

FUJITSU BUSINESS  
COMMUNICATION SYSTEMS

# **SERIES 3**

## **INSTALLATION MANUAL**

### **Package 2**

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## INTRODUCTION

This document contains information for the installation of Series 3 system hardware. This document assumes that the user is familiar with the operating principles of telecommunications systems and possesses the skills required for installing, configuring, and validating those systems.

## ORGANIZATION

The organization of this manual is as follows:

**Chapter 1, Introduction:** Describes the purpose and organization of the manual. Includes a list of Reference Documents.

**Chapter 2, System Construction:** Describes the physical characteristics and operation principals of the Series 3 system.

**Chapter 3, Preparations:** Describes site requirements, unpacking instructions, and hardware inspection and handling instructions.

**Chapter 4, Cabinet Installation:** Describes bracket and cabinet mounting, power unit installation, floppy disk drive installation, and inter-cabinet cables.

**Chapter 5, Circuit Card Installation:** Describes card mounting locations and inter-card connections.

**Chapter 6, Terminal and Line Connection:** Describes installation terminal equipment, including proprietary telephones, the Attendant Console, and other devices.

**Chapter 7, Main Distribution Frame:** Describes MDF cable connections, I/O connectors, Attendant Console wiring, T-1 and 23PT cabling.

**Chapter 8, System Start-Up:** Describes system power-up, IPL, power-down, and data save procedures.

**Chapter 9, Battery Back-Up:** Describes sizing and installation of battery back-up equipment.

**Chapter 10, Peripheral Equipment:** Describes the installation of peripheral equipment.

**Chapter 11, Property Management System Interface (PMSI):** Describes the installation of PMSI equipment.

**Chapter 12, Work Completion Check:** Describes precutover testing to verify system operation after installation.

**Chapter 13, Final Installation:** Provides work completion check lists for use after installation.

**Appendix A, Recommended Spares/Quantities:** Provides a list of cards and equipment that may be needed as spares.

**REFERENCE  
DOCUMENTATION**

The following is a list of available documents:

**Fujitsu Documentation**

**System Description/Features (Section 123-001-002).** Describes in detail all of the features available in the system.

**Applications Manual (Section 123-015-002).** Used to assist in the installation, programming, and maintenance of the system.

**Attendant Console User Guide (Section 123-040-002).** Describes basic attendant console operating instructions.

**Digital Station User Guide (Section 123-050-002).** Describes Digital Station operating instructions.

**CT-10/20/30 User Guide (Section 123-052-002).** Describes CT-10, CT-20, and CT-30 telephone operating instructions.

**Single Line Telephone User Guide (Section 123-063-002).** Describes single line telephone operating instructions.

**Maintenance Manual (Section 123-060-002).** Provides complete instructions for maintaining the Series 3 system.

**Data Base Manual (Section 123-080-002).** Provides information necessary to interface with the system and implementation procedures for each command.

**Site Log Manual (Section 123-200-002).** Provides configuration forms used for entering data base information.

It is recommended that pre-cutover tests be performed. This testing information is located in the Maintenance Manual and the Data Base. A brief test is also recommended to assure telephone operation. Such tests may require referencing the System Description/Features and User Guides.

For overall system information, consult the System Description/Features.

**Industry Standards**

The following additional documents may be helpful when installing the Series 3 system:

EIA Standard RS-232C Interface Between Data Terminal Equipment and Data Communications Equipment Employing Serial Binary Data Interchange.

**EIA RS-464** "Private Branch Exchange Switching Equipment for Voiceband Applications."

**EIA RS-464-1** "PBX Switching Equipment for Voiceband Applications, Addendum Number 1."

**EIA PN-1429** "Proposal Addition" to RS-464.

**EIA RS-478** "Multi-Line Key Telephone Systems (KTS) for Voiceband Applications."

**GENERAL INFORMATION**

- The Series 3 meets FCC Rules and Regulations, Part 68, and Part 15-Class A.
- FCC Registration:
  - Key System: BJ885Z-60084-KF-E
  - PBX System: BJ8USA-75355-PF-E
  - Hybrid (Multifunction) System: BJ8USA-60083-MF-E

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## CABINET CONFIGURATION

The Series 3 system is made up of one to four wall mounted cabinets. A two cabinet Series 3 system is shown in Figure 2-1. Figure 2-2 shows an exterior view of Series 3 four cabinet configurations; a basic cabinet and three expansion cabinets.

The Series 3 consists of the following hardware components:

### Basic Cabinet

The basic cabinet, referred to as cabinet zero, houses one of the power distribution boxes (ACPD or DCPD), the common control card (SC2P2B / SC2P2E or SC4P2B / SC4P2E), and various line and trunk cards

### Expansion Cabinets

The expansion cabinets are physically the same as the basic cabinet. Each expansion cabinet is equipped with a Main Power Supply Unit (MPSU). The third cabinet, in three and four cabinet systems, contains the SSDEC (switching expansion) card and a power distribution box (ACPD/DCPD).

### Wall Bracket

The bracket is mounted on the wall, and the cabinet is then secured to the bracket. The Series 3 system require a minimum of 12 inches clearance above and below each cabinet.

Figure 2-1. Series 3 Cabinet

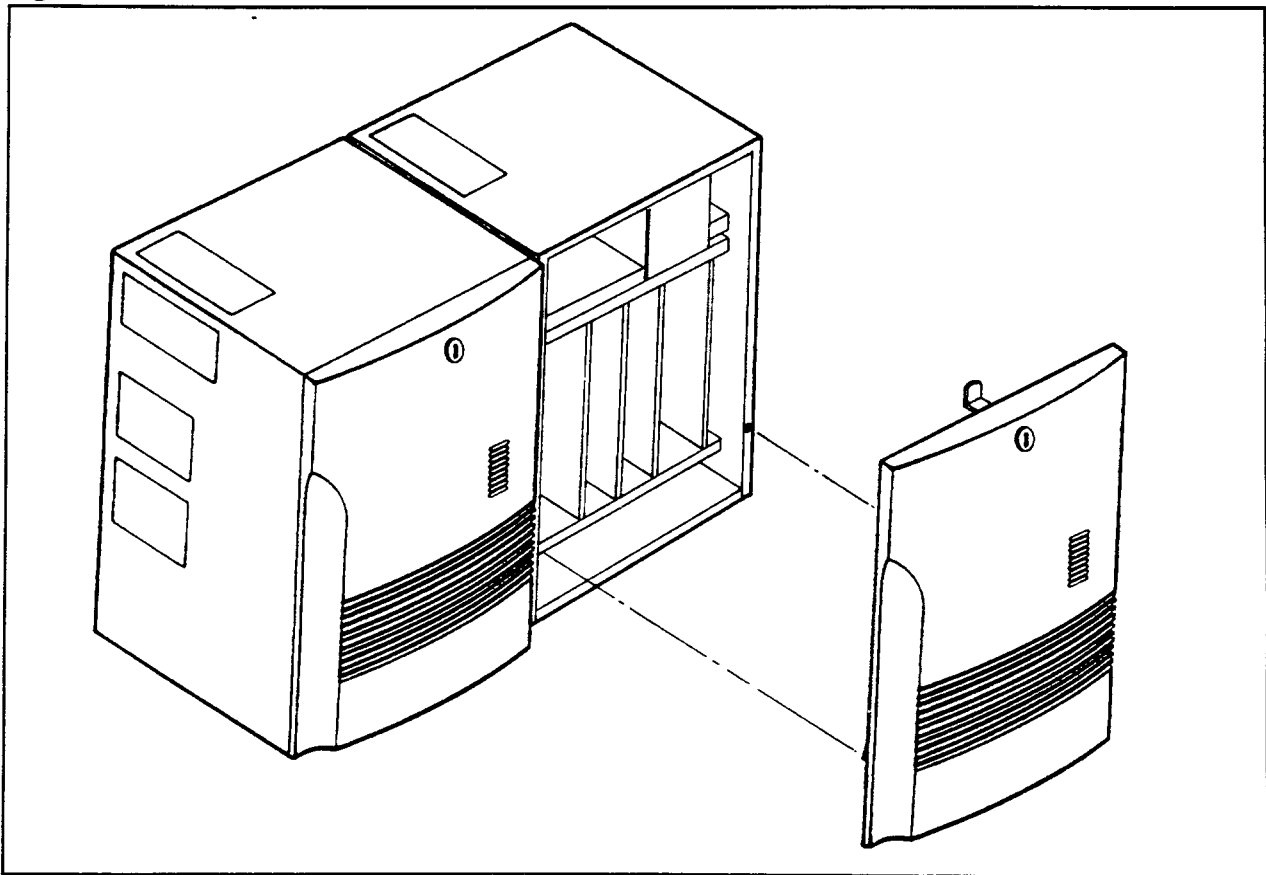
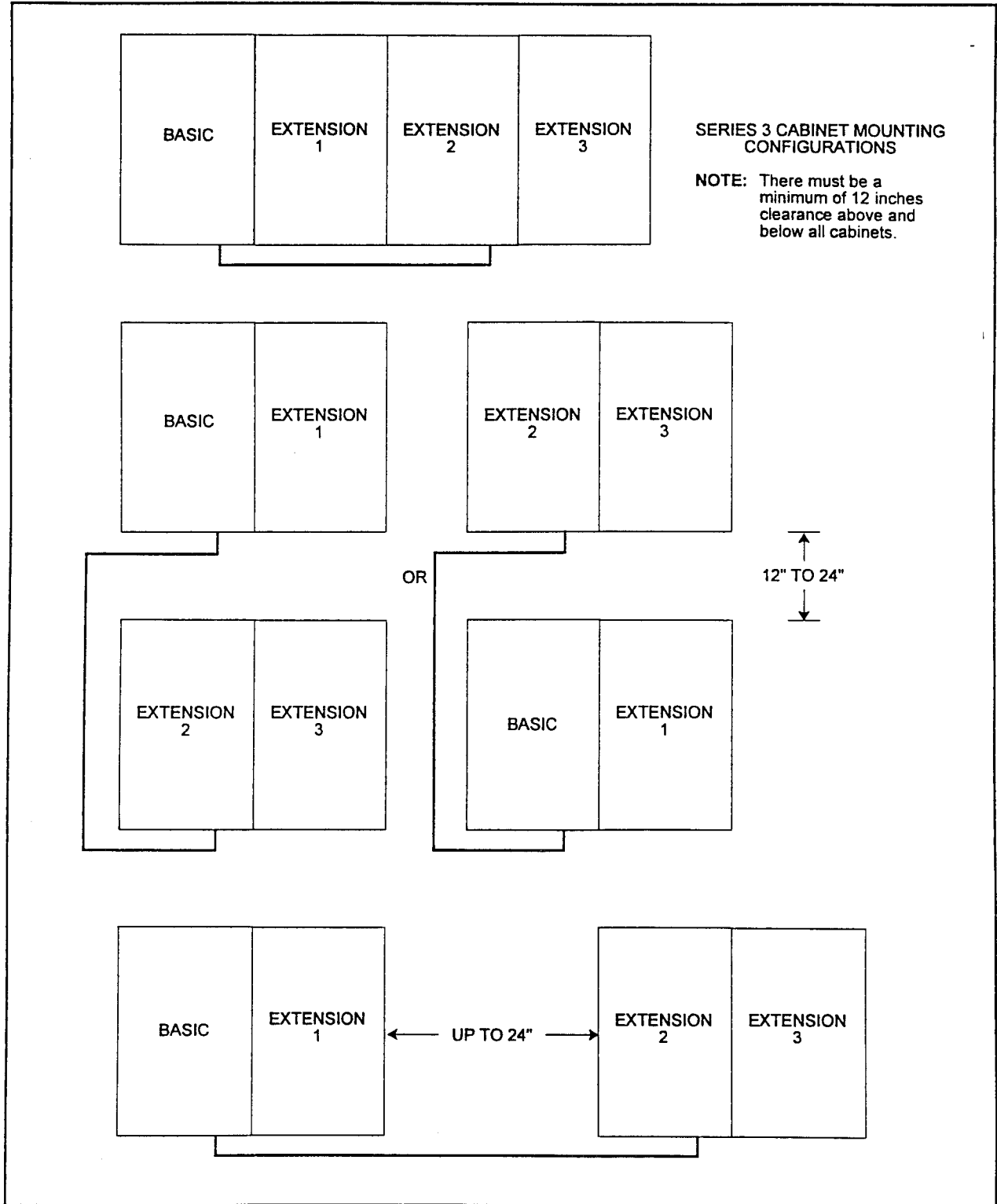


Figure 2-2. Four Cabinet Configurations





## HARDWARE CONFIGURATION

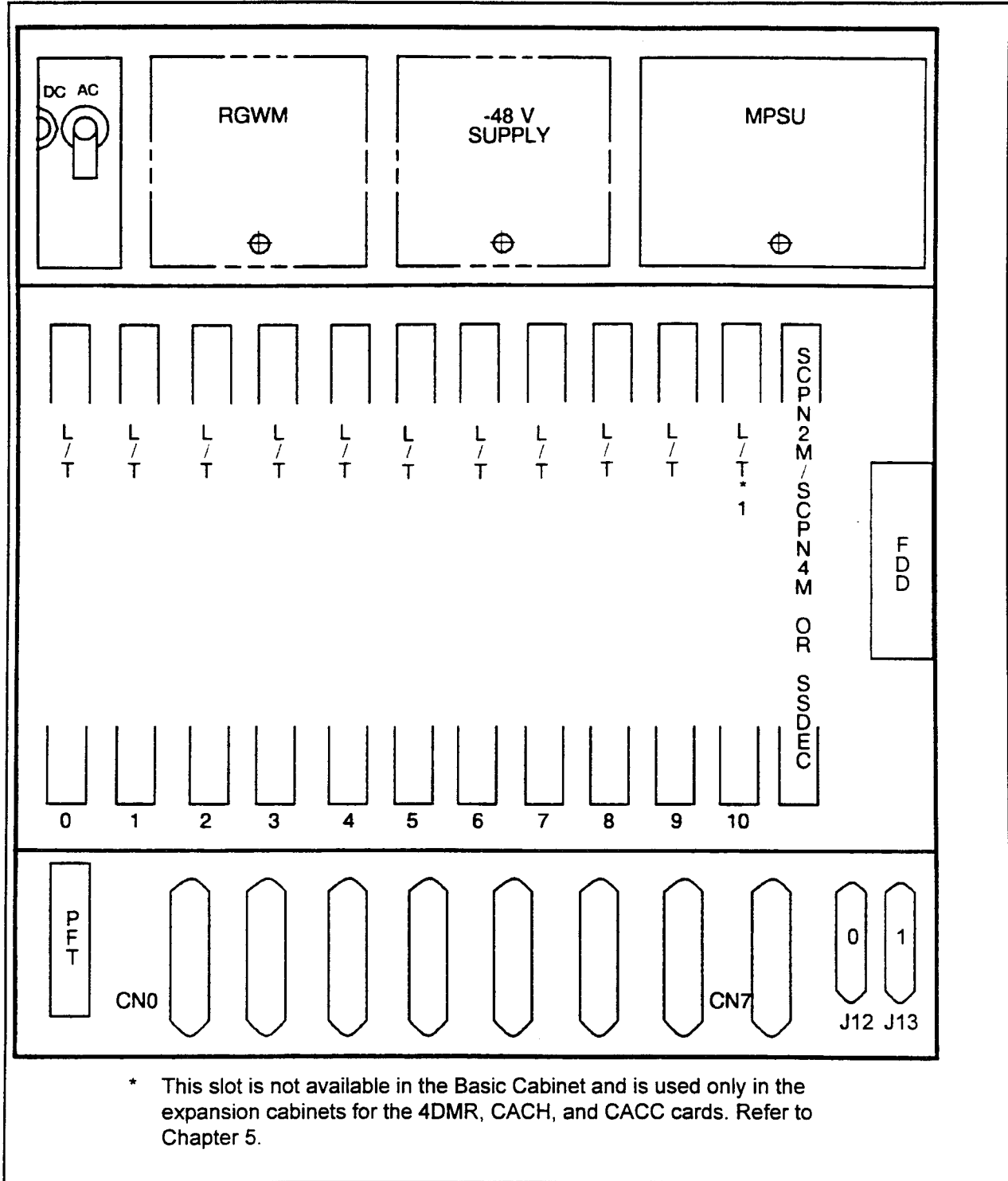
- Power Units**
- **ACPD/DCPD:** The power distribution unit is the primary power input to the Series 3 system. It is available in two versions: the ACPD for AC only operation; and the DCPD for AC with battery back up operation. Installed in the basic and second expansion cabinets.
  - **MPSU:** The Main Power Supply Unit (MPSU) provides +/- 5VDC and -24VDC power for each cabinet. Each cabinet includes its own MPSU. Refer to Table 2-1.
  - **RGMW:** The Ring Generator supplies 20Hz ring voltage and DC message waiting voltage for single line phones. One RGMW mounted in cabinet zero supplies ring voltage and message waiting power for cabinets zero and one. One RGMW in cabinet two supplies cabinets two and three. The RGMW is never installed in cabinets one or three.
  - **-48V PS:** The -48V PS supplies -48 volts for 4SLE, 6DID and 4TE4 cards and for recharging the back-up batteries. The cabinets are connected by a power bus. When two or more -48V PS units are installed in a system, all units load share equally. Refer to Figure 2-3. Each -48V PS has a capacity of 3.0 Amps (A). The 6DID and 4TE4 cards draw an average of 0.3 A each. Any surplus current capacity can be used to charge external back up batteries. Refer to Chapter 9 for battery back up information, and to Table 2-1 below.
  - **24V PS:** This power supply is mounted beneath the card shelf and has no switches. There is a green LED on the front edge.

**Floppy Disk Drive** The optional floppy disk drive stores the customer data base.

**Table 2-1. Power Supply Front Panel Indicators, Switch, and Fuse Labels**

POWER SUPPLY	LABEL	FUNCTION
MPSU	OPE	MPSU is operating correctly.
	UV	Under Voltage, the output of the MPSU is under the specifications.
	INT	Momentary loss of AC input power. An interruption longer than 10 ms, but less than one second. Must be manually reset. INT is disabled if battery back-up is installed.
	RES	Reset switch for INT indicator.
	FUSE	-48 volts output fuse. The -48 volts for 6DID and 4TE4 cards.
-48V PS	OPE	-48V PS is operating correctly.
	SYNC	Sync signal is being received correctly from the MPSU.
24V PS	(none)	24V PS is operating correctly.

Figure 2-3. Series 3 Cabinet Internal View



\* This slot is not available in the Basic Cabinet and is used only in the expansion cabinets for the 4DMR, CACH, and CACC cards. Refer to Chapter 5.

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**CIRCUIT CARDS**

- Common Control Cards**
- **SCP2M**: Combined processor, memory, switch network, and (optional) floppy disk controller for use in one and two cabinet systems. Installed in the basic cabinet.
  - **SCP4M**: Combined processor, memory, switch network, floppy disk controller (optional), and switching extender for three and four cabinet systems. Installed in the basic cabinet.
  - **SSDEC**: Switching extender card for three and four cabinet systems. Mounts in the processor slot of the third cabinet.

**Interface Cards** 16DTC, 16SLC, 8EKC, 8DTC, 8SLC, 8PDL, 4SLE, 4BWC, 8BWC, 2TTL, 2TTE, 2TE4, 4TE4, 4DMR, 4CHT, 6DID, RVAC, 2APIA, MUFN, 24T1, 23PT, CLKS, 6PFA, CACC, and CACH cards can be ordered depending on the customer's requirements.

**SYSTEM SPECIFICATIONS**

The system specifications are listed below. For additional information refer to Table 2-1.

- Cabinet dimensions:
  - Width: 14.61 in. (37.11 cm)
  - Height: 19.91 in. (50.57 cm)
  - Depth: 14.675 in. (37.27 cm) includes door
  - Weight: 5 lb. (25 kg) fully equipped
- Mounting bracket dimensions:
  - Width: 20.89 in (53 cm)
  - Height: 19.8 in. (50.4 cm)
- Central Controller (MBL 80186)
  - 8 Mhz; one and two cabinet systems (SCP2M)
  - 16 MHz; three and four cabinet systems (SCP4M)
- I/O interface:
  - 2 ports
  - RS-232C compatible
  - Full duplex mode
  - Stop bits; 1 or 2
  - ASCII characters: 7 or 8
  - Asynchronous clock
  - Baud rate: 110 to 4800
  - Parity: none, odd, or even
- Maintenance:
  - Remote with optional modem
  - Local

**SYSTEM SPECIFICATIONS  
(Cont'd)**

- Digital switching network bus:
  - Time Division Multiplex (TDM) non-blocking
  - 512 time slots in one and two cabinets (SCPN2M)
  - 1024 time slots in three and four cabinets (SCPN4M)
- One 3.5 inch floppy disk drive (optional):
  - Capacity of 1.44 MB formatted (IBM format)
  - Customer data base back up

**SOFTWARE**

The features provided include:

- Basic Calls (Business Package)
- Station Message Detail Recording (SMDR) (Business Package)
- Direct Inward Dial (DID) (Business Package)
- Direct Inward System Access (DISA) (Business Package)
- Automatic Call Distribution (ACD) (Business Package)
- Hotel/Motel Features (Business Package)
- Least Cost Routing (Business Package)
- Property Management System Interface (Business Package)
- T-1 Interface (Enhanced Package)
- ISDN PRI Interface (Enhanced Package)
- FIPN Interface (Enhanced Package)
- Data Switching (Enhanced Package)
- ACD Report Manager Application Processor (Enhanced Package)

The features of the software are described in more detail in the System Description/Features Manual.

**MAXIMUM CAPACITIES**

Some system maximum capacities are set by the number of available card slots in the cabinets; others are set by the system software. Table 2-2 lists all the maximum capacities. Not all of the maximums can be configured in the same system. For example, the maximum total number of DSS buttons in a system is 640.

Table 2-2. System Maximums

	ONE CABINET SYSTEM	TWO CABINET SYSTEM	THREE CABINET SYSTEM	FOUR CABINET SYSTEM
Ports	144	292	440	588
Stations	120	240	360	480
Trunks	120	240	240	240
Data Terminals	80	160	160	160
DSS 30/40	16	16	16	16
DSS 80	8	8	8	8
DSS 100	2	2	2	2
Attendant Consoles	8	8	8	8
DTMF Receivers	32	32	32	32
Mixers*	10	10	15	15
SLT Ringing	6/ring phase	12/ring phase	18/ring phase	24/ring phase
SLT MW Lamps Lit	50	100	150	200
Proprietary Telephone Speaker Use	96	192	288	384

\* Determined by SCPN2M or SCPN4M card not by the number of cabinets.

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## LIST OF MATERIALS

Observe the following rules when unpacking and inspecting the system hardware:

- Inspect all shipping containers for evidence of damage that may have occurred during shipment. If such evidence is found, advise the carrier and distributor.
- Open the shipping containers and remove the contents carefully. Refer to Figure 3-1.
- Inspect the contents of the containers for any damage; if found, advise the carrier and distributor.
- When handling cards, do not remove them from antistatic bags until card installation. Take normal precautions for electrostatic damage to CMOS devices (antistatic spray, grounding, etc.)

Account for all system parts before discarding packing materials. Table 3-1 at the end of this chapter contains a list of parts that should be shipped with each system.

## MATERIALS NEEDED

You should have the following (customer provided) materials for installation:

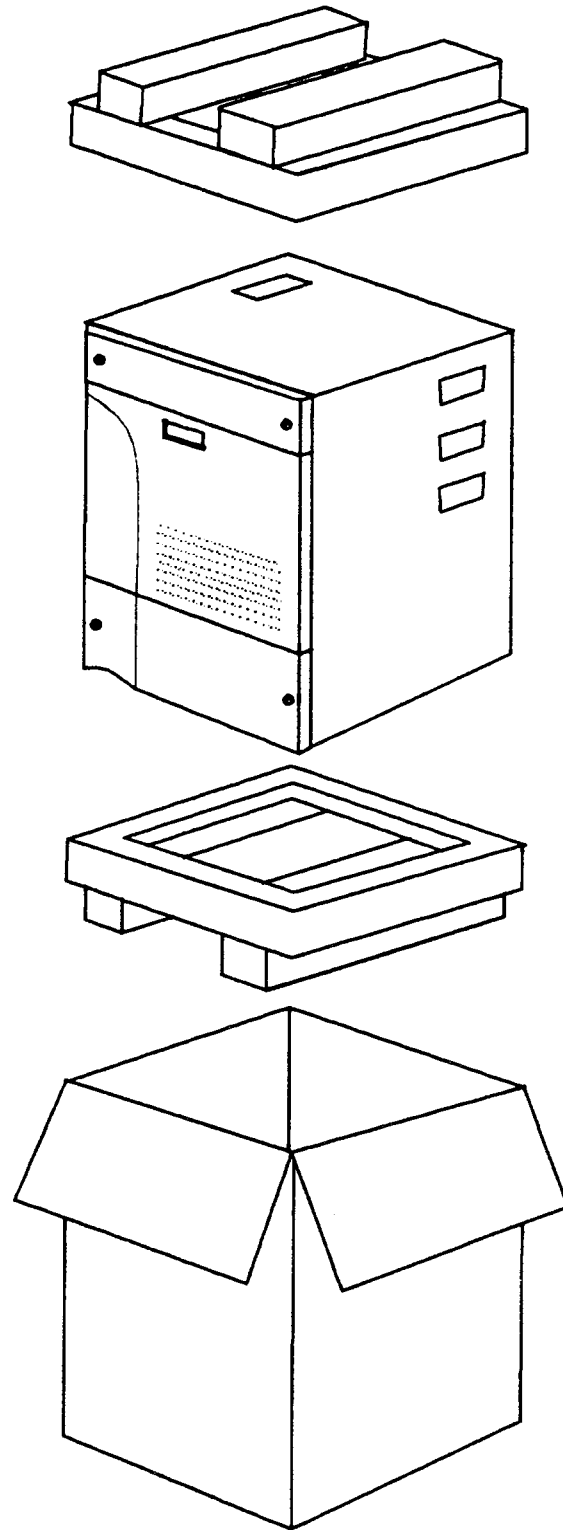
- Mounting bolts; expansion bolts, or No. 10 bolts with insert sleeves, or No. 10 x 5/8 inch wood screws (minimum)
- Ground wire from cabinets to MDF ground bar (12 AWG stranded or solid)
- Signal ground wire from MDF to utility entrance ground (6 AWG or larger, stranded)
- AC power outlet, 110 VAC, 15 Amps
- DC wire from battery plant to cabinet (10 AWG stranded or solid)

## TOOLS

No special tools are required for installation.

All of the screws in the Series 3 cabinet are metric. Use a #2 Phillips or "Reed and Prince" head screwdriver to avoid damage to the screw heads.

Figure 3-1. Unpacking the Cabinet





**INSTALLATION SITE  
REQUIREMENTS**

A stable, clean, and uncluttered area should be carefully considered when selecting an installation site. The equipment cabinets are designed to fit easily in the installation site. The cabinets are compact and operate quietly, so they can be placed in an office or work area.

Before the system can be installed, the operations in this chapter must have been completed.

Keep in mind the following environmental considerations in the selection of an installation site:

- The installation site should be clean, dry, and uncluttered to limit the intake of dust and dirt into the cabinet.
- The installation site should be well ventilated to dissipate warm air vented from the equipment cabinets.
- The installation site should be well lighted to make installation and maintenance easier.
- The installation site ambient temperature must be maintained between 32° and 104° Fahrenheit (0° to 40° Celsius).
- The installation site should be maintained at a relative humidity between 10% and 90% (non-condensing) over the specified temperature range.
- The minimum wall load requirement for mounting a Series 3 cabinet is 55 pounds per cabinet.
- The equipment location should be subject to very little vibration.
- There should be enough AC power outlets and circuits for the system and its peripheral hardware.
- The equipment location should be free of overhead water pipes which might rupture and damage the equipment.
- The equipment location should be free of strong magnetic fields, such as those created by large transformers. Also, avoid an area where there is apt to be static electricity.
- The equipment location must be free of corrosive fumes or machine exhaust which might cause deterioration of circuit components.
- The equipment location should not have heating ducts or adjacent windows which could cause the ambient temperature to rise above or fall below the rated operating range.
- The equipment location must allow adequate air circulation through the cabinet.
- Moving machinery or vehicles should not be permitted in the equipment location.

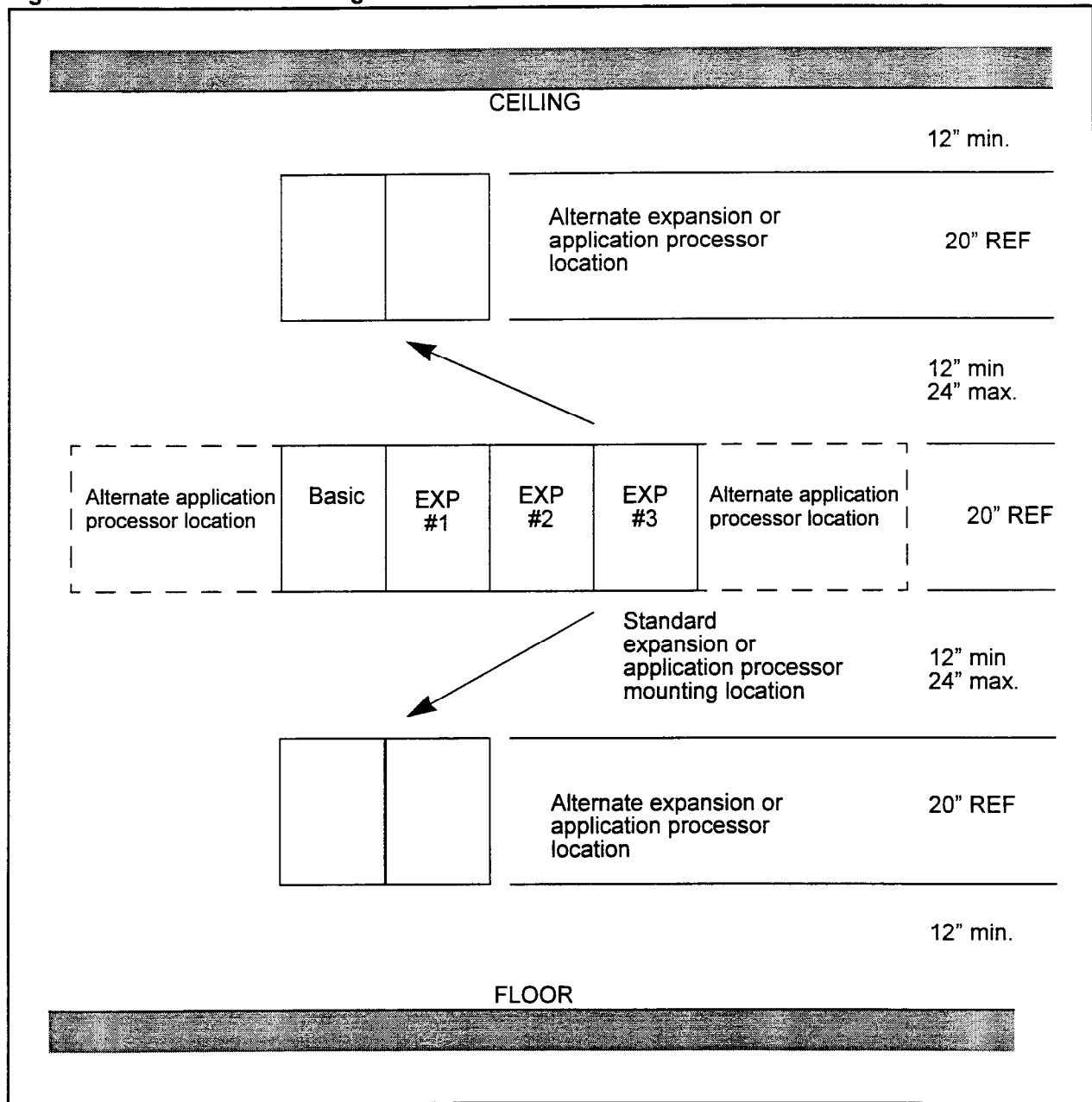
**SPECIAL INSTALLATION INSTRUCTIONS**

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is designed for wet locations.
- Never touch bare telephone wires or terminals unless the telephone has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.

**WALL LAYOUT**

Figure 3-2 shows wall arrangements for the Series 3 system.

**Figure 3-2. Series 3 Wall Arrangements**



**POWER REQUIREMENTS**

The power requirements are as follows:

- Voltage: 96 to 127 VAC
- Frequency: 60 Hz  $\pm$  5 Hz
- Phase: Single phase only
- Maximum current:
  - 3.8 A rated current for single cabinet system
  - 7.2 A for a two cabinet system
  - 11.0 A for a three cabinet system
  - 14.4 A for a four cabinet system
- Power consumption (max):
  - About 418 W for a single cabinet system
  - About 792 W for a two cabinet system
  - About 1210 W for a three cabinet system
  - About 1584 W for a four cabinet system

**HEAT LOADING**

- Typical heat generated:
  - About 956 BTU (single cabinet/70 lines)
  - About 1853 BTU (two cabinet system/150 lines)
  - About 2809 BTU (three cabinet system/220 lines)
  - About 3703 BTU (four cabinet system)

Although standard power provides an acceptable level of performance for most installations, some will require the power failure transfer feature which switches designated stations to assigned outgoing trunks during power outages.

Some facilities (particularly those with computer installations) are equipped with an Uninterruptable Power Supply (UPS). This is the preferred power source since it provides automatic switchover to 120 VAC back up in case of a loss of power. If a UPS is available at the facility, the installer should verify that the Series 3 system power outlet is connected to the UPS system.

Battery back up for the Series 3 is described in Chapter 8.

**GROUNDING REQUIREMENTS**

- **Signal ground:** A single wire is connected to the G (center) terminal of the terminal block in the bottom of cabinet zero (Basic). Refer to Chapter 4. This wire must be 12 AWG, stranded or solid copper conductor. The resistance of the connection from the terminal block to the Utility Entrance Ground must not be greater than 5 ohms.
- **Frame ground:** Frame ground is provided by the third wire ground in the AC power cable. The brackets of cabinets mounted side by side are connected with clips. Refer to Chapter 4.

Table 3-1. Basic Cabinet Parts Lists

PART	SPECIFICATION	COMMENTS
Cabinet	E210-990-V021	Includes covers
Wall Mount Bracket	E210-9900-X156	
MPSU (Power Supply) (old) — or —	710036-01	Shipped in a separate box. Requires supplemental 24V supply.
EMPSU (Power Supply) (new)	710036-02	Shipped in a separate box. Supplemental supply not required.
RGMW (Ring Generator)	710038-01	Shipped in a separate box
ACPD (AC only)	E08B-1034-C001	AC operation
DCPD (AC/DC)	E08B-1034-C101	AC operation with battery back up
Modem (2400 BPS Modem)	735077-05	Attached to I/O port in cabinet
Music on Hold Adapter	360456-01	Shipped in a separate box
4DMR* (4 circuit DTMF receiver)	E20B-4505-R350	Shipped in a separate box
48V PS (-48v Power Supply)	710037-01	Shipped in a separate box
AC Power Monitor	E20B-9900-R370	First and third cabinets only

\* As an option, customers may order a 4DMR or a MUFN card.

Table 3-2. Expansion Cabinet Parts Lists

PART	SPECIFICATION	COMMENTS
Cabinet	E210-990-V021	Includes covers
Wall Mount Bracket	E210-9900-X156	
MPSU (Power Supply) (old)	710036-01	Shipped in a separate box
MPSU (Power Supply) (new)	710036-02	Shipped in a separate box
ACPD (AC only)	E08B-1034-C001	AC operation
DCPD (AC/DC)	E08B-1034-C101	AC operation with battery back up
48V PS (-48v Power Supply)	710037-01	Shipped in a separate box
AC Power Monitor	E20B-9900-R370	Second expansion cabinet only
Expansion Cabinet Cable Set	E08B-1030-K201	
Address Cable Set	E08B-1034-C101	

Table 3-3. SSDEC Kit

PART	SPECIFICATION	COMMENTS
SSDEC	E16B-3020-R130	
SSDEC Cable	E660-2507-T673#00-01	
E Ground Extender (short)	E660-9900-T108 #1	
E Ground Extender (long)	E660-9900-T108 #2	
E Ground Extender (short)	E660-9900-T115 #1	
E Ground Extender (long)	E660-9900-T115 #2	

## GENERAL

The following procedures detail the mounting of wall brackets, cabinets, and the connection of the inter-cabinet cables.

## WALL MOUNTING BRACKETS

Each bracket will support one cabinet.

When planning the layout for a system with expansion cabinets located above or below the basic cabinet allow a minimum 12 inches between the top and bottom mounting brackets. The space is required for MDF cable clearance and cooling air flow. The maximum spacing is 24 inches. Refer to Chapter Two.

### Attaching the Mounting Bracket

Each mounting bracket has four sets of bolt holes. Refer to Figure 4-1. Bolt Hole Set One is used to attach the bracket for the first cabinet in a row. Bolt Hole Set Two is used to attach the second cabinet bracket. The basic cabinet (cabinet zero) is always the first cabinet; expansion cabinet one mounts to the right of the basic cabinet. Attach the mounting bracket to the wall using either expansion bolts, or bolts and insert sleeves. The bolts must be at least 1/4 in. diameter; or, if mounting the bracket on wood, the minimum size wood screw permitted is a 1/4 x 5/8 inch. The method used to secure the bracket must be capable of supporting 55 pounds (25 kg).

### Drilling the Mounting Bolt Holes

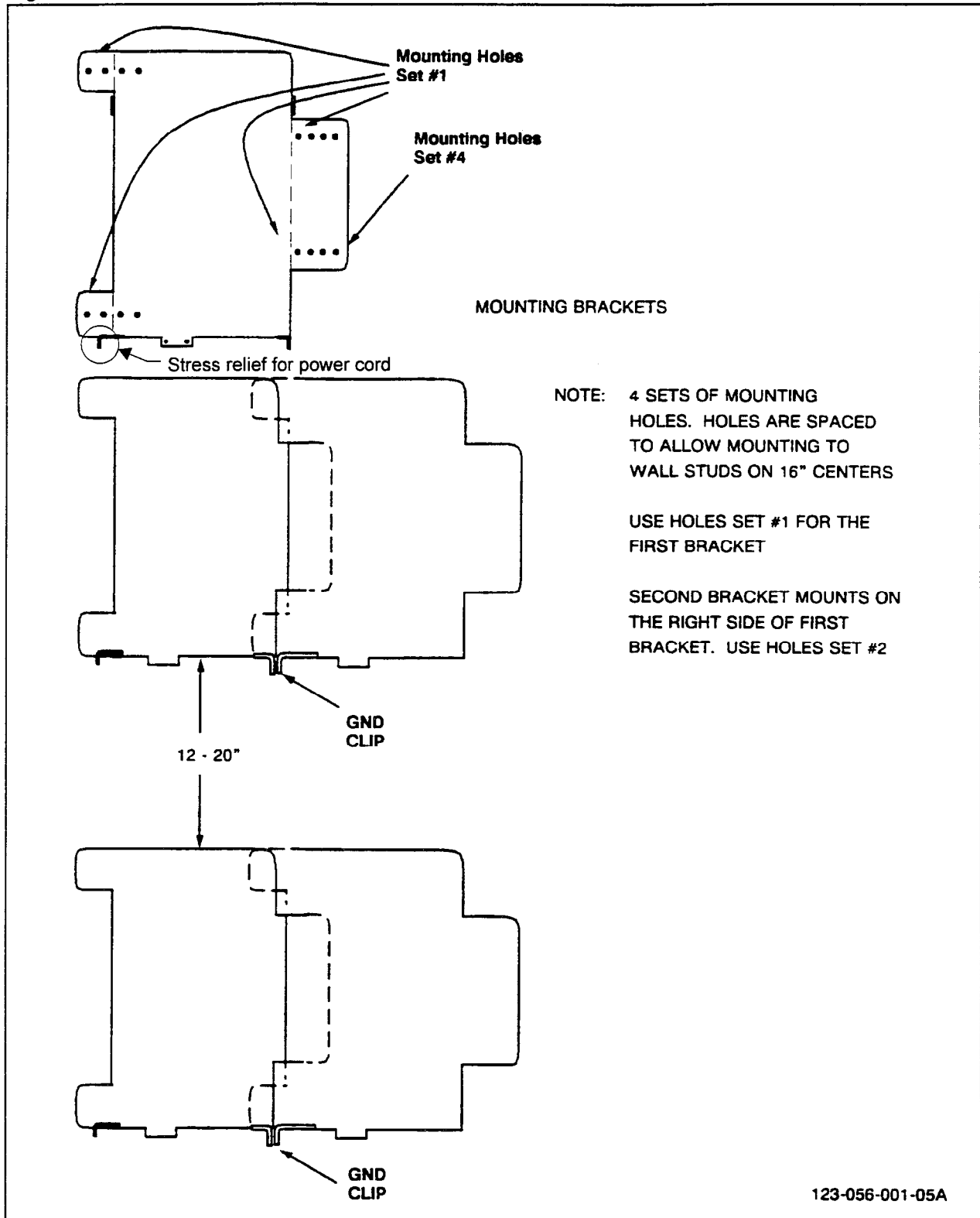
Drill the bolt holes as follows:

1. Find and mark the stud locations behind the walls where the bracket is to be mounted. The mounting bracket provides holes for 16-inch center-to-center stud distance.
2. Mark the positions of the four holes to be drilled in the wall for the mounting bracket. For the basic cabinet use Bolt Hole Set One.
3. Mark the center of the holes using a drill or punch.
4. Drill each marked hole to the correct depth and width for the bolts/sleeves or screws to be used.
5. If sleeve inserts are used, drive one into each of the holes.
6. If another bracket is to be installed to the right; attach the FIRST bracket to the wall. Set the right bracket in place, next to the left bracket. Notice that two right side tabs fit under the main plate of the left mounting bracket. Align the Set Two holes in the new bracket tabs with the Set One hole in the right side of the first bracket. Ensure that the left bracket frame ground tab is over the hole in the right bracket. Mark the wall through the Bolt Hole Set Two holes.

### Wall Bracket Grounding

Connect adjacent brackets together with the frame ground tab on the lower right corner of each bracket. Refer to Figure 4-1.

Figure 4-1. Wall Bracket Detail

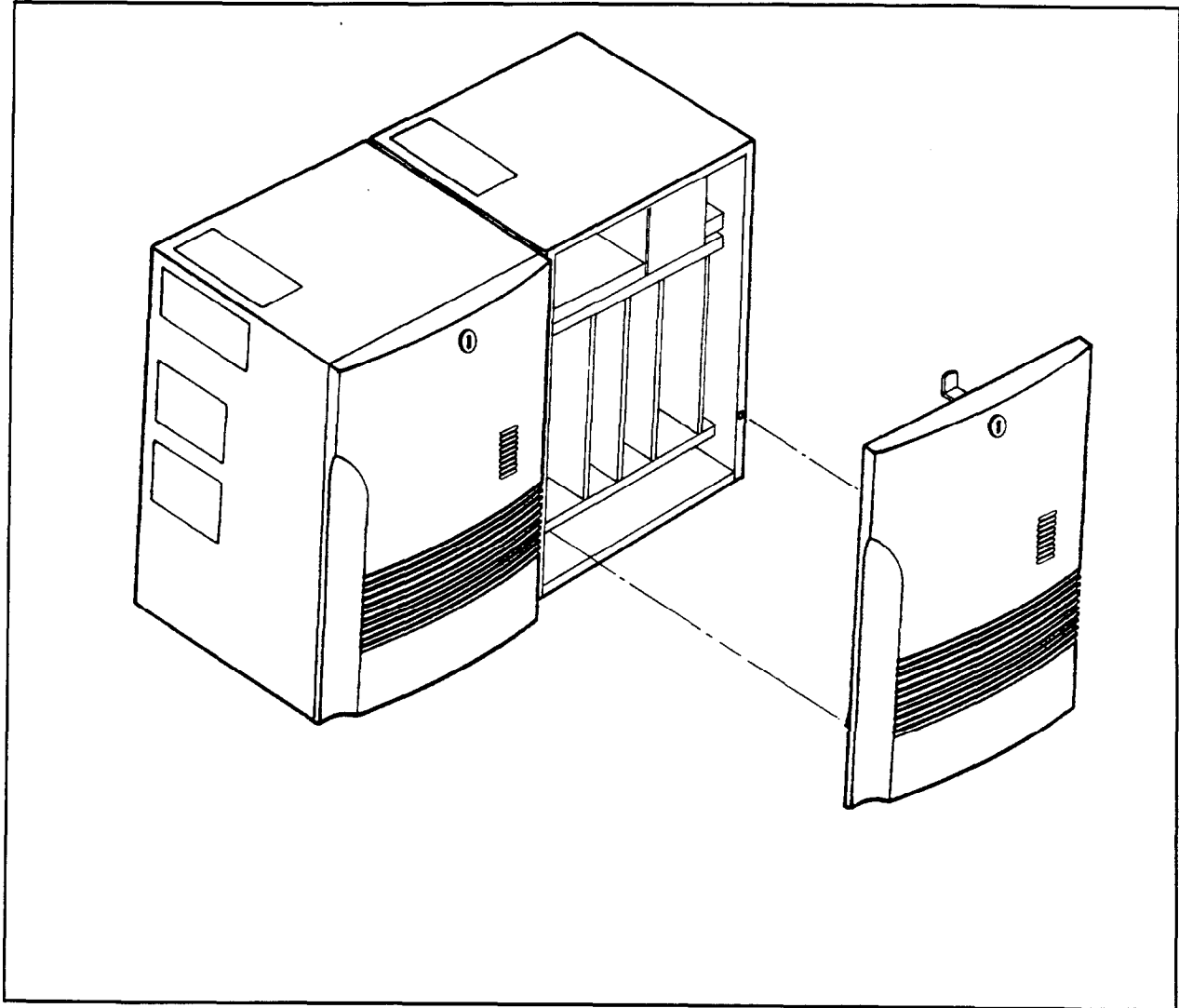


**BASIC CABINET  
INSTALLATION (One-Piece  
Front Cover)**

1. Unpack the basic cabinet as described in Chapter 3.
2. To remove the front cover, turn key clockwise, swing top out to clear to locking tab, lift the cover up and out of the cabinet. Refer to Figure 4-2.
3. Tip cabinet onto its back. Loosen the screws holding the bottom plate. Slide bottom plate off of the screws. Refer to Figure 4-5.

**CAUTION: All covers must be replaced at the end of the installation procedures to meet FCC Part 15 requirements.**

**Figure 4-2. One Piece Front Cover**



**BASIC CABINET  
INSTALLATION (Three-Piece  
Front Cover)**

1. Unpack the basic cabinet as described in Chapter 3. To remove the front cover, open the small lock cover, turn key clockwise, swing top out, lift the cover up and out of the cabinet. Refer to Figure 4-3.
2. Remove two screws from the top front cover. Remove top cover. Remove the bottom front cover the same way.
3. Remove the power supply shelf access port covers from the top of the cabinet. Refer to Figure 4-4.
4. Tip cabinet onto its back. Loosen the screws holding the bottom plate. Slide bottom plate off of the screws. Refer to Figure 4-5.

**CAUTION: All visible covers must be replaced at the end of the installation procedures to meet FCC Part 15 requirements.**

Figure 4-3. Three-Piece Front Cover

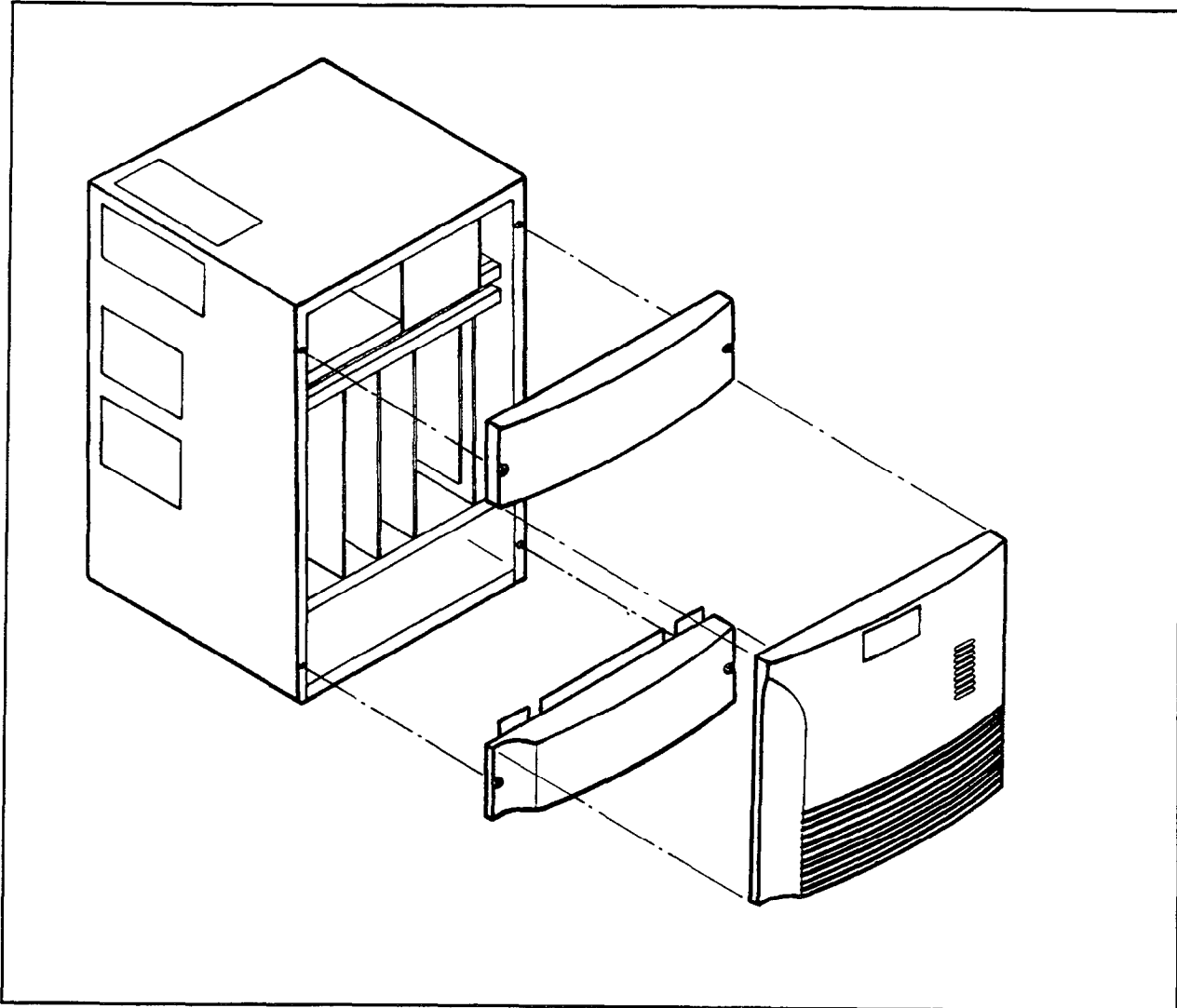




Figure 4-4. Access Port Covers

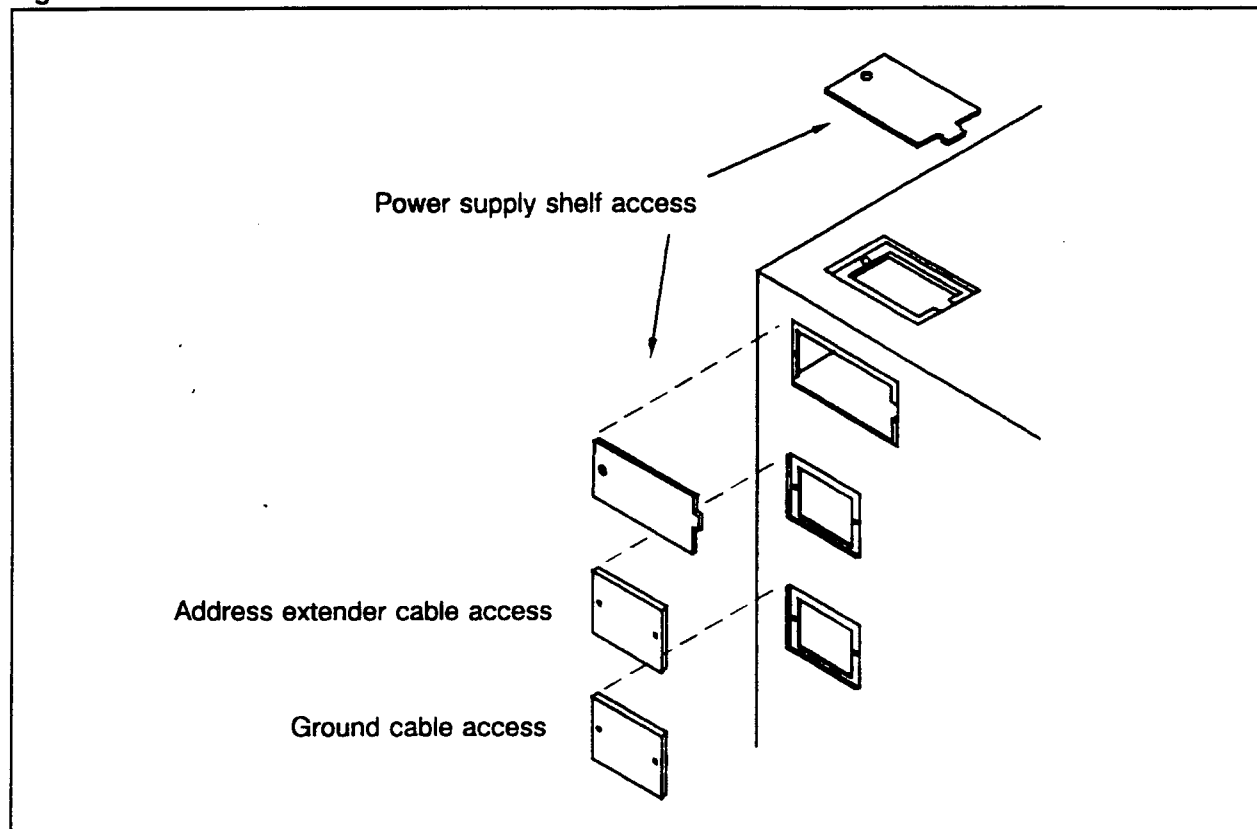
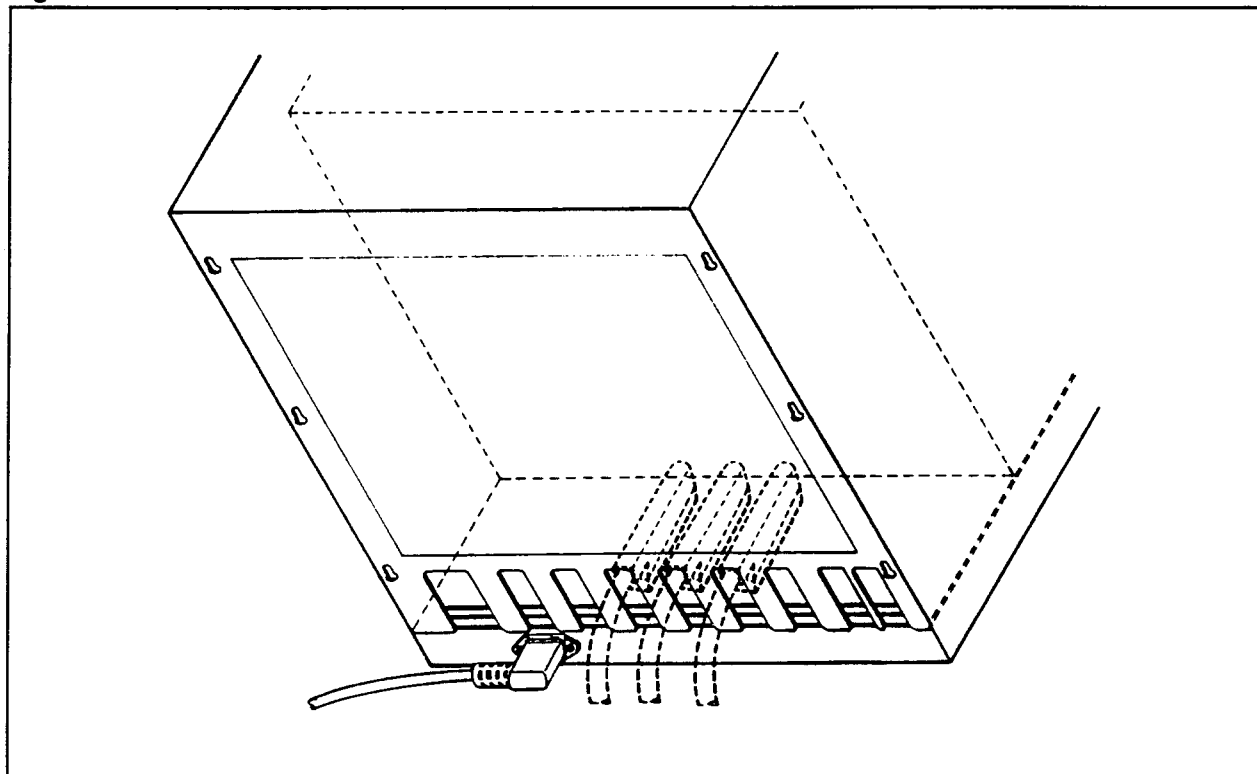


Figure 4-5. Bottom Cover Plate



**INSTALLING THE EMPSU**

A Main Power Supply Unit (EMPSU or MPSU) is mounted in each cabinet. An MPSU (P/N 710036-01) requires a supplemental 24V power supply. When installing an EMPSU (P/N 71036-02) the supplemental power supply must not be installed.

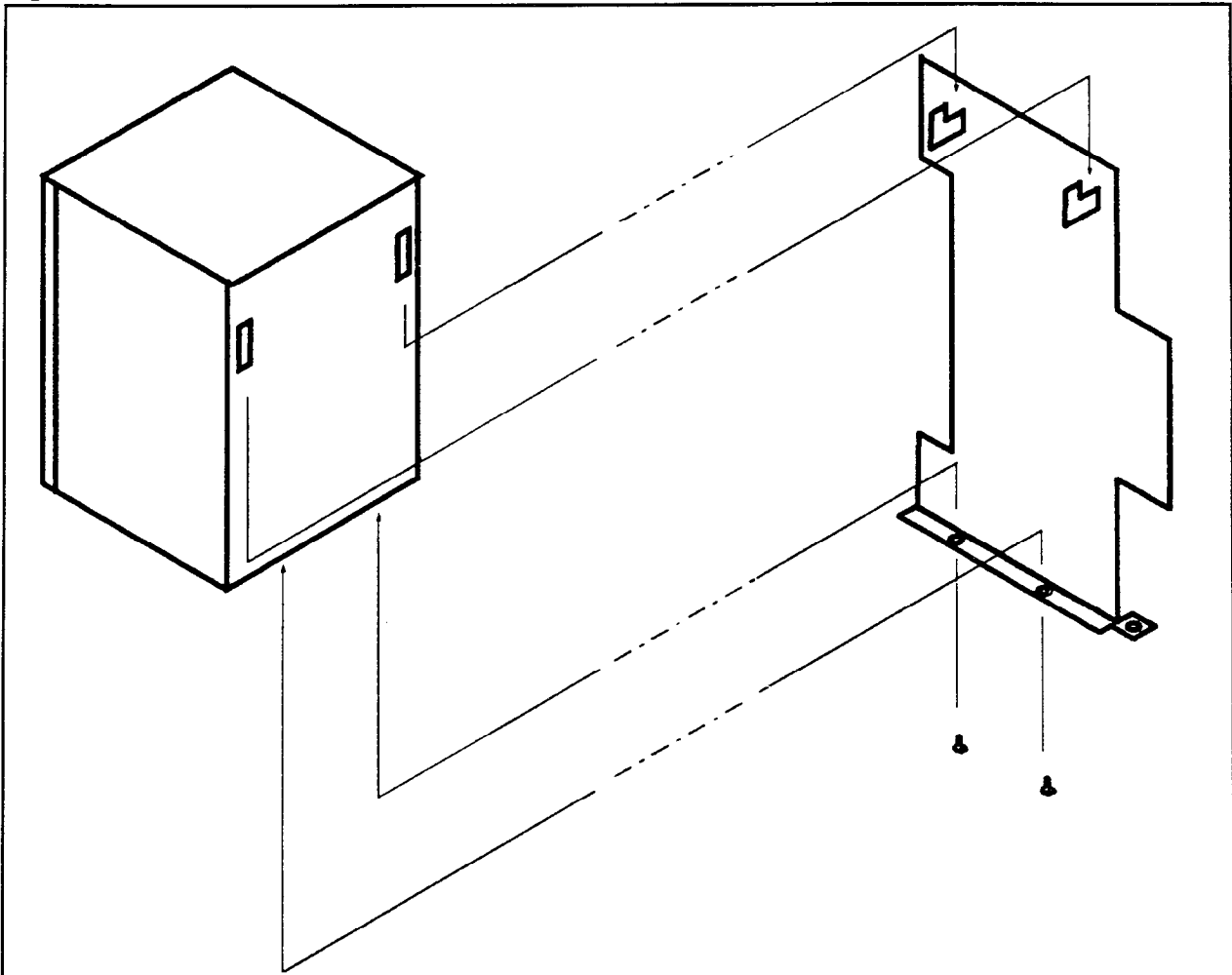
1. Set the MPSU on the right side of the power supply shelf in the basic cabinet.
2. Align the MPSU with the connector on the backplane. Remove the access cover on the left side of the cabinet in order to see the connectors. Replace the cover after the MPSU is installed.
3. Slide the MPSU back until the connectors are seated.
4. Secure the MPSU with the M4x10 screw provided.

**INSTALLING THE BASIC CABINET ON THE WALL BRACKET**

The basic cabinet is ready to be installed on the wall bracket when the MPSU has been installed in the power supply shelf.

1. Lift and attach the cabinet by lining up the mounting slots in the top of the cabinet back with the tabs on the bracket and lowering the cabinet onto the mounting bracket as shown in Figure 4-6.
2. Use two screws and washers to fasten the equipment cabinet to the mounting bracket as shown.

Figure 4-6. Cabinet Installation



- AC Power Monitor** Install the AC Power Monitor plug in the backplane connector as shown in Figure 4-10.
- Ring Generator** If a Ring Generator Message Waiting power supply is required to support single line phones, set the RGMW unit between the guide rails next to the ACPD or DCPD. Refer to Figure 4-7. Push the RGMW unit back until the rear edge connector is seated in the backplane connector. Secure with the M4x10 screw provided. The RGMW is installed in cabinet zero (Basic) and expansion cabinet two as needed.
- 48 Volt Power Supply** If a -48 volt power supply is required, set the unit between the guide rails next to the Main Power Supply. Push the -48 volt power supply back until the rear connector is seated in the backplane connector. Secure with the M4x10 screw provided.

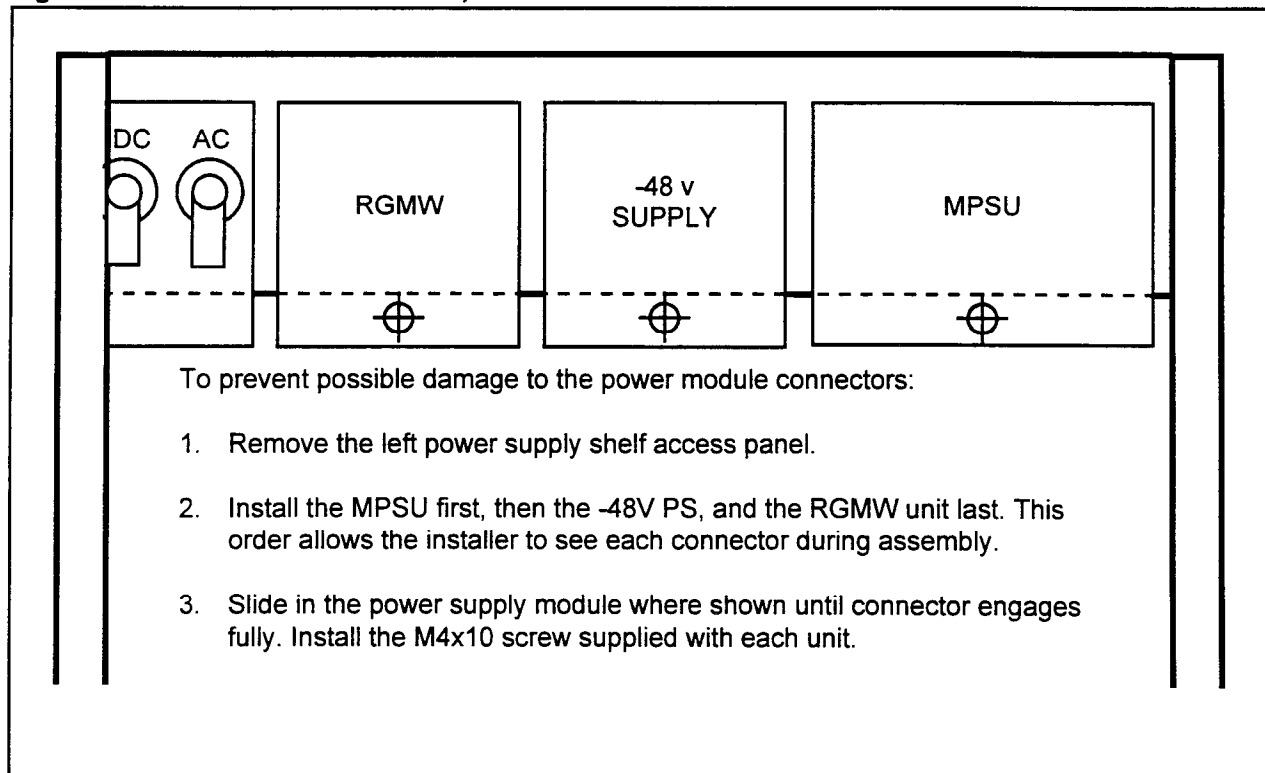
On the bottom of the RGMW unit is the Message Waiting voltage strap. The RGMW is shipped with the strap in position W1.

**NOTE:** Do not cut the strap.

- Strap position W1 is for US installations; message waiting voltage is 100v.
- Strap position W2 is for Canada installations; message waiting voltage is 135v.

**NOTE:** Refer to Table 2-1 for further information on power supply indicators such as OPE, SYNC, etc.

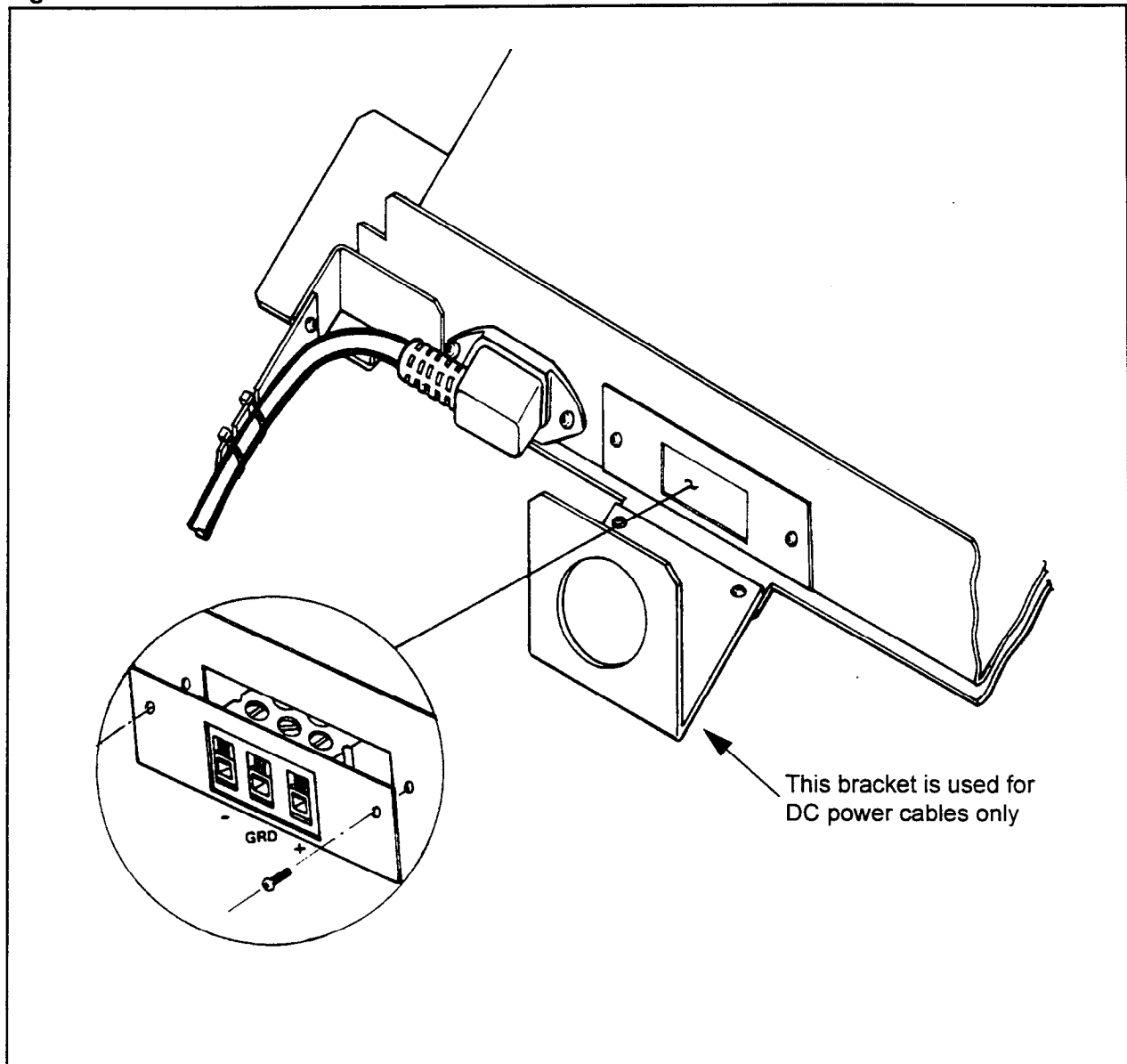
**Figure 4-7. Power Distribution Unit, -48 VDC and RGMW Installed**



## POWER AND GROUNDING

- Power** The AC power, DC power and ground connectors are located in the bottom of the cabinet. Refer to Figure 4-8.
- Frame Ground** The system wall mount brackets should be connected together. The frame ground tabs for side by side, or wire for installations. The ground connection for the frame is made through the third wire in the AC power cord. Verify that the AC receptacle dedicated to the Series 3 system is correctly wired and properly grounded.
- Signal Ground** The signal ground wire must be connected from the G terminal on the DC terminal block to an MDF mounted ground bus bar. The DC resistance of the wire from the last cabinet to the utility entrance grounding point must be less than 5.0 ohms. Refer to Figure 4-9.

Figure 4-8. Power and Ground Connections

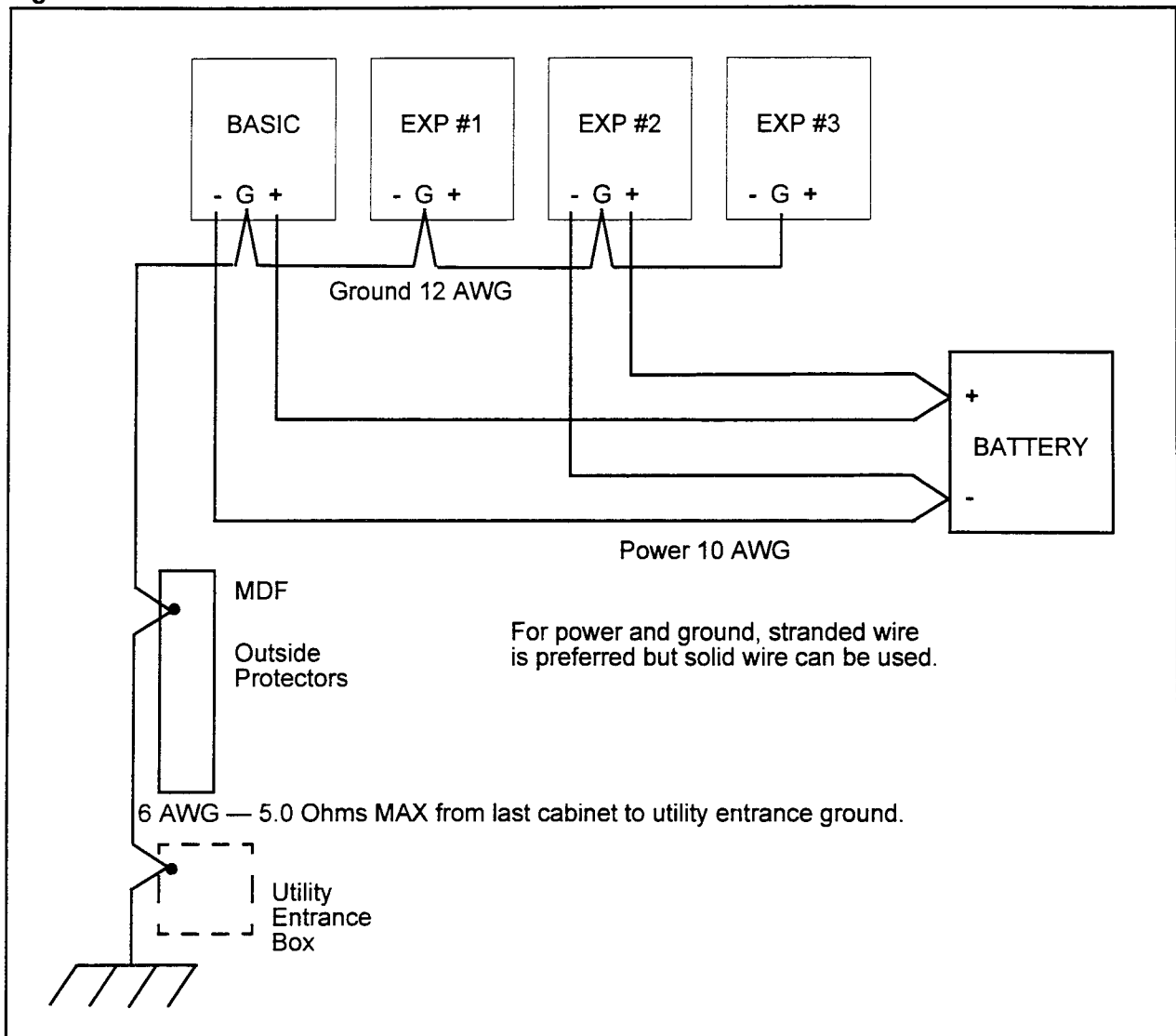


**POWER BRACKETS**

**AC Cord** Use the small straight bracket and nylon ties to provide strain relief for the AC power cord. The bracket is attached to the left ground tab of the wall mount bracket with the provided screw, washer, and nut. Align the dimple on the small bracket with the recess on the ground then tighten the screw. Attach the AC power cord with the nylon ties as shown in Figure 4-8.

**DC Power Cables** The conduit-monitoring angle bracket is used for the DC power cables when the system is equipped with battery backup. **DO NOT ATTEMPT TO RUN THE MDF CABLES OR ANY OTHER CABLES THROUGH THIS BRACKET.** If no conduit is installed, use the gromstrip to line the inside of the large hole to prevent damage to the cables. The angle bracket mounting slots allows the bracket to slide up and down to provide clearance for the DC power and ground terminal block. Refer to Figure 4-8.

**Figure 4-9. DC Cable and G Ground Installation**



**INSTALLING EXPANSION CABINETS**

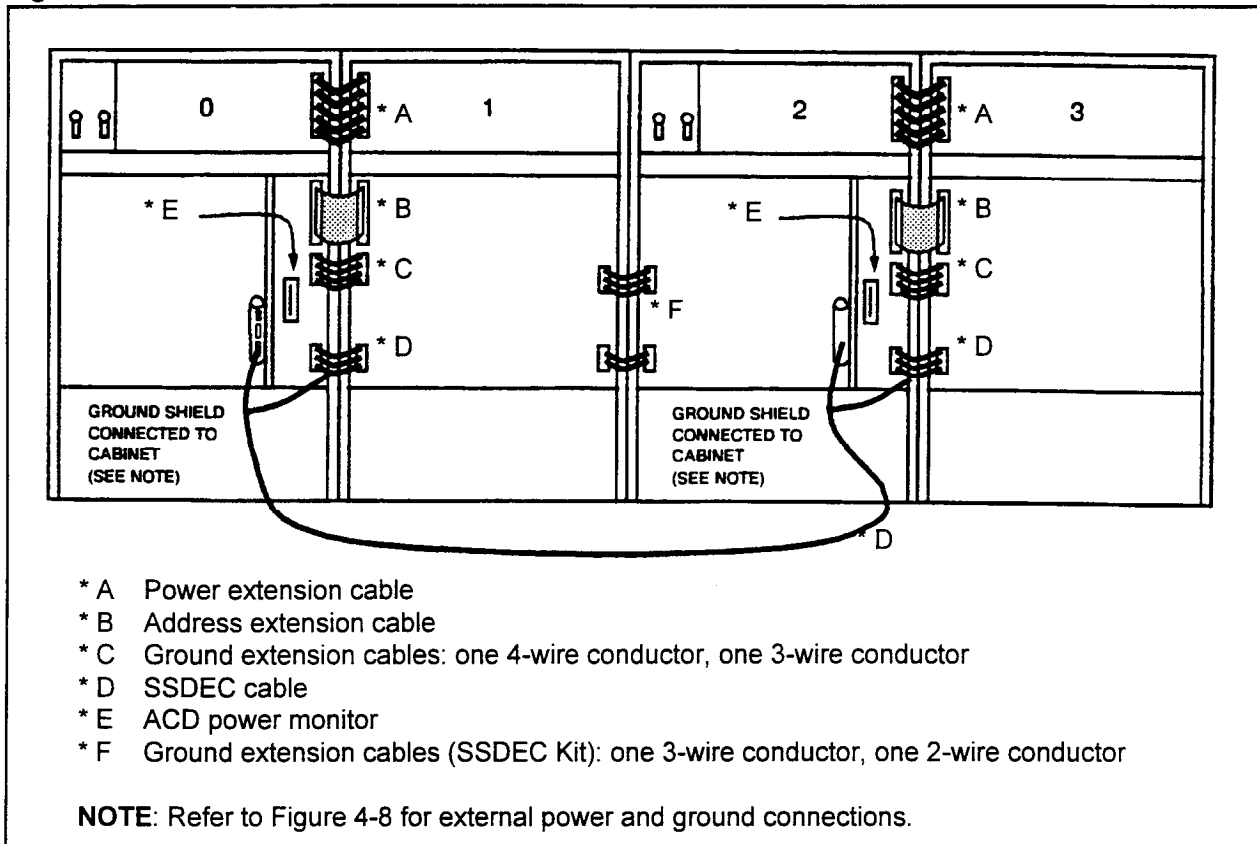
The first expansion cabinet is mounted on the right side of the basic cabinet. The third and fourth cabinets can be installed to the right, above, or below the basic and second cabinet. Refer to Figure 4-1. Notice that expansion cabinet one is always mounted against the right side of the basic cabinet, and expansion cabinet three is mounted against the right side of expansion cabinet two.

**Installing the First Expansion Cabinet**

Unpack the expansion cabinet as described in Chapter 3. Remove the front door, front upper and lower covers, and the bottom cover plate.

1. Set all ACPD or DCPD switches to off. Remove power to the basic cabinet.
2. Remove the power supply assembly (MPSU part number 710036-01) from the right side of the basic cabinet power shelf.
3. Remove the access port covers from the right side of the basic cabinet.
4. Remove the top access cover from the expansion cabinet.
5. Remove the access covers from the left side of the expansion cabinet.
6. Mount and secure the expansion cabinet as described for the basic cabinet.
7. Route the power extender cable from the basic cabinet power supply shelf to the extension cabinet through the access ports. Refer to Figure 4-10. Seat plugs into the backplane connectors as shown.
8. Replace the top access cover on the expansion cabinet.
9. Install the ground extender cables and the address extender cable as shown in Figure 4-10. Refer to Table 3-2.
10. Replace the MPSU in the basic cabinet.
11. Install the MPSU in the expansion cabinet.
12. Install the 48V PS in expansion cabinet.
13. Install RGMW as needed.
14. Refer to Chapter 8 for system start-up procedures.
15. Replace front covers, door, and bottom cover plate.

Figure 4-10. Ground Cable, Address Extension Cable



### Installing the Second Expansion Cabinet

Unpack the expansion cabinet as described in Chapter 3. This will be the third cabinet or second expansion cabinet. Remove the front door, front upper and lower covers, and the bottom cover plate.

1. Set all ACPD or DCPD switches to OFF. Remove power from the basic cabinet.
2. Remove the lower access port covers from the right side of the first expansion cabinet.
3. Remove the access port covers from the left side and the top of the second expansion cabinet.
4. Install the ACPD or DCPD in the second expansion cabinet. Refer to Figure 4-15. Replace power supply shelf access port cover.
5. Mount and secure the second expansion cabinet as described for the basic cabinet.
6. For snug mount cabinets install the short E ground extender cables as shown in Figure 4-10. For cabinets not snug mounted, install the long E ground extender cables. Use the access cover plates included with the cables. Ensure the grommets are installed in the cover plate cut outs. Refer to Figure 4-11 and Table 3-3.
7. Seat the AC Power Monitor in the second expansion cabinet.
8. Install the RGMW and 48V PS units in the second expansion cabinet.

**Installing the Second Expansion Cabinet (Cont'd)**

9. Install a 12 AWG ground wire from the G terminal of the second expansion cabinet to the G terminal of the first expansion cabinet. Refer to Figure 4-9.
10. Verify that all ACPD or DCPD are set to OFF. Attach the AC power cord to the second expansion cabinet.
11. Verify that a SCPN4M card is installed in the basic cabinet. Route the long address expander cable from the SCPN4M card through the bottom cover plate near the I/O connectors. Route the cable up into the second expansion cabinet, to the SSDEC card. Use a M3 nut and star washer to secure the ground lug of the cable to the stud on the right side of the cabinets.
12. Refer to Chapter 8 for system start-up procedures.
13. Replace all covers and doors.

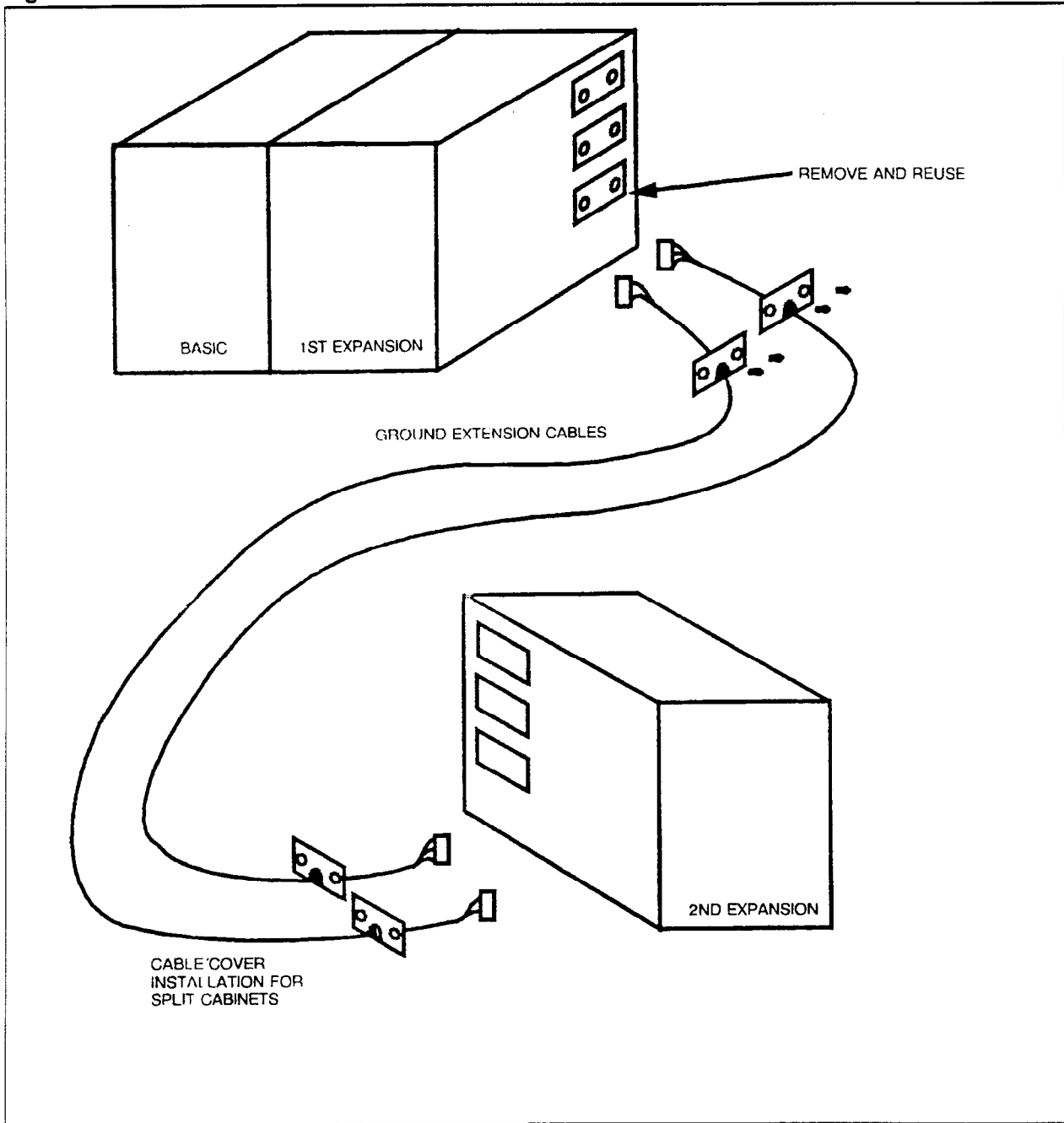
**Installing the Third Expansion Cabinet**

Unpack the expansion cabinet as described in Chapter 3. This will be the fourth cabinet or the third expansion cabinet. Remove the front door, front upper and lower covers, and the bottom cover plate.

1. Set all ACPD and DCPD switches to off. Remove power from the basic and second expansion cabinets.
2. Remove the access port covers from the right side of the second expansion cabinet, and the left side of the third expansion cabinet.
3. Remove the power supply assembly (MPSU part number 710036-01) from the right side of the second expansion cabinet power shelf.
4. Mount and secure the third expansion cabinet as described for the basic cabinet.
5. Remove the top access cover from the expansion cabinet.
6. Route power extender cable from the second expansion cabinet power supply shelf to the third extension cabinet through the access ports. Refer to Figure 4-10. Seat plugs into the backplane connectors as shown.
7. Install the MPSU in the third expansion cabinet.
8. Replace the MPSU in the second expansion cabinet.
9. Install the address extender and ground extender cables. Refer to Figure 4-10.
10. Refer to Chapter 8 for system start-up procedures.
11. Replace top access cover, front covers, door, and bottom cover plate.



Figure 4-11. Extended Cable Installation

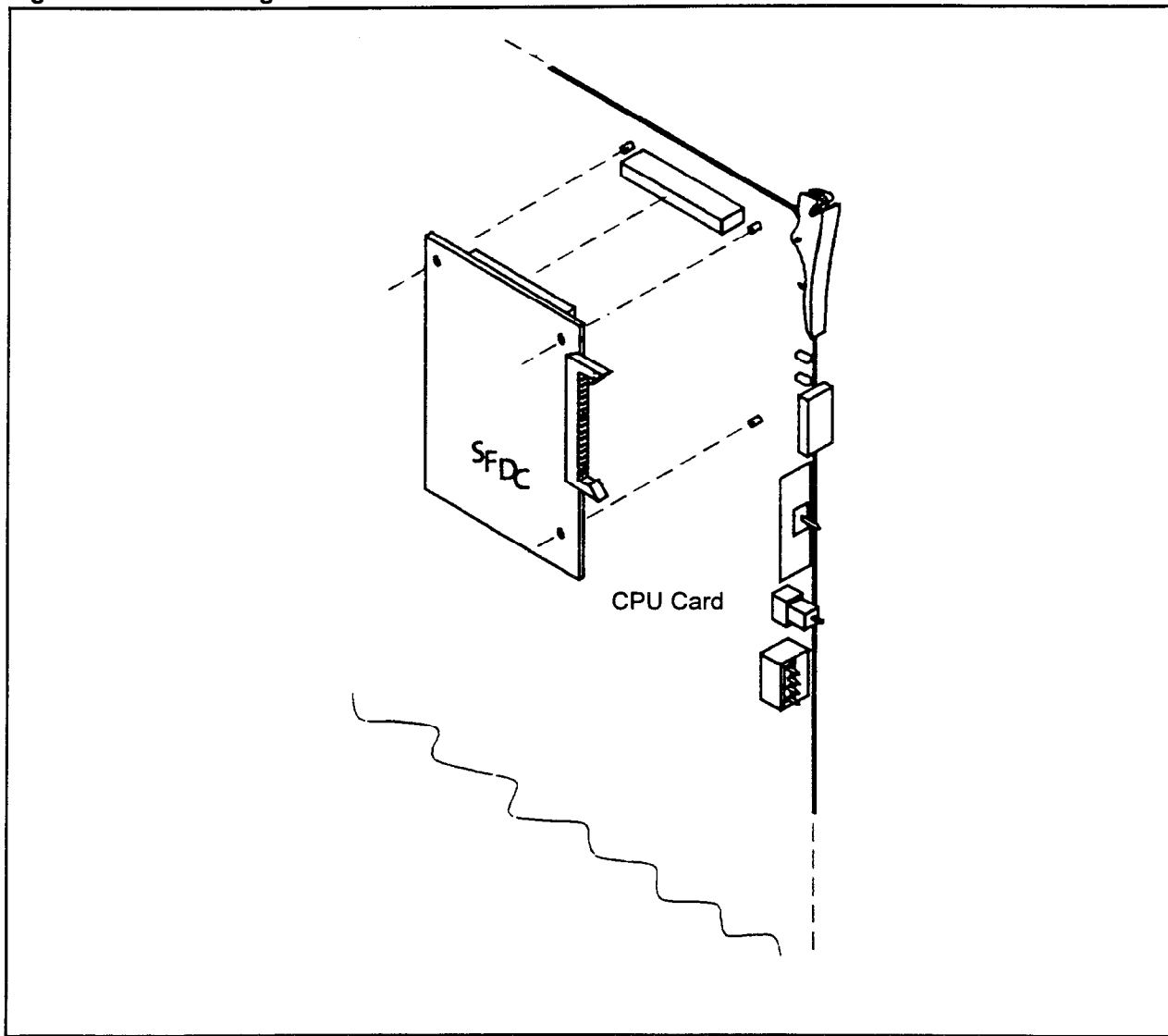


**INSTALLING THE SFDC**

The Floppy Disk Drive Controller (SFDC) is required if the system is equipped with the optional floppy disk drive. The SFDC mounts on the CPU card. If not installed before shipment, proceed as follows. Refer to Figure 4-12.

1. Set the ACPD or DCPD switch(es) to OFF.
2. Remove the CPU card from the basic cabinet. Set the card on a padded surface, with an anti-static bag or anti-static foam sheet under the card.
3. Remove the SFDC from the anti-static shipping bag.
4. Align the connectors. Seat the SFDC onto the CPU card.
5. Install the included screws to secure the SFDC card. The screws must be installed to provide ground to the SFDC.

**Figure 4-12. Mounting the SFDC**



**Installing the Floppy Disk Drive**

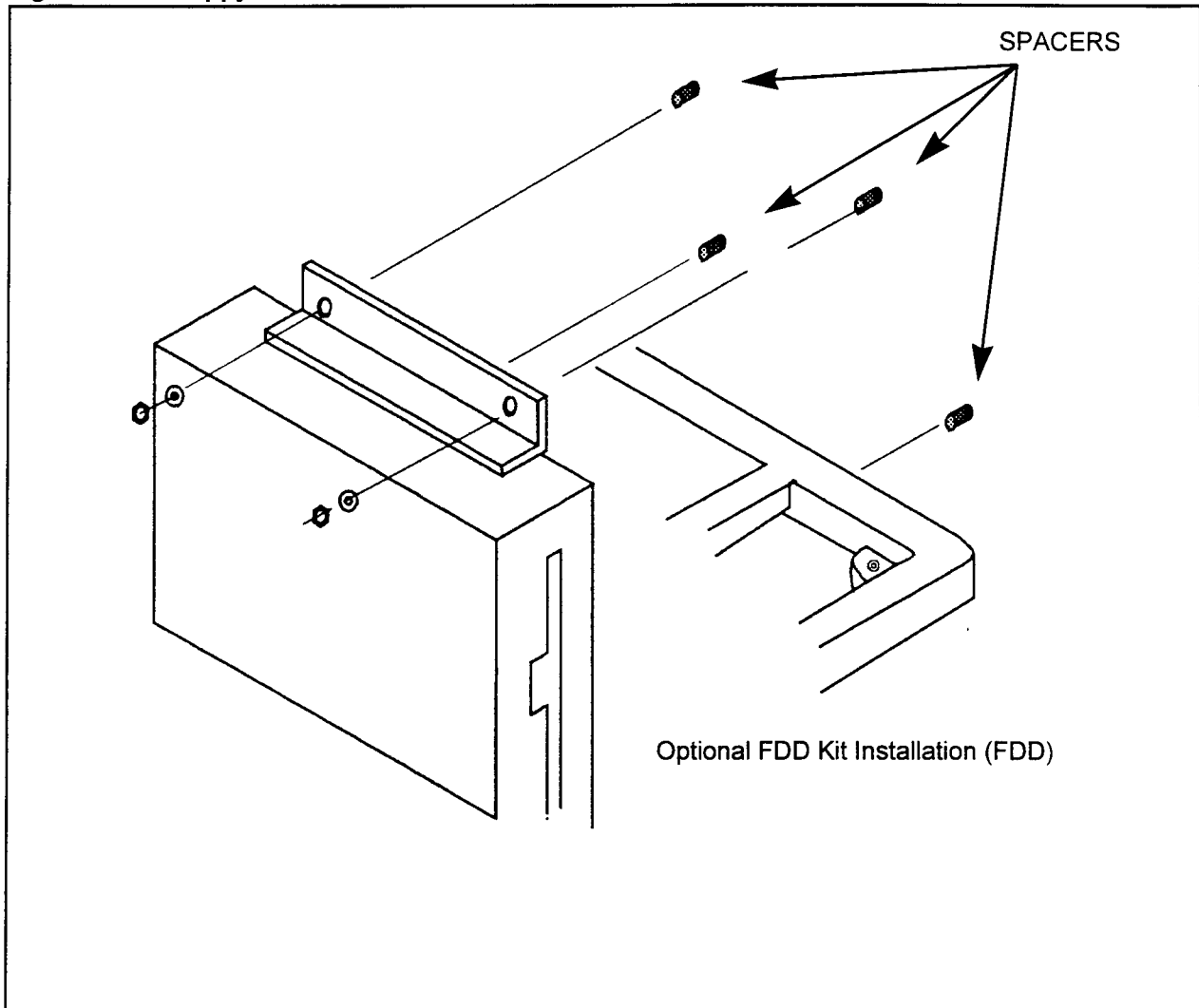
The optional Floppy Disk Drive (FDD) is installed in the basic cabinet only. Perform the following steps:

1. Connect the FDD cable to the FDD.
2. With the CPU card removed from the cabinet, align the FDD with studs on the right side of the cabinet.
3. Secure the FDD in place as shown in Figure 4-13.

**NOTE:** Do not overtighten the nuts.

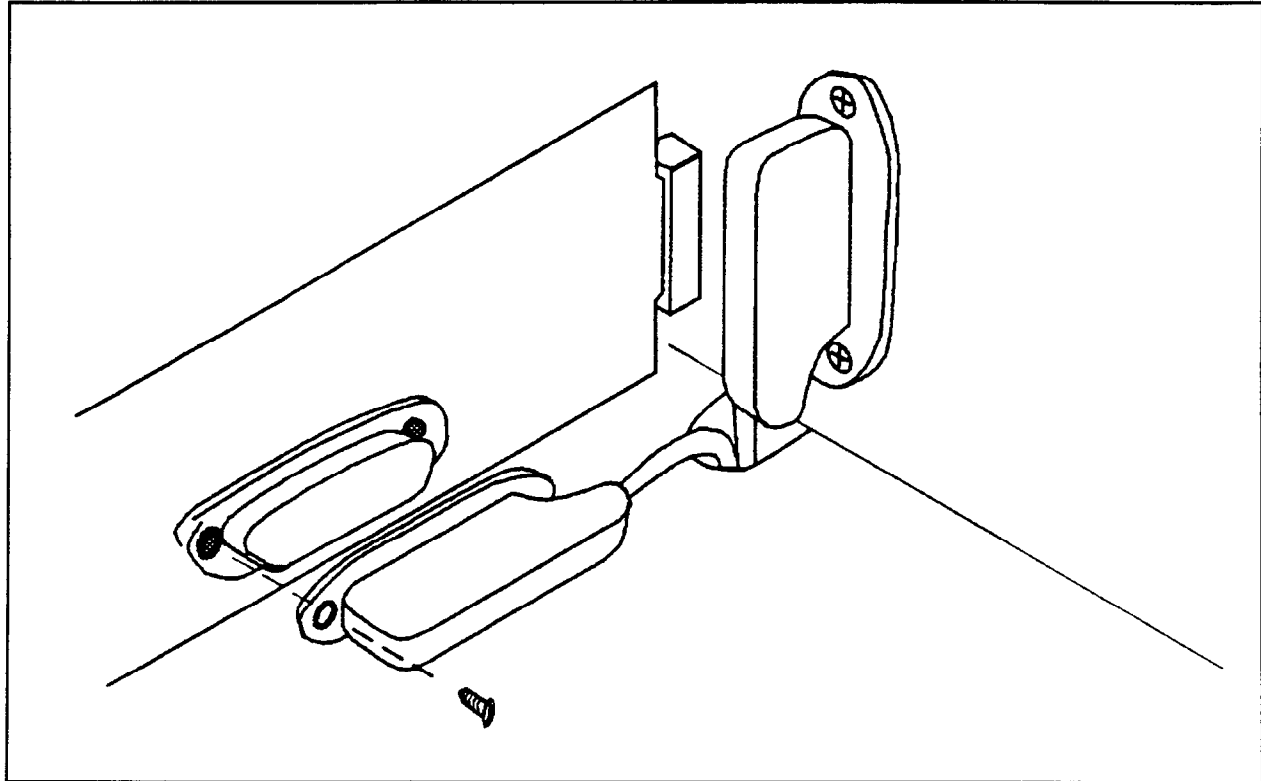
4. Seat the FDD cable in the front connector of the SFDC card, located on the CPU card. (Refer to Figure 4-12.)

Figure 4-13. Floppy Disk Drive Installation



**POWER FAIL TRANSFER**

One Power Fail Transfer (6PFA) card can be installed in each cabinet. Align the card with the guides located on the left side of the cabinet under the card shelf. Push the card back until the 6PFA card edge connector is seated in the backplane. Seat the MDF cable connector and tighten the strain relief screw. Refer to Figure 4-14. Refer to Chapter 6 for cross connection information.

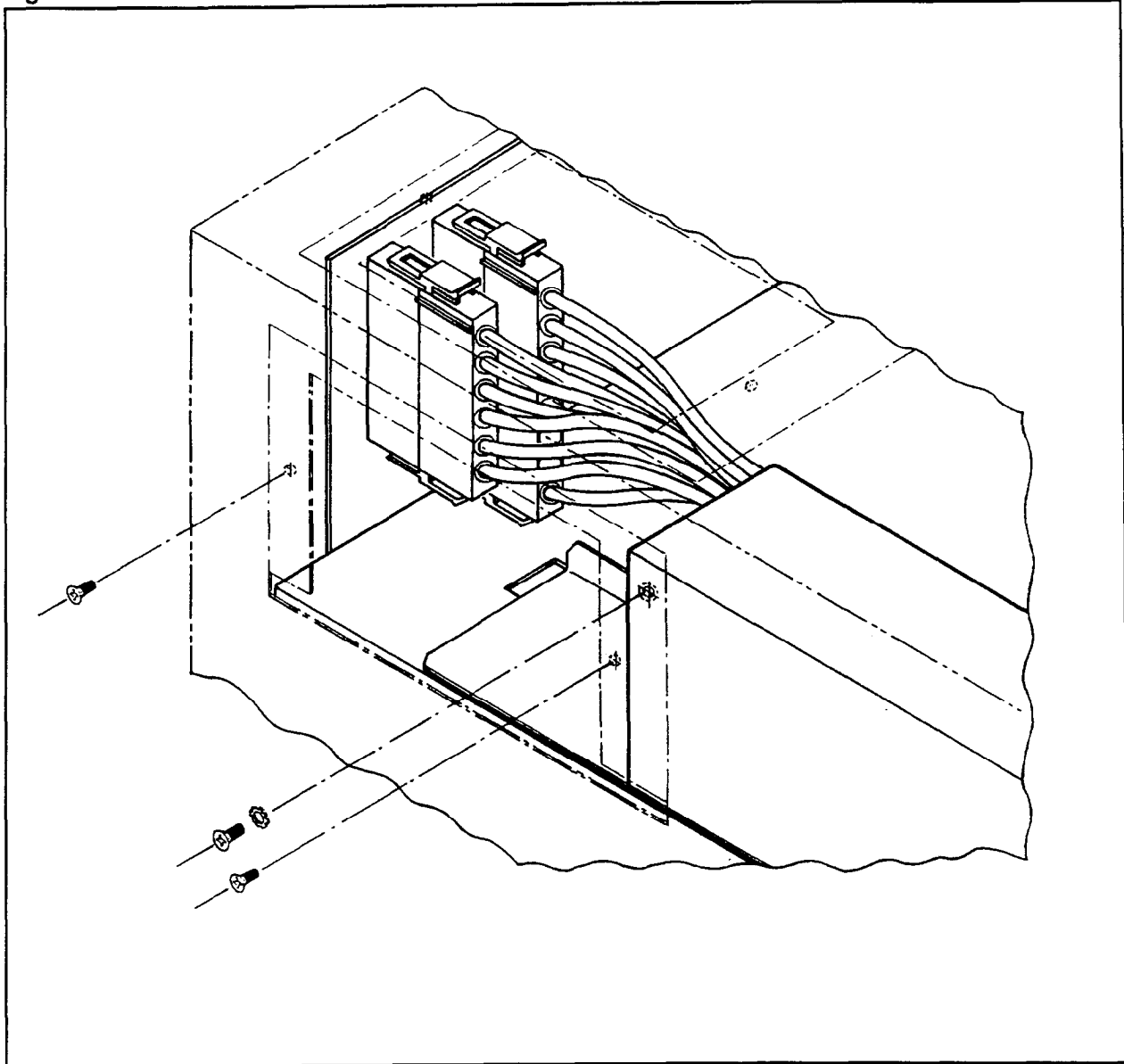
**Figure 4-14. Power Fail Transfer Card Installation**

**Installing the ACPD  
or DCPD**

Installation is shown in Figure 4-15. Two types are available; AC only operation, and AC/DC operation. Installation is as follows:

1. Remove the access cover from the top of the cabinet.
2. Remove the top access cover from the left side of the cabinet.
3. Set the ACPD or DCPD on the left side of the cabinet power supply shelf.
4. Seat the cables in the backplane connectors.
5. Move the ACPD or DCPD to the left and push it back into the cabinet.
6. Install rear mounting screw with lock washer.
7. Replace the access cover on the top of the cabinet.
8. Install the cover on the left side of the cabinet.

**Figure 4-15. ACPD/DCPD Installation**

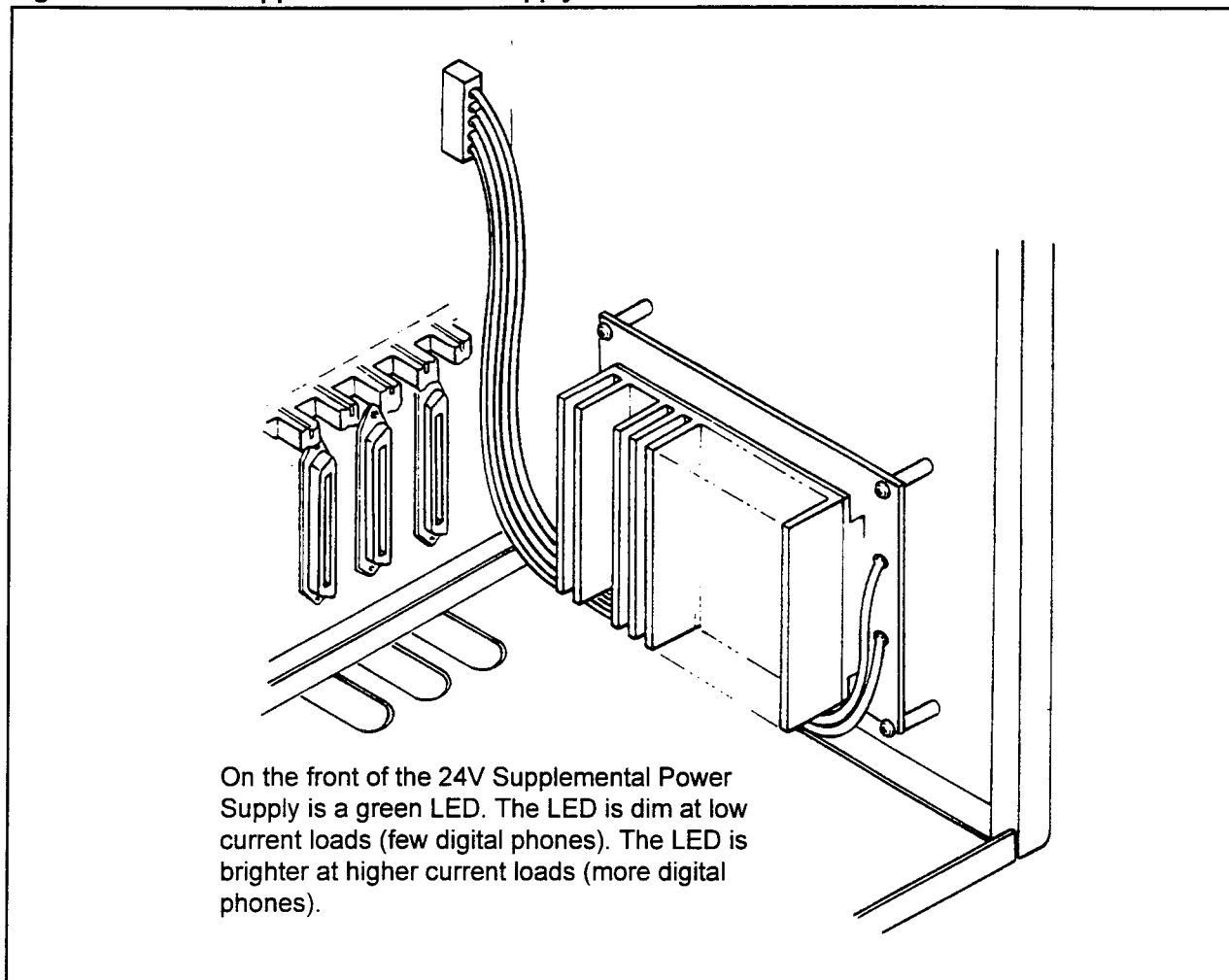


**Supplemental 24V  
Power Supply**

This supplemental supply is required in systems equipped with the MPSU. Systems equipped with with the EMPSU do not use this supplemental power supply. Installation is shown in Figure 4-16. The supplemental power supply (E20B-9900-R410) is factory installed. Installation is as follows:

1. Remove the front covers and door from the cabinet.
2. Attach the supplemental power supply to the studs on the right side of the cabinet, under the lower card guide.
3. Route the cable as shown in Figure 4-16.
4. Seat the cables in the backplane connectors.
5. Replace the front cabinet covers and cabinet door.

**Figure 4-16. 24V Supplemental Power Supply Installation**



## GENERAL

Cabinet card location, common control cards, and system restart procedures are described in this chapter. A list of the maximum number of cards that can be installed in each cabinet is shown in Table 5-1. Refer to Chapter 8 for system power up, start up, and power down procedures.

## COMMON CONTROL CARDS

- **SCPN2M:** Combined processor, memory, switch network, and optional floppy disk controller for use in one and two cabinet systems. Installed in the basic cabinet.
- **SCPN4M:** Combined processor, memory, switch network, optional floppy disk controller, and switching extender for three and four cabinet systems. Installed in the basic cabinet.
- **SSDEC:** Switching extender card for three and four cabinet systems. Installed in the processor slot of the third cabinet.

System status lamps, shown in Figure 5-1, on the CPU card, and include:

- **RUN:** Green; indicates that the system is operating without a major problem. This LED should light when the power supply is turned on.
- **ALM (Alarm):** Character display; indicates a minor or major problem (as an error code). These error codes are displayed sequentially starting as " - ", with the remainder of the code following. If more than one error is present, a period ( ". ") will appear in the lower right corner of the display, faults will be displayed in order of priority, until the first one repeats.
- **TO (Timer Overflow):** Red; indicates a major CPU/memory or system problem.

Table 5-2 shows the designators and function of each of the system status buttons, switches, and status lamps located on the CPU card.

To set the DIP switch for default data base, refer to Table 5-3.

## INTERFACE CARDS

- **2APIA:** 2 Circuit Application Processor Interface Card.
- **2TE4:** 2 Circuit 2/4 Wire E&M Tie Trunk Card.
- **2TTE:** 2 Circuit E&M Tie Trunk Card (man. discontinued)
- **2TTL:** 2 Circuit Loop Dial Tie Trunk Card.
- **4BWC:** 4 Circuit Central Office Bothway Trunk Card.
- **4CHT:** 4 Circuit Character Trunk Card.
- **4DMR:** 4 Circuit Dual-Tone Multi-Frequency Receiver Card.
- **4SLE:** 4 Circuit Single Line (OPX) Telephone Card.
- **4TE4:** 4 Circuit 2/4 Wire E&M Tie Trunk Card.
- **6DID:** 6 Circuit DID Trunk Card.

**INTERFACE CARDS (Cont'd)**

- 6PFA: 6 Circuit Power Failure Transfer Card, with ground start
- 8BWC: 8 Circuit Central Office Bothway Trunk Card.
- 8DTC: 8 Circuit Digital Telephone Interface Card.
- 8EKC: 8 Circuit Electronic Key Telephone Card.
- MUFN: Multi-Function Card (combines the 4DMR and 4EKC (½ of 8EKC) card)
- 8SLC: 8 Circuit Single Line Telephone Card.
- 8PDL: 8 Circuit Positive Disconnect Line Card.
- 16SLC: 16 Circuit Single Line Telephone Card.
- 16DTC: 16 Circuit Digital Telephone Interface Card.
- 23PT: 23-Channel ISDN PRI Trunk Interface Card.
- 24T1: 24-Channel Digital Trunk Interface Card.
- CLKS: Clock Card.
- RVAC: Recorded Voice Announcement Card.
- CACC: Call Accounting Card (Commercial).
- CACH: Call Accounting Card (Hospitality).

**CAUTION: The 4BWC and 2TTL trunk circuits must be protected by a sneak current fuse, ITW LV SCP-2, in all legs of each circuit. The fuse is designed to be mounted at the MDF in place of the normal bridge clips on a Reliance Electric or Siemens 66 block.**

**LINE/TRUNK CARDS**

Line card specifications are listed in Table 5-4. Trunk card information is listed in Table 5-5.



Table 5-1. Maximum Number of Cards per Cabinet

SLOT	CARD	CODE	CABINET				SYSTEM MAX <sup>*1</sup>
			0	1	2	3	
Power Supply Shelf	Main Power Supply Unit	MPSU	1	1	1	1	4
	Ring Generator/Message Waiting	RGMW	1	—	1	—	2
	-48 Volts Power Supply	-48V	1	1	1	1	4
Floppy	Floppy Disk Drive	FDD	1	—	—	—	1
Control Cards	Processor, Memory	SCPN2M	1	—	—	—	1
	Processor, Memory, Switching Extension	SCPN4M	1	—	—	—	1
	Switching Extension (Expansion cabinet)	SSDEC	—	—	1	—	1
Interface Cards	Single Line Analog Telephone - 8 circuit	8SLC	10	10	10	10	40
	Positive Disconnect Line Card - 8 circuit	8PDL	10	10	10	10	40
	Electronic Key Telephone - 8 circuits	8EKC/ MUFN <sup>*2</sup>	10	10	10	10	40
	Digital Station - 8 circuits	8DTC	10- 5 <sup>*3</sup>	10- 5 <sup>*3</sup>	10- 5 <sup>*3</sup>	10- 5 <sup>*3</sup>	40- 20 <sup>*3</sup>
	Digital Station - 16 circuit	16DTC	8	8	8	8	32
	Single Line Analog Telephone - 16 circuit	16SLC	8	8	8	8	32
	Bothway Trunk - 4 circuit	4BWC	10	10	10	10	40
	Bothway Trunk - 8 circuit	8BWC	10	10	10	10	30 <sup>*4</sup>
	Tie Trunk, loop start - 2 circuit	2TTL	10	10	10	10	40
	Tie Trunk, 2 wire E&M - 2 circuit	2TTE	10	10	10	10	40
	Tie Trunk, 4 wire E&M - 2 circuit	2TE4	10	10	10	10	40
	Tie Trunk, 4 wire E&M - 4 circuit	4TE4	10	10	10	10	40
	DID Trunk - 6 circuit	6DID	10	10	10	10	40
	ISDN Digital Trunk - 23B+D	23PT	5	5	—	—	10
	T-1 Digital Trunk - 24 channels	24T1	5	5	5	5	10
Service Cards	DTMF Receiver - 4 circuit <sup>*5</sup>	4DMR/ MUFN	8	8	8	8	8
	Character Trunk - 4 circuit	4CHT	2	2	2	2	4
	Recorded Voice Announce Card	RVAC	2	2	2	2	8
	Application Processor Interface	2APIA	2	2	2	2	2
	Clock Extracting (digital trunks)	CLKS	1	—	—	—	1
	Call Manager Card	CACC/H	1	1	1	1	1
Power Fail	Power Fail Transfer	6PFA	1	1	1	1	4

- NOTES:**
1. All system maximum capacities cannot be installed in one system.
  2. Total includes both 8EKC and MUFN cards. The maximum number of MUFN cards per system is eight, based on the DTMF receiver portion of the card.
  3. Simultaneous voice and data installed for each port.
  4. Maximum trunks per system is 240.
  5. Totals include both 4DMR and MUFN cards.

Figure 5-1. Front View of the CPU Cards

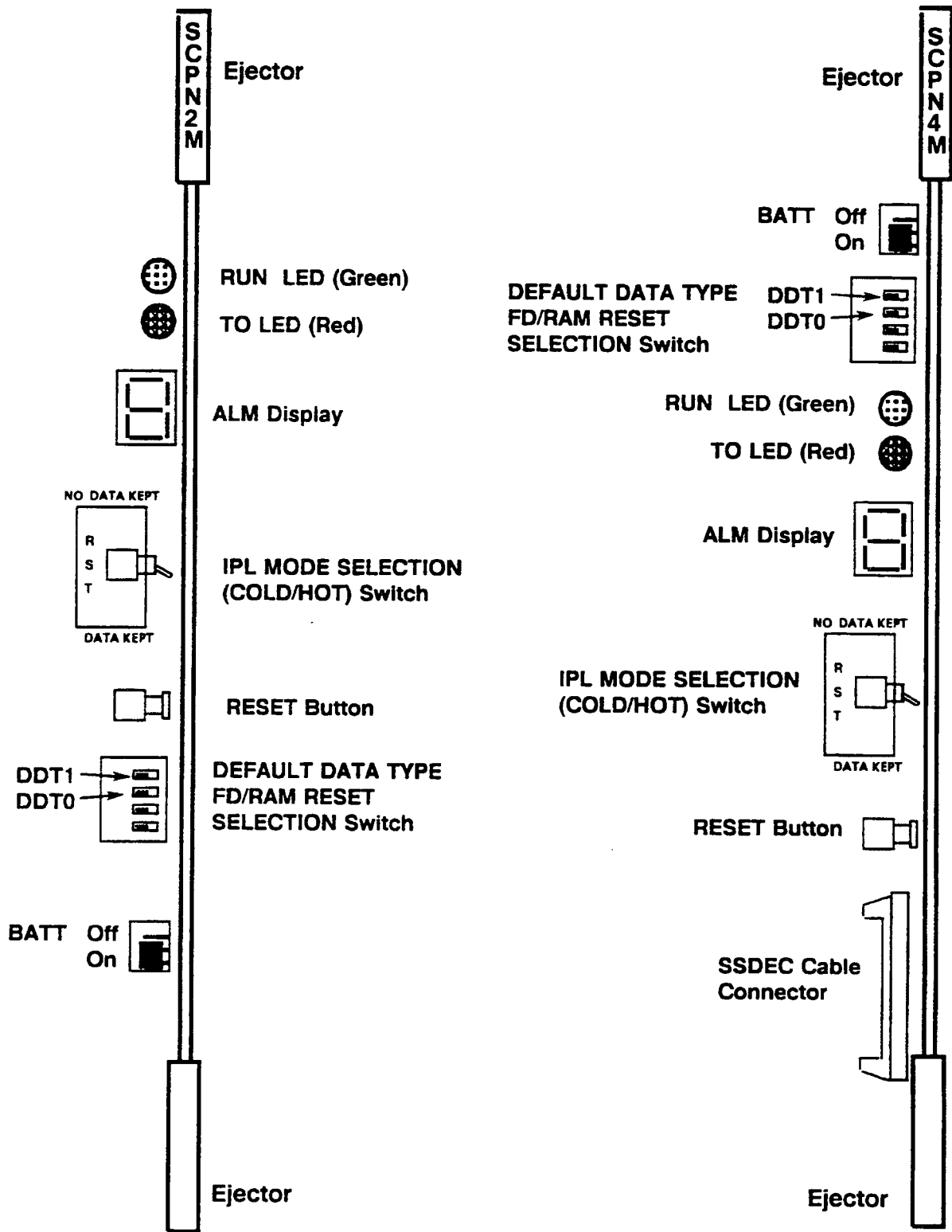


Table 5-2. System Controls and Indicators

CONTROLS/INDICATORS	DESIGNATOR	FUNCTION
Restart button	SET	Push button which activates the system restart
CPU toggle switch	NO DATA SAVED (cold) DATA SAVED (hot) CENTER (no restart)	Non-locking type switch which specifies the restart mode COLD: Initial start mode HOT: Clear restart mode
Default data type selection (DIP) switch	DDT0 (switch 3) DDT1 (switch 4)	4-bit DIP switch (upper 2-bits are used to select default data type)
System running lamp (green)	RUN	Glows steadily when the system is running without a major problem.
Alarm display	ALM	Alphanumeric single character display of system error codes.
Timer overflow lamp (red)	TO	Glows steadily when normal processor program sequencing is interrupted.
BATT on/off jumper	BATT on/off	Set the jumper to ON after system power is applied. Move the jumper to OFF for shipping or extended storage (saved data on the card will be lost).

Table 5-3. IPL Select Switch

DIP SWITCH SETTING		DEFAULT DATA RESULT
DDT0 (Switch 3)	DDT1 (Switch 4)	
Closed	Closed	No default data base assigned - Set for FORMLOAD
Closed	Open	Load data base from floppy disk drive
Open	Closed	3-digit numbering plan default data base
Open	Open	4-digit numbering plan default data base

Table 5-4. Line Card Specifications

CARD	LINE CARD SPECIFICATIONS	REMARKS
8SLC	Loop limit - 600 ohms (including telephone) Line leakage resistance - 15K ohms	8 circuits Analog, standard interface
8PDL	Loop limit - 600 ohms (including telephone) Line leakage resistance - 15K ohms	8 circuits Analog, standard interface
8EKC/ MUFN (EKC portion)	Loop limit - 2000 ft.; 24 AWG Line leakage resistance - 15K ohms Wiring - 4 wires/Proprietary telephone; 6/CT-30 with OCHA	8 circuit / 4 circuits Proprietary telephone: (CT-10/20/30); Attendant Console; and DSS/BLF 40/80/100 console interface
16SLC	Loop limit - 600 ohms (including telephone) Line leakage resistance - 15K ohms Power: -24V Ring Voltage: 80VAC superimposed on -24V	16 circuits Analog, standard interface
8DTC	Loop limit - 2000 ft.; 24 AWG Line leakage resistance - 15K ohms Wiring - 2 wires	Digital simultaneous voice and data; telephone/ DIU interface Accommodates the following: <ul style="list-style-type: none"> <li>• DS20, DS20S, DS20SD, and DS32SD</li> <li>• 8 CSDs or Digital Stations - voice only</li> <li>• 8 DIUs/DSS 30s</li> <li>• 6 CSDs with DTA plus two Digital Stations/ CSDs without DTA or two DIUs</li> <li>• Attendant PC console</li> </ul>
16DTC	Loop limit - 2000 ft.; 24 AWG Line leakage resistance - 15K ohms Wiring - 2 wires	16 circuits, voice or data on each circuit, not both <ul style="list-style-type: none"> <li>• DS20, DS20S, DS20SD, and DS32SD</li> <li>• 16 CSDs/Digital Stations/DIUs/DSS 30</li> <li>• Attendant PC Console</li> </ul>
4SLE	Single line loop extension card - 1600 ohms including the telephone Line leakage resistance - 15K ohms	4 circuits Analog standard telephone Off premise extensions

Table 5-5. Trunk Card Specifications

CARD	LINE CARD SPECIFICATIONS	REMARKS
2TE4 4TE4	Signal - E&M, 2 and 4 wire compatible	2 circuits / 4 circuits E&M tie trunks
2TTE	Signaling - E&M Loop limit: Type I: 150 ohms Type II: 300 ohms	2 circuits Analog tie lines E&M tie trunks
2TTL	Signaling - loop start and ground start Loop limit: 3000 ohms	2 circuits Analog tie lines and DID
4BWC	Signaling - loop start and ground start Loop limit - 300 ohms	2 circuits Analog CO interface
6DID	Signaling - loop start and ground start Loop limit - 600 or 900 ohms	6 circuits (DID only)
8BWC	Signaling - loop start and ground start Loop limit: 3200 ohms	8 circuits Analog CO interface
24T1	Signaling - A/B bit	24 digital circuits Frame format: D4/ESF
23PT	Signaling - LAP B (#4ESS, #5ESS, DMS 100, DMS 250 Protocol)	23 circuits (23B+D) ISDN / FIPN interface

**16 Circuit Digital Telephone Interface Card (16DTC)**

The 16DTC card provides the interface circuitry for Digital Stations, CSDs, DSS 30s, and/or Attendant PC Consoles. Each 16DTC card contains 16 circuits. The voice or data, data control signals, and power (-24V) are fed via one pair of wires. Each circuit provides one voice or data interface.

The 16DTC card also provides the interface for a Data Interface Unit (DIU). A DIU can be used to interface with data terminals through its RS-232C connector. In Hotel/Motel applications, it provides an interface port for an RS-232C compatible printer for providing Hotel/Motel messages. Refer to Table 5-6.

**8 Circuit Digital Telephone Interface Card (8DTC)**

The 8DTC card provides the interface circuitry for Digital Stations, CSDs, DSS 30s, and/or Attendant PC Consoles. Each 8DTC card contains eight circuits. The voice/data, data control signals, and power (-24V) are fed via one pair of wires.

The 8DTC card also provides the interface for a Data Interface Unit (DIU). A DIU can be used to interface with data terminals through its RS-232C connector. In Hotel/Motel applications, it provides an interface port for an RS-232C compatible printer for providing Hotel/Motel messages. Refer to Table 5-6.

**Table 5-6. Combination of Proprietary Telephones and Line Cards**

INTERFACE CARD	DS TELEPHONE	CSD TELEPHONE		DIU
		VOICE ONLY (no DTA)	VOICE and DATA (with DTA)	
16DTC	Yes	Yes	No	Yes
8DTC	Yes	Yes	Yes	Yes

**8 Circuit Electronic Key Telephone Card (8EKC)**

The 8EKC card provides the interface circuit for proprietary electronic key telephones, Attendant Consoles and Busy Lamp Field/Direct Station Selection 40/80/100 button consoles. Each 8EKC card contains eight circuits. Each circuit serves one device via two pairs of wires. One pair is for analog voice transmission; the other for control signals along with the power for the terminal (-24V). When the loop limit from the Attendant Console exceeds 300 feet, an additional pair of wires is required. When the loop limit from the DSS 100 (in the case of one pair wiring) exceeds 1000 feet, an additional pair of wires is required.

Two consecutive circuits on this card are also required for the Off-Hook Call Announce feature for each CT-30 telephone.

**Multi-Function Card (MUFN)**

The EKC portion of the MUFN card contains four electronic key telephone circuits. These circuits are identical to those on the 8EKC card. This card also contains four DTMF receiver circuits, equivalent to a 4DMR card.

**8 Circuit Single Line Telephone Card (8SLC)**

The 8SLC card provides the interface circuitry for eight standard single line telephone sets, in addition to fax machines, modems, night bells, and dictation machines. Each 8SLC card contains eight circuits with each circuit serving one telephone set. An 8-bit microprocessor is on board and performs real time processing for the interface circuits. The loop resistance can be up to 600 ohms including the telephone set.

**8 Circuit Positive Disconnect Line Card (8PDL)**

The 8PDL card provides disconnect supervision in conjunction with voice mail and dictation devices, as well as external conference bridge equipment. Each 8PDL card contains eight circuits with each circuit serving one telephone set. An 8-bit microprocessor is on board and performs real time processing for the interface circuits. The loop resistance can be up to 600 ohms including the telephone set.

**16 Circuit Single Line Telephone Card (16SLC)**

The 16SLC card provides the interface circuitry for standard single line telephone sets, in addition to fax machines, modems, night bells, and dictation machines.

Each 16SLC card contains 16 circuits with each circuit serving one telephone set. An 8-bit microprocessor is on board and performs real time processing for the interface circuits. The loop resistance can be up to 600 ohms including the telephone set.

**4 Circuit Single Line (OPX) Telephone Card (4SLE)**

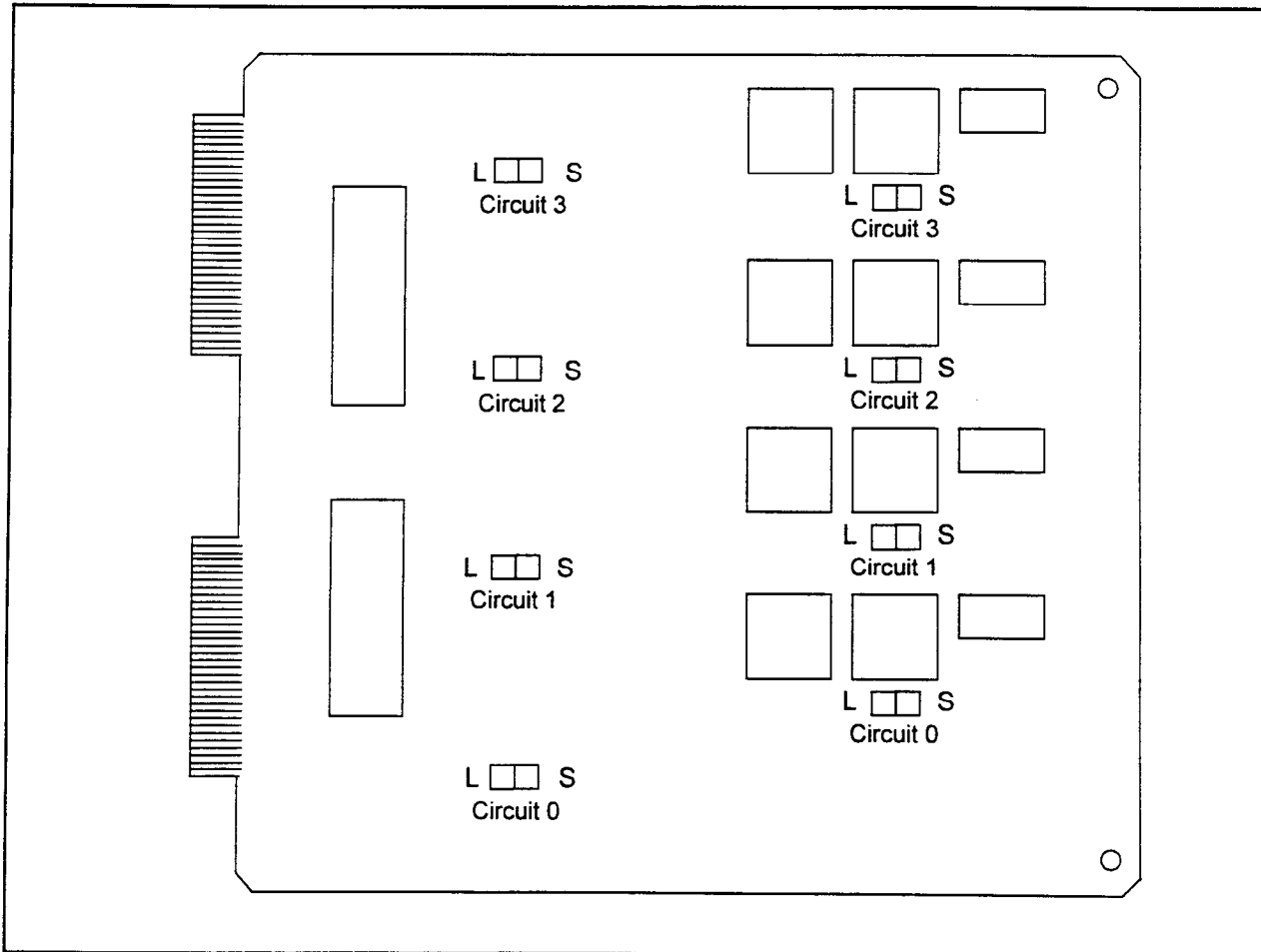
The 4SLE card provides the interface circuitry for off-premise single line telephone sets. Each 4SLE card contains four circuits with each circuit serving one telephone set. An 8-bit microprocessor is on board and performs real time processing for the interface circuits. The loop resistance can be up to 1600 ohms including the telephone set.

There is a switch option on the 4SLE card to select whether the circuit is used as a long line (loop resistance: 600-1600 ohms, including telephone set) or short line (loop resistance: up to 600 ohms, including telephone set). Each circuit has two switches. If both switches are set to the "Long" side, the circuit can be used for off premise extensions (OPX). Table 5-7 shows the available combination of long line and short line installation. Figure 5-2 shows the switch positions on the 4SLE card.

**Table 5-7. Combination of Long/Short Lines**

NUMBER OF SHORT LINES	NUMBER OF LONG LINES
0	Up to 4
1	1
2	0

**Figure 5-2. 4SLE Card Switch Positions**



**8 Circuit Central Office Bothway Trunk Card (8BWC)**

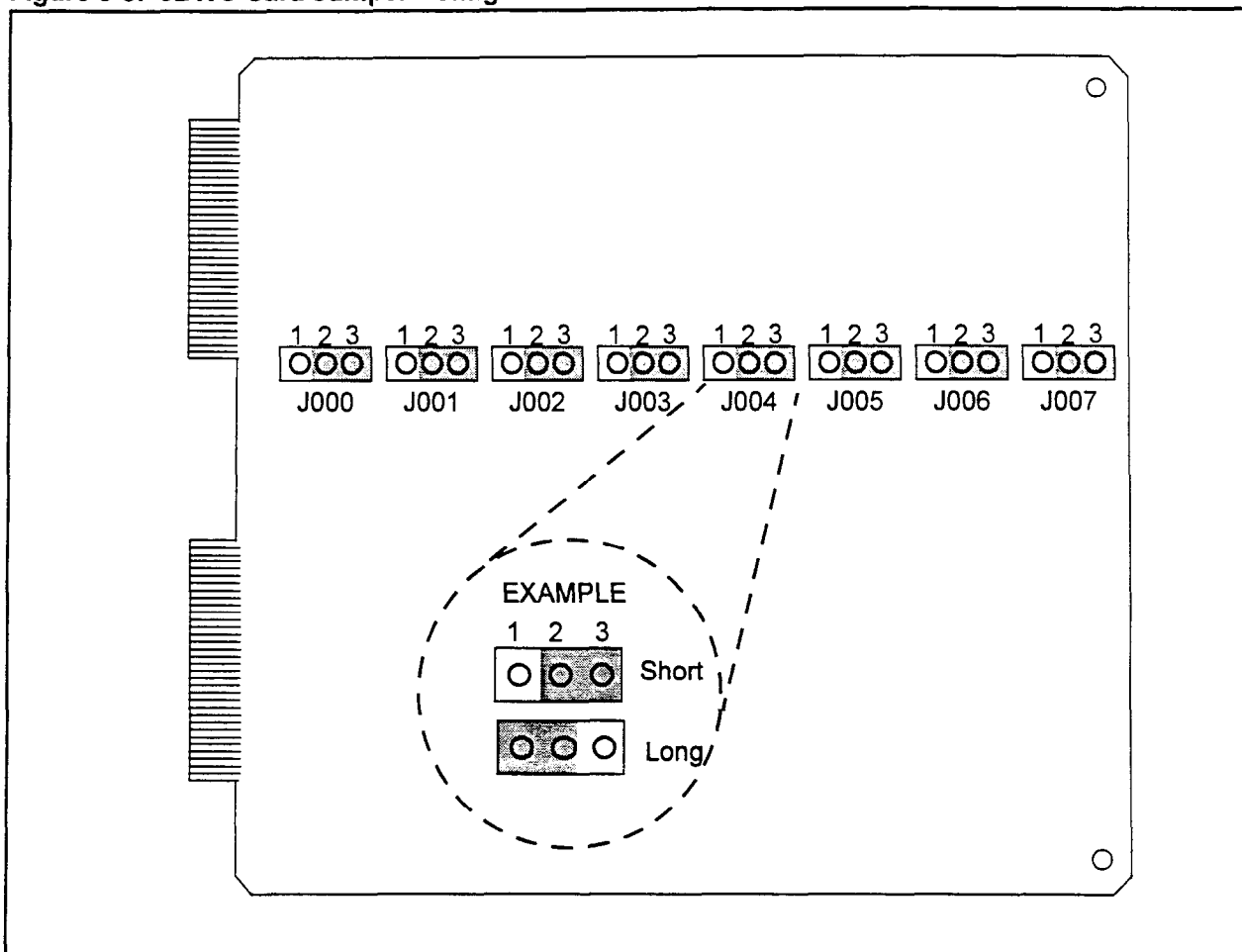
The 8BWC card provides eight circuits of interface circuitry for public switched telephone Central Office (CO) lines. It has a balancing network selection option (short-default/long). Each 8BWC card, equipped with an 8-bit microprocessor, contains eight interface circuits. Two types of signal supervision are provided; loop start and ground start. A loop of up to 2000 ohms including the CO equipment can be served.

Figure 5-3 shows the switch positions for the 8BWC card.

**4 Circuit Central Office Bothway Trunk Card (4BWC)**

The 4BWC card provides the interface circuitry for the public switched telephone network of Central Office (CO) lines. Each 4BWC card, equipped with an 8-bit microprocessor, contains four interface circuits. Two types of signal supervision are provided; loop start and ground start. A loop of up to 3200 ohms including the CO equipment can be served (at 48V, 20mA DC).

Figure 5-3. 8BWC Card Jumper Configuration





**2 Circuit Loop Dial Tie Trunk Card (2TTL)**

The 2TTL card provides the interface circuitry for the direct connection between the system and another PBX, key telephone system, or public network.

One 2TTL card, containing an 8-bit microprocessor, contains two circuits. A loop with up to 3000 ohms resistance including the distant end system (at -48V 20mA DC). These cards are available for Direct Inward Dialing (DID) service.

**2 Circuit E&M Tie Trunk Card (2TTE/2TE4)**

The 2TTE/2TE4 card provides the interface circuitry for another PBX, key telephone system, or public network used in the Series 3 system (common carrier signaling equipment). The 2TTE card provides 2-wire transmission; the 2TE4 card provides changeable 2-wire/4-wire transmission. Each card, controlled by an 8-bit microprocessor, has two interface circuits. A loop of up to 150 ohms resistance for Type 1, or 300 ohms for Type 2, including resistance of external interface, can be served. These cards are available to Direct Inward Dialing (DID) service.

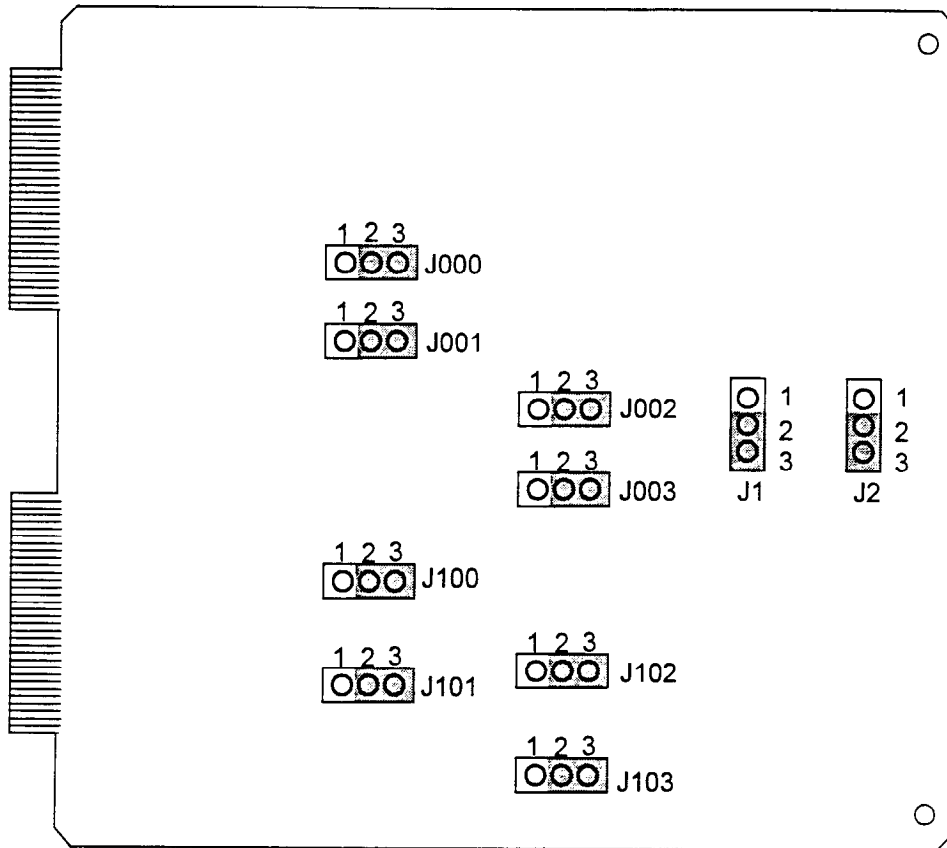
Figure 5-4 shows the switch positions for the 2TE4 card.

**4 Circuit E&M Tie Trunk Card (4TE4)**

The 4TE4 card provides the interface circuitry for another PBX or key telephone system/public network used in the Series 3 system (common carrier signaling equipment). The 4TE4 card provides 2-wire/4-wire transmission (changeable). One 4TE4 card, controlled by an 8-bit microprocessor, has four interface circuits. A loop of up to 150 ohms resistance for Type 1, or 300 ohms for Type 2, including resistance of external interface, can be served. These cards are available for Direct Inward Dialing (DID) service.

Figure 5-5 shows the switch positions for the 4TE4 card.

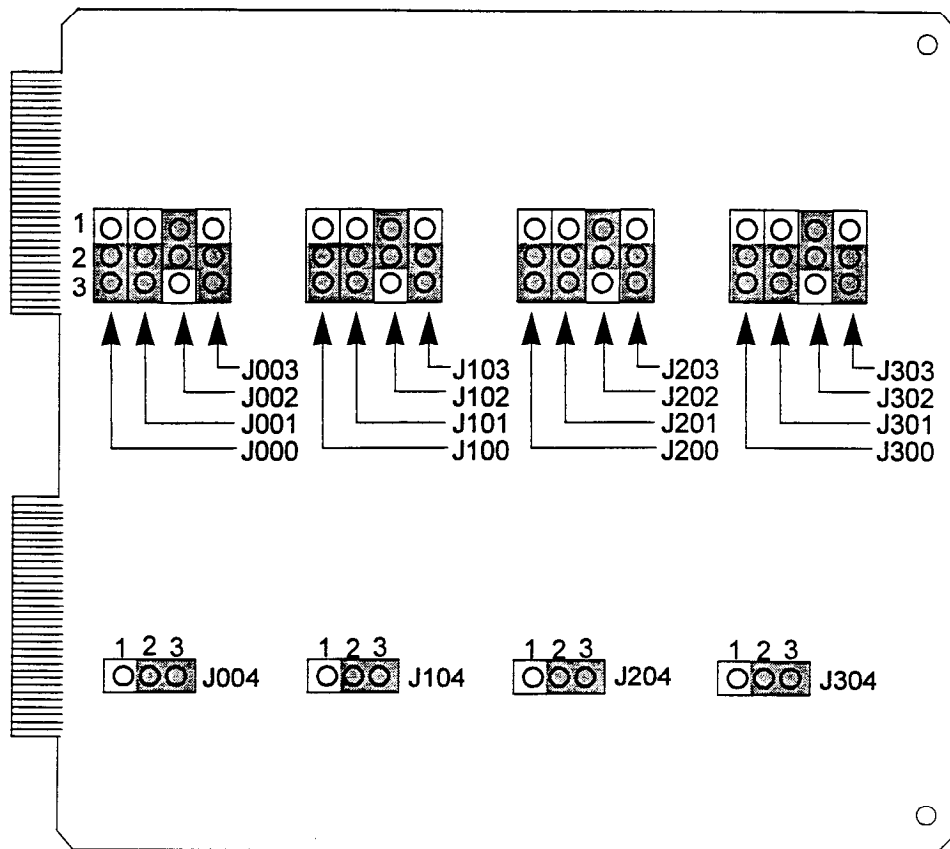
Figure. 5-4. 2TE4 Card Jumper Configuration



OPERATION	J000	J001	J002	J003	J100	J101	J102	J103
2 Wire	2 to 3	2 to 3	2 to 3	2 to 3	2 to 3	2 to 3	2 to 3	2 to 3
4 Wire	1 to 2	1 to 2	1 to 2	1 to 2	1 to 2	1 to 2	1 to 2	1 to 2

STRAPPING	VOLTAGE	J1	J2
Starlog I/II	-24V	1 to 2	1 to 2
Series 3	-48V	2 to 3	2 to 3

Figure 5-5. 4TE4 Card Jumper Configuration



OPERATION	Jx00	Jx01	Jx02	Jx03
2 Wire	1 to 2	1 to 2	2 to 3	1 to 2
4 Wire	2 to 3	2 to 3	1 to 2	2 to 3

E & M	Jx04
Type 1	1 to 2
Type 2	2 to 3

**4 Circuit Dual-Tone Multi-Frequency Receiver Card (4DMR)**

The 4DMR card receives DTMF tones and converts them into dialed numbers. One 4DMR card contains four circuits and is controlled by an 8-bit microprocessor. The 4DMR card meets the requirements specified by EIA/TIA-464A for Type 1 receiver.

**4 Circuit Character Trunk Card (4CHT)**

The character trunk card (4CHT) accommodates four circuits of digital sender/receiver which, together with a DIU, provides Hotel/Motel message output and provides keyboard dialing capability from data terminals.

**6 Circuit Power Failure Transfer Card (6PFA)**

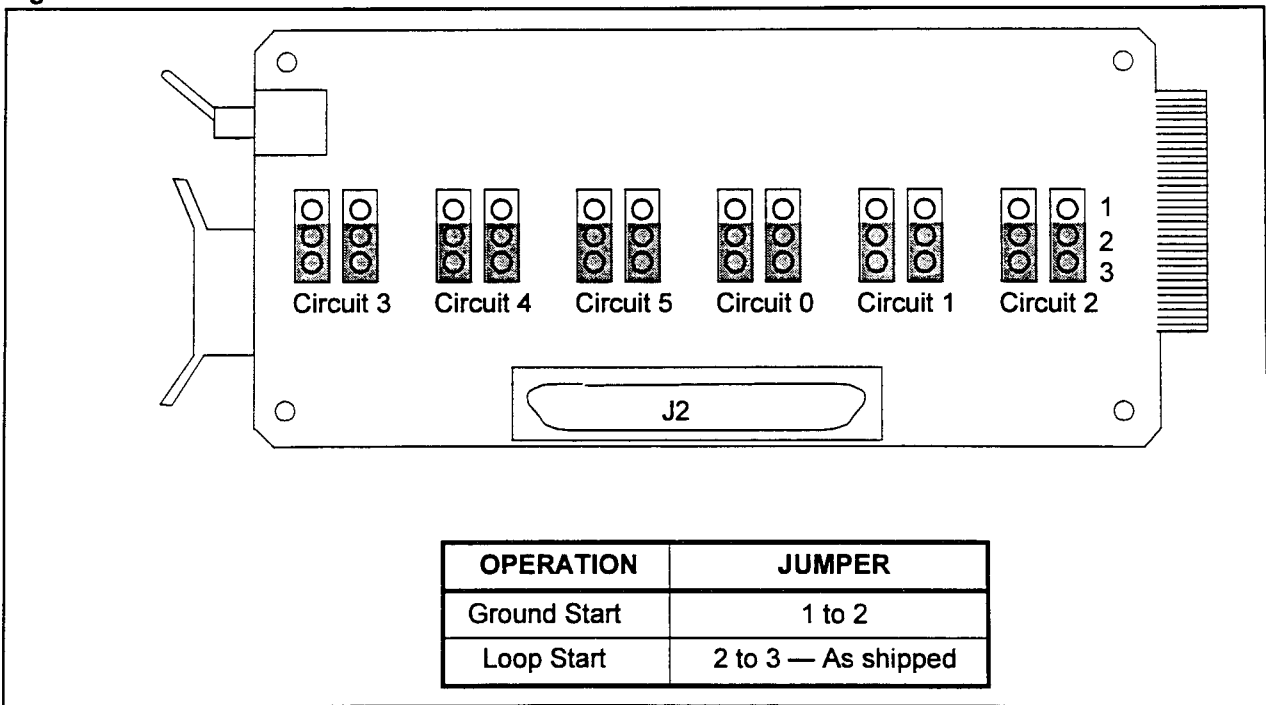
The 6PFA card allows the transfer of predetermined CO lines/trunks to standard single line telephones in the event of a power failure or system call processing interruption. Six lines/trunks can be supported. In addition, the 6PFA provides ports to send the MJ and MN alarms to an external device by relay contact closures. Set the MANUAL/AUTO selection switch to AUTO to activate the power failure transfer feature. It will work automatically when power fails and an external battery system does not take over.

Each circuit on the 6PFA card can be set to loop start or ground start operation. When ground start is selected, the card will automatically provide ground start signaling to the Central Office when the station set goes off hook. Refer to Figure 5-6.

**Recorded Voice Announcement Card (RVAC)**

The Recorded Voice Announcement Card allows station users to record voice messages and to hear recorded voice messages. One RVAC card supports 14 four second blocks; i.e., up to one 56 second message or 14 four second messages. The card has a voice memory back up battery and can save data for up to two weeks in the event of system power down.

Figure 5-6. Power Fail Transfer Card



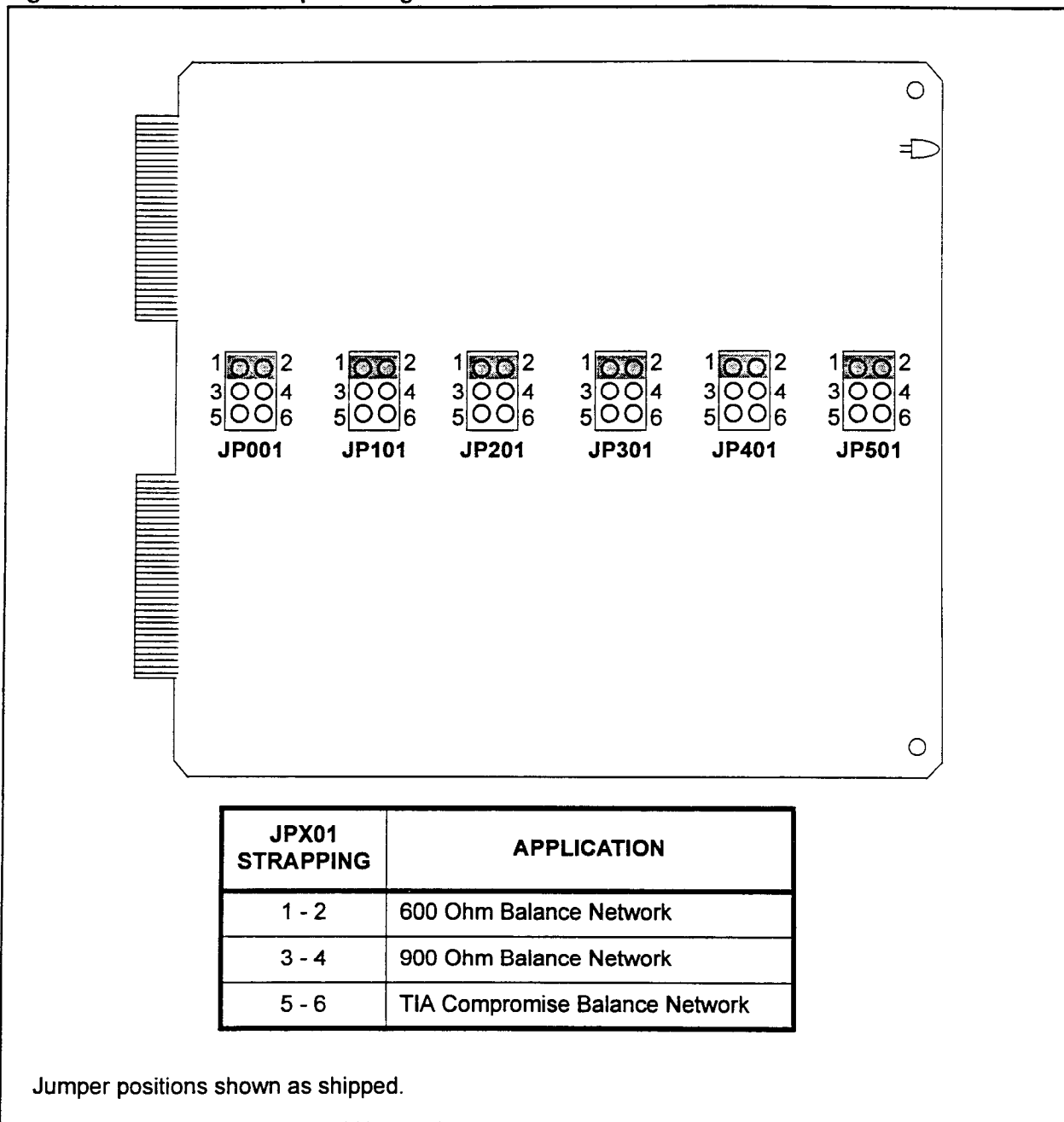
**6 Circuit Direct Inward Dialing Trunk Card (6DID)**

The 6DID card provides the interface circuitry for direct inward dialing in the Series 3 system. Only incoming call functions can be performed by this card. Each 8-bit microprocessor controlled 6DID card has six interface circuits. Refer to Figure 5-7.

**2 Circuit Application Processor Interface Card (2APIA)**

The 2APIA card connects the system with the application processor through the MDF cable. One 2APIA card supports two circuits. The two APs available are ACD Report Manager and Property Management System Interface.

**Figure 5-7. 6DID Card Jumper Configuration**

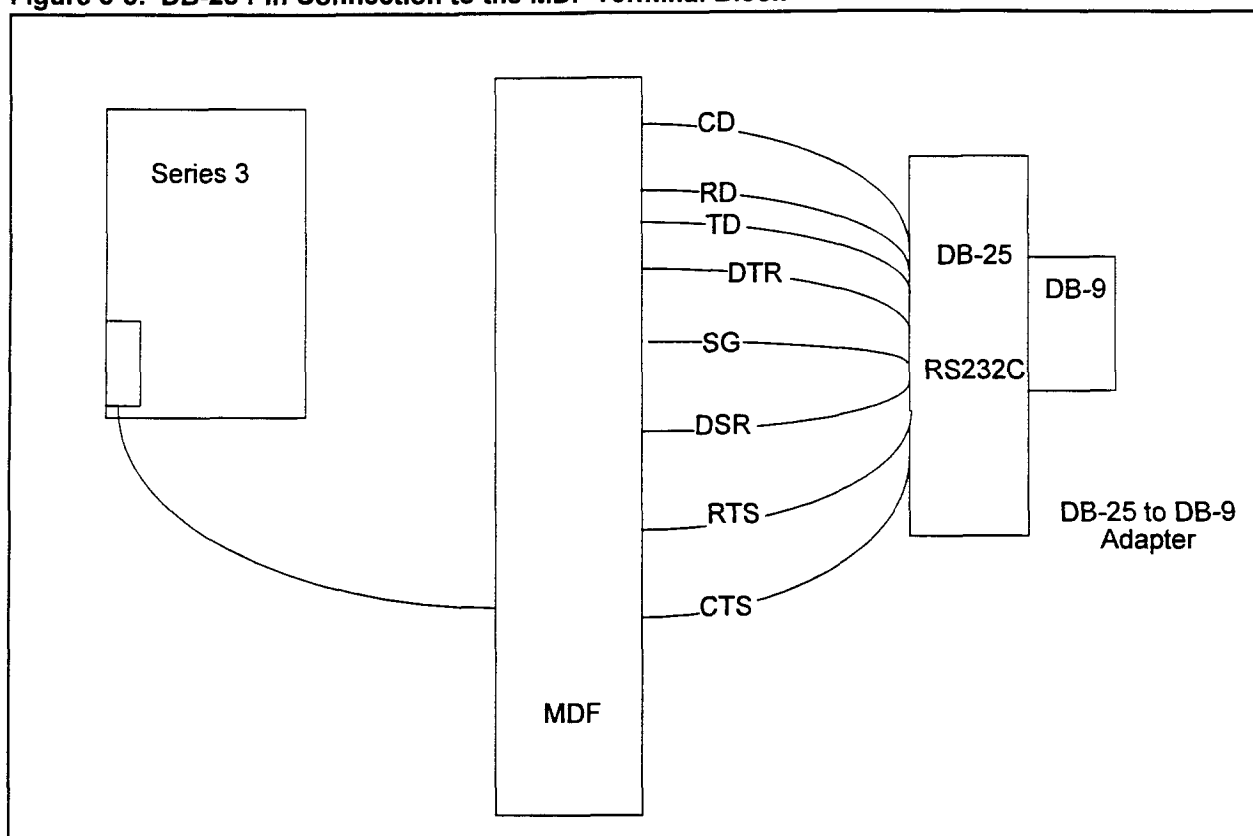


**2APIA Card Installation**

The 2APIA card is an option. This card is used for the Property Management System interface and the ACD Report Manager application processor. ACD Report Manager is run on a dedicated PC.

The 2APIA card connects the PBX with the application processor through the MDF cable. Figure 5-8 shows the pin connection to the MDF. As can be seen in this figure, an adapter is required to convert from a DB-9 connection on the serial port of the associated PC to the DB-25 connector required on the serial port of the system. The cable wires are punched down on the MDF terminal block. The 2APIA card contains two circuits. Port 0 or port 1 may be used for this connection.

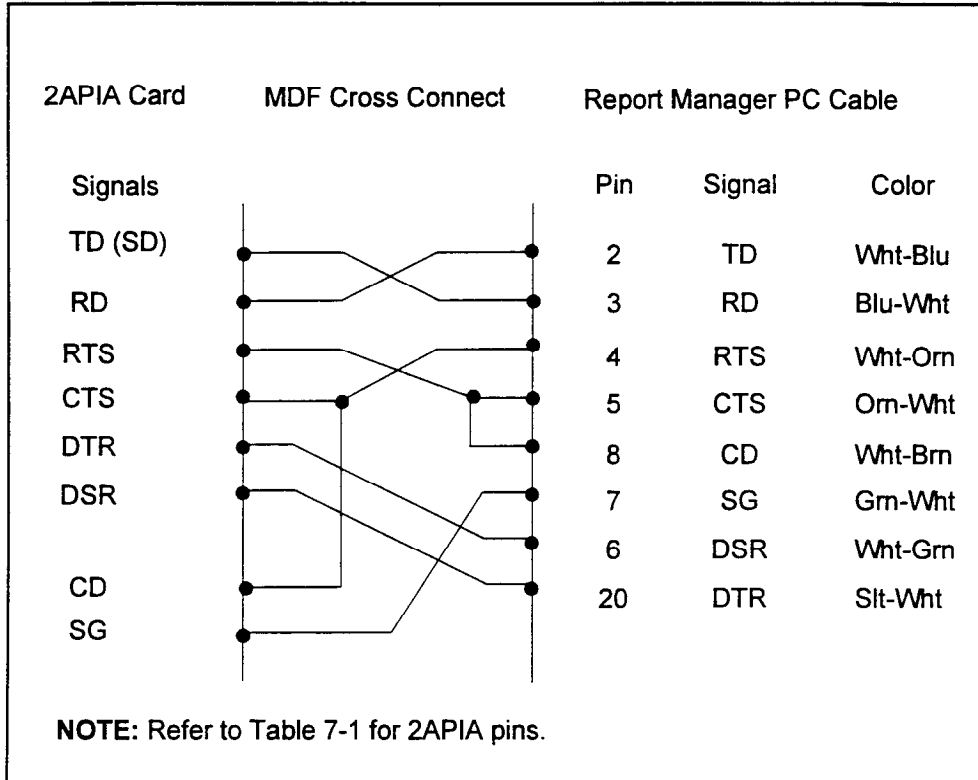
**Figure 5-8. DB-25 Pin Connection to the MDF Terminal Block**



**NOTE:** See Figure 5-9 for the specific cross connection diagram.

**2APIA Cross Connection** Figure 5-9 is a cross connection diagram showing that the CTS and CD signals are tied together on the system side of the MDF block and the RTS signal is tied to both the CTS and CD signals on the PC side of the MDF block. These connections are made on the MDF.

**Figure 5-9. 2APIA Cross Connect Diagram (ASYNC)**



**24 Channel Digital Trunk Interface Card (24T1)**

The 24T1 card provides digital trunk interface connected with 1.544 Maps facility. The CLKS card in cabinet zero, slot nine is necessary to synchronize the system clock to the clock from the outside network. The connection from the outside network is direct to the Series 3 system through the MDF connector adapter; no CSU is required.

Note that no 16 circuit cards can be installed into the slot following the 24T1 card because regardless of the number of channels used, 24 circuits are always used. You may install a 24T1 card in the next card slot, but only three or four cards may be installed per cabinet. Refer to Table 5-1.

**24 Channel Digital Trunk  
Interface (24T1)  
(Cont'd)**

There are eight switch options on the 24T1 card, which set the T-1 interface condition. The meaning of each strap is as follows:

1. **Line Loss Setting (DS-1 interface):** These straps select the equivalent line loss values: 0, 7.5 or 15dB of loss at 772 kHz. This option should be set in case of DS-1 interface.

There are four straps to set this option. These four straps should be set to the same position.

2. **Bit Coding:** This strap selects the coding of the T-1 interface: AMI mode or B8ZS mode.
3. **Framing Format:** This strap selects the framing format of the T-1 interface: D4 format or ESF format.
4. **Bit Stealing Mode (currently not used):** This strap selects the bit-stealing mode of the T-1 interface. If this switch is set to "transparent" mode, A, B-bit stealing will not be done, and all bits will be transmitted transparently. Currently, this function is not supported by the software, so it should be fixed to "bit stealing" mode.
5. **Simplex Current Loopback:** This strap is used to set the simplex current loopback (see Table 5-8). Simplex current loopback is the connection of the center points of "transmit" and "receive transmit." This strap is set to "loopback" mode when the 24T1 trunk card is powered by the network in case of "DS-1" interface. This strap is set to "non-loopback" mode by the default.

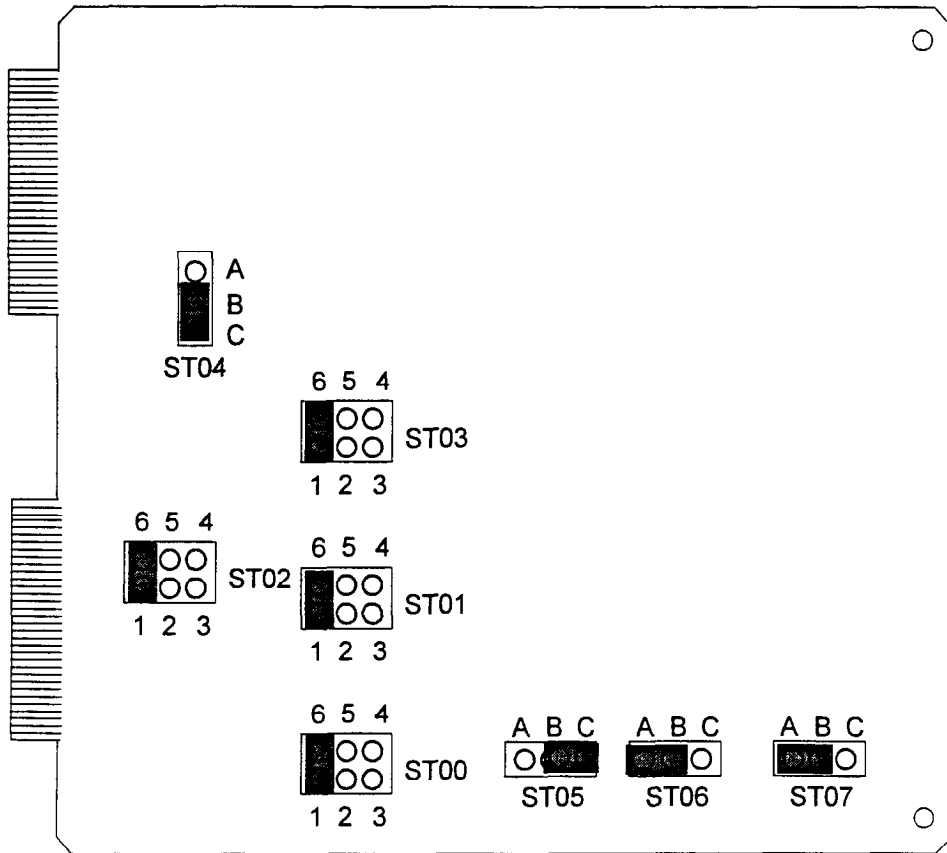
**Table 5-8. 24T1 Card Strapping**

STRAP NUMBER ON 24T1	STRAP NAME	SELECTABLE CONDITIONS	DEFAULT VALUE
ST00 - 03	Line Loss Setting	0 / 7.5 / 15 dB at 772kHz	0dB
ST04	Simplex Current Loopback	Loopback / Non-loopback	Non-loopback
ST05	Bit Stealing Mode	Bit Steal/ Transparent	Bit Stealing (fixed)
ST06	Framing Format	D4 / ESF	D4
ST07	Bit Coding	AMI / B8ZS	AMI

**NOTE:** See Figure 5-10 for a diagram of the placement of each strap on the 24T1 card and instructions on each strap.



Figure 5-10. 24T1 Card Jumper Configuration



LINE LOSS	ST00	ST01	ST02	ST03
0 dB	1 to 6	1 to 6	1 to 6	1 to 6
7.5 dB	2 to 5	2 to 5	2 to 5	2 to 5
15 dB	3 to 4	3 to 4	3 to 4	3 to 4

MODE	ST04
Loopback	A to B
Non-Loopback	B to C

MODE	ST05
Transparent	A to B
Bit Steal	B to C

MODE	ST06
D4	A to B
ESF	B to C

MODE	ST07
AMI	A to B
B8ZS	B to C

Jumper positions shown as shipped.

**24T1 Cable** When a 24T1 or 23PT card is installed in a Series 3 cabinet, an MDF connector adapter (P/N E20B-9900-R400 shipped with the 24T1 or 23PT card) is required. Refer to Figure 5-11. This adapter is used to connect the T-1 service to the Series 3 system; it is used in place of a CSU.

Refer to Table 5-9 to determine the CN connector to be used. Install the adapter on the CN connector, using the provided strain relief screw. The adapter has one 25 pair AMP connector and two modular four pair connectors. The 25 pair AMP connector, J02, allows access to the circuits on any line or trunk cards installed adjacent to the 24T1 or 23PT card. The upper modular connector, J03, is the digital trunk connection for the 24T1 or 23PT cards installed in slot 0, 3, or 6. The lower connector, J04, is the digital trunk connection for cards in slots 1, 4, or 7. The jumpers on the adapter must be set to route digital trunk circuits to the modular connectors. Jumpers J1 to J8 are for card slots 0, 3, and 6. Jumpers J9 to J18 are for card slots 1, 4, and 7. Refer to Tables 5-10 and 5-11 to determine the correct jumper setting for the card configuration installed in this system. The pin configuration for J02 is the same as the CN connector the adapter is plugged into. Refer to the cross-connect tables in Chapter 6.

Figure 5-11. 24T1 / 23PT Adapter

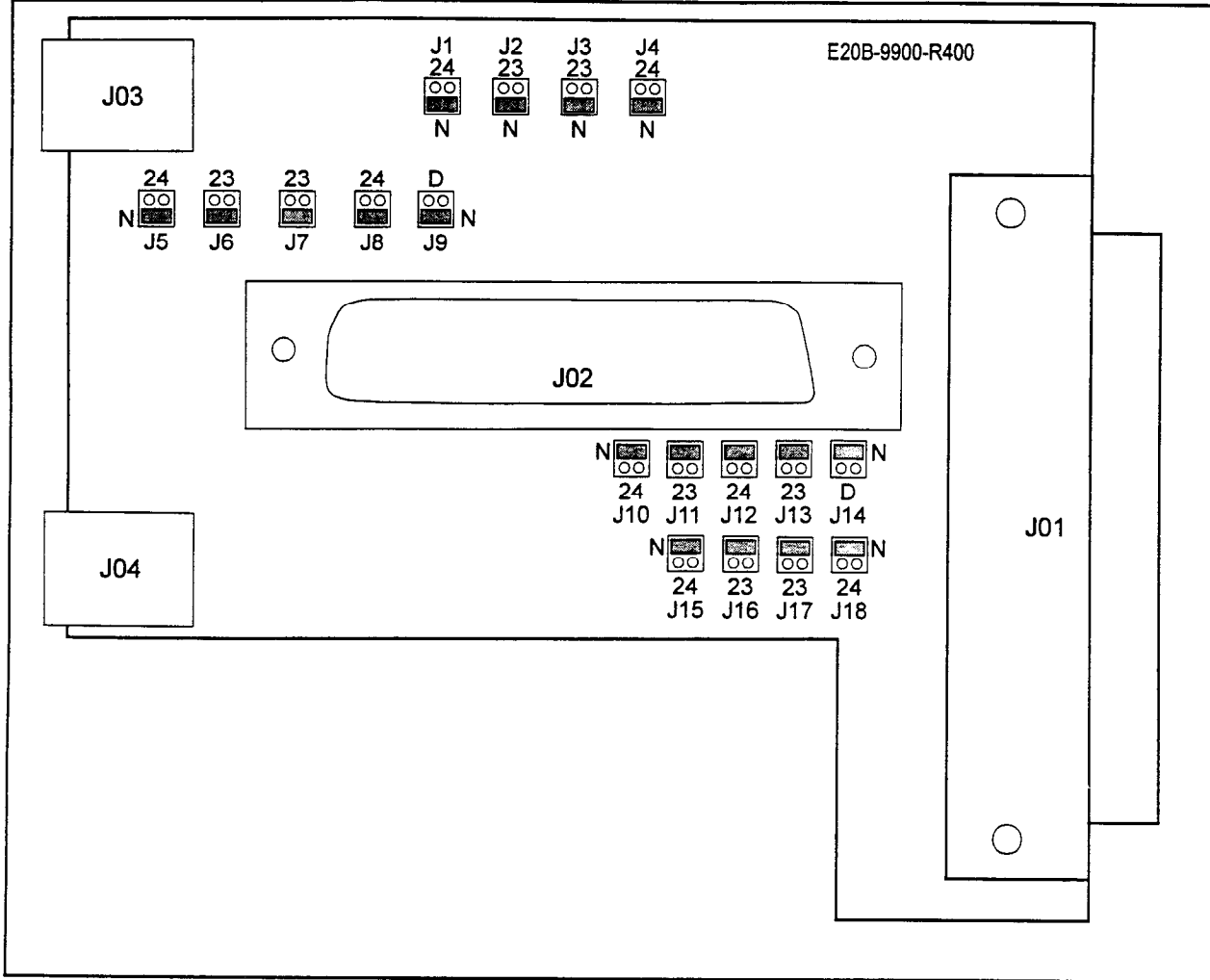


Table 5-9. Adapter Location

24T1 or 23PT INSTALLED IN CARD SLOT	ADAPTER INSTALLED ON
0 or 1	CN 0
3 or 4	CN 2
6 or 7	CN 4

Table 5-10. Card in Slot 0, 3, or 6; Digital Trunk Output on Connector J03

JUMPER	JUMPER POSITION		
	24T1	23PT	NORMAL LINE/TRUNK CARD
J1	24	N	N
J2	N	23	N
J3	N	23	N
J4	24	N	N
J5	24	N	N
J6	N	23	N
J7	N	23	N
J8	24	N	N
J9	D	D	N

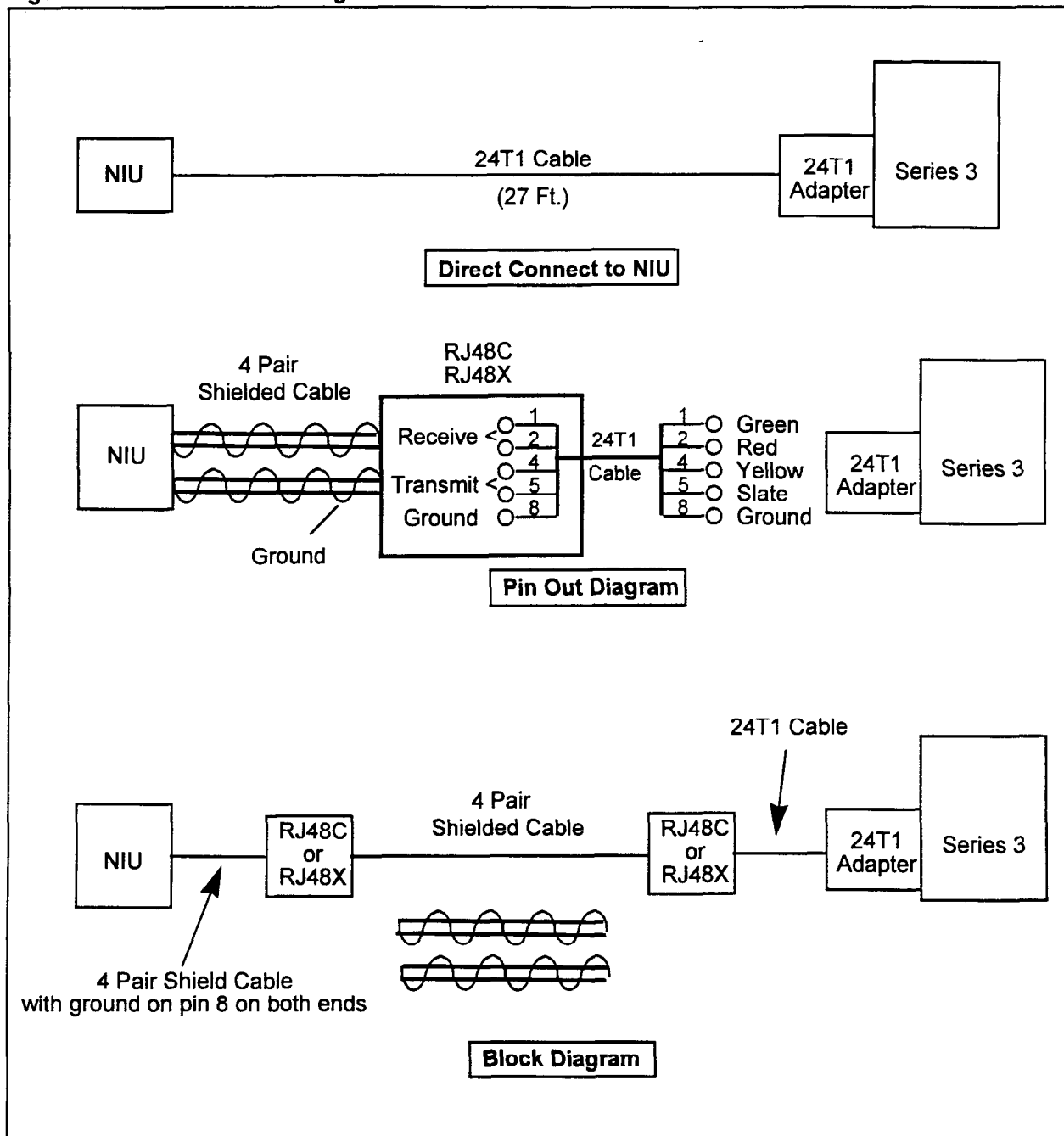
Table 5-11. Card in Slot 1, 4, or 7; Digital Trunk Output on Connector J04

JUMPER	JUMPER POSITION		
	24T1	23PT	NORMAL LINE/TRUNK CARD
J10	24	N	N
J11	N	23	N
J12	24	N	N
J13	N	23	N
J14	D	D	N
J15	24	N	N
J16	N	23	N
J17	N	23	N
J18	24	N	N

**24T1 Cable (Cont'd)**

Locate the Network Interface Unit (NIU) and/or the CSU. The NIU is usually installed by the T-1 network provider. If the NIU is located within the length of the 24T1 cable, the cable can be connected directly between the 24T1 adapter and the NIU. If the 24T1 cable will not reach to the NIU, an extension cable must be made. Use four pair shielded cable with an eight pin modular plug on one end and an RJ48C or RJ48X connector on the other end. Refer to Figure 5-12.

Figure 5-12. 24T1 Cable Configurations



**LED Indicators on the 24T1 Card**

LED indicators located on the front edge of the 24T1 card show the status of the card. The meaning of each LED is as follows:

- **BSY** (Busy) lamp (Green) - indicates that the card is in service.
- **MAS** (Master clock) lamp (Green) - indicates whether or not the master clock of the system is drawing from this card. The extracted clock from this card is the source clock of the sending clock of other 24T1 cards installed in the system.

**LED Indicators on the 24T1  
Card (Cont'd)**

- **LLB** (Line Loop Back) lamp (Red) - lights in the following states:
  - When the 24T1 trunk is in the process of self testing,
  - If remote loopback signal is being received, and If the card is set to loopback mode.
- **LRS** (Loss of Received Signal) lamp (Red) - indicates whether or not a received signal from the network exists.
- **LTS** (Loss of Transmitted Signal) lamp (Red) - indicates whether or not a transmitted signal to the network exists.
- **OOF** (Out of Frame) lamp (Red) - shows that a frame alignment signal is not detected in the 24T1 card. This lamp may also light when a receive signal is lost, or when RAI is sent from the network.
- **AIS** (Receive AIS Signal) lamp (Red) - indicates the reception of an alarm indication signal.
- **SLP** (Slip error) lamp (Red) - indicates slip errors.
- **BPV** (Bipolar Violation error) lamp (Red) - lights for 250 ms each time a bipolar violation is detected.
- **YAL** (Yellow Alarm) lamp (Red) - lights when a YAL signal is sent from the network.

**ISDN Primary Rate Access Interface Card (23PT)**

The 23PT card provides the interface for the public ISDN via PRA (Primary Rate Access) interface and digital private network.

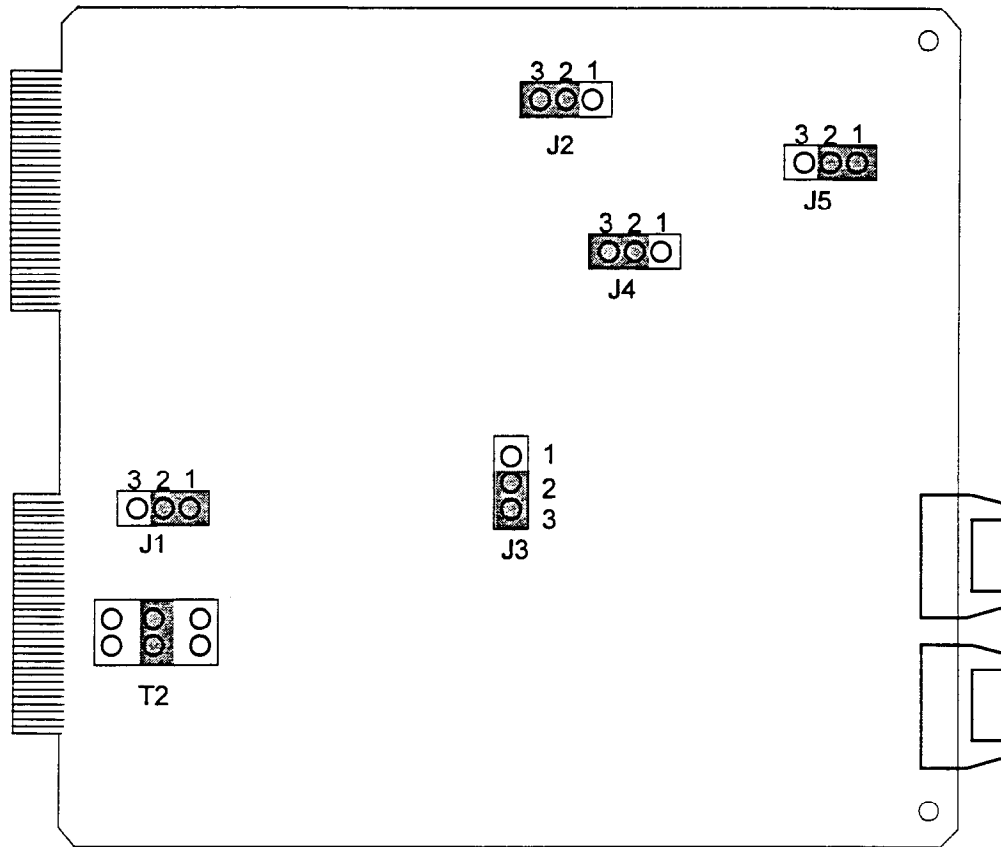
The 23PT card supports a maximum of 23 B-channels of 64 Kbps, which can transmit voice or digital data. The card must be installed one per hiway (refer to Table 5-10). Figure 5-13 shows the switch positions on the 23PT card.

**LED Indicators on the 23PT Card**

LED indicators located on the front edge of the 23PT card show the status of the card. The meaning of each LED is as follows:

- **OOS** (Out of Service) lamp (Red) - indicates that the card has been placed in the out of service mode.
- **MASTER** (Master Clock) lamp (Green) - indicates whether or not the master clock of the system is drawing from this card. The extracted clock from this card is the source clock of the sending clock of other 23PT cards installed in the system.
- **LOOPBACK** (Line Loop Back) lamp (Red) - lights in the following states:
  - When the 23PT trunk is in the process of self testing,
  - If remote loopback signal is being received, and
  - If the card is set to loopback mode.
- **LRS** (Loss of Received Signal) lamp (Red) - indicates whether or not a received signal from the network exists.
- **LTS** (Loss of Transmitted Signal) lamp (Red) - indicates whether or not a transmitted signal to the network exists.
- **OOF** (Out of Frame) lamp (Red) - shows that a frame alignment signal is not detected in the 23PT card. This lamp may also light when a receive signal is lost, when RAI is sent from the network, or when CRC error rates are high.
- **BPV** (Bipolar Violation error) lamp (Red) - lights for 250 ms each time a bipolar violation is detected.
- **RAIS** (Receive AIS Signal) lamp (Red) - indicates the reception of an alarm indication signal.
- **TAIS** (Transmit AIS Signal) lamp (Red) - indicates transmission of an AIS signal.
- **CRCE** (CRC Error) lamp (Red) - indicates the presence of a CRC error in the system.
- **SLP** (Slip error) lamp (Red) - indicates slip errors.
- **YAL** (Yellow Alarm) lamp (Red) - lights when a YAL signal is sent from the network.

Figure 5-13. 23PT Card Jumper Configuration



STRAP	NAME	1 to 2	2 to 3
J1	Simplex Current Loop Back	No Loop Back	Loop Back
J2	FIPN/ISDN Operation	FIPN	ISDN
J3	(AMI) Bit 7 Stuff / 8 Zeros Substitute	Bit 7 Stuff	8 Zero Substitute
J4	Framing	D4 Framing	ESF Framing
J5	D-Channel Inversion	Inverted "D"	Normal "D"

T2 POSITION	RESULTS
Left	0 dB loss
Center	7.5 dB loss
Right	15 dB loss



**Clock Card (CLKS)** The CLKS card is used to synchronize the system clock to the clock from the outside network for digital trunk interface (T-1, ISDN and FIPN). This card is installed in card slot 9 of the basic cabinet.

To install a digital trunk card (i.e., 24T1 card), the system clock must be synchronized to the clock from the outside network, except when the system is in master mode and does not synchronize to any other outside clock. For the synchronization, the digital interface card must be installed with the CLKS card.

**For clock synchronization:** The clock extracted from the outside network is divided into an 8Kbps clock, and drawn to the CLKS card from a digital trunk card via the cabinet backplane. The 8kbps clock from the digital trunk card is multiplied to 16Mbps at the CLKS card.

To install a digital trunk and CLKS card:

- Power off the system.
- Install the CLKS cards in slot 9 of the basic cabinet.
- Install the digital interface card (23PT or 24T1).

## INSERTING AND EXTRACTING

Each card has a plastic ejector lever on the top and bottom of the outside card edge. With the card positioned to slide into a card slot, the card type is imprinted on the top ejector lever. All card components face left when in a slot. The SCPN2M and SCPN4M cards are equipped with plastic inserter/ejector levers.

Handle cards by the ejector levers; do not touch edge connectors.

### To Insert and Seat Cards

Protect against electrostatic discharge. Wear a wrist strap clipped to ground. Line and trunk cards can be installed or removed with system power applied. Make sure power is OFF with all other cards. Caution should be taken when inserting cards to ensure proper slot installation. Card slot 10 in the basic cabinet has a metal block in front of the connector. Attempting to install a card in basic cabinet slot 10 can damage the CPU card. Begin installation with line cards. Install line and trunk cards left to right.

**CAUTION:** To avoid possible damage to backplane pins the SCPN2M and SCPN4M cards must be seated using only the ejector/inserter levers.

To ensure proper insertion:

- Keep card edge connections toward backplane.
- Card edges must ride on tracks (top and bottom).
- Card slot numbers are marked to the left of each slot; be sure card and slot are compatible.
- Common control card slots are marked on the frame bottom to the left of the slot; install each card into corresponding slot.
- Slide card in a slot and push in with gentle pressure until it stops.
- Level the top and bottom ejector levers and push the card until both levers rotate toward the card completely.

**To Unseat/Remove Card**

Protect against electrostatic discharge. **Wear a wrist strap connected to ground.**

**CAUTION: To insert/remove a common control card, power must be OFF.**

- Grasp top and bottom plastic ejector levers.
- Rotate ejector levers 90 degrees gently. The top ejector lever rotates up and the bottom ejector lever rotates down.
- The card unseats.
- To remove card, pull out of cabinet. Do not touch edge connectors.

Note that no 16 circuit cards can be installed into the slot following the 24T1 card because regardless of the number of channels used, 24 circuits are always used. You may install a 24T1 card in the next card slot, but only three or four cards may be installed per cabinet. Refer to Table 5-1.

**SYSTEM CAPACITIES**

The following details the maximum capacity of the Series 3 system.

**Card Slots**

The first (basic) cabinet has 10 card slots available for line, trunk and other cards. The second, third, and fourth cabinets each have 11 card slots available. Each card slot has a capacity of 16 ports, with the following exceptions:

- Card slot 9 will only support 8 circuits or less. Card slot 10 will only support the 4DMR or CACC/CACH cards.

Refer to Table 5-12 for card placement data. Refer to next page for explanation of notes in Table 5-12 .

**Table 5-12. Card Slot Usage**

Physical Slot	00	01	02	03	04	05	06	07	08	09	10 <sup>1</sup>
Logical Slot <sup>2</sup>	0 1	2 3	4 5	6 7	8 9	10 11	12 13	14 15	16 17	17	18
16DTC	X	X	X	X	X	X	X	X	3	-	-
16SLC	X	X	X	X	X	X	X	X	3	-	-
8DTC	4	4	5	4	4	5	4	5	5	5	-
8EKC	X	X	X	X	X	X	X	X	X	X	-
8SLC	X	X	X	X	X	X	X	X	X	X	-
4SLE	X	X	X	X	X	X	X	X	X	X	-
8PDL	X	X	X	X	X	X	X	X	X	X	-
8BWC	X	X	X	X	X	X	X	X	X	X	-
4BWC	X	X	X	X	X	X	X	X	X	X	-
6DID	X	X	X	X	X	X	X	X	X	X	-
4TE4	X	X	X	X	X	X	X	X	X	X	-
2TE4	X	X	X	X	X	X	X	X	X	X	-
2TTE	X	X	X	X	X	X	X	X	X	X	-
2TTL	X	X	X	X	X	X	X	X	X	X	-
4DMR	X	X	X	X	X	X	X	X	X	X	10
4CHT	X	X	X	X	X	X	X	X	X	X	-
2APIA	X	X	X	X	X	X	X	X	X	X	-
24T1	6	7	-	6	7	-	6	8	-	-	-
23PT	6	7	-	6	7	-	6	8	-	-	-
RVAC	X	X	X	X	X	X	X	X	X	X	-
CLKS	-	-	-	-	-	-	-	-	-	9	-
CACC/H	X	X	X	X	X	X	X	X	X	X	10
MUFN	11	X	X	X	X	X	X	X	3	-	-

Refer to next page for explanation of notes.

## Notes for Table 5-12

- Note 1 Physical slot 10 is not available in the basic cabinet (cabinet 0).
- Note 2 When a 2, 4, 6, 8 circuit card, a 24T1, or a 23PT card is assigned, the logical slot number shown as bold in the table is used for the equipment numbers. An 8EKC assigned to physical slot 2 of cabinet 2 (the first expansion cabinet) will use equipment numbers 2040 to 2047. An 8EKC assigned to physical slot 1 of cabinet 2 will use equipment numbers 2030 to 2037. The equipment numbers of a 24T1 card in physical slot 3 of cabinet 2 are 2060 to 2067, 2070 to 2077, and 2080 to 2087.
- When a 16 circuit card is assigned, two logical slot numbers are used. If a 16DTC is installed in physical slot 2 of the basic (first) cabinet the equipment numbers are 0040 to 0047, and 0050 to 0057.
- Note 3 When a 16 circuit card (16DTC or 16SLC) is installed in physical slot 8, physical slot 9 must be empty.
- Note 4 The first six circuits of the 8DTC card can be used for simultaneous voice and data on CSD phones.
- Note 5 Simultaneous voice and data is not available for CSD with DTA phones.
- Note 6 When a 24T1 or 23PT is installed in physical slot 0, 3 or 6, the next physical slot (1, 4, or 7) can be used only for a 1, 4, 6, 8 circuit card or another 24T1 or a 23PT.
- Note 7 When either a 24T1 or 23PT is installed in physical slot 1 or 4, the next physical slot (2 and 5) must be empty. **Clock extraction can be made from the basic (0) cabinet only.**
- Note 8 When either a 24T1 or a 23PT is installed in physical slot 7, the next three physical slots (8, 9 and 10) must be empty.
- Note 9 CLKS card can be installed only in card slot 9 in the basic cabinet.
- Note 10 This card slot is used in the expansion cabinet(s) only.
- Note 11 The first eight circuits of the MUFN card are EKC circuits (circuits 0, 2, 4, and 6 may be used; circuits 1, 3, 5, and 7 are not available). The DTMF receiver circuits are on the next logical slot on circuits 0, 1, 2, 3. A MUFN card installed in physical card slot 8 of the Basic cabinet would have EKC circuit numbers 0160, 0162, 0164 and 0166, the DTMF receivers on circuit numbers 0170, 0171, 0172 and 0173.

**EQUIPMENT NUMBERS AND  
CARD SLOTS**

In the Command Codes (CMC) used for data base programming of the Series 3 system, circuits on the interface cards are referred to by unique equipment numbers.

**Logical Card Slots**

Each physical card slot in a Series 3 cabinet has a maximum capacity of 16 circuits. These 16 circuits are recognized in the data base as two eight circuits slots. Each PHYSICAL card slot has two LOGICAL card slots. The circuits in each logical slot in numbered 0 to 7. Physical card slot 00 has 16 circuits. Physical card slot 00 is shown in the data base as logical slot 00, circuits 0 to 7 and logical slot 01, circuits 0 to 7.

**NOTE:** Slots 8, 9, and 10 have different rules.

Refer to Table 5-12 for this physical to logical card slot relationship.

**Equipment Numbers**

Equipment Numbers (EN) are four digits in length. The EN is always in the pattern XYYZ.

- X: Cabinet number 0 to 3
- YY: Logical slot number 00 to 18
- Z: Circuit number 0 to 7

The cabinet numbers used in the EN are:

- 0: Basic cabinet
- 1: First expansion cabinet
- 2: Second expansion cabinet
- 3: Third expansion cabinet

Equipment numbers for each physical card slot are shown in Table 5-13.

Notice that in physical card slots 08 and 09 eight circuits are available. Card slot 10 has four circuits available. Card slot 10 is not available in the basic cabinet.

Table 5-13. Equipment Numbers

PHYSICAL SLOT No.	00	01	02	03	04	05	06	07	08	09	10
CABINET 0 (Basic Cabinet)	0000 to 0017	0020 to 0037	0040 to 0057	0060 to 0077	0080 to 0097	0100 to 0117	0120 to 0137	0140 to 0157	0160 to 0167	0170 to 0177	N/A
CABINET 1	1000 to 1017	1020 to 1037	1040 to 1057	1060 to 1077	1080 to 1097	1100 to 1117	1120 to 1137	1140 to 1157	1160 to 1167	1170 to 1177	1180 to 1183
CABINET 2	2000 to 2017	2020 to 2037	2040 to 2057	2060 to 2077	2080 to 2097	2100 to 2117	2120 to 2137	2140 to 2157	2160 to 3167	2170 to 2177	2180 to 2183
CABINET 3	3000 to 3017	3020 to 3037	3040 to 3057	3060 to 3077	3080 to 3097	3100 to 3117	3120 to 3137	3140 to 3157	3160 to 3167	3170 to 3177	3180 to 3183

NOTE: If a 16 circuit card is used in card slot 8, equipment numbers 0160 through 0177 are used. Card slot 9 is left vacant.

HIWAYS

The relationship between physical card slots, logical card slots, and hiways are shown in Tables 5-14 and 5-15. Hiway 0 is used for interprocessor communication; hiway 1 is used for system tones and mixer circuits.

Table 5-14. Cabinet Zero (Basic) Hiways

PHYSICAL SLOT	00	01	02	03	04	05	06	07	08	09	10										
LOGICAL SLOT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	17	18	
Hiway 2	●	●	●																		
Hiway 3			●	●	●																
Hiway 4						●	●	●													
Hiway 5									●	●	●										
Hiway 6													●	●	●						
Hiway 7																		●	●	●	●

Table 5-15. Cabinet One Hiways

PHYSICAL SLOT	00		01		02		03		04		05		06		07		08		09		10	
LOGICAL SLOT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	17	18		
Hiway 8	●	●	●																			
Hiway 9				●	●	●																
Hiway 10							●	●	●													
Hiway 11										●	●	●										
Hiway 12													●	●	●							
Hiway 13																●	●	●	●	●	●	●

The third cabinet hiways are 14 through 19.  
 The fourth cabinet hiways are 20 through 25.

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# CHAPTER 6

# TERMINAL AND LINE CONNECTION

## PIN ASSIGNMENT OF MDF TERMINAL

As shown in Figure 6-1, two 25-pair connectors are assigned for every three card slots (CN0 and CN1 for card slots 00, 01, and 02; CN2 and CN3 for slots 03, 04, and 05; and so on).

## CROSS CONNECTION

Typical cross connection for line cards and trunk cards are in Figure 6-2.

The system supports two types of E & M tie trunk interfaces. Cross connection diagrams for Type I and Type II signaling are shown in Figures 6-3 and Figure 6-4.

## METHOD OF WIRING

Figure 6-5 shows the wiring diagram of a three pair modular connector with the pin assignments for the Series 3 terminal devices.

Figure 6-1. Card Slot to MDF Connector Wiring

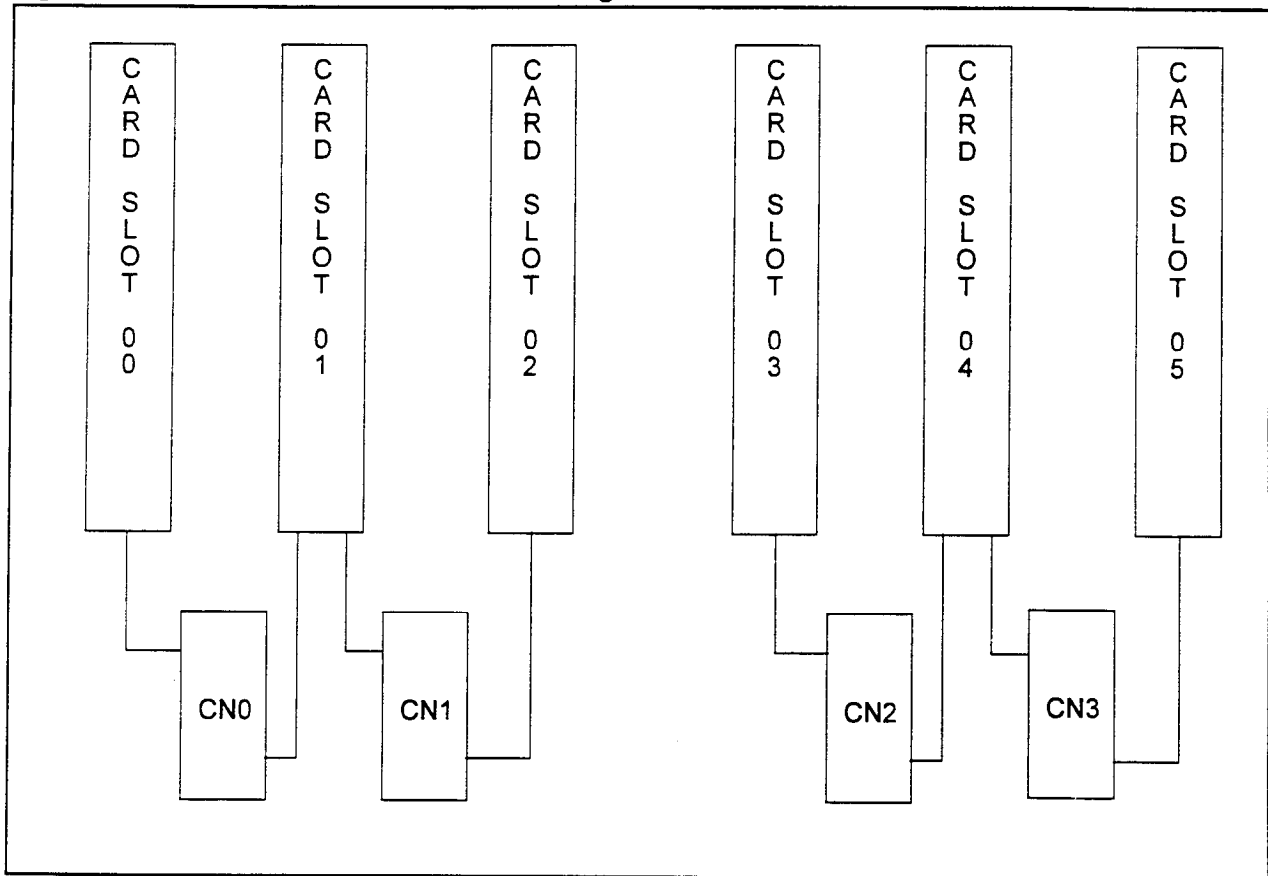


Figure 6-2. Interface of E & M Tie Trunks

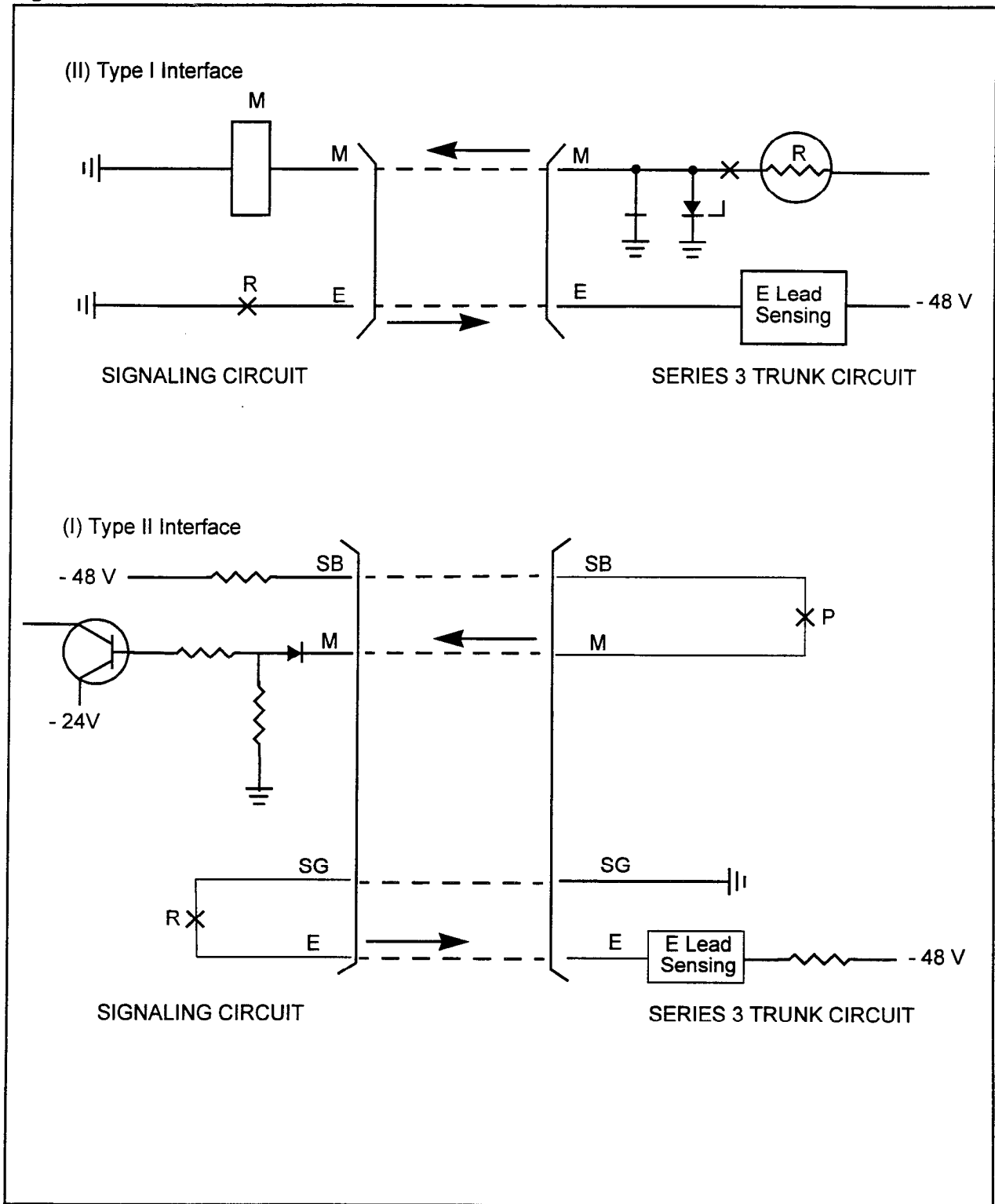
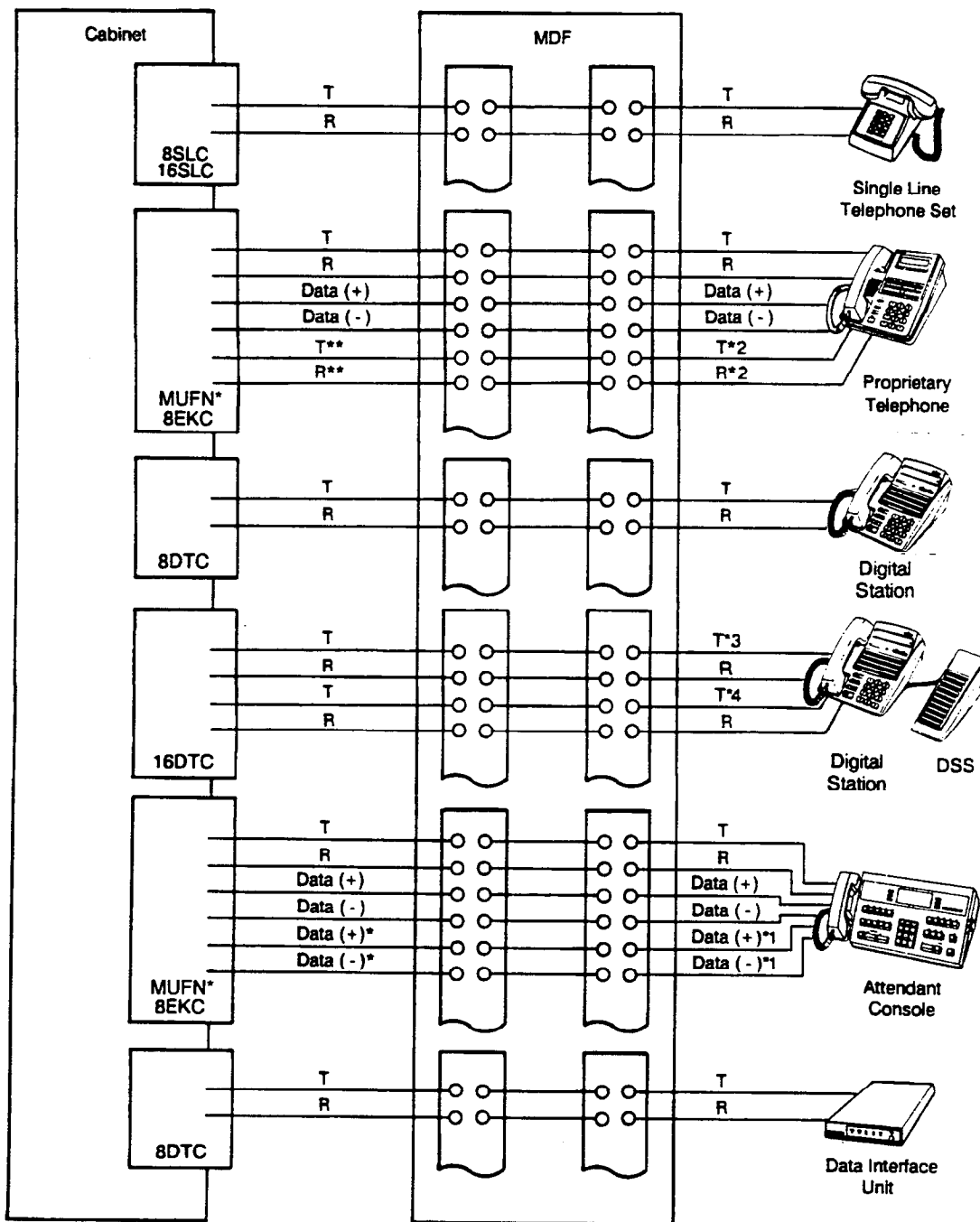


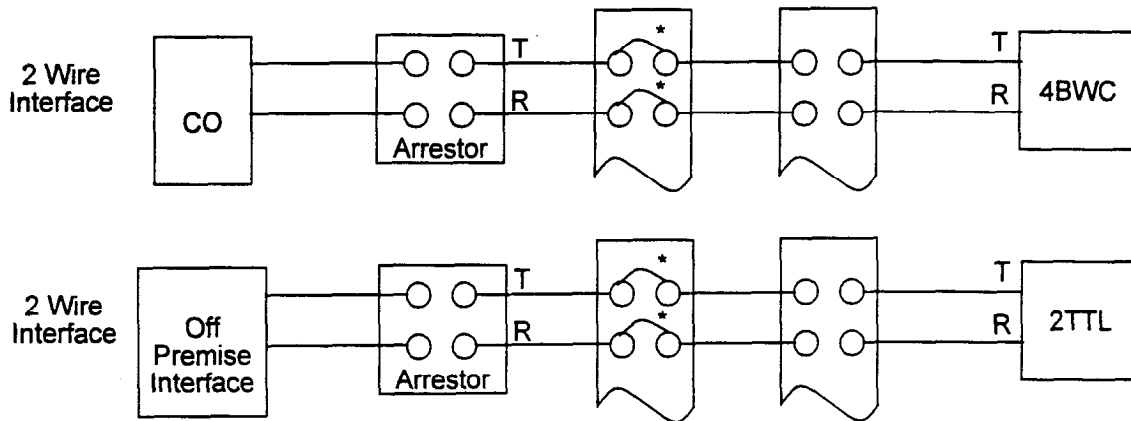
Figure 6-3. Cross-Connection of Lines and Trunks



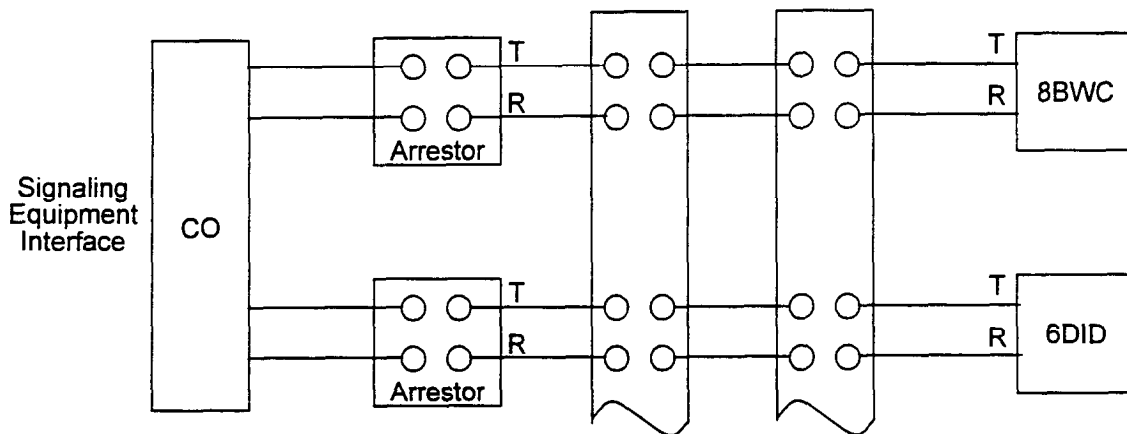
**NOTE:** Proprietary telephones and digital telephones must have proper polarity to operate.

- \*1 Second data pair is needed only when loop lengths exceed 300 ft.
  - \*2 Second T/R pair is needed when CT-30 implements Off-Hook Call Announce feature.
  - \*3 Digital Station connected to 16DTC cards cannot support a data port.
  - \*4 Each DSS paired with a Digital Station requires a pair of wires from a 16DTC circuit. The 2 or 3 pair cable is connected to the Digital Station.
- \* The EKC portion of the MUFN card (future option) may also be used.

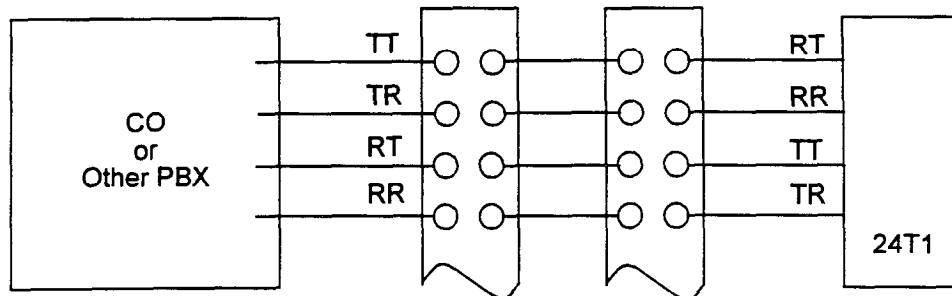
Figure 6-3. Cross-Connection of Line and Trunks (Cont'd)



\* All legs of all circuits connected to cable outside of the building must be protected by a sneak current fuse.

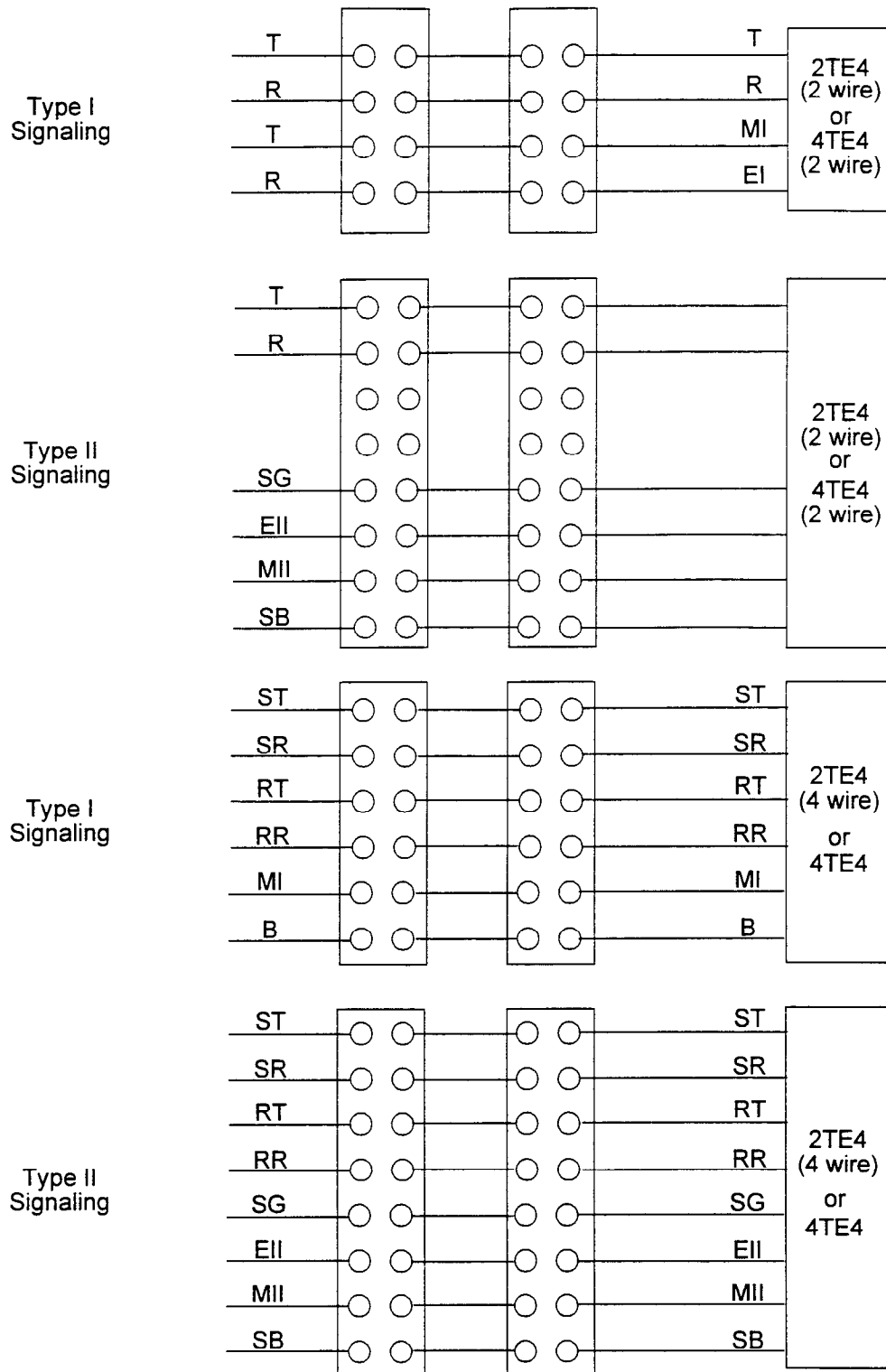


The circuits on 8BWC and 6DID cards have on-board sneak current protection.



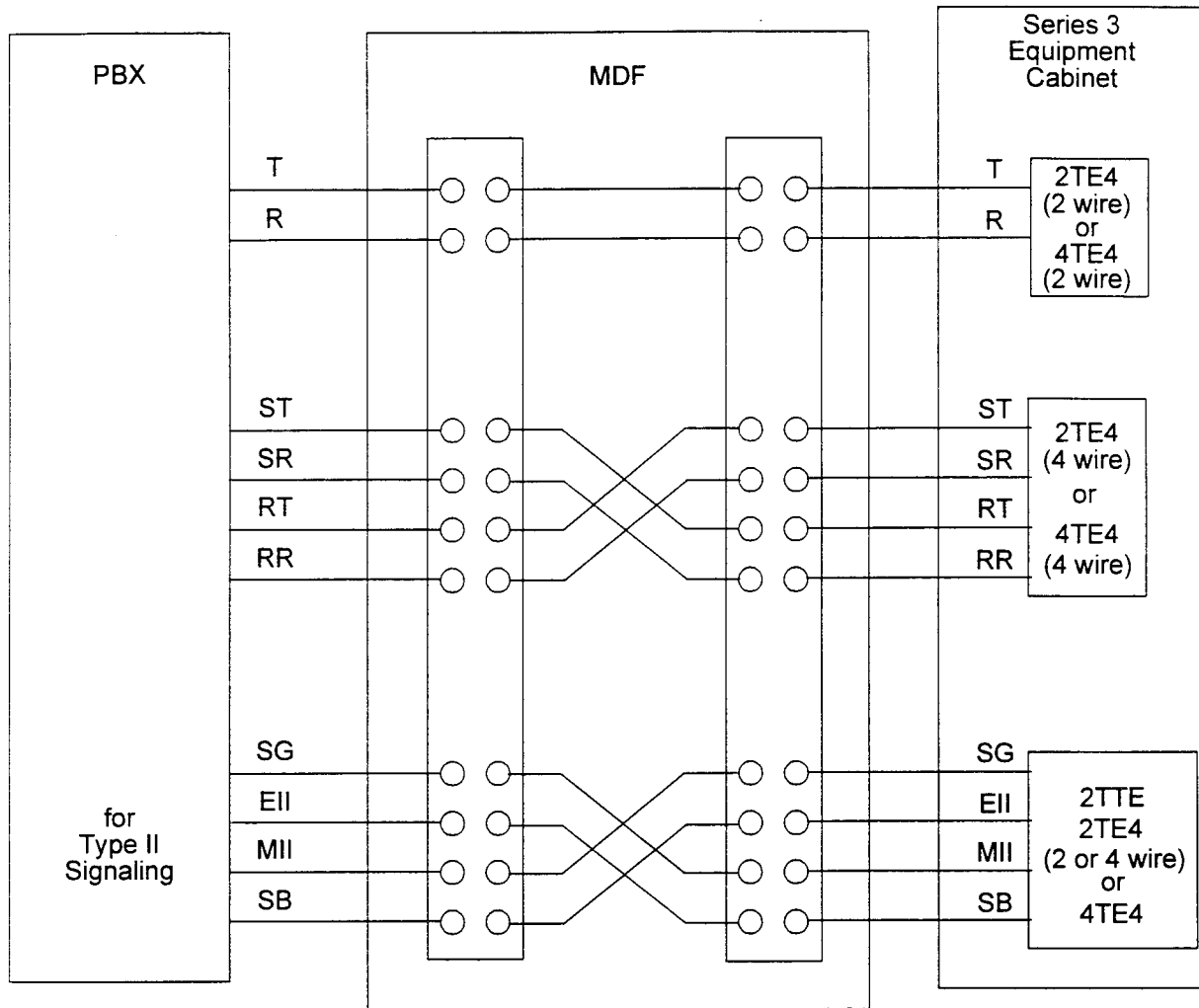
RT = Receive Tip  
 RR = Receive Ring  
 TT = Transmit Tip  
 TR = Transmit Ring

Figure 6-4. Cross-Connection for Type I and Type II Signaling



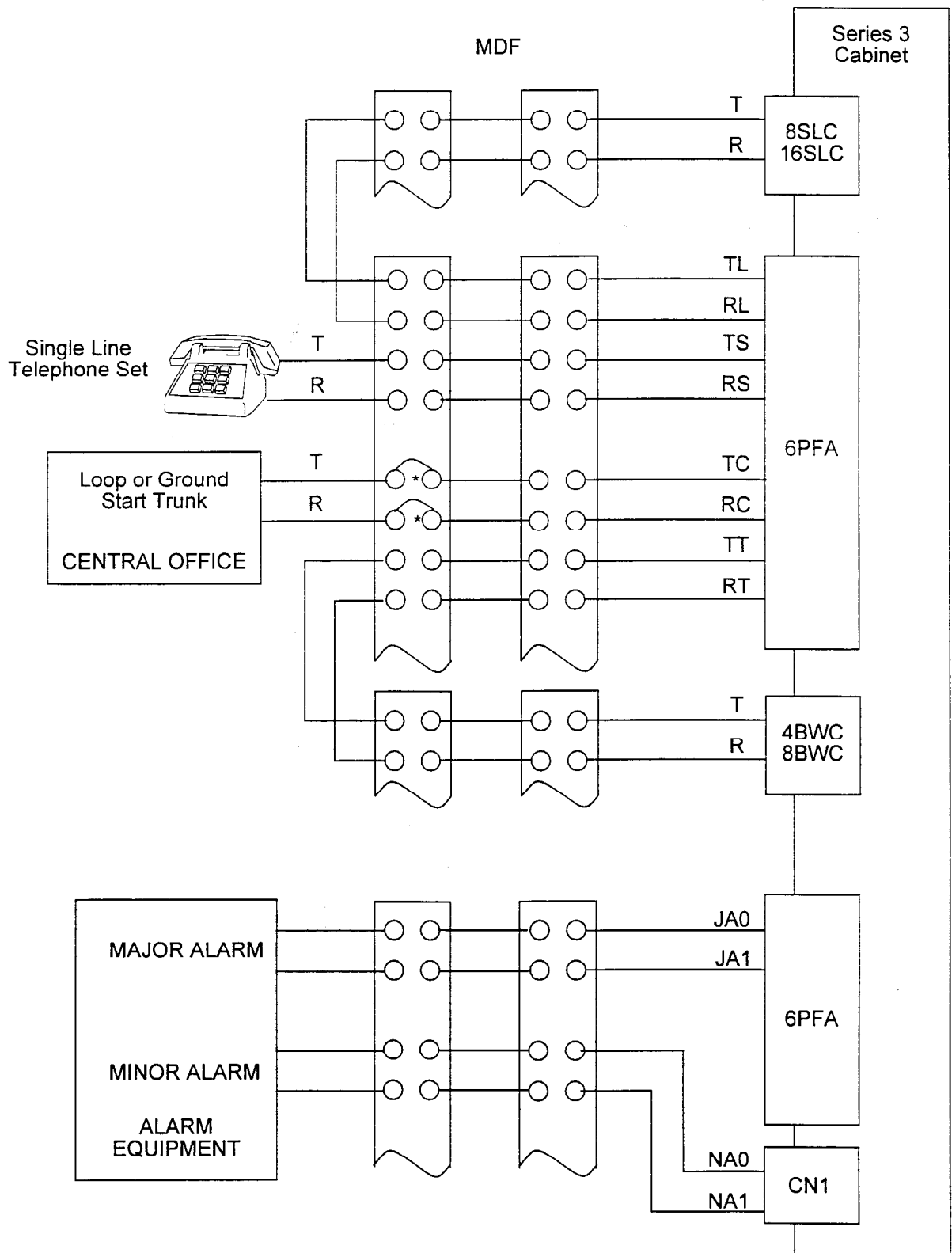
All legs of all circuits connected to cable outside of the building must be protected by a sneak current fuse.

Figure 6-5. Cross-Connection for Type II Signaling



- NOTES:**
1. This arrangement is only for Type II signaling in switch-to-switch situations.
  2. All legs of all circuits connected to cable outside of the building must be protected by a sneak current fuse.

Figure 6-6. Cross-Connection for 6PFA



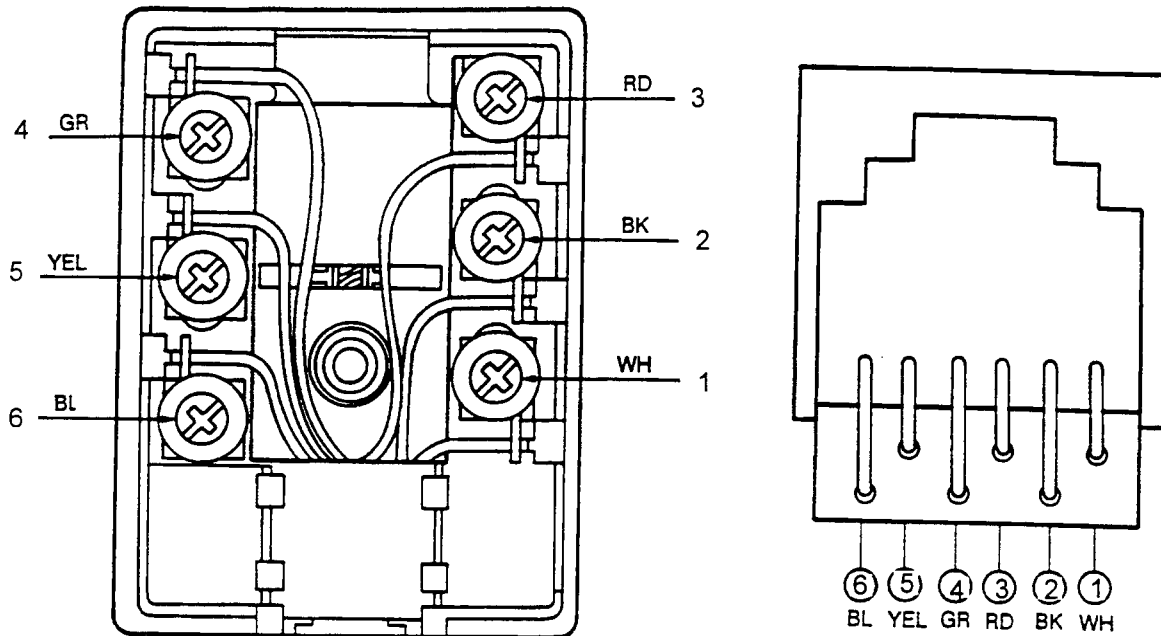
\* All legs of all circuits connected to cable outside of the building must be protected by a sneak current fuse.

Table 6-1. Power Fail Transfer Cross Connect

6PFA CARD			DESTINATION	STATION/TRUNK NUMBER
PIN	COLOR	SIGNAL		
26 / 1	Wht / Blu	TC0 / RC0	CO Trunk 0	
27 / 2	Wht / Or	TT0 / RT0	Series 3 Trunk Card Circuit	
28 / 3	Wht / Gr	TS0 / RS0	Telephone Set	
29 / 4	Wht / Br	TL0 / RL0	Series 3 Line Card Circuit	
30 / 5	Wht / Sl	TC1 / RC1	CO Trunk 1	
31 / 6	Rd / Blu	TT1 / RT1	Series 3 Trunk Card Circuit	
32 / 7	Rd / Or	TS1 / RS1	Telephone Set	
33 / 8	Rd / Gr	TL1 / RL1	Series 3 Line Card Circuit	
34 / 9	Rd / Br	TC2 / RC2	CO Trunk 2	
35 / 10	Rd / Sl	TT2 / RT2	Series 3 Trunk Card Circuit	
36 / 11	Bk / Blu	TS2 / RS2	Telephone Set	
37 / 12	Bk / Or	TL2 / RL2	Series 3 Line Card Circuit	
38 / 13	Bk / Gr	TC3 / RC3	CO Trunk 3	
39 / 14	Bk / Br	TT3 / RT3	Series 3 Trunk Card Circuit	
40 / 15	Bk / Sl	TS3 / RS3	Telephone Set	
41 / 16	Yel / Blu	TL3 / RL3	Series 3 Line Card Circuit	
42 / 17	Yel / Or	TC / RC4	CO Trunk 4	
43 / 18	Yel / Gr	TT4 / RT4	Series 3 Trunk Card Circuit	
44 / 19	Yel / Br	TS4 / RS4	Telephone Set	
45 / 20	Yel / Sl	TL4 / RL4	Series 3 Line Card Circuit	
46 / 21	Vi / Blu	TC5 / RC5	CO Trunk 5	
47 / 22	Vi / Or	TT5 / RT5	Series 3 Trunk Card Circuit	
48 / 23	Vi / Gr	TS5 / RS5	Telephone Set	
49 / 24	Vi / Br	TL5 / RL5	Series 3 Line Card Circuit	
50 / 25	Vi / Sl	MJA1 / MJA0	External Major Alarm Indicator	



Figure 6-7. Configuration of Connector Blocks



TERMINALS							
SCREW No.	SLT	PROPRIETARY	DIGITAL TELEPHONE	DSS	ATT	DIU	DSS 100
4 (GR)	R (or T)	Tip	Tip		Tip	Tip	
3 (RD)	T (or R)	Ring	Ring		Ring	Ring	
5 (YEL)		A10	A10	A10	A10	(R)	A10
2 (BK)		A0	A0	A0	A0	(T)	A0
6 (BLU)		T*		A1**	A1**	(A1)	A1
1 (WHT)		R*		A11**	A11**	(A11)	A11

\* Second T/R pair is needed for Off-Hook Call Announce feature of CT-30.

\*\* Second power pair is needed if the distance from the switch is greater than 300 feet.

Table 6-2. Loop Limit of Terminals

TERMINALS	2 WIRE	4 WIRE	6 WIRE	REMARKS
CT-10, 20		2000 feet (609M)		
CT-30		2000 feet (609M)	2000 feet (609M)	6 wire required for second speech path
DS20, DS20S, DS20SD, DS32SD DSS 30 Attendant PC Console	2000 feet (609M)			One pair for each Digital Station. One pair for each DSS.
Attendant Console (Two handsets, two headsets, or one of each provided by Fujitsu (ceramic type))		2000 feet (609M)	2000 feet (609M)	
Attendant Console (Customer provided (carbon type) handset or headset)		1640 feet (500M)	2000 feet (609M)	
Attendant Console (Customer provided two handsets, two headsets, or one of each (carbon type))		328 feet (100M)	1476 feet (450M)	
DSS 100	1000 feet (304M)	2000 feet (609M)		

**ATTENDANT CONSOLE**

Before the Attendant Console is installed, the four wire or six wire modular extension lines must be connected to the MDF and run to the planned location of the Attendant Console. The Attendant Console can be located about 328 feet (100M) (using 24AWG [0.5 mm] diameter wire) from the cabinet using one port of the 8EKC or MUFN (four wire) with two headsets. If more distance is required, two ports can be used utilizing six wires. This makes the cable distance up to 2000 feet (609M) (using 24AWG [0.5 mm] diameter wire).

Install the Attendant Console as follows: Remove the console from its carton; position the set where it will be used; and plug the modular jack on the attendant line into the set.

**DATA INTERFACE UNIT**

Before the Data Interface Unit (DIU) is installed, the two wire modular extension lines must be connected to the MDF and run to the planned location of the DIUs.

Install the data interface unit in the same way as proprietary telephones. Figure 6-8 shows the rear of a DIU. There are two RJ-11C connectors labeled "LINE" and "MODEM." The DIU is connected to the 8DTC or 16DTC card through pin number 3 (Ring) and 4 (Tip) in "LINE" RJ-11C.

**DATA INTERFACE UNIT  
(Cont'd)**

Two out of four remaining pins of "LINE" RJ-11C are connected to 8SLC or 16SLC in case the DIU is used for modem pooling. Refer to Figure 6-1 for the typical connection for modem pooling.

If the DIU is paired with a CT-10/20/30, all the remaining four wires are connected to the 8EKC card. If the DIU is paired with a CSD, two wires (R and T) are connected to the 8DTC card. Refer to Figure 6-9 for a detailed connection.

Figure 6-10 shows the typical connection for a DIU paired with a proprietary telephone. The DTE/DCE switch should be set to the DTE position. When a DIU is used for modem pooling, this switch should be set to DCE.

The TEST switch is used for a DIU local loop test.

Tone ringer volume can be set for high volume, low volume, or no volume, using the RINGER switch.

**NOTE:** Fujitsu Business Communication Systems recommends all four wires be run, even though only two wires are used for tip and ring.

**WALL MOUNTING  
PROCEDURE FOR  
PROPRIETARY TELEPHONE**

Attach the wall mounting base to the wall with screws. There are two wall mounting procedures as shown in Figures 6-11 and 6-12.

Place the telephone on the wall mounting base as shown in Figure 6-11. Set the handset hook to hold the handset as shown. The wall mounting base, handset hook, and screws, will be found in the accessory list (separately ordered).

**Figure 6-8. Rear View of the Data Interface Unit (DIU)**

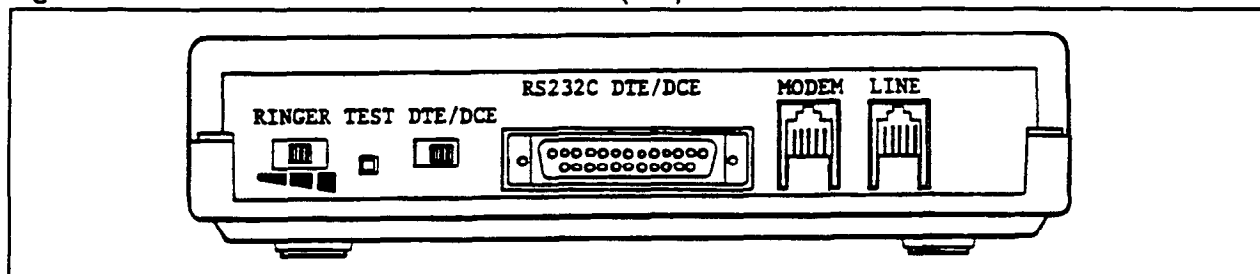


Figure 6-9. DIU with Modern Pooling/DIU with CSD Connection

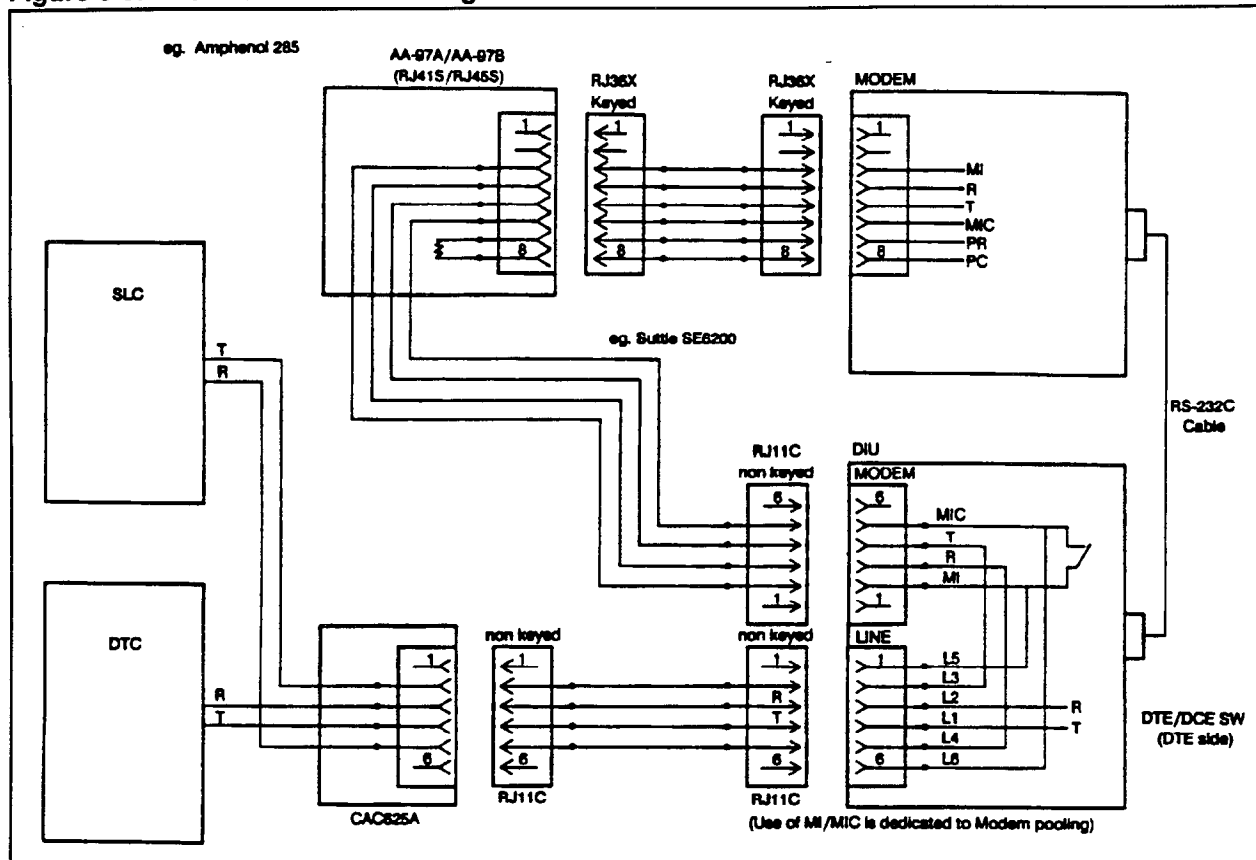


Figure 6-10. Typical Connection for Proprietary Telephone Paired with DIU

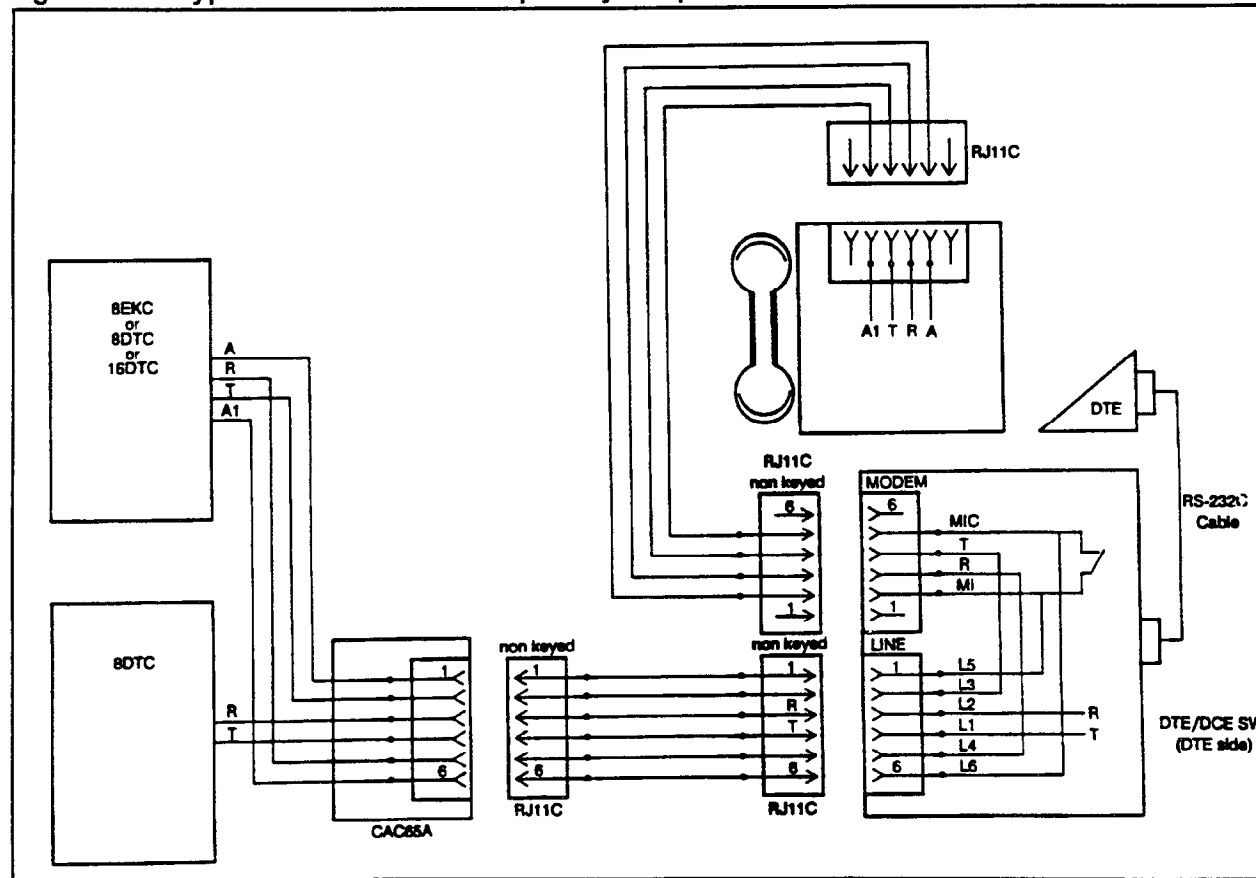
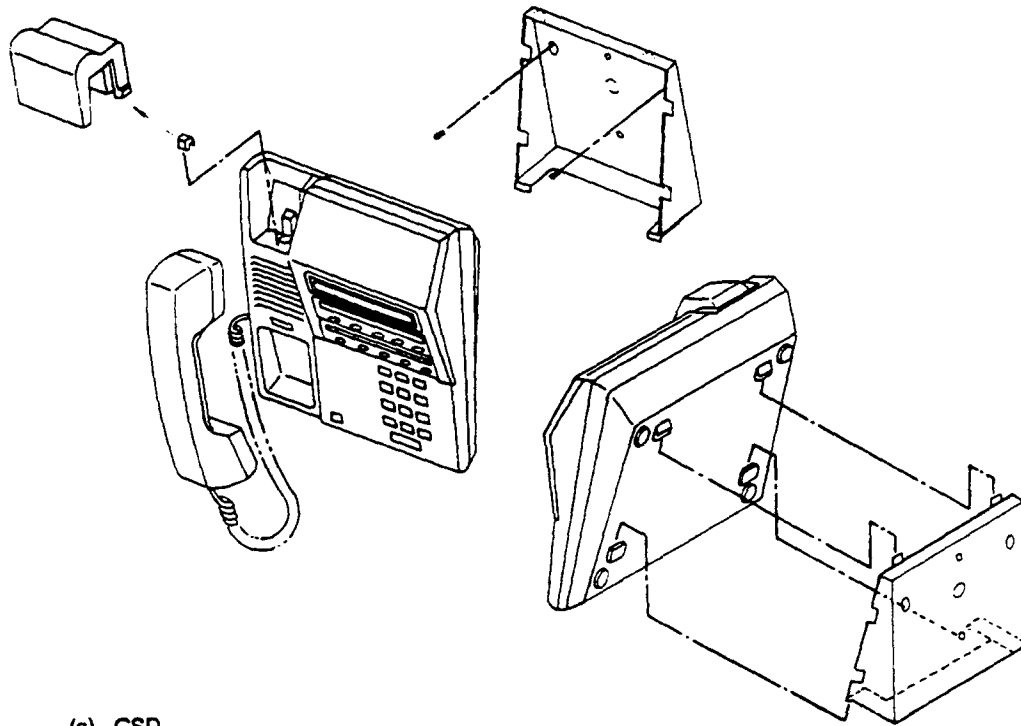
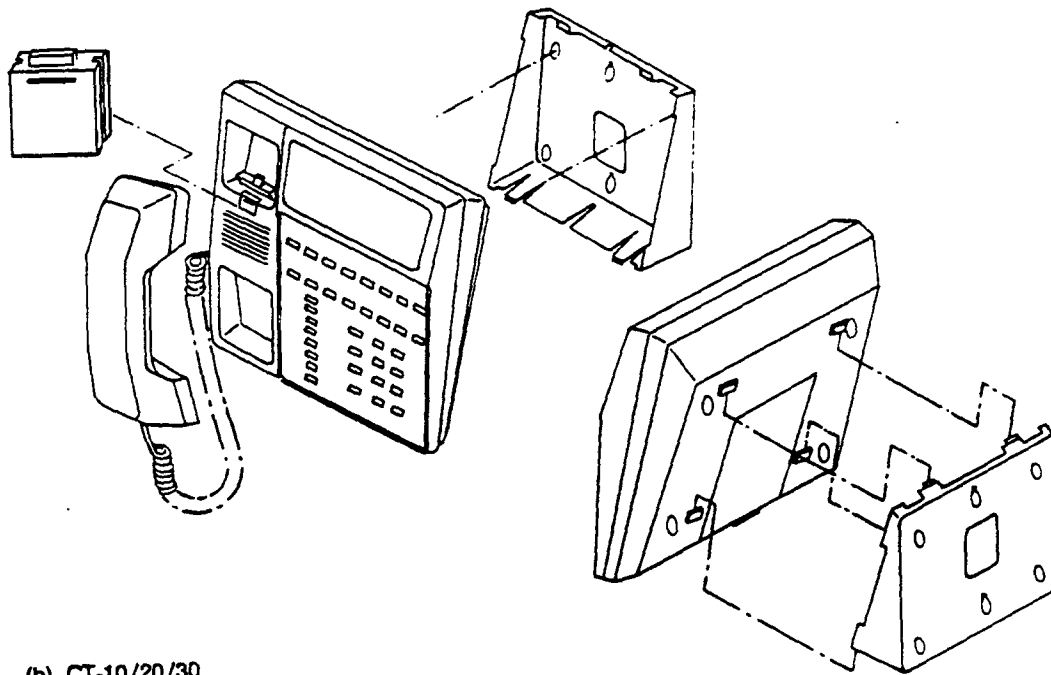


Figure 6-11. Wall Mounting of Proprietary/Digital Telephone

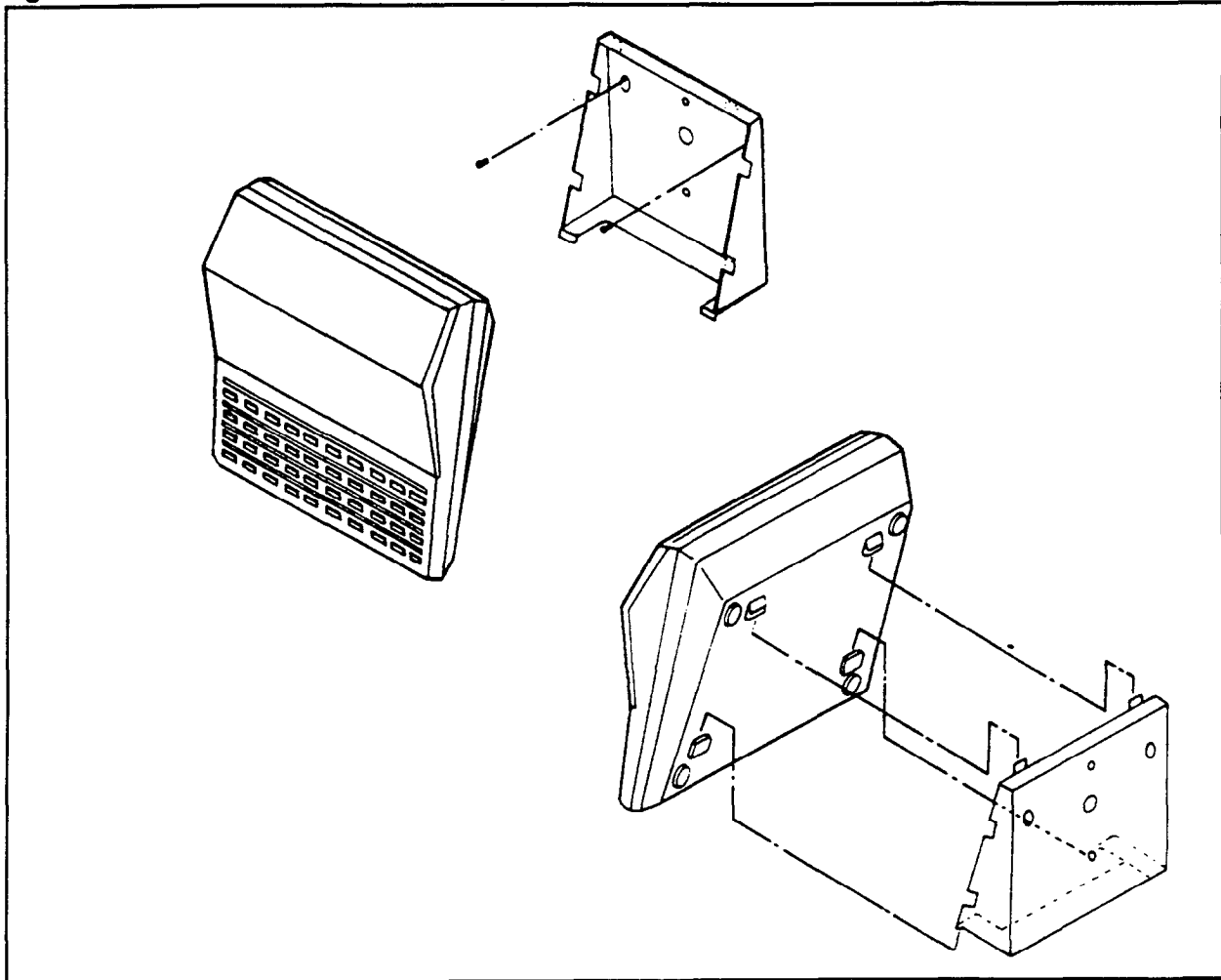


(a) CSD



(b) CT-10/20/30

Figure 6-12. BLF/DSS Console Mounting



**WALL MOUNTING  
PROCEDURE FOR  
PROPRIETARY TELEPHONE  
(Cont'd)**

When using a CT-10,-20,-30, or a CSD, the wall mounting base allows them to be placed on an angle by attaching it back to front (as shown in Figure 6-11). To connect the Attendant Console and DSS 100, an exclusive connecting plate is required. This connecting plate is an optional part. See Figure 6-13 for connecting procedure.

Wall mounting the Digital Stations is similar to the CT-10. The bracket is attached to the wall with the provided screws. The Digital Station attached to the bracket as shown in Figure 6-11 (part b). Turn over the hand set hook as shown in part b of Figure 6-11.

**DATA TERMINAL  
ADAPTER (DTA)**

The DTA provides an RS-232C interface for the CSD. Installation should be done on a conductive mat by an appropriately trained technician with a grounded wrist strap to avoid any electrostatic discharge damage to the MOS IC components in the DTA package and the CSD. The following shows how to connect a DTA to a CSD. Figure 6-15 shows the placement of the DTA in the digital telephone.

1. Take out the DTA card, an AC power adapter, two grounding wires (one is 2" [50 mm] long, the other 8.8" [220 mm] long), five washers, and three screws from the package.
2. Remove the upper case from the telephone by removing two screws on the back.
3. Remove the masking plate from the lower case.
4. Install two grounding wires to the CSD telephone control circuit card. (Refer to Figure 6-15. In this figure the 2" [50mm] grounding wire is referred to as A and the 8.8" [220mm] wire is referred to as B.) Note that each end of the grounding wire is fixed with an attached washer and screws to be used to connect to the CSD control circuit card on the lower case.
5. Install the DTA card by attaching it to the three bosses on the bottom of the case.

**NOTE: Grounding wires are attached by two of three screws and each screw has an attached washer.**

6. Insert the connector from the DTA card into the connector on the digital telephone control circuit card.
7. Install the upper case with the two screws removed in Step 2.
8. Insert one end of the AC power adapter into an AC power outlet and insert the other end into the AC power jack in the rear of the CSD.
9. Connect the modular cord to the CSD.

Figure 6-13. Attendant to DSS 100 Connecting Procedure

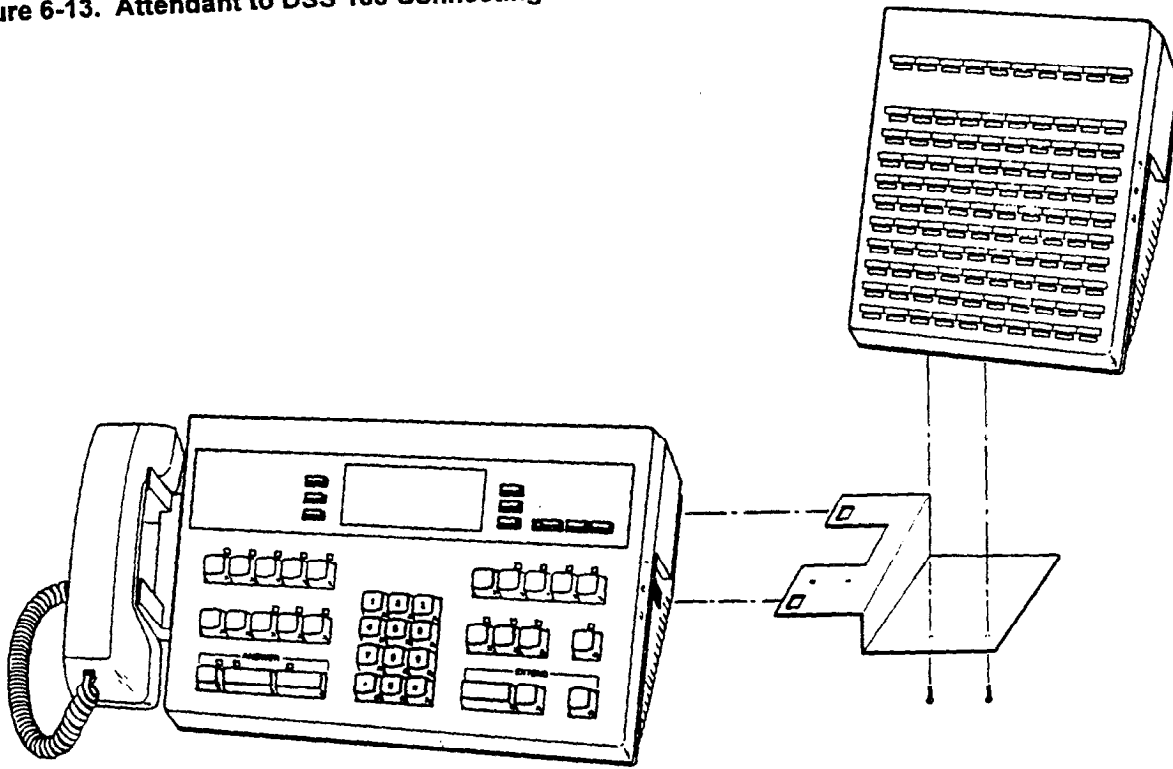
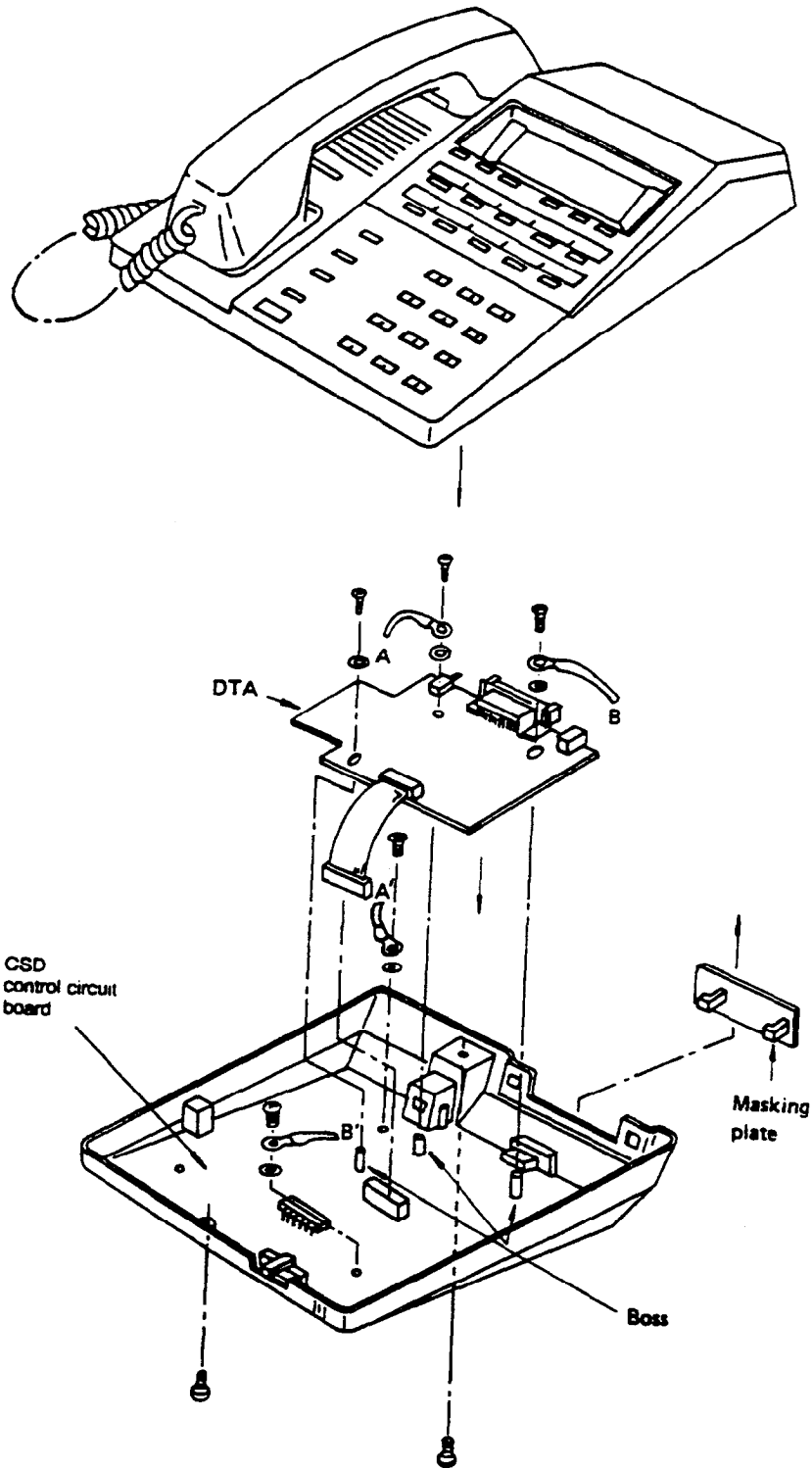




Figure 6-14. Installation of DTA in the Digital Telephone



**DIGITAL STATION**

Install the Digital Station in the same way as proprietary telephones. The Digital Station requires a single pair of wires. It must be connected to an 8DTC or 16DTC card. A Digital Station can support the analog modem port in the DS20SD and DS32SD sets. Each Digital Station is shipped with a one pair station cord.

**DSS 30**

One or two DSS 30 units can be paired with a Digital Station. Each DSS 30 unit requires an 8DTC or 16DTC circuit. The second and third pair of wires for the DSS 30 units are connected to the second and third pairs in a three pair modular line cord to the Digital Station. Refer to Figure 6-15. The required three pair station cord is shipped with each DSS 30. Replace the one pair station cord before installing the DSS 30. On the bottom of the Digital Station is a modular connector for the cable from the first DSS 30 unit. On the bottom of the DSS 30 is a connector for the cable from the second DSS 30 unit. Refer to Figure 6-16. The connector on the bottom of the DSS 30 units and the DSS connector on the Digital Station is covered by a break away cover tab. Remove the tab to allow access for the DSS 30 cable.

**Figure 6-15. Digital Station and DSS 30 Wiring**

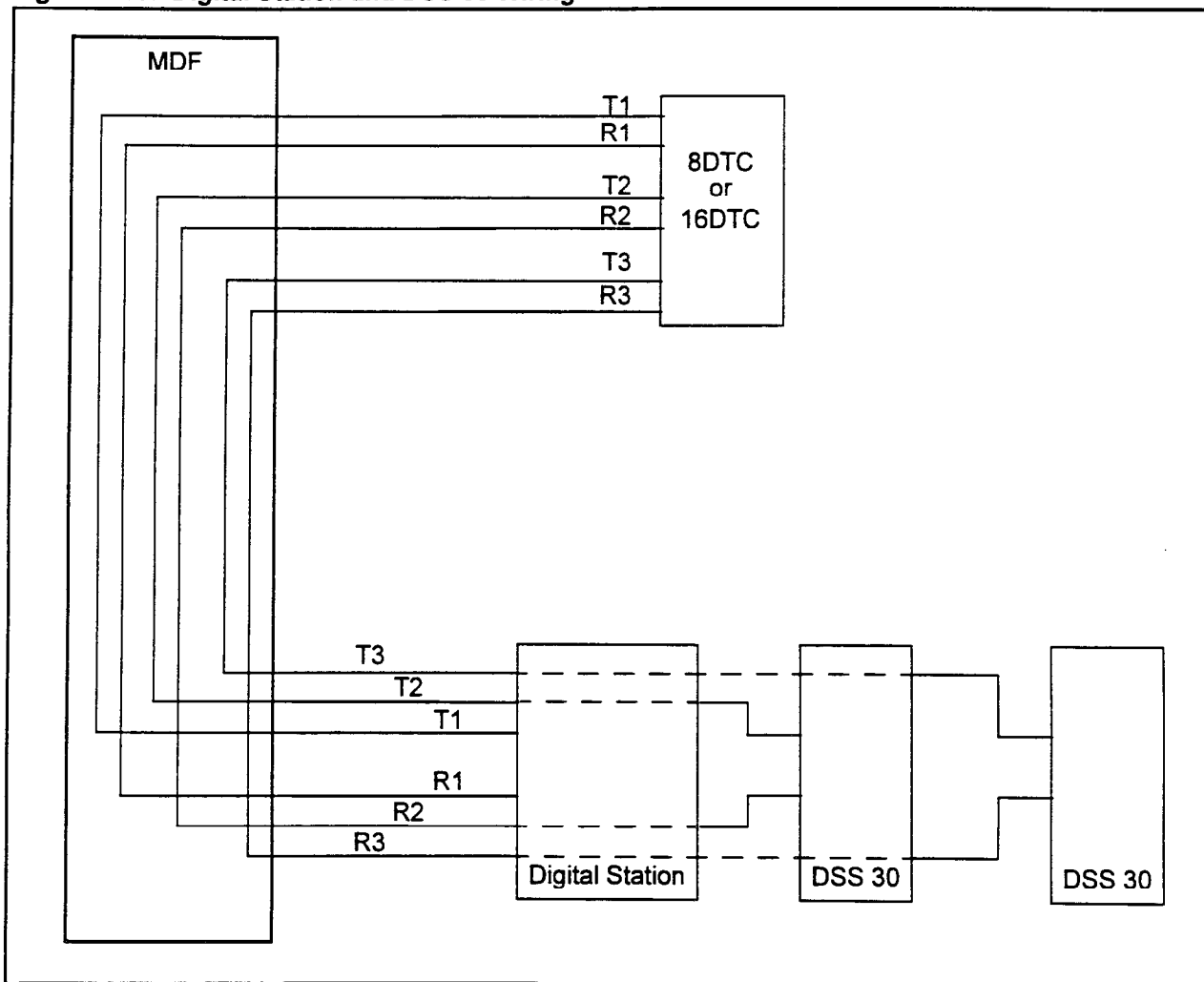
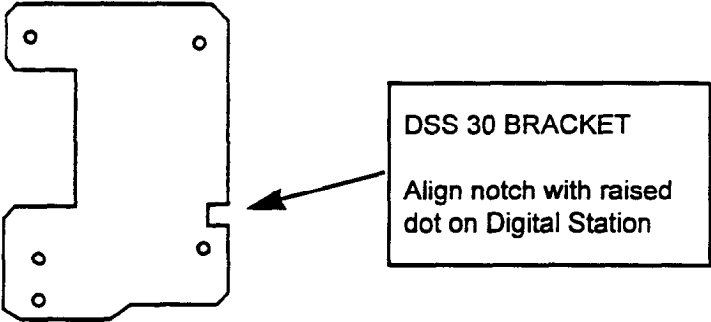
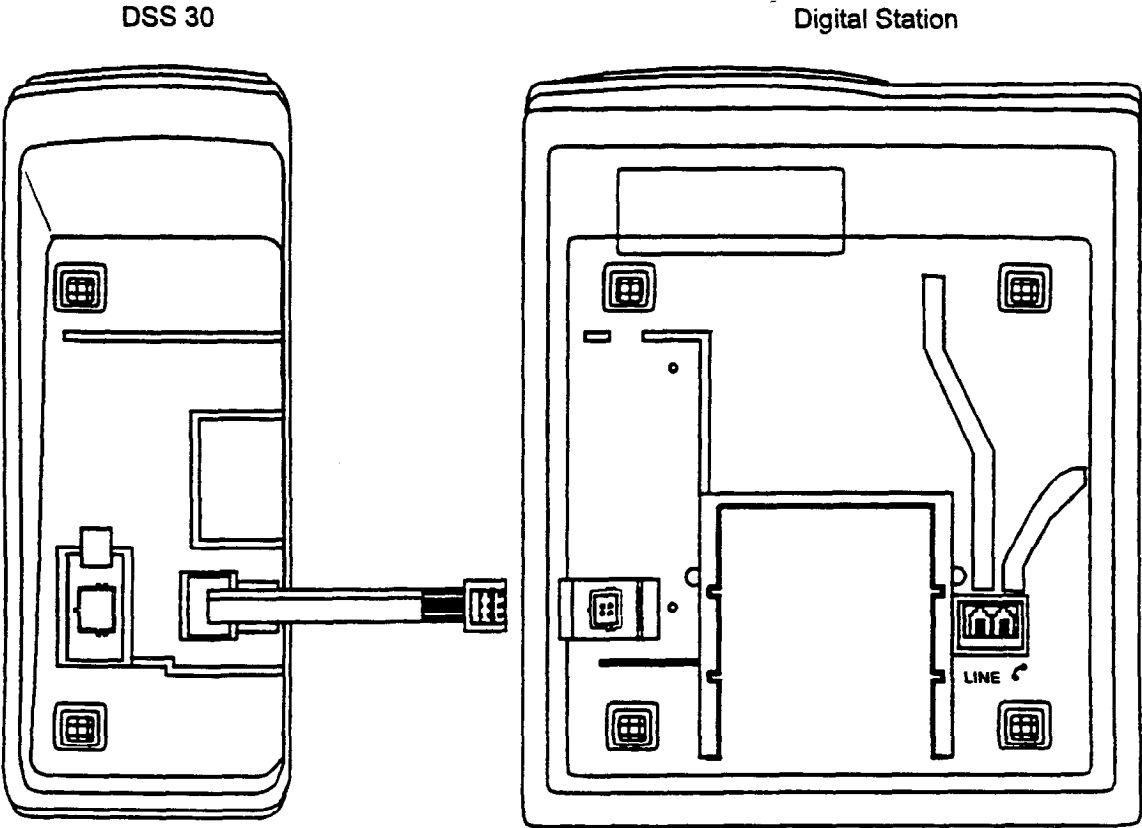


Figure 6-16. Digital Station and DSS 30 Connectors



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## ROUTING THE MDF CABLES

The Series 3 equipment cabinet is connected to the Main Distribution Frame (MDF) with MDF cables. Each MDF cable is 25 pairs made up with a 50 pin male Amphenol connector at the cabinet end. Wires and cables should be minimum 24 AWG. Run the cable out through the slots in the bottom cover of the cabinet.

A clamp-on ferrite core must be installed on each MDF cable. Refer to Figures 7-1 and 7-2. The cores must be clamped onto each MDF cable as close to the bottom of the cabinet as possible. The power cable and I/O cables do not require ferrite cores.

Refer to Figure 7-3 for the relationship of physical card slots, logical card slots, and MDF cable connectors.

Refer to Figure 7-4 for an additional diagram of card slots and highways.

The pin assignments of MDF connectors is shown in Table 7-1.

The MDF pin assignments of 16 circuit cards are shown in Table 7-2.

**NOTE:** Refer to Tables 5-10 and 5-11 for 23PT and 24T1 cross connect information.

Figure 7-1. Clamp-On Ferrite Core RFI Filter

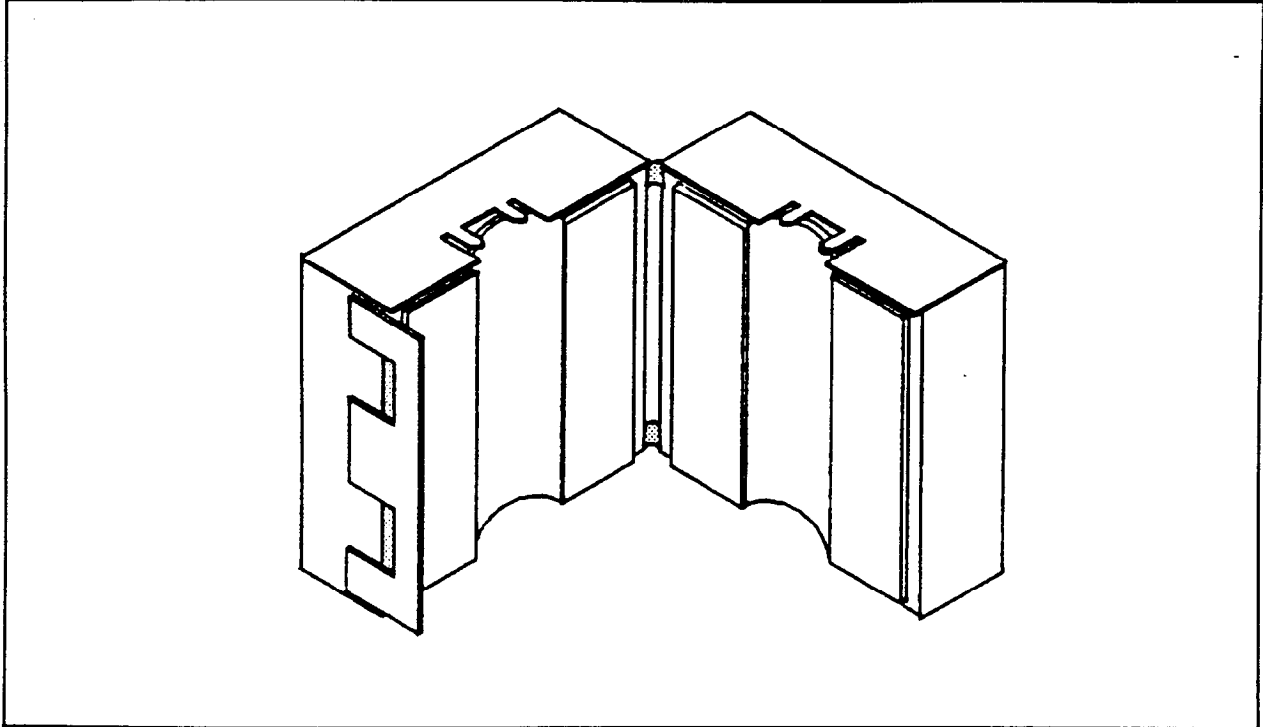


Figure 7-2. Clamp-On Ferrite Core On MDF Cable

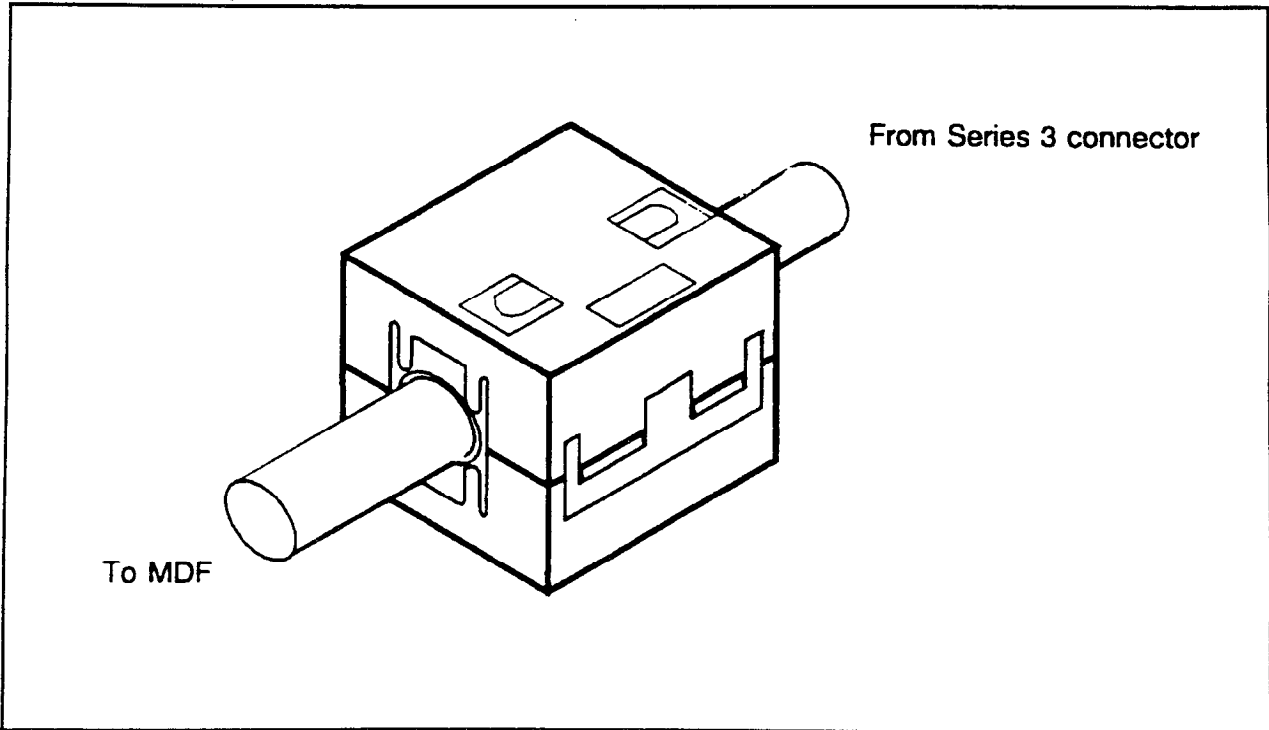


Figure 7-3. Card Slots and Cable Connectors

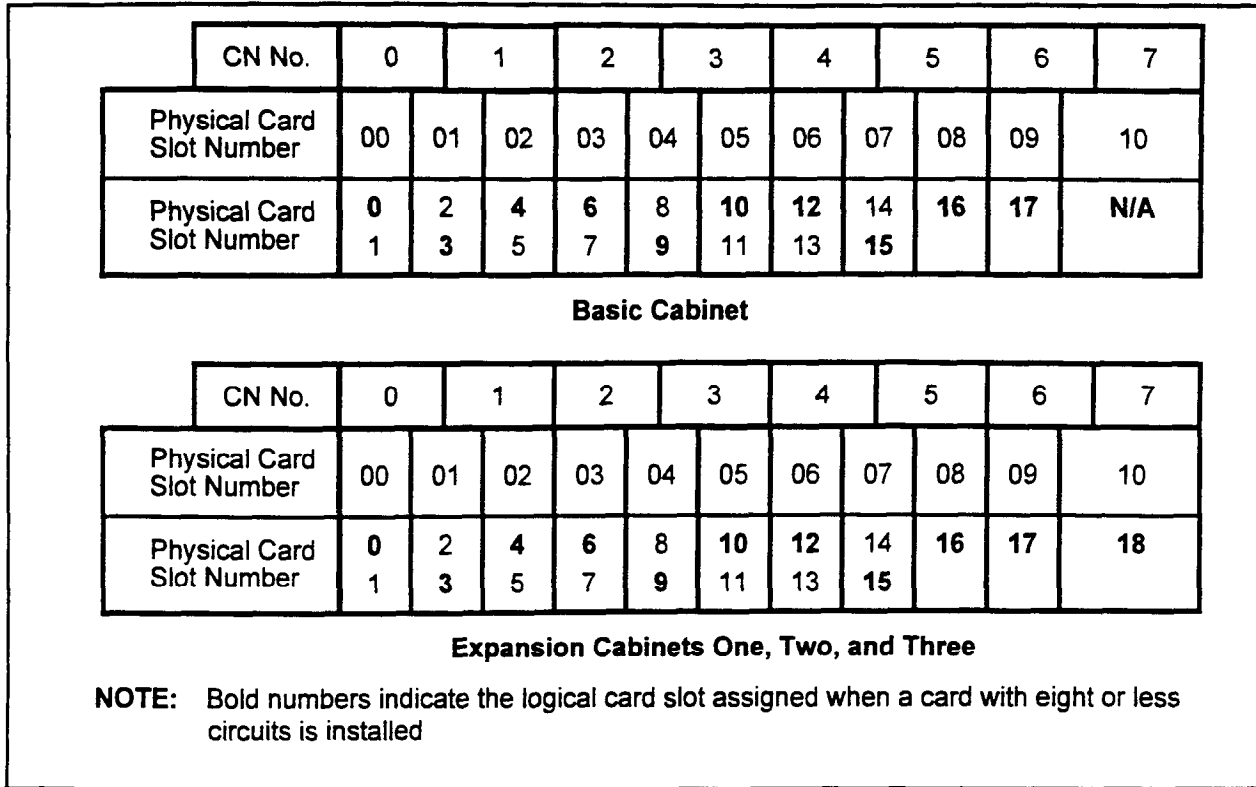


Figure 7-4. Card Slots and Hiways

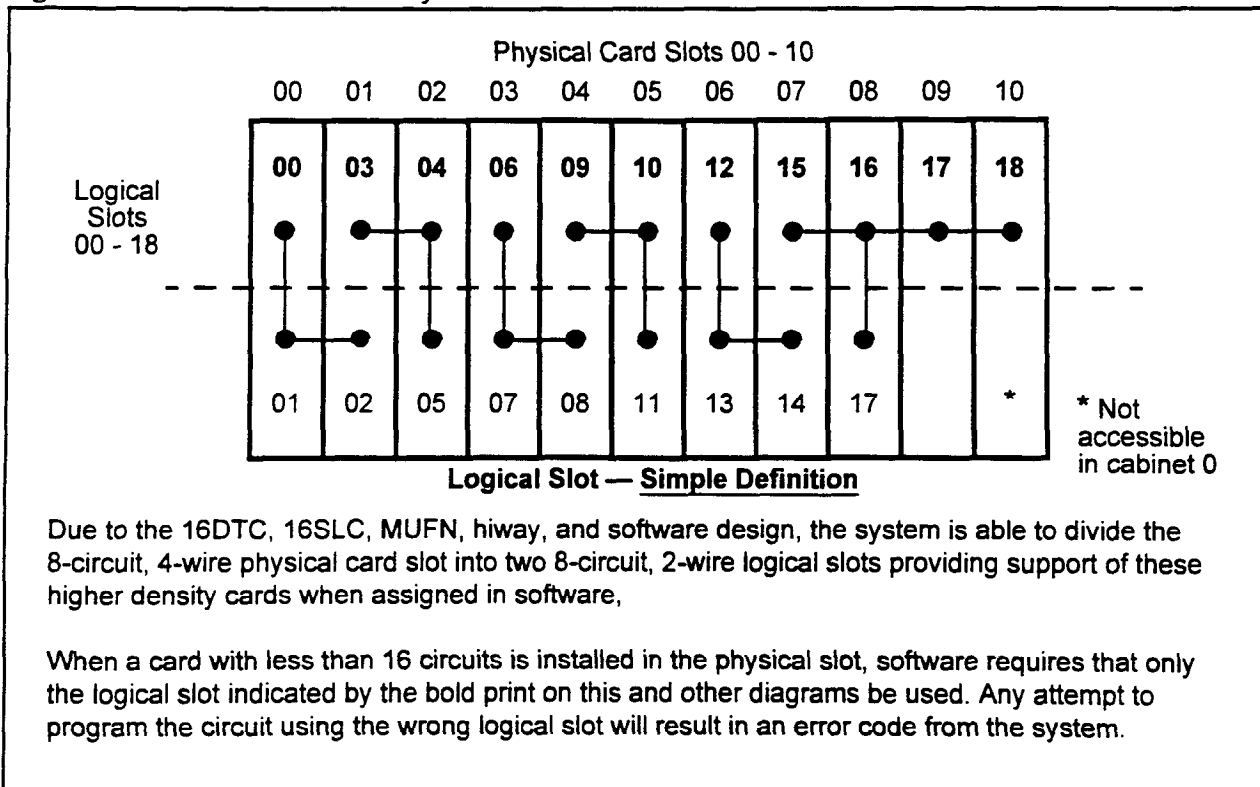


Table 7-1. MDF Cable Pin Configurations

Conn	Color	Pin	Slot		Circuit Card			
			Physical	Logical	8DTC 8SLC 8BWC	8EKC MUFN*	4SLE 4BWC	4TE4 <sup>1</sup>
CN0	Wh / Bl	26 / 01	00	00	0 (T0 / R0)	0 (T0 / R0)	T0 / R0	T00 / R00
	Wh / Or	27 / 02			0 (LG0 / LB0)	0 (LG0 / LB0)		T01 / R01
	Wh / Gr	28 / 03			1 (T1 / R1)	1 (T1 / R1)	T1 / R1	SG0 / E0
	Wh / Br	29 / 04			1 (LG1 / LB1)	1 (LG1 / LB1)		M0 / SB0
	Wh / Sl	30 / 05			2 (T2 / R2)	2 (T2 / R2)	T2 / R2	T10 / R10
	Rd / Bl	31 / 06			2 (LG2 / LB2)	2 (LG2 / LB2)		T11 / R11
	Rd / Or	32 / 07			3 (T3 / R3)	3 (T3 / R3)	T3 / R3	SG1 / E1
	Rd / Gr	33 / 08			3 (LG3 / LB3)	3 (LG3 / LB3)		M1 / SB1
	Rd / Br	34 / 09			4 (T4 / R4)	4 (T4 / R4)		T20 / R20
	Rd / Sl	35 / 10			4 (LG4 / LB4)	4 (LG4 / LB4)		T21 / R21
	Bk / Bl	36 / 11			5 (T5 / R5)	5 (T5 / R5)		SG2 / E2
	Bk / Or	37 / 12			5 (LG5 / LB5)	5 (LG5 / LB5)		M2 / SB2
	Bk / Gr	38 / 13			6 (T6 / R6)	6 (T6 / R6)		T30 / R30
	Bk / Br	39 / 14			6 (LG6 / LB6)	6 (LG6 / LB6)		T31 / R31
	Bk / Sl	40 / 15			7 (T7 / R7)	7 (T7 / R7)		SG3 / E3
	Yel / Bl	41 / 16			---	7 (LG7 / LB7)		M3 / SB3
	Yel / Or	42 / 17			0 (T0 / R0)	0 (T0 / R0)	T0 / R0	T00 / R00
	Yel / Gr	43 / 18			0 (LG0 / LB0)	0 (LG0 / LB0)		T01 / R01
	Yel / Br	44 / 19			1 (T1 / R1)	1 (T1 / R1)	T1 / R1	SG0 / E0
Yel / Sl	45 / 20	1 (LG1 / LB1)	1 (LG1 / LB1)		M0 / SB0			
Vi / Bl	46 / 21	2 (T2 / R2)	2 (T2 / R2)	T2 / R2	T10 / R10			
Vi / Or	47 / 22	2 (LG2 / LB2)	2 (LG2 / LB2)		T11 / R11			
Vi / Gr	48 / 23	3 (T3 / R3)	3 (T3 / R3)	T3 / R3	SG1 / E1			
Vi / Br	49 / 24	---	3 (LG3 / LB3)		M1 / SB1			
Vi / Sl	50 / 25	---	---		---			
CN1	Wh / Bl	26 / 01	01	03	4 (T4 / R4)	4 (T4 / R4)		T20 / R20
	Wh / Or	27 / 02			4 (LG4 / LB4)	4 (LG4 / LB4)		T21 / R21
	Wh / Gr	28 / 03			5 (T5 / R5)	5 (T5 / R5)		SG2 / E2
	Wh / Br	29 / 04			5 (LG5 / LB5)	5 (LG5 / LB5)		M2 / SB2
	Wh / Sl	30 / 05			6 (T6 / R6)	6 (T6 / R6)		T30 / R30
	Rd / Bl	31 / 06			6 (LG6 / LB6)	6 (LG6 / LB6)		T31 / R31
	Rd / Or	32 / 07			7 (T7 / R7)	7 (T7 / R7)		SG3 / E3
	Rd / Gr	33 / 08	---	7 (LG7 / LB7)		M3 / SB3		
	Rd / Br	34 / 09	02	04	0 (T0 / R0)	0 (T0 / R0)	T0 / R0	T00 / R00
	Rd / Sl	35 / 10			0 (LG0 / LB0)	0 (LG0 / LB0)		T01 / R01
	Bk / Bl	36 / 11			1 (T1 / R1)	1 (T1 / R1)	T1 / R1	SG0 / E0
	Bk / Or	37 / 12			1 (LG1 / LB1)	1 (LG1 / LB1)		M0 / SB0
	Bk / Gr	38 / 13			2 (T2 / R2)	2 (T2 / R2)	T2 / R2	T10 / R10
	Bk / Br	39 / 14			2 (LG2 / LB2)	2 (LG2 / LB2)		T11 / R11
	Bk / Sl	40 / 15			3 (T3 / R3)	3 (T3 / R3)	T3 / R3	SG1 / E1
	Yel / Bl	41 / 16			3 (LG3 / LB3)	3 (LG3 / LB3)		M1 / SB1
	Yel / Or	42 / 17			4 (T4 / R4)	4 (T4 / R4)		T20 / R20
	Yel / Gr	43 / 18			4 (LG4 / LB4)	4 (LG4 / LB4)		T21 / R21
	Yel / Br	44 / 19			5 (T5 / R5)	5 (T5 / R5)		SG2 / E2
	Yel / Sl	45 / 20			5 (LG5 / LB5)	5 (LG5 / LB5)		M2 / SB2
	Vi / Bl	46 / 21			6 (T6 / R6)	6 (T6 / R6)		T30 / R30
	Vi / Or	47 / 22			6 (LG6 / LB6)	6 (LG6 / LB6)		T31 / R31
	Vi / Gr	48 / 23			7 (T7 / R7)	7 (T7 / R7)		SG3 / E3
	Vi / Br	49 / 24			---	7 (LG7 / LB7)		M3 / SB3
	Vi / Sl	50 / 25			Note 2	Note 2	Note 2	Note 2

**NOTE:** 1. 2 Wire - Transmit and Receive on Tx0 / Rx0  
4 Wire - Transmit on Tx1 / Rx1, and Receive on Tx0 / Rx0  
2. Connector CN1, the Vi / Sl pair is always the External Minor Alarm output.

\* Circuits 0, 2, 4, or 6 are available when using the MUFN card.



Table 7-1. MDF Cable Pin Configurations (Cont'd)

Circuit Card					Slot		Pin	Color	Conn
2APIA	2TE4	2TTE	2TTL	6DID	Logical	Physical			
SD0 / RD0 RTS0/CTS0 DTR0/DSR0 ST10/ST20 CD0 /RT0 SG0 / FG0 --- --- SD1 / RD1 RTS1/CTS1 DTR1/DSR1 ST11/ST21 CD1 / RT1 SG01 / FG1 --- ---	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2 T01 / R01 T11 / R11	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2	T0 / R0 T1 / R1	T0 / R0 T1 / R1 T2 / R2 T3 / R3 T4 / R4 T5 / R5	00	00	26/01 27/02 28/03 29/04 30/05 31/06 32/07 33/08 34/09 35/10 36/11 37/12 38/13 39/14 40/15 41/16	Wh / Bl Wh / Or Wh / Gr Wh / Br Wh / Sl Rd / Bl Rd / Or Rd / Gr Rd / Br Rd / Sl Bk / Bl Bk / Or Bk / Gr Bk / Br Bk / Sl Yel / Bl	CN0
SD0 / RD0 RTS0/CTS0 DTR0/DSR0 ST10/ST20 CD0 /RT0 SG0 / FG0 --- --- ---	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2 ---	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2 ---	T0 / R0 T1 / R1	T0 / R0 T1 / R1 T2 / R2 T3 / R3	03	01	42/17 43/18 44/19 45/20 46/21 47/22 48/23 49/24 50/25	Yel / Or Yel / Gr Yel / Br Yel / Sl Vi / Bl Vi / Or Vi / Gr Vi / Br Vi / Sl	
SD1 / RD1 RTS1/CTS1 DTR1/DSR1 ST11/ST21 CD1 / RT1 SG01 / FG1 --- ---	T01 / R01 T11 / R11			T4 / R4 T5 / R5	03	01	26/01 27/02 28/03 29/04 30/05 31/06 32/07 33/08	Wh / Bl Wh / Or Wh / Gr Wh / Br Wh / Sl Rd / Bl Rd / Or Rd / Gr	
SD0 / RD0 RTS0/CTS0 DTR0/DSR0 ST10/ST20 CD0 /RT0 SG0 / FG0 --- --- SD1 / RD1 RTS1/CTS1 DTR1/DSR1 ST11/ST21 CD1 / RT1 SG01 / FG1 --- --- Note 4	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2 T01 / R01 T11 / R11	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2	T0 / R0 T1 / R1	T0 / R0 T1 / R1 T2 / R2 T3 / R3 T4 / R4 T5 / R5	04	02	34/09 35/10 36/11 37/12 38/13 39/14 40/15 41/16 42/17 43/18 44/19 45/20 46/21 47/22 48/23 49/24 50/25	Rd / Br Rd / Sl Bk / Bl Bk / Or Bk / Gr Bk / Br Bk / Sl Yel / Bl Yel / Or Yel / Gr Yel / Br Yel / Sl Vi / Bl Vi / Or Vi / Gr Vi / Br Vi / Sl	CN1

- NOTES:**
1. Type 1 signaling
  2. Type 2 signaling
  3. 2 Wire - Transmit and Receive on Tx / Rx (T0 / R0)  
4 Wire - Transmit on Tx1 / Rx1 (T01 / R01), and Receive on Tx / Rx (T0 / R0)
  4. Connector CN1, the Vi / Sl pair is always the External Minor Alarm output.

Table 7-1. MDF Cable Pin Configurations (Cont'd)

Conn	Color	Pin	Slot		Circuit Card						
			Physical	Logical	8DTC 8SLC 8BWC	8EKC MUFN*	4SLE 4BWC	4TE4 <sup>1</sup>			
CN2	Wh / Bl	26 / 01	03	06	0 (T0 / R0)	0 (T0 / R0)	T0 / R0	T00 / R00			
	Wh / Or	27 / 02			0 (LG0 / LB0)	0 (LG0 / LB0)	T01 / R01				
	Wh / Gr	28 / 03			1 (T1 / R1)	1 (T1 / R1)	T1 / R1	SG0 / E0			
	Wh / Br	29 / 04			1 (LG1 / LB1)	1 (LG1 / LB1)	M0 / SB0				
	Wh / Sl	30 / 05			2 (T2 / R2)	2 (T2 / R2)	T2 / R2	T10 / R10			
	Rd / Bl	31 / 06			2 (LG2 / LB2)	2 (LG2 / LB2)	T11 / R11				
	Rd / Or	32 / 07			3 (T3 / R3)	3 (T3 / R3)	T3 / R3	SG1 / E1			
	Rd / Gr	33 / 08			3 (LG3 / LB3)	3 (LG3 / LB3)	M1 / SB1				
	Rd / Br	34 / 09			4 (T4 / R4)	4 (T4 / R4)	T20 / R20				
	Rd / Sl	35 / 10			4 (LG4 / LB4)	4 (LG4 / LB4)	T21 / R21				
	Bk / Bl	36 / 11			5 (T5 / R5)	5 (T5 / R5)	SG2 / E2				
	Bk / Or	37 / 12			5 (LG5 / LB5)	5 (LG5 / LB5)	M2 / SB2				
	Bk / Gr	38 / 13			6 (T6 / R6)	6 (T6 / R6)	T30 / R30				
	Bk / Br	39 / 14			6 (LG6 / LB6)	6 (LG6 / LB6)	T31 / R31				
	Bk / Sl	40 / 15			7 (T7 / R7)	7 (T7 / R7)	SG3 / E3				
	Yel / Bl	41 / 16			—	7 (LG7 / LB7)	M3 / SB3				
	CN2	Yel / Or			42 / 17	04	09	0 (T0 / R0)	0 (T0 / R0)	T0 / R0	T00 / R00
		Yel / Gr			43 / 18			0 (LG0 / LB0)	0 (LG0 / LB0)	T01 / R01	
Yel / Br		44 / 19	1 (T1 / R1)	1 (T1 / R1)	T1 / R1			SG0 / E0			
Yel / Sl		45 / 20	1 (LG1 / LB1)	1 (LG1 / LB1)	M0 / SB0						
Vi / Bl		46 / 21	2 (T2 / R2)	2 (T2 / R2)	T2 / R2			T10 / R10			
Vi / Or		47 / 22	2 (LG2 / LB2)	2 (LG2 / LB2)	T11 / R11						
Vi / Gr		48 / 23	3 (T3 / R3)	3 (T3 / R3)	T3 / R3			SG1 / E1			
Vi / Br		49 / 24	—	3 (LG3 / LB3)	—			M1 / SB1			
Vi / Sl	50 / 25	—	—	—	—						
CN3	Wh / Bl	26 / 01	04	09	4 (T4 / R4)	4 (T4 / R4)		T20 / R20			
	Wh / Or	27 / 02			4 (LG4 / LB4)	4 (LG4 / LB4)	T21 / R21				
	Wh / Gr	28 / 03			5 (T5 / R5)	5 (T5 / R5)	SG2 / E2				
	Wh / Br	29 / 04			5 (LG5 / LB5)	5 (LG5 / LB5)	M2 / SB2				
	Wh / Sl	30 / 05			6 (T6 / R6)	6 (T6 / R6)	T30 / R30				
	Rd / Bl	31 / 06			6 (LG6 / LB6)	6 (LG6 / LB6)	T31 / R31				
	Rd / Or	32 / 07			7 (T7 / R7)	7 (T7 / R7)	SG3 / E3				
	Rd / Gr	33 / 08	—	7 (LG7 / LB7)	M3 / SB3						
	Rd / Br	34 / 09	05	10	0 (T0 / R0)	0 (T0 / R0)	T0 / R0	T00 / R00			
	Rd / Sl	35 / 10			0 (LG0 / LB0)	0 (LG0 / LB0)	T01 / R01				
	Bk / Bl	36 / 11			1 (T1 / R1)	1 (T1 / R1)	T1 / R1	SG0 / E0			
	Bk / Or	37 / 12			1 (LG1 / LB1)	1 (LG1 / LB1)	M0 / SB0				
	Bk / Gr	38 / 13			2 (T2 / R2)	2 (T2 / R2)	T2 / R2	T10 / R10			
	Bk / Br	39 / 14			2 (LG2 / LB2)	2 (LG2 / LB2)	T11 / R11				
	Bk / Sl	40 / 15			3 (T3 / R3)	3 (T3 / R3)	T3 / R3	SG1 / E1			
	Yel / Bl	41 / 16			3 (LG3 / LB3)	3 (LG3 / LB3)	M1 / SB1				
	Yel / Or	42 / 17			4 (T4 / R4)	4 (T4 / R4)	T20 / R20				
	Yel / Gr	43 / 18			4 (LG4 / LB4)	4 (LG4 / LB4)	T21 / R21				
	Yel / Br	44 / 19			5 (T5 / R5)	5 (T5 / R5)	SG2 / E2				
	Yel / Sl	45 / 20			5 (LG5 / LB5)	5 (LG5 / LB5)	M2 / SB2				
Vi / Bl	46 / 21	6 (T6 / R6)			6 (T6 / R6)	T30 / R30					
Vi / Or	47 / 22	6 (LG6 / LB6)	6 (LG6 / LB6)	T31 / R31							
Vi / Gr	48 / 23	7 (T7 / R7)	7 (T7 / R7)	SG3 / E3							
Vi / Br	49 / 24	—	7 (LG7 / LB7)	M3 / SB3							
Vi / Sl	50 / 25	—	—	—							

NOTE: 1. 2 Wire - Transmit and Receive on Tx0 / Rx0  
 4 Wire - Transmit on Tx1 / Rx1, and Receive on Tx0 / Rx0

\* Circuits 0, 2, 4, or 6 are available when using the MUFN card.

Table 7-1. MDF Cable Pin Configurations (Cont'd)

Circuit Card					Slot		Pin	Color	Conn
2APIA	2TE4	2TTE	2TTL	6DID	Logical	Physical			
SD0 / RD0 RTS0/CTS0 DTR0/DSR0 ST10/ST20 CD0 /RT0 SG0 /FG0 — — SD1 / RD1 RTS1/CTS1 DTR1/DSR1 ST11/ST21 CD1 / RT1 SG01 / FG1 — —	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2 T01 / R01 T11 / R11	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2	T0 / R0 T1 / R1 T2 / R2 T3 / R3 T4 / R4 T5 / R5	T0 / R0 T1 / R1 T2 / R2 T3 / R3 T4 / R4 T5 / R5	08	03	26/01 27/02 28/03 29/04 30/05 31/06 32/07 33/08 34/09 35/10 36/11 37/12 38/13 39/14 40/15 41/16	Wh / Bl Wh / Or Wh / Gr Wh / Br Wh / Sl Rd / Bl Rd / Or Rd / Gr Rd / Br Rd / Sl Bk / Bl Bk / Or Bk / Gr Bk / Br Bk / Sl Yel / Bl	CN2
SD0 / RD0 RTS0/CTS0 DTR0/DSR0 ST10/ST20 CD0 /RT0 SG0 /FG0 — — —	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2 — —	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2	T0 / R0 T1 / R1 T2 / R2 T3 / R3	T0 / R0 T1 / R1 T2 / R2 T3 / R3	09	04	42/17 43/18 44/19 45/20 46/21 47/22 48/23 49/24 50/25	Yel / Or Yel / Gr Yel / Br Yel / Sl Vi / Bl Vi / Or Vi / Gr Vi / Br Vi / Sl	
SD1 / RD1 RTS1/CTS1 DTR1/DSR1 ST11/ST21 CD1 / RT1 SG01 / FG1 — —	T01 / R01 T11 / R11		T4 / R4 T5 / R5	T4 / R4 T5 / R5	09	04	26/01 27/02 28/03 29/04 30/05 31/06 32/07 33/08	Wh / Bl Wh / Or Wh / Gr Wh / Br Wh / Sl Rd / Bl Rd / Or Rd / Gr	
SD0 / RD0 RTS0/CTS0 DTR0/DSR0 ST10/ST20 CD0 /RT0 SG0 /FG0 — — SD1 / RD1 RTS1/CTS1 DTR1/DSR1 ST11/ST21 CD1 / RT1 SG01 / FG1 — — —	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2 T01 / R01 T11 / R11	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2	T0 / R0 T1 / R1 T2 / R2 T3 / R3 T4 / R4 T5 / R5	T0 / R0 T1 / R1 T2 / R2 T3 / R3 T4 / R4 T5 / R5	10	05	34/09 35/10 36/11 37/12 38/13 39/14 40/15 41/16 42/17 43/18 44/19 45/20 46/21 4 / 22 48/23 49/24 50/25	Rd / Br Rd / Sl Bk / Bl Bk / Or Bk / Gr Bk / Br Bk / Sl Yel / Bl Yel / Or Yel / Gr Yel / Br Yel / Sl Vi / Bl Vi / Or Vi / Gr Vi / Br Vi / Sl	CN3

- NOTES:**
1. Type 1 signaling
  2. Type 2 signaling
  3. 2 Wire - Transmit and Receive on Tx / Rx (T0 / R0)  
4 Wire - Transmit on Tx1 / Rx1 (T01 / R01), and Receive on Tx / Rx (T0 / R0)

Table 7-1. MDF Cable Pin Configurations (Cont'd)

Conn	Color	Pin	Slot		Circuit Card					
			Physical	Logical	8DTC 8SLC 8BWC	8EKC MUFN*	4SLE 4BWC	4TE4 <sup>1</sup>		
CN4	Wh / Bl	26 / 01	06	12	0 (T0 / R0)	0 (T0 / R0)	T0 / R0	T00 / R00		
	Wh / Or	27 / 02			0 (LG0 / LB0)	0 (LG0 / LB0)		T01 / R01		
	Wh / Gr	28 / 03			1 (T1 / R1)	1 (T1 / R1)	T1 / R1	SG0 / E0		
	Wh / Br	29 / 04			1 (LG1 / LB1)	1 (LG1 / LB1)		M0 / SB0		
	Wh / Sl	30 / 05			2 (T2 / R2)	2 (T2 / R2)	T2 / R2	T10 / R10		
	Rd / Bl	31 / 06			2 (LG2 / LB2)	2 (LG2 / LB2)		T11 / R11		
	Rd / Or	32 / 07			3 (T3 / R3)	3 (T3 / R3)	T3 / R3	SG1 / E1		
	Rd / Gr	33 / 08			3 (LG3 / LB3)	3 (LG3 / LB3)		M1 / SB1		
	Rd / Br	34 / 09			4 (T4 / R4)	4 (T4 / R4)		T20 / R20		
	Rd / Sl	35 / 10			4 (LG4 / LB4)	4 (LG4 / LB4)		T21 / R21		
	Bk / Bl	36 / 11			5 (T5 / R5)	5 (T5 / R5)		SG2 / E2		
	Bk / Or	37 / 12			5 (LG5 / LB5)	5 (LG5 / LB5)		M2 / SB2		
	Bk / Gr	38 / 13			6 (T6 / R6)	6 (T6 / R6)		T30 / R30		
	Bk / Br	39 / 14			6 (LG6 / LB6)	6 (LG6 / LB6)		T31 / R31		
	Bk / Sl	40 / 15			7 (T7 / R7)	7 (T7 / R7)		SG3 / E3		
	Yel / Bl	41 / 16			—	7 (LG7 / LB7)		M3 / SB3		
	Yel / Or	42 / 17			07	15	0 (T0 / R0)	0 (T0 / R0)	T0 / R0	T00 / R00
	Yel / Gr	43 / 18					0 (LG0 / LB0)	0 (LG0 / LB0)		T01 / R01
Yel / Br	44 / 19	1 (T1 / R1)	1 (T1 / R1)	T1 / R1			SG0 / E0			
Yel / Sl	45 / 20	1 (LG1 / LB1)	1 (LG1 / LB1)				M0 / SB0			
Vi / Bl	46 / 21	2 (T2 / R2)	2 (T2 / R2)	T2 / R2			T10 / R10			
Vi / Or	47 / 22	2 (LG2 / LB2)	2 (LG2 / LB2)				T11 / R11			
Vi / Gr	48 / 23	3 (T3 / R3)	3 (T3 / R3)	T3 / R3			SG1 / E1			
Vi / Br	49 / 24	—	3 (LG3 / LB3)				M1 / SB1			
Vi / Sl	50 / 25	—	—		—					
CN5	Wh / Bl	26 / 01	07	15	4 (T4 / R4)	4 (T4 / R4)		T20 / R20		
	Wh / Or	27 / 02			4 (LG4 / LB4)	4 (LG4 / LB4)		T21 / R21		
	Wh / Gr	28 / 03			5 (T5 / R5)	5 (T5 / R5)		SG2 / E2		
	Wh / Br	29 / 04			5 (LG5 / LB5)	5 (LG5 / LB5)		M2 / SB2		
	Wh / Sl	30 / 05			6 (T6 / R6)	6 (T6 / R6)		T30 / R30		
	Rd / Bl	31 / 06			6 (LG6 / LB6)	6 (LG6 / LB6)		T31 / R31		
	Rd / Or	32 / 07			7 (T7 / R7)	7 (T7 / R7)		SG3 / E3		
	Rd / Gr	33 / 08			—	7 (LG7 / LB7)		M3 / SB3		
	Rd / Br	34 / 09	08	16	0 (T0 / R0)	0 (T0 / R0)	T0 / R0	T00 / R00		
	Rd / Sl	35 / 10			0 (LG0 / LB0)	0 (LG0 / LB0)		T01 / R01		
	Bk / Bl	36 / 11			1 (T1 / R1)	1 (T1 / R1)	T1 / R1	SG0 / E0		
	Bk / Or	37 / 12			1 (LG1 / LB1)	1 (LG1 / LB1)		M0 / SB0		
	Bk / Gr	38 / 13			2 (T2 / R2)	2 (T2 / R2)	T2 / R2	T10 / R10		
	Bk / Br	39 / 14			2 (LG2 / LB2)	2 (LG2 / LB2)		T11 / R11		
	Bk / Sl	40 / 15			3 (T3 / R3)	3 (T3 / R3)	T3 / R3	SG1 / E1		
	Yel / Bl	41 / 16			3 (LG3 / LB3)	3 (LG3 / LB3)		M1 / SB1		
	Yel / Or	42 / 17			4 (T4 / R4)	4 (T4 / R4)		T20 / R20		
	Yel / Gr	43 / 18			4 (LG4 / LB4)	4 (LG4 / LB4)		T21 / R21		
	Yel / Br	44 / 19			5 (T5 / R5)	5 (T5 / R5)		SG2 / E2		
	Yel / Sl	45 / 20			5 (LG5 / LB5)	5 (LG5 / LB5)		M2 / SB2		
Vi / Bl	46 / 21	6 (T6 / R6)	6 (T6 / R6)		T30 / R30					
Vi / Or	47 / 22	6 (LG6 / LB6)	6 (LG6 / LB6)		T31 / R31					
Vi / Gr	48 / 23	7 (T7 / R7)	7 (T7 / R7)		SG3 / E3					
Vi / Br	49 / 24	—	7 (LG7 / LB7)		M3 / SB3					
Vi / Sl	50 / 25	—	—		—					

NOTE: 1. 2 Wire - Transmit and Receive on Tx0 / Rx0  
 4 Wire - Transmit on Tx1 / Rx1, and Receive on Tx0 / Rx0

\* Circuits 0, 2, 4, or 6 are available when using the MUFN card.

Table 7-1. MDF Cable Pin Configurations (Cont'd)

Circuit Card					Slot		Pin	Color	Conn
2APIA	2TE4	2TTE	2TTL	6DID	Logical	Physical			
SD0 / RD0 RTS0/CTS0 DTR0/DSR0 ST10/ST20 CD0 /RT0 SG0 /FG0 — — SD1 / RD1 RTS1/CTS1 DTR1/DSR1 ST11/ST21 CD1 / RT1 SG01 / FG1 — —	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2 T01 / R01 T11 / R11	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2	T0 / R0 T1 / R1 T2 / R2 T3 / R3 T4 / R4 T5 / R5	T0 / R0 T1 / R1 T2 / R2 T3 / R3 T4 / R4 T5 / R5	12	06	26/01 27/02 28/03 29/04 30/05 31/06 32/07 33/08 34/09 35/10 36/11 37/12 38/13 39/14 40/15 41/16	Wh / Bl Wh / Or Wh / Gr Wh / Br Wh / Sl Rd / Bl Rd / Or Rd / Gr Rd / Br Rd / Sl Bk / Bl Bk / Or Bk / Gr Bk / Br Bk / Sl Yel / Bl	CN4
SD0 / RD0 RTS0/CTS0 DTR0/DSR0 ST10/ST20 CD0 /RT0 SG0 /FG0 — — —	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2	T0 / R0 T1 / R1 T2 / R2 T3 / R3	T0 / R0 T1 / R1 T2 / R2 T3 / R3	15	07	42/17 43/18 44/19 45/20 46/21 47/22 48/23 49/24 50/25	Yel / Or Yel / Gr Yel / Br Yel / Sl Vi / Bl Vi / Or Vi / Gr Vi / Br Vi / Sl	
SD1 / RD1 RTS1/CTS1 DTR1/DSR1 ST11/ST21 CD1 / RT1 SG01 / FG1 — —	T01 / R01 T11 / R11		T4 / R4 T5 / R5	T4 / R4 T5 / R5	15	07	26/01 27/02 28/03 29/04 30/05 31/06 32/07 33/08	Wh / Bl Wh / Or Wh / Gr Wh / Br Wh / Sl Rd / Bl Rd / Or Rd / Gr	
SD0 / RD0 RTS0/CTS0 DTR0/DSR0 ST10/ST20 CD0 /RT0 SG0 /FG0 — — SD1 / RD1 RTS1/CTS1 DTR1/DSR1 ST11/ST21 CD1 / RT1 SG01 / FG1 — — —	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2 T01 / R01 T11 / R11	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2	T0 / R0 T1 / R1 T2 / R2 T3 / R3 T4 / R4 T5 / R5	T0 / R0 T1 / R1 T2 / R2 T3 / R3 T4 / R4 T5 / R5	16	08	34/09 35/10 36/11 37/12 38/13 39/14 40/15 41/16 42/17 43/18 44/19 45/20 46/21 4 / 22 48/23 49/24 50/25	Rd / Br Rd / Sl Bk / Bl Bk / Or Bk / Gr Bk / Br Bk / Sl Yel / Bl Yel / Or Yel / Gr Yel / Br Yel / Sl Vi / Bl Vi / Or Vi / Gr Vi / Br Vi / Sl	CN5

- NOTES:**
1. Type 1 signaling
  2. Type 2 signaling
  3. 2 Wire - Transmit and Receive on Tx / Rx (T0 / R0)
  - 4 Wire - Transmit on Tx1 / Rx1 (T01 / R01), and Receive on Tx / Rx (T0 / R0)

Table 7-1. MDF Cable Pin Configurations (Cont'd)

Conn	Color	Pin	Slot		Circuit Card			
			Physical	Logical	8DTC 8SLC 8BWC	8EKC	4SLE 4BWC	4TE4 <sup>1</sup>
CN6	Wh / Bl	26 / 01	09	17	0 (T0 / R0)	0 (T0 / R0)	T0 / R0	T00 / R00
	Wh / Or	27 / 02			0 (LG0 / LB0)	0 (LG0 / LB0)		T01 / R01
	Wh / Gr	28 / 03			1 (T1 / R1)	1 (T1 / R1)	T1 / R1	SG0 / E0
	Wh / Br	29 / 04			1 (LG1 / LB1)	1 (LG1 / LB1)		M0 / SB0
	Wh / Sl	30 / 05			2 (T2 / R2)	2 (T2 / R2)	T2 / R2	T10 / R10
	Rd / Bl	31 / 06			2 (LG2 / LB2)	2 (LG2 / LB2)		T11 / R11
	Rd / Or	32 / 07			3 (T3 / R3)	3 (T3 / R3)	T3 / R3	SG1 / E1
	Rd / Gr	33 / 08			3 (LG3 / LB3)	3 (LG3 / LB3)		M1 / SB1
	Rd / Br	34 / 09			4 (T4 / R4)	4 (T4 / R4)		T20 / R20
	Rd / Sl	35 / 10			4 (LG4 / LB4)	4 (LG4 / LB4)		T21 / R21
	Bk / Bl	36 / 11	5 (T5 / R5)	5 (T5 / R5)		SG2 / E2		
	Bk / Or	37 / 12	5 (LG5 / LB5)	5 (LG5 / LB5)		M2 / SB2		
	Bk / Gr	38 / 13	6 (T6 / R6)	6 (T6 / R6)		T30 / R30		
	Bk / Br	39 / 14	6 (LG6 / LB6)	6 (LG6 / LB6)		T31 / R31		
	Bk / Sl	40 / 15	7 (T7 / R7)	7 (T7 / R7)		SG3 / E3		
	Yel / Bl	41 / 16	—	7 (LG7 / LB7)		M3 / SB3		
	Yel / Or	42 / 17						
	Yel / Gr	43 / 18						
	Yel / Br	44 / 19						
	Yel / Sl	45 / 20						
Vi / Bl	46 / 21	10	18					
Vi / Or	47 / 22							
Vi / Gr	48 / 23							
Vi / Br	49 / 24							
Vi / Sl	50 / 25							
CN7	Wh / Bl	26 / 01	10	18				
	Wh / Or	27 / 02						
	Wh / Gr	28 / 03						
	Wh / Br	29 / 04						
	Wh / Sl	30 / 05						
	Rd / Bl	31 / 06						
	Rd / Or	32 / 07						
	Rd / Gr	33 / 08						
	Rd / Br	34 / 09						
	Rd / Sl	35 / 10						
	Bk / Bl	36 / 11						
	Bk / Or	37 / 12						
	Bk / Gr	38 / 13						
	Bk / Br	39 / 14						
	Bk / Sl	40 / 15						
	Yel / Bl	41 / 16						
	Yel / Or	42 / 17						
	Yel / Gr	43 / 18						
	Yel / Br	44 / 19						
	Yel / Sl	45 / 20						
Vi / Bl	46 / 21							
Vi / Or	47 / 22							
Vi / Gr	48 / 23							
Vi / Br	49 / 24							
Vi / Sl	50 / 25							

NOTE: 1. 2 Wire - Transmit and Receive on Tx0 / Rx0  
 4 Wire - Transmit on Tx1 / Rx1, and Receive on Tx0 / Rx0

Table 7-1. MDF Cable Pin Configurations (Cont'd)

Circuit Card					Slot		Pin	Color	Conn
2APIA	2TE4	2TTE	2TTL	6DID	Logical	Physical			
SD0 / RD0 RTS0/CTS0 DTR0/DSR0 ST10/ST20 CD0 /RT0 SG0 /FG0 — — SD1 / RD1 RTS1/CTS1 DTR1/DSR1 ST11/ST21 CD1 / RT1 SG01 / FG1 — —	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2 T01 / R01 T11 / R11	T0 / R0 M0 / E0-1 SG0 / E0-2 M0 / SB0-2 T1 / R1 M1 / E1-1 SG1 / E1-2 M1 / SB1-2	T0 / R0 T1 / R1 T2 / R2 T3 / R3 T4 / R4 T5 / R5	T0 / R0 T1 / R1 T2 / R2 T3 / R3 T4 / R4 T5 / R5	17	09	26/01 27/02 28/03 29/04 30/05 31/06 32/07 33/08 34/09 35/10 36/11 37/12 38/13 39/14 40/15 41/16	Wh / Bl Wh / Or Wh / Gr Wh / Br Wh / Sl Rd / Bl Rd / Or Rd / Gr Rd / Br Rd / Sl Bk / Bl Bk / Or Bk / Gr Bk / Br Bk / Sl Yel / Bl	CN6
					18	10	42/17 43/18 44/19 45/20 46/21 47/22 48/23 49/24 50/25	Yel / Or Yel / Gr Yel / Br Yel / Sl Vi / Bl Vi / Or Vi / Gr Vi / Br Vi / Sl	
					18	10	26/01 27/02 28/03 29/04 30/05 31/06 32/07 33/08	Wh / Bl Wh / Or Wh / Gr Wh / Br Wh / Sl Rd / Bl Rd / Or Rd / Gr	CN7
							34/09 35/10 36/11 37/12 38/13 39/14 40/15 41/16 42/17 43/18 44/19 45/20 46/21 47/22 48/23 49/24 50/25	Rd / Br Rd / Sl Bk / Bl Bk / Or Bk / Gr Bk / Br Bk / Sl Yel / Bl Yel / Or Yel / Gr Yel / Br Yel / Sl Vi / Bl Vi / Or Vi / Gr Vi / Br Vi / Sl	

- NOTES: 1. Type 1 signaling  
2. Type 2 signaling  
3. 2 Wire - Transmit and Receive on Tx / Rx (T0 / R0)  
4 Wire - Transmit on Tx1 / Rx1 (T01 / R01), and Receive on Tx / Rx (T0 / R0)

Table 7-2. 16 Circuit Card MDF Cable Pin Configurations

Conn	Color	Pin	Physical Slot #	16SLC 16DTC	
				Circuit	Logical EN
CN0	Wh / Bl	26 / 01	00	0 (T0 / R0)	Slot 00 Circuit 0
	Wh / Or	27 / 02		1 (T1 / R1)	00 1
	Wh / Gr	28 / 03		2 (T2 / R2)	00 2
	Wh / Br	29 / 04		3 (T3 / R3)	00 3
	Wh / Sl	30 / 05		4 (T4 / R4)	00 4
	Rd / Bl	31 / 06		5 (T5 / R5)	00 5
	Rd / Or	32 / 07		6 (T6 / R6)	00 6
	Rd / Gr	33 / 08		7 (T7 / R7)	00 7
	Rd / Br	34 / 09		8 (T8 / R8)	01 0
	Rd / Sl	35 / 10		9 (T9 / R9)	01 1
	Bk / Bl	36 / 11		10 (T10 / R10)	01 2
	Bk / Or	37 / 12		11 (T11 / R11)	01 3
	Bk / Gr	38 / 13		12 (T12 / R12)	01 4
	Bk / Br	39 / 14		13 (T13 / R13)	01 5
	Bk / Sl	40 / 15		14 (T14 / R14)	01 6
	Yel / Bl	41 / 16	15 (T15 / R15)	01 7	
	Yel / Or	42 / 17	01	0 (T0 / R0)	Slot 02 Circuit 0
	Yel / Gr	43 / 18		1 (T1 / R1)	02 1
	Yel / Br	44 / 19		2 (T2 / R2)	02 2
	Yel / Sl	45 / 20		3 (T3 / R3)	02 3
Vi / Bl	46 / 21	4 (T4 / R4)		02 4	
Vi / Or	47 / 22	5 (T5 / R5)		02 5	
Vi / Gr	48 / 23	6 (T6 / R6)		02 6	
Vi / Br	49 / 24	7 (T7 / R7)	02 7		
Vi / Sl	50 / 25	---	---	---	
CN1	Wh / Bl	26 / 01	01	8 (T8 / R8)	03 0
	Wh / Or	27 / 02		9 (T9 / R9)	03 1
	Wh / Gr	28 / 03		10 (T10 / R10)	03 2
	Wh / Br	29 / 04		11 (T11 / R11)	03 3
	Wh / Sl	30 / 05		12 (T12 / R12)	03 4
	Rd / Bl	31 / 06		13 (T13 / R13)	03 5
	Rd / Or	32 / 07		14 (T14 / R14)	03 6
	Rd / Gr	33 / 08	15 (T15 / R15)	03 7	
	Rd / Br	34 / 09	02	0 (T0 / R0)	Slot 04 Circuit 0
	Rd / Sl	35 / 10		1 (T1 / R1)	04 1
	Bk / Bl	36 / 11		2 (T2 / R2)	04 2
	Bk / Or	37 / 12		3 (T3 / R3)	04 3
	Bk / Gr	38 / 13		4 (T4 / R4)	04 4
	Bk / Br	39 / 14		5 (T5 / R5)	04 5
	Bk / Sl	40 / 15		6 (T6 / R6)	04 6
	Yel / Bl	41 / 16		7 (T7 / R7)	04 7
	Yel / Or	42 / 17		8 (T8 / R8)	04 0
	Yel / Gr	43 / 18		9 (T9 / R9)	05 0
	Yel / Br	44 / 19		10 (T10 / R10)	05 1
	Yel / Sl	45 / 20		11 (T11 / R11)	05 2
Vi / Bl	46 / 21	12 (T12 / R12)		05 3	
Vi / Or	47 / 22	13 (T13 / R13)	05 4		
Vi / Gr	48 / 23	14 (T14 / R14)	05 5		
Vi / Br	49 / 24	15 (T15 / R15)	05 6		
Vi / Sl	50 / 25	MNA0/MNA1	05 7		

**NOTE:** Connector CN1, the Vi / Sl pair is always the External Minor Alarm output.



Table 7-2. 16 Circuit Card MDF Cable Pin Configurations (Cont'd)

Conn	Color	Pin	Physical Slot #	16SLC 16DTC	
				Circuit	Logical EN
CN2	Wh / Bl	26 / 01	03	0 (T0 / R0)	Slot 06 Circuit 0
	Wh / Or	27 / 02		1 (T1 / R1)	06 1
	Wh / Gr	28 / 03		2 (T2 / R2)	06 2
	Wh / Br	29 / 04		3 (T3 / R3)	06 3
	Wh / Sl	30 / 05		4 (T4 / R4)	06 4
	Rd / Bl	31 / 06		5 (T5 / R5)	06 5
	Rd / Or	32 / 07		6 (T6 / R6)	06 6
	Rd / Gr	33 / 08		7 (T7 / R7)	06 7
	Rd / Br	34 / 09		8 (T8 / R8)	07 0
	Rd / Sl	35 / 10		9 (T9 / R9)	07 1
	Bk / Bl	36 / 11		10 (T10 / R10)	07 2
	Bk / Or	37 / 12		11 (T11 / R11)	07 3
	Bk / Gr	38 / 13		12 (T12 / R12)	07 4
	Bk / Br	39 / 14		13 (T13 / R13)	07 5
	Bk / Sl	40 / 15		14 (T14 / R14)	07 6
	Yel / Bl	41 / 16	15 (T15 / R15)	07 7	
	Yel / Or	42 / 17	04	0 (T0 / R0)	Slot 08 Circuit 0
	Yel / Gr	43 / 18		1 (T1 / R1)	08 1
	Yel / Br	44 / 19		2 (T2 / R2)	08 2
	Yel / Sl	45 / 20		3 (T3 / R3)	08 3
	Vi / Bl	46 / 21		4 (T4 / R4)	08 4
	Vi / Or	47 / 22		5 (T5 / R5)	08 5
	Vi / Gr	48 / 23		6 (T6 / R6)	08 6
	Vi / Br	49 / 24		7 (T7 / R7)	08 7
	Vi / Sl	50 / 25		—	—
CN3	Wh / Bl	26 / 01	04	8 (T8 / R8)	09 0
	Wh / Or	27 / 02		9 (T9 / R9)	09 1
	Wh / Gr	28 / 03		10 (T10 / R10)	09 2
	Wh / Br	29 / 04		11 (T11 / R11)	09 3
	Wh / Sl	30 / 05		12 (T12 / R12)	09 4
	Rd / Bl	31 / 06		13 (T13 / R13)	09 5
	Rd / Or	32 / 07		14 (T14 / R14)	09 6
	Rd / Gr	33 / 08	15 (T15 / R15)	09 7	
	Rd / Br	34 / 09	05	0 (T0 / R0)	Slot 10 Circuit 0
	Rd / Sl	35 / 10		1 (T1 / R1)	10 1
	Bk / Bl	36 / 11		2 (T2 / R2)	10 2
	Bk / Or	37 / 12		3 (T3 / R3)	10 3
	Bk / Gr	38 / 13		4 (T4 / R4)	10 4
	Bk / Br	39 / 14		5 (T5 / R5)	10 5
	Bk / Sl	40 / 15		6 (T6 / R6)	10 6
	Yel / Bl	41 / 16		7 (T7 / R7)	10 7
	Yel / Or	42 / 17		8 (T8 / R8)	11 0
	Yel / Gr	43 / 18		9 (T9 / R9)	11 1
	Yel / Br	44 / 19		10 (T10 / R10)	11 2
	Yel / Sl	45 / 20		11 (T11 / R11)	11 3
	Vi / Bl	46 / 21		12 (T12 / R12)	11 4
	Vi / Or	47 / 22		13 (T13 / R13)	11 5
	Vi / Gr	48 / 23		14 (T14 / R14)	11 6
	Vi / Br	49 / 24	15 (T15 / R15)	11 7	
	Vi / Sl	50 / 25		—	—

Table 7-2. 16 Circuit Card MDF Cable Pin Configurations (Cont'd)

Conn	Color	Pin	Physical Slot #	16SLC 16DTC			
				Circuit	Logical EN		
CN4	Wh / Bl	26 / 01	06	0 (T0 / R0)	Slot 12	Circuit 0	
	Wh / Or	27 / 02		1 (T1 / R1)	12	1	
	Wh / Gr	28 / 03		2 (T2 / R2)	12	2	
	Wh / Br	29 / 04		3 (T3 / R3)	12	3	
	Wh / Sl	30 / 05		4 (T4 / R4)	12	4	
	Rd / Bl	31 / 06		5 (T5 / R5)	12	5	
	Rd / Or	32 / 07		6 (T6 / R6)	12	6	
	Rd / Gr	33 / 08		7 (T7 / R7)	12	7	
	Rd / Br	34 / 09		8 (T8 / R8)	13	0	
	Rd / Sl	35 / 10		9 (T9 / R9)	13	1	
	Bk / Bl	36 / 11		10 (T10 / R10)	13	2	
	Bk / Or	37 / 12		11 (T11 / R11)	13	3	
	Bk / Gr	38 / 13		12 (T12 / R12)	13	4	
	Bk / Br	39 / 14		13 (T13 / R13)	13	5	
	Bk / Sl	40 / 15		14 (T14 / R14)	13	6	
	Yel / Bl	41 / 16	15 (T15 / R15)	13	7		
	Yel / Or	42 / 17	07	0 (T0 / R0)	Slot 14	Circuit 0	
	Yel / Gr	43 / 18		1 (T1 / R1)	14	1	
	Yel / Br	44 / 19		2 (T2 / R2)	14	2	
	Yel / Sl	45 / 20		3 (T3 / R3)	14	3	
Vi / Bl	46 / 21	4 (T4 / R4)		14	4		
Vi / Or	47 / 22	5 (T5 / R5)		14	5		
Vi / Gr	48 / 23	6 (T6 / R6)		14	6		
Vi / Br	49 / 24	7 (T7 / R7)	14	7			
Vi / Sl	50 / 25		—	—			
CN5	Wh / Bl	26 / 01	07	8 (T8 / R8)	15	0	
	Wh / Or	27 / 02		9 (T9 / R9)	15	1	
	Wh / Gr	28 / 03		10 (T10 / R10)	15	2	
	Wh / Br	29 / 04		11 (T11 / R11)	15	3	
	Wh / Sl	30 / 05		12 (T12 / R12)	15	4	
	Rd / Bl	31 / 06		13 (T13 / R13)	15	5	
	Rd / Or	32 / 07		14 (T14 / R14)	15	6	
	Rd / Gr	33 / 08		15 (T15 / R15)	15	7	
	Rd / Br	34 / 09		08	0 (T0 / R0)	Slot 16	Circuit 0
	Rd / Sl	35 / 10			1 (T1 / R1)	16	1
	Bk / Bl	36 / 11			2 (T2 / R2)	16	2
	Bk / Or	37 / 12			3 (T3 / R3)	16	3
	Bk / Gr	38 / 13			4 (T4 / R4)	16	4
	Bk / Br	39 / 14			5 (T5 / R5)	16	5
	Bk / Sl	40 / 15			6 (T6 / R6)	16	6
	Yel / Bl	41 / 16	7 (T7 / R7)		16	7	
	Yel / Or	42 / 17	8 (T8 / R8)		17	0	
	Yel / Gr	43 / 18	9 (T9 / R9)		17	1	
	Yel / Br	44 / 19	10 (T10 / R10)		17	2	
	Yel / Sl	45 / 20	11 (T11 / R11)		17	3	
Vi / Bl	46 / 21	12 (T12 / R12)	17		4		
Vi / Or	47 / 22	13 (T13 / R13)	17		5		
Vi / Gr	48 / 23	14 (T14 / R14)	17		6		
Vi / Br	49 / 24	15 (T15 / R15)	17	7			
Vi / Sl	50 / 25		—	—			

Table 7-2. 16 Circuit Card MDF Cable Pin Configurations (Cont'd)

Conn	Color	Pin	Physical Slot #	16SLC 16DTC	
				Circuit	Logical EN
CN6	Wh / Bl	26 / 01	09		
	Wh / Or	27 / 02			
	Wh / Gr	28 / 03			
	Wh / Br	29 / 04			
	Wh / Sl	30 / 05			
	Rd / Bl	31 / 06			
	Rd / Or	32 / 07			
	Rd / Gr	33 / 08			
	Rd / Br	34 / 09			
	Rd / Sl	35 / 10			
	Bk / Bl	36 / 11			
	Bk / Or	37 / 12			
	Bk / Gr	38 / 13			
	Bk / Br	39 / 14			
	Bk / Sl	40 / 15			
	Yel / Bl	41 / 16			
	Yel / Or	42 / 17	10		
	Yel / Gr	43 / 18			
	Yel / Br	44 / 19			
	Yel / Sl	45 / 20			
Vi / Bl	46 / 21				
Vi / Or	47 / 22				
Vi / Gr	48 / 23				
Vi / Br	49 / 24				
Vi / Sl	50 / 25				
CN7	Wh / Bl	26 / 01		10	
	Wh / Or	27 / 02			
	Wh / Gr	28 / 03			
	Wh / Br	29 / 04			
	Wh / Sl	30 / 05			
	Rd / Bl	31 / 06			
	Rd / Or	32 / 07			
	Rd / Gr	33 / 08			
	Rd / Br	34 / 09			
	Rd / Sl	35 / 10			
	Bk / Bl	36 / 11			
	Bk / Or	37 / 12			
	Bk / Gr	38 / 13			
	Bk / Br	39 / 14			
	Bk / Sl	40 / 15			
	Yel / Bl	41 / 16			
	Yel / Or	42 / 17			
	Yel / Gr	43 / 18			
	Yel / Br	44 / 19			
	Yel / Sl	45 / 20			
Vi / Bl	46 / 21				
Vi / Or	47 / 22				
Vi / Gr	48 / 23				
Vi / Br	49 / 24				
Vi / Sl	50 / 25				

No 16 circuit cards are installed in slots 9 and 10.

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## SYSTEM START

When the system is powered up for the first time, or the CPU card is replaced, or the battery has discharged causing the memory to fail, the memory must be initialized. Doing a cold restart will initialize the system. Select No Default Data Base if a Form Load will be used to load the ODDB. Refer to the Data Base Manual (Section 123-080-002).

**NOTE:** If the system was staged, this is not required.

1. Set the DIP switches on the CPU card. Refer to Table 8-1.
2. Push the Mode Select switch on the CPU card upward and hold it to the NO DATA KEPT side while pressing and releasing the Restart button (on the card).
3. Observe the indicators on the CPU card.
4. Make sure that the RUN lamp is on, TO lamp is off, and the AM lamp is off. If any of these do not occur, refer to the Maintenance Manual (Section 123-060-002).

Precutover testing cannot begin until a No Data Kept Restart (cold restart) is performed. The following shows the No Data Kept Restart process.

## DEFAULT DATA

When a No Data Kept Restart is initiated, the system automatically reinitializes the system and customer default data base. If any changes are needed, modify the default data by using CMC commands.

If the Data Kept Restart or Reset Restart is initiated, the system does not change the software or customer data base. The customer default data base is applied only for No Data Kept Restart.

The customer default data base generation mode is set by the DIP switch on the CPU card. This switch selects whether default data is generated or not. If the mode is set to generating default data, the following system condition is applied.

## INITIAL PROGRAM LOADING

When starting the system for the first time, the switch configuration on the CPU card must be set specifically to accomplish one of four purposes (see Table 8-1):

- **Pattern 1** - To FORMLOAD the ODDB from the PcMP™, set the switches to "no default data" as follows:
  - DDT0: Right
  - DDT1: Right

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**INITIAL PROGRAM LOADING  
(Cont'd)**

- **Pattern 2** - To load the ODDB from floppy disk, set the switches as follows:

- DDT0: Right
- DDT1: Left

**NOTE:** This is only applicable if the customer data base was saved to floppy disk using CMC 922.

- **Pattern 3** - To set the default data base with a 3-digit numbering plan, set the switches as follows:

- DDT0: Left
- DDT1: Right

- **Pattern 4** - To set the default data base with a 4-digit numbering plan, set the switches as follows:

- DDT0: Left
- DDT1: Left

Power up the system, and perform a COLD restart after drive activity stops.

**NOTE:** It is suggested that the switches be "parked" during normal operation as follows:

- DDT0: Right
- DDT1: Right

**Table 8-1. IPL Mode Selection Switch**

PATTERN	DDT0 SWITCH 3	DDT1 SWITCH 4	DEFAULT DATA ACTION
1	Right	Right	Will not generate default data, (CMCs 100, 104, 200, 210, 220, 230, and 250) - From load ODDB.
2	Right	Left	Load ODDB from floppy disk.
3	Left	Right	Default data generation with three digit extension numbering.
4	Left	Left	Default data generation with four digit extension numbering.

**START-UP PROCEDURE**

1. Press the RESET button while pressing the momentary-contact switch to NO DATA KEPT (cold restart).
2. When the switches are released, the system automatically identifies the connected terminals, creates data, and starts.
3. The LEDs on the attendant console and proprietary telephones flash once. When system start up is completed, HH:MM appears on the displays of these terminals.
4. After system start-up, the 8-segment LED on the CPU card (Table 8-2) sequentially and continuously displays a code to indicate that batteries on the card are low and are being charged. If the message persists for longer than two days, the batteries are defective, in which case you must change cards. For more information, refer to the Maintenance Manual.
5. System start-up is followed by data input. Refer to the Data Base Manual, for the data input procedure.
6. Customer data can be input from an attendant console or from one of the digital telephones assigned as an MCT. Easy to understand prompts guide you through each step of the input process. Data may also be input from an IBM PC or compatible computer (i.e., PcMP).

**IPL AFTER ODDB LOADING HAS BEEN STORED ON DISK**

The following procedure is for starting the system after the ODDB has been stored on a floppy disk.

- Put the floppy disk into the FDD. Set the CPU card switches as follows:
  - DDT1 Left (open)
  - DDT0 Right (close)
- Initiate a COLD restart, wait until the RUN lamp on the CPU card lights.

**Table 8-2. 7-Segment LED Display on the CPU Card**

CONDITION	7-SEGMENT DISPLAY
CPU card back-up battery is low	-- Eb
RVAC back-up battery is low	--Pb xxxx
	xxxx is the equipment number

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## GENERAL

The Series 3 system can be equipped with an external battery back up system. In the event that AC power is lost, the Series 3 system will continue to operate using battery power. Switchover is automatic; no calls will be lost. The back-up battery is kept charged by the -48V PS unit.

## HARDWARE

The required hardware list follows:

- ACPD or DCPD installed in the basic cabinet and second expansion cabinet (if installed).
- Cable from the battery plant breaker box to the ACPD/DCPD.
- Batteries to operate the system for the required length of time.

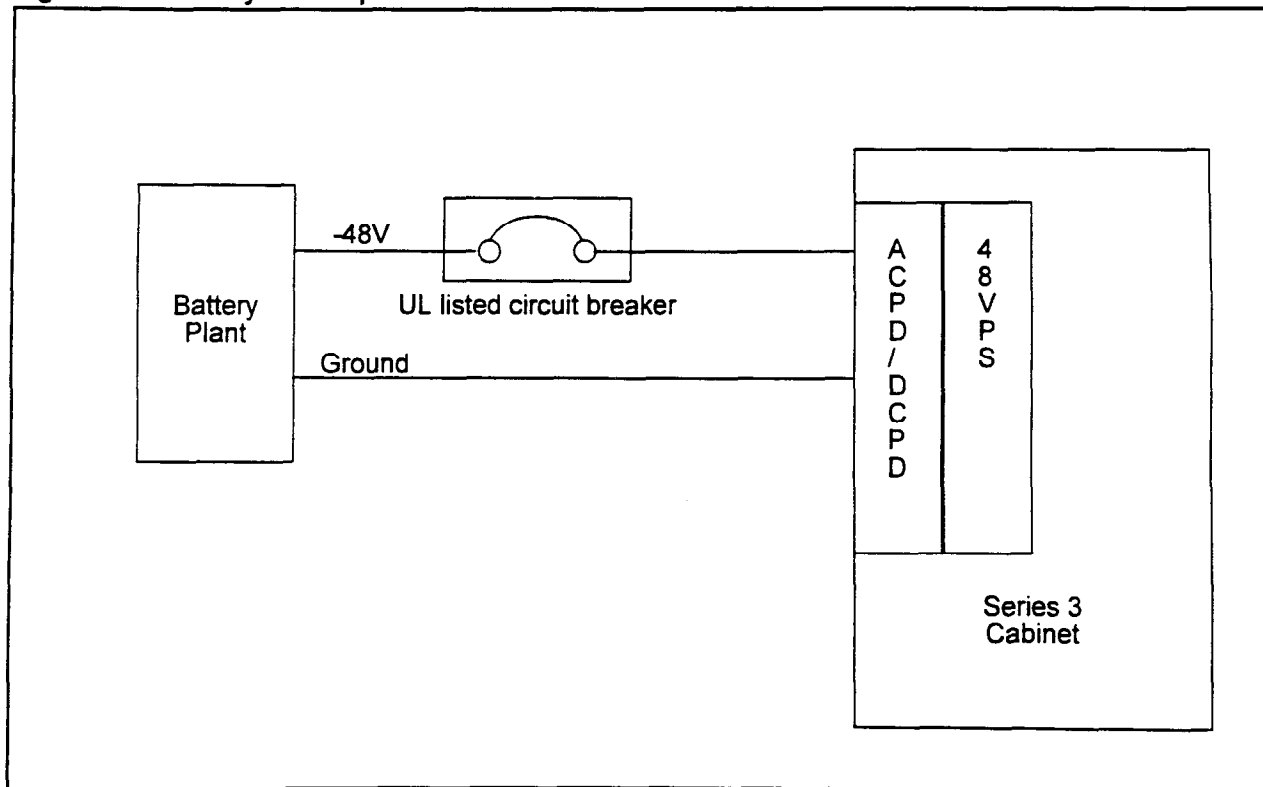
### Cabinet Hardware

Battery back-up operation requires the DCPD (P/N E08B-1034-C101) in the basic cabinet, and second expansion cabinet (if installed). Refer to Chapter 4 for installation.

### Battery Plant

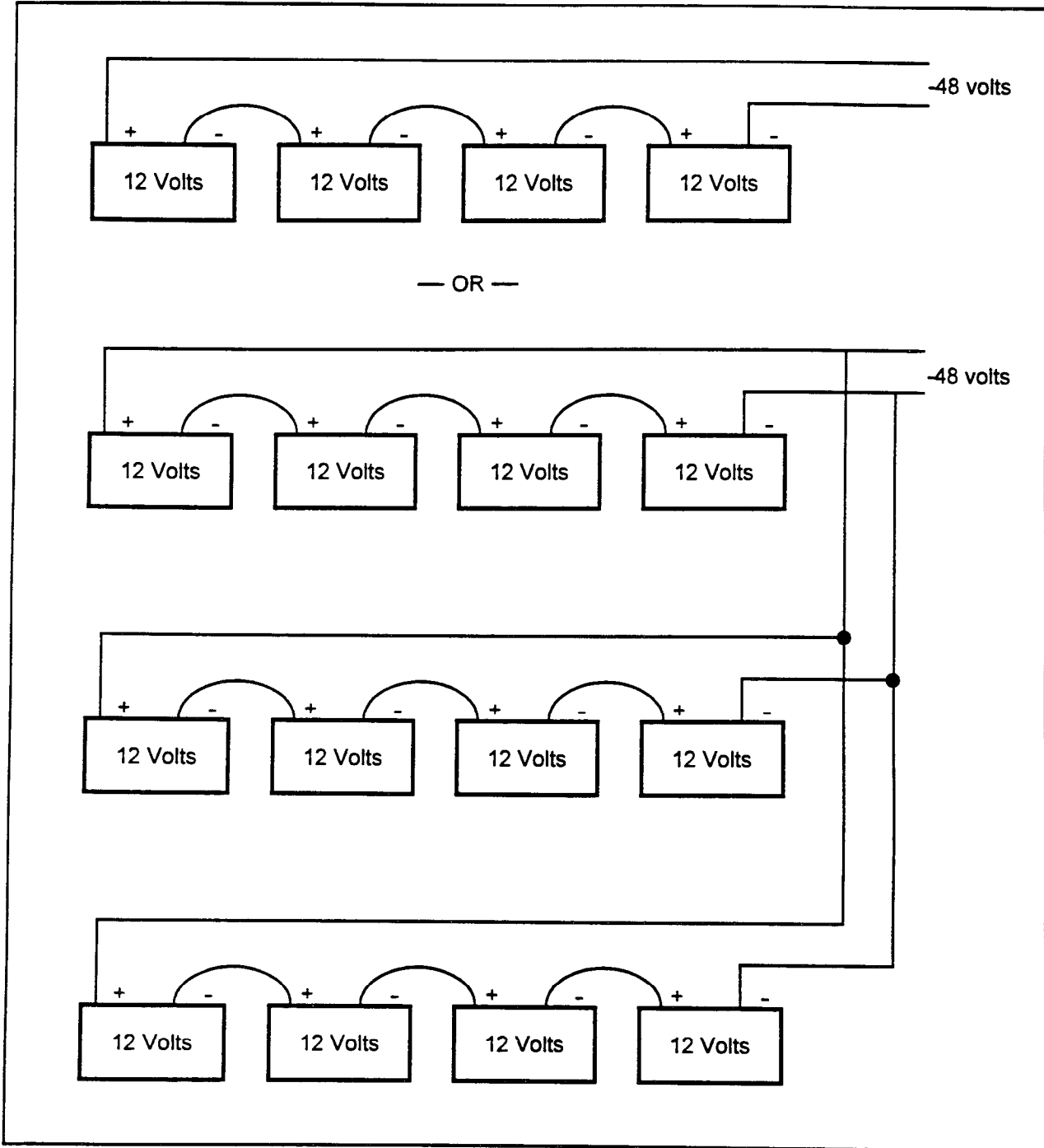
The battery plant is constructed with series connected batteries. A fuse or circuit breaker equipped power panel must be installed between the battery and the Series 3 system. Refer to Figure 9-1.

Figure 9-1. Battery Back-Up



**Battery Plant (Cont'd)** The battery cells are connected in series in banks of -48 to -52 volts. As more banks are connected in parallel the back up time increases. Refer to Figure 9-2.

**Figure 9-2. Battery Plant Construction**



**Battery Sizing** Typical power consumption is shown in Table 9-1; recommended back up battery capacities are shown in Table 9-2. Worst case power consumption is shown in Table 9-3. Battery capacities and minimum recharge times for worst case configurations are in Table 9-4. All battery capacities are in Amp Hours (AH), and recharge times are in hours (HR). All tables are based on a -48 power supply installed in each cabinet.

**Table 9-1. Typical Power Consumption**

SYSTEM SIZE	AMPS at -48VDC	MAXIMUM AVAILABLE CHARGE CURRENT (AMPS)	BTU / HOUR
1 Cabinet	5.8	2.4	956
2 Cabinet	11.3	4.8	1853
3 Cabinet	17.2	7.2	2809
4 Cabinet	22.6	9.6	3703

Based on 20 percent DID trunk using 6DID cards. Charge current available is based on one -48V PS unit per cabinet.

**Table 9-2. Recommended Battery Capacity and Minimum Recharge Time**

BATTERY BACK UP TIME										
SYSTEM SIZE	30 MIN		1 HOUR		2 HOURS		4 HOURS		8 HOURS	
	AH	HR	AH	HR	AH	HR	AH	HR	AH	HR
1 Cabinet	6	3.0	10	5.0	17	8.5	36	18.0	53	26.5
2 Cabinet	11	2.8	19	4.8	32	8.0	71	17.8	103	25.8
3 Cabinet	17	2.9	28	4.6	49	8.1	108	18.0	156	26.0
4 Cabinet	23	2.9	37	4.6	65	8.1	141	17.6	205	25.6

Based on maximum available recharging current from Table 9-1 and 1.75 volts per cell initial battery charge.

Table 9-3. Worst Case Power Consumption

SYSTEM SIZE	AMPS at -48VDC	MAXIMUM AVAILABLE CHARGE CURRENT (AMPS)	BTU / HOUR
1 Cabinet	8.3	1.5	1365
2 Cabinet	16.2	3.0	2645
3 Cabinet	24.5	4.5	4010
4 Cabinet	32.3	6.0	5290

Based on 50 percent DID trunk using 6DID cards. Charge current available is based on one -48V PS unit per cabinet.

Table 9-4. Recommended Battery Capacity and Minimum Recharge Time for Worst Case

BATTERY BACK UP TIME										
SYSTEM SIZE	30 MIN		1 HOUR		2 HOURS		4 HOURS		8 HOURS	
	AH	HR	AH	HR	AH	HR	AH	HR	AH	HR
1 Cabinet	8	6.4	14	11.2	24	19.2	51	40.8	76	60.8
2 Cabinet	16	6.4	27	10.8	46	18.4	101	40.4	147	58.8
3 Cabinet	25	6.6	40	10.6	70	18.6	153	40.8	223	59.4
4 Cabinet	32	6.4	53	10.6	92	18.4	202	40.4	294	58.8

Based on maximum available recharging current from Table 9-3 and 1.75 volts per cell initial battery charge.

**STATION MESSAGE DETAIL  
RECORDING (SMDR)  
PRINTER**

The requirements for the printer, which is used for SMDR output, are described as follows (see Table 10-1):

**Table 10-1. SMDR Printer Requirements**

ITEM	REQUIREMENT	STANDARD (DEFAULT VALUE)
Interface	RS-232C, DTE mode	
Speed	Asynchronous 110, 150, 300, 600, 1200, 2400, 4800 bps	2400 bps
Code	ASCII	
Parity	None, Odd, Even	Even
Character length	7 bit, 8 bit  <b>NOTE:</b> When 8 bit is selected, the most significant bit is used as a parity bit.	7 bit
Stop bit	1, 2 bits	1 bit
XON / XOFF	Available (see following text)	No flow control
Power on/off	Available (see following text)	No power control
Line length	80 characters (1 or 2 lines) or 16 characters (1 line)	none (See CMC 901)

The configuration can be modified by using a CMC command (CMC 900, 901) according to the characteristics of the installed printer.

**XON/XOFF Flow Control Option**

The system has the ability to sense and respond to XON/XOFF characters transmitted to it by the printer. The XON/XOFF option prevents the system from transmitting more characters than the printer can handle. If an XOFF character is received from the printer, the system stops transmitting characters immediately. This may happen when there is no paper in the printer. After installing new paper, the printer is ready to receive characters. The printer will then send an XON character. When the XON character is received, the system begins to send characters to the printer again.

XON/XOFF characters can be selected from the following:

- Pattern 1, DC1 = XON, DC3 = XOFF.
- Pattern 2, DC2 = XON, DC4 = XOFF.

DC1, DC2, DC3, and DC4 are ASCII control code characters. This arrangement is accomplished by CMC code (CMC 901).

**XON/XOFF Flow Control Option (Cont'd)**

**NOTE:** The system automatically starts to send characters 30 seconds after receiving an XOFF character, whether or not an XON character is received. This restores communications if the system does not receive the XON character for some reason (e.g., transmission error).

**Power On/off Option**

If the printer has the ability to detect power on/off control sequences, the power on/off option can be selected by using CMC 901. When this option is selected, the system sends a power on control character sequence to the printer before transmitting each SMDR message.

After power on timing, the system starts transmitting SMDR messages. When there is no SMDR message for the amount of time set in the power off timing parameter, the system sends the power off character to the printer. Power on/off characters can be selected from the following ASCII code characters:

- Power on character: NUL, DEL, ESCH, not assign.
- Power off character: NUL, DEL, ESCJ, not assign.

Power on/off timing can be specified from the following range:

- Power on timing: 0.2 to 51 sec (200ms. increment).
- Power off timing: 0 to 2550 sec (10 sec. increments).

A power off control character sequence is transmitted when the power off timer is expired. Timing: 1 to 255 sec (10 sec. increments).

**NOTE:** The resolution of timing depends on increment timing.

This arrangement is accomplished by using CMC 901.

**REQUIREMENTS FOR CABLE**

The requirements for the cable to connect to the RS-232C port on the system with the SMDR printer depends on the type of SMDR printer (DTE mode or DCE mode).

Maximum length of printer cable is 50 feet (15M). The cable is provided by the customer.

**DTE Mode Printer**

The cable between the system and an SMDR printer, operating in DTE mode, must have the pin arrangement as seen in Figure 10-1.

**DCE Mode Printer**

The cable between the system and a printer operating in DCE (modem) mode must have the pin arrangement as seen in Figure 10-2.

Figure 10-1. RS-232C Cable for DTE Mode SMDR Printer

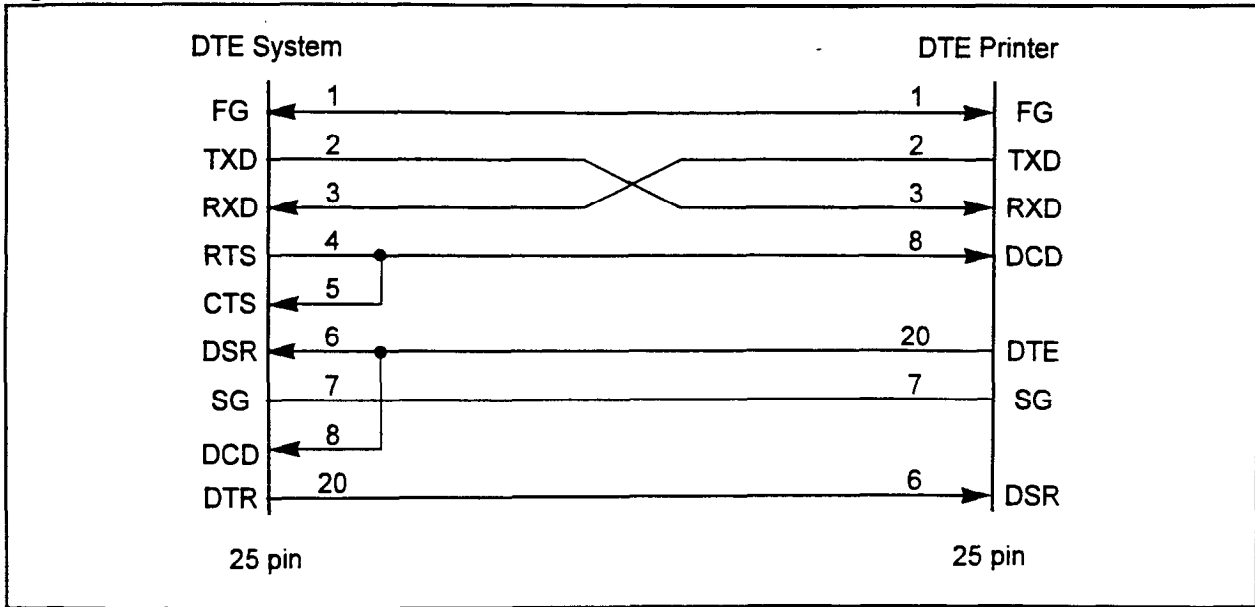
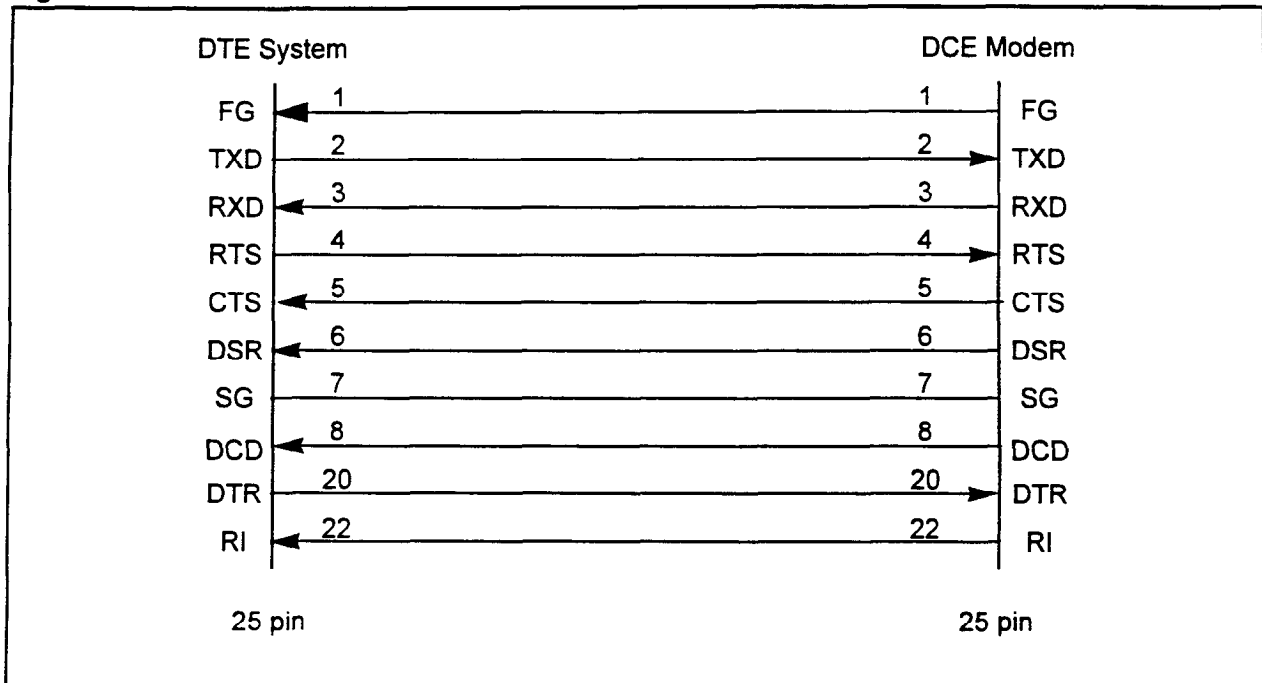


Figure 10-2. RS-232C Cable for Modem / DCE Mode SMDR Printer



**RS-232C PORTS IN THE BASIC CABINET**

The RS-232C ports in the basic cabinet are positioned at connector I/O #0 and #1 on the right of the cabinet.

I/O port #0 is usually used for the command entry facility and I/O port #1 is used for the SMDR printer.

The assignment of the printer port must be made after the installation of the printer by using CMC 901.

Figure 10-3 shows the position of I/O port #0 and I/O port #1 for the Series 3 system.

The system automatically assigns the default port configuration data after a COLD restart.

Table 10-2 shows the default attributes for the ports.

**Figure 10-3. Position of I/O Ports #0 and #1**

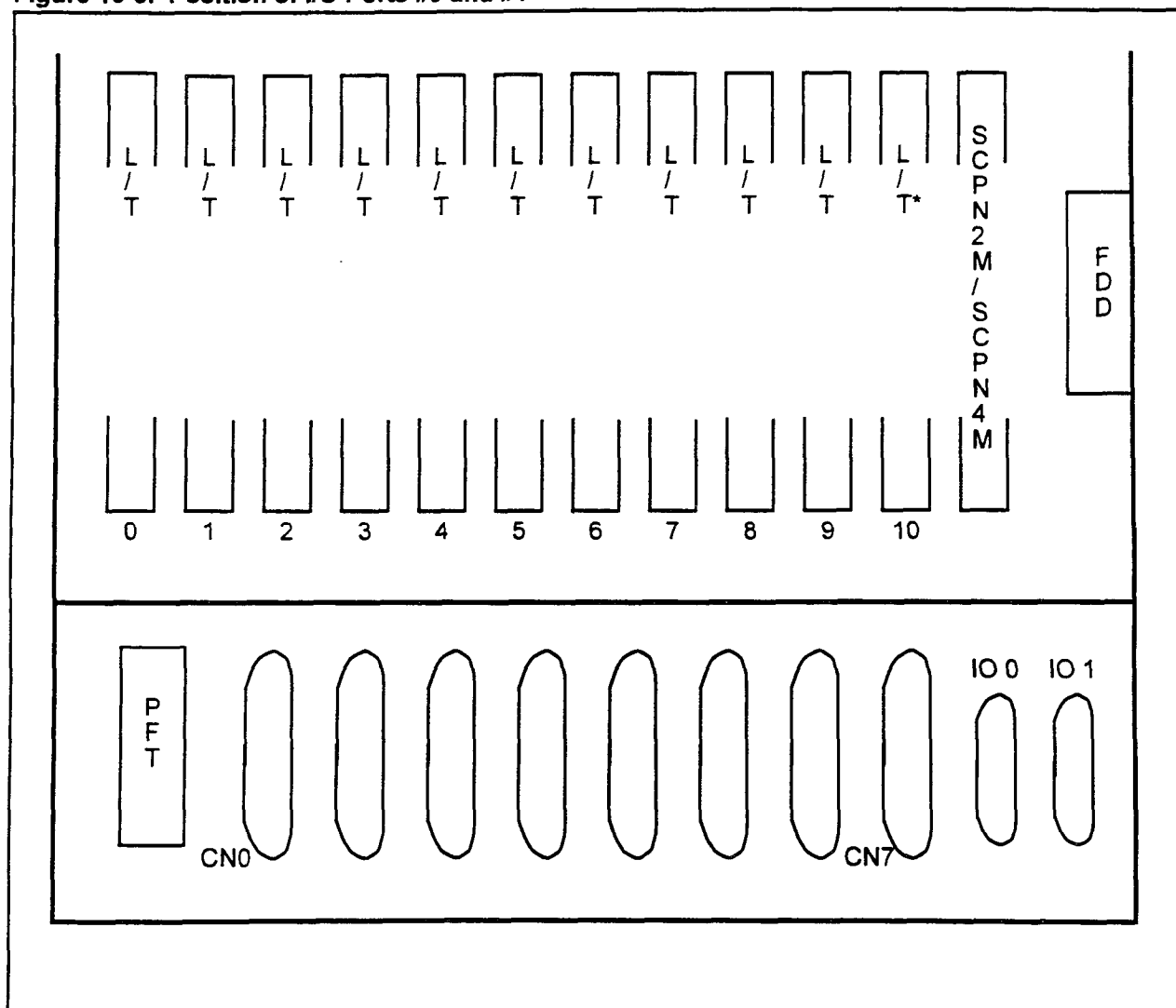




Table 10-2. Default Attributes for I/O Ports

ATTRIBUTE	PORT #0	PORT #1
Speed	2400	2400
Parity	EVEN	EVEN
Character length	7 bits	7 bits
Stop Bits	1 bit	1 bit
XON/XOFF option	Not assigned	Not assigned
Power on/off option	Not assigned	Not assigned
Device Type	PMP, modem, laptop	Printer

**SMDR INSTALLATION**

To output the SMDR message to the SMDR printer, the following procedures must be taken.

1. Connect the SMDR printer to I/O port #0 using the RS-232C cable.
2. Turn the power on for the SMDR printer.
3. Enter the RS-232C port configuration assignment command (CMC 900), if needed (when the type of SMDR printer is different from the default data for port configuration).
4. Enter the SMDR printer control command (CMC 901) to install the SMDR printer and set the XON/XOFF and power on/off options.

**SMDR SCREENING**

The system has screening capability for SMDR. This capability is specified by using codes. Table 10-3 shows the screening items, description, and related CMC codes.

Table 10-3. Screening Capability

ITEM	DESCRIPTION	RELATED COMMAND
CO outgoing call	Output CO outgoing calls	CMC 500
Tie outgoing call	Output only calls with account code entry	CMC 500
Account code entry	Output only calls with account code entry	CMC 500
Trunk group	Output calls from specified trunk group	CMC 501
Class of Restriction (COR)	Output calls with specified COR	CMC 502
Tenant	Output calls from specified tenant	CMC 503
Call Duration	Output calls of minimum duration or longer	CMC 504
Modem group	Output calls of the specified modem group	CMC 505
Outgoing digit	Output calls with specified digits (1-6 digits)	CMC 506

**SMDR SCREENING (Cont'd)**

Each item can be assigned independently by using CMC code. The system automatically establishes the specified screening capability after a cold restart.

The default data for screening capability is shown in Table 10-4. A different group of commands may be required only when particular modification is requested.

**Table 10-4. Default Data for Screening Capability**

ITEM	DEFAULT SELECTION
CO outgoing call	Output all CO outgoing calls
Tie outgoing call	Output all tie trunk outgoing calls
Account code entry	Output calls with and without account code entry
Trunk group	Output calls from all trunk groups
COR	Output calls with any class of restriction
Tenant	Output calls from all tenants
Call duration	Output all calls of any duration

**SMDR FORMAT**

This section describes the SMDR message format per call and the system messages.

**SMDR Message per Call**

Messages are selected according to the printer configuration assigned in CMC 901, when the SMDR printer is initially installed. There are three types of SMDR messages:

- 80-digit, one line print out.
- 80-digit, two line print out.
- 136-digit, one line print out.

The output format of the SMDR message per call is shown in Figure 10-4.

**SYSTEM MESSAGES**

A system message is output in order to supplement call base messages.

**Time and Date Change**

The time and date change message is printed out with the SMDR message in order to separate the SMDR messages printed by each hour.

Its format is as follows:

**HH:MM MM/DD/YY**

where **HH:MM** is the time (24-hour) and **MM/DD/YY** is the date.

**NOTE:** When the first SMDR message for the hour is printed, the time and date change message is printed just before the SMDR message to indicate the time and date.

**System Restart**

If a cold or hot restart occurs, the system restart message is output in the following format:

**\*\*SYSTEM READY MM/DD/YY**

where **MM/DD/YY** is the date.

**Power Failure**

If a power failure occurs when outputting a message, the power failure message is output after restoration of power as follows:

**POWER FAIL**

**Printer Failure**

If an SMDR printer failure occurs while printing a message, the following printer failure message is output after the printer is repaired:

**PRINTER FAIL**

**Clock Failure**

If a clock (real time source (RTS) on PCM card) failure occurs, the clock failure message is output as follows:

**CLOCK FAIL**

This message is output with each SMDR message during clock failure. The time and date fields in SMDR messages may show all zeros.

## 1. 80 digit, one line printer format

```

      1         2         3         4         5         6         7         8
1234567890123456789012345678901234567890123456789012345678901234567890
I HH:MM HH:MM SS TT DDDD TDDDD AAAA DDDDDDDDDDDDDDDDDDDDD AAAAAAAAAAAAAA TT GGG
(1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11)

```

## 2. 80 digit, two line printer format

```

      1         2         3         4         5         6         7         8
1234567890123456789012345678901234567890123456789012345678901234567890
I HH:MM HH:MM SS TT DDDD TDDDD AAAA DDDDDDDDDDDDDDDDDDDDD AAAAAAAAAAAAAA TT GGG
(1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11)

      MM
      (12)

```

## 3. 136 digit, one line printer output format

```

      1         2         3         4         5         6         7         8         9         10        13
123456789012345678901234567890123456789012345678901234567890123456789012345678901...6
I HH:MM HH:MM SS TT DDDD TDDDD AAAA DDDDDDDDDDDDDDDDDDDDD AAAAAAAAAAAAAA TT GGG          MM
(1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12)

```

(1) Incoming call identification (I = incoming; Blank = Outgoing)

(2) Time of call origination

(3) Duration of call

(4) Calling party identification

**NOTE:**

\* = Incoming call answered

\*\* = Incoming call terminated (just arrived)

# = Incoming call finished or transferred

\*# = Abandoned call

ST: Station

AT: Attendant

TI: Tie trunk

DD: DID trunk

DS: DISA trunk

DT: Data line

(5) Originating extension number

(6) Trunk identification and trunk number

T; C: CO trunk DDDD: Trunk Number

F: FX trunk

W: WATS trunk

T: Tie trunk

(7) Trunk access code

(8) Directory number dialed and personal accounting code (max. 20 digits)

(9) Account code (if not specified, blank is output)

(10) Tenant number (if not specified, blank is output)

(11) SMDR group (if not specified, blank is output)

(12) Modem identification number

**PRIORITY**

The above SMDR call messages and system messages are prioritized as follows:

- System restart message
- Power failure message
- Printer failure message
- Clock failure message
- Time and date change message
- SMDR messages

The message priority means that if there are many messages to be output at the same time, the highest priority message is output first.

**RESPONSE PROCEDURES**

If an unusual situation occurs, the following procedures must be taken:

**Paper End**

The system has a capacity of about 100 calls for the SMDR message buffer; therefore, replace the paper as quickly as possible.

**Printer with XON/XOFF Option**

This type of printer can notify the system of a problem by means of an XOFF character transmitted to the system.

Change the paper to resume printing automatically.

**Printer with Line Disconnect Option**

This type of printer can notify the system of a problem by means of a line disconnect.

Change the paper to restart printing.

The printer failure message will be output first after changing paper.

**Printer without Paper End Alerting Function**

This type of printer cannot notify the system of a problem and the system continues to output SMDR messages or system messages.

You must turn the printer power off immediately, change the paper, and turn the printer power back on.

**NOTE:** The messages sent by the system during the outage have been erased from the system and cannot be reprinted.

If there is enough time before the paper supply runs out, enter the SMDR Printer Make Busy command (CMC 705) to make the SMDR printer busy, and change the paper. This will cause the system to accumulate the call messages in its buffer.

After replacing the paper, enter the SMDR Printer Make Busy command (CMC 705) again to start printing.

**OTHER PROBLEMS**

If the printer malfunctions either intermittently or completely, the following steps may help to remedy the problem.

- Turn the printer power off and back on.
- Check the cable connection.
- Check the port configuration of the I/O port and the printer configuration.

**HOTEL/MOTEL PRINTER**

Up to two hotel/motel printers for printing out hotel/motel related information can be installed in the system.

The hotel/motel printer is connected to a DIU or DTA. System messages are sent through the 4CHT card.

Figure 10-5 shows the hotel/motel printer configuration.

Printer Requirements

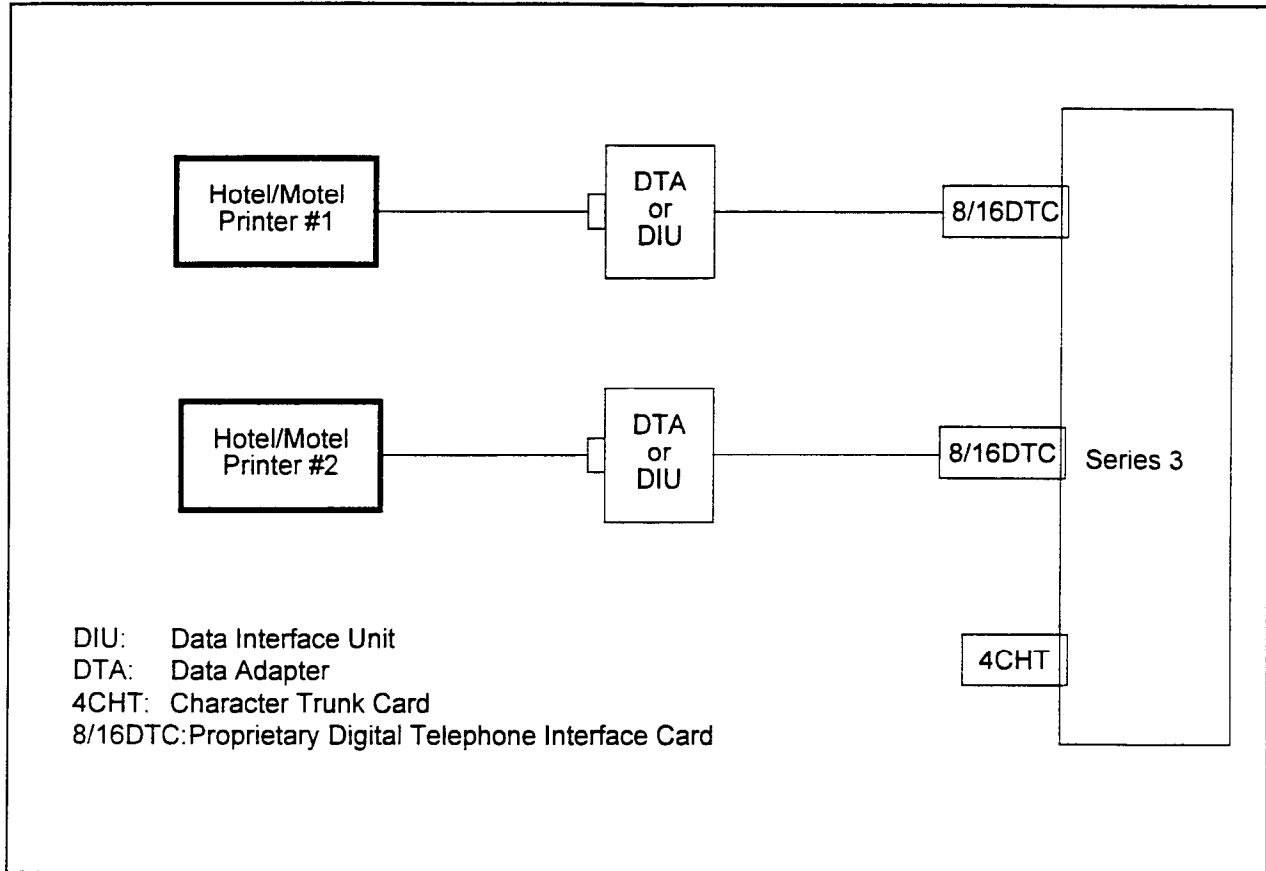
Table 10-5 shows the hotel/motel printer requirements.

**Table 10-5. Hotel/Motel Printer Requirements**

ITEM	REQUIREMENT
Interface	RS-232C, DTE mode
Speed	Asynchronous, up to 19.2 Kbps
Code	7-bit ASCII
Parity	None/odd/even
Character length	7 bits/8 bits <b>NOTE:</b> When 8 bit length is selected, the most significant bit must be space or zero.
Stop bits	1 bit/2 bit
XON/XOFF option	Available
Power on/off option	Not available
Line length	80 characters

This configuration can be modified by using CMC 222 and CMC 223 according to the characteristics of the installed printer.

Figure 10-5. Hotel/Motel Printer Configuration

**XON/XOFF Option**

The system has the ability to detect XON/XOFF control characters from the hotel/motel printer. The XON/XOFF option makes the printer unable to receive more characters than its capacity. If the system receives an XOFF character from the printer, it stops transmitting characters immediately. This may happen when there is no paper in the printer, for example. After replacing the paper, the printer is ready to receive characters. The printer will then send an XON character. When the XON character is received, the system starts to send characters again.

XON/XOFF characters are defined as follows:

- XON, DC1 or DC2.
- XOFF, DC3 or DC4.

DC1, DC2, DC3, and DC4 are ASCII code characters.

**Power On/Off Option**

This function is not available.

**CABLE REQUIREMENTS**

The requirements for the cable which connects the RS-232C port on the DTA/DIU to the hotel/motel printer is described in the following paragraphs.

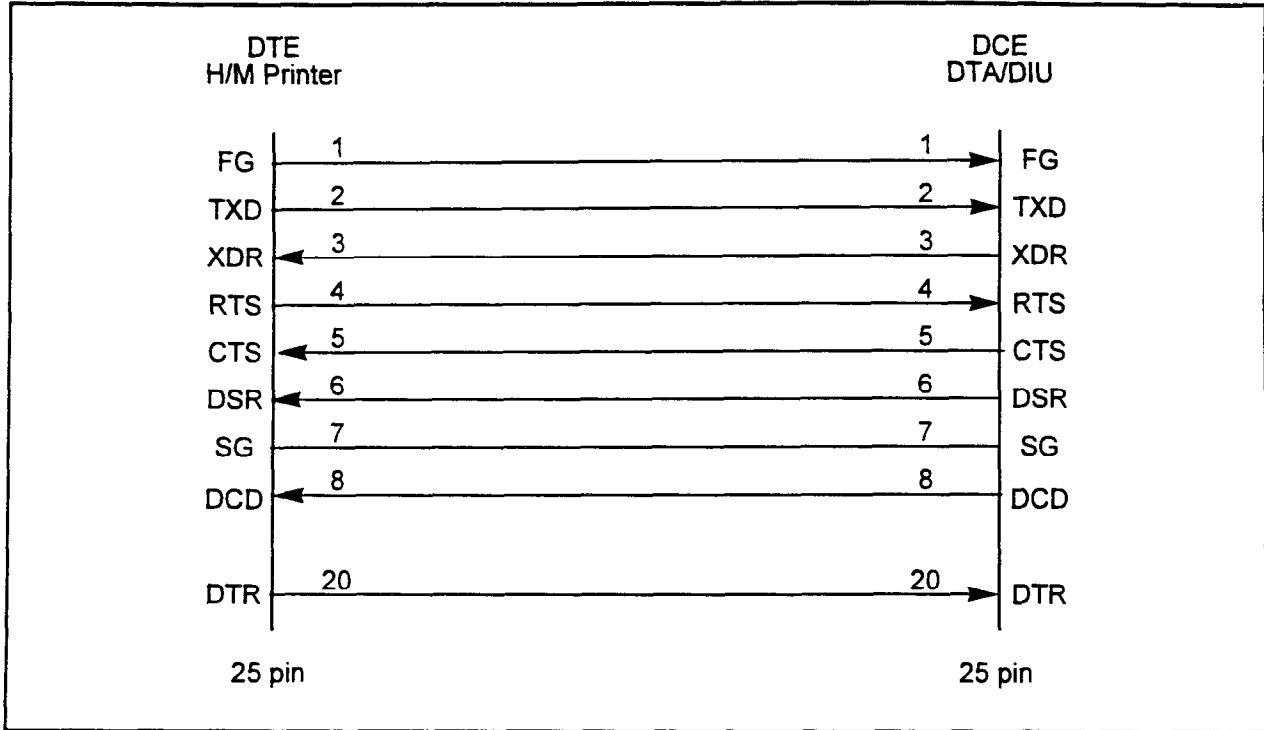
Maximum length of printer cable is 50 feet (15M).

The cable is provided by the customer.

**Hotel/Motel Printer Cable Connection**

The cable between the hotel/motel printer and the DTA/DIU must have the pin arrangement as shown in Figure 10-6.

**Figure 10-6. RS-232C Cable for Hotel/Motel Printer**





**Hotel/Motel Printer Installation**

To print out hotel/motel printer messages to the hotel/motel printer, follow the procedure below.

1. Install the 8DTC and 4CHT cards and the DTA/DIU.
2. Connect the hotel/motel printer to the RS-232C port on the DTA/DIU.
3. Turn the power to the hotel/motel printer on.
4. Enter the Data Station Assignment command (CMC 220) to install the DTA/DIU.
5. Conform with the hotel/motel printer.
6. Enter the Hotel/Motel Printer Assignment command (CMC 356) to establish the hotel/motel printer.
7. Enter the Hotel/Motel Printer Allocation Assignment command (CMC 357) to select the printout message (Independent or Common) and the paired FDC, if needed.
8. Enter the Hotel/Motel Option Data Assignment command (CMC 358) to assign the option data for message print out, if needed.

**HOTEL/MOTEL PRINTER SCREENING**

The system has screening capability for the hotel/motel printer. This capability is specified by using CMC codes. The following shows the screening items, description, and related CMC codes.

SCREENING CAPABILITY	DESCRIPTION	RELATED COMMAND
<b>Independent Message</b>	Automatic wake-up status	CMC 357
	Automatic wake-up registration/cancellation/report by FDC	CMC 357, 358
	Call charge status	CMC 357
	Call charge added/initialized/verify/report	CMC 357, 358
<b>Common Messages</b>	Automatic wake-up registration/cancellation by guest room	CMC 357, 358
	Automatic wake-up execution	CMC 357, 358
	RTS failure/repair/change	CMC 357

**HOTEL/MOTEL PRINT OUT FORMAT**

This section describes the hotel/motel print out formats. The messages output to the hotel/motel printer are classified as one of the following:

- **Common messages** - Messages independent of the front desk console operation (wake-up records, etc.).
- **Independent messages** - Messages related to the associated front desk console operation (wake-up registration/cancellation, etc.).

**HOTEL/MOTEL PRINT OUT  
FORMAT (Cont'd)**

Common messages are output to a preregistered hotel/motel printer, and independent messages are output according to front desk console operation:

- Automatic wake-up registration.
- Automatic wake-up cancellation.
- Automatic wake-up execution.
- Automatic wake-up report.
- Call charge addition.
- Call charge clear.
- Call charge verification.
- Call charge report.
- Short power failure.
- Printer failure.
- Real time clock failure.
- Real time clock repair.
- Real time clock change.
- SMDR print out for single guest room.
- SMDR printout for all guest rooms.

This area is initialized when the hotel/motel printer is installed. When 100 messages have been stored, any succeeding messages are discarded. The system has a print out buffer area capable of holding 100 messages for each hotel/motel printer. See Figures 10-7 through 10-21 for the printout formats.

**Figure 10-7. Automatic Wake-Up Registration Message**

```

      1           2           3           4           5           6           7           8
12345678901234567890123456789012345678901234567890123456789012345678901234567890
mm/dd hh:mm WAKE-UP REG      rrrr hh:mm hh:mm      BY rrrr
    
```

**Figure 10-8. Automatic Wake-Up Cancellation Message**

```

      1           2           3           4           5           6           7           8
12345678901234567890123456789012345678901234567890123456789012345678901234567890
mm/dd hh:mm WAKE-UP CNCL    rrrr hh:mm hh:mm      BY rrrr
    
```

**Figure 10-9. Automatic Wake-Up Execution Message**

```

      1           2           3           4           5           6           7           8
12345678901234567890123456789012345678901234567890123456789012345678901234567890
mm/dd hh:mm WAKE-UP CALL    rrrr hh:mm hh:mm      BY rrrr
    
```

Figure 10-10. Automatic Wake-Up Report

1	2	3	4	5	6	7	8
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
mm/dd	hh:mm	WAKE-UP	REGISTRATION	PRINT OUT	BY	rrrr	
hh:mm		rrrr	rrrr	rrrr	rrrr	rrrr	
eeeeee							

**NOTE: \*\***

mm/dd hh:mm	Wake up no answer sign
rrrr (column 33)	Current day and time
hh:mm (column 38)	Registered, canceled or verified room number
hh:mm (column 44/ column 10)	Old wake up time
ssssssss	New or current wake up time
rrrr (column 57)	Wake up call status
eeeeee	ANSWER, NO ANSWER, BUSY or NO RING
	Operator number
	Completion message
	END or CANCEL

Figure 10-11. Call Charge Addition Message

1	2	3	4	5	6	7	8
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
mm/dd	hh:mm	CHARGE ADDED	rrrr	hh:mm	hh:mm	BY	rrrr

Figure 10-12. Call Charge Clear Message

1	2	3	4	5	6	7	8
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
mm/dd	hh:mm	CHARGE CLEARED	rrrr	hh:mm	hh:mm	BY	rrrr

Figure 10-13. Call Charge Verification Message

1	2	3	4	5	6	7	8
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
mm/dd	hh:mm	CHARGE VERIFIED	rrrr	hh:mm	hh:mm	BY	rrrr

Figure 10-14. Call Charge Report

```

      1           2           3           4           5           6           7           8
1234567890123456789012345678901234567890123456789012345678901234567890
mm/dd hh:mm CHARGE PRINT OUT          BY rrrr
  rrrr  xxxx  rrrr  xxxx  rrrr  xxxx  rrrr  xxxx  rrrr  xxxx
  eeeee

NOTE:  **                Wake up no answer sign
      mm/dd hh:mm        Current day and time
      rrr (column 33)    Registered, canceled or verified room number
      xxxx (column 39)  Old or current change
      xxxx (column 47)  New change
      rrr (column 47)   Operator Number
      eeeee             Completion message
                       END or CANCEL

```

Figure 10-15. Short Power Failure Message

```

      1           2           3           4           5           6           7           8
1234567890123456789012345678901234567890123456789012345678901234567890
POWER FAIL

```

Figure 10-16. Printer Failure Message

```

      1           2           3           4           5           6           7           8
1234567890123456789012345678901234567890123456789012345678901234567890
PRINTER FAIL

```

Figure 10-17. Real Time Clock Failure Message

```

      1           2           3           4           5           6           7           8
1234567890123456789012345678901234567890123456789012345678901234567890
CLOCK FAIL hh:mm CHECK WAKE UP

```

Figure 10-18. Real Time Clock Repair Message

```

      1           2           3           4           5           6           7           8
1234567890123456789012345678901234567890123456789012345678901234567890
CLOCK REPAIR hh:mm CHECK WAKE-UP

```

Figure 10-19. Real Time Clock Changed by Command Message

1	2	3	4	5	6	7	8
12345678901234567890123456789012345678901234567890123456789012345678901234567890							
CLOCK CHANGE	hh:mm	CHECK	WAKE-UP				

Figure 10-20. SMDR Printout for Single Guest Room

1	2	3	4	5	6	7	8
12345678901234567890123456789012345678901234567890123456789012345678901234567890							
##CHARGE PRINT##			mm/dd	hh:mm	BY	0000	
DN:rrrr							
mm/dd	hh:mm	hh:mm:ss	aaaa	xxxxxxxxxxxxxxxx	cccc		
			:				
			:				
			:				
mm/dd	hh:mm	hh:mm:ss	aaaa	xxxxxxxxxxxxxxxx	cccc		
END				TOTAL	tttt		

Figure 10-21. SMDR Printout for all Guest Rooms

```

      1      2      3      4      5      6      7      8
1234567890123456789012345678901234567890123456789012345678901234567890
##CHARGE PRINT ALL##                mm/dd hh:mm                BY 0000
DN:rrrr
mm/dd hh:mm      hh:mm:ss      aaaa:xxxxxxxxxxxxxxxxx      ccccc
                                :
                                :
mm/dd hh:mm      hh:mm:ss      aaaa:xxxxxxxxxxxxxxxxx      ccccc
CANCEL

      1      2      3      4      5      6      7      8
1234567890123456789012345678901234567890123456789012345678901234567890
##CHARGE PRINT ALL##                mm/dd hh:mm                BY 0000
DN:rrrr
mm/dd hh:mm      hh:mm:ss      aaaa:xxxxxxxxxxxxxxxxx      ccccc
                                :
                                :
mm/dd hh:mm      hh:mm:ss      aaaa:xxxxxxxxxxxxxxxxx      ccccc
                                TOTAL                          ttttt

##CHARGE PRINT ALL##                mm/dd hh:mm                BY 0000
DN:rrrr
mm/dd hh:mm      hh:mm:ss      aaaa:xxxxxxxxxxxxxxxxx      ccccc
                                :
                                :
mm/dd hh:mm      hh:mm:ss      aaaa:xxxxxxxxxxxxxxxxx      ccccc
END                                TOTAL                          ttttt

NOTE: mm/dd  hh:mm      Current day and time
      0000      Operator number
      rrrr      Guest room number
      mm/dd hh:mm      Conversation start time
      hh:mm:ss      Call duration
      aaaa      Assistant number
      xxxxxxxxxxxxxxxx      Outgoing number
      ccccc      Call charge
      ttttt      Total call charge
    
```

**RESPONSE PROCEDURES FOR MALFUNCTIONS**

When an unusual situation occurs, the following procedures must be taken.

**Paper End**

The system has a capacity of about 100 messages for one hotel/motel printer message buffer; therefore, the paper must be replaced quickly.

**Printer with XON/XOFF Option**

This type of printer can notify the system to stop sending characters by transmitting an XOFF character.

Change the paper to resume printing automatically.

---

<b>Printer with Line Disconnect Option</b>	This type of printer can notify the system to stop sending characters by means of a line disconnect.
	Change the paper to resume printing automatically.
	The printer failure message will be output first after changing paper.
<b>Printer without Paper End Alerting Function</b>	This type of printer allows the system to continue to output printer messages, even if the paper runs out.
	You must turn the printer power off immediately, change the paper, and turn the printer power back on.
	<b>NOTE:</b> The messages, sent by the system during the outage, have been erased from the system and cannot be printed.
	If there is enough time before the paper runs out, enter the Hotel/Motel Printer Make Busy command (CMC 706) to make the hotel/motel printer busy, then change the paper. This will cause the system to accumulate the call messages in its buffer.
	After replacing the paper, enter the Hotel/Motel Printer Make Busy command (CMC 706) again to start printing.
<b>OTHER PROBLEMS</b>	If the printer malfunctions either intermittently or completely, the following steps may help to remedy the problem.
	<ul style="list-style-type: none"><li>• Turn the printer power off and back on.</li><li>• Check the cable connection.</li><li>• Check the port configuration of the hotel/motel printer port and the printer configuration.</li></ul>
<b>ACD CALLS WAITING INDICATOR</b>	The Calls Waiting Indicator (Figure 10-22) provides a visual indication of the approximate number of calls waiting in the ACD queue.
	An indicator can control four pairs of lamps (yellow and red). The maximum capacity of paired lamps is 40 in conjunction with the ACD indicator.
	A 4BWC or 8BWC card must be dedicated solely for the ACD call waiting indicator; one circuit of the card must be used in order to control a group. A 4BWC or 8BWC card cannot support a CO trunk line and ACD call waiting on the same card.
	An AC power supply unit, required to display the lamps, is included in the indicator. The indicator plugs into the 115V AC outlet.

**ACD CALL WAITING  
INDICATOR (Cont'd)**

Install the Calls Waiting Indicator via a 4BWC/8BWC card as follows:

1. Connect a signal cable (one pair of wires) to the MDF terminals that relate to the respective bothway trunk card tip and ring circuits.
2. Route the signal cable to the indicator.
3. Remove the four screws securing the top cover.
4. Hold the indicator and carefully lift the front of the top cover.
5. Route the signal cable through the signal cable entry port located in the rear of the top cover.
6. Strip the cable's outer covering and prepare the inner wires for placement into their terminal block (see Figure 10-23).
7. Loosen the terminal block set screws.
8. Insert the signal wires into their terminal block and secure in place with the set screw.
9. Lower the top cover.
10. Reinstall the four screws that secure the top cover.
11. Connect the AC power cord of the indicator to a 115V AC power outlet.
12. Register the installation to the system and set two threshold levels by CMC command.

**Operational Checks**

The indicator has been equipped with a lamp test push-button that, when pressed, causes all eight indicator lamps to light. Testing the operating characteristics of the display can only be performed after the indicator has been installed into an operating system programmed for this feature. The test initiates the feature, causing the system to reach the first and second threshold levels of the ACD queue, verifying the resulting display.



Figure 10-22. ACD Calls Waiting Indicator

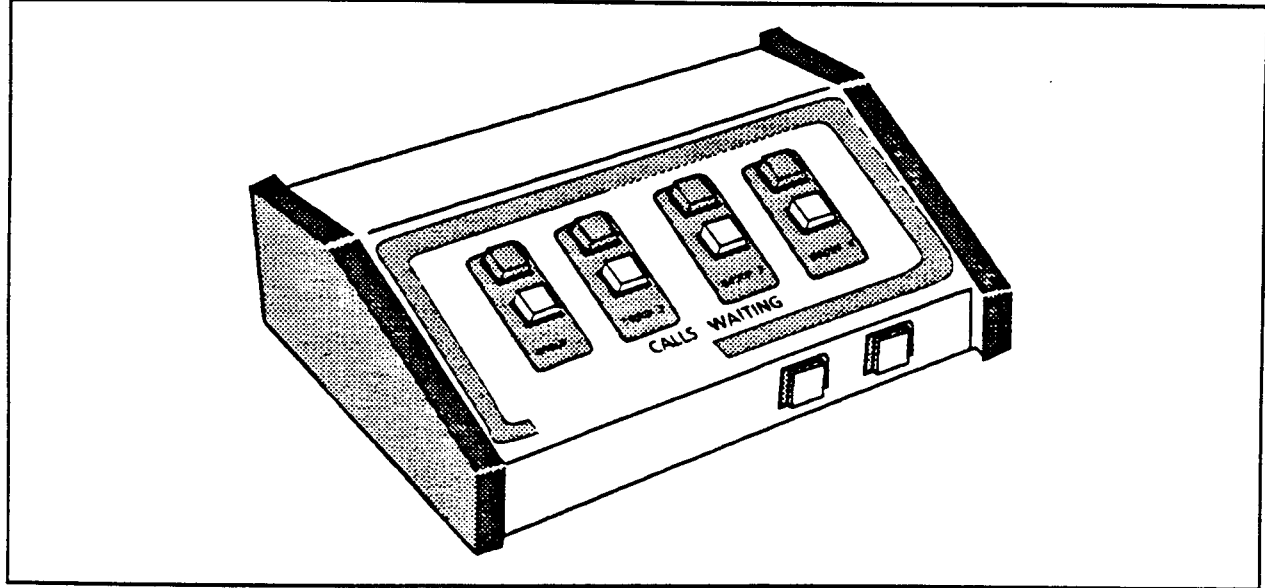
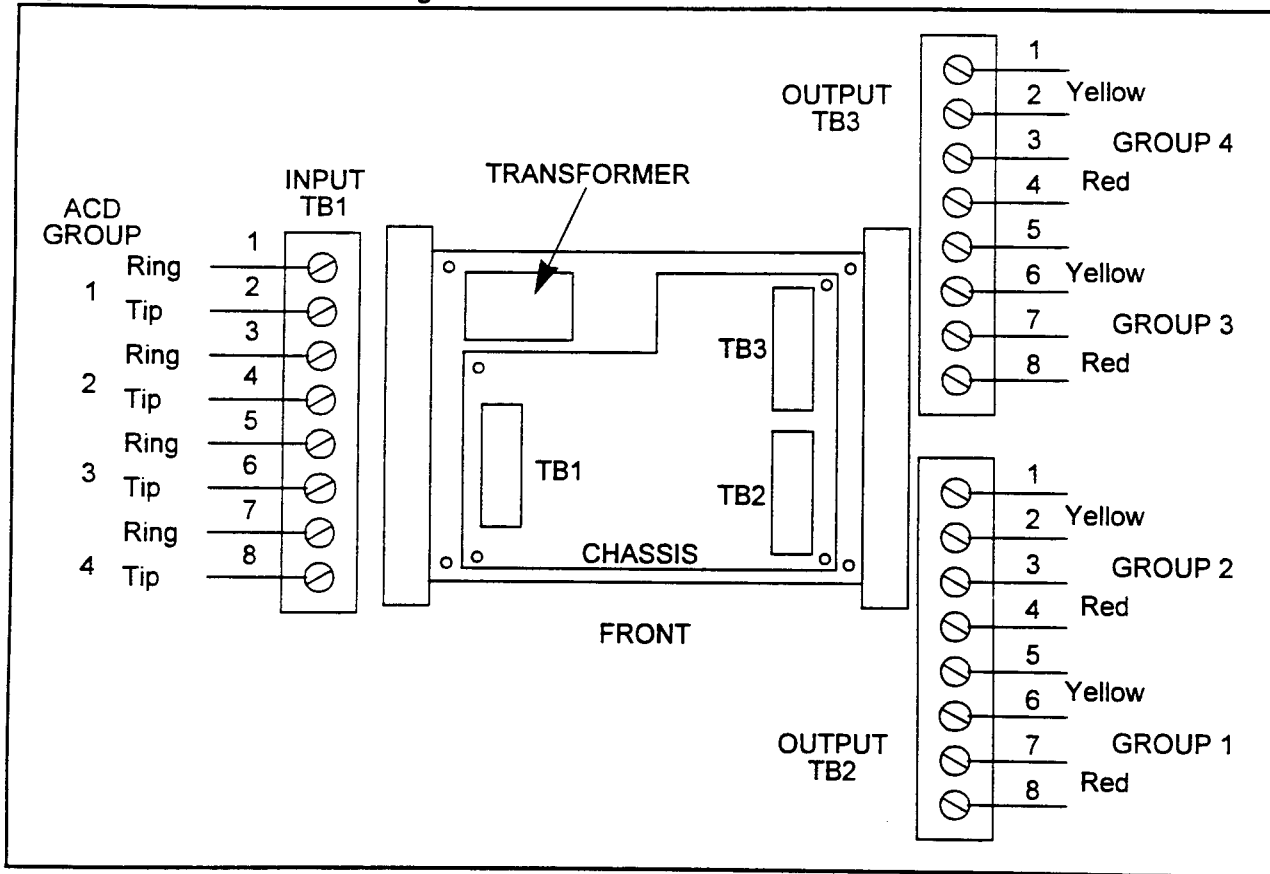


Figure 10-23. ACD Calls Waiting Indicator Terminal Block



<b>DIAGNOSIS</b>	<p>The system provides diagnostic capability for the 4CHT card.</p> <p>The CHT Loop Test command (CMC 810) is used for this purpose. For more information, see the Data Base Manual.</p>
<b>MUSIC SOURCE EQUIPMENT</b>	<p>A music source is connected through the Music On Hold Adapter (P/N 360456-01) to the MDF terminal corresponding to a 4BWC or 8BWC circuit. It is then assigned to the system by using CMC 250, CMC 305, CMC 317, and CMC 463.</p>
<b>DICTIONATION MACHINE</b>	<p>A dictation machine is connected to the MDF terminal corresponding to the 8SLC or 16SLC card. It is then assigned to the system by using CMC 200 and CMC 204.</p>
<b>EXTERNAL ALARM UNIT</b>	<p>An external alarm unit is connected to the MDF terminal corresponding to the 6PFA in the basic cabinet. The pin assignment of the MDF terminal is shown in Chapter 10.</p>
<b>APPLICATION PROCESSOR APPLIQUE</b>	<p>The applique is a universal serial cable interface. The jumper options on the applique make it possible to use standard cables and connectors to connect any Application Processor to the Series 3 system. Refer to the Application Processor documentation.</p>

## INTRODUCTION

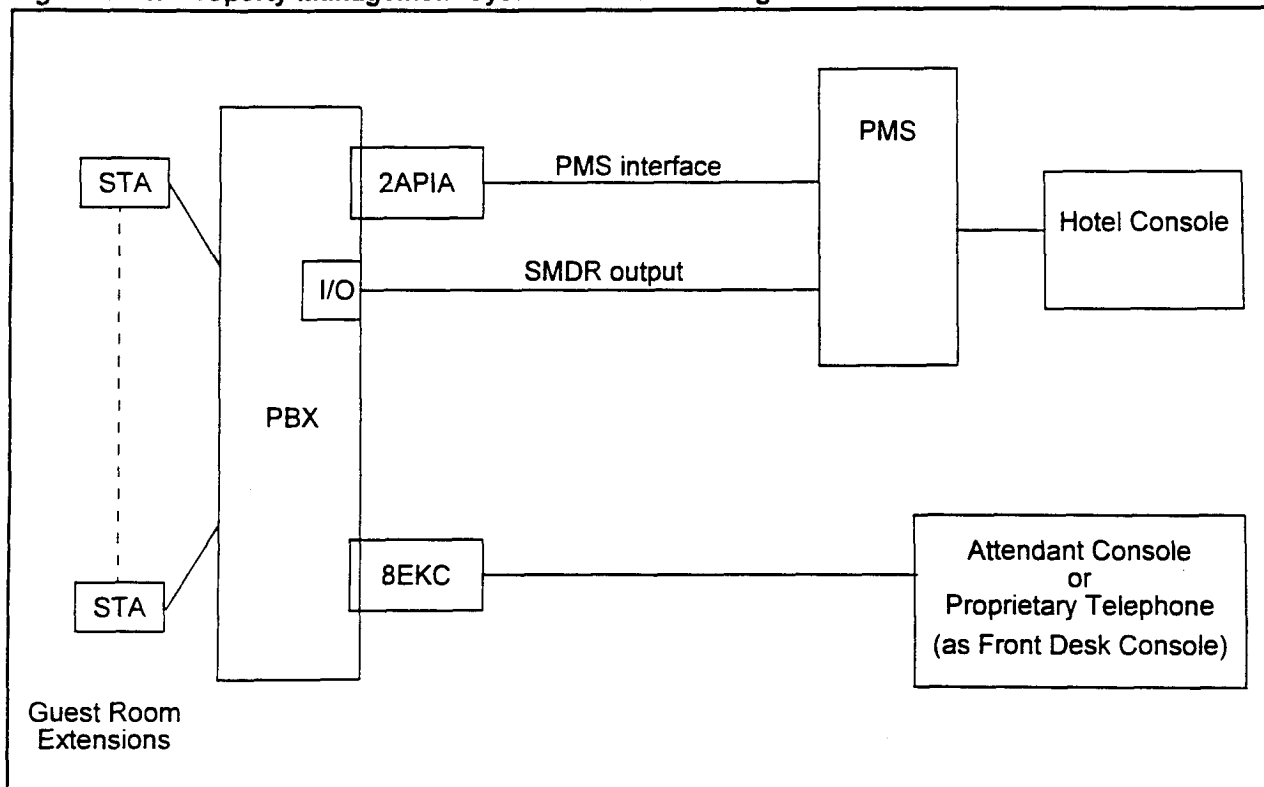
The purpose of this section is to provide a description of the features available with the Property Management System Interface (PMSI). This interface allows a PMS to provide some integrated features for Hotel/Motel applications. The following are the main features provided:

- Maid status.
- Message waiting.
- Check-in/check-out.
- Wake-up (multi-language).
- Guest information (guest name and language code).
- Room restriction.

The billing information may be passed to the PMS through an I/O port as Station Message Detail Recording (SMDR) output.

The system allows one PMS system to be interfaced.

**Figure 11-1. Property Management System Interface Configuration**



**GENERAL CONDITIONS**

The data base, such as the guest room number, should be synchronized between the system and the PMS.

When the PMS is used for Hotel/Motel services, the PMS equipment should be operated as specified in Table 11-1 below.

The PMSI is available only for extensions registered in the system as a guest room. Therefore, the PMSI is not available for business applications.

**Table 11-1. PMS Feature Support**

SERVICE NAME	AVAILABLE EQUIPMENT		NOTES
	PMS CONSOLE	FDC	
Maid Status	X *1		*1. Maid Status is entered by using guest room telephone. *2. If both PMS console and FDC are used simultaneously, the data base of the PBX will be different from the base of the PMS. *3. Alternatively used. Either PMS console or FDC should be used.
Message Waiting	X	X	
Check-In/Out	X	*2	
Wake Up (Multi-language)	X	X	
Do Not Disturb		X	
Call Billing	X*3	X*3	

**SYSTEM INTERFACE  
SPECIFICATIONS**

The Application Processor Interface (2APIA) card is used to interface between a PMS and the system. The API card is installed in the system and connected to the PMS using an RS-232C cable. Table 11-2 shows the system interface specifications.

**Table 11-2. System Interface Specifications**

DEFINITIONS	PARAMETER VALUES
Data Speed	300, 600, 1200, 2400, 4800
Type of Synchronization	Asynchronous (Fixed)
Type of Communication	Full Duplex (Fixed)
Control Signaling	SD, RD, DTR, DSR, RTS
Start bit	1 (Fixed)
Stop Bit	1, 1.5, 2
Word Length	8 (Fixed)
Parity Bit	Odd, Even, None
Error Correction	BCC
Data Code	4 bit Nibble
Mode	DTE Mode

**SOFTWARE INTERFACE  
SPECIFICATIONS**

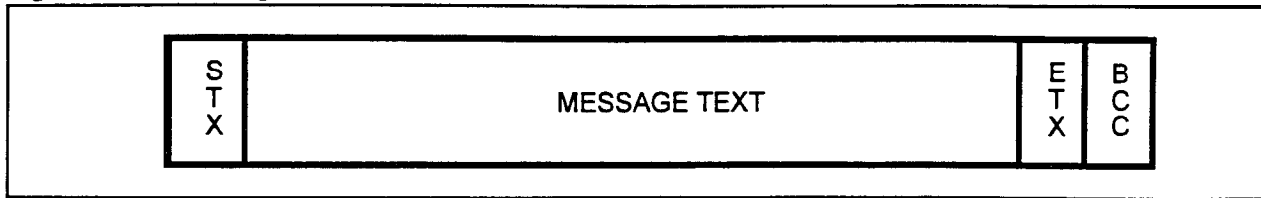
The following tables and figures give additional information on the PMSI software interface specifications; i.e., protocol, message formats, etc.

**Table 11-3. Software Interface Specifications**

CHARACTER	CODE	SOURCE		MENS
		SENDER	RECEIVER	
STX	02 <sub>H</sub>	X		Start of data text
ETX	03 <sub>H</sub>	X		End of data text, block check code follows
ENQ	05 <sub>H</sub>	X		Sender request for ACK/NAK from receiver
ACK	06 <sub>H</sub>		X	Message acknowledged by receiver
NAK	15 <sub>H</sub>		X	Message not acknowledged by receiver

**Message Format** Figure 11-2 shows the message format.

**Figure 11-2. Message Format**



The Block Check Code (BCC) is an EXCLUSIVE OR of all contents following the STX through and including the ETX.

- Control Codes**
- ENQ
  - ACK
  - NAK

**Protocol** Tables 11-4 and 11-5 show the state of transitions. Because of the full-duplex transmission, there are two diagrams for both the sending side and the receiving side.

**Table 11-4. State Transition Diagrams (Receive Side)**

STATE CONDITION	IDLE (0)	RECEIVING TEXT (1)	WAIT FOR BCC (2)	WAIT FOR TEXT (3)
Receive STX	→ (1)	Clear received text (1)		(1)
Receive STX				
Receive BCC			If correct BCC then send ACK; If illegal BCC then send NAK → (3)	
Receive ENQ	Send NAK → (0)			Send last ACK/ NAK within 3 retries → (3) At the fourth retry, send NAK → (0)
Receive transmission code		Receive text → (1)		
Receive NAK		Receive text as "15" nibble code		
Time out (2 sec.)		Send NAK → (0)	Send NAK → (0)	→ (0)

Table 11-5. State Transition Diagrams (Send Side)

STATE CONDITION	IDLE (A)	COMPLETION OF TEXT SENDING (B)
Send STX	Sed message → (1)	
Receive ACK		→ (A)
Receive NAK		Send message up to 3 times → (B) At the fourth retry →(A)
Timing ut	Send NAK → (0)	
Time out (2 sec.)		Send last ENQ up to 3 times → (B) At the fourth retry→ (A)

NOTE: The blank boxes in Tables 11-4 and 11-5 indicate that the system ignores this condition.

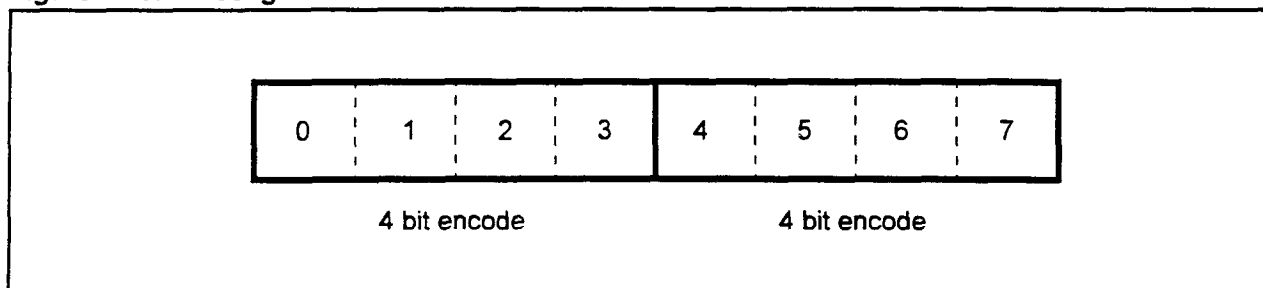
**Error Codes** The following are the error conditions:

- BCC code error.
- Overrun error.
- Framing error.
- Parity error.
- Break detection.
- Send buffer does not become empty within 200 ms after sending a character.
- No ACK/NAK response within 2 sec. after the end of sending message.
- No BCC code within 2 sec. after STX code.
- DSR is not set at sending.

**TRANSMISSION CODE**

Shown below is Figure 11-3, which shows the message text format.

Figure 11-3. Message Text Format



**TRANSMISSION CODE  
(Cont'd)**

Table 11-6 below shows the code representation.

**Table 11-6. Code Representation**

CODE	ENCODE	CODE	ENCODE	CODE	ENCODE	CODE	ENCODE
Not Used	0 (0000)	4	4 (0100)	8	8 (1000)	#	C (1100)
1	1 (0001)	5	5 (01010)	9	9 (1001)	Not Used	D (1101)
2	2 (0010)	6	6 (0110)	0	A (1010)	Not Used	E (1110)
3	3 (0011)	7	7 (0111)	*	B (1011)	Null	F (1111)

**MESSAGE SPECIFICATIONS**

This section describes the conditions under which the message is sent or received. The supported feature codes are summarized in Table 11-7 below.

**Table 11-7. Feature Message Summary**

OPERATIONAL FEATURE	FEATURE CODE	PURPOSE
Maid status-dialed from guest room	11	Communicate maid-dialed status change from guest room.
Message waiting	13	Communicate message waiting lamp status change,
Room Restriction	15	Restrict guest room phone use.
Check In/Out	16	Communicate room check-in and check-out.
Room data image	17	Exchange status information for guest room.
Wake-up	30	Register or cancel wake-up service.
Wake-up attempt	31	Notify the result of wake-up attempt after wake-up service is executed.
Set and change guest information	32	Set or change guest name and language code.
Status inquiry and failure management	70	Data link maintenance.



**PMSI FEATURES**

The features described in this section are included in the PMSI package.

**Maid Status - Dialed from Guest Room****Description**

Maid status enables the on-line tracking of the house cleaning service and room status change. The maid enters a one-digit maid status code (1-6) and up to six digits for an optional code from a guest room telephone. The definitions for maid status and the optional digits can be specified by the PMS manufacturer; the system simply passes the dialed process code and optional digits without any check or verification.

**Operation**

1. The maid dials the Feature Access Code (FAC) by using a guest room telephone. The display on the proprietary telephone shows the following:

**MAID**

2. The maid then dials a one-digit maid status code and the optional code (up to six digits). When the maid dials the six-digit code or the inter-digit time out occurs, the system sends MSG (11, x) - Maid status message, including the optional digits to the PMS where X is the dialed process code.
3. If the system receives MSG (11, 9) - Content/state valid from the PMS, then the maid hears a confirmation tone and the display on the proprietary telephone shows the following:

**DONE**

If the system receives MSG (11, 8) - Content/state error or no response at all from the PMS within the predetermined time, then the maid hears reorder tone and the display on the proprietary telephone shows the following:

**RETRY**

- Conditions
1. The maid must remain on the line to receive either confirmation tone or reorder tone to know whether the maid status message has been accepted.
  2. The system sends a maid status message to the PMS when the six-digit code is dialed or inter-digit time out has occurred.
  3. In the case of a communication failure between the system and the PMS, the system sends reorder tone after dialing has been completed.
  4. If the Maid Status access code is dialed from a telephone assigned as anything other than a guest room telephone, then reorder tone is heard.

### Message Waiting

Description      The Message Waiting feature turns on or off the message waiting lamp on a guest room telephone. This feature can be entered via the system terminal (with notification to the PMS) or after receiving a message from the PMS.

- Operation
1. For the PMS to activate message waiting, a message MSG (13, 1) - MW lamp turn on by PMS must be received.
  2. After receiving a message from the PMS, the system turns on the message waiting lamp on the designated guest room telephone. The following message is displayed on the proprietary telephone when the message waiting button is pressed:

200	CALL ME BACK
-----	--------------

↑ Front Desk Console telephone number

3. When the message is called back, either by pushing the message waiting button or dialing the extension shown, the PMS is called back.
4. If the call back is answered, the system turns off the message waiting lamp on the guest room telephone and the system sends MSG (13, 4) - MW lamp turn off by the system to the PMS.
5. The PMS can deactivate the message waiting lamp on the guest room telephone before the message is picked up by the guest by sending MSG (13, 2).

- Conditions
1. One Front Desk Console telephone, which may be an extension or an Attendant Console, is assigned as the paired station with the PMS. This extension is considered the message registration source.
  2. If the message registration source attempts to turn on a message waiting lamp that has not been turned on, the system sends MSG (13, 3) - MW lamp turn on by the system to the PMS.
  3. If the message registration source attempts to turn off a message waiting lamp that had previously been registered, the system clears the message and sends MSG (13, 4) - MW lamp turn off by the system to the PMS if there is no other message waiting. When there are remaining messages, a message will not be sent to the PMS although the message from the registration source has been cleared.
  4. When the PMS requests that the message waiting lamp be turned on by MSG (13, 1) - MW lamp turn on by PMS, the system turns on the message waiting lamp.
  5. When the PMS requests that the message waiting lamp be turned off by MSG (13, 2) - MW lamp turn off by PMS, the system clears all messages left and turns off the message waiting lamp.
  6. When the MW message is sent by the PMS, there is no return message sent back to the PMS to indicate whether or not the message waiting lamp was activated.

**Multi-Language Wake-Up**

**Description** One of ten wake-up messages can be selected from an extension, FDC, or PMS.

**Operation** Registration/change or confirmation of ten wake-up messages:

**Extension Operation**

1. Lift the handset and dial the access code or press the feature button. "R-INF" displays on the LCD of the proprietary telephone and confirmation tone is heard.
2. Dial a selection ID (1 or 9) followed by the guest room extension number.
  - a. If 1 is selected, a language code (0 to 9) can be registered or changed. "LG" is displayed on the LCD of the proprietary telephone.
  - b. If 9 is selected, room information can be confirmed when it is displayed on the LCD of the proprietary telephone.

**XXXX L**

XXXX = Guest room extension

L = Language code

If the operating extension has no LCD, reorder tone (ROT) is heard. Confirmation tone is heard when the operation is completed.

- c. Under the following conditions, ROT will be heard:
  - If the selection ID is neither 1, 2, nor 9.
  - If the designated extension is not a guest room extension.
  - If the designated extension has not been checked-in.
  - If the designated extension is not a valid extension.
3. If ID 1 is dialed, dial a one-digit language (0-9).
4. Under the following conditions, ROT will be heard:
  - If an invalid language code is selected.
  - If the designated extension is not a guest room extension.
  - If the designated extension has not been checked-in.

**Front Desk Console (FDC) operation:**

"Room information" is added to the FDC menu (on the four-line display) to enable the operator to register or change a language code and room restriction COR for a guest room extension (set P1=18 in CMC 358).

---

**Operation (Cont'd) PMSI Operation**

The following messages are sent to the PBX from the PMS and vice versa when Multi-language wake-up is registered or changed:

- MSG (32, 1) - Guest room information is used for defining a language code for each guest room extension. When the system receives the message from the PMS, the designated language code is registered to the extension.
- The system returns MSG (32, 9) - Data accepted when the language code has been registered. The system returns MSG (32, 8) - Data not accepted when the language code is not registered.

- Conditions
1. Up to ten wake-up messages can be recorded on the RVAC/VMCA card. When a guest extension answers the wake-up, the selected message is heard. When the voice announcement has not been registered, confirmation tone is heard.
  2. If a language code is not registered, the message corresponding to type "0" is sent. When a guest is checked in, the language code is set to "0."
  3. The language code setting is denied under the following conditions:
    - The specified extension is not a guest room extension.
    - The specified extension has not been checked-in.
    - An unidentified language code has been used.
  4. When the FDC is used, "ROOM INF" menu can be omitted by setting the option data in CMC 358.

**Check-In/Out**

**Description** As a guest checks in or out, the PMS can change a room from a vacant to occupied status and vice versa.

**Operation** **Check-in:**

1. When a guest checks in, an entry is made in the PMS which sends MSG (16, 1) - Check-in to the system.
2. The system changes the room status for the designated guest room from vacant to occupied and clears any message waiting, DND, Wake-up and/or billing information.

If the guest room selected has already been occupied, the system returns MSG (16, 8) - Already occupied to the PMS.

If the guest room telephone is busy, the check-in request will be blocked and the system will return the message MSG (16, 9) - Check-in not performed, phone/file busy to the PMS.

If the message waiting lamp has been turned on, the system will turn it off and return the message MSG (13, 4) - MW lamp turn off by the system to the PMS (room status moves to check-in).

**Check-out:**

1. When a guest checks out, an entry is made in the PMS which sends MSG (16, 2) - Check-out.
2. The system changes the room status for the designated guest room from occupied to vacant, prints billing information, and returns MSG (16, 5) - Check-out confirm to the PMS.

If the guest room is already registered as vacant, the system returns MSG (16, 7) - Already vacant to the PMS.

If at the time of the check-out the printer is blocked, the check-out will be blocked and the system will return MSG (16, 4) - Check-out not performed, printer blocked to the PMS.

If the message waiting lamp has been turned on, the system sends MSG (16, 6) - Check-out performed, MW lamp on to the PMS (room status moves to check-out).

If the guest room telephone is busy, check-out will be blocked. The system will return MSG (16, 9) - Check-out not performed, phone/file busy to the PMS.

**Operation (Cont'd) Partial check-out (clear telephone charges):**

1. The PMS sends MSG (16, 3) - Partial check-out to the system.
2. The system prints the billing information and then clears it. The status of the room will not be changed.

If at the time of partial check-out the printer is blocked, the partial check-out will be blocked and the system will return MSG (16, 4) - Check-out not performed, printer blocked to the PMS.

If the guest room telephone is busy, check-out will be blocked. The system will return MSG (16, 9) - Check-out not performed, phone/file busy to the PMS.

- Conditions
1. The Hotel/Motel printer, which prints out the billing information, should be allocated to a paired extension with the PMS. The system directs the printout to this printer when the PMS requests a check-out.
  2. If the printout request is blocked, check-out or partial check-out will be denied under the following conditions:
    - Printer is made busy.
    - CHT, DIU, and/or DTA are faulty.
    - Printer is not ready; e.g. power is off.
    - DIU/DTA is in test mode.
    - Print out buffer block.
  3. Under the following conditions, a check-out can be completed without a printout:
    - The system is configured not to print out the billing information during the check-out operation. (Programmable using CMC 358, Flag 7).
    - The paired extension with the PMS is not registered.
    - The Hotel/Motel printer is not specified to the paired PMS station.
  4. The system does not check the room status at MSG (16, 3) - Partial check-out from the PMS. This message is also effective for a vacant room.
  5. When the room status is controlled by the PMS, it is not recommended that the room status change be made from the Front Desk Console. This will result in a status mismatch.

**Room Restriction**

Description One of sixteen Class of Restrictions (COR) can be selected from an extension, FDC, or PMS to restrict guest telephone use.

Operation Registration/change of guest telephone COR:

**Extension Operation**

1. Lift the handset and dial the access code or press the feature button. "R-INF" displays on the LCD of the proprietary telephone and confirmation tone is heard.
2. Dial a selection ID (2 or 9) followed by the guest room extension number.
  - a. If 1 is selected, a language code (0 to 9) can be registered or changed. "RS" is displayed on the LCD of the proprietary telephone.
  - b. If 9 is selected, room information can be confirmed when it is displayed on the LCD of the proprietary telephone.

**XXX L RR**

XXXX = Guest room extension

L = Language code

RR = Room Restriction (COR: 01-16)

If the operating extension has no LCD, reorder tone (ROT) is heard. Confirmation tone is heard when the operation is completed.

- c. Under the following conditions, ROT will be heard:
  - If the selection ID is not 1, 2, or 9.
  - If the designated extension is not a guest room extension.
  - If the designated extension has not been checked-in.
  - If the designated extension is not a valid extension.
3. If ID 2 is dialed, dial a two-digit COR (01 - 16).
4. Under the following conditions, ROT will be heard:
  - If an invalid COR is selected.
  - If the designated extension is not a guest room extension.
  - If the designated extension has not been checked-in.

**Front Desk Console (FDC) Operation:**

"Room Information" is added to the FDC menu (on the four-line display) to enable the operator to register or change a language code and room restriction COR for a guest room extension (set P1 = 18 in CMC 358).



## Operation (Cont'd)

## PMSI Operation

The following messages are sent to the PBX from the PMS and vice versa when room restriction is registered or changed:

- MSG (15,1) - Room restriction from PMS is used to define a COR for a guest room from PMS. When the system receives this message, the day and night COR are updated.
- MSG (15,2) - Room restriction from PBX sent to PMS when COR for a guest room is changed via FDC or feature access code operation in the PBX.
- MSG (17, 3) - Data base update request is used to set the COR of a guest room telephone.
- MSG (17, 2) - Image response from PBX includes COR of a requested guest room telephone.

## Conditions

1. When a COR for a guest room is entered from PBX by either FDC, or feature access code, a room restriction message (FC=15) is set to the PMS. But when the COR is changed by CMC 202, no message is set to the PMS.
2. When MSG (17, 1) - Request image is received from the PMS, the PBX sends MSG (17, 2) with the COR to the PMS.

## Room Data Image

**Description** This feature provides an inquiry capability on the status of a given room via the PMS. There are two types of process codes; change of the room status or information only. The system is responsible for room status, vacant/occupied, message waiting lamp activation or deactivation, language code, and wake-up time.

**Operation Inquiry:**

1. To check the status of a guest room, an entry is made in the PMS which sends a message MSG (17, 1) - Request room image.
2. The system returns MSG (17, 2) - Image response that fills out the null fields with the current guest room status. Any non-null field is returned with null.

**Status Change:**

1. To change the status of a guest room, an entry is made in the PMS which sends MSG (17, 3) - Change room data.
2. The system updates the room data along with the requested status by the PMS. The result is returned by MSG (17, 4) - Data base update response. The system returns the status at null fields, changes the status at non-null fields and returns null code for the same fields.

- Conditions**
1. Some of the status fields are not defined for the status inquiry. The system returns null to those fields in MSG (17, 2) - Image response.
  2. The message waiting lamp responds to MSG (17, 3) - Change room data the same way as receiving MSG (13, 1/2) - MW lamp turn on/off by PMS.
  3. When a room status is changed from vacant to occupied or vice versa, the Room Status Indicator (RSI) is updated.
  4. When the room status is changed from vacant to occupied, all billing information, wake-up, DND, and Message Waiting registration are cleared. The system then returns MSG (17, 4) - Data base update response to the PMS.
  5. When the room status is changed from occupied to vacant, the billing information is printed out and MSG (17, 4) - Data base update response is sent to the PMS. If the print out is blocked by the same reasons as those listed under **Check-out**, MSG (16, 4) - Printer block is returned to the PMS, but the room status is changed to vacant.
  6. When guest room status is requested for the system, vacant "Need-clean-up" status is reported as vacant and occupied "Need-clean-up" is reported as occupied.

- Conditions (Cont'd)
7. In MSG (17, 3) - Change room data, NULL is filled in fields for wake-up time or LC, the wake-up time or LC registered in the system is sent to the PMS in MSG (17, 4) - Data base update response.
  8. If "\*\*\*:\*\*\*" is entered in the wake-up time field in MSG (17, 3) - Change room data, the system regards it as wake-up call cancellation. If the system has registered the wake-up time, then the system sends NULL in the wake-up time field in MSG (17, 4) - data base update response for cancellation acceptance. If the system has not registered the wake-up time, it sends "\*\*\*:\*\*\*" in the wake-up time field in MSG (17, 4) - Data base response for notification of cancellation status.

**Wake-Up**

**Description** This feature enables wake-up service to be registered for guests via the PMS.

**Operation** **Wake-Up Registration:**

1. To set a wake-up call for a guest room, an entry in the PMS sends MSG (30, 1) - Set wake-up.
2. The system registers the wake-up service for the designated extension.
3. The system returns MSG (30, 9) - Data accepted when the wake-up request has been successfully registered. The system returns MSG (30, 8) - Data not accepted if the request has not been accepted.
4. If a wake-up is registered using the Front Desk Console or an access code, the systems sends MSG (30, 3) - PBX entry to PMS.

**Wake-up Cancellation:**

1. To cancel a wake-up call to a guest room, an entry in the PMS sends MSG (30, 2) - Clear wake-up.
2. The system cancels the wake-up service to the designated extension.
3. The system returns MSG (30, 9) - Data accepted when the wake-up request has been accepted.
4. If a wake-up is canceled by using the Front Desk Console or an access code, the systems sends MSG (30, 4) - PBX clear to PMS.
5. When a wake-up call is canceled by activating the check-in procedure, the system does not send a message to the PMS.

- Conditions**
1. A wake-up time registered within four minutes is invalid.
  2. Under the following conditions, MSG (30, 8) - Data not accepted is sent:
    - The time is not registered in the system.
    - The correct time format (00:00 - 23:59) is not used.
    - The designated extension has already received registered wake-up service when responding to MSG (30, 1).
    - The designated extension does not have registered wake-up service when responding to MSG (30, 2).
  3. For the system's response MSG (30, 8) or MSG (30, 9) to MSG (30, 1), the system sends the same content for guest room extension number and wake-up time as MSG (30, 1) filled.

**Wake-Up Attempt**

- |             |   |
|-------------|---|
| Description | When Wake-Up service is activated in the system, the PMS is notified of the result.   |
| Operation   | <ol style="list-style-type: none"><li>1. When a guest answers the wake-up call, the system sends <u>MSG (31, 1) - Wake-up answer.</u></li><li>2. On a second attempt, the wake-up is not answered, the system sends <u>MSG (31, 3) - Wake-up no answer.</u></li><li>3. If a guest extension is busy or faults on the first and second attempt of wake-up, the system sends <u>MSG (31, 2) - Wake-up busy.</u></li></ol> |

<b>Set and Change Guest Information</b>	This procedure enables guest names and language codes (LC) to be registered. The following information refers to Guest Name Registration.
Description	A registered guest's name (up to fifteen digits) can be programmed in the PMS to display on the proprietary telephone of the calling party.
Operation	<b>Registration of Guest Name:</b> <ol style="list-style-type: none"><li>1. To register a guest's name, an entry in the PMS sends <u>MSG (32, 1) - Set and change guest information</u>.</li><li>2. The system registers the defined name to the designated guest extension.</li><li>3. The system returns <u>MSG (32, 9) - Data accepted</u> when the name has been successfully entered or changed. The system returns <u>MSG (32, 8) - Data not accepted</u> if the registered guest name has not been accepted.</li></ol> <b>Cancellation of Guest Name:</b> <ol style="list-style-type: none"><li>1. When the system receives <u>MSG (16, 1) - Check-in from PMS</u>, the system cancels the registered name.</li></ol>
Conditions	<ol style="list-style-type: none"><li>1. Up to fifteen characters can be registered for a guest name.</li><li>2. In the PBX, two names are registered for each section: Name 1 (up to 5 digits) and Name 2 (up to 15 digits). <u>MSG (32, 1)</u> only sets Name 2, and when Name 1 needs to be displayed, the dialed number displays instead. Refer to the System Description/Features Manual for further information.</li></ol>

**Set and Change Guest Information (Cont'd)**

This procedure enables guest names and language codes (LC) to be registered. The following information refers to language codes.

**Description** One wake-up message can be selected out of ten different wake-up messages from an extension, Front Desk Console, or PMS.

**Operation** **Registration/Change of Ten Wake-up Messages:**

Refer to the multi-language wake-up operation.

**ASCII-Nibbles Conversion For Guest Name Conditions**

In Table 11-8, the ASCII-Nibbles Conversion for guest names are shown.

- When the length of a name is less than fifteen characters, the remaining spaces should be filled with NULL. For example, if a guest's name is seven characters, then NULL would be entered for the remaining eight to fifteen characters.
- If NULL is entered in the LC field, neither registration or change is performed.

**Table 11-8. ASCII Nibbles Conversion for Guest Name**

		TWO LEFT-MOST NIBBLES													
		AA	A1	A2	A3	A4	A5	A6	A7	A8	A9	1A	11	12	—
MOST RIGHT NIBBLE	A					(	2	<	F	P	Z				
	1					)	3	=	G	Q					
	2				S	*	4	>	H	R					
	3				!	+	5	?	I	S					
	4				"	,	6	@	J	T					
	5				#	-	7	A	K	U					
	6				\$	.	8	B	L	V					
	7				%	/	9	C	M	W					
	8				&	0	:	D	M	X					
9				'	1	;	E	O	Y						

**Language Code**

LC (Nibbles)	A	1	2	3	4	5	6	7	8	9
Type of Language	0	1	2	3	4	5	6	7	8	9

- Conditions (Cont'd)
- Under the following conditions, MSG (32, 8) - Data not accepted is sent:
    - The designated extension has not been checked-in to the system.
    - Characters other than those allowed are entered as a guest name in the LC field.
    - NULL is entered for both guest name and language code. However, when NULL is entered for either guest name or language code, MSG (32, 9) - Data accepted is sent.
    - For the system's response MSG (32, 8) or MSG (32, 9) to MSG (32, 1), the system sends the same content for the guest name and the language code as MSG (32, 1) filled.



**Status Inquiry**

**Description** The PMS provides a data link maintenance and data base synchronization between the system and the PMS. The PMS sends MSG (70, F) at least every ten seconds, but not more than every 500 ms, to check link failure. Additionally, when the PMS reconnects to the system after a link down, the PMS performs the data base synchronization.

**Operation** **Link Inquiry Message:**

1. In order to confirm communication and to verify that the PMS is working properly, the PMS sends MSG (70, F) - Periodic message for link check.
2. The system returns MSG (70, 0) - Response "link-up" to periodic message.

The system returns MSG (70, 2) - Response "The system failure" under the following conditions:

- Experienced reset restart.
- Experienced "Data Kept" restart.
- API link down.
- API card failure.

**Data Base Swap:**

1. To begin the data base synchronization, the PMS sends MSG (70, 3) - Start data base exchange.
2. To complete the data base synchronization, the PMS sends MSG (70, 4) - End data base synchronization.

- Conditions**
1. The system returns nothing in response to MSG (70, 3) or MSG (70, 4).

**Message Format**

**Description** The following section shows the message formats for the features listed in this chapter.

- NOTES:**
1. The message count field (MSG CT) represents a ten message counter.
  2. When the system receives two of the same "message counter message" in sequence, the system discards the second message.
  3. The system will ignore any message with an invalid code.
  4. The system returns the received message setting, the most significant bit in the Feature Code octet, under the following conditions:
    - a. Undefined or unavailable feature code or process code.
    - b. The designated extension number is not a guest room telephone.
    - c. Message length is different from the one defined.
    - d. Invalid message content.
  5. An extension number that is shorter than 4-digits is padded from X4. Nibble "A" code is used in front of the extension number. In the example below, extension 310 is used.

1	A	Second two digits of extension number
A	3	First two digits of extension number

6. The option digit in maid status extension message is padded from DGT6. When the option digits are less than 6 digits, null (nibble "F" code) is padded in front of the dialed digits. In the example below, the dialed option digits are 2401.

A	1	Digit 2 and Digit 1
2	4	Digit 4 and Digit 3
F	F	Digit 6 and Digit 5

Maid Status Controlled From Room (FC 11)

**Message Format**

1	1	Feature Code
MSG CT	PR-C	
X2	X1	Extension Number second two digits
X4	X3	Extension Number first two digits
DIG2	DIG1	Option Digits
DIG4	DIG3	Option Digits
DIG6	DIG5	Option Digits

Process Code	Definition	Sender
1-6	PMS Interpreted	PBX
8	Data not accepted	PMS
9	Data accepted	PMS

Message Waiting (FC 13)

**Message Format**

1	3	Feature Code
MSG CT	PR-C	
X2	X1	Extension Number second two digits
X4	X3	Extension Number first two digits

Process Code	Definition	Sender
1	MW lamp turn on by PMS	PMS
2	MW lamp turn off by PMS	PMS
3	MW lamp turn on by PBX	PBX
4	MW lamp turn off by PBX	PBX

## Room Restriction (FC 15)

**Message Format**

1	5	Feature Code
MSG CT	PR-C	
X2	X1	Extension Number second two digits
X4	X3	Extension Number first two digits
R2	R1	Room Restriction (01-16)
F	F	Filler (NULL)
F	F	Filler (NULL)

**Process**

Code	Definition	Sender
1	Set room restriction by PMS	PMS
2	Set room restriction by PBX	PBX

## Check-in/out (FC 16)

**Message Format**

1	6	Feature Code
MSG CT	PR-C	
X2	X1	Extension Number second two digits
X4	X3	Extension Number first two digits
F	F	Filler (NULL)

**Process**

Code	Definition	Sender
1	Check-in	PMS
2	Check-out	PMS
3	Clear phone charge for partial check-out	PMS
4	Check-out not performed, printer blocked	PBX
5	Check-out confirmed	
6	Check-out confirmed, with MW on	PBX
7	Check-out confirmed, already vacant	
8	Check-in confirmed, already occupied	PBX
9	Check-in/out performed, Phone busy	PBX

Room Data Image (FC 17)

**Message Format**

1	7	Feature Code
MSG CT	PR-C	
X2	X1	Extension Number second two digits
X4	X3	Extension Number first two digits
LC	OCC	OCC 0: Vacant, 1 Occupied LC: Language Code
F	MW	MW: 0=MW off, 1=MW on
R2	R1	R2R1: Room Restriction (01-16)
M1	M2	M1M2: AA-59 (minutes)
H1	H2	H1H2: AA-23 (hour) wake-up time
F	F	F: Filler (NULL)

Process Code	Definition	Sender
1	Request image (information)	PMS
2	Image response (information)	PBX
3	Data base update request	PMS
4	Data base update response	PBX

Wake-up (FC 30)

**Message Format**

3	0	Feature Code
MSG CT	PR-C	
X2	X1	Extension Number second two digits
X4	X3	Extension Number first two digits
M1	M2	M1, M2: AA-59 (minutes)
H1	H2	H1, H2: AA-23 (hour) wake-up time

Process Code	Definition	Sender
1	Set wake-up	PMS
2	Clear wake-up	PMS
3	PBX entry	PBX
4	PBX clear	PBX
8	Data not accepted	PBX
9	Data accepted PBX	PBX

Wake-up Attempt (FC.31)

**Message Format**

3	1	Feature Code
MSG CT	PR-C	
X2	X1	Extension Number second two digits
X4	X3	Extension Number first two digits

**Process**

Code	Definition	Sender
1	Wake-up answers	PBX
2	Wake-up busy	PBX
3	Wake-up call answer	PMS

Set and Change Guest Information (FC 32)

**Message Format**

3	2	Feature Code
MSG CT	PR-C	
X2	X1	Extension Number second two digits
X4	X3	Extension Number first two digits
G1 <sub>1</sub>	G1 <sub>2</sub>	Guest Name
G1 <sub>3</sub>	G2 <sub>1</sub>	G1 <sub>1,2,3</sub> : Guest Name First Character
G2 <sub>2</sub>	G2 <sub>3</sub>	G2 <sub>1,2,3</sub> : Guest Name Second Character
G133	G141	G14 <sub>1,2,3</sub> : Guest Name 14 <sup>th</sup> Character
G142	G143	
G151	G152	G15 <sub>1,2,3</sub> : Guest Name 15 <sup>th</sup> Character
G153	F	
LC	F	LC: Language Code
F	F	

**Process**

Code	Definition	Sender
1	Set and change information	PMS
8	Data not accepted	PBX
9	Data accepted	PBX

Status Inquiry and Failure Management (FC 70)

**Message Format**

7	0	Feature Code
MSG CT	PR-C	
F	F	Filler (NULL)

Process Code	Definition	Sender
F	Periodic message for link check	PBX
0	Response "Link Up" to periodic message	PBX
2	Response "PBX Failure," memory reinstalled, initiate data base exchange	PBX
3	Start data base exchange	PMS
4	End data base exchange	PMS

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## GENERAL

Precutover tests verify the operation of the system after installation. The following shows the precutover test procedure.

### Initial Setting of Real-Time Clock

Set the real time clock of the RTS on the CPU card, using CMC 700 (Time and Date Setting). Refer to the Data Base Manual for parameters and procedures.

### Interface Card

System interface tests are performed to verify the quality of incoming and outgoing trunks and extension lines. These include extension-to-extension call testing, and CO, FX, tie, and WATS trunk group tests.

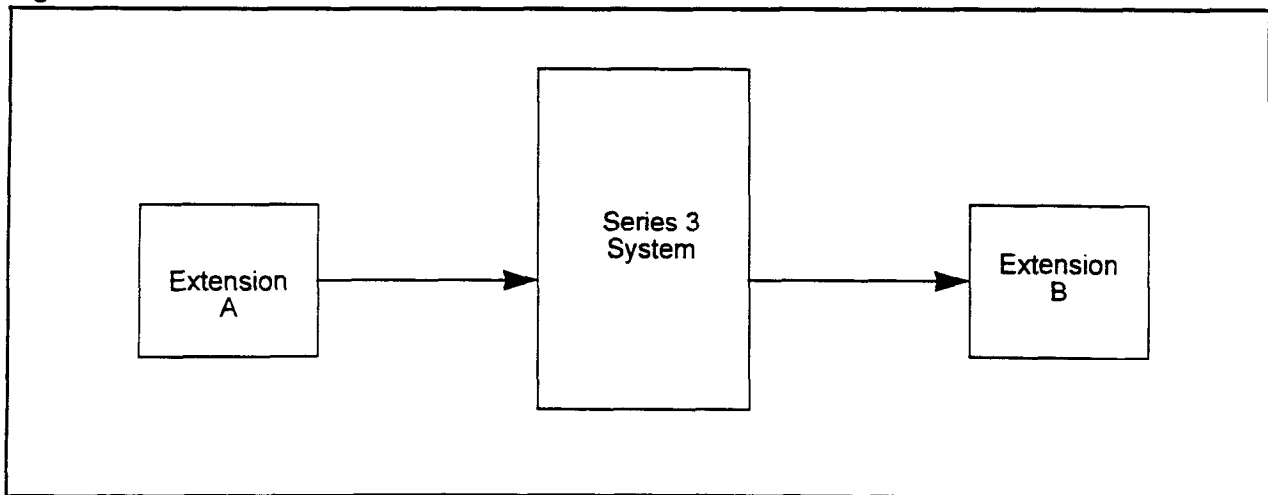
**NOTE:** Test for FX, tie, and WATS trunk groups need arrangement of the system and customer data base using an CMC code. For details, refer to the Data Base Manual.

### Extension-to-Extension and Attendant-to-Extension Verification

Continuity, acoustic quality, and call progress tones of lines between extensions are verified in this test. A diagram of the test is shown in Figure 12-1. The test is performed as detailed below.

1. Lift the handset at any extension to verify dial tone.
2. Dial the directory number of another extension, verify ringback tone.
3. Lift the handset of the called extension to verify the acoustic quality between extensions.
4. Hang up both extensions.
5. Lift the handset and dial the attendant access code.
6. Press the STA button on the Attendant Console to verify the acoustic quality between extension and attendant.
7. Hang up.

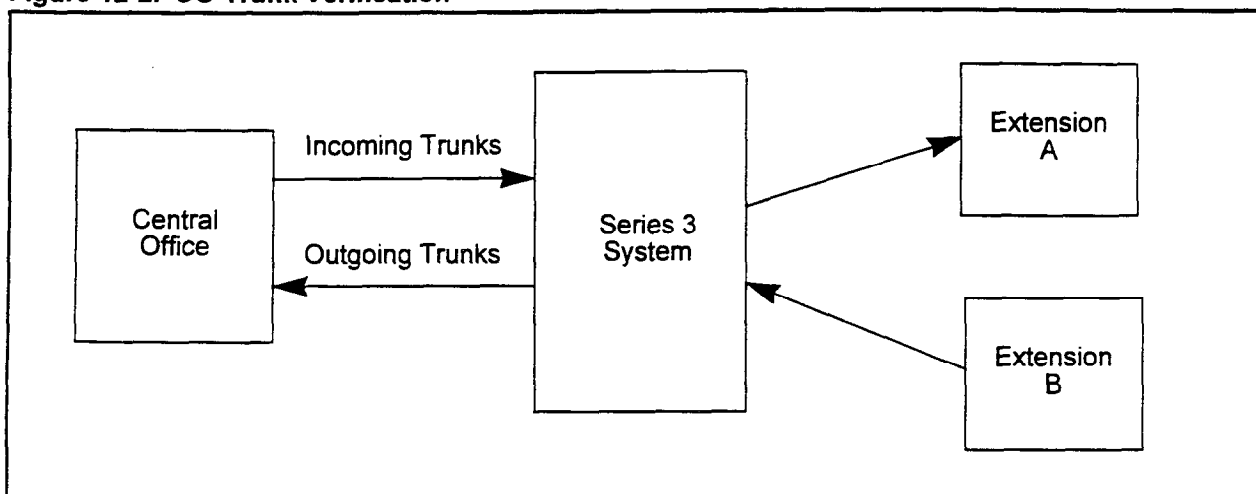
Figure 12-1. Extension-to-Extension Verification



**CO Trunk Verification** Continuity, acoustic quality, and listed directory numbers of CO trunks are verified in this test. A diagram of the test is shown in Figure 12-2. The test is performed as follows.

1. Lift any handset and dial the CO trunk access code to seize an outgoing trunk and listen for external dial tone.
2. Dial the listed directory number of an incoming CO trunk to verify termination of the incoming call.
3. Press the **INCOMING** button on the Attendant Console or answer the incoming call ringing at an extension to verify acoustic quality of the CO lines.
4. Hang up both extensions.

Figure 12-2. CO Trunk Verification



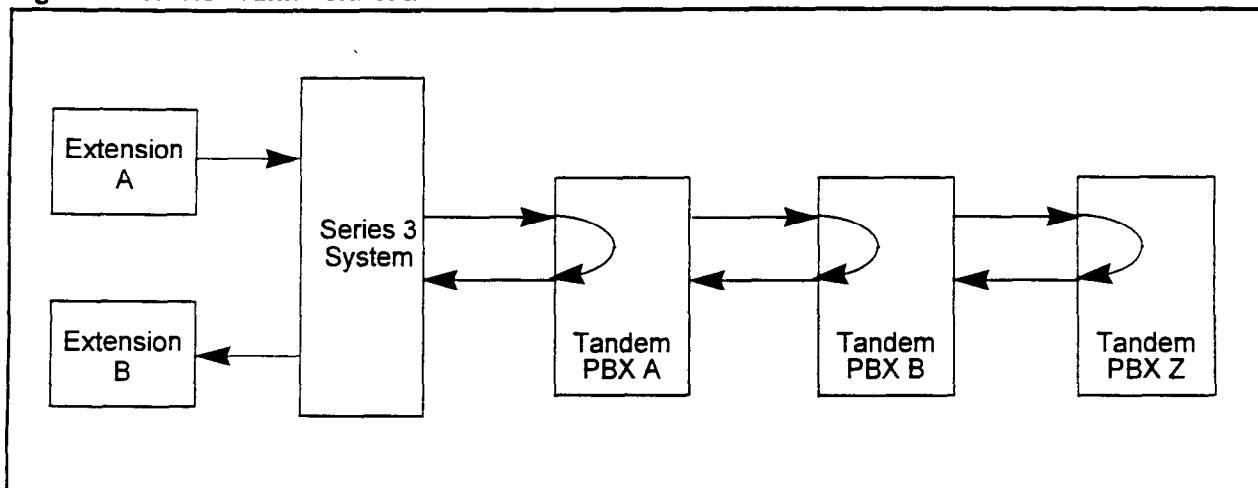
**Tie Trunk Verification**

Continuity, acoustic quality, and call progress tones of tie trunks are verified in this test. If a tandem tie trunk is installed, tandem operation is verified, too. A diagram of the test is shown in Figure 12-3. The test is performed as described below.

1. Lift any handset and dial the tie trunk access code to seize a tie trunk and verify dial tone from the distant end.
2. Dial the tie trunk access code for the system followed by an extension number in the system.
3. Lift the handset at the called extension to verify acoustic quality between extensions via the other PBX.
4. Hang up the extensions.
5. Repeat steps 1 through 4 for each tandem branch of the tie trunk network arrangement.

**NOTE:** Trunks can not be tested until the circuits are connected to a central office or, in the case of tie lines, another switch. An attempt to seize an unconnected trunk circuit will cause the trunk circuit to be made busy.

**Figure 12-3. Tie Trunk Verification**



**Data Terminal-to-Data Terminal Verification**

Transmission quality of data communication lines between data terminals and basic data functions of data switching are verified in this test. A diagram of the test is shown in Figure 12-4. The test is performed as shown below.

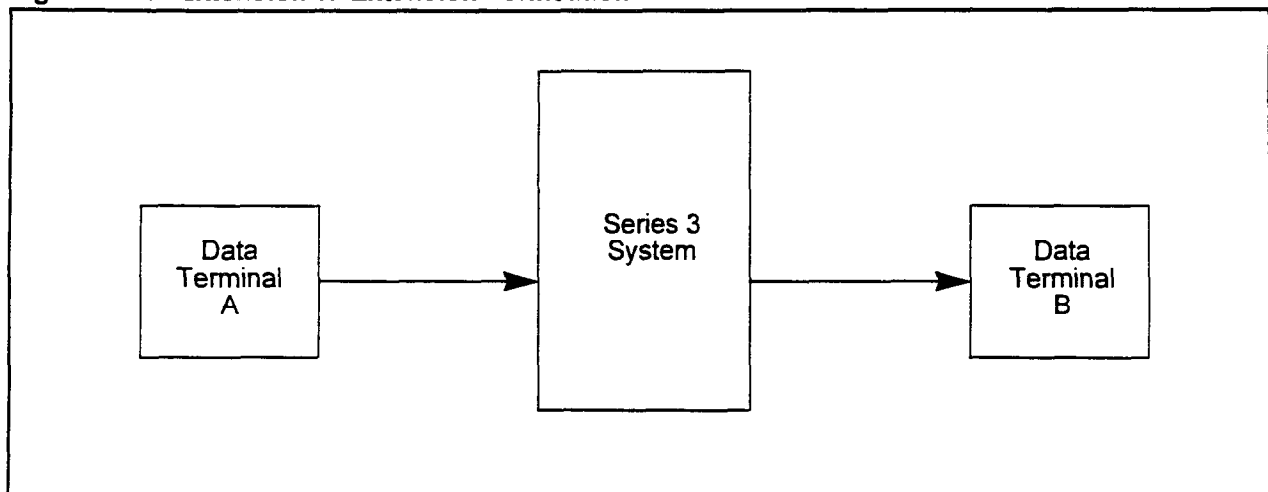
1. Turn on the data terminals connected to data stations (DTA/DIU).
2. Press the **DATA CALL** button on a proprietary telephone and dial another data station number. Verify the data call termination to the data station.
3. Press the **DATA CALL** button at the called data station to establish the data communication path.
4. Start a data communication application to verify transmission and reception of data.

**SYSTEM DATA VERIFICATION**

It is recommended that each of the peripheral devices be checked for proper operation.

If customer provided equipment is installed, the interface between such equipment and the system must be checked. For example, if a music source is installed for the music on hold feature, verify that music can be heard at a held extension. (Keep in mind that many of these devices require some type of change be made to the data base.)

**Figure 12-4. Extension-to-Extension Verification**



## DRESS UP

After all work completion tests have been satisfactorily concluded, clean the cabinet. Next, check the equipment, cables, cabinets, and area around the system.

### Installation Check List (Cabinet)

- Cables are run between cabinet and MDF.
- Basic cabinet and brackets are properly grounded.
- Cards have been checked for proper strapping.
- Cards installed in correct slots.
- Cable connectors are installed on cabinet connectors.
- Cables dressed and tied as necessary.

### Cabinet Covers

Cabinet top, side, bottom and front covers check list is shown below.

- Top access cover all cabinets.
- Left side covers on basic cabinet.
- Right side covers on last cabinet.
- If the second and third cabinet are separated, ensure that shielded cable covers are secure.
- Bottom cover plates all cabinets.
- Top and bottom front covers all cabinets.
- Close and lock front door all cabinets.

### Housekeeping

- Cartons and packing have been removed.
- Tools and test equipment have been removed.
- Installation site has been cleaned.

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**APPENDIX A**

**SPARE/OPTIONAL PARTS**

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**PARTS NEEDED**

Parts needed for installation are composed of parts provided by Fujitsu Business Communication Systems and optional equipment provided by a dealer.

**Optional Equipment  
Provided by a Dealer**

- SMDR printer: A serial printer compatible with RS-232C interface; 80 characters or more per line with 300 bps or more.
- Cable for SMDR.
- Hotel/Motel printer: A serial printer compatible with RS-232C interface; 80 characters or more per line with 300 bps or more.
- Cable for Hotel/Motel printer.
  - Modem for remote maintenance:
  - Compatible with RS-232C (recommended)
  - Speed: 1200 bps
  - Full duplex
  - Asynchronous
  - Auto Answer function
  - Loss of Carrier Disconnect function
- Cable for modem (same as Hotel/Motel printer).
- External music source for music on hold: With interface to 4BWC.
- External speaker for paging unit: With interface to 4BWC/8BWC
- Dictation machine: With interface to 8SLC or 16SLC.
- Maintenance Console: IBM-PC or compatible.
- Voice Mail System

ASSEMBLY TYPE	NUMBER OF ASSEMBLIES PER AREA											
	1 TO 4	5 TO 8	9 TO 16	17 TO 32	33 TO 64	65 TO 128	129 TO 256	257 TO 512	513 TO 1024	1025 TO 2048	2049 TO 4096	4097 TO 8192
SC2P2x, SC4P2x SSDEC SFDC 16DTC 16SLC 8EKC 8DTC 8SLC 8PDL 4SLE 4BWC 8BWC 2TTE, 2TE4 2TTL 6DID 24T1, 23PT CLKS 4TE4 4CHT 4DMR MUFN* 2AP1A RVAC 6PFA ATTC ATT 40 ATT 80 DSS 40 DSS 80 DTA FDIU ACA HFAU CT-10 CT-20 CT-30 DSS 100 DS20 DS20S DS20SD DS32SD	1	2	3	4	5	6	7	8	9	10	11	12
MPSU RGMW 48 PS FDD	1	2	3	3	4	4	5	5	6	6	7	7

\* The MUFN card is a future option for the Series 3.

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**FUJITSU**

**FUJITSU BUSINESS  
COMMUNICATION SYSTEMS**

# ***SERIES 3***

**SITE LOG  
MANUAL**

**Package 2**

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**SECTION 123-200-002  
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**PREFACE**

This document is designed to help users (Customer Service Advisor, Business Support Specialist, Sales Engineer, etc.) perform their job responsibilities. Use of this site log manual helps ensure the successful implementation of the Series 3 system into the customer's environment.

The site log manual is intended as a tool for:

- Identifying and recording the customer's data base information
- Programming the system according to the customer's requirements
- Providing a permanent record of the customer's data base

This manual provides sufficient copies of the programming forms to cover all system maximums.

**About This Manual**

This manual contains a variety of forms for documenting system capabilities and features. These forms are organized into the following sections:

**INTRODUCTION (p. 1 - 6)**, describes how to use this manual and provides FCC Registration information.

**SYSTEM CONFIGURATION (p. 7 - 12)**, provides forms for information about a system's equipment and capacities. Separate forms are provided for Basic and Expanded system configurations.

**SYSTEM OVERVIEW (p. 13 - 30)**, provides forms for general system information, including a trunk summary, a station summary, and system features information. Separate forms are provided for Basic and Expanded system configurations.

**ACCESS CODE ASSIGNMENT (p. 31 - 38)**, provides forms for assigning system access codes to trunks and features (CMC 100).

**SYSTEM PARAMETERS (p. 39 - 52)**, provides forms for assigning feature and timing parameters to a system (CMC 101, CMC 102, CMC 103).

**CLASS OF SERVICE (p. 53 - 54)**, provides forms for assigning Class of Service (COS) for all Feature Packages (CMC 104).

**PREFACE (Cont'd)****TRUNKS (p. 55 - 88)**, provides forms for assigning:

- Trunk Restrictions **(CMC 105)**
- Network Clock Assignment **(CMC 107)**
- FIPN Assignments **(CMC 111, CMC 407)**
- Trunks - Basic and Expansion Cabinet(s) **(CMC 250, CMC 251, CMC 252, CMC 253, CMC 437)**
- Trunk Route Timing Parameters **(CMC 254)**
- Trunk Party Name Assignment **(CMC 256)**
- Common Carrier Access **(CMC 404, CMC 405)**
- Tie Trunk Level Changes **(CMC 406)**
- Reverse Signal Data Assignment **(CMC 255)**
- Trunk-to-Trunk Connections **(CMC 410)**
- ACD Trunk Priority Assignment **(CMC 314)**
- DID/DISA Information **(CMC 430)**
- Listed Directory Numbers **(CMC 431)**
- Listed Directory Numbers (Enhanced) **(CMC 435)**
- DID Trunk Levels **(CMC 433)**
- DISA Authorization Code Assignment **(CMC 432)**

**ISDN (p. 89 - 92)**

- ISDN CLIR Assignment **(CMC 120)**
- ISDN Service Display **(CMC 121)**
- Specific ISDN Network Assignment **(CMC 122)**
- CLID Extension Data Assignment **(CMC 438)**
- CLID Data Extension Data Assignment **(CMC 439)**
- PRI Protocol Assignment **(CMC 915)**

**STATIONS (p. 93 - 110)**, provides forms for assigning:

- Stations for Basic Cabinet **(CMC 200, CMC 201, CMC 202, CMC 208)**
- Stations for Expansion Cabinet(s) **(CMC 200, CMC 201, CMC 202, CMC 208)**

**STATION DETAILS (p. 111 - 136)**, provides forms for assigning:

- Feature Button Assignments **(CMC 203)**
- Feature Button Assignments for CSDs **(CMC 203)**
- CT-10/20/30 Feature Button Assignments **(CMC 203)**

**PREFACE (Cont'd)****STATION DETAILS (Cont'd)**

- DS20, DS20S, DS20SD, and DS32SD Feature Button Assignments **(CMC 203)**
- Stations **(CMC 204)**
- BLFs to Proprietary Telephones **(CMC 205)**
- Silent Message Warning Tone **(CMC 206)**
- D-ICM for Single Line Telephones **(CMC 207)**
- Station Hookflash Assignment **(CMC 209)**
- Station Call Forward Assignment **(CMC 319)**
- Intercom Group Assignment

**DSS/BLF ASSIGNMENTS (p. 137 - 160)**, provides forms for assigning:

- DSS/BLF for 30-Button Instruments - EKT **(CMC 210, CMC 211)**
- DSS/BLF for 40-Button Instruments - EKT **(CMC 210, CMC 211)**
- DSS/BLF for 80-Button Instruments - EKT **(CMC 210, CMC 211)**
- DSS/BLF for Attendant Console - 40-Button Instrument **(CMC 210, CMC 211)**
- DSS/BLF for Attendant Console - 80-Button Instrument **(CMC 210, CMC 211)**
- DSS/BLF 100 Button Assignment **(CMC 212, CMC 213)**

**ATTENDANT CONSOLE (p. 161 - 172)**, provides forms for assigning:

- Attendant Console and COS/COR **(CMC 230, CMC 232)**
- Attendant Console Buttons **(CMC 231)**
- Attendant Console Answering Priority Level **(CMC 233)**
- Attendant Voice Message Assignment **(CMC 316)**



**PREFACE (Cont'd)****FEATURE ASSIGNMENTS (p. 173 - 228)**, provides forms for assigning:

- Recorded Voice Announcement Card Assignment **(CMC 260)**
- Recorded Voice Announcement Message **(CMC 261)**
- Recorded Voice Announcement Copying **(CMC 262)**
- Recorded Voice Announcement Protection **(CMC 263)**
- Application Processor Interface **(CMC 280)**
- Application Processor Type **(CMC 281)**
- System Speed Call Directory **(CMC 300)**
- Hunting Group Arrangement - Voice/Data **(CMC 301)**
- Pickup Group Assignment **(CMC 302)**
- Internal Paging Zones Assignment **(CMC 303)**
- Hotline Stations - Voice **(CMC 304)**
- Hotline Stations - Data **(CMC 304)**
- Music on Hold **(CMC 305)**
- Music on Hold Per Tenant **(CMC 317)**
- Night Answer Group Assignments **(CMC 306)**
- Direct-In Line Assignments **(CMC 307)**
- ACD Group Assignments **(CMC 308)**
- ACD Group Work Time **(CMC 315)**
- Day/Night Mode ACD Route Table Assignment **(CMC 370)**
- AP Mode ACD RouteTable Display **(CMC 371)**
- Silent Message Assignment **(CMC 309)**
- Forced Account Code Flag **(CMC 313)**
- DNIS TGN Assignment **(CM 460)**
- DNIS Number Registration **(CMC 461)**
- DNIS Name **(CMC 462)**
- DNIS Music on Hold Assignment **(CMC 463)**
- DNIS Night Number Assignment **(CMC 464)**
- Forced Account Code - Verify Code Assignment **(CMC 310)**
- Password Assignment **(CMC 311)**
- Automated Attendant Answering Message/Overflow Station **(CMC 434)**
- Single Digit Automated Attendant Assignment **(CMC 480)**

## PREFACE (Cont'd)

**TOLL RESTRICTION (p. 229 - 256)**, provides forms for assigning:

- Trunk Dialing and Restriction Groups (CMC 400)
- Dial Group (CMC 401) N0/1X Area/Office (CMC 402)
- Routing Digit (CMC 403)
- NXX/N11 Office Code Assignment (CMC 408)
- Toll Restriction 2 Assignment (CMC 417)
- Toll and Operator Restriction Assignment (CMC 411)
- Toll Restriction Tables (CMC 412, CMC 413, CMC 414)
- Office Code Restriction for Area Code (CMC 416)
- Five-Digit Carrier Identification Code Restriction Assignment (CMC 415)
- Seven-Digit Carrier Identification Code Restriction Assignment (CMC 470)

**LEAST COST ROUTING TABLES (p. 257 - 276)**, provides forms for assigning:

- Office Code Routes (CMC 420, CMC 422)
- Area Code/Time of Day Routes (CMC 421, CMC 423)
- Area/Office Code Routes (CMC 424)
- Five-Digit Common Carrier Access Code Table (CMC 425)
- Seven-Digit Common Carrier Access Code Table (CMC 471)
- LCR International Code Assignment (CMC 429)
- International Code Routing Table (CMC 428)
- Five-Digit Personal Account Code for CAC (CMC 426)
- Seven-Digit Personal Account Code for CAC (CMC 472)
- LCR Time and Day RTN Assignment (CMC 427)
- System Calendar Assignment (CMC 510)
- System Time Table Assignment (CMC 511)
- System Holiday Assignment (CMC 516)

**STATION MESSAGE DETAIL RECORDING (p. 277 - 282)**, provides forms for assigning:

- Station Message Detail Recording (CMC 500, CMC 504)
- Station Message Detail Recording for Trunk Groups (CMC 501)
- Station Message Detail Recording for Classes of Restrictions (CMC 502)
- Station Message Detail Recording for Tenant Groups (CMC 503)
- SMDR Assignment for Modem Groups (CMC 505)
- SMDR Outgoing Digits Screening (CMC 506)

**PREFACE (Cont'd)**

**DATA FEATURES PARAMETERS (p. 283 - 294)**, provides forms for assigning:

- Data Terminals (**CMC 220, CMC 221, CMC 222, CMC 223, CMC 224**)
- Modem Pooling (**CMC 270**)
- Modem Group Attributes (**CMC 271**)

**HOTEL/MOTEL SYSTEM PARAMETERS (p. 295 - 316)**, provides forms for assigning:

- Call Charge for Trunk Groups (**CMC 350**)
- Call Charge for Office Code Assignments (**CMC 351**)
- Call Charge Billing Rate Assignments (**CMC 352**)
- Special Service Codes and Service Call Routing (**CMC 353**)
- Room Status Indicator Assignment for an 30/40/80-Button Instrument - Electronic Key Set (**CMC 354**)
- Room Status Indicator Assignment for a 40/80-Button Instrument - Attendant Console (**CMC 354**)
- Room Status Indicator Button Assignment (**CMC 355**)
- Hotel/Motel Printer Assignments (**CMC 356**)
- Hotel/Motel Printout Message Allocation (**357**)
- Hotel/Motel System Parameters (**CMC 358**)
- Paired Station/Attendant Console for Hotel System Assignment (**CMC 359**)

**MISCELLANEOUS ASSIGNMENTS (p. 317 - 324)**, provides forms for assigning:

- Multi-Language Display Character Assignment (**CMC 318**)
- Make Busy (**CMC 701**)
- Master Control Station (**CMC 702**)
- Security Code Assignment (**CMC 704**)
- RS-232C Port Configuration (**CMC 900**)
- SMDR Printer Control (**CMC 901**)

**APPENDIX A (p. 325 - 328)**, provides a list of CMCs in numerical order.

**APPENDIX B (p. 329 - 332)**, provides information on how to determine the equipment number (physical card slots vs. logical card slots).

**Available Documentation**

This manual is part of a series of Technical Documents for the Fujitsu Business Communication Systems Series 3. The series includes the following:

- 123-001-002 Series 3 System Description/Features
- 123-056-002 Series 3 Installation
- 123-060-002 Series 3 Maintenance
- 123-080-002 Series 3 Data Base

**How to Use This Manual**

This manual is intended for use with the Data Base Manual. The following procedure should be used when filling out the site log manual:

1. Gather the customer information on the system and station overview forms to provide a complete picture of the system.
2. Translate the overview information into system requirements.
3. Refer to the Data Base Manual as needed to aid interpreting customer needs into system requirements.
4. Refer to the Data Base Manual as needed for instructions on filling in the data base collection sheets.
5. Using the list of the customer's equipment, work through the system configuration worksheets and check the equipment cabinet(s) to ensure that the card placement complies with the customer requirements and system capacities.
6. Refer to the Data Base Manual as needed for instructions on filling in the forms for each type of station (single-line, proprietary telephone, attendant console, or CSD).
7. Gather the unused forms into the back of the manual where they can be kept as spares.
8. Refer to the Data Base Manual as needed for instructions on programming the system using the data collected on the site log forms.
9. Leave a copy of the site log on the customer's premises and/or at the remote maintenance site as the permanent written record of the Office Dependent Data Base (ODDB).

**FCC Registration Information**

In compliance with FCC regulations, the following information is provided:

1. Before connecting the telephone network, the end user must notify the local telephone company of this intention and provide the telephone company with the number of the particular lines on which the system is to be used, and shall provide the telephone company the FCC registration number, the Ringer Equivalence Number (REN), and the model number of the system. This information is located on the registration plate. The FCC registration number for the System is BJ885Z-60084-KF-E (used as Key System) or BJ8USA-75355-PF-E (used as PBX) or BJ8USA-60083-MF-E (used as Multifunction Systems).
2. The end user must inform the local telephone company of the quantities and type of Universal Service Order Code (USOC) jacks which are required as shown below:

**MTS/TS Interface**

TRUNK	INTERFACE	REN	NO. OF LEADS	USOC
4BWC	2-Wire Loop	0.2A	2	RJ21X
4BWC	2-Wire G.S.	0.2A	2	RJ21X
8BWC	2-Wire Loop	0.6A	2	RJ21X
8BWC	2-Wire G.S.	0.6A	2	RJ21X
6DID	02RV2-T	0.0B	2	RJ21X

3. When private line ports are connected to the telephone network, the user must provide the following information to the telephone company:
  - Service Order Code, and Facility Interface Code.
  - The quantities and USOC numbers for the required jacks.
  - For each jack, list the sequence in which the lines are to be connected, giving technical description codes by position and the ringer equivalence number or service code where applicable.
4. Since the system does not have signal power limiting, it can only be used with FCC registered, grandfathered devices, or devices which otherwise comply with Section 68.308.

FCC Registration  
Information (Cont'd)

## Digital Interface

TRUNK	PRIVATE LINE FACILITY INTERFACE CODE	SERVICE CODE	NO. OF LEADS	USOC
24T1	04DU9-B 04DU9-C 04DU9-S	6.0Y	4	RJ48C
23PT	04DU9-B 04DU9-C 04DU9-S	6.0Y	4	RJ48C

## Private Line Interface

TRUNK	PRIVATE LINE FACILITY INTERFACE CODE	SERVICE CODE	NO. OF LEADS	USOC
F33SO-2TTE	TL11M	9.0F	4	RJ21X, RJ2EX (2W E&M TYPE 1 SIG)
F33SO-2TTE	TL12M	9.0F	6	RJ21X, RJ2FX (2W E&M TYPE 2 SIG)
2TE4	TL11M TL31M TL12M TL32M	9.0F	4 6 8	RJ21X, RJ2FX (2W E&M TYPE 2 SIG) RJ2EX (2W E&M TYPE 1 SIG) RJ2GX (4W E&M TYPE 1 SIG) RJ2HX (4W E&M TYPE 2 SIG)
4TE4	TL11M TL31M TL12M TL32M	9.0F	4 6 8	RJ21X, RJ2EX (2W E&M TYPE 2 SIG) RJ2FX (2W E&M TYPE 2 SIG) RJ2GX (4W E&M TYPE 1 SIG) RJ2HX (4W E&M TYPE 2 SIG)

FCC Registration Information (Cont'd)	Off Premise Extension Interface				
	OPX CARD	FACILITY CODE	SERVICE CODE	NO. OF LEADS	USOC
	FS35SO-4SLE	OL13A	9.0F	2	RJ21X
	FS35SO-4SLE	OL13B	9.0F	2	RJ21X
	FS35SO-4SLE	OL13C	9.0F	2	RJ21X

5. The system complies with the following U.S. standards:

- FCC Part 68.
- FCC 15, Class A.
- UL 1459 telephone equipment.
- EIA RS-464-1.

**NOTE:** The 6DID, 8BWC, 24T1, 23PT, 2TE4, and 4TE4 cards meet UL Type I protection. The 4BWC, 2TTL, and 2TTE cards require Type II protection at the MDF.

6. FCC rules provide that, should the equipment cause harm to the telephone network, the telephone company shall, where practicable, notify the customer that temporary discontinuance of service may be required; however, where prior notice is not practicable, the telephone company may temporarily discontinue service immediately, if such action is reasonable in the circumstances.
7. FCC rules provide that the telephone company may make changes in its communications facilities, equipment operations, or procedures where such action is reasonably required in the operation of its business and is not inconsistent with the rules and regulations of the FCC. If such changes render any customer terminal equipment incompatible with the telephone company's facilities or require modification, or alteration of such terminal equipment, or otherwise materially affect its use or performance, the customer will be given adequate notice in writing to allow the customer an opportunity to maintain uninterrupted service.
8. The end user shall not attempt to repair or modify this equipment. Instead, any necessary service or repair shall only be initiated and performed by the manufacturer or its authorized agent.

**FCC Registration  
Information (Cont'd)**

9. If trouble is experienced, disconnect this equipment from the telephone line to determine if it is causing the malfunction. If the equipment is determined to be malfunctioning, its use shall be discontinued until the problem has been corrected.
10. This equipment shall not be used on party lines or coin telephone lines.
11. The local telephone company must be notified when this equipment is permanently disconnected.
12. Allowing this equipment to be operated in such a manner as to not provide for proper answer supervision is a violation of part 68 of the FCC's rules.

Proper answer supervision is when:

A. This equipment returns answer supervision to the Public Switched Network (PSTN) when DID calls are:

- Answered by the called station.
- Answered by the attendant.
- Routed to a recorded announcement that can be administered by the CPE user.
- Routed to a dial prompt.

B. This equipment returns answer supervision on all DID calls forwarded to the PSTN. Permissible exceptions are:

- A call is unanswered.
- A busy tone is received.
- A reorder tone is received.



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**SYSTEM CONFIGURATION  
GENERAL**

Use the customer's system configuration to work through this form and verify that:

- the proper equipment was ordered and
- there is no conflict with system capacities.

**A. Trunk Cards:**

Number of central office lines \_\_\_\_\_  
 Number of WATS lines \_\_\_\_\_  
 Number of FX lines \_\_\_\_\_  
 Music on hold, enter 1 \_\_\_\_\_  
 Number of paging circuits \_\_\_\_\_  
 ACD Call Waiting Indicator\* \_\_\_\_\_

Number of Loop tie lines \_\_\_\_\_  
 Number of Loop DID lines \_\_\_\_\_

Number of E&M tie lines \_\_\_\_\_  
 Number of E&M DID lines \_\_\_\_\_  
 Number of T-1 trunks \_\_\_\_\_  
 Number of ISDN lines \_\_\_\_\_  
 Number of FIPN lines \_\_\_\_\_  
 Number of E&M 2 or 4-wire circuits \_\_\_\_\_  
 Number of E&M 2 or 4-wire circuits \_\_\_\_\_  
 Number of Loop DID lines \_\_\_\_\_

Total Trunk Circuits	_____	÷	4	=	_____	4BWC Cards
			8	=	_____	8BWC Cards
Total Loop Circuits	_____	÷	2	=	_____	2TTL Cards
Total E&M Circuits	_____	÷	2	=	_____	2TTE Cards
Total Trunk Circuits	_____	÷	24	=	_____	T-1 Cards **
Total Trunk Circuits	_____	÷	23	=	_____	ISDN Cards
Total Trunk Circuits	_____	÷	23	=	_____	FIPN Cards
Total Trunk Circuits	_____	÷	2	=	_____	2TE4 Cards
Total Trunk Circuits	_____	÷	4	=	_____	4TE4 Cards
Total Trunk Circuits	_____	÷	6	=	_____	6DID Cards

\* If an ACD Calls Waiting Indicator is used, each module requires a dedicated trunk card (circuits cannot be used for anything but Calls Waiting Indicators).  
 \*\* These circuits also require one CLKS card per system that uses the incoming T-1 clock for system timing.

**B. Station Cards:**

Single line stations \_\_\_\_\_  
 Off-premise stations \_\_\_\_\_  
 (need extender) \_\_\_\_\_  
 Dictation access circuits \_\_\_\_\_  
 UNA external alert \_\_\_\_\_  
 Off-premises stations (OPX) \_\_\_\_\_  
 Voice mail ports \_\_\_\_\_

Total Station Circuits \_\_\_\_\_ ÷ 8 = \_\_\_\_\_ 8SLC Cards  
 or \_\_\_\_\_ ÷ 16 = \_\_\_\_\_ 16SLC Cards

Total OPX Circuits \_\_\_\_\_ ÷ 4 = \_\_\_\_\_ 4SLE Cards

CT-10 instruments \_\_\_\_\_  
 CT-20 instruments \_\_\_\_\_  
 CT-30 instruments \_\_\_\_\_  
 40 button DSS/BLF \_\_\_\_\_  
 80 button DSS/BLF \_\_\_\_\_  
 Attendant Consoles \_\_\_\_\_  
 Attendant 40 button DSS/BLF \_\_\_\_\_  
 Attendant 80 button DSS/BLF \_\_\_\_\_  
 Attendant 100 button DSS/BLF \_\_\_\_\_  
 Room Status Indicators \_\_\_\_\_

Total Electronic Circuits \_\_\_\_\_ ÷ 8 = \_\_\_\_\_ 8EKC Cards

**C. Digital Terminals:**

CSD Instruments (voice only) \_\_\_\_\_  
 CSD Instruments (with DTA) \_\_\_\_\_  
 Data Interface Units (DIU) \_\_\_\_\_  
 DS20, DS20S, DS20SD, \_\_\_\_\_  
 DS32SD sets \_\_\_\_\_  
 30 button DSS/BLF \_\_\_\_\_

Total Digital Circuits \_\_\_\_\_ ÷ 8 = 8DTC Cards  
 or \_\_\_\_\_ ÷ 16 = 16DTC Cards

**D. Miscellaneous Cards:**

RGMW (See Note 1) \_\_\_\_\_  
 6PFA \_\_\_\_\_  
 8PDL \_\_\_\_\_  
 4DMR (See Notes 1 and 2) \_\_\_\_\_  
 4CHT (See Note 3) \_\_\_\_\_

**NOTES:**

1. RGMW and 4DMR cards required for single line telephones.
2. Maximum of eight 4DMR cards per system (see chart).

TRAFFIC	NUMBER OF DTMF STATIONS						
	0	49	50	60	90	150	200
Normal (6ccs)	0	1	1	1	2	2	2
Heavy (9ccs)	0	1	1	2	2	2	3
Extra Heavy (12ccs)	0	1	2	2	2	3	3

3. The total number of 4CHT cards cannot exceed two per cabinet.

**E. Common Control Cards for the Series 3:**

SC2P2B / SC2P2E	<u>    (1)    </u>	(required in a 2-cabinet system)
SC4P2B / SC4P2E	<u>    (1)    </u>	(required in a 4-cabinet system)
SSDEC	<u>    (1)    </u>	(1 card for the second and third expansion cabinets)
SFDC	<u>          </u>	(optional)

**F. Special Cards:**

Recorded Voice Announcements \*              =          RVAC Cards  
 Application Processor Interface              ÷ 2 =          2APIA Cards

\* The total number of RVAC cards cannot exceed two per cabinet.  
 Message capacity:     RVAC 14 blocks X 4 seconds

- G. 4CHT cards are required for the Hotel/Motel printer and for keyboard dialing. A maximum of two 4CHT cards are required (see chart).

NO. OF HOTEL/MOTEL PRINTERS	TRAFFIC*	NUMBER OF DATA STATIONS WITH KEYBOARD DIALING				
		0	to 10	to 20	to 50	to 80
0	Low	0	1	1	1	1
	Medium	0	1	1	1	2
	High	0	1	1	2	2
1	Low	1	1	1	1	2
	Medium	1	1	1	2	2
	High	1	1	2	2	2
2	Low	1	1	2	2	2
	Medium	1	1	2	2	2
	High	1	2	2	2	2

\* Low: 1 keyboard dialing operation per hour  
 Medium: 2 keyboard dialing operations per hour  
 High: 3 or more keyboard dialing operations per hour

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**SYSTEM OVERVIEW**

Use the following forms to compile general information about a customer's system and its features.

1. Customer:	Telephone number:
2. System location address:	
3. Requested installation date:	Software version (1):
4. Sales representative:	Telephone number:
5. System programming: _____ Customer            _____ Installation	Programming units: _____ PMP    _____ MCT    _____ PcMP
6. Message detail recording: _____ Yes            _____ No	Type of terminal:
7. Least cost routing: _____ Yes            _____ No	8. Music on hold - enter customer source:
9. Paging: _____ Internal proprietary telephone	Type of external paging system: _____ External speakers
10. Night answer: _____ Bells	External alerts - enter quantity: _____ Stations _____



<p>11. Toll restriction:                _____ Yes                      _____ No</p>	<p>1 + within area code _____ Yes    _____ No          Operator toll prefix _____</p>
<p>12. Capacities</p>	
<p>Local central office trunks</p>	<p>Enter quantity:</p>
<p>Local central office lines</p>	<p>Enter quantity:</p>
<p>WATS lines - intrastate</p>	<p>Enter quantity:</p>
<p>WATS lines - interstate</p>	<p>Enter quantity:</p>
<p>FX lines</p>	<p>Enter quantity:</p>
<p>SCC facilities</p>	<p>Enter carrier names:</p>
<p>Other (dial dictation, private lines)</p>	<p>Enter quantity:</p>
<p>Tie lines</p>	<p>Enter quantity:</p>
<p>PBX/Centrex lines</p>	<p>Enter quantity:          Enter type of PBX:          Enter dial access code:</p>
<p>T-1 trunks</p>	<p>Enter quantity:</p>
<p>ISDN</p>	<p>Enter quantity:</p>
<p>FIPN</p>	<p>Enter quantity:</p>

13.	Station equipment Attendant Console	_____ Yes _____ No
	CT-10	Enter quantity:
	CT-20	Enter quantity:
	CT-30	Enter quantity:
	DS20	Enter quantity:
	DS20S	Enter quantity:
	DS20SD	Enter quantity:
	DS32SD	Enter quantity:
	DSS/BLF 30 Button	Enter quantity:
	DSS/BLF 40 Button	Enter quantity:
	DSS/BLF 80 Button	Enter quantity:
	DSS/BLF 100 Button	Enter quantity:
	CSD	Enter quantity:
	Single line telephones	Enter quantity of main stations: Enter quantity of extension stations:

<b>14.</b> Off-premise station location	
Remote building 1 address	Number of stations:
Remote building 2 address	Number of stations:
Remote building 3 address	Number of stations:
Remote building 4 address	Number of stations:
Remote building 5 address	Number of stations:

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15. Power failure stations	Enter quantity:
16. Voice mail	Number of ports:
17. External ACD Calls Waiting Indicator	Number CWIs:
18. Comments	

**TRUNK SUMMARY**

Use the following forms to compile general information about a customer's system's trunks.

EN (see Note)	TRK DIR	OGT AC	TGN	TOT	SIG	SEND MODE	START MODE	PAGE ZONE	TEN. NO.	TERM. TRK	TYPE OF TERM. TRK	DIR NO. TERM. STA	SMDR (Y/N)	T-1 /ISDN TRKS ONLY			
														ZERO SUP	FORMAT	ISDN/FIPN/ T-1	SYNC PLAN

EN = Equipment Number, TRK DIR = Trunk Direction (Incoming/Outgoing/Two-Way), OGT AC = Outgoing Access Code, TGN = Trunk Group Number, TOT = Type of Trunk, SIG = Signaling (Ground, Loop, E&M), SEND MODE = Sending Mode (DP/DTMF), START MODE = Start Mode (Wink, Delay, Immediate), PAGE ZONE = Page Zone number, TEN NO = Tenant number, TERM. TRK = Terminating Trunk group number, TYPE OF TERM TRK = Type of Terminating Trunk (Personal/Direct/Pooled Direct-In), DIR NO TERM STA = Directory number of terminating station (Direct-In line), ZERO SUP = Zero Suppression, FORMAT = Frame Format, ISDN/FIPN/T-1 = D-Channel Polarity (ISDN/FIPN), SYNC PLAN = Synchronization Plan

**NOTE:** Refer to Appendix B for further information to determine EN.

**TRUNK SUMMARY**

EN	TRK DIR	OGT AC	TGN	TOT	SIG	SEND MODE	START MODE	PAGE ZONE	TEN. NO.	TERM. TRK	TYPE OF TERM. TRK	DIR NO. TERM. STA	SMDR (Y/N)	T-1 /ISDN TRKS ONLY				
														ZERO SUP	FORMAT	ISDN/FIPN/T-1	SYNC PLAN	

EN = Equipment Number, TRK DIR = Trunk Direction (Incoming/Outgoing/Two-Way), OGT AC = Outgoing Access Code, TGN = Trunk Group Number, TOT = Type of Trunk, SIG = Signaling (Ground, Loop, E&M), SEND MODE = Sending Mode (DP/DTMF), START MODE = Start Mode (Wink, Delay, Immediate), PAGE ZONE = Page Zone number, TEN NO = Tenant number, TERM. TRK = Terminating Trunk group number, TYPE OF TERM TRK = Type of Terminating Trunk (Personal/Direct/Pooled Direct-In), DIR NO TERM STA = Directory number of terminating station (Direct-In line), ZERO SUP = Zero Suppression, FORMAT = Frame Format, ISDN/FIPN/T-1 = D-Channel Polarity (ISDN/FIPN), SYNC PLAN = Synchronization Plan

**TRUNK SUMMARY**

EN	TRK DIR	OGT AC	TGN	TOT	SIG	SEND MODE	START MODE	PAGE ZONE	TEN. NO.	TERM. TRK	TYPE OF TERM. TRK	DIR NO. TERM. STA	SMDR (Y/N)	T-1 /ISDN TRKS ONLY			
														ZERO SUP	FORMAT	ISDN/FIPN/T-1	SYNC PLAN

EN = Equipment Number, TRK DIR = Trunk Direction (Incoming/Outgoing/Two-Way), OGT AC = Outgoing Access Code, TGN = Trunk Group Number, TOT = Type of Trunk, SIG = Signaling (Ground, Loop, E&M), SEND MODE = Sending Mode (DP/DTMF), START MODE = Start Mode (Wink, Delay, Immediate), PAGE ZONE = Page Zone number, TEN NO = Tenant number, TERM. TRK = Terminating Trunk group number, TYPE OF TERM TRK = Type of Terminating Trunk (Personal/Direct/Pooled Direct-In), DIR NO TERM STA = Directory number of terminating station (Direct-In line), ZERO SUP = Zero Suppression, FORMAT = Frame Format, ISDN/FIPN/T-1 = D-Channel Polarity (ISDN/FIPN), SYNC PLAN = Synchronization Plan

**TRUNK SUMMARY**

EN	TRK DIR	OGT AC	TGN	TOT	SIG	SEND MODE	START MODE	PAGE ZONE	TEN. NO.	TERM. TRK	TYPE OF TERM. TRK	DIR NO. TERM. STA	SMDR (Y/N)	T-1 /ISDN TRKS ONLY			
														ZERO SUP	FORMAT	ISDN/FIPN/ T-1	SYNC PLAN

**EN** = Equipment Number, **TRK DIR** = Trunk Direction (Incoming/Outgoing/Two-Way), **OGT AC** = Outgoing Access Code, **TGN** = Trunk Group Number, **TOT** = Type of Trunk, **SIG** = Signaling (Ground, Loop, E&M), **SEND MODE** = Sending Mode (DP/DTMF), **START MODE** = Start Mode (Wink, Delay, Immediate), **PAGE ZONE** = Page Zone number, **TEN NO** = Tenant number, **TERM. TRK** = Terminating Trunk group number, **TYPE OF TERM TRK** = Type of Terminating Trunk (Personal/Direct/Pooled Direct-In), **DIR NO TERM STA** = Directory number of terminating station (Direct-In line), **ZERO SUP** = Zero Suppression, **FORMAT** = Frame Format, **ISDN/FIPN/T-1** = D-Channel Polarity (ISDN/FIPN), **SYNC PLAN** = Synchronization Plan









**TRUNK SUMMARY (EXPANDED CABINET)**

EN	TRK DIR	OGT AC	TGN	TOT	SIG	SEND MODE	START MODE	PAGE ZONE	TEN. NO.	TERM. TRK	TYPE OF TERM. TRK	DIR NO. TERM. STA	SMDR (Y/N)	T-1 /ISDN TRKS ONLY				
														ZERO SUP	FORMAT	ISDN/FIPN/T-1	SYNC PLAN	

**EN** = Equipment Number, **TRK DIR** = Trunk Direction (Incoming/Outgoing/Two-Way), **OGT AC** = Outgoing Access Code, **TGN** = Trunk Group Number, **TOT** = Type of Trunk, **SIG** = Signaling (Ground, Loop, E&M), **SEND MODE** = Sending Mode (DP/DTMF), **START MODE** = Start Mode (Wink, Delay, Immediate), **PAGE ZONE** = Page Zone number, **TEN NO** = Tenant number, **TERM. TRK** = Terminating Trunk group number, **TYPE OF TERM TRK** = Type of Terminating Trunk (Personal/Direct/Pooled Direct-In), **DIR NO TERM STA** = Directory number of terminating station (Direct-In line), **ZERO SUP** = Zero Suppression, **FORMAT** = Frame Format, **ISDN/FIPN/T-1** = D-Channel Polarity (ISDN/FIPN), **SYNC PLAN** = Synchronization Plan











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**NUMBERING PLAN ASSIGNMENT (TRUNK ACCESS CODE)**  
**CMC 100**

Feature Name	Feature Number (P1)	Default Code	New Code (P2)	Trunk Group No. (P3)	Outgoing Digits (P4)	Digits Sent (Tie Only) (P5)	Dial Store & Forward (P6)	Numbering Scheme
CO #1 (CO trunks)/ISDN CO #1 access (default)	4	75		13				FAC + outgoing directory no.
CO #2 (CO trunks)/ISDN CO #2 access	5	76		14				FAC + outgoing directory no.
CO/ISDN #3 access	6	85		15				FAC + outgoing directory no.
CO/ISDN #4 access	7	86		16				FAC + outgoing directory no.
CO #5 access	8	None		17				FAC + outgoing directory no.
CO #6 access	9	None		18				FAC + outgoing directory no.
FX #1 access	10	10		19				FAC + outgoing directory no.
FX #2 access	11	12		20				FAC + outgoing directory no.
FX #3 access	12	13		21				FAC + outgoing directory no.
FX #4 access	13	14		22				FAC + outgoing directory no.
FX #5 access	14	15		23				FAC + outgoing directory no.
FX #6 access	15	16		24				FAC + outgoing directory no.
WATS #1 access	16	70		25				FAC + outgoing directory no.
WATS #2 access	17	72		26				FAC + outgoing directory no.
WATS #3 access	18	73		27				FAC + outgoing directory no.
WATS #4 access	19	74		28				FAC + outgoing directory no.
WATS #5 access	20	None		29				FAC + outgoing directory no.
WATS #6 access	21	None		30				FAC + outgoing directory no.
Tie #1 (E&M)/Tie #1 (FIPN) access (default)	22	80		31				FAC + outgoing directory no.
Tie #2 (Loop)/Tie #2 (FIPN) access (default)	23	82		32				FAC + outgoing directory no.
Tie/FIPN #3 access	24	83		33				FAC + outgoing directory no.
Tie/FIPN #4 access	25	84		34				FAC + outgoing directory no.

**NUMBERING PLAN ASSIGNMENT (TRUNK ACCESS CODE)  
CMC 100**

Feature Name	Feature Number (P1)	Default Code	New Code (P2)	Trunk Group No. (P3)	Outgoing Digits (P4)	Digits Sent (Tie Only) (P5)	Dial Store & Forward (P6)	Numbering Scheme
Tie/FIPN #5 access	26	None		35				FAC + outgoing directory no.
Tie/FIPN #6 access	27	None		36				FAC + outgoing directory no.
Tie/FIPN #7 access	28	None		37				FAC + outgoing directory no.
Tie/FIPN #8 access	29	None		38				FAC + outgoing directory no.
Tie/FIPN #9 access	30	None		39				FAC + outgoing directory no.
Tie/FIPN #10 access	31	None		40				FAC + outgoing directory no.
Tie/FIPN #11 access	32	None		41				FAC + outgoing directory no.
Tie/FIPN #12 access	33	None		42				FAC + outgoing directory no.
Tie/FIPN #13 access	34	None		43				FAC + outgoing directory no.
Tie/FIPN #14 access	35	None		44				FAC + outgoing directory no.
Tie/FIPN #15 access	36	None		45				FAC + outgoing directory no.
Tie/FIPN #16 access	37	None		46				FAC + outgoing directory no.
Tie/FIPN #17 access	38	None		47				FAC + outgoing directory no.
Tie/FIPN #18 access	39	None		48				FAC + outgoing directory no.
Tie/FIPN #19 access	40	None		49				FAC + outgoing directory no.
Tie/FIPN #20 access	41	None		50				FAC + outgoing directory no.
SCC #1 access	42	46		51				FAC + outgoing directory no.
SCC #2 access	43	47		52				FAC + outgoing directory no.
SCC #3 access	44	48		53				FAC + outgoing directory no.
SCC #4 access	45	49		54				FAC + outgoing directory no.
SCC #5 access	46	None		55				FAC + outgoing directory no.
SCC #6 access	47	None		56				FAC + outgoing directory no.

**NUMBERING PLAN ASSIGNMENTS (FEATURE ACCESS CODE)  
CMC 100**

Feature Name	Feature Number (P1)	Default Code	New Code (P2)	Numbering Scheme
Account code entry/client billing	154	56		FAC + (max. 15 digits)
Add data call set-up	160	67		FAC
Attendant access	55	0		FAC
Attendant password	158	None		FAC + 0/1 + password (max. 4 digits) 0 = Cancel 1 = Register
Call announce receive on/off	126	#8		FAC + 0/1 0 = Tone ringer 1 = Voice calling
Call charges message registration add/clear	74	None		FAC + 0/1/9 + directory no. + charge 0 = Cancel 1 = Register 9 = Verify
Call forward - all calls (register)	80	*34		FAC (+ 0/1) + directory no. (see Note)
Call forward - all calls (cancel)	81	*30		FAC (+ 0/1) (see Note)
Call forward - busy (register)	56	*36		FAC (+ 0/1) + directory no. (see Note)
Call forward - busy (cancel)	57	*38		FAC (+ 0/1) (see Note)
Call forward - busy/no answer (register)	82	*33		FAC (+ 0/1) + directory no. (see Note)
Call forward - no answer (register)	83	*32		FAC (+ 0/1) + directory no. (see Note)
Call forward - busy/no answer and no answer (cancel)	84	*31		FAC (+ 0/1) (see Note)
Call forward - follow me (register/cancel)	110	*35		FAC + 0/1 + directory number 0 = Cancel 1 = Register
Call forward - for other station (register/cancel)	112	*37		FAC + 0/1 + directory number (forward from) + directory number (forward to) 0 = Cancel 1 = Register
Call park	153	*9		FAC + (max. 4 digits)

NOTE: A value of 0 (internal) or 1 (external) must be added to call forwarding register/cancel where indicated if Flag 195 of CMC 102 is set to 1.

**NUMBERING PLAN ASSIGNMENTS (FEATURE ACCESS CODE)  
CMC 100**

Feature Name	Feature Number (P1)	Default Code	New Code (P2)	Numbering Scheme
Call park answer	93	#9		FAC + (max. 4 digits)
Controlled restriction (register)	75	None		FAC + 1/2/3/4 + 1 + COS 1 = Station incoming calls 2 = All incoming calls 3 = All outgoing trunk calls 4 = All calls
Controlled restriction (cancel)	75	None		FAC + 1/2/3/4 + 0 + COS 1 = Station incoming calls 2 = All incoming calls 3 = All outgoing trunk calls 4 = All calls
Data call attribute (change)	117	69		FAC + changed attribute (see CMC 222)
Day/night mode change - self tenant only	131	*#		FAC + 0/1 0 = Day mode 1 = Night mode
Day/night mode change - all tenants	132	8#		FAC + [BTN] + speed calling access codes + speed call no. FAC + [BTN] + directory no.
Direct station selection	122	#4		FAC + 0/1 0 = Day mode 1 = Night mode
DSS park answer	107	18		FAC + 1 or 2 digit DSS number + 2 digit DSS no.
DSS speed call (program)	135	52		FAC + [BTN] + trunk access code + outgoing directory no.
Directed call pick-up	106	17		FAC
Do not disturb (register)	85	None		FAC
Do not disturb (cancel)	86	#6		FAC

**NUMBERING PLAN ASSIGNMENTS (FEATURE ACCESS CODE)**  
**CMC 100**

Feature Name	Feature Number (P1)	Default Code	New Code (P2)	Numbering Scheme
Do not disturb - other (register/cancel/verify)	71	None		FAC + 0/1/2/9 + directory no. + silent message ID (00-50) 0 = Cancel 1 = Register 2 = Register silent message 9 = Verify
Do not disturb override (register)	120	*2		FAC + directory no.
Do not disturb override (cancel)	121	#2		FAC
Do not disturb with silent message (register)	137	*6		FAC + silent message ID (00-50)
Proprietary telephone paging access - zone/all zones	51	77		FAC + (0-9 digits)
Proprietary telephone paging answer	52	87		FAC + (0-9 digits)
Executive override	152	#5		FAC
Extension prefix	1	None		FAC + directory no.
External paging access	53	78		FAC + (0-9 digits)
External paging answer	54	88		FAC + (0-9 digits)
Flash from SLT	67	6		TRANSFER + FAC
Guest room clean-up	73	None		FAC
Group pick-up	92	*4		FAC
Idle line preference change	129	541		FAC + 0/1/2/3 0 = Not available 1 = ICM 2 = Trunk 3 = D-ICM
Key touch tone control - proprietary telephone only	133	58		FAC + 0/1 0 = No touch tone 1 = Touch tone
Least cost routing - system access	3	9		FAC + outgoing directory number
Maid status change	69	None		FAC + status ID (1-6) + maid ID (6 digits)

**NUMBERING PLAN ASSIGNMENTS (FEATURE ACCESS CODE)  
CMC 100**

Feature Name	Feature Number (P1)	Default Code	New Code (P2)	Numbering Scheme
Message leaving (register)	87	*1		FAC + directory no. + silent message ID (00-50)
Message leaving (cancel)	88	#1		FAC + directory no.
Message leaving (cancel from third station)	109	1#1		FAC + 0 (active station) FAC + 1 + directory no. (third station)
Message pick-up	89	*5		FAC
Modem individual access	164	63*		FAC + modem group ID + modem no. + trunk access code + outgoing directory no.
Multi-group pick-up	108	60		FAC + pick-up group no.
Night answer any station - this tenant only	94	#30		FAC
Night answer any station - all tenants	95	#31		FAC
Off-hook incoming signal change-user programmability (CT-10, CT-20, CT-30, CSD)	124	57		FAC + 0/1 0 = No off-hook signaling 1 = Off-hook signaling
Off-hook incoming signal change-user programmability (DS20, DS20S, DS20SD, DS32SD).	124	57		FAC + 0/1/2/3 0 = No off-hook signaling 1 = Set volume level to low 2 = Set volume level to medium 3 = Set volume level to high
Preselection mode change	127	542		FAC + 0/1 0 = One-touch off-premise 1 = Preselection
Programming from key telephone (buttons)	134	53		FAC + [BTN] + FNO + X (X = directory no., zone no., ACD no.)
Recorded voice announcement	136	89		FAC + 0/1/9 + voice message ID (01-99/001-999) 0 = Cancel 1 = Register 9 = Verify
Repertory dialing (program)	138	62		FAC + [BTN] + outgoing directory no.

**NUMBERING PLAN ASSIGNMENTS (FEATURE ACCESS CODE)**

**CMC 100**

Feature Name	Feature Number (P1)	Default Code	New Code (P2)	Numbering Scheme
Ringling line preference change	128	540		FAC + 0/1/2/3 0 = Not available 1 = ICM 2 = ICM-TRK 3 = D-ICM, ICM, TRK
Room information register	68	None		FAC + 1/2/9 + directory no. + [01 to 16] 1 = Register for multi-language wake-up 2 = Register for COR 9 = Display
Room status change	72	None		FAC + (see CMC 358) + directory no.
Save/last number redial	50	*8		FAC
Secretary station (register)	120	*2		FAC + directory no.
Secretary station (cancel)	121	#2		FAC
Self station ringing	66	61#		FAC + on-hook
Service call routing #1	96	None		FAC
Service call routing #2	97	None		FAC
Service call routing #3	98	None		FAC
Service call routing #4	99	None		FAC
Service call routing #5	100	None		FAC
Service call routing #6	101	None		FAC
Service call routing #7	102	None		FAC
Service call routing #8	103	None		FAC
Service call routing #9	104	None		FAC
Service call routing #10	105	None		FAC
Sign-on/sign-off (ACD)	143	5*		Sign-on: FAC + 1 + ACD agent ID Sign-off: FAC + 0
Silent monitor (activation)	144	55		FAC
Station camp-on (register)	150	**		FAC
Station camp-on (cancel)	90	#*		FAC



**NUMBERING PLAN ASSIGNMENTS (FEATURE ACCESS CODE)  
CMC 100**

Feature Name	Feature Number (P1)	Default Code	New Code (P2)	Numbering Scheme
Station speed call-user programmability	123	#0		FAC + X (X = speed call code, trunk access code, outside directory no.)
Station speed calling	48	*0		FAC + (0-9)
System speed calling	49	# #		FAC + (00-99/000-999)
Terminal password (change)	155	*3#		FAC + 0/1/8 + password + new password 0 = Cancel 1 = Register 8 = Change
Trunk camp-on (register)	151	*7		FAC
Trunk camp-on (cancel)	91	#7		FAC
Trunk access (direct)	130	61*		FAC + trunk directory no. + outgoing directory no. (see Notes)
Wake-up (other) - guest phone	70	None		FAC + 0/1/9 + directory no. + time 0 = Cancel 1 = Register 9 = Verify
Wake-up self (register)	78	None		FAC + wake-up time
Wake-up self (cancel)	79	None		FAC
Walking COS (assign)	155	*3#		FAC + 0/1/8 + directory no. + password 0 = Cancel 1 = Register 8 = Change
Wrap-up code entry	142	66		FAC + wrap-up code

**NOTES:**

1. If the system consists of two or more cabinets, FNO 131 requires the use of a 4-digit trunk access code. (By default, the trunk access code is the same as the trunk equipment number.)
2. If CMC 251 was used to assign trunk directory numbers, the assigned directory number must be used in place of the trunk access code.

**SERVICE PARAMETERS  
CMC 101**

Use the following forms to assign system parameters. (NOTE: Default values are shown in **bold type**.)

P1 Flag ID	Flag Function	Available Values	P2 New Value
1	Send warning burst on override	<b>0 = Send</b> 1 = Do not send	
2	Permit trunk-to-trunk connection during transfer (not applied to FIPN)	<b>0 = Do not check CMC 410</b> 1 = Check CMC 410	
3	Send warning tone during override	<b>0 = Do not send</b> 1 = Send	
4	Voice/tone signal for intercom	<b>0 = Tone</b> 1 = Voice	
5-7	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
8	No-dial alarm sent to attendant console	<b>0 = Do not send</b> 1 = Send	
9-12	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
13	Disconnect supervision option of CO loop (outgoing) trunk	<b>0 = Detect</b> 1 = Do not detect	
14	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
15	Speech path before completion of outgoing dialing	<b>0 = One-way speech path</b> 1 = Bothway speech path	
16	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
17	Make busy for ground start CO trunk	<b>0 = Loop</b> 1 = Ground	
18-19	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
20	Cancel lost call recall	<b>0 = Lost call recall</b> 1 = Disconnect	
21-32	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>

**SYSTEM PARAMETERS****CMC 102** (NOTE: Default values are shown in **bold** type.)

P1 Flag No.	Flag Definition	Available Values	P2 New Value
1	Trunk sharing among tenants	<b>0 = Own trunks incoming and outgoing</b> 1 = Own trunks outgoing, share incoming 2 = Own trunks incoming, share outgoing	
2	Ringer pattern for off-premise stations	<b>1 = Station call</b> 2 = Incoming call 3 = Recall	
3	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
4	Call charges (SMDR) for transferred call	<b>0 = Divided between stations</b> 1 = Charge transferred station	
5	Check trunk signaling before allowing trunk-to-trunk transfer (not applied to FIPN)	<b>0 = Yes</b> 1 = No	
6	Hunt for outgoing trunks based on tenant number	<b>0 = Yes</b> 1 = No	
7	Hunt for bothway trunks based on tenant number	<b>0 = Yes</b> 1 = No	
8-9	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
10	Number of digits for call park orbits	1 to 4 digits <b>3 digits</b>	
11	Number of digits in user account codes	1 to 15 digits <b>15 digits</b>	
12	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
13	Meaning of pound sign (#) sent to tie trunk	<b>0 = End of dialing</b> 1 = Dial code	
14	Meaning of pound sign (#) sent to CO trunk	<b>0 = End of dialing</b> 1 = Dial code	
15	Message waiting for SLTs with message waiting lamp (The system must be <b>HOT</b> restarted after this flag is changed for it to take effect.)	<b>0 = Off</b> 1 = On	
16	Digits in personal account code for SCC #1	<b>0 = Not assigned</b> 1, 2, or 3 digits (input required)	

**SYSTEM PARAMETERS****CMC 102 (Cont'd)** (NOTE: Default values are shown in **bold** type.)

P1 Flag No.	Flag Definition	Available Values	P2 New Value
17	Digits in personal account code for SCC #2	<b>0 = Not assigned</b> 1, 2, or 3 digits (input required)	
18	Digits in personal account code for SCC #3	<b>0 = Not assigned</b> 1, 2, or 3 digits (input required)	
19	Digits in personal account code for SCC #4	<b>0 = Not assigned</b> 1, 2, or 3 digits (input required)	
20	Digits in personal account code for SCC #5	<b>0 = Not assigned</b> 1, 2, or 3 digits (input required)	
21	Digits in personal account code for SCC #6	<b>0 = Not assigned</b> 1, 2, or 3 digits (input required)	
22-27	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
28	Type of intercept for a call to a vacant number (DID application)	<b>0 = Attendant</b> 1 = Reorder tone (when using RVAC card this flag is invalid if msg. ID 51 is recorded)	
29	Number of times the flash button is effective	0 to 255 times <b>3 times</b>	
30-48	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
49	Filler digit for voice mail integration	<b>Default = 8</b>	
50-55	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
56	Direct line access by trunk access code (key system lines)	0 = Not available <b>1 = Available</b>	
57-67	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
68	# code treatment in speed calling	<b>0 = Pause</b> 1 = #	
69	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
70	Clock card installation	<b>0 = Not Installed</b> 1 = Installed	
71-73	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>

**SYSTEM PARAMETERS****CMC 102 (Cont'd)** (NOTE: Default values are shown in bold type.)

P1 Flag No.	Flag Definition	Available Values	P2 New Value
74	Station/trunk installation check assignment command	<b>0 = Check</b> 1 = Do not check	
75-76	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
77	PSL line busy. Off-hook call announcement can be performed even when FLGN 71 = 1 (available)	<b>0 = Not available</b> 1 = Available	
78-82	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
83	Attendant overflow from station call	<b>0 = Not available</b> 1 = Available	
86	Send hold tone during off-hook camp-on	<b>0 = Do not send</b> 1 = Send (hold tone can be either music from music on hold or RVAC card)	
87	LCR delayed advance time	<b>0 = 1 time</b> 1 = 2 times	
88	Outgoing route selection when CAC is dialed in LCR access	<b>0 = LCR route</b> 1 = <b>TGN #13 route</b>	
89-93	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
94	Send LCR warning burst tone	<b>0 = Do not send</b> 1 = <b>Send in case of hunting most expensive cost route</b> 2 = Send in case of not least cost route	
95	Send RBT at transfer	<b>0 = Do not send</b> 1 = Send	
96	Number of DSS number in DSS call park orbit	<b>0 = 1 digit</b> 1 = 2 digits	
97	Send cut-through warning burst tone	<b>0 = Do not send</b> 1 = <b>Send</b>	
98-105	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
106	TGN screening for SMDR	<b>0 = Original TGN</b> 1 = Routed-to TGN	
107	First level of call waiting indicator for ACD	1 to 254 (must be less than FLGN 108) <b>Default = 1</b>	

**SYSTEM PARAMETERS****CMC 102 (Cont'd)** (NOTE: Default values are shown in **bold type**.)

P1 Flag No.	Flag Definition	Available Values	P2 New Value
108	Second level of call waiting indicator	2 to 255 (must be greater than FLGN 107) <b>Default = 5</b>	
109	Auto-disconnect when caller goes on-hook	<b>0 = Not available</b> 1 = Available	
110	Stutter dial tone to notify of messages waiting (message notification)	<b>0 = Not active</b> 1 = Active	
111	Voice mail integration patterns	0 to 4	
112	Number of station/trunk digits sent for VMS integration	2 to 8 (includes extension prefix code) An entered value of greater than 8 will mean a value of "0." <b>Default = 4</b>	
113	Tenant type	<b>0 = Soft tenant</b> 1 = Hard tenant	
114-128	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
129	SMDR for incoming call	<b>0 = Not available</b> 1 = Available	
130	SMDR when account code is changed during conversation	<b>0 = Charge the last account code</b> 1 = Divided between account codes	
131	PAD control corresponding to TGN for tie route	<b>0 = Not available</b> 1 = Available	
132	Type of forced account code service	<b>0 = Not available</b> 1 = Forced 2 = Forced and verified	
133-135	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
136	Send distinctive busy tone	<b>0 = Send</b> 1 = Do not send (BT instead of DBT)	
137-152	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
153	AC alarm detection	<b>0 = Detected</b> 1 = Not detected	
154-155	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>

**SYSTEM PARAMETERS****CMC 102 (Cont'd)** (NOTE: Default values are shown in **bold** type.)

P1 Flag No.	Flag Definition	Available Values	P2 New Value
156	Tie trunk (incoming) reverse signal control	<b>0 = Do not transmit reverse signal</b> 1 = Transmit reverse signal	
157-160	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
161	Presentation Indicator in ISDN	<b>0 = Not checked</b> 1 = Checked	
162	Number of digits of system abbreviation/system speed calling code	<b>0 = 2 digits (SYS ABB/SPD code = 00 to 99)</b> 1 = 3 digits (SYS ABB/SPD code = 000 to 999)	
163	Call diversion to attendant	<b>0 = Individual extension assigned by P6, CMC-206</b> 1 = All extensions in the system	
164	SMDR output of authorization code of DISA-S	<b>0 = Not output</b> 1 = Output	
165	Incoming SMDR output before answering call	<b>0 = Not output</b> 1 = Output	
166	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
167	SMDR output for tandem trunking resulting in trunk seizure block	<b>0 = Output as discarded call</b> 1 = Output as incomplete call	
168-172	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
173	Minimum number of digits of forced account code	0 to 15 <b>0 = Not checked</b>	
174	Maximum number of digits of forced account code	0 to 15 <b>0 = Not checked</b>	
175	ACD route table	<b>0 = Not apply ACD route table (only ACD calling is applied)</b> 1 = Apply ACD route table	
176-183	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
184	Type of extension name on the attendant supervised loop area	<b>0 = Display extension name 1</b> 1 = Display extension name 2 registered by CMC 208	

**SYSTEM PARAMETERS**

**CMC 102 (Cont'd)** (NOTE: Default values are shown in **bold type**.)

P1 Flag No.	Flag Definition	Available Values	P2 New Value
185	Detection of T-1 trunk slip error	<b>0 = Do not detect</b> 1 = Detect	
186-188	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
189	PMSI hotel message counter	<b>0 = MSGCT = "1" to "A"</b> 1 = MSGCT = "1" to "9"	
190-191	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
192	Type of automatic hold when a trunk key is pressed	<b>0 = Exclusive hold</b> 1 = Common hold	
193	Number of digits of MSGID for recorded voice message	<b>0 = 2 digits</b> 1 = 3 digits (see Note 1)	
194	LCR default route	13 to 56 = TGN 13 to TGN 56 <b>0 = TGN 13</b>	
195	Call forward separation for internal/external calls (CMC 319 must also be set up to implement this feature)	<b>0 = Not separated</b> 1 = Separated	
196	Default COR at hotel/motel check-in (defined in CMCs 411, 412, 413, 414, 416, and 417)	1 to 16 <b>Default = 1</b>	
197	Day/night DNIS (refer to CMC 461 for day and CMC 464 for night)	<b>0 = Do not apply</b> 1 = Apply	
198	Second DN display at receiving calling party number (see Note 2)	<b>0 = Do not display</b> 1 = Display	
199	Time-out disconnect for ring/no answer of DISA-S calls (refer to CMC 103, flag number 151)	<b>0 = Not disconnected</b> 1 = Disconnected	
200	Language display (DS20, DS20S, DS20SD, and DS32SD sets only) (see Note 3)	<b>0 = English</b> 1 = Spanish	
201	Front desk console and BS coding flag	0 = Mu-law 1 = A-law	

**NOTES:**

1. Required when attendant voice message or music on hold per tenant/DNIS is assigned.
2. When FLGN 198 is assigned, a maximum of ten characters can be programmed for display. If more than ten characters are used, you may see only nine or less in the display, depending on the calling situation.
3. After any changes are made, each individual phone where changes are to apply must be unplugged and plugged back in; or, perform a HOT restart.



**SYSTEM PARAMETERS****CMC 102 (Cont'd)** (NOTE: Default values are shown in bold type.)

P1 Flag No.	Flag Definition	Available Values	P2 New Value
202	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
203	Time format (DS20, DS20S, DS20SD, and DS32SD sets only) (see Note)	0 = 12-hour      1 = 24-hour	
204	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
205	Silent monitor start	0 = Start from call in progress 1 = Start at next call	
206	Send silent monitor break-in burst tone	0 = Do not send      1 = Send	
207	Silent monitor waiting message in idle state	0 = Message (set at CMC 305) 1 = Silent tone	
208-211	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
212	Name and DN display for 4-line display digital telephone	0 = Do not apply 1 = Apply	
213	Name and DN display for ATT	0 = Do not apply 1 = Apply	
214-217	<b>RESERVED</b>	<b>NONE</b>	<b>DO NOT CHANGE</b>
218	Off-hook call announcement for PSL is busy	0 = Not allowed 1 = Allowed	
223	NXX area code flag	0 = Apply 1 = Not apply	
224	CAC digit flag	0 = 5 digit CACs only 1 = Both 5 digit and 7 digit CACs 2 = 7 digit CACs only	
225	International call digit flag	0 = 15 digits 1 = 18 digits	
226	Extension prefix application flag	0 = Standard (extension call only) 1 = Extend (extension call, DN for FAC, VMS integration digits)	
227	Paging access for DND registering station	0 = Allow 1 = Restrict	

NOTE: After any changes are made, each individual phone where changes are to apply must be unplugged and plugged back in; or, perform a HOT restart.

**SYSTEM TIMING PARAMETERS  
CMC 103**

Use the following forms to assign system timing parameters, using CMC 103.

P1 Identification (Service Timing ID Definition)	Default Value	Unit of Time (ms)	P2 New Value	If Number of Units = 0, Flag is:
1 Station hookswitch timing for SLTs	21	50		Meaningless
2 Length of time after all digits are dialed by the station user before the call is timed for SMDR and shown on the display	16	1,000		Infinity
10 Confirmation tone burst timing	7	100	<b>NONE</b>	255-256 sec
11 Ready to call timing after service registration	2	1,000	<b>NONE</b>	Infinity
12 Ringing duration before call is forwarded on no-answer condition	13 (approx. 3 rings)	1,000		255-256 sec
14 Ringing duration for call return of station camp-on before abandoning call-back attempt	31 (approx. 7 rings)	1,000		255-256 sec
15 Station camp-on release timing	0	10,000		Infinity
16 Trunk camp-on cancel timing	0	10,000		Infinity
17 Time interval during which parked call is held before returning to the parking station	61	1,000		Sta = Infinity Trk = 255-256
18 Time interval during which a trunk call is held before returning to the holding station (only applicable if trunk appears on a button on the station)	181	1,000		255-256 sec
19 Time interval during which a call is camped-on to a station before returning to the DSS.	31	1,000		Sta = Infinity Trk = 255-256
20 Time interval during which a parked call is held before returning to the DSS	31	1,000		255-256 sec
22 Ringing duration after a call has been transferred to a station, before it returns to the transferring station on a no-answer condition	31 (approx. 7 rings)	1,000		255-256 sec

**NOTE:** Do NOT change the P2 value for STIDs 10 or 11.

**SYSTEM TIMING PARAMETERS**  
**CMC 103 (Cont'd)**

P1 Identification (Service Timing ID Definition)	Default Value	Unit of Time (ms)	P2 New Value	If Number of Units = 0, Flag is:
23 Duration of burst tone after going off-hook and before dial tone (service registration reminder)	7	100		Infinity
24 Pre-selection timing	4	1,000		255-256 sec
25 Camp-on burst timing	2	100		Infinity
27 Direct-in line party busy burst timing	2	100		Infinity
28 Override warning burst timing	2	1,000		255-256 sec
29 Paging proprietary telephone warning burst timing	2	1,000		Infinity
30 BT (Busy Tone), ROT (Reorder Tone) duration timing (time-out routing to attendant)	31	1,000		Sta = Infinity Trk = 255-256
34 Duration of warning tone that sounds before a voice announce to a station	2	1,000		255-256 sec
35 Confirmation tone time-out (time between CFT and ROT)	11	1,000		Infinity
36 Called party release timing	1	1,000		Infinity
37 Amount of time before a trunk camp-on callback to a station cancels under a no-answer condition	11 (approx. 3 rings)	1,000		255-256 sec
38 Pre-pause for second DT (LCR, SCC)	1	1,000		Infinity
39 Recalled station lock-in timing	2	1,000	<b>NONE</b>	255-256 sec
40 Station camp-on recall timing	31	1,000		255-256 sec
42 Paging proprietary telephone call timing	1	1,000	<b>NONE</b>	Infinity
43 Station hold loop recall timing	181	1,000		255-256 sec
44 Direct-in line called party busy timing	2	1,000	<b>NONE</b>	255-256 sec

**NOTE:** Do NOT change the P2 value for STIDs 39, 42, or 44.

**SYSTEM TIMING PARAMETERS**  
**CMC 103 (Cont'd)**

P1 Identification (Service Timing ID Definition)	Default Value	Unit of Time (ms)	P2 New Value	If Number of Units = 0, Flag is:
45 Amount of time that a warning tone is sent over the external paging system before the page	2	1,000		255-256 sec
46 Account code registration confirmation tone timing	11	100		255-256 sec
47 Verify display timing	31	1,000		255-256 sec
48 Amount of time that a call returns to an attendant console after camp-on to a station.	31	1,000		255-256 sec
49 Amount of time that a call returns to the attendant console from park	31	1,000		255-256 sec
51 Amount of time that a call returns to the attendant console from supervised hold	61	1,000		255-256 sec
52 Amount of time that a transferred call returns to the attendant console on a no-answer condition	31 (approx. 7 rings)	1,000		255-256 sec
53 Amount of time a call waits to be answered at the attendant console before it overflows to the alternate destination	61	1,000		255-256 sec
54 Amount of time before an initial ACD message answers an incoming call	7	1,000		255-256 sec
55 Amount of time that an incoming ACD call waits in queue before overflowing to an alternate position or returning to the attendant	181	1,000		Infinity
56 Time between first and second ACD message	31	1,000		255-256 sec
57 Silent message confirmation display timing	4	1,000		255-256 sec
60 Time until common hold feature times out after first button depression	16	100		Infinity
61 Amount of time applicable for delayed ringing on key system lines	11	1,000		Infinity
62 Automatic pause timing	21	100		255-256 sec

**SYSTEM TIMING PARAMETERS**  
**CMC 103 (Cont'd)**

	P1 Identification (Service Timing ID Definition)	Default Value	Unit of Time (ms)	P2 New Value	If Number of Units = 0, Flag is:
63	Automatic disconnect timing after sending reorder tone on DISA-standard	11	1,000		255-256 sec
64	Confirmation timing for wake-up answer	21	1,000		255-256 sec
65	Retry timing for seizure of DTMF port after DTMF seizure failure in Tie/DID termination	2	1,000		255-256 sec
76	Repertory dial pause timing	10	200		51000-51200
82	Modem pre-activating timing	6	1,000		255-256 sec
83	Modem initiating timing	11	1,000		255-256 sec
84	Modem guard timing	11	100		25500-25600
86	Modem release timing	11	100		25500-25600
94	LCR #1 to #2 route advance timing (off-hook)	31	1,000		Infinity
95	LCR #2 to #3 route advance timing (off-hook)	31	1,000		Infinity
96	LCR #1 to #2 route advance timing (on-hook)	18	10,000		Infinity
97	LCR #2 to #3 route advance timing (on-hook)	18	10,000		Infinity
98	Automatic camp-on registration timing	5	1,000		Infinity
99	Modem reserve timing	19	10,000		2550-2560 sec
100	Cut-through warning burst timing	2	100		25500-25600
103	LCR warning burst timing	11	100		25500-25600
104	ACD limited work time	12	5,000		1275-1280 sec
105	Auto answer	7	100		Infinity
106	Modem ringing timing	21	100		25500-25600
107	Duration while CFA to CO burst tone is sent out	7	100		25500-25600

**SYSTEM TIMING PARAMETERS**  
**CMC 103 (Cont'd)**

P1 Identification (Service Timing ID Definition)	Default Value	Unit of Time (ms)	P2 New Value	If Number of Units = 0, Flag is:
108 Timing when "Add to ACD Group" message (MSG 61) is received after sign-on message (MSG 65) was sent out	7	1,000		255-256 sec
109 Timing when "Disconnect" message (MSG 18) is sent again in IPL sequence	6	1,000		255-256 sec
110 Timing when "ACK" message (MSG 17) is received after "Connect" message (MSG 19) was sent out in IPL sequence	7	1,000		255-256 sec
111 Duration while the response from Hotel-AP is received after maid status is sent out from PBX	7	1,000		255-256 sec
130 T-1 ground signal release timing	2	8		0
131 T-1 loop closure timing	0	8		0
137 ACD high level queue level up timing	6	5,000		Infinity
145 Amount of time that a call will wait in queue until it is answered with the attendant voice message	0	1,000		255-256 sec
147 Camp-on recall timing for transferred call	0	1,000		255-256 sec
151 DISA-S no-answer disconnect timing (see Note 3)	61	1,000		255-256 sec
152 Call waiting burst timing	30	100		Infinity

**NOTES:**

- STIDs 3-9, 13, 21, 26, 31-33, 41, 50, 58-59, 66-75, 77-81, 85, 87-93, 101-102, 112-129, 132-136, 138-144, 146, and 148-150 are reserved. Do **NOT** try to change these STIDs.
- Actual timing values for the STIDs may be determined by multiplying the Unit of Time by the Number of Time Units (P2). (The actual value used by the system may be as much as one Number of Units less than the calculated value.)
- Refer to CMC 102, flag number 199.

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**CLASS OF SERVICE ASSIGNMENT**  
**CMC 104**

Class of Service Assignment								
Class of Service (P1)	Feature Numbers (P2)							
1								
2								
3								
4								
5								
6								
7								
8								



**CLASS OF SERVICE ASSIGNMENT  
CMC 104**

Class of Service Assignment								
Class of Service (P1)	Feature Numbers (P2)							
9								
10								
11								
12								
13								
14								
15								
16								

**TRUNK ACCESS (COR) ASSIGNMENTS  
CMC 105**

<b>P1</b> Class of Restriction Group Number	<b>P2</b> Allow/Deny Outgoing CO/FX/WATS/DID	<b>P3</b> Allow/Deny Incoming CO/FX/WATS	<b>P4</b> Allow/Deny Outgoing Tie	<b>P5</b> Allow/Deny Incoming Tie
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

**NETWORK CLOCK ASSIGNMENT  
CMC 107**

<b>P1</b> Priority of network clock	<b>P2</b> Equipment number of T-1 trunk extracted network clock
1	
2	
3	

**FIPN TIMING PARAMETERS  
CMC 111**

P1 Identification	Default Value	Unit	P2 New Value
1 Busy service (FAC) waiting timing (terminating PBX side)	30	1 sec.	
2 CCBS (Call Completion Busy Subscriber) cancel timing	60	1 msec.	
3 to 100 RESERVED	NONE	NONE	NONE

**FIPN NODE NUMBER ASSIGNMENT  
CMC 407**

P1 Trunk Group Number	P2 Node Number	P1 Trunk Group Number	P2 Node Number
31		41	
32		42	
33		43	
34		44	
35		45	
36		46	
37		47	
38		48	
39		49	
40		50	

**TRUNK ASSIGNMENT - BASIC CABINET**

**CMC 250, 251, 252, 253, and 437**

Use the following forms to assign trunk lines.

**CMC 250**

**CMC 251\*1**

**CMC 252\*2**

**CMC 253\*3**

**CMC 437\*4**

CARD TYPE	P1 EQUIP. NO.	P2 TYPE OF TRUNK	P3 TRUNK GROUP NUMBER	P4 OPER. MODE	P5 SIGNAL MODE	P6 START MODE	P2 DIAL MODE	P3 TRUNK NUMBER	P4 TENANT NUMBER	P2 DAY CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 DAY CLASS OF REST.	P5 NIGHT CLASS OF REST.	P1 TERM. TRUNK GROUP NUMBER	P3 TYPE OF TERM GROUP	P2 DISA STANDARD MODE FLAG

\*1 P1 = EQUIPMENT NUMBER    \*2 P1 = TRUNK GROUP NUMBER    \*3 P2 = EQUIPMENT NUMBER    \*4 P1 = EQUIPMENT NUMBER

**NOTE:** Refer to Appendix B for further information to determine Equipment Number.

**TRUNK ASSIGNMENT - BASIC CABINET**

**CMC 250, 251, 252, 253, and 437**

Use the following forms to assign trunk lines.

**CMC 250**

**CMC 251\*1**

**CMC 252\*2**

**CMC 253\*3**

**CMC 437\*4**

CARD TYPE	P1 EQUIP. NO.	P2 TYPE OF TRUNK	P3 TRUNK GROUP NUMBER	P4 OPER. MODE	P5 SIGNAL. MODE	P6 START MODE	P2 DIAL MODE	P3 TRUNK NUMBER	P4 TENANT NUMBER	P2 DAY CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 DAY CLASS OF REST.	P5 NIGHT CLASS OF REST.	P1 TERM. TRUNK GROUP NUMBER	P3 TYPE OF TERM GROUP	P2 DISA STANDARD MODE FLAG

\*1 P1 = EQUIPMENT NUMBER    \*2 P1 = TRUNK GROUP NUMBER    \*3 P2 = EQUIPMENT NUMBER    \*4 P1 = EQUIPMENT NUMBER

**TRUNK ASSIGNMENT - BASIC CABINET**

**CMC 250, 251, 252, 253, and 437**

Use the following forms to assign trunk lines.

**CMC 250**

**CMC 251\*1**

**CMC 252\*2**

**CMC 253\*3**

**CMC 437\*4**

CARD TYPE	P1 EQUIP. NO.	P2 TYPE OF TRUNK	P3 TRUNK GROUP NUMBER	P4 OPER. MODE	P5 SIGNAL. MODE	P6 START MODE	P2 DIAL MODE	P3 TRUNK NUMBER	P4 TENANT NUMBER	P2 DAY CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 DAY CLASS OF REST.	P5 NIGHT CLASS OF REST.	P1 TERM. TRUNK GROUP NUMBER	P3 TYPE OF TERM GROUP	P2 DISA STANDARD MODE FLAG

\*1 P1 = EQUIPMENT NUMBER    \*2 P1 = TRUNK GROUP NUMBER    \*3 P2 = EQUIPMENT NUMBER    \*4 P1 = EQUIPMENT NUMBER

**TRUNK ASSIGNMENT - EXPANDED CABINET**  
**CMC 250, 251, 252, 253, and 437**

Use the following forms to assign trunk lines.

**CMC 250**

**CMC 251\*1**

**CMC 252\*2**

**CMC 253\*3**

**CMC 437\*4**

CARD TYPE	P1 EQUIP. NO.	P2 TYPE OF TRUNK	P3 TRUNK GROUP NUMBER	P4 OPER. MODE	P5 SIGNAL MODE	P6 START MODE	P2 DIAL MODE	P3 TRUNK NUMBER	P4 TENANT NUMBER	P2 DAY CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 DAY CLASS OF REST.	P5 NIGHT CLASS OF REST.	P1 TERM. TRUNK GROUP NUMBER	P3 TYPE OF TERM GROUP	P2 DISA STANDARD MODE FLAG

\*1 P1 = EQUIPMENT NUMBER    \*2 P1 = TRUNK GROUP NUMBER    \*3 P2 = EQUIPMENT NUMBER    \*4 P1 = EQUIPMENT NUMBER



**TRUNK ASSIGNMENT - EXPANDED CABINET**

**CMC 250, 251, 252, 253, and 437**

Use the following forms to assign trunk lines.

**CMC 250**

**CMC 251\*1**

**CMC 252\*2**

**CMC 253\*3**

**CMC 437\*4**

CARD TYPE	P1 EQUIP. NO.	P2 TYPE OF TRUNK	P3 TRUNK GROUP NUMBER	P4 OPER. MODE	P5 SIGNAL MODE	P6 START MODE	P2 DIAL MODE	P3 TRUNK NUMBER	P4 TENANT NUMBER	P2 DAY CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 DAY CLASS OF REST.	P5 NIGHT CLASS OF REST.	P1 TERM. TRUNK GROUP NUMBER	P3 TYPE OF TERM GROUP	P2 DISA STANDARD MODE FLAG

\*1 P1 = EQUIPMENT NUMBER    \*2 P1 = TRUNK GROUP NUMBER    \*3 P2 = EQUIPMENT NUMBER    \*4 P1 = EQUIPMENT NUMBER

**TRUNK ASSIGNMENT - EXPANDED CABINET**

**CMC 250, 251, 252, 253, and 437**

Use the following forms to assign trunk lines.

**CMC 250**

**CMC 251\*1**

**CMC 252\*2**

**CMC 253\*3**

**CMC 437\*4**

CARD TYPE	P1 EQUIP. NO.	P2 TYPE OF TRUNK	P3 TRUNK GROUP NUMBER	P4 OPER. MODE	P5 SIGNAL MODE	P6 START MODE	P2 DIAL MODE	P3 TRUNK NUMBER	P4 TENANT NUMBER	P2 DAY CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 DAY CLASS OF REST.	P5 NIGHT CLASS OF REST.	P1 TERM. TRUNK GROUP NUMBER	P3 TYPE OF TERM GROUP	P2 DISA STANDARD MODE FLAG

\*1 P1 = EQUIPMENT NUMBER    \*2 P1 = TRUNK GROUP NUMBER    \*3 P2 = EQUIPMENT NUMBER    \*4 P1 = EQUIPMENT NUMBER

**TRUNK ASSIGNMENT - EXPANDED CABINET**

**CMC 250, 251, 252, 253, and 437**

Use the following forms to assign trunk lines.

**CMC 250**

**CMC 251\*1**

**CMC 252\*2**

**CMC 253\*3**

**CMC 437\*4**

CARD TYPE	P1 EQUIP. NO.	P2 TYPE OF TRUNK	P3 TRUNK GROUP NUMBER	P4 OPER. MODE	P5 SIGNAL MODE	P6 START MODE	P2 DIAL MODE	P3 TRUNK NUMBER	P4 TENANT NUMBER	P2 DAY CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 DAY CLASS OF REST.	P5 NIGHT CLASS OF REST.	P1 TERM. TRUNK GROUP NUMBER	P3 TYPE OF TERM GROUP	P2 DISA STANDARD MODE FLAG

\*1 P1 = EQUIPMENT NUMBER

\*2 P1 = TRUNK GROUP NUMBER

\*3 P2 = EQUIPMENT NUMBER

\*4 P1 = EQUIPMENT NUMBER

**TRUNK ASSIGNMENT - EXPANDED CABINET  
CMC 250, 251, 252, 253, and 437**

Use the following forms to assign trunk lines.

**CMC 250**

**CMC 251\*1**

**CMC 252\*2**

**CMC 253\*3**

**CMC 437\*4**

CARD TYPE	P1 EQUIP. NO.	P2 TYPE OF TRUNK	P3 TRUNK GROUP NUMBER	P4 OPER. MODE	P5 SIGNAL. MODE	P6 START MODE	P2 DIAL MODE	P3 TRUNK NUMBER	P4 TENANT NUMBER	P2 DAY CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 DAY CLASS OF REST.	P5 NIGHT CLASS OF REST.	P1 TERM. TRUNK GROUP NUMBER	P3 TYPE OF TERM GROUP	P2 DISA STANDARD MODE FLAG

\*1 P1 = EQUIPMENT NUMBER    \*2 P1 = TRUNK GROUP NUMBER    \*3 P2 = EQUIPMENT NUMBER    \*4 P1 = EQUIPMENT NUMBER

**TRUNK ASSIGNMENT - EXPANDED CABINET**

**CMC 250, 251, 252, 253, and 437**

Use the following forms to assign trunk lines.

**CMC 250**

**CMC 251\*1**

**CMC 252\*2**

**CMC 253\*3**

**CMC 437\*4**

CARD TYPE	P1 EQUIP. NO.	P2 TYPE OF TRUNK	P3 TRUNK GROUP NUMBER	P4 OPER. MODE	P5 SIGNAL MODE	P6 START MODE	P2 DIAL MODE	P3 TRUNK NUMBER	P4 TENANT NUMBER	P2 DAY CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 DAY CLASS OF REST.	P5 NIGHT CLASS OF REST.	P1 TERM. TRUNK GROUP NUMBER	P3 TYPE OF TERM GROUP	P2 DISA STANDARD MODE FLAG

\*1 P1 = EQUIPMENT NUMBER    \*2 P1 = TRUNK GROUP NUMBER    \*3 P2 = EQUIPMENT NUMBER    \*4 P1 = EQUIPMENT NUMBER

**TRUNK ROUTE TIMING PARAMETER ASSIGNMENT  
CMC 254**

Use the following forms to assign trunk route parameters.

**CMC 254**

**CMC 254**

<b>P1</b> Trunk Group Number 0 to 64	<b>P2</b> Route Timing Identification 1 to 15	<b>P3</b> Number of Timing Units 0 to 255	<b>P1</b> Trunk Group Number 0 to 64	<b>P2</b> Route Timing Identification 1 to 15	<b>P3</b> Number of Timing Units 0 to 255

**TRUNK ROUTE TIMING PARAMETER ASSIGNMENT**

**CMC 254**

Use the following forms to assign trunk route parameters.

**CMC 254**

**CMC 254**

<b>P1</b> Trunk Group Number 0 to 64	<b>P2</b> Route Timing Identification 1 to 15	<b>P3</b> Number of Timing Units 0 to 255	<b>P1</b> Trunk Group Number 0 to 64	<b>P2</b> Route Timing Identification 1 to 15	<b>P3</b> Number of Timing Units 0 to 255

**TRUNK PARTY NAME ASSIGNMENT**  
**CMC 256**

P1 Equipment Number	P2 Trunk Name	P1 Equipment Number	P2 Trunk Name	P1 Equipment Number	P2 Trunk Name

**NOTE:** Refer to Appendix B for further information to determine Equipment Number.



**SCC ASSIGNMENT  
CMC 404  
SCC ROUTING TGN ASSIGNMENT  
CMC 405**

Use this form to assign common carrier access information.

**CMC 404**

**CMC 405**

P1 SCC Route Number	P2 Gateway Telephone Number	P3 Security Code*	P4 Timing Value	P1 SCC Trunk Group No.	P2 Route Dest. Trunk Group No.
1					
2					
3					
4					
5					
6					

\* Up to 15 digits or blank

**TIE TRUNK LEVEL CHANGE ASSIGNMENT  
CMC 406**

Use the following forms to assign common carrier access information.

<b>P1 Trunk Group Number</b>	<b>P2 Additional Digits</b>	<b>P3 Digits to be Compared</b>	<b>P4 Number of Digits to be Deleted</b>
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			

**TIE TRUNK LEVEL CHANGE ASSIGNMENT  
CMC 406**

P1 Trunk Group Number	P2 Additional Digits	P3 Digits to be Compared	P4 Number of Digits to be Deleted
47			
48			
49			
50			

**TIE TRUNK LEVEL CHANGE ASSIGNMENT**  
**CMC 406**

<b>P1</b> Trunk Group Number	<b>P2</b> Additional Digits	<b>P3</b> Digits to be Compared	<b>P4</b> Number of Digits to be Deleted

**REVERSE SIGNAL DATA ASSIGNMENT  
CMC 255**

<b>P1</b> Trunk Group Number	<b>P2</b> Answer/Disconnect Detection for Outgoing Trunk Group	<b>P3</b> Reverse Control for Tie/Incoming Trunk Group

**TRUNK-TO-TRUNK CONNECTION ASSIGNMENT  
CMC 410**

<p><b>P1</b> Trunk Group Number</p>	<p><b>P2</b> Trunk Group Numbers Allowed Connection to Trunk Group Entered at P1</p>			

**TRUNK-TO-TRUNK CONNECTION ASSIGNMENT**  
**CMC 410**

<b>P1</b> Trunk Group Number	<b>P2</b> Trunk Group Numbers Allowed Connection to Trunk Group Entered at P1			

**TRUNK-TO-TRUNK CONNECTION ASSIGNMENT**  
**CMC 410**

<b>P1</b> Trunk Group Number	<b>P2</b> Trunk Group Numbers Allowed Connection to Trunk Group Entered at P1			



**TRUNK-TO-TRUNK CONNECTION ASSIGNMENT**  
**CMC 410**

<b>P1</b> Trunk Group Number	<b>P2</b> Trunk Group Numbers Allowed Connection to Trunk Group Entered at P1			

**ACD TRUNK PRIORITY ASSIGNMENT  
CMC 314**

<b>P1</b> Trunk Group Number	<b>P2</b> Priority Level (1 = highest to 8 = lowest)

**DID/DISA ADDITIONAL CODE ASSIGNMENT  
CMC 430**

Use this form to assign DID/DISA features.

<b>P1</b> Trunk Group Number	<b>P2</b> Received Digits Length	<b>P3</b> Prefix Code	<b>P4</b> DISA Directory Number	<b>P5</b> DISA Authorization Code	<b>P6</b> COS / COR
13					
14					
15					
16					
57					
58					
59					
60					
61					
62					

**LISTED DIRECTORY NUMBER ASSIGNMENT  
CMC 431**

Use this form to assign listed directory numbers.

<b>P1</b> Trunk Group Number	<b>P2</b> Listed Directory Number	<b>P3</b> Listed Directory Number	<b>P4</b> Listed Directory Number	<b>P5</b> Listed Directory Number	<b>P6</b> Listed Directory Number
13					
14					
15					
16					
57					
58					
59					
60					
61					
62					

**LISTED DIRECTORY NUMBER ASSIGNMENT (ENHANCED)  
CMC 435**

This command has a higher priority than CMC 431.

<b>P1</b> Trunk Group Number	<b>P2</b> Index Number for LDN Table	<b>P3</b> Listed Directory Number	<b>P4</b> Tenant Number	<b>P5</b> Directory Number of Night Answer Telephone
13				
14				
15				
16				
57				
58				
59				
60				
61				
62				

**DID TRUNK LEVEL CHANGE ASSIGNMENT  
CMC 433**

Use this form to assign DID trunk levels.

<b>P1</b> Trunk Group Number	<b>P2</b> Replaced Digit	<b>P3</b> New Digit
13		
14		
15		
16		
57		
58		
59		
60		
61		
62		

### AUTHORIZATION CODE ASSIGNMENT CMC 432

Use this table to establish the DISA authorization code, and COS/COR when standard trunks are assigned the DISA feature (CO, FX, or WATS).

P1 Authorization Code	P2 Trunk Group No.	P3 COS/COR

**NOTE:** P1 = DISA authorization code: 1 to 8 digits or blank. When P1 is blank, DISA Standard does not function.

P2 = Trunk Group Number:           0 or blank - System Authorization Code  
  13 to 30 - Trunk Group Number

P3 = COS/COR - Format is SSRR: SS = COS  
  RR = COR

**ISDN CLIR ASSIGNMENT  
CMC 120**

<b>P1</b> Trunk Group Number of ISDN CO TGN = 13 to 16	<b>P2 (CLIR Control Flag)</b> 0 = CLIR not requested 1 = Request CLIR 2 = Request restriction of CLIR	<b>P3</b> National Number
13		
14		
15		
16		

CLIR - Calling Line Identification Restriction

**ISDN SERVICE DISPLAY  
CMC 121**

<b>P1</b> Equipment Number of B-Channel of ISDN CO	<b>P2</b> Service Control Flag
EN = XYZ X = Cabinet Number (0 or 1) YY = Card Slot Number (00 to 17) Z = Circuit Number (0 to 9)	0 = In Service 1 = Maintenance 2 = Out of Service



**SPECIFIC ISDN NETWORK ASSIGNMENT  
CMC 122**

<b>P1</b> Trunk Group Number	<b>P2</b> Type of Network Service	<b>P3</b> WATS Band
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		

**CLID EXTENSION DATA ASSIGNMENT  
CMC 438**

Parameter	Description	Data Range	New Value
P1	Directory Number	1 to 4 digits	
P2	DID Number	1 to 4 digits	

**CLID DATA EXTENSION DATA ASSIGNMENT  
CMC 439**

Parameter	Description	Data Range	New Value
P1	Directory Number	1 to 4 digits	
P2	DID Number	1 to 4 digits	

**PRI PROTOCOL ASSIGNMENT  
CMC 915**

Parameter	Description	Data Range	Default	New Value
<b>P1</b>	Protocol ID	1 = AT&T #4 ESS 2 = AT&T #5 ESS 3 = Northern Telecom DMS 100 4 = Northern Telecom DMS 250	1	

**STATION ASSIGNMENT - BASIC CABINET**

**CMC 200**

**CMC 201\***

**CMC 202\***

**CMC 208\***

CARD TYPE	P1 EQUIP. NO.	P2 NEW STATION NUMBER	P3 STATION TYPE	P4 COPIED STATION NUMBER	P5 T1 OPS	P2 OPER. MODE	P3 DTMF OR ROTARY	P4 TENANT NUMBER	P5 SCC PER. ACC. CODE	P6 SHARED STATION SPEED CALL LIST	P2 CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 CLASS OF RESTRICTION	P5 NIGHT CLASS OF RESTRICTION	P2 STATION NAME 1	P3 STATION NAME 2

\*P1 = Station Number

**NOTE:** Refer to Appendix B for further information to determine Equipment Number.

**STATION ASSIGNMENT - BASIC CABINET**

**CMC 200**

**CMC 201\***

**CMC 202\***

**CMC 208\***

CARD TYPE	P1 EQUIP. NO.	P2 NEW STATION NUMBER	P3 STATION TYPE	P4 COPIED STATION NUMBER	P5 T1 OPS	P2 OPER. MODE	P3 DTMF OR ROTARY	P4 TENANT NUMBER	P5 SCC PER. ACC. CODE	P6 SHARED STATION SPEED CALL LIST	P2 CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 CLASS OF RESTRICTION	P5 NIGHT CLASS OF RESTRICTION	P2 STATION NAME 1	P3 STATION NAME 2

\*P1 = Station Number



STATION ASSIGNMENT - BASIC CABINET

CMC 200

CMC 201\*

CMC 202\*

CMC 208\*

P1 EQUIP. NO.	P2 STATION NEW NUMBER	P3 STATION TYPE	P4 STATION COPIED NUMBER	P5 T1 OPS	P2 MODE OPER.	P3 DTMF OR ROTARY	P4 TENANT NUMBER	P5 SCC PER. ACC. CODE	P6 SHARED STATION CALL SPEED LIST	P2 CLASS NIGHT SERVICE OF	P3 CLASS NIGHT SERVICE OF	P4 CLASS NIGHT RESTRICT- TION	P5 CLASS NIGHT RESTRICT- TION	P2 STATION NAME 1	P3 STATION NAME 2

\*P1 = Station Number







STATION ASSIGNMENT - BASIC CABINET

CMC 200

CMC 201\*

CMC 202\*

CMC 208\*

CARD TYPE	P1 EQUIP. NO.	P2 NEW STATION NUMBER	P3 STATION TYPE	P4 COPIED STATION NUMBER	P5 T1 OPS	P2 OPER. MODE	P3 DTMF OR ROTARY	P4 TENANT NUMBER	P5 SCC PER. ACC. CODE	P6 SHARED STATION SPEED CALL LIST	P2 CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 CLASS OF RESTRICTION	P5 NIGHT CLASS OF RESTRICTION	P2 STATION NAME 1	P3 STATION NAME 2

\*P1 = Station Number

**STATION ASSIGNMENT - EXPANDED CABINET**

**CMC 200**

**CMC 201\***

**CMC 202\***

**CMC 208\***

CARD TYPE	P1 EQUIP. NO.	P2 NEW STATION NUMBER	P3 STATION TYPE	P4 COPIED STATION NUMBER	P5 T1 OPS	P2 OPER. MODE	P3 DTMF OR ROTARY	P4 TENANT NUMBER	P5 SCC PER. ACC. CODE	P6 SHARED STATION SPEED CALL LIST	P2 CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 CLASS OF RESTRICTION	P5 NIGHT CLASS OF RESTRICTION	P2 STATION NAME 1	P3 STATION NAME 2

\*P1 = Station Number

**NOTE:** Refer to Appendix B for further information to determine Equipment Number.

**STATION ASSIGNMENT - EXPANDED CABINET**

**CMC 200**

**CMC 201\***

**CMC 202\***

**CMC 208\***

CARD TYPE	P1 EQUIP. NO.	P2 NEW STATION NUMBER	P3 STATION TYPE	P4 COPIED STATION NUMBER	P5 T1 OPS	P2 OPER. MODE	P3 DTMF OR ROTARY	P4 TENANT NUMBER	P5 SCC PER. ACC. CODE	P6 SHARED STATION SPEED CALL LIST	P2 CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 CLASS OF RESTRIC- TION	P5 NIGHT CLASS OF RESTRIC- TION	P2 STATION NAME 1	P3 STATION NAME 2

\*P1 = Station Number

**STATION ASSIGNMENT - EXPANDED CABINET**

**CMC 200**

**CMC 201\***

**CMC 202\***

**CMC 208\***

CARD TYPE	P1 EQUIP. NO.	P2 NEW STATION NUMBER	P3 STATION TYPE	P4 COPIED STATION NUMBER	P5 T1 OPS	P2 OPER. MODE	P3 DTMF OR ROTARY	P4 TENANT NUMBER	P5 SCC PER. ACC. CODE	P6 SHARED STATION SPEED CALL LIST	P2 CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 CLASS OF RESTRICTION	P5 NIGHT CLASS OF RESTRICTION	P2 STATION NAME 1	P3 STATION NAME 2

\*P1 = Station Number

**STATION ASSIGNMENT - EXPANDED CABINET**

CMC 200

CMC 201\*

CMC 202\*

CMC 208\*

CARD TYPE	P1 EQUIP. NO.	P2 NEW STATION NUMBER	P3 STATION TYPE	P4 COPIED STATION NUMBER	P5 T1 OPS	P2 OPER. MODE	P3 DTMF OR ROTARY	P4 TENANT NUMBER	P5 SCC PER. ACC. CODE	P6 SHARED STATION SPEED CALL LIST	P2 CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 CLASS OF RESTRICTION	P5 NIGHT CLASS OF RESTRICTION	P2 STATION NAME 1	P3 STATION NAME 2

\*P1 = Station Number

**STATION ASSIGNMENT - EXPANDED CABINET**

**CMC 200**

**CMC 201\***

**CMC 202\***

**CMC 208\***

CARD TYPE	P1 EQUIP. NO.	P2 NEW STATION NUMBER	P3 STATION TYPE	P4 COPIED STATION NUMBER	P5 T1 OPS	P2 OPER. MODE	P3 DTMF OR ROTARY	P4 TENANT NUMBER	P5 SCC PER. ACC. CODE	P6 SHARED STATION SPEED CALL LIST	P2 CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 CLASS OF RESTRICTION	P5 NIGHT CLASS OF RESTRICTION	P2 STATION NAME 1	P3 STATION NAME 2

\*P1 = Station Number

**STATION ASSIGNMENT - EXPANDED CABINET**

**CMC 200**

**CMC 201\***

**CMC 202\***

**CMC 208\***

CARD TYPE	P1 EQUIP. NO.	P2 NEW STATION NUMBER	P3 STATION TYPE	P4 COPIED STATION NUMBER	P5 T1 OPS	P2 OPER. MODE	P3 DTMF OR ROTARY	P4 TENANT NUMBER	P5 SCC PER. ACC. CODE	P6 SHARED STATION SPEED CALL LIST	P2 CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 CLASS OF RESTRIC- TION	P5 NIGHT CLASS OF RESTRIC- TION	P2 STATION NAME 1	P3 STATION NAME 2

\*P1 = Station Number



STATION ASSIGNMENT - EXPANDED CABINET

CMC 200

CMC 201\*

CMC 202\*

CMC 208\*

CARD TYPE	P1 EQUIP. NO.	P2 NEW STATION NUMBER	P3 STATION TYPE	P4 COPIED STATION NUMBER	P5 T1 OPS	P2 OPER. MODE	P3 DTMF OR ROTARY	P4 TENANT NUMBER	P5 SCC PER. ACC. CODE	P6 SHARED STATION SPEED CALL LIST	P2 CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 CLASS OF RESTRICTION	P5 NIGHT CLASS OF RESTRICTION	P2 STATION NAME 1	P3 STATION NAME 2

\*P1 = Station Number

**STATION ASSIGNMENT - EXPANDED CABINET**

**CMC 200**

**CMC 201\***

**CMC 202\***

**CMC 208\***

CARD TYPE	P1 EQUIP. NO.	P2 NEW STATION NUMBER	P3 STATION TYPE	P4 COPIED STATION NUMBER	P5 T1 OPS	P2 OPER. MODE	P3 DTMF OR ROTARY	P4 TENANT NUMBER	P5 SCC PER. ACC. CODE	P6 SHARED STATION SPEED CALL LIST	P2 CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 CLASS OF RESTRIC- TION	P5 NIGHT CLASS OF RESTRIC- TION	P2 STATION NAME 1	P3 STATION NAME 2

\*P1 = Station Number

**STATION ASSIGNMENT - EXPANDED CABINET**

**CMC 200**

**CMC 201\***

**CMC 202\***

**CMC 208\***

CARD TYPE	P1 EQUIP. NO.	P2 NEW STATION NUMBER	P3 STATION TYPE	P4 COPIED STATION NUMBER	P5 T1 OPS	P2 OPER. MODE	P3 DTMF OR ROTARY	P4 TENANT NUMBER	P5 SCC PER. ACC. CODE	P6 SHARED STATION SPEED CALL LIST	P2 CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 CLASS OF RESTRICTION	P5 NIGHT CLASS OF RESTRICTION	P2 STATION NAME 1	P3 STATION NAME 2

\*P1 = Station Number

**STATION ASSIGNMENT - EXPANDED CABINET**

CMC 200

CMC 201\*

CMC 202\*

CMC 208\*

CARD TYPE	P1 EQUIP. NO.	P2 NEW STATION NUMBER	P3 STATION TYPE	P4 COPIED STATION NUMBER	P5 T1 OPS	P2 OPER. MODE	P3 DTMF OR ROTARY	P4 TENANT NUMBER	P5 SCC PER. ACC. CODE	P6 SHARED STATION SPEED CALL LIST	P2 CLASS OF SERVICE	P3 NIGHT CLASS OF SERVICE	P4 CLASS OF RESTRICTION	P5 NIGHT CLASS OF RESTRICTION	P2 STATION NAME 1	P3 STATION NAME 2

\*P1 = Station Number

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**PROPRIETARY TELEPHONE BUTTON ASSIGNMENTS  
CMC 203**

P1 = Station Number: \_\_\_\_\_

FEATURE P2_6 P3____ P4____ P5____ P6____	FEATURE P2_7 P3____ P4____ P5____ P6____	FEATURE P2_8 P3____ P4____ P5____ P6____	FEATURE P2_9 P3____ P4____ P5____ P6____	FEATURE P2_10 P3____ P4____ P5____ P6____
FEATURE P2_1 P3____ P4____ P5____ P6____	FEATURE P2_2 P3____ P4____ P5____ P6____	FEATURE P2_3 P3____ P4____ P5____ P6____	FEATURE P2_4 P3____ P4____ P5____ P6____	FEATURE P2_5 P3____ P4____ P5____ P6____

P1 = Station Number: \_\_\_\_\_

FEATURE P2_6 P3____ P4____ P5____ P6____	FEATURE P2_7 P3____ P4____ P5____ P6____	FEATURE P2_8 P3____ P4____ P5____ P6____	FEATURE P2_9 P3____ P4____ P5____ P6____	FEATURE P2_10 P3____ P4____ P5____ P6____
FEATURE P2_1 P3____ P4____ P5____ P6____	FEATURE P2_2 P3____ P4____ P5____ P6____	FEATURE P2_3 P3____ P4____ P5____ P6____	FEATURE P2_4 P3____ P4____ P5____ P6____	FEATURE P2_5 P3____ P4____ P5____ P6____

(NOTE: Refer to the Intercom Group Assignment Table at the end of this section, page 135.)

**PROPRIETARY TELEPHONE BUTTON ASSIGNMENTS  
CMC 203**

P1 = Station Number: \_\_\_\_\_

FEATURE P2_6 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_7 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_8 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_9 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_10 P3 _____ P4 _____ P5 _____ P6 _____
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FEATURE P2_1 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_2 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_3 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_4 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_5 P3 _____ P4 _____ P5 _____ P6 _____
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P1 = Station Number: \_\_\_\_\_

FEATURE P2_6 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_7 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_8 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_9 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_10 P3 _____ P4 _____ P5 _____ P6 _____
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FEATURE P2_1 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_2 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_3 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_4 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_5 P3 _____ P4 _____ P5 _____ P6 _____
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**PROPRIETARY TELEPHONE BUTTON ASSIGNMENTS  
CMC 203**

P1 = Station Number: \_\_\_\_\_

FEATURE P2_6 P3____ P4____ P5____ P6____	FEATURE P2_7 P3____ P4____ P5____ P6____	FEATURE P2_8 P3____ P4____ P5____ P6____	FEATURE P2_9 P3____ P4____ P5____ P6____	FEATURE P2_10 P3____ P4____ P5____ P6____
FEATURE P2_1 P3____ P4____ P5____ P6____	FEATURE P2_2 P3____ P4____ P5____ P6____	FEATURE P2_3 P3____ P4____ P5____ P6____	FEATURE P2_4 P3____ P4____ P5____ P6____	FEATURE P2_5 P3____ P4____ P5____ P6____

P1 = Station Number: \_\_\_\_\_

FEATURE P2_6 P3____ P4____ P5____ P6____	FEATURE P2_7 P3____ P4____ P5____ P6____	FEATURE P2_8 P3____ P4____ P5____ P6____	FEATURE P2_9 P3____ P4____ P5____ P6____	FEATURE P2_10 P3____ P4____ P5____ P6____
FEATURE P2_1 P3____ P4____ P5____ P6____	FEATURE P2_2 P3____ P4____ P5____ P6____	FEATURE P2_3 P3____ P4____ P5____ P6____	FEATURE P2_4 P3____ P4____ P5____ P6____	FEATURE P2_5 P3____ P4____ P5____ P6____



**PROPRIETARY TELEPHONE BUTTON ASSIGNMENTS  
CMC 203**

P1 = Station Number: \_\_\_\_\_

FEATURE P2_6 P3 P4 P5 P6	FEATURE P2_7 P3 P4 P5 P6	FEATURE P2_8 P3 P4 P5 P6	FEATURE P2_9 P3 P4 P5 P6	FEATURE P2_10 P3 P4 P5 P6
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FEATURE P2_1 P3 P4 P5 P6	FEATURE P2_2 P3 P4 P5 P6	FEATURE P2_3 P3 P4 P5 P6	FEATURE P2_4 P3 P4 P5 P6	FEATURE P2_5 P3 P4 P5 P6
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P1 = Station Number: \_\_\_\_\_

FEATURE P2_6 P3 P4 P5 P6	FEATURE P2_7 P3 P4 P5 P6	FEATURE P2_8 P3 P4 P5 P6	FEATURE P2_9 P3 P4 P5 P6	FEATURE P2_10 P3 P4 P5 P6
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FEATURE P2_1 P3 P4 P5 P6	FEATURE P2_2 P3 P4 P5 P6	FEATURE P2_3 P3 P4 P5 P6	FEATURE P2_4 P3 P4 P5 P6	FEATURE P2_5 P3 P4 P5 P6
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**PROPRIETARY TELEPHONE BUTTON ASSIGNMENTS  
CMC 203**

P1 = Station Number: \_\_\_\_\_

FEATURE P2_6 P3____ P4____ P5____ P6____	FEATURE P2_7 P3____ P4____ P5____ P6____	FEATURE P2_8 P3____ P4____ P5____ P6____	FEATURE P2_9 P3____ P4____ P5____ P6____	FEATURE P2_10 P3____ P4____ P5____ P6____
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FEATURE P2_1 P3____ P4____ P5____ P6____	FEATURE P2_2 P3____ P4____ P5____ P6____	FEATURE P2_3 P3____ P4____ P5____ P6____	FEATURE P2_4 P3____ P4____ P5____ P6____	FEATURE P2_5 P3____ P4____ P5____ P6____
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P1 = Station Number: \_\_\_\_\_

FEATURE P2_6 P3____ P4____ P5____ P6____	FEATURE P2_7 P3____ P4____ P5____ P6____	FEATURE P2_8 P3____ P4____ P5____ P6____	FEATURE P2_9 P3____ P4____ P5____ P6____	FEATURE P2_10 P3____ P4____ P5____ P6____
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FEATURE P2_1 P3____ P4____ P5____ P6____	FEATURE P2_2 P3____ P4____ P5____ P6____	FEATURE P2_3 P3____ P4____ P5____ P6____	FEATURE P2_4 P3____ P4____ P5____ P6____	FEATURE P2_5 P3____ P4____ P5____ P6____
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**PROPRIETARY TELEPHONE BUTTON ASSIGNMENTS  
CMC 203**

P1 = Station Number: \_\_\_\_\_

FEATURE P2_6 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_7 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_8 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_9 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_10 P3 _____ P4 _____ P5 _____ P6 _____
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FEATURE P2_1 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_2 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_3 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_4 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_5 P3 _____ P4 _____ P5 _____ P6 _____
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P1 = Station Number: \_\_\_\_\_

FEATURE P2_6 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_7 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_8 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_9 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_10 P3 _____ P4 _____ P5 _____ P6 _____
--	--	--	--	---

FEATURE P2_1 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_2 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_3 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_4 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_5 P3 _____ P4 _____ P5 _____ P6 _____
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**PROPRIETARY TELEPHONE BUTTON ASSIGNMENTS (CSD)  
CMC 203**

P1 = CSD Station Number: \_\_\_\_\_

FIXED FEATURE BUTTONS: SPEAKER ( ) MUTE ( ) TRANSFER ( ) HOLD ( )	FEATURE P2 <u>6</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>7</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>8</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>9</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>10</u> P3 _____ P4 _____ P5 _____ P6 _____	
	FEATURE P2 <u>1</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>2</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>3</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>4</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>5</u> P3 _____ P4 _____ P5 _____ P6 _____	

P1 = CSD Station Number: \_\_\_\_\_

FIXED FEATURE BUTTONS: SPEAKER ( ) MUTE ( ) TRANSFER ( ) HOLD ( )	FEATURE P2 <u>6</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>7</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>8</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>9</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>10</u> P3 _____ P4 _____ P5 _____ P6 _____	
	FEATURE P2 <u>1</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>2</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>3</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>4</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>5</u> P3 _____ P4 _____ P5 _____ P6 _____	

(NOTE: Refer to the Intercom Group Assignment Table at the end of this section, page 135.)

**PROPRIETARY TELEPHONE BUTTON ASSIGNMENTS (CSD)  
CMC 203**

P1 = CSD Station Number: \_\_\_\_\_

FIXED FEATURE BUTTONS: SPEAKER ( ) MUTE ( ) TRANSFER ( ) HOLD ( )	FEATURE P2_6 P3____ P4____ P5____ P6____	FEATURE P2_7 P3____ P4____ P5____ P6____	FEATURE P2_8 P3____ P4____ P5____ P6____	FEATURE P2_9 P3____ P4____ P5____ P6____	FEATURE P2_10 P3____ P4____ P5____ P6____	
	FEATURE P2_1 P3____ P4____ P5____ P6____	FEATURE P2_2 P3____ P4____ P5____ P6____	FEATURE P2_3 P3____ P4____ P5____ P6____	FEATURE P2_4 P3____ P4____ P5____ P6____	FEATURE P2_5 P3____ P4____ P5____ P6____	

P1 = CSD Station Number: \_\_\_\_\_

FIXED FEATURE BUTTONS: SPEAKER ( ) MUTE ( ) TRANSFER ( ) HOLD ( )	FEATURE P2_6 P3____ P4____ P5____ P6____	FEATURE P2_7 P3____ P4____ P5____ P6____	FEATURE P2_8 P3____ P4____ P5____ P6____	FEATURE P2_9 P3____ P4____ P5____ P6____	FEATURE P2_10 P3____ P4____ P5____ P6____	
	FEATURE P2_1 P3____ P4____ P5____ P6____	FEATURE P2_2 P3____ P4____ P5____ P6____	FEATURE P2_3 P3____ P4____ P5____ P6____	FEATURE P2_4 P3____ P4____ P5____ P6____	FEATURE P2_5 P3____ P4____ P5____ P6____	

**PROPRIETARY TELEPHONE BUTTON ASSIGNMENTS (CSD)  
CMC 203**

P1 = CSD Station Number: \_\_\_\_\_

FIXED FEATURE BUTTONS:  SPEAKER ( )  MUTE ( )  TRANSFER ( )  HOLD ( )	FEATURE P2_6 P3____ P4____ P5____ P6____	FEATURE P2_7 P3____ P4____ P5____ P6____	FEATURE P2_8 P3____ P4____ P5____ P6____	FEATURE P2_9 P3____ P4____ P5____ P6____	FEATURE P2_10 P3____ P4____ P5____ P6____
	FEATURE P2_1 P3____ P4____ P5____ P6____	FEATURE P2_2 P3____ P4____ P5____ P6____	FEATURE P2_3 P3____ P4____ P5____ P6____	FEATURE P2_4 P3____ P4____ P5____ P6____	FEATURE P2_5 P3____ P4____ P5____ P6____

P1 = CSD Station Number: \_\_\_\_\_

FIXED FEATURE BUTTONS:  SPEAKER ( )  MUTE ( )  TRANSFER ( )  HOLD ( )	FEATURE P2_6 P3____ P4____ P5____ P6____	FEATURE P2_7 P3____ P4____ P5____ P6____	FEATURE P2_8 P3____ P4____ P5____ P6____	FEATURE P2_9 P3____ P4____ P5____ P6____	FEATURE P2_10 P3____ P4____ P5____ P6____
	FEATURE P2_1 P3____ P4____ P5____ P6____	FEATURE P2_2 P3____ P4____ P5____ P6____	FEATURE P2_3 P3____ P4____ P5____ P6____	FEATURE P2_4 P3____ P4____ P5____ P6____	FEATURE P2_5 P3____ P4____ P5____ P6____

**PROPRIETARY TELEPHONE BUTTON ASSIGNMENTS (CSD)  
CMC 203**

P1 = CSD Station Number: \_\_\_\_\_

FIXED FEATURE BUTTONS:  SPEAKER ( )  MUTE ( )  TRANSFER ( )  HOLD ( )	FEATURE P2_6 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_7 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_8 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_9 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_10 P3 _____ P4 _____ P5 _____ P6 _____
	FEATURE P2_1 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_2 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_3 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_4 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_5 P3 _____ P4 _____ P5 _____ P6 _____

P1 = CSD Station Number: \_\_\_\_\_

FIXED FEATURE BUTTONS:  SPEAKER ( )  MUTE ( )  TRANSFER ( )  HOLD ( )	FEATURE P2_6 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_7 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_8 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_9 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_10 P3 _____ P4 _____ P5 _____ P6 _____
	FEATURE P2_1 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_2 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_3 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_4 P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2_5 P3 _____ P4 _____ P5 _____ P6 _____

**PROPRIETARY TELEPHONE BUTTON ASSIGNMENTS (CT 10/20/30)  
CMC 203**

P1 = CT 10/20/30 Station Number

**FIXED FEATURE  
BUTTONS:**

**SPEAKER ( )**

**FLASH ( )**

**TRANSFER ( )**

**HOLD ( )**

26	27	28	29	30	FEATURE P2_31 P3____ P4____ P5____ P6____
20	21	22	23	24	26
14	15	16	17	18	19
8	9	10	11	12	13
FEATURE P2_5 P3____ P4____ P5____ P6____	FEATURE P2_6 P3____ P4____ P5____ P6____	FEATURE P2_7 P3____ P4____ P5____ P6____			

FOR CT 20 / 30 FOR CT 10

(NOTE: Refer to the Intercom Group Assignment Table at the end of this section, page 135.)



**PROPRIETARY TELEPHONE BUTTON ASSIGNMENTS (DS20, DS20S, DS20SD)  
CMC 203**

P1 = DS Station Number: \_\_\_\_\_

FEATURE P2_7 P3 P4 P5 P6	FEATURE P2_8 P3 P4 P5 P6	FEATURE P2_9 P3 P4 P5 P6	FEATURE P2_10 P3 P4 P5 P6	FEATURE P2_11 P3 P4 P5 P6	FEATURE P2_12 P3 P4 P5 P6
--------------------------------------	--------------------------------------	--------------------------------------	---------------------------------------	---------------------------------------	---------------------------------------

FEATURE P2_1 P3 P4 P5 P6	FEATURE P2_2 P3 P4 P5 P6	FEATURE P2_3 P3 P4 P5 P6	FEATURE P2_4 P3 P4 P5 P6	FEATURE P2_5 P3 P4 P5 P6	FEATURE P2_6 P3 P4 P5 P6
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**FIXED FEATURE  
BUTTONS:**

PARK ( )
FLASH ( )
PICK-UP ( )
HOLD ( )

**FIXED FEATURE  
BUTTONS:**

MESSAGE ( )
REDIAL ( )
TRANSFER ( )
SPEAKER ( )

(NOTE: Refer to the Intercom Group Assignment Table at the end of this section, page 135.)

**PROPRIETARY TELEPHONE BUTTON ASSIGNMENTS (DS20, DS20S, DS20SD)  
CMC 203**

P1 = DS Station Number: \_\_\_\_\_

FEATURE P2 <u>7</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>8</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>9</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>10</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>11</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>12</u> P3 _____ P4 _____ P5 _____ P6 _____
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FEATURE P2 <u>1</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>2</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>3</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>4</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>5</u> P3 _____ P4 _____ P5 _____ P6 _____	FEATURE P2 <u>6</u> P3 _____ P4 _____ P5 _____ P6 _____
---	---	---	---	---	---

<b>FIXED FEATURE BUTTONS:</b>
PARK ( )
FLASH ( )
PICK-UP ( )
HOLD ( )

<b>FIXED FEATURE BUTTONS:</b>
MESSAGE ( )
REDIAL ( )
TRANSFER ( )
SPEAKER ( )

**PROPRIETARY TELEPHONE BUTTON ASSIGNMENTS (DS32SD)**

**CMC 203** (NOTE: Refer to the Intercom Group Assignment Table at the end of this section, page 135.)

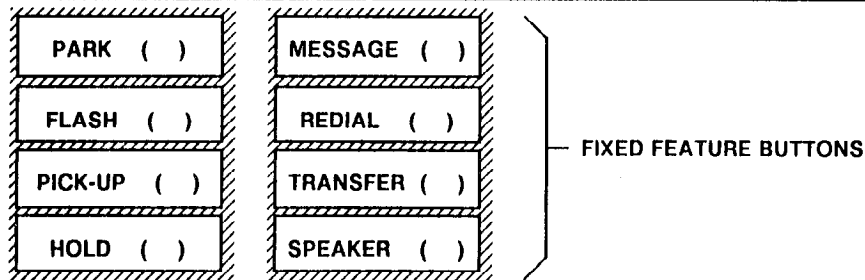
P1 = DS Station Number: \_\_\_\_\_

FEATURE P2_19 P3_____ P4_____ P5_____ P6_____	FEATURE P2_20 P3_____ P4_____ P5_____ P6_____	FEATURE P2_21 P3_____ P4_____ P5_____ P6_____	FEATURE P2_22 P3_____ P4_____ P5_____ P6_____	FEATURE P2_23 P3_____ P4_____ P5_____ P6_____	FEATURE P2_24 P3_____ P4_____ P5_____ P6_____
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FEATURE P2_13 P3_____ P4_____ P5_____ P6_____	FEATURE P2_14 P3_____ P4_____ P5_____ P6_____	FEATURE P2_15 P3_____ P4_____ P5_____ P6_____	FEATURE P2_16 P3_____ P4_____ P5_____ P6_____	FEATURE P2_17 P3_____ P4_____ P5_____ P6_____	FEATURE P2_18 P3_____ P4_____ P5_____ P6_____
---	---	---	---	---	---

FEATURE P2_7 P3_____ P4_____ P5_____ P6_____	FEATURE P2_8 P3_____ P4_____ P5_____ P6_____	FEATURE P2_9 P3_____ P4_____ P5_____ P6_____	FEATURE P2_10 P3_____ P4_____ P5_____ P6_____	FEATURE P2_11 P3_____ P4_____ P5_____ P6_____	FEATURE P2_12 P3_____ P4_____ P5_____ P6_____
--	--	--	---	---	---

FEATURE P2_1 P3_____ P4_____ P5_____ P6_____	FEATURE P2_2 P3_____ P4_____ P5_____ P6_____	FEATURE P2_3 P3_____ P4_____ P5_____ P6_____	FEATURE P2_4 P3_____ P4_____ P5_____ P6_____	FEATURE P2_5 P3_____ P4_____ P5_____ P6_____	FEATURE P2_6 P3_____ P4_____ P5_____ P6_____
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**PROPRIETARY TELEPHONE BUTTON ASSIGNMENTS (DS32SD)  
CMC 203**

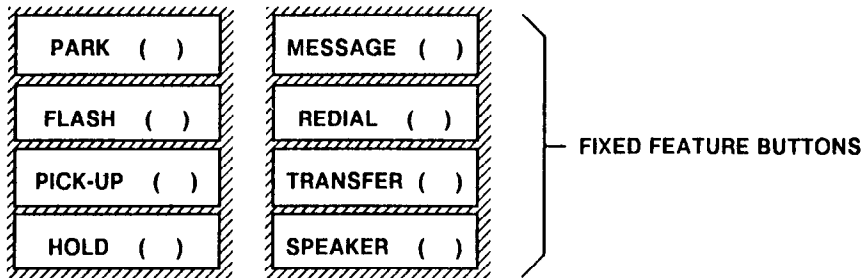
P1 = DS Station Number: \_\_\_\_\_

FEATURE P2_19 P3____ P4____ P5____ P6____	FEATURE P2_20 P3____ P4____ P5____ P6____	FEATURE P2_21 P3____ P4____ P5____ P6____	FEATURE P2_22 P3____ P4____ P5____ P6____	FEATURE P2_23 P3____ P4____ P5____ P6____	FEATURE P2_24 P3____ P4____ P5____ P6____
---	---	---	---	---	---

FEATURE P2_13 P3____ P4____ P5____ P6____	FEATURE P2_14 P3____ P4____ P5____ P6____	FEATURE P2_15 P3____ P4____ P5____ P6____	FEATURE P2_16 P3____ P4____ P5____ P6____	FEATURE P2_17 P3____ P4____ P5____ P6____	FEATURE P2_18 P3____ P4____ P5____ P6____
---	---	---	---	---	---

FEATURE P2_7 P3____ P4____ P5____ P6____	FEATURE P2_8 P3____ P4____ P5____ P6____	FEATURE P2_9 P3____ P4____ P5____ P6____	FEATURE P2_10 P3____ P4____ P5____ P6____	FEATURE P2_11 P3____ P4____ P5____ P6____	FEATURE P2_12 P3____ P4____ P5____ P6____
--	--	--	---	---	---

FEATURE P2_1 P3____ P4____ P5____ P6____	FEATURE P2_2 P3____ P4____ P5____ P6____	FEATURE P2_3 P3____ P4____ P5____ P6____	FEATURE P2_4 P3____ P4____ P5____ P6____	FEATURE P2_5 P3____ P4____ P5____ P6____	FEATURE P2_6 P3____ P4____ P5____ P6____
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**STATION DATA ASSIGNMENTS  
CMC 204**

P1 Directory Number	P2 Data Secure	P3 Off Premise	P4 Single Line/MW	P5 Guest Room	P6 Dictation Access

**STATION DATA ASSIGNMENTS  
CMC 204**

P1 Directory Number	P2 Data Secure	P3 Off Premise	P4 Single Line/MW	P5 Guest Room	P6 Dictation Access

**STATION ASSIGNMENT FOR BLF BUTTONS  
CMC 205**

<b>P1</b> BLF Area Number (1 to 24)	<b>P2</b> Directory Number (1 to 4 Digits)	<b>P3</b> Start Button Number for BLF on Proprietary Telephone (1 to 31)	<b>P4</b> End Button Number for BLF on Proprietary Telephone (1 to 31)

**STATION DATA ASSIGNMENT (III)**  
**(SILENT MESSAGE WARNING TONE, MANUAL TELEPHONE, VMS PORT, PASSWORD GROUP)**  
**CMC 206**

<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>	<b>P5</b>	<b>P6</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>	<b>P5</b>	<b>P6</b>
STATION NO.	SILENT MESSAGE 0 = Send tone 1 = Don't send	MANUAL TELEPHONE 0 = No 1 = Yes	VMS PORT FLAG 0 = Not VMS 1 = VMS port	PASSWORD GROUP NO. (0 to 100 or blank)	CALL DIVERSION TO ATT 0 = Not Active 1 = Active	STATION NO.	SILENT MESSAGE 0 = Send tone 1 = Don't send	MANUAL TELEPHONE 0 = No 1 = Yes	VMS PORT FLAG 0 = Not VMS 1 = VMS port	PASSWORD GROUP NO. (0 to 100 or blank)	CALL DIVERSION TO ATT 0 = Not Active 1 = Active



**STATION DATA ASSIGNMENT (III)**  
**(SILENT MESSAGE WARNING TONE, MANUAL TELEPHONE, VMS PORT, PASSWORD GROUP)**  
**CMC 206**

P1 STATION NO.	P2 SILENT MESSAGE 0 = Send tone 1 = Don't send	P3 MANUAL TELEPHONE 0 = No 1 = Yes	P4 VMS PORT FLAG 0 = Not VMS 1 = VMS port	P5 PASSWORD GROUP NO. (0 to 100 or blank)	P6 CALL DIVERSION TO ATT 0 = Not Active 1 = Active	P1 STATION NO.	P2 SILENT MESSAGE 0 = Send tone 1 = Don't send	P3 MANUAL TELEPHONE 0 = No 1 = Yes	P4 VMS PORT FLAG 0 = Not VMS 1 = VMS port	P5 PASSWORD GROUP NO. (0 to 100 or blank)	P6 CALL DIVERSION TO ATT 0 = Not Active 1 = Active

**SLT D-ICM GROUP ASSIGNMENTS**

CMC 207

(NOTE: Refer to the Intercom Group Assignment Table at the end of this section, page 135.)

<b>P1</b> Directory Number	<b>P2</b> D-ICM Group Number	<b>P3</b> D-ICM Directory Number

**SLT D-ICM GROUP ASSIGNMENTS**  
**CMC 207**

<b>P1</b> Directory Number	<b>P2</b> D-ICM Group Number	<b>P3</b> D-ICM Directory Number

STATION DATA ASSIGNMENT (IV)  
CMC 209

P1 Directory Number	P2 Hook Flash Capability	P3 Monitored Station?

**STATION CALL FORWARD ASSIGNMENT**  
**CMC 319**

<b>P1</b> Directory Number	<b>P2</b> Call Forwarding Type	<b>P3</b> Destination (Internal Calls)	<b>P4</b> Destination (External Calls)

**INTERCOM GROUP ASSIGNMENT**

<b>ICM GROUP NUMBER (1-10)</b>	<b>DIRECTORY NUMBERS (up to 50 per ICM group)</b>									
1										
2										
3										
4										

**INTERCOM GROUP ASSIGNMENT**

ICM GROUP NUMBER (1-10)	DIRECTORY NUMBERS (up to 50 per ICM group)										

**DSS/BLF ASSIGNMENT  
FOR 30 BUTTON STATION DSS INSTRUMENTS (First DSS/BLF)  
CMC 210**

Parameter	Description	Assigned Value
P1	DSS/BLF instrument number ( 1 - 16 )	
P2	DSS/BLF instrument type	3
P3	Equipment number (card slot and circuit number)	
P4	Associated proprietary telephone station number (1 to 4 digits)	
P5	If duplicate of previous DSS/BLF - indicate instrument number	
P6	Indicate if this is the first or second DSS/BLF associated with this proprietary telephone	1



**DSS/BLF ASSIGNMENT  
FOR 30 BUTTON STATION DSS (First DSS/BLF)  
CMC 211**

**P1 = Associated Proprietary Telephone Station Number**

<u>P2 1</u>	<u>P2 4</u>	<u>P2 7</u>	<u>P2 10</u>	<u>P2 13</u>	<u>P2 16</u>	<u>P2 19</u>	<u>P2 22</u>	<u>P2 25</u>	<u>P2 28</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2 2</u>	<u>P2 5</u>	<u>P2 8</u>	<u>P2 11</u>	<u>P2 14</u>	<u>P2 17</u>	<u>P2 20</u>	<u>P2 23</u>	<u>P2 26</u>	<u>P2 29</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2 3</u>	<u>P2 6</u>	<u>P2 9</u>	<u>P2 12</u>	<u>P2 15</u>	<u>P2 18</u>	<u>P2 21</u>	<u>P2 24</u>	<u>P2 27</u>	<u>P2 30</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____

**DSS/BLF ASSIGNMENT  
FOR 40 BUTTON STATION DSS INSTRUMENTS (First DSS/BLF)  
CMC 210**

Parameter	Description	Assigned Value
P1	DSS/BLF instrument number ( 1 - 16 )	
P2	DSS/BLF instrument type	1
P3	Equipment number (card slot and circuit number)	
P4	Associated proprietary telephone station number (1 to 4 digits)	
P5	If duplicate of previous DSS/BLF - indicate instrument number	
P6	Indicate if this is the first or second DSS/BLF associated with this proprietary telephone	1

**DSS/BLF ASSIGNMENT  
FOR 40 BUTTON STATION DSS (First DSS/BLF)  
CMC 211**

P1 = Associated Proprietary Telephone Station Number									
<u>P2_31</u>	<u>P2_32</u>	<u>P2_33</u>	<u>P2_34</u>	<u>P2_35</u>	<u>P2_36</u>	<u>P2_37</u>	<u>P2_38</u>	<u>P2_39</u>	<u>P2_40</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2_21</u>	<u>P2_22</u>	<u>P2_23</u>	<u>P2_24</u>	<u>P2_25</u>	<u>P2_26</u>	<u>P2_27</u>	<u>P2_28</u>	<u>P2_29</u>	<u>P2_30</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2_11</u>	<u>P2_12</u>	<u>P2_13</u>	<u>P2_14</u>	<u>P2_15</u>	<u>P2_16</u>	<u>P2_17</u>	<u>P2_18</u>	<u>P2_19</u>	<u>P2_20</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2_1</u>	<u>P2_2</u>	<u>P2_3</u>	<u>P2_4</u>	<u>P2_5</u>	<u>P2_6</u>	<u>P2_7</u>	<u>P2_8</u>	<u>P2_9</u>	<u>P2_10</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____

**DSS/BLF ASSIGNMENT  
FOR 80 BUTTON STATION DSS INSTRUMENTS (First DSS/BLF)  
CMC 210**

Parameter	Description	Assigned Value
P1	DSS/BLF instrument number ( 1 - 16 )	
P2	DSS/BLF instrument type	2
P3	Equipment number (card slot and circuit number)	
P4	Associated proprietary telephone station number (1 to 4 digits)	
P5	If duplicate of previous DSS/BLF - indicate instrument number	
P6	Indicate if this is the first or second DSS/BLF associated with this proprietary telephone	1

**DSS/BLF ASSIGNMENT  
FOR 80 BUTTON STATION DSS (First DSS/BLF)  
CMC 211**

(Page 1 of 2)

P1 = Associated Proprietary Telephone Station Number									
<u>P2 31</u>	<u>P2 32</u>	<u>P2 33</u>	<u>P2 34</u>	<u>P2 35</u>	<u>P2 36</u>	<u>P2 37</u>	<u>P2 38</u>	<u>P2 39</u>	<u>P2 40</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2 21</u>	<u>P2 22</u>	<u>P2 23</u>	<u>P2 24</u>	<u>P2 25</u>	<u>P2 26</u>	<u>P2 27</u>	<u>P2 28</u>	<u>P2 29</u>	<u>P2 30</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2 11</u>	<u>P2 12</u>	<u>P2 13</u>	<u>P2 14</u>	<u>P2 15</u>	<u>P2 16</u>	<u>P2 17</u>	<u>P2 18</u>	<u>P2 19</u>	<u>P2 20</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2 1</u>	<u>P2 2</u>	<u>P2 3</u>	<u>P2 4</u>	<u>P2 5</u>	<u>P2 6</u>	<u>P2 7</u>	<u>P2 8</u>	<u>P2 9</u>	<u>P2 10</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____

**DSS/BLF ASSIGNMENT**  
**80 BUTTON – EKT (First DSS/BLF)**  
**CMC 211**

(Page 2 of 2)

P1 = Associated Proprietary Telephone Station Number									
<u>P2 71</u>	<u>P2 72</u>	<u>P2 73</u>	<u>P2 74</u>	<u>P2 75</u>	<u>P2 76</u>	<u>P2 77</u>	<u>P2 78</u>	<u>P2 79</u>	<u>P2 80</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2 61</u>	<u>P2 62</u>	<u>P2 63</u>	<u>P2 64</u>	<u>P2 65</u>	<u>P2 66</u>	<u>P2 67</u>	<u>P2 68</u>	<u>P2 69</u>	<u>P2 70</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2 51</u>	<u>P2 52</u>	<u>P2 53</u>	<u>P2 54</u>	<u>P2 55</u>	<u>P2 56</u>	<u>P2 57</u>	<u>P2 58</u>	<u>P2 59</u>	<u>P2 60</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2 41</u>	<u>P2 42</u>	<u>P2 43</u>	<u>P2 44</u>	<u>P2 45</u>	<u>P2 46</u>	<u>P2 47</u>	<u>P2 48</u>	<u>P2 49</u>	<u>P2 50</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____

**DSS/BLF ASSIGNMENT  
FOR 40 BUTTON ATTENDANT DSS INSTRUMENTS (First DSS/BLF)  
CMC 210**

Parameter	Description	Assigned Value
P1	DSS/BLF instrument number ( 1 - 16 )	
P2	DSS/BLF instrument type	1
P3	Equipment number (card slot and circuit number)	
P4	Directory number of the attendant console associated with this DSS/BLF (01-08)	
P5	If duplicate of previous DSS/BLF - indicate instrument number	
P6	Indicate if this is the first or second DSS/BLF associated with this attendant console	1

**DSS/BLF ASSIGNMENT  
40 BUTTON ATTENDANT DSS  
CMC 211**

P1 = Attendant Console \_\_\_\_\_  
paired with this DSS/BLF \_\_\_\_\_

P2 10	P2 20	P2 30	P2 40
P3	P3	P3	P3
P4	P4	P4	P4
P5	P5	P5	P5
P6	P6	P6	P6
P2 9	P2 19	P2 29	P2 39
P3	P3	P3	P3
P4	P4	P4	P4
P5	P5	P5	P5
P6	P6	P6	P6
P2 8	P2 18	P2 28	P2 38
P3	P3	P3	P3
P4	P4	P4	P4
P5	P5	P5	P5
P6	P6	P6	P6
P2 7	P2 17	P2 27	P2 37
P3	P3	P3	P3
P4	P4	P4	P4
P5	P5	P5	P5
P6	P6	P6	P6
P2 6	P2 16	P2 26	P2 36
P3	P3	P3	P3
P4	P4	P4	P4
P5	P5	P5	P5
P6	P6	P6	P6
P2 5	P2 15	P2 25	P2 35
P3	P3	P3	P3
P4	P4	P4	P4
P5	P5	P5	P5
P6	P6	P6	P6
P2 4	P2 14	P2 24	P2 34
P3	P3	P3	P3
P4	P4	P4	P4
P5	P5	P5	P5
P6	P6	P6	P6
P2 3	P2 13	P2 23	P2 33
P3	P3	P3	P3
P4	P4	P4	P4
P5	P5	P5	P5
P6	P6	P6	P6
P2 2	P2 12	P2 22	P2 32
P3	P3	P3	P3
P4	P4	P4	P4
P5	P5	P5	P5
P6	P6	P6	P6
P2 1	P2 11	P2 21	P2 31
P3	P3	P3	P3
P4	P4	P4	P4
P5	P5	P5	P5
P6	P6	P6	P6



**DSS/BLF ASSIGNMENT  
FOR 80 BUTTON ATTENDANT DSS INSTRUMENTS (First DSS/BLF)  
CMC 210**

Parameter	Description	Assigned Value
P1	DSS/BLF instrument number ( 1 - 16 )	
P2	DSS/BLF instrument type	2
P3	Equipment number (card slot and circuit number)	
P4	Directory number of the attendant console associated with this DSS/BLF (01-08)	
P5	If duplicate of previous DSS/BLF - indicate instrument number	
P6	Indicate if this is the first or second DSS/BLF associated with this attendant console	1

**DSS/BLF ASSIGNMENT  
80 BUTTON ATTENDANT DSS  
CMC 211**

P1 = Attendant Console  
paired with this DSS/BLF (01 -  
08 ) \_\_\_\_\_

P2 10 P3 P4 P5 P6	P2 20 P3 P4 P5 P6	P2 30 P3 P4 P5 P6	P2 40 P3 P4 P5 P6	P2 50 P3 P4 P5 P6	P2 60 P3 P4 P5 P6	P2 70 P3 P4 P5 P6	P2 80 P3 P4 P5 P6
P2 9 P3 P4 P5 P6	P2 19 P3 P4 P5 P6	P2 29 P3 P4 P5 P6	P2 39 P3 P4 P5 P6	P2 49 P3 P4 P5 P6	P2 59 P3 P4 P5 P6	P2 69 P3 P4 P5 P6	P2 79 P3 P4 P5 P6
P2 8 P3 P4 P5 P6	P2 18 P3 P4 P5 P6	P2 28 P3 P4 P5 P6	P2 38 P3 P4 P5 P6	P2 48 P3 P4 P5 P6	P2 58 P3 P4 P5 P6	P2 68 P3 P4 P5 P6	P2 78 P3 P4 P5 P6
P2 7 P3 P4 P5 P6	P2 17 P3 P4 P5 P6	P2 27 P3 P4 P5 P6	P2 37 P3 P4 P5 P6	P2 47 P3 P4 P5 P6	P2 57 P3 P4 P5 P6	P2 67 P3 P4 P5 P6	P2 77 P3 P4 P5 P6
P2 6 P3 P4 P5 P6	P2 16 P3 P4 P5 P6	P2 26 P3 P4 P5 P6	P2 36 P3 P4 P5 P6	P2 46 P3 P4 P5 P6	P2 56 P3 P4 P5 P6	P2 66 P3 P4 P5 P6	P2 76 P3 P4 P5 P6
P2 5 P3 P4 P5 P6	P2 15 P3 P4 P5 P6	P2 25 P3 P4 P5 P6	P2 35 P3 P4 P5 P6	P2 45 P3 P4 P5 P6	P2 55 P3 P4 P5 P6	P2 65 P3 P4 P5 P6	P2 75 P3 P4 P5 P6
P2 4 P3 P4 P5 P6	P2 14 P3 P4 P5 P6	P2 24 P3 P4 P5 P6	P2 34 P3 P4 P5 P6	P2 44 P3 P4 P5 P6	P2 54 P3 P4 P5 P6	P2 64 P3 P4 P5 P6	P2 74 P3 P4 P5 P6
P2 3 P3 P4 P5 P6	P2 13 P3 P4 P5 P6	P2 23 P3 P4 P5 P6	P2 33 P3 P4 P5 P6	P2 43 P3 P4 P5 P6	P2 53 P3 P4 P5 P6	P2 63 P3 P4 P5 P6	P2 73 P3 P4 P5 P6
P2 2 P3 P4 P5 P6	P2 12 P3 P4 P5 P6	P2 22 P3 P4 P5 P6	P2 32 P3 P4 P5 P6	P2 42 P3 P4 P5 P6	P2 52 P3 P4 P5 P6	P2 62 P3 P4 P5 P6	P2 72 P3 P4 P5 P6
P2 1 P3 P4 P5 P6	P2 11 P3 P4 P5 P6	P2 21 P3 P4 P5 P6	P2 31 P3 P4 P5 P6	P2 41 P3 P4 P5 P6	P2 51 P3 P4 P5 P6	P2 61 P3 P4 P5 P6	P2 71 P3 P4 P5 P6

**DSS/BLF ASSIGNMENT  
FOR 30 BUTTON STATION DSS INSTRUMENTS (Second DSS/BLF)  
CMC 210**

<b>Parameter</b>	<b>Description</b>	<b>Assigned Value</b>
<b>P1</b>	DSS/BLF instrument number ( 1 - 16 )	
<b>P2</b>	DSS/BLF instrument type	3
<b>P3</b>	Equipment number (card slot and circuit number)	
<b>P4</b>	Associated proprietary telephone station number (1 to 4 digits)	
<b>P5</b>	If duplicate of previous DSS/BLF - indicate instrument number	
<b>P6</b>	Indicate if this is the first or second DSS/BLF associated with this proprietary telephone	2

**DSS/BLF ASSIGNMENT  
30 BUTTON STATION DSS (Second DSS/BLF)  
CMC 211**

P1 = Associated Proprietary Telephone Station Number

<u>P2_81</u>	<u>P2_84</u>	<u>P2_87</u>	<u>P2_90</u>	<u>P2_93</u>	<u>P2_96</u>	<u>P2_99</u>	<u>P2_102</u>	<u>P2_105</u>	<u>P2_108</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2_82</u>	<u>P2_85</u>	<u>P2_88</u>	<u>P2_91</u>	<u>P2_94</u>	<u>P2_97</u>	<u>P2_100</u>	<u>P2_103</u>	<u>P2_106</u>	<u>P2_109</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2_83</u>	<u>P2_86</u>	<u>P2_89</u>	<u>P2_92</u>	<u>P2_95</u>	<u>P2_98</u>	<u>P2_101</u>	<u>P2_104</u>	<u>P2_107</u>	<u>P2_110</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____

**DSS/BLF ASSIGNMENT  
FOR 40 BUTTON STATION DSS INSTRUMENTS (Second DSS/BLF)  
CMC 210**

Parameter	Description	Assigned Value
P1	DSS/BLF instrument number ( 1 - 16 )	
P2	DSS/BLF instrument type	1
P3	Equipment number (card slot and circuit number)	
P4	Associated proprietary telephone station number (1 to 4 digits)	
P5	If duplicate of previous DSS/BLF - indicate instrument number	
P6	Indicate if this is the first or second DSS/BLF associated with this proprietary telephone	2

**DSS/BLF ASSIGNMENT  
40 BUTTON STATION DSS (Second DSS/BLF)  
CMC 211**

P1 = Associated Proprietary Telephone Station Number									
<u>P2_111</u>	<u>P2_112</u>	<u>P2_113</u>	<u>P2_114</u>	<u>P2_115</u>	<u>P2_116</u>	<u>P2_117</u>	<u>P2_118</u>	<u>P2_119</u>	<u>P2_120</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2_101</u>	<u>P2_102</u>	<u>P2_103</u>	<u>P2_104</u>	<u>P2_105</u>	<u>P2_106</u>	<u>P2_107</u>	<u>P2_108</u>	<u>P2_109</u>	<u>P2_110</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2_91</u>	<u>P2_92</u>	<u>P2_93</u>	<u>P2_94</u>	<u>P2_95</u>	<u>P2_96</u>	<u>P2_97</u>	<u>P2_98</u>	<u>P2_99</u>	<u>P2_100</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2_81</u>	<u>P2_82</u>	<u>P2_83</u>	<u>P2_84</u>	<u>P2_85</u>	<u>P2_86</u>	<u>P2_87</u>	<u>P2_88</u>	<u>P2_89</u>	<u>P2_90</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____

**DSS/BLF ASSIGNMENT  
FOR 80 BUTTON STATION DSS INSTRUMENTS (Second DSS/BLF)  
CMC 210**

Parameter	Description	Assigned Value
P1	DSS/BLF instrument number ( 1 - 16 )	
P2	DSS/BLF instrument type	2
P3	Equipment number (card slot and circuit number)	
P4	Associated proprietary telephone station number (1 to 4 digits)	
P5	If duplicate of previous DSS/BLF - indicate instrument number	
P6	Indicate if this is the first or second DSS/BLF associated with this proprietary telephone	2

**DSS/BLF ASSIGNMENT  
80 BUTTON STATION DSS (Second DSS/BLF)  
CMC 211**

**P1 = Associated Proprietary Telephone Station Number**

<u>P2 151</u>	<u>P2 152</u>	<u>P2 153</u>	<u>P2 154</u>	<u>P2 155</u>	<u>P2 156</u>	<u>P2 157</u>	<u>P2 158</u>	<u>P2 159</u>	<u>P2 160</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2 141</u>	<u>P2 142</u>	<u>P2 143</u>	<u>P2 144</u>	<u>P2 145</u>	<u>P2 146</u>	<u>P2 147</u>	<u>P2 148</u>	<u>P2 149</u>	<u>P2 150</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2 131</u>	<u>P2 132</u>	<u>P2 133</u>	<u>P2 134</u>	<u>P2 135</u>	<u>P2 136</u>	<u>P2 137</u>	<u>P2 138</u>	<u>P2 139</u>	<u>P2 140</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____
<u>P2 121</u>	<u>P2 122</u>	<u>P2 123</u>	<u>P2 124</u>	<u>P2 125</u>	<u>P2 126</u>	<u>P2 127</u>	<u>P2 128</u>	<u>P2 129</u>	<u>P2 130</u>
P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____	P3____
P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____	P4____
P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____	P5____
P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____	P6____



**DSS/BLF ASSIGNMENT - ATTENDANT CONSOLE  
FOR 40 BUTTON ATTENDANT DSS INSTRUMENTS  
CMC 210**

Parameter	Description	Assigned Value
P1	DSS/BLF instrument number ( 1 - 16 )	
P2	DSS/BLF instrument type	1
P3	Equipment number (card slot and circuit number)	
P4	Directory number of the attendant console associated with this DSS/BLF (01 - 08)	
P5	If duplicate of previous DSS/BLF - indicate instrument number	
P6	Indicate if this is the first or second DSS/BLF associated with this attendant console	2

**DSS/BLF ASSIGNMENT  
40 BUTTON ATTENDANT DSS (Second DSS/BLF)  
CMC 211**

P1 = Attendant Console paired  
with this DSS/BLF \_\_\_\_\_

P2 90	P2 100	P2 110	P2 120
P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____
P2 89	P2 99	P2 109	P2 119
P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____
P2 88	P2 98	P2 108	P2 118
P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____
P2 87	P2 97	P2 107	P2 117
P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____
P2 86	P2 96	P2 106	P2 116
P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____
P2 85	P2 95	P2 105	P2 115
P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____
P2 84	P2 94	P2 104	P2 114
P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____
P2 83	P2 93	P2 103	P2 113
P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____
P2 82	P2 92	P2 102	P2 112
P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____
P2 81	P2 91	P2 101	P2 111
P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____

**DSS/BLF ASSIGNMENT  
FOR 80 BUTTON ATTENDANT DSS INSTRUMENTS (Second DSS/BLF)  
CMC 210**

Parameter	Description	Assigned Value
<b>P1</b>	DSS/BLF instrument number ( 1 - 16 )	
<b>P2</b>	DSS/BLF instrument type	2
<b>P3</b>	Equipment number (card slot and circuit number)	
<b>P4</b>	Directory number of the attendant console associated with this DSS/BLF (01 - 08)	
<b>P5</b>	If duplicate of previous DSS/BLF - indicate instrument number	
<b>P6</b>	Indicate if this is the first or second DSS/BLF associated with this attendant console	2

**DSS/BLF ASSIGNMENT  
80 BUTTON ATTENDANT DSS  
CMC 211**

P1 = Attendant Console  
paired with this DSS/BLF  
( 01 - 08) \_\_\_\_\_

P2 90	P2 100	P2 110	P2 120	P2 130	P2 140	P2 150	P2 160
P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____
P2 89	P2 99	P2 109	P2 119	P2 129	P2 139	P2 149	P2 159
P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____
P2 88	P2 98	P2 108	P2 118	P2 128	P2 138	P2 148	P2 158
P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____
P2 87	P2 97	P2 107	P2 117	P2 127	P2 137	P2 147	P2 157
P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____
P2 86	P2 96	P2 106	P2 116	P2 126	P2 136	P2 146	P2 156
P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____
P2 85	P2 95	P2 105	P2 115	P2 125	P2 135	P2 145	P2 155
P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____
P2 84	P2 94	P2 104	P2 114	P2 124	P2 134	P2 144	P2 154
P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____
P2 83	P2 93	P2 103	P2 113	P2 123	P2 133	P2 143	P2 153
P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____
P2 82	P2 92	P2 102	P2 112	P2 122	P2 132	P2 142	P2 152
P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____
P2 81	P2 91	P2 101	P2 111	P2 121	P2 131	P2 141	P2 151
P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____
P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____	P4 _____
P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____	P5 _____
P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____	P6 _____

**DSS/BLF ASSIGNMENT  
FOR 100 BUTTON INSTRUMENTS  
CMC 212**

<b>Parameter</b>	<b>Description</b>	<b>Assigned Value</b>
<b>P1</b>	DSS/BLF instrument number ( 1 - 2 )	
<b>P2</b>	Equipment number (card slot and circuit number)	
<b>P3</b>	Paired attendant console DN (01 - 08)	
<b>P4</b>	Copied DSS 100 instrument number (1, 2, or blank)	

**DSS 100 BUTTON ASSIGNMENT  
CMC 213**

P1 = \_\_\_\_\_ Associated Attendant Console Directory Number  
 \_\_\_\_\_ Screen Number (01-10)

<u>P2 091</u>	<u>P2 092</u>	<u>P2 093</u>	<u>P2 094</u>	<u>P2 095</u>	<u>P2 096</u>	<u>P2 097</u>	<u>P2 098</u>	<u>P2 099</u>	<u>P2 100</u>
P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>
P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>
<u>P2 081</u>	<u>P2 082</u>	<u>P2 083</u>	<u>P2 084</u>	<u>P2 085</u>	<u>P2 086</u>	<u>P2 087</u>	<u>P2 088</u>	<u>P2 089</u>	<u>P2 090</u>
P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>
P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>
<u>P2 071</u>	<u>P2 072</u>	<u>P2 073</u>	<u>P2 074</u>	<u>P2 075</u>	<u>P2 076</u>	<u>P2 077</u>	<u>P2 078</u>	<u>P2 079</u>	<u>P2 080</u>
P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>
P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>
<u>P2 061</u>	<u>P2 062</u>	<u>P2 063</u>	<u>P2 064</u>	<u>P2 065</u>	<u>P2 066</u>	<u>P2 067</u>	<u>P2 068</u>	<u>P2 069</u>	<u>P2 070</u>
P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>
P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>
<u>P2 051</u>	<u>P2 052</u>	<u>P2 053</u>	<u>P2 054</u>	<u>P2 055</u>	<u>P2 056</u>	<u>P2 057</u>	<u>P2 058</u>	<u>P2 059</u>	<u>P2 060</u>
P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>	P3 <u>1</u>
P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>	P4 <u>  </u>
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**DSS 100 BUTTON ASSIGNMENT  
CMC 213**

P1 = \_\_\_\_\_ Associated Attendant Console Directory Number  
 \_\_\_\_\_ Screen Number (01-10)

<u>P2 041</u>	<u>P2 042</u>	<u>P2 043</u>	<u>P2 044</u>	<u>P2 045</u>	<u>P2 046</u>	<u>P2 047</u>	<u>P2 048</u>	<u>P2 049</u>	<u>P2 050</u>
<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>
<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>
<u>P2 031</u>	<u>P2 032</u>	<u>P2 033</u>	<u>P2 034</u>	<u>P2 035</u>	<u>P2 036</u>	<u>P2 037</u>	<u>P2 038</u>	<u>P2 039</u>	<u>P2 040</u>
<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>
<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>
<u>P2 021</u>	<u>P2 022</u>	<u>P2 023</u>	<u>P2 024</u>	<u>P2 025</u>	<u>P2 026</u>	<u>P2 027</u>	<u>P2 028</u>	<u>P2 029</u>	<u>P2 030</u>
<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>
<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>
<u>P2 011</u>	<u>P2 012</u>	<u>P2 013</u>	<u>P2 014</u>	<u>P2 015</u>	<u>P2 016</u>	<u>P2 017</u>	<u>P2 018</u>	<u>P2 019</u>	<u>P2 020</u>
<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>
<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>
<u>P2 001</u>	<u>P2 002</u>	<u>P2 003</u>	<u>P2 004</u>	<u>P2 005</u>	<u>P2 006</u>	<u>P2 007</u>	<u>P2 008</u>	<u>P2 009</u>	<u>P2 010</u>
<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>	<u>P3 1</u>
<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>	<u>P4</u>

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**ATTENDANT CONSOLE ASSIGNMENT  
CMC 230**

**ATTENDANT COS/COR ASSIGNMENT  
CMC 232\***

P1 Console Number	P2 Equipment Number	P3 Tenant Number	P4 Copied Console	P5 Speed Call Table	P2 Day COS	P3 Night COS	P4 Day COR	P5 Night COR
1								
2								
3								
4								
5								
6								
7								
8								

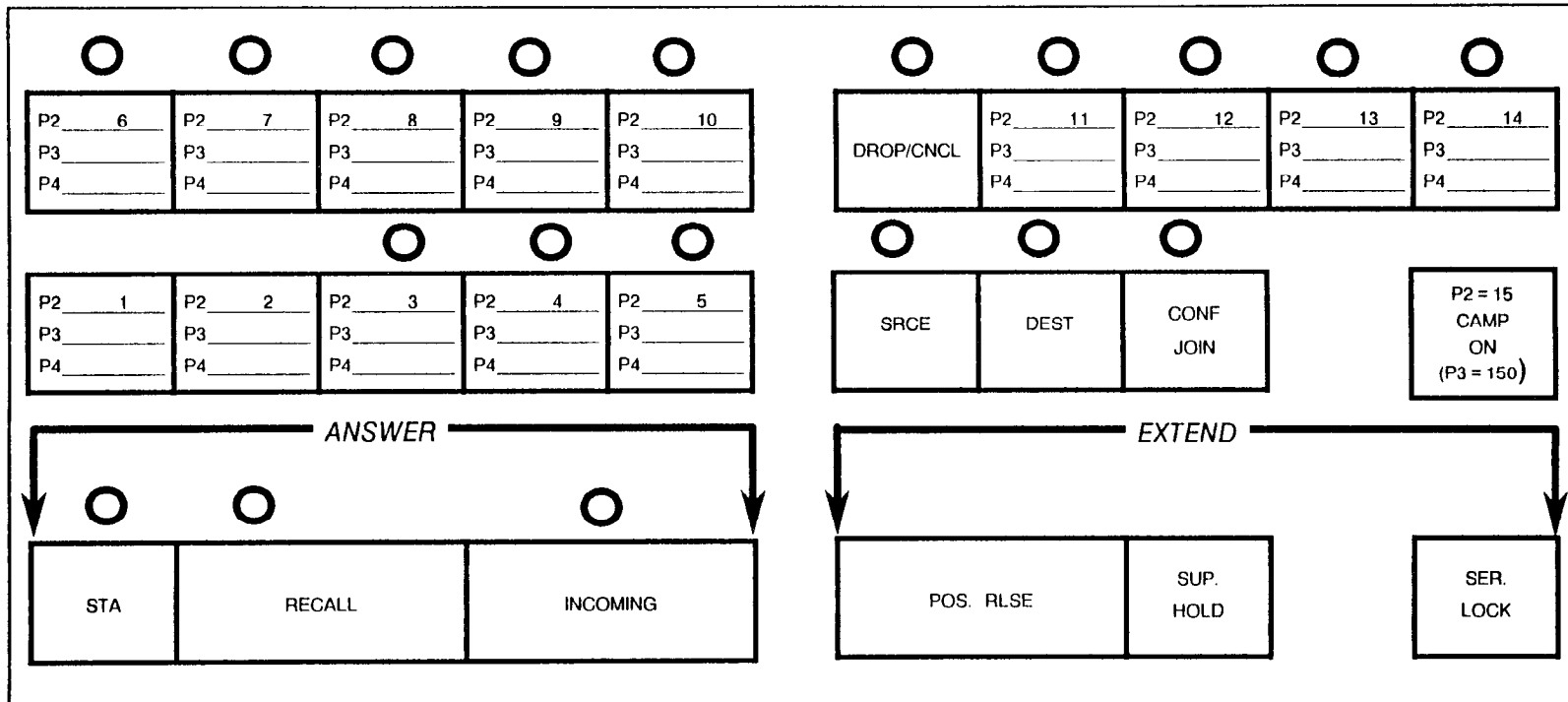
\* P1 = Enter the number of this attendant console.

**NOTE:** Refer to Appendix B for further information to determine Equipment Number.



**ATTENDANT CONSOLE BUTTON ASSIGNMENT  
CMC 231**

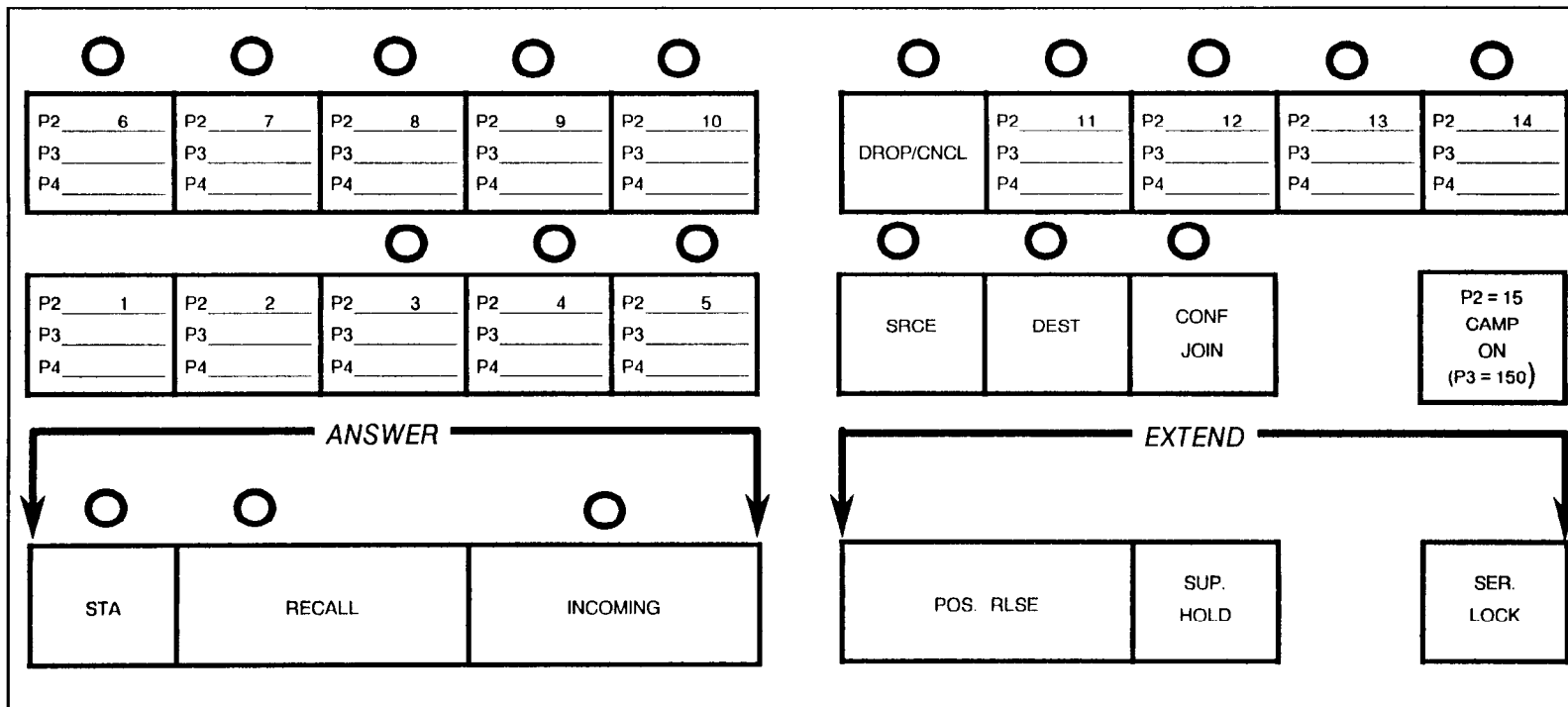
P1 = Enter the number of the attendant console (1 to 8) \_\_\_\_\_



**NOTE:** Button 16 = Position Busy (FNO 225)

**ATTENDANT CONSOLE BUTTON ASSIGNMENT  
CMC 231**

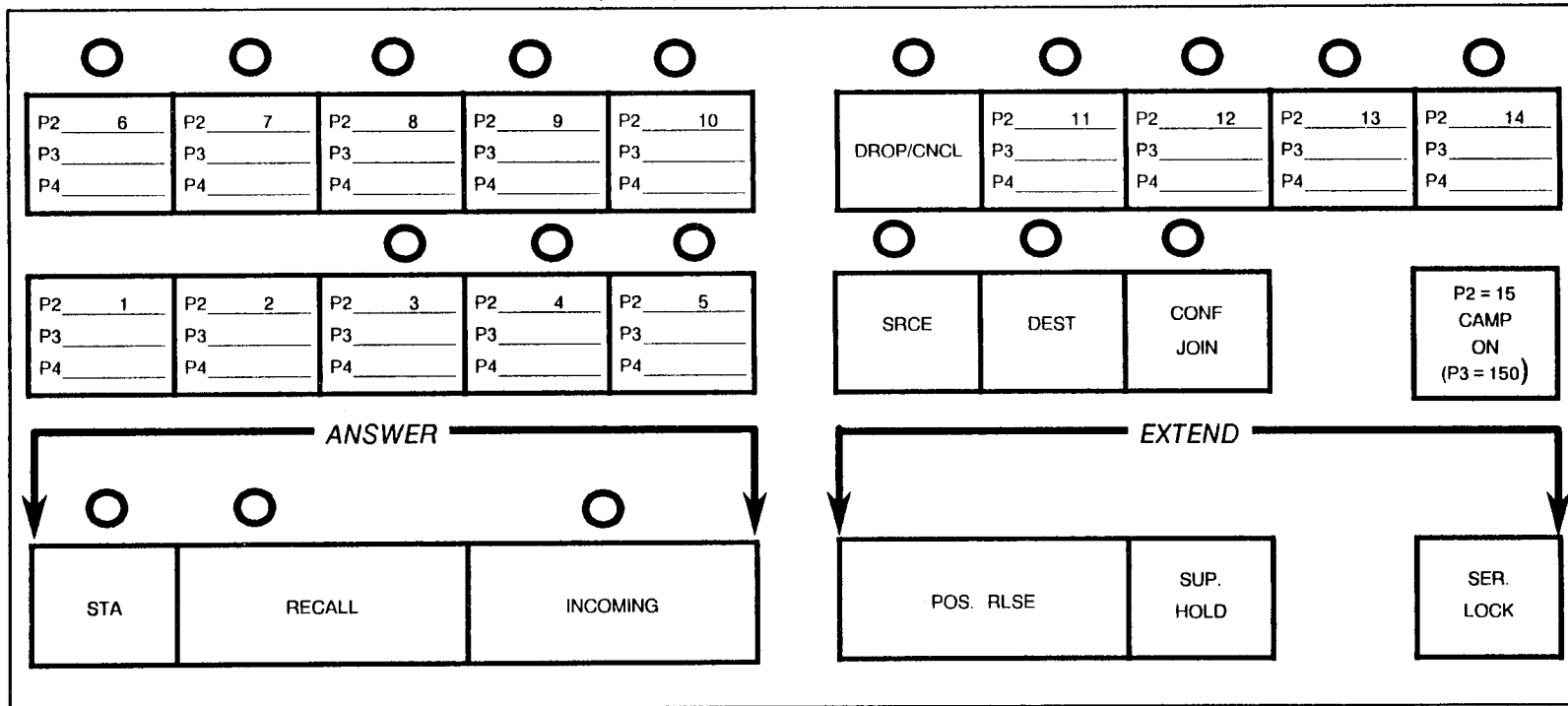
P1 = Enter the number of the attendant console (1 to 8) \_\_\_\_\_



NOTE: Button 16 = Position Busy (FNO 225)

**ATTENDANT CONSOLE BUTTON ASSIGNMENT  
CMC 231**

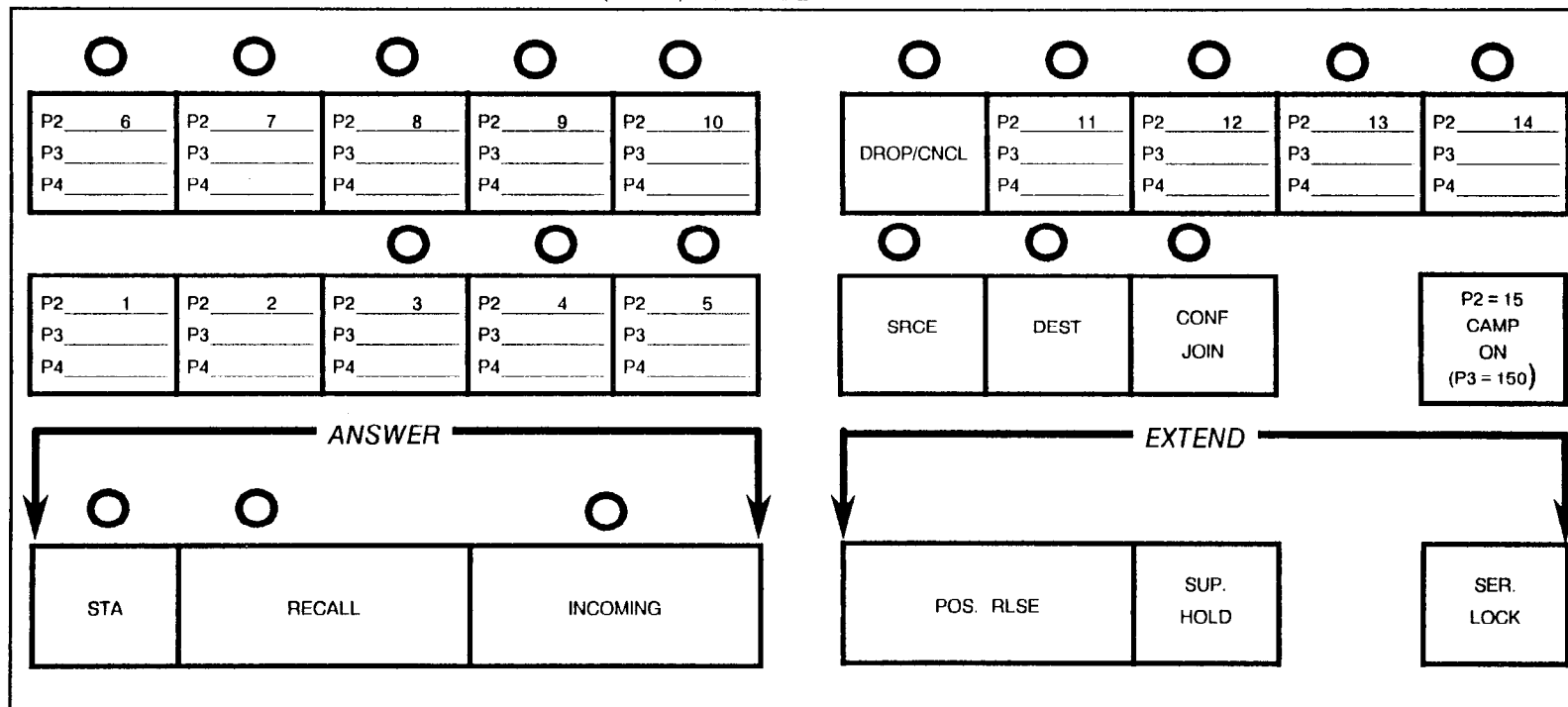
P1 = Enter the number of the attendant console (1 to 8) \_\_\_\_\_



**NOTE:** Button 16 = Position Busy (FNO 225)

**ATTENDANT CONSOLE BUTTON ASSIGNMENT  
CMC 231**

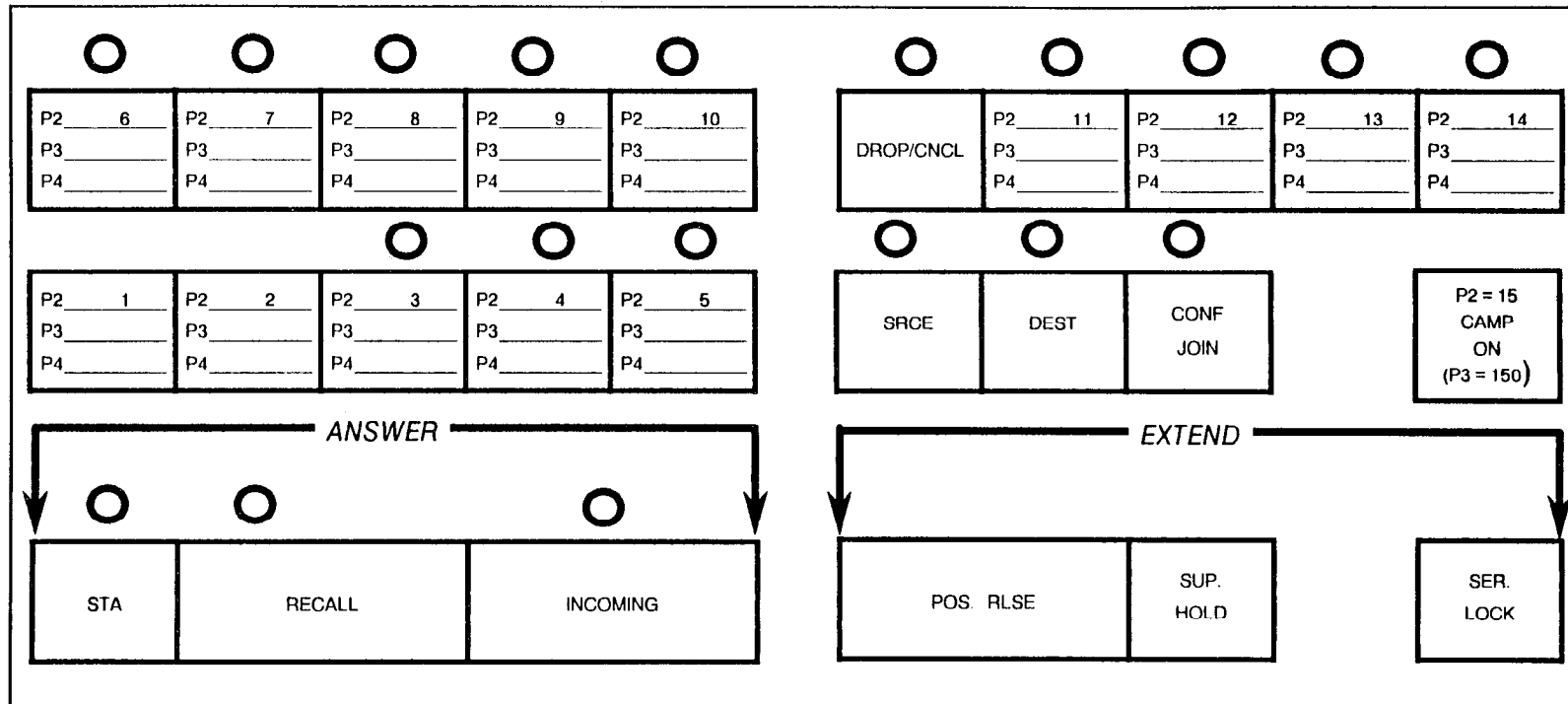
P1 = Enter the number of the attendant console (1 to 8) \_\_\_\_\_



**NOTE:** Button 16 = Position Busy (FNO 225)

**ATTENDANT CONSOLE BUTTON ASSIGNMENT  
CMC 231**

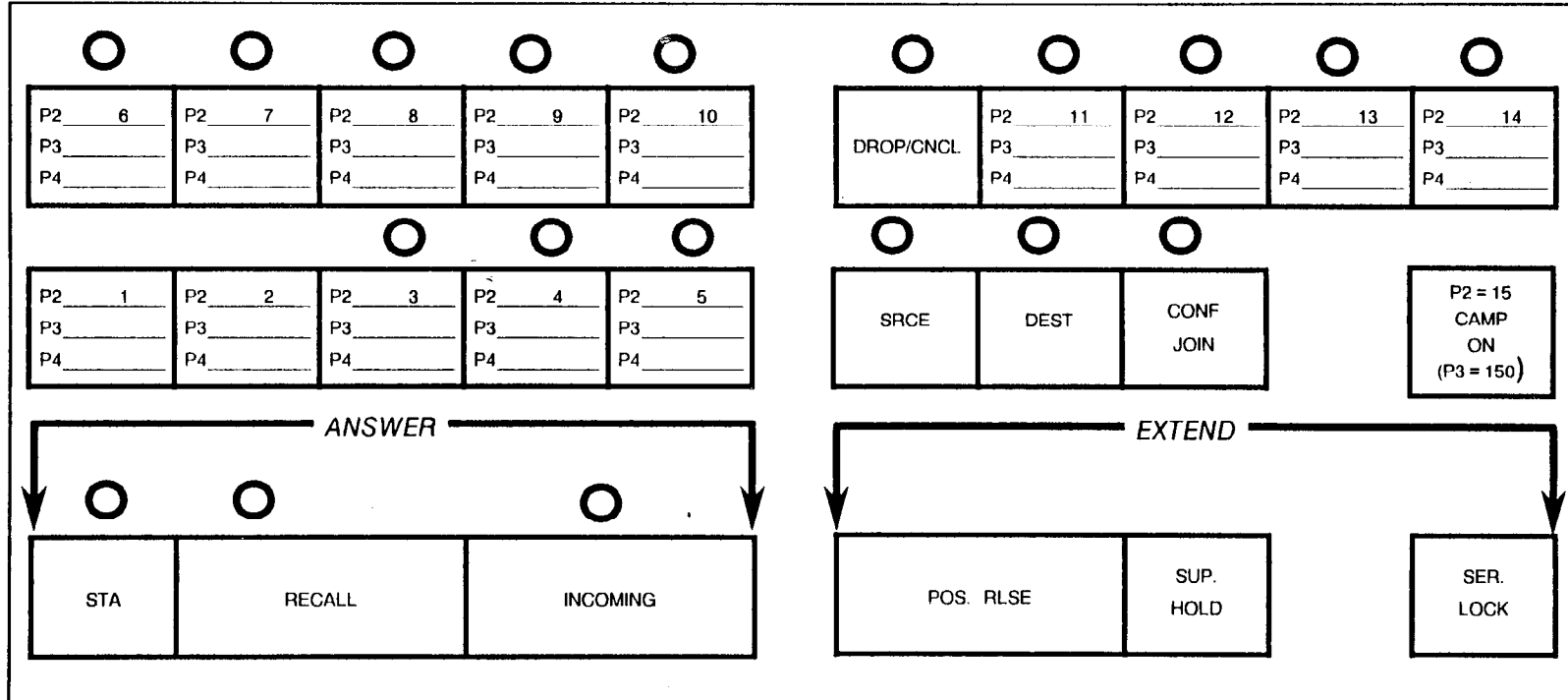
P1 = Enter the number of the attendant console (1 to 8) \_\_\_\_\_



**NOTE:** Button 16 = Position Busy (FNO 225)

**ATTENDANT CONSOLE BUTTON ASSIGNMENT  
CMC 231**

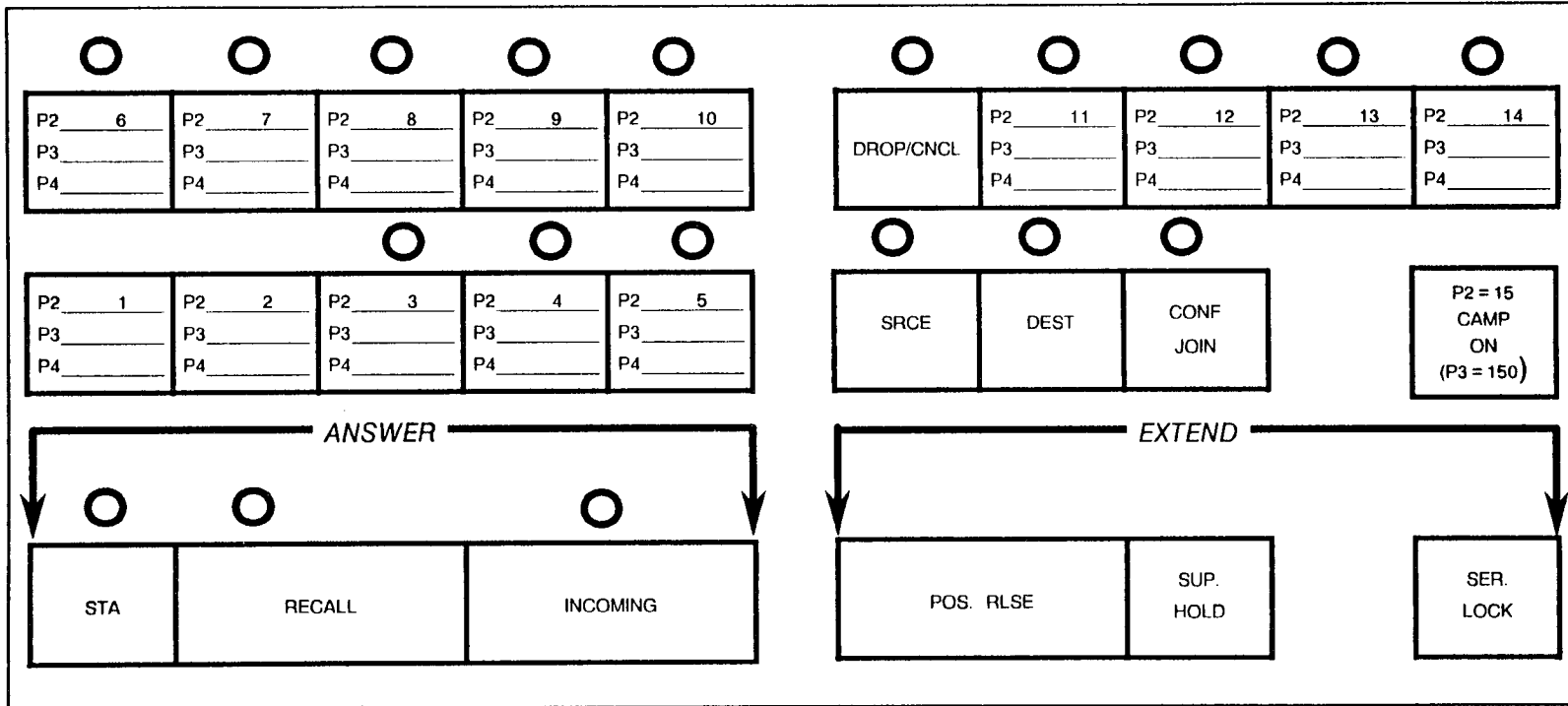
P1 = Enter the number of the attendant console (1 to 8) \_\_\_\_\_



**NOTE:** Button 16 = Position Busy (FNO 225)

**ATTENDANT CONSOLE BUTTON ASSIGNMENT  
CMC 231**

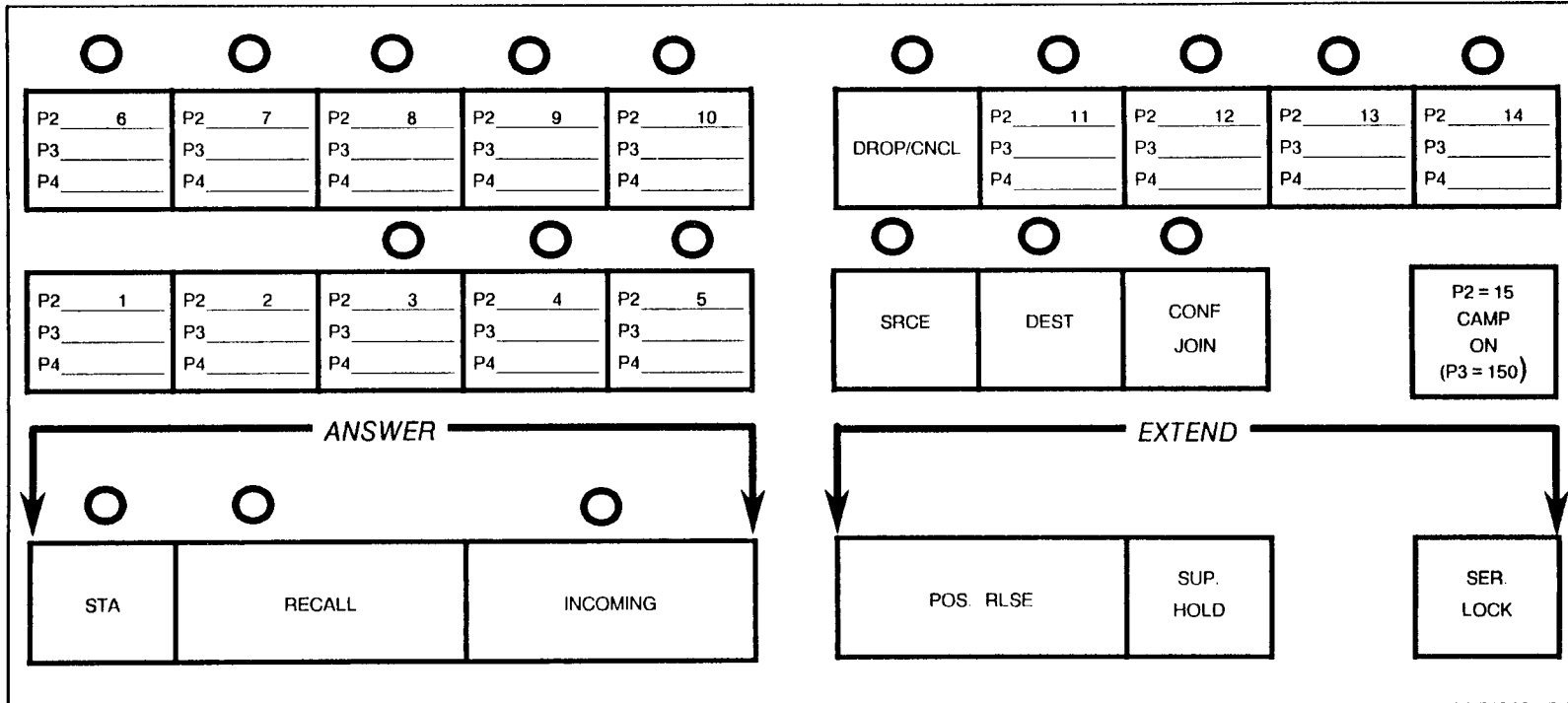
P1 = Enter the number of the attendant console (1 to 8) \_\_\_\_\_



**NOTE:** Button 16 = Position Busy (FNO 225)

**ATTENDANT CONSOLE BUTTON ASSIGNMENT  
CMC 231**

P1 = Enter the number of the attendant console (1 to 8) \_\_\_\_\_



**NOTE:** Button 16 = Position Busy (FNO 225)



**ATTENDANT PRIORITY ASSIGNMENT  
CMC 233**

<b>P1 TGN</b>	<b>Default Answering Priority</b>	<b>P2 New Answering Priority</b>
13	1	
14	1	
15	1	
16	1	
17	1	
18	1	
19	1	
20	1	
21	1	
22	1	
23	1	
24	1	
25	1	
26	1	
27	1	
28	1	
29	1	
30	1	

**ATTENDANT PRIORITY ASSIGNMENT**  
**CMC 233 (Cont'd)**

<b>P1 TGN</b>	<b>Default Answering Priority</b>	<b>P2 New Answering Priority</b>
57	1	
58	1	
59	1	
60	1	
61	1	
62	1	

**ATTENDANT QUEUE VOICE MESSAGE ASSIGNMENT  
CMC 316**

<b>P1</b> Tenant Number	<b>P2</b> Day Answer MSGID	<b>P3</b> Waiting MSGID	<b>P4</b> Night Answer MSGID	<b>P5</b> Music MSGID	<b>P6</b> Music Timing (sec.)

**RECORDED VOICE ANNOUNCEMENT CARD ASSIGNMENT  
CMC 260**

The Recorded Voice Announcement Card must be assigned in the data base prior to assigning the messages.  
A maximum of two (2) RVAC cards may be installed in each cabinet. The RVAC card may reside in slots 00 through 17.

<b>P1</b> RVAC Equipment Number (First Card)	<b>P1</b> RVAC Equipment Number (Second Card)
Cabinet 1	Cabinet 1
Cabinet 2	Cabinet 2
Cabinet 3	Cabinet 3
Cabinet 4	Cabinet 4

**RECORDED VOICE ANNOUNCEMENT ASSIGNMENT  
CMC 261**

<b>P1</b> RVAC Equip. Number	<b>P2</b> Message ID (1 to 255)	<b>P3</b> Message Time Blocks											<b>P4</b> Recorded Flag (0 or 1)	<b>P5</b> Number of Playbacks (1 to 255 or 0)			

**RECORDED VOICE ANNOUNCEMENT ASSIGNMENT  
CMC 261**

<p><b>P1</b> RVAC Equip. Number</p>	<p><b>P2</b> Message ID (1 to 255)</p>	<p><b>P3</b> Message Time Blocks</p>												<p><b>P4</b> Recorded Flag (0 or 1)</p>	<p><b>P5</b> Number of Playbacks (1 to 255 or 0)</p>		

**RECORDED VOICE ANNOUNCEMENT ASSIGNMENT  
CMC 261**

<b>P1</b> RVAC Equip. Number	<b>P2</b> Message ID (1 to 255)	<b>P3</b> Message Time Blocks	<b>P4</b> Recorded Flag (0 or 1)	<b>P5</b> Number of Playbacks (1 to 255 or 0)

**RECORDED VOICE ANNOUNCEMENT COPY  
CMC 262**

P1 Target Message Identification	P2 Source Message Identification



RECORDED VOICE ANNOUNCEMENT COPY  
CMC 262

P1 Target Message Identification	P2 Source Message Identification

**RECORDED VOICE ANNOUNCEMENT PROTECT ASSIGNMENT  
CMC 263**

<p><b>P1</b> Message Identification</p>	<p><b>P2</b> 0 = Protection off (default) 1 = Protection on</p>	<p><b>P1</b> Message Identification</p>	<p><b>P2</b> 0 = Protection off (default) 1 = Protection on</p>

**RECORDED VOICE ANNOUNCEMENT PROTECT ASSIGNMENT**  
**CMC 263**

P1 Message Identification	P2 0 = Protection off (default) 1 = Protection on	P1 Message Identification	P2 0 = Protection off (default) 1 = Protection on

**APPLICATION PROCESSOR INTERFACE (API) ASSIGNMENT  
CMC 280**

<b>P1</b> API Equipment No.	<b>P2</b> Communication Protocol	<b>P3</b> Data Speed	<b>P4</b> Communication Mode	<b>P5</b> Word Structure	<b>P6</b> Parity

**P2 (Communication Protocol):**  
 1 = Reserved  
 2 = ACD Report Manager (default)  
 3 = Property Management System Interface (PMSI)

**P3 (Data Speed):**  
 1 = 300 bps  
 2 = 600 bps  
 3 = 1200 bps  
 4 = 2400 bps  
 5 = 4800 bps (default)  
 6 = 9600 bps

**P4 (Communication Mode):**  
 1 = Full duplex (asynchronous) (default)  
 2 = Half duplex (asynchronous)

**P5 (Word Structure):**  
 1 = Stop bit 1, word length 7 (default)  
 2 = Stop bit 1.5, word length 7  
 3 = Stop bit 2, word length 7  
 4 = Stop bit 1, word length 8  
 5 = Stop bit 1.5, word length 8  
 6 = Stop bit 2, word length 8

**P6 (Parity):**  
 1 = Odd  
 2 = Even (default)  
 3 = None

**APPLICATION PROCESSOR (AP) TYPE ASSIGNMENT  
CMC 281**

<b>P1</b> AP Equipment No.	<b>P2</b> AP Type

**P2 (AP Type):** 1 = Automatic Call Distribution (ACD) AP  
2 = Property Management System (PMS) Hotel Interface

**SYSTEM SPEED CALLING ASSIGNMENT  
CMC 300**

P1 User Code (00 to 99 or 000 to 999)	P2 Access Code	P3 Area Code and Telephone Number	Called Party Name

**SYSTEM SPEED CALLING ASSIGNMENT (Cont'd)**  
**CMC 300**

<b>P1</b> User Code (00 to 99 or 000 to 999)	<b>P2</b> Access Code	<b>P3</b> Area Code and Telephone Number	Called Party Name

**SYSTEM SPEED CALLING ASSIGNMENT (Cont'd)**

**CMC 300**

<b>P1</b> User Code (00 to 99 or 000 to 999)	<b>P2</b> Access Code	<b>P3</b> Area Code and Telephone Number	Called Party Name



**SYSTEM SPEED CALLING ASSIGNMENT (Cont'd)**  
**CMC 300**

<b>P1</b> User Code (00 to 99 or 000 to 999)	<b>P2</b> Access Code	<b>P3</b> Area Code and Telephone Number	Called Party Name

**SYSTEM SPEED CALLING ASSIGNMENT (Cont'd)  
CMC 300**

P1 User Code (00 to 99 or 000 to 999)	P2 Access Code	P3 Area Code and Telephone Number	Called Party Name

**HUNT GROUP NUMBER ASSIGNMENT - VOICE/DATA**

CMC 301 (If more than 20 Voice/Data hunt groups are required, make a copy of this form and make the appropriate changes.)

P1 = ____ Hunt Group Number	P1 = ____ Hunt Group Number	P1 = ____ Hunt Group Number	P1 = ____ Hunt Group Number	P1 = ____ Hunt Group Number
<b>P2</b>	<b>P2</b>	<b>P2</b>	<b>P2</b>	<b>P2</b>
<b>P3 (DN)</b>	<b>P3 (DN)</b>	<b>P3 (DN)</b>	<b>P3 (DN)</b>	<b>P3 (DN)</b>
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
10	10	10	10	10
11	11	11	11	11
12	12	12	12	12
13	13	13	13	13
14	14	14	14	14
15	15	15	15	15
16	16	16	16	16
<b>P4</b> Type of Hunting	<b>P4</b> Type of Hunting	<b>P4</b> Type of Hunting	<b>P4</b> Type of Hunting	<b>P4</b> Type of Hunting

**HUNT GROUP NUMBER ASSIGNMENT – VOICE/DATA**

CMC 301 (If more than 20 Voice/Data hunt groups are required, make a copy of this form and make the appropriate changes.)

P1 = ____ Hunt Group Number		P1 = ____ Hunt Group Number		P1 = ____ Hunt Group Number		P1 = ____ Hunt Group Number		P1 = ____ Hunt Group Number	
<b>P2</b>	<b>P3 (DN)</b>	<b>P2</b>	<b>P3 (DN)</b>	<b>P2</b>	<b>P3 (DN)</b>	<b>P2</b>	<b>P3 (DN)</b>	<b>P2</b>	<b>P3 (DN)</b>
1		1		1		1		1	
2		2		2		2		2	
3		3		3		3		3	
4		4		4		4		4	
5		5		5		5		5	
6		6		6		6		6	
7		7		7		7		7	
8		8		8		8		8	
9		9		9		9		9	
10		10		10		10		10	
11		11		11		11		11	
12		12		12		12		12	
13		13		13		13		13	
14		14		14		14		14	
15		15		15		15		15	
16		16		16		16		16	
<b>P4</b> Type of Hunting		<b>P4</b> Type of Hunting		<b>P4</b> Type of Hunting		<b>P4</b> Type of Hunting		<b>P4</b> Type of Hunting	

**HUNT GROUP NUMBER ASSIGNMENT - VOICE/DATA**

CMC 301 (If more than 20 Voice/Data hunt groups are required, make a copy of this form and make the appropriate changes.)

P1 = ____ Hunt Group Number		P1 = ____ Hunt Group Number		P1 = ____ Hunt Group Number		P1 = ____ Hunt Group Number		P1 = ____ Hunt Group Number	
<b>P2</b>	<b>P3 (DN)</b>	<b>P2</b>	<b>P3 (DN)</b>	<b>P2</b>	<b>P3 (DN)</b>	<b>P2</b>	<b>P3 (DN)</b>	<b>P2</b>	<b>P3 (DN)</b>
1		1		1		1		1	
2		2		2		2		2	
3		3		3		3		3	
4		4		4		4		4	
5		5		5		5		5	
6		6		6		6		6	
7		7		7		7		7	
8		8		8		8		8	
9		9		9		9		9	
10		10		10		10		10	
11		11		11		11		11	
12		12		12		12		12	
13		13		13		13		13	
14		14		14		14		14	
15		15		15		15		15	
16		16		16		16		16	
<b>P4</b> Type of Hunting		<b>P4</b> Type of Hunting		<b>P4</b> Type of Hunting		<b>P4</b> Type of Hunting		<b>P4</b> Type of Hunting	

**HUNT GROUP NUMBER ASSIGNMENT – VOICE/DATA**

**CMC 301** (If more than 20 Voice/Data hunt groups are required, make a copy of this form and make the appropriate changes.)

P1 = ____ Hunt Group Number		P1 = ____ Hunt Group Number		P1 = ____ Hunt Group Number		P1 = ____ Hunt Group Number		P1 = ____ Hunt Group Number	
P2	P3 (DN)	P2	P3 (DN)	P2	P3 (DN)	P2	P3 (DN)	P2	P3 (DN)
1		1		1		1		1	
2		2		2		2		2	
3		3		3		3		3	
4		4		4		4		4	
5		5		5		5		5	
6		6		6		6		6	
7		7		7		7		7	
8		8		8		8		8	
9		9		9		9		9	
10		10		10		10		10	
11		11		11		11		11	
12		12		12		12		12	
13		13		13		13		13	
14		14		14		14		14	
15		15		15		15		15	
16		16		16		16		16	
<b>P4</b> Type of Hunting		<b>P4</b> Type of Hunting		<b>P4</b> Type of Hunting		<b>P4</b> Type of Hunting		<b>P4</b> Type of Hunting	

**HUNT GROUP NUMBER ASSIGNMENT - VOICE/DATA**

CMC 301 (If more than 20 Voice/Data hunt groups are required, make a copy of this form and make the appropriate changes.)

P1 = ____ Hunt Group Number		P1 = ____ Hunt Group Number		P1 = ____ Hunt Group Number		P1 = ____ Hunt Group Number		P1 = ____ Hunt Group Number	
P2	P3 (DN)	P2	P3 (DN)	P2	P3 (DN)	P2	P3 (DN)	P2	P3 (DN)
1		1		1		1		1	
2		2		2		2		2	
3		3		3		3		3	
4		4		4		4		4	
5		5		5		5		5	
6		6		6		6		6	
7		7		7		7		7	
8		8		8		8		8	
9		9		9		9		9	
10		10		10		10		10	
11		11		11		11		11	
12		12		12		12		12	
13		13		13		13		13	
14		14		14		14		14	
15		15		15		15		15	
16		16		16		16		16	
<b>P4</b> Type of Hunting		<b>P4</b> Type of Hunting		<b>P4</b> Type of Hunting		<b>P4</b> Type of Hunting		<b>P4</b> Type of Hunting	

**GROUP PICK-UP MEMBER ASSIGNMENT  
CMC 302**

<b>P1</b> Pick-Up Group Number (1 to 63)	<b>P2</b> Assigned Station Numbers			



**GROUP PICK-UP MEMBER ASSIGNMENT  
CMC 302**

<b>P1</b> Pick-Up Group Number (1 to 63)	<b>P2</b> Assigned Station Numbers			

**GROUP PICK-UP MEMBER ASSIGNMENT**  
**CMC 302**

<b>P1</b> Pick-Up Group Number (1 to 63)	<b>P2</b> Assigned Station Numbers			

**GROUP PICK-UP MEMBER ASSIGNMENT  
CMC 302**

<b>P1</b> Pick-Up Group Number (1 to 63)	<b>P2</b> Assigned Station Numbers			

**GROUP PICK-UP MEMBER ASSIGNMENT  
CMC 302**

<b>P1</b> Pick-Up Group Number (1 to 63)	<b>P2</b> Assigned Station Numbers			

**GROUP PICK-UP MEMBER ASSIGNMENT  
CMC 302**

<b>P1</b> Pick-Up Group Number (1 to 63)	<b>P2</b> Assigned Station Numbers			

**GROUP PICK-UP MEMBER ASSIGNMENT  
CMC 302**

<b>P1</b> Pick-Up Group Number (1 to 63)	<b>P2</b> Assigned Station Numbers			

**GROUP PICK-UP MEMBER ASSIGNMENT  
CMC 302**

<b>P1</b> Pick-Up Group Number (1 to 63)	<b>P2</b> Assigned Station Numbers			

**INTERNAL SPEAKER PAGING GROUP ASSIGNMENT  
CMC 303**

P1 Paging Zone Number	P2 Assigned Station Numbers									
1										
2										
3										
4										
5										
6										
7										
8										
9										



**HOTLINE STATION ASSIGNMENT - VOICE  
CMC 304**

<b>P1</b> Hotline Number (1 - 20)	<b>P2</b> Originating Station Number	<b>P3</b> Terminating Station Number

**HOTLINE STATION ASSIGNMENT - VOICE  
CMC 304**

<b>P1</b> Hotline Number (1 - 20)	<b>P2</b> Originating Station Number	<b>P3</b> Terminating Station Number

**HOTLINE STATION ASSIGNMENT - DATA  
CMC 304**

<b>P1</b> Hotline Number (51 - 90)	<b>P2</b> Originating Station Number	<b>P3</b> Terminating Station Number

**HOTLINE STATION ASSIGNMENT - DATA  
CMC 304**

<b>P1</b> Hotline Number (51 - 90)	<b>P2</b> Originating Station Number	<b>P3</b> Terminating Station Number

**MUSIC ON HOLD ASSIGNMENT  
CMC 305**

Use this form to assign music on hold.

<b>P1 =</b> _____
-------------------

**NOTE:** The RVAC card has capacity of 4 sec. X 14 blocks.

**P1 =** Enter the equipment number for the trunk card or RVAC card that will provide the music or tone source.

XYZZ

X = Cabinet number 0, 1, 2, or 3

YY = Logical card slot 00 through 17

Z = Circuit number: 0 to 7

Tone pattern number for the tone source = 0 to 15

**MUSIC ON HOLD PER TENANT ASSIGNMENT  
CMC 317**

P1 Tenant Number	P2 Tone Source Flag 1: Tone Pattern 2: Trunk EN 3: Message ID	P3		
		Tone Pattern (0 to 9)	Trunk EN (4 digits)	Message ID (190 to 199)

**NIGHT ANSWER/ATTENDANT OVERFLOW STATION ASSIGNMENTS  
CMC 306**

<p><b>P1 =</b> Night Answer group number _____</p> <p><b>P2 =</b> <u>1 = Stations</u></p> <p><b>P3 =</b> Equipment number of stations in this group</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
<p><b>P2 =</b> <u>2 = Trunks</u></p> <p><b>P3 =</b> Equipment number of trunks in this group</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
<p><b>P2 =</b> <u>3 = Tenants</u></p> <p><b>P3 =</b> Enter the tenant number 1 through 63, * for all tenants, or 0 for common tenant</p>	<p>_____</p>

**NIGHT ANSWER/ATTENDANT OVERFLOW STATION ASSIGNMENTS  
CMC 306**

<p><b>P1 = Night Answer group number</b> _____</p> <p><b>P2 = <u>1 = Stations</u></b></p> <p><b>P3 = Equipment number of stations in this group</b></p>	<table border="1"> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> </table>	_____	_____	_____	_____	_____	_____	_____	_____																																
_____	_____	_____	_____																																						
_____	_____	_____	_____																																						
<p><b>P2 = <u>2 = Trunks</u></b></p> <p><b>P3 = Equipment number of trunks in this group</b></p>	<table border="1"> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> </table>	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____																																						
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_____	_____	_____	_____																																						
_____	_____	_____	_____																																						
_____	_____	_____	_____																																						
_____	_____	_____	_____																																						
_____	_____	_____	_____																																						
<p><b>P2 = <u>3 = Tenants</u></b></p> <p><b>P3 = Enter the tenant number 1 through 63, * for all tenants, or 0 for common tenant</b></p>	<p>_____</p>																																								



**DIRECT-IN LINE ASSIGNMENT  
CMC 307**

<b>P1</b> Trunk Equipment Number	<b>P2</b> Station Number	<b>P3</b> Day/Night Answer Mode 0 or blank = All Day and Night 1 = Night Only    2 = Day Only

**ACD GROUP ASSIGNMENT  
CMC 308**

**ACD DATA ASSIGNMENT  
(GROUP WORK TIME)  
CMC 315**

P1 ACD Group Number	P2 Station Number	P3 0 = Agent, 1 = Pilot	P1 ACD Group Number	P2* Work Time Units
		1		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		

Units = 1 to 255. Work Time (seconds) = 5 x Unit. If 0 is entered, Work Time is set by CMC 103, P1 = 104

**ACD GROUP ASSIGNMENT  
CMC 308**

**ACD DATA ASSIGNMENT  
(GROUP WORK TIME)  
CMC 315**

P1 ACD Group Number	P2 Station Number	P3 0 = Agent, 1 = Pilot	P1 ACD Group Number	P2* Work Time Units
		1		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		

Units = 1 to 255. Work Time (seconds) = 5 x Unit. If 0 is entered, Work Time is set by CMC 103, P1 = 104

**DAY/NIGHT MODE ACD ROUTE TABLE ASSIGNMENT  
CMC 370**

<b>P1</b> ACD Group Number	<b>P2</b> Route Table Block No. and Route Step	<b>P3</b> Processing ID	<b>P4</b> Supplement 1	<b>P5</b> Supplement 2	<b>P6</b> Supplement 3

**DAY/NIGHT MODE ACD ROUTE TABLE ASSIGNMENT  
CMC 370**

<b>P1</b> ACD Group Number	<b>P2</b> Route Table Block No. and Route Step	<b>P3</b> Processing ID	<b>P4</b> Supplement 1	<b>P5</b> Supplement 2	<b>P6</b> Supplement 3

**SILENT MESSAGE ASSIGNMENT  
CMC 309**

P1 Message Identification	P2 Silent Message (Maximum 15 characters)
00	Call Me Back (default)
01	Will Call Back (default)
02	Returned Call (default)
03	Urgent (default)
04	To My Office (default)
05	In a Meeting (default)
06	Out to Lunch (default)
07	In Tomorrow (default)
08	Out of Town (default)
09	On Vacation (default)
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

**SILENT MESSAGE ASSIGNMENT  
CMC 309**

<b>P1</b> Message Identification	<b>P2</b> Silent Message (Maximum 15 characters)
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	

**SILENT MESSAGE ASSIGNMENT  
CMC 309**

<b>P1</b> Message Identification	<b>P2</b> Silent Message (Maximum 15 characters)
42	
43	
44	
45	
46	
47	
48	
49	
50	You Have Mail (default)



**TGN SERVICE ASSIGNMENT  
(FORCED ACCOUNT CODE FLAG)  
CMC 313**

<b>P1 TGN 13 to 30 51 to 56</b>	<b>P2 Type 1 = Forced 2 = Verified</b>	<b>P1 TGN 13 to 30 51 to 56</b>	<b>P2 Type 1 = Forced 2 = Verified</b>	<b>P1 TGN 13 to 30 51 to 56</b>	<b>P2 Type 1 = Forced 2 = Verified</b>	<b>P1 TGN 13 to 30 51 to 56</b>	<b>P2 Type 1 = Forced 2 = Verified</b>	<b>P1 TGN 13 to 30 51 to 56</b>	<b>P2 Type 1 = Forced 2 = Verified</b>

**NOTE:** In column P2:

0 = No forced account code

Blank = Applied to CMC 102, flag 132

**DNIS TGN ASSIGNMENT  
CMC 460**

<b>P1</b> TGN 13 to 16 (ISDN-DID) 57 to 62 (Analog DID)	<b>P2</b> DNIS Flag 0 = Disabled 1 = Activated	<b>P3</b> DDC Number of Digits Recv'd. 1 to 10 or blank	<b>P4</b> DN Day Directory Number 1 to 4 digits or blank	<b>P5</b> NDN Night Directory Number 1 to 4 digits or blank

**DNIS NUMBER REGISTRATION  
CMC 461**

**DNIS NAME  
CMC 462\***

<b>P1</b> DNIS Number  1 to 10 Digits	<b>P2</b> TRMN Terminating Station Number <ul style="list-style-type: none"> <li>● STA DN</li> <li>● ATT Access Code</li> <li>● System Speed Access Code + Speed Code</li> </ul>	<b>P3</b> LVL Priority Level <ul style="list-style-type: none"> <li>● 1 (High) to</li> <li>● 8 (Low) or</li> <li>● blank</li> </ul>	<b>P2</b> DNIS Name  1 to 15 characters

\* P1 = DNIS Number

**MUSIC ON HOLD PER DNIS NUMBER ASSIGNMENT  
CMC 463**

P1 DNIS Number	P2 Tone Source Flag 1 = Tone Pattern 2 = Trunk EN 3 = Message ID Blank = Not registered	P3		
		Tone Pattern (0 to 9)	Trunk EN (4 digits)	Message ID (190 to 199)

**MUSIC ON HOLD PER DNIS NUMBER ASSIGNMENT  
CMC 463**

P1 DNIS Number	P2 Tone Source Flag 1 = Tone Pattern 2 = Trunk EN 3 = Message ID Blank = Not registered	P3		
		Tone Pattern (0 to 9)	Trunk EN (4 digits)	Message ID (190 to 199)

**DNIS NIGHT NUMBER ASSIGNMENT**  
**CMC 464**

<b>P1</b> DNIS Number	<b>P2</b> Station Number	<b>P3</b> Priority Level

**DNIS NIGHT NUMBER ASSIGNMENT  
CMC 464**

P1 DNIS Number	P2 Station Number	P3 Priority Level

**FORCED ACCOUNT CODE - VERIFY CODE ASSIGNMENT**  
**CMC 310**

<b>P1 VID</b>	<b>P2 Verify Code</b>	<b>P3 Trunk Group Number (13-30, 51-56, or blank)</b>	<b>P1 VID</b>	<b>P2 Verify Code</b>	<b>P3 Trunk Group Number (13-30, 51-56, or blank)</b>	<b>P1 VID</b>	<b>P2 Verify Code</b>	<b>P3 Trunk Group Number (13-30, 51-56, or blank)</b>

\* If P3 is left blank, account codes are registered on a system-wide basis and not on a trunk group basis.



**PASSWORD ASSIGNMENT  
CMC 311**

P1 PWGN	P2 Password	P3 COS	P4 COR	P1 PWGN	P2 Password	P3 COS	P4 COR

**AUTOMATED ATTENDANT ANSWERING MESSAGE AND OVERFLOW STATION ASSIGNMENT  
CMC 434**

<b>P1</b> Tenant Number (0 to 63)	<b>P2</b> Answering Message ID (Day Mode)	<b>P3</b> Overflow Station DN (Day Mode)	<b>P4</b> Answering Message ID (Night Mode)	<b>P5</b> Overflow Station DN (Night Mode)	<b>P6</b> Single-Digit Flag 0 = Not Applied 1 = Applied

**SINGLE DIGIT AUTOMATED ATTENDANT ASSIGNMENT  
CMC 480**

<b>P1</b> Tenant Number (0 to 63)	<b>P2</b> Dial Number	<b>P3</b> Automated Attendant in Day Mode	<b>P4</b> Destination when in Day Mode (leave blank when P3 = 0)	<b>P5</b> Automated Attendant in Night Mode	<b>P6</b> Destination when in Night Mode (leave blank when P5 = 0)

**TRUNK DIALING AND RESTRICTION GROUP ASSIGNMENTS  
CMC 400**

P1 = Trunk group number      P2 = Dial group number      P3 = Restriction group number				
<u>Central Office</u> <u>Trunks</u>	<u>FX Trunks</u>	<u>WATS Trunks</u>	<u>Tie Trunks</u>	<u>SCC LINES</u>
P1 = TGN <u>13</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>19</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>25</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>31</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>51</u> P2 = DGN ____ P3 = RGN ____
P1 = TGN <u>14</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>20</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>26</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>32</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>52</u> P2 = DGN ____ P3 = RGN ____
P1 = TGN <u>15</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>21</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>27</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>33</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>53</u> P2 = DGN ____ P3 = RGN ____
P1 = TGN <u>16</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>22</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>28</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>34</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>54</u> P2 = DGN ____ P3 = RGN ____
P1 = TGN <u>17</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>23</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>29</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>35</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>55</u> P2 = DGN ____ P3 = RGN ____
P1 = TGN <u>18</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>24</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>30</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>36</u> P2 = DGN ____ P3 = RGN ____	P1 = TGN <u>56</u> P2 = DGN ____ P3 = RGN ____

### CUSTOMER AND OPERATOR TOLL PREFIX CODES ASSIGNMENT CMC 401

P1 = Dial Group Number   1  

Parameter	Description	Data Range	Default Value	New Value
P2	Customer toll prefix	1 to 3 digits or blank	1 +	
P3	Operator toll prefix 1	1 to 3 digits or blank	0 +	
P4	Operator toll prefix 2	1 to 3 digits or blank	00 +	

P1 = Dial Group Number   2  

Parameter	Description	Data Range	Default Value	New Value
P2	Customer toll prefix	1 to 3 digits or blank	1 +	
P3	Operator toll prefix 1	1 to 3 digits or blank	0 +	
P4	Operator toll prefix 2	1 to 3 digits or blank	00 +	

P1 = Dial Group Number   3  

Parameter	Description	Data Range	Default Value	New Value
P2	Customer toll prefix	1 to 3 digits or blank	1 +	
P3	Operator toll prefix 1	1 to 3 digits or blank	0 +	
P4	Operator toll prefix 2	1 to 3 digits or blank	00 +	

**N0/1X CONFLICTING AREA/OFFICE ASSIGNMENT  
CMC 402**

P1 TOLL PREFIX (0 = REQUIRED, 1 = NOT REQUIRED) \_\_\_\_\_  
P2 DIAL GROUP NO. (1 THROUGH 3) \_\_\_\_\_

ENTER MAXIMUM OF 30 AREA/OFFICE CODES: (N0/1X CODES)

P3 OFFICE = 0 AREA = 1	P4 N0/1X CODE	P3 OFFICE = 0 AREA = 1	P4 N0/1X CODE	P3 OFFICE = 0 AREA = 1	P4 N0/1X CODE	P3 OFFICE = 0 AREA = 1	P4 N0/1X CODE

**N0/1X CONFLICTING AREA/OFFICE ASSIGNMENT  
CMC 402**

**P1** TOLL PREFIX (0 = REQUIRED, 1 = NOT REQUIRED) \_\_\_\_\_  
**P2** DIAL GROUP NO. (1 THROUGH 3) \_\_\_\_\_

ENTER MAXIMUM OF 30 AREA/OFFICE CODES: (N0/1X CODES)

<b>P3</b> OFFICE = 0 AREA = 1	<b>P4</b> N0/1X CODE	<b>P3</b> OFFICE = 0 AREA = 1	<b>P4</b> N0/1X CODE	<b>P3</b> OFFICE = 0 AREA = 1	<b>P4</b> N0/1X CODE	<b>P3</b> OFFICE = 0 AREA = 1	<b>P4</b> N0/1X CODE

**N0/1X CONFLICTING AREA/OFFICE ASSIGNMENT  
CMC 402**

**P1** TOLL PREFIX (0 = REQUIRED, 1 = NOT REQUIRED) \_\_\_\_\_  
**P2** DIAL GROUP NO. (1 THROUGH 3) \_\_\_\_\_

ENTER MAXIMUM OF 30 AREA/OFFICE CODES: (N0/1X CODES)

<b>P3</b> OFFICE = 0 AREA = 1	<b>P4</b> N0/1X CODE	<b>P3</b> OFFICE = 0 AREA = 1	<b>P4</b> N0/1X CODE	<b>P3</b> OFFICE = 0 AREA = 1	<b>P4</b> N0/1X CODE	<b>P3</b> OFFICE = 0 AREA = 1	<b>P4</b> N0/1X CODE









**TOLL RESTRICTION 2 ASSIGNMENT  
CMC 417**

P1 = Restriction Group Number =
P2 = Class of Restriction =

P3 = Flag ID

ID	Description	P4 = Flag Value	Value
1	CAC (10XXX/10XXXXXX) + OTP1	1 = allow / 0 = deny	
2	CAC (10XXX/10XXXXXX) + OTP2	1 = allow / 0 = deny	
3	Toll Free Dial (1 + 800)	1 = allow / 0 = deny	
4	CAC (950) + 0XXX	1 = allow / 0 = deny	
5	CAC (10XXX/10XXXXXX) + CTP	1 = deny / 0 = allow	
6	CAC (950) + 1XXX	1 = deny / 0 = allow	
7	CAC (10XXX/10XXXXXX) + International Direct Dial (011)	1 = deny / 0 = allow	

**NOTE:** When FVA = 0, there is no allowance or denial for its type of calls. Further restrictions assigned by CMC 411, 412, 413, 414, and 416 will determine whether or not a call should go through, based on the rest of the dialed number. When FVA = 1, this command has priority over other restrictions assigned by CMC 411, 412, 413, 414, and 416.

### TOLL AND OPERATOR RESTRICTION ASSIGNMENT CMC 411

<b>P1 =</b> Restriction Group Number =
<b>P2 =</b> Class of Restriction =

**P3 =** Flag ID

**P4 =** Flag Value

ID	Description	Access Code	Data Values	New Value
1	International Toll Prefix	011	1 = deny / 0 = allow	
2	Operator Toll Prefix	0 *	1 = deny / 0 = allow	
3	Customer Toll Prefix	1 *	1 = deny / 0 = allow	
4	Toll Assistance	555-1212 or 411	0 = deny / 1 = allow (see Note 2)	
5	All Area Codes	XXX	1 = deny / 0 = allow	
6	All Office Codes	XXX	1 = deny / 0 = allow	
7	Long Distance Directory Assistance	(XXX) + 555-1212	0 = deny / 1 = allow (see Note 3)	
8	Reserved	NONE	NONE	DO NOT CHANGE
9	Operator Toll Prefix #2	00	1 = deny / 0 = allow	

**NOTES:**

1. For access codes marked with an " \* ", refer to CMC 401 for access code definitions.
2. This means to disable (or enable) CMC 412 with reference to office codes containing a "one one" (11) pattern.
3. This means enable (or disable) CMC 412 with reference to office codes containing a "five five five" (555) pattern and CMC 414 with reference to office codes containing a "five five five" (555) pattern with a particular area code.

**TOLL AND OPERATOR RESTRICTION ASSIGNMENT  
CMC 411**

P1 = Restriction Group Number =
P2 = Class of Restriction =

**P3 = Flag ID**

**P4 = Flag Value**

ID	Description	Access Code	Data Values	New Value
1	International Toll Prefix	011	1 = deny / 0 = allow	
2	Operator Toll Prefix	0 *	1 = deny / 0 = allow	
3	Customer Toll Prefix	1 *	1 = deny / 0 = allow	
4	Toll Assistance	555-1212 or 411	0 = deny / 1 = allow (see Note 2)	
5	All Area Codes	XXX	1 = deny / 0 = allow	
6	All Office Codes	XXX	1 = deny / 0 = allow	
7	Long Distance Directory Assistance	(XXX) + 555-1212	0 = deny / 1 = allow (see Note 3)	
8	Reserved	NONE	NONE	DO NOT CHANGE
9	Operator Toll Prefix #2	00	1 = deny / 0 = allow	

**NOTES:**

1. For access codes marked with an " \* ", refer to CMC 401 for access code definitions.
2. This means to disable (or enable) CMC 412 with reference to office codes containing a "one one" (11) pattern.
3. This means enable (or disable) CMC 412 with reference to office codes containing a "five five five" (555) pattern and CMC 414 with reference to office codes containing a "five five five" (555) pattern with a particular area code.

### TOLL AND OPERATOR RESTRICTION ASSIGNMENT CMC 411

P1 = Restriction Group Number =

P2 = Class of Restriction =

P3 = Flag ID

P4 = Flag Value

ID	Description	Access Code	Data Values	New Value
1	International Toll Prefix	011	1 = deny / 0 = allow	
2	Operator Toll Prefix	0 *	1 = deny / 0 = allow	
3	Customer Toll Prefix	1 *	1 = deny / 0 = allow	
4	Toll Assistance	555-1212 or 411	0 = deny / 1 = allow (see Note 2)	
5	All Area Codes	XXX	1 = deny / 0 = allow	
6	All Office Codes	XXX	1 = deny / 0 = allow	
7	Long Distance Directory Assistance	(XXX) + 555-1212	0 = deny / 1 = allow (see Note 3)	
8	Reserved	NONE	NONE	DO NOT CHANGE
9	Operator Toll Prefix #2	00	1 = deny / 0 = allow	

#### NOTES:

1. For access codes marked with an " \* ", refer to CMC 401 for access code definitions.
2. This means to disable (or enable) CMC 412 with reference to office codes containing a "one one" (11) pattern.
3. This means enable (or disable) CMC 412 with reference to office codes containing a "five five five" (555) pattern and CMC 414 with reference to office codes containing a "five five five" (555) pattern with a particular area code.

**TOLL AND OPERATOR RESTRICTION ASSIGNMENT  
CMC 411**

P1 = Restriction Group Number =
P2 = Class of Restriction =

**P3 = Flag ID**

**P4 = Flag Value**

ID	Description	Access Code	Data Values	New Value
1	International Toll Prefix	011	1 = deny / 0 = allow	
2	Operator Toll Prefix	0 *	1 = deny / 0 = allow	
3	Customer Toll Prefix	1 *	1 = deny / 0 = allow	
4	Toll Assistance	555-1212 or 411	0 = deny / 1 = allow (see Note 2)	
5	All Area Codes	XXX	1 = deny / 0 = allow	
6	All Office Codes	XXX	1 = deny / 0 = allow	
7	Long Distance Directory Assistance	(XXX) + 555-1212	0 = deny / 1 = allow (see Note 3)	
8	Reserved	NONE	NONE	DO NOT CHANGE
9	Operator Toll Prefix #2	00	1 = deny / 0 = allow	

**NOTES:**

1. For access codes marked with an " \* ", refer to CMC 401 for access code definitions.
2. This means to disable (or enable) CMC 412 with reference to office codes containing a "one one" (11) pattern.
3. This means enable (or disable) CMC 412 with reference to office codes containing a "five five five" (555) pattern and CMC 414 with reference to office codes containing a "five five five" (555) pattern with a particular area code.



### TOLL AND OPERATOR RESTRICTION ASSIGNMENT CMC 411

P1 = Restriction Group Number =

P2 = Class of Restriction =

P3 = Flag ID

P4 = Flag Value

ID	Description	Access Code	Data Values	New Value
1	International Toll Prefix	011	1 = deny / 0 = allow	
2	Operator Toll Prefix	0 *	1 = deny / 0 = allow	
3	Customer Toll Prefix	1 *	1 = deny / 0 = allow	
4	Toll Assistance	555-1212 or 411	0 = deny / 1 = allow (see Note 2)	
5	All Area Codes	XXX	1 = deny / 0 = allow	
6	All Office Codes	XXX	1 = deny / 0 = allow	
7	Long Distance Directory Assistance	(XXX) + 555-1212	0 = deny / 1 = allow (see Note 3)	
8	Reserved	NONE	NONE	DO NOT CHANGE
9	Operator Toll Prefix #2	00	1 = deny / 0 = allow	

#### NOTES:

1. For access codes marked with an " \* ", refer to CMC 401 for access code definitions.
2. This means to disable (or enable) CMC 412 with reference to office codes containing a "one one" (11) pattern.
3. This means enable (or disable) CMC 412 with reference to office codes containing a "five five five" (555) pattern and CMC 414 with reference to office codes containing a "five five five" (555) pattern with a particular area code.

**OFFICE CODE RESTRICTION ASSIGNMENT  
CMC 412  
AREA CODE RESTRICTION ASSIGNMENT  
CMC 413**

<b>P1</b>	Restriction Group No. _____	<b>P2 =</b>	Class of Restriction _____				
<b>P3</b>	0 = Allowed, 1 = Denied _____	<b>P4 =</b>	Office Codes - CMC 412				
			Area Codes - CMC 413				
Area Code	Office Code	Area Code	Office Code	Area Code	Office Code	Area Code	Office Code

**OFFICE CODE RESTRICTION ASSIGNMENT  
CMC 412  
AREA CODE RESTRICTION ASSIGNMENT  
CMC 413**

<b>P1</b>	Restriction Group No.	_____	<b>P2 =</b>	Class of Restriction	_____		
<b>P3</b>	0 = Allowed, 1 = Denied	_____	<b>P4 =</b>	Office Codes - CMC 412 Area Codes - CMC 413			
Area Code	Office Code	Area Code	Office Code	Area Code	Office Code	Area Code	Office Code

**AREA/OFFICE CODE RESTRICTION ASSIGNMENT  
CMC 414**

<b>P1</b>	Restriction Group No. _____	<b>P2</b>	=	Class of Restriction _____
<b>P3</b>	0 = Allowed, 1 = Denied _____			

<b>P4</b> Area Code	<b>P5</b> Office Code	<b>P4</b> Area Code	<b>P5</b> Office Code	<b>P4</b> Area Code	<b>P5</b> Office Code	<b>P4</b> Area Code	<b>P5</b> Office Code

**AREA/OFFICE CODE RESTRICTION ASSIGNMENT**  
**CMC 414**

<b>P1</b>	Restriction Group No.	_____	<b>P2</b>	=	Class of Restriction	_____	
<b>P3</b>	0 =	Allowed, 1 = Denied	_____				
<b>P4</b>	<b>P5</b>	<b>P4</b>	<b>P5</b>	<b>P4</b>	<b>P5</b>	<b>P4</b>	<b>P5</b>
Area	Office	Area	Office	Area	Office	Area	Office
Code	Code	Code	Code	Code	Code	Code	Code

OFFICE CODE RESTRICTION FOR ALL AREA CODES  
CMC 416

P1 = <u>RGN</u>	_____					
P2 = <u>COR</u>	_____					
P3 = <u>FLG</u>	_____					
P4 = <u>OC</u>	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
P1 = <u>RGN</u>	_____					
P2 = <u>COR</u>	_____					
P3 = <u>FLG</u>	_____					
P4 = <u>OC</u>	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____

**OFFICE CODE RESTRICTION FOR ALL AREA CODES**  
**CMC 416**

<b>P1 =</b>	<u><b>RGN</b></u>	_____					
<b>P2 =</b>	<u><b>COR</b></u>	_____					
<b>P3 =</b>	<u><b>FLG</b></u>	_____					
<b>P4 =</b>	<u><b>OC</b></u>	_____	_____	_____	_____	_____	_____
		_____	_____	_____	_____	_____	_____
		_____	_____	_____	_____	_____	_____
		_____	_____	_____	_____	_____	_____
		_____	_____	_____	_____	_____	_____
		_____	_____	_____	_____	_____	_____

---

<b>P1 =</b>	<u><b>RGN</b></u>	_____					
<b>P2 =</b>	<u><b>COR</b></u>	_____					
<b>P3 =</b>	<u><b>FLG</b></u>	_____					
<b>P4 =</b>	<u><b>OC</b></u>	_____	_____	_____	_____	_____	_____
		_____	_____	_____	_____	_____	_____
		_____	_____	_____	_____	_____	_____
		_____	_____	_____	_____	_____	_____
		_____	_____	_____	_____	_____	_____
		_____	_____	_____	_____	_____	_____

**OFFICE CODE RESTRICTION FOR ALL AREA CODES  
CMC 416**

P1 = RGN	_____					
P2 = COR	_____					
P3 = FLG	_____					
P4 = OC	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____

P1 = RGN	_____					
P2 = COR	_____					
P3 = FLG	_____					
P4 = OC	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____



**FIVE-DIGIT CARRIER IDENTIFICATION CODE RESTRICTION ASSIGNMENT  
CMC 415**

<b>P1</b> Restriction Group Number 1 to 3	<b>P2</b> Class of Restriction 1 to 16	<b>P3</b> Five-Digit Carrier Access Codes (10XXX)

**NOTES:**

1. CAC calls registered in CMC 415 will bypass call restriction checks made by the system, such as Area and Office Code Restriction.
2. Seven-digit carrier identification codes are assigned using CMC 470.

**FIVE-DIGIT CARRIER IDENTIFICATION CODE RESTRICTION ASSIGNMENT  
CMC 415**

<b>P1</b> Restriction Group Number 1 to 3	<b>P2</b> Class of Restriction 1 to 16	<b>P3</b> Five-Digit Carrier Access Codes (10XXX)

**NOTES:**

1. CAC calls registered in CMC 415 will bypass call restriction checks made by the system, such as Area and Office Code Restriction.
2. Seven-digit carrier identification codes are assigned using CMC 470.

**FIVE-DIGIT CARRIER IDENTIFICATION CODE RESTRICTION ASSIGNMENT  
CMC 415**

<b>P1</b> Restriction Group Number 1 to 3	<b>P2</b> Class of Restriction 1 to 16	<b>P3</b> Five-Digit Carrier Access Codes (10XXX)

**NOTES:**

- 1. CAC calls registered in CMC 415 will bypass call restriction checks made by the system, such as Area and Office Code Restriction.
- 2. Seven-digit carrier identification codes are assigned using CMC 470.

**SEVEN-DIGIT CARRIER IDENTIFICATION CODE RESTRICTION ASSIGNMENT  
CMC 470**

<b>P1</b> Restriction Group Number 1 to 3	<b>P2</b> Class of Restriction 1 to 16	<b>P3</b> Seven-Digit Carrier Access Codes (10XXX)

**NOTES:**

- 1. CAC calls registered in CMC 470 will bypass call restriction checks made by the system, such as Area and Office Code Restriction.
- 2. Five-digit carrier identification codes are assigned using CMC 415.

**SEVEN-DIGIT CARRIER IDENTIFICATION CODE RESTRICTION ASSIGNMENT  
CMC 470**

<b>P1</b> Restriction Group Number 1 to 3	<b>P2</b> Class of Restriction 1 to 16	<b>P3</b> Seven-Digit Carrier Access Codes (10XXX)

**NOTES:**

1. CAC calls registered in CMC 470 will bypass call restriction checks made by the system, such as Area and Office Code Restriction.
2. Five-digit carrier identification codes are assigned using CMC 415.

**SEVEN-DIGIT CARRIER IDENTIFICATION CODE RESTRICTION ASSIGNMENT  
CMC 470**

<b>P1</b> Restriction Group Number 1 to 3	<b>P2</b> Class of Restriction 1 to 16	<b>P3</b> Seven-Digit Carrier Access Codes (10XXX)

**NOTES:**

1. CAC calls registered in CMC 470 will bypass call restriction checks made by the system, such as Area and Office Code Restriction.
2. Five-digit carrier identification codes are assigned using CMC 415.

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**LCR OFFICE CODE ROUTE SELECTION ASSIGNMENT**  
**CMC 420**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

P1 = Office code route table no. \_\_\_\_\_ (1 to 15)

P2		P3	P4
Selection Sequence	Type of Trunk	Trunk Group Number	Dialing Pattern Flag
1. Primary route	_____	_____	_____
2. Alternate route	_____	_____	_____
3. Third alternate route	_____	_____	_____
4. Fourth alternate route	_____	_____	_____
5. Fifth alternate route	_____	_____	_____
6. Sixth alternate route	_____	_____	_____
7. Seventh alternate route	_____	_____	_____
8. Eighth alternate route	_____	_____	_____
9. Ninth alternate route	_____	_____	_____
10. Tenth alternate route	_____	_____	_____

**LCR OFFICE CODE ASSIGNMENT**

**CMC 422** P1 = Office code route table number \_\_\_\_\_ P2 = Office codes  
 (Maximum 800 office codes)




**LCR OFFICE CODE ROUTE SELECTION ASSIGNMENT  
CMC 420**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

P1 = Office code route table no. \_\_\_\_\_ (1 to 15)

P2	P3	P4	
Selection Sequence	Type of Trunk	Trunk Group Number	Dialing Pattern Flag
1. Primary route	_____	_____	_____
2. Alternate route	_____	_____	_____
3. Third alternate route	_____	_____	_____
4. Fourth alternate route	_____	_____	_____
5. Fifth alternate route	_____	_____	_____
6. Sixth alternate route	_____	_____	_____
7. Seventh alternate route	_____	_____	_____
8. Eighth alternate route	_____	_____	_____
9. Ninth alternate route	_____	_____	_____
10. Tenth alternate route	_____	_____	_____

**LCR OFFICE CODE ASSIGNMENT**

**CMC 422** P1 = Office code route table number \_\_\_\_\_ P2 = Office codes  
(maximum 800 office codes)


**LCR OFFICE CODE ROUTE SELECTION ASSIGNMENT  
CMC 420**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

P1 = Office code route table no. \_\_\_\_\_ (1 to 15)

P2		P3	P4
Selection Sequence	Type of Trunk	Trunk Group Number	Dialing Pattern Flag
1. Primary route	_____	_____	_____
2. Alternate route	_____	_____	_____
3. Third alternate route	_____	_____	_____
4. Fourth alternate route	_____	_____	_____
5. Fifth alternate route	_____	_____	_____
6. Sixth alternate route	_____	_____	_____
7. Seventh alternate route	_____	_____	_____
8. Eighth alternate route	_____	_____	_____
9. Ninth alternate route	_____	_____	_____
10. Tenth alternate route	_____	_____	_____

**LCR OFFICE CODE ASSIGNMENT**

**CMC 422** P1 = Office code route table number \_\_\_\_\_ P2 = Office codes  
(maximum 800 office codes)


**LCR OFFICE CODE ROUTE SELECTION ASSIGNMENT  
CMC 420**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

P1 = Office code route table no. \_\_\_\_\_ (1 to 15)

P2		P3	P4
Selection Sequence	Type of Trunk	Trunk Group Number	Dialing Pattern Flag
1. Primary route	_____	_____	_____
2. Alternate route	_____	_____	_____
3. Third alternate route	_____	_____	_____
4. Fourth alternate route	_____	_____	_____
5. Fifth alternate route	_____	_____	_____
6. Sixth alternate route	_____	_____	_____
7. Seventh alternate route	_____	_____	_____
8. Eighth alternate route	_____	_____	_____
9. Ninth alternate route	_____	_____	_____
10. Tenth alternate route	_____	_____	_____

**LCR OFFICE CODE ASSIGNMENT**

**CMC 422** P1 = Office code route table number \_\_\_\_\_ P2 = Office codes  
(maximum 800 office codes)


**LCR AREA AND AREA/OFFICE CODE ROUTE SELECTION ASSIGNMENT  
CMC 421**

PAGE OF

P1 = Area code route table no. \_\_\_\_\_ (1 to 63)

P2		P3		P4
Selection Sequence	Type of Trunk	Trunk Group Number	Dialing Pattern Flag	
1. Primary route	_____	_____	_____	
2. Alternate route	_____	_____	_____	
3. Third alternate route	_____	_____	_____	
4. Fourth alternate route	_____	_____	_____	
5. Fifth alternate route	_____	_____	_____	
6. Sixth alternate route	_____	_____	_____	
7. Seventh alternate route	_____	_____	_____	
8. Eighth alternate route	_____	_____	_____	
9. Ninth alternate route	_____	_____	_____	
10. Tenth alternate route	_____	_____	_____	

**LCR AREA CODE ASSIGNMENT**

**CMC 423** P1 = Time of day route table \_\_\_\_\_ P2 = Area codes  
(See Note)  
(maximum 160 area codes)


**NOTE:** When specific area code calls are to be routed at a certain time of day, P1 should have the time of day route table number and CMC 427 should be entered to select the area code route table.

**LCR AREA AND AREA/OFFICE CODE ROUTE SELECTION ASSIGNMENT**  
**CMC 421**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

P1 = Area code route table no. \_\_\_\_\_ (1 to 63)

P2		P3		P4
Selection Sequence	Type of Trunk	Trunk Group Number	Dialing Pattern Flag	
1. Primary route	_____	_____	_____	
2. Alternate route	_____	_____	_____	
3. Third alternate route	_____	_____	_____	
4. Fourth alternate route	_____	_____	_____	
5. Fifth alternate route	_____	_____	_____	
6. Sixth alternate route	_____	_____	_____	
7. Seventh alternate route	_____	_____	_____	
8. Eighth alternate route	_____	_____	_____	
9. Ninth alternate route	_____	_____	_____	
10. Tenth alternate route	_____	_____	_____	

**LCR AREA CODE ASSIGNMENT**

**CMC 423** P1 = Time of day route table \_\_\_\_\_ P2 = Area codes  
 (See Note)  
 (maximum 160 area codes)


**NOTE:** When specific area code calls are to be routed at a certain time of day, P1 should have the time of day route table number and CMC 427 should be entered to select the area code route table.











**FIVE-DIGIT LCR CARRIER ACCESS CODE ASSIGNMENT  
CMC 425**

<b>P1</b> LCR Carrier Number (1 to 10)	<b>P2</b> Five-Digit Carrier Access Number (10XXX)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

**SEVEN-DIGIT LCR CARRIER ACCESS CODE ASSIGNMENT  
CMC 471**

<b>P1</b> LCR Carrier Number (1 to 10)	<b>P2</b> Seven-Digit Carrier Access Number (10XXXXXX)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

**LCR INTERNATIONAL CODE ASSIGNMENT  
CMC 429**

<b>P1</b> International Code Route Table No.	<b>P2</b> International Access Code 3 digits (01X)
<b>INTERNATIONAL CODE ROUTING TABLE CMC 428</b>	
P1 = IRTN No.	
<b>P2</b> Routing Sequence	<b>P3</b> Trunk Group Number
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

**LCR INTERNATIONAL CODE ASSIGNMENT  
CMC 429**

<b>P1</b> International Code Route Table No.	<b>P2</b> International Access Code 3 digits (01X)
<b>INTERNATIONAL CODE ROUTING TABLE CMC 428</b>	
P1 = IRTN No.	
<b>P2</b> Routing Sequence	<b>P3</b> Trunk Group Number
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	





**LCR TIME OF DAY ROUTE TABLE NUMBER ASSIGNMENT  
CMC 427**

<b>P1</b> TRTN Time of Day Route Table Number (1 to 63)	<b>P2</b> TYOD Type of Day 1 = Weekday 2 = Holiday 3 = Special holiday 4 = Reserved	<b>P3</b> TIOD Time of Day 1 = Day 2 = Night 3 = Midnight 4 = Reserved	<b>P4</b> ARTN Area Code Route Table Number (1 to 63)
	1	1	
	1	2	
	1	3	
	2	1	
	2	2	
	2	3	
	3	1	
	3	2	
	3	3	

**NOTE:** The TRTN corresponds to P1 of CMC 423 and CMC 424. The ARTN corresponds to P1 of CMC 421. In case the TRTN is not assigned in this command, the system will recognize the TRTN as ARTN.





**SYSTEM TIME TABLE ASSIGNMENT**  
**P1: TYPE OF CALL = 1 (FIXED)**  
**CMC 511**

P2: TYOD 1 = Wkday 2 = Holiday 3 = Spec H 4 = Rsvrd	P3: TTN Number (1 to 9)	P4: TIOD 1 = Day 2 = Night 3 = Mdnit 4 = Rsvrd	P5: DTIM 0000 to 2400	P2	P3	P4	P5	P2	P3	P4	P5	P2	P3	P4	P5
1	1			2	1			3	1			4	1		
1	2			2	2			3	2			4	2		
1	3			2	3			3	3			4	3		
1	4			2	4			3	4			4	4		
1	5			2	5			3	5			4	5		
1	6			2	6			3	6			4	6		
1	7			2	7			3	7			4	7		
1	8			2	8			3	8			4	8		
1	9			2	9			3	9			4	9		

**SYSTEM HOLIDAY ASSIGNMENT  
CMC 516**

<b>P1</b> TOC - Type of Call 1 (fixed)	<b>P2</b> DOH - Day of Holiday 1 = Sunday 2 = Monday 3 = Tuesday 4 = Wednesday 5 = Thursday 6 = Friday 7 = Saturday

**SYSTEM HOLIDAY ASSIGNMENT  
CMC 516**

<p><b>P1</b> TOC - Type of Call 1 (fixed)</p>	<p><b>P2</b> DOH - Day of Holiday 1 = Sunday 2 = Monday 3 = Tuesday 4 = Wednesday 5 = Thursday 6 = Friday 7 = Saturday</p>

**SMDR OUTGOING CONNECTION SCREENING ASSIGNMENT  
CMC 500**

Parameter	Description	Data Values/Range		Input Value
P1	CO outgoing connection	0 = No SMDR	1 = SMDR (default)	
P2	Tie line outgoing connection	0 = No SMDR	1 = SMDR (default)	
P3	Account code flag	0 = SMDR on all calls regardless of account code entry (default)	1 = SMDR only on calls with account code entry	
P4	Toll call flag	0 = SMDR on toll and non-toll calls (default)	1 = SMDR on toll call only	

**SMDR CALL DURATION SCREENING ASSIGNMENT  
CMC 504**

Parameter	Description	Data Values	Default	Input Value
P1	Hours for minimum call duration before SMDR output	0 to 23 hours	0	
P2	Minutes for minimum call duration before SMDR output	0 to 59 minutes	0	
P3	Seconds for minimum call duration before SMDR output	0 to 59 seconds	0	

**SMDR TRUNK GROUP SCREENING ASSIGNMENT  
CMC 501**

<b>P1</b> Trunk Group Number	<b>P2</b> 0 = No SMDR 1 = SMDR (*)	<b>P1</b> Trunk Group Number	<b>P2</b> 0 = No SMDR 1 = SMDR (*)	<b>P1</b> Trunk Group Number	<b>P2</b> 0 = No SMDR 1 = SMDR (*)
13		28		43	
14		29		44	
15		30		45	
16		31		46	
17		32		47	
18		33		48	
19		34		49	
20		35		50	
21		36		51	
22		37		52	
23		38		53	
24		39		54	
25		40		55	
26		41		56	
27		42			

\* = Default

**SMDR STATION COR SCREENING ASSIGNMENT  
CMC 502**

<b>P1</b> Class of Restriction	<b>P2</b> 0 = No SMDR (*) 1 = SMDR
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

\* = Default

**SMDR TENANT SCREENING ASSIGNMENT  
CMC 503**

<p><b>P1</b> Tenant Group (1-63)</p>	<p><b>P2</b> 0 = No SMDR 1 = SMDR (*)</p>

\* = Default

**SMDR MODEM GROUP SCREENING ASSIGNMENT  
CMC 505**

<b>P1 Modem Group ID</b>	<b>P2 0 = No SMDR 1 = SMDR (*)</b>	<b>P1 Modem Group ID</b>	<b>P2 0 = No SMDR 1 = SMDR (*)</b>	<b>P1 Modem Group ID</b>	<b>P2 0 = No SMDR 1 = SMDR (*)</b>
01		06		11	
02		07		12	
03		08		13	
04		09		14	
05		10		15	

\* = Default



**SMDR OUTGOING DIGITS SCREENING ASSIGNMENT  
CMC 506**

<b>P1</b> FLAG - Output ID Flag 0 = SMDR output unnecessary 1 = SMDR output necessary	<b>P2</b> CD-Dialing Code (1 to 10 digits)	<b>P1</b> FLAG - Output ID Flag 0 = SMDR output unnecessary 1 = SMDR output necessary	<b>P2</b> CD-Dialing Code (1 to 10 digits)

**DATA STATION ASSIGNMENT  
CMC 220**

**CMC 221\***

**CMC 224\***

<b>P1</b> Equipment Number	<b>P2</b> Directory Number	<b>P3</b> Data Term Type	<b>P4</b> Voice Station DN	<b>P2</b> Day COS	<b>P3</b> Night COS	<b>P4</b> Day COR	<b>P5</b> Night COR	<b>P2</b> Oper. Mode	<b>P3</b> Dial Mode	<b>P4</b> Tenant Number	<b>P5</b> SMDR Group No.	<b>P6</b> Modem Type

\*P1 = Directory number for Data Terminal

**NOTE:** Refer to Appendix B for further information to determine Equipment Number.

**DATA STATION ASSIGNMENT**

**CMC 220**

**CMC 221\***

**CMC 224\***

P1 Equipment Number	P2 Directory Number	P3 Data Term Type	P4 Voice Station DN	P2 Day COS	P3 Night COS	P4 Day COR	P5 Night COR	P2 Oper. Mode	P3 Dial Mode	P4 Tenant Number	P5 SMDR Group No.	P6 Modem Type

\*P1 = Directory number for Data Terminal

**DATA STATION ASSIGNMENT**

**CMC 220**

**CMC 221\***

**CMC 224\***

<b>P1</b> Equipment Number	<b>P2</b> Directory Number	<b>P3</b> Data Term Type	<b>P4</b> Voice Station DN	<b>P2</b> Day COS	<b>P3</b> Night COS	<b>P4</b> Day COR	<b>P5</b> Night COR	<b>P2</b> Oper. Mode	<b>P3</b> Dial Mode	<b>P4</b> Tenant Number	<b>P5</b> SMDR Group No.	<b>P6</b> Modem Type

\*P1 = Directory number for Data Terminal

**DATA STATION ASSIGNMENT**  
**CMC 220**

**CMC 221\***

**CMC 224\***

P1 Equipment Number	P2 Directory Number	P3 Data Term Type	P4 Voice Station DN	P2 Day COS	P3 Night COS	P4 Day COR	P5 Night COR	P2 Oper. Mode	P3 Dial Mode	P4 Tenant Number	P5 SMDR Group No.	P6 Modem Type

\*P1 = Directory number for Data Terminal

**DATA STATION ASSIGNMENT  
CMC 222**

**CMC 223\***

P1 Directory Number	P2 Data Term. Speed	P3 Sync. Comm.	P4 Stop Bit and Word Length	P5 Parity	P6 Echoplex	P2 Call Control Mode	P3 RS-232C Signal Mode 1	P4 RS-232C Signal Mode 2

\*P1 = Directory number for Data Terminal

**DATA STATION ASSIGNMENT**  
**CMC 222**

**CMC 223\***

<b>P1</b> Directory Number	<b>P2</b> Data Term. Speed	<b>P3</b> Sync. Comm.	<b>P4</b> Stop Bit and Word Length	<b>P5</b> Parity	<b>P6</b> Echoplex	<b>P2</b> Call Control Mode	<b>P3</b> RS-232C Signal Mode 1	<b>P4</b> RS-232C Signal Mode 2

\*P1 = Directory number for Data Terminal

**DATA STATION ASSIGNMENT  
CMC 222**

**CMC 223\***

<b>P1 Directory Number</b>	<b>P2 Data Term. Speed</b>	<b>P3 Sync. Comm.</b>	<b>P4 Stop Bit and Word Length</b>	<b>P5 Parity</b>	<b>P6 Echoplex</b>	<b>P2 Call Control Mode</b>	<b>P3 RS-232C Signal Mode 1</b>	<b>P4 RS-232C Signal Mode 2</b>

\*P1 = Directory number for Data Terminal











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**HOTEL/MOTEL APPLICATION  
CALL CHARGE TGN SCREENING ASSIGNMENT  
CMC 350**

P1 Trunk Group Number	P2 0 = No Call Chrg. (*) 1 = Call Chrg.	P1 Trunk Group Number	P2 0 = No Call Chrg. (*) 1 = Call Chrg.	P1 Trunk Group Number	P2 0 = No Call Chrg. (*) 1 = Call Chrg.
13		24		55	
14		25		56	
15		26			
16		27			
17		28			
18		29			
19		30			
20		51			
21		52			
22		53			
23		54			

\* = Default







**CALL CHARGE BILLING RATE ASSIGNMENT (CALL CHARGES)**  
**CMC 352**

<b>P1</b> Billing Rate Table Number	<b>P2</b> Initial Time (1 - 400 seconds)	<b>P3</b> Initial Charge (0 - 255 cents)	<b>P4</b> Additional Time (1 - 400 seconds)	<b>P5</b> Additional Charge (0 - 255 cents)
1				
2				
3				
4				
5				
6				

**SPECIAL SERVICE CODES AND SERVICE CALL ROUTING**  
**CMC 353**  
**SPECIAL SERVICE CODES**

<b>P1</b> Feature Access Code	<b>P2</b> Special Service Code	<b>P3</b> Destination Station No.
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	

**SPECIAL SERVICE CODES AND SERVICE CALL ROUTING**  
**CMC 353**  
**SERVICE CALL ROUTING CODES**

P1 Feature Access Code	P2 Serv Call Routing	P3 Destination Station No.	P4 Guest Room Floor No(s).				
	2						
	2						
	2						
	2						
	2						
	2						
	2						
	2						
	2						
	2						

**ROOM STATUS INDICATOR ASSIGNMENT  
(30 BUTTON STATION DSS INSTRUMENT)  
CMC 354**

Parameter	Description	Input Value
P1	Room status indicator number	
P2	Type of DSS/BLF	4
P3	Equipment number for this room status indicator	
P4	Screen number (optional parameter)	

### ROOM STATUS INDICATOR BUTTON ASSIGNMENT CMC 355

P1 = 30 button room status indicator number \_\_\_\_\_

P2 <u>21</u>	P2 <u>22</u>	P2 <u>23</u>	P2 <u>24</u>	P2 <u>25</u>	P2 <u>26</u>	P2 <u>27</u>	P2 <u>28</u>	P2 <u>29</u>	P2 <u>30</u>
P3 ____	P3 ____	P3 ____	P3 ____	P3 ____	P3 ____	P3 ____	P3 ____	P3 ____	P3 ____
P2 <u>11</u>	P2 <u>12</u>	P2 <u>13</u>	P2 <u>14</u>	P2 <u>15</u>	P2 <u>16</u>	P2 <u>17</u>	P2 <u>18</u>	P2 <u>19</u>	P2 <u>20</u>
P3 ____	P3 ____	P3 ____	P3 ____	P3 ____	P3 ____	P3 ____	P3 ____	P3 ____	P3 ____
P2 <u>  1</u>	P2 <u>  2</u>	P2 <u>  3</u>	P2 <u>  4</u>	P2 <u>  5</u>	P2 <u>  6</u>	P2 <u>  7</u>	P2 <u>  8</u>	P2 <u>  9</u>	P2 <u> 10</u>
P3 ____	P3 ____	P3 ____	P3 ____	P3 ____	P3 ____	P3 ____	P3 ____	P3 ____	P3 ____

**ROOM STATUS INDICATOR ASSIGNMENT  
(40 BUTTON STATION DSS INSTRUMENT)  
CMC 354**

Parameter	Description	Input Value
<b>P1</b>	Room status indicator number	
<b>P2</b>	Type of DSS/BLF	1
<b>P3</b>	Equipment number for this room status indicator	
<b>P4</b>	Screen number (optional parameter)	

### ROOM STATUS INDICATOR BUTTON ASSIGNMENT CMC 355

P1 = 40 button room status indicator number \_\_\_\_\_

P2 <u>31</u>	P2 <u>32</u>	P2 <u>33</u>	P2 <u>34</u>	P2 <u>35</u>	P2 <u>36</u>	P2 <u>37</u>	P2 <u>38</u>	P2 <u>39</u>	P2 <u>40</u>
P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____
P2 <u>21</u>	P2 <u>22</u>	P2 <u>23</u>	P2 <u>24</u>	P2 <u>25</u>	P2 <u>26</u>	P2 <u>27</u>	P2 <u>28</u>	P2 <u>29</u>	P2 <u>30</u>
P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____
P2 <u>11</u>	P2 <u>12</u>	P2 <u>13</u>	P2 <u>14</u>	P2 <u>15</u>	P2 <u>16</u>	P2 <u>17</u>	P2 <u>18</u>	P2 <u>19</u>	P2 <u>20</u>
P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____
P2 <u>1</u>	P2 <u>2</u>	P2 <u>3</u>	P2 <u>4</u>	P2 <u>5</u>	P2 <u>6</u>	P2 <u>7</u>	P2 <u>8</u>	P2 <u>9</u>	P2 <u>10</u>
P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____	P3 _____

**ROOM STATUS INDICATOR ASSIGNMENT  
(80 BUTTON STATION DSS INSTRUMENT)  
CMC 354**

Parameter	Description	Input Value
P1	Room status indicator number	
P2	Type of DSS/BLF	2
P3	Equipment number for this room status indicator	
P4	Screen number (optional parameter)	



### ROOM STATUS INDICATOR BUTTON ASSIGNMENT CMC 355

P1 = 80 button room status indicator number \_\_\_\_\_

P2 <u>71</u> P3 _____	P2 <u>72</u> P3 _____	P2 <u>73</u> P3 _____	P2 <u>74</u> P3 _____	P2 <u>75</u> P3 _____	P2 <u>76</u> P3 _____	P2 <u>77</u> P3 _____	P2 <u>78</u> P3 _____	P2 <u>79</u> P3 _____	P2 <u>80</u> P3 _____
P2 <u>61</u> P3 _____	P2 <u>62</u> P3 _____	P2 <u>63</u> P3 _____	P2 <u>64</u> P3 _____	P2 <u>65</u> P3 _____	P2 <u>66</u> P3 _____	P2 <u>67</u> P3 _____	P2 <u>68</u> P3 _____	P2 <u>69</u> P3 _____	P2 <u>70</u> P3 _____
P2 <u>51</u> P3 _____	P2 <u>52</u> P3 _____	P2 <u>53</u> P3 _____	P2 <u>54</u> P3 _____	P2 <u>55</u> P3 _____	P2 <u>56</u> P3 _____	P2 <u>57</u> P3 _____	P2 <u>58</u> P3 _____	P2 <u>59</u> P3 _____	P2 <u>60</u> P3 _____
P2 <u>41</u> P3 _____	P2 <u>42</u> P3 _____	P2 <u>43</u> P3 _____	P2 <u>44</u> P3 _____	P2 <u>45</u> P3 _____	P2 <u>46</u> P3 _____	P2 <u>47</u> P3 _____	P2 <u>48</u> P3 _____	P2 <u>49</u> P3 _____	P2 <u>50</u> P3 _____
P2 <u>31</u> P3 _____	P2 <u>32</u> P3 _____	P2 <u>33</u> P3 _____	P2 <u>34</u> P3 _____	P2 <u>35</u> P3 _____	P2 <u>36</u> P3 _____	P2 <u>37</u> P3 _____	P2 <u>38</u> P3 _____	P2 <u>39</u> P3 _____	P2 <u>40</u> P3 _____
P2 <u>21</u> P3 _____	P2 <u>22</u> P3 _____	P2 <u>23</u> P3 _____	P2 <u>24</u> P3 _____	P2 <u>25</u> P3 _____	P2 <u>26</u> P3 _____	P2 <u>27</u> P3 _____	P2 <u>28</u> P3 _____	P2 <u>29</u> P3 _____	P2 <u>30</u> P3 _____
P2 <u>11</u> P3 _____	P2 <u>12</u> P3 _____	P2 <u>13</u> P3 _____	P2 <u>14</u> P3 _____	P2 <u>15</u> P3 _____	P2 <u>16</u> P3 _____	P2 <u>17</u> P3 _____	P2 <u>18</u> P3 _____	P2 <u>19</u> P3 _____	P2 <u>20</u> P3 _____
P2 <u>1</u> P3 _____	P2 <u>2</u> P3 _____	P2 <u>3</u> P3 _____	P2 <u>4</u> P3 _____	P2 <u>5</u> P3 _____	P2 <u>6</u> P3 _____	P2 <u>7</u> P3 _____	P2 <u>8</u> P3 _____	P2 <u>9</u> P3 _____	P2 <u>10</u> P3 _____

**ROOM STATUS INDICATOR ASSIGNMENT  
(40 BUTTON - ATTENDANT DSS)**

**CMC 354**

Parameter	Description	Input Value
<b>P1</b>	Room status indicator no.	
<b>P2</b>	Type of DSS/BLF	1
<b>P3</b>	Equipment number	
<b>P4</b>	Screen number (optional parameter)	

**CMC 355** P1 = Room status indicator number

<u>P2 10</u> <u>P3</u> _____	<u>P2 20</u> <u>P3</u> _____	<u>P2 30</u> <u>P3</u> _____	<u>P2 40</u> <u>P3</u> _____
<u>P2 9</u> <u>P3</u> _____	<u>P2 19</u> <u>P3</u> _____	<u>P2 29</u> <u>P3</u> _____	<u>P2 39</u> <u>P3</u> _____
<u>P2 8</u> <u>P3</u> _____	<u>P2 18</u> <u>P3</u> _____	<u>P2 28</u> <u>P3</u> _____	<u>P2 38</u> <u>P3</u> _____
<u>P2 7</u> <u>P3</u> _____	<u>P2 17</u> <u>P3</u> _____	<u>P2 27</u> <u>P3</u> _____	<u>P2 37</u> <u>P3</u> _____
<u>P2 6</u> <u>P3</u> _____	<u>P2 16</u> <u>P3</u> _____	<u>P2 26</u> <u>P3</u> _____	<u>P2 36</u> <u>P3</u> _____
<u>P2 5</u> <u>P3</u> _____	<u>P2 15</u> <u>P3</u> _____	<u>P2 25</u> <u>P3</u> _____	<u>P2 35</u> <u>P3</u> _____
<u>P2 4</u> <u>P3</u> _____	<u>P2 14</u> <u>P3</u> _____	<u>P2 24</u> <u>P3</u> _____	<u>P2 34</u> <u>P3</u> _____
<u>P2 3</u> <u>P3</u> _____	<u>P2 13</u> <u>P3</u> _____	<u>P2 23</u> <u>P3</u> _____	<u>P2 33</u> <u>P3</u> _____
<u>P2 2</u> <u>P3</u> _____	<u>P2 12</u> <u>P3</u> _____	<u>P2 22</u> <u>P3</u> _____	<u>P2 32</u> <u>P3</u> _____
<u>P2 1</u> <u>P3</u> _____	<u>P2 11</u> <u>P3</u> _____	<u>P2 21</u> <u>P3</u> _____	<u>P2 31</u> <u>P3</u> _____

**ROOM STATUS INDICATOR ASSIGNMENT  
(80 BUTTON INSTRUMENT - ATTENDANT DSS)  
CMC 354**

Parameter	Description	Input Value
<b>P1</b>	Room status indicator number	
<b>P2</b>	Type of DSS/BLF	2
<b>P3</b>	Equipment number for this room status indicator	
<b>P4</b>	Screen number (optional parameter)	

**ROOM STATUS INDICATOR BUTTON ASSIGNMENT  
CMC 355**

P1 = 80 button room status indicator number \_\_\_\_\_

<u>P2 10</u> P3 _____	<u>P2 20</u> P3 _____	<u>P2 30</u> P3 _____	<u>P2 40</u> P3 _____	<u>P2 50</u> P3 _____	<u>P2 60</u> P3 _____	<u>P2 70</u> P3 _____	<u>P2 80</u> P3 _____
<u>P2 9</u> P3 _____	<u>P2 19</u> P3 _____	<u>P2 29</u> P3 _____	<u>P2 39</u> P3 _____	<u>P2 49</u> P3 _____	<u>P2 59</u> P3 _____	<u>P2 69</u> P3 _____	<u>P2 79</u> P3 _____
<u>P2 8</u> P3 _____	<u>P2 18</u> P3 _____	<u>P2 28</u> P3 _____	<u>P2 38</u> P3 _____	<u>P2 48</u> P3 _____	<u>P2 58</u> P3 _____	<u>P2 68</u> P3 _____	<u>P2 78</u> P3 _____
<u>P2 7</u> P3 _____	<u>P2 17</u> P3 _____	<u>P2 27</u> P3 _____	<u>P2 37</u> P3 _____	<u>P2 47</u> P3 _____	<u>P2 57</u> P3 _____	<u>P2 67</u> P3 _____	<u>P2 77</u> P3 _____
<u>P2 6</u> P3 _____	<u>P2 16</u> P3 _____	<u>P2 26</u> P3 _____	<u>P2 36</u> P3 _____	<u>P2 46</u> P3 _____	<u>P2 56</u> P3 _____	<u>P2 66</u> P3 _____	<u>P2 76</u> P3 _____
<u>P2 5</u> P3 _____	<u>P2 15</u> P3 _____	<u>P2 25</u> P3 _____	<u>P2 35</u> P3 _____	<u>P2 45</u> P3 _____	<u>P2 55</u> P3 _____	<u>P2 65</u> P3 _____	<u>P2 75</u> P3 _____
<u>P2 4</u> P3 _____	<u>P2 14</u> P3 _____	<u>P2 24</u> P3 _____	<u>P2 34</u> P3 _____	<u>P2 44</u> P3 _____	<u>P2 54</u> P3 _____	<u>P2 64</u> P3 _____	<u>P2 74</u> P3 _____
<u>P2 3</u> P3 _____	<u>P2 13</u> P3 _____	<u>P2 23</u> P3 _____	<u>P2 33</u> P3 _____	<u>P2 43</u> P3 _____	<u>P2 53</u> P3 _____	<u>P2 63</u> P3 _____	<u>P2 73</u> P3 _____
<u>P2 2</u> P3 _____	<u>P2 12</u> P3 _____	<u>P2 22</u> P3 _____	<u>P2 32</u> P3 _____	<u>P2 42</u> P3 _____	<u>P2 52</u> P3 _____	<u>P2 62</u> P3 _____	<u>P2 72</u> P3 _____
<u>P2 1</u> P3 _____	<u>P2 11</u> P3 _____	<u>P2 21</u> P3 _____	<u>P2 31</u> P3 _____	<u>P2 41</u> P3 _____	<u>P2 51</u> P3 _____	<u>P2 61</u> P3 _____	<u>P2 71</u> P3 _____

**ROOM STATUS INDICATOR ASSIGNMENT  
(100 BUTTON STATION DSS INSTRUMENT)  
CMC 354**

Parameter	Description	Input Value
P1	Room status indicator number	
P2	Type of DSS/BLF	3
P3	Equipment number for this room status indicator	
P4	Screen number (optional parameter)	

**ROOM STATUS INDICATOR BUTTON ASSIGNMENT  
CMC 355**

P1 = 100 button room status indicator number

P2 <u>91</u> P3 _____	P2 <u>92</u> P3 _____	P2 <u>93</u> P3 _____	P2 <u>94</u> P3 _____	P2 <u>95</u> P3 _____	P2 <u>96</u> P3 _____	P2 <u>97</u> P3 _____	P2 <u>80</u> P3 _____	P2 <u>99</u> P3 _____	P2 <u>100</u> P3 _____
P2 <u>81</u> P3 _____	P2 <u>82</u> P3 _____	P2 <u>83</u> P3 _____	P2 <u>84</u> P3 _____	P2 <u>85</u> P3 _____	P2 <u>86</u> P3 _____	P2 <u>87</u> P3 _____	P2 <u>79</u> P3 _____	P2 <u>89</u> P3 _____	P2 <u>90</u> P3 _____
P2 <u>71</u> P3 _____	P2 <u>72</u> P3 _____	P2 <u>73</u> P3 _____	P2 <u>74</u> P3 _____	P2 <u>75</u> P3 _____	P2 <u>76</u> P3 _____	P2 <u>77</u> P3 _____	P2 <u>78</u> P3 _____	P2 <u>79</u> P3 _____	P2 <u>80</u> P3 _____
P2 <u>61</u> P3 _____	P2 <u>62</u> P3 _____	P2 <u>63</u> P3 _____	P2 <u>64</u> P3 _____	P2 <u>65</u> P3 _____	P2 <u>66</u> P3 _____	P2 <u>67</u> P3 _____	P2 <u>68</u> P3 _____	P2 <u>69</u> P3 _____	P2 <u>70</u> P3 _____
P2 <u>51</u> P3 _____	P2 <u>52</u> P3 _____	P2 <u>53</u> P3 _____	P2 <u>54</u> P3 _____	P2 <u>55</u> P3 _____	P2 <u>56</u> P3 _____	P2 <u>57</u> P3 _____	P2 <u>58</u> P3 _____	P2 <u>59</u> P3 _____	P2 <u>60</u> P3 _____
P2 <u>41</u> P3 _____	P2 <u>42</u> P3 _____	P2 <u>43</u> P3 _____	P2 <u>44</u> P3 _____	P2 <u>45</u> P3 _____	P2 <u>46</u> P3 _____	P2 <u>47</u> P3 _____	P2 <u>48</u> P3 _____	P2 <u>49</u> P3 _____	P2 <u>50</u> P3 _____
P2 <u>31</u> P3 _____	P2 <u>32</u> P3 _____	P2 <u>33</u> P3 _____	P2 <u>34</u> P3 _____	P2 <u>35</u> P3 _____	P2 <u>36</u> P3 _____	P2 <u>37</u> P3 _____	P2 <u>38</u> P3 _____	P2 <u>39</u> P3 _____	P2 <u>40</u> P3 _____
P2 <u>21</u> P3 _____	P2 <u>22</u> P3 _____	P2 <u>23</u> P3 _____	P2 <u>24</u> P3 _____	P2 <u>25</u> P3 _____	P2 <u>26</u> P3 _____	P2 <u>27</u> P3 _____	P2 <u>28</u> P3 _____	P2 <u>29</u> P3 _____	P2 <u>30</u> P3 _____
P2 <u>11</u> P3 _____	P2 <u>12</u> P3 _____	P2 <u>13</u> P3 _____	P2 <u>14</u> P3 _____	P2 <u>15</u> P3 _____	P2 <u>16</u> P3 _____	P2 <u>17</u> P3 _____	P2 <u>18</u> P3 _____	P2 <u>19</u> P3 _____	P2 <u>20</u> P3 _____
P2 <u>1</u> P3 _____	P2 <u>2</u> P3 _____	P2 <u>3</u> P3 _____	P2 <u>4</u> P3 _____	P2 <u>5</u> P3 _____	P2 <u>6</u> P3 _____	P2 <u>7</u> P3 _____	P2 <u>8</u> P3 _____	P2 <u>9</u> P3 _____	P2 <u>10</u> P3 _____

**HOTEL/MOTEL PRINTER ASSIGNMENT  
CMC 356**

<b>P1</b> Printer Number	<b>P2</b> 4CHT Equip. No.	<b>P3</b> DTA/DIU Dir. No.	<b>P2</b> Message ID	<b>P3</b> FDC Sta. No.
1				
2				

\*CMC 357, P1 = Printer number 1 or 2

**HOTEL/MOTEL PRINT OUT MESSAGE  
ALLOCATION  
CMC 357\***

**HOTEL/MOTEL PARAMETER ASSIGNMENT  
CMC 358**

P1	Identification	Available Values	P2 New Value
1	Print out wake-up registration on printer	0 = Do not print out 1 = Print out (*)	
2	Print out wake-up cancellations on printer	0 = Do not print out 1 = Print out (*)	
3	Print out wake-up answered	0 = Do not print out 1 = Print out (*)	
4	Print out wake-up no answer	0 = Do not print out 1 = Print out (*)	
5	Print out when call charge is added to guest room	0 = Do not print out 1 = Print out (*)	
6	Print out when call charge is activated for guest room	0 = Do not print out 1 = Print out (*)	
7	Print out when call charge is verified for a vacant room	0 = Do not print out 1 = Print out (*)	
8	When room status is changed to vacant, automatically apply "need clean up" state	0 = Do not apply clean up 1 = Apply clean up (*)	
9	Display guest room "line lockout" on the room status indicator	0 = Do not display 1 = Display (*)	
10	Display a wake-up no answer condition on the room status indicator	0 = Do not display 1 = Display (*)	

\* This indicates the default value.



**HOTEL/MOTEL PARAMETER ASSIGNMENT (Cont'd)**  
**CMC 358**

P1	Identification	Available Values	P2 New Value
11	Display do-not-disturb condition on the room status indicator	0 = Do not display 1 = Display (*)	
12	Should room-to-room calling be allowed or denied	0 = Allowed (*) 1 = Denied	
13	When room status is changed to vacant, should incoming station calls be allowed	0 = Allowed 1 = Denied (*)	
14	When room status is changed to vacant, should outgoing trunk calls be allowed	0 = Allowed 1 = Denied (*)	
15	If service call routing is activated in the system, establish the base floor number	1 to 99 (Default = 1)	
16	Will wake-up be a continuous success tone or music source	0 = Success tone (*) 1 = Music source	
17	Indicate needs clean-up for occupied room on Room Status Indicator	0 = Do not apply 1 = Apply (*)	
18	FDC menu display (room information for multi-language wake-up (RINF))	0 = Do not display 1 = Display (*)	
19 - 99	RESERVED	NONE	DO NOT CHANGE

\* This indicates the default value.

**PAIRED STATION/ATTENDANT CONSOLE FOR HOTEL SYSTEM ASSIGNMENT  
CMC 359**

Parameter	Description	Input Value
<b>P1</b>	Station DN - or - ATT access code + ATT No.	

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**MULTI-LANGUAGE DISPLAY CHARACTER ASSIGNMENT  
CMC 318**

<b>P1</b> Type of Message	<b>P2</b> Message ID	<b>P3</b> Character 1	<b>P4</b> Character 2	<b>P5</b> Max. Length of Character

**MAKE BUSY ASSIGNMENT  
CMC 701**

P1 Equipment Number	P2 0 = Release make-busy (default) 1 = Busy-out the circuit Blank = Not installed

**NOTE:** Refer to Appendix B for further information to determine Equipment Number.

**MASTER CONTROL TELEPHONE (MCT) ASSIGNMENT  
CMC 702**

<b>P1</b> Master Control Number	<b>P2</b> Station/Attendant Directory Number
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

**MASTER CONTROL TELEPHONE (MCT) ASSIGNMENT  
CMC 702**

<b>P1</b> Master Control Number	<b>P2</b> Station/Attendant Directory Number
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

**SECURITY CODE ASSIGNMENT  
CMC 704**

Low-level = #380  
High-level = #803

**P1** = Enter the low-level security access code, 4 digits (0-9, #, ·).  
**P2** = Enter the high-level security access code, 4 digits (0-9, #, ·).

Parameter	Description	Default Value	Input Value
<b>P1</b>	Low-level security code	#380	
<b>P2</b>	High-level security code	#803	



**RS-232C PORT CONFIGURATION ASSIGNMENT  
CMC 900**

<b>P1</b> Port Number	<b>P2</b> Bit Rate	<b>P3</b> Parity	<b>P4</b> Character Length	<b>P5</b> Stop Bit	<b>P6</b> Echo Back
0					

<b>P1</b> Port Number	<b>P2</b> Bit Rate	<b>P3</b> Parity	<b>P4</b> Character Length	<b>P5</b> Stop Bit	<b>P6</b> Echo Back
1					

**SMDR PRINTER CONTROL  
CMC 901**

<b>P1</b> Port Number	<b>P2</b> X-on/X-off Characters	<b>P3</b> Power Control Characters	<b>P4</b> Power On Timing	<b>P5</b> Power Off Timing	<b>P6</b> Printout Format
0					

<b>P1</b> Port Number	<b>P2</b> X-on/X-off Characters	<b>P3</b> Power Control Characters	<b>P4</b> Power On Timing	<b>P5</b> Power Off Timing	<b>P6</b> Printout Format
1					

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**CARD SLOTS**

The Basic cabinet has ten card slots available for line, trunk, and other cards. Expansion cabinets two, three, and four each have eleven card slots available. Each card slot has a capacity of sixteen ports. Refer to Table B-1 for card placement data.

**Table B-1. Card Slot Usage**

Physical Slot	00	01	02	03	04	05	06	07	08	09	10 <sup>1</sup>
Logical Slot <sup>2</sup>	0 1	2 3	4 5	6 7	8 9	10 11	12 13	14 15	16	17	18
16DTC	X	X	X	X	X	X	X	X	3	-	-
16SLC	X	X	X	X	X	X	X	X	3	-	-
8DTC	4	4	5	4	4	5	4	5	5	5	-
8EKC	X	X	X	X	X	X	X	X	X	X	-
8SLC	X	X	X	X	X	X	X	X	X	X	-
8PDL	X	X	X	X	X	X	X	X	X	X	-
8BWC	X	X	X	X	X	X	X	X	X	X	-
4BWC	X	X	X	X	X	X	X	X	X	X	-
6DID	X	X	X	X	X	X	X	X	X	X	-
4TE4	X	X	X	X	X	X	X	X	X	X	-
2TE4	X	X	X	X	X	X	X	X	X	X	-
2TTE	X	X	X	X	X	X	X	X	X	X	-
2TTL	X	X	X	X	X	X	X	X	X	X	-
4DMR	X	X	X	X	X	X	X	X	X	X	10
4CHT	X	X	X	X	X	X	X	X	X	X	-
2APIA	X	X	X	X	X	X	X	X	X	X	-
24T1	6	7	-	6	7	-	6	8	-	-	-
23PT	6	7	-	6	7	-	6	8	-	-	-
RVAC	X	X	X	X	X	X	X	X	X	X	-
CLKS	-	-	-	-	-	-	-	-	-	9	-
CACC/H	X	X	X	X	X	X	X	X	X	X	10

Refer to next page for explanation of notes.



**Notes for  
Table B-1**

- Note 1 Physical slot 10 is not available in the Basic cabinet (cabinet 0).
- Note 2 When a 2-, 4-, 6-, 8-circuit card, a 24T1 card, or a 23PT card is assigned, the logical slot number shown as bold in the table is used for the equipment numbers. An 8EKC card assigned to physical slot 2 of cabinet 2 (the first expansion cabinet) will use equipment numbers 2040 to 2047. An 8EKC card assigned to physical slot 1 of cabinet 2 will use equipment numbers 2030 to 2037. The equipment numbers of a 24T1 card in physical slot 3 of cabinet 2 are 2060 to 2067, 2070 to 2077, and 2080 to 2087.
- When a 16-circuit card is assigned, two logical slot numbers are used. If a 16DTC card is installed in physical slot 2 of the Basic (first) cabinet, the equipment numbers are 0040 to 0047, and 0050 to 0057.
- Note 3 When a 16-circuit card (16DTC or 16SLC) is installed in physical slot 8, physical slot 9 must be empty. The exceptions to this rule are the CLKS or the Call manager card(s).
- Note 4 The first six circuits of the 8DTC card can be used for simultaneous voice and data on CSD phones.
- Note 5 Simultaneous voice and data is not available for CSD with DTA phones.
- Note 6 When a 24T1 or 23PT card is installed in physical slot 0, 3 or 6, the next physical slot (1, 4, or 7) can be used only for a 1-, 4-, 6-, or 8-circuit card or another 24T1 or 23PT card.
- Note 7 When either a 24T1 or 23PT card is installed in physical slot 1 or 4, the next physical slot (2 and 5) must be empty. **Clock extraction can be made from the basic (0) cabinet only.**
- Note 8 When either a 24T1 or a 23PT card is installed in physical slot 7, the next three physical slots (8, 9, and 10) must be empty.
- Note 9 CLKS card can be installed only in physical slot 9 of the Basic cabinet.
- Note 10 This card slot is used in the Expansion cabinet(s) only.

**Logical Card Slots**

Each card slot in a Series 3 cabinet has a maximum capacity of 16 circuits. These 16 circuits are recognized in the data base as two 8-circuit slots. Each PHYSICAL card slot has two LOGICAL card slots. The circuits in each logical slot are numbered 0 to 7. Physical card slot 00 has 16 circuits. Physical card slot 00 is shown in the data base as logical slot 00, circuits 0 to 7 and logical slot 01, circuits 0 to 7. Refer to Table B-1 for this physical to logical card slot relationship.

**EQUIPMENT NUMBERS**

In the Command Codes (CMC) used for data base programming of the Series 3 system, circuits on the interface cards are referred to by unique equipment numbers.

Equipment numbers (ENs) are four digits in length. The EN is always in the pattern XYYZ.

- X = Cabinet number: 0 to 3.
- YY = Logical slot number: 00 to 17 (or 18).
- Z = Circuit number: 0 to 7.

The cabinet numbers used in the EN are:

- 0 = Basic cabinet.
- 1 = First expansion (second) cabinet.
- 2 = Second expansion cabinet.
- 3 = Third expansion cabinet.

Equipment numbers for each physical card slot are shown in Table B-2. Notice that in physical card slots 08 and 09, eight circuits are available. Card slot 10 has four circuits available. Card slot 10 is not available in the Basic cabinet.

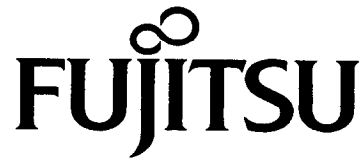
**Table B-2. Equipment Numbers**

Slot Number	00	01	02	03	04	05	06	07	08	09	10
Cabinet 0 (Basic Cabinet)	0000 to 0017	0020 to 0037	0040 to 0057	0060 to 0077	0080 to 0097	0100 to 0117	0120 to 0137	0140 to 0157	0160 to 0167	0170 to 0177	N/A
Cabinet 1	1000 to 1017	1020 to 1037	1040 to 1057	1060 to 1077	1080 to 1097	1100 to 1117	1120 to 1137	1140 to 1157	1160 to 1167	1170 to 1177	1180 to 1183
Cabinet 2	2000 to 2017	2020 to 2037	2040 to 2057	2060 to 2077	2080 to 2097	2100 to 2117	2120 to 2137	2140 to 2157	2160 to 2167	2170 to 2177	2180 to 2183
Cabinet 3	3000 to 3017	3020 to 3037	3040 to 3057	3060 to 3077	3080 to 3097	3100 to 3117	3120 to 3137	3140 to 3157	3160 to 3167	3170 to 3177	3180 to 3183

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FUJITSU BUSINESS  
COMMUNICATION SYSTEMS

# *SERIES 3*

## MAINTENANCE MANUAL

### Package 2

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## OVERVIEW

This document covers maintenance practices and procedures for the Fujitsu Business Communication Systems Series 3. This document assumes that the user is familiar with the operating principles of telecommunications systems and possesses the skills required for installing, configuring, and validating those systems.

This document is intended to provide information for commonly occurring system-level, peripheral, and card-specific fault conditions. If the technician encounters a fault condition not covered by this document, the Technical Assistance Center (TAC) at Fujitsu Business Communication Systems should be contacted.

## REFERENCE DOCUMENTATION

The system is complemented by a complete list of reference documentation. The following is a list of documents available or necessary:

### Fujitsu Documentation

**System Description/Features (Section 123-001-002).** Describes in detail all of the features available in the system.

**Applications Manual (Section 123-015-002).** Used to assist in the installation programming and maintenance of the system.

**Attendant Console User Guide (Section 123-040-002).** Describes basic Attendant Console operating instructions.

**Digital Station User Guide (Section 123-050-002).** Describes Digital Station operating instructions.

**CT-10/20/30 User Guide (Section 123-052-002).** Describes CT-10, CT-20, and CT-30 telephone operating instructions.

**Installation Manual (Section 123-056-002).** Provides complete instructions for installing the Series 3 system.

**Single Line Telephone User Guide (Section 123-063-002).** Describes single line telephone operating instructions.

**Data Base Manual (Section 123-080-002).** Provides information necessary to interface with the system, including implementation procedures for each command.

**Site Log Manual (123-200-002).** Provides configuration forms used for entering data base information.

**Industry Standards/  
Documents**

The following additional documents may be helpful when installing the Series 3 system:

- FCC Rules and Regulations, Part 68, and Part 15-Class A.
- EIA Standard RS-232C Interface Between Data Terminal Equipment and Data Communications Equipment Employing Serial Binary Data Interchange.
- EIA RS-464 "Private Branch Exchange Switching Equipment for Voiceband Applications."
- EIA RS-464-1 "PBX Switching Equipment for Voiceband Applications, Addendum Number 1."
- EIA PN-1429 "Proposal Addition" to RS-464.
- EIA RS-478 "Multi-Line Key Telephone Systems (KTS) for Voiceband Applications."

**FAULT ISOLATION**

The fault isolation procedure usually begins when a maintenance technician is notified of a problem. The source of the initial fault often determines the first troubleshooting steps.

This manual uses the top-down approach to fault isolation. This top-down method uses tests and diagnostics which are performed starting at the most general level. The fault isolation procedure eliminates possible causes of the fault one by one and proceeds to more specific testing. Fault isolation continues until a defective Field Replaceable Unit (FRU) is identified.

The majority of fault complaints or indications typically come from:

- Peripheral equipment users.
- Equipment cabinet indicators.

The goal of fault isolation is to quickly and efficiently find and correct system problems, minimizing downtime and maximizing user service. Figure 1-1 shows the first steps and decisions of top-down fault isolation. The flowchart directs the maintenance technician to chapter and/or sections of this document and other documents for further fault isolation procedures.

The system provides the following tools to aid in system fault isolation:

- System status alarm lamps.
- System software diagnostics.
- Peripheral equipment self-tests.

**FAULT ISOLATION (Cont'd)**

The procedures for fault isolation using the system maintenance tools and the procedures for running equipment self-tests are presented for:

- Common system-level fault conditions.
- Voice application fault conditions.
- Data application fault conditions.

Additional procedural information is provided to aid in fault isolation. References are made to other documents. For example, the Data Base Manual may need to be referenced to ensure that a user station is properly defined and enabled in the system software.

Various fault conditions and events can occur. However, the most common are user reported faults pertaining to special features that are available through proprietary digital telephones and associated data communications equipment. When diagnosing feature related faults, the maintenance technician should first refer to the Data Base Manual and ensure that the features are properly defined and enabled in the system software. If the feature is correctly defined and enabled and a fault condition still exists, use the information outlined in the flowchart in Figure 1-1 to reference appropriate material.

Figure 1-1. Overall System Maintenance Procedure

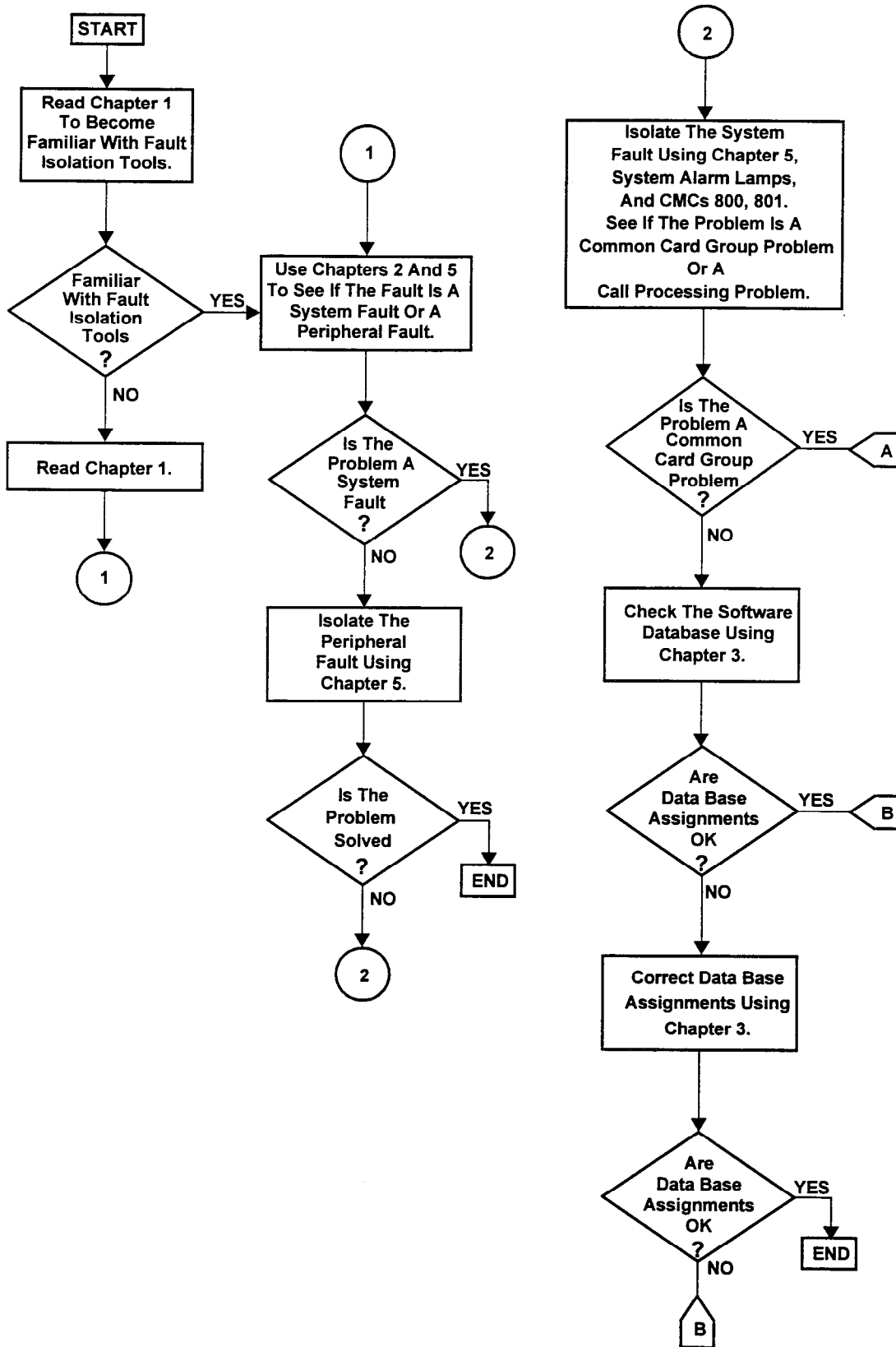
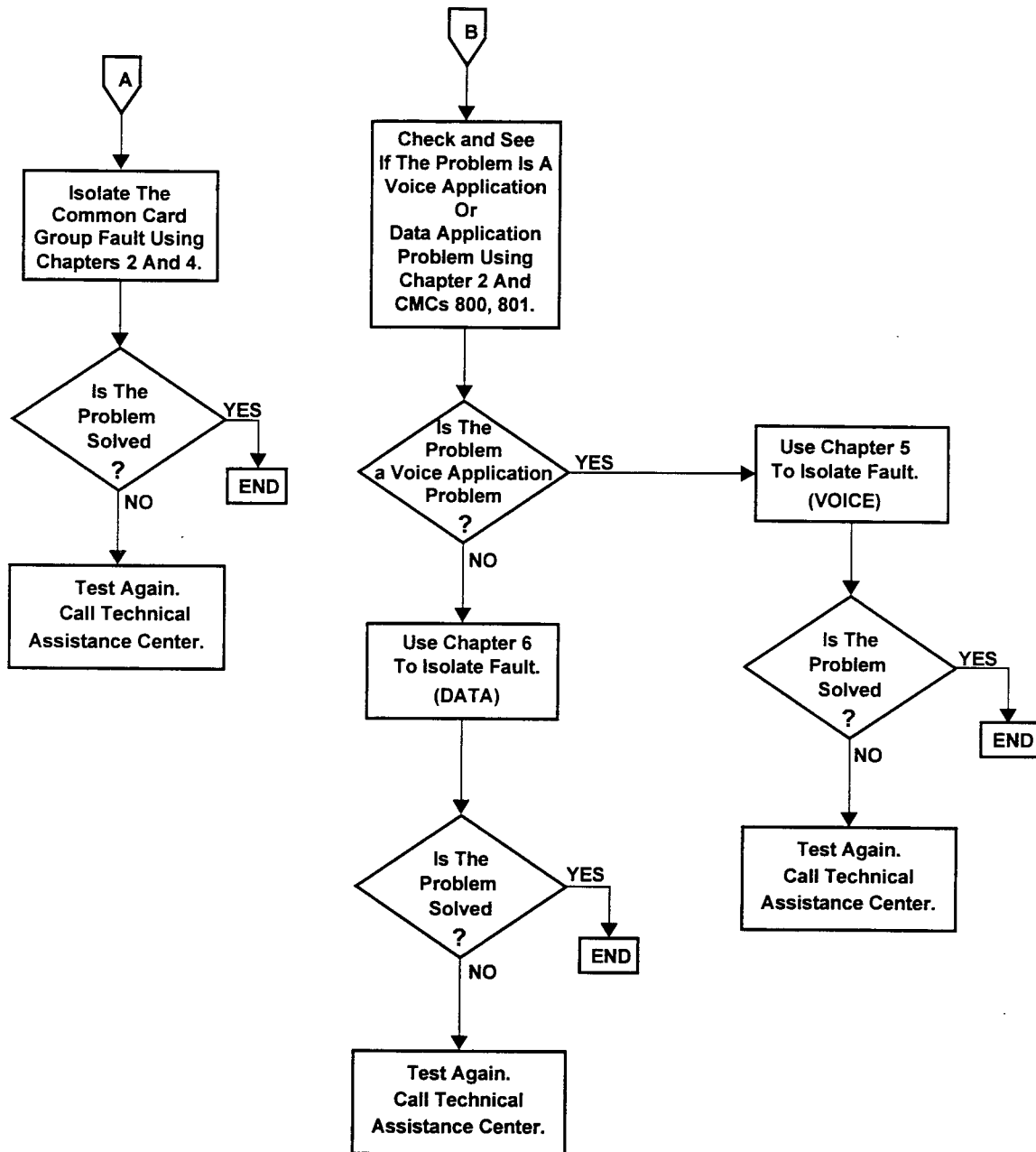


Figure 1-1. Overall System Maintenance Procedure (Cont'd)



## TYPES OF MAINTENANCE DEVICES

Diagnostic maintenance commands, data base loading, and data base storage are implemented using a system maintenance device. The following equipment units can be used as maintenance devices:

- Attendant Console (used as a Master Control Telephone).
- CT-20/30 (used as a Master Control Telephone).
- CSD digital telephone (used as a Master Control Telephone).
- DS20SD/DS32SD telephone (used as a Master Control Telephone).
- PcMP™ (IBM compatible personal computer).

Specific installation and operating procedures for these maintenance devices are contained in the Installation Manual, Data Base Manual, and applicable user guides.

### Proprietary Digital Telephone Used as a Maintenance Device

CT-20/30s, the CSD, DS20SD/DS32SD sets, and the Attendant Console can be used as maintenance devices called MCTs (Master Control Telephones). Up to twenty can be assigned. Save and load operations cannot be performed with these instruments.

### Personal Computer Used as a Maintenance Device

The switching system supports a PcMP (an IBM personal computer or IBM compatible device) as a maintenance device. The PcMP uses a software program stored on a floppy disk or the hard drive.

### Remote Maintenance Capabilities

The maintenance technician can also perform remote diagnostics using a modem link with a PcMP. If the system is equipped with the PFT (Power Failure Transfer) option, remote alarm information is also provided.

Remote connections are established by dialing-in through ordinary CO lines, DID lines, or tie lines. When making a call for remote maintenance, you must call a specific internal station number that is registered as a port for remote maintenance connection. This can be done through either:

- A direct-in line.
- A transferred-to station.

A customer-provided automatic answer modem is activated to connect to an RS-232C interface to the remote maintenance center. Refer to the Data Base Manual for specific directions after you make this connection.

**NOTE:** The cable length between the cabinet port (usually I/O #0) and the modem must be within 16 feet.

**SYSTEM ALARMS**

The system provides visual indicators of system status:

- RUN.
- ALM (Alarm).
- TO (Timer-Overflow).

The indicators are all located on the CPU (SC2P2B / SC2P2E or SC4P2B / SC4P2E) card. In addition, remote alarm indicators can be installed as an option. Major (MJ or MAJ) and minor (MN or MIN) lamps on a remote alarm indicator (customer-provided) can be installed. The major lamp corresponds to the TO lamp on the CPU card and the minor lamp corresponds to the ALM lamp.

A 6PFA card is required for the remote alarm option: (The customer-provided remote alarm device is connected to the 6PFA as described in the Installation Manual.)

The system provides additional alarm indicators on the DSS/BLF Console, Attendant Console, CT-10, CT-20, CT-30, DS20, DS20S, DS20SD, DS32SD, and CSD stations. One LED lamp can be assigned as a minor alarm indicator. The software program lights the LED when it detects a failure in system operation.

**CMC (CHANGE AND MAINTENANCE COMMANDS) AND ERROR MESSAGES**

An MCT or PcMP is used to enter CMCs for fault isolation and maintenance operations. The CMC instructs the system to run a specific test or provide information about system status.

**CMC – Command Entry and Display**

The following paragraphs provide information on CMC displays and entry summaries. Detailed information is contained in Chapters 2 and 3 of this manual and in the Data Base Manual.

CMCs are composed of three digits which are entered using the 0 through 9, \*, and # keys of the maintenance device. The abbreviations used when entering CMCs and reading the CMC display information are defined in Chapters 2 and 3 of this manual and in the Data Base Manual.

**Error Messages** Error messages are generated by the system software and displayed on the maintenance device. An error message is cleared from the display by pressing the release (RLS) key on the maintenance device. There are two types of errors:

- Common errors.
- Parameter errors.

Common error messages are generated from key stroke errors, improper security code entry, incorrect parameter entries, and absence of parameter entries. Table 1-1 lists common error codes and descriptions.

**Table 1-1. Common Errors**

ERROR CODE	DESCRIPTION
ILLEGAL	The CMC command does not exist in the program.
LOCKED	This is a high level command. The high level security code must be entered to access this table.
IGNORED	An incorrect function key was pressed.
NO PARA.	The necessary parameters were not entered.
PARA. ERR	The wrong parameter value was entered.

Parameter errors occur when an operation, such as Add/Change or Remove, is attempted but cannot be completed due to a conflict in the software. Table 1-2 lists parameter error codes and descriptions. Parameter error codes and descriptions are also included (when applicable) with each individual CMC table.

Some of the parameter errors are warning messages only. The priority of these messages are as follows:

CHK SPD → CHK KEY → CHK SLF → CHK PKG  
 HIGH → LOW



Table 1-2. Parameter Errors

ERROR CODES	DESCRIPTIONS
NOT RGTR	The specified parameter (EN, DN, etc.) is not installed or assigned.
OVERLAP	The specified parameter has been installed or assigned already (when the ADD/CHG key is pressed.)
NO FOUND	The specified parameter has not been installed or assigned yet (when the RMV key is pressed.)
NO AREA	There is no available area for the assignment. The table or register for this parameter is filled.
DENIED	a) Service is assigned. When an attempt to remove a station/trunk is made, services from other CMC tables must be removed before removing the station trunk. b) Attempt has been made to remove the MCT in use.
DENIED 1	Specified station is an MCT.
DENIED 2	The specified station has been assigned as a member of an ACD group (CMC 308).
DENIED 3	The specified station has been assigned as a member of a hunt group (CMC 301).
DENIED 4	The specified station has been assigned as a member of a pickup group (CMC 302).
DENIED 5	a) Remove before making assignment. b) The specified trunk has been assigned to a line button (CMC 203).
DENIED 6	The specified station is paired with a DSS (CMC 210).
DENIED 7	The specified station is assigned hotline service (CMC 304).
DENIED 8	The specified station is assigned to a paging zone (CMC 303).
DENIED 9	The specified station is paired with a data station (CMC 220).
DENIED 10	The specified trunk is assigned as a member of a night answer group (CMC 306).
DENIED 11	The specified trunk is assigned to a TTGN (Terminating Trunk Group) (CMC 253).
DENIED 12	The specified trunk is assigned as a direct-in line station (CMC 307).
DENIED 20	The H/M (Hotel/Motel) printer is being registered.
DENIED 21	The specified EN is registering automatic wake-up.
DENIED 24	The specified EN is assigned a music source (CMC 305).
DENIED 27	The AP type is assigned to the specified EN (CMC 281).
DENIED 28	The specified agent is in the sign-on status.
DENIED 30	The 24T1 card is currently assigned as the master clock. Cancel using CMC 107 before removing the T-1 trunk.
DENIED 31	The specified EN is in loop back test mode (CMC 813 or CMC 910). Cancel the loop back test mode using CMC 813 or CMC 910.

Table 1-2. Parameter Errors (Cont'd)

ERROR CODES	DESCRIPTIONS
CHK PKG	The card for the specified EN is not physically installed, or the entered type of terminal does not match the type of card. (This is a warning message. The data has been entered into the data base. Delete the data before processing.)
I/O BUSY	Printer is connected or assigned to this port. To change printer or change port, busy out the printer first.
RG BUSY	Ringer phase for message waiting is busy.
TRF MEAS	An attempt was made to change or remove a trunk group being measured during traffic measurement study. Stop traffic measurement to remove the trunk group.
HARD ERR	The hardware clock is faulty. Change the CPU card.
NOT EXEC	<ul style="list-style-type: none"> <li>a) 4CHT or DIU/DTA is faulty or in the make-busy condition.</li> <li>b) The 4CHT loop test was attempted when the CHT and/or DIU/DTA are/is faulty or in the make-busy condition.</li> <li>c) Too heavy traffic for Attendant Console assignment.</li> </ul>
DISAGREE	<ul style="list-style-type: none"> <li>a) The type of terminal does not match the other terminal types on the same card.</li> <li>b) The type of trunk termination does not match the other trunks in the same terminating group.</li> <li>c) RVAC card has been assigned to this EN.</li> </ul>
CHK SLF	<ul style="list-style-type: none"> <li>a) The power supply unit for the cabinet of the specified EN has failed.</li> <li>b) The cabinet is not installed (this is a warning message).</li> </ul>
CHK SPD	The speed calling group number (P6 for CMC 201 or P5 for CMC 230) is not assigned to the installed station/Attendant Console because all the numbers have been used (this is a warning message).
CHK KEY	Line button is not copied to the installed station because the capacity of trunk line appearance exceeds 52, or station line appearance exceeds 16.

**MAINTENANCE PRACTICES  
FOR CARD HANDLING AND  
REPLACEMENT**

Correction of system faults requires that defective components be replaced and proper operation verified. Maintenance practices listed below should be followed while inserting, seating/unseating, or removing all equipment cabinet cards.

Replacing defective printed circuit cards is the most commonly required maintenance operation. Each card has a plastic ejector lever on the top and bottom of the outside card edge. When the card is inserted into a card slot, the card type shows on the top ejector. The Common Control Group (CCG) cards have a pin guide which prevents installation in line or trunk card slots.

Common control cards include:

- SC2P2B / SC2P2E card (one or two cabinet system).
- SC4P2B / SC4P2E card (three or four cabinet system).
- SSDEC card.

Interface and service function cards include:

- 24T1 card.
- 23PT card.
- 8SLC card.
- 8PDL card.
- 16SLC card.
- 4SLE card.
- 8EKC card.
- 6DID card.
- 4BWC card.
- 8BWC card.
- 2TE4 card.
- 4TE4 card.
- 2TTE card.
- 2TTL card.
- 4DMR card.
- 4CHT card.
- RVAC card.
- 8DTC card.
- 16DTC card.
- 2APIA card.
- CLK card.
- 6PFA card.

**Handling Cards** Handle the cards by the extractor tabs (do not touch the edge connectors).

**Inserting/Seating Cards** Insert and seat the cards as follows:

STEP	PROCEDURE
1	Ensure the system is grounded.
2	Protect against electrostatic discharge; wear a wrist strap clipped to ground.
	<b>CAUTION: The work area where cards are handled must be kept static-free.</b>
3	Ensure proper card orientation:
	<b>CAUTION: Attempts to set a CCG card in the wrong slot can cause permanent damage to the backplane. To insert/remove the CCG cards, <u>the power must be off.</u></b>
	a. Card edge connectors face toward backplane.
	b. Card edges ride on tracks (top and bottom). Physical card slots are marked on the frame bottom, to the left of the slot.
	c. Card type shows on the top ejector; components are on the left.
4	Slide the card into a slot and push in with gentle pressure until it stops.
5	Push simultaneously on the top and bottom ejector levers to seat the card in the backplane.

**CAUTION: Do not stack circuit cards. Each card should be placed in its own anti-static bag when not in use.**

**CAUTION: Do not touch the gold-plated connectors, and avoid touching the components. Even a small amount of perspiration from the hands can contaminate the gold plating and may cause faulty operation of the cards.**

**Unseating/Removing Cards**

Unseat/remove cards as follows:

STEP	PROCEDURE
1	Protect against electrostatic discharge; wear a wrist strap clipped to ground.
2	Grasp the top and bottom plastic ejectors.
3	Move the ejectors 90 degrees with some pressure. Push the top ejector up and toward ceiling. Pull the bottom ejector down and toward floor.
4	The card unseats.
5	Remove the card by gently pulling it out of the cabinet. Do not touch the edge connectors.

**Spare Equipment Requirements and Storage**

It is recommended that a back-up card be provided for all Common Control Group cards, as well as one spare for each type of service and line/trunk card used in the installation. Spare cards should be tested to ensure that they are in proper working order.

All spare cards and equipment should be stored in the original shipping containers whenever practical. Cards should be wrapped in the original shipping anti-static plastic bags to minimize any potential for static electricity damage.

**Recommended Test Equipment**

The following is a list of recommended test equipment to be used when isolating faults in the system:

- Volt-ohmmeter.
- RS-232C breakout box.
- Two-channel oscilloscope.
- Bit error rate test set.
- Analog telephone line test set for measuring line and trunk loss, frequency response, noise, etc.

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## OVERVIEW

This chapter describes fault isolation using the two diagnostic facilities provided by the system:

- Visual indicator LEDs.
- Change and maintenance software commands (CMCs).

This section also provides information for when a visual indicator LED indicates a fault condition or when the software fault logs are accessed for a fault report.

## SYSTEM STATUS VISUAL INDICATORS AND DIAGNOSTICS

The system provides visual indicator LEDs that show the system alarm status. These indicators are found on the CPU cards.

### CPU (Central Processing Unit)

Refer to Figure 2-1 for the exact location of each indicator:

- **RUN**: Green; indicates that the system is operating without major problem. This LED should light when the power supply is turned on.
- **TO** (Timer Overflow): Red; indicates a major CPU/memory or system problem. (The CPU card will need to be replaced.)
- **ALM** (Alarm): Character display indicating a minor problem (as an error code). Refer to Table 2-1 for a list of error codes. These error codes are displayed sequentially starting as “–”, with the remainder of the code following. If more than one error is present, the next error code will follow the next displayed “–”, then the next, until the first one repeats.

Figure 2-1. Front View of the CPU Cards

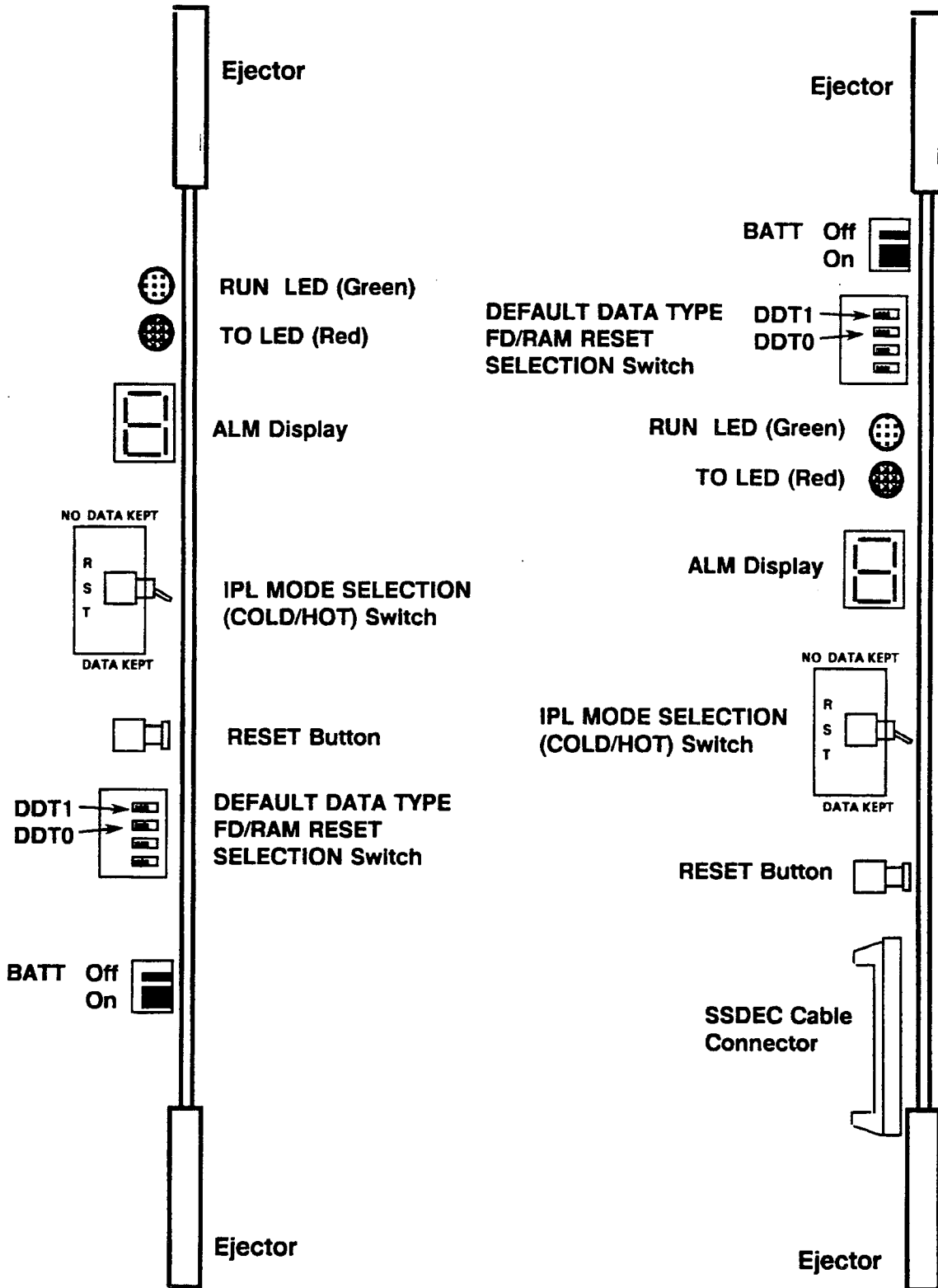




Table 2-1. ALM Indicator Error Codes

ERROR CODE	PROBLEM	SYSTEM ACTION
1	Floppy disk drive fault during IPL.	IPL stop.
2	No floppy disk in the unit during IPL.	IPL stop.
3	Floppy disk media fault during IPL.	IPL stop.
5	Bit stack of IPL RAM.	IPL stop.
6	Wrong floppy disk inserted (wrong format).	IPL stop.
7	Wrong floppy disk inserted (wrong type of floppy).	IPL stop.
8	Wrong floppy disk inserted (wrong memory capacity).	IPL stop.
9	Wrong floppy disk inserted (wrong customer data).	IPL stop.
A	Wrong floppy disk inserted (sequence error).	IPL stop.
AC	AC power down.	Call processing in progress (by back-up battery, if equipped).
APxxxx	API communication failure. xxxx: equipment number.	Makes the card busy.
b	Wrong floppy disk inserted (wrong density).	IPL stop.
bLx	Ring generator fault. x: cabinet number (0-3)	Makes the RGMW busy.
C	FD1 to FD2 VID mismatch.	IPL stop.
Cbx	Expansion cabinet power down. x: cabinet number (0-3)	Makes the cabinet busy.
CF	1) PRI line failed. 2) Network clock or data link lost.	Makes the card busy.
CFxxxx	PRI line fault. xxxx: equipment number	Makes faulty PRI trunk busy.
CL0	RTS stop.	Call processing in progress.
CL1	RTS fault.	Call processing in progress.
CP0x	Parity or framing error in I/O port. x: port number (0/1)	Call processing in progress.
CP1x	Response time-out in I/O port.	Call processing in progress.
d	No customer data on floppy.	Stop customer data load operation.
dFxxxx	T-1 trunk fault. xxxx: equipment number	Makes faulty T-1 trunk busy.
E1	SRAM stack.	Call processing in progress.
E2	Memory protect error.	Call processing in progress.
E3	DRAM parity error.	Automatic reset.
Eb	SRAM back-up battery fault.	Call processing in progress.

Table 2-1. ALM Indicator Error Codes (Cont'd)

ERROR CODE	PROBLEM	SYSTEM ACTION
Hy	Network clock fault, busy flag stack.	System down.
Hy0	Network memory (CM) read/write error.	Call processing in progress.
Hy1	Network memory (RSM) read/write error.	Call processing in progress.
Hy2	Network memory (SSM) read/write error.	Call processing in progress.
Hy3	No input/output or out of sync. error on CLKS card.	Call processing in progress.
Lxxxx	CO line fault. xxxx: equipment number	Makes faulty CO line busy.
pbxxxx	RVAC battery fault. xxxx: equipment number	Call processing in progress.
pxxxx	PCB fault. xxxx: equipment number	Makes faulty PCB busy.
uxxxx	Terminal fault. xxxx: equipment number	Makes faulty terminal busy.

**Remote Alarms** Optional remote alarm indicators can be installed in addition to the indicators on the 6PFA in the Basic cabinet.

MAJOR	MINOR	SYSTEM STATUS
Off	Off	Okay.
On	Off	Failure in one or more areas.
On	On	System-wide failure.

**Automatic System Test Alarms** The CPU visual indicator LEDs provide alarm status information resulting from the following automatic system tests or hardware failure:

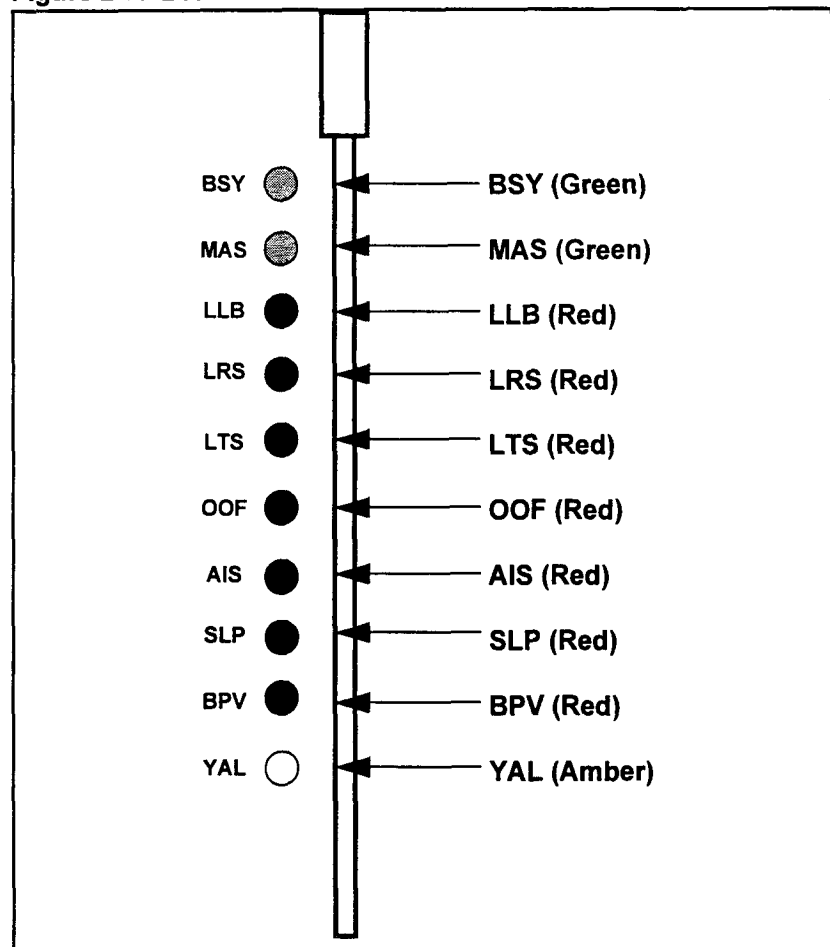
- **System restart self-diagnostics:** Routine tests performed following a HOT restart, COLD restart, or system reset.
- **Call processing diagnostics:** Routine diagnostics automatically run by the system.
- **Hardware alarms:** Hardware faults indicated by visual indicator LED

**24T1 Card Indicators** The 24T1 card has the following LED indicators on the front edge of the card to show its status. (See Figure 2-2 for the position of the LEDs.)

- **BSY (Busy):** Green; indicates that a channel in the T-1 trunk is in use. This LED goes on when any of the 24 channels are busy.
- **MAS (Master Clock):** Green; indicates that the system's master clock is being supplied by this card.
- **LLB (Line Loop Back):** Red; goes on when the T-1 trunk self-test is complete or when the loop back signal is received and the 24T1 card is set to loop back mode.
- **LRS (Loss of Received Signal):** Red; goes on when the clock receive signal is discontinued for more than 2.6 seconds. It goes off if the signal continues for more than 10 seconds.

**24T1 Card Indicators (Cont'd)**

- **LTS** (Loss of Transmitted Signal): Red; goes on if the clock transmission signal is discontinued for more than 1 second. It goes off if the signal continues for more than 10 seconds.
- **OOF** (Out of Frame): Red; indicates that a frame alignment signal is not detected on the 24T1 card. It can also go on when a receive signal is lost, RAI is sent from the network, or CRC error rates are high.
- **AIS** (Alarm Indication Signal): Red; goes on when an AIS signal is sent from the network.
- **SLP** (Slip Error): Red; goes on when slip error rate is high.
- **BPV** (Bipolar Violation Error): Red; goes on each time a bipolar violation is detected.
- **YAL** (Yellow Alarm): Amber; goes on when a YAL signal is sent from the network.

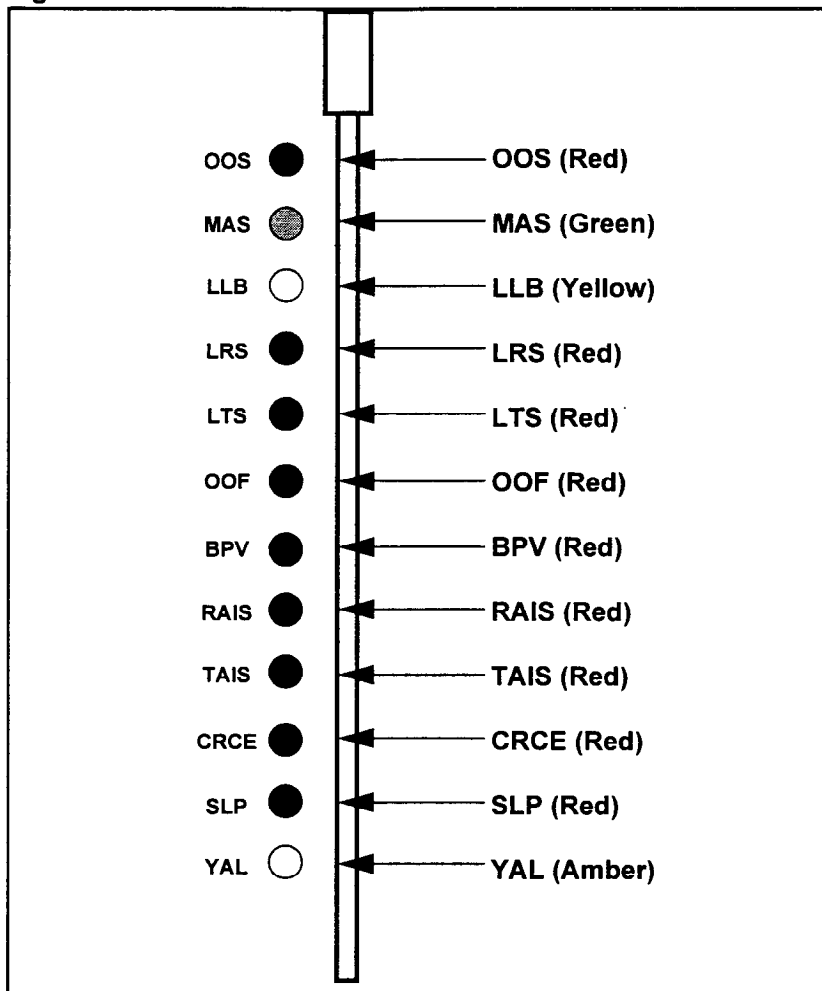
**Figure 2-2. 24T1 LED Indicators**

**23PT Card Indicators**

The 23PT card has the following LED indicators on the front edge of the card to show its status. (See Figure 2-3 for the position of the LEDs.)

- **OOS** (Out of Service) - Red; indicates that the card has been placed in the out of service mode.
- **MAS** (Master Clock) - Green; indicates that the system's master clock is being supplied by this card.
- **LLB** (Line Loop Back) - Yellow; goes on when the 23PT trunk self-test is being executed or when the 23PT card is set to loop back mode.
- **LRS** (Loss of Received Signal) - Red; goes on when the clock receive signal is discontinued for more than 2.6 seconds. It goes off if the signal continues for more than 10 seconds.
- **LTS** (Loss of Transmitted Signal) - Red; goes on if the clock transmission signal is discontinued for more than 1 second. It goes off if the signal continues for more than 10 seconds.
- **OOF** (Out of Frame) - Red; indicates that a frame alignment signal is not detected on the 23PT card. It can also go on when a receive signal is lost, RAI is sent from the network, or CRC error rates are high.
- **BPV** (Bipolar Violation Error) - Red; goes on each time a bipolar violation error is detected.
- **RAIS** (Receive AIS Signal) - Red; goes on when an AIS signal is received from the network.
- **TAIS** (Transmit AIS Signal) - Red; indicates transmission of an AIS signal.
- **CRCE** (CRC Error) - Red; indicates the presence of a CRC error on the system.
- **SLP** (Slip Error) - Red; goes on when slip error rate is high.
- **YAL** (Yellow Alarm) - Amber; goes on when a YAL signal is sent from the network.

Figure 2-3. 23PT LED Indicators



### SYSTEM RESTART SELF-DIAGNOSTICS

There are three methods to restart routine diagnostics:

- Powering up the system.
- Pressing the RESET button.
- Watchdog timer overflow attempts to restart system up to 16 times.

The system automatically runs the following tests once it is restarted:

- RAM read/write test.
- RAM protection test.
- Memory read/write test.
- Non-volatile RAM check.

Table 2-2 shows the type of test, type of alarm (if an error is detected), and the system response after an error is detected.

Table 2-2. System Restart Routine Self Diagnostics

TYPE OF SELF TEST	TYPE OF RESTART			TYPE OF ALARM			FAULT LOGGED	SYSTEM RESPONSE
	COLD	HOT	SR	RUN	ALM	TO		
RAM read/write test	X	X		ON	E0/ ON	--	X	Call processing uninterrupted
RAM memory protection test	X	X		ON	E1/ ON	--	X	Call processing uninterrupted
Memory read/write test	X	X		ON	Hyx/ ON	--	X	Call processing uninterrupted
Non-volatile RAM check	X	X	X	ON	OFF	--	X	Initiate COLD restart

**NOTES:**

1. Type of restart:
  - X - Test is done at the restart.
  - COLD - COLD restart (NO DATA RETAINED).
  - HOT - HOT restart (DATA RETAINED).
  - SR: Short power failure recovery.
2. Type of alarm:
  - E0 - SRAM stack error.
  - E1 - Memory protect error.
  - Hyx - Memory read/write error.  
x = 1/1/2 (CM/RSM/SSM)
  - -- - Alarm shows the last status (ON or OFF).
3. Fault logged:
  - X - System saves the fault information.

**CALL PROCESSING  
DIAGNOSTICS**

Two types of call processing diagnostics are used for diagnosing the operating system:

- Automatic call processing diagnostics.
- Manual call processing diagnostics.

**Automatic Call Processing  
Diagnostics**

The system periodically supervises the call processing operation. The following tests are performed automatically:

- RTS (Real-Time Source) clock check.
- I/O control (serial communications interface) check.
- Clock down check.
- Switch memory error test.
- SSDEC control test.
- CPU-ICG (Interface Card Group) data transmission check.
- CPU-Proprietary telephone data transmission check.
- System and RVAC (memory back-up battery charge check).
- Invalid system interruption check.
- Software maze check.
- RGMW (ring generator) module check.
- T-1 trunk interface error check.
- CLKS clock down check.
- ISDN PRI trunk interface error check.

Table 2-3 describes the type of diagnostics, system alarm (if an error is detected), and system response after an error is detected. This table also shows whether the fault is logged in CMC 801.

**Manual Call Processing  
Diagnostics**

The following diagnostics are manually activated using CMC commands:

- CHT and DIU/DTA loop back test (CMC 810).
- API loop back test (CMC 811).
- T-1 trunk loop back test (CMC 813).
- ISDN loop back test (CMC 910).



Table 2-3. Call Processing Diagnostics

TYPE OF DIAGNOSTICS	PROBLEM	TYPE OF ALARM			FAULT LOGGED	SYSTEM RESPONSE
		RUN	TO	ALM		
RTS (Real-Time Source Clock)	Stop incrementing time. Erroneous time display.	ON	--	CL0 CL1/ ON  CL0 CL1/ ON	X	Call processing uninterrupted. Timer is down. Erroneous or lack of proprietary telephone time display (HH:MM).
I/O control (serial communications interface)	Parity error. Framing error (not recoverable).	ON	--	CP0n/ ON	X	Call processing uninterrupted.
Control clock down	Clock down.	OFF	--	Hy/ ON	X	System down (PFT activated when the clock is restored and HOT restart initiated). RUN LED on.
Memory error	Memory read/write error.	ON	--	Hyx/ ON	X	Call processing uninterrupted.
CPU-ICG data transmission	Card or circuit has been removed. Illegal function attempted.	ON	--	Pxxx/ ON	X	Makes faulty line/trunk circuits busy.
CPU-Proprietary telephone data transmission	Data transmission parity error. Line card or Proprietary telephone removed.	ON	--	Uxxxx/ ON	X	Makes faulty Proprietary telephone circuit busy.
Memory back-up battery charge	Back-up battery discharged.	ON	--	Eb/ ON	X	Call processing uninterrupted. Replace CPU card.
SSDEC control error	Busy flag stack.	ON	ON	Hy/ ON	X	Initiates HOT restart.
Software maze (memory problem)	Software logic error.	ON	ON	OFF	X	Initiates HOT restart.
RGMW module	Ring generator defective.	ON	--	bLn/ ON	X	No ringing to SLT.
RVAC memory or back-up battery charge	Discharge.	ON	--	pbxxxx/ ON	X	Alarm indicator only. Call processing continues normally.

Table 2-3. Call Processing Diagnostics (Cont'd)

TYPE OF DIAGNOSTICS	PROBLEM	TYPE OF ALARM			FAULT LOGGED	SYSTEM RESPONSE
		RUN	TO	ALM		
ISDN PRI trunk interface error	Line or remote side error; card defective.	ON	--	CFxxxx/ ON	X	Makes faulty PRI trunk busy. Change the clock extracting trunk.
CO line current	No current at off-hook.	ON	--		X	Makes faulty CO line busy.
T-1 trunk interface error	Line or remote side error. Card defective.	ON	--	dFxxxx/ ON	X	Makes faulty T-1 trunk busy.
CLKS clock down	No input clock. Card defective.	ON	--	Hy3/ ON	X	CLKS or internal clock is used as a system clock.

**NOTES:**

1. Type of alarm:
  - CL0 - RTS stop.
  - CL1 - RTS fault.
  - CP0n - I/O port parity or framing error.  
n = I/O port number (0 or 1)
  - Hy - Clock fault of busy flag stack.
  - Hyx - Memory R/W error.  
x = 0/1/2 (CM/RSM/SSM)  
x = 3 (CLKS clock down)
  - xxxx - Equipment number.
  - n - Cabinet number (0, 1, 2, or 3).
  - -- - Alarm shows the last status (ON or OFF).
2. Fault Logged:
  - X - System saves fault information

**HARDWARE FAULT ALARMS** Hardware or power failures in the system cause status changes in the alarm LEDs. The fault conditions, changes in alarm LED status, and system responses are described in Table 2-4.

**Table 2-4. Hardware Fault Alarms**

TYPE OF DIAGNOSTICS	TYPE OF ALARM			SYSTEM RESPONSE
	RUN	TO	ALM	
CPU clock failure	OFF	ON	OFF	System down (PFT is activated).
Watchdog timer overflow	ON	ON	OFF	Initiate HOT restart (replace card).
Restart threshold exceeded	OFF	ON	OFF	System down (PFT is activated).

**NOTES:**

1. PFT is power failure transfer. The 6PFA card must be installed for the power failure transfer to occur.
2. Type of alarm:
  - ON - The LED is on.
  - OFF - The LED indicates a steady off.

### Summary and Interpretation of Alarm Lamp Status Conditions

Table 2-5 is a summary of likely problems indicated by combinations of alarm LED status conditions. The table includes the following:

- All possible combinations of LED conditions.
- The most probable fault conditions causing the LED change.
- The recommended action to correct the fault condition.

Table 2-5. Summary and Interpretation of Alarm LED Status Conditions

LED STATUS				LIKELY PROBLEM	ACTION
POWER	RUN	TO	ALM		
OFF	OFF	OFF	OFF	Short circuit. Power or power supply fault. Peripheral card fault.	Power down or power supply fault.
ON	OFF	ON	OFF	CPU fault: <ul style="list-style-type: none"> <li>• Clock failed.</li> <li>• Restart.</li> <li>• Retry.</li> <li>• Overrun.</li> </ul>	Replace the CPU card.
ON	OFF	OFF	DISPLAY	SSDEC fault: <ul style="list-style-type: none"> <li>• Clock Down</li> </ul>	Read out and translate fault log; replace SSDEC card.
ON	OFF	ON	DISPLAY	CPU or SSDEC fault. Peripheral card fault. Proprietary telephone fault.	Replace SSDEC card; check system status. If necessary, change CPU card.
ON	ON	ON	OFF	Software fault. CPU intermittent fault.	Read out the fault log, and then translate accordingly (see Fault Log Display).
ON	ON	OFF	DISPLAY	SSDEC fault. Peripheral card fault. Proprietary telephone fault. RGMW fault. Memory back-up battery discharge. CO line fault. RVAC memory back-up battery discharge. T-1 trunk interface error. CLKS clock down.	Read out the fault log, and then translate accordingly (see Fault Log Display). If the memory back-up battery is low, the CPU card will need to be replaced.
ON	ON	ON	DISPLAY	Software fault. CPU/SSDEC intermittent fault. Peripheral card fault. Proprietary telephone fault. Memory back-up battery discharge. RVAC memory back-up battery discharge.	Read out the fault log, and then translate accordingly (see Fault Log Display). If the memory back-up battery is low, the CPU card will need to be replaced.

**SYSTEM-LEVEL CMC DIAGNOSTICS**

The following information describes the CMCs used to determine fault information and the troubleshooting techniques used with a maintenance device. These CMCs are:

- **Device Status Display (CMC 800):** A quick reference for system faults.
- **Fault Information Display (CMC 801):** Contains a record of the most current fault conditions. The system automatically enters the faults in the fault log. The fault log contains a more detailed account of the fault, including the time of the fault, the equipment number, and the time of recovery.
- **Fault Time Display (CMC 803):** Indicates the number of times of encountering the same device and cause.

**DEVICE STATUS DISPLAY (CMC 800)**

Use the Device Status Display table (**CMC 800**) to determine the current status of each device connected to the system. The status information is shown in six screen displays:

- Screen 1: Device name faults.
- Screen 2: Cabinet and ring generator faults.
- Screen 3: ICG card and I/O faults.
- Screen 4: Terminal faults.
- Screen 5: ISDN and/or FIPN faults.
- Screen 6: T-1 faults.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DVN	Device name	3 characters	None
P2	DVN	Device name	3 characters	None
P3	DVN	Device name	3 characters	None

**Parameter Descriptions**

**P1 (DVN):**

The first set of faulty devices (if any) is displayed.

- 3 characters (see screens 1-1 and 1-2 on the next page)

**P2 (DVN):**

The second set of faulty devices is displayed.

- 3 characters (see screens 1-1 and 1-2 on the next page)

**P3 (DVN):**

The third set of faulty devices is displayed.

- 3 characters (see screens 1-1 and 1-2 on the next page)

**Display** 1. Press **DSP**.

**NOTE:** If the system detects a faulty device the following screen is displayed. Table 2-6 explains the abbreviations listed in P1, P2, and P3. This CMC is released if no faults are detected.

**Screen 1-1. Device Name Fault**

<b>P1:</b>	<b>CC</b>	<b>RAM</b>	<b>RTS</b>	<b>BAT</b>
<b>P2:</b>	<b>SWC</b>	<b>ICG</b>	<b>TRM</b>	<b>SCI</b>
<b>P3:</b>	<b>RG</b>	<b>VMC</b>	<b>POW</b>	<b>CAB</b>

**Screen 1-2. Device Name Fault**

<b>P1:</b>	<b>ISD</b>	<b>DIF</b>
<b>P2:</b>		
<b>P3:</b>		

**NOTE:** Each fault indicator will be shown in the actual position illustrated above.

**Table 2-6. Device Names (DVN) for CMC 800**

<b>ABBR.</b>	<b>DEVICE NAME</b>
CC	CPU card
RAM	RAM on CPU card
RTS	Real-time source on CPU card
BAT	Battery on CPU card
SWC	CPU card/SCLKS card
ICG	Trunk or line card
TRM	Proprietary telephone terminal
SCI	Serial communication interface (RS-232C port)
RG	RGMW
VMC	RVAC card
POW	Power
CAB	Cabinet
ISD	ISDN PRA/FIPN
DIF	T-1 digital trunk

Display (Cont'd) 2. Press **DSP** again.

**NOTE:** When faulty cabinets or faulty ring generators are detected, the system displays 0s (no fault) or 1s (fault). This screen is skipped if there are no faulty cabinets or ring generators. Screen 2-1 shows an example of cabinet and ring generator faults.

**Screen 2-1. Example of Cabinet and Ring Generator Faults**

<b>CMC = 800</b>		
<b>P1:</b>	<b>CAB &amp; RGMW STATUS</b>	
<b>P2:</b>	<b>C<sub>0</sub>C<sub>1</sub>C<sub>2</sub>C<sub>3</sub></b>	← C <sub>0</sub> = Basic cabinet fault C <sub>1</sub> = Expansion cabinet 1 C <sub>2</sub> = Expansion cabinet 2 C <sub>3</sub> = Expansion cabinet 3
<b>P3:</b>	<b>R<sub>0</sub>R<sub>1</sub>R<sub>2</sub>R<sub>3</sub></b>	← R <sub>0</sub> = Basic cabinet fault R <sub>1</sub> = Expansion cabinet 1 R <sub>2</sub> = Expansion cabinet 2 R <sub>3</sub> = Expansion cabinet 3

3. Press **DSP** again.

**NOTES:**

1. When faulty cards are detected, the system displays 0s (no fault) and 1s (fault).
2. Press **DSP** again to display other cabinets in a two cabinet system. This screen is skipped if there are no faulty devices in ICG cards and/or I/O ports.

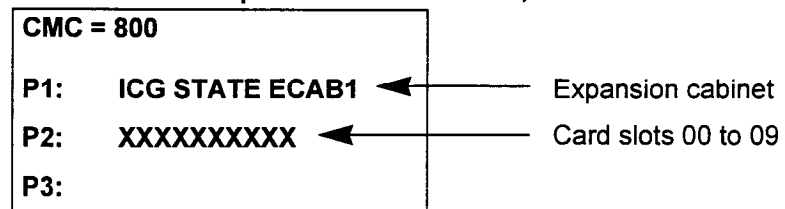
**Screen 3-1. Example of ICG Card Faults and I/O Faults**

<b>CMC = 800</b>		
<b>P1:</b>	<b>ICG &amp; SCI BCAB</b>	← Basic cabinet
<b>P2:</b>	<b>0001000000</b>	← Card slots 00 to 09
<b>P3:</b>	<b>01</b>	← I/O ports 0 and 1

Screen 3-1 shows that in the basic cabinet, the card in card slot three and I/O port 1 are faulty. Continued pressing of **DSP** shows any faults in cabinets two, three, and four (if applicable).

Display (Cont'd)

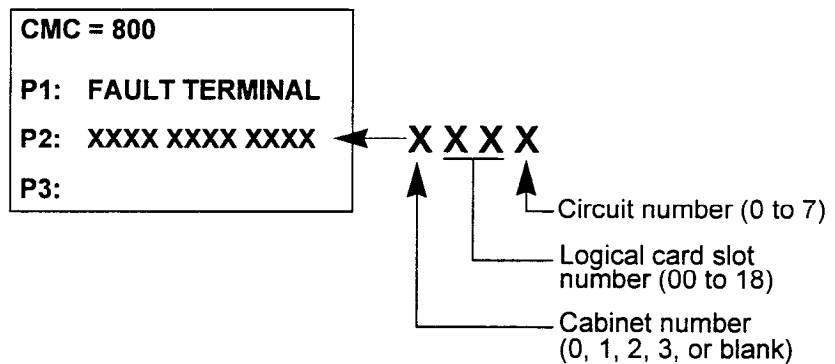
**Screen 3-2. Example of ICG Card Faults, Cabinet 1**



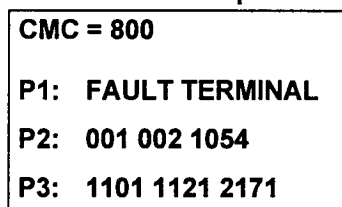
4. Press **DSP** again.

**NOTE:** When faulty terminals are detected, the system displays the terminal ENs. The screen can only display a maximum of three faulty terminal ENs per line for a maximum of six on the screen. If more than six terminals are faulty, display them again by pressing **DSP**. If no terminals are faulty, this screen is skipped. The system releases this CMC after the last EN has been displayed.

**Screen 4-1. Terminal Faults**



**Screen 4-2. Example of Terminal Faults**



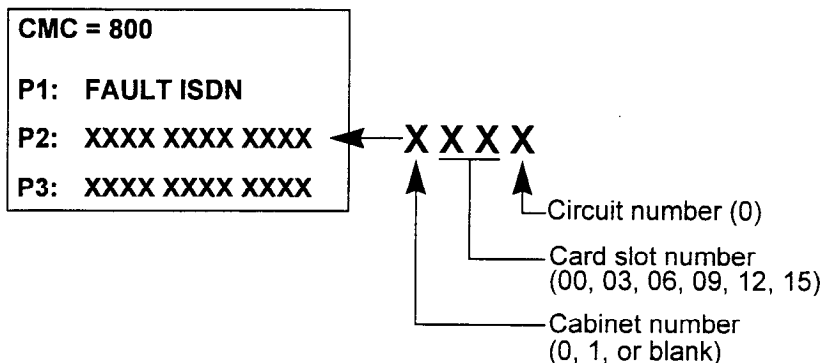
This example shows faulty terminals in EN = 001, 002, 1054, 1101, 1121, and 2171.



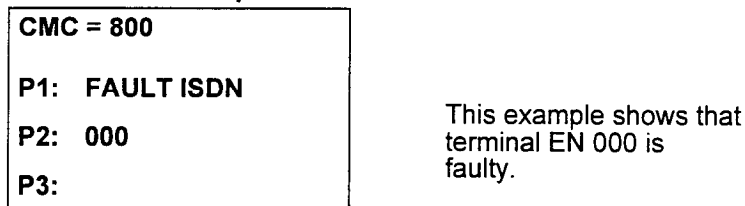
Display (Cont'd) 5. Press DSP again.

**NOTE:** When a faulty ISDN card(s) is detected, the system displays the equipment number of the faulty card(s). The screen is skipped if there is no faulty card. If there are more than six faulty cards, repeated pressing of the **DSP** key displays the next EN. The system releases this CMC after the last EN has been displayed.

**Screen 5-1. ISDN/FIPN Faults**



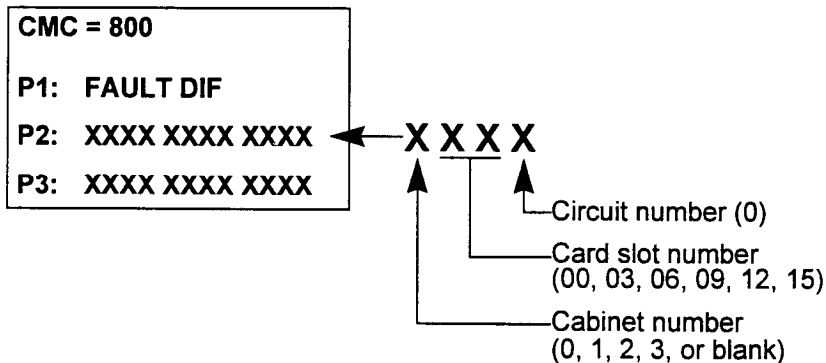
**Screen 5-2. Example of ISDN Faults**



6. Press DSP again.

**NOTE:** When faulty T-1 cards are detected, the system displays the equipment number of the faulty T-1 trunk. Only the first EN of the T-1 card (ENXXX0) is displayed at P2 and/or P3. To determine, if more than six T-1 cards are faulty, press **DSP** again. If no T-1 trunk cards are faulty, this screen is skipped. The system releases this CMC after the last EN has been displayed.

**Screen 6-1. T-1 Faults**



**FAULT INFORMATION DISPLAY (CMC 801)**

The Fault Information Display (**CMC 801**) table provides a display of currently logged fault data. Displaying this data will reset the ALM and TO lamps.

After displaying all the faults, the TO lamp will go off, the TOF counter will be reset, and the following faults will be cleared with no condition:

- SRAM stack
- SRAM protect
- CM stack
- SSM stack
- RSM stack

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DVN	Device name	3 characters	Table 2-7
P2	TIME	Time and date of fault or repair	HH:MM MM/DD	None
P3	FACT	Fault cause and data	X HHHHHHHHHHHH	Table 2-7 and Figure 2-4
P4	DN/EN	Directory number or equipment number of the faulty equipment	4 digits	Table 2-7

**Parameter Descriptions**

**P1 (DVN):**

The faulty device name will be displayed (refer to Table 2-7).

- 3 characters

**P2 (TIME):**

The time and date of the fault or repair will be displayed.

- HH:MM MM/DD

**P3 (FACT):**

The fault cause and data will be displayed (refer to Table 2-7 and Figure 2-4).

- X HHHHHHHHHHHH

**P4 (DN/EN):**

The directory number or equipment number of the faulty equipment is displayed (refer to Table 2-7).

- 4 digits

**Display** Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display the remaining fault data.
2. Data display mode terminates when the last faulty device displays.
3. If the following faults occur, SCI is reset:
  - SCI data transmission error (I/O Port #0,1)
  - SCI send data timing out (I/O Port #0,1)

**Interpreting the Fault Log Display**

To interpret the fault data contained in the fault log, refer to Table 2-7 and Figure 2-4. P1 provides the device name as abbreviated in Table 2-7. The P3 entry is composed of two characters:

- Caused factor number from 0 to 9.
- Hex trouble cause code or RS-232C control lead status report. This paragraph contains general information for interpreting these features of CMC 801.

In all but two cases, a zero reported for the first P3 character of Table 2-7 indicates that the system has recovered from a reported fault. At P1 = RAM, a zero indicates that the ALM LED is OFF. At P1 = CC (Common Control Group cards), a zero indicates that a COLD restart has occurred. In this case, the system falls back to the default data base, resulting in a loss of the ODDB customer-specific data base. This condition requires an ODDB reload.

Table 2-7. Key to CMC 801 Parameters

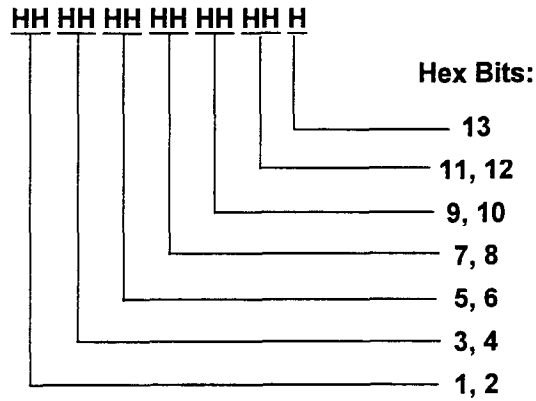
DVN (P1)	DN (P4)	FACT (P3)	
		CAUSE X	FAULT DATA HHHHHHHHHHHHH (see Figure 2-4)
CC	None	0 = COLD restart 1 = Watchdog timer overflow 2 = Software maze 3 = RAM data problem 4 = Illegal interruption 5 = Command processing maze 6 = Traffic overflow 7 = Illegal reset interruption 8 = HOT restart 9 = Automatic HOT restart is experienced due to CMC 921 operation or PcMP LOAD command	None
SRAM	None	1 = SRAM memory stack	1, 4 Segment address 5, 8 Offset address 9 10, 13 Stack data
		2 = SRAM protection	1, 4 Segment address 5, 8 Offset address 9 10, 11 Read data 12, 13 Write data
RTS	None	1 = Stop incrementing 2 = Illegal time	
BAT	None	1 = Discharge	
SWC	None	1 = Clock down	
		2 = CM memory stack	1, 4 Read after write data 6, 9 CM address
		3 = RSM memory stack	1, 2 Read after write data 6, 9 RSM address
		4 = SSM memory stack	1, 2 Read after write data 6, 9 SSM address
		5 = CLKS failure	0001 Loss of receive data 0002 Loss of transmit data 0004 Out of frame
ICG	First EN on card	1 = Data transmission error 2 = ICG audit error	
TRM	EN	1 = Terminal failure 2 = CO line failure	

Table 2-7. Key to CMC 801 Parameters (Cont'd)

DVN (P1)	DN (P4)	FACT (P3)	
		CAUSE X	FAULT DATA HHHHHHHHHHHHHH (see Figure 2-4)
SCI	Port number 000/001  EN	1 = Data transmission error 2 = Send data time out 3 = 2APIA line failure 4 = 2APIA line recovery	See Status *1
RG	Cabinet number (000-003)	1 = Ring generator fault	
VMC	EN	1 = RVAC battery discharge	
POW	None	1 = AC power failure	
CAB	Cabinet number (000-003)	1 = Expansion cabinet failure	
DIF	First EN on card	1 = T-1 trunk block	See Status *2
ISD	First EN on card	1 = ISDN trunk block	See Status *3

Figure 2-4. Key to Fault and Status Data

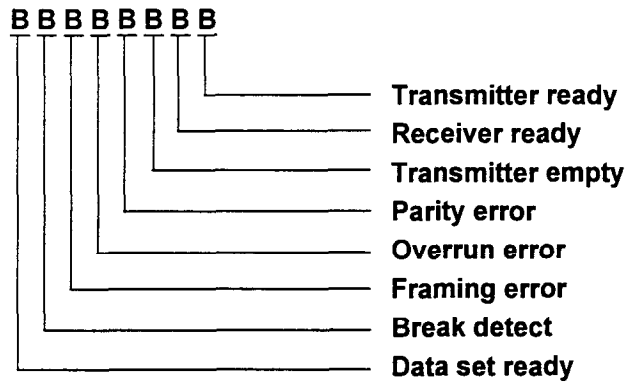
**Fault Data:**



H = 0 to 9, A to F, " , " (comma), or blank

**Status \*1:**

2-byte Hex code means the following binary image:



**Status \*2:**

- 01 = Detect loss of receive data
- 02 = Detect loss of transmit data
- 04 = Receive maintenance busy out signal (RAIS)
- 08 = Detect out of frame
- 10 = Detect yellow alarm
- 20 = Receive remote loop back signal
- 40 = Detect slip error
- 80 = Detect bipolar violation

\* displayed in hex code

**Figure 2-4. Key to Fault and Status Data (Cont'd)**

<b>Status *3:</b>	0001 = ROM check sum error
	0002 = ROM stack error
	0003 = Interface fault
	0004 = Loss of input clock
	0005 = Data link fault
	0006 = CRC-4 error
	0007 = Bipolar violation
	0008 = Remote loop back
	0009 = Loss of transmit signal

\* displayed in hex code

**Recommended Action Summary for CMC 801 Faults** Table 2-8 recommends an action plan to help the technician in restoring service for fault conditions reported by the CMC 801 fault log.

**Table 2-8. CMC Fault Isolation and Recommended Actions for CMC 801**

TYPES OF FAULT	ACTION
Common Control (CC)	Generally no action required. If problem gets worse, initiate restart in this order: RESET, HOT, then COLD. The COLD restart loses the ODDB. (Note 1)
Real-Time Source Clock	Replace CPU card during low-traffic period. (Note 1)
RAM Memory	Replace CPU card during low-traffic period. (Note 1)
Back-Up Battery	If there has been a long-term power failure, no action is needed. The battery is being charged. If discharge condition continues more than two days, change back-up battery. Save the ODDB to tape (Note 1) or disk.
Switch Control	Replace SSDEC card.
Line/Trunk Card	Troubleshoot according to Trunk Assignment (CMC 250) and Chapter 5.
Terminal (TRM) Proprietary Telephone or DSS	Test Proprietary Telephone, Attendant Console and/or BLF/DSS. See Telephone Company CO Trunk/Line Test Procedure. If instrument is faulty, replace. If instrument is OK, replace associated card.
Serial Communication Interface	Check I/O equipment. Check configuration match of RS-232C port (CMC 900) and the connection. If OK, change CPU card during low-traffic condition. (Note 1) ZAPIA card - check P3 if 4, then replace the card.
Software	No response is needed. If system operation gets worse, initiate restart. (RESET, HOT, or COLD restart)
RGMW Unit	Replace with spare RGMW unit.
CO Line Current	Check the running of the CO cable, including the CDF. If cable connections are correct, then call the local CO maintenance office. (Ground start trunks only.)
RVAC Battery	Battery automatically recharges after long-term power failure. If the battery does not recharge within two days, replace the card. (Note 2)
T-1/TRI Trunk Card	Check the fault status by the LED on the card. If LRS (Loss of Receive Signal) is lit, then check the connection to the CO. If the other lamp is lit, call the Technical Assistance Center.

**NOTES:**

1. If the Fault Log cannot be accessed, replace the CPU card. Initiate RESET and survey the system before changing the CPU card. Before changing the card and initiating COLD restart and battery discharge, try to save the ODDB (Office Dependent Data Base) on a microcassette tape or floppy disk.
2. Replacement of RVAC causes loss of all recorded announcements.



**FAULT TIME DISPLAY  
(CMC 803)**

Use the Fault Time Display (**CMC 803**) table to display the number of times each fault occurred, and the reason why the fault occurred.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>CL</b>	Counter reset flag	0 = Not reset 1 = Reset	None
<b>P2</b>	<b>TMS1</b>	Faulty device, caused factor, number of times	See Table 2-9	None
<b>P3</b>	<b>TMS2</b>	Faulty device, caused factor, number of times	See Table 2-9	None
<b>P4</b>	<b>DATE</b>	Last day the counter was reset	MM = Month (01 to 12) DD = Day (1 to 31)	None

**Parameter Descriptions****P1 (CL):**

Enter the counter reset flag.

- 0 = Not reset
- 1 = Reset

**P2 (TMS1):**

The faulty device, the cause of the fault, and the number of times the fault occurred is displayed for the first faulty item.

- Refer to Table 2-9 for display information

**P3 (TMS2):**

The faulty device, the cause of the fault, and the number of times the fault occurred is displayed for the second faulty item.

- Refer to Table 2-9 for display information

**P4 (DATE):**

The last day that the counter was reset is displayed in the MM/DD format.

- MM = Month (1 to 12)
- DD = Day (1 to 31)

**Parameter Descriptions  
(Cont'd)****NOTE:** Each parameter is displayed in the following format:

<b>CMC = 803</b>	
<b>P1: CL</b>	<b>P4: MM/DD</b>
<b>P2: DVN FACT CNT</b>	
<b>P3: DVN FACT CNT</b>	

CL = Counter reset flag  
DVN = Faulty device name  
FACT = Cause factor  
CNT = Counted data  
MM/DD = Date

This screen will not be displayed unless a device is faulty. The counter can be reset when the screen displays all faulty devices and the number of times each device has malfunctioned.

**Display**

1. Enter the CMC.
2. Enter a CL at parameter P1.
3. Press **DSP** to display the faulty device names, the reason why the fault occurred, and the number of times each device malfunctioned.
4. Press **DSP** again to display additional fault information.

**NOTE:** If no fault information occurs, this command automatically terminates.

Table 2-9. Device Name and Fault Cause (P2, P3)

DEVICE NAME	FAULT CAUSE
CC	0 = COLD restart 1 = Watchdog timer overflow 2 = Software maze 3 = RAM data problem 4 = Illegal interruption 5 = Software endless loop (command) 6 = Traffic overflow 7 = Illegal reset interruption 8 = HOT restart 9 = Automatic HOT restart is experienced due to CMC 921 operation or PcMP LOAD command
RAM	1 = SRAM memory stack 2 = SRAM protection
RTS	0 = Recovery 1 = Stop incrementing 2 = Illegal time
BAT	1 = RAM battery discharge
SWC	1 = Clock down 2 = CM memory stack 3 = RSM memory stack 4 = SSM memory stack 5 = CLKS failure
ICG	1 = Data transmission error
TRM	1 = Terminal failure 2 = CO line failure
SCI	1 = Data transmission error 2 = Send data timing out 3 = API failure
RG	1 = Ringer generator fault
POW	1 = Power failure
CAB	1 = Expansion cabinet fault
ISD	1 = ISDN/FIPN line fault
VMC	1 = RVAC battery discharge
DIF	1 = T-1 trunk block

**TRAFFIC ANALYSIS**

Observing and analyzing the pattern and amount of switching system call traffic can provide limited diagnostic insight into call connection and connection delay problems. These types of problems are sometimes caused by call blocking that results from faults on lines/trunks. These paragraphs describe how a trunk group can be selected and how to interpret the traffic density display.

**TGN SCREENING ASSIGNMENT (CMC 600)**

Use the TGN Screening Assignment (**CMC 600**) table to list trunk groups for traffic measurement.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>RNO</u>	Traffic registration number	1 to 10	None
P2	TGN	Trunk group number	1 to 63 10 = Modem group	None
P3	MGID	Modem group ID	1 to 15	None

**Parameter Descriptions****P1 (RNO):**

Enter the number you wish to assign to this trunk group as a traffic registration number.

- 1 to 10

**P2 (TGN):**

Enter the trunk group number which will be referenced by the registration number entered above.

- 1 to 63
- 10 = Modem group

**P3 (MGID):**

Enter the modem group ID (when TGN = 10). Otherwise, leave blank.

- 1 to 15

**Display**

1. Enter an RNO at P1.
2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of TGNs.
2. The system releases this CMC after the last registered TGN displays.

- Change**
1. Enter an RNO at P1.
  2. Press **DSP**.
  3. Press **ADD/CHG**.

- Remove**
1. Enter an RNO at P1.
  2. Press **DSP**.
  3. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
TRF MEAS	An attempt was made to add, change, or remove a TGN or MGID while traffic measurement was active.	Use CMC 601 to shut off traffic measurement before using CMC 600.

**TRAFFIC MEASUREMENT  
ACTIVATION (CMC 601)**

Use the Traffic Measurement Activation (**CMC 601**) table to display and change the traffic measurement activation flag.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TSF	Traffic measurement start/stop flag	0 = Stop traffic measurement 1 = Start traffic measurement	None

**Parameter Descriptions****P1 (TSF):**

Enter the value you wish to assign regarding starting or stopping traffic measurement.

- 0 = Stop traffic measurement
- 1 = Start traffic measurement

**Display**

Press **DSP** to display the TSF.

**Change**

1. Enter the TSF.
2. Press **ADD/CHG** to change the TSF.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
TRF MEAS	Now measuring the traffic.	

**TRAFFIC MEASUREMENT  
DATA DISPLAY (CMC 602)**

Use the Traffic Measurement Data Display (**CMC 602**) table to display the traffic data. Traffic data for each traffic group is held in two buffers. Each buffer can contain up to 10 hours of data. Buffer two fills up first. When it is full, the contents of buffer two are put into buffer one. When buffer two fills again, it empties into buffer one, overwriting any data in buffer one. The system can hold up to 20 hours of data for any one traffic group.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>FLG</b>	Traffic measurement data area flag	1 = Measurement data storing area 2 = Measurement data stored area	None
<b>P2</b>	<b>RNO</b>	Registration sequence number	1 to 10	None
<b>P3</b>	<b>TGN</b>	Trunk group number	1 to 63	None
<b>P4</b>	<b>TIM</b>	Traffic measurement period	1 to 10 hours	None
<b>P5</b>	<b>TRF</b>	Traffic density	0 to 100%	None
<b>P6</b>	<b>MGID</b>	Modem group ID	1 to 15	None

**Parameter Descriptions****P1 (FLG):**

Enter the traffic measurement data area flag. This value determines which area will be displayed.

- 1 = Measurement data storing area
- 2 = Measurement data saved area

**P2 (RNO):**

Enter the registration sequence number.

- 1 to 10 (see CMC 600)

**P3 (TGN):**

The registered trunk group number will be displayed.

- 1 to 63

**P4 (TIM):**

The assigned traffic measurement period will be displayed. This is the elapsed time in hours from the time the traffic measurement was started.

- 1 to 10 (hours)

**Parameter Descriptions  
(Cont'd)****P5 (TRF):**

The traffic density will be displayed.

- 0 to 100%

**P6 (MGID):**

When the TGN has been assigned as 10, the modem group ID will be displayed here.

- 1 to 15

**Display**

1. Enter the FLG and RNO.
2. Press **DSP** to display the TGN, TIM, TRF, and MGID corresponding to the RNO.

**NOTES:**

1. If the traffic measurement has not been registered, blanks are displayed for the TGN parameter.
2. Press **DSP** repeatedly to display subsequent TIMs and their TRFs.
3. Press **DSP** when the TRF corresponding to the last TIM has been displayed to terminate the command.
4. TRF corresponding to the period not measured displays as 0.



## CHAPTER 3

## CHANGE AND MAINTENANCE COMMANDS

### OVERVIEW

This chapter describes device-specific CMCs. Use these commands to isolate faults on specific cards, trunks, stations, etc. These commands are referenced in fault isolation flowcharts in Chapters 4 and 5 of this document.

This chapter also lists and describes the CMCs associated with maintenance operations. Refer to the Data Base Manual for CMCs referenced but not included in this document.

### TIME AND DATE SETTING (CMC 700)

Use the Time and Date Setting (**CMC 700**) table to set the system hardware and software clocks. The time and date are used when faults are logged in the system (see CMC 801). The time and date are also displayed on LCD display telephones.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	YEAR	Current year	4 digits (0001 to 9999)	None
P2	DAY	Current month and day	MM = Month (01 to 12) DD = Day (01 to 31)	None
P3	WEEK	Current day of the week	1 = Sunday 2 = Monday 3 = Tuesday 4 = Wednesday 5 = Thursday 6 = Friday 7 = Saturday	None
P4	TIME	Current hour and minute	HH = Hour (00 to 23) MM = Minute (00 to 59)	None

#### Parameter Descriptions

##### P1 (YEAR):

Enter the current year.

- 4 digits (0001 to 9999)

##### P2 (DAY):

Enter the current month and day, in an MMDD format:

- MM = Month (01 to 12)
- DD = Day (01 to 31)

**Parameter Descriptions  
(Cont'd)**

**P3 (WEEK):**

Enter the current day of the week.

- 1 = Sunday
- 2 = Monday
- 3 = Tuesday
- 4 = Wednesday
- 5 = Thursday
- 6 = Friday
- 7 = Saturday

**P4 (TIME):**

Enter the current hour and minute in the HHMM format:

- HH = Hour (00 to 23)
- MM = Minute (00 to 59)

**Display**

1. Press **DSP** to display:

- Minute
- Hour
- Day of the week
- Month and day
- Year

specified for the software clock.

2. Blanks are displayed when:

- The clock is not set after a COLD restart has occurred.
- The hardware clock is out of order.

**Change**

1. Enter the YEAR to TIME parameters.
2. Press **ADD/CHG** to change the software and hardware clock for:

- Second
- Minute
- Hour
- Day of the week
- Month and day
- Year

**NOTES:**

1. Seconds will always start from 00 when setting the clock.
2. There is no check for dates which are within range but are illegal, e.g., February 30. However, the system will not display an illegal date on phone instruments or consoles.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
HARD ERR	The hardware clock is faulty.	Check the hardware clock.
PARA. ERR	The specified YEAR, DAY, WEEK, or TIME is out of range.	Enter a correct value.

**MAKE BUSY ASSIGNMENT  
(CMC 701)**

Use the Make Busy Assignment (**CMC 701**) table to make a card circuit busy or to release a make-busy condition. When a trunk is made busy, the system sends a trunk-busy signal to the connected system.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>EN</u>	Equipment number	See description below	None
<u>P2</u>	<u>BI</u>	Make busy status	0 = Release make-busy 1 = Busy-out the circuit Blank = Not installed	0

**Parameter Descriptions**

**P1 (EN):**

Enter the equipment number of the circuit card which you wish to make busy. Equipment numbers are entered in the XYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00-18
- Z = Circuit number: 0-7

**P2 (BI):**

Enter the value corresponding to the make busy status you desire.

- **0 = Release make-busy (default)**
- 1 = Busy-out the circuit
- Blank = Not installed

**Display**

1. Enter an EN at P1.
2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of ENs.
2. To release this CMC, press **DSP** after the last EN has been displayed.

- Change**
1. Enter the EN to be changed at P1.
  2. Enter the new value for BI at P2.
  3. Press **ADD/CHG**.

**NOTES:**

1. When using CMC 701 to make a 4BWC, 8BWC, 2TTL, 2TTE, 2TE4, 4TE4, or 6DID trunk busy, the system sends a trunk-busy signal to the connecting system. The type of signal sent is as follows:

TRUNK TYPE	SIGNAL TYPE
4BWC, 8BWC (ground start)	Send a ground signal - then close the loop
4BWC, 8BWC (loop start)	Close the loop
2TTE, 2TTL, 2TE4, 4TE4, 6DID (wink start, delay dial, immediate start)	Close the loop

2. With a DID trunk, the trunk-busy signal is sent to the connected system.
3. When a power failure or HOT restart occurs, the system closes the loop of any trunk in the make-busy state.
4. If an MCT is used to perform this function, the system denies any attempt to make the MCT circuit busy.
5. Use CMC 705 to make the SMDR printer busy.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	An attempt was made to enter an EN which is not registered.	Check the data and try again.
DENIED 1	The station registered to the entered EN or the station paired with the data station registered to the entered EN is assigned as an MCT.	Remove the MCT assignment at CMC 702 and try again.
DENIED 27	API is assigned to the specified EN.	Remove API at CMC 281 and try again.
DENIED 31	Trunk in loop back mode.	Cancel the loop back and try again.
DISAGREE	An attempt was made to enter an EN which is assigned as an RVAC port.	Abandon the attempt.

**SMDR PRINTER MAKE BUSY ASSIGNMENT (CMC 705)**

Use the SMDR Printer Make Busy (**CMC 705**) command to create an artificial busy state on the SMDR printer port.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>PORT</u>	Port number	0 or 1	None
<u>P2</u>	<u>MBF</u>	Make busy/ release flag	0 = Release make busy 1 = Place in a make-busy state	0

**Parameter Descriptions**

**P1 (PORT):**

Enter the port number of the SMDR printer which you wish to make busy.

- 0 or 1

**P2 (MBF):**

If necessary, enter the value corresponding to the release or make busy state.

- **0 = Release make busy (default)**
- 1 = Place in a make busy state

**Display**

1. Enter the PORT at P1.
2. Press **DSP**.

**NOTE:** Press **DSP** again to release the CMC.

**Change**

1. Enter the PORT at P1.
2. Press **DSP**.
3. Enter the new value for MBF at P2.
4. Press **ADD/CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	An attempt was made to display a PORT which does not host an SMDR printer.	Enter the other PORT and try again.

**HOTEL/MOTEL PRINTER  
MAKE BUSY ASSIGNMENT  
(CMC 706)**

The Hotel/Motel Printer Make Busy Assignment (**CMC 706**) command is used to put a hotel/motel printer into the busy state for maintenance.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>PNO</u>	Printer number	0 or 1	None
<b>P2</b>	<b>MBF</b>	Make busy/ release flag	0 = Release make busy 1 = Place in a make-busy state	0

**Parameter Descriptions**

**P1 (PNO):**

Enter the printer number of the hotel/motel printer which you wish to make busy.

- 0 or 1

**P2 (MBF):**

If necessary, enter the value corresponding to the release or make busy state.

- **0 = Release make busy (default)**
- 1 = Place in a make busy state

**Display**

1. Enter a P1 value.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** again will display the other printer if it is installed.
2. The system will release this CMC when the PNO value exceeds 2.

**Change**

1. Enter a PNO at P1.
2. Enter the new MBF value at P2.
3. Press **ADD/CHG**.

**4CHT LOOP BACK TEST (CMC 810)**

Use CMC 810 to perform a loop back test on the 4CHT card or between the 4CHT card and the DIU/DTA.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>TTP</u>	Test type	0 = Loop back test on the 4CHT card 1 = Loop back test between the 4CHT card and a DIU or DTA	None
<u>P2</u>	<u>CEN</u>	4CHT equipment number	See description below	None
<u>P3</u>	<u>DEN</u>	DIU or DTA directory number	3 or 4 digits	None
<u>P4</u>	<u>ANS1</u>	Test result 1	See Figure 3-1	None
<u>P5</u>	<u>ANS2</u>	Test result 2	See Figure 3-1	None

**Parameter Descriptions**

**P1 (TTP):**

Enter the test type which you wish to run.

- 0 = Loop back test on the 4CHT card
- 1 = Loop back test between the 4CHT card and a DIU or DTA

**P2 (CEN):**

Enter the equipment number of the 4CHT card which will be used for the test. Equipment numbers are entered in the XYYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0, 2, 4, or 6

**P3 (DEN):**

Enter the DIU or DTA directory number (when P1 = 1).

- 3 or 4 digits

**P4 (ANS1):**

Test result 1 is displayed (refer to Figure 3-1)

**P5 (ANS2):**

Test result 2 is displayed (refer to Figure 3-1)

**NOTE:** If TTP = 1 is selected, the associated DIU and DTA's test switch must be set to ON (see Figures 3-2 and 3-3 for the location of the test switches).

- Display**
1. Enter the TTP for the desired test at P1.
  2. Enter the CEN for the 4CHT to be tested at P2.
  3. Press **DSP**.
  4. The results are displayed in ANS1 and ANS2.

**NOTES:**

1. Pressing DSP repeatedly tests and displays data in numerical order of CENs.
2. The system releases this CMC when all registered CENs have been tested and displayed.
3. ANS1 and ANS2 will be blank if the test fails before completion.
4. When implementing the loop back test between the CHT and the DIU/DTA (P1 = 1), set the DIU/DTA test switch to on.
5. Figures 3-2 and 3-3 show the location of the DIU and DTA test switches used for extended loop testing (P1 = 1).

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The entered CEN is not installed.	Check the data entry and installation and try again.
DISAGREE	An attempt was made to test a trunk which is not a CHT.  The DIU/DTA is set to synchronous mode.	Check the data entry and installation and try again.  Return to CMC 222 and remove the synchronous mode from the terminal.
DENIED 20	An attempt was made to test a hotel/motel printer which is in the make-busy state.	Return to CMC 706 and release the hotel/motel printer.
NOT EXEC	The CHT or DIU/DTA is faulty or in the make-busy state.	Replace faulty cards. Return to CMC 701 to release equipment.



Figure 3-1. Key to P4 and P5: ANS1 and ANS2

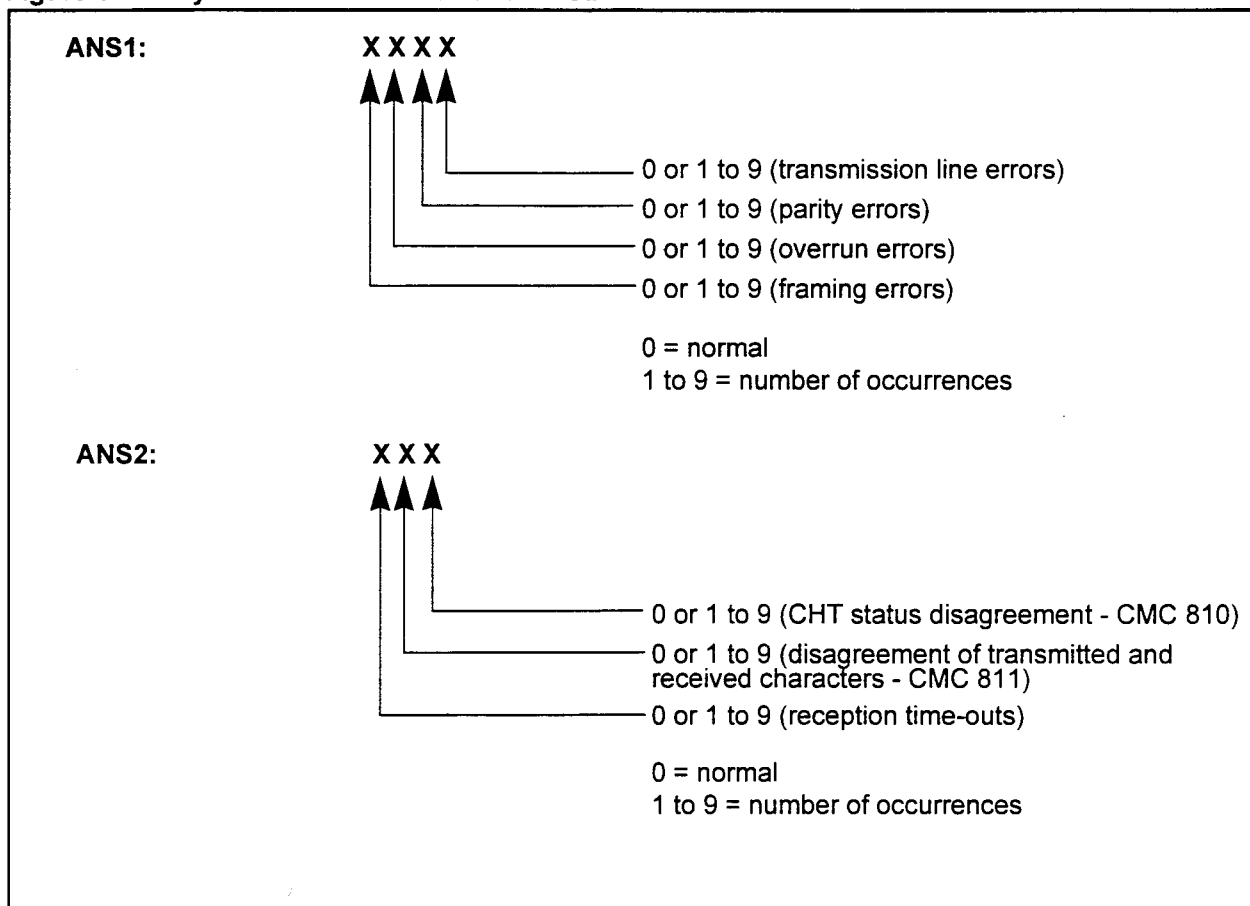


Figure 3-2. DIU Back Panel

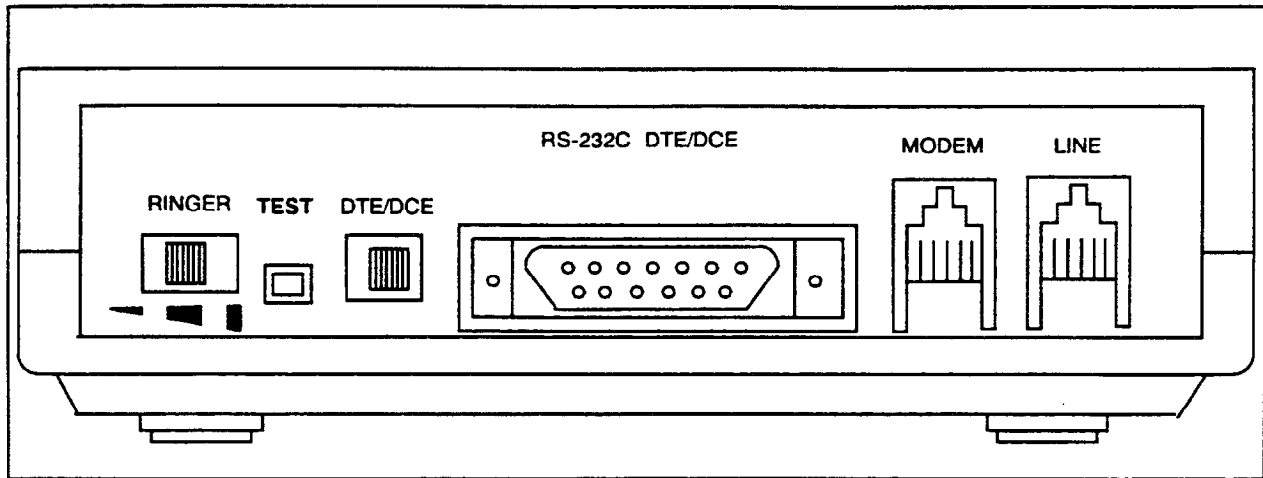
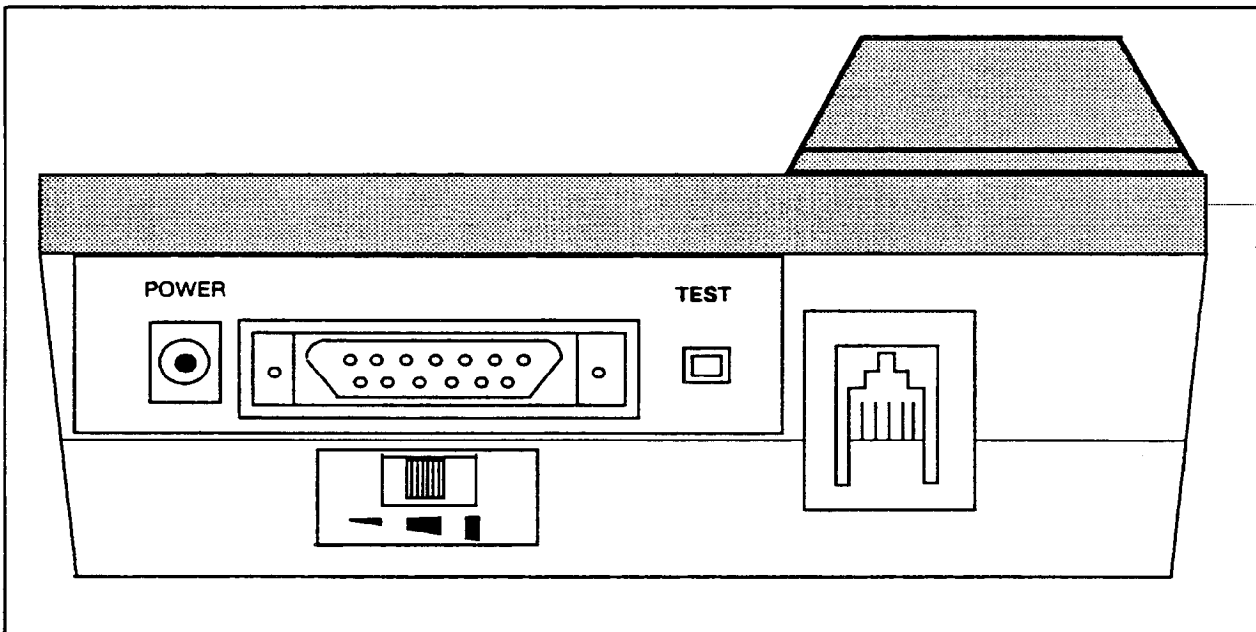


Figure 3-3. CSD with DTA Back Panel



**2APIA LOOP BACK TEST  
(CMC 811)**

Use this CMC to perform the loop back test inside or outside the 2APIA card.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>EN</u>	2APIA equipment number	See description below	None
<u>P2</u>	<u>TTP</u>	Test type	0 = Loop back test inside the 2APIA card 1 = Loop back test outside the 2APIA card	None
<u>P3</u>	<u>ANS1</u>	Test result 1	4 digits (see Notes)	None
<u>P4</u>	<u>ANS2</u>	Test result 2	3 digits (see Notes)	None

**Parameter Descriptions**

**P1 (EN):**

Enter the equipment number of the 2APIA card which will be used for the test. Equipment numbers are entered in the XYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 or 1

**P2 (TTP):**

Enter the test type which you wish to run (refer to Figure 3-4).

- 0 = Loop back test inside the 2APIA card
- 1 = Loop back test outside the 2APIA card

**P3 (ANS1):**

Test result 1 is displayed. See further on in this CMC for more information.

**P4 (ANS2):**

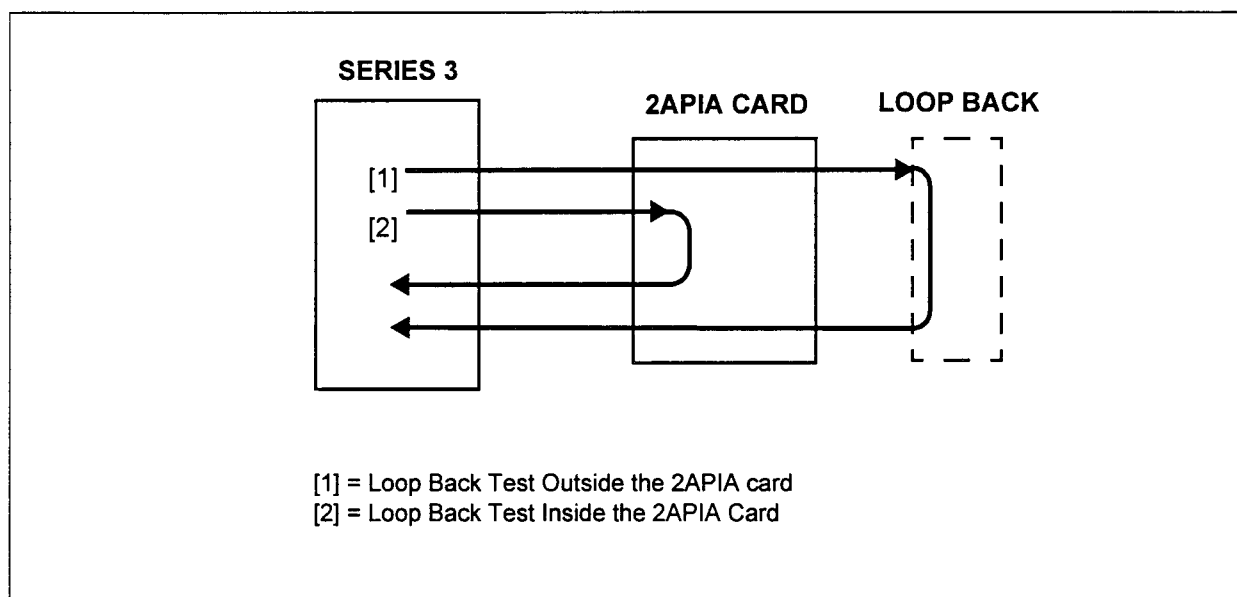
Test result 2 is displayed. See further on in this CMC for more information.

- Display/Perform Test**
1. Enter the EN at P1 and the TTP at P2.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** performs the loop back test. Results are displayed in ANS1 and ANS2.
2. Nine tests are automatically performed for each loop test. Test results can take up to 30 seconds to appear after pressing **DSP**.
3. Pressing **DSP** repeatedly increments the EN automatically and performs the loop back test.
4. The command terminates when all 2APIAs are tested.
5. ANS1 and ANS2 are blank when a failure has occurred in the specified 2APIA card.

**Figure 3-4. 2APIA Loop Back Test**



**NOTE:** When performing an outside loop back test the data signal connections must be as follows:

- SD to RD
- RTS to CTS and CD
- DTR to DSR

- Meaning of the P3 parameter:

**ANS1:**

X X X X

- 0 or 1 to 9 (transmission timeouts)
- 0 or 1 to 9 (parity errors)
- 0 or 1 to 9 (overrun errors)
- 0 or 1 to 9 (framing errors)

0 = normal  
1 to 9 = number of occurrences

- Meaning of the P4 parameter:

**ANS2:**

X X X

- 0 or 1 to 9 (2APIA status disagreements)
- 0 or 1 to 9 (disagreement of transmitted and received characters)
- 0 or 1 to 9 (reception time-outs)

0 = normal  
1 to 9 = number of occurrences

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified EN has not yet been installed.	Check the EN.
DISAGREE	A package other than a 2APIA card is assigned to the specified EN.	Check the EN.
DENIED 27	AP type is assigned to the specified EN.	Remove AP type (CMC 281).
NOT EXEC	The 2APIA card is faulty or made-busy.	The test is disabled if the 2APIA is faulty. Release the make-busy.

**T-1 TRUNK LOOP BACK TEST (CMC 813)**

Use this CMC to perform the loop back test inside or outside the 24T1 trunk card. Figure 3-5 shows a diagram of the T-1 loop back test. This test can only be performed when all channels of the 24T1 trunk card are idle. In addition, this test cannot be performed when the following conditions exist:

- Network clock is extracted.
- Trunk failure.
- Trunk made busy.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>EN</u>	Equipment number	See description below	None
<u>P2</u>	<u>TTP</u>	Type of test	0 = Run the loop back test inside the trunk card 1 = Run the loop back test outside the trunk card 2 = Set the card to loop back mode	None
<u>P3</u>	<u>ANS</u>	Test results	When P2 = 0 or 1, the number of errors detected (0 to 9) is displayed When P2 = 2, 0 (normal) or 1 (loop back) is displayed	None

**Parameter Descriptions****P1 (EN):**

Enter the equipment number of the T-1 card which you wish to test.

**P2 (TTP):**

Enter the type of test which you wish to run.

- 0 = Run the loop back test inside the trunk card
- 1 = Run the loop back test outside the trunk card
- 2 = Set the card to loop back mode

**P3 (ANS):**

Test results are displayed.

- When P2 = 0 or 1, the number of errors detected (0 to 9) is displayed
- When P2 = 2, 0 (normal) or 1 (loop back) is displayed

- Display**
1. Enter the EN and the TTP.
  2. Press **DSP** to perform the test. The results are displayed in ANS.

**NOTES:**

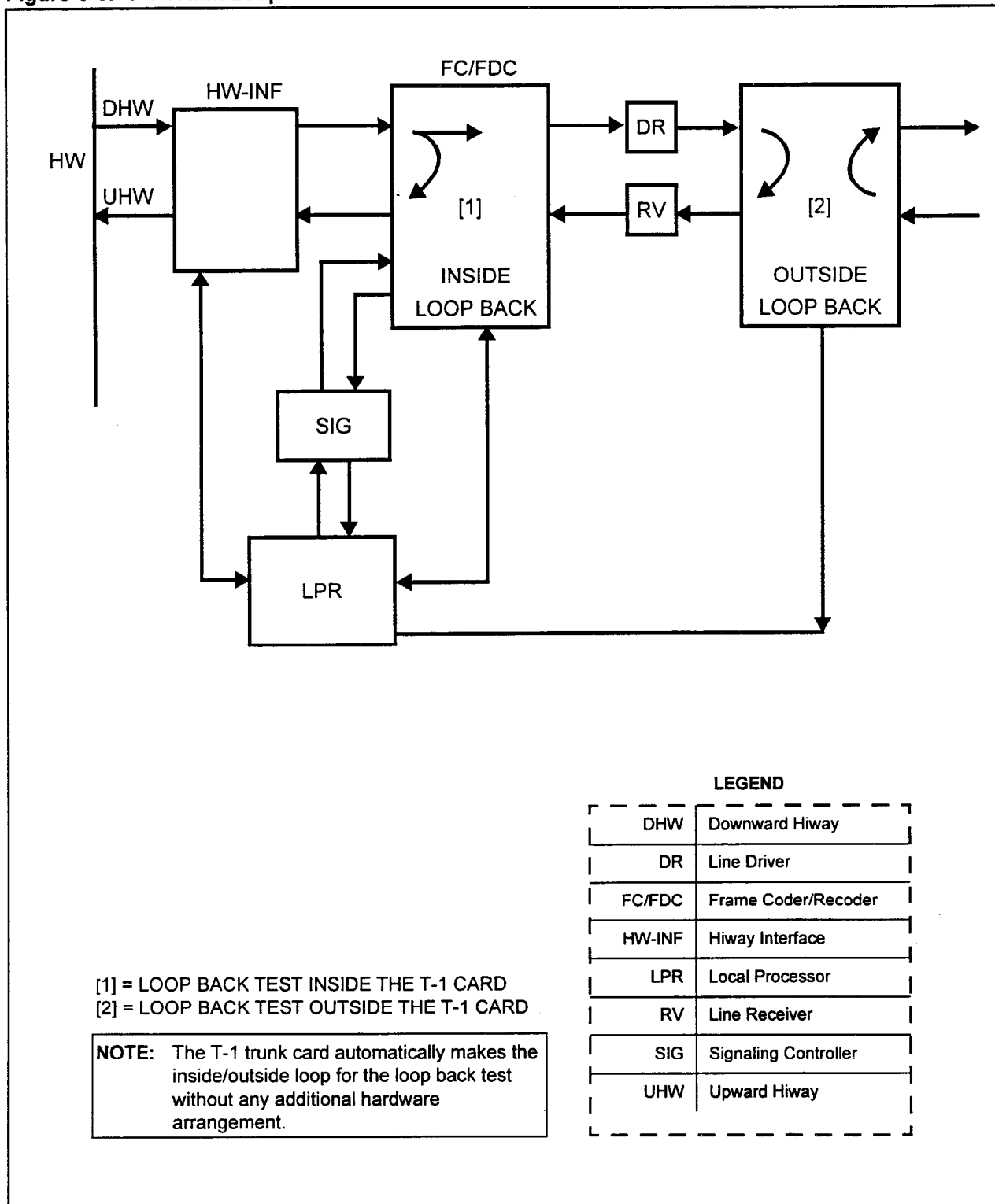
1. Physical card slots available for the T-1 card are 00, 01, 03, 04, 06, or 07.
2. Up to five T-1 cards can be installed in each cabinet; however, *the maximum number of T-1 channels allowed is 240 channels.*
3. Pressing **DSP** repeatedly automatically updates P1 to the next T-1 trunk card EN and performs the loop back test.
4. Pressing **DSP** after testing the T-1 trunk card with the largest EN terminates this command.
5. If you attempt to perform the loop back test when the specified T-1 trunk card is busy, the system monitors the trunk until it is idle, and then performs the test. Pressing **RLS** terminates the command, and releases the system from this monitor status.
6. P3 tells the number of errors detected after a total of nine tests.

- Change** Enter EN, TTP, and ANS and press **ADD/CHG** to set/cancel the loop back mode.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DISAGREE	The specified EN is not a T-1 trunk.	Check the EN and try again.
NOT EXEC	The specified T-1 is faulty or made-busy.	Cancel the make-busy.
NOT RGTR	The specified EN is not registered.	Check the EN and try again.
PARA. ERR	<b>ADD/CHG</b> has been pressed when P2 is not set to 2.	Check P2 value.
	The specified ANS is not correct.	Check P3 value.
DENIED 30	Extracting network clock.	Stop extracting network clock.

Figure 3-5. T-1 Trunk Loop Back Test



[1] = LOOP BACK TEST INSIDE THE T-1 CARD  
 [2] = LOOP BACK TEST OUTSIDE THE T-1 CARD

**NOTE:** The T-1 trunk card automatically makes the inside/outside loop for the loop back test without any additional hardware arrangement.

LEGEND

DHW	Downward Hiway
DR	Line Driver
FC/FDC	Frame Coder/Recorder
HW-INF	Hiway Interface
LPR	Local Processor
RV	Line Receiver
SIG	Signaling Controller
UHW	Upward Hiway



**RS-232C PORT  
CONFIGURATION  
ASSIGNMENT (CMC 900)**

Use the RS-232C Port Configuration Assignment (**CMC 900**) table to change the configuration of the system I/O ports.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	PORT	Port number	0 or 1	None
P2	RATE	Bit rate	1 = 110 bps 2 = 150 bps 3 = 300 bps 4 = 600 bps 5 = 1200 bps 6 = 2400 bps 7 = 4800 bps	6
P3	PRTY	Parity	1 = None 2 = Odd 3 = Even	3
P4	CHR	Character length	7 = 7 bits 8 = 8 bits	7
P5	STOP	Stop bit	1 = 1 bit 2 = 2 bits	1
P6	ECHO	Echo back	1 = Echo on 2 = Echo off	1

**Parameter Descriptions**
**P1 (PORT):**

Enter the port which you wish to configure.

- 0 or 1

**P2 (RATE):**

Enter the bit rate for this port.

- 1 = 110 bps
- 2 = 150 bps
- 3 = 300 bps
- 4 = 600 bps
- 5 = 1200 bps
- **6 = 2400 bps (default)**
- 7 = 4800 bps

**NOTE:** If assigning a PcMP, set the bit rate for 2400 bps.

**P3 (PRTY):**

Enter the parity for the port being defined.

- 1 = None
- 2 = Odd
- **3 = Even (default)**

**Parameter Descriptions  
(Cont'd)**

**P4 (CHR):**

Enter the character length for this port.

- 7 = 7 bits (default)
- 8 = 8 bits

**P5 (STOP):**

Enter the stop bit.

- 1 = 1 bit (default)
- 2 = 2 bits

**P6 (ECHO):**

Enter the echo back.

- 1 = Echo off (default)
- 2 = Echo on

**Display**

1. Enter the port number at P1.
2. Press **DSP**.

**NOTES:**

1. Press **DSP** again to display the other port.
2. The system releases this CMC when the PORT exceeds 1.

**Change**

1. Enter the number of the port to be changed.
2. Press **DSP**.
3. Use the cursor control keys or **Return** to move the cursor to the parameter(s) to be changed.
4. Enter any new values.
5. Press **ADD/CHG**.

**NOTE:** The changed condition becomes available at the end of the command mode for the port that is assigned for PcMP. This command is not available for the port that is assigned SMDR.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DENIED	The specified port is being used for your PMP command mode or SMDR printer.	Remove the SMDR assignment using CMC 901 before making any changes.
I/O BUSY	The specified port is in use.	

**SMDR PRINTER CONTROL  
(CMC 901)**

Use the SMDR Printer Control (**CMC 901**) table to assign a printer to a system port which will print SMDR data. In addition, use this table to establish the control codes needed for printer operation.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	PORT	Port number	0 or 1	None
P2	XON	X-on/X-off control characters	See Table 3-1	None
P3	PC	Power control characters	See Table 3-2	None
P4	ONT	Power on timing	1 to 255 (200 ms)	None
P5	OFFT	Power off timing	1 to 255 (10 sec)	None
P6	PRTF	Printer format	1 = 80 digits/one line 2 = 80 digits/two lines 3 = 136 digits/one line	None

**Parameter Descriptions****P1 (PORT):**

Enter the port which you wish to configure.

- 0 or 1
- Blank = No printers installed

**P2 (XON):**

Enter the X-on/X-off control characters (please refer to Table 3-1).

**P3 (PC):**

Enter the power control characters for the port being defined (please refer to Table 3-2).

- 1 to 12, or leave blank

**P4 (ONT):**

Enter the power on timing for this port, in units of 200 ms.

- 1 to 255, or leave blank

**P5 (OFFT):**

Enter the power off timing for this port, in units of 10 sec.

- 1 to 255, or leave blank

**NOTE:** The actual timing generated by the ONT and OFFT values may be up to one time unit less than the calculated timing.

**P6 (PRTF):**

Enter printer format.

- 1 = 80 digits/one line
- 2 = 80 digits/two lines
- 3 = 136 digits/one line

**NOTE:** Execute a warm restart for records to be generated.

Table 3-1. X-On/X-Off Characters

P2	X-ON CHARACTERS	X-OFF CHARACTERS
1	DC1	DC3
2	DC2	DC4
Blank	None	None

Table 3-2. Power On/Power Off Characters

P3	POWER ON CHARACTER	POWER OFF CHARACTER
1	Null	None
2	Null	Null
3	Null	Del
4	Null	Esc J
5	Del	None
6	Del	Null
7	Del	Del
8	Del	Esc J
9	Esc H	None
10	Esc H	Null
11	Esc H	Del
12	Esc H	Esc J
Blank	None	None

**Display** Press **DSP**.

**NOTES:**

1. The values for parameters 1 through 6 will be displayed.
2. Pressing **DSP** again will terminate data display mode.

- Change**
1. Press **DSP**.
  2. Use **Return** or the cursor control keys to move the cursor to the parameter(s) to be modified.
  3. Enter the new data.
  4. Press **ADD/CHG**.

- Remove**
1. Press **DSP**.
  2. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
OVERLAP	An attempt was made to register an SMDR printer when one is already installed.	Abandon the attempt.
NOT RGTR	The specified port has not been installed.	Check the PORT value.
DENIED	An attempt was made to designate a port for use by the SMDR printer which is already being used by a programming tool.	Attempt to designate the other port for use by the SMDR printer.
I/O BUSY	An attempt was made to designate a port for use by the SMDR printer which is already being used.	Attempt to designate the other port for use by the SMDR printer.
PARA. ERR	P4 or P5 entered without corresponding P3 value.  P3 entered without corresponding P4 and P5 values.	Check the parameter(s).

**SYSTEM SOFTWARE  
VERSION DISPLAY (CMC 904)**

Use the system software version display (**CMC 904**) table to determine the software version operating the system.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	VID	Version ID	15 characters (maximum)	None

**Parameter Descriptions**

**P1 (VID):**

The version ID will be displayed as shown below.

- 15 characters (maximum)

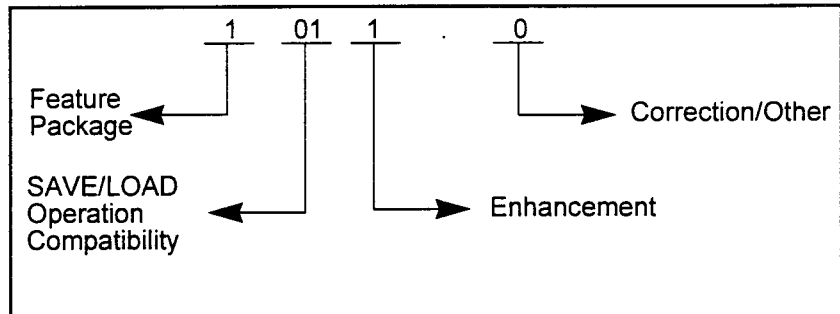
**NOTE:** In addition, the code to determine whether the Basic (1.0B) or Enhanced (1.0E) software is installed can be found on the memory daughter board on the CPU card.

**Display**

Press **DSP**.

**NOTE:** Press **DSP** again to release this CMC.

**FORMAT**



- **Save/Load Operation Compatibility:** Customer data in RAM can be backed up by PMP onto a microcassette tape or by PcMP onto a disk and loaded back to the system in the SAVE/LOAD operation. However, if the new software to be loaded is a different version than the already existing saved data base, then the two versions will be incompatible.
- **Enhancement:** This shows any updated versions containing enhancements to the operation of the system.
- **Correction/Other:** This shows the correction version when any corrections or improvements are made that do not affect the user's operation of the system.

**DISTRIBUTED PROCESSOR  
VERSION ID DISPLAY (CMC  
907)**

Use the Distributed Processor Version ID Display (CMC 907) command to display the processor version of cards installed in card slots 00-18 in each cabinet of the system.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	EN	Equipment number	See description below	None
P2	TYP	Card type	1 = 8SLC/16SLC/8PDL 2 = 4BWC 3 = 2TTE/2TE4 4 = 2TTL 5 = 4DMR 6 = 4CHT 7 = RVAC 8 = 4SLE 9 = 2APIA 10 = Reserved 11 = ISDN 23PT 12 = FIPN 23PT 13 = Reserved 14 = 24T1 15 = 6DID 16 = Reserved 17 = Reserved 18 = 8BWC 19 = 4TE4	None
P3	VNO	Version number	0 to 127	None

**Parameter Descriptions**

**P1 (EN):**

Enter the equipment number of the card which you wish to display. Equipment numbers are entered in the XYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 18
- Z = Circuit number: 0 to 7

**Parameter Descriptions  
(Cont'd)**

**P2 (TYP):**

The card type will be displayed, using one of the values shown below:

- 1 = 8SLC/16SLC/8PDL
- 2 = 4BWC
- 3 = 2TTE/2TE4
- 4 = 2TTL
- 5 = 4DMR
- 6 = 4CHT
- 7 = RVAC
- 8 = 4SLE
- 9 = 2APIA
- 10 = Reserved
- 11 = ISDN 23PT
- 12 = FIPN 23PT
- 13 = Reserved
- 14 = 24T1
- 15 = 6DID
- 16 = Reserved
- 17 = Reserved
- 18 = 8BWC
- 19 = 4TE4

**P3 (VNO):**

The version number of the card will be displayed.

- 0 to 127

**NOTES:**

1. The system displays the processor versions for the cards which are installed in the system cabinet.
2. If an EN is not installed, or if the EN contains an 8EKC, 8DTC, or 16DTC, the EN is skipped and the next installed EN is displayed.
3. P3 only identifies the processor version, not the card revision. The card revision is located on the card itself.

**Display**

1. Enter an EN at P1.
2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of ENs.
2. The system releases this CMC after the last installed EN has been displayed.



**SERVICE INFORMATION DISPLAY (CMC 908)**

Use the Service Information Display (**CMC 908**) table to display service information, showing whether or not a value added service is available. Depending on the configuration of your system, different screens and parameters may be displayed.

This CMC requires a LOW level security code.

**Copyright Display Screen** No data need be entered. This is a display screen only.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	PT	System prompt	COPYRIGHT (C)	None
P2	PT	System prompt	FUJITSU LIMITED	None
P3	PT	System prompt	1993	None

**Version ID Screen** No data need be entered. This is a display screen only.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	VID	Version ID	15 characters maximum	None
P2	SD	Service data	8 characters maximum	None

**P1 (VID):**  
The version ID (maximum 15 characters) will be displayed.

**P2 (SD):**  
Any additional service data (8 characters) will be displayed.

**Service Information Display** Enter data in P1 only.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	SVN	Service name	See Table 3-3	None
P2	SVA	Service availability	See Table 3-3	None

**P1 (SVN):**  
Enter the desired service name (maximum 15 characters). Please refer to Table 3-3 for more information.

**P2 (SVA):**  
The specific service availability will be displayed.

**NOTE:** Repeated pressing of DSP displays the next SVN and SVA. For example:

P1: ACD  
P2: AVAILABLE

Table 3-3. Service Information

SERVICE NUMBER BITS	SERVICE NAME	SERVICE DATA
00 01 02 03	Reserved Reserved Basic (200A) Basic (400)	First hex character
04 05 06 07	Attendant Multi-Line Data	Second hex character
08 09 10 11	SMDR Reserved	Third hex character
12 13 14 15	Hotel Hotel Interface Recorded Voice Voice Mail	Fourth hex character
16 17 18 19	DID DISA DNIS	Fifth hex character
20 21 22 23	ACD ACD Interface	Sixth hex character
24 25 26 27	LCR FIPN Reserved T-1	Seventh hex character
28 29 30 31	ISDN PRI	Eighth hex character

**NOTE:** Service names of reserved numbers are not displayed. Service data is the hex character coded from a four-bit pattern which shows the service availability of each four services.

**DN-EN CONVERSION  
COMMAND (CMC 909)**

Use the DN-EN Conversion Assignment (**CMC 909**) to display the equipment number corresponding to the type of terminal and the directory number.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>TID</b>	Terminal ID	1 = Station 2 = Trunk 3 = Data station	None
<b>P2</b>	<b>DN</b>	Directory number	1 to 4 digits	None
<b>P3</b>	<b>EN</b>	Equipment number	See description below	None

**Parameter Descriptions****P1 (TID):**

Enter the terminal ID for which you wish to display information.

- 1 = Station
- 2 = Trunk
- 3 = Data station

**P2 (DN):**

Enter the directory number.

- 1 to 4 digits

**P3 (EN):**

The equipment number corresponding to the data entered in P1 and P2 will be displayed. Equipment numbers are displayed in the XYYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7

**Display**

Press **DSP** after entering P1 and P2 to display the EN corresponding to the DN.

**NOTES:**

1. Pressing **DSP** without entering a P2 value displays the parameters corresponding to the lowest DN of the entered TID.
2. Pressing **DSP** increments the DN and displays the corresponding ENs consecutively.
3. Pressing **DSP** after the last DN is displayed causes P2 and P3 to display blanks. Press **DSP** again to terminate the command.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified DN is not assigned.	Check the DN.

**ISDN PACKAGE DIAGNOSIS TEST (CMC 910)**

The ISDN Package Diagnosis Test (**CMC 910**) consists of the following:

- Loop back test inside and outside package.
- LPR test.
- Loop back cancel request to CO.

**NOTE:** During the loop back test, the line connector should be removed.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>TTP</u>	Type of test	1 = Loop back test inside the circuit card 2 = Loop back test outside the circuit card 3 = LPR test 4 = Loop back cancel request to CO	None
<u>P2</u>	<u>EN</u>	Equipment number	See description below	None
<u>P3</u>	<u>ANS</u>	Test results	See description below	None

**Parameter Descriptions****P1 (TTP):**

Enter the type of test you wish to run.

- 1 = Loop back test inside the circuit card
- 2 = Loop back test outside the circuit card
- 3 = LPR test
- 4 = Loop back cancel request to CO

**P2 (EN):**

Enter the equipment number of the ISDN card which you wish to test. Equipment numbers are entered in the XYYZ format:

- X = Cabinet number: 0 or 1
- YY = Logical card slot number: 00, 03, 06, 09, 12, 15
- Z = Circuit number: 0

**P3 (ANS):**

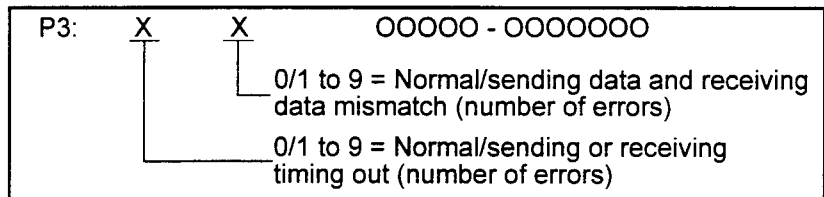
Test results will be displayed.

- When P1 = 1, 2, or 3, the information will be displayed as shown in the figures below and on the following page.
- When P1 = 4, 0 (cancel) or 1 (request) will be displayed.

ERROR CODES

ERROR CODE	CAUSE	CORRECTION
DISAGREE	The entered EN is not ISDN.	Specify an ISDN EN.
NOT EXEC	Corresponding channel failure or busy.  There is no loop back function of the entered EN.	Recover the failure or make the channel idle.
NOT RGTR	The entered EN is not installed.	Specify an installed ISDN EN.
DENIED 31	The entered EN is in loop back mode.	Release the loop back mode.

Loop back test:

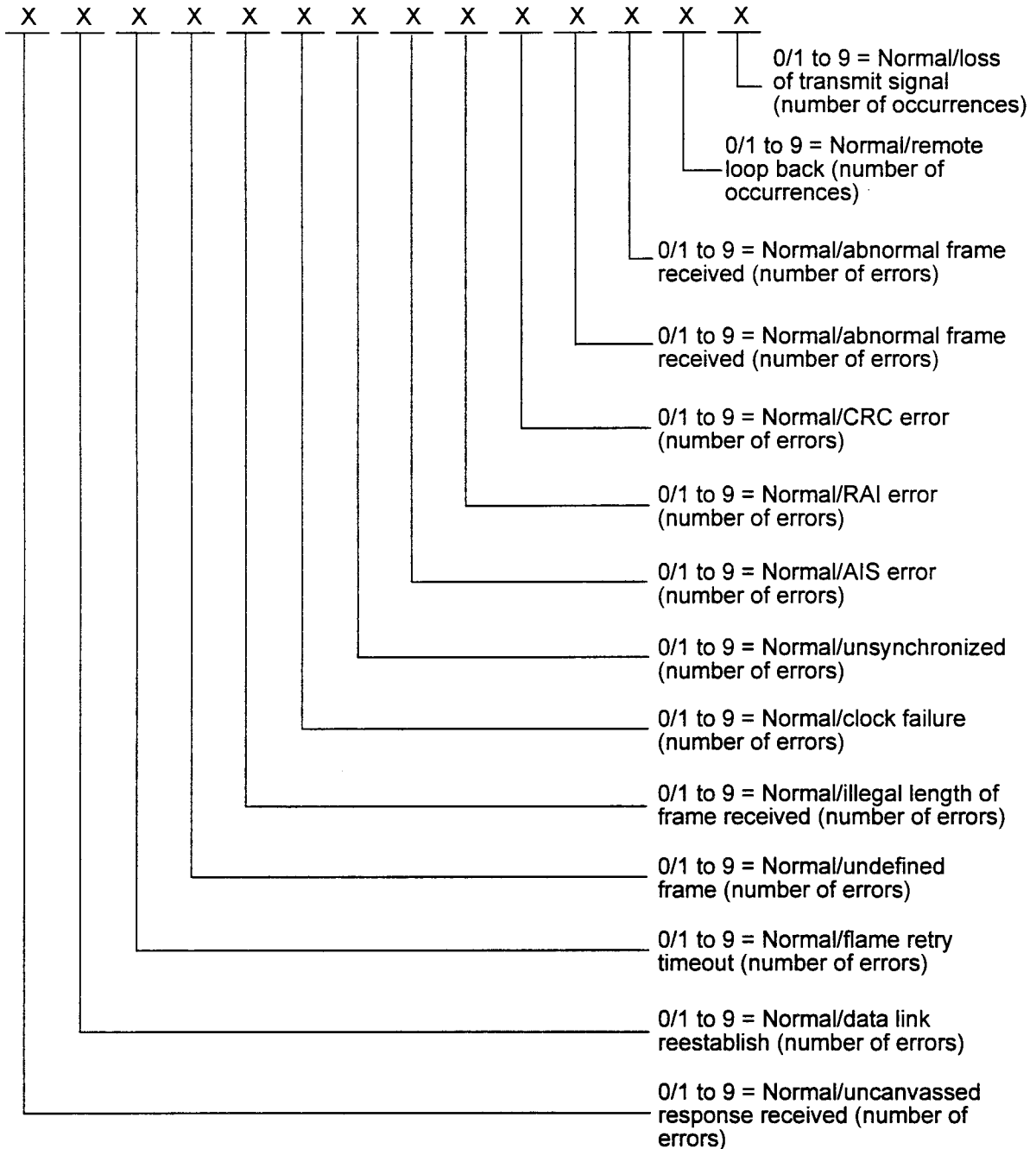


The total number of errors is displayed. (A maximum 54 sec. delay may occur.)

The result of the LPR error count is displayed (maximum 9 times).  
When the count is read, the counter is reset.

**LPR test:**

P3:



## Test examples:

**CMC = 910****P1 : 3****P2 : 090****P3 :**

P1: Type of test

P2: Equipment number of  
ISDN cardPress **DSP****CMC = 910 PROGRESS****P1 : 3****P2 : 090****P3 :**

Testing in progress

(During progress, you may  
press **RLS** to abort the  
command)**CMC = 910 DSP****P1 : 3****P2 : 090****P3 : 007000-000000**

Display of test results

## Abnormal abort:

- During the test, if an LPR failure occurs, the test is aborted and "spare" is displayed in P3.
- The loop back test is done when the entire channel is idle in a package. During a test, the package cannot be used.

**FLOPPY DISK DRIVE HEAD  
CLEANING (CMC 920)**

Use CMC 920 to clean the floppy disk drive heads. The floppy disk cleaning operation should be done every three months. The directions with the cleaning disk specify how long the disk can be used (usually it must be replaced after two operating hours).

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	FDDN	Floppy disk number	0	0

**Parameter Descriptions****P1 (FDDN):**

Enter the number of the floppy disk which you wish to be cleaned.

- 0

To clean the floppy disk drive:

1. Insert the floppy disk.
2. Enter the target drive number (0).
3. Press **ADD/CHG** to start cleaning.

**NOTE:** Cleaning cannot be interrupted.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DRIV ERR	The floppy disk drive is faulty.	Check the floppy disk drive.
NO FLPPY	The cleaning floppy disk is not inserted into the FDD.	Insert a cleaning floppy disk.



**LOAD DATA FROM FLOPPY DISK (CMC 921)**

Use this CMC to load customer data saved by the Save command. The switching process stops during loading. The system automatically performs a data kept start after the loading is complete.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	HSD	High level security code	4 digits	None
P2	DATE	Last date office data was saved	MM = Month DD = Day YY = Year	None
P3	VER	Version of office data	VER.XXXXX.XXX	None

**Parameter Descriptions**

**P1 (HSD):**

Enter the HIGH level security code.

- 4 digits

**P2 (DATE):**

The last date that the office data was saved is displayed in the MM/DD/YY format:

- MM = Month
- DD = Day
- YY = Year

**P3 (VER):**

The version of the office data is also displayed.

- VER.XXXXX.XXX

**Add/Display**

1. Place the floppy disk with the saved office data into the floppy disk drive.

**NOTE:** The floppy disk drive is optional in the Series 3 system.

2. Enter P1 value.
3. Press **ADD/CHG** to display P2 and P3 information.
4. Press **ADD/CHG** again to load the office data from the floppy disk.

**NOTE:** Loading cannot be interrupted.

**Office Data Load Procedure**

1. Enter the HIGH level security code.
2. Press **ADD/CHG** to display information on the saved office data.
3. Press **ADD/CHG** again to load the data.
4. After the data is loaded, the system will execute a "Data Kept" restart.

**NOTES:**

1. If an error occurs during the data loading procedure, perform a "No Kept" (COLD) restart.
2. Logging information is recorded as "CC" (device name) and "9" (error code) by CMC 801 when the load process is finished.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DRIV ERR	The floppy disk drive is faulty.	Check the floppy disk drive.
DISK ERR	The floppy disk is faulty.	Check the floppy disk.
NO DATA	The office data is not saved.	Check the floppy disk.
FRMT ERR	Floppy disk format error.	Check the floppy disk.
TYPE ERR	Floppy disk type error.	Check the floppy disk.
VER ERR	Floppy disk version error.	Check the floppy disk.
NO FLPPY	No floppy disk is inserted.	Insert a floppy disk.
PARA. ERR	The specified security code is not correct.	Enter a correct security code.
NO DRIV	The floppy disk drive is not installed correctly.	Install a floppy disk drive, or connect the FDD and CPU with the required cable.

**SAVE DATA TO FLOPPY DISK (CMC 922)**

Use the Save Data to Floppy Disk command (**CMC 922**) to save the office data to a floppy disk. Use an IBM-DOS formatted high-density (1.44 Mb) floppy disk.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>HSD</b>	High level security code	4 digits	None
<b>P2</b>	<b>DATE</b>	Last date office data was saved	MM = Month DD = Day YY = Year	None
<b>P3</b>	<b>VER</b>	Version of office data	VER.XXXXX.XXX	None
<b>P4</b>	<b>VCF</b>	Version check flag	0 (or blank) = With version check 1 = Without version check	None

**Parameter Descriptions****P1 (HSD):**

Enter the HIGH level security code.

- 4 digits

**P2 (DATE):**

The last date that the office data was saved is displayed in the MM/DD/YY format:

- MM = Month
- DD = Day
- YY = Year

**P3 (VER):**

The version of the office data is also displayed.

- VER.XXXXX.XXX

**P4 (VCF):**

Enter the version check flag (a value of either 0 or 1), depending upon your data save requirements.

- 0 (or blank) = With version check
- 1 = Without version check

**Add/Display**

To save data to a disk with no data saved:

1. Place the data floppy disk with no saved office data in the floppy disk drive.
2. Enter values for P1 and P4.
3. Press **ADD/CHG** to save the office data to the floppy disk.

**Add/Display (Cont'd)** To save data to a disk with data saved:

1. Place the data floppy disk with the saved office data into the floppy disk drive.
2. Enter values for P1 and P4.
3. Press **DSP** to display the parameter information for P2 and P3.
4. Press **ADD/CHG** to execute the save.

**NOTES:**

1. The new office data will override the existing office data.
2. Saving cannot be interrupted.

**Office Data Save Procedure**

1. Enter the HIGH level security code and version check flag.
2. If the floppy disk with no data is inserted, press **ADD/CHG** to save the office data.
3. If the floppy disk with data is inserted, press **ADD/CHG** to display the date and the version of the saved data on the floppy disk. Press **ADD/CHG** again to save the new office data.
4. When the save is complete, a **COMPLETION** message is displayed on the terminal screen.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DRIV ERR	The floppy disk drive is faulty.	Check the floppy disk drive.
DISK ERR	The floppy disk is faulty.	Check the floppy disk.
FRMT ERR	Floppy disk format error.	Check the floppy disk.
TYPE ERR	Floppy disk type error.	Check the floppy disk.
VER ERR	Floppy disk version error.	Check the floppy disk.
NO FLPPY	No floppy disk is inserted.	Insert a floppy disk.
WRT PROT	Floppy disk write-protected.	Release write-protection.
PARA. ERR	The specified security code is not correct.	Enter a correct security code.
NO AREA	There is no available area for the data save.	Delete unnecessary information and try again.
NO DRIV	The floppy disk drive is not installed correctly.	Install a floppy disk drive, or connect the FDD and CPU with the required cable.

**ISDN SERVICE DISPLAY  
(CMC 121)**

Use the ISDN Service Display (**CMC 121**) command to display the condition of service for ISDN CO trunk groups.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>EN</b>	Equipment number	See description below	None
<b>P2</b>	<b>SRV</b>	Service control flag	0 = In service 1 = Maintenance 2 = Out of service	None

**Parameter Descriptions**

**P1 (EN):**

Enter the equipment number of the ISDN CO trunk B-channel. Equipment numbers are entered in the XYZ format:

- X = Cabinet number: 0 or 1
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0-9

**P2 (SRV):**

After the equipment number is entered, the status of the ISDN trunk will be displayed as one of the following:

- 0 = In service
- 1 = Maintenance
- 2 = Out of service

**Display**

1. Enter the EN.
2. Press **DSP** to display the SRV value.

**NOTE:** After display, pressing **DSP** again updates the EN and displays the corresponding parameters. The command terminates when **DSP** is pressed after the last EN has been displayed.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified EN is not installed.	Enter a correct EN.
DISAGREE	The specified EN is not an ISDN trunk.	Enter a correct EN.

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## OVERVIEW

This chapter covers the procedures used for isolating faults of system-level common equipment and should be used in conjunction with the information provided in Chapter 2.

A total call processing failure (excluding one caused by a commercial AC power failure) can be caused by:

- Defective card in the CCG (Common Control Group).
- A failure of the fan in the MPSU.
- Defective power supply or fault in the interconnecting power cables to the cabinet.

If a total call processing failure occurs, the possible causes must be systematically excluded. If the cause cannot be found, the cabinet backplane circuitry may be faulty. The procedures for determining causes of system-wide problems are shown in flowcharts in this chapter.

## BASIC SYSTEM COMMON EQUIPMENT FAULT ISOLATION

This section describes fault isolation procedures for the basic (one cabinet) system. Flowcharts are included for diagnosing CCG card problems and system power failures.

If the installation is equipped with the 6PFA card, preconfigured stations are automatically connected to outside trunks during a system power failure. For testing, this option can also be manually activated through the switch on the 6PFA card.

### Basic Cabinet Power System Fault Isolation

Three LEDs are located on the front of the MPSU power supply. The LEDs are labeled OPE (green), UV (red), and INT (red).

The power supply is working properly when the green LED is on. When the OPE light is off, or when the red UV LED is on, the power supply has stopped working for one of the following reasons:

- Loss of commercial AC power (line unplugged or power failure).
- The INPUT switch of the power supply set to the OFF position.
- A major power supply problem in the power supply.
- The fan used to cool the MPSU has failed.
- An overload of one of the DC outputs; i.e., a short circuit occurred inside the cabinet.

Use the flowchart shown in Figure 4-1 to isolate the problem.

Figure 4-1. Fault Isolation Flowchart for System Power Failure

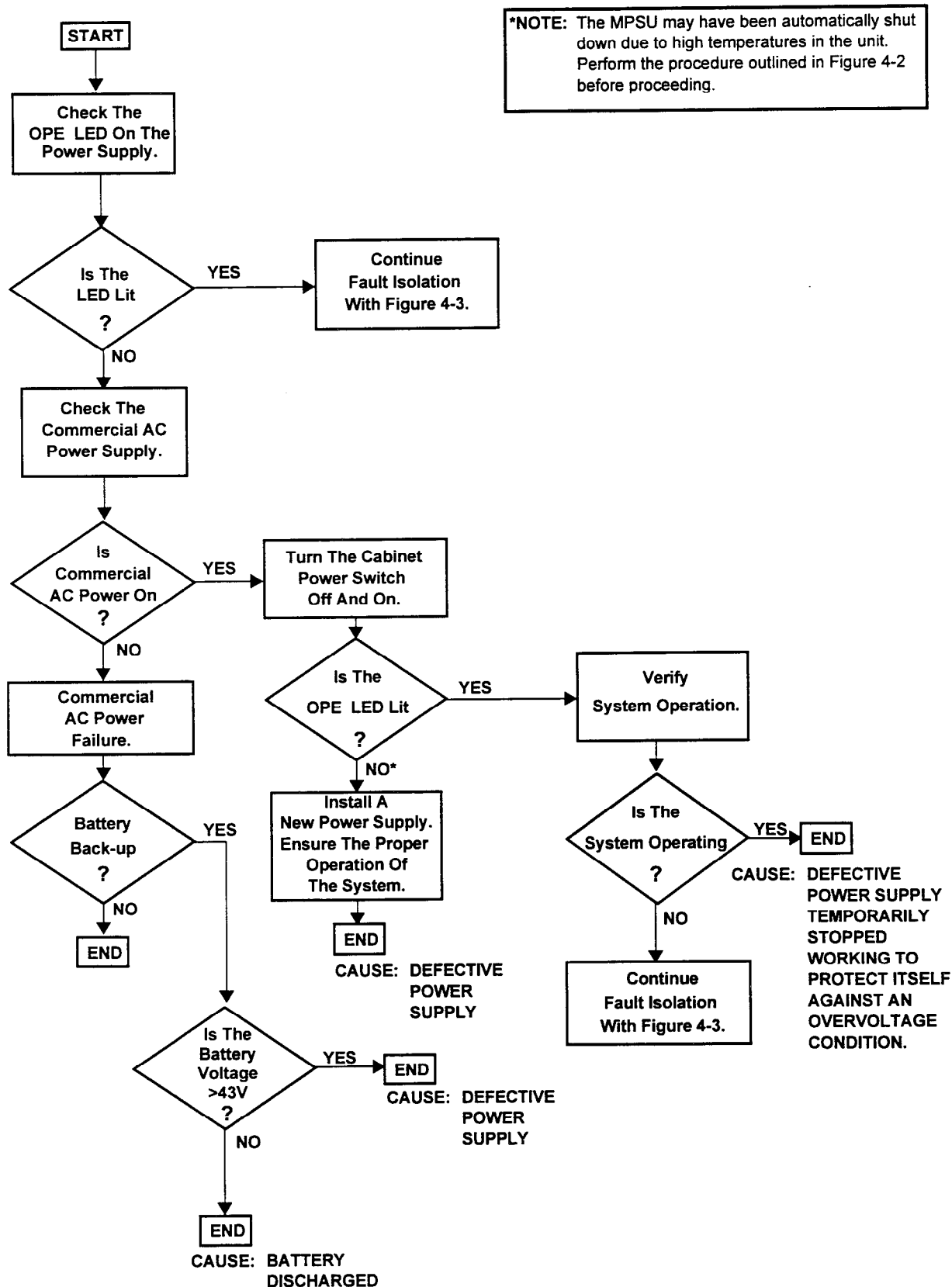
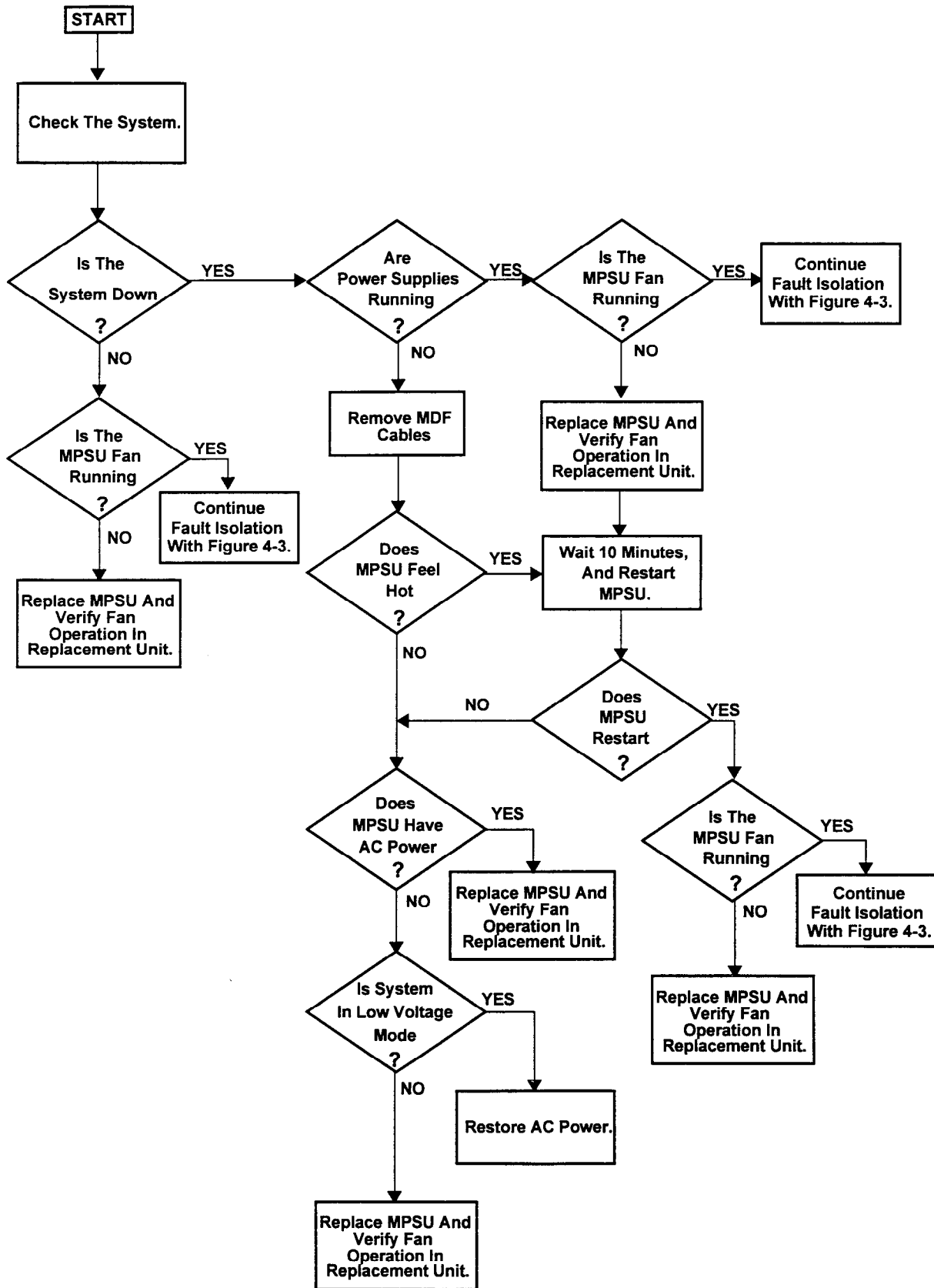




Figure 4-2. Fault Isolation Flowchart for MPSU Fan Failure



**Basic Cabinet Common  
Control Group Card Isolation**

This paragraph describes fault isolation procedures for basic system CCG cards. Check CMC 800 and 801 for specific fault information and Chapter 2 for specific information on troubleshooting CCG faults. The "Fault Log Display" portion of Chapter 2 describes the fault log in detail. The system writes fault information into this log whenever the AL (alarm) LED is activated.

If the system is being installed, and the initial software load does not operate correctly, the Distributed Processor Version and software versions should be read out using CMCs 904 and 907. Call Fujitsu Business Communication Systems Technical Assistance Center (TAC) to verify proper operation with the equipment release levels.

The Figure 4-3 flowchart shows you how to diagnose CCG card fault conditions if the problem is a power distribution fault.

Figure 4-3. Fault Isolation Flowchart for Common Control Card Group Faults

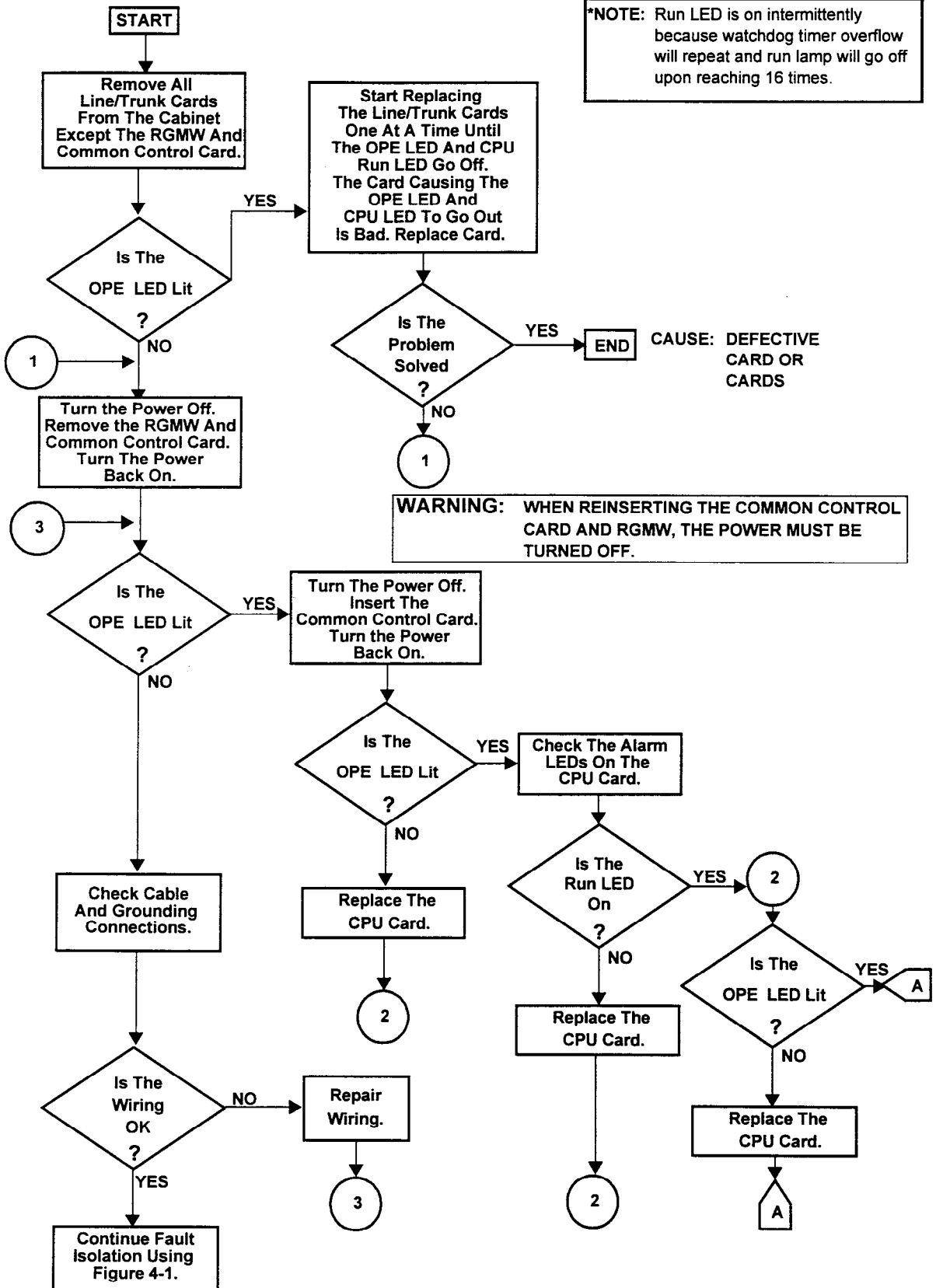


Figure 4-3. Fault Isolation Flowchart for Common Control Card Group Faults (Cont'd)

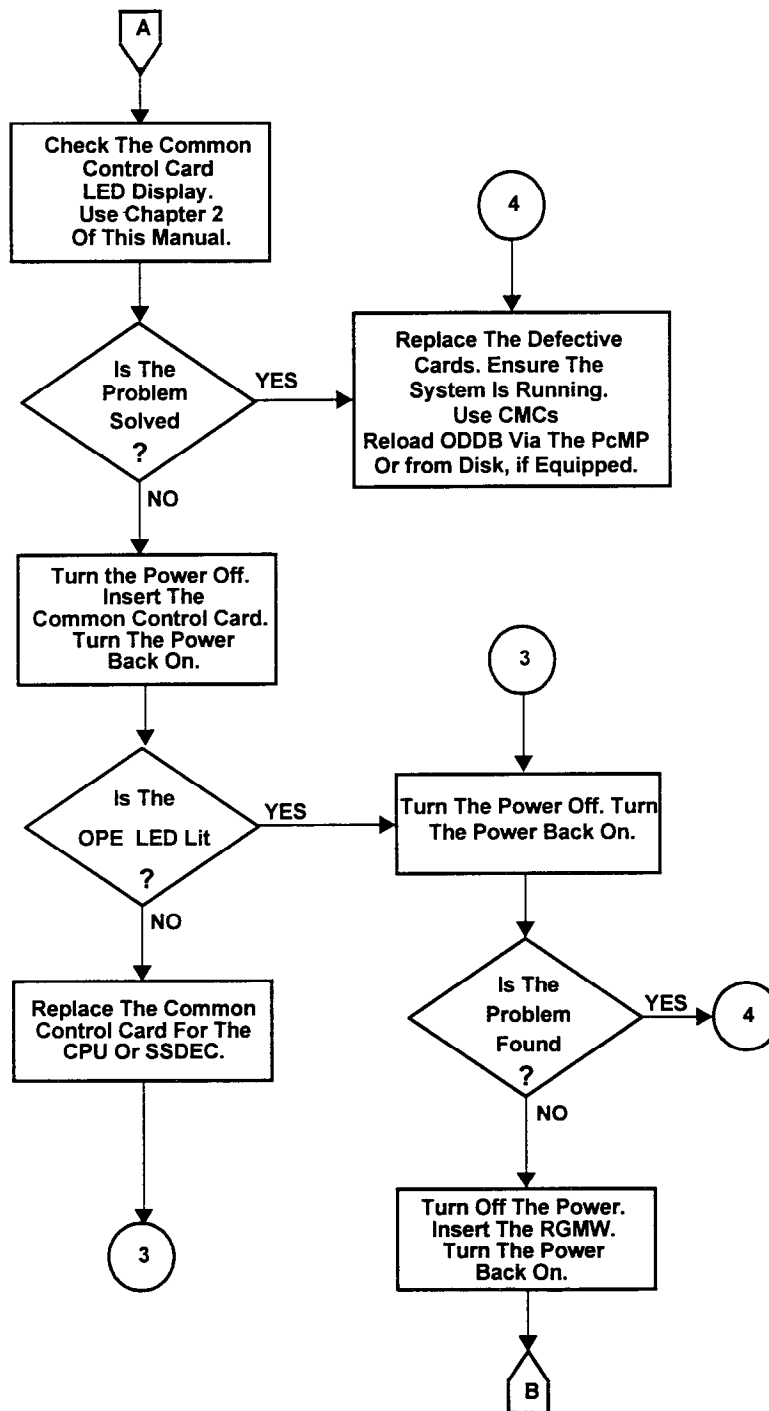
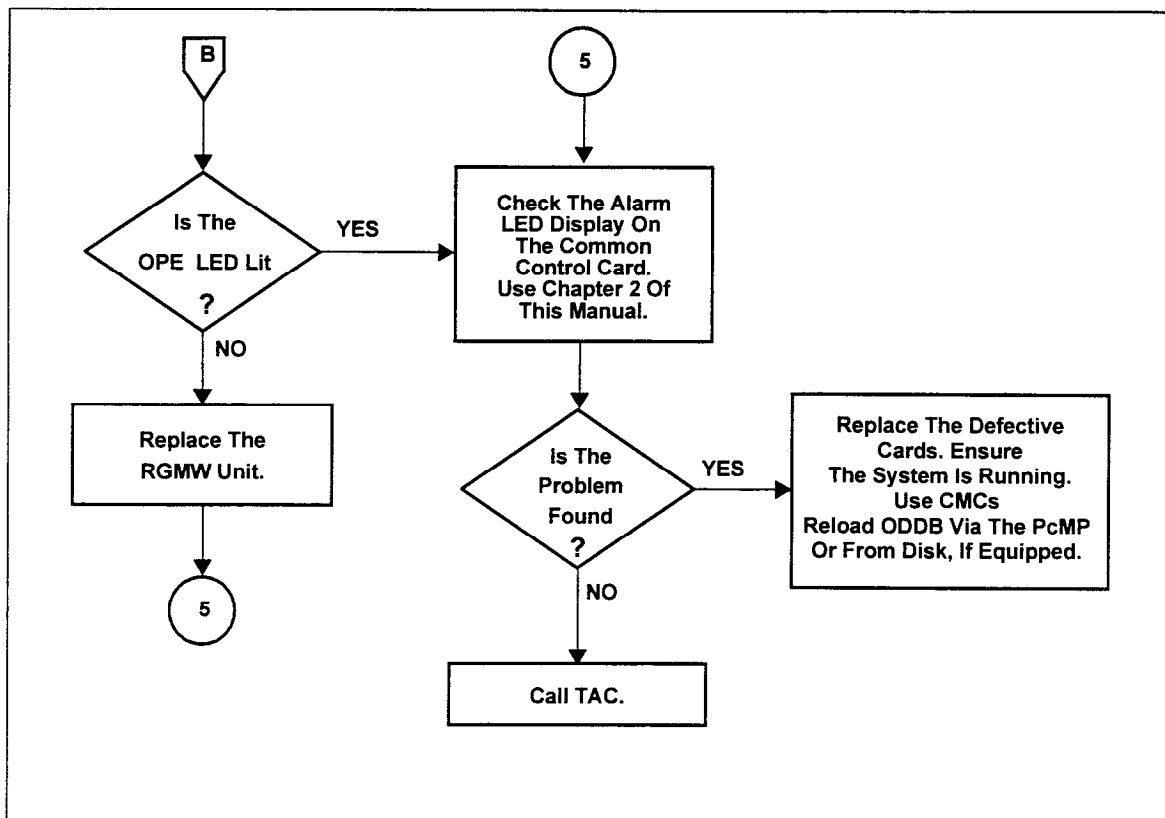


Figure 4-3. Fault Isolation Flowchart for Common Control Card Group Faults (Cont'd)



### EXPANDED SYSTEM COMMON EQUIPMENT FAULT ISOLATION

This section describes fault isolation procedures for the expanded system. The procedures and flowcharts are the same as for the basic system. This paragraph discusses operational details of the expansion cabinet.

### Expansion Cabinet Power System Fault Isolation

The expansion cabinet power system is separate from the basic cabinet power system. Failure of the basic cabinet power system causes a processing outage that affects the entire system. Therefore, if the expanded system is inoperable, the basic cabinet power system should be fault isolated using the flowchart in Figure 4-1.

If a power failure occurs in the expansion cabinet only, expansion cabinet call processing stops and the power supply LED of the expansion cabinet is OFF, while the alarm LED on the basic cabinet is ON. Expansion cabinet power supply fault isolation should be performed using the flowchart in Figure 4-1.

**Expansion Cabinet(s)  
Common Control Group Card  
Trouble Diagnosis**

The (second) expansion cabinet switch card is cable connected to the SSDEC card in the basic cabinet. A CCG card failure in the basic cabinet also shuts down processing in the expansion cabinets. Fault isolation for this condition is identical to the basic system (see flowchart in Figure 4-3).

If a Common Control Group card failure occurs only in the second expansion cabinet, the basic cabinet operates normally with an alarm LED indication. Perform expansion cabinet CCG card fault isolation using the flowchart in Figure 4-3. The only CCG card in the second expansion cabinet is the SSDEC card.

# CHAPTER 5

## FAULT ISOLATION AND TEST PROCEDURES (VOICE)

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### OVERVIEW

This chapter provides information for diagnosing, isolating, testing, and repairing fault conditions for voice applications. Fault isolation flowcharts are provided. The flowcharts contain references to other documents and other chapters and/or sections of this document for specific test and repair procedures.

### VOICE APPLICATION AND CALL TRACE FAULT ISOLATION

This section provides fault isolation flowcharts for two specific types of call attempt fault conditions:

- On-premise, intrasystem calls.
- Off-premise, trunk type calls.

Faults are further categorized in terms of voice service function, connection, and voice quality for each type of call attempt.

An outgoing voice signal initiates at a system station instrument: CT-10, CT-20, CT-30, CSD, DS20, DS20S, DS20SD, DS32SD, Attendant Console, or SLT (Single Line Telephone). The system sends a signal to a line card in the equipment cabinet.

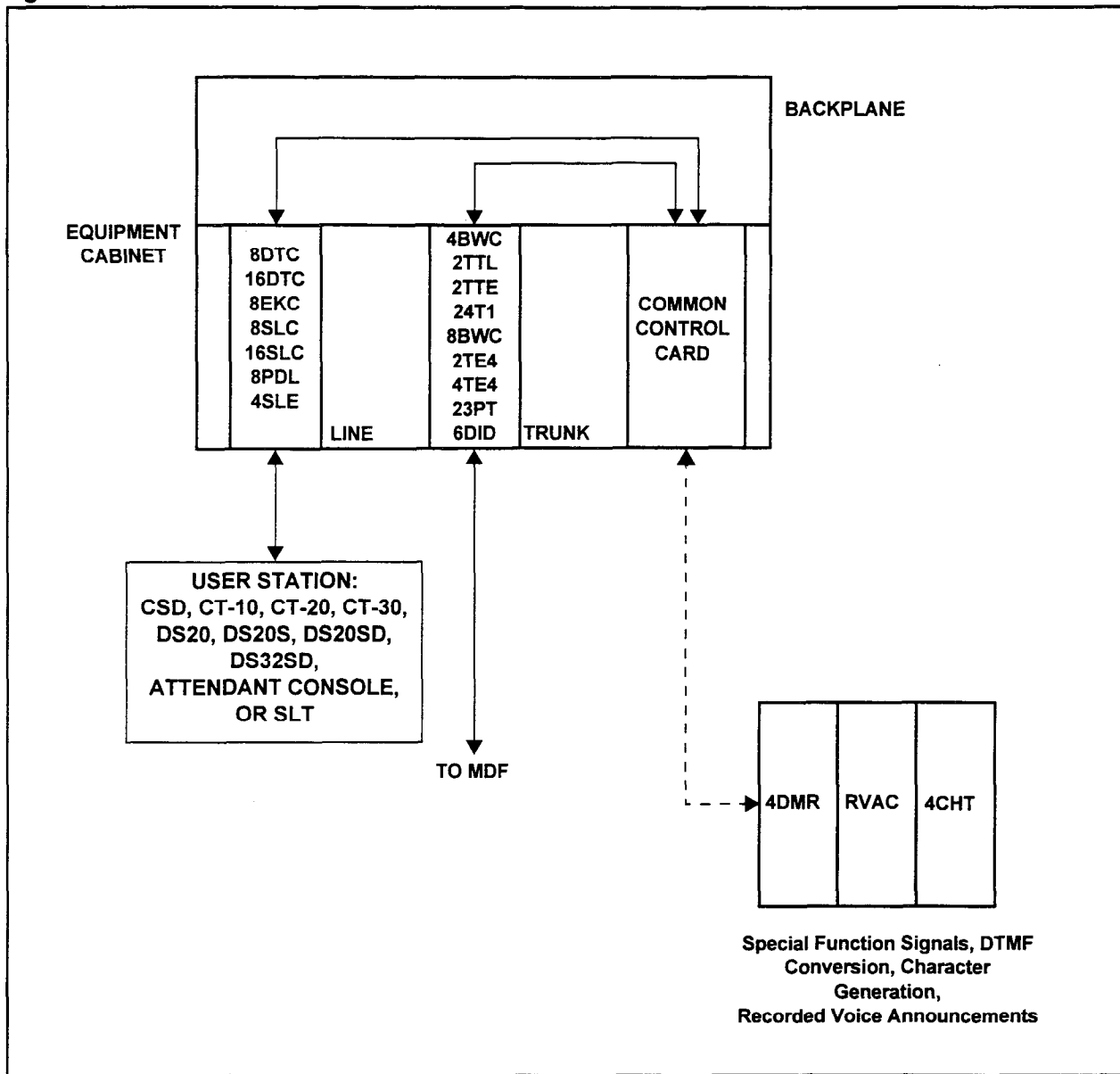
- A digital telephone signal goes to an 8DTC or 16DTC card.
- A Proprietary Telephone signal goes to an 8EKC card.
- An off-premise SLT signal goes to a 4SLE card.
- An SLT signal goes to an 8SLC card, 16SLC, 8PDL, or 4SLE card.

The signals route from the line cards to the SSDEC card. This card also receives control signals from the CPU card and special function control signals from the 4DMR (Dual-Tone Multi-Frequency Receiver) card, recorded announcements from the RVAC (Recorded Voice Announcement) card, or character signals from the 4CHT (Character Trunk) card.

The switch card provides call status tones for the voice signal. The voice signal is switched through the switch card and routed to a trunk card: 4BWC, 2TTL, 2TTE, 24T1, 8BWC, 2TE4, 4TE4, 6DID, or 23PT. The signal routes through the trunk card and on to the MDF (Main Distribution Frame). The signal enters the Telco system from the MDF.

The incoming voice signal is the reverse of the outgoing voice signal (Figure 5-1).

Figure 5-1. Voice Call Trace



**Fault Isolation Flowchart for Voice Service Function Problems**

The flowchart in Figure 5-2 shows the procedure for isolating fault conditions pertaining to system voice service functions including RGMW, RVAC, DTMF, and 6PFA cards.

**Fault Isolation Flowchart for Connection Problems on Intrasystem (On-Premise) Calls**

Figure 5-3 shows the procedure for isolating fault conditions pertaining to system call connection problems on intrasystem (on-premises) calls.



Figure 5-2. Fault Isolation Flowchart for Voice Service Functions

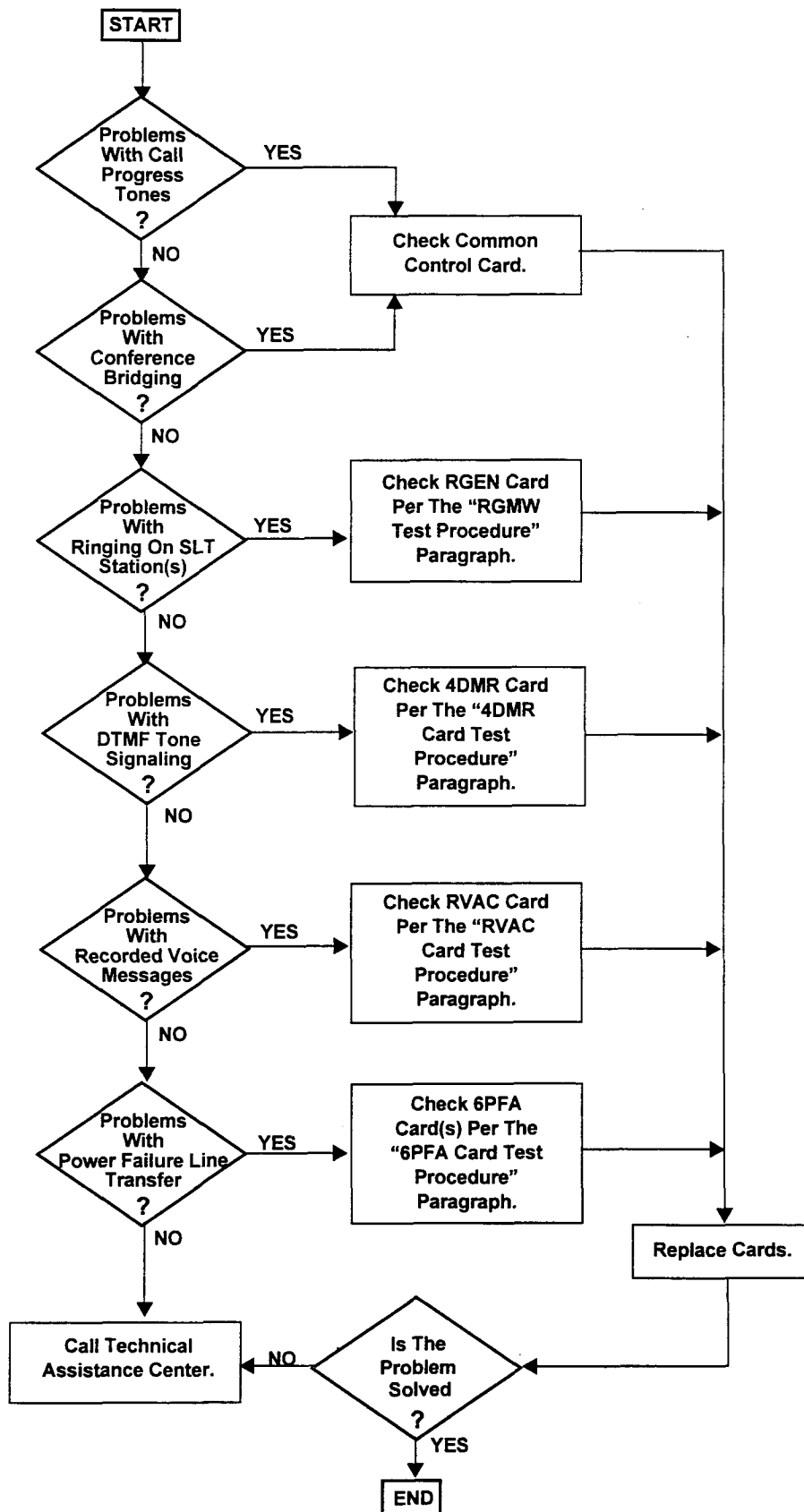


Figure 5-3. Call Connection Problems on an On-Premise Call

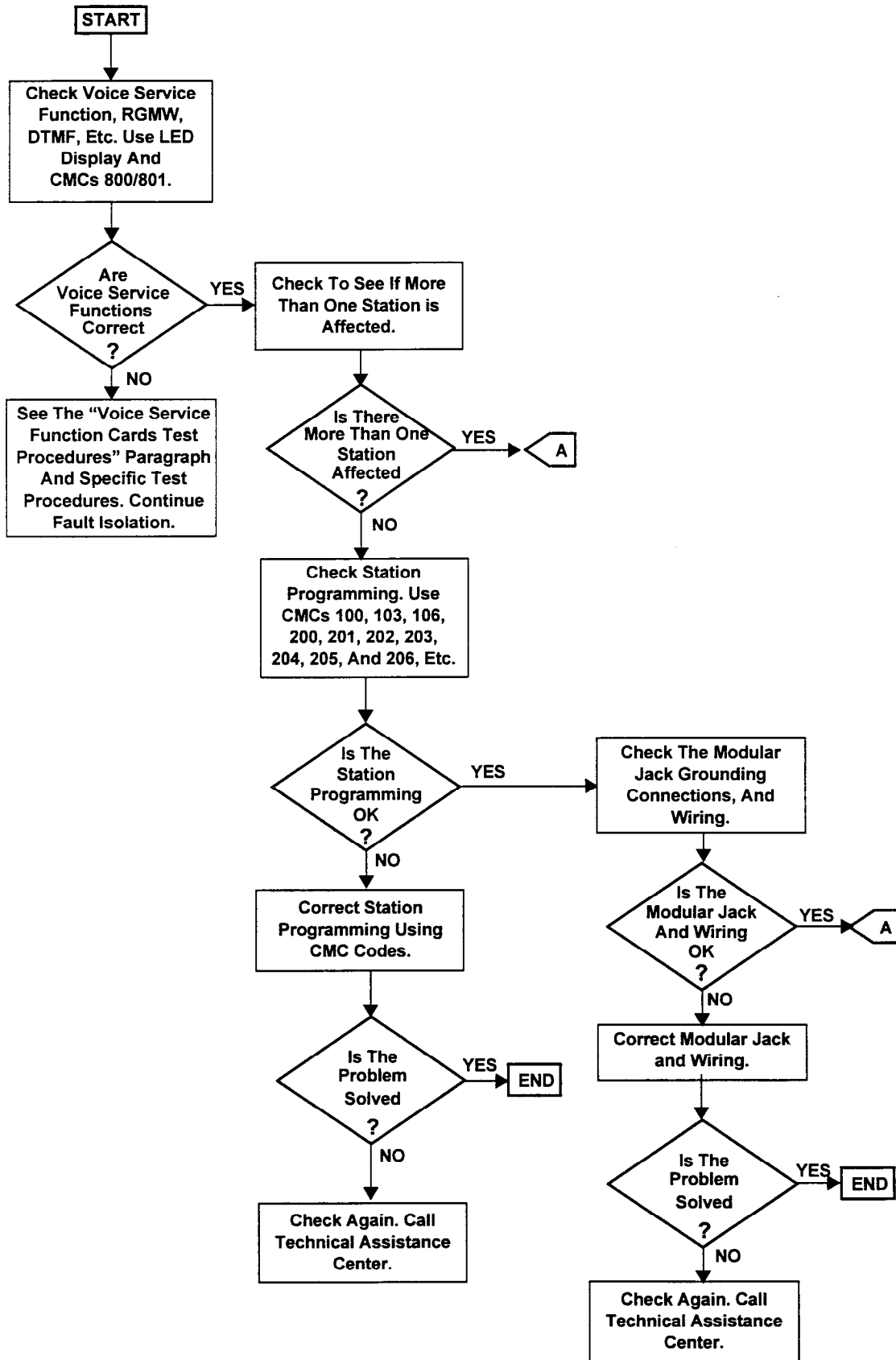


Figure 5-3. Call Connection Problems on an On-Premise Call (Cont'd)

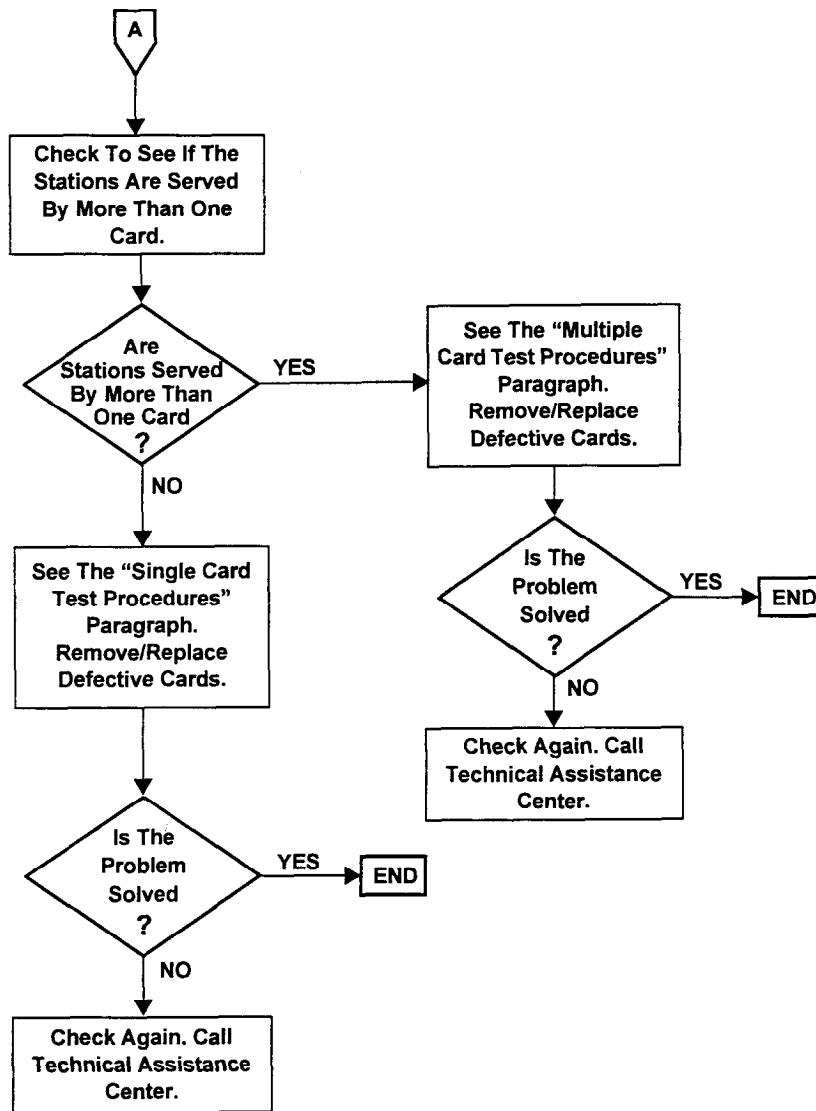
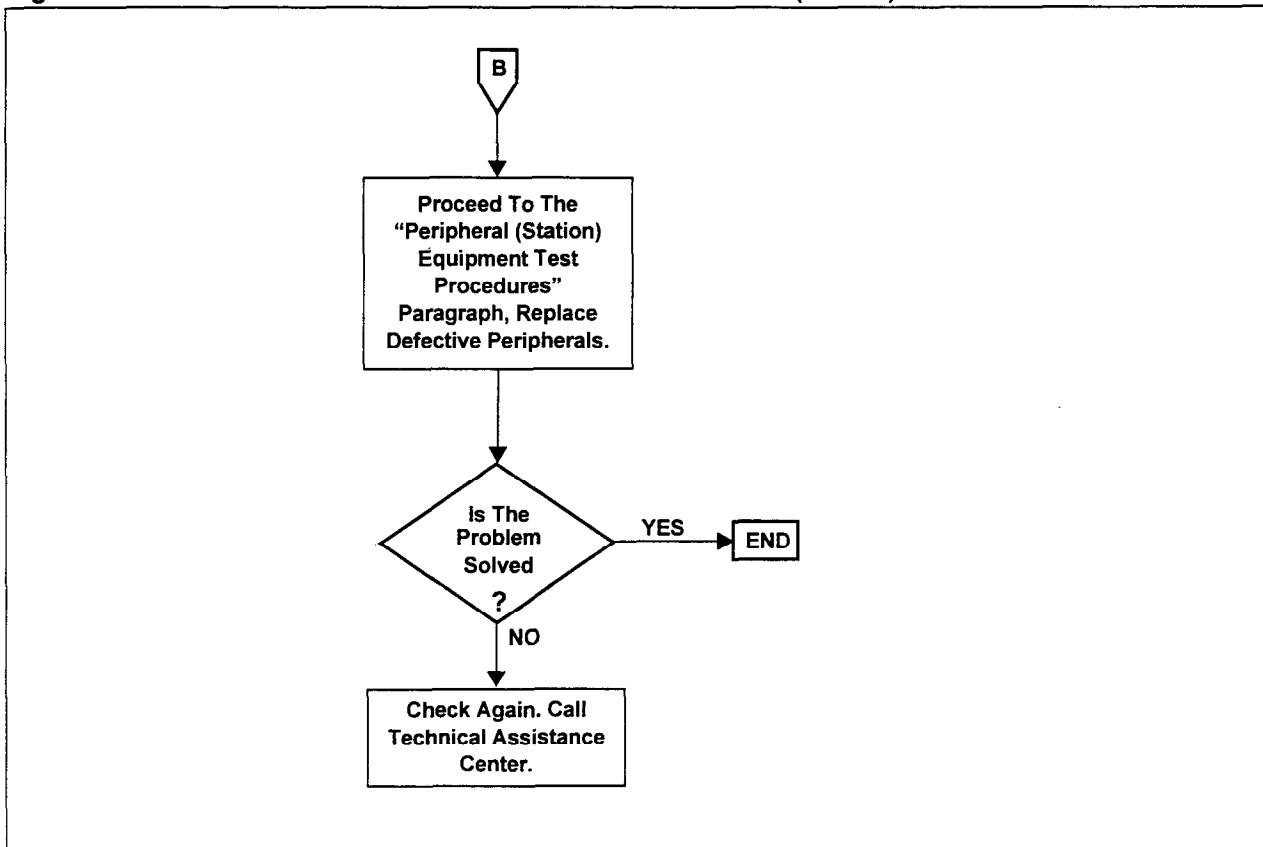


Figure 5-3. Call Connection Problems on an On-Premise Call (Cont'd)



**Fault Isolation Flowchart for  
Voice Quality Level Problems  
on Intrasystem (On-Premise)  
Calls**

Figure 5-4 shows the procedure for isolating fault conditions pertaining to intrasystem level voice quality problems.

**Fault Isolation Flowchart for  
Noise Problems on  
Intrasystem (On-Premise)  
Calls**

Figure 5-5 shows the procedure for isolating fault conditions pertaining to intrasystem noise problems shown in the flowchart.

**Fault Isolation Flowchart for  
Connection Problems on Off-  
Premise Trunk Calls**

Figure 5-6 shows the procedure for isolating connection fault conditions for off-premise trunk calls.

**Fault Isolation Flowchart for  
Voice Quality Problems on  
Off-Premise Trunk Calls**

Figure 5-7 shows the procedure for isolating voice quality problems on off-premise trunk calls.

**Fault Isolation Flowchart for  
Noise Problems on Off-  
Premise Trunk Calls**

Figure 5-8 shows the procedure for isolating noise problems on off-premise trunk calls.

Figure 5-4. Fault Isolation Flowchart for Voice Quality Faults on On-Premise Trunk Calls

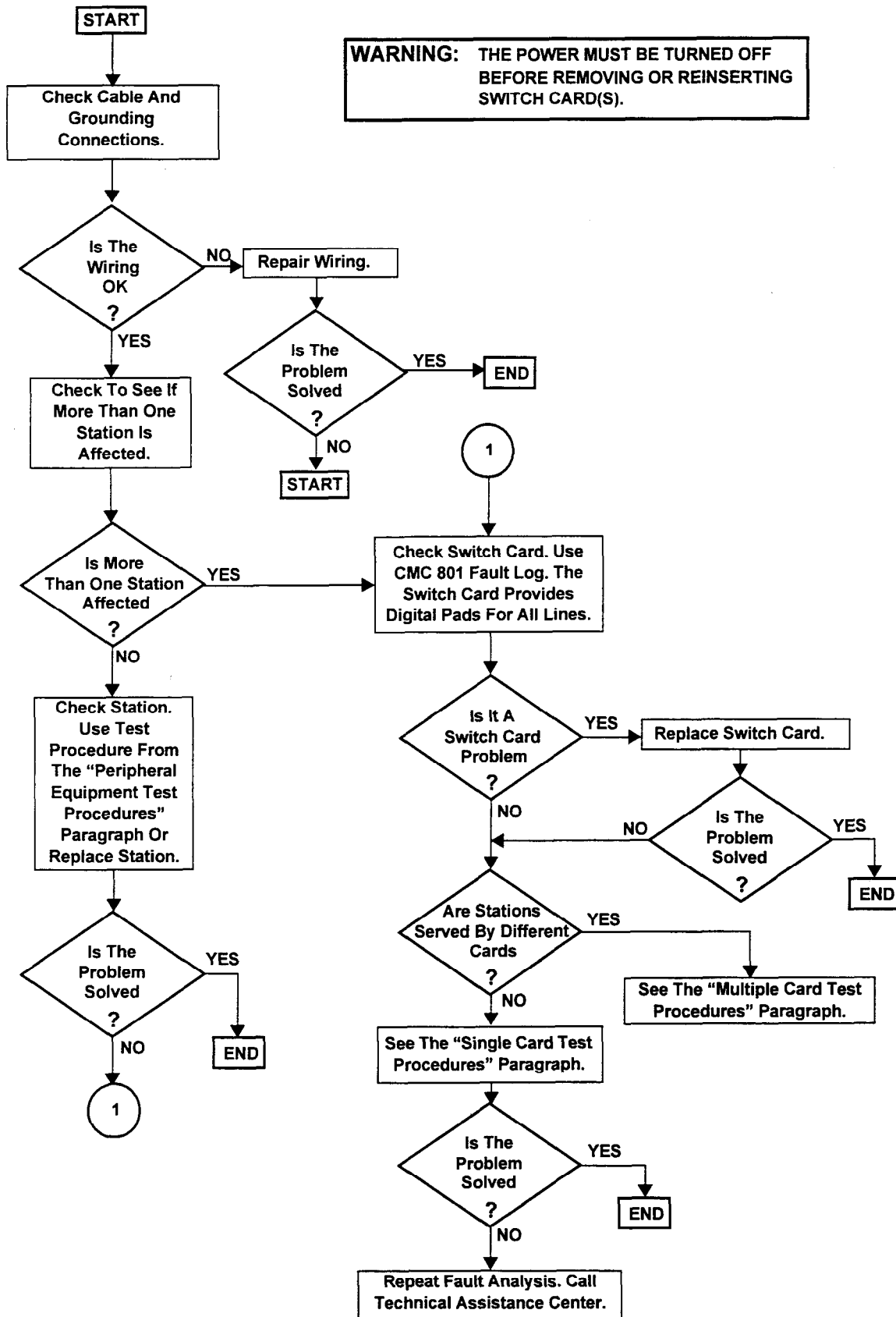


Figure 5-5. Fault Isolation Flowchart for Noise Problems on On-Premise Trunk Calls

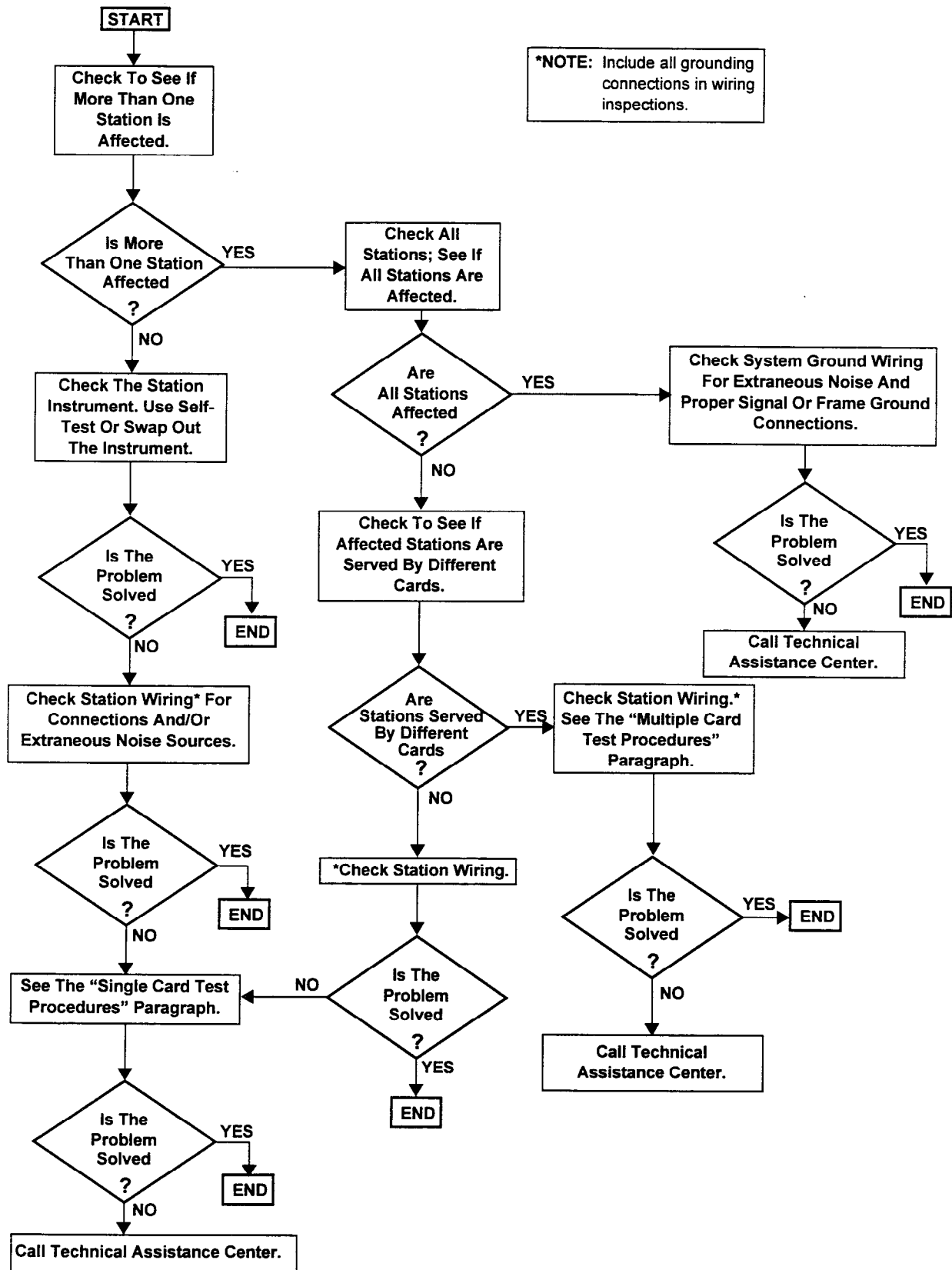


Figure 5-6. Call Connection Problems on Off-Premise Trunk Calls

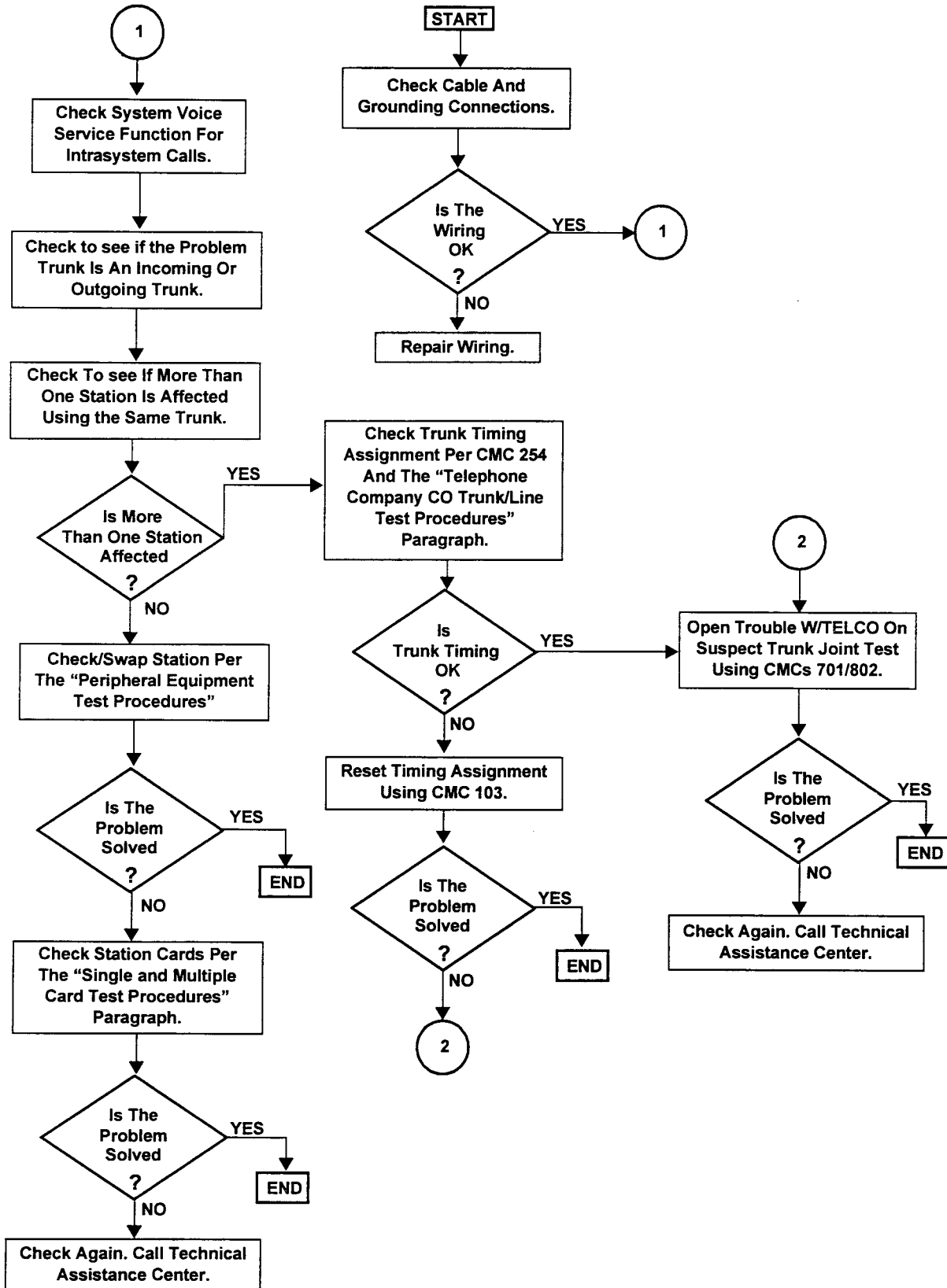


Figure 5-7. Fault Isolation Flowchart for Voice Quality Faults on Off-Premise Trunk Calls

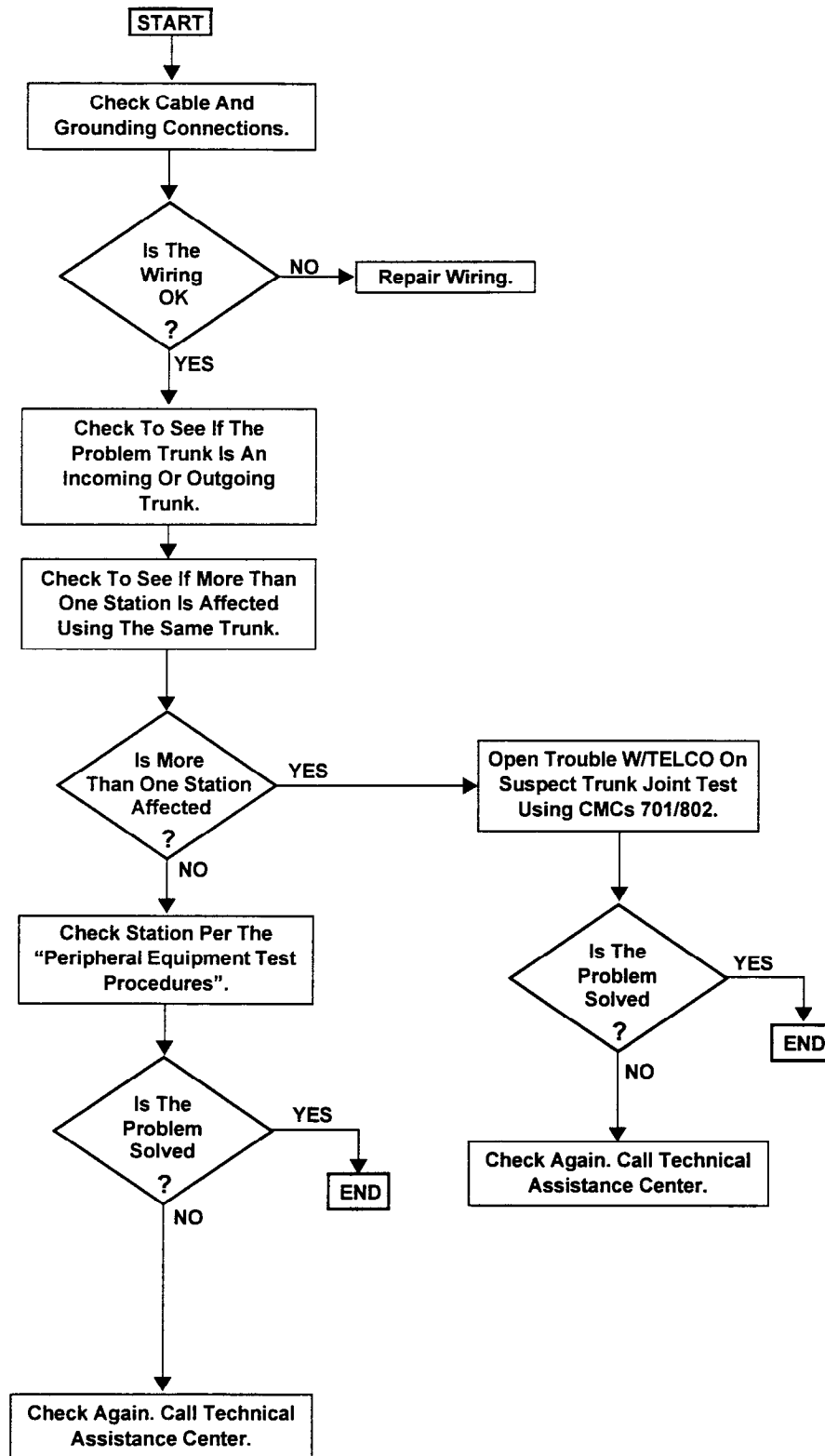
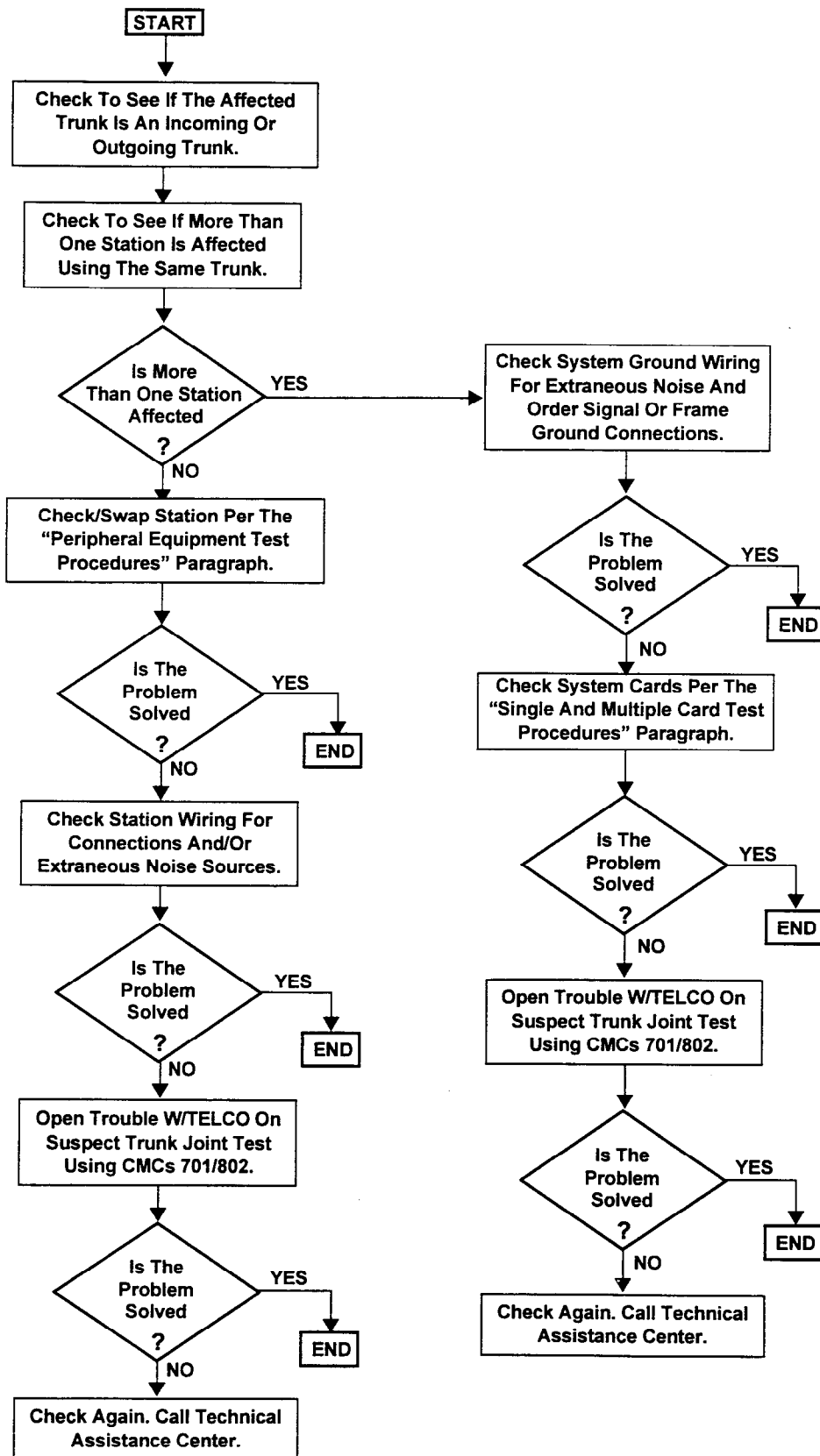




Figure 5-8. Fault Isolation Flowchart for Noise Problems on Off-Premise Trunk Calls



**VOICE APPLICATION  
SYSTEM CARD TEST  
PROCEDURES**

This section covers testing procedures for problems affecting the circuits on a single interface card, and problems affecting the circuits on multiple cards.

**Single Card Test Procedures**

If a problem affects more than one station or trunk, all served by the same line/trunk card, the most probable causes are:

- The card is defective.
- A connection is bad.

Change the card, following the maintenance procedures for card changing in Chapter 1, "Maintenance Practices for Card Handling and Replacement." Check, repair, or replace grounding and cable connections.

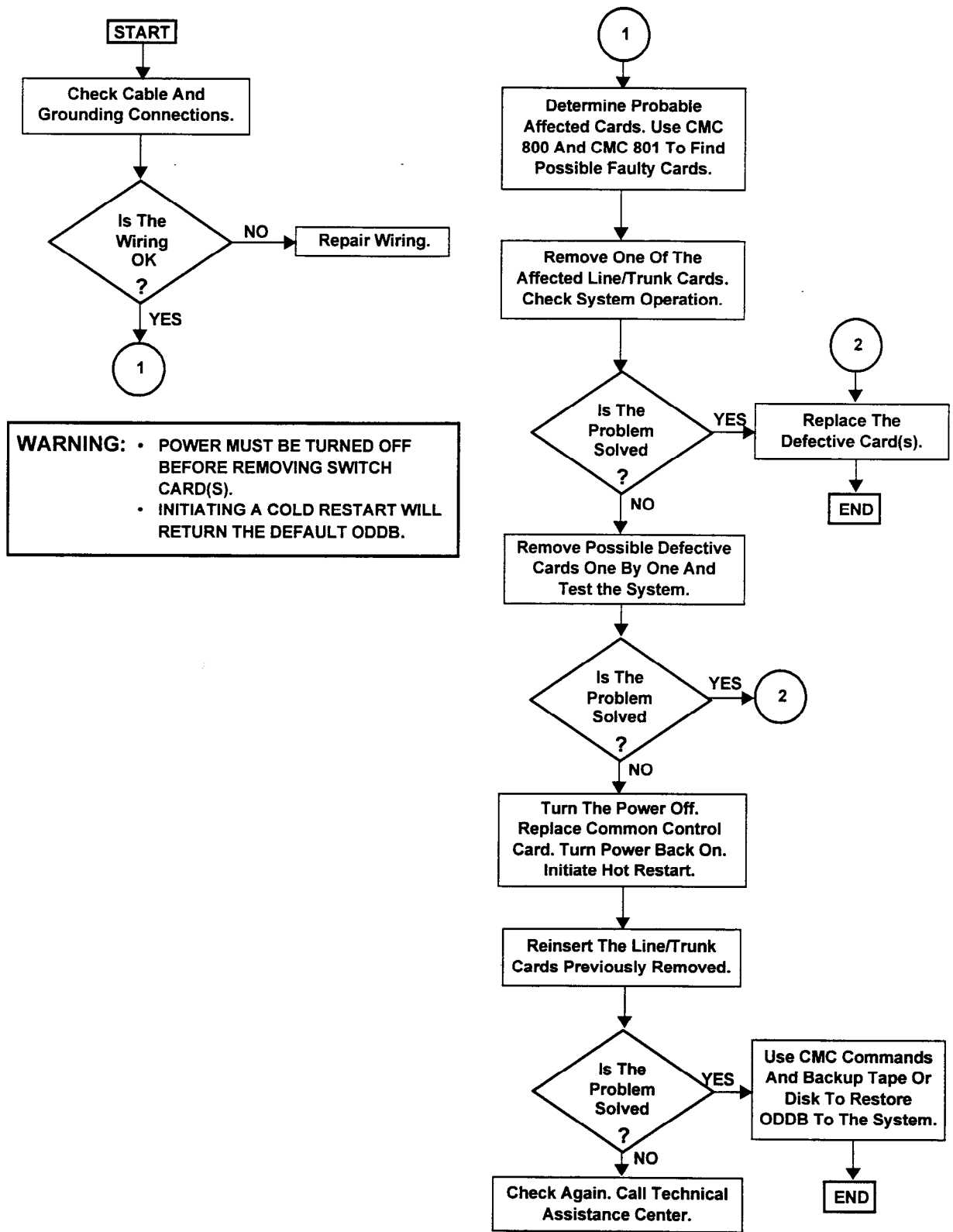
**Multiple Card Test  
Procedures**

When more than one station or trunk line is defective and served by different cards, the most probable causes are that the interface signals are being:

- Shorted by a defective card.
- Opened by a defective backplane.
- Affected by a defective driver/receiver circuitry (the SSDEC card controlling the group is defective).

If a problem affects more than one card, follow the procedures in the flowchart in Figure 5-9.

Figure 5-9. Multiple Card Fault Isolation Procedure



**VOICE SERVICE FUNCTION  
CARDS TEST PROCEDURES**

This section provides specific test procedures for the cards that provide voice service functions such as ring generator, DTMF, recorded voice announcements, and power failure transfer.

**RGMW Test Procedure**

The most probable causes of ringing problems are:

- The RGMW is defective.
- The output of the RGMW is shorted by a line or trunk card.
- The RGMW option for the applied ringer phase and the applied ringing frequency do not match the data base.

**NOTE:** RGMW options are controlled via CMC command. There is a switch located on the card which is used to set the ring voltage for either Canada or United States; this, however, is preset at the factory and should not need to be changed.

If all stations are affected, causes 1 or 2 are most probable.

If the ALM lamp on the common control card lights or displays a power problem error message, the RGMW is defective and should be replaced.

If the ring pattern and sound do not match to the specification, cause 3 is most probable.

If the problem is intermittent, system wide, and only for incoming calls, refer to the Data Base Manual for RGMW option settings.

Additional RGMW and fault isolation procedures are provided in the Figure 5-10 flowchart.

Figure 5-10. Fault Isolation Flowchart for Ring Generator

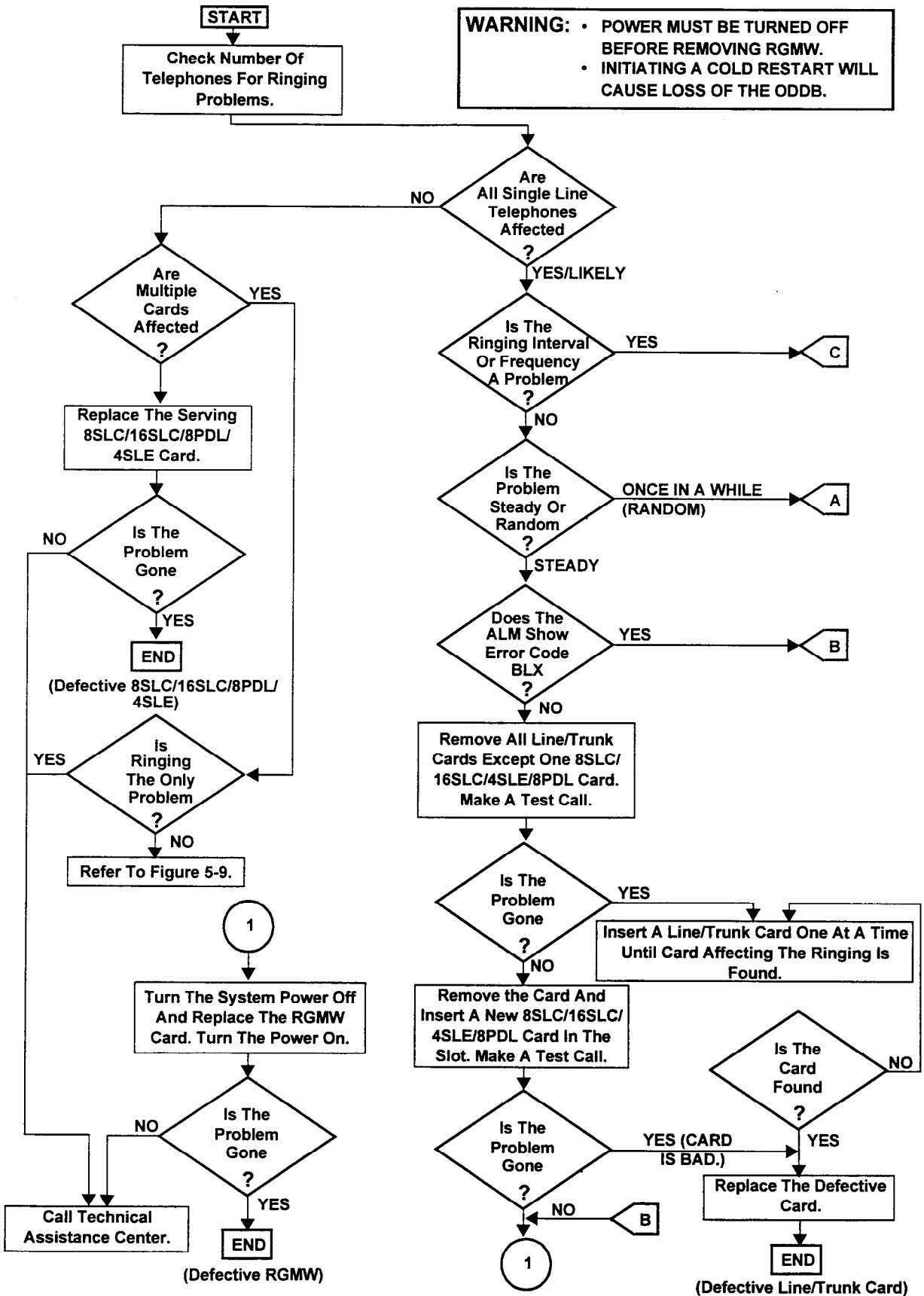
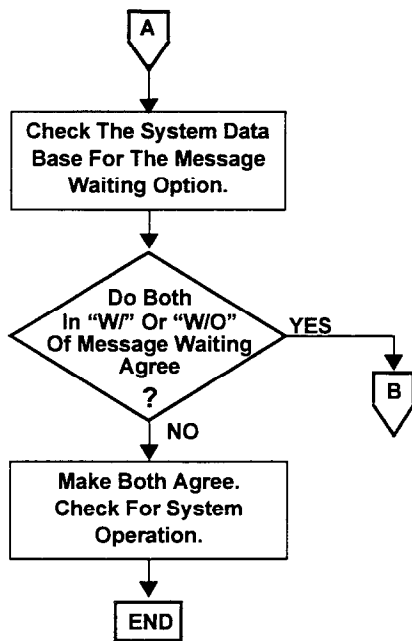
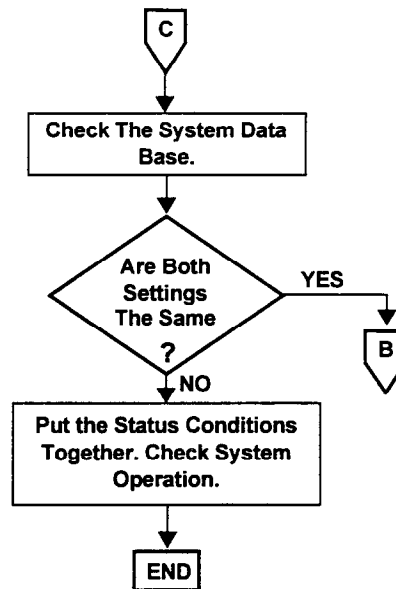


Figure 5-10. Fault Isolation Flowchart for Ring Generator (Cont'd)



**WARNING:**

- POWER MUST BE TURNED OFF BEFORE REMOVING OR INSERTING RGMW.
- INITIATING A COLD RESTART WILL CAUSE LOSS OF THE ODDB.



**4DMR Card Test Procedure**

DTMF faults are categorized as follows:

- Problems affecting a single DTMF station.
- Problems affecting multiple DTMF stations.

Diagnose problems affecting only one DTMF station using the procedure shown in Figure 5-2. Troubleshoot these types of problems by busy-ing out each DTMF circuit using CMC 701.

Problems affecting more than one DTMF station indicate defective 4DMR card(s). Replace defective 4DMR cards using the card replacement procedures in Chapter 1, "Maintenance Procedures for Card Handling and Replacement".

**6PFA Card Test Procedure**

If a 6PFA (Power Failure Transfer) card is suspected of malfunctioning, enable the manual switch to test the station/trunk transfer feature. A failure of the transfer feature indicates faulty wiring, improper software station/trunk assignment, or a bad 6PFA card. Perform the following steps:

1. Check the 6PFA wiring by using the Installation Manual as a reference.
2. Verify the software assignments for station and trunks using CMC 250.
3. If Steps 1 and 2 do not correct the problem, replace the 6PFA card using maintenance procedures in Chapter 1, "Maintenance Procedures for Card Handling or Replacement".

**RVAC Card Test Procedure**

RVAC card problems are caused by:

- Card failure.
- Incorrect or operational data base errors.
- Loss of battery back-up which results in messages being lost in a power failure.

If operational problems are encountered when accessing messages from the RVAC, refer to the Data Base Manual for related RVAC entries.

Reenter messages lost in a power failure by using the procedure outlined in the Data Base Manual. The RVAC alarm lamp remains lit while the battery is charging (approximately 24 hours).

If a card failure is suspected of causing a recorded voice message problem (i.e., battery does not charge within two days), replace the card, using the maintenance procedures discussed in Chapter 1, "Maintenance Procedures for Card Handling and Replacement".

**STATION EQUIPMENT TEST PROCEDURES**

This section provides specific test procedures for each voice peripheral used with the switching system.

**Analog Station Test Procedures**

Test analog stations which become suspect during fault isolation by interchanging with another station of the same type.

**CSD Test Procedures**

Proprietary digital station sets which become suspect when diagnosing trouble conditions should be isolated by interchanging with another proprietary digital station set.

**Proprietary Telephone and DSS Test Procedures**

Test proprietary telephones (CSD, CT-10, CT-20, CT-30, DS20, DS20S, DS20SD, DS32SD, and the DSS) off-line. The following tests can be performed:

- Button and keypad test.
- LED test.
- LCD display test.
- Hookswitch (voice circuit) test.
- Audible tone test.

**NOTE:** The DS20, DS20S, DS20SD, and DS32SD tests are started by pressing indicated keys (refer to each specific table).

**Digital and Proprietary Telephone Instrument Diagnostics**

The following steps put the telephone into the diagnostic test mode:

1. Remove the telephone cord from the jack at the back of the telephone.
2. Press keys 1 and 3 on the numeric keypad simultaneously.
3. Plug the telephone cord back into the jack at the back of the telephone while simultaneously pressing keys 1 and 3.

**DSS 30, 40, or 80 Diagnostics**

Use the following steps to put the DSS 30, 40, or 80 into diagnostic mode. Refer to Tables 5-9 through 5-12 for the location of function keys.

1. Remove the telephone cord from the jack at the back of the DSS.
2. Simultaneously press function keys FK23 and FK3.
3. Plug the telephone cord into the jack at the back of the DSS while pressing function keys FK23 and FK3.

**DSS 100 Diagnostics**

Use the following steps to put the DSS 100 into diagnostic mode. Refer to Table 5-13 for the location of function keys.

1. Remove the telephone cord from the jack at the back of the DSS.
2. Simultaneously press function keys FK1 and FK3.
3. Plug the telephone cord into the jack at the back of the DSS while pressing function keys FK1 and FK3.



**DSS Diagnostics (Cont'd)****NOTES:**

1. The DSS buttons on the normal DSS/BLF 80 are different from the DSS buttons on the cream-colored DSS/BLF 80 which matches the Attendant Console.
2. When the CSD and DSS 30/40/80 are in test mode, all of the LEDs flash and the tone ringer rings until the hand set is picked up or one of the buttons is pressed. The LCD displays "TESTING" if the handset is on-hook.
3. When the CT-10, CT-20, CT-30, and DS20, DS20S, DS20SD, and DS32SD sets are in test mode, the LEDs flash sequentially in function key order. Both the red and green LEDs alternately light during a one second interval until one of the buttons is pressed. The LCD displays "TESTING" if the handset is on-hook.
4. DSS 100 red and green LEDs alternately light in an ordered cycle: from the ten lower line buttons to the upper line buttons.
5. During the test mode, an instrument is out of service. No calls may be terminated to the instrument.

**Test Items**

Maintenance technicians can determine that the telephone is operating properly by visual and audible inspections during the test mode.

- Table 5-1 lists the CSD and DSS keypad self-tests.
- Table 5-2 lists CSD and DSS function key self-tests.
- Table 5-3 lists the keypad self-tests for CT-10, CT-20, and CT-30.
- Table 5-4 lists the function key self-tests for the CT models.
- Tables 5-5, 5-6, and 5-7 list the self-tests for the DS20, DS20S, DS20SD, and DS32SD.
- Table 5-8 lists the test mode ringing patterns. If results differ from those listed in the tables, the instrument is faulty.
- Tables 5-9 through 5-13 show the function key locations for the DSS 30, DSS 40, DSS 80, and DSS 100.
- Tables 5-14 through 5-16 show Attendant Console testing keys, and the associated Attendant Console LED test patterns.
- Figure 5-11 shows LED patterns that occur during testing.
- Figures 5-12 through 5-14 show the default function key locations for the CT-10, CT-20, CT-30 and CSD.
- Figure 5-15 and Figure 5-16 shows the default function key locations for the DS20, DS20S, DS20SD, and DS32SD stations.

**Return Instruments to On-Line Operation**

After completing the test, remove the telephone cord and then insert it into the jack in the back of the telephone without pressing any keys. This places the telephone back into on-line operation.

**Table 5-1. CSD and DSS Test (Keypad)**

KEY PRESSED	RESULT
1	Stop ringing. CSD displays "1"
2	Start ringing in pattern 1. CSD displays "2"
3	Start ringing in pattern 2. CSD displays "3"
4	Start ringing in pattern 3. CSD displays "4"
5	Start ringing in pattern 4. CSD displays "5"
6	Start ringing in pattern 5. CSD displays "6"
7	Start ringing in pattern 6. CSD displays "7"
8	Start ringing in pattern 7. CSD displays "8"
9	Start ringing in pattern 8. CSD displays "9"
0	All LEDs flashing in pattern 5. CSD displays "0"
#	All LEDs flashing in pattern 7. CSD displays "#"
*	All LEDs flashing in pattern 6. CSD displays dot pattern (".")

**NOTES:**

1. Any time a key is pressed, key touch tone is heard.
2. See Table 5-8 for ringing pattern descriptions.

Table 5-2. CSD and DSS Test (Function Key)

KEY PRESSED	RESULT
FK1	Associated LED flashing in pattern 3.
FK2	Associated LED flashing in pattern 3.
FK3	Associated LED flashing in pattern 3.
FK4	Associated LED flashing in pattern 3.
FK5	Associated LED flashing in pattern 3.
FK6	Associated LED flashing in pattern 3.
FK7	Associated LED flashing in pattern 3.
FK8	Associated LED flashing in pattern 3.
FK9	Associated LED flashing in pattern 3. Display all dot pattern on the LCD of the CSD.
FK10	Associated LED flashing in pattern 3. Display blank on LCD of CSD.
FK11-14 (CSD and DSS only)	Associated LED flashing in pattern 3.
FK11-100 (DSS only)	Associated LED flashing in pattern 3.
SK1 (CSD only)	LED associated with FK1 flashing in pattern 4 (repeat of 1.875 sec. ON, 0.125 sec. OFF).
SK2 (CSD only)	LED associated with FK2 flashing in pattern 4 (repeat of 1.875 sec. ON, 0.125 sec. OFF).
SK3 (CSD only)	LED associated with FK3 flashing in pattern 4 (repeat of 1.875 sec. ON, 0.125 sec. OFF).
SK4 (CSD only)	LED associated with FK4 flashing in pattern 4 (repeat of 1.875 sec. ON, 0.125 sec. OFF).
SK5 (CSD only)	LED associated with FK5 flashing in pattern 4 (repeat of 1.875 sec. ON, 0.125 sec. OFF).
SK6	LED associated with FK6 flashing in pattern 4 (repeat of 1.875 sec. ON, 0.125 sec. OFF).
Hookswitch	In on-hook status: high volume tone ringer. All LEDs flashing in pattern 1. In off-hook status: low volume tone ringer. All LEDs flashing in pattern 2.
TEST SW (CSD only)	ON: All LEDs flashing in pattern 4. OFF: All LEDs flashing in pattern 5.

**NOTES:**

1. Any time a key is pressed (except on DSS), key tone is heard.
2. Green and red LEDs flash alternately on DSS 100.

Table 5-3. CT-10, CT-20, and CT-30 Test (Keypad)

KEY PRESSED	RESULT
1	Stop ringing. CT-20 and CT-30 display "1"
2	Start ringing in pattern 1. CT-20 and CT-30 display "2"
3	Start ringing in pattern 2. CT-20 and CT-30 display "3"
4	Start ringing in pattern 3. CT-20 and CT-30 display "4"
5	Start ringing in pattern 4. CT-20 and CT-30 display "5"
6	Start ringing in pattern 5. CT-20 and CT-30 display "6"
7	Start ringing in pattern 6. CT-20 and CT-30 display "7"
8	Start ringing in pattern 7. CT-20 and CT-30 display "8"
9	Start ringing in pattern 8. CT-20 and CT-30 display "9"
0	Ringer volume down. All LEDs flashing in pattern 3. CT-20 and CT-30 display "0"
#	Continuous high frequency ringing. CT-20 and CT-30 display blank
*	Continuous low frequency ringing. CT-20 and CT-30 display (".")

**NOTES:**

1. Any time a key is pressed, key touch tone is heard.
2. See Table 5-8 for ringing pattern descriptions.

Table 5-4. CT-10, CT-20, and CT-30 Test (Function Key)

KEY PRESSED	RESULT
FK1	Associated red LED flashing in pattern 3. Ringer volume down. LCD on CT-20 and CT-30 displays HDS.
FK2	Associated red LED flashing in pattern 3. Ringer volume down. LCD on CT-20 and CT-30 displays SPK.
FK3	Associated red LED flashing in pattern 3. LCD on CT-20 and CT-30 displays MIC.
FK4	All green LEDs flashing in pattern 3. Ringer volume down. LCD on CT-20 and CT-30 is blank.
FK5	Associated LED flashing in pattern 3. Ringer volume down. LCD on CT-20 and CT-30 displays HFSK.
FK6	Associated red LED flashing in pattern 3. LCD on CT-20 and CT-30 displays HFMIC.
FK7	Associated red LED flashing in pattern 3. LCD on CT-20 and CT-30 displays AMP.
FK8 - FK31	Associated red LED flashing in pattern 3.
RG	Ringer frequency (high/low) change.
DW	Ringer volume down. In no ringing status, pressing DW changes the LCD contrast.
UP	Ringer volume up. In no ringing status, pressing UP changes the LCD contrast.
Hookswitch	In on-hook status: high volume tone ringer. All LEDs flashing in pattern 1. In off-hook status: low volume tone ringer. All LEDs flashing in pattern 2.

**NOTE:** Any time a key is pressed, key touch tone is heard.

Table 5-5. DS20, DS20S, DS20SD, and DS32SD Key Test (FK1)

STEP	DS20, DS20S, DS20SD	DS32SD	STEP	DS20, DS20S, DS20SD	DS32SD
1	RG	RG	25	2	FK4
2	Down Arrow	Down Arrow	26	3	FK5
3	Up Arrow	Up Arrow	27	4	FK6
4	FK7	FK19	28	5	FK32
5	FK8	FK20	29	6	FK28
6	FK9	FK21	30	7	FK31
7	FK10	FK22	31	8	FK27
8	FK11	FK23	32	9	FK30
9	FK12	FK24	33	*	FK26
10	FK1	FK13	34	0	FK29
11	FK2	FK14	35	#	FK25
12	FK3	FK15	36		1
13	FK4	FK16	37		2
14	FK5	FK17	38		3
15	FK6	FK18	39		4
16	FK32	FK7	40		5
17	FK28	FK8	41		6
18	FK31	FK9	42		7
19	FK27	FK10	43		8
20	FK30	FK11	44		9
21	FK26	FK12	45		*
22	FK29	FK1	46		0
23	FK25	FK2	47		#
24	1	FK3			

Table 5-6. DS20, DS20S, DS20SD, and DS32SD LED Test (FK2 and FK3)

STEP	DS20, DS20S, DS20SD	DS32SD
1	L7	L19
2	L8	L20
3	L9	L21
4	L10	L22
5	L11	L23
6	L12	L24
7	L1	L13
8	L2	L14
9	L3	L15
10	L4	L16
11	L5	L17
12	L6	L18
13	L28 *	L7
14	L27 *	L8
15	L26 *	L9
16	L25 *	L10
17		L11
18		L12
19		L1
20		L2
21		L3
22		L4
23		L5
24		L6
25		L28*
26		L27*
27		L26*
28		L25*

**NOTES:**

1. Press the # key to advance to the next LED.
2. Pressing K3 displays all LEDs as red. Taking the handset off-hook changes the LEDs to green.
3. LEDs marked with an asterisk (\*) will display a red color only.

Table 5-7. DS20, DS20S, DS20SD, and DS32SD Ringing Pattern Test (FK4)

TONE KEY	RESULT	PATTERN KEY	PITCH	
			Low	High
0 1	Low pitch, high volume High pitch, high volume	0 1	880 370	1175 494
2 3	Low pitch, medium volume High pitch, medium volume	2 3	494 659	659 880
4 5	Low pitch, low volume High pitch, low volume	4 5	880 370	1175 494
6 7	880 Hz tone, high volume 880 Hz tone, low volume	6 7	494 656	659 880
8 9	Low pitch, high volume * High pitch, high volume *	8 9	880 370	1175 494
K32 K31	Low pitch, medium volume * High pitch, medium volume *	K32 K31	494 656	659 880
K30 K29	Low pitch, low volume * High pitch, low volume *	K30 K29	880 370	1175 494
K28	880 Hz tone is sent to the * handset (medium volume)	K28	494	659
K27	Stop 880 Hz tone *	K2	659	880

**NOTES:**

1. Press a tone key and a pattern key to implement this test. Any combination of two can be entered.
2. Keys marked with an asterisk (\*) define off-hook ringing patterns.



Table 5-8. Testing Mode Ringing Patterns

INDICATION PATTERN	FREQUENCIES IN HERTZ	ON/OFF INTERVAL IN SECONDS
Pattern 1	500/650/20	1.0 sec. ON 3.0 sec. OFF
Pattern 2	500/650/20	0.4 sec. ON 0.2 sec. OFF 0.4 sec. ON 3.0 sec. OFF
Pattern 3	500/650/40	0.4 sec. ON 0.2 sec. OFF 0.4 sec. ON 3.0 sec. OFF
Pattern 4	500/650/20	1.0 sec. ON 1.0 sec. OFF
Pattern 5	500/650/40	0.5 sec. ON 0.5 sec. OFF
Pattern 6	650	0.5 sec. ON 0.5 sec. OFF
Pattern 7	500	1 burst of: 0.1 sec. ON Steady OFF
Pattern 8	500	2 bursts of: 0.1 sec. ON Steady OFF

Figure 5-11. LED Testing Patterns

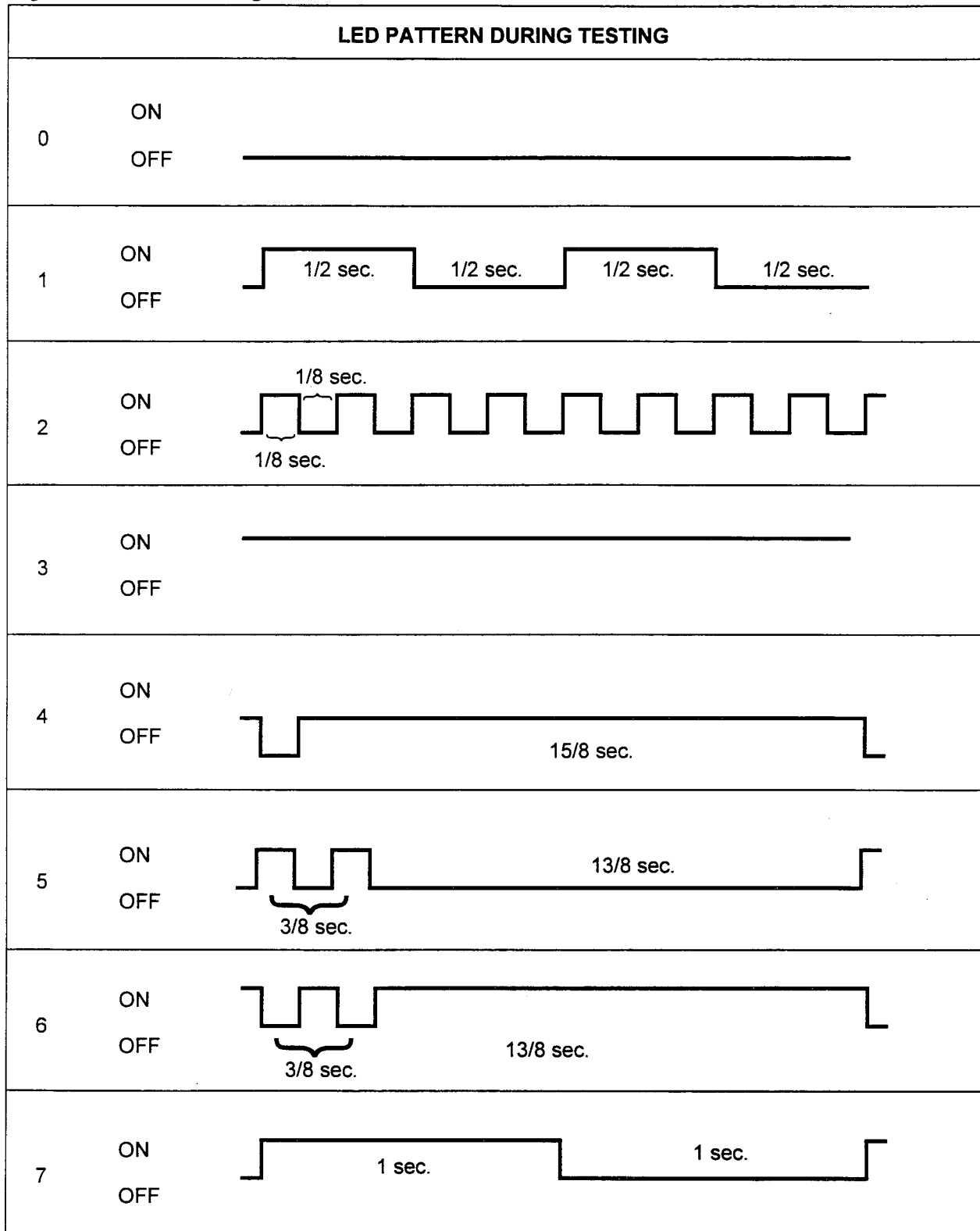


Figure 5-12. CSD Function Keys

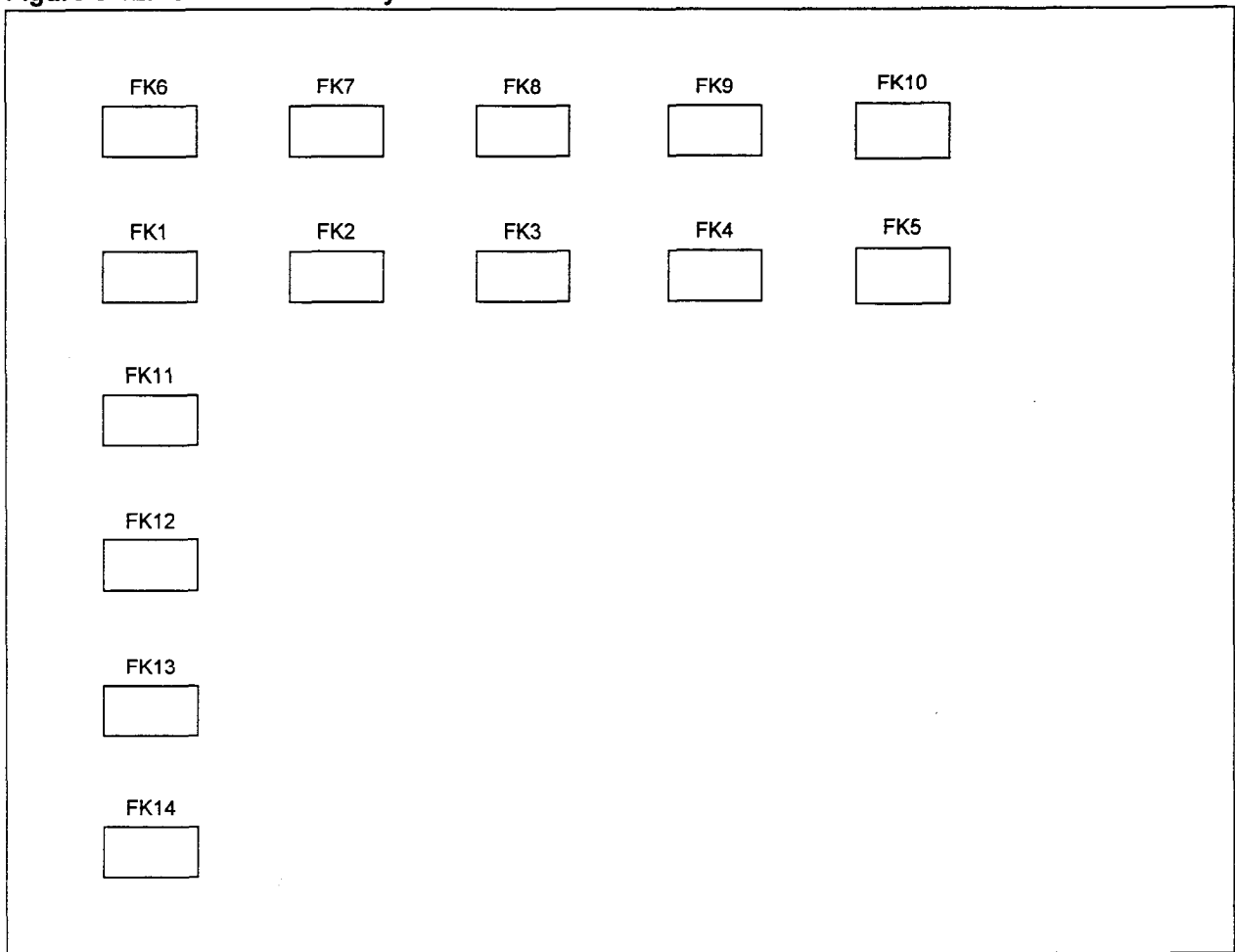


Figure 5-13. CT-10 and CT-20 Function Keys

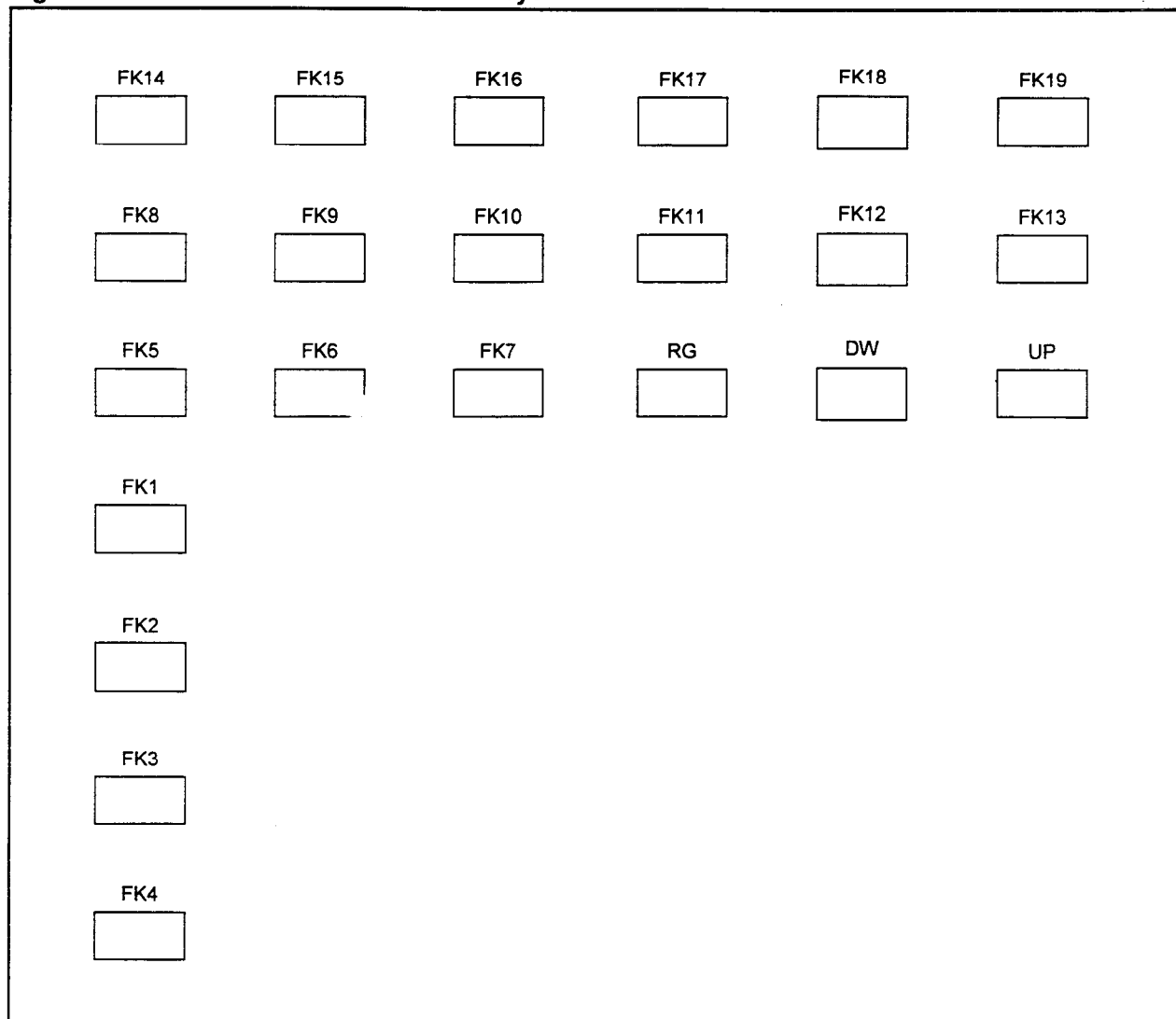


Figure 5-14. CT-30 Function Keys

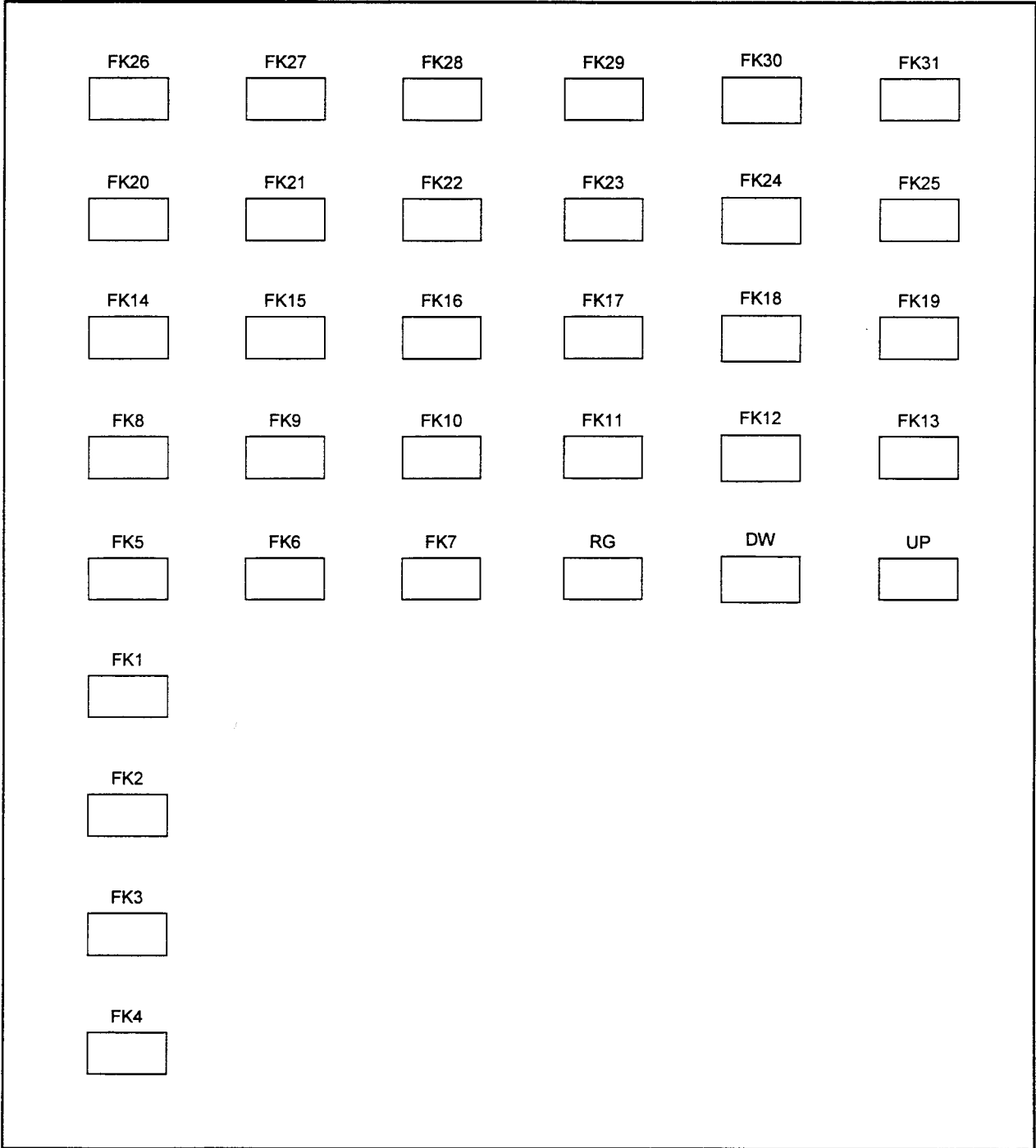


Figure 5-15. DS20, DS20S, and DS20SD Function Keys

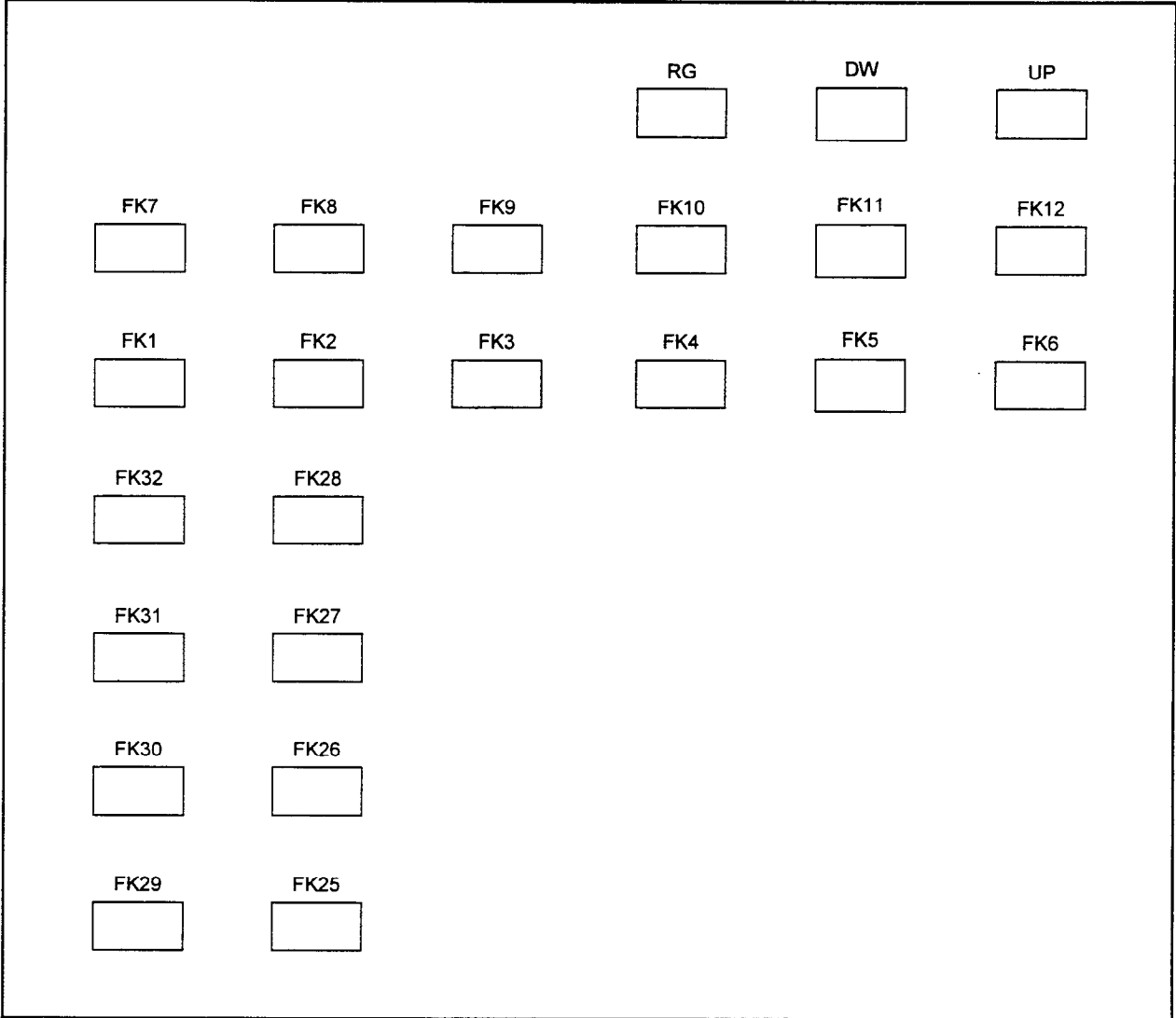


Figure 5-16. DS32SD Function Keys

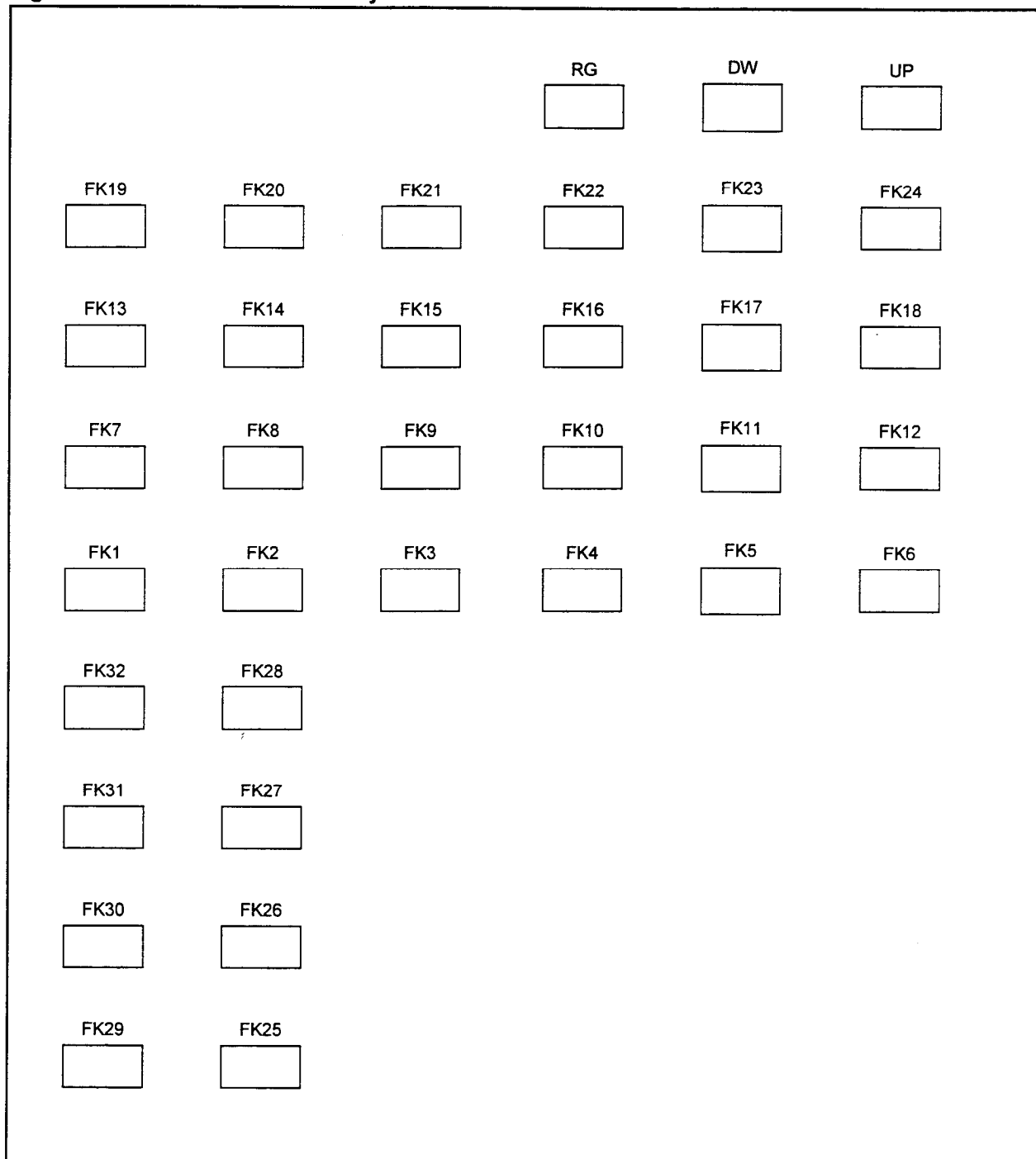


Table 5-9. DSS 30-Button Default Assignment

FK	21	22	23	24	25	26	27	28	29	30
FK	11	12	13	14	15	16	17	18	19	20
FK	1	2	3	4	5	6	7	8	9	10

Table 5-10. DSS 40-Button Default Assignment

FK	31	32	33	34	35	36	37	38	39	40
FK	21	22	23	24	25	26	27	28	29	30
FK	11	12	13	14	15	16	17	18	19	20
FK	1	2	3	4	5	6	7	8	9	10

Table 5-11. DSS 80-Button Default Assignment

FK	71	72	73	74	75	76	77	78	79	80
FK	61	62	63	64	65	66	67	68	69	70
FK	51	52	53	54	55	56	57	58	59	60
FK	41	42	43	44	45	46	47	48	49	50
FK	31	32	33	34	35	36	37	38	39	40
FK	21	22	23	24	25	26	27	28	29	30
FK	11	12	13	14	15	16	17	18	19	20
FK	1	2	3	4	5	6	7	8	9	10



**Table 5-12. Attendant Type, 80-Button DSS/BLF Assignment**

FK	10	20	30	40	50	60	70	80
FK	9	19	29	39	49	59	69	79
FK	8	18	28	38	48	58	68	78
FK	7	17	27	37	47	57	67	77
FK	6	16	26	36	46	56	66	76
FK	5	15	25	35	45	55	65	75
FK	4	14	24	34	44	54	64	74
FK	3	13	23	33	43	53	63	73
FK	2	12	22	32	42	52	62	72
FK	1	11	21	31	41	51	61	71

**Table 5-13. DSS 100-Button Default Assignment**

FK	101	102	103	104	105	106	107	108	109	110
FK	91	92	93	94	95	96	97	98	99	100
FK	81	82	83	84	85	86	87	88	89	90
FK	71	72	73	74	75	76	77	78	79	80
FK	61	62	63	64	65	66	67	68	69	70
FK	51	52	53	54	55	56	57	58	59	60
FK	41	42	43	44	45	46	47	48	49	50
FK	31	32	33	34	35	36	37	38	39	40
FK	21	22	23	24	25	26	27	28	29	30
FK	11	12	13	14	15	16	17	18	19	20
FK	1	2	3	4	5	6	7	8	9	10

**ATTENDANT CONSOLE  
TEST PROCEDURES**

The Attendant Console can be tested in the off-line mode by performing the following tests:

- Button and keypad test.
- LED test.
- LCD display test.
- Audible tone test.

Change the operation mode of the Attendant Console from on-line to off-line by following these steps:

1. Remove the line cord from the jack at the back of the Attendant Console.
2. Press the 1 and 3 buttons on the keypad simultaneously.
3. Plug the line cord back into the jack at the back of the Attendant Console while pressing the 1 and 3 buttons.

**NOTE:** When step 3 is complete, all LEDs start flashing and the tone ringer sounds until any one of the buttons is pressed.

When the Attendant Console is in the off-line test mode, the display shows TESTING.

**Attendant Console Test Items**

In the test mode, verify the proper operation of the Attendant Console by visual and audible inspection.

- Table 5-14 describes the test items and test execution keys.
- Table 5-15 describes the function key self-test.
- Table 5-16 describes the test LED patterns.

**Attendant Console Test  
Completion**

After completion of the Attendant Console tests, remove the Attendant Console line cord from the jack. Replace the line cord without pressing any keys to place the Attendant Console in the on-line mode.

**Table 5-14. Attendant Console Test (Keypad)**

KEYPAD KEY PRESSED	FUNCTION
1	Stop ringing, display shows 1 on the LCD.
2	Start ringing in pattern 1, display shows 2 on the LCD.
3	Start ringing in pattern 2, display shows 3 on the LCD.
4	Start ringing in pattern 3, display shows 4 on the LCD.
5	Start ringing in pattern 4, display shows 5 on the LCD.
6	Start ringing in pattern 5, display shows 6 on the LCD.
7	Start ringing in pattern 6, display shows 7 on the LCD.
8	Start ringing in pattern 7, display shows 8 on the LCD.
9	Start ringing in pattern 8, display shows 9 on the LCD.
0	Associated LED flashes in pattern 5, display shows 0 on the LCD.
#	Associated LED flashes in pattern 6, display shows “#” on the LCD.
*	Associated LED flashes in pattern 7, display shows “*” on the LCD.

**NOTE:** The ringing patterns can be found in Table 5-8, and the LED pattern can be found in Table 5-16.

**Table 5-15. Attendant Console Test (Function Key)**

FUNCTION KEY PRESSED	RESULT
FK16	Display shows @ on the LCD.
FK17	Display shows A on the LCD.
FK18	Associated LED flashes in pattern 3, display shows B on the LCD.
FK19	Associated LED flashes in pattern 3, display shows C on the LCD.
FK20	Associated LED flashes in pattern 3, display shows D on the LCD.
FK21	Associated LED flashes in pattern 3, display shows E on the LCD.
FK22	Associated LED flashes in pattern 3, display shows F on the LCD.
FK23	Associated LED flashes in pattern 3, display shows G on the LCD.
FK24	Associated LED flashes in pattern 3, display shows all dot pattern on the LCD.
FK25	Associated LED flashes in pattern 3, display shows all blank pattern on the LCD.
FK26	Associated LED flashes in pattern 3, display shows J on the LCD.

Table 5-15. Attendant Console Test (Function Key) (Cont'd)

FUNCTION KEY PRESSED	RESULT
FK27	Associated LED flashes in pattern 3, display shows K on the LCD.
FK28	Associated LED flashes in pattern 3, display shows L on the LCD.
FK29	Associated LED flashes in pattern 3, display shows M on the LCD.
FK30	Associated LED flashes in pattern 3, display shows N on the LCD.
FK31	Associated LED flashes in pattern 3, display shows O on the LCD.
STA	Associated LED flashes in pattern 3, display shows P on the LCD.
RECALL	Associated LED flashes in pattern 3, display shows Q on the LCD.
INCOMING	Associated LED flashes in pattern 3, display shows R on the LCD.
POS.RLSE	Displays S on the LCD.
SUP/HOLD	Displays T on the LCD.
SER/LOCK	Displays U on the LCD.
SRCE	Associated LED flashes with FK38 in pattern 3, display shows V on the LCD.
DEST	Associated LED flashes with FK39 in pattern 3, display shows W on the LCD.
CON/JOIN	Associated LED flashes with FK40 in pattern 3, display shows X on the LCD.
DROP/CNCL	Displays Y on the LCD.
VOL UP	All associated LEDs flashing in pattern 1, display controlling volume on the LCD, and increase receiver volume.
VOL DOWN	All associated LEDs flashing in pattern 2, display controlling volume on the LCD, and decrease receiver volume.
SK1	Associated LED flashes with FK18 flashing in pattern 4.
SK2	Associated LED flashes with FK19 flashing in pattern 4.
SK3	Associated LED flashes with FK20 flashing in pattern 4.
SK4	Associated LED flashes with FK21 flashing in pattern 4.
SK5	Associated LED flashes with FK22 flashing in pattern 4.
SK6	Associated LED flashes with FK23 flashing in pattern 4.

Table 5-16. Attendant Console Test LED Patterns

LED PATTERN INDICATOR	PATTERN
0	0.125 sec. on, 0.125 sec. off
1	0.5 sec. on, 0.5 sec. off
2	0.125 sec. off, 0.125 sec. on, 0.125 sec. off, 0.625 sec. on
3	0.125 sec. off, 1.875 sec. on
4	Steady on
5	Steady off
6	0.125 sec. on, 0.125 sec. off, 0.125 sec. on, 0.625 sec. off
7	1 sec. on, 1 sec. off

**OPTIONAL PERIPHERAL  
EQUIPMENT TEST  
PROCEDURES**

Optional peripheral test equipment such as paging amplifiers, music on hold devices, etc., should be diagnosed for fault conditions using the manufacturer's documentation.

**Telephone Company CO  
Trunk/Line Test Procedures**

It is beyond the scope of this document to present all necessary parameters and procedures for joint Telco testing on CO trunks and lines. The installer should reference operating company documentation for this information.

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# CHAPTER 6

## FAULT ISOLATION AND TEST PROCEDURES (DATA)

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### OVERVIEW

This chapter provides information for isolating, testing, and repairing fault conditions for data applications. Fault isolation flowcharts are provided with references to other sections of this document for specific test and repair procedures. The configurations covered include:

- Proprietary digital phones equipped with DTAs (Data Terminal Adapters).
- Proprietary Telephones with associated DIUs (Data Interface Units).
- Hotel/motel printer option.

### DTA DATA APPLICATION FAULT ISOLATION

This section provides functional block diagrams for specific data communications configurations. Each configuration has an associated fault isolation flowchart(s) for specific types of fault conditions.

#### DTA Connector

The DTA (Data Terminal Adapter) connected to a terminal is a data circuit set up within the system. Prior to establishing the data circuit, make sure that:

- Both terminals are operating at the same data speed, parity, character length, stop bit, and echoplex.
- Both DTAs are operating at the same data speed, parity, character length, stop bit, and echoplex.

The data originates at one terminal and flows to the DTA connected to a CSD. The operating speeds of the terminal and DTA do not have to be the same. The DTA contains a data buffer that either slows down or speeds up the data to accommodate both terminal operation and line side operation.

The DTA sends data to an 8DTC/16DTC card in the equipment cabinet. The 8DTC/16DTC card routes the data to the common control card(s). These control signals tell the card(s) where to send the data signal. The common control card(s) then switches the data signal to the receiving 8DTC/16DTC card. The receiving 8DTC/16DTC card routes the data signal to the receiving CSD with DTA. The signal passes through the DTA data buffer and is received at the terminal. The data terminal can operate as a two-way station, originating only station, or terminating only station. The operating mode is assigned at CMC 224. See the Data Base Manual and Figure 6-1. Figure 6-2 is a generic fault isolation diagram for a DTA.

Figure 6-1. CSD with DTA Connected to Terminal Data Flow

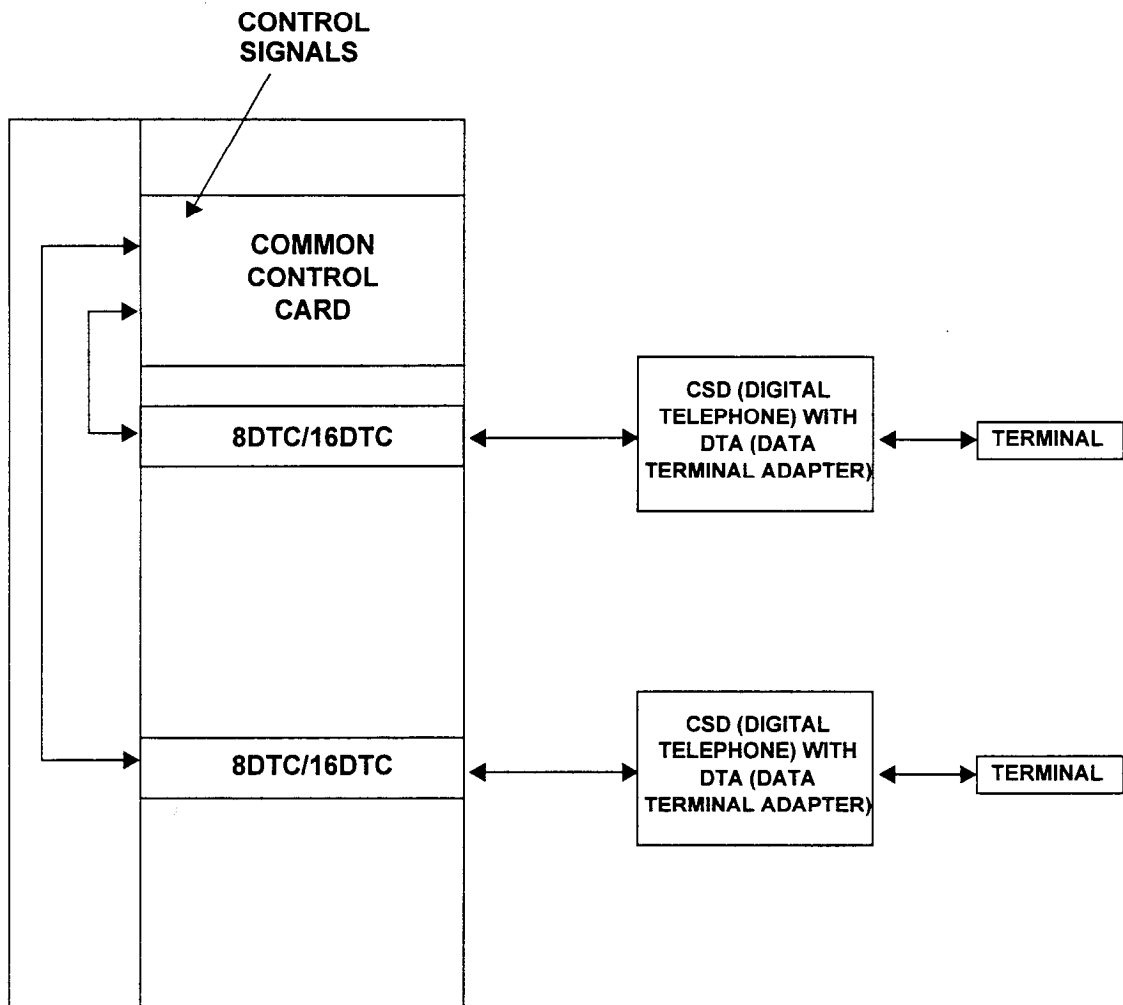




Figure 6-2. DTA Fault Isolation

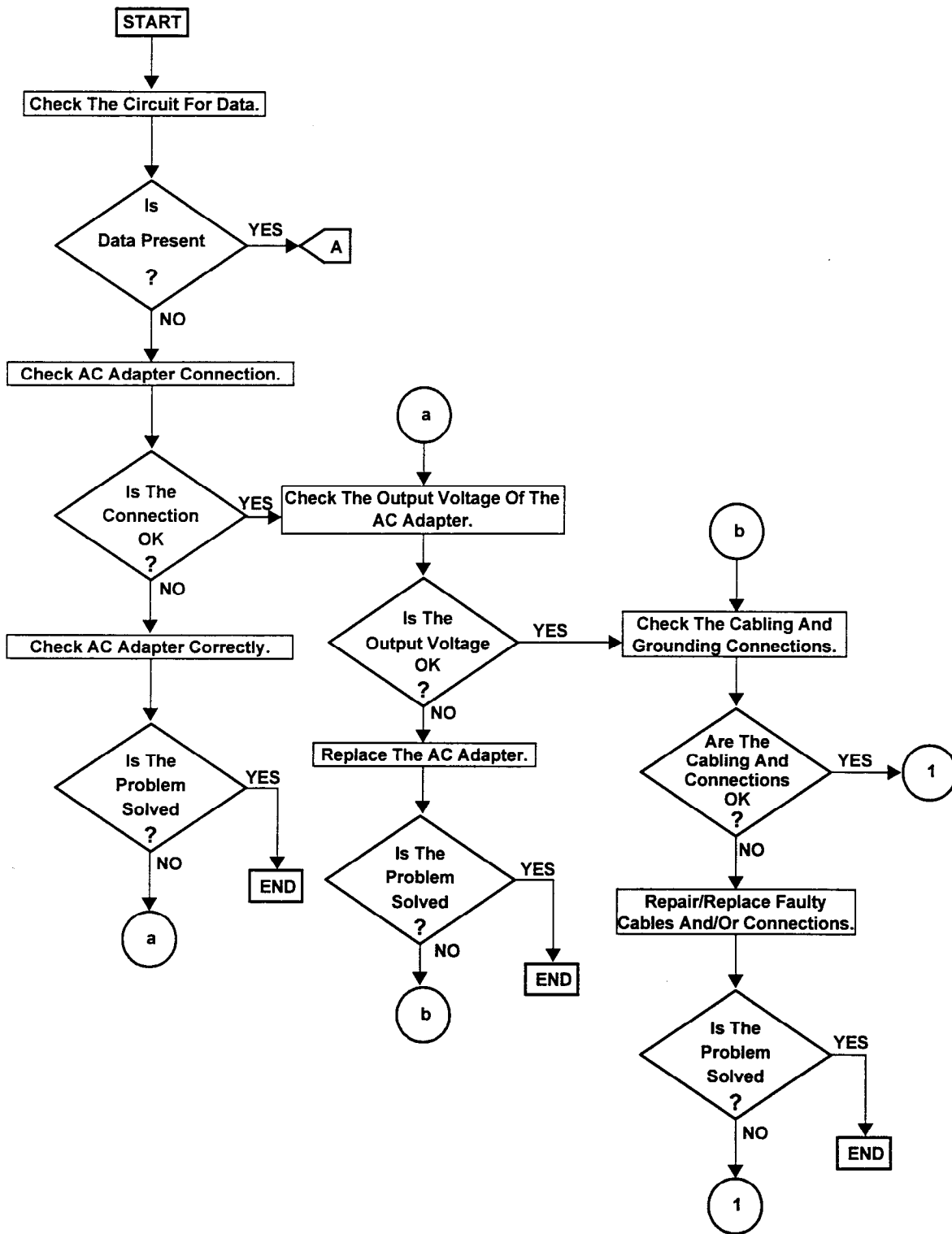


Figure 6-2. DTA Fault Isolation (Cont'd)

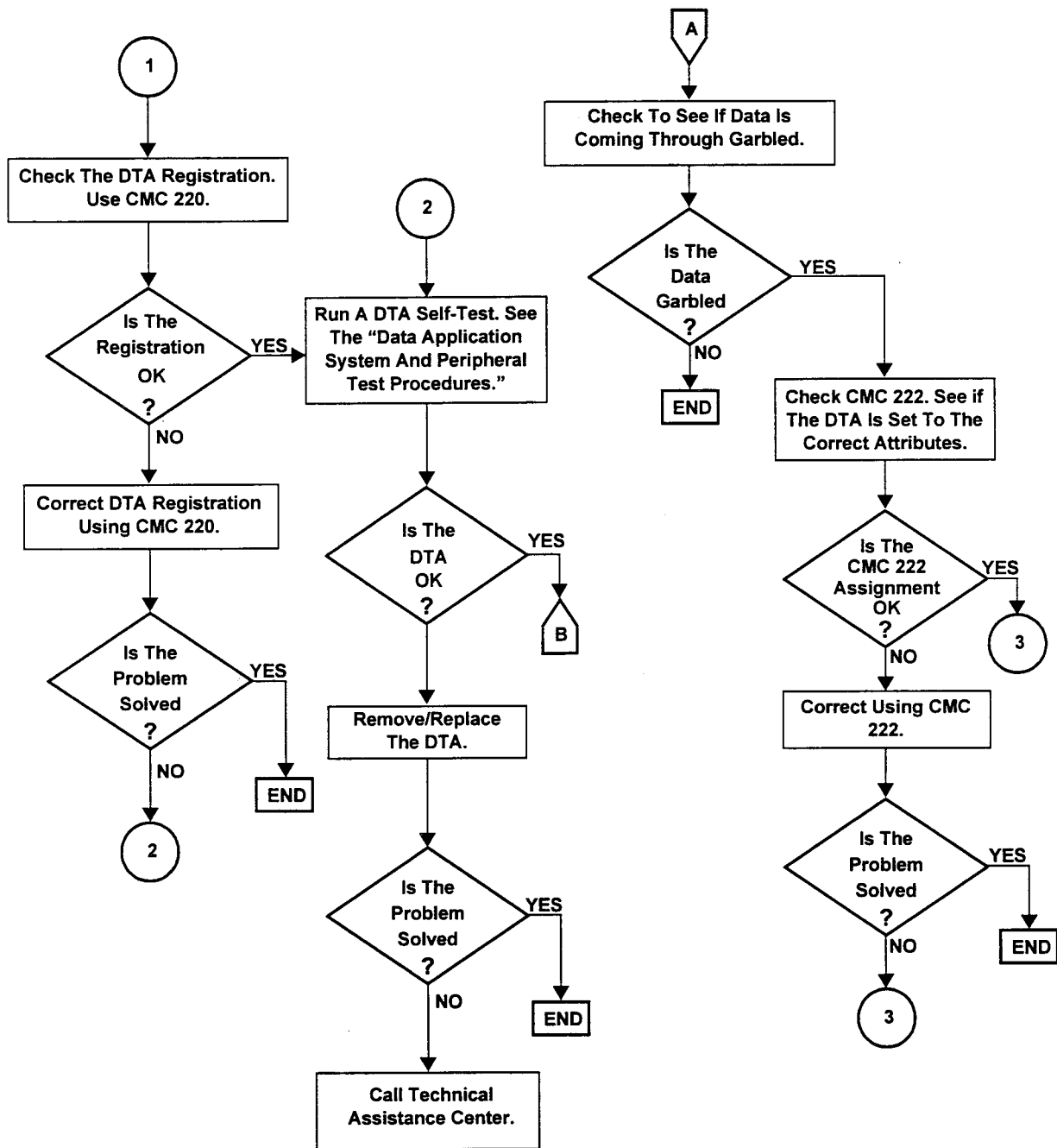
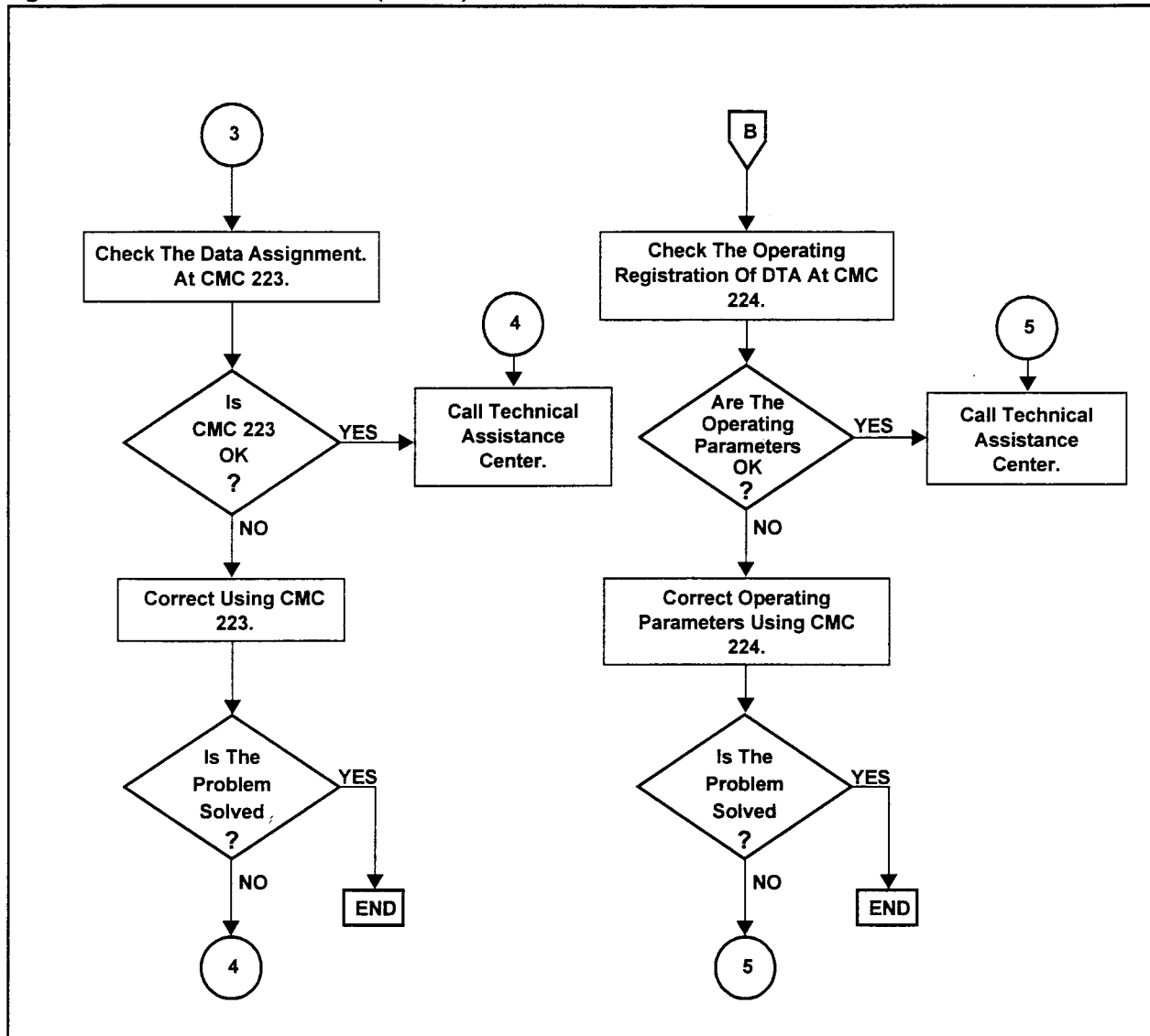


Figure 6-2. DTA Fault Isolation (Cont'd)



**DIU DATA APPLICATION  
FAULT ISOLATION**

This section provides procedures for isolating fault conditions on data communication configurations using a DIU (Data Interface Unit).

**DIU Call Trace**

The internal data circuit utilizing proprietary telephones and DIUs shares some of the same preconditions as the data circuit utilizing a CSD with DTA. The preconditions are:

- Both terminals must operate at the same data speed, parity, character length, stop bit, and echoplex.
- Both DIUs must operate at the same data speed, parity, character length, stop bit, and echoplex.

**DIU Call Trace (Cont'd)****NOTES:**

1. The DIU can be paired with any voice instrument.
2. Assign this pairing using CMC 220.
3. The voice instruments on the data circuit must also match.
4. A circuit with an extension paired with a DIU will not operate.

The data signal flow originates at the data terminal and flows to the DIU. The DIU sends the data signal to an 8DTC/16DTC card. The 8DTC/16DTC card sends the data signal to the common control card(s) for switching. The digital telephone signal originates at the CSD. The voice signal goes to an 8DTC/16DTC card and is sent on to the common control card(s) for switching. The common control card sends signals indicating the switching destination and the pairing of the voice and data signals. The signals are switched and routed to the receiving 8DTC/16DTC cards. The voice signal travels on to the receiving digital telephone. The data signal travels to the receiving DIU and goes on to the receiving data terminal.

The signal path for a Proprietary telephone paired with a DIU is similar. The only difference is the system routes the signal through an 8EKC card instead of the 8DTC/16DTC used by the Digital Station (DS20, DS20S, DS20SD, and DS32SD). See Figures 6-3 and 6-4.

With the Hotel/Motel features, an FDC (Front Desk Console) can obtain a printout using the 4CHT card in the equipment cabinet and a DIU. The signal enters the equipment cabinet from the FDC on either an 8DTC/16DTC card or an 8EKC card. If the FDC is a CSD, the 8DTC/16DTC card is the interface.

If an Attendant Console, CT-10, CT-20, or CT-30 is used, the interface is the 8EKC card. The common control card(s) also receives routing signals from the 4CHT card. The 4CHT card changes the signals to characters. The common control card(s) routes the character stream through an 8DTC/16DTC card to the DIU. The DIU routes the character stream onto the printer (see Figure 6-5). Figure 6-6 is a generic flowchart for fault isolation of a DIU.

Figure 6-3. Internal Data Circuit Using Digital Telephones

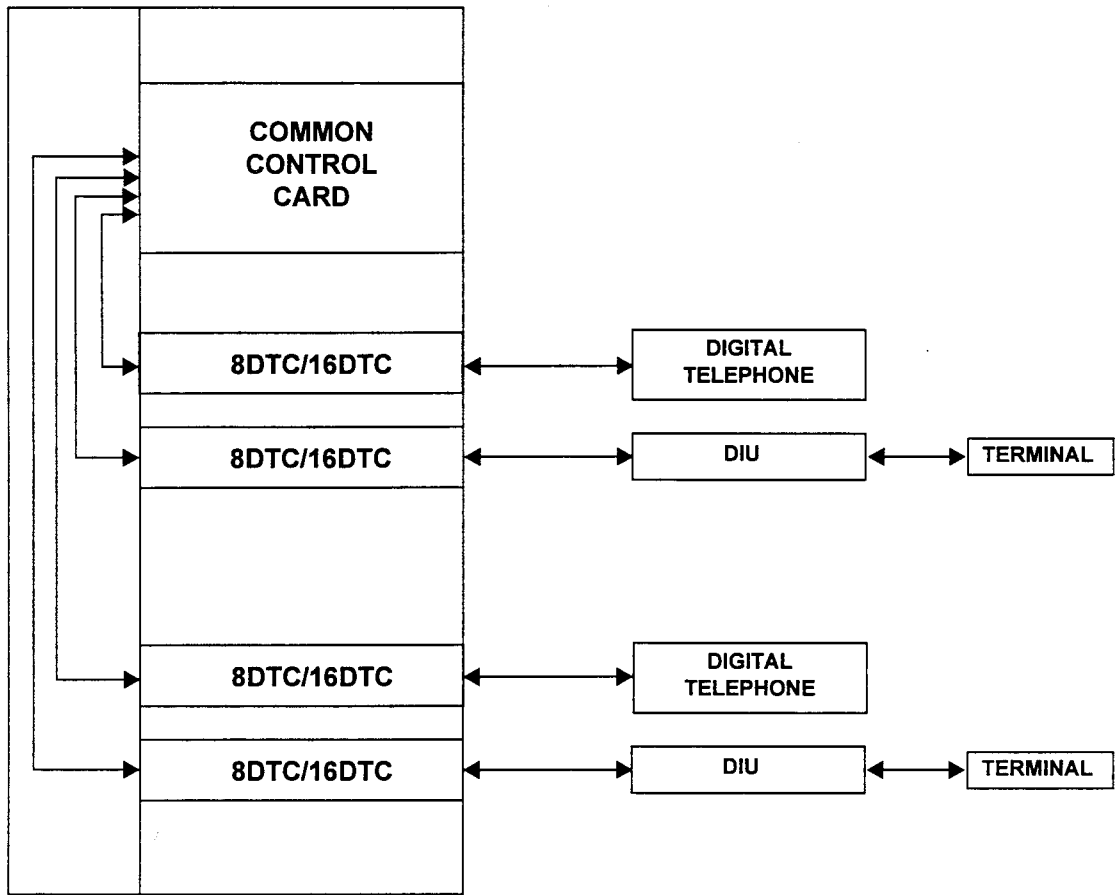


Figure 6-4. Internal Data Circuit Using Proprietary Telephones and DIUs

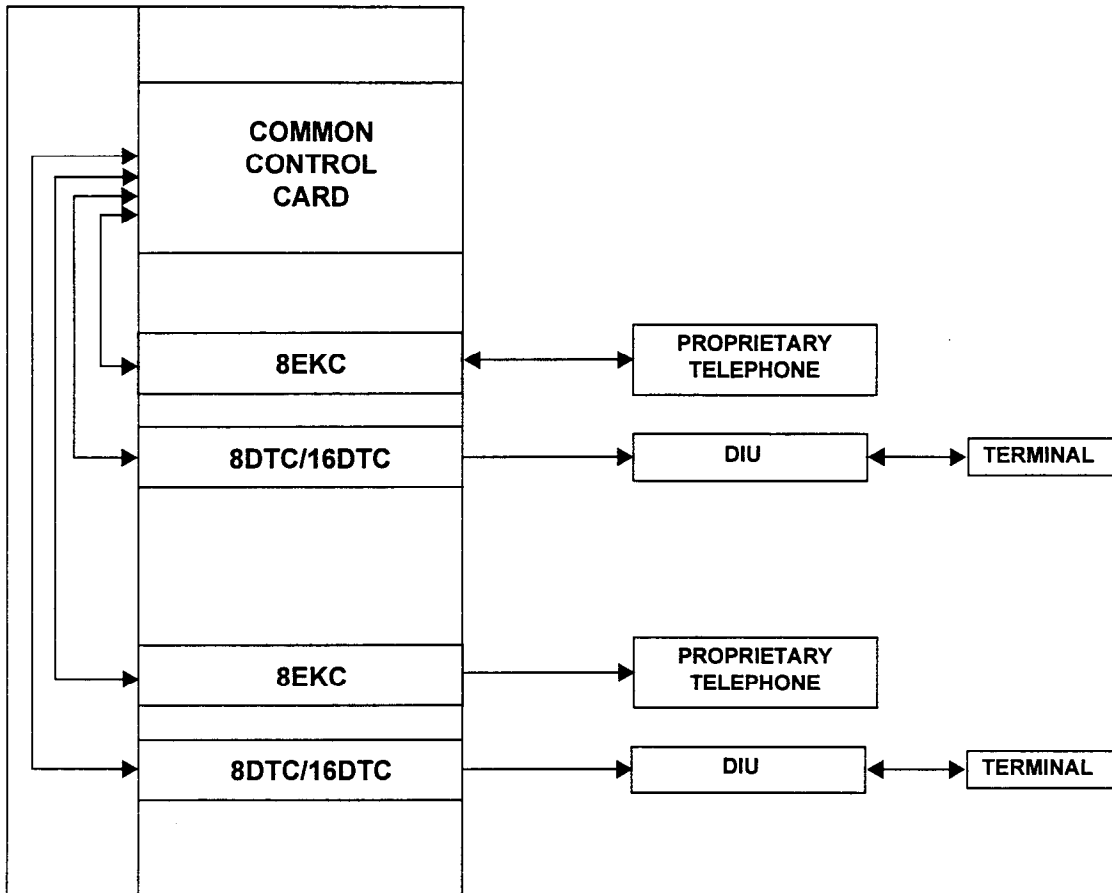


Figure 6-5. Hotel/Motel FDC to Printer Using a DIU

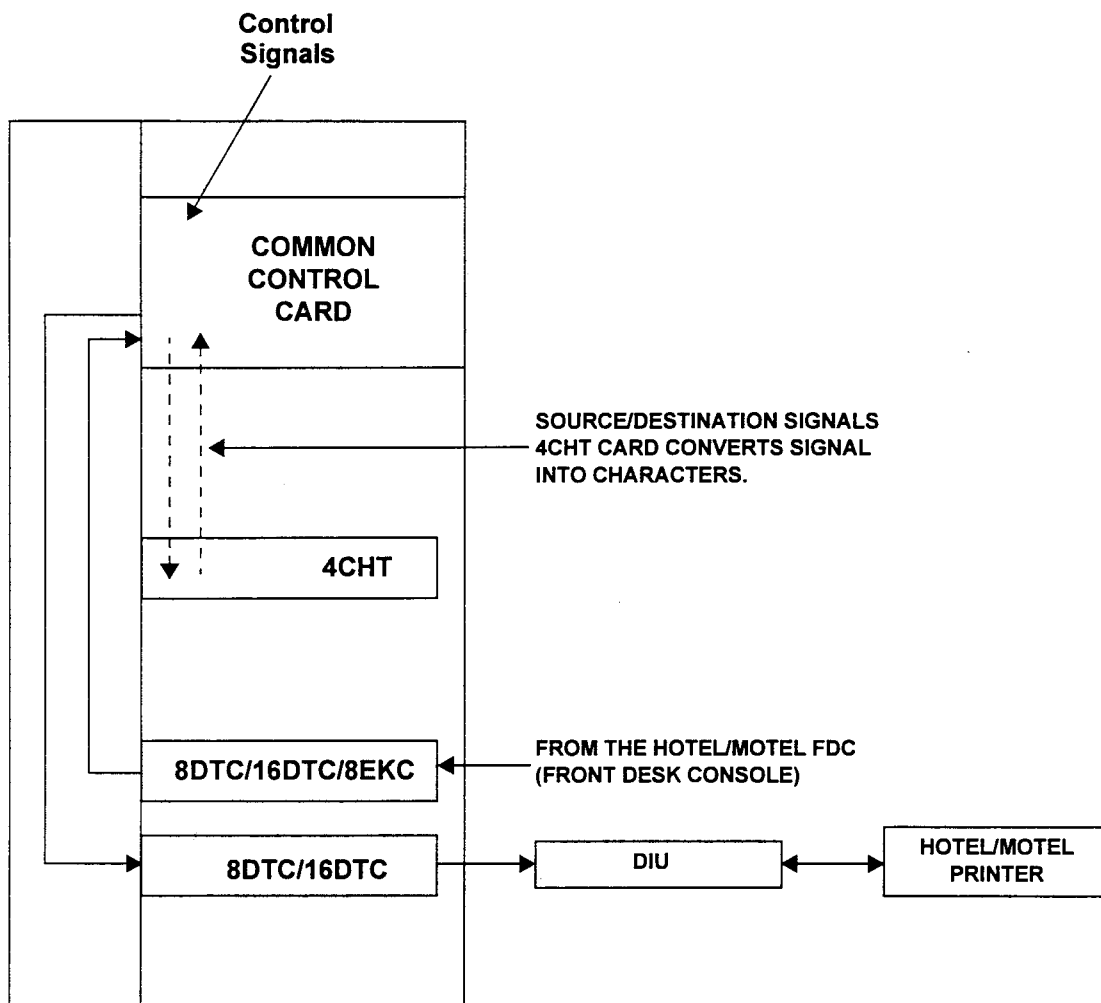


Figure 6-6. DIU Fault Isolation

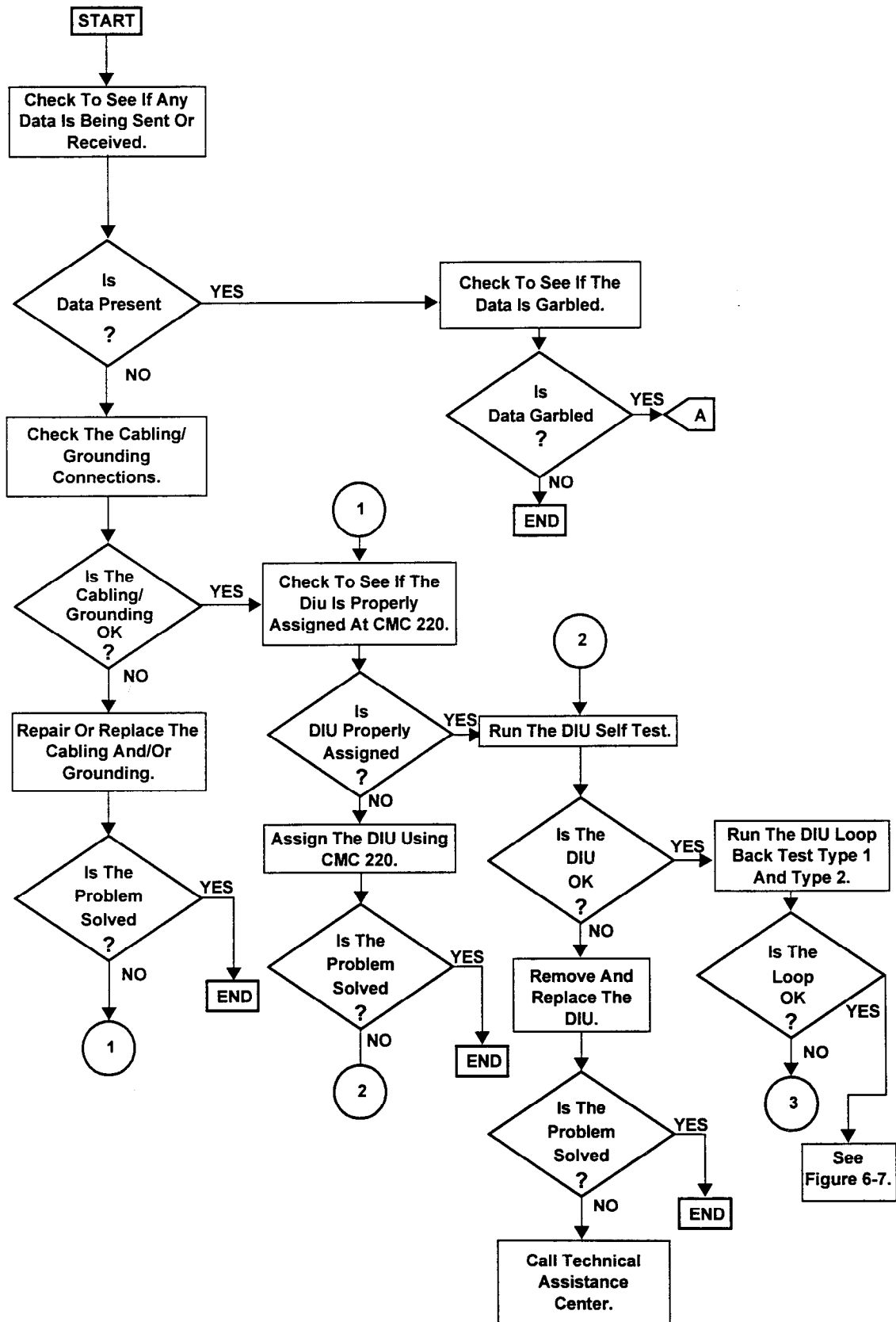
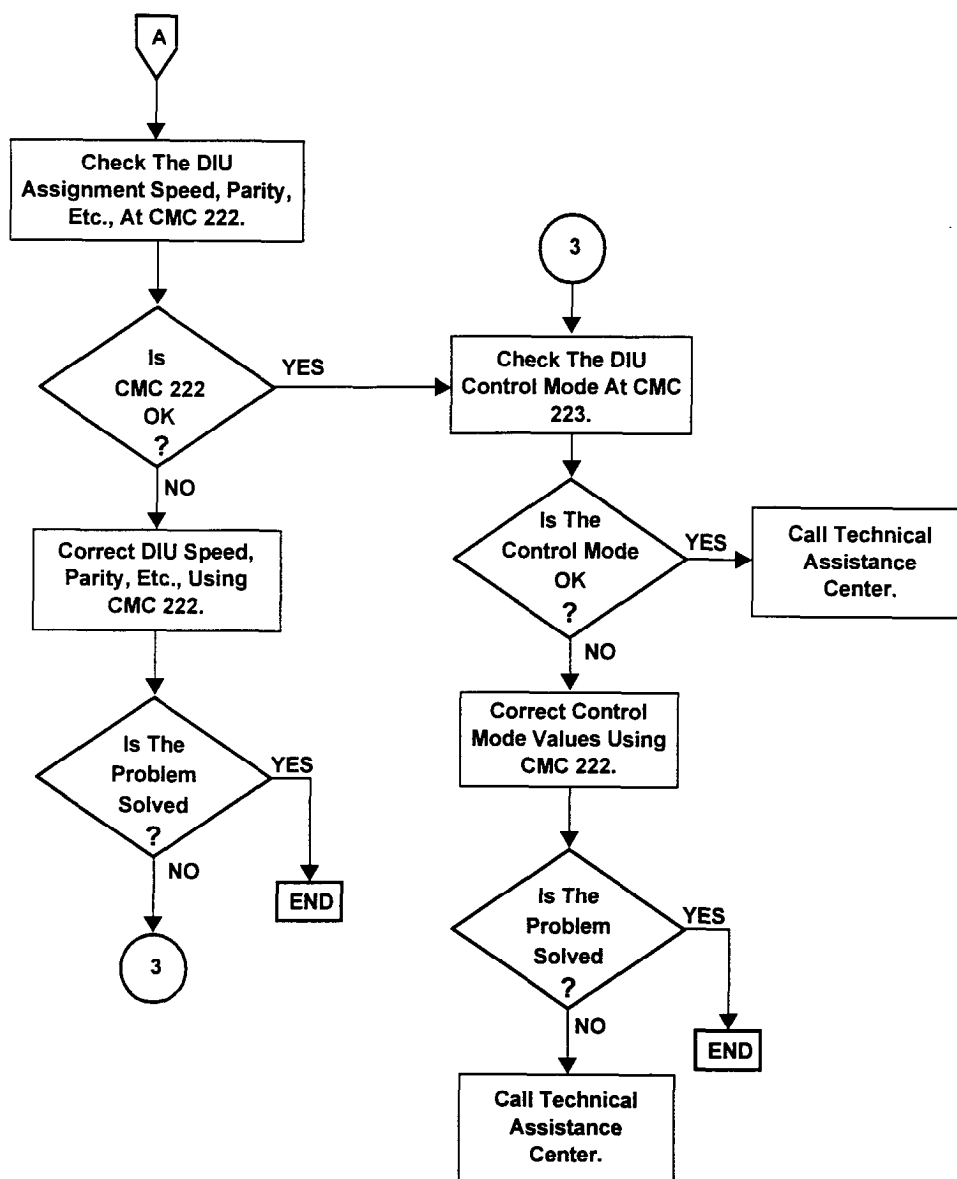




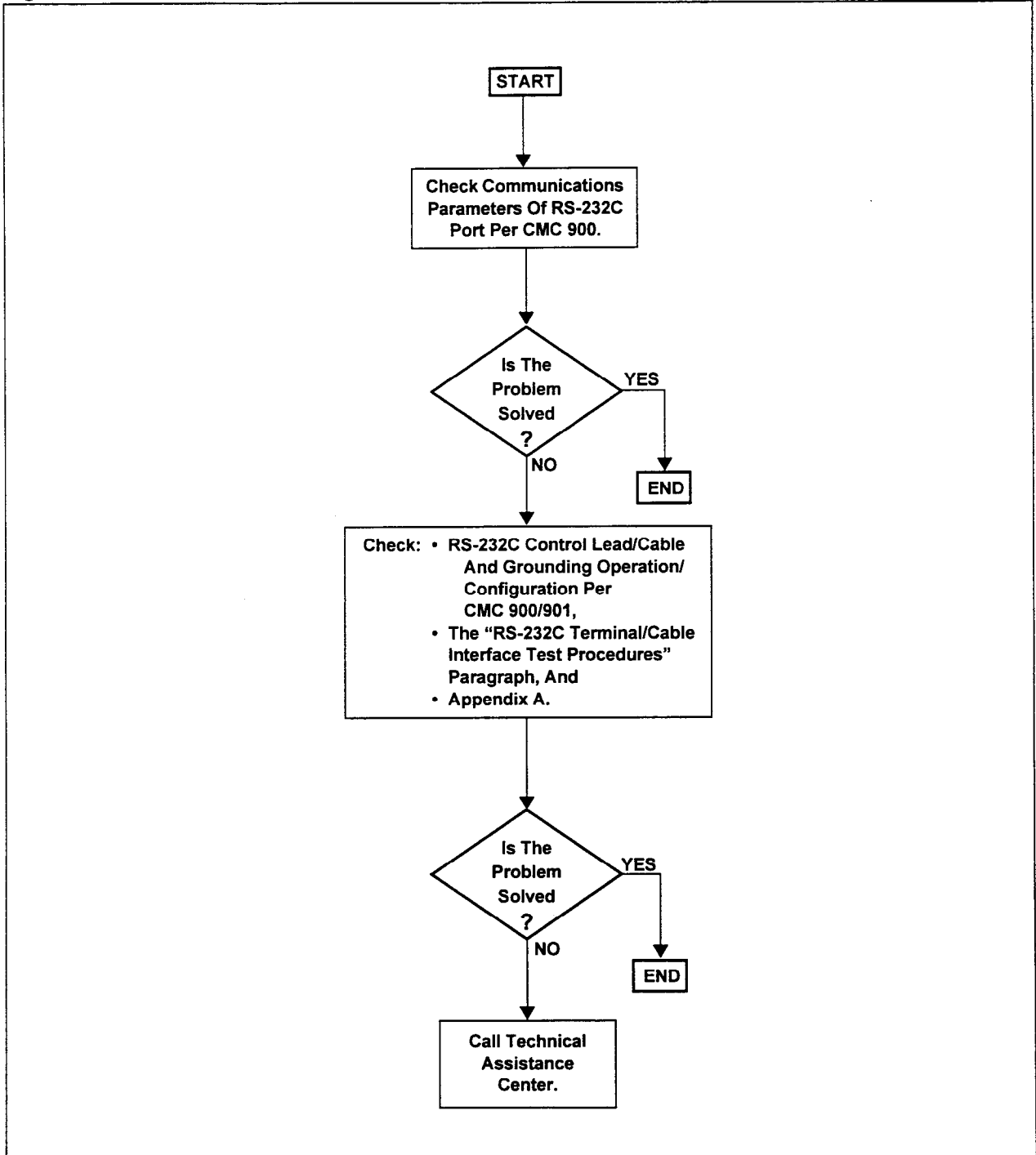
Figure 6-6. DIU Fault Isolation (Cont'd)



### SERIAL COMMUNICATIONS PORT FAULT ISOLATION

This section provides fault isolation for the RS-232C serial communications port interface used for the maintenance devices and SMDR printer. Figure 6-7 is a fault isolation flowchart for the two serial communications port interfaces.

Figure 6-7. Serial Communications Port Fault Isolation



**DATA APPLICATION AND PERIPHERAL TEST PROCEDURES**

This section describes specific test procedures for data communications cards and peripheral equipment.

**DIU Self-Test Procedure**

The DIU can be tested in the off-line mode to verify the following:

- Call progress.
- LED operation.
- TEST switch.
- DTE/DCE switches.

The DIU must be placed off-line as follows:

1. Place the TEST switch in the ON position.
2. Place the DTE/DCE switch in the DCE position.
3. Simultaneously press and hold the **CALL** button while unplugging the line cord from the line jack of the DIU; then plug it back in.

The DIU is now in the off-line or test mode. Table 6-1 shows the DIU test information.

**Table 6-1. Data Interface Unit Test**

TEST ITEM	FUNCTION
Initial Condition	Ringing starts in pattern 4. PWR LED flashes in pattern 1. TEST LED indicates ON. CALL LED flashes in pattern 7. MI/MIC signal is set to OFF.
Press <b>CALL</b> Button	CALL LED flashes, changing in patterns from 0 to 7. Ringing continues, changing in patterns from 0 to 7.
Test Switch	TEST LED goes on when switch is set to ON; TEST LED goes off when switch is set to OFF.
DTE/DCE Switch Mode	In DCE mode, MI/MIC signal goes OFF, and PWR LED flashes in pattern 1. In DTE mode, MI/MIC signal goes ON, and PWR LED flashes in pattern 5.

**NOTES:**

1. **CALL** button, TEST switch, and DTE/DCE mode switch test operations are independent.
2. Refer to Table 5-5 for ringing test patterns.
3. Place the DTE/DCE switch in the DTE position after the test, if necessary.

**DTA/DIU LOOP BACK TEST PROCEDURES**

Both the DTA and the DIU provide loop backs on the terminal and network side interfaces to support bit error rate and/or test pattern verification.

**DTA/DIU Local Loop Back Procedures**

To verify proper operation of the terminal interface, perform a local DTA/DIU loop back test as follows:

1. Place the TEST switch on the rear of the DTA/DIU to test position (the DIU TEST LED indicator will light).
2. The local loop back configuration shown in Figure 6-8 (Loop 1) is now activated. Proper operation of the terminal interface can now be evaluated.

**NOTE:** Loop test shown is only for a hotel/motel printer with 4CHT card.

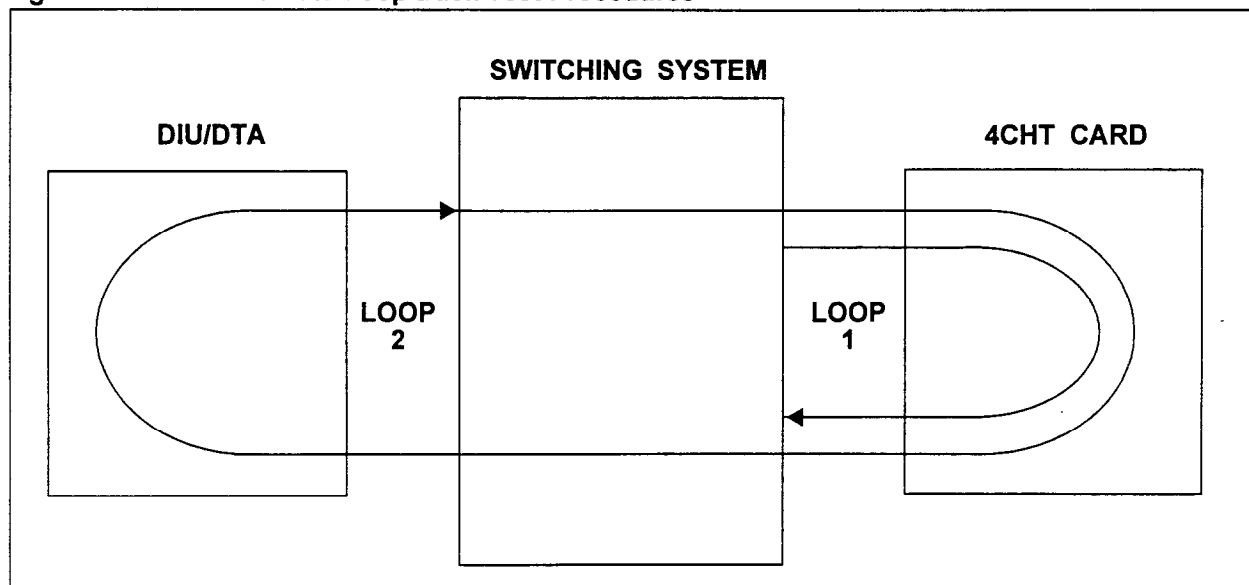
**DTA/DIU Remote Loop Back Procedures**

To verify proper operation transmission quality through service extensions and the system, a remote DTA/DIU loop back test should be initiated as follows:

1. Set up data call with remote DTA/DIU.
2. Place TEST switch on the rear of the remote DTA/DIU to the TEST position (local DTA/DIU remains in normal operating configuration).
3. The remote loop back configuration (Loop 2) shown in Figure 6-8 is now activated (only if a hotel/motel printer and 4CHT card are installed). The transmission quality of the service extensions and system can now be evaluated.

**NOTE:** The CALL button is not functional when the DTA or DIU is in the test mode.

Figure 6-8. Local/Remote Loop Back Test Procedures

**4CHT TEST PROCEDURES**

The 4CHT card tests its own internal card logic and also runs a test pattern to a remote loop back enabled DTA/DIU for character transmission testing. The 4CHT self-test uses a loop test (Loop 1 as shown in Figure 6-8) to test card operation.

**4CHT Self Test**

The 4CHT self test is performed as follows:

1. Use maintenance device and CMC 810 to enter the following parameters:
  - a. P1 = 0 (internal test)
  - b. P2 = Character trunk number (per application)
  - c. P3 = DTA/DIU directory number (per application)
2. The system displays test results on the screen in parameters P4 and P5. Interpret the results. The 4CHT remote test uses a loop test (Loop 1, as shown in Figure 6-8) to test DIU operation.

**4CHT Remote Loop Back Test Procedure**

Perform the 4CHT remote loop back test as follows:

1. Place DTA/DIU TEST switch to ON position.
2. Run test as 4CHT self-test with the exception of P1 = 1 (loop test).
3. Interpret the results by referring to the Data Base Manual.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The entered EN is not installed.	Check parameters.
DISAGREE	Disagreement of terminal types.  The DIU/DTA is set to synchronous mode.	Check the data entry and installation and try again.  Return to CMC 222 and remove synchronous mode from the terminal.
DENIED	An attempt was made to test a Hotel/Motel printer which is in the make-busy state.	Release the hotel/motel printer.
NOT EXEC	The 4CHT or DIU/DTA is faulty or in the make-busy state. 4CHT Loop Test is disabled during a fault.	Replace faulty cards. Return to CMC 701 to release equipment. Place a busy printer in service with CMC 706.

**RS-232C TERMINAL/CABLE  
INTERFACE TEST  
PROCEDURE**

Functional and/or operational terminal and/or printer problems may occur in the RS-232C serial interface. These problems usually result from a cable which does not support the proper RS-232C control leads. Troubleshooting and testing these kinds of problems is best accomplished using an RS-232C breakout box.

**Installation and Use of  
RS-232C Breakout Box**

Install the RS-232C breakout box between the DTA/DIU and associated customer-provided equipment. All data, timing, and control leads are brought out on the breakout box so that "space" (on) or "mark" (off) conditions can be imposed on the control leads. View the status of each lead, as well as transitions between states, using LED indicators on the breakout box.

**Testing RS-232C Supported Control Leads**

Appendix A contains cable pin-out diagrams indicating the data, timing, and control leads which must be supported for each application. Control leads of particular importance for call setup are:

- RTS.
- DCD.
- CTS.
- DSR.
- DTR.

DTR also serves as the call initiation control lead for abbreviated dialing (hotline) data calls. Refer to the EIA RS-232C specification and equipment manufacturer's documentation for proper control lead sequencing. Emulate control lead sequences by using the breakout box to change lead status and/or through CMCs. Additionally, check the RS-232C cables to verify that:

- The cable is less than 50 feet in length (per EIA recommendations).
- The cable is equipped with pins and wires to support requested control leads.

Perform this verification by using a volt-ohmmeter to test end-to-end continuity through each cable control lead circuit.

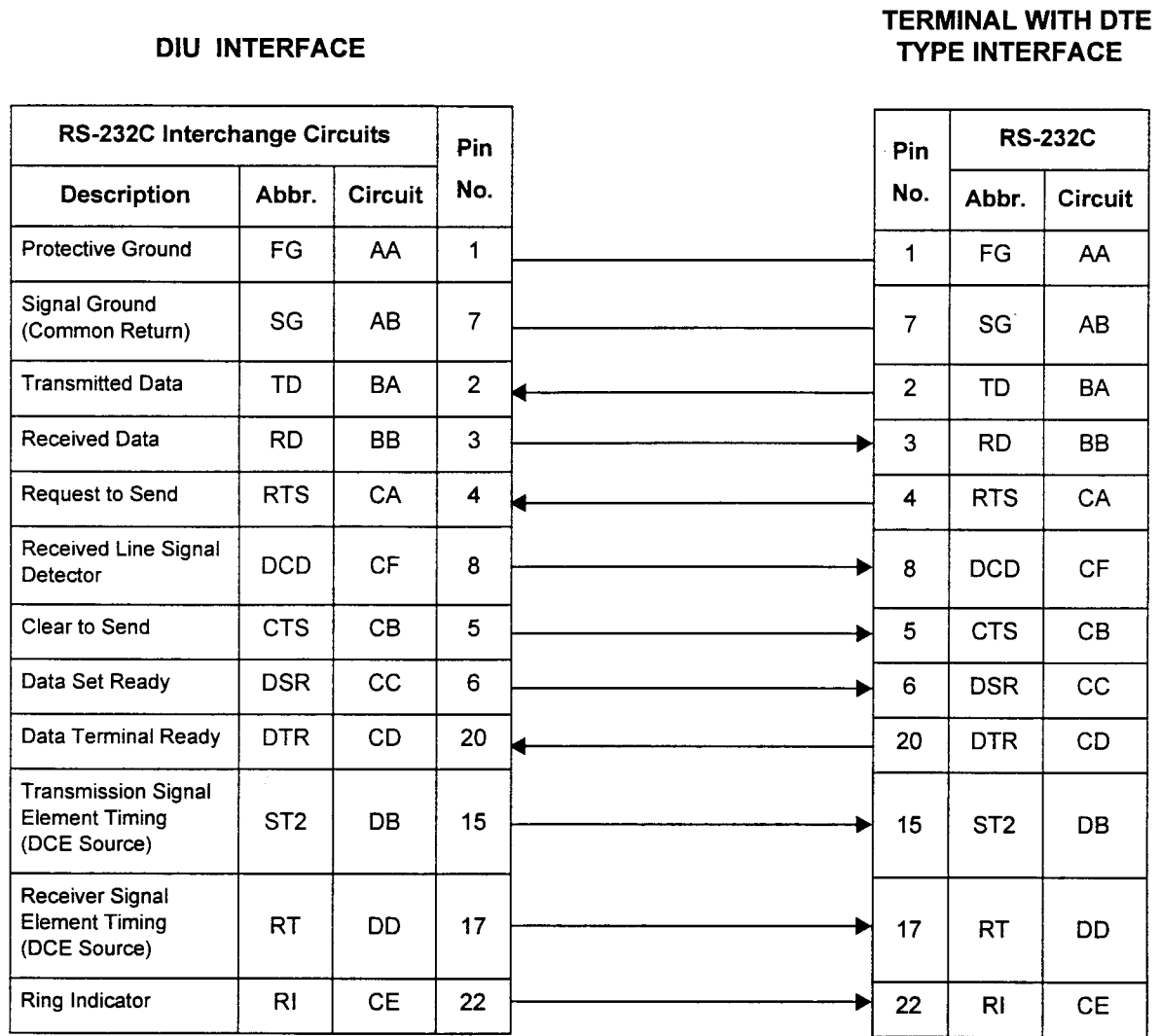
Figure 6-9 shows the generic pin-out configuration for a DTA to DIU connected to a DTE.

**Special Construction of RS-232C Cables**

Appendix A contains pin-out information required for special construction of cables for many common types of printers and terminals.

---

Figure 6-9. Supported RS-232C Signals for DTA and DIU Connected to a DTE





**HOTEL/MOTEL AND  
SMDR PRINTER TEST  
PROCEDURES**

Because test procedures vary for specific types of printers, refer to the manufacturer's documentation.

The most common type of printer problem is an incorrectly configured cable. Appendix A of this document provides the proper cable makeup for most printers.

**Printer Paper End Condition**

Most printers contain small buffers. Therefore, give particular attention to keeping the printer supplied with paper. This is especially true in SMDR applications where valuable call record information can be lost. The following information is provided as an aid for replenishing paper supplies for three different types of printers:

- **Printer with XON/XOFF option.** This type of printer notifies users with a "PAPER END" message to the system by means of the XOFF character. Change the paper to restart printing.
- **Printer with line disconnect option.** This type of printer notifies users with a "PAPER END" message to the system by means of a line disconnect. Add paper to restart printing. The printer first outputs the failure message after changing the paper.
- **Printer without paper end alerting function.** This type of printer continues to output SMDR messages or system messages even if the paper ends. Messages output during paper end are erased from the system and cannot be retrieved.
  - a. Immediately turn the printer power to the OFF position.
  - b. Change the paper.
  - c. Turn the printer power to the ON position.

If there is enough time before the paper ends, enter CMC 705 to busy-out the printer. Change the paper quickly while the system holds the call messages in its buffer. Enter CMC 705 and then place the printer back into service.

**DIGITAL INTERFACE  
CARD (24T1) TESTS**

The 24T1 digital interface card has the following on-line test functions:

- Software testing (loop back test: CMC 813).
- Transmitted line testing by remote loop back function (DS-1 interface).

**Digital Interface Card  
Software Test**

Software testing checks the normality of the:

- Frame coder/decoder part.
- A, B bit signaling processing part.
- Driver/receiver part.

**Transmitted Line Interface  
Test**

This test is executed by the network equipment. The 24T1 card is set to the outside loop back mode (CMC 813). The 24T1 card is in a make-busy status and all outgoing calls are blocked. This card is set to the loop back mode automatically when the remote loop back requesting signal from the network is deleted. In the loop back mode, the 24T1 card is in a make busy state and all incoming/outgoing calls are blocked.

**ISDN PRI TRUNK CARD  
(23PT) TESTS**

The 23PT ISDN PRI trunk card has the following on-line test functions:

- Loop back test (internal/external).
- Error status check (LPR test).
- Transmitted line interface test (loop back mode).

**Loop Back Test**

The loop back test checks the normality of the:

- Frame coder/decoder.
- Layer 2 control.
- Driver/receiver.

The internal loop back test checks the frame coder/decoder and the layer 2 control only. The external loop back test checks all three areas.

**Error Status Check**      This test shows the error counts of the following:

- Illegal frame reception.
- Normal frame reception:
- CRC error.
- RAI reception.
- AIS reception.
- Out of frame error.
- Loss of clock.
- Long frame reception.
- Undefined frame reception.
- Frame resending T.O.
- Data link reestablishment.
- Unexpected response reception.

**Transmitted Line Interface  
Test**

This test is executed by the network equipment. The 23PT card may be set to the loop back mode towards the network by the loop back test command (CMC 910). In the loop back mode, the 23PT card is placed in make-busy status and all incoming/outgoing calls are blocked.

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## OVERVIEW

This chapter describes the required preventive maintenance for the system, peripherals, and service extensions.

### **Cooling and Air Flow Preventive Maintenance**

Observe the following guidelines to maintain proper cooling and air flow in the system:

- Do not obstruct air flow at the top of the system equipment cabinet or power supply.
- Do not permit foreign particles or liquids to enter the ventilation holes.
- Dress all interface cabling neatly. The grounding cables and power cables should remain free for easy access.

### **System Voltage Checks**

Voltage checks on this system are not necessary. If problems occur which indicate power unit distribution faults (continual breakdown of the same card), change the power unit.

Voltage adjustments are factory set and cannot be altered as a part of maintenance. Battery packs are checked during installation and are charged by the system.

### **Spare Cards**

The spare cards (except CPU and SSDEC switch cards) should be tested for correct operation after the system is completely tested and operational. To test the spare cards, replace a working card with an identical spare card, and test the function associated with the card. If the function is operational, the inserted card can remain in the system as the working card and the previous working card can become the spare. The procedures for replacing each card are described in Chapter 1 of this document. The card replacement procedures must be followed to avoid causing damage to the card and system.

### System Memory Back-Up Battery

The battery is located on the CPU card:

- The Real Time Source (RTS) is backed up against loss of power by a lithium battery. The ALM LED displays the following messages:

PROBLEMS	ALM DISPLAY	LOG FAULT INFORMATION
Stop incrementing time	CL0	X
Illegal time output	CL1	

#### NOTES:

- The system operation continues without the timer even when the ALM indicates a problem.
  - Use CMC 700 to set the time. If the problem keeps reoccurring, replace the CPU card.
- Random access memory (RAM) is backed up by the nickel cadmium battery on this card. The system periodically checks this battery. When the battery is in a "brown-out" condition, the ALM LED displays "Eb."

The ALM LED can go ON if a long-term power failure causes the battery to discharge. The battery automatically recharges and the ALM LED should go off within a specified time frame. If the discharge condition continues more than two days, the battery is dead and the CPU card should be replaced. For this reason, it is recommended that a current copy of the customer data base be available on floppy disk(s) in the event that the CPU card should need to be replaced.

**NOTE:** The Trouble Information Display command indicates the day and time when the battery discharge occurs.

The ALM LED automatically goes off if the battery on a new card is fully charged. If the power stops working while the battery is being changed, the customer data must be loaded from the tape after a COLD restart.

**NOTE:** The system runs without battery back-up while the battery is being replaced.

**RVAC Memory Back-Up  
Battery**

The RAM on the RVAC card is backed up by a nickel-cadmium battery to store recorded voice messages in the event of a power failure. When the RVAC card is first installed without the battery being charged or when the power is turned on, the ALM LED on the CPU card displays "pbxxxx".

Additional battery information is found in the Installation Manual. The ALM LED displays during the 24-hour period after initial installation or when the battery charge is low. If the battery cannot be charged in two days, the battery is dead. The RVAC card should be replaced and the voices messages recorded again.

**NOTE:** The Trouble Information Display command indicates the day and time when the battery discharge occurs.

**TELEPHONE COMPANY  
MAINTENANCE**

Perform regular maintenance per standard practices. If the local operating company provides a dial-up responder unit, use it in conjunction with CMC 701 to test line/trunk levels.

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**APPENDIX A**

**PIN-OUT DIAGRAMS**



Figure A-1. Cable Pin-Out for a DTE Type Terminal Connected to a DIU

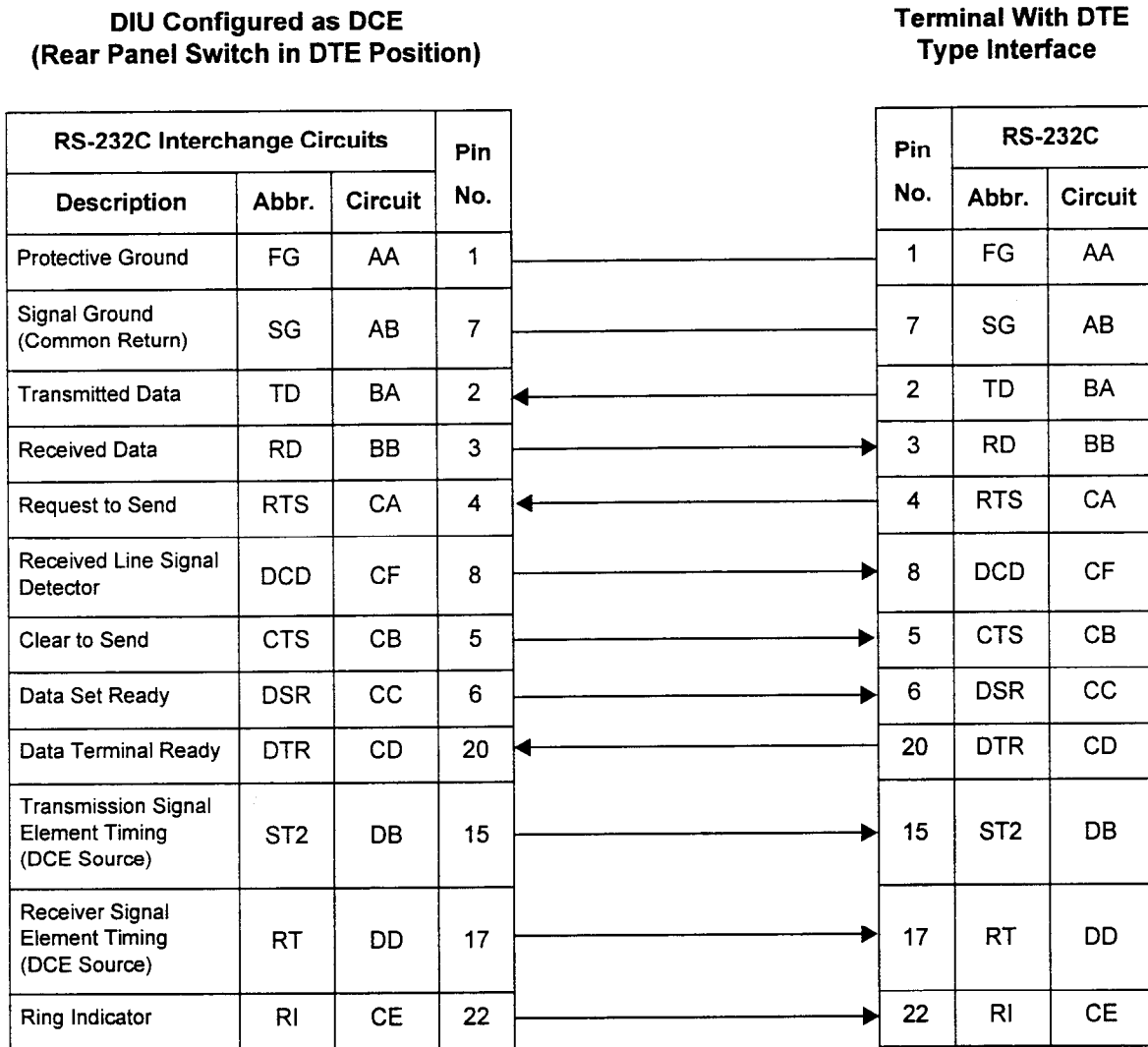
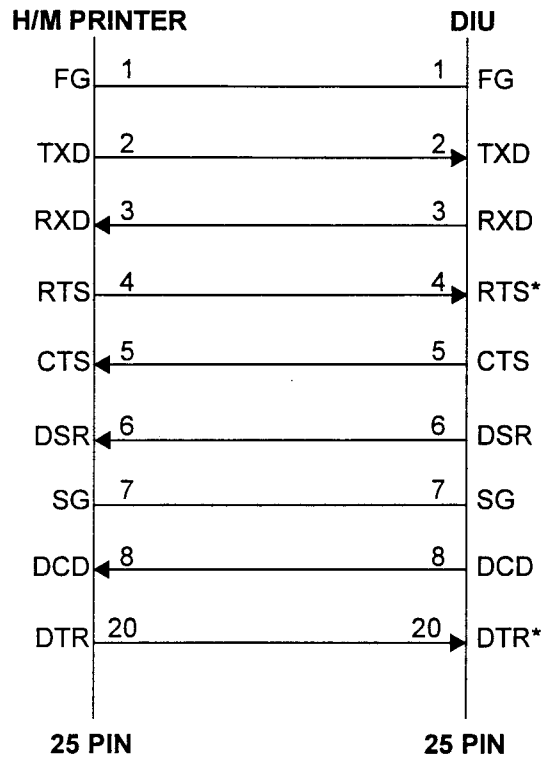


Figure A-2. Cable Pin-out for a Hotel/Motel Printer Connected to a DIU



\*NOTE: DTR signal and/or RTS signal must be omitted and the DTR option and/or RTS option are set by command (CMC 223).

Figure A-3. Generic Cable Pin-Out for a DTE Type Terminal Connected to a DTA

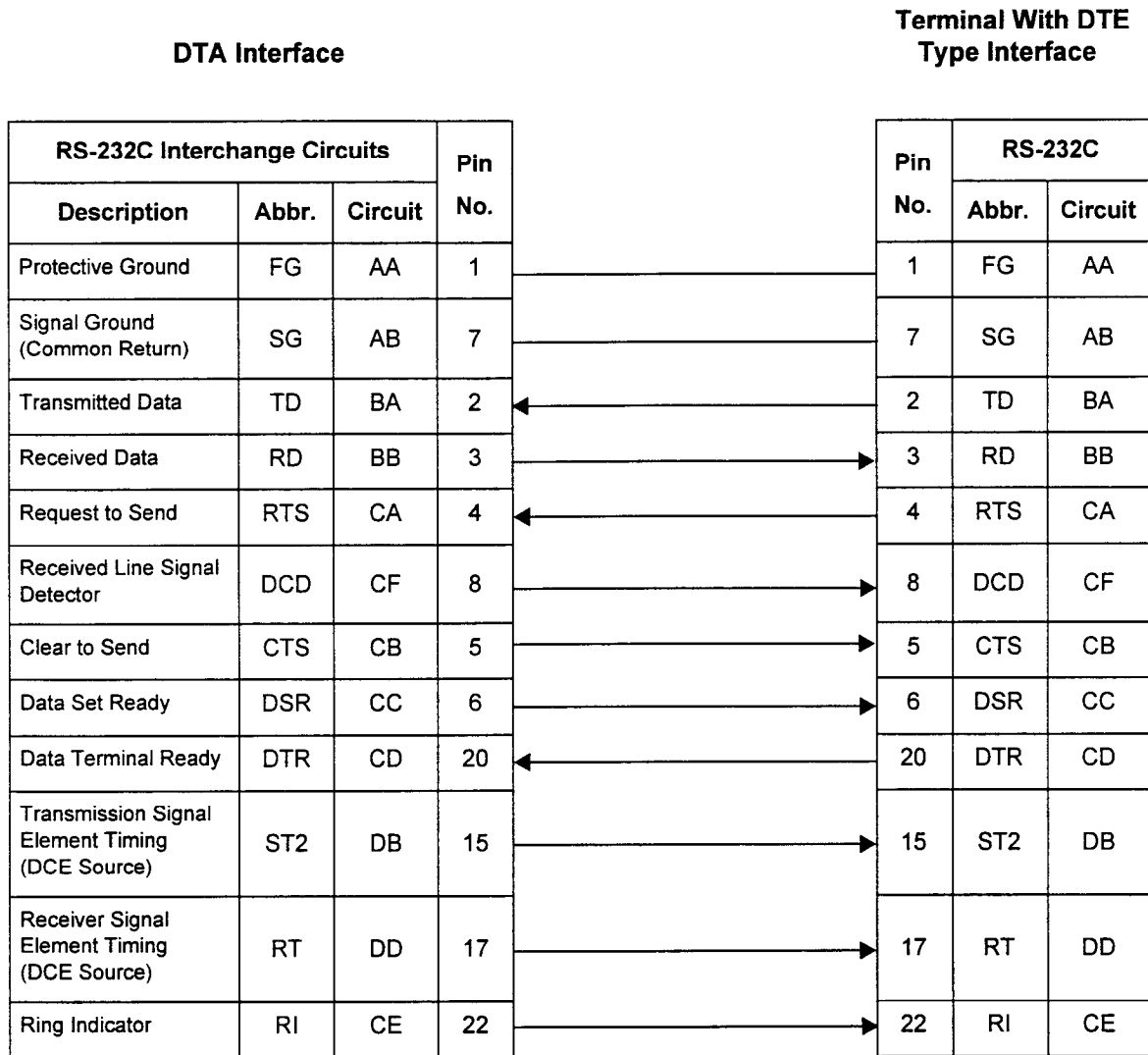


Figure A-4. Special Cable Pin-Outs for an IBM PC-to-Serial Port Interface

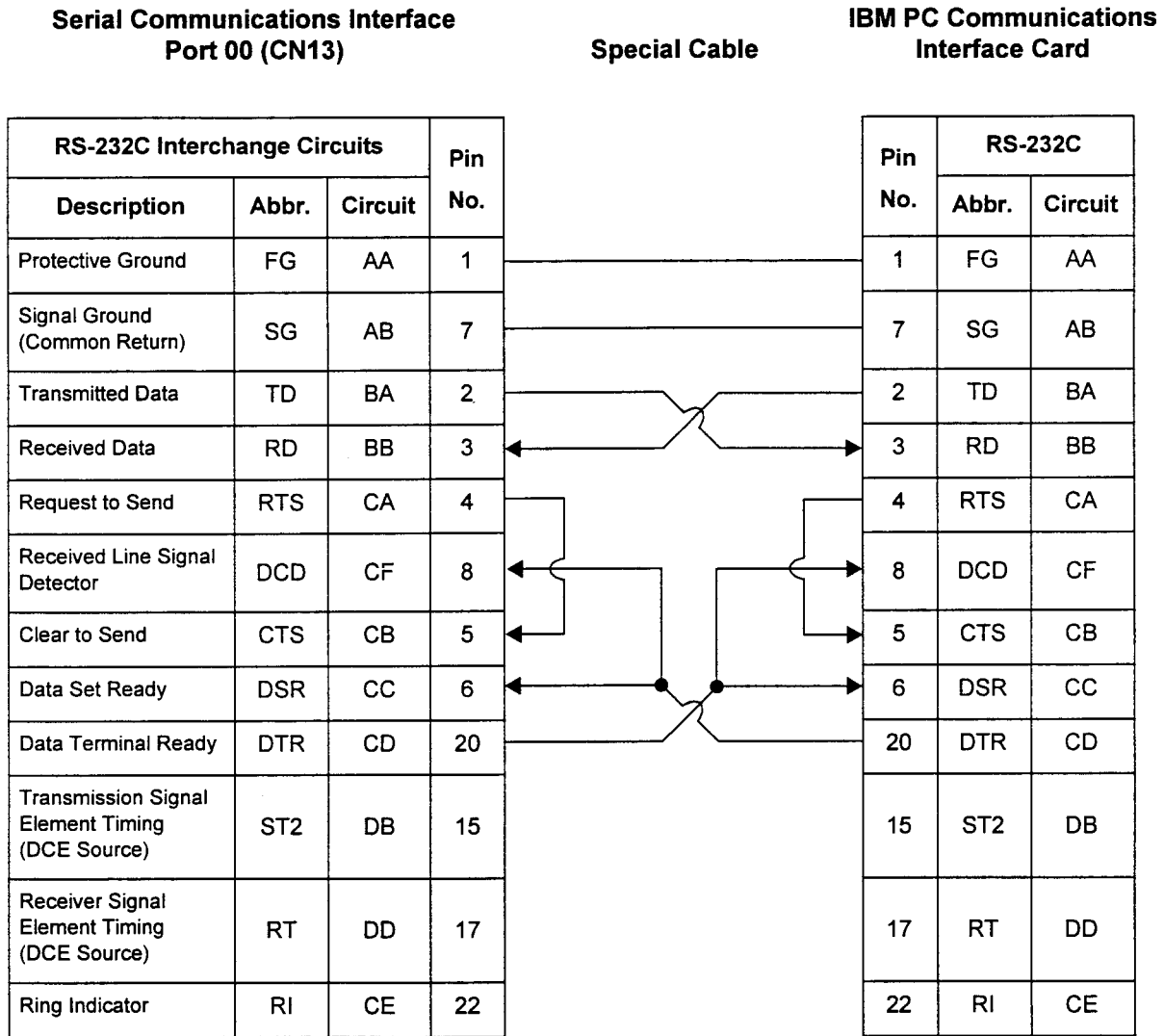


Figure A-5. Cable Pin-Outs for a DTE Type Modem Connected to the IBM PC for Use as a Remote Maintenance Device

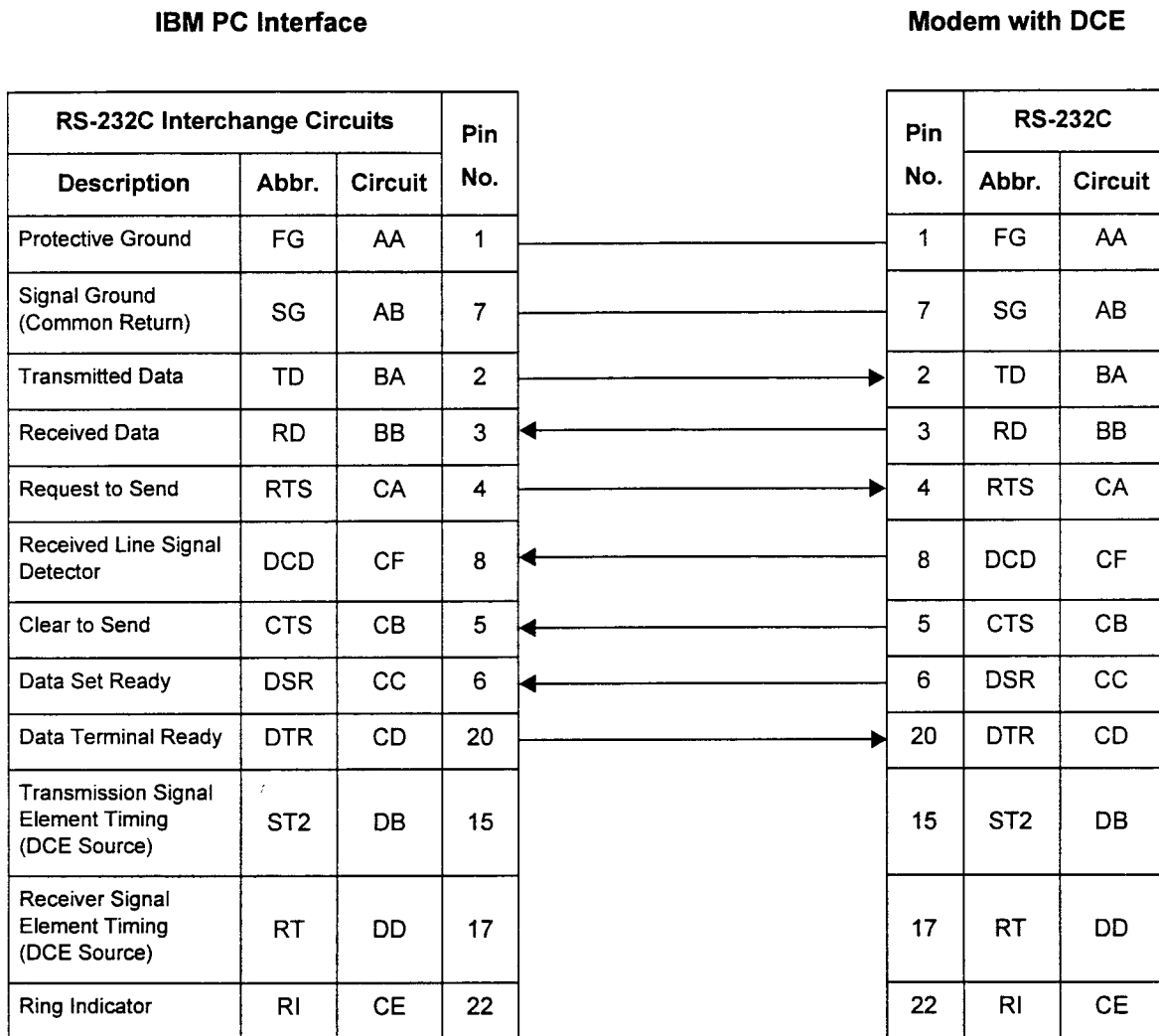


Figure A-6. Cable Pin-Outs for a DTE Type SMDR Printer with RTS Connected to the Serial Communications Port

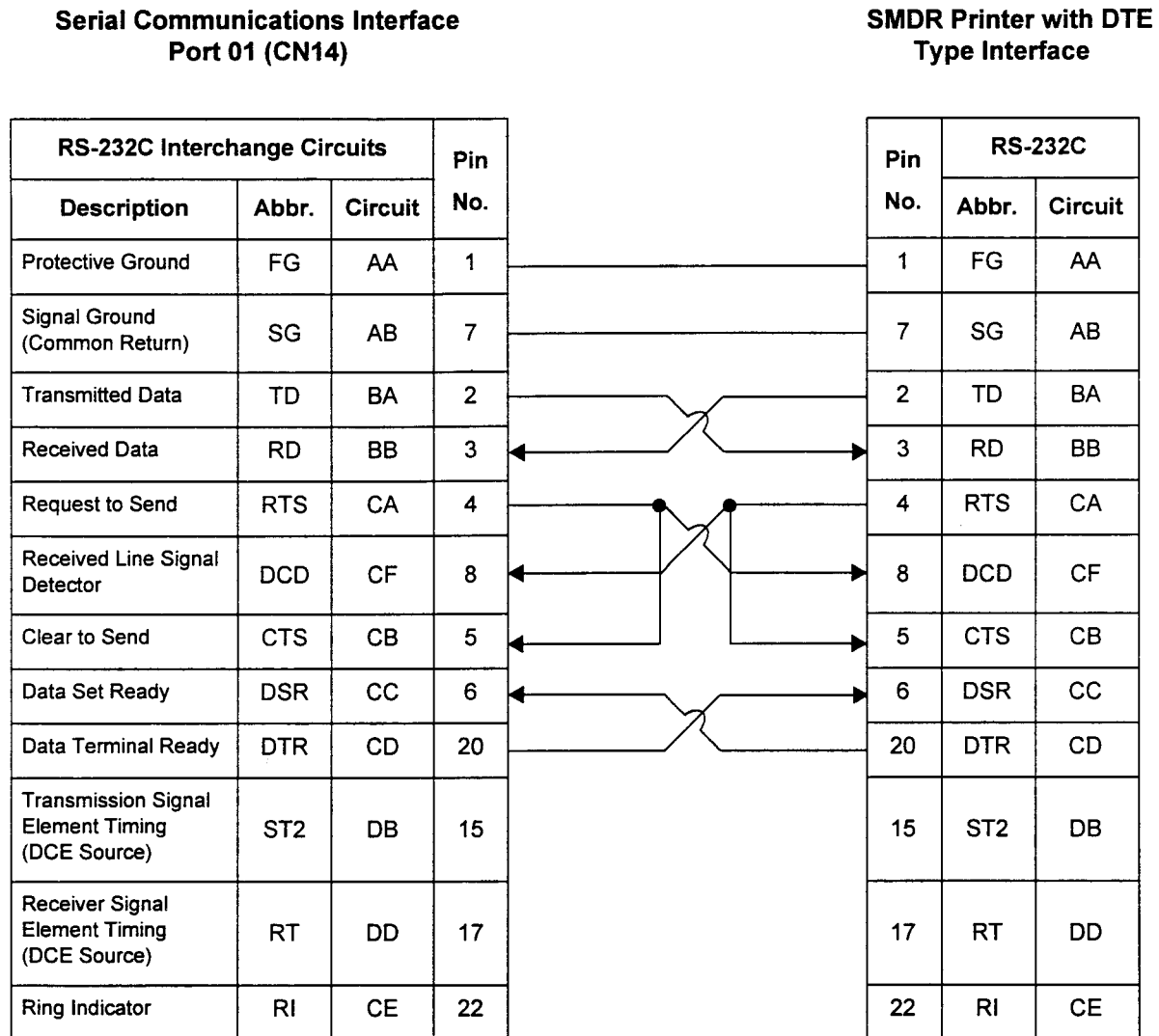




Figure A-7. Cable Pin-Outs for a DTE Type SMDR Printer Connected to the Serial Communications Port

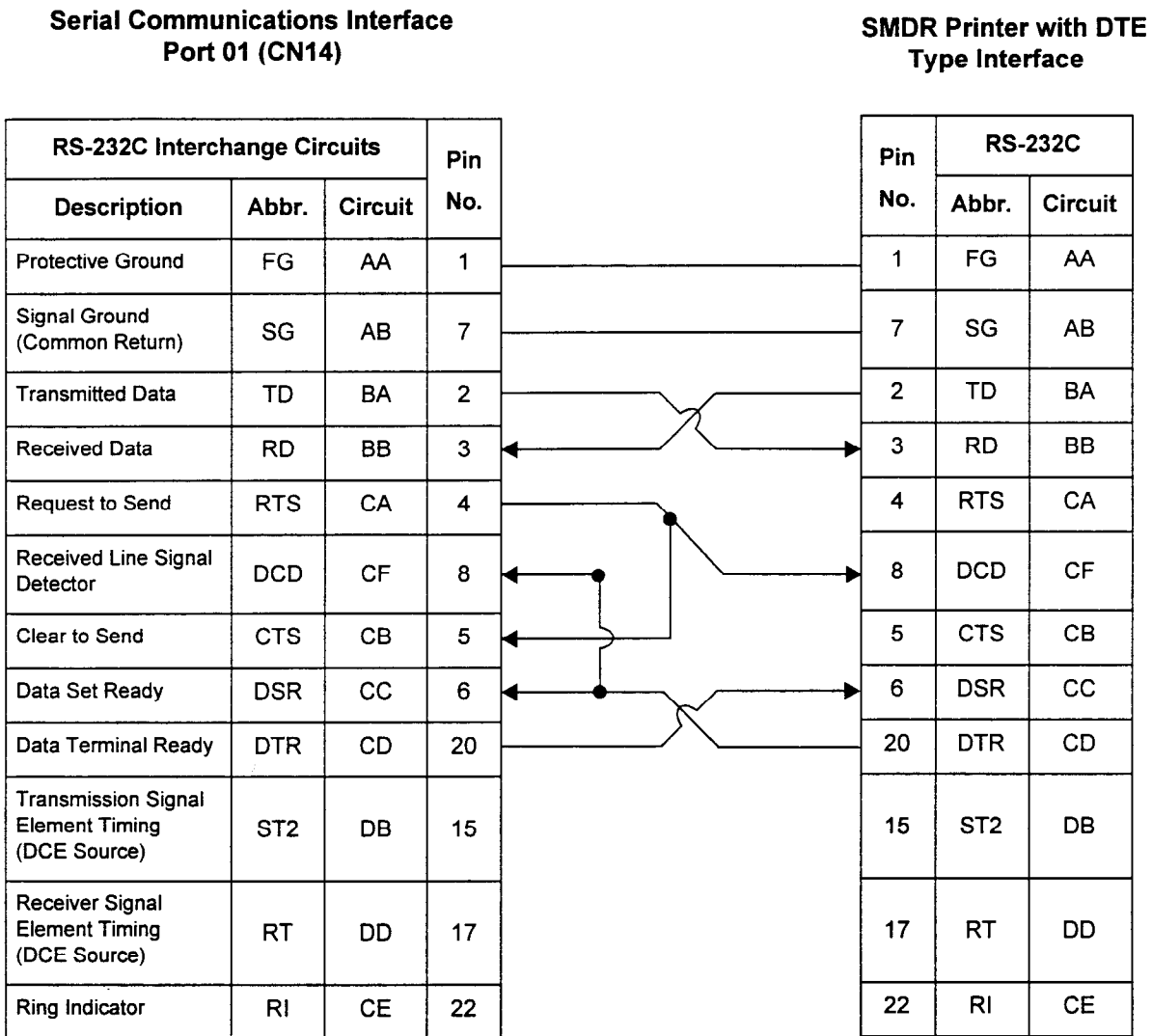


Figure A-8. Specific Cable Pin-Outs for a Telematic Printer Used as an SMDR Printer

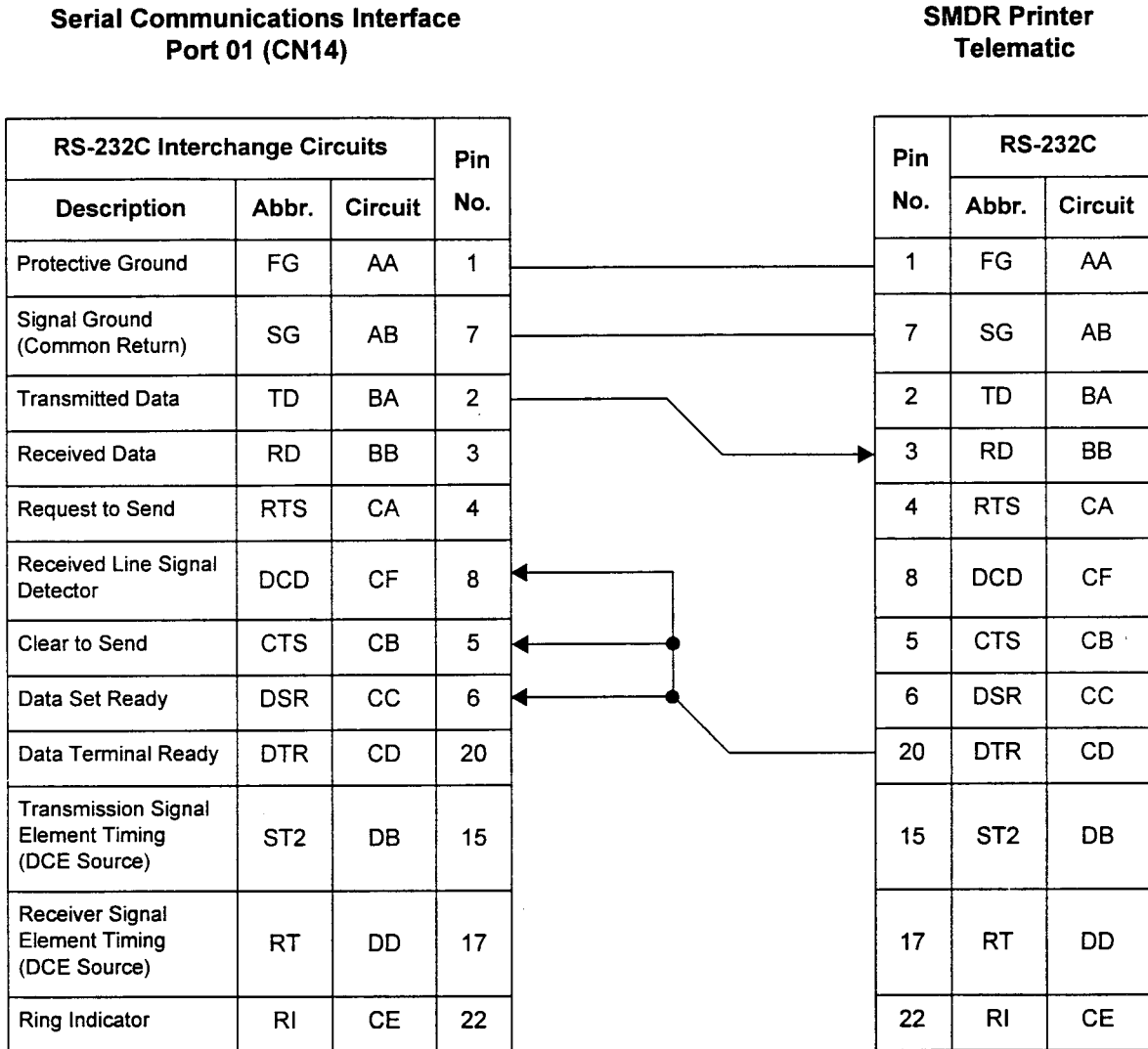


Figure A-9. Specific Cable Pin-Outs for a 3M Printer Used as an SMDR Printer

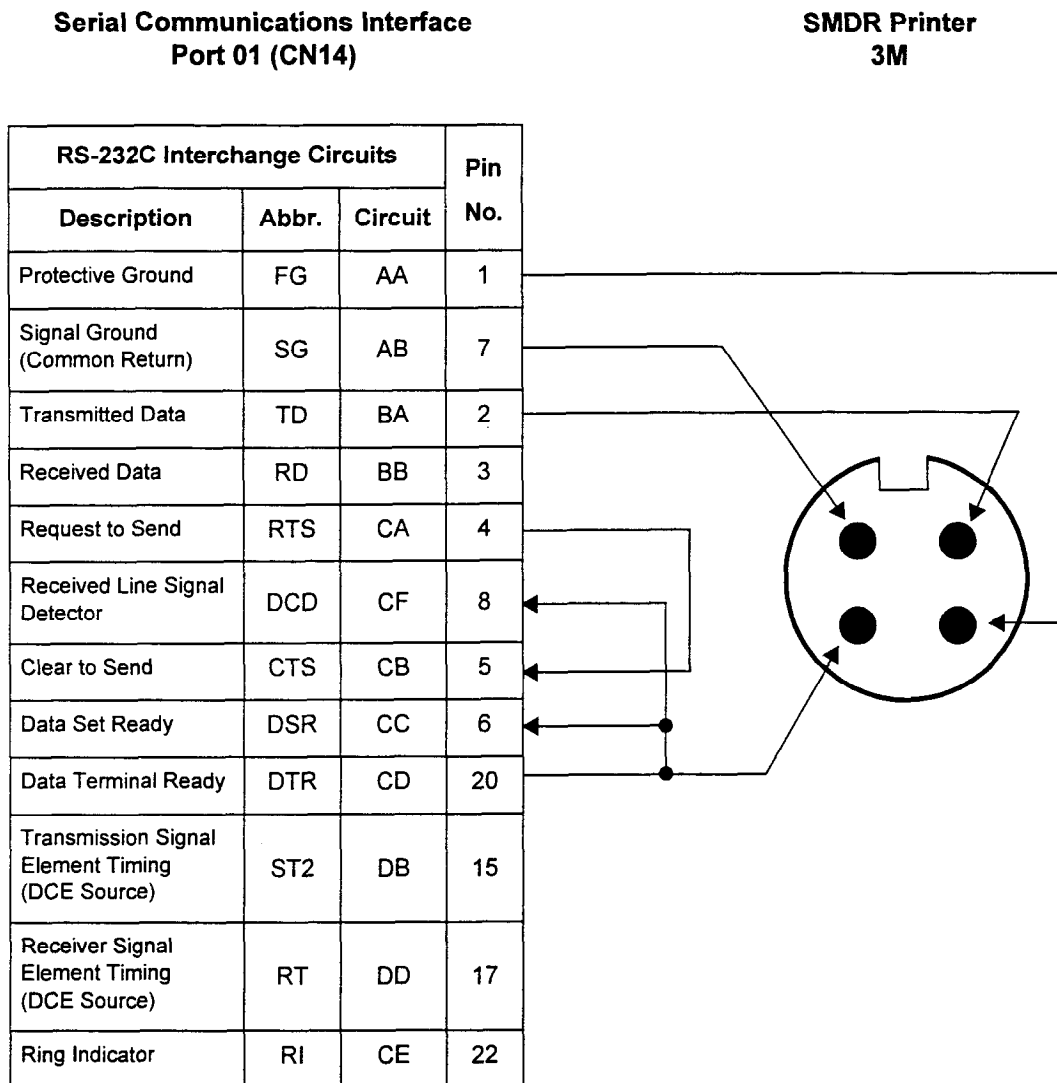


Figure A-10. Specific Cable Pin-Outs for an Okidata Printer Used as an SMDR Printer

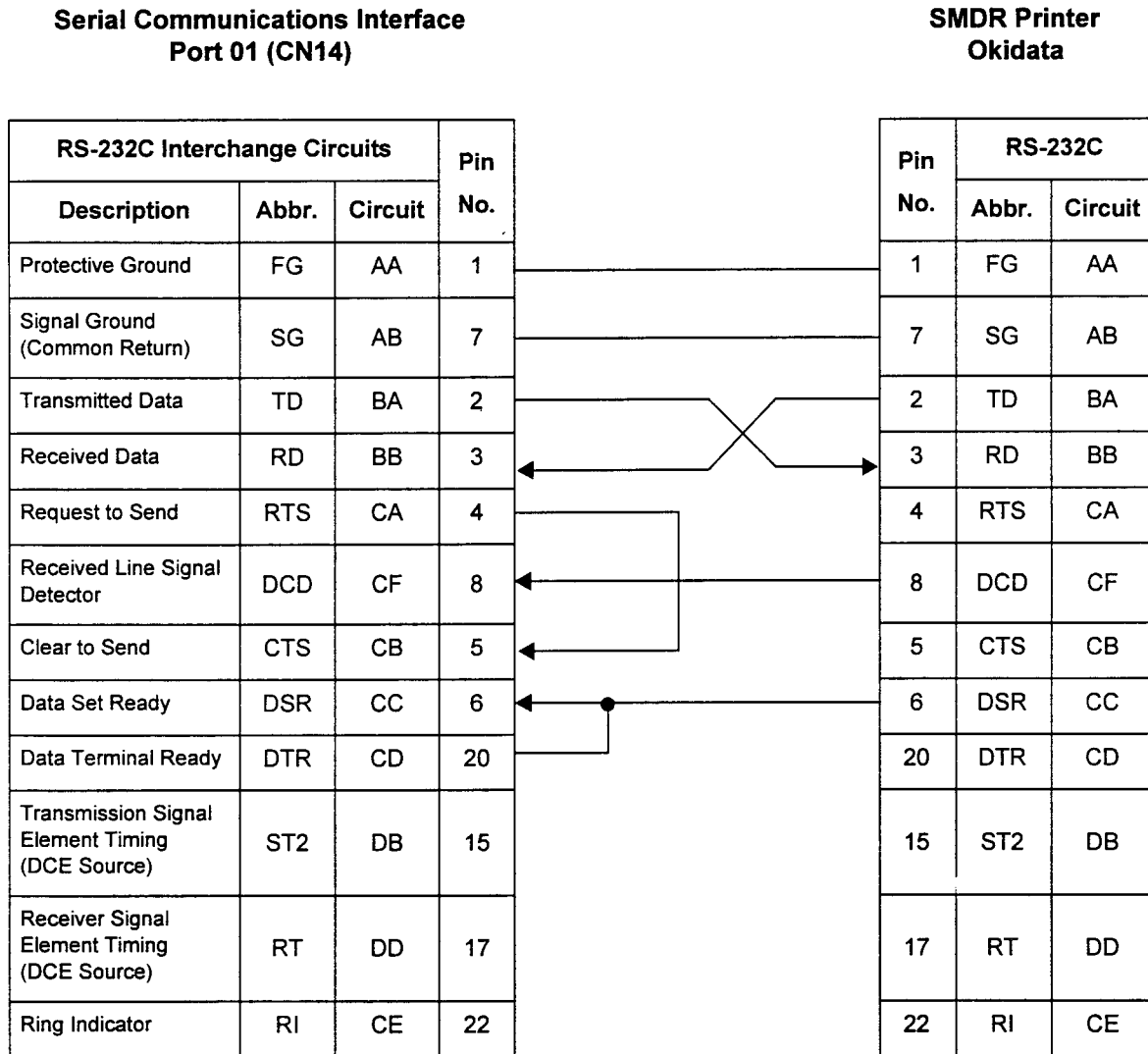
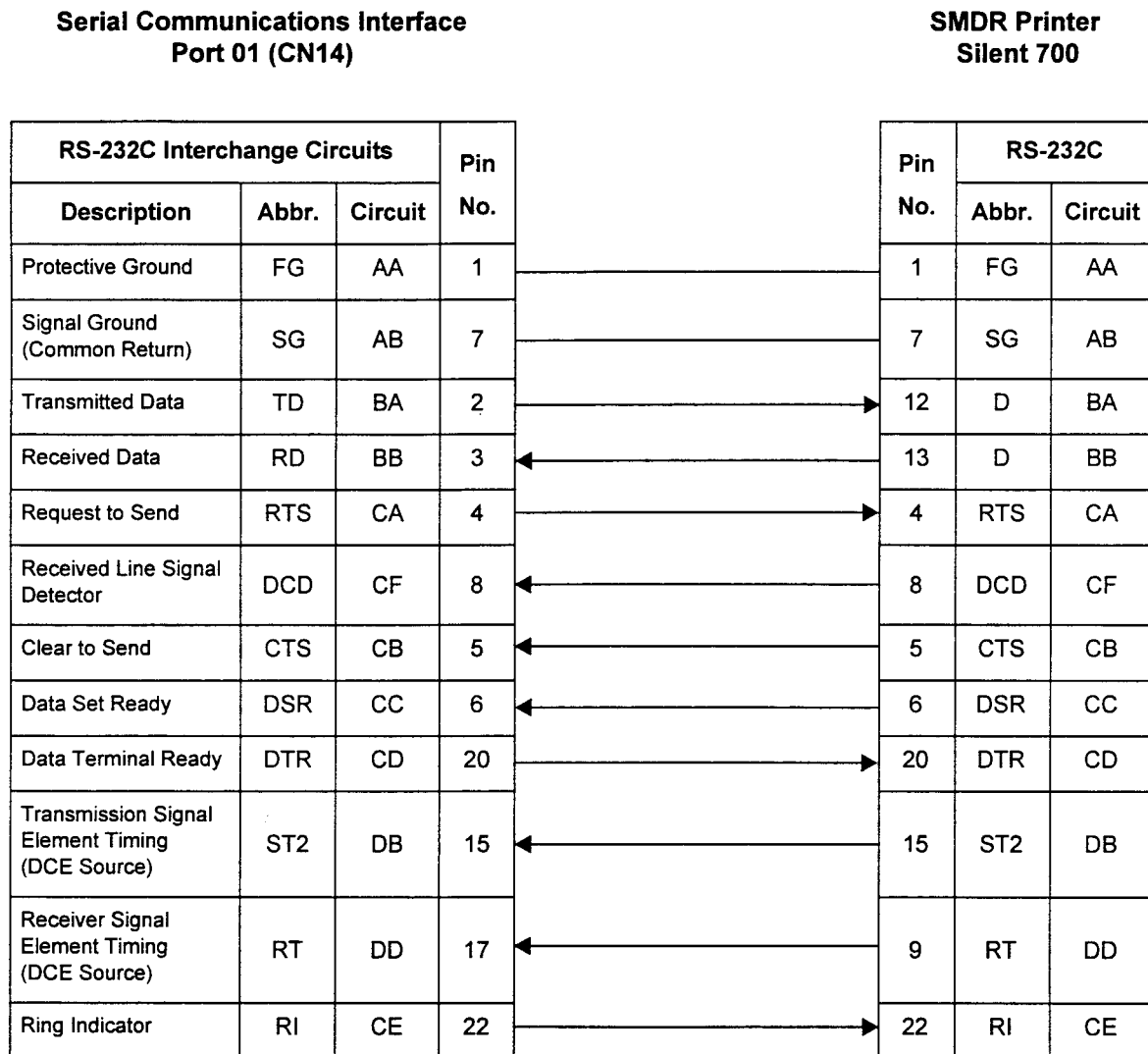


Figure A-11. Specific Cable Pin-Outs for a Silent 700 Printer Used as an SMDR Printer



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FUJITSU BUSINESS  
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# ***SERIES 3***

## **APPLICATIONS MANUAL**

### **Package 2**

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## PURPOSE

This document is designed to assist in the installation, programming, and maintenance of the Series 3 system. Each chapter is presented in a direct and comprehensive format with the following sections:

- Hardware Requirements.
- Assignment.
- Restriction.
- Feature Interaction.
- Capacity.

Not all sections may be applicable to a particular feature or function. Such sections are labeled "None" or "Not Listed."

In addition, in the "Assignment" section, a system security code has been assigned to each CMC (Command Code). A system security code is a password used to prevent unauthorized access to the system data base. There are two levels of system security: "High" and "Low." The "Low" level security code allows changes to be made to the commands used in the daily operation of the system. A "High" level security code allows access to commands with a broader system impact, such as maintenance or global commands.

## REFERENCE DOCUMENTATION

This manual is used in conjunction with the Data Base and Site Log Manuals for the Series 3 system. The Data Base Manual contains the CMC descriptions and the corresponding parameters for the purpose of programming. The Site Log provides the forms for actual data planning and entry.

The section numbers for the above mentioned manuals are:

- Data Base: 123-080-002
- Site Log: 123-200-002

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**NORTH AMERICAN DIALING  
PLAN ENHANCMENT**

In order to comply with the North American Numbering Plan change, the following functions are enhanced:

- Expanded area codes (NXX, where N = 2-9, and X = 0-9).
- Expanded Carrier Access Codes (CACs) to 10XXXXX
- Expanded number of digits for an international call (from 15 to 18, including 01 code).

The application of the NXX area code is determined by setting the required system flag using CMC 102. When dialing a long distance call, the dialing pattern is CTP or OTP + NXX – NXX + XXXX. When dialing a local call, the dialing pattern is (OTP) + NXX + XXXX. + (inter-digit timeout). Refer to Table 2-1 for more information.

Carrier access codes may now be either five digits or seven digits in length. A total of ten 5-digit and 7-digit CACs may be assigned per system.

International call digits are determined by setting the desired system flag (CMC 102).

Installation of the North American Numbering Plan load is as follows:

1. Perform a Form Save as outlined in the PcMP Data Base Management Manual.

**NOTE:** The system is fully operational at this point.

2. Turn system power OFF.
3. Remove the old version SCPN2M/4M card set. This consists of a mother board (CPU) and a daughter board (memory). Replace with the new version SCxP2x card (as shown below). The new version will be identified with a plastic designation guide attached to the daughter board, and labeled as follows:
  - SC2P2B: Two cabinet basic package.
  - SC2P2E: Two cabinet enhanced package.
  - SC4P2B: Four cabinet basic package.
  - SC4P2E: Four cabinet enhanced package.
4. Restore power to the system.
5. Perform a Form Load to install the modified ODDB on the system. This is described in the PcMP Data Base Management Manual. The system will remain non-operational during the Form Load process.

**NUMBERING PLAN**

Use this feature to change the default feature access numbering plan or trunk access code.

**NOTE:** The system may not have the default data base depending on the CPU card setting during NO DATA KEPT RESTART.

**Hardware Requirement**

None

**Assignment**1. **CMC 100 (HIGH)** changes:

- Feature number.
- Feature access code/trunk access code.
- Trunk group number.
- Number of outgoing digits.
- Number of access code digits to be sent.
- Dial or store and forward flag.

2. Verify that any modification of feature access codes does not conflict with existing feature access codes or station directory number assignments. Refer to CMC 200 for more information.

**Restriction**

None

**Feature Interaction**

None

**Capacity**

No maximum capacity listed



**NORTH AMERICAN DIALING  
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In order to comply with the North American Numbering Plan change, the following functions are enhanced:

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1. Perform a Form Save as outlined in the PcMP Data Base Management Manual.

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  - SC2P2B: Two cabinet basic package.
  - SC2P2E: Two cabinet enhanced package.
  - SC4P2B: Four cabinet basic package.
  - SC4P2E: Four cabinet enhanced package.
4. Restore power to the system.
5. Perform a Form Load to install the modified ODDB on the system. This is described in the PcMP Data Base Management Manual. The system will remain non-operational during the Form Load process.

Table 2-1. Dialing Patterns

CTP	OTP	TYPE OF DIALING	DIALING PATTERN	
			N0/1X AREA CODE	NXX AREA CODE
Yes	Yes	Toll operator	No digit	No digit
		Service code	Not permitted	Not permitted
		Area code	Not permitted	Not permitted
		Office code	Not permitted	Not permitted
		International call	Not permitted	Not permitted
Yes	No	Service code	N11 or 11X	N11 or 11X
		Area code	N0/1X + XXX + XXXX	N0/1X + XXX + XXXX
		Office code	NNX + XXXX N'XX + XXXX N0/1X + XXXX	Not permitted
		International call	Not permitted	Not permitted
No	Yes	Service code	N11 or 11X	N11 or 11X
		Area code	N0/1X + XXX + XXXX N0/1X + X1,...,Xi + ITO (i ≤ 6)	N0/1X + XXX + XXXX N0/1X + X1,...,Xi + ITO (i ≤ 6)
		Office code	NNX + XXXX N'XX + XXXX N0/1X + XXXX NNX + X1,...,Xi + ITO N'XX + X1,...,Xi + ITO N0/1X + X1,...,Xi + ITO (i ≤ 3)	NNX + XXX + ITO NXX + XXXX + ITO N0/1X + XXXX + ITO
		International call	Not permitted	Not permitted
		Others	X + ITO XX + ITO	X + ITO XX + ITO
No	No	Service code	N11 or 11X	N11 or 11X
		Area code	N0/1X + XXX + XXXX	Not permitted
		Office code	NNX + XXXX N'XX + XXXX N0/1X + XXXX	NNX + XXXX N'XX + XXXX N0/1X + XXXX
		International call	01 + X1,..., + X13 01 + X1,..., + Xi + ITO (i ≤ 12)	01 + X1,..., + X16 01 + X1,..., + Xi + ITO (i ≤ 15)

**NOTES:**

- 0/1 = 0 to 1, N = 2 to 9, X = 0 to 9, N' = 1 to 9, ITO = interdigit time out. N'XX office codes are assigned using CMC 408; N0/1X office codes are assigned using CMC 402.
- If an OTP is dialed, any digits following will be regarded as an area code. Therefore, office code restriction will not be effective.

TENANT (Cont'd)

**Feature Interaction**

System mode change day/night:

**CMC 100** (HIGH) assigns access codes to system trunks and features:

- Feature number (131 = self tenant, 132 = all tenants).
- Feature access code.

Night answer pick-up:

**CMC 100** (HIGH) assigns:

- Feature number (94 = this tenant only, 95 = all tenants).
- Feature access code.

**Capacity**

A maximum of 63 tenants may be assigned, plus one common tenant.

<b>TENANT</b>	Use this procedure to program the system for use by one or more tenants.
<b>Hardware Requirement</b>	None
<b>Assignment</b>	<ol style="list-style-type: none"> <li>1. <b>CMC 201</b> (LOW) assigns stations to a tenant group. <ul style="list-style-type: none"> <li>• Station directory number (P1).</li> <li>• Tenant number of station (P4).</li> </ul> </li> <li>2. <b>CMC 102</b> (HIGH), if applicable, assigns: <ul style="list-style-type: none"> <li>• Sharing of incoming and outgoing trunks (flag number 1).</li> <li>• Hard tenant (flag number 113).</li> </ul> </li> </ol> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>1. When a hard tenant is assigned, the system rejects an internal call between tenants.</li> <li>2. When any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.</li> </ol> <ol style="list-style-type: none"> <li>3. <b>CMC 251</b> (HIGH) is used to assign trunks to a tenant group. <ul style="list-style-type: none"> <li>• Equipment number (P1).</li> <li>• Tenant number of trunk (P4).</li> </ul> </li> <li>4. <b>CMC 230</b> (HIGH) assigns an attendant console to a tenant group. <ul style="list-style-type: none"> <li>• Attendant console number (P1).</li> <li>• Tenant number (P3).</li> </ul> </li> <li>5. <b>CMC 503</b> (LOW) is used to assign the tenants subjected to output SMDR. <ul style="list-style-type: none"> <li>• Tenant number (P1).</li> <li>• Output ID flag (P2).</li> </ul> </li> <li>6. <b>CMC 306</b> (LOW) is used to assign attendant overflow/night answer group to a tenant. <ul style="list-style-type: none"> <li>• Night answer group number (P1).</li> <li>• Trunk/station/tenant flag (P2).</li> <li>• Equipment number/tenant number (P3).</li> </ul> </li> <li>7. <b>CMC 317</b> (HIGH) is used to assign music on hold to a tenant. <ul style="list-style-type: none"> <li>• Tenant number.</li> <li>• Music/tone source flag.</li> <li>• Tone pattern/music trunk EN/RVAC message ID.</li> </ul> </li> </ol>
<b>Restriction</b>	None

TENANT (Cont'd)

**Feature Interaction**

System mode change day/night:

**CMC 100** (HIGH) assigns access codes to system trunks and features:

- Feature number (131 = self tenant, 132 = all tenants).
- Feature access code.

Night answer pick-up:

**CMC 100** (HIGH) assigns:

- Feature number (94 = this tenant only, 95 = all tenants).
- Feature access code.

**Capacity**

A maximum of 63 tenants may be assigned, plus one common tenant.



## INTRODUCTION

This chapter defines the programming requirements for installing, changing, or removing trunk assignments in the system.

## BASIC TRUNK PROGRAMMING

The following procedures permit users to program CO and service trunks. Use these procedures to install new trunks for all packages.

### Hardware Requirement

Verify that the trunk card is seated in an appropriate card slot and that a trunk has been physically connected to a card slot and circuit on the card.

### Assignment

1. **CMC 250** (HIGH) is used to add:

- Trunk equipment number.
- Type of trunk.
- Trunk group number.
- Operations mode (incoming, outgoing, bothway).
- Signaling (loop or ground).
- Start mode, zone number, DISA mode, etc.

**CAUTION:** Changes to this table returns the circuit parameters at CMC 251 to the default values and also removes the changed trunk from CMC 253, Terminating Trunk Group Assignments. If a changed trunk is removed from CMC 250, it is removed from all other tables. If remove is denied, refer to the error messages table.

2. **CMC 251** (HIGH) assigns additional data associated with an installed trunk.

- Trunk equipment number.
- Dial mode and break ratio.
- Trunk directory number.
- Tenant number.

3. **CMC 252** (HIGH) assigns COS and COR for each trunk group.

- Trunk group number.
- Class of service (day mode).
- Class of service (night mode).
- Class of restriction (day mode).
- Class of restriction (night mode).

4. **CMC 254** (HIGH) assigns route timing for each trunk group.

- Trunk group number.
- Route timing ID.
- Normalized timing.

**BASIC TRUNK  
PROGRAMMING (Cont'd)**

5. **CMC 256 (LOW)** assigns a name in alphanumeric characters corresponding to each trunk display in call origination and call termination instead of the directory number.
- Trunk equipment number.
  - Trunk name.

**Restriction** None

**Feature Interaction** None

**Capacity** A maximum of 240 trunks may be assigned in the Series 3.



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<b>DIRECT-IN LINE TRUNK</b>	A direct-in line rings directly to a station bypassing the attendant console. Direct-in lines can be assigned to day and night mode independently.
<b>Hardware Requirement</b>	Verify that the trunk card is seated in an appropriate card slot and that a trunk has been physically connected to a circuit on the card.
<b>Assignment</b>	<ol style="list-style-type: none"><li>1. <b>CMC 307 (LOW)</b> assigns a trunk line to a designated SLT or proprietary telephone station.<ul style="list-style-type: none"><li>• Trunk equipment number.</li><li>• Station directory number.</li><li>• Day/night answer mode.</li></ul></li></ol>
<b>Restriction</b>	None
<b>Feature Interaction</b>	Call forwarding service (CFA, CFB/N, CFN, CFB) is available.  Distinctive ringing is applied to the incoming ring of a direct-in line call.
<b>Capacity</b>	Any number of trunks within the system may be programmed to the same station; however, each individual trunk may be programmed to one station number only for each mode of operation (day/night).

**KEY SYSTEM TRUNK**

Use this procedure to emulate the operation of a traditional key telephone system by reserving one trunk line for up to 52 stations.

**Hardware Requirement**

Verify that the trunk card is seated in an appropriate card slot and that a trunk has been physically connected to a circuit on the card.

**Assignment**

1. **CMC 250** (HIGH) assigns trunks in the system.
  - Trunk equipment number.
  - Type of trunk.
  - Trunk group number.
  - Operations mode.
  - Signaling.
  - Start mode, zone number, DISA mode, etc.
2. **CMC 253** (HIGH) assigns:
  - Terminating trunk group (1-63).
  - Equipment number.
  - Trunk termination flag (2).
3. **CMC 203** (LOW) assigns trunk(s) to designated proprietary telephone buttons.
  - Station directory number.
  - Button number.
  - Feature number.
  - Terminating trunk group number.
  - Line terminating type (2).
  - Ringing mode.
4. **CMC 211** (LOW) assigns trunk(s) to designated DSS/BLF buttons.
  - Directory number of proprietary telephone paired with DSS/BLF.
  - Button number.
  - Button type (9).
  - Terminating trunk group.
  - Line terminating number type (2).
  - Ringing mode.
5. **CMC 102** (HIGH) assigns the system flags if the same trunks are allowed to be accessed via a feature access code from a single line telephone:
  - Flag number (56).

**NOTE:** After any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.

**Restriction**

Direct-in lines, tie trunks, and DID trunks cannot be assigned to a terminating trunk group.

**Feature Interaction**

Call Forwarding is allowed if a pooled incoming trunk is assigned on only one trunk.

**Capacity**

A maximum of 63 terminating trunk group numbers may be assigned.

**PERSONAL/PRIVATE TRUNK**

This procedure is used to reserve a trunk line for single button access on one telephone.

**Hardware Requirement**

Verify that the trunk card is seated in an appropriate card slot and that a trunk has been physically connected to a circuit on the card.

**Assignment**

1. **CMC 253 (HIGH)** assigns:

- Terminating trunk group (1-63).
- Equipment number.
- Trunk termination flag (1).

**NOTE:** Ensure that the trunk has been removed from any previously assigned trunk group at CMC 253.

2. **CMC 203 (LOW)** assigns trunk(s) to designated proprietary telephone buttons.

- Station directory number.
- Button number.
- Feature number.
- Terminating trunk group number.
- Line termination type (1 = Personal trunk).
- Ringing mode.

3. **CMC 211 (LOW)** assigns trunk(s) to designated DSS/BLF buttons.

- Station directory number.
- Button number.
- Feature number.
- Terminating trunk group number.
- Line termination type (1 = Personal trunk).
- Ringing mode.

**Restriction**

Direct-in lines, tie lines, and DID trunks cannot be assigned to a terminating trunk group.

**Feature Interaction**

Call Forwarding

**Capacity**

A maximum of 63 terminating trunk groups may be assigned.

**POOLED INCOMING TRUNK** Use this procedure to pool incoming trunks into one terminating trunk group.

**NOTE:** If trunk cards were seated at the time of a COLD restart, the default data base places and designates them as bothway trunks and assigns a pooled incoming trunk button on proprietary telephones with ENs 010 through 017 when the system is in the key telephone mode (without attendant). No pooled incoming trunk default data is created in the PBX mode (with attendant).

**Hardware Requirement** Verify that the trunk card is seated in an appropriate card slot and that a trunk has been physically connected to a circuit on the card.

**Assignment** 1. **CMC 253 (HIGH)** is used to assign:

- Terminating trunk group (1-63).
- Equipment number.
- Trunk terminating flag (4).

Ensure that the trunk has been removed from any previously assigned terminating trunk group at CMC 253.

2. **CMC 203 (LOW)** assigns trunks to designated proprietary telephone buttons.

- Station directory number.
- Button number.
- Feature number.
- Terminating trunk group number.
- Line termination type (4).
- Ringing mode.

3. **CMC 211 (LOW)** assigns trunk(s) to designated DSS/BLF buttons.

- Station directory number.
- Button number.
- Feature number.
- Terminating trunk group number.
- Line termination type (4).
- Ringing mode.

**Restriction** Tie lines and DID trunks cannot be assigned to a terminating trunk group.

**Feature Interaction** Call forwarding is allowed if a pooled incoming trunk is assigned on only one telephone.

**Capacity** Up to 72 proprietary telephones can have the same incoming trunk button assignment and a maximum of 63 terminating trunk groups may be programmed into the system.

**POOLED OUTGOING TRUNK**

Use this procedure to pool outgoing trunk groups into one terminating trunk group.

**NOTE:** If trunk cards were seated at the time of a COLD restart, the default data base places and designates them as bothway trunks and assigns a pooled outgoing trunk button on every proprietary telephone when the system is in the key telephone mode (without attendant). No pooled outgoing trunk default data is created in the PBX mode (with attendant).

**Hardware Requirement**

Verify that the trunk card is seated in an appropriate card slot and that a trunk has been physically connected to a circuit on the card.

**Assignment**

1. **CMC 253 (HIGH)** is used to assign:

- Terminating trunk group (1-63).
- Equipment number.
- Trunk terminating flag (3).

Ensure that the trunk has been removed from any previously assigned terminating trunk group at CMC 253.

2. **CMC 203 (LOW)** assigns trunk(s) to designated proprietary telephone buttons.

- Station directory number.
- Button number.
- Feature number.
- Terminating trunk group number.
- Line termination type (3).
- Ringing mode.

3. **CMC 211 (LOW)** assigns trunk(s) to designated DSS/BLF buttons.

- Station directory number.
- Button number.
- Feature number.
- Terminating trunk group number.
- Line termination type (3).
- Ringing mode.

**Restriction**

Tie lines and DID trunks cannot be assigned to a terminating trunk group.

**Feature Interaction**

None

**Capacity**

A maximum of 63 terminating trunk group numbers may be assigned with an unlimited number of appearances.

**POOLED BOTHWAY TRUNK** Use this procedure to pool bothway trunks into one terminating trunk group.

**NOTE:** If trunk cards were seated at the time of COLD restart, the default data base places and designates them as bothway trunks when the system is in the key telephone mode (without attendant). No pooled bothway trunk default data base is created in the PBX mode (without attendant).

**Hardware Requirement** Verify that the trunk card is seated in an appropriate card slot and that a trunk has been physically connected to a circuit on the card.

**Assignment**

1. **CMC 253 (HIGH)** is used to assign:

- Terminating trunk group (1-63).
- Equipment number.
- Trunk terminating flag (5).

Ensure that the trunk has been removed from any previously assigned terminating trunk group at CMC 253.

2. **CMC 203 (LOW)** assigns trunk(s) to designated proprietary telephone buttons.

- Station directory number.
- Button number.
- Feature number.
- Terminating trunk group number.
- Line termination type (5).
- Ringing mode.

3. **CMC 211 (LOW)** assigns trunk(s) to designated DSS/BLF buttons.

- Station directory number.
- Button number.
- Feature number.
- Terminating trunk group number.
- Line termination type (5).
- Ringing mode.

**Restriction** Tie lines and DID trunks cannot be assigned to a terminating trunk group.

**Feature Interaction** Call Forwarding restriction applies.

**Capacity** A maximum of 63 terminating trunk group numbers may be assigned, with a maximum of 72 appearances.

**DIRECT INWARD DIAL (DID)**

DID allows calls to ring directly to a station, bypassing the attendant position. DID trunks are for incoming calls only. DID trunks can be assigned on DID-DISA, providing access to stations, features, and trunks from remote locations.

**Hardware Requirement**

Verify that the trunk card is seated in an appropriate card slot and that a trunk has been physically connected to a circuit on the card. A 4DMR card is required for this operation.

**Assignment**

1. **CMC 250** (HIGH) assigns:
  - Equipment number.
  - Type of trunk (5 = E&M; 6 = ISDN; 13 = Loop; 17 = 6DID; 23 = T-1, DID; 29 = DID/DOD (LD); 30 = DID/DOD (E&M); 31 = DID/DOD (T-1).
  - Trunk group number (13-16 = ISDN DID; 57-62 = Analog DID).
  - Operations mode (1 = Incoming).
  - Signaling (1 = Fixed).
  - Start mode or type of ISDN.
2. **CMC 252** (HIGH) is used to assign COS and COR.
  - Trunk group number.
  - Class of service (day mode).
  - Class of service (night mode).
  - Class of restriction (day mode).
  - Class of restriction (night mode).
3. **CMC 430** (HIGH) assigns:
  - Trunk group number.
  - Number of received digits (1-4).
  - Prefix code.
  - DISA directory number, if DID-DISA is used.
  - DISA authorization code, if DID-DISA is used.
  - COS/COR if DID-DISA is used.
4. **CMC 433** (HIGH) assigns the first received digit replacement.
  - Trunk group number.
  - Digit to be replaced.
  - Replacement digit.
5. **CMC 435** (HIGH) assigns the Listed Directory Number (LDN).
  - Trunk group number.
  - Listed directory number.
  - Tenant of attendant.
  - Night answer station directory number.

**DIRECT INWARD DIAL (DID)**  
(Cont'd)

<b>Restriction</b>	None
<b>Feature Interaction</b>	None
<b>Capacity</b>	<ul style="list-style-type: none"><li>• LDN: a maximum of 100 per trunk group number may be assigned.</li><li>• DID: a maximum of 6 trunk groups may be assigned.</li><li>• A maximum of 500 DID-DISA authorization codes may be assigned.</li></ul>



**DIRECT INWARD SYSTEM  
ACCESS (DISA) - STANDARD**

Use this procedure to assign an access code that will allow an outside user to access DISA over a standard ground start trunk. DISA provides access to stations, features, and trunks from remote locations. The remote caller must be using a DTMF telephone.

**Hardware Requirement**

Verify that the trunk card is seated in an appropriate card slot and that a trunk has been physically connected to a circuit on the card. A 4DMR card is required for this operation. A loop start line can be used even though ground start trunks are recommended.

**Assignment**

1. **CMC 250** (HIGH) assigns:
  - Equipment number.
  - Type of trunk (6 = CO; 19 = T-1 CO).
  - Trunk group number (13-30).
  - Operations mode.
  - Signaling (1 = Ground).
  - DISA mode (2 = DISA).
2. **CMC 252** (HIGH) is used to assign COS and COR.
  - Trunk group number.
  - Class of service (day mode).
  - Class of service (night mode).
  - Class of restriction (day mode).
  - Class of restriction (night mode).
3. **CMC 432** (HIGH) assigns the DISA authorization code.
  - Authorization code.
  - Trunk group number (13-30).
  - COS/COR.
4. **CMC 437** (HIGH) assigns day/night mode.
  - DISA trunk equipment number.
  - DISA mode flag.
5. **CMC 102** (HIGH) assigns:
  - Flag number (P1 = 199).

**NOTE:** After any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.

6. **CMC 103** (HIGH) is used to assign:
  - Service timing ID (P1 = 151).

**Restriction** None

**DIRECT INWARD SYSTEM  
ACCESS (DISA) - STANDARD  
(Cont'd)**

**Feature Interaction** This feature can be used with the Automated Attendant feature. To program the Automated Attendant, refer to Chapter 5.

**Capacity** The system can accommodate:

- Eighteen trunk groups for DISA-standard.
- A maximum of 500 authorization codes can be assigned.

**SPECIALIZED COMMON CARRIER**

Use this procedure to install specialized common carrier trunks.

**Hardware Requirement**

Verify that the trunk card is seated in an appropriate card slot and that a trunk has been physically connected to a circuit on the card.

**Assignment**

1. **CMC 404** (HIGH) is used to assign:
  - SCC route number (1-6) (that corresponds to the designated trunk group number).
  - SCC gateway telephone number.
  - SCC security access code.
  - Signal timing values.
2. **CMC 405** (HIGH) is used to establish the outgoing trunk route for each SCC trunk group.
  - SCC trunk group number.
  - Routing destination trunk group number (13-30).
3. **CMC 102** (HIGH) assigns the number of digits to be sent for personal account codes.
  - Flag number 16-21.

**NOTE:** After any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.

4. **CMC 201** (LOW) assigns personal accounting codes.
  - Station directory number.
  - Personal accounting code (P5).

**Restriction** None

**Feature Interaction** None

**Capacity** A maximum of six trunk groups may be assigned.

<b>T-1 AND CLOCK CARD</b>	This feature provides a digital connection with a 1.544 Mbps facility as specified by the North American T-1 standard.
<b>Hardware</b>	For the Series 3 system, the following hardware is necessary: <ul style="list-style-type: none"> <li>• 24T1 card (one per T-1 span).</li> <li>• CLKS card (one per system) (slave system).</li> <li>• 24T1 adapter board (one per T-1 span).</li> </ul>
<b>Assignment</b>	<ol style="list-style-type: none"> <li>1. <b>CMC 102</b> (HIGH) assigns clock card installation: <ul style="list-style-type: none"> <li>• Flag number, P1 = 70.</li> <li>• Flag set value, P2 = 0, if CLKS card is not installed. P2 = 1, if CLKS card is installed.</li> </ul> <p><b>NOTE:</b> After any changes are made, either a HOT restart must be performed or each individual phone where changes apply must be unplugged and plugged back in.</p> </li> <li>2. <b>CMC 107</b> (HIGH) assigns: <ul style="list-style-type: none"> <li>• Clock number (priority).</li> <li>• Network clock extracted T-1 equipment number.</li> </ul> </li> <li>3. <b>CMC 250</b> (HIGH) assigns: <ul style="list-style-type: none"> <li>• Trunk equipment number.</li> <li>• Type of trunk (19 = CO; 20 = FX; 21 = WATS; 22 = tie; 23 = DID; 31 = DID/DOD).</li> <li>• Trunk group number.</li> <li>• Operations mode.</li> <li>• Signaling.</li> <li>• Start mode.</li> </ul> <p><b>CAUTION:</b> Changes to this table will return the circuit parameters at CMC 251 to the default values and remove the changed trunk from CMC 253, Terminating Trunk Groups. Removing a trunk from this table does not remove it from all other table entries. When removing or changing a trunk, check CMCs 251 and 307.</p> </li> </ol>
<b>Restriction</b>	When either the 24T1 or the 23PT card is installed in physical slot 0, 3, or 6, the next physical slot, 1, 4, or 7 can only be used for a 1/2/4/6/8 circuit card or another 24T1 or 23PT card. When either the 24T1 or 23PT card is installed in physical slot 1 or 4, the next physical slot, 2 or 5, must be empty. When either the 24T1 or 23PT card is installed in physical slot 7, the next three physical slots, 8, 9, and 10, cannot be used. Clock extraction can only be made from the basic (0) cabinet.
<b>Feature Interaction</b>	None

**T-1 AND CLOCK CARD  
(Cont'd)**

**Capacity**     The system can accommodate the following:

- Maximum of 240 channels per system.
- The maximum number of 23PT cards that may be installed are as follows:
  - Five 23PT cards may be installed in a one-cabinet system.
  - Ten 23PT cards may be installed in a two-cabinet system.
  - Ten 23PT cards may be installed in a three-cabinet system.
  - Ten 23PT cards may be installed in a four-cabinet system.

**TRUNK-TO-TRUNK  
CONNECTION**

This feature allows connection between two outside parties using trunks programmed into the system without continued monitoring.

**Hardware Requirement**

Verify that the trunk card is seated in an appropriate card slot and that a trunk has been physically connected to a circuit on the card.

**Assignment**

1. **CMC 101 (HIGH)** assigns a system flag to check trunk-to-trunk connection pattern when a trunk call is transferred to another trunk.

- System flag ID (P1 = 2).
- Associated flag value (P2 = 1).

2. **CMC 102 (HIGH)** assigns service control flag to perform signaling check for trunk-to-trunk connection.

- Flag number (P1 = 5).
- Flag set value (P2 = 0).

**NOTE:** After any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.

3. **CMC 250 (HIGH)** assigns trunks in the system.

- Trunk equipment number.
- Type of trunk.
- Trunk group number.
- Operations mode.
- Signaling.
- Start mode.

4. **CMC 255 (HIGH)** assigns answer and disconnect detection capability to trunk groups.

- Trunk group number.
- Answer detection for outgoing trunk group.
- Reverse control for tie/DID incoming trunk group (usually 0).

5. **CMC 410 (HIGH)** assigns the allowance or restriction of trunk-to-trunk connection.

- Trunk group number of originating trunk group.
- Trunk group number of the connecting trunk group.

**TRUNK-TO-TRUNK CONNECTION (Cont'd)**

Trunk-to-trunk connections are permitted in the following arrangements by default. Depending on the assignment in CMC 255, trunk-to-trunk connection restricted by default will be permitted.

1st Trunk \ 2nd Trunk	CO Loop (Outgoing)	CO Ground (Outgoing)	Tie (Outgoing)
CO Loop (OG, IC)	X	O	X
CO Ground (OG, IC)	O	O	O
Tie (OG)	X	O	X
Tie (IC)	O	O	O

O = Permitted  
 X = Restricted

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## INTRODUCTION

The programming defined in this chapter is used to assign a variety of functions to station telephones.

## DEFAULT STATION INSTALLATION

Use this procedure to initiate the default directory numbering scheme.

### Hardware Requirement

Verify that a line card is seated in an appropriate card slot and that a telephone instrument is physically connected to a port on the card.

### Assignment

1. Set the DIP switch on the CPU card as follows for the Series 3:

Numbering Plan	DDT0	DDT1
3-digit	OPEN	CLOSED
4-digit	OPEN	OPEN

2. COLD start the system at initial installation, or HOT restart the system when installing additional instruments to an existing system.
3. Refer to the default data base tables.
4. Program any desired changes using applicable CMC commands.

### Restriction

None

### Feature Interaction

None

### Capacity

No maximum capacity is listed.

**MANUAL STATION  
INSTALLATION**

Use this procedure to modify the default directory numbering scheme or to add a station.

**Hardware Requirement**

Verify that a line card is seated in an appropriate card slot and that a telephone instrument is physically connected to a port on the card.

**Assignment**

1. **CMC 200** (LOW) assigns the station type and directory number.
  - Equipment number.
  - Station directory number.
  - Type of terminal.
  - Copied station directory number.
2. **CMC 201** (LOW) is used to assign:
  - Station directory number.
  - Operations mode.
  - Type of dialing.
  - Tenant number.
  - SMDR group number or personal account code.
  - Shared station speed call table.
3. **CMC 202** (LOW) assigns station COS and COR.
  - Station directory number.
  - Class of service (day mode).
  - Class of service (night mode).
  - Class of restriction (day mode).
  - Class of restriction (night mode).
4. **CMC 253** (HIGH) assigns trunk termination group data when trunks appear on proprietary telephone buttons.
5. **CMC 203** (LOW) assigns button data on proprietary telephones.
  - Station directory number.
  - Button number.
  - Feature number.
  - Supplementary data.
  - Line termination type, directory number for station line, intercom group station number.
  - Ringing mode.

**CAUTION: Button number positions for CT-10, CT-20, and CT-30 telephones are different than the DS20, DS20S, DS20SD, and DS32SD stations. Be aware of this when programming.**

**MANUAL STATION  
INSTALLATION (Cont'd)**

6. **CMC 204** (LOW), if applicable, assigns:
  - Station directory number.
  - Speech path interruption denial (data secure path).
  - Off-premise extension.
  - SLT with message waiting.
  - Guest room flag.
  - Interface for dictation machine.
  
7. **CMC 205** (LOW), if applicable, assigns BLF function on Automatic Intercom Access (AIA) buttons.
  - BLF area number.
  - Directory number.
  - Start button number for BLF on proprietary telephone.
  - End button number for BLF on proprietary telephone.
  
8. **CMC 206** (LOW), if applicable, assigns:
  - Station directory number.
  - Send silent message burst tone flag.
  - Manual telephone flag.
  - VMS port flag.
  - Password group number.
  - Activation flag of call diversion to attendant.
  
9. **CMC 207** (LOW) is used to assign:
  - Station directory number.
  - Intercom group number.
  - Intercom group station number.
  
10. **CMC 208** (LOW), if applicable, assigns:
  - Station directory number.
  - Station name number one, using up to five characters.
  - Station name number two, using up to fifteen characters.
  
11. **CMC 209** (LOW), if applicable, assigns:
  - Station directory number.
  - Call waiting answer allowance.

**NOTE:** PcMP must be used to enter this command.

<b>Restriction</b>	None
<b>Feature Interaction</b>	None
<b>Capacity</b>	The maximum number of stations assignable is 480.

**CHANGE OR REMOVE A STATION**

This procedure is used to change the data associated with a specific station or to remove a station from the system.

**Hardware Requirement**

None

**Assignment****CHANGE**

1. **CMC 203** (LOW) is used to:

- Remove unwanted proprietary telephone button assignments.
- Enter new button assignments.

**CAUTION: Button number positions for CT-10, CT-20, and CT-30 telephones are different than the Digital Stations. Be aware of this when programming.**

2. **CMC 200** (LOW) programs a change in the directory numbers and/or equipment numbers.

3. **CMC 201**, (LOW), **CMC 202**, (LOW), and **CMC 204**, (LOW) can be used to change station directory numbers, appropriate COS/COR, operation mode, type of dialing, tenant number, SMDR group number or personal account code, data security, OPS designation, SLT with Message Waiting, or interface for dictation access.

**REMOVE**

1. **CMC 200** (LOW) is used remove a station directory number assignment and equipment number assignment.

2. If the system denies the attempt, refer to the error code listing at **CMC 200** and correct the error condition.

3. **CMC 200** can be tried again.

**Restriction**

None

**Feature Interaction**

None

**Capacity**

No maximum capacity is listed.

**DSS/BLF 30, 40 AND 80  
MANUAL INSTALLATION**

Use this procedure to install a 30, 40 or 80 DSS/BLF console.

**Hardware Requirement**

For each 40 or 80 DSS/BLF console to be installed, a 2-pair 24 AWG cable needs to be provided with a maximum loop length of 2,000 feet. An available port on an 8EKC card for each DSS/BLF to be installed is also required. For each 30 DSS/BLF console, a single pair cable connects to a port on an 8DTC or 16DTC card.

**Assignment**

1. **CMC 210** (HIGH) is used to assign or remove:
  - DSS/BLF console number.
  - Equipment number.
  - Number of instrument with which DSS is paired.
  - Copied DSS/BLF console number.
  - DSS/BLF order.
2. **CMC 211** (LOW) is used to assign or remove:
  - Station directory number of the instrument paired with the specified DSS/BLF.
  - DSS/BLF button number.
  - Button type.
  - Directory number of alternate proprietary telephone, directory number of DSS destination, zone number, terminating trunk group, and type of station line.
  - Line terminating type, directory number for station line access.
  - Ringing mode.

**Restriction**

- Up to two DSS 30, 40 or 80 can be paired with a proprietary telephone.
- A maximum of 30 line buttons can be assigned on a DSS paired with a proprietary telephone.

**Feature Interaction**

None

**Capacity**

The system can support up to sixteen DSS/BLF consoles. The maximum number of total DSS 30/40/80 buttons that may be assigned is 640.

**NOTE:** The 30-button DSS is counted as a 40-button DSS when totaling the 640 maximum.

**DSS/BLF 100 MANUAL  
INSTALLATION**

Use this procedure to install a DSS 100 console.

**Hardware Requirement**

For each DSS/BLF console to be installed, a 2-pair 24 AWG cable needs to be provided with a maximum loop length of 2,000 feet. An available port on an 8EKC card for each DSS/BLF to be installed is also required. A DSS 100 can be paired only with an Attendant Console.

**Assignment**

1. **CMC 212 (HIGH)** is used to assign or remove:
  - DSS 100 console number.
  - Equipment number.
  - Pair with an Attendant Console.
  - Copied DSN (DSS console number).
  
2. **CMC 213 (LOW)** is used to assign or remove:
  - Directory number of the Attendant Console paired with a specified DSS 100.
  - DSS button number.
  - Button type (fixed at 1).
  - Directory number of DSS destination.

**Restriction**

Only Automatic Intercom Access (AIA) buttons may be assigned.

**Feature Interaction**

None

**Capacity**

The system can support up to two DSS/BLF 100 consoles.

**MULTIPLE STATION  
APPEARANCES**

Proprietary telephones can have one PSL (Primary Station Line) appearance assigned to a button. This procedure is used to assign a PSL appearance on other proprietary telephones.

**NOTE:** Single line telephones can appear as an OSL (Other Station Line) on proprietary telephones.

**Hardware Requirement**

Verify that a line card is seated in an appropriate card slot and that a telephone instrument is physically connected to a port on the card.

**Assignment**

1. **CMC 203 (LOW)** is used to assign a button for station appearance.

- Station directory.
- Button number.
- Feature number (183).
- PSL/OSL flag (0/1).
- Directory number for station line.
- Ringing mode.

**Restriction**

Proprietary telephones must have one PSL (Primary Station Line) appearance assigned to a button.

**Feature Interaction**

None

**Capacity**

Each PSL may appear on up to fifteen other proprietary telephones.

**INTERCOM GROUPS**

This feature allows station users to originate or terminate intercom calls on the primary station line of a proprietary telephone by pressing the Dial Intercom (D-ICM) button. This feature can have an independent numbering plan in the intercom group separate from the feature access codes or station directory numbers.

**Hardware Requirement** None

**Assignment** 1. **CMC 203** (LOW) assigns a button for intercom access on a proprietary telephone.

- Station directory number.
- Button number.
- Feature number (194).
- Intercom group number.
- Intercom group station number.
- Ringing mode.

2. **CMC 207** (LOW) is used to assign or remove an SLT to or from a D-ICM group.

- Station directory number.
- Intercom group number.
- Intercom group station number.

**NOTE:** Although single line telephones can be assigned to a D-ICM group, these stations can only receive D-ICM calls. D-ICM calls cannot be originated from a single line telephone.

**CAUTION:** Button number positions for the CT telephones and the DS20, DS20S, DS20SD, and DS32SD stations are different. Be aware of this when programming.

**Restriction** None

**Feature Interaction** None

**Capacity** The system can accommodate:

- Ten intercom groups.
- Up to fifty members per group.



**FEATURE BUTTON  
ASSIGNMENT**

This procedure is used to assign features to buttons on proprietary telephones.

**Hardware Requirement**

None

**Assignment**

1. **CMC 203** (LOW) assigns:

- Station directory number.
- Button number.
- Feature number.
- Supplemental data.
- Line termination type (for line buttons).
- Ringing mode.

**CAUTION: Button number positions for the CT telephones and the DS20, DS20S, DS20SD, and DS32SD stations are different. Be aware of this when programming.**

**Restriction**

None

**Feature Interaction**

None

**Capacity**

No maximum capacity is listed.

**MESSAGE WAITING FOR SLT**

Use this procedure to activate message waiting for SLTs equipped with a message waiting lamp.

**Hardware Requirement**

The RGMW is required to provide 100 VDC for message waiting lamps.

**Assignment**

1. **CMC 102 (HIGH)** is used to activate an SLT with message waiting lamps for the system:
  - Flag number (15).
  - Flag set value (1 = message waiting for SLT - activated),
2. **CMC 102 (HIGH)** is used to provide stutter dial tone for SLTs with no message waiting lamp:
  - Flag number (110).
  - Flag set value (1 = stutter dial tone).

**NOTE:** After any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.

3. **CMC 204 (LOW)** assigns:

- Station directory number.
- SLT with message waiting lamp (P4 = 1).

**Restriction**

None

**Feature Interaction**

None

**Capacity**

The following message waiting lamps can be lit simultaneously per cabinet:

- Cabinet 1 = 50
- Cabinet 2 = 100
- Cabinet 3 = 200

- 
- OFF-HOOK CALL ANNOUNCE** This feature allows a user to receive a call via the speaker while participating in a conversation using the handset or headset of a CT-30 telephone. Off-Hook Call Announce works when the called station is engaged in any of the following situations:
- Conversation via handset or headset.
  - Data call via the analog modem port.
  - Post-selection state using a handset.
- Hardware** To activate this feature, a CT-30 must have a D-ICM appearance. This means that six wires are necessary for a CT-30 to have the Off-Hook Call Announce feature. Also, the next circuit of the CT-30 which has the Off-Hook Call Announce feature must be used. Any station wanting to call a CT-30 while off-hook must also be in the same D-ICM group.
- Assignment**
1. **CMC 200** assigns:
    - Equipment number.
    - Station directory number.
    - Type of terminal (22 = CT-30 with Off-Hook Call Announce).
    - Copied station directory number.
  2. **CMC 203 (LOW)** assigns a D-ICM button on a CT-30.
- Restriction** Conditions of this feature:
- Off-Hook Call Announce cannot be activated when the terminal is assigned off-hook signaling (FNO 124).
  - If the speaker of the called party is already in use when the Off-Hook Call Announce feature is attempted, the call will ring the called station as it would normally.
  - No D-ICM (dial intercom) calls may terminate to a station while receiving the Off-Hook Call Announce.
  - Disconnecting from Off-Hook Call Announce can only be done by the calling party.
  - Placing an existing call on hold or disconnecting from an existing call changes the Off-Hook Call Announce to a regular voice call.
  - Off-Hook Call Announce works via a D-ICM appearance only. This feature cannot terminate on a PSL.
  - The calling party must have a **VOICE CALL** button on their CT-30 to operate the Off-Hook Call Announce feature.

**OFF-HOOK CALL  
ANNOUNCE (Cont'd)**

- A tone alerts the user immediately prior to receiving an Off-Hook Call Announce.
- This feature cannot be activated by the attendant.

**Feature Interaction**

Off-Hook Call Announce is activated by pressing the **VOICE CALL** button in D-ICM ringing. Off-Hook Signaling mode should be canceled by dialing the default access code 57 + 0.

**Capacity**

No maximum capacity is listed.

**OFF-PREMISE STATIONS  
(OPS)**

This feature allows industry-standard SLTs (Single Line Telephones) at off-premise locations to be connected to the PBX.

**Hardware Requirement**

One of the following methods may be used to accomplish an off-premise station:

- Loop extenders: These are available in the commercial marketplace and are used to extend station lines. This equipment is mounted and powered externally from the system.
- CO conditioned leased lines: A 600 ohms limit includes the telephone. This equipment is mounted and powered externally from the system.
- 4SLE card: The system proprietary off-premise extension card.

**Assignment**

1. **CMC 200** (LOW) assigns:

- Equipment number.
- Station directory number.
- Type of terminal.
- Copied station directory number.

2. **CMC 204** (LOW) assigns:

- Station directory number.
- Fixed ringing pattern for off-premise station (P3 = 1).

3. **CMC 102** (HIGH) assigns ringing pattern for an off-premise station:

- Flag number (2).
- Set value (1 = station call ringing; 2 = incoming call ringing; 3 = recall ringing).

**NOTE:** After any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.

**Restriction**

The distinctive ringing pattern cannot be used on an off-premise station. Because of this, there is a flag that may be set in CMC 204 to identify an off-premise station.

Normal station restrictions apply to OPS users. Refer to Chapter 6 of this manual (Class of Service/Restriction) to change station restrictions.

**Feature Interaction**

None

**Capacity**

No maximum capacity is listed.

**OFF-PREMISE STATIONS  
(OPS) VIA T-1**

This feature allows industry-standard SLTs (Single Line Telephones) at off-premise locations to be connected to the PBX via a T-1 link.

**Hardware Requirement**

A 24T1 card is required to install an OPS via a T-1 link. Refer to Chapter 3 of this manual for more information on T-1 installation.

**Assignment**

1. Remove from programming all previously programmed CO trunks that are to be used for this operation. Refer to CMC 250.

2. **CMC 200** (LOW) is used to reassign desired circuits:

- Equipment number.
- Station directory number.
- Type of terminal (23 = T-1 OPS).
- Copied station directory number (blank).
- Signaling of T-1 OPS (1 = FXS, 2 = SAS).

**NOTE:** Circuits should be assigned in increments of eight. If only a portion of the eight circuits are to be physically assigned, the remaining circuits must remain unassigned.

3. **CMC 204** (LOW) assigns:

- Station directory number.
- Fixed ringing pattern (P3 = 1).

4. **CMC 102** (HIGH) assigns ringing pattern for an off-premise station:

- Flag number (2).
- Set value (1 = station call ringing; 2 = incoming call ringing; 3 = recall ringing).

**NOTE:** After any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.

**Restriction**

The distinctive ringing pattern cannot be used on an off-premise station. Because of this, there is a flag that may be set in CMC 204 to identify an off-premise station.

Normal station restrictions apply to OPS users. Refer to Chapter 6 of this manual (Class of Service/Restriction) to change station restrictions.

**Feature Interaction**

None

**Capacity**

No maximum capacity is listed.

**PHANTOM LINES**

This feature allows the designation of a second (phantom) station number to be assigned to a telephone in addition to the primary station line.

**Hardware Requirement**

None

**Assignment**

1. **CMC 200** (LOW) is used to assign:
  - Equipment number (EN for phantom lines begins from \*000 to \*095).
  - Station directory number.
  - Type of terminal (1).
2. **CMC 203** (LOW) assigns OSL (Other Station Lines) on proprietary telephone buttons.

**CAUTION: Button number positions for the CT telephones and the DS20, DS20S, DS20SD, and DS32SD stations are different. Be aware of this when programming.**

3. **CMC 301** (LOW), if applicable, assigns hunt group for a secondary line appearance.

**Restriction**

The following are features that are not available to phantom stations:

- Message Waiting.
- Night Answer.
- Attendant Overflow.
- Make Busy.

**Feature Interaction**

None

**Capacity**

A maximum of 96 phantom stations per system are supported.

<b>RINGING LINE PREFERENCE</b>	With this feature, proprietary telephones can automatically select a ringing or idle line by lifting a handset or pressing a <b>SPEAKER</b> button.
<b>Hardware Requirements</b>	None
<b>Assignment</b>	<p>1. <b>CMC 100</b> (HIGH) assigns the feature access code for the ringing line and idle line preference.</p> <ul style="list-style-type: none"> <li>• Feature number (128 = ringing line preference, 129 = idle line preference).</li> <li>• Feature Access Code (FAC).</li> </ul> <p>Ringing line preference is set by dialing the FAC + 0 = no preference, 1 = ringing extension line preference, 2 = ringing CO and extension line preference, or 3 = ringing dial intercom, CO, and extension line preference.</p> <p>Idle line preference is set by dialing the FAC + 0 = no preference, 1 = extension line preference, 2 = CO line preference, or 3 = dial intercom line preference.</p> <p>2. <b>CMC 104</b> (LOW) is used to assign COS for this feature.</p> <ul style="list-style-type: none"> <li>• Class of Service (COS).</li> <li>• Feature Number (128 = ringing line preference, 129 = idle line preference).</li> </ul>
<b>Restriction</b>	<p>Ringing line preference is applied only when an audible ringing is provided. That is, ringing line preference is not given to a line assigned with no ringing or delayed ringing (until an audible ringing is provided when the delay-ringing timer times out).</p> <p>The following calls have priority over ringing line preference.</p> <ul style="list-style-type: none"> <li>• Camp-on call back.</li> <li>• Wake-up call.</li> <li>• Lost call.</li> <li>• Voice call.</li> <li>• Night call.</li> </ul> <p>Idle line preference is applied only when no audible ringing is provided to a telephone.</p> <p>When multiple calls on preferred ringing lines ring, the call on the lowest numbered button is answered. In a similar way, when several lines on preferred idle lines are idle, the line on the lowest numbered button is seized.</p>
<b>Feature Interaction</b>	Pre-selection overrides ringing and idle line preference.
<b>Capacity</b>	No maximum capacity is listed.



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<b>SYSTEM CALL FORWARDING</b>	This feature allows Call Forwarding to be registered via CMC. This capability can be used to assign Call Forwarding on phantom station lines.
<b>Hardware Requirements</b>	None
<b>Assignment</b>	<ol style="list-style-type: none"><li>1. <b>CMC 319</b> (LOW) is used to assign Call Forwarding to stations.<ul style="list-style-type: none"><li>• Station directory number.</li><li>• Type of Call Forwarding (0 = cancel; 1 = All Calls; 2 = Busy/No Answer; 3 = No Answer; 4 = Busy).</li><li>• Station directory number for Call Forwarding station.</li><li>• Station directory number for incoming Call Forwarding.</li></ul></li><li>2. <b>CMC 102</b> (HIGH) is used to designate either the same destination or different destinations for an incoming trunk Call Forwarding to a station.<ul style="list-style-type: none"><li>• Flag number (195).</li></ul></li></ol> <p><b>NOTE:</b> After any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.</p>
<b>Restriction</b>	Call Forwarding Busy/No Answer cannot be registered simultaneously with Call Forward Busy or Call Forward No Answer.
<b>Feature Interaction</b>	Call Forwarding may be registered from the station. Any call forwarding registered from the station, however, will override the forwarding programmed via CMC.
<b>Capacity</b>	No maximum capacity is listed.

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# CHAPTER 5

# ATTENDANT CONSOLE PROGRAMMING

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## INTRODUCTION

The programming defined in this chapter is used to assign a variety of functions to attendant consoles.

## BASIC ATTENDANT PROGRAMMING

Use this procedure to assign attendant consoles in the system.

### Hardware Requirement

Verify that an 8EKC card is seated in an appropriate card slot and the Attendant Console(s) is physically connected to a port on a card. If the Attendant Console is to be placed more than 300 feet from the system cabinet, a second circuit port is required.

### Assignment

1. **CMC 230** (HIGH) is used to assign an attendant console.
  - Attendant Console number.
  - Equipment number.
  - Tenant number.
  - Attendant console to copy data from.
  - Shared speed calling table. This is the same table number as station speed calling.
2. **CMC 231** (LOW) assigns the button functions to an attendant console.
  - Attendant Console number.
  - Button number.
  - Feature number.
  - Supplementary data.
3. **CMC 232** (LOW) is used to assign COS and COR to an attendant console.
  - Attendant Console number.
  - Class of service (day mode).
  - Class of service (night mode).
  - Class of restriction (day mode).
  - Class of restriction (night mode).
4. **CMC 233** (HIGH) assigns Attendant Console answering priority.
  - Trunk group number.
  - Answering priority.
5. **CMC 306** (LOW) assigns the Attendant Console overflow position.
  - Night answer group number.
  - Trunk/station/tenant flag.
  - Equipment number or tenant number.

**BASIC ATTENDANT  
PROGRAMMING (Cont'd)**

<b>Restriction</b>	None
<b>Feature Interaction</b>	None
<b>Capacity</b>	The system can accommodate up to eight Attendant Consoles.

**ATTENDANT VOICE MESSAGE**

Voice messages and music can be provided to callers waiting in attendant queue.

**Hardware Requirement**

Verify that the RVAC card has been seated in the appropriate card slot.

**Assignment**

1. **CMC 260** (HIGH) is used to assign the RVAC equipment number.
  - RVAC equipment number.
2. **CMC 261** (HIGH) assigns voice message data:
  - RVAC equipment number.
  - Message ID (100-189).
  - Voice message block.
  - Recorded flag.
  - Number of playbacks.
3. **CMC 316** (HIGH) assigns message and music for attendant automatic answering and waiting.
  - Tenant number.
  - Day answer message ID (100-189).
  - Waiting message ID (100-189).
  - Night answer message ID (100-189).
  - Music message ID (190-199).
  - Music timing.

**NOTE:** If the music timing is not entered, the waiting message will not be played.
4. **CMC 103** (HIGH) is used to assign the length of time a caller will wait in queue before an answer message is given to the caller.
  - Timing ID (145).

**Restriction**

None

**Feature Interaction**

None

**Capacity**

The system can accommodate up to 90 messages and 10 music segments.

**ATTENDANT PASSWORD** Use this procedure to assign a password to an Attendant Console. The password will be required to change the console from position busy to the operating mode.

**Hardware Requirement** None

- Assignment**
1. **CMC 100** (HIGH) assigns the feature access code.
    - Feature number (158).

**Restriction** None

**Feature Interaction** None

**AUTOMATED ATTENDANT**

This feature allows incoming calls to reach the desired station without operator or attendant assistance. Using this feature, the system answers the incoming call with a recorded voice announcement which prompts the caller to enter the desired station number. The caller dials the number on the touch tone keypad and the call is transferred to the appropriate station.

**Hardware Requirement**

An RVAC (Recorded Voice Announcement) card is required. Before programming, verify that this card is seated in the appropriate slot. In addition, a 4DMR card is required.

**Assignment**

1. **CMC 250** (HIGH) assigns:
  - Trunk equipment number.
  - Type of trunk (P2 = 6 or 19).
  - Trunk group number.
  - Operations mode.
  - Signaling (P5 = 1).
  - DISA-S mode (P6 = 2).
2. **CMC 251** (HIGH) assigns:
  - Trunk equipment number.
  - Dial mode and break ratio.
  - Trunk directory number.
  - Tenant number (optional).
3. **CMC 252** (HIGH) changes the COS and COR assigned to trunk for day/night operation:
  - Trunk group number.
  - Class of service (day mode).
  - Class of service (night mode).
  - Class of restriction (day mode).
  - Class of restriction (night mode).
4. **CMC 260** (HIGH) assigns:
  - RVAC equipment number.
5. **CMC 261** (HIGH) assigns:
  - RVAC equipment number.
  - Message ID (70-79 for Automated Attendant answering message).
  - Voice message block.
  - Recorded flag.
  - Number of playbacks.
6. **CMC 437** assigns day/night mode to a DISA trunk:
  - DISA equipment number.
  - DISA mode flag (day, night, all day).

**AUTOMATED ATTENDANT  
(Cont'd)**

7. **CMC 434** (HIGH) assigns the Automated Attendant answering message, overflow station, and single digit dialing capability:

- Tenant number.
- Answering machine ID in day mode.
- Overflow station DN in day mode.
- Answering message ID in night mode.
- Overflow message ID in night mode.
- Single digit automated attendant flag.

8. **CMC 480** (HIGH) assigns the single digit automated attendant mode and the destination for each tenant:

- Tenant number.
- Dial number.
- Automated attendant mode in day mode.
- Destination in day mode.
- Automated attendant mode in night mode.
- Destination in night mode.

**Restriction**

1. When the overflow station is not assigned, the attendant is identified as the overflow station.
2. In the following cases, the system sends out dial tone instead of the Automated Attendant answering message:
  - If MSGID is not specified.
  - If the Recorded Voice Announcement data for Automated Attendant is not specified in CMC 260.
  - If the Automated Attendant answering message is not assigned in CMC 261.
  - If the RVAC card fails.
3. The CO trunk which is used for the Automated Attendant feature must be a ground start trunk.
4. When a speed calling number is assigned as the destination using CMC 480, the call will not be transferred if it is blocked by an all trunks busy condition.

**Feature Interaction**

None

**Capacity**

No maximum capacity is listed.



# CHAPTER 6

# SERVICE FUNCTION PROGRAMMING

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## INTRODUCTION

The applications detailed in this chapter are special service functions that may be programmed into your system.

## AUTOMATIC CALL DISTRIBUTION (ACD)

ACD provides automatic distribution of incoming trunk and internal calls to idle stations within an ACD group. If all stations in the ACD group are busy, the call is placed in the ACD call queue to await the next available station. When a particular group is busy, calls can be programmed to overflow to another station, attendant, or ACD group.

### Hardware Requirement

No hardware is required.

### ACD Report Manager

The following are the hardware requirements for ACD Report Manager:

- 2APIA card.
- Application Processor.

**NOTE:** The following four CMCs are not allowed to change or update the data base when ACD Report Manager is assigned in the system:

- **CMC 314** ACD Trunk Priority Assignment.
- **CMC 315** ACD Data Assignment (work time assignment for individual ACD group).
- **CMC 370** ACD Route Table Assignment.
- **CMC 462** DNIS Name Assignment.

In order to input a change to the above mentioned CMCs, the AP assignment must be removed in CMC 281. After the necessary change has been made, the AP must be reassigned.

For more information regarding ACD Report Manager, refer to the ACD Report Manager System Manual (117-043-007) and the ACD Report Manager User Guide (117-040-007).

### Assignment

1. **CMC 308** (LOW) assigns:

- ACD group number.
- Extension number.
- Extension type (0 = agent; 1 = pilot).

**AUTOMATIC CALL  
DISTRIBUTION (Cont'd)**

2. **CMC 203** (LOW) is used to assign the ACD supervisor button to a CSD telephone and its parameters:
  - Station directory number.
  - Button number.
  - Feature number (191).
  - ACD group number.
  - Call waiting indicator flag.

**NOTE:** Parameter P6 is not used in this procedure.

3. **CMC 702** (HIGH) assigns a CSD for a supervisory position:
  - MCT number.
  - MCT directory number or Attendant Console directory number.
4. **CMC 102** (HIGH) is used to activate the ACD route table:
  - Flag Number: P1 = 175.
  - Set value: P2 = 1 (activate); 0 (deactivate).

**NOTE:** After any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.

5. **CMC 370** (LOW) assigns the ACD route table without ACD AP:
  - ACD group number.
  - Route table block number and route step (maximum 10 steps per route table).
  - Processing ID.
  - Supplementary data 1 (VMC MSG number, tone ID, loop start step number, jump step number).
  - Supplementary data 2 (skip flag, timing, loop count, waiting count).
  - Supplementary data 3 (transferred-to-party number).
6. **CMC 314** (LOW) assigns the answer priority for each trunk group:
  - Trunk group number.
  - Priority level.

**AUTOMATIC CALL  
DISTRIBUTION (Cont'd)**

- Restriction**
1. A Supervisor must be a CSD telephone and may be assigned the ACD status feature at CMC 203. The Supervisor does not have to be a member of the group.
  2. The overflow feature handles only CO, tie, DID, and DIL, and transferred trunk calls.
  3. CO trunks should be ground start signaling.
  4. At CMC 370, the active route table cannot be changed. In other words, during the day, the day route table cannot be changed unless the ACD route table is deactivated via CMC 102, Flag 175.
  5. ACD calls only directly from attendant-transferred CO, DISA-S, DID or DID-DISA will be handled by ACD route table. Station, tie trunk calls, and station-transferred calls are not handled by the ACD route table.

**Feature Interaction** When an RVAC (Recorded Voice Announcement) card is used, the system can be programmed to give a message and music while the caller is in the ACD queue. Refer to "Recorded Voice Announcement."

The ACD service is activated by the following types of calls terminating at a pilot station:

- ICM (intercom) call.
- Transferred call.
- Forwarded call.
- Tie line call.
- DID call.
- Direct-in line termination call.
- Personal line termination call.
- Pooled incoming trunk (one appearance).
- Pooled bothway trunk (one appearance).
- Key system line (one appearance).

Overflow is established via the Call Forward No Answer feature (at the pilot station). The overflow timer (CMC 103, time ID = 55) controls the time until the overflow occurs.

**NOTE:** The following types of calls do not receive route table treatment:

- ICM call.
- Transferred call.
- Tie line call.

**Capacity** Up to 20 ACD groups may be programmed into the system. There is no limit to the number of agents per ACD group unless ACD Report Manager is integrated.

<b>ACD Work Button</b>	Use this procedure to assign or change the time duration for the <b>work</b> button on an ACD agent's proprietary telephone.
<b>Hardware Requirement</b>	Verify that an ACD agent proprietary telephone has been properly installed.
<b>Assignment</b>	<ol style="list-style-type: none"><li>1. <b>CMC 203</b> (LOW) assigns ACD <b>work</b> button:<ul style="list-style-type: none"><li>• Station directory number.</li><li>• Feature number (198).</li></ul></li><li>2. <b>CMC 315</b> (LOW) assigns:<ul style="list-style-type: none"><li>• ACD group number.</li><li>• Work time.</li></ul></li></ol> <p><b>NOTE:</b> The P2 value is configured in units consisting of 5 seconds per unit. When P2 = 0, the value becomes the system value assigned by CMC 103 (P1 = 104).</p>
<b>Restriction</b>	Station COS needs to be assigned to make the limited work time operational.
<b>Feature Interaction</b>	None
<b>Capacity</b>	No maximum capacity is listed.

**ACD Sign-On/Off**

This feature is used to register or remove an ACD agent proprietary telephone to or from the ACD group available status.

**NOTE:** This feature is available with Report Manager.

**Hardware Requirement**

None

**Assignment**

1. **CMC 100 (HIGH)** assigns access codes to system trunks and features:

- Feature number (143).
- Feature access code.

2. **CMC 203 (LOW)** is used to assign feature access functions to programmable buttons on a proprietary telephone instrument:

- Station directory number.
- Feature number (143).

**Restriction**

None

**Feature Interaction**

None

**Capacity**

No maximum capacity is listed.

**AUTHORIZATION CODE**

By implementing this feature, users may change another telephone's Class of Service (COS) to their own COS. This allows users to have all the privileges and functions that their own telephone provides at another station, without permanently changing the functions available at that other station. When the call placed with an authorization code has been terminated and the handset replaced on-hook, the telephone returns to the original COS/COR automatically. This feature also allows a user to effectively "lock/unlock" their station.

**Hardware Requirement**

None

**Assignment**

1. **CMC 100** (HIGH) assigns the feature access code for authorization code use.
  - Feature number (155).
  - Feature access code.
2. **CMC 206** (LOW) is used to assign the password group number for the assigned station.
  - Station directory number.
  - Password group number (P5).
3. **CMC 311** (LOW) is used to assign password, COS, and COR for each password group.
  - Password group number.
  - Password.
  - Class of service for this password group.
  - Class of restriction for this password group.

**Restriction**

None

**Feature Interaction**

None

**Capacity**

The maximum length of each password is four digits with a maximum of 100 password groups.

**CALLING/CALLED NAME  
DISPLAY**

This feature displays the name of a calling party on the LCD of a proprietary telephone or Attendant Console for the calling and called party. Trunk names can also be displayed.

**NOTE:** PcMP must be used to enter the names of stations and trunks using CMCs 208 and 256.

**Hardware Requirement** None

- Assignment**
1. **CMC 208** assigns name 1 and name 2 for the station.
    - Directory number.
    - Station name 1, up to five characters or blank.
    - Station name 2, up to fifteen characters or blank.
  2. **CMC 256 (LOW)** assigns:
    - Equipment number.
    - Trunk name (one to seven characters or blank).
  3. **CMC 102 (HIGH)** assigns the station name display for the attendant supervised loop.
    - Flag number (184).
    - Station name for attendant supervised loop (1 = name 1, 2 = name 2)

**NOTE:** After any changes are made, either a HOT restart must be performed or each individual phone where changes apply must be unplugged and plugged back in.

**Restriction** None

**Feature Interaction** Station name 1 is displayed when the display area is limited; for example, when the forwarding name/number is displayed on the Attendant Console.

**Capacity** No maximum capacity is listed.

**CALL RESTRICTION**

This feature restricts certain outgoing calls based on the Class of Restriction (COR). Refer to the note at the end of this feature for information regarding area code memory allocation.

**Hardware Requirement**

None

**Assignment**

1. **CMC 411** (HIGH) restricts toll and operator calls.
  - Restriction group number.
  - Class of restriction.
  - Flag ID.
  - Flag value.
2. **CMC 412** (HIGH) restricts certain office codes.
  - Restriction group number.
  - Class of restriction.
  - Allowed/denied flag.
  - Office code.
3. **CMC 413** (HIGH) restricts certain area codes.
  - Restriction group number.
  - Class of restriction.
  - Allowed/denied flag.
  - Area code.
4. **CMC 414** (HIGH) restricts office codes within an area code.
  - Restriction group number.
  - Class of restriction.
  - Allowed/denied flag.
  - Area code.
  - Office code.
5. **CMC 415** (HIGH) allows certain carrier access codes.
  - Restriction group number.
  - Class of restriction.
  - Carrier access code.
6. **CMC 416** (HIGH) assigns office code restrictions for all area codes.
  - Restriction group number.
  - Class of restriction.
  - Allowed/denied flag.
  - Office code.
7. **CMC 417** (HIGH) restricts or allows certain carrier access code calls.
  - Restriction group number.
  - Class of restriction.
  - Flag ID.
  - Flag value.



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**CALL RESTRICTION (Cont'd)**

<b>Restriction</b>	None
<b>Feature Interaction</b>	None
<b>Capacity</b>	The system can accommodate three different restriction groups.

**NOTE:** CMCs 412, 413, and 414 use the same data blocks for storage of assigned area and office codes. The Series 3 has 150 total data blocks for use by all three CMCs. Each data block can have 10 area codes assigned using CMC 413 (1,500 maximum when only area codes are assigned; 150 blocks x 10 codes). Each data block can also have 10 office codes assigned using CMC 412 (1,500 maximum when only office codes are assigned; 150 blocks x 10 codes). And finally, each data block can have 6 blocks per each 5 area/office code assignment using CMC 414 (125 maximum when only area/office codes are assigned).

Therefore, the system capacity is determined by the combination of restricted office codes, area codes, and area/office codes, up to the system available maximum of 150 data blocks.

**CALL WAITING**

When an incoming call terminates at a busy extension, the receiving party is notified with a tone and given the option of answering the call. The receiving caller then may perform call splitting between the two parties or terminating one call and returning to a two-way conversation.

**Hardware Requirement**

None

**Assignment**

1. **CMC 103 (HIGH)** assigns the tone burst duration provided to a busy station as an indication of an incoming call.
  - Service timing ID (P1 = 152).
  - Timing value in 100 ms unit (default = 30)
2. **CMC 209 (LOW)** assigns the capability for answering call waiting from a station.
  - Directory number.
  - Call waiting answering capability (P2 = 0 for yes, 1 for no).

**Restriction**

None

**Feature Interaction**

When the capability for answering call waiting is assigned to an extension and the tone indication for an incoming call is received, the receiving extension can only answer the call waiting by pressing the Transfer button (proprietary telephone) or the hookflash (SLT). No other features can be activated during the call waiting activation.

Call Waiting is not applied under the following conditions:

- The called extension is not in a two-way conversation.
- The called extension is connected to the attendant.
- The called extension is Data Secured.
- The called extension registers Do Not Disturb.

When multiple incoming calls arrive at a busy extension simultaneously, only the first call to register Call Waiting can be answered.

When an incoming call is directed to an extension which has registered Call Forward - All Calls or Call Forward - Busy and the forwarded-to extension is busy, the incoming caller registers the call waiting on the forwarded-to extension, not the dialed number.

When an incoming call terminates to a hunt group where all the extensions are busy, Call Waiting is applied to the first busy extension in a two-way conversation.

When an incoming call terminates to a night answer group where all the extensions are busy, Call Waiting is registered to the first busy extension in a two-way conversation.

When an incoming call terminates to a busy extension used by an OSL extension, Call Waiting is applied to the OSL extension.

**CALL WAITING (Cont'd)**

**Capacity** No maximum capacity is listed.

**CLASS OF SERVICE/CLASS OF RESTRICTION (COS/COR)**

The following procedures permit programming of multiple classes of service to restrict stations from accessing certain features. A COS is assigned to each station/trunk and the station/trunk has access to all the features allowed for that class.

COR is used to restrict outside dialing capabilities of a station, such as certain phone numbers, long distance, etc. The following is the procedure to restrict access to CO (FX and WATS) and tie lines and COS.

**Hardware Requirement**

None

**Assignment**

1. **CMC 105** (LOW) assigns trunk connection capability for each COR.
  - Class of restriction.
  - Outgoing CO, FX, WATS connections.
  - Incoming CO, FX, WATS connections.
  - Outgoing tie connections.
  - Incoming tie connections.
2. **CMC 104** (LOW) assigns features allowed for each COS.
  - Class of service.
  - Feature number.
3. **CMC 202** (LOW) is used to assign or change the COS and COR of stations.
  - Station directory number.
  - Class of service (day mode).
  - Class of service (night mode).
  - Class of restriction (day mode).
  - Class of restriction (night mode).
4. **CMC 232** (HIGH) is used to assign or change the COS and COR of attendants.
  - Attendant Console directory number.
  - Class of service (day mode).
  - Class of service (night mode).
  - Class of restriction (day mode).
  - Class of restriction (night mode).
5. **CMC 252** (HIGH) is used to assign or change the COS and COR of trunks.
  - Trunk group number.
  - Class of service (day mode).
  - Class of service (night mode).
  - Class of restriction (day mode).
  - Class of restriction (night mode).

**CLASS OF SERVICE/CLASS  
OF RESTRICTION (COS/COR)  
(Cont'd)**

<b>Restriction</b>	None
<b>Feature Interaction</b>	None
<b>Capacity</b>	The system can accommodate up to 16 classes of service and 16 classes of restriction.

**DICTATION MACHINE**

This feature provides a user with proprietary telephone dial access to a user provided dictation machine.

**Hardware Requirement**

Dictation must be assigned to a station circuit card on an 8SLC or 16SLC card.

**Assignment**

1. **CMC 204** (LOW) assigns:
  - Station directory number.
  - 8SLC interface dictation machine (P6 = 1).

**Restriction**

None

**Feature Interaction**

By assigning the port as a dictation machine port, the system does not send reorder tone, but instead produces silence which tells the dictation machine that the recording has ended.

**Capacity**

No maximum capacity is listed.

**EXTERNAL CALLS WAITING INDICATOR**

Use this procedure to program the ACD external calls waiting indicator.

**Hardware Requirement**

A circuit on a 4BWC card is required for each external calls waiting indicator.

**Assignment**

1. **CMC 102** (HIGH) is used to assign:

- First level ACD call waiting threshold (Flag 107).
- Second level ACD call waiting threshold (Flag 108).

**NOTES:** 1. The second level threshold must be greater than the first level threshold.

2. After any changes are made, either a HOT restart must be performed or each individual phone where changes apply must be unplugged and plugged back in.

2. **CMC 250** (HIGH) is used to assign:

- Equipment number of 4BWC or 8BWC card used for call waiting indicator.
- Type of trunk (14).
- Leave P3, P4, and P5.
- ACD group number (P6).

**Restriction**

When a CO port is programmed as a calls waiting indicator, the remaining ports cannot be assigned as normal CO interfaces. The remaining ports should be used as calls waiting indicator interfaces only.

**Feature Interaction**

None

**Capacity**

The system can accommodate 40 calls waiting indicators including calls waiting buttons on proprietary telephones.

**EXTERNAL SPEAKER  
PAGING**

Use this procedure to identify the circuit used for external paging.

**Hardware Requirement**

Verify that a 4BWC or 8BWC card and an external speaker/amplifier with the appropriate cross connections have been installed.

**Assignment**

1. **CMC 250 (HIGH)** assigns:

- Equipment number.
- Type of trunk (9).
- Trunk group number (3).
- Operating mode (2).
- Signaling.
- Zone number.

2. **CMC 100 (HIGH)**, if applicable, is used to change:

- Feature number (paging access = 53; paging answer = 54).
- Feature access code.

**Restriction**

None

**Feature Interaction**

None

**Capacity**

The system can accommodate nine External Speaker Paging zones.



**FORCED ACCOUNT CODE -  
VERIFY**

This feature forces the input of an account code when a station originates a call via the Trunk Access Code, Speed Call, LCR SCC, Auto ICM, DSS Speed Call, SAVE/REPEAT, or individual trunk seizure. Forced account code is not activated for tie trunk calls.

**Hardware Requirement** None

**Assignment**

1. **CMC 102** (HIGH) assigns:
  - Flag number (132 = type of forced account code service).
  - Set value (0 = None; 1 = Forced; 2 = Verify).
  - Flag number (11 = number of digits in user account codes).
  - Set value (1 to 15 digits).
  - Flag number (173 = minimum number of digits of forced account code).
  - Set value (0 to 15 digits).
  - Flag number (174 = maximum number of digits of forced account code).
  - Set value (0 to 15 digits. 0 = no check).

**NOTE:** After any changes are made, either a HOT restart must be performed or each individual phone where changes apply must be unplugged and plugged back in.

2. **CMC 104** (LOW) is used to register COS for Forced Account Code.

- Class of service.
- Feature number (208).

3. **CMC 310** (LOW) assigns:

- Verify code ID (1-1024).
- Verify code.
- Trunk group number (if verify codes are assigned per TGN).

4. **CMC 313** (LOW) assigns forced account code type per TGN:

- Trunk group number.
- Forced account code type.

**NOTE:** Refer to CMC 102, Flag 132.

**Restriction**

If TGNs are not assigned, forced account codes (verify), system forced account codes (verify) are applied.

**Feature Interaction**

Forced account code entry per TGN basis and length check are available.

**Capacity**

Up to 1,024 account codes may be programmed into the system, each code containing up to 15 digits.

**HOTLINE STATION**

A Hotline station is assigned to a specific internal station in the data base. When the hotline station goes off-hook, its terminating station is automatically rung. Use this procedure to program a hotline station. Delete existing entries before changing hotline station assignments.

**Hardware Requirement** Stations designated for hotline assignment must be installed.

**Assignment**

1. **CMC 304** (LOW) is used to change or remove:
  - Hotline number (1-20).
  - Originating directory number.
  - Terminating directory number.
2. **CMC 206** (LOW) assigns the hotline to the attendant:
  - Directory number.
  - Manual telephone (P3 = 1).

**Restriction** None

**Feature Interaction** None

**Capacity** A maximum of 20 hotline stations may be assigned.

**INTERNAL SPEAKER  
PAGING GROUP**

This procedure permits designated proprietary telephones to be assigned as part of a paging group. Delete existing entries before changing paging group assignments.

**Hardware Requirement** Assign internal speaker paging to installed proprietary telephones.

- Assignment**
1. **CMC 303** (LOW) is used to add or remove:
    - Paging group (1-9).
    - Directory number of a zone member station.
  2. **CMC 100** (HIGH) assigns access codes to system trunks and features:
    - Feature number (51 = paging access, 52 = paging answer).
    - Feature access code.

**Restriction** None

**Feature Interaction** None

**Capacity** A maximum of 36 total members can be divided among nine paging zones in the system.

**MUSIC ON HOLD**

Music on hold can be provided to the system through one of two different methods. Both procedures are described below.

**Description 1** Use the following procedure to register a customer provided music source.

**Hardware Requirement** Verify that a 4BWC trunk card is seated in an appropriate slot and that a customer provided music source has been physically connected to the desired slot and circuit.

- Assignment**
1. **CMC 250** (HIGH) assigns:
    - Trunk equipment number.
    - Type of trunk (11).
  2. **CMC 305** (LOW) assigns the music source for the entire system.
    - Equipment number for music source connection or TPN (tone pattern for tone source).
  3. **CMC 317** (HIGH) assigns the music source on a per tenant basis.
    - Tenant number.
    - Tone source flag (1 = tone; 2 = music source).
    - Equipment number of the music source or tone pattern.

**Restriction** None

**Feature Interaction** None

**Capacity** One music source is available per tenant.

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**MUSIC ON HOLD (Cont'd)**

<b>Description 2</b>	Music for the system can also be provided via the RVAC card. Use the following procedure to activate music on hold via the RVAC card.
<b>Hardware Requirement</b>	Verify that the RVAC card is seated in the appropriate slot.
<b>Assignment</b>	<ol style="list-style-type: none"><li>1. <b>CMC 260</b> (HIGH) assigns RVAC equipment number.</li><li>2. <b>CMC 261</b> (HIGH) assigns:<ul style="list-style-type: none"><li>• RVAC equipment number.</li><li>• Message ID.</li><li>• Voice message block.</li><li>• Recorded flag.</li><li>• Number of playbacks.</li></ul></li><li>3. <b>CMC 305</b> (LOW) assigns:<ul style="list-style-type: none"><li>• Equipment number for RVAC (playback port of the hold message).</li></ul></li><li>4. <b>CMC 317</b> (HIGH) assigns the music source on a per tenant basis.<ul style="list-style-type: none"><li>• Tenant number.</li><li>• Tone source flag (3).</li><li>• Message ID.</li></ul></li></ol>
<b>Restriction</b>	None
<b>Feature Interaction</b>	None
<b>Capacity</b>	One music source only is available per tenant.

**NIGHT ANSWER STATION/  
ATTENDANT OVERFLOW**

Use this procedure to establish a night answer position and/or attendant overflow position.

**Hardware Requirement**

An auxiliary night bell may be physically connected to a circuit on an 8SLC or 16SLC card. The RGMW must also be installed.

**Assignment**

1. **CMC 200** (LOW) is used to assign stations in the system:
  - Equipment number.
  - Station directory number.
  - Type of terminal.
  - Copied station directory number.
2. **CMC 250** (HIGH) assigns the type of trunk.
3. **CMC 201** (LOW) and **CMC 251** (HIGH), if applicable, can be used to check tenant assignments.
4. **CMC 306** (LOW) is used to assign a station, trunk, and tenant for attendant overflow:
  - Night answer group number.
  - Station/trunk/tenant flag.
  - Station/trunk equipment number or tenant number.
5. **CMC 100** (HIGH) assigns access codes to system trunks and features:
  - Feature number (94 = answer any station, this tenant only; 95 = answer any station, all tenants).
  - Feature access code.
6. **CMC 102** (HIGH) assigns system parameters:
  - Flag number (P1 = 83; allow internal calls to overflow to bell).

**NOTE:** After any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.

**Restriction**

Attendant Overflow and Night Answer calls cannot use Call Forwarding, Hunt Group, etc. The station, however, that is designated as the Night Answer/Attendant Overflow station, can use features to process normal calls.

**Feature Interaction**

None

**Capacity**

No maximum capacity is listed.

**PICK-UP GROUP**

This feature allows station users to pick up a ringing call at another (Including Multi-Group) station within a pre-programmed group using a feature button or access code. The following is the procedure for programming a pick-up group.

**Hardware Requirement** None

- Assignment**
1. **CMC 302** (LOW) assigns:
    - Pick-up group number.
    - Directory number of member station.
  2. **CMC 100** (HIGH) assigns access codes to system trunks and features:
    - Feature number (92) for pick-up, (108) for multi-group.
    - Feature access code.

**Restriction** A station may reside in only one pick-up group.

**Feature Interaction** None

**Capacity** The system can accommodate up to 63 groups with a maximum of 64 members per group.

**RECORDED VOICE  
ANNOUNCEMENT**

Use this procedure to record, duplicate, and protect recorded voice messages.

**Hardware Requirement**

Verify that the RVAC card has been seated in the appropriate card slot.

**Assignment**

1. **CMC 260** (HIGH) is used to register an RVAC after installation.
2. **CMC 261** (HIGH) assigns RVAC voice message data:
  - RVAC message number.
  - Message ID.
  - Voice message block.
  - Recorded flag.
  - Number of playbacks.
3. **CMC 262** (HIGH), if desired, is used to duplicate an existing RVAC message.
  - RVAC message number.
  - Message number from which the message is copied.
4. **CMC 263** (HIGH) is used to record/protect message blocks.
  - RVAC message number.
  - Protect on/off.
5. **CMC 305** (LOW) is used to assign the RVAC as the music on hold source.
  - Equipment number of music source.
6. **CMC 317** (HIGH) is used to assign the RVAC card as the music on hold source on a per tenant basis.
  - Tenant number.
  - Music source flag (3 = RVAC message).
  - Message number (190-199).
7. **CMC 463** (HIGH) is used to assign the RVAC message as the music on hold source on a per DNIS number basis.
  - DNIS number.
  - Tone source flag (3 = RVAC message).
  - Message number (190-199).

**Restriction**

One RVAC card:

- Supports voice message lengths of up to 56 seconds.
- Has fourteen 4-second message blocks.
- Allows extension of messages over blocks.
- Does not permit messages to extend to a second card.



**RECORDED VOICE  
ANNOUNCEMENT (Cont'd)**

**Feature Interaction** The RVAC feature can be used to provide the following features:

- Music on hold.
- ACD music, answering/waiting message.
- Automated attendant message.
- Hotel/motel wake-up message.
- Time reminder message.
- Announcement message.
- DID vacant number message.
- DISA authorization code entry message.
- DISA invalid authorization code message.

**Capacity** Two RVAC cards per equipment cabinet may be supported by the system.

**RESTRICTION GROUP/DIAL GROUP**

This procedure is used to assign dialing group and restriction group toll prefixes and conflicting area and office codes.

**Hardware Requirement**

None

**Assignment**

1. **CMC 400** (HIGH) assigns the dialing group and restriction group.
  - Trunk group number.
  - Dial group number.
  - Restriction group number.
2. **CMC 401** (HIGH) assigns the toll prefix codes.
  - Dial group number.
  - Customer toll prefix code.
  - Operator toll prefix code.
  - Operator toll prefix code 2.
3. **CMC 402** (HIGH) assigns conflicting area and office codes.
  - Toll prefix code.
  - Dial group number.
  - Area/office code flag (0 = office; 2 = area code).
  - Area/office code.
4. **CMC 408** (HIGH) assigns office codes such as "811."
  - Dial group number.
  - NXY office code.

**NOTES:** 1. N = 1-9; X = 0-9; Y = 0-9.  
2. This command has a higher priority than CMC 402.

**Restriction**

Each station may belong to only one restriction group/dialing group.

**Feature Interaction**

None

**Capacity**

The system can accommodate three different trunk dialing groups and up to 50 different trunk groups.

**SILENT MESSAGES**

Use this procedure to establish the text of silent messages and to program the method in which silent messages are delivered to selected stations. The default database provides 11 silent messages.

**NOTE:** PcMP must be used to add or change silent messages in the system database; the alphanumeric keyboard is required.

**Hardware Requirement** None

**Assignment**

1. **CMC 309** (LOW) assigns the message text used for the silent message.
  - Message ID, 00 to 50.
  - Message text, 1 to 15 characters.
2. **CMC 206** (LOW) assigns:
  - Station directory number.
  - Receive warning tone with silent message while in conversation (P2).
3. **CMC 104** (LOW) is used to activate/receive DND silent messages.
  - Feature number 87 for message waiting with silent message.
  - Feature number 89 for message waiting pick-up.
  - Feature number 137 for DND with silent message.
4. **CMC 100** (HIGH) assigns the feature access codes.
  - Feature number 87 for message waiting with silent message.
  - Feature number 89 for message waiting pick-up.
  - Feature number 137 for DND with silent message.

**Restriction** None

**Feature Interaction** Silent message can also be used as a DND message.

**Capacity** The system maximum is four silent messages per station plus one from voice mail with a total of 50 different messages containing up to 15 characters.

<b>SILENT MONITOR</b>	This procedure is used to program the Silent Monitor feature.
<b>Hardware Requirement</b>	None
<b>Assignment</b>	<ol style="list-style-type: none"> <li>1. <b>CMC 100</b> (HIGH) is used to assign the feature access code: <ul style="list-style-type: none"> <li>• Feature number (P1 = 144).</li> <li>• Feature Access Code.</li> </ul> </li> <li>2. <b>CMC 102</b> (HIGH) assigns system flags: <ul style="list-style-type: none"> <li>• Flag number (Flag 205 = Starting; 206 = Break-In burst tone; 207 = Hold message).</li> </ul> </li> </ol> <p><b>NOTE:</b> After any changes are made, either a HOT restart must be performed or each individual phone where changes apply must be unplugged and plugged back in.</p> <ol style="list-style-type: none"> <li>3. <b>CMC 104</b> (LOW) is used to register a list of features for each Class of Service: <ul style="list-style-type: none"> <li>• Class of Service.</li> <li>• Feature number (P2 = 144).</li> </ul> </li> <li>4. <b>CMC 203</b> (LOW) is used to assign the programmable button on an EKT instrument: <ul style="list-style-type: none"> <li>• Directory number.</li> <li>• Button number.</li> <li>• Feature number (P3 = 144).</li> </ul> </li> <li>5. <b>CMC 209</b> (HIGH) is used to enable monitoring for stations: <ul style="list-style-type: none"> <li>• Directory number.</li> <li>• SMON (P3 = 1).</li> </ul> </li> <li>6. <b>CMC 103</b> (HIGH) table assigns the duration of the break-in burst tone by the system: <ul style="list-style-type: none"> <li>• Service timing ID flag (P1 = 28).</li> <li>• Normalized timing.</li> </ul> </li> </ol>
<b>Restriction</b>	<ul style="list-style-type: none"> <li>• Class of Service (CMC 104).</li> <li>• Protection Flag (CMC 209).</li> </ul>
<b>Feature Interaction</b>	<ul style="list-style-type: none"> <li>• Only proprietary telephone stations have the break-in capability.</li> <li>• A station that is already being monitored cannot be monitored by another station.</li> <li>• A station that is in conversation with the attendant or is participating in a three-way conference can be monitored, however break-in capability is denied.</li> </ul>
<b>Capacity</b>	The number of simultaneous Silent Monitoring activations is limited by the number of mixer circuits in the system.

**SPECIALIZED COMMON  
CARRIER RESTRICTION**

Use this procedure to program access to the long distance carrier by dialing the carrier access code.

**Hardware Requirement**

Verify that necessary trunks are connected to the appropriate circuits in the system.

**Assignment**

1. **CMC 425 (HIGH)**, if applicable, is used to assign five-digit CACs which will be automatically dialed by LCR:
  - Carrier Access Code number (1-10).
  - Carrier Access Code.
2. **CMC 471 (HIGH)**, if applicable, is used to assign seven-digit CACs which will be automatically dialed by LCR:
  - Carrier Access Code number (1-10).
  - Carrier Access Code.
3. **CMC 426 (HIGH)**, if applicable, is used to assign a five-digit personal account code for CAC, which will be dialed automatically by LCR.
  - Carrier Access Code (5 digits; 10XXX).
  - Position of Personal Account Code (0 = after DN; 1 = before DN).
  - Send timing.
4. **CMC 472 (HIGH)**, if applicable, is used to assign a seven-digit personal account code for CAC, which will be dialed automatically by LCR.
  - Carrier Access Code (7 digits; 10XXXXX).
  - Position of Personal Account Code (0 = after DN; 1 = before DN).
  - Send timing.
5. **CMC 415 (HIGH)**, if applicable, is used to allow five-digit CACs access within a class of restriction by assigning:
  - Restriction group number.
  - Class of restriction.
  - Carrier access code.
6. **CMC 470 (HIGH)**, if applicable, is used to allow seven-digit CACs access within a class of restriction by assigning:
  - Restriction group number.
  - Class of restriction.
  - Carrier access code.

<b>Assignment (Cont'd)</b>	7. <b>CMC 417</b> (HIGH), if applicable, is used to allow/restrict certain CAC calls. <ul style="list-style-type: none"><li>• Restriction group number.</li><li>• Class of restriction.</li><li>• Flag ID.</li><li>• Flag value.</li></ul>
<b>Restriction</b>	Up to 10 five- and seven-digit CACs may be registered in the system.
<b>Feature Interaction</b>	None
<b>Capacity</b>	A maximum of 10 carrier access codes may be registered for equal access in LCR.

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<b>STATION HUNT GROUP</b>	Use this procedure to create or change circular, terminating, or pilot hunt groups.
	<b>NOTE:</b> Existing entries must be removed before changing hunt group assignments.
<b>Hardware Requirement</b>	None
<b>Assignment</b>	<b>CMC 301 (LOW)</b> is used to change or remove: <ul style="list-style-type: none"><li>• Hunting group number.</li><li>• Terminating sequence.</li><li>• Station/data directory number.</li><li>• Hunting group type (1 = circular; 2 = terminating; 3 = pilot).</li></ul>
	<b>NOTE:</b> When entering parameters for a pilot hunt group, the first directory number entered is designated as the pilot station.
<b>Restriction</b>	None
<b>Feature Interaction</b>	None
<b>Capacity</b>	Each station may belong to only one hunt group. The system is able to accommodate 50 voice hunt groups and 10 data hunt groups consisting of a maximum of 16 members per group.

**STATION MESSAGE DETAIL  
RECORDING**

The SMDR (Station Message Detail Recording) feature provides a printed copy of information, such as originating station number, number dialed, duration and cost of call for every outgoing call.

**Hardware Requirement**

Verify that a serial printer has been physically installed.

**Assignment**

1. **CMC 900** (HIGH) assigns RS-232C port configuration:
  - Port number.
  - Bit rate.
  - Parity.
  - Character length.
  - Stop bit.
  - Echo back.
2. **CMC 901** (HIGH) assigns SMDR control condition:
  - Port number.
  - Pause/continue transmission character.
  - Power control.
  - Power on timing.
  - Power off timing.
  - Printout format.
3. **CMC 500** (LOW) assigns SMDR output options on outgoing connections:
  - CO outgoing connection.
  - Tie outgoing connection.
  - Account flag.
  - Toll call flag.
4. **CMC 501** (LOW) assigns trunk groups for SMDR output:
  - Trunk group number.
  - Output ID flag.
5. **CMC 502** (LOW) assigns COR for SMDR output:
  - Class of restriction.
  - Output ID flag.
6. **CMC 503** (LOW) assigns SMDR output for tenants:
  - Tenant group.
  - Output ID flag.
7. **CMC 504** (LOW) is used to set minimum call duration for SMDR output:
  - Hours of minimum duration.
  - Minutes of minimum duration.
  - Seconds of minimum duration.



**STATION MESSAGE DETAIL  
RECORDING (Cont'd)**

- 8. **CMC 505 (LOW)** (Data usage) is used to set SMDR screening for a modem group:
  - Modem group number.
  - SMDR output flag.
  
- 9. **CMC 102 (HIGH)** is used to assign:
  - Flag number (129 = incoming SMDR).
  - Flag setting.
  
  - Flag number (164 = SMDR output of authorization code of DISA-S).
  - Flag setting.
  
  - Flag number (165 = Incoming SMDR output prior to answer).
  - Flag setting.
  
- NOTE:** After any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.
  
- 10. **CMC 506 (LOW)** assigns SMDR digit screening:
  - Output identification flag.
  - Outgoing digit.

**Restriction** None

**Feature Interaction** None

**Capacity** A maximum of 100 SMDR screening digits can be used in the system.

**SYSTEM SPEED CALLING  
DIRECTORY**

This procedure is used to program frequently used numbers into the system to be accessed by users on a system-wide basis who have this feature included in their class of service.

**Hardware Requirement**

None

**Assignment**

1. **CMC 102** (HIGH) is used to assign 2- or 3-digit speed call numbers.

- Flag number (162).
- Flag setting (0 = 2 digit; 1 = 3 digit).

**NOTE:** After any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.

2. **CMC 300** (LOW) is used to assign, change, or delete:

- System speed call number.
- Trunk access code.
- Sent digits.

3. **CMC 104** (LOW) is used to allow feature in COS.

- Feature number (49).

4. **CMC 202** (LOW) is used to assign station to COS.

- Station directory number.
- Class of service (day mode).
- Class of service (night mode).

**Restriction**

None

**Feature Interaction**

None

**Capacity**

A maximum of 1,000 speed calling directory numbers are available in the system.

**TIME REMINDER  
ANNOUNCEMENT**

This feature allows a station to register time reminder service, providing automatic ringing at a designated time.

**Hardware Requirement** Verify that the RVAC card is seated in the appropriate card slot.

- Assignment**
1. **CMC 260 (HIGH)** assigns:
    - RVAC equipment number.
  2. **CMC 261 (HIGH)** assigns:
    - RVAC equipment number.
    - Message ID (55).
    - Voice message block.
    - Recorded flag.
    - Number of playbacks.
  3. **CMC 104 (LOW)** assigns:
    - Class of service.
    - Feature number (P2 = 78 for registration).
  4. **CMC 100 (HIGH)** assigns feature access codes:
    - Feature number (P1 = 78 for registration; 79 for cancellation).
    - Feature access code.

**Restriction** None

**Feature Interaction** Recording registration and cancellation for the time reminder announcement is made through a station by feature access.

- Capacity** The system capacities are:
- 80 SLTs and 80 proprietary telephones in a 5-minute time period.
  - 7 SLTs (per cabinet) and 16 proprietary telephones (in the system) can simultaneously ring.

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## LEAST COST ROUTING/LCR TIME OF DAY

With LCR, the system chooses the most cost effective outgoing trunk based on the outside number dialed. Use this procedure to program the least cost routing lists for the system.

### Hardware Requirement

Verify that the necessary trunks are installed on the proper circuits in the system.

### Assignment

1. **CMC 510 (HIGH)** is used to assign holidays to the system calendar.
  - Type of call (1 fixed).
  - Type of day.
  - Date.
2. **CMC 511 (HIGH)** is used to assign delimited time for the day.
  - Type of call (1 fixed).
  - Type of day.
  - Time table number.
  - Time of day.
  - Delimited time.
3. **CMC 421 (HIGH)** assigns the area and office code route table.
  - Area code route table number.
  - Route selection sequence.
  - Trunk group number.
  - Dialing pattern flag.

**NOTE:** In each routing table, exclude route number 10 from use if feature number 202 is selected at CMC 104. Be sure to place any route which is to be excluded in the Route Selection Sequence (RSC) 10. RSC numbers may be skipped to do this.

4. **CMC 427 (HIGH)** assigns a table for the LCR time of day.
  - Time of day route.
  - Type of day.
  - Time of day.
  - Area code route table number.
5. **CMC 423 (HIGH)** assigns area codes to the area code route table.
  - Area code route table number/time of day route table number.
  - Area code.

**LEAST COST ROUTING/LCR  
TIME OF DAY (Cont'd)**

6. **CMC 424 (HIGH)** assigns area/office codes.
  - Area code route table number/time of day route table number.
  - Area code.
  - Office code.
7. **CMC 420 (HIGH)** assigns the office code route table.
  - Office code route table number.
  - Route selection sequence.
  - Trunk group number.
  - Dialing pattern flag.
8. **CMC 422 (HIGH)** assigns office codes to the office code route table.
  - Office code route table number.
  - Office code.
9. **CMC 425 (HIGH)** assigns the five-digit LCR carrier access code (CAC).
  - LCR CAC number.
  - Carrier access code.
10. **CMC 471 (HIGH)** assigns the seven-digit LCR carrier access code (CAC).
  - LCR CAC number.
  - Carrier access code.
11. **CMC 426 (HIGH)** assigns five-digit personal accounts for LCR CAC access.
  - Carrier access code.
  - Position of personal account code.
  - Personal account code.
  - Personal account code timing.
12. **CMC 472 (HIGH)** assigns seven-digit personal accounts for LCR CAC access.
  - Carrier access code.
  - Position of personal account code.
  - Personal account code.
  - Personal account code timing.
13. **CMC 428 (HIGH)** assigns international route tables:
  - International code routing table number.
  - Routing sequence.
  - Trunk group number.

**LEAST COST ROUTING/LCR  
TIME OF DAY (Cont'd)**

14. **CMC 429 (HIGH)** is used to assign international codes to each LCR international code routing table.

- International code route table number.
- International code.

15. **CMC 104 (LOW)** assigns LCR capability to the COS table.

- Feature number (201 = LCR #1, least cost route only).
- Feature number (202 = LCR #2, all routes accepted except 10).
- Feature number (203 = LCR #3, all routes).

16. **CMC 103 (HIGH)** assigns LCR advance timing.

- Service timing ID = 94 (off-hook LCR #1 to #2 advance timing).
- Service timing ID = 95 (off-hook LCR #2 to #3 advance timing).
- Service timing ID = 96 (on-hook LCR #1 to #2 advance timing).
- Service timing ID = 97 (on-hook LCR #2 to #3 advance timing).

17. **CMC 100 (HIGH)** assigns the LCR feature access code.

- Feature number (3).

**Restriction** None.

**Feature Interaction** None.

**Capacity** Two types of tables:

- LCR area code route table/sys Max. 63.
- LCR area code routes/table Max. 10.
- LCR area codes/sys Max. 160.
- LCR office code route table/sys Max. 15.
- LCR office code routes/table Max. 10.
- LCR office codes/sys Max. 800.
- LCR area/office codes/sys Max. 800 office codes/  
Max. 8 area codes.
- LCR time of day Max. 9 time zones of 4 time  
patterns.

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## INTRODUCTION

This chapter deals with data applications and features of the Series 3 system.

## DATA SWITCHING

Use this procedure to establish basic data switching (using either a DTA or DIU) in the system.

### Hardware Requirement for DTA Installation

1. Verify that DTAs (Data Terminal Adapters) are installed in the CSD.
2. Verify that the CSD telephones are installed.
3. Verify that 8DTC cards are installed in the proper physical/ logical card slot. Refer to the Data Base Manual (123-080-002) for more information.
4. Verify that data terminals are connected to the RS-232C interfaces in the rear of the CSD telephones.
5. Assign the CSD telephones as voice stations and designate appropriate service using CMCs 201, 202, 203, 204, etc.

### Hardware Requirements for DIU Installation

1. Verify that DIU (Data Interface Unit) is set to the DTE mode and is connected to an 8DTC or 16DTC port.
2. Verify that data terminals are connected to the RS-232C interfaces in the rear of the DIU.

**NOTE:** If keyboard dialing is used, a 4CHT card is required.

### Assignment

1. **CMC 220 (LOW)** assigns the data station directory number and type.
  - Equipment number of data station.
  - Data station directory number.
  - Data terminal type.
  - Directory number of associated voice station.
2. **CMC 221 (LOW)** assigns the COS and COR of the data station.
  - Data station directory number.
  - Class of service (day mode).
  - Class of service (night mode).
  - Class of restriction (day mode).
  - Class of restriction (night mode).

**DATA SWITCHING (Cont'd)**

3. **CMC 222** (LOW) assigns communication attributes to the data station.
    - Data station directory number.
    - Data speed.
    - Synchronization and communications.
    - Word structure (stop bits/word length).
    - Parity.
    - Echoplex.
  4. **CMC 223** (LOW) assigns attributes and RS-232C signal mode.
    - Data station directory.
    - Call control mode.
    - RS-232C interface signal/mode 1.
    - RS-232C interface signal/mode 2.
  5. **CMC 224** (LOW) assigns:
    - Directory number.
    - Operating mode.
    - Dial mode.
    - Tenant number.
    - SMDR group number.
    - Modem type.
  6. **CMC 301** (LOW), if applicable, assigns the data hunt group.
    - Hunt group number.
    - Terminating sequence.
    - Station/directory data number.
    - Hunt group type.
- NOTE:** Each station can be assigned to only one hunt group.
7. **CMC 304** (LOW), if applicable, assigns data hotline information.
    - Hot line number.
    - Originating terminal station.
    - Terminating terminal.
  8. **CMC 203** (LOW) is used to assign a **DATA CALL** button and a **MODE CHANGE** button on the associated proprietary telephone.
    - Station directory number.
    - Button number.
    - Feature number (185 = DATA CALL, 186 = MODE CHANGE).

**NOTE:** The **MODE CHANGE** button can be assigned only on proprietary telephones that are equipped with displays.

**DATA SWITCHING (Cont'd)**

<b>Restriction</b>	None
<b>Feature Interaction</b>	None
<b>Capacity</b>	The maximum capacity for the Series 3 system is 120 CSDs with DTA.

**DIU FOR MODEM POOLING**

Use this feature to program DIUs associated with modems in a modem pool (see Figure 8-1).

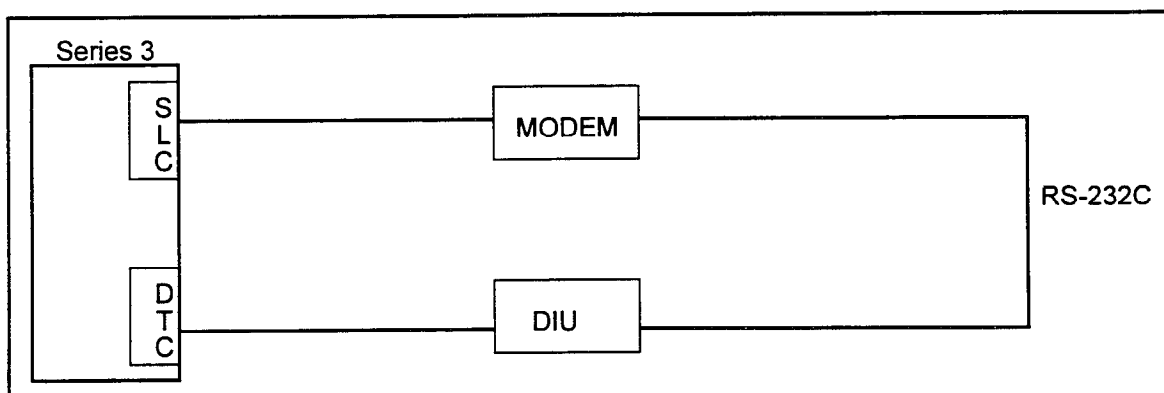
**Hardware Requirement**

A modem must be connected to a DIU in the DCE mode and to a single line port.

**Assignment**

1. **CMC 220** (LOW) is used to remove the DIU if it was assigned by default.
2. **CMC 200** (LOW) is used to remove the single line port if it was defined by default.
3. **CMC 270** (LOW) assigns the modem group.
  - DIU equipment number.
  - SLC equipment number.
  - Modem group ID and modem number.
  - Pattern number of MI/MIC control signal.
  - MI/MIC timing.
  - RS-232C interface signal mode.
4. **CMC 271** (LOW) assigns the modem group attributes.
  - Modem group ID.
  - Communication mode.
  - Data speed.
  - Modem type.
  - Operation mode.
5. **CMC 224** (LOW) registers the modem type pertaining to the operation of the data station.
  - Data station directory number.
  - Operating mode.
  - Dialing mode.
  - Tenant number.
  - SMDR group number.
  - Modem type.

**Figure 8-1. Modem Pooling Diagram**



**DIU FOR MODEM POOLING**

(Cont'd)

**Restriction**      The DIU must be set to DCE mode when used for modem pooling.

**Feature Interaction**      None

**Capacity**      A maximum of 15 modem groups and 15 modem types may be assigned in the system.

**KEYBOARD DIALING**

This feature allows a user to originate a call via an ASCII terminal used as a stand alone data terminal, with keyboard commands only, saving the user from having to use a telephone.

**Hardware Requirement**

A 4CHT card must be installed.

**Assignment**

1. **CMC 220 (LOW)** assigns the data station.
  - Equipment number of data station.
  - Directory number of data station.
  - Data terminal type.
  - Directory number of associated voice station.
2. **CMC 224 (LOW)** assigns data station attributes.
  - Data station directory number.
  - Operating mode.
  - Dialing mode, P3 = 1.
  - Tenant number.
  - SMDR group number.
  - Modem type.
3. **CMC 250 (HIGH)** assigns the 4CHT card in the system.
  - Trunk equipment number.
  - Type of trunk (12).
  - Trunk group number (2).

**Restriction**

None

**Feature Interaction**

None

**Capacity**

No maximum capacity is listed.

**AUTOMATIC ANSWER**

When a call is placed to a data set which is in the Automatic Answer mode, the data set can automatically answer the call, allowing unattended data communication with remote terminals.

**Hardware Requirement**    None

- Assignment**    1. **CMC 223** (LOW) assigns:
- Data directory number.
  - Call control mode (P2: second digit = 1).

**Restriction**    None

**Feature Interaction**    None

**DATA HOTLINE**

This feature allows users at a data station to automatically place data calls to a predetermined data station without dialing. The originating data hotline station can receive calls from another data station, but is prohibited from placing calls to any data station other than the predetermined station.

**Assignment**

1. **CMC 304 (LOW)** assigns:

- Hotline number.
- Originating directory number (calling station).
- Terminating station number (called station).

**Restriction**

The predetermined data station must be an internal station in order to be programmed as a hotline station.

**Feature Interaction**

None

**Capacity**

Up to 40 data hotlines may be assigned per system.



**DATA HUNT GROUP**

Use this feature to create, change, or delete hunt groups for data stations. There are three types of hunt groups: circular, terminating, and pilot.

**Hardware Requirement**

None

**Assignment**1. **CMC 301** (LOW) assigns:

- Hunt group number.
- Terminating sequence.
- Station/data directory number.
- Hunt group type.

**NOTE:** When the hunting type is pilot, the first station entered is the pilot station.

**Restriction**

None

**Feature Interaction**

None

**Capacity**

The system maximum is 10 data hunt groups consisting of 16 members each.

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## INTRODUCTION

This chapter details those features used in hotel/motel applications.

## ROOM STATUS INDICATOR

This feature provides for room status to be visually identified by means of a Room Status Indicator. The lamps on the DSS/BLF console when assigned as a Front Desk Console can be used as Room Status Indicators.

**NOTE:** A BLF/DSS cannot be assigned as both a DSS/BLF console and a Room Status Indicator. Remove any existing DSS/BLF console assignments using CMC 210 or CMC 212.

### Hardware Requirement

Verify that the appropriate number of Room Status Indicators have been installed.

### Assignment

1. **CMC 354** (HIGH) assigns:
  - Room status indicator number.
  - Room status indicator type.
  - Equipment number.
  - Screen number (If type = 3 (DSS 100)).
2. **CMC 355** (LOW) assigns:
  - Room status indicator number.
  - Button number.
  - Directory number.

### Restriction

When using a DSS 100, one screen is regarded as one RSI.

### Feature Interaction

None

### Capacity

Up to 18 DSS/BLF consoles may be registered as Room Status Indicators (6 RSIs x 3 RSI groups). This means six RSIs with different room numbers may be duplicated and put into as many as three groups.

**GUEST ROOM ASSIGNMENT**

Guest rooms are recognized by setting the guest room flag after assigning the station (see Chapter 4 of this manual).

**Hardware Requirement**

Verify that a line card is seated in an appropriate card slot and that a telephone instrument is physically connected to a port on the card.

**Assignment**

1. **CMC 200** (LOW) assigns the station directory number and type.

- Equipment number.
- Station directory number.
- Type of terminal.
- Copied station directory number.

2. **CMC 204** (LOW) assigns the guest room.

- Station directory number.
- SLT with message waiting (P4)
- Guest room flag (P5).

**Restriction**

None

**Feature Interaction**

None

**Capacity**

The maximum number of assignable stations is 480 for the Series 3.

**GUEST CALL CHARGING**

This is an accounting feature that totals the charges for local calls originated by guest room stations.

**Hardware Requirement**

An FDC can be used to display call charges for a guest room or a printer may be supplied in order to obtain a hard copy.

**Assignment**

1. **CMC 350** (HIGH) is used to assign Message Restriction/Call Charges:

- Trunk group number.
- Call charge flag.

2. **CMC 351** (HIGH) assigns office codes for each billing rate number.

- Billing rate number.
- Office code.

3. **CMC 352** (HIGH) assigns:

- Billing rate number.
- Initial time for a telephone call.
- Initial charge for a telephone call.
- Additional time for a telephone call.
- Additional charge for a telephone call.

**Restriction** None

**Feature Interaction** None

**Capacity** The maximum charge is \$650.00.

**HOTEL/MOTEL PRINTER**

Use the following procedure to install a hotel/motel printer.

**Hardware Requirement**

Verify that printer, 4CHT card, and DIU are installed. Also, this application requires an 8DTC card to support a DIU or CSD with DTA.

**Assignment**

1. **CMC 356** (HIGH) assigns the hotel/motel printer.
  - Printer number.
  - Character trunk equipment number.
  - DIU/DTA directory number.
2. **CMC 357** (HIGH) assigns a message type to the hotel/motel printer.
  - Printer number.
  - Message type ID code.
  - Front Desk Console directory number.
3. **CMC 358** (HIGH) is used to revise or confirm the system defaults for the hotel/motel parameters.
  - Flag number.
  - Status value.

**Restriction**

None

**Feature Interaction**

None

**Capacity**

A maximum of two hotel/motel printers may be assigned per system.

**PROPERTY MANAGEMENT  
SYSTEM (PMS)**

This feature allows a PMS AP to be connected to the system.

**Hardware Requirement**

A 2APIA card is required and one of the serial ports is connected to the PMS RS-232C port.

**Assignment**

1. **CMC 280** (LOW) assigns the 2APIA card and its port configuration.
  - Equipment number.
  - Protocol (3 = PMSI).
  - Baud rate.
  - Full/half duplex.
  - Stop bit/word length.
  - Parity.
2. **CMC 281** (HIGH) assigns a PMS interface port on the 2APIA card.
  - Equipment number.
  - Type of AP interface (2 = PMSI).
3. **CMC 359** (HIGH) assigns a message center for the PMS.
  - Directory number or attendant number for the message center.
4. **CMC 100** (HIGH) assigns a feature access code for room status to PMS.
  - Feature number (69).

**Restriction**

None

**Feature Interaction**

None

**Capacity**

No maximum capacity is listed.

**ROOM INFORMATION FOR  
ROOM RESTRICTION**

This feature enables room restriction for cash paying guests. At check-in, a default Class of Restriction (COR) is automatically assigned. By using an FDC, station, or attendant, the COR can be displayed and changed.

**Hardware Requirement**

None

**Assignment**

1. **CMC 102** (HIGH) assigns the default COR at check-in.

- Flag number (196).

**NOTE:** After any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.

2. **CMC 100** (HIGH) assigns a feature access code to display and change COR of guest telephones.

- Flag number (68).

3. **CMC 358** (HIGH) assigns an option flag to display and change the COR of guest telephones on an FDC.

- Flag number (18).



**SINGLE DIGIT DIALING**

This feature allows all stations, including guest rooms, to dial a single digit to route calls or to obtain services. This numbering can also be "floor number + single digit" by assigning the special service code.

**Hardware Requirement**

None

**Assignment**

1. **CMC 358 (HIGH)** assigns the base floor number for the single digit service call routing.

- Flag number (15).
- Base floor number for single digit service call routing.

2. **CMC 353 (HIGH)** assigns:

- Dialed number.
- Feature selection control (1 = Special service code; 2 = Service call routing).
- Destination directory number.
- Base guest room floor number (necessary if P2 = 2).

**Restriction**

The one to three digit number assigned for single digit dialing may be the same as the first three digits of a station number. The end of dialing is determined by interdigit time out.

**Feature Interaction**

None

**Capacity**

A maximum of 20 floors can be assigned at CMC 353, P4.

**TIME OUT ROUTING TO ATTENDANT**

If a guest room station user lifts the handset off the cradle and does not replace the handset after receiving an error tone, the system automatically routes the call to the Attendant Console after a predetermined time.

**Hardware Requirement**

None

**Assignment**

1. **CMC 103** (HIGH) assigns:
  - Service timing ID (30).
  - Normalized timing (number of time units).
2. **CMC 104** (LOW) assigns the class of service.
  - Class of service.
  - Feature number (206).
3. **CMC 101** (HIGH) sets service flags for given situations.
  - Flag number (P1 = FLGN = 8).

**Restriction**

None

**Feature Interaction**

None

**Capacity**

No maximum capacity is listed.

**WAKE-UP  
ANNOUNCEMENTS (Room  
Information for Multi-  
Language Wake-Up)**

The feature enables registration of wake-up service from a guest room station or the Front Desk Console (FDC). Automatic Wake-Up provides for automatic ringing of a guest room station at a predetermined time.

The following programming is also used for the Room Information for Multi-Language Wake-Up feature. This feature allows the front desk clerk upon check-in to assign a guest one of ten messages for the guest to receive during his stay.

**Hardware Requirement**

If recorded music is desirable, verify that the RVAC card has been installed and programmed.

**Assignment**

1. **CMC 260 (HIGH)** assigns the RVAC equipment number.
  - RVAC equipment number.
2. **CMC 261 (HIGH)** assigns the RVAC voice message.
  - RVAC equipment number.
  - Message ID (54 = wake-up message 0, 91-99 = for wake-up message numbers 1-9).
  - Voice message block.
  - Recorded flag.
  - Number of playbacks.
3. **CMC 104 (LOW)** assigns the class of service (COS).
  - Class of service.
  - Feature number (70 = from FDC, 78 = from guest room).
4. **CMC 100 (HIGH)** assigns the wake-up feature access code.
  - Feature number (70 = from FDC, 78 = from guest room).
  - Feature access code.
5. **CMC 100 (HIGH)** assigns a feature access code for wake-up message selection.
  - Feature number (68).
6. **CMC 203 (LOW)** assigns an FDC button to the Front Desk Console.
  - FDC button (FNO 188).
7. **CMC 358 (HIGH)** assigns an option flag to display and register key-up message number (0-9) on an FDC.
  - Flag number (18).

**Restriction**

The time input is in 24-hour format in units of five minutes.

**Feature Interaction**

None

**WAKE-UP  
ANNOUNCEMENTS (Cont'd)****Capacity**

The following are the system capacities:

- Number of terminals in one five minute time frame: Maximum of 40 SLTs and 80 proprietary telephones.
- Number of simultaneous ringing terminals: Maximum of 8 SLTs (Single Line Telephones) and 16 proprietary telephones.

## INTRODUCTION

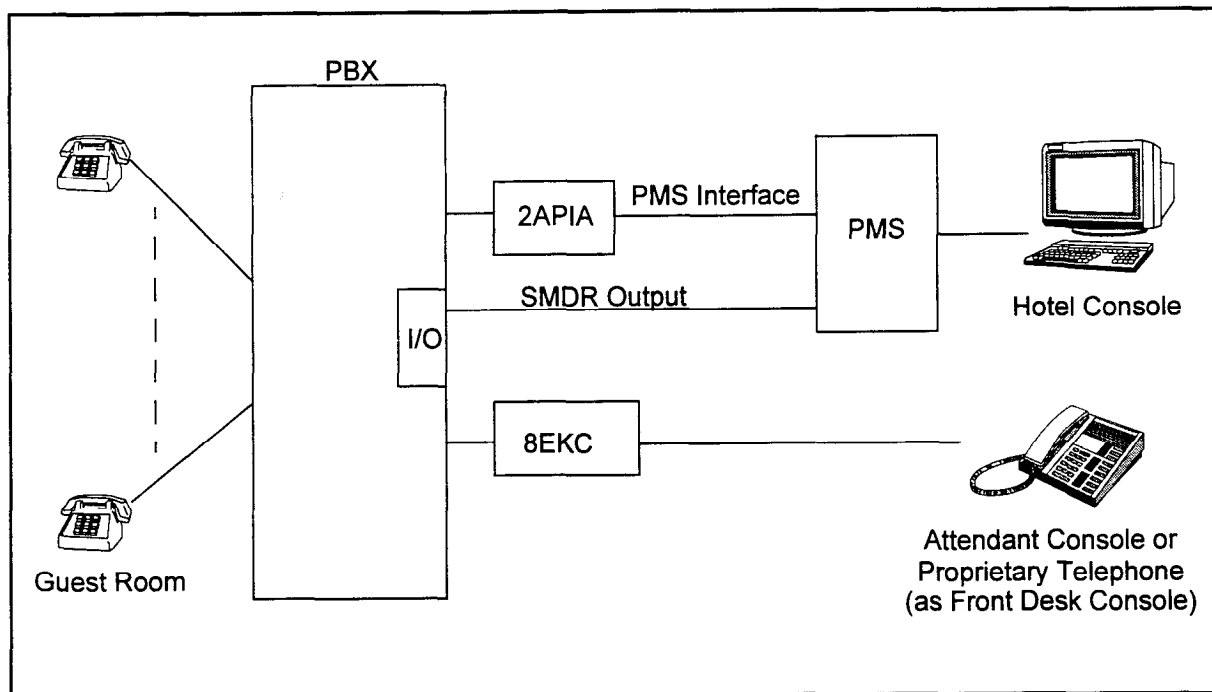
The purpose of this section is to provide a description of the features available with the Property Management System Interface (PMSI). This interface allows a PMS to provide some integrated features for Hotel/Motel applications. The following are the main features provided:

- Maid Status.
- Message Waiting.
- Check-in/Check-out.
- Wake-up (Multi-Language).
- Guest information (Guest name and language code).

The billing information may be passed to the PMS through an I/O port as Station Message Detail Recording (SMDR) output.

The system allows one PMS system to be interfaced.

**Figure 10-1. Property Management System Interface Configuration**



**GENERAL CONDITIONS**

The data base, such as the guest room number, should be synchronized between the system and the PMS.

When the PMS is used for Hotel/Motel services, the PMS equipment should be operated as specified in Table 10-1 below.

The PMSI is available only for extensions registered in the system as a guest room. Therefore, the PMSI is not available for business applications.

**Table 10-1. Property Management System Interface (PMSI)**

SERVICE NAME	SUPPORTED SERVICE BY PMS	AVAILABLE EQUIPMENT		NOTES
		PMS Console	FDC	
Maid Status	X	X *1		*1 Maid Status is entered by using guest room telephone.
Message Waiting	X	X	X	
Check-In/out	X	X	*2	*2 If both PMS console and FCD are used simultaneously, the data base of the PBX will be different from the data base of the PMS.
Control of Restriction			X	
Wake-up (multi-language)	X	X	X	
Do Not Disturb			X	*3 Alternatively used. Either PMS console or FDC should be used.
Call Billing		X *3	X *3	

**SYSTEM INTERFACE  
SPECIFICATIONS**

The Application Processor Interface (API) card is used to interface between a PMS and the system. The API card is installed in the system and connected to the PMS using an RS 232C cable (refer to the Series 3 Installation Manual). Table 10-2 shows the System Interface Specifications.

**Table 10-2. System Interface Specifications**

DEFINITIONS	PARAMETER VALUES
Data Speed	300, 600, 1200, 2400, 4800
Type of Synchronization	Asynchronous (Fixed)
Type of Communications	Full Duplex (Fixed)
Control Signaling	SD, RD, DTR, DSR, RTS
Length of Start Bit	1 (Fixed)
Length of Stop Bit	1/1.5/2
Length of Word	8 (Fixed)
Parity Bit	Odd/Even/None
Error Correction	BCC
Data Code	4-bit Nibble
Mode	DTE Mode

**SOFTWARE INTERFACE  
SPECIFICATIONS**

The following tables and figures give additional information on the PMSI software interface specifications; i.e., protocol, message formats, etc.

**Table 10-3. Software Interface Specifications**

CHARACTER	CODE	SOURCE		MEANS
		SENDER	RECEIVER	
STX	02 <sub>H</sub>	X		Start of data text
ETX	03 <sub>H</sub>	X		End of data text, block check code follows
ENQ	05 <sub>H</sub>	X		Sender request for ACK/NAK from receiver
ACK	06 <sub>H</sub>		X	Message acknowledged by receiver
NAK	15 <sub>H</sub>		X	Message not acknowledged by receiver

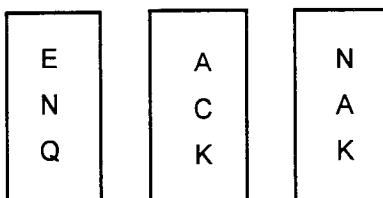
**Message Format** Figure 10-2 shows the message format.

**Figure 10-2. Message Format**

S T X	MESSAGE TEXT	B T X	B C C
-------------	--------------	-------------	-------------

The Block Check Code (BCC) is an EXCLUSIVE OR of all contents following the STX through and including the ETX.

**Control Code**



**Protocol** Tables 10-4 and 10-5 show the state of transition diagrams. Because of the full-duplex transmission, there are two diagrams for both the sending side and the receiving side.

**Table 10-4. State Transition Diagrams (Receive Side)**

State / Condition	Idle (0)	Receiving TEXT (1)	Wait for BCC (2)	Wait for TEXT (3)
Receive STX	→ (1)	Clear received text →		→ (1)
Receive ETX		→ (2)		
Receive BCC			If correct BCC then send ACK; if illegal BCC then send NAK → (3)	
Receive ENQ	Send NAK → (0)			Send last ACK/NAK within 3 retries → (3) At the fourth retry, send NAK → (0)
Receive transmission code		Receive text → (1)		
Receive NAK		Receive text as '15' nibble code		
Timing out (2 sec.)		Send NAK → (0)	Send NAK → (0)	→ (0)



Table 10-5. State Transition Diagrams (Send Side)

Condition \ State	Idle (A)	Completion of TEXT Sending (B)
Send message	Send message → (B)	
Receive ACK		→ (A)
Receive NAK		Send last message up to 3 times → (B)
Timing out (2 sec.)		Send last ENQ up to 3 times → (B) At the fourth retry → (A)

**NOTE:** The blank boxes in Tables 10-4 and 10-5 mean that the system ignores this condition.

**Error Codes**

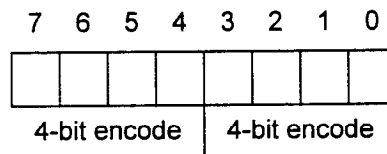
The following are the error conditions:

- BCC code error.
- Overrun error.
- Framing error.
- Parity error.
- Break detection.
- Send buffer does not become empty within 200 ms after sending a character.
- No ACK/NAK response within 2 sec. after the end of sending message.
- No BCC code within 2 sec. after STX code.
- DSR is not set at sending.

**TRANSMISSION CODE**

Shown below is Figure 10-3, which shows the message text format.

**Figure 10-3. Message Text Format**



TRANSMISSION CODE  
(Cont'd)

Table 10-6 below shows the code representation.

Table 10-6. Code Representation

CODE	ENCODE	CODE	ENCODE	CODE	ENCODE	CODE	ENCODE
-	0 (0000)	4	4 (0100)	8	8 (1000)	#	C (1100)
1	1 (0001)	5	5 (0101)	9	9 (1001)	-	D (1101)
2	2 (0010)	6	6 (0110)	0	A (1010)	-	E (1110)
3	3 (0011)	7	7 (0111)	*	B (1011)	Null	F (1111)

-: Not used

## MESSAGE SPECIFICATIONS

This section describes the conditions under which the message is sent or received. The supported feature codes are summarized in Table 10-7 below. (For more information, refer to the Message Format section of this manual.)

Table 10-7. Feature Message Summary

OPERATIONAL FEATURE	FEATURE CODE	PURPOSE
Maid Status - dialed from guest room	11	Communicate maid-dialed status change from guest room
Message Waiting	13	Communicate message waiting lamp status change
Check in\out	16	Communicate room check-in and check-out
Room Data Image	17	Exchange status information for guest room
Wake-up	30	Register or cancel wake-up service
Wake-up attempt	31	Notify the result of wake-up attempt after wake-up service is executed
Set and Change Guest Information	32	Set or change guest name and language code
Status inquiry and Failure Management	70	Data link maintenance

**PMSI FEATURES**

The features described in this section are included in the PMSI package.

**Maid Status - Dialed from  
Guest Room**

**Description** Maid status enables the on-line tracking of the house cleaning service and room status change. The maid enters a one-digit maid status code (1-6) and up to 6 digits for an option code from a guest room telephone. The definitions for maid status and the option digits can be specified by the PMS manufacturer; the system simply passes the dialed code/option digits without check or verification.

**Operation** 1. The maid dials the Feature Access Code (FAC) by using a guest room telephone. The display on the proprietary telephone shows the following:

MAID

2. The maid then dials a one-digit maid status code and the option code (up to 6 digits). When the maid dials a 6 digit option code or the inter-digit time out occurs, the system sends MSG (11, x) - Maid status message, including the option digits to the PMS where X is the dialed process code

3. If the system receives MSG (11, 9) - content/state valid from the PMS, then the maid hears a confirmation tone and the display on the proprietary telephone shows the following:

DONE

If the system receives MSG (11, 8) - content/state error or no response at all from the PMS within the predetermined time, then the maid hears reorder tone and the display on the proprietary telephone shows the following:

RETRY

**Conditions**

1. The maid must remain on the line to receive either confirmation tone or reorder tone to know whether the maid status message has been accepted.
2. The system sends a maid status message to the PMS when a 6-digit option code is dialed or interdigit time out has occurred.
3. In the case of a communication failure between the system and the PMS, the system sends reorder tone after dialing has been completed.
4. If the Maid Status access code is dialed from a telephone assigned as anything other than a guest room telephone, then reorder tone is heard.

**Message Waiting**

**Description** The Message Waiting feature turns on or off the message waiting lamp on a guest room telephone. This feature can be entered via the system terminal (with notification to the PMS) or after receiving a message from the PMS.

**Operation**

1. For the PMS to activate message waiting, a message MSG (13, 1) - MW lamp turn on by PMS must be received.
2. After receiving a message from the PMS, the system turns on the message waiting lamp on the designated guest room telephone. The following message is displayed on the proprietary telephone when the message waiting button is pressed:

200	CALL ME BACK
-----	--------------

↑ \_\_\_\_\_ Front Desk Console telephone number

3. When the message is called back, either by pushing the message waiting button or dialing the extension shown, the PMS is called back.
  4. If the call back is answered, the system turns off the message waiting lamp on the guest room telephone and the system sends MSG (13, 4) - MW lamp turn off by the system to the PMS.
  5. The PMS can deactivate the message waiting lamp on the guest room telephone before the message is picked up by the guest by sending MSG (13, 2).
- Conditions**
1. One front desk console telephone, which may be an extension or an attendant console, is assigned as the paired station with the PMS. This extension is considered the message registration source.
  2. If the message registration source attempts to turn on a message waiting lamp that has not been turned on, the system sends MSG (13, 3) - MW lamp turn on by the system to the PMS.
  3. If the message registration source attempts to turn off a message waiting lamp that had previously been registered, the system clears the message and sends MSG (13, 4) - MW lamp turn off by the system to the PMS if there is no other message waiting. When there are remaining messages, a message will not be sent to the PMS although the message from the registration source has been cleared.

- Conditions (Cont'd)
4. When the PMS requests that the message waiting lamp be turned on by MSG (13, 1) - MSG lamp turn on by PMS, the system turns on the message waiting lamp.
  5. When the PMS requests that the message waiting lamp be turned off by MSG (13, 2) - MW lamp turn off by PMS, the system clears all messages left and turns off the message waiting lamp.
  6. When the MW message is sent by the PMS, there is no return message sent back to the PMS to indicate whether or not the message waiting lamp was activated.

**Room Information for Multi-  
Language Wake-Up**

Description One of ten wake-up messages can be selected from an extension, FDC or PMS.

Operation Registration/change or confirmation of 10 wake-up messages:

1. Lift the handset and dial the access code or press the feature button. "R-INF" displays on the LCD of the Proprietary telephone and confirmation tone is heard.
2. Dial a selection ID (1 or 9) followed by the guest room extension number.

- a. If 1 is selected, a language code can be registered or changed. "LG" is displayed on the LCD of the proprietary telephone.
- b. If 9 is selected, room information can be confirmed when it is displayed on the LCD of the proprietary telephone.

XXXX L  
 \_\_\_\_\_ Language code  
 \_\_\_\_\_ Guest room extension

If the operating extension has no LCD, reorder tone (ROT) is heard.

- c. Under the following conditions, ROT will be heard:
  - If the selection ID is neither 1 nor 9.
  - If the designated extension is not a guest room extension.
  - If the designated extension has not been checked-in.
  - If the designated extension is not a valid extension.
4. If ID 1 is dialed, dial a one digit language (0-9).
5. Confirmation tone is heard when the operation is completed. Under the following conditions, ROT will be heard:
  - If an invalid language code is selected.
  - If the designated extension is not a guest room extension.
  - If the designated extension has not been checked-in.

Front Desk Console (FDC) operation:

"Room information" is added to the FDC menu (on the 4-line display) to enable the operator to register or change a language code for a guest room extension.

- 
- Operation (Cont'd)      The following messages are sent to the PBX from the PMS and vice versa when multi-language wake-up is registered or changed:
- MSG (32, 1) - Guest room information is used for defining a language code for each guest room extension. When the system receives the message from the PMS, the designated language code is registered to the extension.
  - The system returns MSG (30, 9) - Data Accepted when the language code has been registered. The system returns MSG (30, 8) - Data not accepted when the language code is not registered.
- Conditions
1. Up to ten wake-up messages can be recorded on the RVAC/VMC card. When a guest extension answers the wake-up, the selected message is heard. When the voice announcement has not been registered, confirmation tone is heard.
  2. If a language code is not registered, the message corresponding to type "0" is sent. When a guest is checked in, the language code is set to "0".
  3. The language code setting is denied under the following conditions:
    - The specified extension is not a guest room extension.
    - The specified extension has not been checked-in.
    - An unidentified language code has been used.
  4. When the FDC is used, "ROOM INF" menu can be omitted by setting the option data in **CMC 358**.

**Check-In/Out**

**Description** As a guest checks-in or out, the PMS can change a room from a vacant to occupied status and vice versa.

**Operation** **Check-In:**

1. When a guest checks-in, an entry is made in the PMS which sends MSG (16, 1) - check-in to the system.
2. The system changes the room status for the designated guest room from vacant to occupied and clears any message waiting, DND, wake-up and/or billing information.

If the guest room selected has already been occupied, the system returns MSG (16, 8) - already occupied to the PMS.

If the guest room telephone is busy, the check-in request will be blocked and the system will return the message MSG (16, 9) - check-in not performed, phone/file busy to the PMS.

If the message waiting lamp has been turned on, the system will turn it off and return the message MSG (13, 4) - MW lamp turn off by the system to the PMS (Room status moves to check-in).

**Check-Out:**

1. When a guest checks-out, an entry is made in the PMS which sends MSG (16, 2) - check-out.
2. The system changes the room status for the designated guest room from occupied to vacant, prints billing information, and returns MSG (16, 5) - check-out confirm to the PMS.

If the guest room is already registered as vacant, the system returns MSG (16, 7) - already vacant to the PMS.

If at the time of the check-out the printer is blocked, the check-out will be blocked and the system will return MSG (16, 4) - check-out not performed, printer blocked to the PMS.

If the message waiting lamp has been turned on, the system sends MSG (16, 6) - check-out performed, MW lamp on to the PMS (Room status moves to check-out).

If the guest room telephone is busy, check-out will be blocked. The system will return MSG (16, 9) - check-out not performed, phone/file busy to the PMS.



Check-In/Out (Cont'd)

Partial Check-Out (clear telephone charges):

1. The PMS sends MSG (16, 3) - partial check-out to the system.
2. The system prints the billing information and then clears it. The status of the room will not be changed.

If at the time of partial check-out the printer is blocked, the partial check-out will be blocked and the system will return MSG (16, 4) - check-out not performed, printer blocked to the PMS.

If the guest room telephone is busy, check-out will be blocked. The system will return MSG (16, 9) - check-out not performed, phone/file busy to the PMS.

Conditions

1. The Hotel/Motel printer, which prints out the billing information, should be allocated to a paired extension with the PMS. The system directs the printout to this printer when the PMS requests a check-out.
2. If the printout request is blocked, check-out or partial check-out will be denied under the following conditions:
  - Printer is made busy.
  - CHT, DIU, and/or DTA are faulty.
  - Printer is not ready; e.g. power is off.
  - DIU/DTA is in test mode.
  - Print out buffer block.
3. Under the following conditions, a check-out can be completed without a printout:
  - The system is configured not to print out the billing information during the check-out operation. (Programmable using **CMC 358**, Flag 7.)
  - The paired extension with the PMS is not registered.
  - The Hotel/Motel printer is not specified to the paired PMS station.
4. The system does not check the room status at MSG (16, 3) - partial check-out from the PMS. This message is also effective for a vacant room.
5. When the room status is controlled by the PMS, it is not recommended that the room status change be made from the Front Desk Console. This will result in a status mismatch.

**Room Data Image**

**Description** This feature provides an inquiry capability on the status of a given room via the PMS. There are two types of process codes: change of the room status or information only. The system is responsible for room status, vacant/occupied, message waiting lamp activation or deactivation, language code, and wake-up time.

**Operation Inquiry:**

1. To check the status of a guest room, an entry is made in the PMS which sends a message MSG (17, 1) - request room image.
2. The system returns MSG (17, 2) - image response that fills out the null fields with the current guest room status. Any non-null field is returned with null.

**Status Change:**

1. To change the status of a guest room, an entry is made in the PMS which sends MSG (17, 3) - change room data.
2. The system updates the room data along with the requested status by the PMS. The result is returned by MSG (17, 4) - data base update response. The system returns the status at null fields, changes the status at non-null fields and returns null code for the same fields.

**Conditions**

1. Some of the status fields are not defined for the status inquiry. The system returns null to those fields in MSG (17, 2) - image response.
2. The message waiting lamp responds to MSG (17, 3) - change room data after receiving MSG (13, 1/2) - MW lamp turn on/off by PMS.
3. When a room status is changed from vacant to occupied or vice versa, the Room Status Indicator (RSI) is updated.
4. When the room status is changed from vacant to occupied, all billing information, wake-up, DND, and Message Waiting registration are cleared. The system then returns MSG (17, 4) - data base update response to the PMS.
5. When the room status is changed from occupied to vacant, the billing information is printed out and MSG (17, 4) - data base update response is sent to the PMS. If the print out is blocked by the same reasons as those listed under Check-Out, MSG (16, 4) - printer block is returned to the PMS, but the room status is changed to vacant.

- 
- Conditions (Cont'd)
6. When guest room status is requested for the system, vacant "Need-clean-up" status is reported as vacant and occupied "Need-clean-up" is reported as occupied.
  7. In MSG (17, 3) - change room data, NULL is filled in fields for wake-up time or LC, the wake-up time or LC registered in the system is sent to the PMS in MSG (17, 4) data base update response.
  8. If "\*\*\*:\*\*" is entered in the wake-up time field in MSG (17, 3) - range room data, the system regards it as wake-up call cancellation. If the system has registered the wake-up time, then the system sends NULL in the wake-up time field in MSG (17, 4) - data base update response for cancellation acceptance. If the system has not registered the wake-up time, it sends "\*\*\*:\*\*" in the wake-up time field in MSG (17, 4) - data base response for notification of cancellation status.

**Wake-Up**

**Description** This feature enables wake-up service to be registered for guests via the PMS.

**Operation** Wake-Up Registration:

1. To set a wake-up call for a guest room, an entry in the PMS sends MSG (30, 1) - set wake-up.
2. The system registers the wake-up service for the designated extension.
3. The system returns MSG (30, 9) - data accepted when the wake-up request has been successfully registered. The system returns MSG (30, 8) - data not accepted if the request has not been accepted.
4. If a wake-up is registered using the Front Desk Console or an access code, the systems sends MSG (30, 3) - PBX entry to PMS.

**Wake-Up Cancellation:**

1. To cancel a wake-up call to a guest room, an entry in the PMS sends MSG (30, 2) - clear wake-up.
2. The system cancels the wake-up service to the designated extension.
3. The system returns MSG (30, 9) - data accepted when the wake-up request has been accepted.
4. If a wake-up is cancelled by using the Front Desk Console or an access code, the systems sends MSG (30, 4) - PBX clear to PMS.
5. When a wake-up call is cancelled by activating the check-in procedure, the system does not send a message to the PMS.

- Conditions**
1. A wake-up time registered within four minutes is invalid.
  2. Under the following conditions, MSG (30, 8) - data not accepted is sent:
    - The time is not registered in the system.
    - The correct time format (00:00 - 23:59) is not used.
    - The designated extension has already received registered wake-up service when responding to MSG (30, 1).
    - The designated extension does not have registered wake-up service when responding to MSG (30, 2).
  3. For the system's response MSG (30, 8) or MSG (30, 9) to MSG (30, 1), the system sends the same content for guest room extension number and wake-up time as MSG (30, 1) filled.

**Wake-Up Attempt**

- |             |  |
|-------------|--|
| Description | When Wake-Up service is activated in the system, the PMS is notified of the result.  |
| Operation   | <ol style="list-style-type: none"><li>1. When a guest answers the wake-up call, the system sends MSG (31, 1) - wake-up answer.</li><li>2. On a second attempt, the wake-up is not answered, the system sends MSG (31, 3) - wake-up no answer.</li><li>3. If a guest extension is busy or faults on the first and second attempt of wake-up, the system sends MSG (31, 2) - wake-up busy.</li></ol> |

---

<b>Set and Change Guest Information</b>	This procedure enables guest names and language codes (LC) to be registered. The following information refers to Guest Name Registration.
Description	A registered guest's name (up to 15 digits) can be programmed in the PMS to display on the proprietary telephone of the calling party.
Operation	<b>Registration of Guest Name:</b> <ol style="list-style-type: none"><li>1. To register a guest's name, an entry in the PMS sends MSG (32, 1) - set and change guest information.</li><li>2. The system registers the defined name to the designated guest extension.</li><li>3. The system returns MSG (32, 9) - data accepted when the name has been successfully entered or changed. The system returns MSG (32, 8) - data not accepted if the registered guest name has not been accepted.</li></ol> <b>Cancellation of Guest Name:</b> <ol style="list-style-type: none"><li>1. When the system receives MSG (16, 1) - check-in from PMS, the system cancels the registered name.</li></ol>
Conditions	<ol style="list-style-type: none"><li>1. Up to 15 characters can be registered for a guest name.</li><li>2. In the PBX, two names are registered for each section: Name 1 (up to 5 digits) and Name 2 (up to 15 digits). MSG (32, 1) only sets Name 2, and when Name 1 needs to be displayed, the dialed number displays instead. Refer to the Feature Description Manual for further information.</li></ol>

**Set and Change Guest  
Information (Cont'd)**

This procedure enables guest names and language codes (LC) to be registered. The following information refers to language codes.

Description

One wake-up message can be selected out of 10 different wake-up messages from an extension, Front Desk Console, or PMS.

Operation

**Registration/Change of 10 Wake-Up Messages:**

1. To register or change a selection of 10 wake-up messages using an access code or feature button:
  - a. Lift the handset and dial the access code or press the feature button.
  - b. Dial the guest room number followed by a 1-digit language code (0-9).
  - c. Confirmation tone is heard when the operation is complete.

Reorder tone is heard in the following conditions:

- a. An illegal language code is selected.
  - b. The designated extension is not a guest room extension.
  - c. The designated extension has not been checked-in to the system.
2. To register or change a selection of 10 wake-up messages using the Front Desk Console:
    - a. Add "room information" to the Front Desk Console menu (on 4-line LCD display) to register/change a language code for a guest room extension by setting flag 18 in CMC 358.
  3. To register or change a selection of 10 wake-up messages using a PMS:
    - a. To define a language code per guest room extension use MSG (32, 1) - guest room information.
    - b. When the system receives MSG (32, 1), the designated language code is registered to the extension.
    - c. The system returns MSG (32, 9) - data accepted when the language code has been registered successfully. The system returns MSG (32, 8) - data not accepted if the language code has not been registered.

Conditions

1. When a guest answers the wake-up, the selected message is heard.
2. If a language code is not registered, the message corresponding to "0" is sent.

**ASCII-Nibbles Conversion for Guest Name Conditions**

In Table 10-8, the ASCII-Nibbles Conversion for guest names are shown.

- When the length of a name is less than 15 characters, the remaining spaces should be filled with NULL. For example, if a guest's name is 7 characters, then NULL would be entered for the remaining 8-15 characters.
- If NULL is entered in the LC field, neither registration or change is performed.

**Table 10-8. ASCII-Nibbles Conversion Table for Guest Name**

		2 Left-Most Nibbles													
		AA	A1	A2	A3	A4	A5	A6	A7	A8	A9	1A	11	12	-
Most Right 1	A					(	2	<	F	P	Z				
	1					)	3	=	G	Q					
	2				S	*	4	>	H	R					
	3				!	+	5	?	I	S					
	4				"	,	6	@	J	T					
	5				#	-	7	A	K	U					
	6				\$	.	8	B	L	V					
	7				%	/	9	C	M	W					
	8				&	0	:	D	N	X					
9				'	1	;	E	O	Y						

**Language Code**

LC (Nibbles)	A	1	2	3	4	5	6	7	8	9
Type of Language	0	1	2	3	4	5	6	7	8	9



**ASCII-Nibbles Conversion for  
Guest Name Conditions  
(Cont'd)**

- Under the following conditions, MSG (32, 8) - data not accepted is sent:
  - The designated extension has not been checked-in to the system.
  - Characters other than those allowed are entered as a guest name in the LC field.
  - NULL is entered for both guest name and language code. However, when NULL is entered for either guest name or language code, MSG (32, 9) - data accepted is sent.
  - For the system's response MSG (32, 8) or MSG (32, 9) to MSG (30, 1), the system sends the same content for the guest name and the language code as MSG (32, 1) filled.

**Status Inquiry**

**Description** The PMS provides a data link maintenance and data base synchronization between the system and the PMS. The PMS sends MSG (70, F) at least every 10 seconds, but not more than every 500 ms, to check link failure. Additionally, when the PMS reconnects to the system after a link down, the PMS performs the data base synchronization.

**Operation** **Link Inquiry Message:**

1. In order to confirm communication and to verify that the PMS is working properly, the PMS sends MSG (70, F) - periodic message for link check.
2. The system returns MSG (70, 0) - response "link-up" to periodic message.

The system returns MSG (70, 2) - response "The system failure" under the following conditions:

- Experienced reset restart.
- Experienced "Data Kept" restart.
- API link down.
- API card failure.

**Data Base Swap:**

1. To begin the data base synchronization, the PMS sends MSG (70, 3) - start data base exchange.
2. To complete the data base synchronization, the PMS sends MSG (70, 4) - end data base synchronization.

**Conditions** The system returns nothing in response to MSG (70, 3) or MSG (70, 4).

**Message Format**

Description The following section shows the message formats for the features listed in this chapter.

- NOTES:**
1. The message count field (MSG CT) represents a module 10 message counter.
  2. When the system receives two of the same "message counter message" in sequence, the system discards the second message.
  3. The system will ignore any message with an invalid code.
  4. The system returns the received message setting, the most significant bit in the Feature Code octet, under the following conditions:
    - Undefined or unavailable feature code or process code.
    - The designated extension number is not a guest room telephone.
    - Message length is different from the one defined.
    - Invalid message content.
  5. An extension number that is shorter than 4-digits is padded from X4. Nibble "A" code is used in front of the extension number. In the example below, extension 310 is used.

1	A	2nd 2 digits of extension number
A	3	1st 2 digits of extension number

6. The option digit in maid status extension message is padded from DGT6. When the option digits are less than 6 digits, null (nibble "F" code) is padded in front of the dialed digits. In the example below, the dialed option digits are 2401.

A	1	DIG2 & DIG1
2	4	DIG4 & DIG3
F	F	DIG6 & DIG5

Maid Status Controlled From  
Room (FC 11)**Message Format**

	1	Feature Code
MSG CT	PR-C	
X2	X1	Extension Number (2nd 2 digits)
X4	X3	Extension Number (1st 2 digits)
DIG2	DIG1	Option Digits
DIG4	DIG3	Option Digits
DIG6	DIG5	Option Digits

Process Code	Definition	Sender
1-6	PMS Interpreted	PBX
8	Data not accepted	PMS
9	Data accepted	PMS

## Message Waiting (FC 13)

**Message Format**

1	3	Feature code
MSG CT	PR-C	
X2	X1	Extension Number (2nd 2 digits)
X4	X3	Extension Number (1st 2 digits)

Process Code	Definition	Sender
1	MW lamp turn on by PMS	PBX
2	MW lamp turn off by PMS	PMS
3	MW lamp turn of by PBX	PMS
4	MW lamp turn off by PBX	PBX

Check In/Check Out (FC 16)

**Message Format**

1	6	Feature code
MSG CT	PR-C	
X2	X1	Extension Number (2nd 2 digits)
X4	X3	Extension Number (1st 2 digits)
F	F	Filler (NULL)

Process Code	Definition	Sender
1	Check-In	PMS
2	Check-Out	PMS
3	Clear phone charge for partial check-out	PMS
4	Check-out not performed, printer blocked	PBX
5	Check-out confirmed	
6	Check-out confirmed, with MW on	PBX
7	Check-out confirmed, already vacant	PBX
8	Check-in confirmed, already occupied	PBX
9	Check-in/out not preformed, phone busy	PBX

Room Data Image (FC 17)

Message Format

1	7	Feature code
MSG CT	PR-C	
X2	X1	Extension number (2nd 2 digits)
X4	X3	Extension number (1st 2 digits)
LC	OCC	OCC 0: Vacant, 1: Occupied LC: Language code
F	MW	MW: 0 MW off 1 MW on
F	F	
M1	M2	
H1	H2	M1M2: AA - 59 (minutes) H1H2: AA - 23 (hour) wake-up time
F	F	

Process Code	Definition	Sender
1	Request image (information)	PMS
2	Image response (information)	PBX
3	Data base update request	PMS
4	Data base update response	PBX

Wake-Up (FC 30)

Message Format

3	0	Feature code
MSG CT	PR-C	
X2	X1	Extension Number (2nd 2 digits)
X4	X3	Extension Number (1st 2 digits)
M1	M2	M1, M2: AA - 59 (minutes)
H1	H2	H1, H2: AA - (hour) wake-up time

Process Code	Definition	Sender
1	Set wake-up	PMS
2	Clear wake-up	PMS
3	PBX entry	PBX
4	PBX clear	PBX
8	Data not accepted	PBX
9	Data accepted	PBX

Wake-Up Attempt (FC 31)

Message Format

3	1	Feature code
MSG CT	PR-C	
X2	X1	Extension number (2nd 2 digits)
X4	X3	

Process Code	Definition	Sender
1	Wake-up answers	PBX
2	Wake-up busy	PBX
3	Wake-up no answer	PBX

Set & Change Guest  
Information (FC 32)

Message Format

3	2	Feature code
MSG CT	PR-C	
X2	X1	Extension A (2nd 2 digits)
X4	X3	
G1 <sub>1</sub>	G1 <sub>2</sub>	Guest name
G1 <sub>3</sub>	G2 <sub>1</sub>	
G2 <sub>2</sub>	G2 <sub>3</sub>	G1 <sub>1,2,3</sub> : Guest name 1st character
G13 <sub>3</sub>	G14 <sub>1</sub>	G14 <sub>1,2,3</sub> : Guest name 14th character
G14 <sub>2</sub>	G14 <sub>3</sub>	
G15 <sub>1</sub>	G15 <sub>2</sub>	G15 <sub>1,2,3</sub> : Guest name 15th character
G15 <sub>3</sub>	F	
LC	F	LC: Language code
F	F	

Process Code	Definition	Sender
1	Set and change information	PMS
2	Data not accepted	PBX
3	Data accepted	PBX

Status Inquiry and Failure  
Management (FC 70)**Message Format**

7	0	Feature code
MSG CT	PR-C	
F	F	Filler (NULL)

<b>Process Code</b>	<b>Definition</b>	<b>Sender</b>
F	Periodic message for link check	PMS
0	Response "Link Up" to periodic message	PBX
2	Response "PBX Failure," memory reinitialized, initiate data base exchange	PBX
3	Start data base exchange	PMS
4	End data base exchange	PMS



## INTRODUCTION

This chapter details programming for special feature functions that can be used with the Series 3 system.

## Series 3 BEHIND A PBX/ CENTREX

Use this procedure to coordinate the installation of the system behind a PBX or CENTREX.

Several factors are involved which must be considered prior to programming a switch for CENTREX access. These include:

- The composition of the switch: are the trunks all CENTREX or a mix of other types of trunks (such as; FX, WATS, local CO). If trunks other than CENTREX are terminated into the switch, each trunk group may have its own access code or the LCR feature may be flagged.
- What restrictions are present

Specialized Common Carrier (SCC) routing is used to allow the automatic insertion of a "9" or other digit for calls outside the CENTREX system.

## Hardware Requirement

CENTREX trunks must be loop start.

## Assignment

In this assignment, it is assumed that CENTREX trunks are assigned on TGN 14 by CMC 250. Two other trunk groups, TGN 15 and 51, are used for CENTREX extension dialing and outgoing dialing. There are no actual trunks on these two trunk groups. All calls are routed over TGN 14.

1. **CMC 100 (HIGH)** is used to assign the feature access numbering plan. Refer to this CMC and coordinate the numbering plan with both systems.
  - Identify access code for SCC access (P1 = 42).
  - Access code for calls outside of CENTREX. (Verify that the default access code for LCR is removed; P1 = 3.)
  - Trunk group number (P3 = 51).
2. **CMC 100 (HIGH)** is used to assign a feature access code for outgoing calls outside of CENTREX.
  - Feature access code (P1 = 6).
  - Feature access code.
  - Trunk group number (P3 = 15).
  - Outgoing digits (identify length of CENTREX station directory number).

**Series 3 BEHIND A PBX/  
CENTREX (Cont'd)**

3. **CMC 101** (HIGH) is used to assign immediate speech path cut-through for Proprietary telephone stations when calls are transferred from an incoming CENTREX trunk to a CENTREX station.
  - System flag (P1 = 15).
  - Flag value (P2 = 1).
4. **CMC 400** (HIGH) is required if incoming calls from CENTREX are allowed to be transferred to a CENTREX station.
  - Trunk group number (P1 = 15).
  - Dialing group number (P2 = Blank).
  - Restriction group number (P3 = Blank).
5. **CMC 400** (HIGH) allows Non-North American dialing over TGN 14 which is required for CENTREX station dialing.
  - Trunk group number (P1 = 15).
  - Dialing group number (P2 = Blank).
  - Restriction group number (P3 = Blank).
6. **CMC 400** (HIGH) is used to change the dial group and restriction group numbers.
  - Trunk group number (P1 = 51).
  - Dialing group number (P2 = 1).
  - Restriction group number (P3 = 1, allows for toll restriction).
7. **CMC 404** (HIGH) is used to assign:
  - SCC route number (P1 = 1).
  - SCC gateway telephone number (P2 = 9).
  - SCC security access code (P3 = Blank).
  - Signal timing values (P4 = 0000).

(This CMC inserts a 9 as the routing digit, assuming 9 is the CO access code over CENTREX. Each CENTREX system can differ from another).

**NOTE:** The timing in P4, may be set for some CENTREX lines to 0100, allowing a one second pause after the digit 9 is sent to wait for dial tone before sending dialed digits.

**Series 3 BEHIND A PBX/  
CENTREX (Cont'd)**

8. **CMC 405** (HIGH) assigns:
  - SCC trunk group number (P1 = 15).
  - Routing destination trunk group number (P2 = 14).
9. **CMC 405** (HIGH) assigns:
  - SCC trunk group number (P1 = 51).
  - Routing destination trunk group number (P2 = 14).

**NOTES:**

1. When the CENTREX trunks are installed, only assign them to TGN 14. No other trunk groups should be required for this application. Trunk group 15, the phantom trunk group, **MUST NOT** have an actual trunk port assignment. **CMC 405** ensures that when TGN 15 is accessed, the call actually routes over TGN 14. Outgoing calls can now be accomplished through direct trunk group access as follows:
  - CENTREX station calls: Dial TGN 15 access code, dial number.
  - All other calls: Dial SCC access code, dial number.
2. When trunks other than CENTREX lines are terminated at the switch, the LCR feature may be used for trunk calls.
3. SCC access is assigned in the LCR routing table for trunk calls through CENTREX lines.
4. Operator calls, international calls, and service calls (911, 411, etc.), can be routed to CENTREX lines by assigning an SCC trunk group number in **CMC 162**, flag number 194.

**Feature Interaction**

If OPX lines are used, all features that pertain to a standard single line telephone are available. If CO trunks or tie lines are used, LCR and trunk group access features are available from the PBX.

To transfer a CENTREX call to another CENTREX extension, the FLASH feature button can be used from a proprietary station or Attendant Console; an SLT must use the FLASH feature access code. To complete the transfer, the station user hangs up; the Attendant Console operator presses the DROP/CANCEL button.

**Capacity**

The capacity of the system is dependent on the number of trunks, etc., available from the PBX.

**Series 3 BEHIND A PBX/  
CENTREX USING LCR**

This procedure follows the same premise as programming the Series 3 system behind a PBX or CENTREX. This programming, however, reflects the use of LCR.

**Hardware Requirements**

CENTREX trunks must be loop start.

**Assignment**

In this programming, it is assumed that CENTREX trunks are assigned on TGN 14 and other types of trunks (i.e., WATS, FX, etc.) are on other TGNs assigned in CMC 250.

1. **CMC 100 (HIGH)** is used to assign the LCR feature access code. Refer to this CMC and coordinate the numbering plan with both systems.

- LCR feature access code (P1 = 3).
- Feature access code.

2. **CMC 100 (HIGH)** is used to assign:

- SCC access code (P1 = 6, CO #3 access).
- Feature access code.
- Trunk group number (P3 = 15).
- Outgoing digits (identify the length of CENTREX station directory number).

**NOTE:** Trunk group 15 is used when CENTREX station dialing is desired. Note that any trunk group can be used for this purpose. FNO 6 and TGN 15 are used here as an example.

3. **CMC 101 (HIGH)** allows immediate speech path cut-through for EKT stations when incoming CENTREX calls are transferred to CENTREX stations.

- System flag (P1 = 15).
- Flag value (P2 = 1).

4. **CMC 102 (HIGH)** is required when no local CO is directly terminated to the system and calls via LCR default route (i.e., 411, 911, 0, 0+) should be dialed over CENTREX trunks.

- Flag number (P1 = 194).
- Signal timing values (P2 = 51).

**NOTE:** After any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.

5. **CMC 400 (HIGH)** is assigned with dialing group 1 for LCR dialing.

- Trunk group number (P1 = 13).
- Dialing group number (P2 = 1).
- Restriction group number (P3 = 1).

**Series 3 BEHIND A PBX/  
CENTREX USING LCR  
(Cont'd)**

6. **CMC 400** (HIGH) allows incoming calls to be transferred to a CENTREX station.

- Trunk group number (P1 = 14).
- Dialing group number (P2 = blank).
- Restriction group (P3 = blank).

7. **CMC 404** (HIGH) is used to assign:

- SCC route number (P1 = 1).
- SCC gateway telephone number (P2 = 9).
- SCC security access code (P3 = blank).
- Signal timing values (P4 = 0000).

**NOTE:** The timing in P4, may be set for some CENTREX lines to 0100, allowing a one second pause after the digit 9 is sent to wait for dial tone before sending dialed digits.

8. **CMC 405** (HIGH) assigns:

- SCC trunk group number (P1 = 15).
- Routing destination trunk group number (P2 = 14).

9. **CMC 405** (HIGH) assigns:

- SCC trunk group number (P1 = 51).
- Routing destination trunk group number (P2 = 14).

**NOTE:** Trunks are not installed on TGN 15 and 51. The CENTREX station calls via TGN 15 and outgoing calls over CENTREX via TGN 51 are actually routed over TGN 14 which has trunks connected to CENTREX lines.

10. **CMCs 420, 421, 422, 423, 424, 425, 426, 427, 428, 429**, etc. are used to set up LCR tables including TGN 51 for CENTREX access.

When the above mentioned CMCs have been programmed, the following dialing procedures will be accomplished:

- CENTREX station lines: Dial TGN 15 access code and CENTREX station number.
- Outgoing calls: Dial LCR access code and outgoing North American number.

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<b>ISDN</b>	This feature provides the ISDN public network interface.
<b>Hardware Requirement</b>	The following hardware is required for the Series 3 system: <ul style="list-style-type: none"><li>• 23PT card (1 per span).</li><li>• CLKS card (1 per system).</li><li>• Adapter board (1 per span).</li></ul>
<b>Assignment</b>	<ol style="list-style-type: none"><li>1. <b>CMC 102</b> (HIGH) assigns clock card installation:<ul style="list-style-type: none"><li>• Flag number (P1 = 70).</li><li>• Flag set value (P2 = 0 if CLKS card is not installed; P2 = 1 if CLKS card is installed).</li></ul><p><b>NOTE:</b> After any changes are made, either a HOT restart must be performed or each individual phone where changes apply must be unplugged and plugged back in.</p></li><li>2. <b>CMC 107</b> (HIGH) assigns network clock extraction.<ul style="list-style-type: none"><li>• Clock number (Priority).</li><li>• Network clock extracted 23PT equipment number.</li></ul></li><li>3. <b>CMC 250</b> (HIGH) assigns ISDN trunks.<ul style="list-style-type: none"><li>• Trunk equipment number.</li><li>• Type of trunk (6, fixed).</li><li>• Trunk group number (13-16).</li><li>• Operations mode (1 fixed).</li><li>• Signaling (1 fixed).</li><li>• ISDN type (7 = Attendant terminate; 8 = DID).</li></ul></li><li>4. <b>CMC 112</b> (HIGH) assigns presentation indication:<ul style="list-style-type: none"><li>• Flag number (P1 = 161).</li><li>• Set value (P2 = 0 to not check presentation indicator; P2 = 1 to check presentation indicator).</li></ul></li><li>5. <b>CMC 120</b> (HIGH) assigns CLIR control flag and national number.<ul style="list-style-type: none"><li>• Trunk group number (P1 = 13-16).</li><li>• CLIR control flag (P2 = 0/1/2).</li><li>• National number.</li></ul></li><li>6. <b>CMC 915</b> (HIGH) assigns the ISDN protocol ID.<ul style="list-style-type: none"><li>• Protocol ID (1 = 4ESS, 2 = 5ESS, 3 = DMS 100, 4 = DMS 250)</li></ul></li><li>7. <b>CMC 122</b> (HIGH) assigns the type of ISDN service:<ul style="list-style-type: none"><li>• Trunk group number (P1 = 13-30).</li><li>• Type of ISDN service (0 = CBC; 1 = CO; 2 = WATS; 3 = MEGACOM).</li><li>• WATS band number.</li></ul></li></ol>

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## ISDN (Cont'd)

8. **CMC 430 (HIGH)** assigns received digits from ISDN trunks.
  - Trunk group number.
  - Number of received digits (1-4).
  - Prefix code.
9. **CMC 435 (HIGH)** assigns listed directory numbers.
  - Trunk group number.
  - Listed directory number.
  - Tenant of Attendant.
  - Night answer station directory number.
10. **CMC 438 (HIGH)** assigns CLID data to extensions.
  - Directory number.
  - DID number.
11. **CMC 439 (HIGH)** assigns CLID data to data stations.
  - Directory number of data extension.
  - DID number.

**Restriction** When either the 24T1 or the 23PT card is installed in physical slot 0, 3, or 6, the next physical slot, 1, 4, or 7 can only be used for a 1/2/4/6/8 circuit card or another 24T1 or 23PT card. When either the 24T1 or 23PT card is installed in physical slot 1 or 4, the next physical slot, 2 or 5, must be empty. When either the 24T1 or 23PT card is installed in physical slot 7, the next three physical slots, 8, 9, and 10, cannot be used. Clock extraction can only be made from the basic (0) cabinet.

**Feature Interaction** None

**Capacity** The system can accommodate the following:

- Maximum of 240 channels per system for the Series 3.
- The maximum number of 23PT cards that may be installed are as follows:
  - Three 23PT cards may be installed in a one cabinet system.
  - Seven 23PT cards may be installed in a two cabinet system.
  - Seven 23PT cards may be installed in a three cabinet system.
  - Seven 23PT cards may be installed in a four cabinet system.

**ISDN CALL BY CALL (CBC)**

This feature allows CBC capability on the ISDN public network interface. The CBC feature is accomplished by assigning ISDN CBC trunks and routing all ISDN CO, WATS, and MEGACOM calls to the CBC trunks. Refer to the ISDN application mentioned previously for complete ISDN trunk installation programming. The instructions listed here are supplemental for the CBC feature.

**Assignment**

1. **CMC 122 (HIGH)** assigns the type of ISDN service for ISDN trunks.

- Trunk group number.
- Type of ISDN service (0 = CBC).

**NOTE:** Assign ISDN CO, WATS, or MEGACOM type to ISDN trunk groups (13-30). No physical trunks are installed on these trunk groups.

2. **CMC 405 (HIGH)** routes the ISDN CO, WATS, and MEGACOM calls to the ISDN CBC trunks.

- Trunk group number (ISDN CO, WATS, or MEGACOM).
- Trunk group number (ISDN CBC).

3. **CMC 100 (HIGH)** if necessary, assigns feature access codes for the ISDN CO, WATS, and MEGACOM calls.

**Restriction**

When either the 24T1 or the 23PT card is installed in physical slot 0, 3, or 6, the next physical slot, 1, 4, or 7 can only be used for a 1/2/4/6/8 circuit card or another 24T1 or 23PT card. When either the 24T1 or 23PT card is installed in physical slot 1 or 4, the next physical slot, 2 or 5, must be empty. When either the 24T1 or 23PT card is installed in physical slot 7, the next three physical slots, 8, 9, and 10, cannot be used. Clock extraction can only be made from the basic (0) cabinet.

**Feature Interaction**

None

**Capacity**

The system can accommodate the following:

- Maximum of 240 channels per system for the Series 3.
- The maximum number of 23PT cards that may be installed are as follows:
  - Three 23PT cards may be installed in a one cabinet system.
  - Seven 23PT cards may be installed in a two cabinet system.
  - Seven 23PT cards may be installed in a three cabinet system.
  - Seven 23PT cards may be installed in a four cabinet system.



**FIPN**

This feature provides the Fujitsu ISDN Private Network (FIPN) function with feature transparency via digital link.

**Hardware Requirement**

The following hardware is required for this system:

- 23PT card (1 per system).
- CLKS card (1 per system) (slave system).
- Adapter board (1 per span).

**Assignment**

1. **CMC 102** (HIGH) assigns Clock card installation:

- Flag number (P1 = 70).
- Flag set value (P2 = 0 if CLKS card is not installed; P2 = 1 if CLKS card is installed).

**NOTE:** After any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.

2. **CMC 107** (HIGH) assigns:

- Clock number (Priority).
- Network clock extracted 23PT equipment number.

3. **CMC 250** (HIGH) assigns:

- Trunk equipment number.
- Type of trunk.
- Trunk group number.
- Operations mode.
- Signaling.
- Master/Slave mode.

**CAUTION:** Changes to this table will return the circuit parameters at CMC 251 to the default values and remove the changed trunk from CMC 253, Terminating Trunk Groups. Removing a trunk from this table does not remove it from all other table entries. When removing or changing a trunk, check CMCs 251 and 307. A trunk will not be removed from CMC 250 if it is also assigned in CMC 307.

4. **CMC 111** (HIGH) assigns FIPN service timing:

- Service timing ID.
- Timing.

5. **CMC 407** (HIGH) assigns the node number:

- Trunk group number.
- Node number.

**FIPN (Cont'd)**

**Restriction** When either the 24T1 or the 23PT card is installed in physical slot 0, 3, or 6, the next physical slot, 1, 4, or 7 can only be used for a 1/2/4/6/8 circuit card or another 24T1 or 23PT card. When either the 24T1 or 23PT card is installed in physical slot 1 or 4, the next physical slot, 2 or 5, must be empty. When either the 24T1 or 23PT card is installed in physical slot 7, the next three physical slots, 8, 9, and 10, cannot be used. Clock extraction can only be made from the basic (0) cabinet.

**Feature Interaction** None

- Capacity** The system can accommodate the following:
- Maximum of 240 channels per system for the Series 3.
  - The maximum number of 23PT cards that may be installed are as follows:
    - Three 23PT cards may be installed in a one cabinet system.
    - Seven 23PT cards may be installed in a two cabinet system.
    - Seven 23PT cards may be installed in a three cabinet system.
    - Seven 23PT cards may be installed in a four cabinet system.

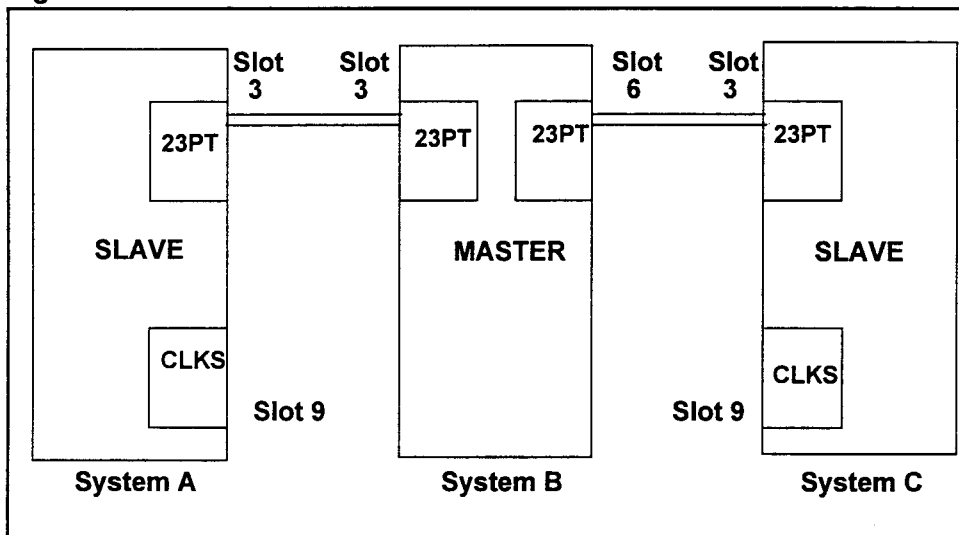
**FIPN APPLICATION**

The following examples illustrate two different applications for FIPN. The first example shows systems using a coordinated station numbering plan and the second shows systems using a non-coordinated station numbering plan. Listed below are the necessary hardware and programming steps required to implement either application.

**Hardware Requirement**

System A and C each require one 23PT and one CLKS card. System B requires two 23PT cards. The 23PT card can be installed in the Basic cabinet and the first expansion cabinet. The CLKS card can be installed in the Basic cabinet only. See Figure 11-1 for card slot locations and connections for the Series 3 systems.

**Figure 11-1. Slot Allocation and Connection for 23PT and CLKS for Series 3**



**NOTE:** For the Series 3, the 23PT should be installed in card slots 0, 3, and 6 if clock extraction needs to be performed. The 23PT should be installed in card slots 0, 1, 3, 4, 6, or 7. The CLKS card should be installed in slot 9 in the Basic cabinet. Cabling between the 23PT and CLKS is not required for Series 3.

**Jumper Setting** Please refer to the Installation Manual for the correct jumper setting for FIPN on the 23PT card.

**Connection Among Systems** FIPN cabling between two systems is similar to the cabling requirements for a T-1 installation. A T-1 adapter is required for each 23PT. Please refer to the Installation Manual for cross-connection information.

### Coordinated Number Plan Application

**Assignment** In this application, node-transparent operation is achieved. A station can dial any 4-digit station as if they were located in the same system.

**NOTE:** For this example, verify that station assignments in System A are 2XXX, stations in System B are 3XXX, and extensions in System C are 4XXX and that feature access codes do not conflict with these station assignments.

Table 11-1 lists the necessary CMCs and their associated values to be programmed. For this example, TGN 31 is used for the link between System A and System B, and TGN 32 is assigned for the link between System B and C. Each CMC is explained in the following section.

**Table 11-1. CMC Assignment for Coordinate Station Number Plan**

CMC	SYSTEM A			SYSTEM B			SYSTEM C		
CMC 100	P1	22	23	P1	22	23	P1	22	23
	P2	3	4	P2	2	4	P2	2	3
	P3	31	31	P3	31	32	P3	32	32
	P4	4	4	P4	4	4	P4	4	4
	P5	1	1	P5	1	1	P5	1	1
	P6			P6			P6		
CMC 250	P1	060-082		P1	160-	120-	P1	160-	
					182	142		182	
	P2	27		P2	27	27	P2	27	
	P3	31		P3	31	32	P3	32	
	P4	3		P4	3	3	P4	3	
	P5			P5			P5		
CMC 107	P1	1					P1	1	
	P2	160					P2	160	
CMC 102	P1	70		P1	70		P1	70	
	P2	1		P2	0		P2	1	

**NOTES:**

1. In this application, **CMC 407**, Node Number Assignment, should not be entered.
2. This application assumes no default data is assigned in the system. In the case where the system has been cold-started with a default data base, REMOVE and/or CHANGE may be necessary.

**CMC 100** In System A, feature number 22 and 23 are assigned with FIPN access codes 3 and 4. **P3**, trunk group number, has been assigned as 31 since both 3XXX and 4XXX calls are routed through this trunk group. **P4**, total number of digits, is 4 which includes the single-digit FIPN access code. The number of digits of access code to be sent, **P5**, is 1.

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**Coordinated Number Plan  
Application (Cont'd)**

- CMC 100 (Cont'd) In System B, feature numbers 22 and 23 are assigned with FIPN access codes 2 and 4. P3 is assigned 31 for access from 2XXX stations and 32 for 4XXX access.
- In System C, FIPN access codes 2 and 3 are assigned over trunk group number 32.
- CMC 250 In **CMC 250**, FIPN trunk equipment numbers are assigned. Note that the equipment numbers for the 23PT are different from the 24T1. For example, for the 23PT card installed in card slot 3, equipment numbers are assigned from 060 to 082.
- The 23PT in System B is configured as a master so P6 is assigned as 1. P6 for System A and System C has been assigned as 2 indicating that these systems are slaves to System B.
- CMC 107 Since System A and C are configured as slaves, network clock extraction is assigned.
- CMC 102 The service flag for network clock extraction should be set to 1 in System A and C.

**Non-Coordinated Number  
Plan Application**

- Assignment** In this application, each system is assigned a unique node number that is used as an access code to a particular system from other systems. For example, if System A is assigned an access code of 80, System B and System C will dial 80 and a station number to access a station in System A. Node numbers should be selected taking into consideration the station numbering plan and feature access codes of the system.
- In this example, node numbers 80, 81, and 82 have been assigned to System A, B, and C respectively. It is assumed that 3-digit station numbers are used in all systems.
- Table 11-2 lists the necessary CMCs and their associated values to be programmed. For this example, TGN 31 is used for the link between System A and System B, and TGN 32 is assigned for the link between System B and C. Each CMC is explained in the following section.

Table 11-2. CMC Assignments for Non-Coordinated Station Number Plan

CMC	SYSTEM A			SYSTEM B			SYSTEM C		
CMC 100	P1	22	23	P1	22	23	P1	22	23
	P2	81	82	P2	80	82	P2	80	81
	P3	31	31	P3	31	32	P3	32	32
	P4	5	5	P4	5	5	P4	5	5
	P5	2	2	P5	2	2	P5	2	2
	P6			P6			P6		
CMC 406	P1	31		P1	31	32	P1	32	
	P2			P2			P2		
	P3	80		P3	81	81	P3	82	
	P4	2		P4	2	2	P4	2	
CMC 407	P1	31		P1	31	32	P1	32	
	P2	80		P2	81	81	P2	82	
CMC 250	P1	160-182		P1	160-182,120-142		P1	160-182	
	P2	27		P2	27	27	P2	27	
	P3	31		P3	31	32	P3	32	
	P4	3		P4	3	3	P4	3	
	P5			P5			P5		
	P6	2		P6	1	1	P6	2	
CMC 107	P1	1					P1	1	
	P2	160					P2	160	
CMC 102	P1	70		P1	70		P1	70	
	P2	1		P2	0		P2	1	

**NOTE:** This application assumes no default data is assigned in the system. In the case where the system has been cold-started with a default data base, REMOVE and/or CHANGE may be necessary.

**CMC 100** In System A, feature number 22 and 23 are assigned with FIPN access codes 81 and 82. **P3**, trunk group number, has been assigned as 31 for both feature number 22 and 23 since station calls for both System B and C are routed through the same TGN 31. **P4**, total number of digits, is 5 which includes the 2-digit FIPN access code. The number of digits of access code to be sent, **P5**, is 2.

In System B, feature number 22 and 23 are assigned with FIPN access code 80 and 82. **P3** is set to 31 for System A access and 32 for System B access.

In System C, FIPN access code 80 and 81 are assigned over TGN 32.

**Non-Coordinated Application  
(Cont'd)**

Feature Access Codes for FIPN in CMC 100 may be assigned without using CMC 406. See Table 11-3. When this method of programming is used, display-equipped telephones and the Attendant Console will not have correct displays.

**Table 11-3. CMC 100 Feature Access Codes for FIPN**

CMC	SYSTEM A	SYSTEM B	SYSTEM C
CMC 100	P1 22 23	P1 22 23	P1 22 23
	P2 81 82	P2 80 82	P2 80 81
	P3 31 31	P3 31 32	P3 32 32
	P4 3 5	P4 3 3	P4 5 3
	P5 2	P5	P5 2
	P6	P6	P6

**CMC 406** When a call is received from a different system (node), a FIPN access code plus a station number are sent over a FIPN trunk. For calls terminated on a node, the FIPN access code delivered over FIPN should be removed. Therefore, in System A, the access code 80 from FIPN calls over TGN 31 should be removed. Likewise, for System B, the access code 81 over TGN 31 and 32 needs to be removed. In System C, 82 should be removed.

**CMC 407** In this application, node numbers must be assigned for all three systems. Node numbers are the FIPN access codes used by other systems; 80 for System A, 81 for System B, and 82 for System C.

**CMC 250** In **CMC 250**, FIPN trunk equipment numbers are assigned. Note that the equipment numbers for the 23PT are different from the 24T1. For example, for the 23PT card installed in card slot 3, equipment numbers are assigned from 160 to 182.

The 23PT in System B is configured as a master so P6 is assigned as 1. P6 for System A and System C has been assigned as 2 indicating that these systems are slaves to System B.

**CMC 107** Since System A and System C are configured as slaves, network clock extraction needs to be assigned.

**CMC 102** The service flag for network clock extraction should be set to 1 in System A and System C.

**Restriction** See the Feature Interaction section.

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**FIPN Application (Cont'd)****Feature Interaction**

The following considerations should be made when using these features:

- **Attendant Camp-On across a FIPN link:** If two systems have the same station numbering plans (non-coordinated numbering plan such as the default numbering plan), node numbers must be assigned for each system in order to use the camp-on feature in the remote system. The node number for the near side must be the feature access code for the far side and vice versa. This allows the attendant to access the FIPN trunk and ring the busy FIPN station.
  - **DID over a FIPN link:** To implement this feature, each system must have a different (unique) station numbering plan.
  - **Character dialing a data call across a FIPN link:** A FIPN access code different from the first digit of the remote station number is preferred. If the access code is the first digit of the remote station number, such as 3, then the following instructions apply when placing a data call to a data station across the FIPN. For this example, station number 3962 will be used.
    - At the first “Destination” prompt when setting up a data call, enter 3 (or the first digit of the remote station) and then press Enter.
    - At the second “Destination” prompt, enter the last three digits of the station number, such as 962, then press Enter.
- If a separate access code, such as 10, is used, the following instructions apply:
- At the first “Destination” prompt, enter 10 and press Enter.
  - At the second “Destination” prompt, enter 3962 and press Enter.
- **Call Forwarding over a FIPN link:** Calls cannot be forwarded across the FIPN network using the extension number of a remote FIPN station. A station user is able to activate Call Forwarding All Calls via the speed calling feature only.



**DIALED NUMBER  
IDENTIFICATION SERVICE  
(DNIS)**

DNIS includes the following functions:

- **DNIS Routing:** System automatically routes DNIS calls to predetermined extensions, attendant, or outside party via CO/tie line.
- **DNIS Name Display:** When a DNIS call terminates, the name corresponding to the DNIS number is displayed.
- **DNIS Priority:** When DNIS calls terminate to ACD Pilot 1, ACD queuing is done by their priority level.

**Hardware Requirement**

Verify that the trunk card is seated in an appropriate card slot.

**Assignment**

1. **CMC 250 (HIGH)** assigns the trunk as DID:

- Trunk equipment number.
- Type of trunks.
- Trunk group number.
- Operation mode.
- Signaling.
- Start mode.

2. **CMC 102 (HIGH)** assigns a DNIS day/night destination.

- Flag (197).
- Value (0 = day/night same destination; 1 = day/night different destination).

**NOTE:** After any changes are made, either a HOT restart must be performed, or each individual phone where changes apply must be unplugged and plugged back in.

3. **CMC 460 (HIGH)** assigns DNIS, TGN:

- Trunk group number.
- DNIS activation flag.
- Number of receiving digits of DNIS.
- Routing extension number.

4. **CMC 461 (LOW)** assigns DNIS number:

- DNIS number.
- Terminating extension, attendant or Speed Calling access code plus Speed Calling number.
- Priority Level (eight levels).

**NOTE:** If system flag (CMC 102, flag 197) is 0, this assignment is applied for both day and night. If the flag is 1, the assignment is for day only and CMC 464 assigns the night destination.

**DIALED NUMBER  
IDENTIFICATION SERVICE  
(DNIS) (Cont'd)**

5. **CMC 464 (LOW)** assigns the DNIS destination for night.

- DNIS number.
- Terminating extension, attendant or Speed Calling access code plus Speed Calling number.
- Priority Level (eight levels).

**NOTE:** DNIS numbers not assigned in CMCs 461 and 464 are routed to the number assigned in CMC 461. Only when the system flag (CMC 102, flag 197) is set to 1 is the assignment in CMC 464 effective.

6. **CMC 462 (LOW)** assigns DNIS name:

- DNIS number.
- DNIS name.

7. **CMC 463 (HIGH)** assigns the music on hold source for the DNIS number.

- DNIS number.
- Tone source flag.
- Tone pattern/trunk DN/message ID.

**Restriction** If the received DNIS number is not registered in CMC 461, or no digit is received, the incoming call is terminated to a station specified in P4 of CMC 460.

**Feature Interaction** None

**Capacity** The system has the following capacities:

- Maximum of 1000 DNIS codes.
- Maximum of 10 DNIS digits per code.
- Maximum of 15 characters per DNIS name.
- Maximum of 8 DNIS priority levels.

**UPGRADE PROCEDURE -  
UPGRADING TO A  
DIFFERENT FEATURE  
PACKAGE**

This procedure is written to describe an upgrade from one feature package to another. If upgrading to a new release of the same feature package, refer to the Upgrade Procedure - Upgrading Within the Same Feature Package. To upgrade to a different feature package, PcMP must be used.

**Hardware Requirement**

The following hardware is required to support the PcMP service:

- IBM compatible PC.
- 2 floppy disk drives or 1 floppy disk drive and 1 hard disk.
- Color or monochrome monitor.
- 512K of memory or more.
- Printer (serial/parallel).
- Serial port for communication.
- Serial or parallel port for printer.

(The operating system must be at DOS 3.1 or higher for 5-1/4 inch disks, or DOS 3.2 or higher for 3-1/2 inch disks. The PcMP revision must be up to date to cover all the new features.)

**Assignment**

The upgrade procedure can take up to several hours depending on the size of the customer data base. This time could possibly be shortened by changing the baud rate of the serial ports on the Series 3 and PC to 4800 bps.

1. If an additional floppy drive is equipped, use **CMC 922** to save the existing data base to floppy disk. Do this twice; once with the original disks and once with the backup disks. This step will take a few minutes and will not affect system operation.

**NOTE:** In the event of a failure during the upgrade procedure, it may be necessary to reinstall the original cards. This saved file can then be LOADED back into the system using CMC 921 to reduce system downtime.

If a floppy disk drive is not equipped, save the existing data base using the SAVE function of PcMP. If it becomes necessary to reinstall the original cards this file can be LOADED back into the system to reduce system downtime. This procedure can take 20 - 60 minutes depending on the customer data base (changing the baud rate of the PcMP serial port can significantly reduce this time).

2. Consult the Site Log and make a list of all the CMCs that have been changed from the default configuration. Include the following CMCs even if they were not changed from the default configuration:
  - 100
  - 104
  - 107 (only if 24T1/23PT and CLKS cards are installed.)
  - 200 - 204
  - 206
  - 210 - 213

**Assignment (Cont'd)**

- 220 - 225 (only if data switching or a hotel/motel printer in conjunction with a DIU is being used.)
- 230 - 232
- 250 - 251
- 280 - 281 (only if an application processor is installed.)
- 702

Some CMCs may not be available in all feature packages. Only include CMCs applicable to the feature package in the system being upgraded. Keep in mind that extension speed call numbers and REP DIAL assignments WILL NOT be saved. The extension users should make note of these assignments to reregister them after the upgrade.

3. Do a selected FORMSAVE of all CMCs previously noted.
4. When FORMSAVE is complete, turn the system power OFF and perform the following three steps:
  - Replace the CPU card with the feature package.
  - Set the SCPU DIP switches as follows:
    - (4) DDT1 - CLOSED (right)
    - (3) DDT0 - CLOSED (right)
    - (2) N/A
    - (1) N/A
5. Turn the system power back ON.
6. If the system was FORMSAVED at 2400 bps, go to step 9. If it was FORMSAVED at 4800 bps, change the PcMP serial port to 2400 bps.
7. Connect the PcMP port to I/O 1 and establish communication with the system via Interactive Update. With CMC 900, display serial port 0 and change P2 from a 6 to a 7. This will change the baud rate on port 0 to 4800 bps. Exit from system programming.
8. Change the PcMP serial port back to 4800 bps and connect the PC to I/O 0.
9. BEFORE YOU PERFORM THIS STEP BE AWARE THAT THE PROCESS, ONCE INITIATED, CAN TAKE SEVERAL HOURS DEPENDING ON THE CUSTOMER'S DATA BASE. DURING THIS TIME THE SYSTEM IS INOPERABLE.

Perform a FORMLOAD using the original FORMSAVED data base. It is recommended that you create an audit file in the event an error occurs during formloading. This is an option that you will be prompted to enter while initiating the FORMLOAD procedure.

10. Use CMC 700 to enter the correct time and day once FORMLOAD is completed.

**Assignment (Cont'd)**

11. Have extension users reregister their speed call and repertory dialing assignments and verify proper system operation. The upgraded/updated data base can now be saved with the PcMP SAVE operation and onto an optional disk. This will create a file which can be quickly loaded in the unlikely event of a system failure.
12. Move the CPU DIP switches to the following positions:
  - (4) DDT1 - OPEN (left)
  - (3) DDT0 - CLOSED (right)
  - (2) N/A
  - (1) N/A

If the floppy disk drive is not equipped, move the SCPU DIP switches to the following positions:

- (4) DDT1 - CLOSED (right)
- (3) DDT2 - CLOSED (right)
- (2) N/A
- (1) N/A

Perform a NO KEPT RESTART. From PcMP, perform LOAD to reload the customer ODDB with all prior information.

**UPGRADE PROCEDURE -  
UPGRADING WITH THE  
SAME FEATURE PACKAGE**

This procedure is written to describe an upgrade from one release to another within the same feature package.

**Hardware Requirement**

No additional hardware is required to complete this procedure.

**Assignment**

The procedure disables normal system operation for approximately 30 minutes. It is recommended that the upgrade procedure take place after the customer's business hours.

1. Use **CMC 904** to display the software version operating the system. The display should show as follows:

XXX Y.Y ZZZZZ

The new disks for the upgrade should have a version level, SV-XXX Y.Y. The three XXX characters should exactly match the first three characters displayed by CMC 904. If this is not the case, the system must be upgraded using the PcMP FORMSAVE and FORMLOAD procedures.

2. If an additional floppy disk drive is equipped, CMC 922 saves the existing data base to floppy disk. Do this twice; once with the original disks and once with the backup disks. This step will only take a few minutes and will not affect system operation.
3. If an additional floppy disk drive is not equipped, save the existing data base using the SAVE function of PcMP. If it becomes necessary to reinstall the original cards this file can be LOADED back into the system to reduce system downtime. This procedure can take 20 - 60 minutes depending on the customer data base (changing the baud rate of the PcMP serial port can significantly reduce this time). When saving is complete, turn the system power off and replace the SCPN2M or SCPN4M with the new release feature package.
4. If an additional floppy disk drive is equipped, move the CPU DIP switches to the following positions:
  - (4) DDT1 - OPEN (left)
  - (3) DDT2 - CLOSED (right)
  - (2) N/A - CLOSED (right)
  - (1) N/A - CLOSED (right)

Perform a NO KEPT RESTART. This will load the new release into the system followed by the customer ODDB just as it was previously.

5. With **CMC 904**, verify that the software version matches the SV designation on the disks when the system returns to operational status.
6. Use **CMC 700** to reset the system time.

**Restriction**    None

**Feature Interaction**    None

**Capacity**    None

**VOICE MAIL INTEGRATION**

This feature allows integration of voice mail systems (VMS) from other vendors. The voice mail feature sends and receives information between the PBX system and VMS. The information is sent and received via tip and ring interface using inband DTMF signaling.

**Hardware Requirement**

Verify that an appropriate number of 8SLC cards are seated and a single line port is programmed and cross-connected for each port used in the voice mail system. Voice mail ports should be connected to ACD ports of the Series 3 system. The following voice mail systems can integrate with the Series 3:

- Integrated Voice System (IVS).
- Cindi (Genesis).
- VMX 100 (VMX).
- Centigram.
- Microlog Callstar 1000 or 2000.

Installation of the voice mail system may involve the following operations:

- Preparation of the voice mail system data base.
- Configuration of the system switches.
- Hookup and checkout of a dumb terminal.
- Installation of the voice mail software and tailoring of the system to meet the customer's specifications.

**Assignment**

Data base assignment will depend on the voice mail system being installed. For information regarding your specific installation, call the Technical Assistance Center at (800) 242-3227.

**Restriction**

None

**Feature Interaction**

All Call Forwarding features can be activated to redirect calls to the voice mail mailbox. After a message is left in the voice mail mailbox, the Message Waiting feature can be activated in the PBX to leave a message waiting light for the user. First, verify that the voice mail system being used is an integrated system and that the Message Waiting feature is available. If available, automatic work time should be specified.

**Capacity**

One VMS per system can be accommodated. The number of assignable ports will be determined by the voice mail system. Ports may be partitioned in a tenant environment.



Table 12-1. Feature Support Timers

FEATURE	SUPPORT TIMER	TIMER ID	BASE UNIT	DEFAULT VALUE	DEFAULT VALUE
Least Cost Routing	• Auto camp-on registration timer	98	1 sec	5 sec	
	• LCR cut-through warning burst duration timer	100	100 msec	200 msec	
	• LCR cut-through warning burst activation timer	103	100 msec	1.1 sec	
	• LCR #1 to #2 off-hook advance timer	94	1 sec	31 sec	
	• LCR #2 to #3 off-hook advance timer	95	1 sec	31 sec	
	• LCR #1 to #2 on-hook advance timer	96	10 sec	190 sec	
	• LCR #2 to #3 on-hook advance timer	97	10 sec	190 sec	
• Second dialtone pre-pause timer (LCR/SCC)	38	1 sec	1 sec		
Miscellaneous Features	• Attendant overflow to station timer	53	1 sec	61 sec	
	• DISA-Standard reorder tone auto disconnect	63	1 sec	11 sec	
	• DIAS-Standard no answer disconnect	154	1 sec	61 sec	
	• Incoming tie/DID trunk DTMF receiver reseizure	65	1 sec	2 sec	
	• Repertory dialing pause timer	76	200 msec	2 sec	
	• SMDR call threshold	2	1 sec	16 sec	
	• Speed call auto pause timer	62	100 msec	2.1 sec	
	• Attendant voice message answer timer	145	1 sec	7 sec	
Modem Pooling	• Modem pre-activate timer	82	1 sec	6 sec	
	• Modem initiation timer	83	1 sec	11 sec	
	• Modem guard timer	84	100 msec	1.1 sec	
	• Modem release timer	86	100 msec	1.1 sec	
	• Modem reserve timer	99	10 sec	190 sec	
	• Modem ringing timer	106	100 msec	2.1 sec	
Paging	• External page pre-warning tone burst	45	1 sec	2 sec	
	• Internal page pre-warning tone burst	29	1 sec	2 sec	
	• Internal page guard timer	42	1 sec	1 sec	
Property Management Sys.	• PMS AP maid status response timer	111	1 sec	7 sec	
Proprietary Station Features	• Pre-selection timer	24	1 sec	4 sec	Suggest 1 second
	• Display set timers				
	– Account code "DONE"	46	100 msec	1.1 sec	
	– Feature verification	47	1 sec	31 sec	
	– Silent message confirmation	57	1 sec	4 sec	Max time for verify
					DO NOT CHANGE
					DO NOT CHANGE

Table 12-1. Feature Support Timers (Cont'd)

FEATURE	SUPPORT TIMER	TIMER ID	BASE UNIT	DEFAULT VALUE	
Voice Calling	• Pre Waring tone burst	34	1 sec	2 sec	
	• Called party release timer	36	1 sec	1 sec	
Automatic Call Distribution	• First announcement threshold	54	1 sec	7 sec	
	• Music on hold duration	56	1 sec	31 sec	
	• Don't answer recall	55	1 sec	181 sec	
	• auto Answer zip-tone	105	100 msec	700 msec	
	• Limited work time	104	5 sec	60 sec	
	• ACD queue level up timer	137	5 sec	30 sec	
ACD Report Manager AP	• Add to ACD group message timer	108	1 sec	7 sec	
	• Disconnect message resend timer	109	1 sec	6 sec	
	• ACD message receive timer	110	1 sec	6 sec	
Call Forwarding	• Don't answer jump timer	12	1 sec	13 sec	3 ring; increase in 4s incr.
	• all calls to CO sending burst	107	100 msec	700 msec	
Call Hold	• Attendant long hold recall	51	1 sec	61 sec	
	• Station long hold recall	18	1 sec	181 sec	
	• Station ICM/SL long hold recall	43	1 sec	181 sec	
Call Park	• Attendant park recall	49	1 sec	31 sec	Suggest 181 sec (3 min)
	• DSS park recall	20	1 sec	31 sec	
	• Station park recall	17	1 sec	61 sec	
Call Transfer	• Attendant don't answer recall	52	1 sec	31 sec	
	• Station don't answer recall	22	1 sec	31 sec	
Call Waiting	• Station-to-station tone burst duration	25	100 msec	200 msec	DO NOT CHANGE
	• Direct-in line to station tone burst duration	27	100 msec	200 msec	
	• Direct-in line call waiting repeat timer	44	1 sec	2 sec	
	• Incoming call waiting burst duration	152	100 msec	3 sec	

Table 12-1. Feature Support Timers (Cont'd)

FEATURE	SUPPORT TIMER	TIMER ID	BASE UNIT	DEFAULT VALUE	
Camp -On	• Attendant camp-on recall	48	1 sec	31 sec	Suggest 61 sec (1min) Suggest 61 sec (1 min) Suggest 61 sec (1 min)
	• DSS camp-on recall	19	1 sec	31 sec	
	• Station camp-on recall	40	1 sec	31 sec	
	• Station camp-on recall	14	1 sec	31 sec	
	• Station callback cancel	37	1 sec	11 sec	
	• Trunk callback cancel	15	10 sec	infinity	
	• Station camp-on purge timer	16	10 sec	infinity	
	• Trunk camp-on purge timer	147	1 sec	31 sec	
	• Camp-on recall timing for transferred call				
Executive Override/ Attendant Verify	• Override tone burst duration	28	1 sec	2 sec	
General Purpose Station Feature Timers	• Switchhook flash	1	50 msec	1.05 sec	DO NOT CHANGE
	• confirmation tone burst duration	10	100 msec	700 msec	
	• confirmation tone timeout	35	1 sec	11 sec	
	• Feature registration guard timer	11	1 sec	2 sec	DO NOT CHANGE DO NOT CHANGE
	• Service registration reminder	23	100 msec	700 msec	
	• busy tone/reorder tone duration timer	30	1 sec	31 sec	DO NOT CHANGE Time window for X-hold Starts after 3 ring cycle
	• Recalled station locking	39	1 sec	2 sec	
	• Common hold wait	60	100 msec	1.6 sec	
	• Delayed ringing start	61	1 sec	11 sec	
	• Wake-up answer confirmation tone duration	64	1 sec	21 sec	

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FUJITSU BUSINESS  
COMMUNICATION SYSTEMS

# ***SERIES 3***

## **DIU USER MANUAL**

### **Package 2**

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## GENERAL

The Series 3 system, in addition to its voice calling features, provides data communication capabilities between terminals, computers, work stations, or other associated devices through the use of a Data Interface Unit (DIU). A DIU can be used with a Digital Station (DS) or CT-10, CT-20, or CT-30 telephone, in which case data calls are placed, received, and monitored from the telephone. However, a telephone is not required. A DIU can be connected directly to a terminal, printer, modem, or other data device, so that data calls can be received and placed, via keyboard dialing, from the associated equipment.

A DIU-equipped terminal or other data device can accommodate asynchronous or synchronous communication in half or full duplex operation with speeds of up to 19,200 bits per second (bps). To transmit and/or receive data, the DIU and its terminal must be set with parameters which are compatible with those of the data terminal with which it is to communicate.

The access codes noted in this user manual are the standard system codes. However, the access codes required to implement features in each particular system may differ.

This user manual contains information regarding the operation of a DIU and data terminal with or without an associated telephone.

## ORGANIZATION

The organization of this manual is as follows:

**Chapter 1, Introduction.** Describes the organization of this manual, with a brief description of each chapter.

**Chapter 2, Data Peripherals.** Describes data switching operations, and the configuration of the Data Interface Unit (DIU).

**Chapter 3, Data Switching Features.** Lists the data switching features available with the system.

**Chapter 4, Installation.** Provides installation instructions for the DIU, with or without an associated telephone.

**Chapter 5, DIU Operation (without a Telephone).** Describes stand-alone DIU feature operation.

**Chapter 6, DIU Operation (with a Telephone).** Describes DIU feature operation when the DIU is associated with a telephone.

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### INTRODUCTION

With the Data Switching option, the system can transmit simultaneous voice and data communications. The data option requires:

- DIU as a stand-alone unit.
- Digital Station (DS) or CT-10/20/30 coupled with a DIU.

A high speed, end-to-end, digital nonblocking communication path is provided in the system.

The data option can accommodate asynchronous or synchronous data in half or full duplex operation at speeds up to 19.2 kbps.

The system's data communications network uses a "Star" type approach to network design. The system acts as the central point for interconnecting different users for the processing of data information.

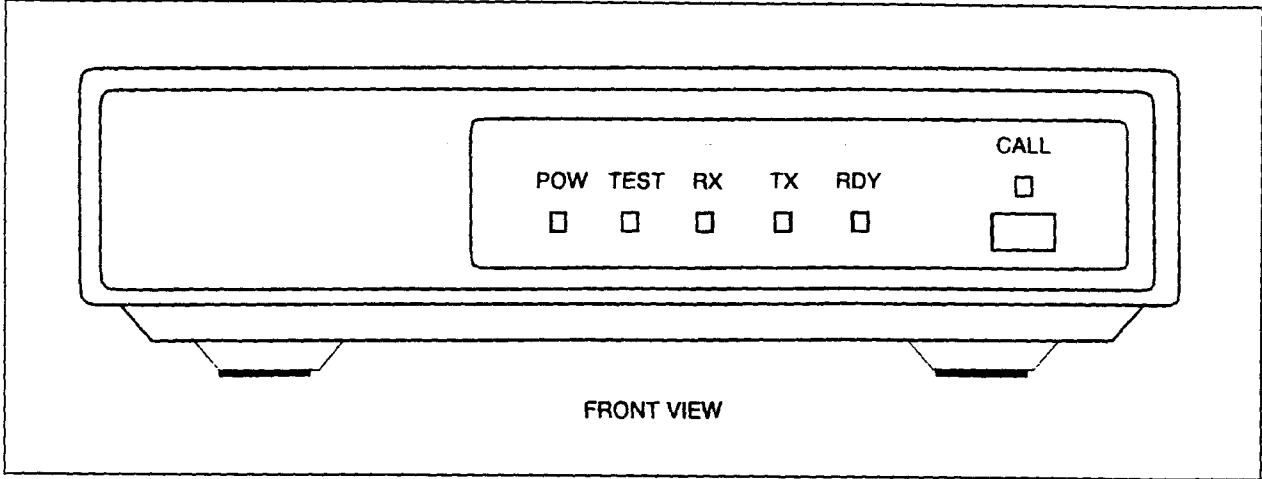
For each data station, the following parameters can be assigned through the data base software:

- Data transmission modes:
  - Data terminal speed (up to 19.2 kbps)
  - Synchronous or asynchronous
  - Half or full duplex
- Character dialing mode:
  - Stop bit
  - Word length
  - Parity
- Call control mode:
  - Originate mode (automatic or manual)
  - Answer mode (automatic or manual)
  - Disconnect mode (automatic or manual)
- RS-232C signal mode:
  - DTR (Data Terminal Ready)
  - RTS (Ready to Send)
  - RI (Ringer Indicator)
  - DSR (Data Set Ready)

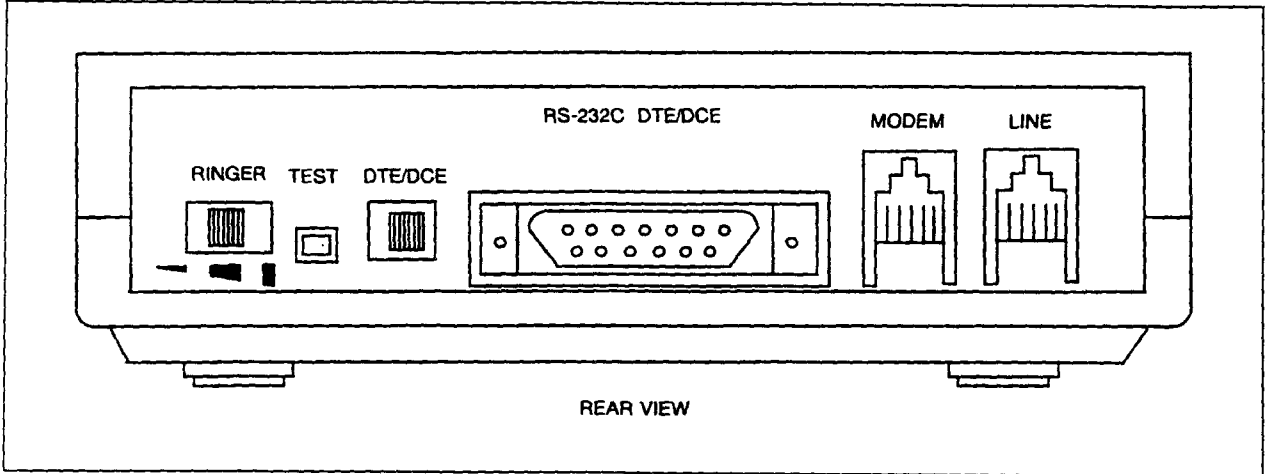
Data terminal speed and answer mode can be changed from the proprietary telephone associated with the DIU.

**Data Interface Unit** Figures 2-1 and 2-2 show the Data Interface Unit used in the data switching operation.

**Figure 2-1. Data Interface Unit (DIU) Front View**



**Figure 2-2. Data Interface Unit (DIU) Rear View**





## INTRODUCTION

The following paragraphs list the data switching features available with the system. Instructions for implementing these features can be found in Chapters 5 and 6 of this manual.

### Add Data Call

This feature provides the station user with the ability to add a data call to an existing voice conversation. To set up a data call with a voice conversation, the station user presses the programmable **add data** button or presses the **DATA CALL** button and dials an access code. Pressing the add data button changes the LCD display to data information without interrupting the voice transmission during data call set-up.

**NOTE:** Programmable buttons are referenced by lower case, bold type. Fixed or default buttons are shown in upper case, bold type.

### Alternate Telephone and Keyboard Dialing

This feature allows a user to originate a data call by dialing from the EKT keypad or entering the phone number from a data terminal. The station must first be set for keyboard dialing via CMC command.

### Alternate Voice/Data Communication

This feature allows a proprietary telephone user to switch from a voice to a data call and vice versa while the call is in progress. The voice line must be associated with a data line (DIU) via an appropriate pooled modem. The following operations are possible:

- **Voice to Data (Originate/Incoming):** Upon completion of the voice portion of a call, the user can press the programmable **talk/data** button to send or receive data. The call is transferred to the data terminal as a data call. The **talk/data** button is ignored if the modem pool is busy. To disconnect the data call, press the **DATA CALL** button.
- **Data to Voice:** Upon completion of data communication, the user can press the **talk/data** button to transfer the call to the voice station (EKT). When the data terminal is busy (sending or receiving data), the **talk/data** button is ignored.

### Automatic Answer

When a call is placed to a data set which is in Automatic Answer mode, the data set can automatically answer the call. The data set must be placed in the DTR condition to operate in Automatic Answer mode.

- Call Control Mode**     The system provides three different call control modes in either automatic or manual operation. The three calling modes are originate, answer, and disconnect.
- **Originate:** Data calls can be set up on the system data stations in either Auto Originate or Manual Originate mode. The Auto Originate or Manual Originate option is set in the data base for each data station. The stand-alone DIU must be set up for data hotline to originate a call. Auto Originate provides one-button access to only one data station. Auto Originate operates just like one-button dedicated speed calling; however, only one data station may be accessed. Calls can be released using Manual Disconnect only. Manual Originate requires the input of the receiving station number.
  - **Answer:** When an incoming call is placed to a telephone with a DIU, or a stand-alone DIU in the Auto Answer mode, the data set can automatically answer the call. This option is set in the data base and can be changed from Auto Answer to Manual Answer by using the Data Change feature. Manual Answer requires the user to press the **DATA CALL** feature button to answer a data call.
  - **Disconnect:** Auto Disconnect is a data base selected option. When the remote party disconnects a data call, the data station automatically disconnects from the call. In the manual mode, both stations must disconnect from the call independently.

**Data Call Detail Recording**

Data Call Detail Recording (DCDR) provides a local hard copy printout of statistics of outgoing calls. DCDR is used to manage expenses and identify unauthorized calls. The following information is printed for every outgoing call:

- Data call identification.
- Time of call origination.
- Call duration (hours, minutes, seconds).
- Originating station number.
- Trunk number.
- Calling party identification.
- Directory number dialed.
- Account code.

DCDR also provides a screening capability for the following:

- Account code calls only.
- Toll calls only.
- Overtime calls only.
- Trunk selection.
- Station selection.
- Modem group screening.

If the outgoing call satisfies any of the screening items, the communication information is output to the printer connected to the RS-232C port after the call is completed.

DCDR is provided in addition to SMDR for voice calls. In the case of simultaneous voice/data communication, DCDR and SMDR are output separately.

**Data Call Set-Up (External)  
via Modem Pooling**

This feature allows a local data terminal to connect to a remote data terminal through a conventional analog modem which is pooled in the system. Data call set-up using a telephone and terminal keyboard are available with this feature. The data call set-up operation is similar to that of an internal data call except for the need to dial a trunk access code and outside directory number.

Modems are arranged in groups, each group having the same attributes. Attributes are:

- Communication mode (full or half duplex).
- Data speed (baud rate).
- Modem type (15 types).
- Operation mode (incoming, outgoing, or bothway).

When the user places a data call to a remote data terminal, the system automatically selects a modem from a modem group having the same attributes as the calling data station. On an incoming call, the system selects a modem from the modem group with the same attributes as the called data station.

To originate a call from an EKT, activate Data Terminal Ready (DTR) on the data terminal and press the **DATA CALL** button. Dial the CO access code and the outside station directory number. The system selects the modem with appropriate attributes for the originating data station. When the called data station answers the call, data communication begins.

For incoming data calls, two answering methods are possible; automatic or manual. In automatic mode, the call is received directly by the data station via Direct-In Line, DID, or DISA. In manual mode, the outside call arrives at a voice station and is transferred to the data station by Alternate Voice/Data procedures (see the Alternate Voice/Data Communication feature in this chapter).

**Data Call Set-Up (Internal)  
with DIU**

Data speeds up to 19.2 kbps, synchronous or asynchronous, can be switched internally between proprietary telephones equipped with a DIU (Data Interface Unit), or a stand-alone DIU unit. An RS-232C cable and connector are used for interface between the DIU and the data terminal. The **DATA CALL** and **VOICE/DATA MODE** feature buttons are used to initiate and display a data call. The **DATA CALL** feature button initiates the data call. The **VOICE/DATA MODE** feature button changes the instrument LCD display from voice call information to data call information or data to voice call information.

**Data Call Set-Up (Internal)  
with Terminal Keyboard**

This feature allows a user to make an internal data call with a keyboard attached to an asynchronous ASCII terminal with TTY protocol. The call is originated by pressing the **DATA CALL** button on the data extension, or DIU. The data station monitor then prompts for a destination number. The user enters the desired station number and follows with a carriage return (CR). The system rings the target data station and data communication begins. The system provides error codes on the data station monitor for abnormal operations, such as Busy Call, Illegal Number, Protocol Mismatch, and Dial Time Out.

The Character Trunk card (4CHT) is required for this feature. The attributes of the calling and called data terminals must be the same.

**Data Call Set-Up (Internal) by  
Voice Port**

This feature allows station users to set-up data calls by dialing the station directory number of the instrument paired with the data terminal, instead of dialing the desired data terminal directory number.

When a data call is initiated by pressing the **DATA CALL** button and then dialing the station number, the display shows an asterisk (\*) and the station number. The display will then show an asterisk and the associated data terminal number.

**Data Class of Service**

DCOS (Data Class of Service) allows or denies data stations access to station features. DCOS is available in both Day Class of Service and Night Class of Service. Data and voice Classes of Service are identical for a given station number.

**Data Hotline**

This feature allows users at data stations to automatically place data calls to a predetermined data station without dialing. The originating Data Hotline station can receive calls from another data station, but is prohibited from placing calls to any data station other than the predetermined station. The predetermined data station must be an internal station. A stand-alone DIU cannot initiate a call unless it is programmed as a hotline and also programmed for Auto Originate. Auto Originate may be used when the maximum number of data hotlines is exceeded.

**Data Least Cost Routing (LCR)**

This feature is similar to that for voice calls. With LCR, the system chooses the most cost effective outgoing trunk based on the outside number dialed. After the outgoing destination number is dialed, the LCR stores and examines the number on the basis of the area and/or office code used. The LCR then chooses the proper trunk from a preprogrammed route table which can contain up to ten trunk group choices. The system contains two route tables:

- One table contains fifteen office code routes.
- The other table contains fifteen routes for either area codes or office codes within an area code (area/office codes).

The LCR class of service levels determine the caller's ability to advance immediately through the trunk groups listed in the route table.

**NOTE:** With LCR, trunk queuing cannot be activated.

A feature number allows access to one of the following:

- Only to the first trunk group in the route table.
- All trunk groups except the last trunk group in the table.
- All trunk groups in the table.

Multi-Digit Toll Restriction and Toll Restriction are applied to outgoing calls through this feature.

**Data Station Flexible Numbering Plan**

The data station numbers are assigned in the same manner as voice station numbers. An individual number is assigned to a voice or data station under the flexible numbering plan. The default data base assigns station numbers to each data terminal. These can be changed to accommodate individual user needs. One- to four-digit numbering is used in the system.

**Data Status Attribute Change**

This feature allows users to change the attributes of data terminals. Users may change any of the following attributes:

- Data speed (110-19200 bps).
- Communication mode (half or full duplex).
- Stop bit, word length, parity bit, echo.
- Originate mode (auto or manual).
- Answer mode (auto or manual).
- Disconnect mode (normal or forced).
- Modem type (0-15).

This feature is activated by pressing the **DATA CALL** feature button, then dialing an access code, the attribute number, and the new attribute value. The attributes can also be changed via the data terminal keyboard.

- One feature button on each telephone with DIU.

**Data Terminal Group Hunting**

This feature allows data stations to be assigned to hunt groups for data calls. When a call is placed to a busy data station in a hunt group, the system automatically initiates a search among the hunt group members to find and establish a connection with the first available station. The following types of hunt groups can be established:

- **Circular Hunt Group:** The hunting sequence for a non-busy station starts with the called data station and then searches in a prearranged order through all data stations in the hunt group to find an available station. The hunt continues in a full circle back to the original station and will try that station a second time before returning a busy tone to the caller.
- **Terminating Hunt Group:** The hunting sequence for a non-busy station starts with the called data station and then proceeds through the hunt group data stations to find an available station. The hunting sequence ends at the last station in the hunt group; therefore, a call placed to any hunt group station except the first one will not make a complete search of all available data stations.
- **Pilot Hunt Group:** The hunting sequence for a non-busy station begins only when the pilot number is dialed. The pilot number is assigned as the first number in the hunt group. The hunting sequence ends at the last station in the hunt group. The pilot station is not rung a second time.

**Data Traffic Measurement**

This feature provides data communication traffic measurements by Trunk Group Number (TGN) or pooled modem group ID (MGID). The system calculates usage ratios for the TGN/MGID resources and displays them through command entry facilities. Activation of the traffic measurement feature is accomplished via CMC 600 (to specify the resource to be measured), CMC 601 (to start and stop the measurement), and CMC 602 (to display the measurement information).

Traffic density is displayed as an average one hour time frame of TGN/MGID usage, checked every five seconds by the system. Traffic density is stored in a ten hour storage area. When the storage area fills with ten time frames, the data in the storage area is transferred to a buffer and the storage area is cleared.

**Individual Modem Access**

This feature allows a user to designate a specific modem within a modem pool for an outgoing data call. This feature will generally be used for maintenance purposes.

To initiate the individual modem access, press the **DATA CALL** feature button, dial the feature access code and the modem group ID and modem ID. The remainder of the procedure is the same as for a standard data call.

The selected modem is forcibly connected even if the attributes of the modem do not match with the originating data station. This feature can be restricted by COS.

**Simultaneous Voice/Data Communications**

This feature provides simultaneous voice/data communications to the user at the telephone with DIU. Voice call operations are unchanged. There is no interruption of either voice or data transmission during simultaneous voice/data calls.

**Subordinate Data Call**

This feature allows a user to add a data call to an existing internal voice conversation. The operation is performed by using the programmable add data feature button set-up by system data base commands; or with the **DATA CALL** feature button and the feature access code. In either case, the destination station number need not be dialed.

Subordinate Data Calls can be set up in the following voice port situations:

- During internal voice conversation.
- During internal voice conversation with held outside call.
- During internal voice conversation with held tie trunk call.
- During internal voice conversation with held internal call.



## PROCEDURE

If your terminal is not connected to a Data Interface Unit (DIU) or must be moved to a new location, you may wish to connect the devices yourself. To connect a terminal to the DIU associated with your telephone, proceed as follows:

Gather the following parts:

- Digital Station or CT-10, CT-20, or CT-30 telephone. (Only required when the telephone is associated with the DIU.)
- DIU.
- Terminal, work station, modem or computer and any optional associated devices, such as a printer.

**NOTE:** If the DIU is to be connected to a modem, the DTE/DCE switch on the back of the DIU must be set to DCE.

- Terminal-to-DIU cable.

**NOTE:** This cable should be equipped with a standard RS-232C connector which will plug into the DIU. The standard specifications define an RS-232C as 25 conductors or pins. However, a 4, 7, or 12 conductor cable may be used, depending on the application used within your system and the extent to which it supports the RS-232C connection.

**PROCEDURE (Cont'd)**

Table 4-1 contains the entire pin configuration of the RS-232C port on the DIU. You may use this chart to verify the compatibility of your terminal with the DIU.

**Table 4-1. RS-232C Pin Configuration**

PIN	SIGNAL	DESCRIPTION
1	FG	Protective Ground
2	TD	Transmitted Data
3	RD	Received Data
4	RTS	Request to Send
5	CTS	Clear to Send
6	DSR	Data Set Ready
7	SG	Signal Ground (Common Ground)
8	RLSD	Received Line Signal Detector
9		
10		
11		
12		
13		
14		
15	ST2	Transmission Signal Element Timing
16		
17	RT	Receiver Signal Element Timing
18		
19		

Table 4-1. RS-232C Pin Configuration (Cont'd)

PIN	SIGNAL	DESCRIPTION
20	DTR	Data Terminal Ready
21		
22	RI	Ring Indicator
23		
24		
25		

**PROCEDURE (Cont'd)**

**NOTE:** If you are connecting the DIU to a modem, you may be required to switch Pin 2 (Transmitted Data) with Pin 3 (Received Data). Consult with your Data Communications Coordinator for further information.

Inspect all parts previously listed. If any of the parts appear to be damaged, do not proceed. Contact your Data Communications Coordinator for replacements.

Inspect the location for the terminal. The location should be equipped with the following:

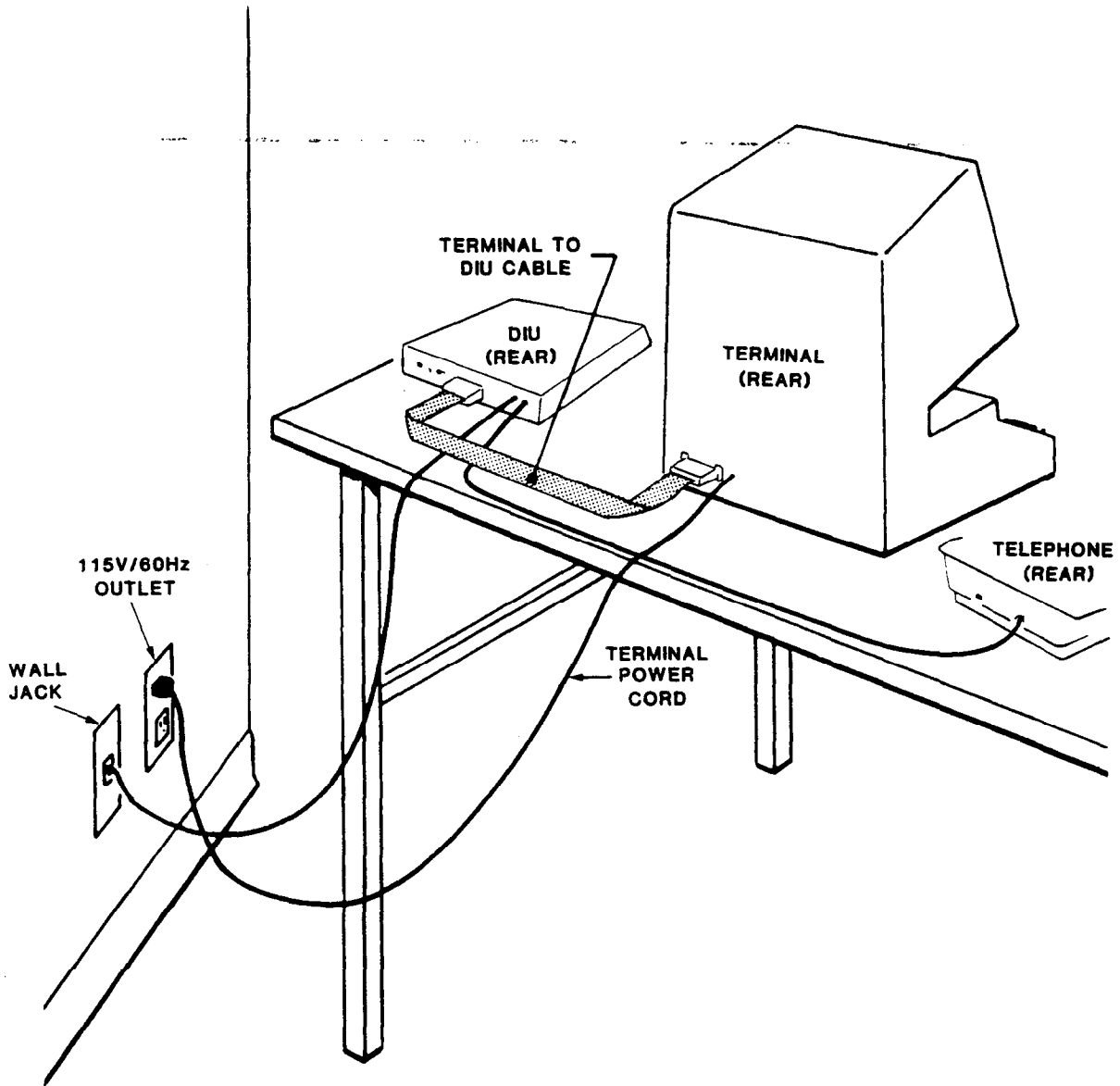
- Installed Digital Station or CT-10, CT-20, or CT-30. (Only required when the telephone is associated with the DIU.)
- AC power outlets (115 volts/60 cycles).
- Wall jacks. (Two wall jacks are required when a telephone is associated with the DIU. If the DIU is stand-alone, only one wall jack is required.)

**NOTE:** Additional outlets may be needed if they are required by any optional equipment associated with the terminal.

To avoid the risk of damage to your telephone, install it in the following manner (refer to Figure 4-1 for details):

1. Plug the terminal power cable into the power outlet.
2. Connect the terminal and DIU with the terminal-to-DIU cable.
3. Plug the line cord of the DIU into the wall jack.

Figure 4-1. DIU Installation



120-044-000-02

## CHAPTER 5

## DIU OPERATION (WITHOUT A TELEPHONE)

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### DATA COMMUNICATIONS USING A DIU

A DIU can be connected to a terminal, work station, modem, printer, or other device without being associated with any type of telephone. In this case, the DIU allows data to be received by and transmitted from the data terminal to which it is connected. Telephone dialing is accomplished via keyboard dialing from the data terminal.

To transmit or receive data, the **POWER** lamp on your DIU must be lit steadily. Data calls are placed and received through the **CALL** button and the **CALL** lamp of the DIU. The **CALL** button controls the operation of the data call. The **CALL**, **RECEIVE**, **TRANSMIT**, and **CARRIER DETECT** lamps provide visual indication of the progress of the data call.

### DISTINCTIVE DATA CALL RINGING

#### Incoming Data Call

Slow ringing. A repetitive 1-second ring followed by a 3-second pause. The **CALL** lamp on the DIU will flash simultaneously.

**NOTE:** If the DIU is programmed for Automatic Answer, you will hear only one ring or no ringing tone at all when an incoming data call is received.

### VISUAL DATA CALL INDICATORS

#### PWR (POWER) Lamp

- **Steady Light:** The DIU is connected to the telephone system and is ready for placing or receiving a data call.
- **No Light:** The DIU is not receiving power from the telephone system. Verify that the correct installation procedures were followed and consult with your Data Communications Coordinator for further information.

#### CALL Lamp

- **Steady Light:** A data call is in progress.
- **Slowly Flashing Light (30 interruptions per minute):** A Data Terminal Ready (DTR) signal has been received from the terminal by the DIU. The DIU is ready to receive or place a data call.
- **Flashing Light (60 interruptions per minute):** The DIU is receiving a data call.
- **Rapidly Flashing Light (240 interruptions per minute):** A data call has been disconnected at the other end and you must now manually disconnect the call. (This operation is not required if the DIU is programmed for Automatic Disconnect.)

- CALL Lamp (Cont'd)**
- **Double Interrupted Flashing Light:** The data capabilities of the DIU are being tested and you cannot place or receive a data call until the **CALL** lamp goes dark.

**NOTE:** While the data capabilities of the DIU are being tested, the **TEST** lamp will light steadily and, if a modem is attached to the DIU, the **CXD** lamp will also light steadily.

**TXD (TRANSMIT) and RXD  
(RECEIVE) Lamp**

- **No Light:** No data call is in progress.
- **Flashing Light:** Data is being transmitted or received.
- **No Light:** No data call is in progress.

**CXD (CARRIER DETECT)  
Lamp**

- **Steady Light:** The DIU and its modem are connected to another modem.
- **No Light:** No data call is in progress.

**PLACING AN INTERNAL  
DATA CALL**

You can initiate an internal data call directly from your computer terminal keyboard via keyboard dialing. Prior to placing the data call, start your data terminal communication software. The **TXD** lamp on the DIU associated with your terminal flashes briefly indicating that the DTR (Data Terminal Ready) signal was received.

1. Press the **CALL** button. The **CALL** lamp flashes slowly.
2. The terminal displays:  
**READY**  
**DESTINATION=**
3. Enter the destination data station number (350, for example), then press **Enter**.
4. The terminal displays:  
**DESTINATION=350**  
**RINGING 350**
5. When the destination data station answers the call, the terminal displays:  
**CONNECTED**  
The **CALL** lamp lights steadily.
6. Begin data communications.

**PLACING AN INTERNAL  
DATA CALL (Cont'd)****NOTES:**

1. If your DIU is programmed for Hotline calling, the system places the data call automatically to the programmed data station after you press the **CALL** button on the DIU. It is not necessary to enter the data station number.
2. The following messages may appear on the terminal screen. They are accompanied by a rapidly flashing **CALL** lamp, indicating that the call did not go through. To release a call and retry, press the **CALL** button twice.

**BUSY****PLEASE RELEASE THE CALL**

(indicates the destination data was busy)

**RETRY****PLEASE RELEASE THE CALL**

(indicates an illegal number, mismatched data attributes, or dialing time-out)

**PLACING A REMOTE DATA  
CALL**

You can initiate a remote (outside your PBX system) data call directly from your computer terminal keyboard via keyboard dialing. The system must first be set up for modem pooling. The modem pool must contain at least one modem that matches the attributes (such as baud rate, parity, etc.) of your data terminal. Prior to placing the data call, start your data terminal communication software. The **TXD** lamp on the DIU associated with your terminal flashes briefly indicating that the DTR (Data Terminal Ready) signal was received.

1. Press the **CALL** button. The **CALL** lamp flashes slowly.
2. The terminal displays:  
**READY**  
**DESTINATION=**
3. Enter the trunk access code (75, for example), then press **Enter**.
4. The terminal displays:  
**DESTINATION=75**  
**OUTGOING CALL**  
**DESTINATION=**
5. Enter the outside data station directory number (555-1212, for example), then press **Enter**.
6. The terminal displays:  
**DESTINATION=5551212**  
**TRUNK NUMBER=COT3333**  
**MODEM ID=02-01**  
**DIALING5551212**

**PLACING A REMOTE DATA CALL (Cont'd)**

7. The system completes dialing the remote location and activates an available pooled modem. The terminal displays:

**DIALING COMPLETED  
MODEM ACCESSING  
MODEM INITIATED**

8. Begin data communications.

**ANSWERING A DATA CALL**

The DIU attached to your data device may be programmed for either Automatic or Manual Answer. In the Automatic Answer mode, the DIU will automatically answer an incoming internal or remote data call. With Manual Answer, you must press the **CALL** button on the DIU in order to answer the data call. You must start your data terminal communication software to receive data.

**Automatic Answer**

1. Incoming data call rings once. The **CALL** lamp flashes slowly.
2. Your data station answers the call automatically. The **CALL** lamp lights steadily.
3. Begin data communications.

**Manual Answer**

1. Incoming data call rings. The **CALL** lamp flashes slowly.
2. Press the **CALL** button. The **CALL** lamp lights steadily.
3. Begin data communications.

**DISCONNECTING FROM A DATA CALL**

The DIU connected to your data device may be programmed for either Automatic or Manual Disconnect. In the Automatic Disconnect mode, the DIU will disconnect automatically from a data call when the other party disconnects. With Manual Disconnect, when the other party disconnects, the **CALL** lamp on the DIU will flash rapidly. You must press the **CALL** button to disconnect from the data call.

**Automatic Disconnect**

1. After the other party hangs up, the **CALL** lamp goes dark.
2. You are automatically disconnected from the data call.

**Manual Disconnect**

1. After the other party hangs up, the **CALL** lamp flashes rapidly.
2. Press the **CALL** button.
3. You are now disconnected from the data call.

**NOTE:** The DIU connected to your data device cannot be programmed simultaneously for both Automatic Origination and Automatic Disconnect.



## CHAPTER 6

## DIU OPERATION (WITH A TELEPHONE)

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### DATA COMMUNICATIONS USING A DIU AND A TELEPHONE

If your Digital Station or CT-10, CT-20, or CT-30 telephone is associated with a Data Interface Unit (DIU) that is connected to a customer-provided computer, modem, work station or terminal, you may communicate with another data station in your system. Each DIU linked with a telephone has a data station number assigned to it that is paired with the voice station number. To transmit or receive data, the **POWER** lamp on the DIU must be lit steadily.

The telephone, in conjunction with the DIU, allows Simultaneous Voice/ Data Communication. Voice call operations remain unchanged. There is no interruption of either voice or data transmission during Simultaneous Voice/Data Calling.

Data calls are placed and answered through the dialpad of the telephone and through a preprogrammed **DATA CALL** feature button. The **DATA CALL** feature button controls the progress of a data call. The associated **DATA CALL** lamp provides visual indication of the data call status. Other data communication features may be implemented through additional feature buttons or access codes.

Your telephone may also be equipped with an additional preprogrammed feature button, referred to as the **VOICE/DATA MODE** button. This feature button allows you to change the display of your telephone from voice call to data call information and vice versa when only a data call is in progress or during Simultaneous Voice/Data communication.

Once a data call has been placed or answered, you must follow the operational procedures for your specific data device in order to transmit or receive data.

### DISTINCTIVE DATA CALL RINGING

**Incoming Data Calls** Slow ringing. A repetitive 1-second ring followed by a 3-second pause. The **DATA CALL** lamp will flash simultaneously. If equipped, the **VOICE/DATA MODE** lamp will light steadily.

**NOTE:** If the DIU associated with your telephone is programmed for Automatic Answer, you will hear only one ring or no ringing tone at all when an incoming data call is received.

### DISTINCTIVE VOICE CALL RINGING

**Station Calls and Tie Line Calls** Slow ringing. A repetitive 1-second ring followed by a 3-second pause.

**Incoming Outside Calls** Slow double ringing. A repetitive double ring followed by a 3-second pause.

**Call Forward Calls** Rapid ringing. A repetitive 1-second ring followed by a 1-second pause.

**Call Announce Calls** Two brief bursts of tone immediately followed by a voice announcement.

### VISUAL DATA CALL INDICATORS

- DATA CALL Lamp**
- **Steady Light:** A data call is in progress.
  - **Slowly Flashing Light (30 interruptions per minute):** You have pressed the DATA CALL button to place a data call and may now dial the destination number.
  - **Flashing Light (60 interruptions per minute):** An incoming data call is waiting to be answered.
  - **Rapidly Flashing (120 interruptions per minute):** A data call has been disconnected at the other end and you must now manually disconnect the call. (This operation is not required if the DIU associated with your telephone is programmed for Automatic Disconnect.)
  - **Double Interrupted Flashing Light:** The data capabilities of the DIU associated with your telephone are being tested and you cannot place or receive a data call until the test is completed and the **DATA CALL** lamp goes dark.

- VOICE/DATA MODE Lamp**
- **Steady Light:** Data call information is shown on the display.
  - **No Light:** Voice call information is shown on the display.

**VISUAL DATA CALL  
INDICATORS (Cont'd)****LCD Display Panel**

The CT-20, CT-30, DS20SD, and DS32SD telephones have an LCD display panel which the system uses to provide status on all calls made to and from the telephone. An asterisk (\*) appears at the left side of the display for all data call information. Voice call information appears without the asterisk. The called or calling data or voice station numbers appear immediately following the asterisk.

For example, the following display indicates that a call to data station number 350 is being initiated:

<b>* 3 5 0</b>	<b>R I N G</b>
----------------	----------------

The following display indicates that a call between your station and data station number 350 is in progress:

<b>* 3 5 0</b>	<b>D A T A</b>
----------------	----------------

The following display indicates that a voice call between your station and voice station number 200 is in progress:

<b>2 0 0</b>	<b>T A L K</b>
--------------	----------------

When communicating simultaneously with voice and data, use the preprogrammed **VOICE/DATA MODE** button to switch between the voice and the data display information.

**SYSTEM TONES**

**External Dial Tone**      Obtained when you lift your handset and press an outside line button or when dialing a code (usually **9**) to access an outside telephone network. This dial tone indicates that you can place an external voice call. External dial tone will not be heard if it is not provided by the local telephone network.

**Internal Dial Tone**      Obtained when you lift your handset. Indicates that you can place a voice station call (Intercom call) or request a special voice feature.

**PLACING AN INTERNAL DATA CALL**

**Using a Data Station Number**      The DIU associated with your telephone can be programmed for either Automatic Origination or Manual Origination of a data call. With Automatic Origination, when a Data Terminal Ready (DTR) signal is received from the data terminal, your telephone will automatically be placed in the Data Mode and the **DATA CALL** lamp will flash slowly.

If the **DATA CALL** button is programmed with a data hotline station number, the programmed data station number will be dialed automatically.

If the **DATA CALL** button is not programmed with a data hotline station number, you must manually dial the desired Data Station Number.

To place a data call manually, you must press the **DATA CALL** button. All the examples in this section, unless otherwise noted, will show data call operations using the Manual Origination method.

1. Press the **DATA CALL** button. The **DATA CALL** lamp flashes slowly and the **VOICE/DATA MODE** lamp lights steadily.
2. Dial the desired data station number.
3. The destination data station answers the call. The **DATA CALL** lamp lights steadily.
4. Begin data communications.

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**PLACING AN INTERNAL  
DATA CALL (Cont'd)****Using a Voice Station Number**

This feature allows you to place a call to a data station by keying in the voice station number of its associated telephone. The operation of this feature is identical to placing an internal data call using a data station number. The system automatically transfers a data call made to the voice number to the associated data station.

1. Press the **DATA CALL** button. The **DATA CALL** lamp flashes slowly and the **VOICE/DATA MODE** lamp lights steadily.
2. Dial the desired voice station number.
3. The destination data station answers the call. The **DATA CALL** lamp lights steadily.

**NOTES:**

1. A data call cannot be placed while you are placing a voice call and vice versa. You must place your data call before or after establishing a voice connection.
2. Your telephone cannot be programmed simultaneously for both Automatic Origination and Automatic Disconnect.
3. If you attempt to call a voice station that does not have a data station associated with it, your display will show **RETRY** and your **DATA CALL** lamp will flash rapidly.

**PLACING A REMOTE DATA CALL**

You can initiate a remote (outside your PBX system) data call directly from your telephone. The system must first be set up for modem pooling. The modem pool must contain at least one modem that matches the attributes (such as baud rate, parity, etc.) of your associated data terminal. Prior to placing the data call, start your data terminal communication software.

1. Press the **DATA CALL** button. The **DATA CALL** lamp flashes slowly and the **VOICE/DATA MODE** lamp lights steadily.
2. Dial the trunk access code (75, for example).
3. Dial the outside data station directory number (555-1212, for example).
4. The system completes dialing the remote location and activates an available pooled modem. The **DATA CALL** lamp lights steadily.
5. Begin data communications.

**ANSWERING A DATA CALL**

The DIU associated with your telephone can be programmed for either Automatic or Manual Answer. In the Automatic Answer mode, an incoming data call will be automatically answered. In the Manual Answer mode, you must press the **DATA CALL** button to answer the call. All the examples in this section will show data call operations in the Manual Answer mode, unless otherwise noted.

**Automatic Answer**

1. The incoming data call rings once. The **DATA CALL** lamp flashes slowly and the **VOICE/DATA MODE** lamp lights steadily.
2. The system answers the incoming data call automatically. Your data call is now connected. The **DATA CALL** lamp and the **VOICE/DATA MODE** lamp light steadily.

**Manual Answer**

1. The incoming data call rings. The **DATA CALL** lamp flashes slowly and the **VOICE/DATA** lamp lights steadily.
2. Press the **DATA CALL** button. The **DATA CALL** lamp and the **VOICE/DATA MODE** lamp light steadily.
3. Your data call is now connected.

**DISCONNECTING FROM A DATA CALL**

The DIU associated with your telephone is programmed for either Automatic or Manual Disconnect. In the Automatic Disconnect mode, you will be automatically disconnected from a data call when the other party disconnects. In the Manual Disconnect mode, when the other party disconnects, the **DATA CALL** lamp on your telephone will flash rapidly. You must press the **DATA CALL** button to disconnect from the data call.

**Automatic Disconnect**

1. The **DATA CALL** lamp and the **VOICE/DATA MODE** lamp go dark.
2. The system automatically disconnects the data call.

**Manual Disconnect**

1. Press the **DATA CALL** button. The **DATA CALL** lamp and the **VOICE/DATA MODE** lamp go dark.
2. You are now disconnected from the data call.

**DATA HOTLINE**

This feature allows you to place a data call to a preprogrammed data hotline station by pressing the **DATA CALL** button.

1. Press the **DATA CALL** button. The **DATA CALL** lamp flashes slowly and the **VOICE/DATA MODE** lamp lights steadily.
2. The system automatically dials the preprogrammed data station.
3. The destination data hotline station answers the call. The **DATA CALL** lamp lights steadily.
4. Begin data communications.

**NOTE:** If the DIU associated with your telephone is preprogrammed with a data hotline station number, you may receive data calls from other data stations. However, you can place data calls only to the terminal programmed as the data hotline station.

To disconnect from the data hotline call, use the following procedure:

1. Press the **DATA CALL** button. The **DATA CALL** lamp and the **VOICE/DATA MODE** lamp go dark.
2. You are now disconnected from the data call.

**SIMULTANEOUS VOICE/  
DATA CALLING**

Your data communications system allows you to conduct both voice and data calls at the same time. The **DATA CALL** Lamp indicates the existence and progress of data calls. The **VOICE/DATA MODE** lamp is lit steadily when the display of the telephone shows data call information.

**Placing a Voice Call While on  
a Data Call**

1. Lift the handset. Internal dial tone sounds. The **DATA CALL** lamp lights steadily and the **VOICE/DATA MODE** lamp goes dark.
2. Dial the desired voice station number  
-or-  
Press the appropriate **LINE** button.  
-or-  
Dial the appropriate outside line access code.  
  
External dial tone sounds.  
Dial the desired outside number.
3. When the called party answers, your voice call is established.
4. If you hang up from the voice call while the data call continues, the display will show the time and date.

**NOTE:** Press the **VOICE/DATA MODE** button to alternate the display between voice and data call information.

**Placing a Data Call While on  
a Voice Call**

1. Press the **DATA CALL** button. The **DATA CALL** lamp flashes slowly and the **VOICE/DATA MODE** lamp lights steadily.
2. Key in the desired data station number.
3. The destination data station answers the call. The **DATA CALL** lamp lights steadily.
4. Begin data communications.

**Disconnecting**

1. Press the **DATA CALL** button.
2. You are now disconnected from the data call. Your voice call will not be interrupted. The **DATA CALL** lamp and the **VOICE/DATA MODE** lamp go dark.

**NOTES:**

1. If you hang up from the voice call during the data call, there is no change in the display.
2. If you wish to display voice call information during a data call, press the **VOICE/DATA MODE** button. To return to the data call information, press the **VOICE/DATA MODE** button again.



**SIMULTANEOUS VOICE/  
DATA CALLING (Cont'd)****Answering an Internal Voice  
Call While on a Data Call**

1. The incoming voice station call rings.
2. Lift the handset. The **VOICE/DATA MODE** lamp goes dark
3. You are now connected to the voice station call. The existing data call proceeds without interruption.

**Answering an External Voice  
Call While on a Data Call**

1. The outside voice call rings.
2. Lift the handset. The **VOICE/DATA MODE** lamp goes dark.
3. Press the appropriate **LINE** button.
4. You are now connected to the voice outside calling party. The existing data call proceeds without interruption.

**Disconnecting**

Replace the handset (hang up). The existing data call proceeds without interruption.

**NOTE:** Press the **VOICE/DATA MODE** button to alternate the display between voice and data call information.

**SIMULTANEOUS VOICE/  
DATA CALLING (Cont'd)****Answering a Data Call While  
on a Voice Call**

1. The incoming data call rings. The **DATA CALL** lamp flashes slowly.
2. Press the **DATA CALL** button. The **DATA CALL** lamp lights steadily.
3. Begin data communications.

**NOTES:**

1. To display the data call information, when the incoming data call rings and the **DATA CALL** lamp flashes, prior to answering the call, press the **VOICE/DATA MODE** button and the **DATA CALL** button. To return your display to voice call information, press the **VOICE/DATA MODE** button.
2. If you hang up from the voice call while the data call continues and the **VOICE/DATA MODE** lamp is not lit, the display will show the time and date.

**SIMULTANEOUS VOICE/  
DATA CALLING (Cont'd)****Adding Data to an Existing  
Data Call**

This feature allows you to transmit data, during a voice station call, to the data station associated with the other party's voice station.

1. Press the programmable **add data** button. The **add data** lamp lights steadily. The **DATA CALL** lamp flashes slowly and the **VOICE/DATA MODE** lamp lights steadily.
2. The system automatically places the data call to the other party's data station.
3. The data station answers the call. The **DATA CALL** lamp lights steadily.
4. Begin data communications.

-or-

1. Press the **DATA CALL** button. The **DATA CALL** lamp flashes slowly and the **VOICE/DATA MODE** lamp lights steadily.
2. Key in **6 7**.
3. The data station answers the call. The **DATA CALL** lamp lights steadily.

**NOTES:**

1. If you have a voice call on hold, the data call is connected to the data terminal associated with the voice station of the party with whom you are currently speaking.
2. To display voice call information during the data call, press the **VOICE/DATA MODE** button. The **VOICE/DATA MODE** lamp goes dark.

**Disconnecting**

1. Press the **DATA CALL** button. The **add data** lamp goes dark (if equipped). The **DATA CALL** lamp and the **VOICE/DATA MODE** lamp go dark.
2. You are now disconnected from the data call.

**NOTES:**

1. If you have a voice call on hold, the data call will be connected to the data terminal associated with the voice station of the party with whom you are currently speaking.
2. This feature can be implemented only if your telephone is programmed for Manual Origination when placing calls.

**DATA TERMINAL  
ATTRIBUTE CHANGE**

If you experience a problem in receiving or sending data, you may need to change your data terminal attributes by using the Data Change feature. The data change operation requires the display capability of a data terminal or telephone.

Consult your Data Communications Coordinator for the appropriate data attribute settings.

It is possible to change the following data attributes:

- **01:** Data Speed (110, 150, 300, 600, 1200, 2400, 4800, 9600, or 19200 bps)
- **02:** Answer Mode (0 = Manual Answer, 1 = Auto Answer)
- **03:** Originate Mode (0 = Manual Originate, 1 = Auto Originate)
- **04:** Disconnect Mode (0 = Normal Disconnect, 1 = Forced Disconnect)
- **05:** Communication Mode (0 = Full Duplex, 1 = Half Duplex)
- **06:** Synchronization (0 = Synchronous, 1 = Asynchronous)
- **07:** Stop Bit (1 = 1 bit, 2 = 1.5 bit, 3 = 2 bit)
- **08:** Word Length (0 = 7-bit, 1 = 8-bit)
- **09:** Parity Bit (1 = Odd, 2 = Even, 3 = None, 4 = Mark, 5 = Space)
- **10:** Echo (0 = ON, 1 = OFF)
- **11:** Modem Type (0 to 15)

**Changing Data Attributes via  
a Telephone**

1. Press the **DATA CALL** button. The **DATA CALL** lamp flashes slowly and the **VOICE/DATA MODE** lamp lights steadily.
2. Press the **DATA CHANGE** button (or dial **6 9** if you do not have a **DATA CHANGE** button). The **DATA CHANGE** lamp lights steadily.
3. Dial the desired data attribute from 01 to 11. (You must include the leading zero.) Example: **01** for data speed.
4. The system displays the current setting (for example, 1200):  
**\*1200**
5. Dial the new data attribute value. (For example, 2400).  
**\*2400**

**SIMULTANEOUS VOICE/  
DATA CALLING (Cont'd)****Adding Data to an Existing  
Data Call**

This feature allows you to transmit data, during a voice station call, to the data station associated with the other party's voice station.

1. Press the programmable **add data** button. The **add data** lamp lights steadily. The **DATA CALL** lamp flashes slowly and the **VOICE/DATA MODE** lamp lights steadily.
2. The system automatically places the data call to the other party's data station.
3. The data station answers the call. The **DATA CALL** lamp lights steadily.
4. Begin data communications.

-or-

1. Press the **DATA CALL** button. The **DATA CALL** lamp flashes slowly and the **VOICE/DATA MODE** lamp lights steadily.
2. Key in **6 7**.
3. The data station answers the call. The **DATA CALL** lamp lights steadily.

**NOTES:**

1. If you have a voice call on hold, the data call is connected to the data terminal associated with the voice station of the party with whom you are currently speaking.
2. To display voice call information during the data call, press the **VOICE/DATA MODE** button. The **VOICE/DATA MODE** lamp goes dark.

**Disconnecting**

1. Press the **DATA CALL** button. The **add data** lamp goes dark (if equipped). The **DATA CALL** lamp and the **VOICE/DATA MODE** lamp go dark.
2. You are now disconnected from the data call.

**NOTES:**

1. If you have a voice call on hold, the data call will be connected to the data terminal associated with the voice station of the party with whom you are currently speaking.
2. This feature can be implemented only if your telephone is programmed for Manual Origination when placing calls.

**DATA TERMINAL  
ATTRIBUTE CHANGE**

If you experience a problem in receiving or sending data, you may need to change your data terminal attributes by using the Data Change feature. The data change operation requires the display capability of a data terminal or telephone.

Consult your Data Communications Coordinator for the appropriate data attribute settings.

It is possible to change the following data attributes:

- **01:** Data Speed (110, 150, 300, 600, 1200, 2400, 4800, 9600, or 19200 bps)
- **02:** Answer Mode (0 = Manual Answer, 1 = Auto Answer)
- **03:** Originate Mode (0 = Manual Originate, 1 = Auto Originate)
- **04:** Disconnect Mode (0 = Normal Disconnect, 1 = Forced Disconnect)
- **05:** Communication Mode (0 = Full Duplex, 1 = Half Duplex)
- **06:** Synchronization (0 = Synchronous, 1 = Asynchronous)
- **07:** Stop Bit (1 = 1 bit, 2 = 1.5 bit, 3 = 2 bit)
- **08:** Word Length (0 = 7-bit, 1 = 8-bit)
- **09:** Parity Bit (1 = Odd, 2 = Even, 3 = None, 4 = Mark, 5 = Space)
- **10:** Echo (0 = ON, 1 = OFF)
- **11:** Modem Type (0 to 15)

**Changing Data Attributes via  
a Telephone**

1. Press the **DATA CALL** button. The **DATA CALL** lamp flashes slowly and the **VOICE/DATA MODE** lamp lights steadily.
2. Press the **DATA CHANGE** button (or dial **6 9** if you do not have a **DATA CHANGE** button). The **DATA CHANGE** lamp lights steadily.
3. Dial the desired data attribute from 01 to 11. (You must include the leading zero.) Example: **01** for data speed.
4. The system displays the current setting (for example, 1200):  
**\*1200**
5. Dial the new data attribute value. (For example, 2400).  
**\*2400**

**Changing Data Attributes via  
a Telephone (Cont'd)**

6. After a few seconds, the new attribute value is set. The **DATA CHANGE** lamp goes dark and the **DATA CALL** lamp flashes rapidly.
7. Press the **DATA CALL** button. The **DATA CALL** lamp and the **VOICE/DATA MODE** lamp go dark.

**NOTE:** You can change data terminal attributes while you are engaged in a voice call. Your conversation will not be interrupted.

**Changing Data Attributes via  
a Terminal Keyboard**

1. Press the **DATA CALL** button. The **DATA CALL** lamp flashes slowly and the **VOICE/DATA MODE** lamp lights steadily.
2. The terminal displays:  
**READY**  
**DESTINATION=**
3. Enter **6 9** (feature access code), then press **Enter**.
4. The terminal displays:  
**ATTRIBUTE CHANGE**  
**DESTINATION=**  
The **DATA CALL** lamp lights steadily.
5. Enter the desired data attribute number (01 to 11). (You must include the leading zero.) Example: **01** for data speed. Press **Enter**.
6. The terminal displays:  
**DESTINATION=01**  
**DATA SPEED=1200**  
**DESTINATION=**
7. Enter the new value for the attribute (2400, for example), then press **Enter**.
8. The terminal displays:  
**DESTINATION=2400**  
**REGISTERED**  
**PLEASE RELEASE THE CALL**  
The new attribute value is set. The **DATA CALL** lamp flashes rapidly.
9. Press the **DATA CALL** button. The **DATA CALL** lamp and the **VOICE/DATA MODE** lamp go dark.

**INDIVIDUAL MODEM ACCESS**

For maintenance purposes, it may be necessary to access a specific modem from the group of pooled modems.

**Placing a Data Call via a Telephone**

1. Press the **DATA CALL** button. The **DATA CALL** lamp flashes slowly and the **VOICE/DATA MODE** lamp lights steadily.
2. Dial **6 3 \***.
3. Dial the modem group ID and the modem ID for the desired modem. (The format is GGMM, where GG = 2-digit modem group ID, MM = 2-digit modem ID)
4. Dial the CO access code.
5. Dial the remote station directory number.
6. The remote station answers. The **DATA CALL** lamp lights steadily.
7. Begin data communications over specified modem.

**Placing a Data Call via a Terminal Keyboard**

1. Press the **DATA CALL** button. The **DATA CALL** lamp flashes slowly and the **VOICE/DATA MODE** lamp lights steadily.
2. The terminal displays:  
**READY**  
**DESTINATION=**
3. Enter **6 3 \***, then press **Enter**.
4. The terminal displays:  
**DESTINATION=63\***  
**MODEM ID=**
5. Enter the modem group ID and the modem ID for the desired modem. (The format is GGMM, where GG = 2-digit modem group ID, MM = 2-digit modem ID, then press **Enter**.)
6. The terminal displays (for example):  
**MODEM ID=0201**  
**DESTINATION=**
7. Enter the trunk access code (75, for example), then press **Enter**.
8. The terminal displays:  
**DESTINATION=75**  
**OUTGOING CALL**  
**DESTINATION=**
9. Enter the outside data station directory number (555-1212, for example), then press **Enter**.



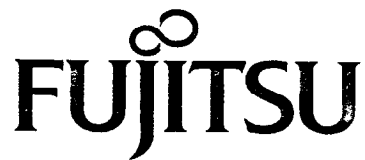
**Placing a Data Call via a  
Terminal Keyboard (Cont'd)**

10. The terminal displays:  
**DESTINATION=5551212**  
**TRUNK NUMBER=COT3333**  
**MODEM ID=02-01**  
**DIALING 5551212**
  
11. The system completes dialing the remote location and activates an available pooled modem. The terminal displays:  
**DIALING COMPLETED**  
**MODEM ACCESSING**  
**MODEM INITIATED**  
The **DATA CALL** lamp lights steadily.
  
12. Begin data communications over the specified modem.

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THE UNIVERSITY OF CHICAGO





FUJITSU BUSINESS  
COMMUNICATION SYSTEMS

# ***SERIES 3***

## **OVERVIEW**

### **Package 2**

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## NEW HARDWARE

The following new hardware is available for use with Package 2 of the Series 3 system:

### Common Control Kits

- SC2P2B (P/N E08B-1039-K001)  
Kit for two-cabinet basic system. Contains CPU card and required memory daughter board.
- SC2P2E (P/N E08B-1039-K002)  
Kit for two-cabinet enhanced system. Contains CPU card and required memory daughter board.

**NOTE:** The first number (SC2P2B, SC2P2E) designates that the card is used in a two-cabinet system. The second number (SC2P2B, SC2P2E) shows that these cards are for Package 2. The last letter (SC2P2B, SC2P2E) shows in which type of system (basic or enhanced) the card is used.

- SC4P2B (P/N E08B-1039-K003)  
Kit for four-cabinet basic system. Contains CPU card and required memory daughter board.
- SC4P2E (P/N E08B-1039-K004)  
Kit for four-cabinet enhanced system. Contains CPU card and required memory daughter board.

**NOTE:** The first number (SC4P2B, SC4P2E) designates that the card is used in a four-cabinet system. The second number (SC2P2B, SC2P2E) shows that these cards are for Package 2. The last letter (SC2P2B, SC2P2E) shows in which type of system (basic or enhanced) the card is used.

### Memory Cards

- SM2E2 (P/N E20B-9518-R141)  
Daughter board for two-cabinet system.
- SM4E2 (P/N E20B-9518-R571)  
Daughter board for four-cabinet system.

**NOTE:** The first number (SM2E2, SM4E2) designates whether the card is used in a two-cabinet or a four-cabinet system. The second number (SM2E2, SM4E2) shows that these cards are for Package 2.

### Positive Disconnect Line Card (8PDL)

A new line card is available with the Series 3 Package 2. This card (P/N E20B-9900-R360) provides disconnect supervision in conjunction with voice mail and dictation devices, as well as external conference bridge equipment.

**NEW SOFTWARE**

The software version number is **P20 x.x #5**. The "#5" shows the country number (U.S.A.). If this is displayed as "??," this indicates that the software package is either a foreign version or has been illegally modified.

## SYSTEM FEATURES

### Automated Attendant - Single Digit Dialing

An enhancement to the Automated Attendant feature allows incoming calls to reach a destination by dialing a single digit code, which can be assigned on a per tenant basis.

An outside caller may dial the DISA-S trunk destination number. The system will then answer the call with a recorded voice announcement to prompt the entering of a specific single digit code. If the caller does not enter any information, the call may be routed to a predetermined destination, such as an extension or the Attendant Console.

Automated Attendant - Single Digit Dialing is on a per tenant basis (not system-wide). Refer to CMC 434, P6. DISA-S is required to implement this feature.

### Numbering Plan Enhancement

In order to comply with the North American Numbering Plan change, the following functions are enhanced:

- Expanded area codes (NXX, where N = 2-9, and X = 0-9).
- Expanded Carrier Access Codes (CACs) to 10XXXXX
- Expanded number of digits for an international call (from 15 to 18, including 01 code).

The application of the NXX area code is determined by setting the required system flag using CMC 102. When dialing a long distance call, the dialing pattern is CTP or OTP + NXX – NXX + XXXX. When dialing a local call, the dialing pattern is (OTP) + NXX + XXXX + (inter-digit timeout). Refer to Table 2-1 for more information.

Carrier access codes may now be either five digits or seven digits in length. A total of ten 5-digit and 7-digit CACs may be assigned per system.

International call digits are determined by setting the desired system flag (CMC 102).

Installation of the North American Numbering Plan load is as follows:

1. Perform a Form Save as outlined in the PcMP Data Base Management Manual.

**NOTE:** The system is fully operational at this point.

2. Turn system power OFF.

### Numbering Plan Enhancement (Cont'd)

3. Remove the old version SCPN2M/4M card set. This consists of a mother board (CPU) and a daughter board (memory). Replace with the new version SCPN2M/4M card. The new version will be identified with a plastic designation guide attached to the daughter board, and labeled as follows:
  - SC2P2B: Two cabinet basic package.
  - SC2P2E: Two cabinet enhanced package.
  - SC4P2B: Four cabinet basic package.
  - SC4P2E: Four cabinet enhanced package.
4. Restore power to the system.
5. Perform a Form Load to install the modified ODDB on the system. This is described in the PcMP Data Base Management Manual. The system will remain non-operational during the Form Load process.
6. Upon successful completion, it is recommended that a Save be executed. This procedure is described in the PcMP Data Base Management Manual ("Saving the ODDB to Floppy Disk").
7. The ODDB can be modified on-line via the PcMP or directly using a Master Control Telephone (MCT). There are up to five CMCs which may need to be updated to include the new area code assignments. They are:
  - CMC 402: N0/1X Conflicting Area/Office Code Assignment.
  - CMC 413: Area Code Restriction Assignment.
  - CMC 414: Area/Office Code Restriction Assignment.
  - CMC 423: LCR Area Code Assignment.
  - CMC 424: LCR Area/Office Code Assignment.

The new area codes which are currently assigned are:

- 334 (Alabama; effective 1/15/95).
- 360 (Washington State; effective 1/15/95).
- 520 (Arizona; effective 3/19/95).

Select the desired CMC. For Conflicting Area/Office Code Assignments (CMC 402), assign the restriction digit flag (P3) and the restricted digits (P4).

For Area Code and Area/Office Code Restriction Assignments (CMC 413 and CMC 414), select the affected restriction group number (P1), and input the affected area code(s) in P4.

For LCR Area Code Assignments and LCR Area/Office Code Assignments (CMC 423 and CMC 424), select the desired route table number in P1, and input the affected area code(s) in P2.

8. After all updates have been made to the data base, perform a Save to save the final version of the data base.

Table 2-1. Dialing Patterns

CTP	OTP	TYPE OF DIALING	DIALING PATTERN	
			N0/1X AREA CODE	NXX AREA CODE
Yes	Yes	Toll operator	No digit	No digit
		Service code	Not permitted	Not permitted
		Area code	Not permitted	Not permitted
		Office code	Not permitted	Not permitted
		International call	Not permitted	Not permitted
Yes	No	Service code	N11 or 11X	N11 or 11X
		Area code	N0/1X + XXX + XXXX	N0/1X + XXX + XXXX
		Office code	NNX + XXXX N'XX + XXXX N0/1X + XXXX	Not permitted
		International call	Not permitted	Not permitted
No	Yes	Service code	N11 or 11X	N11 or 11X
		Area code	N0/1X + XXX + XXXX N0/1X + X1,...,Xi + ITO (i ≤ 6)	N0/1X + XXX + XXXX N0/1X + X1,...,Xi + ITO (i ≤ 6)
		Office code	NNX + XXXX N'XX + XXXX N0/1X + XXXX NNX + X1,...,Xi + ITO N'XX + X1,...,Xi + ITO N0/1X + X1,...,Xi + ITO (i ≤ 3)	NNX + XXXX + ITO NXX + XXXX + ITO N0/1X + XXXX + ITO
		International call	Not permitted	Not permitted
		Others	X + ITO XX + ITO	X + ITO XX + ITO
		International call	Not permitted	Not permitted
No	No	Service code	N11 or 11X	N11 or 11X
		Area code	N0/1X + XXX + XXXX	Not permitted
		Office code	NNX + XXXX N'XX + XXXX N0/1X + XXXX	NNX + XXXX N'XX + XXXX N0/1X + XXXX
		International call	01 + X1,..., + X13 01 + X1,..., + Xi + ITO (i ≤ 12)	01 + X1,..., + X16 01 + X1,..., + Xi + ITO (i ≤ 15)

**NOTES:**

- 0/1 = 0 to 1, N = 2 to 9, X = 0 to 9, N' = 1 to 9, ITO = interdigit time out. N'XX office codes are assigned using CMC 408; N0/1X office codes are assigned using CMC 402.
- If an OTP is dialed, any digits following will be regarded as an area code. Therefore, office code restriction will not be effective.

**Phantom Stations** Phantom Station assignment allows the designation of a phantom or secondary station number in addition to the normal station number. CMC 200 assigns this feature. Equipment numbers may now be assigned as \*000 - \*095 for phantom lines that will be assigned as appearances on a multi-station telephone.

Phantom stations can be assigned on up to sixteen OSL appearances on DS/CT DSS stations.

**Positive Disconnect for Single Line Interface**

This new feature enables the system to send a loop disconnect signal to an SLT or other equipment connected to the 8PDL card (e.g., VMS) when the other party disconnects from the call.

**Conditions:**

The loop disconnect signal is not sent when:

- The other party presses the **Privacy Release** button, then hangs up.
- The other party breaks into a conversation by using the Privacy Release button, and then hangs up.
- The other party calls the SLT using the OSL button, and then hangs up after the conversation.
- The other party enters the FDC menu mode, and then hangs up.

**STATION FEATURES**

**Paging (Station)**

This feature allows the Attendant Console to page one of nine station paging zones or an all page to all zones. Paging is accomplished through the speakers in digital and electronic stations. Paging can be activated from a station or the attendant. This feature may be assigned to a programmable button on the Attendant Console, DS, or CT telephone. A new enhancement to the Paging feature enables internal (station) paging to be blocked when the other station has registered Do Not Disturb (FNO = 71 or 137), depending on the assigned system flag (CMC 102). If the system flag is set to "restrict paging access to DND extensions," the paging access is not executed. However, if there is an extension which has not registered DND in that same zone, that extension will hear the page. This restriction is applied to "one zone" or "all zone" paging access.

Nine zones with 36 stations/zone maximum are available.

**Pick-Up** The Group Pick-Up feature allows station users to answer calls directed to another station, in the same pick-up group. A station alphanumeric display, integrated into a station using this feature, provides a display of the calling station number when picked up by a second station.

A new enhancement enables 64 members maximum to be assigned per group.

**Station Prefix Codes** Station prefix codes (not including any additional dialed numbers) may now be up to four digits in length. In addition, station prefix codes may be dialed after the entry of a feature access code. Also, when accessing Voice Mail, the system will send the station prefix code as a part of the entered mail box number. (For example, a user can dial 200 or 300; the system can add a 3 (or other number) to the beginning of each number, which will cause 3200 or 3300 to be dialed.)



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## SYSTEM PARAMETER ASSIGNMENT (CMC 102)

Use the System Parameter Description (**CMC 102**) table to set system flags that govern how the system will interpret user input.

**NOTE:** The new or modified FLGN values in this command are:

- FLGN 112.
- FLGN 201.
- FLGN 212.
- FLGN 213.
- FLGN 218.
- FLGN 223.
- FLGN 224.
- FLGN 225.
- FLGN 226.
- FLGN 227.

Table 3-1 lists these new/changed FLGN values.

Table 3-1. New System Parameter Assignment Default Values (CMC 102)

System Parameter Assignment		
Flag No. (P1)	Flag Function	Available Values
112	Number of station/trunk digits sent for VMS integration	2 to 8 (includes extension prefix code) An entered value greater than 8 will mean a value of "0." <b>Default = 4</b> (Please see Table 3-2)
201	Front desk console and BS coding flag	0 = Mu-law 1 = A-law
212	Name and DN display for 4-line display digital telephone	0 = Do not apply <b>1 = Apply</b>
213	Name and display for attendant	0 = Do not apply <b>1 = Apply</b>
218	Off-hook call announcement when PSL is busy	0 = Not allowed <b>1 = Allowed</b>
223	NXX area code flag	<b>0 = Apply</b> 1 = Not apply
224	CAC digit flag	0 = 5 digit CACs only <b>1 = Both 5 digit and 7 digit CACs</b> 2 = 7 digit CACs only
225	International call digit flag	<b>0 = 15 digits</b> 1 = 18 digits
226	Extension prefix application flag	<b>0 = Standard (extension call only)</b> 1 = Extend (extension call, DN for FAC, VMS integration digits)
227	Paging access for DND registering extension	<b>0 = Allow</b> 1 = Restrict

**NOTE:** Default values are shown in **bold** type.

CMC 102 (Cont'd)

A note regarding the station prefix application has been added to this table, as shown below (Note 4).

Table 3-2. Voice Mail Integration Patterns

SERVICE		SLT INTERFACE (DTMF)				
CALL TYPE	SRCE/DEST	STV = 0	STV = 1	STV = 2	STV = 3	STV = 4
Direct call (IND1)	from extension	"C1" + (SA) + "#"	"C1" + "#"	None	"#" + (SA)	"*" + (SA)
	from outside	"C2" + (TA) + "#"			None	None
Forwarded call (IND2)	Busy (from ext)	"C3" + (SA) + "#" + (SB) + "#"	(SB)	(SB)	(SB)	(SB)
	N/A (from ext)	"C4" + (SA) + "#" + (SB) + "#"	(SB)	(SB)	(SB)	(SB)
	All (from ext)	"C5" + (SA) + "#" + (SB) + "#"	(SB)	(SB)	(SB)	(SB)
	Busy (from out)	"C8" + (SA) + "#" + (SB) + "#"	(SB)	(SB)	(SB)	(SB)
	N/A (from out)	"C9" + (SA) + "#" + (SB) + "#"	(SB)	(SB)	(SB)	(SB)
	All (from out)	"C0" + (SA) + "#" + (SB) + "#"	(SB)	(SB)	(SB)	(SB)
Message pick-up (IND3)	—	"C1" + (SA) + "#"	"C1" + "#"	None	"#" + (SA)	"*" + (SA)
Transferred call (IND4)	from extension	None	None	None	None	None
	from outside					
Ack. of MWI	—	CFT/ROT	CFT/ROT	CFT/ROT	CFT/ROT	CFT/ROT
MWI (IND5, IND6)	Lamp on	FAC + (DN)		FAC + (DN)		
	Lamp off	FAC + (DN)		FAC + (DN)		
Outgoing call (IND7)	to outside	FAC + (DN)		FAC + (DN)		
	to extension	(DN)		(DN)		
VMS trans. call (IND8)	to attendant	FL + (DN)		FL + (DN)		
	to extension					

- |   |                          |
|---|--------------------------|
| SA: Calling extension number (2, 3, or 4 digits, fixed) | FAC: Feature access code |
| SB: Called extension number (2, 3, or 4 digits, fixed)  | TAC: Trunk access code   |
| TA: Incoming trunk number (2, 3, or 4 digits, fixed)    | DN: Directory number     |
|   | FL: Hookflash            |

NOTES:

- The same number may be assigned to SA, SB, and TA. For example, a station and a trunk number may both be 2100.
- Number of digits sent for VMS integration is programmable by this CMC command, FLGN = 112.
- The filler value is programmable by CMC command (CMC 102, FLGN = 49; default set to 8). For example, when the filler value is "8":
  - 2 digits: 81, 10
  - 3 digits: 882, 811, 100
  - 4 digits: 8883, 8881, 8121, 1231
 In the case of the Attendant Console, the attendant access code plus the attendant number is sent.
- If the enhanced station prefix application flag (CMC 102, FLGN = 226) is set to "1," 2 to 8 digits are applied for SA/SB.

**GROUP PICK-UP MEMBER  
ASSIGNMENT (CMC 302)**

Use the Group Pick-Up Member Assignment (**CMC 302**) table to assign or remove stations from specified pick-up groups. Group pick-up allows a station user to answer calls for other stations in the same pick-up group using a feature button or an access code. A station with an alphanumeric display shows the originating trunk or station which was originally called. Each station can only belong to one pick-up group.

**NOTE:** An enhancement to this feature increases the maximum number of member stations per group to 64.

**ACD (AUTOMATIC CALL  
DISTRIBUTION) GROUP  
ASSIGNMENT (CMC 308)**

The possible cause for the NOT RGTR error code has been modified, as shown below.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The EN that corresponds to the entered DN has not been installed.	Enter a correct (installed) DN.
	The specified DN is assigned as PS.	
	The terminal that corresponds to the entered DN is not an extension.	Enter a correct DN.

**N0/1X CONFLICTING AREA/  
OFFICE CODE ASSIGNMENT  
(CMC 402)**

Use the Conflicting Area/Office Code Assignment (**CMC 402**) table to register conflicting area and office codes. This list is limited to 30 conflicting codes in each dialing group.

An enhancement to this feature specifies that when the NXX area code is applied by using a system flag (CMC 102, FLGN = 223), the registered code assigned at this CMC is not valid.

In order to allow area codes to be used as office codes beyond the system capacity (30), make the following entries (always enter the toll prefix code for long distance calls):

P1: 0	P1: 1
P2: 1	P2: 1
P3: 0	P3: 1
P4: Blank	P4: Blank

**CARRIER IDENTIFICATION CODE (5-DIGIT CACs) RESTRICTION CHECKING ASSIGNMENT (CMC 415)**

In equal access areas, the system assigns each secondary carrier a five-digit carrier access code (CAC), 10XXX. **CMC 415** allows stations in a restriction group within a class of restriction access to specific secondary carriers by manually dialing the CAC.

If a station is restricted from area codes, office codes, etc., through class of restriction and restriction group assignment and/or by least cost routing assignment, programming a carrier access code for that class of restriction and restriction group through CMC 415 overrides all other restrictions. However, the station user must manually dial the 10XXX code to access the desired secondary carrier. This feature can be used to force stations to use a secondary carrier for outgoing trunk calls. Up to ten total (5-digit CACs and 7-digit CACs) can be registered. All ten may be assigned to one COR.

Please note that seven-digit CACs are assigned using CMC 470.

**TOLL RESTRICTION 2 ASSIGNMENT (CMC 417)**

Use **CMC 417** to override the toll restriction when 10XXX/10XXXXX is dialed. Refer to the Note of Table 3-3 for further information. Note the difference between 5-digit and 6-digit access codes.

**Table 3-3. Toll Restriction Default Values (CMC 417)**

ID	Description	Flag Value (P4)
1	CAC (10XXX/10XXXXX) + OTP1	1 = Allow
2	CAC (10XXX/10XXXXX) + OTP2	1 = Allow
3	Toll Free Dial (1 + 800)	1 = Allow
4	CAC (950) + 0XXX	1 = Allow
5	CAC (10XXX/10XXXXX) + CTP	1 = Deny
6	CAC (950) + 1XXX	1 = Deny
7	CAC (10XXX/10XXXXX) + International Direct Dial (001)	1 = Deny

**NOTE:** When FVA = 0, there is no allowance or denial for its type of calls. Further restrictions assigned by CMCs 411, 412, 413, 414, and 416 will determine whether or not a call should go through, based on the rest of the dialed number. When FVA = 1, this command has priority over other restrictions assigned by CMC 411, 412, 413, 414, and 416.

**LCR CARRIER ACCESS  
CODE (5-DIGIT CACs)  
ASSIGNMENT (CMC 425)**

Use the LCR Carrier Access Code Assignment (**CMC 425**) table to record 5-digit carrier access codes which will be outpulsed to the CO if LCR selects an alternate carrier in an equal access area. If the specified CAC is one that has been registered as having seven digits, it cannot be registered using this CMC.

Please note that seven-digit CACs are assigned using CMC 471.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	The specified CAC is not correct.	Check the CAC.
DENIED	The specified LCN is registered as a seven digit CAC.	Check the CAC.

**PERSONAL ACCOUNT CODE  
FOR 5-DIGIT CACs  
ASSIGNMENT (CMC 426)**

Use the Personal Account Code for CAC Assignment (**CMC 426**) table to assign the personal account code, the sending position of the personal account code, and length of outgoing call to the LCR feature. Each 5-digit carrier identification code contains this information.

Please note that seven-digit CACs are assigned using CMC 472. A maximum of ten 5-digit and 7-digit CACs can be registered per system.

**AUTOMATED ATTENDANT  
ANSWERING MESSAGE AND  
OVERFLOW STATION  
ASSIGNMENT (CMC 434)**

Use this CMC to assign the Automated Attendant answering message and overflow station. The Automated Attendant feature allows incoming calls to reach the desired station without operator or attendant assistance. The system will answer an incoming call with a recorded voice announcement which prompts the caller to enter the desired station number. The caller dials the number on the touch tone keypad and the call is transferred to the appropriate station. The trunk must be defined as ground start and DISA-S in CMC 250. An enhancement to this feature enables the assignment of single digit automated attendant capability, using the new parameter, P6.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P6	ODF	Single digit automated attendant flag	0 or blank = Not applied 1 = Applied	0

**Parameter Descriptions**

**P6 (ODF):**

Enter whether or not the Single Digit Automated Attendant feature has been assigned. This assignment is made at CMC 480.

**0 or blank = Not applied** (default)

1 = Applied

**CARRIER IDENTIFICATION  
CODE (7-DIGIT CACs)  
RESTRICTION CHECKING  
ASSIGNMENT (CMC 470)**

In equal access areas, the system assigns each secondary carrier a seven-digit carrier access code (CAC), 10XXXXX. This new command, **CMC 417**, allows stations in a restriction group within a class of restriction access to specific secondary carriers by manually dialing the CAC.

If a station is restricted from area codes, office codes, etc., through class of restriction and restriction group assignment and/or by least cost routing assignment, programming a carrier access code for that class of restriction and restriction group through **CMC 417** overrides all other restrictions. However, the station user must manually dial the 10XXXXX code to access the desired secondary carrier. This feature can be used to force stations to use a secondary carrier for outgoing trunk calls. Up to ten total (5-digit CACs and 7-digit CACs) can be registered. All ten may be assigned to one COR.

Please note that five-digit CACs are assigned using **CMC 415**.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>RGN</b>	Restriction group number	1 to 3	None
<b>P2</b>	<b>COR</b>	Class of restriction	1 to 16	None
<b>P3</b>	<b>CIC</b>	Carrier identification code	7 digits (10XXXXX)	None

**Parameter Descriptions**

**P1 (RGN):**

Enter the restriction group to which you wish to assign secondary carrier information (required).

- 1 to 3

**P2 (COR):**

Enter the class of restriction which will apply to this restriction group (required).

- 1 to 16

**P3 (CIC):**

Enter the carrier identification (access) code which stations in this restriction group must dial to access the secondary carrier.

- 7 digits, in the 10XXXXX format

**Display**

1. Enter an RGN and COR at P1 and P2.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays subsequent data in numerical order of COR and CIC within each class. If the COR is not entered, or after all CICs have been displayed, pressing **DSP** will display a blank line. Pressing **DSP** again will recycle the list.
2. Each RGN must be displayed separately.



## CMC 470 (Cont'd)

- Add**
1. Enter the required parameters.
  2. Use the cursor controls or **Return** to move the cursor to the parameter to be added.
  3. Enter the new value.
  4. Press **ADD/CHG**.

- Remove**
1. Enter the required parameters or press **DSP**.
  2. Press **RMV**.

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
NO AREA	An attempt was made to add a CIC combination when no more system memory was available.	Remove one or more CIC combinations from any RGN.
OVERLAP	An attempt was made to add a CIC combination which is already registered.	Check the entry and try again, or abandon the attempt.
NO FOUND	An attempt was made to remove a CIC combination which is not currently registered.	Check the entry and try again, or abandon the attempt.

**LCR CARRIER IDENTIFICATION CODE (7-DIGIT CACs) ASSIGNMENT (CMC 471)**

Use the new LCR Carrier Identification Code Assignment (CMC 4715) table to record 7-digit carrier access codes which will be outputted to the CO if LCR selects an alternate carrier in an equal access area. If the specified CIC is one that has been registered using CMC 425, it cannot be registered using this CMC.

Please note that five-digit CACs are assigned using CMC 425.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	LCN	Least cost routing carrier	1 to 10	None
P2	CIC	Carrier identification code	7 digits (10XXXXX)	None

**Parameter Descriptions**

**P1 (LCN):**

Enter the number that will be used for this Least Cost Routing carrier access (required).

- 1 to 10

**P2 (CIC):**

Enter the carrier identification (access) code.

- 7 digits (10XXXXX)

**Display**

1. Enter an LCN at P1.
2. Press **DSP** to display the corresponding CIC.

**NOTES:**

1. Press **DSP** repeatedly to display CIC data in numerical order of LCNs. Five-digit CACs are not displayed.
2. The system releases this CMC when the LCN value exceeds 10.

**Change**

1. Enter an LCN at P1.
2. Enter a CIC at P2.
3. Press **ADD/CHG**.

**NOTE:** Five-digit CACs are not changed.

**Remove**

1. Enter an LCN at P1.
2. Press **DSP**.
3. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	The specified CIC is not correct.	Check the CIC.
DENIED	The specified LCN is registered as a five-digit CIC.	Check the CIC.

**PERSONAL ACCOUNT CODE  
FOR 7-DIGIT CACs  
ASSIGNMENT (CMC 472)**

Use the new Personal Account Code for CAC Assignment (CMC 472) table to assign the personal account code, the sending position of the personal account code, and length of outgoing call to the LCR feature. Each 7-digit carrier identification code contains this information. Up to ten 5-digit and 7-digit CACs can be registered.

Please note that five-digit CACs are assigned using CMC 426.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>CIC</b>	Carrier identification code	7 digits (10XXXXXX)	None
<b>P2</b>	<b>FLG</b>	Flag value	0 = Send personal account code after dialed number 1 = Send personal account code before dialed number	None
<b>P3</b>	<b>PAC</b>	Personal account code	1 to 15 digits Blank = Not assigned	None
<b>P4</b>	<b>TIM</b>	Personal account code send timing	4 digits	None

**Parameter Descriptions**

**P1 (CIC):**

Enter the carrier identification (access) code (required).

- 7 digits (10XXXXXX)

**P2 (FLG):**

If necessary, enter a value to determine the send position of the personal account code, entered below.

- 0 = Send after dialed number
- 1 = Send before dialed number

**P3 (PAC):**

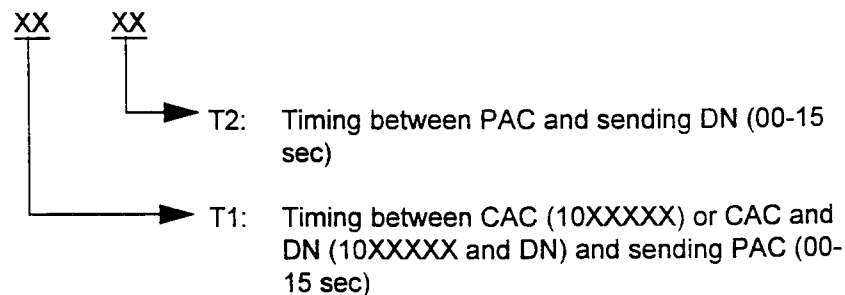
Enter the personal account code.

- 1 to 15 digits
- Blank = Not assigned

**P4 (TIM):**

Enter the personal account code send timing.

- 4 digits



## CMC 472 (Cont'd)

Parameter Descriptions  
(Cont'd)

**NOTE:** The outgoing digit sending patterns in LCR are as follows:

	P2	SENT DIGITS
Pattern 1	0	CAC + DN + T1 + PAC
Pattern 2	1	CAC + T1 + PAC + T2 + DN

**Display**

1. Enter the CIC.
2. Press **DSP** to display FLG, PAC, and TIM data.

**NOTES:**

1. If **DSP** is pressed without entering a CIC, the lowest CIC and associated parameters will be displayed.
2. Press **DSP** repeatedly to display the parameters corresponding to the next CIC.
3. The system releases the CIC when the last CIC has been displayed.

**Change**

1. Enter all parameters.
2. Press **ADD/CHG**.

**NOTE:** Press **ADD/CHG** to change the parameters corresponding to a specified CIC.

**Remove**

After the display, or, after entering the necessary parameters, press **RMV** to remove FLG, PAC and TIM.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NO FOUND	The specified CIC is not assigned (Remove command).	Enter a correct CIC.
PARA. ERR	The specified CIC or TIM is not correct.	Assign a correct CIC or TIM.
NO AREA	There is no area available for CIC registration.	
NOT RTGR	The specified CIC is not assigned (Display command).	Enter a correct CIC.

**SINGLE DIGIT AUTOMATED  
ATTENDANT ASSIGNMENT  
(CMC 480)**

Use this new table (CMC 480) to assign the single digit automated attendant mode and destination for each attendant. DISA-S is required for this feature.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TNN	Tenant number	0 to 63	None
P2	DNO	Dial number	0 to 9, *, #	None
P3	MID	Automated attendant in day mode	0 = Listen to answering message again 1 = Terminates to destination assigned below 2 = Manual dial	0
P4	DID	Destination in day mode (when P3 = 1)	When MID = 0 or 2, leave blank When MID = 1, enter extension DN, attendant access code, or system speed calling FAC + code	Blank
P5	MIN	Automated attendant in night mode	0 = Listen to answering message again 1 = Terminates to destination assigned below 2 = Manual dial	0
P6	DIN	Destination in night mode (when P5 = 1)	When MIN = 0 or 2, leave blank When MIN = 1, enter extension DN, attendant access code, or system speed calling FAC + code	Blank

**Parameter Descriptions**

**P1 (TNN):**

Enter the tenant number (required).

- 0 to 63

**P2 (DNO):**

Enter the one-digit dial number.

- 0 to 9, \*, #

**P3 (MIN):**

Enter how the automated attendant in day mode operation will interpret the single digit dial number entered in P2.

- **0 = Listen to answering message again** (default).
- 1 = Terminates to destination specified in P4.
- 2 = Manual dial

**P4 (DID):**

Enter the day mode destination routing number, when P3 = 1

- Extension directory number.
- Attendant access code.
- System speed calling number + code
- **Default = Leave blank**

CMC 480 (Cont'd)

**Parameter Descriptions  
(Cont'd)**

**P5 (MIN):**

Enter how the automated attendant in night mode operation will interpret the single digit dial number entered in P2.

- 0 = Listen to answering message again (default).
- 1 = Terminates to destination specified in P6.
- 2 = Manual dial

**P6 (DIN):**

Enter the night mode destination routing number, when P5 = 1

- Extension directory number.
- Attendant access code.
- System speed calling number + code
- **Default = Leave blank**

**NOTE:** When a speed calling number is assigned as a destination and the call is blocked via an all trunks busy, the incoming call is not transferred to the attendant console or the assigned extension. The caller will hear reorder tone.

**Display**

1. Enter the TNN.
2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display the MID, DID, MIN, and DIN data corresponding to the next assigned DNO.
2. If no TNN or DNO information is entered, data corresponding to TNN = 0 and DNO = 0 is displayed.
3. Pressing the DSP key after DNO " # " is displayed will show the parameters corresponding to the next assigned TNN.

**Change**

1. Enter all parameters.
2. Press **ADD/CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NO PARA	The required TNN parameter is not entered.	Enter a TNN value.
PARA. ERR	The specified parameter is not correct.	Enter a correct value.

**SMDR OUTGOING DIGITS  
SCREENING ASSIGNMENT  
(CMC 506)**

Use the SMDR Outgoing Digits Screening Assignment (CMC 506) table to mark each digit group as subject to or exempt from SMDR. The data range for this command has been newly defined for P1, as shown below.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	FLAG	Flag value	0 = SMDR output unnecessary 1 = SMDR output necessary	None

**DISTRIBUTED PROCESSOR  
VERSION ID DISPLAY (CMC  
907)**

Use the Distributed Processor Version ID Display (CMC 907) command to display the processor version of cards installed in card slots 00-18 in each cabinet of the system. The new 8PDL card is displayed in P2 as "1."

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P2	TYP	Card type	1 = 8SLC/16SLC/8PDL 2 = 4BWC 3 = 2TTE/2TE4 4 = 2TTL 5 = 4DMR 6 = 4CHT 7 = RVAC 8 = 4SLE 9 = 2APIA 10 = Reserved 11 = ISDN 23PT 12 = FIPN 23PT 13 = Reserved 14 = 24T1 15 = 6DID 16 = Reserved 17 = Reserved 18 = 8BWC 19 = 4TE4	None

## INTRODUCTION

Site log forms are used to assist in the successful implementation of the Series 3 system into the customer's environment. The Site Log Manual (Section 123-200-002) is intended as a tool for:

- Identifying and recording the customer's data base information.
- Providing a permanent record of the customer's data base.
- Programming the system according to the customer's requirements.

The following CMC's programming forms have been either updated for Package 2, or have had new forms created for them.

- CMC 102.
- CMC 302.
- CMC 415.
- CMC 417.
- CMC 425.
- CMC 426.
- CMC 434.
- CMC 470.
- CMC 471.
- CMC 472.
- CMC 480.
- CMC 506.

This chapter is intended as a reference only. To record any new or pertinent customer data for a specific site, please refer to the Package 2 Site Log Manual.



## SYSTEM PARAMETERS

CMC 102 (NOTE: Default values are shown in **bold** type.)

P1 Flag No.	Flag Definition	Available Values	P2 New Value
112	Number of station/trunk digits sent for VMS integration	2 to 8 (includes extension prefix code) An entered value of greater than 8 will mean a value of "0." <b>Default = 4</b>	
201	Front desk console and BS coding flag	0 = Mu-law 1 = A-law	
212	Name and DN display for four-line display digital telephone	<b>0 = Do not apply</b> 1 = Apply	
213	Name and display for attendant	<b>0 = Do not apply</b> 1 = Apply	
218	Off-hook call announcement when PSL is busy	<b>0 = Not allowed</b> 1 = Allowed	
223	NXX area code flag	<b>0 = Apply</b> 1 = Not apply	
224	CAC digit flag	0 = 5 digit CACs only <b>1 = Both 5 digit and 7 digit CACs</b> 2 = 7 digit CACs only	
225	International call digit flag	0 = 15 digits <b>1 = 18 digits</b>	
226	Extension prefix application flag	<b>0 = Standard (extension call only)</b> 1 = Extend (extension call, DN for FAC, VMS integration digits)	
227	Paging access for DND registering station	<b>0 = Allow</b> 1 = Restrict	

**GROUP PICK-UP NUMBER ASSIGNMENT**  
**CMC 302**

<b>P1</b> Pick-Up Group Number (1 to 64)	<b>P2</b> Assigned Station Numbers			

**FIVE-DIGIT CARRIER IDENTIFICATION CODE RESTRICTION ASSIGNMENT  
CMC 415**

<b>P2</b> Restriction Group Number 1 to 3	<b>P2</b> Class of Restriction 1 to 16	<b>P3</b> Five-Digit Carrier Access Codes (10XXX)

**NOTES:**

1. CAC calls registered in CMC 415 will bypass call restriction checks made by the system, such as Area and Office Code Restriction.
2. Seven-digit carrier identification codes are assigned using CMC 470.

**TOLL RESTRICTION 2 ASSIGNMENT  
CMC 417**

P1 = Restriction Group Number =
P2 = Class of Restriction =

P3 = Flag ID

ID	Description	P4 = Flag Value	Value
1	CAC (10XXX/10XXXXX) + OTP1	0 = Deny 1 = Allow	
2	CAC (10XXX/10XXXXX) + OTP2	0 = Deny 1 = Allow	
3	Toll Free Dial (1 + 800)	0 = Deny 1 = Allow	
4	CAC (950) + 0XXX	0 = Deny 1 = Allow	
5	CAC (10XXX/10XXXXX) + CTP	0 = Allow 1 = Deny	
6	CAC (950) + 1XXX	0 = Allow 1 = Deny	
7	CAC (10XXX/10XXXXX) + International Direct Dial (001)	0 = Allow 1 = Deny	

**NOTE:** When FVA = 0, there is no allowance or denial for its type of calls. Further restrictions assigned by CMCs 411, 412, 413, 414, and 416 will determine whether or not a call should go through, based on the rest of the dialed number. When FVA = 1, this command has priority over other restrictions assigned by CMC 411, 412, 413, 414, and 416.

**FIVE-DIGIT LCR CARRIER ACCESS CODE ASSIGNMENT**  
**CMC 425**

<b>P1</b> LCR Carrier Number 1 to 10	<b>P2</b> Five-Digit Carrier Access Number (10XXX)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

**FIVE-DIGIT PERSONAL ACCOUNT CODE FOR CAC ASSIGNMENT  
CMC 426**

<b>P1</b> Five-Digit Carrier Access Code	<b>P2</b> Send Position of PAC 1 = Send Before Dialed No. 0 = Send After Dialed No.	<b>P3</b> Personal Account Code 1 to 15 digits (assigned) or blank (not assigned)	<b>P4</b> PAC Send Timing (4 digits)

**AUTOMATED ATTENDANT ANSWERING MESSAGE AND OVERFLOW STATION ASSIGNMENT**  
**CMC 434**

<b>P1</b> Tenant Number 0 to 63	<b>P2</b> Answering Message ID (Day Mode)	<b>P3</b> Overflow Station DN (Day Mode)	<b>P4</b> Answering Message ID (Night Mode)	<b>P3</b> Overflow Station DN (Night Mode)	<b>P6</b> Single-Digit Flag 0 = Not Applied 1 = Applied

**SEVEN-DIGIT CARRIER IDENTIFICATION CODE RESTRICTION ASSIGNMENT  
CMC 470**

<b>P2</b> Restriction Group Number 1 to 3	<b>P2</b> Class of Restriction 1 to 16	<b>P3</b> Seven-Digit Carrier Access Codes (10XXXXXX)

**NOTES:**

1. CAC calls registered in CMC 470 will bypass call restriction checks made by the system, such as Area and Office Code Restriction.
2. Five-digit carrier identification codes are assigned using CMC 415.



**SEVEN-DIGIT LCR CARRIER ACCESS CODE ASSIGNMENT  
CMC 471**

<b>P1</b> LCR Carrier Number 1 to 10	<b>P2</b> Seven-Digit Carrier Access Number (10XXXXX)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

**SEVEN-DIGIT PERSONAL ACCOUNT CODE FOR CAC ASSIGNMENT**  
**CMC 472**

<b>P1</b> Seven-Digit Carrier Access Code	<b>P2</b> Send Position of PAC 1 = Send Before Dialed No. 0 = Send After Dialed No.	<b>P3</b> Personal Account Code 1 to 15 digits (assigned) or blank (not assigned)	<b>P4</b> PAC Send Timing (4 digits)

**SINGLE DIGIT AUTOMATED ATTENDANT ASSIGNMENT**  
**CMC 480**

<b>P1</b> Tenant Number	<b>P2</b> Dial Number	<b>P3</b> Automated Attendant in Day Mode	<b>P4</b> Destination when in Day Mode (leave blank when P3 = 0)	<b>P5</b> Automated Attendant in Night Mode	<b>P5</b> Destination when in Night Mode (leave blank when P5 = 0)

**SMDR OUTGOING DIGITS SCREENING ASSIGNMENT  
CMC 506**

<b>P1</b> Output ID Flag 0 = SMDR output unnecessary 1 = SMDR output necessary	<b>P2</b> Outgoing Digits 1 to 6	<b>P1</b> Output ID Flag 0 = SMDR output unnecessary 1 = SMDR output necessary	<b>P2</b> Outgoing Digits 1 to 6

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FUJITSU BUSINESS  
COMMUNICATION SYSTEMS

# ***SERIES 3***

## **SYSTEM DESCRIPTION/FEATURES MANUAL**

**Package 2**

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## SYSTEM OVERVIEW

The Fujitsu Business Communication Systems' state-of-the-art hybrid digital PBX (Private Branch Exchange) Series 3 system offers cost effective voice and data telecommunications services for small to medium-size switching applications. Figure 1-1 shows various cabinet configurations.

A major advantage of this integrated voice and data system is that it offers typical businesses a variety of user-friendly features that incorporate the high technology architecture usually found only in the more expensive PBX systems for larger businesses.

Designed for companies requiring from 16 to 480 telephone lines, the Series 3 combines key system and PBX features into one sophisticated, easy to use business communications system and uses highly advanced digital switching technology for both voice and data communications. Signaling tones are in accordance with the North American Standard precise tone plan. System dual-tone multi-frequency signaling conforms to the EIA Standard RS-470 requirements.

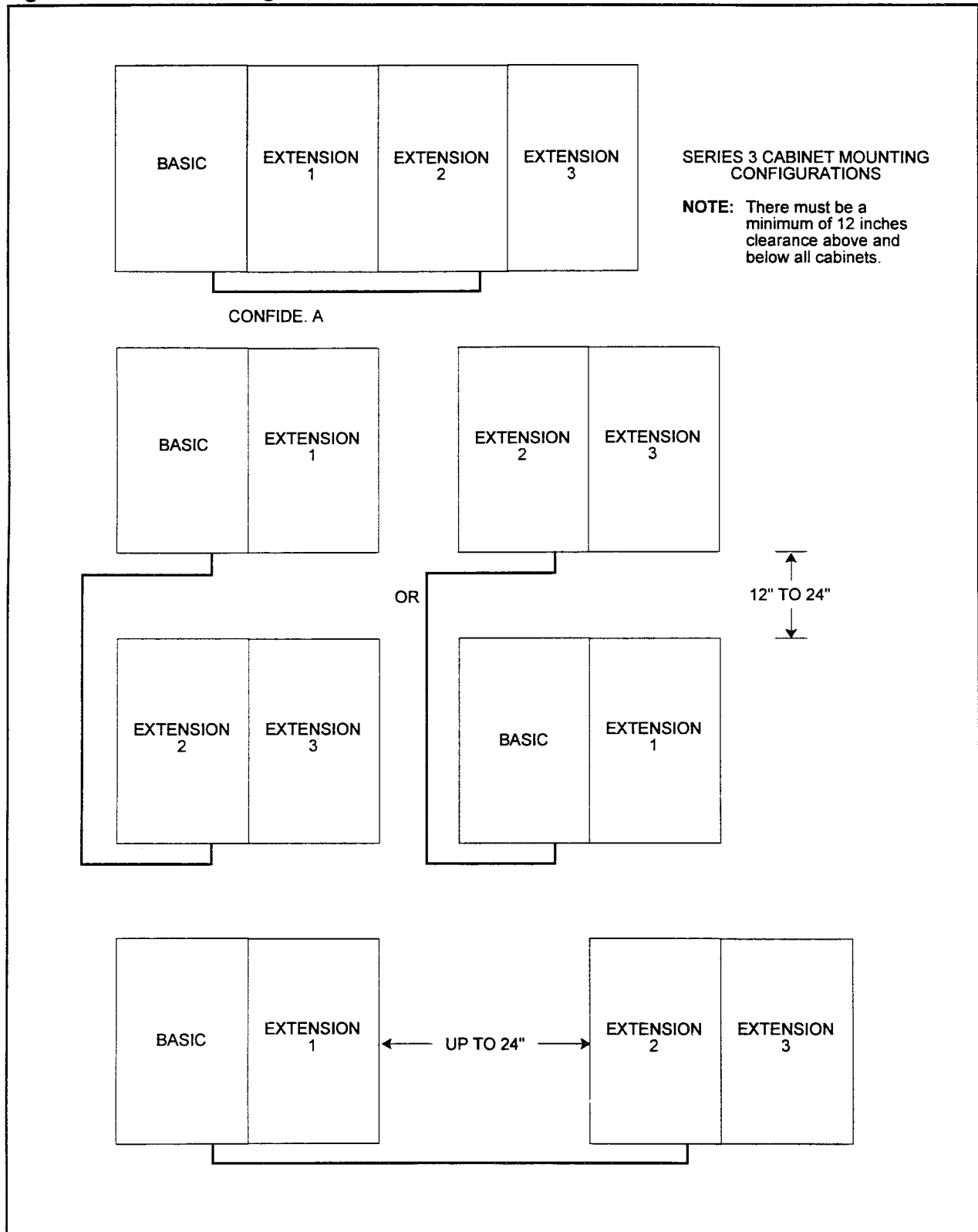
The system is available in flexible configurations which may range from 16 to 480 stations and from 4 to 240 trunks. This flexibility is designed into the system's universal card slots, which allow either line or trunk cards to be used in most card slot locations. A 16-bit microprocessor and distributed 8-bit or 16-bit processor card architecture provide the power required for future expansion. Refer to Chapter 2, System Configuration, for more details on the cabinets, card locations, and system capacities.

The Series 3 offers a variety of cost control features including Least Cost Routing and Multi-Digit Toll Restriction, as well as the ability to include or exclude various features on any individual station.

Other features allow users to provide call coverage for each other and to route calls to an individual or to a destination they select. The system provides feature buttons which can be programmed for Call Forward, Camp-On, Call Park, and many other functions.

The system offers a full range of voice communications features, enhanced business features, and support for industry standard and proprietary multi-line telephones. (See Figure 1-2 for a general system overview.) Simultaneous voice and data transmission over single-pair wiring and multi-function attendant and front desk console services are also provided.

Figure 1-1. Series 3 Configurations



- Digital Telephones** The following digital telephones can be used with the Series 3 system:
- CSD digital telephones which provide data communication and system programming capabilities.
  - DS20, DS20S, DS20SD, and DS32SD digital stations, which also provide programming capabilities, along with variable calendar display (English or Spanish) and other features.

CSD digital voice/data telephones, Digital Stations, and Data Interface Units (DIUs) are supported by the one of the following configurations:

- Connected to an 8DTC card over single-pair wiring which provides:
  - Eight CSDs (voice only).
  - Eight DIUs (Data Interface Units).
  - Six CSD telephones with DTAs (Data Terminal Adapters), plus two voice only CSDs.
  - Eight Digital Stations with optional 30-button DSS modules (refer to the Data Base Manual for the system DSS 30-button capacity).
- Connected to a 16DTC card over single-pair wiring which provides:
  - Sixteen CSDs (voice only).
  - Sixteen Digital Stations.
  - Sixteen DIUs.
  - Sixteen Digital Stations with optional 30-button DSS modules (refer to the Data Base Manual for the system DSS 30-button capacity).

**Analog Telephones** Other telephone instruments unique to the system include:

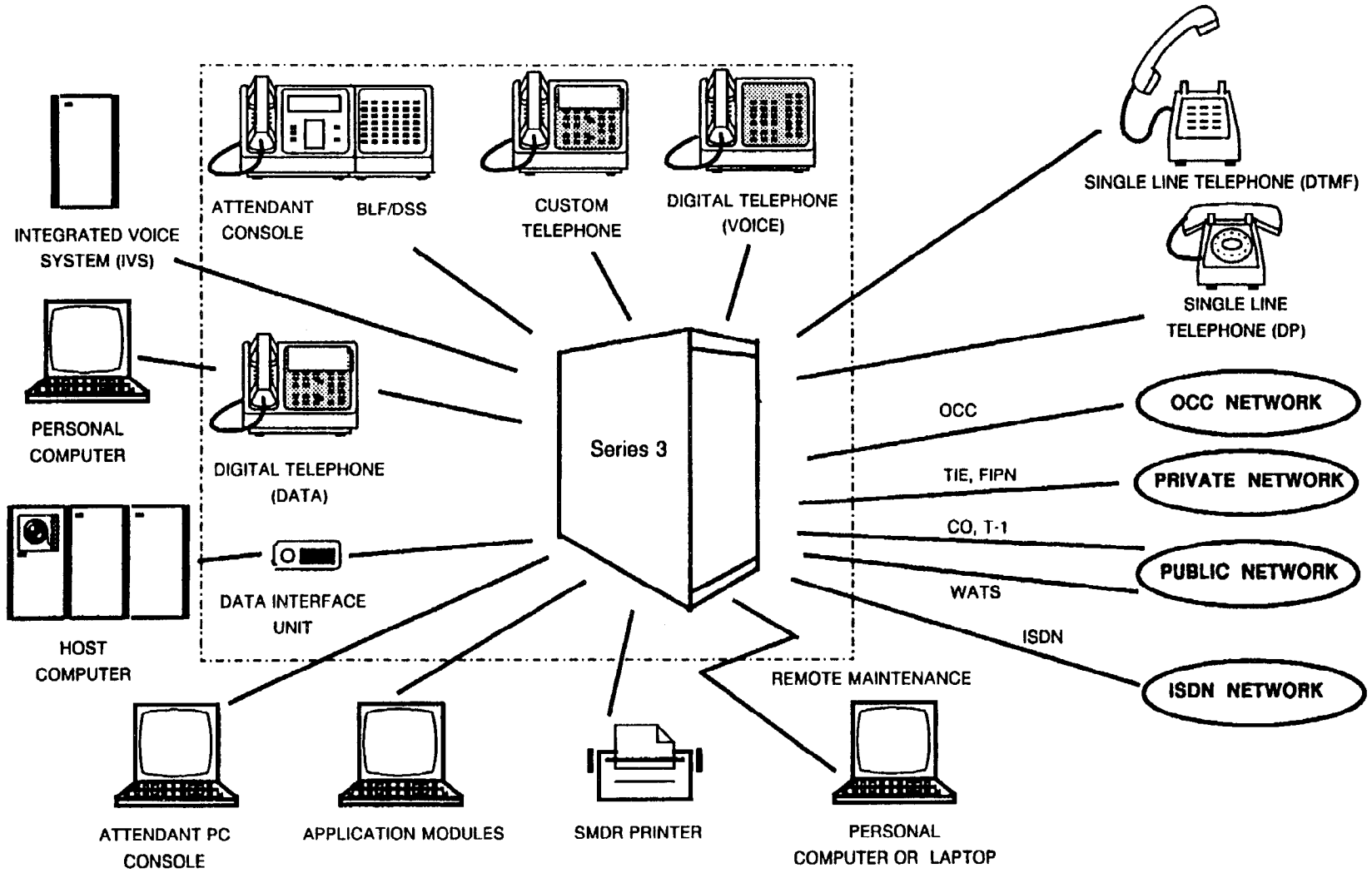
- Attendant Consoles.
- CT-10s, CT-20s, CT-30s, and Direct Station Selection Consoles with Busy Lamp Fields.

Users can program the system to meet their individual needs. System programming and diagnostics can take place either on-site or from a remote facility.

CT-10s, CT-20s, and CT-30s, as well as DSS/BLF (Direct Station Selection/Busy Lamp Field) modules and Attendant Consoles are connected with 8EKC (Electronic Key Telephone) cards or MUFN \* card EKT circuits using two-pair wiring; one pair for voice signals and the other for control signals. Standard single line telephones can also be connected to the system using 8SLC (8 Circuit Single Line Telephone) cards or 16SLC (16 Circuit Single Line Telephone) cards. An off-premise extension can be connected through a four-circuit 4SLE card.

\* MUFN cards are a future Series 3 option

Figure 1-2. System Overview



**Types of Lines** The system can communicate with the Public Switched Telephone Network (PSTN) over the following types of lines:

- CO (Central Office) lines.
- WATS (Wide Area Telecommunications Service) lines.
- FX (Foreign Exchange) lines.
- DID (Direct Inward Dialing) lines.
- Tie lines.
- T-1 lines.
- ISDN lines.

**NOTE:** A description of each type of line can be found in Chapter 2.

There are two circuits per card on the 2TTL card. The 2TE4 card has two circuits, and the 4TE4 card has four circuits. The 4TE4 supports four-wire lines.

The 4BWC (Bothway Trunk) card has four circuits per trunk card, and the 8BWC card has eight circuits per trunk card. Both cards support CO, WATS, and FX lines. DID trunks are supported on the 2TTL and 6DID cards. The 6DID card has six circuits and supports incoming DID only.

The 4CHT (Character Trunk) card adds Hotel/Motel printing and keyboard dialing from a data terminal. The RVAC (Recorded Voice Announcement) card adds recorded voice announcements. Each T-1 card has 24 circuits. The 23PT card provides an ISDN PRI or Fujitsu ISDN Private Network (FIPN) interface.

## SYSTEM BENEFITS

Additional benefits of the system include:

- Improved productivity.
  - Full range of programmable voice features can be configured to suit individual user needs
  - Digital telephones providing a high degree of performance
  - Proprietary Telephone support provides additional functionality for station users
  - Multi-function Attendant Console provides greater call processing capability
  - System/station programmability provides users with the ability to quickly perform adds/changes to meet changing user requirements
  - Integrated Voice Server (IVS)



**SYSTEM BENEFITS  
(Cont'd)**

- Efficient operation.
  - Low power requirements
  - Compact unit takes up little office space
  - System software provides highly reliable and efficient call handling capabilities
  - Digital switching technology provides increased switching capacity without increasing the system cabinet's physical size
  - Combined voice and data transmission over one-pair wiring eliminates need for separate data distribution (using 8DTC)
- Cost management/control.
  - LCR (Least Cost Routing) ensures most economical route selection
  - Multi-digit toll restriction permits customized toll restriction for greater cost control
  - SMDR (Station Message Detail Recording) provides a record of telephone usage for budget/planning purposes
  - Expandable modular system (universal card slots) permits flexibility and easy growth
  - Local/remote maintenance and administration provides economical service and support, reducing maintenance expense
  - Automated attendant reduces staffing requirements for attendant position
  - Optional Call Manager supports call accounting functions

**AVAILABLE FEATURES**

The following charts show all the available features for the Business Package and the Enhanced Network Package. These features are explained in the chapters that follow.

SYSTEM FEATURE	FEATURE PACKAGE	
	Business	Enhanced
Alarms	X	X
ACD (Automatic Call Distribution)	X	X
ACD Agent	X	X
ACD Report Manager		X
ACD Route Queuing	X	X
ACD Route Table	X	X
ACD Supervisor	X	X
API Loop Back Test	X	X
Automated Attendant	X	X
Calling/Called Party Name Display	X	X
Call Diversion to Attendant	X	X
Call Manager	X	X
Call Progress Tones	X	X
Change Work Time by ACD Group	X	X
Class of Service/Class of Restriction	X	X
Conferencing (Three-Party)	X	X
Day/Night DISA	X	X
Diagnostics (Local/Remote)	X	X
Dial Outgoing Restriction	X	X
Dial Pulse/DTMF Stations	X	X
Dialed Number Identification Service (DNIS)		X
Dictation Access	X	X
(DID) Direct Inward Dialing	X	X
Direct-In Dial/Direct Out Dial Service	X	X
Direct Inward Trunks	X	X
Direct Station Selection/Busy Lamp Field 30/40/80	X	X
Direct Station Selection 100	X	X
Direct Station Selection as Room Status Indicator	X	X
Directory Number to Equipment Number Display	X	X
(DISA) Direct Inward System Access	X	X

SYSTEM FEATURE	FEATURE PACKAGE	
	Business	Enhanced
Display Character Assignment	X	X
Distinctive Ringing	X	X
DNIS for Day/Night Call	X	X
DTMF After Account Code Entry	X	X
DTMF Sending During Conference	X	X
Equal Access	X	X
Flexible Numbering Plan	X	X
Hold Message per Tenant or DNIS Number	X	X
Hotel/Motel and Healthcare Applications	X	X
Hunt Groups	X	X
Increase in Proprietary Telephone Capacity	X	X
Least Cost Routing (LCR)	X	X
LCR for International Calls	X	X
Line Button Copy	X	X
Local/Remote Maintenance (Adds, Moves, Changes)	X	X
Maintenance Trunk Busy	X	X
Modular Common Equipment Expansion	X	X
Multi-Digit Toll Restriction	X	X
Multi-Station Appearance Enhancement	X	X
Music on Hold/Tone on Hold	X	X
Night Service	X	X
Office Codes (NXX)	X	X
Off-Premise Extensions (OPX)	X	X
Phantom Station	X	X
Pound ( # ) Code Dialing	X	X
Power Failure Restart	X	X
Power Failure Transfer	X	X
Recorded Voice Announcement	X	X
Silent Monitor	X	X
Simultaneous Voice/Data Transmission	X	X

SYSTEM FEATURE	FEATURE PACKAGE	
	Business	Enhanced
Single Stage Nonblocking Voice Path	X	X
(SMDR) Station Message Detail Recording	X	X
Station Alternate Position	X	X
Specialized Common Carrier (SCC) Access	X	X
System Call Park	X	X
System Speed Calling	X	X
T-1 Interface		X
Tenant Service	X	X
Tie Trunks	X	X
Time Out Disconnect for Ring/No Answer (DISA-S)	X	X
Traffic Measurement	X	X
Trunk Busy Signal	X	X
Trunk Individual Access	X	X
Trunk Priority on ACD Queuing	X	X
Trunk Types	X	X
Variety of Stations	X	X
Voice Mail Integration	X	X
Zero "00" Operator Toll Prefix	X	X

STATION FEATURE	FEATURE PACKAGE	
	Business	Enhanced
Account Code	X	X
Alarms	X	X
Analog Modem Port	X	X
Attendant Park Pick-Up	X	X
Call Announce	X	X
Call Announce Off-Hook	X	X
Call Forward	X	X
Call Forward - Busy	X	X
Call Forward - Follow Me	X	X
Call Forward - Internal/External	X	X
Call Forward - Other Extension	X	X
Call Forward to Station Speed Call Number	X	X
Call Park	X	X
Call Park Recall	X	X
Call Splitting	X	X
Call Status Display	X	X
Call Waiting	X	X
Camp-On, Station	X	X
Camp-On, Trunk	X	X
Conferencing (Three-Party)	X	X
Consultation	X	X
Data Security	X	x
Direct Station Selection/Busy Lamp Field (DSS/BLF)	X	X
Directed Pick-Up (Station Pick-Up)	X	X
Direct Trunk Access	X	X
Do Not Disturb	X	X
Do Not Disturb Override	X	X
Elapsed Time	X	X
Executive Override	X	X
Exclusive Hold	X	X

STATION FEATURE	FEATURE PACKAGE	
	Business	Enhanced
FLASH from SLT	X	X
FLASH/New Call Button	X	X
Flexible Button Assignment	X	X
Floating Loop Line Terminations	X	X
Forced Account Code	X	X
Full Handsfree Operation	X	X
Group Pick-Up	X	X
Hotline Station	X	X
Intercom Groups	X	X
Least Cost Routing (LCR)	X	X
LED Illumination	X	X
Lost Call Recall	X	X
Message Cancellation	X	X
Message Pick-Up	X	X
Message Selective Cancellation	X	X
Message Waiting	X	X
Message Waiting (SLTs)	X	X
Monitor	X	X
Multiple Classes of Service	X	X
Multiple Group Pick-Up	X	X
Mute	X	X
Night Answer	X	X
Off-Hook Incoming Call Signaling	X	X
Primary Station Line	X	X
Program	X	X
Ringing Line Preference	X	X
Save/Last Number Redial	X	X
Selective Secretarial Override Assignment	X	X
Self Extension Ringing	X	X
Silent Messages	X	X

STATION FEATURE	FEATURE PACKAGE	
	Business	Enhanced
Speakerphone	X	X
Speed Calling (Station)	X	X
Station Page Access	X	X
Station-to-Station Calls	X	X
Terminal Password	X	X
Time and Date	X	X
Time Reminder	X	X
Tone Ringer	X	X
Touch (Key) Tone	X	X
Transfer	X	X
Transfer Camp-On	X	X
Transfer Release	X	X
Transfer with AUTO HOLD	X	X
Trunk Group Access	X	X
Voice Calling/Handsfree Answer	X	X
Walking Class of Service	X	X

ATTENDANT FEATURE	FEATURE PACKAGE	
	Business	Enhanced
ACD (Automatic Call Distribution) Access	X	X
Account Code Entry	X	X
Alarm	X	X
Alphanumeric Display	X	X
Attendant Overflow	X	X
Attendant Password	X	X
Attendant Priority	X	X
Attendant Station BLF/DSS	X	X
Attendant Transfer	X	X
Attendant Voice Message	X	X
Automatic Recall	X	X
Break-In	X	X
Call Announce	X	X
Call Park	X	X
Call Splitting	X	X
Call Waiting Indicator	X	X
Camp-On	X	X
Conference	X	X
COS/COR	X	X
Digital Clock Display	X	X
Directed Call Pick-Up	X	X
Do Not Disturb Override	X	X
Drop/Cancel	X	X
FLASH Button	X	X
Floating Loop Keys	X	X
Hold	X	X
INCOMING Button	X	X
Individual Trunk Access	X	X



ATTENDANT FEATURE	FEATURE PACKAGE	
	Business	Enhanced
Message Leaving	X	X
Multiple Attendants	X	X
Night	X	X
Paging (External)	X	X
Paging (Station)	X	X
Position Busy	X	X
Position Release	X	X
Programming	X	X
Save/Last Number Redial	X	X
Serial Call	X	X
STATION Button	X	X
Station Lockout	X	X
Station Speed Calling	X	X
Supervised Release	X	X
System Speed Calling	X	X
Through Dialing	X	X
Trunk Camp-On	X	X
Trunk Group Busy/Trunk Group Access	X	X
Trunk Priority	X	X
Trunk-to-Trunk Connection	X	X
Volume Control	X	X

KEY TELEPHONE SYSTEM FEATURE	FEATURE PACKAGE	
	Business	Enhanced
Alternate DSS	X	X
Common Hold with I-Use Indication	X	X
Delayed Ringing	X	X
DSS Camp-On	X	X
DSS Line Terminations	X	X
DSS Park	X	X
DSS Speed Calling	X	X
FLASH/New Call	X	X
Headset	X	X
Idle Line/Ringing Line Preference	X	X
Intercom Line Origination/Termination	X	X
One-Touch Selection	X	X
Postselection/Preselection	X	X
Prime Line Preference	X	X
Privacy/Privacy Release	X	X
Programming from Station	X	X
Repertory Dialing	X	X
Ringing Line Preference	X	X
Square Configuration	X	X

HOTEL/MOTEL FEATURE	FEATURE PACKAGE	
	Business	Enhanced
Automatic Wake-up	X	X
Call Charge Message Registration	X	X
Call Controlled Restriction	X	X
DND/DND Override by FDC or ATT	X	X
Front Desk Program	X	X
Hotel/Motel Printers	X	X
Hotline to Attendant	X	X
Message Registration	X	X
Message Waiting	X	X
Property Management System	X	X
Room Information for Multi-Language Wake-Up	X	X
Room Information for Room Restriction	X	X
Room Number Correlation	X	X
Room Status	X	X
Room Status Indicator	X	X
Room-to-Room Blocking	X	X
Service Call Routing	X	X
Single Digit Dialing	X	X
Special Service Codes	X	X
Time Out Routing to Attendant	X	X
Vacant Room Restriction	X	X

DATA SWITCHING FEATURE	FEATURE PACKAGE	
	Business	Enhanced
Add Data Call		X
Alternate Telephone/Keyboard Dialing		X
Alternate Voice/Data Communications		X
Automatic Answer		X
Call Control Mode		X
Data Call Detail Recording		X
Data Call Setup by Voice Port		X
Data Call Setup via Modem Pooling		X
Data Call Setup with CSD and DIU		X
Data Call Setup with Terminal Keyboard		X
Data Class of Service		X
Data Hotline		X
Data Least Cost Routing		X
Data Station Flexible Numbering Plan		X
Data Status Attribute Change		X
Data Terminal Group Hunting		X
Data Traffic Measurement		X
Individual Modem Access		X
Simultaneous Voice/Data Communications		X
Subordinate Data Call		X

ISDN FEATURE	FEATURE PACKAGE	
	Business	Enhanced
Calling Line Identification Display (CLID)		X
Calling Line Identification Display (CLID) Enhancement		X
Calling Line Identification Presentation (CLIP)		X
Calling Line Identification Restriction (CLIR)		X
CBC Service		X
ISDN Numbering Plan		X
ISDN PRI Interface		X
Maintenance		X

FIPN FEATURE	FEATURE PACKAGE	
	Business	Enhanced
Attendant Break-In		X
Attendant Call Transfer		X
Attendant Camp-On		X
Attendant Supervised Loop		X
Attendant Termination		X
Calling Party Number Display		X
Connected Party Number Display		X
Connected Party Status Display		X
Distinctive Ringing		X
Extension Break-In		X
Extension Call Transfer		X
Extension Camp-On		X
Trunk Signaling Check		X

**SYSTEM SOFTWARE**

The operating system incorporates an advanced software design for switching systems. It utilizes a high level programming language, CHILL, which has the following features:

- Designed specifically to meet multi-national standards.

CHILL (an acronym for CCITT High Level Language) was developed according to a recommendation of the CCITT (International Consultative Committee for Telephony and Telegraphy). This international organization defined technical standards to govern the operation of the world's telecommunications systems.

- Designed specifically for stored program control systems.

CHILL was designed primarily for programming stored program control telephone exchanges. With the increasing use of this type of system control, generic software has become very large and complex.

- Enhances system reliability.

CHILL's advanced software design provides a language processing tool which enables the switch to operate faster and the equipment to support more telephone processing than a similar switch with a different operating system.

- Provides applications flexibility.

CHILL provides powerful programming tools which make it easy to perform new applications and to exploit various kinds of hardware. In addition, CHILL supports a wide range of other applications (i.e., message switching, packet switching, etc.).

The generic software for the system utilizes the proper programming tools to achieve the maximum benefit of this telephone technology.

The software resides in ROM located on the CPU card. This card also contains the switching matrix. The optional disk drive can be located on the right side of the basic cabinet and is available for customer data saving purposes.

**FCC REGISTRATION INFORMATION**

In compliance with FCC regulations, the following information is provided:

1. Before connecting the telephone network, the user must notify the local telephone company of this intention and provide the telephone company with the number of the particular lines on which the system is to be used, and shall provide the telephone company the FCC registration number, the Ringer Equivalence Number (REN), and the model number of the system. This information is located on the registration plate. The FCC registration number for the system is **BJ885Z-60084-KF-E** (used as a Key System), **BJ8USA-75355-PF-E** (used as a PBX), or **BJ8USA-60083-MF-E** (used as a multi-function system).
2. The end user must inform the local telephone company of the quantities and type of Universal Service Order Code (USOC) jacks which are required as shown in the following charts.
3. When private line ports are connected to the telephone network, the user must provide the following information to the telephone company:
  - Service Order Code and Facility Interface Code.
  - The quantities and USOC numbers for the required jacks.
  - For each jack, list the sequence in which the lines are to be connected, giving technical description codes by position and the ringer equivalence number or service code where applicable.
4. Since the system does not have signal power limiting, it can only be used with FCC registered, grandfathered devices, or devices which otherwise comply with Section 68.308.
5. The system complies with the following U.S. standards:
  - FCC Part 68.
  - FCC Part 15, Class A.
  - UL 1459 telephone equipment.
  - EIA RS-464-1.

**NOTE:** The 6DID, 8BWC, 24T1, 23PT, 2TE4, and 4TE4 cards meet UL Type I protection. The 4BWC, 2TTL, and 2TTE cards require Type II protection at the MDF.

**MTS/TS Interface**

TRUNK	INTERFACE	REN	NO. OF LEADS	USOC
4BWC	2-Wire Loop	0.2A	2	RJ21X
4BWC	2-Wire G.S.	0.2A	2	RJ21X
8BWC	2-Wire Loop	0.6A	2	RJ21X
8BWC	2-Wire G.S.	0.6A	2	RJ21X
6DID	02RV2-T	0.0B	2	RJ21X

Digital Interface

TRUNK	PRIVATE LINE FACILITY INTERFACE CODE	SERVICE CODE	NO. OF LEADS	USOC
24T1	04DU9-BN 04DU9-DN 04DU9-1KN 04DU9-1ZN	6.0Y	4	RJ48C
23PT	04DU9-BN 04DU9-DN 04DU9-1KN 04DU9-1ZN	6.0Y	4	RJ48C

Private Line Interface

TRUNK	PRIVATE LINE FACILITY INTERFACE CODE	SERVICE CODE	NO. OF LEADS	USOC
2TE4	TL11M	9.0F	4	RJ21X, RJ2FX (2W E&M TYPE 2 SIG) RJ2EX (2W E&M TYPE 1 SIG) RJ2GX (4W E&M TYPE 1 SIG) RJ2HX (4W E&M TYPE 2 SIG)
	TL31M		6	
	TL12M		8	
	TL32M			
4TE4	TL11M	9.0F	4	RJ21X, RJ2EX (2W E&M TYPE 2 SIG) RJ2FX (2W E&M TYPE 2 SIG) RJ2GX (4W E&M TYPE 1 SIG) RJ2HX (4W E&M TYPE 2 SIG)
	TL31M		6	
	TL12M		8	
	TL32M			

Off-Premise Extension Interface

OPX CARD	FACILITY INTERFACE CODE	SERVICE CODE	NO. OF LEADS	USOC
FS35SO-4SLE	OL13A	9.0F	2	RJ21X



**FCC REGISTRATION  
INFORMATION (Cont'd)**

6. FCC rules provide that, should the equipment cause harm to the telephone network, the telephone company shall, where practicable, notify the customer that temporary discontinuance of service may be required; however, where prior notice is not practicable, the telephone company may temporarily discontinue service immediately, if such action is reasonable in the circumstances.
7. FCC rules provide that the telephone company may make changes in its communications facilities, equipment operations, or procedures where such action is reasonably required in the operation of its business and is not inconsistent with the rules and regulations of the FCC. If such changes render any customer terminal equipment incompatible with the telephone company's facilities or require modification, or alteration of such terminal equipment, or otherwise materially affect its use or performance, the customer will be given adequate notice in writing to allow the customer an opportunity to maintain uninterrupted service.
8. The user shall not attempt to repair or modify this equipment. Instead, any necessary service or repair shall only be initiated and performed by the manufacturer or its authorized agent.
9. If trouble is experienced, disconnect this equipment from the telephone line to determine if it is causing the malfunction. If the equipment is determined to be malfunctioning, its use shall be discontinued until the problem has been corrected.
10. This equipment shall not be used on party lines or coin telephone lines.
11. The local telephone company must be notified when this equipment is permanently disconnected.
12. Allowing this equipment to be operated in such a manner as to not provide for proper answer supervision is a violation of part 68 of the FCC's rules.

Proper answer supervision is when:

- A. This equipment returns answer supervision to the Public Switched Telephone Network (PSTN) when DID calls are:
  - Answered by the called station.
  - Answered by the attendant.
  - Routed to a dial prompt.
  - Routed to a recorded announcement that can be administered by the CPE user.
- B. This equipment returns answer supervision on all DID calls forwarded to the PSTN. Permissible exceptions are:
  - A call is unanswered.
  - A busy tone is received.
  - A reorder tone is received.

**REFERENCE  
DOCUMENTATION**

The system is complemented by a complete list of reference documentation. The following is a list of documents available or necessary:

**Fujitsu Documentation**

**Attendant PC Console User Manual (Section 117-025-002).** Describes the operations of the Attendant PC Console.

**Applications Manual (Section 123-015-002).** Used to assist in the feature programming of the system.

**Attendant Console User Guide (Section 123-040-002).** Describes Attendant Console operating instructions. A Quick Reference Guide (Section 123-045-002) is also available.

**DIU User Manual (Section 123-044-002).** Describes the operations of a Data Interface Unit.

**Front Desk User Guide (Section 123-049-002).** Describes the Front Desk Console operating instructions.

**Digital Station User Guide (Section 123-050-002).** Describes the operations of the Digital Stations. A Quick Reference Guide (Section 123-051-002) is also available.

**CT-10/20/30 User Guide (Section 123-052-002).** Describes CT-10, CT-20, and CT-30 telephone operating instructions. A Quick Reference Guide (Section 123-053-002) is also available.

**DSS Quick Reference Guide (Section 123-055-002).** Describes user operations for the DSS/BLF. Refer to the CT-10/20/30 User Guide for more detailed information on feature operation using the DSS.

**Installation Manual (Section 123-056-002).** Provides complete instructions for installing the Series 3 system.

**ACD Agent/Supervisor Quick Reference Guide (Section 123-058-002).** Describes user operation of Automatic Call Distribution (ACD) features.

**Maintenance Manual (Section 123-060-002).** Provides programming and hardware information for maintaining the Series 3 system.

**Single Line Telephone User Guide (Section 123-063-002).** Describes single line telephone operating instructions. A Quick Reference Guide (Section 123-054-002) is also available.

**Data Base Manual (Section 123-080-002).** Provides information necessary for installation programming and maintenance of the system.

**Site Log (Section 123-200-002).** Provides the forms necessary to document the programming for the system.

**Related Documentation**

The Integrated Voice Server (IVS) is a voice messaging system that is designed to complement the Series 3 system. The following is a complete list of documentation for the IVS:

**IVS System Manual (Section 117-011-002).** Provides complete programming information for installing and maintaining the IVS.

**IVS Installation/Maintenance Manual (Section 117-012-002).** Provides hardware installation and maintenance information for the IVS.

**IVS User Guide (Section 117-014-002).** Describes user operation of the IVS features.

**IVS Administrator Manual (Section 117-015-002).** Provides maintenance programming information for on-site administration of the IVS.

Call Manager is an integrated call accounting system designed to operate with the Series 3 and its Station Message Detail Recording (SMDR) capability. The following is a complete list of documentation for the Call Manager:

**Call Manager Polling Document (Section 117-036-001).** Provides information on the collection, storage, and pricing of call records.

**Call Manager Report Writer System Manual (Section 117-037-001).** Provides information on call record buffering and pricing, archiving onto the hard disk, and enhanced PC-based reporting capabilities.

**Call Manager System Manual - Commercial (Section 117-038-001).** Provides information on collecting SMDR data, storage of formatted call records into system memory, and the pricing of the call records as system reports are generated.

**Call Manager System Manual - Lodging (Section 117-039-001).** Provides information on collecting SMDR data, storage of formatted call records into system memory, and the pricing of the call records as system reports are generated. In addition, housekeeping, maintenance, and occupancy information is included for the Lodging system.

The ACD Report Manager enables ACD users to interface to an external, PC-driven reporting system. On-screen and printed reports are available, to aid in making effective use of Automatic Call Distribution capabilities. The following is a complete list of documentation for the ACD Report Manager:

**ACD Report Manager Platform Manual (Section 117-029-007).** Provides information about the Acer 486 PC and its add-on components to be used with the ACD Report Manager system.

**ACD Report Manager User Guide (Section 117-040-007).** Describes user operation of the ACD Report Manager.

**ACD Report Manager System Manual (Section 117-043-007).** Describes the system configuration, available features, generation of reports, and installation information.

## SYSTEM CONFIGURATION

The Series 3 system has full universal card slot architecture which allows either line or trunk cards to be used in most card slot locations. Figure 2-1 shows a general system configuration with accompanying telephones and other peripherals.

As with all communications systems, the configuration of the system depends on the user's line and trunk requirements.

**NOTE:** Line/trunk card replacement does not require reprogramming the system features.

Figure 2-2 shows the internal card slot configuration used for both basic and expansion cabinets. Certain card slots are dedicated for the common control cards and the Power Failure Transfer (6PFA) card.

The basic system configuration utilizes one equipment cabinet and provides up to 120 stations or 80 trunks. The expanded system configuration can add up to three additional universal equipment cabinets. Therefore, the system can consist of one, two, three, or four cabinets. The maximum system capacities are:

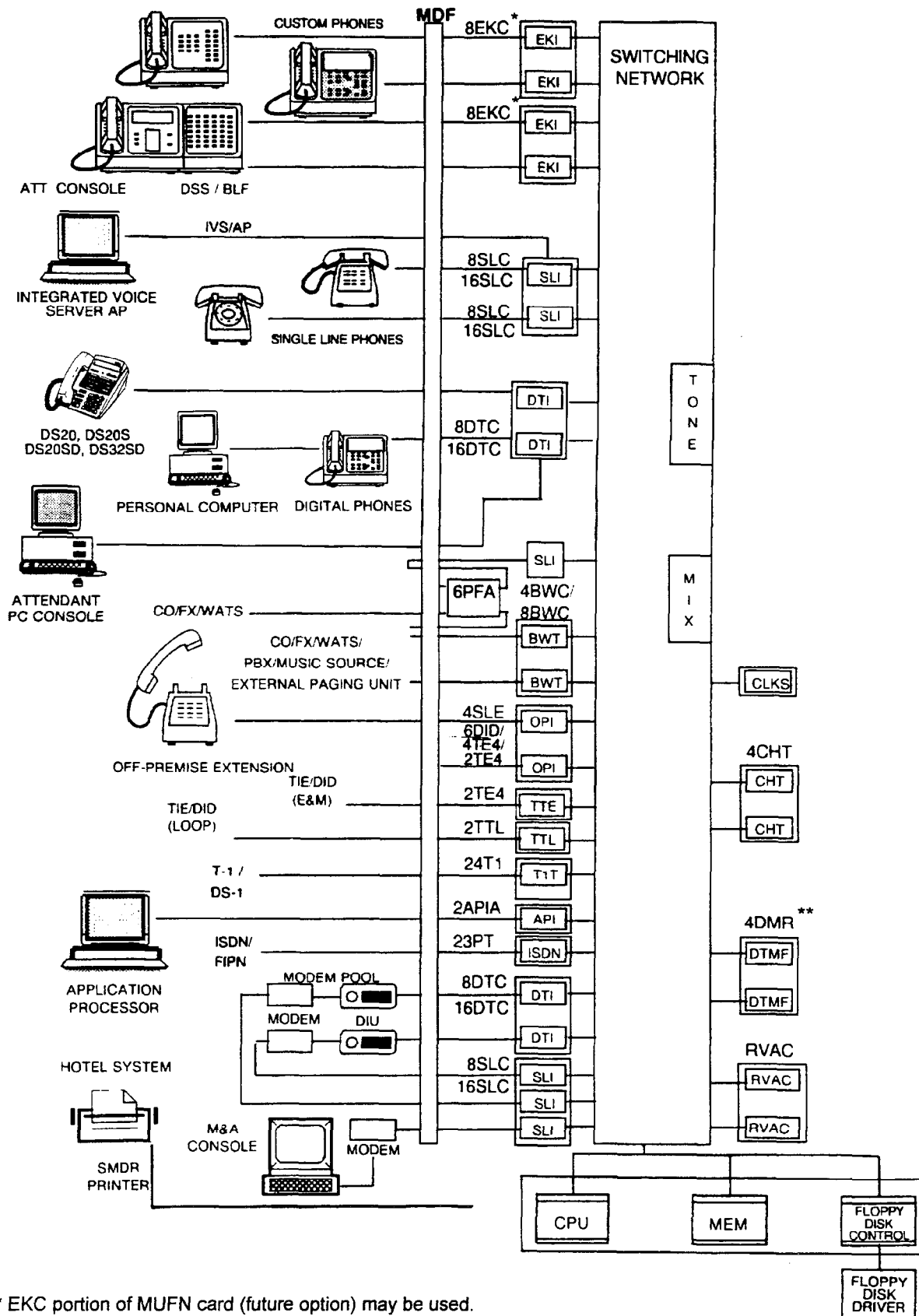
NUMBER OF CABINETS	TRUNKS	STATIONS
1	80	120
2	160	240
3	240	360
4	240	480

**Card Slots** Table 2-1 and Table 2-2 lists the card slots available for the various types of cards. Table 2-1 shows the differences between physical and logical card slots, with installation restrictions for each card. Table 2-2 lists in which physical slot each circuit card can be installed (by cabinet), and total system capacities.

**Cards per Cabinet Maximums** Table 2-3 lists the maximum number of cards per cabinet for trunks, stations, data stations, etc., for the system.

**System Capacities** Refer to Table 2-4 for maximum system capacities (listed per feature). This table is used to describe all system maximums. All system maximums cannot be utilized simultaneously in the Series 3.

Figure 2-1. System Configuration Overview



\* EKC portion of MUFN card (future option) may be used.  
 \*\* DMR portion of MUFN card (future option) may be used.

Figure 2-2. Series 3 Cabinet Internal View

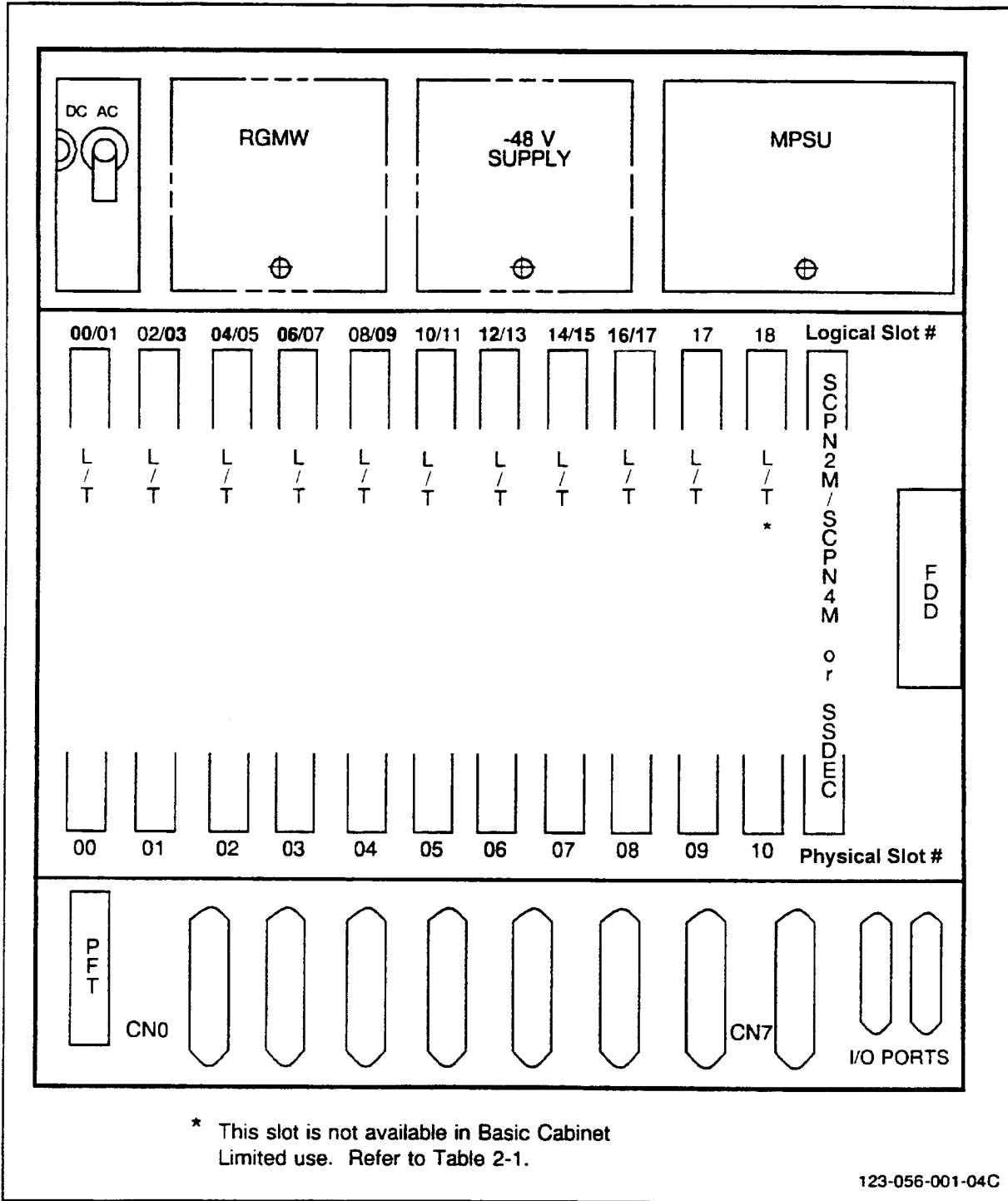


Table 2-1. Card Slot Usage

Physical Slot	00	01	02	03	04	05	06	07	08	09	10 <sup>1</sup>
Logical Slot <sup>2</sup>	0 1	2 3	4 5	6 7	8 9	10 11	12 13	14 15	16 17	17	18
16DTC	X	X	X	X	X	X	X	X	3	-	-
16SLC	X	X	X	X	X	X	X	X	3	-	-
8DTC	4	4	5	4	4	5	4	5	5	5	-
8EKC	X	X	X	X	X	X	X	X	X	X	-
8PDL	X	X	X	X	X	X	X	X	X	X	-
8SLC	X	X	X	X	X	X	X	X	X	X	-
8BWC	X	X	X	X	X	X	X	X	X	X	-
4BWC	X	X	X	X	X	X	X	X	X	X	-
4SLE	X	X	X	X	X	X	X	X	X	X	-
6DID	X	X	X	X	X	X	X	X	X	X	-
4TE4	X	X	X	X	X	X	X	X	X	X	-
2TE4	X	X	X	X	X	X	X	X	X	X	-
2TTE	X	X	X	X	X	X	X	X	X	X	-
2TTL	X	X	X	X	X	X	X	X	X	X	-
4DMR	X	X	X	X	X	X	X	X	X	X	10
4CHT	X	X	X	X	X	X	X	X	X	X	-
2APIA	X	X	X	X	X	X	X	X	X	X	-
24T1	6	7	-	6	7	-	6	8	-	-	-
23PT	6	7	-	6	7	-	6	8	-	-	-
RVAC	X	X	X	X	X	X	X	X	X	X	-
CLKS	-	-	-	-	-	-	-	-	-	9	-
CACC/H	X	X	X	X	X	X	X	X	X	X	10
MUFN <sup>11</sup>	X	X	X	X	X	X	X	X	3	-	-

Refer to next page for explanation of notes.

## Notes for Table 2-1

- Note 1 Physical slot 10 is not available in the Basic cabinet (cabinet 0).
- Note 2 When a 2, 4, 6, 8 circuit card, a 24T1, or a 23PT card is assigned, the logical slot number shown as bold in the table is used for the equipment numbers. An 8EKC assigned to physical slot 2 of cabinet 2 (the first expansion cabinet) will use equipment numbers 2040 to 2047. An 8EKC assigned to physical slot 1 of cabinet 2 will use equipment numbers 2030 to 2037. The equipment numbers of a 24T1 card in physical slot 3 of cabinet 2 are 2060 to 2067, 2070 to 2077, and 2080 to 2087.
- When a 16 circuit card is assigned, two logical slot numbers are used. If a 16DTC is installed in physical slot 2 of the basic (first) cabinet, the equipment numbers are 0040 to 0047, and 0050 to 0057.
- Note 3 When a 16 circuit card (16DTC, 16SLC, or MUFN) is installed in physical slot 8, physical slot 9 must be empty, unless occupied by a CACC/H card or CLKS card.
- Note 4 The first six circuits of the 8DTC card can be used for simultaneous voice and data on CSD phones.
- Note 5 Simultaneous voice and data is not available for CSD with DTA phones.
- Note 6 When a 24T1 or 23PT is installed in physical slot 0, 3 or 6, the next physical slot (1, 4, or 7) can be used only for 1, 2, 4, 6, or 8 circuit card or another 24T1 or 23PT card.
- Note 7 When either a 24T1 or 23PT is installed in physical slot 1 or 4, the next physical slot (2 and 5) must be empty. **Clock extraction can be made from the basic (0) cabinet only.**
- Note 8 When either a 24T1 or a 23PT card is installed in physical slot 7, the next three physical slots (8, 9, and 10) must be empty. Clock extraction cannot be made on this card.
- Note 9 CLKS card can be installed only in physical slot 9 of the Basic cabinet.
- Note 10 This card slot is used in the expansion cabinet(s) only.
- Note 11 The first eight circuits of the MUFN card are EKC circuits, although only circuits 0, 2, 4, and 6 may be used (circuits 1, 3, 5, and 7 are not available). The next four circuits are used for the DTMF receiver function. The quantity of DTMF receiver circuits and EKC circuits on this card must be taken into account along with circuits on any other 4DMR and 8EKC cards when calculating system maximum capacities.
- When installed in a two-hiway card slot, the EKC portion of the MUFN card occupies the first hiway and logical card slot. The DMR portion of the MUFN occupies the second hiway and logical card slot. Any required M&A commands should reference the appropriate commands used for the 4DMR and 8EKC cards.



Table 2-2. Available Card Slots (Physical Slots)

CARD TYPE	INTERFACE	BASIC CAB.	EXPAN. CABINET 1	EXPAN. CABINET 2	EXPAN. CABINET 3	TOTAL SYSTEM CAPACITY
2APIA	Application Processor	00-09	00-09	00-09	00-09	2
2TTL	Loop Tie Lines, Loop DID Lines	00-09	00-09	00-09	00-09	40*
6DID	Direct Inward Dialing Trunks	00-09	00-09	00-09	00-09	40*
2TE4	E&M Tie Lines	00-09	00-09	00-09	00-09	40*
4TE4	E&M Tie Lines	00-09	00-09	00-09	00-09	40*
4BWC	Loop/Ground Bothway Trunk; FX, WATS, CO	00-09	00-09	00-09	00-09	40*
8BWC	Loop/Ground Bothway Trunk; FX, WATS, CO	00-09	00-09	00-09	00-09	30*
4CHT	Hotel/Motel Printer or Data Terminal	00-09	00-09	00-09	00-09	4
CLKS	T-1 Digital Trunk	09	--	--	--	1
4DMR	DTMF for Single Line Stations	00-09	00-10	00-10	00-10	8
4SLE	OPX Circuits	00-09	00-09	00-09	00-09	40
6PFA	Power Failure Stations	Dedicated	Dedicated	Dedicated	Dedicated	4
8EKC (CTs require Rev 13D or higher)	CT-10, CT-20, CT-30, DSS/BLF, RSIs, Attendant Consoles	00-09	00-09	00-09	00-09	40
MUFN	CT-10, CT-20, CT-30, DSS/BLF, RSIs, Attendant Consoles	00-08	00-08	00-08	00-08	8
8DTC	CSD w/DTA/, DSS 30, DS20, DS20S, DS20SD, DS32SD, Attendant PC Console	00, 01, 03, 04, 06	00, 01, 03, 04, 06	00, 01, 03, 04, 06	00, 01, 03, 04, 06	20

\* Maximum of combined circuits is 240.

\*\* The sum of installed MUFN cards and 8EKC cards may not exceed 40.

Table 2-2. Available Card Slots (Physical Slots) (Cont'd)

CARD TYPE	INTERFACE	BASIC CAB.	EXPAN. CABINET 1	EXPAN. CABINET 2	EXPAN. CABINET 3	TOTAL SYSTEM CAPACITY
8DTC	CSD w/o DTA/DIU/ DS20, DS20S, DS20SD, DS32SD	00-09	00-09	00-09	00-09	40
8SLC	Single Line Stations, IVS Interface	00-09	00-09	00-09	00-09	40
16DTC	CSD w/o DTA/DIU/ DS20, DS20S, DS20SD, DS32SD, Atten- dant PC Console	00-08	00-08	00-08	00-08	32
16SLC	Single Line Stations, IVS Interface	00-08	00-08	00-08	00-08	32
24T1	Digital Trunk	00, 01, 03, 04, 06, 07	00, 01, 03, 04, 06, 07	00, 01, 03, 04, 06, 07	00, 01, 03, 04, 06, 07	10*
23PT	ISDN Trunk	00, 01, 03, 04, 06, 07	00, 01, 03, 04, 06, 07	--	--	10*
SC2P2B / SC2P2E / SC4P2B / SC4P2E	Central Processor/ Memory/ Switch Control	Dedi- cated	--	--	--	1
SSDEC	Signal Distributor	--	--	Dedicated	--	1
RVAC	Recorded Voice Announcement	00-09	00-09	00-09	00-09	8
CACC**	Call Manager (Commercial)	00-09	00-10	00-10	00-10	1
CACH**	Call Manager (Hospitality)	00-09	00-10	00-10	00-10	1

\* Maximum of combined circuits is 240.

\*\* These cards can be placed in any of the indicated card slots, except when the slot is next to either a 24T1 or 23PT card installed in slot 01, 04, or 07.

Table 2-3. Cards per Cabinet Maximums

CARD TYPE	INTERFACE	BASIC CABINET	EXPAN. CABINET 1	EXPAN. CABINET 2	EXPAN. CABINET 3	TOTAL SYSTEM CAPACITY
2APIA	Application Processor	2	2	2	2	2
2TTL	Loop Tie Lines, Loop DID Lines	10	10	10	10	40*
6DID	Direct Inward Dialing Trunks	10	10	10	10	40*
2TE4	E&M Tie Lines	10	10	10	10	40*
4TE4	E&M Tie Lines	10	10	10	10	40*
4BWC	Loop/Ground, Bothway Trunk; FX, WATS, CO	10	10	10	10	40*
8BWC	Loop/Ground, Bothway Trunk; FX, WATS, CO	10	10	10	10	30*
4CHT	Hotel/Motel Printer or Data Terminal	2	2	2	2	4
CLKS	T-1 Digital Trunk	1	0	0	0	1
4DMR / MUFN**	DTMF for Single Line Stations	8	8	8	8	8
4SLE	OPX Circuits	10	10	10	10	40
6PFA	Power Failure Stations	1	1	1	1	4
8EKC (Rev 13D or higher)	CT-10, CT-20, CT-30, DSS/BLF, RSIs, Attendant Consoles	10	10	10	10	40
8DTC	CSD w/DTA, Attendant PC Console	5	5	5	5	20
8DTC	CSD w/o DTA/ DIU/ DS20, DS20S, DS20SD, DS32SD, Attendant PC Console	10	10	10	10	40

\* Maximum of combined circuits is 240.

\*\* Totals include both 4DMR and MUFN cards. The MUFN card is a future Series 3 option.

Table 2-3. Cards per Cabinet Maximums (Cont'd)

CARD TYPE	INTERFACE	BASIC CABINET	EXPAN. CABINET 1	EXPAN. CABINET 2	EXPAN. CABINET 3	TOTAL SYSTEM C'PACITY
8SLC	Single Line Stations, IVS Interface	10	10	10	10	40
16DTC	CSD w/o DTA/ DIU/ DS20, DS20S, DS20SD, DS32SD, Attendant PC Console	9	9	9	9	32**
16SLC	Single Line Stations, IVS Interface	9	9	9	9	32**
24T1	Digital Trunk	5	5	5	5	10*
23PT	ISDN Trunk	5	5	0	0	10*
SC2P2B / SC2P2E / SC4P2B / SC4P2E	Central Processor/ Memory/ Switching	1	0	0	0	1
SSDEC	Signal Distributor	0	0	1	0	1
RVAC	Recorded Voice Announcement	2	2	2	2	8
CACC/H	Call Manager	1	1	1	1	1

\* Maximum of combined circuits is 240.

\*\* Each cabinet can accommodate up to nine cards, but only thirty-two cards total can be activated.

Table 2-4. System Maximum Capacities

SUBJECT	BASIC CABINET	EXPAN. CABINET 1	EXPAN. CABINET 2	EXPAN. CABINET 3	SYSTEM MAXIMUM
Ports	144	292	440	588	588
Total Trunks	80	160	240	240	240
Trunk Groups	44	44	44	44	44
SCC Routes	10	10	10	10	10
Terminating Trunk Groups	63	63	63	63	63
Trunk Dialing Groups	3	3	3	3	3
Trunk Restriction Groups	3	3	3	3	3
Trunk Queuing/ Simultaneous	20	20	20	20	20
Total Stations	120	240	360	480	480
DS20, DS20S, DS20SD, DS32SD/ CSD (voice only)	120	240	360	480	480
Proprietary Stations (CS, CT, and CSD telephones)	80	160	240	320	320
Single Line Stations	120	240	360	480	480
Master Control Telephones	20	20	20	20	20
Attendant Consoles	8	8	8	8	8
30 Button DSS/BLF	16	16	16	16	16
40 Button DSS/BLF	16	16	16	16	16
80 Button DSS/BLF	8	8	8	8	8
100 Button DSS/BLF	2	2	2	2	2
CSD w/DTA	30	60	90	120	120
Speaker Paging	9 zones + all zone	9 zones + all zone	9 zones + all zone	9 zones + all zone	9 zones + all zone
Tenants	63	63	63	63	63

**NOTE:** DSS 30, 40, 80, and DSS 100 cannot exceed 640 buttons total. (DSS 30s count as DSS 40s for total button count.)

Table 2-4. System Maximum Capacities (Cont'd)

SUBJECT	BASIC CABINET	EXPAN. CABINET 1	EXPAN. CABINET 2	EXPAN. CABINET 3	SYSTEM MAXIMUM
Power Fail Transfer Lines	6	12	18	24	24
Voice Mail	1*	1*	1*	1*	1*
ACD Call Waiting Indicator	10	10	10	10	10
Room Status Indicators	18	18	18	18	18
DIU	80	152	152	152	152
DID Trunks	120	240	240	240	240
DID Trunk Groups	6	6	6	6	6
DTMF Receivers	32	32	32	32	32
Mixers	10	10	15	15	15
SLT Ringing	6/ring phase	12/ring phase	18/ring phase	24/ring phase	24/ring phase
SLT MW Lamps Lit	50	100	150	200	200
Speaker Use	96	192	288	384	384
Time Slots	512	512	1024	1024	1024

\* One Voice Mail per system is supported with no limitation on the maximum number of voice mail ports.

**CARD GROUPS**

The Series 3 incorporates common control cards, interface cards, and power modules.

**Common Control Cards**

The following cards belong in the common control card group:

- SCPN2M/ SCPN4M (System Control card).
- SSDEC (Signal Distributor card).

**Interface Cards**

The cards listed below constitute the new interface cards:

- 8BWC (High density bothway trunk card).
- 16DTC (High density 16-circuit digital telephone card).
- 16SLC (High density 16-circuit single line telephone card).
- 24T1 (T-1 digital trunk card).
- 6PFA (Power failure transfer card).

The additional interface cards are covered in detail in the System Interface Card Group section in this chapter.

**Power Modules**

The five power modules are as follows:

- ACPD (AC Power Distribution Box).
- DCPD (AC/DC Power Distribution Box).
- MPSU (Main Power Supply Unit).
- RGMW (Ring and Message Waiting Unit).
- -48V PS (-48V Power Supply).

**CPU (Central Processing Unit)**

The CPU (SCPN2M / SCPN4M card) contains the system microprocessor, memory, network switching, one optional floppy disk drive interface circuit, an internal 8 or 16 MHz clock, calendar, input/ output communications interface, visual indicators, and other control circuits. The CPU card also performs time slot switching for voice and data path connections.

The SCPN2M card is equipped with an 8 MHz Proprietary Fujitsu Processor CPU and 512 channels multiplex, while the SCPN4M card has a 16 MHz Proprietary Fujitsu Processor CPU and 1,024 channels multiplex.

The CPU cards have installed daughter boards (SM2E2 or SM4E2) used for memory (ROM and RAM) and an optional floppy disk controller. If the Series 3 system should lose power or should the card be unplugged, the battery that resides in the card retains the system ODDB in RAM of the memory board. Refer to Table 2-5 for a list of CPU card specifications.

The main components and their functions are as follows:

- An 8- or 16-bit Proprietary Fujitsu Processor acting as the central processing unit.
- ROM (Read Only Memory), which contains the system program and stores the ODDB (Office Dependent Data Base) information. The system program contains the specific feature package and the ODDB contains the customized, customer-specific data base.
- One optional floppy disk drive control circuit acts as an interface unit to the floppy disk drive. The floppy disk drive is used to store the customer ODDB only.
- RTS (Real-Time Source) acts as an internal system clock and displays time and data on proprietary telephones with LCD displays.



**CPU (Central Processing Unit) (Cont'd)**

- A Serial Communication Interface consisting of two RS-232C input/output transmission ports for communications outside the system.
  - One port is equipped with a 2400 bps modem which may be used for data interchange with a maintenance device, such as a PC using the PcMP™ software program connected to a remote maintenance center.
  - One port may be used for SMDR (Station Message Detail Recording) output to the Call Manager integrated call accounting application.

Both ports are data base programmable and support full duplex transmission.

**Table 2-5. Specifications of the CPU Cards**

SPECIFICATION	SCPN2M	SCPN4M
CPU	Proprietary Fujitsu	Proprietary Fujitsu
Clock	8 MHz	16 MHz
Network	512 ch TDM	1024 ch TDM
System Memory	ROM: 2 Mb (max. 3 Mb) SRAM: 1.5 Mb (max. 2 Mb)	ROM: 2 Mb (max. 3 Mb) SRAM: 1.5 Mb (max. 2 Mb)
Floppy Disk Drive (optional)	3.5 inch 1.44 Mb IBM DOS format	3.5 inch 1.44 Mb IBM DOS format

**System Memory**

The daughter board is a component of the various CPU cards, and holds the system program and the customer data base (ODDB). It consists of ROMs and static RAMs (SRAM).

The daughter board components and their functions are as follows:

- ROM (Read Only Memory) is the storage address for the system program.
- SRAM (Static Random Access Memory) is the storage address for the customer data base and more system program information.

**NOTE:** The daughter board consists of 1 Mb ROM chips and 256 Kb SRAM chips.

**System Memory (Cont'd)**

The software revision is identified on the daughter board by a label in the following manner:

- C2P2B: This indication means that the SCPN2M card is equipped with the Basic software package.
- C2P2E: This indication means that the SCPN2M card is equipped with the Enhanced software package.
- C4P2B: This indication means that the SCPN4M card is equipped with the Basic software package.
- C4P2E: This indication means that the SCPN4M card is equipped with the Enhanced software package.

The software version is displayed as P20 x.x #5. The "#5" shows the country number (U.S.A.). If this is displayed as "??," this indicates that the software is either a foreign version or has been illegally modified.

**System Interface Card Group**

The System Interface Card Group controls the interactions of the system peripherals (telephones, etc.) with the system hardware, PBXs, and the public switched telephone network. The card slots available for line and trunk connections are as follows:

- Cabinet one: 10 slots (0-9).
- Cabinet two: 11 slots (0-10).
- Cabinet three: 11 slots (0-10).
- Cabinet four: 11 slots (0-10).

The cards which make up the System Interface Card Group and their functions are listed below.

- **4SLE Card (Single Line Loop Extender Card)**
  - Switch selectable: provides option for loop limits of up to 1600 ohms/1300 ohms (long line), including the telephone equipment, or 600 ohms (short line). Setting both switches to "long" allows use of the card for off-premise extensions
  - Provides -48 VDC interface when required
  - Allows personnel in an off-premise location to make business calls using an extended loop from the system
  - Maximum of 40 cards per system
- **8SLC (Single Line Telephone Card)**
  - Provides interface circuitry between standard SLTs and the system
  - Provides interface circuits for the IVS
  - Eight circuits per card
  - One-pair wiring
  - Performs real-time processing for interface circuits via 8-bit microprocessor
  - Loop resistance of up to 600 ohms, including telephone set
  - Maximum of 40 cards per system
- **16SLC (Single Line Telephone Card)**
  - Provides interface circuitry between standard SLTs and the system
  - Provides interface circuits for the IVS
  - Sixteen circuits per card
  - Loop resistance of 600 ohms
  - Battery feeding; current limiting circuit, less than 35mA with 500 type telephone
  - Insertion loss: -3 dB ( $\pm$  0.4 db)
  - Maximum of 32 cards per system
- **8PDL (Positive Disconnect Line Card)**
  - Provides disconnect supervision in conjunction with voice mail and dictation devices, as well as external conference bridge equipment.
  - Eight circuits per card

**System Interface Card Group  
(Cont'd)**

- **8DTC (Digital Telephone Card)**
  - Provides interface circuitry between a CSD, DS station, DSS 30 button, and/or a DIU and the system
  - Provides interface circuitry for the Attendant PC Console
  - Eight circuits per card (six of which may be used for voice and data transmission with a CSD with Data Terminal Adapter)
  - One-pair wiring for voice/data transmission, control data transmission, and power feeding
  - Loop limit of 2,000 feet with 24 AWG wire
  - Maximum of 40 cards per system
  
- **16DTC (Digital Telephone Card)**
  - Provides interface circuitry for the digital stations such as the DS20, DS20S, DS20SD, DS32SD (Digital Telephone), Attendant PC Console, DIU, DSS 30 button, and CSD without DTA.
  - Sixteen circuits per card
  - One-pair wiring
  - Loop limit of 2,000 feet with 24 AWG wire
  - Maximum of 32 cards per system
  
- **8EKC (Electronic Key Telephone Card)**
  - Provides interface circuitry between the CT-10, CT-20, CT-30, DSS/BLF Console (40, 80, 100 button), Attendant Console and the system
  - Eight circuits per card
  - Two-pair wiring; 1 pair for data and power control transmission and 1 pair for voice transmission
  - Loop limit of 2,000 feet with 24 AWG wire (DSS with one control pair is 1,000 feet; with two control pairs, 2,000 feet)
  - Maximum of 40 cards per system
  
- **MUFN (Multi-Function Card)**
  - Provides EKC interface circuitry between the CT-10, CT-20, CT-30, DSS/BLF Console (40, 80, 100 button), Attendant Console and the system
  - Four EKC circuits per card; four DMR circuits per card
  - Two-pair wiring; 1 pair for data and power control transmission and 1 pair for voice transmission
  - Loop limit of 2,000 feet with 24 AWG wire (DSS with one control pair is 1,000 feet; with two control pairs, 2,000 feet)
  - Includes 4DMR function (receives DTMF tones from pushbutton SLTs and converts them into dialed numbers)
  - 8-bit microprocessor control
  - Maximum of 40 cards per system
  
- **4BWC (Central Office Bothway Trunk Card)**
  - Provides interface circuitry for communications between the public switched telephone network and the system
  - Four circuits per card
  - 8-bit microprocessor on each card
  - Loop and ground start signal supervision
  - Loop resistance of 3200 ohms, including central office equipment
  - Maximum of 40 cards per system

**System Interface Card Group  
(Cont'd)**

- **8BWC (Central Office Bothway Trunk Card)**
  - Provides interface circuitry for communications between the public switched telephone network and the system
  - Eight circuits per card
  - 8-bit microprocessor on each card
  - Loop and ground start signal supervision
  - Loop resistance of 3200 ohms, including central office equipment
  - Maximum of 30 cards per system
- **2TE4 (E&M Tie Trunk Card)**
  - Provides 2-wire or 4-wire interface circuitry between the common carrier signaling equipment and DID (Direct Inward Dialing) trunks and the system
  - Provides for tie lines between PBXs
  - Two types of signaling interface; type 1 - up to 150 ohms, type 2 - up to 300 ohms
  - Supports DID
  - Maximum of 40 cards per system (in combination with 2TTL/4TE4 cards)
- **4TE4 (E&M Tie Trunk Card)**
  - Provides 4-wire interface circuitry between the common carrier signaling equipment and DID (Direct Inward Dialing) trunks and the system, and tie lines between PBXs
  - Four circuits per card
  - Two types of signaling interface; type 1 - up to 150 ohms, type 2 - up to 300 ohms
  - Supports DID
  - Maximum of 40 cards per system (in combination with 2TTL/2TE4 cards)
- **2TTL (Loop Dial Tie Trunk Card)**
  - Provides interface circuitry between the common carrier signaling equipment and DID trunks and the system
  - Two circuits per card
  - 8-bit microprocessor on each card
  - Loop resistance of 3000 ohms
  - Supports DID
  - Maximum of 40 cards per system (in combination with 2TE4/4TE4 cards)
- **6DID (Direct Inward Dialing Trunk Card)**
  - Provides interface for direct inward dialing lines (incoming calls only)
  - Loop or battery and ground pulsing
  - Six circuits per card
  - Maximum of 40 cards per system

**System Interface Card Group  
(Cont'd)**

- **4DMR (Dual-Tone Multi-Frequency Receiver Card)**
  - Receives DTMF tones from pushbutton SLTs and converts them into dialed numbers
  - Four circuits per card
  - 8-bit microprocessor control
  - Maximum of 8 cards per system
  
- **RVAC (Recorded Voice Announcement Card)**
  - Records and provides voice message or announcement
  - One port for recording and seven ports for playing messages per card
  - 8-bit microprocessor on each card
  - Supports up to seven simultaneous calls
  - Maximum of eight cards per system
  - Capacity is 14 message blocks of 4 seconds each; 56 seconds total
  
- **2APIA Card (Application Processor Interface Card)**
  - Provides the interface to an external application processor; ACD Report Manager, Hotel/Motel system interface, or Property Management System
  - Two circuits per card
  - Maximum of 2 cards per system
  
- **CLKS Card (Clock Card)**
  - Synchronizes the system clock to the clock from an outside network for the T-1 digital trunk interface and the 23PT card
  - Input signal frequency is 8 kHz (Duty 50%)
  - Output signal frequency 16.384 MHz (Duty 50%)
  - TTL signal frequency
  - Maximum of one card per system
  
- **24T1 Card (24 Channel Digital Trunk Card)**
  - Provides a digital trunk interface to connect to a facility under the North American T-1 standard
  - DS-1 interface
  - Maximum of 10 per system (maximum number of channels: 240)
  
- **4CHT (Character Trunk Card)**
  - Transmits/receives up to 19.2 kbps asynchronous ASCII data
  - Provides message output to the printer for Hotel/Motel applications
  - Provides keyboard dialing for data communication
  - Maximum of 4 cards per system

**System Interface Card Group  
(Cont'd)**

- **23PT Card (ISDN Trunk Card)**
  - Provides a digital trunk interface to connect to a facility under the North American T-1 standard
  - Provides a FIPN connection to link systems together
  - Clock card is necessary to synchronize the system clock to an outside network
  - ISDN PRI protocol signaling (4ESS, 5ESS, DMS 100, DMS 250)
  - Maximum of 10 cards per system (maximum number of channels: 230)
  
- **6PFA (Power Failure Transfer Card)**
  - Transfers six CO trunks to predetermined single line telephone sets in the event of a power failure or interruption in system call processing
  - 6PFA cards are installed in dedicated areas in the system cabinet(s). It does not require a separate card slot.
  - Provides MAJOR/MINOR alarm indication signal on the MDF connector
  - Supports both Loop and Ground Start trunks
  - Automatically generates the Ground Start pulse upon detecting an off-hook for an outgoing call
  - Circuits can be individually identified as either Loop or Ground Start
  - Maximum of 4 cards per system

**4DMR / MUFN Cards** To give users additional flexibility in station instruments, industry standard SLTs (Single Line Telephones) may be used instead of the proprietary electronic telephones. Using pushbutton SLT sets requires that the system configuration includes DTMF (Dual-Tone Multi-Frequency) receivers. These DTMF receivers convert DTMF tones into dialed numbers and dialed numbers into DTMF tones. A Ring Generator is also required. The 4DMR / MUFN card is also used for the IVS interface, in addition to DTMF tie lines, DID, and T-1.

As can be seen in Table 2-6, the number of DTMF cards required for SLTs depends on the traffic handling capabilities of the system measured by CCS (Hundred Call Seconds), a standard line usage measurement.

Table 2-6. DTMF Receiver Requirements

TRAFFIC	0 TO 49 DTMF STATIONS	OVER 50 DTMF STATIONS	OVER 60 DTMF STATIONS	OVER 90 DTMF STATIONS	OVER 150 DTMF STATIONS	OVER 200 DTMF STATIONS
Normal (6 CCS)	1	1	1	2	2	2
Heavy (9 CCS)	1	1	2	2	2	3
Very Heavy (12 CCS)	1	2	2	2	3	3

For example, if the system is configured for 60 stations at greater than 9 CCS; two 4DMR / MUFN cards are needed. If the system is configured for 60 stations at less than 6 CCS, one 4DMR / MUFN card is needed.

- Power Modules**
- **ACPD/DCPD:** The AC Power Distribution Box or the AC/DC Power Distribution Box is the primary power input to the Series 3 system. This unit is available in two versions; AC for AC only operation, and AC/DC for AC with battery back-up operation. To protect batteries, the low voltage disconnect function is added to the AC/DC unit. The Basic cabinet and Cabinet 3 are equipped with an ACPD or DCPD.
  - **MPSU:** The Main Power Supply Unit (MPSU) provides +5V, -5V and -24V DC power from 115V AC or -48V DC for common control cards and interface cards. Each cabinet includes its own MPSU.



**Power Modules (Cont'd)**

- **RGMW:** The Ring Generator supplies 20Hz ring voltage and DC message waiting voltage for single line telephones. One RGMW mounted in cabinet one supplies ring voltage and message waiting power for cabinets one and two. One RGMW in cabinet three supports cabinets three and four. RGMW will provide four-phase ring voltages by a signal from the system common control unit. The fourth phase can be configured for either Ringing or Message Waiting. Three ringing patterns will be generated:
  - 1 on/3 off for internal calls
  - 4 on/0.2 off/0.4 on/3 off for trunk calls
  - 1 on/1 off for recalls

No more than 2.0 REN can be connected to one circuit per 8SLC/16SLC card. Each phase of the ring generator can support up to twelve RENs.

- **-48V PS:** The -48V PS supplies -48 volts for 4SLE, 6DID and 4TE4 cards and recharging back-up batteries. The -48V PS is installed in each cabinet. If battery back-up is installed in the system, the -48V PS module will provide current to recharge the batteries.

Table 2-7 lists the electrical characteristics of the three power supply units.

**Table 2-7. Electrical Characteristics of Power Supply Units**

	MPSU				RGMW		-48V PS
	+5VA	+5VB	-5V	-24V	RG	MW	
Input Volts	115V AC/-48V DC				-24V DC	-24V DC	115V AC
Output Volts	+5V	+5V	-5V	-24V	85V (20Hz AC)	-110V	-48V
Output Amps	5.0	8.3	1.6	2.5	0.24	0.10	3.00

---

**SYSTEM DEFAULTS****3 and 4 Digit Numbering Plan  
(Defaults)**

The system provides two different default numbering plans:

- 3-digit numbering plan.
- 4-digit numbering plan.

You may chose the desired default numbering plan by selecting certain DIP switch settings on the CPU card.

Once the system is initialized, the selected default data base assigns station numbers to all active voice stations and data terminals in the system. Voice station number assignments are as follows:

- 3-digit numbering plan = numbers 200 through 439.
- 4-digit numbering plan = numbers 2000 through 2777.

See the Data Base Manual for details on how to set the DIP switch for these numbering plans.

**Feature Button Assignment  
(Default)**

The system assigns lines and features to the feature buttons of the proprietary telephones based on the system configuration. If an Attendant Console is installed in the system, the default feature/line assignments are PBX arrangements. If there is no Attendant Console installed, the system assigns key telephone features to the instruments.

**SYSTEM OPTIONS****Call Manager**

Call Manager is an integrated call accounting system designed to operate with the system and its Station Message Detail Recording (SMDR) capability. Call Manager collects SMDR data, stores formatted call records into system memory, and then prices the call records as printed reports are generated. Printed reports may be generated either automatically or on-demand with the use of a terminal device such as an optional touchpad or programming terminal. Call record information is sent to a serial printer. For more information, refer to Chapter 4 of this manual.

**External Calls Waiting  
Indicator**

The ACD Calls Waiting Indicator provides a visual indication of the approximate number of calls waiting in the ACD queue. The indicator panel contains four pairs of yellow and red lamps corresponding to four ACD groups. The lamps are dark if the queue size is less than the first threshold. The yellow lamp lights if the queue size is greater than or equal to the first threshold but less than the second threshold. The red lamp lights and the yellow lamp goes dark when the second threshold is reached. One 4BWC card (or four circuits from an 8BWC card) is required for each ACD Calls Waiting Indicator installed.

**ACD Report Manager™**

The ACD Report Manager enables ACD users to interface (via a 2APIA card) with an external, PC-driven reporting system. On-screen or printed reports are available.

ACD Report Manager™ is a trademark of Fujitsu Business Communication Systems.

**Integrated Voice Server (IVS)**

The Integrated Voice Server can be configured for two to twelve ports (in two port increments) and two to forty hours of voice storage. Additionally, the IVS includes software features such as full integration, auto attendant, paging, message waiting indication, and audiotext. Other options include AMIS analog networking and fax publishing applications.

**EQUIPMENT CABINETS**

Figure 2-3 illustrates the front view of a single (Basic) cabinet configuration and a two cabinet configuration.

The cabinets contain system hardware and card slots for:

- System operation.
- Power failure transfer.
- Line/trunk assignments.

Located beneath the card slots are:

- Two serial communications ports.
- One optional Power Failure Transfer card slot.
- One optional floppy disk drive located at the right side of the cabinet.
- One standard 1200/2400 baud modem.
- Amphenol cable connections to the MDF.

Each equipment cabinet offers the following features:

- Each cabinet measures 14.68"x 14.61"x 19.91".
- Universal card slots for easy system expansion/upgrade.
- Lightweight cabinets. Total weight in pounds are approximately as follows:

	Empty:	Fully loaded:
One cabinet	45	55
Two cabinets	90	110
Three cabinets	135	165
Four cabinets	180	220

- Power requirements:
  - 110/120 VAC
  - 60 Hz approximately
  - 1400 watts power consumption
- Convection cooled, self-ventilating, requiring no fans.
- Environmental conditions:
  - 32° to 104° F/0 to 40° C
  - 10 to 90% relative humidity without condensation.

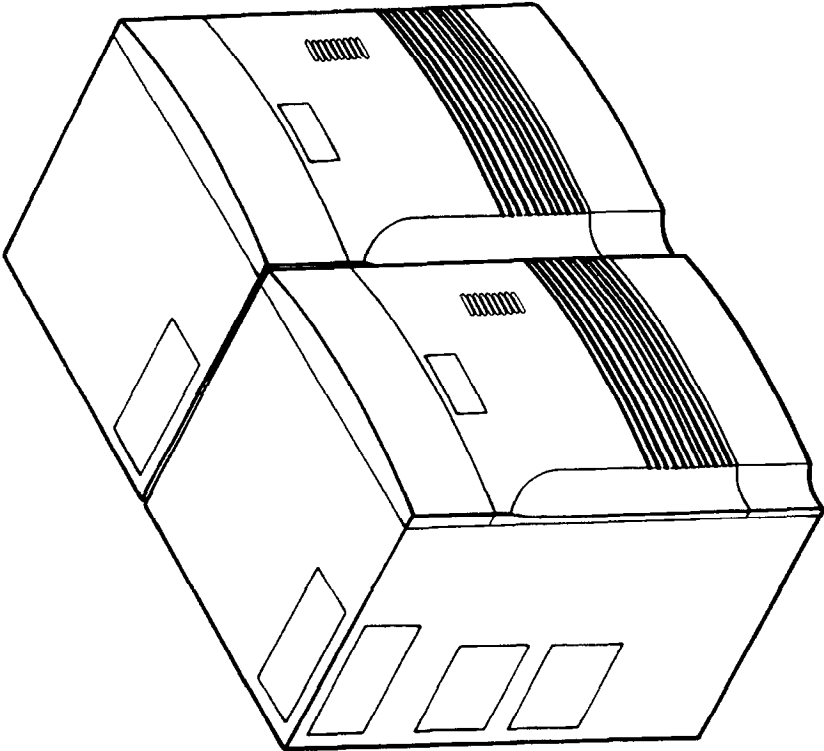
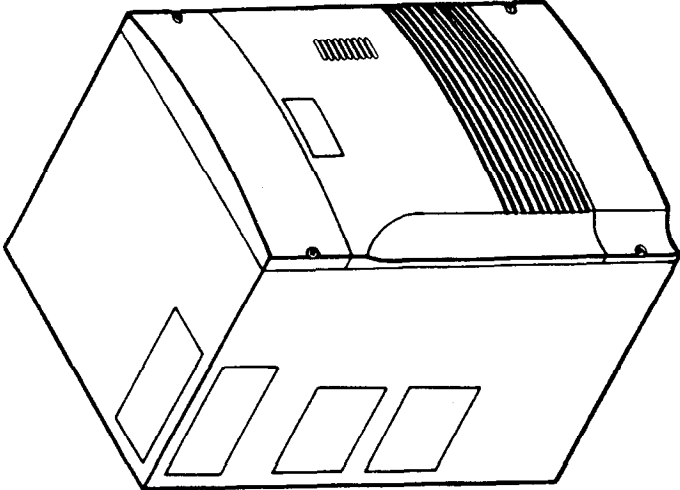


Figure 2-3. Series 3 Equipment Cabinets (Basic Cabinet and Two-Cabinet Configurations)



**SYSTEM BACK-UP AND RECOVERY**

Three components of the system ensure back-up and recovery of communications service in the event of commercial power failure or major system malfunction:

- 6PFA (Power Failure Transfer) card.
- Memory back-up battery.
- RVAC (Recorded Voice Announcement) card back-up battery.

**Power Failure Transfer Card**

When the system is functioning normally, the 6PFA card directs the termination of selected CO (central office) lines and SLTs to CO trunks and line circuits. In the event of power or system failure, the 6PFA card provides a direct connection between the selected CO trunks and SLTs to enable the user to maintain communications with the outside world. These cards permit the transmission of alarm signals. The MAJ (Major) or MIN (Minor) alarm signals are sent to the MDF for use with external devices.

Characteristics of each Power Failure Transfer card are:

- Six circuits.
- Allows transfer of six loop start or ground start CO trunks to six predetermined SLTs.

**RVAC Card Back-Up Battery**

A nickel-cadmium battery provided on the RVAC card protects recorded messages in the card's RAM. The battery is trickle charged when system power is on. This battery is capable of maintaining the RAM up to two weeks when fully charged.

The nickel-cadmium life expectancy is five years. The system monitors the status of the battery and shows the appropriate message on the CPU card's display when the RVAC card battery must be replaced. All messages are lost when the battery is replaced. When the back-up battery becomes fully charged, the alarm indicator goes off.

**CPU Cards Memory Back-Up**

Nickel-cadmium battery is provided on the CPU card. This battery protects the card from losing RAM and the Real-Time Source (RTS) for up to two weeks when fully charged. The life expectancy of this battery is five years. An alarm display on the front of the card(s) displays when the battery needs to be replaced.

## SYSTEM TERMINALS

The system accommodates a wide selection of terminals/peripherals to provide a broad range of voice and data communication services. All proprietary telephones have programmable feature buttons which are changeable. Most programmable buttons can be reprogrammed at any time. Figures 3-1 through 3-15 show:

- Terminal and peripheral designs.
- Major components of each terminal and peripheral.
- Feature button assignments.

For further information on feature button assignment, refer to the Data Base Manual.

To offer the user a full spectrum of voice capabilities, the system interfaces with:

- Digital Stations:
  - DS20, DS20S, DS20SD (Figure 3-1)
  - DS32SD (Figure 3-2)
  - CSD (Figure 3-4)
- EKTs:
  - CT-10, CT-20 (Figure 3-6)
  - CT-30 (Figure 3-7)
- Industry standard DTMF (Dual-Tone Multi-Frequency) SLTs (Single Line Telephones).
- Industry standard dial pulse SLTs.

To provide optional communications enhancements, the system interfaces with:

- Attendant Consoles (Figure 3-9).
- DSS/BLF 30, 40, 80 and 100 (Direct Station Selection/Busy Lamp Field) Consoles (Figures 3-10, 3-11, 3-12, and 3-13)

To utilize data switching capabilities, the system interfaces with:

- DIUs (Data Interface Unit) (Figures 3-14 and 3-15).
- DTAs (Data Terminal Adapter) mounted into CSD telephones.

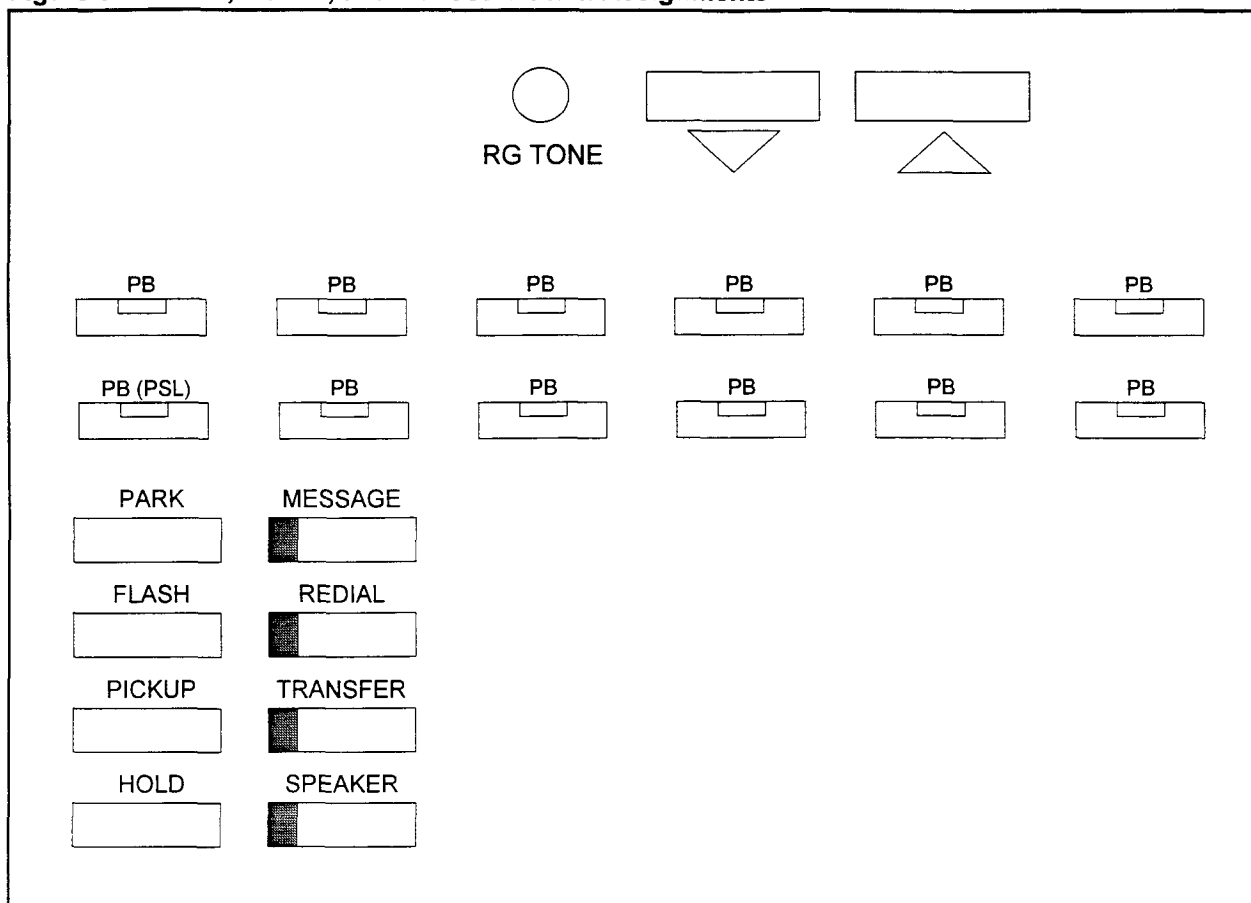
**Digital Stations** The DS20, DS20S, DS20SD, and DS32SD characteristics are summarized in the chart below. Button assignments for each station are shown on the following pages.

Characteristic	DS20	DS20S	DS20SD	DS32SD
Display	None	None	20 char x 2 lines	20 char x 2 lines
Speakerphone	Monitor only	Speakerphone	Speakerphone	Speakerphone
Fixed Buttons	8	8	8	8
Programmable Buttons	12	12	12	24
Volume Control	8 levels for speaker and 5 levels for handset adjustment by UP/DOWN button			
LCD Contrast	N/A	N/A	Adjusted by UP/DOWN button in idle	
Ringer Volume	4 levels adjusted by UP/DOWN button in ringing mode			
Ringer Tone	3 levels adjusted by RG TONE button in ringing mode			
Analog Modem Port	None	None	Yes	Yes
Dimensions	180 x 220 x 80 mm			

All DS telephones are also equipped with the following:

- A coiled handset cord (six feet in length when uncoiled) available in two colors; black and ivory.
- A standard seven-foot line cord with modular connectors at each end.
- Hearing-aid compatible handsets as required by the American Disabilities Act of 1990.
- A custom faceplate with space for fifteen 10-point characters for the instruments assigned telephone number.

Figure 3-1. DS20, DS20S, and DS20SD Button Assignments



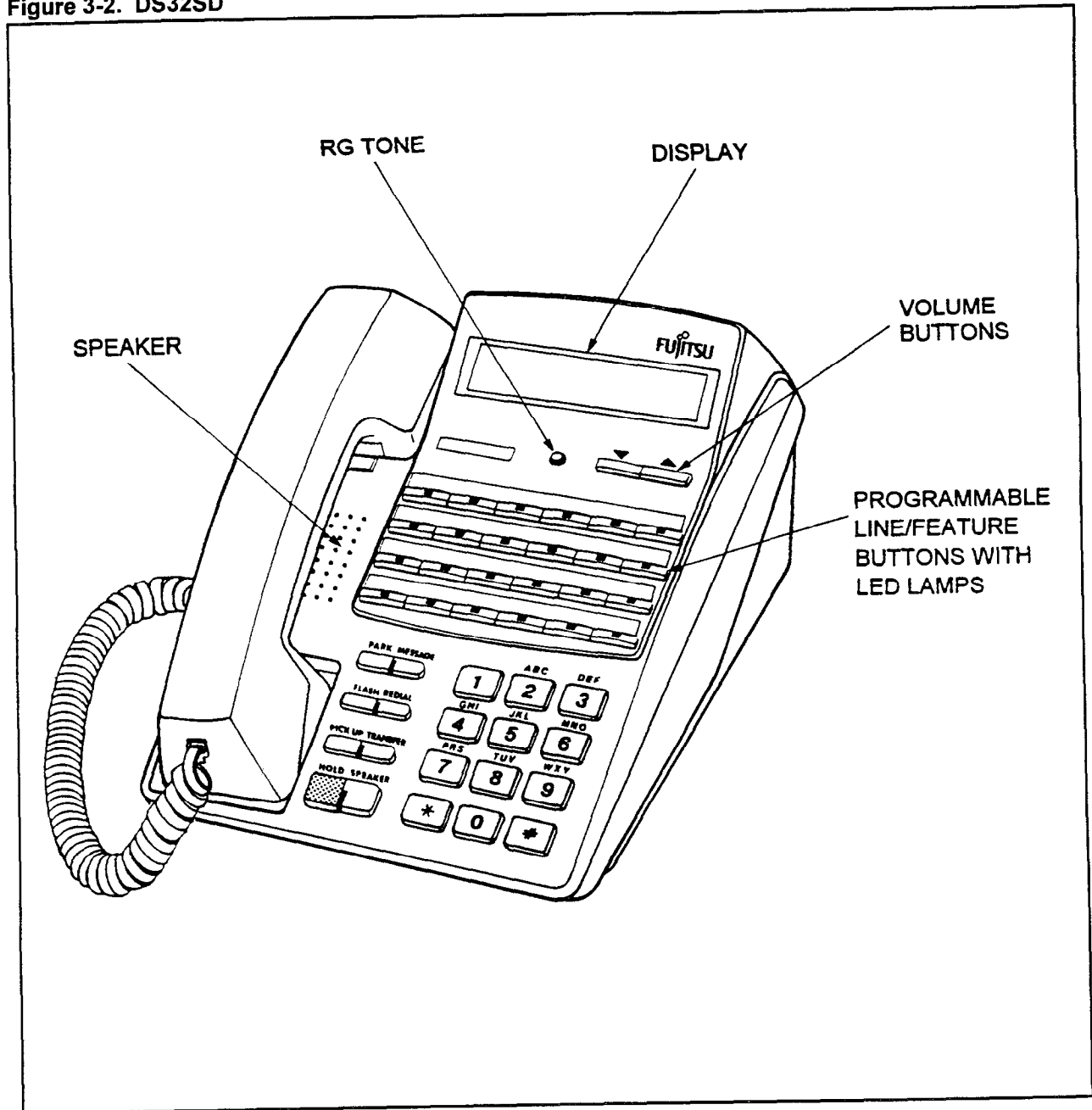
Abbreviations used: PSL = Primary Station Line  
PB = Programmable Button  
RG TONE = Ringer Tone

The Digital Station has the following characteristics:

- 12 programmable line/feature buttons.
- Associated two-color LED indicators.
- **RG (ring) TONE** and Up and Down controls.
- Monitor (DS20 only) or internal speaker.
- 20 character x 2 line display (DS20SD only).
- Eight fixed buttons: **SPEAKER, TRANSFER, REDIAL, MESSAGE, HOLD, PICK UP, FLASH, PARK.**
- Analog modem port (DS20SD only).



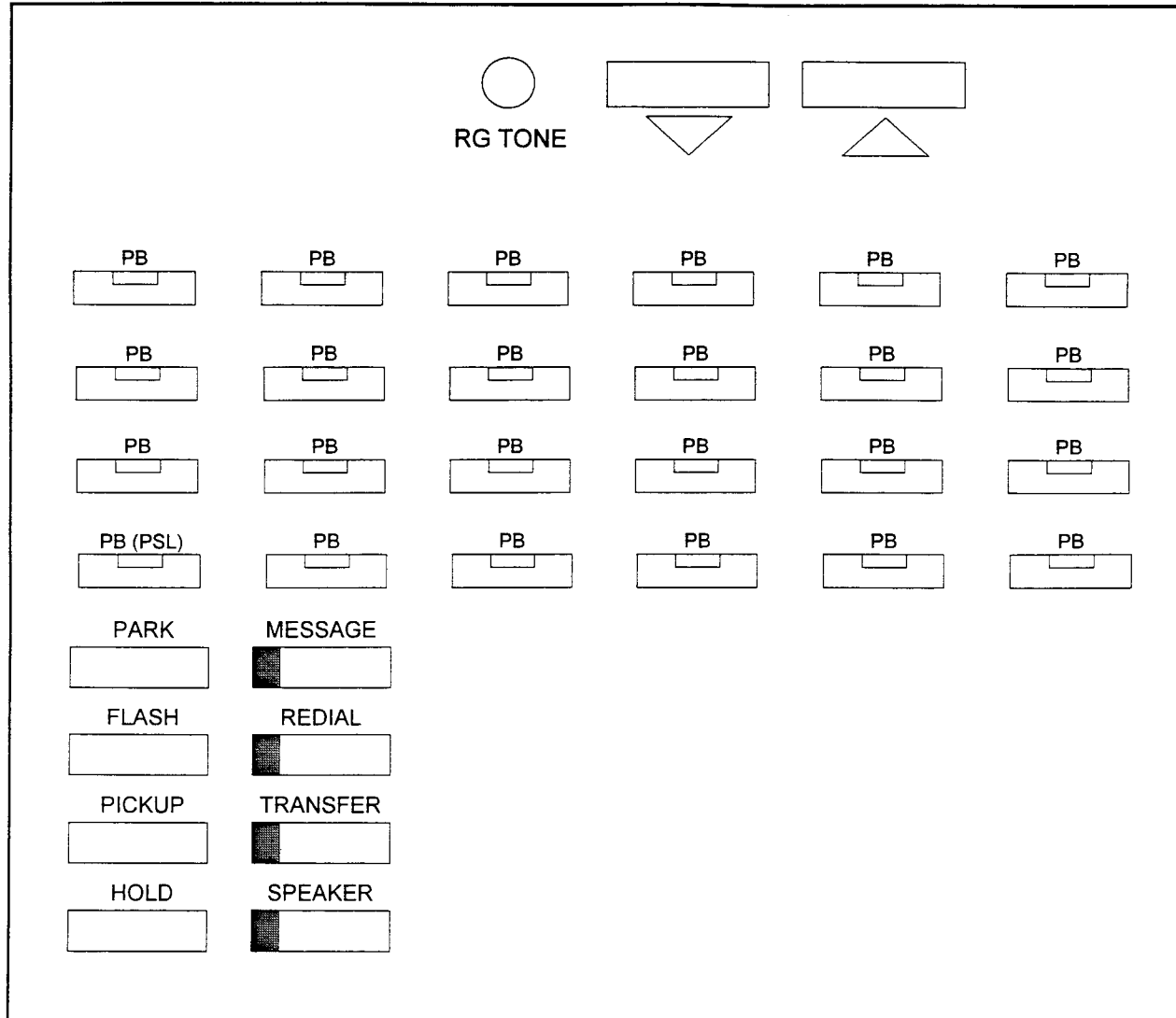
Figure 3-2. DS32SD



The DS32SD has the following characteristics:

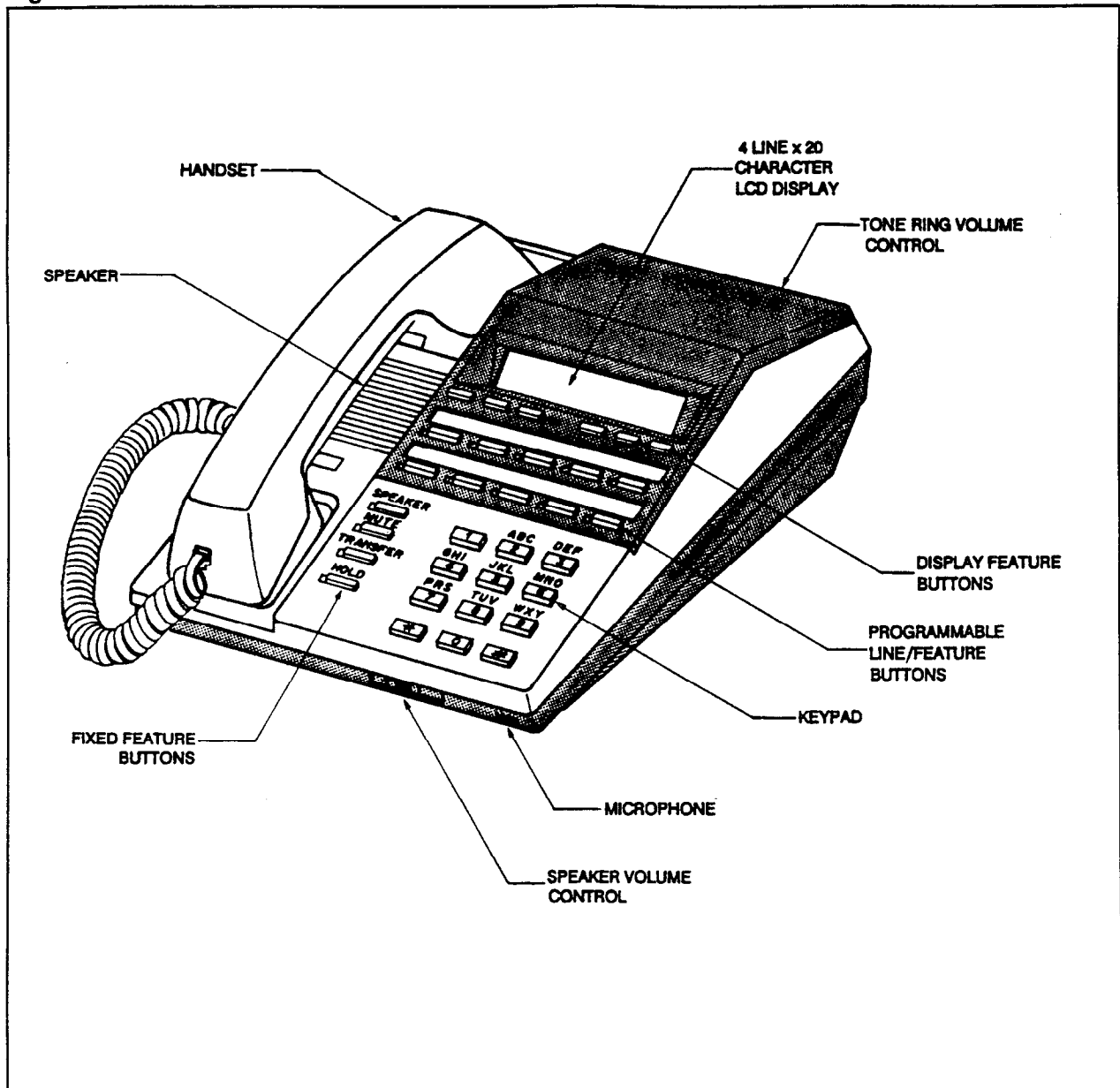
- 24 programmable line/feature buttons.
- Associated two-color LED indicators.
- **RG** (ring) **TONE** and Up and Down controls.
- Internal speaker.
- 20 character x 2 line display.
- Eight fixed buttons: **SPEAKER**, **TRANSFER**, **REDIAL**, **MESSAGE**, **HOLD**, **PICK UP**, **FLASH**, **PARK**.
- Analog modem port.

Figure 3-3. DS32SD Button Assignments



Abbreviations used: PSL = Primary Station Line  
 PB = Programmable Button  
 RG TONE = Ringer Tone

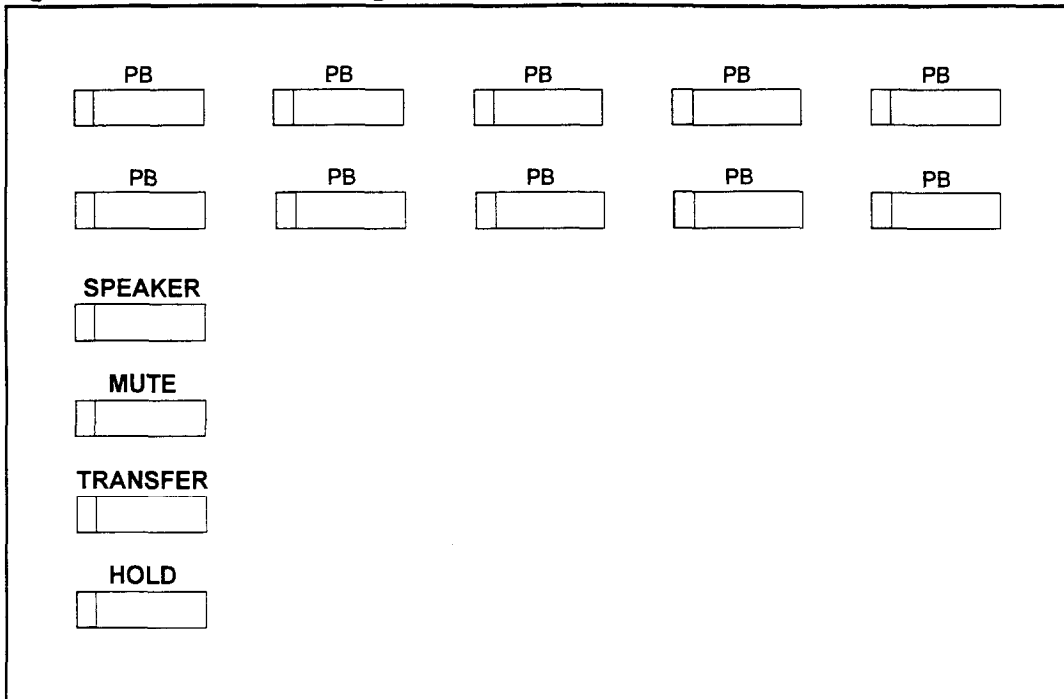
Figure 3-4. CSD



The CSD has the following characteristics:

- Ten programmable line/feature buttons.
- K-style handset.
- Speakerphone.
- 20 character x four-line display.
- Single pair wiring.
- Four fixed buttons: **SPEAKER, MUTE, TRANSFER, HOLD.**
- Six display feature buttons.
- Modular plug.

Figure 3-5. CSD Button Assignments

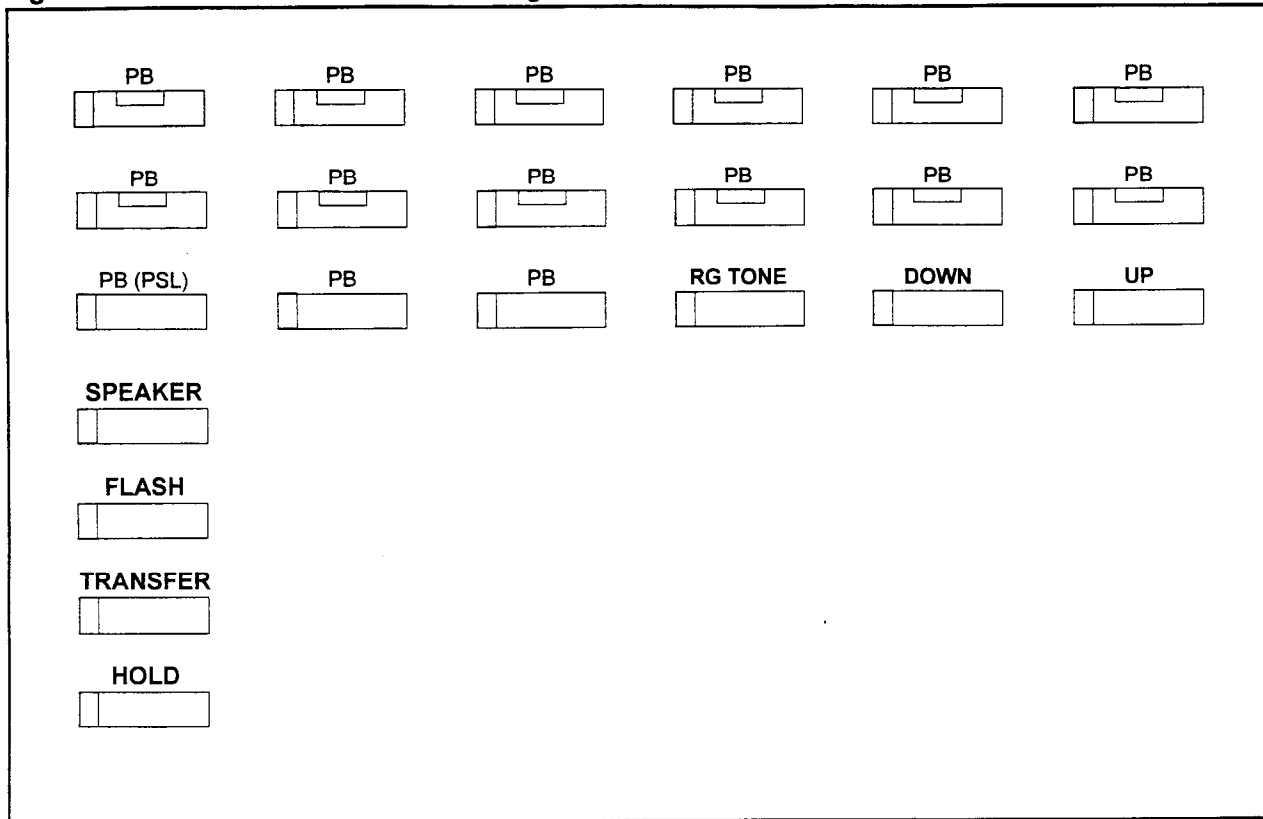


PB = Programmable Button

**CT-10, CT-20, CT-30** The CT-10, CT-20, CT-30 characteristics are summarized in the chart below. Button assignments for each station are shown on the following pages.

CHARACTERISTIC	CT-10	CT-20	CT-30
Display	None	20 char x 2 lines	20 char x 2 lines
Speakerphone	Monitor only	Speakerphone	Speakerphone
Fixed Buttons	4	4	4
Programmable Buttons	15	15	27
Volume Control	8 levels for speaker and 5 levels for handset adjustment by UP/DOWN button		
LCD Contrast	N/A	Adjusted by UP/DOWN button in idle mode	
Ringer Volume	4 levels adjusted by UP/DOWN button in ringing mode		
Ringer Tone	3 levels adjusted by RG TONE button in ringing mode		
Analog Modem Port	None	Yes	Yes

Figure 3-6. CT-10 and CT-20 Button Assignments

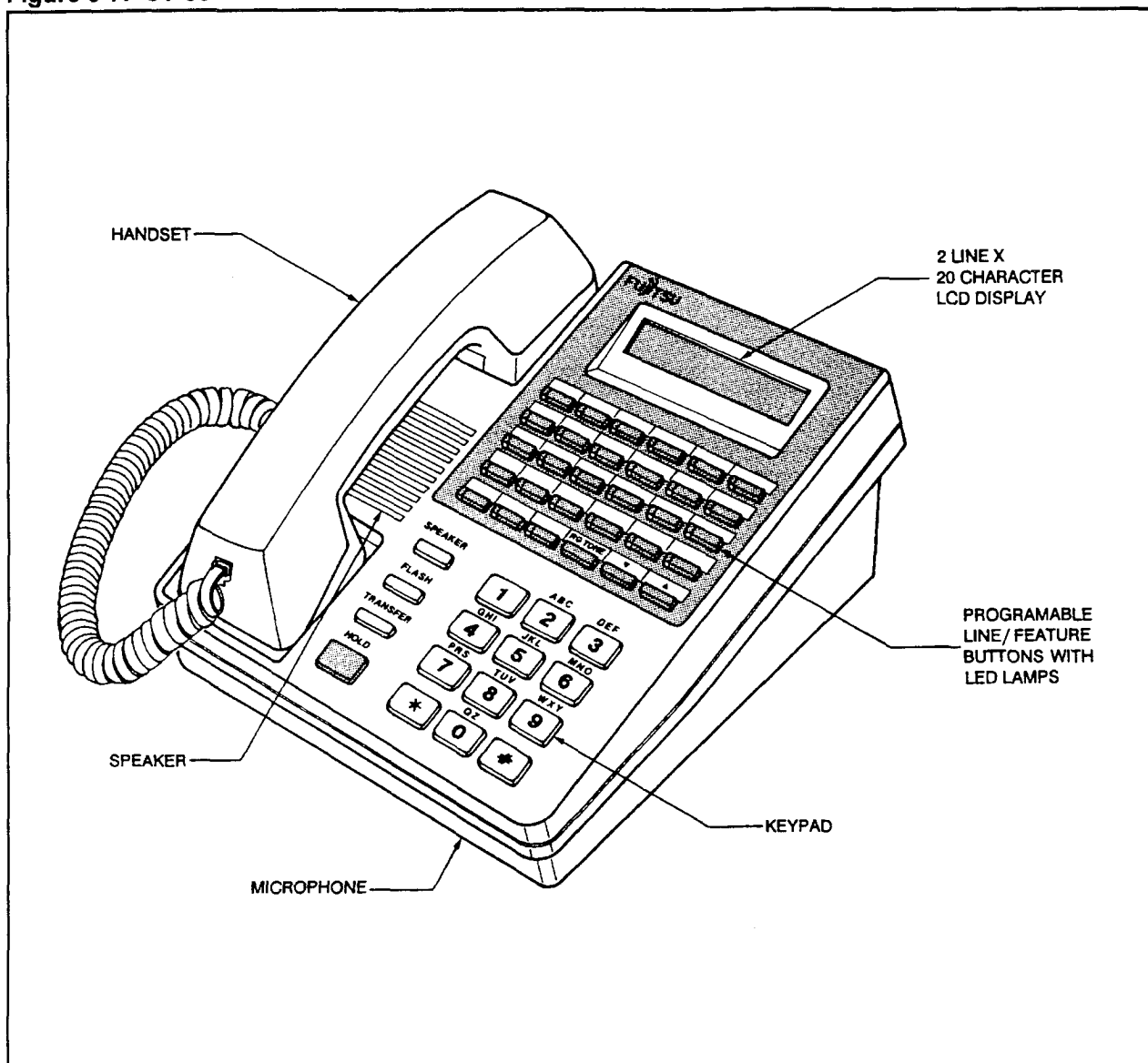


Abbreviations used: PSL = Primary Station Line  
PB = Programmable Button  
RG TONE = Ringer Tone

The CT-10 and CT-20 have the following characteristics:

- 15 programmable line/feature buttons.
- Associated two-color LED indicators.
- Monitor (CT-10) or internal speaker (CT-20).
- Two-pair wiring.
- K-style handset.
- Two-lines x 20 character alphanumeric display (CT-20 only).
- Seven fixed buttons: **SPEAKER**, **FLASH**, **TRANSFER** (with one-color LED), **HOLD**, **RG** (ring) **TONE**, Up and Down controls.
- Analog modem port (CT-20 only).

Figure 3-7. CT-30

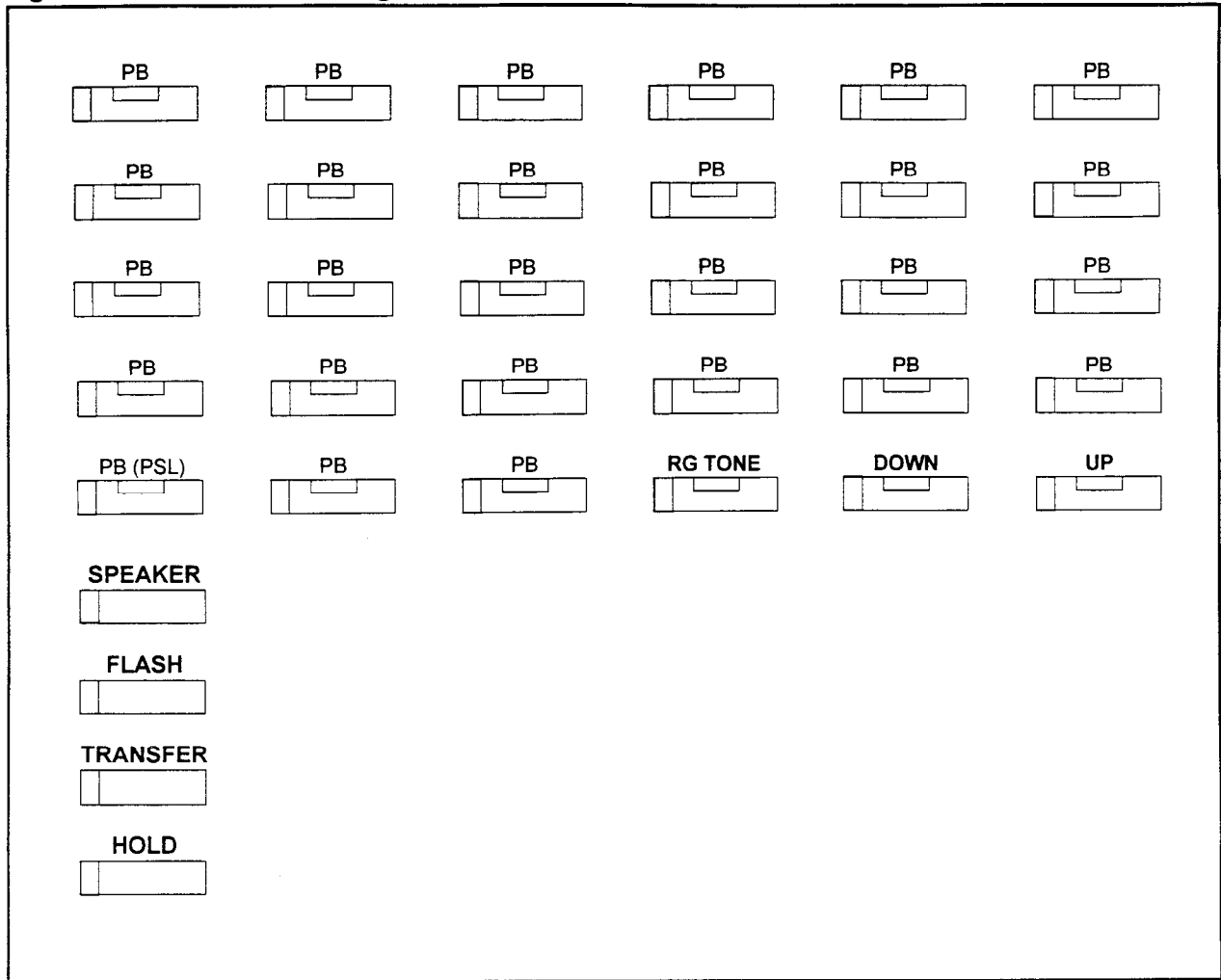


The CT-30 has the following characteristics:

- 27 programmable line/feature buttons.
- Associated two-color LED indicators.
- Built-in speakerphone.
- K-style handset.
- Two-lines x 20 character alphanumeric display.
- Seven fixed buttons: **SPEAKER**, **FLASH**, **TRANSFER** (with one-color LED), **HOLD**, **RG** (ring) **TONE**, Up and Down controls.
- Analog modem port.
- Six wire - Two pair necessary (optional extra pair needed for Off-Hook Call Announce).

**NOTE:** Using six-wires with the CT-30 reduces the capacity on the EKC card by one-half.

Figure 3-8. CT-30 Button Assignments



Abbreviations used: PSL = Primary Station Line  
 PB = Programmable Button  
 RG TONE = Ringer Tone



**DS/CT RG TONE, Up/Down Buttons**

These terminals have three fixed buttons on the right side of the keypad that control volume and LCD contrast. The three fixed buttons are:

- ^ (Up).
- v (Down).
- **RG (ring) TONE.**

Changes to volume and contrast can be made under certain conditions when using the Up and Down buttons. Table 3-1 shows what changes can be made during different conditions.

**Table 3-1. DS/CT Volume and Contrast Controls**

STATE	^ (UP)	v (DOWN)
Idle	LCD contrast - increase	LCD contrast - decrease
Speakerphone	Speaker volume - increase	Speaker volume - decrease
Off-Hook by Handset	Handset volume - increase	Handset volume - decrease
Ringing	Ring volume - increase	Ring volume - decrease

The **RG TONE** button to the left of the Up and Down buttons controls the ringing tone of the telephone. There are three different patterns that can be set by the **RG TONE** button.

Additionally, the telephone can be set to no ring. A terminating call in such a case is identified by a flashing PSL.

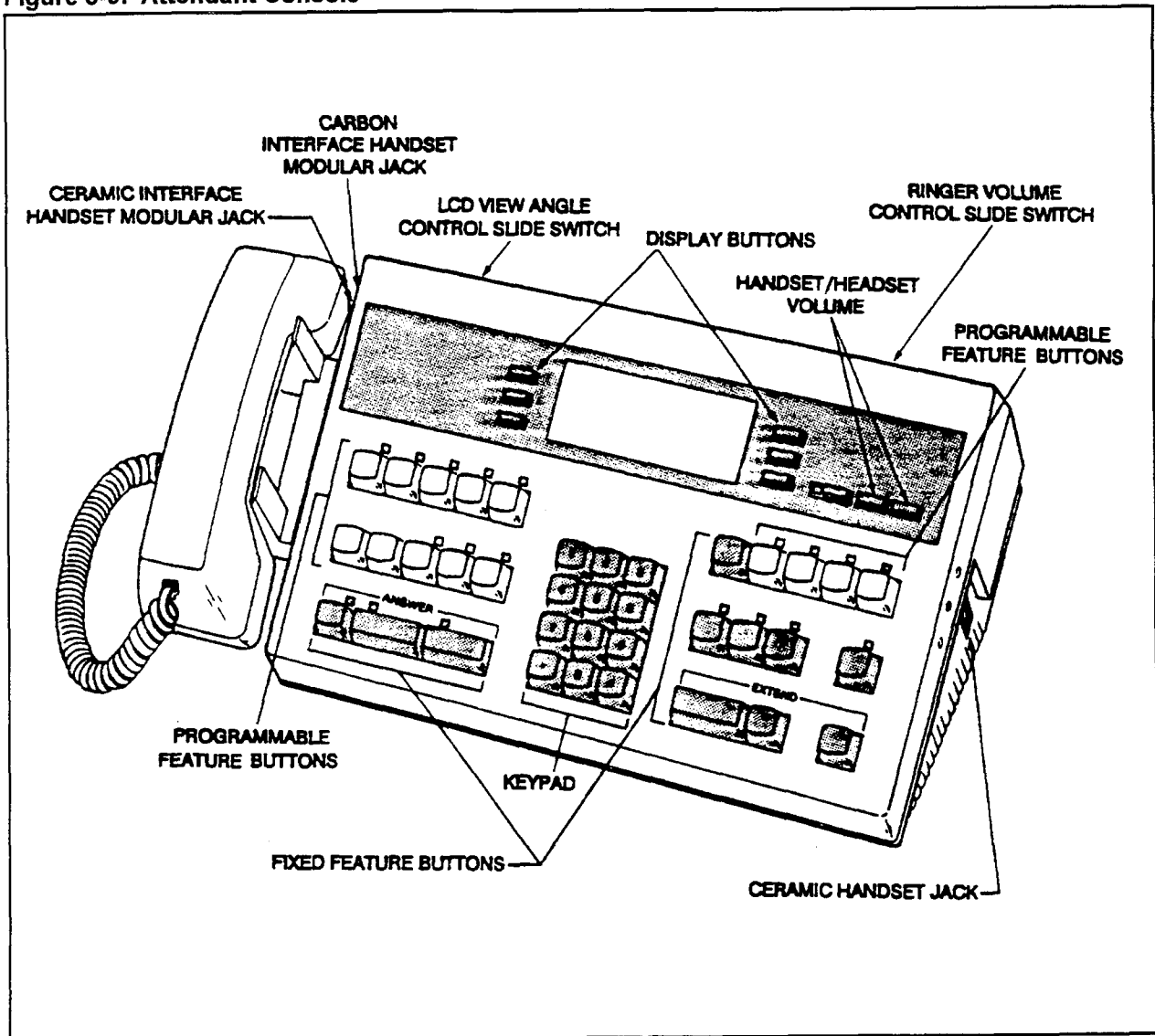
**DS/CT Two-Color LEDs**

The DS and CT stations have two-color LEDs. The colors associated with different conditions are:

- Red:
  - Line is ringing
  - Line called in use
  - Line is recalling
  - Line placed on common hold
- Green:
  - Line is in use
  - Call is on exclusive hold
  - Call is on common hold

For the display patterns and all other specifics on the DS/CT telephones, refer to the appropriate User Guide.

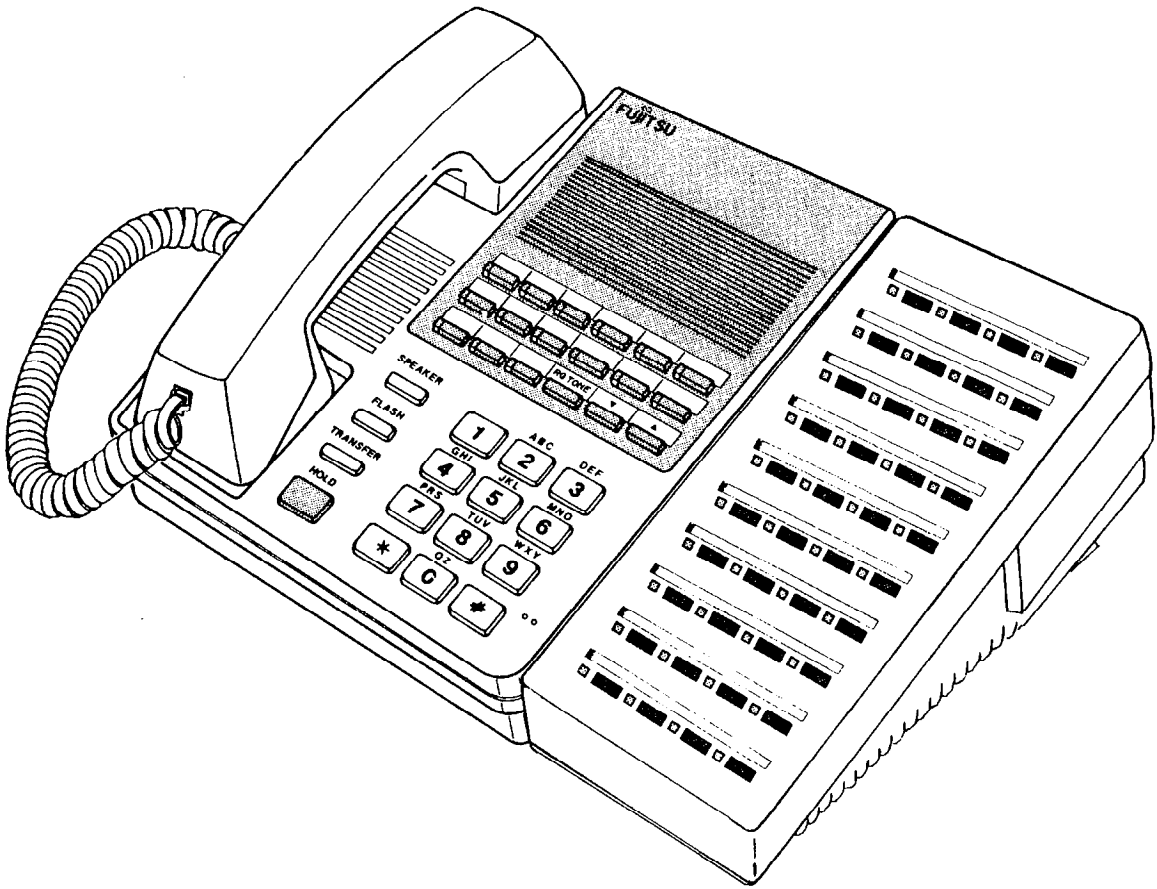
Figure 3-9. Attendant Console



The Attendant Console has the following characteristics:

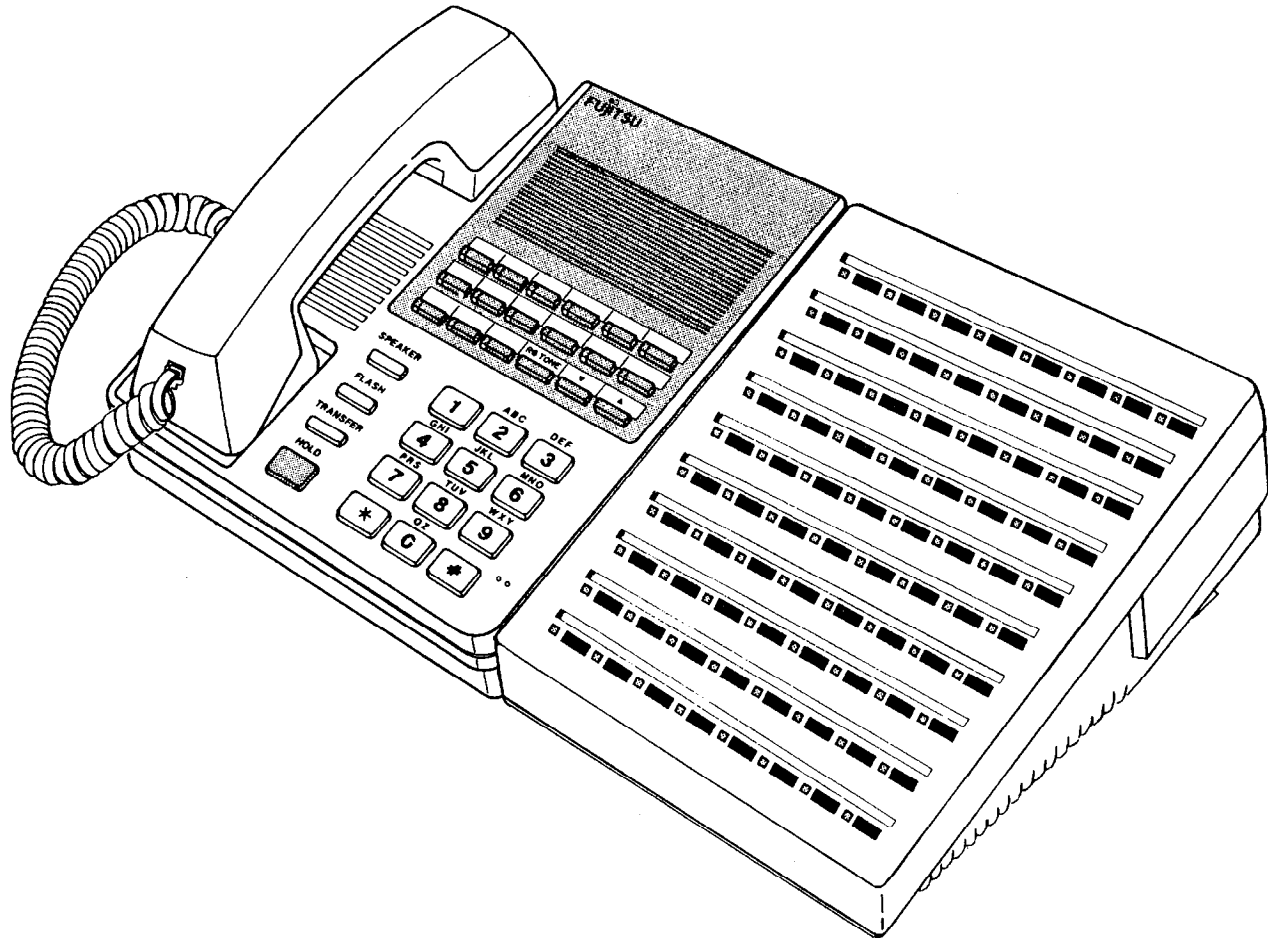
- 28 non-locking line/feature buttons.
- Associated single LED indicators (26 feature buttons).
- Four-line x 20 character alphanumeric display.
- Two-pair wiring (up to 300 feet from cabinet).
- or
- Six wires (up to 2,000 feet from cabinet).
- 14 programmable buttons.
- Modular plug.
- K-style handset.
- Headset jack.
- Handset modular jack:
  - (1) carbon interface
  - (2) ceramic interface

Figure 3-10. CT-10 with 40-Button DSS/BLF



NOTE: The 40-button DSS/BLF can also be used with an Attendant Console.

Figure 3-11. CT-10 with 80-Button DSS/BLF

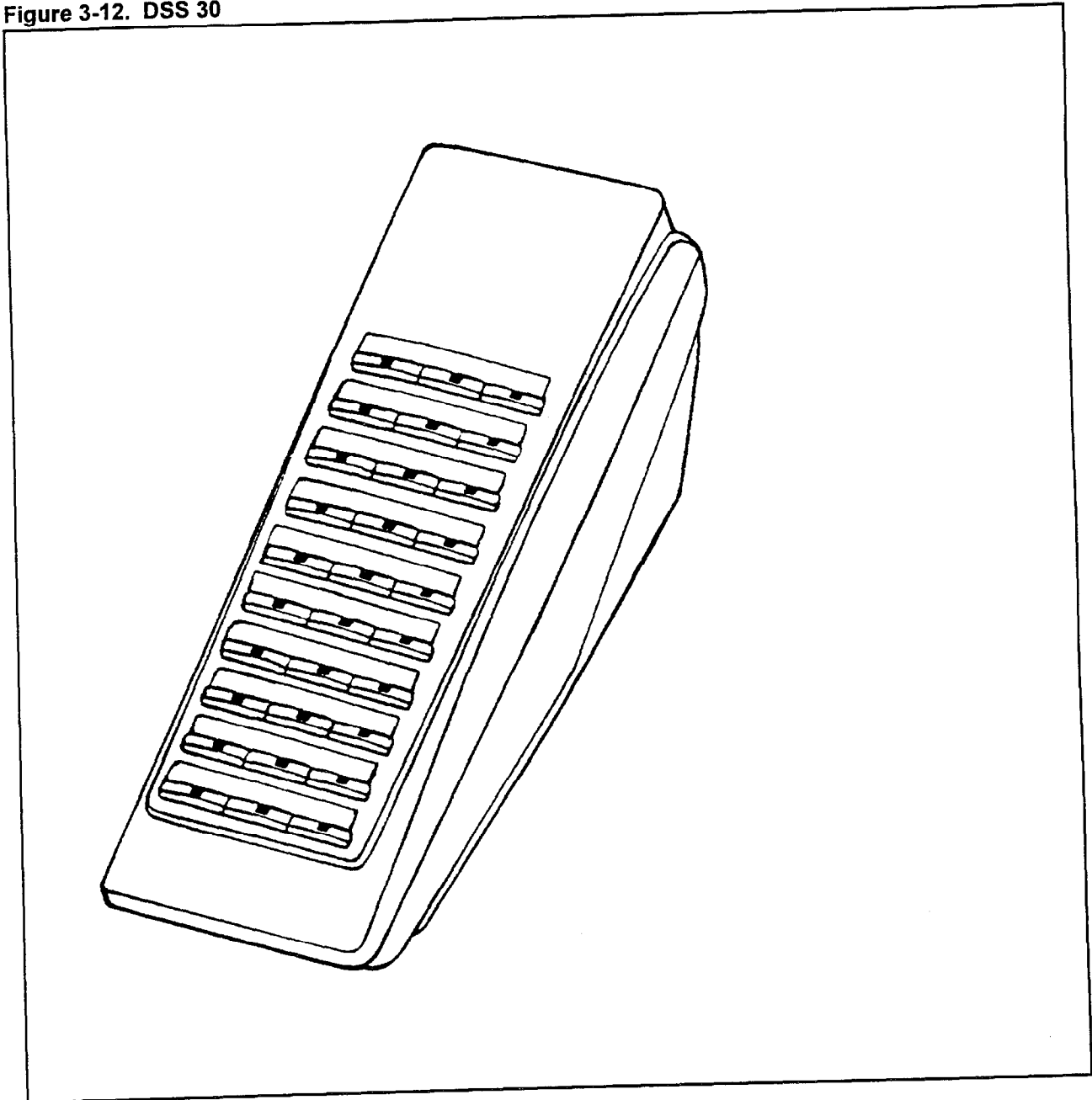


NOTE: The 80-button DSS/BLF can also be used with an Attendant Console.

**DSS 30** The DSS 30 (Figure 3-12) is equipped with 30 Direct Station Selection (DSS) buttons with a red/green lamp on each button. A Digital Station can be paired with one or two DSS 30s.

Each DSS 30 uses one circuit on a DTC card.

Figure 3-12. DSS 30

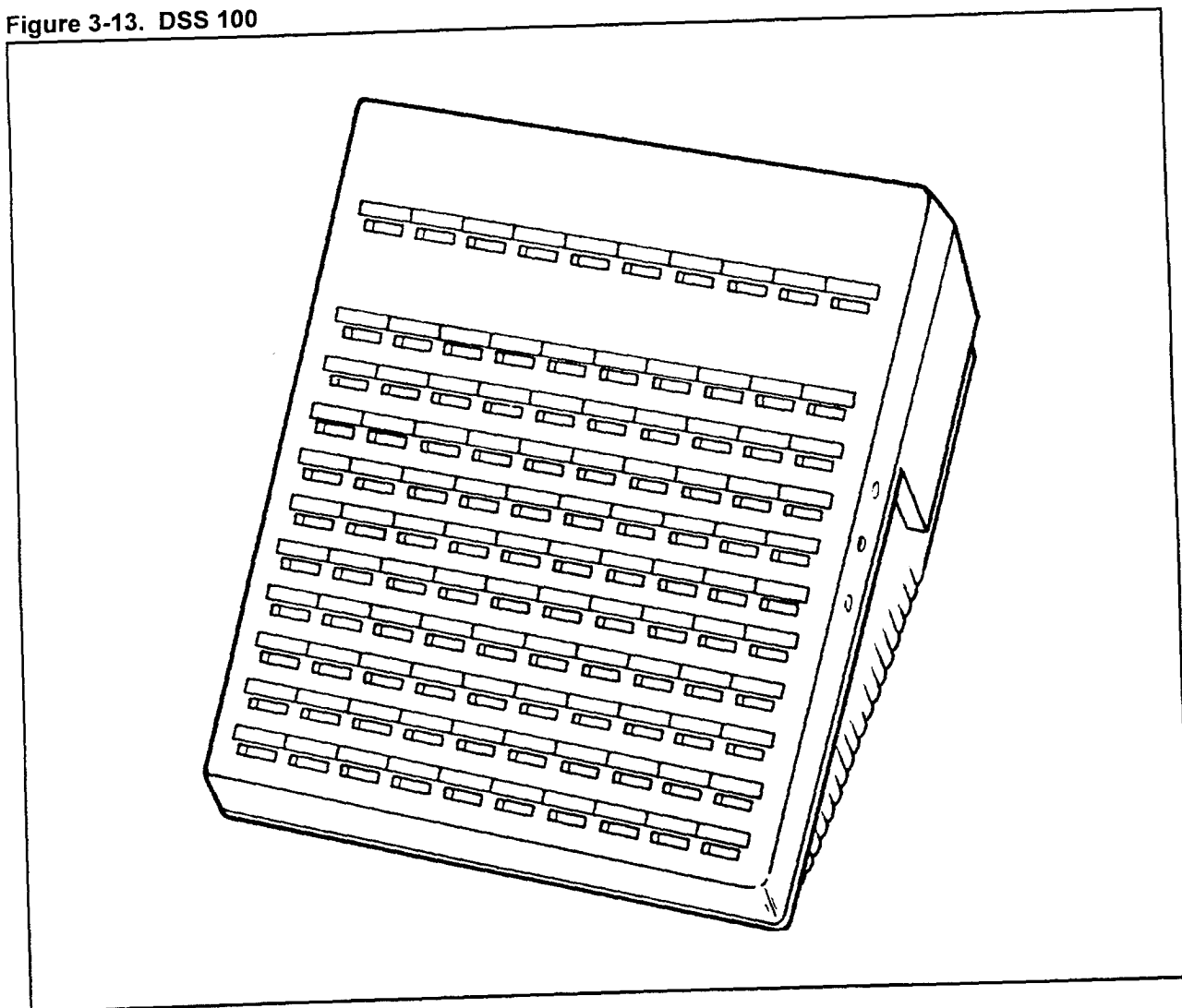


**DSS 100** The DSS 100 provides the Direct Station Selection (DSS) function and the Room Status Indicator (RSI) function. The DSS shows the status of all stations registered in the system. The DSS 100 has one hundred DSS/BLF buttons and ten screen change buttons (refer to Figure 3-13). Other service buttons, such as DSS Camp-On, cannot be assigned.

Each DSS/BLF button has one one-color LED. If a button is assigned as a DSS/BLF button, the paired LED indicates the state of the station assigned to that DSS button. The ten screen change buttons have one-color LEDs.

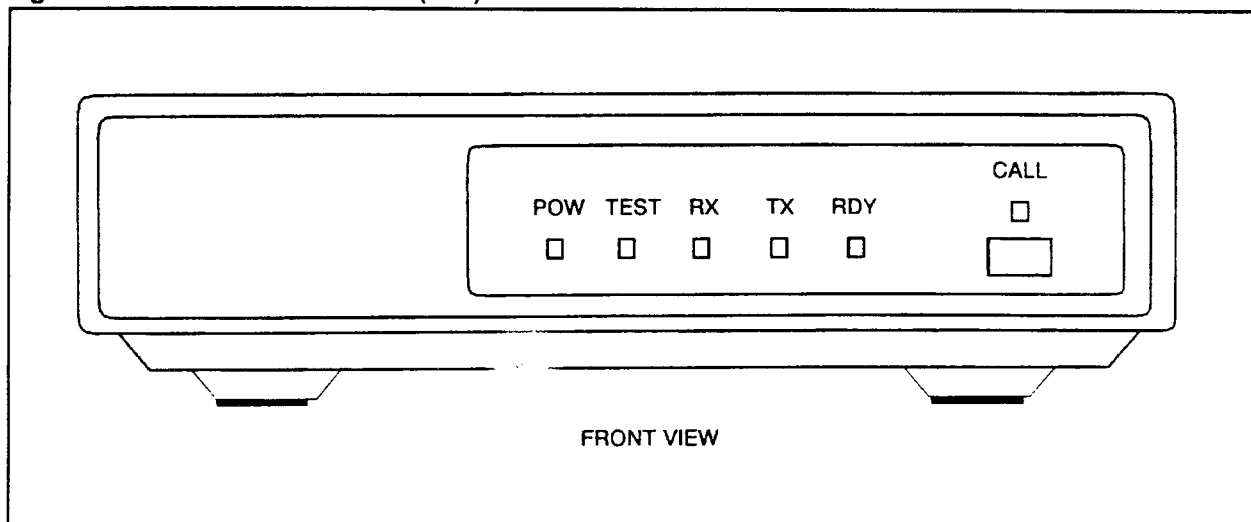
Two DSS 100s may be installed per system on separate Attendant Consoles. If the DSS 100 functions as an RSI, up to three may be installed per system. Each DSS 100 must be paired with an Attendant Console only.

Figure 3-13. DSS 100

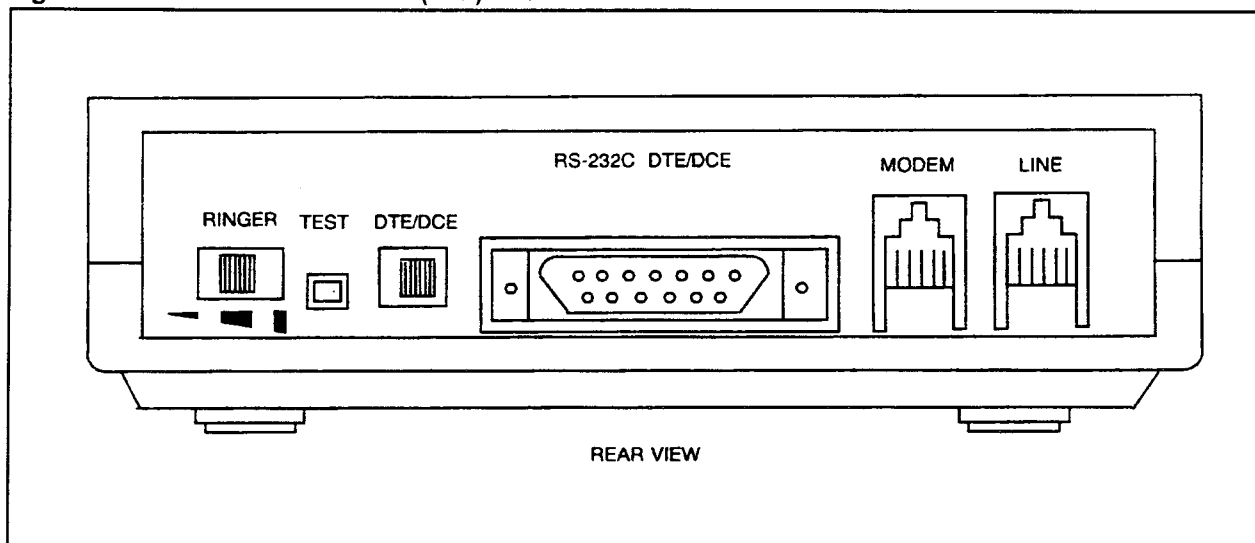


**Data Interface Unit** Figures 3-14 and 3-15 show the Data Interface Unit used in the data switching operation. This is more fully explained in Chapter 9.

**Figure 3-14. Data Interface Unit (DIU) Front View**



**Figure 3-15. Data Interface Unit (DIU) Rear View**



**MAINTENANCE AND  
ADMINISTRATION  
PERIPHERALS**

The testing of system functions and the programming of changes to the ODDB (office dependent data base) can be accomplished either on-site or at remote location by entering CMC (Change and Maintenance Command) codes.

Reliable and easy maintenance and administration can be performed using any of the following devices:

- CT-20 or CT-30 as MCT (Master Control Telephone).
- CSD as an MCT.
- DS20SD/DS32SD as an MCT.
- Attendant PC Console as an MCT.
- PcMP (Personal Computer Maintenance Program).

The system can support a maximum of twenty MCTs. Only one MCT may be used at a time for programming.

**CT-20 or CT-30 as MCT  
(Master Control Telephone)**

In addition to functioning as a station instrument, a CT-20 or a CT-30 can also serve as an MCT (Master Control Telephone) for programming the customer data base by the entry of CMC commands. A CT as an MCT is assigned in the data base to access the system programming mode when the appropriate access code is entered from the instrument. For full details on using a CT-20 or a CT-30 as an MCT, refer to the Data Base Manual.

**CSD as MCT (Master Control  
Telephone)**

In addition to functioning as a station instrument, the CSD telephone can also act as an MCT for programming the customer data base. The CSD as MCT is assigned in the data base to access the system programming mode when the appropriate access code is entered from the instrument. For full details on using a CSD as an MCT, refer to the Data Base Manual.

**DS20SD/DS32SD as MCT  
(Master Control Telephone)**

In addition to functioning as a station instrument, a DS20SD or DS32SD can also serve as an MCT (Master Control Telephone) for programming the customer data base by the entry of CMC commands. A DS20SD or DS32SD as an MCT is assigned in the data base to access the system programming mode when the appropriate access code is entered from the instrument. For full details on using an DS20SD or DS32SD as an MCT, refer to the Data Base Manual.



**Attendant Console as MCT  
(Master Control Telephone)**

In addition to functioning as the primary answering position, the Attendant Console can function as an MCT programming and maintenance device. The Attendant Console performs system programming by first activating the Position Busy mode, which removes the attendant from active status. The required security code is then entered to access the system programming mode. For full details on using an Attendant Console as an MCT, refer to the Data Base Manual.

**PcMP (Personal Computer  
Maintenance Program)**

This user friendly, menu-driven software program runs on an IBM-PC or compatible computer. The PC can be connected to the RS-232C port on the equipment cabinet. The PcMP software (available in either the 3 1/2-inch or 5 1/4-inch floppy disk format) allows users to:

- Add new station lines.
- Install new features or users.
- Update, save, and load customer data bases.
- Upgrade customers from one release to another.
- Gain complete upload and download capabilities.
- Print out an entire customer data base.
- Perform off-line edits of a customer data base without having to communicate with remote system.

In addition, the PcMP maintenance data base features multiple security codes and an on-screen, context-sensitive HELP command. For complete details on this software, see the PcMP Data Base Management User Guide (117-055-001).

## SYSTEM FEATURES

This chapter describes the major system features and their functions and also lists benefits and market applications.

### Alarms

Alarms are located on the CPU card in the equipment cabinet. An **alarm** button can be programmed as a feature button on Digital Stations, electronic telephones, Attendant Consoles, or DSS/BLF Consoles. Some alarms are turned off by maintenance personnel; some occur only momentarily and are turned off by the system (e.g., recovered data error); others reset when the condition clears (e.g., an unplugged telephone). External alarms can also be activated through contact closures on the Power Failure Transfer card (6PFA).

#### Benefits:

- Reduces/eliminates downtime.
- Speeds troubleshooting and warns of fault conditions before major problems occur.

#### Applications:

- Organizations that cannot tolerate downtime; health care, telemarketing, service bureaus, travel agencies.

### ACD (Automatic Call Distribution)

ACD (Automatic Call Distribution) provides automatic distribution of incoming trunk and internal calls to idle agent stations in the ACD group. If all stations in the ACD group are busy, the call is placed in the ACD call queue to await the next available station.

The ACD feature also maintains an idle agent station queue. An incoming call is connected to the agent station that has been idle the longest. Monitoring or timing of each idle agent station begins at the termination of the last call handled by that station.

ACD treatment is activated for calls to the pilot number for CO and DID trunks, calls forwarded to the pilot station (e.g., Call Forward Busy/No Answer, Call Forward-Busy, Call Forward-No Answer, and Call Forward-All Calls), and calls transferred from the Attendant Console.

**ACD (Automatic Call Distribution) (Cont'd)**

ACD service is activated for the following types of calls terminating at the pilot station:

- Station call.
- Transferred call.
- Forwarded call.
- Tie line call.
- DID line call.
- Direct-in line termination call.
- Personal line termination call.
- Pooled incoming trunk (one appearance).
- Pooled bothway trunk (one appearance).
- Key system line (one appearance).

When the system contains an RVAC card and a call is placed in the ACD calling queue on a CO or DID line, the caller hears a recorded voice announcement. The caller then hears a hold tone or music until the call is answered. If the hold condition exceeds a predetermined time, the system issues a second voice message (the second recorded voice announcement may be different from the first recorded voice announcement). The caller again hears a hold tone or music. The second recorded announcement is heard again if the call remains on hold long enough. Calls transferred to the pilot number that are held in queue only hear the second voice message.

If the initial predetermined time period expires but the voice message is busy, the caller continues to hear the hold tone or music until the voice message is idle. The second announcement may be repeated an unlimited number of times.

Connect supervision is returned when the caller is connected to the recorded announcement or an ACD agent.

Any ACD call transferred by the Attendant Console to a pilot number returns to the Attendant Console if it is not answered within a predetermined time. The transferred call is removed from the ACD calling queue when it returns to the Attendant Console.

Wrap-up codes may be entered by the agent to further define and classify each incoming call. The optional ACD Report Manager application processor is required for wrap-up codes.

The overflow feature operates when calls in the primary ACD calling queue are not answered within a predetermined time. The overflow feature handles only CO, tie, and DID lines and transferred calls. The system sends calls to a predetermined station, attendant, or pilot in a secondary ACD group or the Integrated Voice Server (IVS). If the secondary ACD group is also busy, the calls are sent a recorded voice message (when the system is equipped with the RVAC card) and placed in the secondary ACD calling queue. When a call overflows from the primary ACD group, the system removes the call from the primary ACD calling queue.

**ACD (Automatic Call Distribution) (Cont'd)**

When Call Forward-All Calls (CFA) is activated from the pilot station, the system forwards all calls to a predetermined destination. No calls are routed to the pilot of the group forwarding the calls.

Variable work time for ACD agents may be set on a per group basis (see the Change Work Time by ACD Group feature in this chapter).

**Benefits:**

- Incoming customer calls are routed directly to individual departments, improving the professional image of the business using the system.
- Cost effective ACD eliminates or reduces the need for call handling by an attendant, thereby reducing costs.
- ACD speeds communications in high-traffic operations, improving customer service and employee productivity.

**Applications:**

- Mail order houses and businesses handling diversified product lines.
- Newspapers.
- Advertising departments.
- Government agencies.
- Service bureaus.
- Customer service.
- Travel-related industries with a high volume of customer communications.
- Order entry departments.
- Any department (or person) handling a high volume of calls.

**Capacity:**

- 20 ACD groups. Total 240 agents per system; no limit on the number of agents per group.

**ACD Agent** The ACD agent position offers specialized station features to handle ACD calls effectively. The agent position function is programmed into one of the ACD groups. The following features are available at the ACD agent position:

- **Agent Consultation:** This feature permits private consultation with an internal or external party while the initial calling party is on hold.
- **Agent Transfer:** This feature allows transfer of an ACD call to another station or ACD group.
- **Agent Handsfree Operation:** This feature provides handsfree operation for agents with Digital Stations and electronic stations having a built-in handsfree speaker and microphone. The feature is activated automatically by the Voice Calling - Handsfree Answer feature when a supervisor's voice call is received. (Handsfree operation is also available when headsets are used.)
- **Agent Instrument:** Proprietary telephones and SLTs (Single Line Telephones) can be agent instruments to receive ACD calls. Each agent instrument is assigned a station directory number. If an SLT is used as an agent instrument, the following ACD features are not available:
  - Incoming Call Identification
  - Message Waiting
  - Silent Messages
  - Emergency Call
  - Call Waiting Indicator (station)
  - Auto Answer
- **Agent Received Non-ACD Incoming Calls:** This feature allows the agent instrument to receive calls other than ACD calls.
- **Agent Three-Party Conference Call:** This feature permits the addition of a third party to a two-party call. This can be used to add a supervisor to an existing call.
- **Automatic Answer:** This feature allows the agent to answer incoming calls automatically through the speakerphone, or by hearing a tone through the headset.
- **Automatic Disconnect:** This feature forces the agent into the idle queue or into automatic work mode when the calling party disconnects.
- **Call Hold:** This feature places an incoming call on exclusive hold. No other station can access the call.

- ACD Agent (Cont'd)**
- **Direct Outward Dialing:** This feature allows an agent instrument to originate an external call using the PBX facility. This feature is regulated by the agent instrument's COS (Class of Service) and COR (Class of Restriction).
  - **Incoming Call Identification:** This feature provides visual indication in the LCD display of Digital Stations and electronic stations (if equipped) of the internal calling party, name, station directory number, trunk number, trunk name, or DNIS name. The calling party is displayed to indicate an ACD call. The pilot number of the ACD group called is displayed on the LCD.
  - **Intercom Dialing:** Allows ACD agents to dial internal stations via their line appearance or intercom appearance on Digital Stations or electronic stations.
  - **Message Display:** This feature allows the reception of:
    - A message from the supervisor
    - Silent Messages on display-equipped telephones
  - **Position Unstaffed:** This feature allows registering the DND (Do Not Disturb) feature when an agent is temporarily unable to answer any incoming calls
  - **Sign-On/Sign-Off:** This feature allows ACD agents to sign on to the system to allow incoming ACD calls. Sign-off is used to sign off from the system. Agent ID's are used to sign on and sign off, allowing multiple agents to use the same agent instrument. Sign-On/Sign-Off is used only when the ACD Report Manager system is installed.

**NOTE:** Voicemail ports assigned as ACD members are automatically set for Ready mode so that no agent Sign-On/Sign-Off is required.
  - **Supervisor Assistance:** This feature, when used with the Silent Message feature, allows the agent to alert the requested supervisor of the need for assistance.
  - **ACD Work Mode (Automatic):** This feature provides a programmable time setting for an agent to perform follow-up paper work after an ACD call. During this work time, the agent is not placed in the ACD agent idle queue and does not receive ACD calls. When the work time interval has elapsed, the agent is again placed in the available queue and can start receiving calls. Non-ACD calls can be received and the agent can originate calls during the work interval.
  - **ACD Work Mode (Manual):** Depending on the agent instrument COS, unlimited work time is provided. Pressing the programmable **work** button toggles the work time feature on and off.

- ACD Agent (Cont'd)**
- **ACD Wrap-Up:** This feature is used for the purpose of updating statistics in the ACD Report Manager. The wrap-up code can be entered during a conversation or after the call has been disconnected. After the wrap-up code has been entered, the ACD Report Manager receives the information and the statistical report is updated.
  - **Call Waiting Indicator:** This feature provides the agent a visual indicator of the number of calls waiting. Two call waiting thresholds can be set via CMC command. The feature button indicator lights steadily when the number of calls waiting reaches the first threshold. The indicator flashes when the number of calls waiting reaches the second threshold.
  - **External Call Waiting Indicator:** The display panel is mounted to be visible by the ACD groups served. Each display can serve up to four ACD groups and consists of four pairs of red and yellow lamps. The yellow lamp lights when the first ACD calls waiting threshold is reached, the red when the second threshold is reached.

**Benefits:**

- Allows handling of calls in a timely manner.
- User friendly.

**Applications:**

- Reservation desks, catalog sales, ticket agents, customer service.

**Capacity:**

- 20 ACD groups. Total 240 agents per system; no limit on the number of agents per group.

**ACD Report Manager™**

ACD users can interface (via the 2APIA card) to an external, PC-driven reporting system. The ACD Report Manager system can provide the following on-screen (via CRT) or printed report to aid in making effective use of Automatic Call Distribution capabilities.

- **Real-Time, On-Demand Reporting via CRT**
  - Group summary monitor
  - Individual agent status monitor
  - System status monitor
- **Hard Copy Statistical Reporting**
  - System status report
  - Source group report
  - Agent status report
  - Group trend report
  - System percentage report
  - Individual agent staffing report

When the ACD Report Manager is installed, a Sign-On/Sign-Off feature for agents is used to make agents available to receive ACD calls. To sign on, the agent presses the programmable **sign-on** button and enters a 4-digit code (3-digit Agent ID and 1-digit check sum) into the agent instrument. The Report Manager application verifies the ID and records the agent status. Signing off is accomplished by pressing the **sign-on** button. At this point the agent is not available to receive ACD calls and the Report Manager records the agent status.

The ACD Report Manager system requires an 80386 or 80486 PC. The following PCs are certified:

- ACER 1120.
- ACER 1125.
- ACER ACROS 486/33DX.
- Hewlett Packard QS 20 Model 46.
- Hewlett Packard VECTRA 486/25N.

Please see the ACD Report Manager System Manual (117-043-002) for all the requirements needed for the ACD Report Manager system to function properly.

**Benefits:**

- Enables ACD users to effectively staff agent positions.
- Provides traffic information to determine trunking requirements.
- Quantifies lost or abandoned calls.

**Capacity:**

- Maximum of 240 agents.
- Maximum of 20 ACD agent groups.
- Maximum of 47 agents per ACD agent group.

ACD Report Manager™ is a trademark of Fujitsu Business Communication Systems.



- ACD Route Queuing** ACD Route Queuing is provided by assigning a Queue Active step in the ACD Route Table at CMC 370 or by the ACD AP that corresponds to an ACD group. ACD agents will not receive any incoming ACD calls until this step is activated in the Route Table.
- When ACD Route Queuing is applied, an "ACD Call" message will be sent to the AP after an ACD call is received. Then, the "Port in Queue" message is sent to the AP when the ACD Queue Active Step is complete. Regardless of whether the "Port in Queue" message has been sent to the AP, one of two messages will follow. Either a "Port Abandoned" message (when the call is abandoned) or an "Interflow" message (when a call is transferred) will be sent to the AP.
- If a route table is not registered to an ACD group, or the Queue Active Step is not registered to a route table, or the route table activation flag is not set to "route table active" in the system flag command, then this feature is not available. In this case, an ACD call will terminate to a vacant agent immediately.
- ACD Route Table** Route tables provide users with the ability to determine the action of incoming ACD pilot or attendant transferred calls to busy agents, until an agent in the group is able to answer the call. The system has four route tables per ACD group. Two of these tables are day and night tables, automatically selected by either the day or night system mode. The remaining two tables are maintained and transferred either automatically or manually via the ACD Report Manager. The following steps are available:
- Send ACD message.
  - Send ACD message, and then transfer the call to a specified extension.
  - Send ACD music.
  - Send ACD music, and then transfer the call to a specified extension.
  - Send a tone.
  - Send a tone, and then transfer the call to a specified extension.
  - Forced disconnect.
  - Loop process in the route table.
  - Jump process initiated by the number of waiting calls.
  - Queue active.
- Benefits:**
- Allows specific types of calls to be assigned to specially configured route tables, thus enabling different routing actions when busy agents are encountered.
- Capacity:**
- Maximum of four route tables per ACD group.
  - Maximum of 80 route tables available per system.
  - Maximum of ten route steps per route table.

- ACD Supervisor** To effectively manage ACD group(s) and assist agents, the ACD Supervisor has access to several extra features in addition to those available to agents. The supervisor station can be programmed with the following features:
- **System Administration Function:** The supervisor uses this feature to administrate the ACD group. The supervisor station must be a DS20SD, DS32SD, CSD, CT-20, or CT-30 configured as an MCT (Master Control Telephone). The supervisor can reassign or remove agent stations from the ACD group using Change and Maintenance Commands (CMC).
  - **Call to an Agent Station:** With this feature, the supervisor can call any agent station by dialing the station directory number. A call can be placed to the agent's prime line, a secondary line, or an intercom station number.
  - **Three-Party Conference:** This feature allows the supervisor to assist the agents when requested for training purposes.
  - **Message to an Agent Station:** With this feature, the supervisor can send a silent message to an agent station that has an LCD display.
  - **ACD Status:** With this feature, the supervisor station can receive the following information (programmed on feature buttons on a CSD telephone only):
    - Number of idle agents in the group
    - Number of busy agents in the group
    - Number of work agents in the group
    - Number of DND (Do Not Disturb) agents in the group
    - Number of CO calls in the queue
    - Number of tie line calls in queue
    - Number of station calls in queue
    - ACD group number
  - **Calls Waiting Indicator:** This feature provides the supervisor with a visual indicator of the number of calls waiting on Digital Stations and electronic telephones via a button appearance. Two calls waiting thresholds are available and programmable on a system-wide basis. The indicator lights steadily when the number of calls waiting reaches the first threshold. The indicator flashes when the number of calls waiting reaches the second threshold. Additionally, an external calls waiting indicator is available.
  - **Silent Monitor:** This feature provides the supervisor with the ability to monitor an agent's call while in conversation, conference, etc., without an interrupt tone to either party. The supervisor's voice is not heard by either the agents or calling party while using this feature.

**ACD Supervisor (Cont'd)****Benefits:**

- Allows supervisor monitoring of more than one group.
- Reduces number of lost calls.
- Allows more than one supervisor for each group.
- Assists in training agents.
- Improves employee productivity.
- Allows the monitoring of agents to meet staffing needs.
- Allows the reconfiguration of ACD group or trunk lines to facilitate call handling.

**Applications:**

- Reservation desks, ticket offices, customer service, telemarketing, dispatchers, newspaper advertising departments.

**Capacity:**

- Maximum of 20 MCTs per system when used as a Supervisory position telephone.

**API Loop Back Test**

This service provides the loop back test for the 2APIA card used in the ACD Report Manager and the Property Management System (PMS) interface applications.

The loop back test is made initially when using CMC 280 to assign the 2APIA card in the system. The loop back is automatically released during the following conditions:

- Assigning AP types by CMC command.
- Automatic loop back test by CMC 811.
- Restart or API failure.

**Automated Attendant**

This feature allows incoming calls to reach the desired station without operator or attendant assistance. Using this feature, the system answers the incoming call with a recorded voice announcement which prompts the caller to enter the desired station number. The caller dials the station number and completes the call. The Recorded Voice Announcement card (RVAC) is used for this application. The RVAC card allows seven calls to be answered simultaneously. Ten different messages can be recorded for the Automated Attendant (one for each of the ten tenants).

Day, night, or 24-hour recordings are also available with the RVAC card. (Automated Attendant can also be turned off or on with a programmable **night** button on a station or Attendant Console, allowing calls to be answered automatically by a general greeting used for both day and night use.)

If the called station is busy, if the caller does not dial the station number within a predetermined time, or if the caller dials an incorrect station number, the system transfers the call to an Attendant Console or other designated station.

**Automated Attendant (Cont'd)****Benefits:**

- Reduces staffing requirements for attendant position.
- Allows attendant to perform other work while on duty.
- Provides faster service to calling party.

**Applications:**

- Reservation desks, ticket offices, customer service, telemarketing, dispatchers, newspaper advertising departments.

## Single Digit Dialing

This feature allows incoming calls to reach a destination by dialing a single digit code, which can be assigned on a per tenant basis.

An outside caller may dial the DISA-S trunk destination number. The system will then answer the call with a recorded voice announcement to prompt the entering of a specific single digit code. If the caller does not enter any information, the call may be routed to a predetermined destination, such as an extension or the Attendant Console.

Automated Attendant - Single Digit Dialing is on a per tenant basis (not system-wide). Refer to CMC 434, P6, in the Data Base Manual (Section 123-080-002). DISA-S is required to implement this feature.

## Time-Out Disconnect for Ringing/No Answer of DISA-S

This feature allows a DISA-S CO trunk to be released by a system time-out if not answered within a predetermined time. DISA-S is used for Automated Attendant applications.

**Benefits:**

Prevents a DISA-S trunk from being locked out of the system.

**Applications:**

- This feature is available only for voice communication.
- This feature is available for DISA-S calls that are terminated to an extension or an attendant.

**Capacity:**

- Timing for this feature may be assigned between 1 to 256 seconds. Default is set at 61 seconds.

**Calling/Called Party Name Display**

This feature displays the name of the person called and the name of the person who placed the call on both the originating and terminating telephones. Trunk names can also be displayed, if assigned.

An enhancement to this feature allows both the name and directory number to be shown on the 4-line display of an attendant console or CSD telephone.

Up to fifteen characters may be used. The trunk name may also be up to fifteen characters.

**Restrictions:**

- When the extension party name is not registered, only calling and called numbers are displayed.
- When using programmable buttons on a CSD (FDC, three-way conference menus, etc.), the extension party name is not displayed.
- Call duration is displayed on the last 5 digits of the first line.
- When using the **message waiting pick-up** button, the name is displayed only if it is registered. Otherwise, the DN is displayed.
- When the attendant answers the station call by pressing either the STA or RECALL button, the display gives caller identification while the RECALL button is continuing to be pressed.
- The attendant returns to conversation with the first party by:
  - Pressing the SRCE button after conversing with the second party or hearing ROT/BT while calling the second party
  - Pressing the DROP/CNCL button after conversing with the second party, hearing ROT/BT while calling the second party, or calling the second party without performing any additional service (i.e., camp-on)
- When the call terminates to the attendant by using call forward features, the transferring factor (CFA, CFB, etc.) is not displayed.
- If the DN is less than 4 digits, it is displayed at the right side without a space.

**Call Diversion to Attendant**

Incoming call diversion to the Attendant Console is automatically provided when the call is not answered within a predetermined time, or the call terminates to a busy extension or to one that has registered do not disturb (when the call comes in through the Automated Attendant feature of the RVAC card).

**Benefits:**

- Reduces lost or abandoned calls.

**Call Manager** Call Manager is an optional integrated call accounting system designed to operate with the system and its Station Message Detail Recording (SMDR) capability.

The Call Manager collects SMDR data, stores the formatted call records into system memory, and then prices the call records as printed reports are generated. Printed reports may be generated either automatically (in batch mode), or on demand, with the use of a terminal device such as an optional touchpad, programming terminal, or station set (via DTMF) with the appropriate COS. Call record reports are delivered to a serial printer.

An optional service module may be included to permit remote data base maintenance and system diagnostics.

There are two versions of Call Manager, each requiring a specific circuit card (refer to Chapter 2):

- Commercial (with a maximum capacity of 42,000 call records).
- Hospitality (with a maximum capacity of 1,000 call records).

In addition, the commercial version of Call Manager also has the Report Writer option available. This PC-based software application enables call record buffering and pricing, archiving onto hard disk, and enhanced reporting capabilities.

Further information can be found in the following manuals:

- Call Manager - Report Writer Manual (117-037-001).
- Call Manager - Commercial Manual (117-038-001).
- Call Manager - Lodging (117-039-001).

**Call Progress Tones** Call progress tones are provided by the system to indicate call status as shown in Table 4-1.

**Timing:**

- Busy tone, Reorder tone; 1 sec to 255 sec

**Benefits:**

- Provides automatic audible indication of calling status.
- Prompts station user for feature activation.

Table 4-1. Call Progress Tones

TONE	ABBREVIATION	DESCRIPTION	FREQUENCY				INTERVAL	dB (*1)
			350	440	480	620		
Dial tone	DT	Proceed to dial	X	X			Continuous	-16
Ringback tone	RBT	Called party is ringing		X	X		1.0 sec on/ 3.0 sec off	-16
Busy tone	BT	Called party is busy			X	X	0.5 sec on/ 0.5 sec off	-21
Reorder tone	ROT	Service unobtainable			X	X	0.25 sec on/ 0.25 sec off	-21
Recall dial tone	RDT	Proceed to second dial	X	X			3 bursts of: 0.1 sec on/ 0.1 sec off, then DT	-16
Confirmation tone	CFT	Request is acknowledged	X	X			3 bursts of: 0.1 sec on/ 0.1 sec off, then no tone	-16
Distinctive busy tone	DBT	Called party busy; camp-on, override services available	X	X			0.2 sec on/ 0.1 sec off, 0.1 sec on/ 0.1 sec off	-21
Call waiting tone	CWT	Call is waiting		X			1 burst of 0.1 sec on	-14
Hold tone	HT	Call is held					No tone (*2)	--
LCR warning burst tone	LCR 1	The most expensive route is selected	X	X	X	X	0.5 sec on/ 0.5 sec on	-21
LCR warning burst tone	LCR 2	Other than the least cost route is selected	X	X			1.0 sec on	-16
Cut through warning burst tone		Cut through is available	X	X			1 burst of 0.1 sec on	-16
Zip tone		Auto answer is executed	X	X			3 bursts of: 0.1 sec on/ 0.1 sec off, then no tone	-16

NOTES: \*1 Level (dB) at the trunk interface.

\*2 This tone is replaced by music source if music on hold feature is activated.

**Change Work Time by ACD Group**

Variable work times for ACD agents may be set on a per group basis.

**Benefits:**

- PBX users with multiple ACD groups can tailor the automatic work time on a per group basis allowing more efficient operation.

**Applications:**

- Any user requiring multiple ACD groups.

**Conferencing (Three-Party)**

The Three-Party Conferencing feature allows a station to establish a connection with another station while engaged in a two-party call or trunk call.

If the trunks (in any trunk connection) are ground start trunks, the system is allowed to receive disconnect supervision from the Central Office; therefore, the system is able to automatically disconnect a trunk-to-trunk connection. This means that the internal station may disconnect from the call without disrupting the trunk-to-trunk conversation.

DTMF tones may be sent during three-party conferences. This enables access to voice mail systems, etc. Only the transferring station can send DTMF tones to the other parties.

**Benefits:**

- Provides three-way communications for conference calls.
- Eliminates time and money spent traveling for traditional conferences.
- Eliminates/reduces costly call backs.
- Expedites decisions/information.

**Applications:**

- Teleconferencing situations for businesses.

**Capacity:**

- Maximum number of mixers is 10 (with a SC2P2x card) or 15 (with a SC4P2x card).



**COS/COR (Class of Service/  
Class of Restriction)**

This feature provides multiple classes of service to restrict stations from accessing certain features. A COS is assigned to each station/trunk and the station/trunk has access to all the features allowed for that class. Default COS and customized COS are available through the data base.

COR is used to restrict the dialing capabilities of a station, such as outside calls, long distance, etc.

**Benefits:**

- Provides customization of features to meet the unique needs of a user by allowing sixteen classes of service and sixteen classes of restriction.

**Applications:**

- Business operations in a tenant service environment.
- Organizations with a need for more control over feature assignment than is normally offered in COS designations.

**Capacity:**

- 16 classes of service.
- 16 classes of restriction.

**Day/Night DISA**

The DISA-S mode of each trunk in the system can be set to day only, night only, or all day. This feature is also available for the automated attendant.

**Benefits:**

- DISA-S mode can be set on each trunk independently.

**Applications:**

- Users that require remote system access to PBX features or capabilities such as WATS or FX lines.

**Diagnostics (Local/Remote)** The system uses on-line diagnostic routines to provide detailed information on system operation and fault locations. Users obtain a visual display of type of fault, location of defective card or instrument, time of fault, etc., by entering CMC (Change and Maintenance Command) codes on a Master Control Telephone (DS20SD, DS32SD, CSD, CT-20, CT-30, or Attendant Console). Use these devices on-site for troubleshooting activities. Faults are displayed on the segment display of the CPU card.

**Benefits:**

- Reduces costly on-site service calls by providing diagnostic capability at the user site or from a remote maintenance center.
- Reduces time spent in troubleshooting activities by providing a visual display of diagnostic data.
- Enhances the maintenance function by providing a periodic check of system status during system restart or call processing routines.
- Saves time and money by allowing on-line testing of Proprietary telephones.

**Applications:**

- Businesses that require 24-hour telephone service.
- Emergency type service; e.g., fire, rescue, etc.
- Remote sites requiring part-time service support.

**Dial Outgoing Restriction** Trunk calls can be restricted by COS and COR as well as multi-digit restriction.

**Benefits:**

- Allows the user to limit access to outside lines.
- Provides savings on outside call costs.
- Prevents unauthorized outside calls.

**Applications:**

- Offices with a need to regulate and control outside calling.

**Capacity:**

- Three restriction groups per system.
- 16 classes of restriction.

### Dial Pulse/Dual-Tone Multi-Frequency (DP/DTMF) Stations

The system supports both rotary dial and DTMF single line telephones. Dial pulses and DTMF tones are received by the system and translated to allow access to station features, system features, and trunks. A DTMF receiver (4DMR / MUFN\* card) must be installed in the system to support DTMF single line telephones.

#### Benefits:

- Allows the use of existing SLTs (rotary dial or DTMF) by providing DP/DTMF conversion.
- Allows the use of station instruments most appropriate to user needs and working environment.
- Dial access to features available to all SLTs.

#### Applications:

- Offices with working environments in which SLTs are more practical or cost-effective than digital or electronic stations; e.g., warehouse, stockroom, etc.

#### Capacity:

- Eight 4DMR / MUFN cards per cabinet, with a maximum of eight 4DMR / MUFN cards per system.

**NOTE:** Traffic density will dictate how many cards are required. Further information can be found in Chapter 2 of this manual.

### Dialed Number Identification Service (DNIS)

DNIS allows digits to be received from a long distance carrier across T-1 or DID type service, and then automatically routed to predetermined stations in the system. DNIS service is divided into four categories:

- **DNIS Routing:** The system automatically routes DNIS calls to a predetermined extension, the attendant, or an outside party via a CO/tie line.
- **DNIS Name Display:** When a DNIS call is terminated to a display station, the name corresponding to the DNIS number is displayed.
- **DNIS Reporting:** When a DNIS call is terminated to an ACD group, the DNIS number is transferred to the AP.
- **DNIS Priority:** When DNIS calls terminate to an ACD pilot, ACD queuing is done on a DNIS priority level.
- **DNIS Day/Night Call:** A different destination can be assigned for day or night mode for calls that terminate through DNIS.

#### Benefits:

- Enables quick identification of types of incoming calls, so that each call may be specifically handled.

\* The MUFN card is a future Series 3 option.

**Dialed Number Identification Service (DNIS) (Cont'd)****Capacity:**

- Maximum of 1,000 DNIS codes.
- Maximum of 10 DNIS digits per code.
- Maximum of nine characters per DNIS name.
- Maximum of eight DNIS priority levels.

**Dialed Number Identification Service (DNIS) for Day/Night Call**

A different destination can be assigned for day or night mode for calls that terminate through DNIS. DNIS digits can be from one to ten digits in length. DNIS digits received are translated by the system to allow termination to a station directory number, attendant access code, or system speed calling number. Day and night priority levels (1-8) are also provided.

**Benefits:**

- This feature is available for analog DID trunks, T-1 DID and ISDN trunks.
- Provides greater answering flexibility for termination of DNIS trunks.

**Applications:**

- Customer service, 24-hour service related companies.

**Dictation Access**

This feature provides a station user with proprietary telephone dial access to a user-provided dictation machine.

Accessing a dictation machine is accomplished by dialing an access code, usually the station number.

If the dictation machine line terminates, connection is made to the ring back tone before the machine answers.

The dictation machine should answer automatically.

**NOTE:** Setting P6 in CMC 204 will prevent reorder tone from being sent to the dictation machine when the calling party hangs up.

After successfully accessing the dictation machine, use the telephone key pad to send multi-digit commands to the machine. Consult the dictation machine manual for specific commands.

**Benefits:**

- Cost effective by allowing the use of existing dictation equipment.
- Shared usage of dictation equipment.
- Retraining of personnel on use of "new" dictation equipment is not necessary.

**Applications:**

- Organizations with telephone dictation requirements.
- Offices requiring off-site access to dictation equipment.

**Direct-In Dial/Direct-Out Dial Service**

This feature allows calls to be received using DID service and DOD calls to be sent out over the same trunks. This application is generally used for DNIS applications with T-1 spans.

**Direct Station Selection/Busy Lamp Field (DSS/BLF) 30/40/80 Button**

The DSS/BLF contains individual programmable buttons for accessing some or all internal stations. The direct station selection feature enables the user to place a call to an assigned station by pressing the associated DSS button. Unassigned buttons on the DSS/BLF can be programmed for specific features. The DSS/BLF will accommodate a maximum of five **park** buttons, five **camp-on** buttons, and one button each for **alarm**, **night answer**, and **alternate**. Up to forty speed call buttons or forty trunk buttons can be programmed on a DSS/BLF.

The Busy Lamp Field feature on the DSS/BLF provides an updated status display of associated stations. LED indicators display the Idle, Do Not Disturb, Ring, Busy, or Recall state of associated DSS station buttons.

Three types of DSS/BLF – DSS/BLF 30 (for Digital Stations), DSS/BLF 40 and DSS/BLF 80 (for CT stations and Attendant Consoles) – are available with thirty, forty, and eighty lamp (LED)/button combinations, respectively.

**Benefits:**

- Provides a constantly updated visual display of station status.
- Efficient call processing reduces network costs.
- Improved professional image.
- Reduced hardware costs.
- Provides single-button access (instead of dialing) to a desired station.
- Allows telephone coverage at an alternate DS/CT station via an **alternate** feature button.
- Provides easy activation of call handling features via DSS **park** and **camp-on** feature buttons.

**Applications:**

- Offices where receptionist uses the intercom frequently.
- Offices with a need for centralized answering capability.
- Offices that use DID and do not need a full console.
- Offices with a need for more than one answer point to cover absences, vacations, etc.

**Direct Station Selection/Busy  
Lamp Field (DSS/BLF) 30/40/  
80 Button (Cont'd)****Capacity:**

- Sixteen 30-button DSS/BLFs.
- Sixteen 40-button DSS/BLFs.
- Eight 80-button DSS/BLFs.

- NOTES:**
1. Two DSS/BLFs may be assigned to one station. Digital 30-button DSS/BLFs only work with Digital Telephones (DS).
  2. A digital 30-button DSS/BLF counts as 40 buttons.
  3. Thirty-button DSS/BLFs are connected to a 16DTC or 8DTC card. Forty- and eighty-button DSS/BLFs are connected to 8EKC cards utilizing the data pair.
  4. The system DSS maximum is 16. DSS button maximum is 640 total.

The following features are available using the DSS/BLF:

**DSS Camp-On**

This feature allows a station with a DSS/BLF to extend a held call to a busy station by pressing a programmable **DSS camp-on** feature button. Upon DSS Camp-On registration, a burst of tone alerts the busy station of a waiting call. The waiting call is extended to that station when the busy station becomes idle. A camp-on recall condition can be programmed to recall to the originating station DSS after the camp-on recall timer expires (recall time programmable up to 255 seconds). This condition is indicated on the DSS/BLF by the flashing of the DSS **camp-on** button and station button lamp, and audible recall tone ringing. If the DSS/BLF is paired with a DS20SD, DS32SD, CT-20, CT-30, or CSD, the LCD shows the calling station/trunk number and the camped-on station number.

**Benefits:**

- Saves time and improves productivity by eliminating repeated dialing to gain access to busy stations.
- Reduces number of callbacks.
- Assures that callers are not left waiting for extended periods of time by providing automatic return of a camped-on call to the DSS answering position after a predetermined time interval.
- Improves call handling by providing visual and audible indications of camp-on recall.

**Applications:**

- Centralized answering positions.

**Capacity:**

- Maximum of 5 **DSS camp-on** buttons per DSS/BLF.

**DSS Park** This feature allows the user to activate or retrieve calls parked at the DSS/BLF. Each programmable **park** button holds one call. DSS parked calls can be retrieved from a station by using the parking number assigned at the DSS/BLF.

**Benefits:**

- Increases call handling capability by allowing the DSS/BLF operator to place calls in a hold status.

**Applications:**

- Offices with a high volume of calls.

**Capacity:**

- Five **park** buttons per DSS/BLF.

**Alternate DSS** If the DSS/BLF has a button programmed as **alternate**, an alternate position is assigned in the data base. Calls are transferred to the alternate position when the user presses the designated feature button.

**Benefits:**

- Prevents unanswered calls.
- Allows calls to be automatically routed to an alternate position.
- Prevents a back-up of calls at the DSS/BLF.

**Applications:**

- Offices that require coverage for vacant stations.
- Businesses with a high volume of calls.

**Capacity:**

- One button on each DSS/BLF.

**DSS Alarm** An alarm can be programmed to appear at a DSS/BLF. When an error in the system occurs, the alarm button lights. The alarm button turns off when the fault is corrected.

**Benefits:**

- Automatically alerts the user to problems within the system.
- Reduces downtime.

DSS Night Night mode indication can be given by the programmable **night mode** button on a DSS/BLF. This button activates/ deactivates day and night mode.

**Benefits:**

- No training of personnel in day/night conversion required.
- Permits easy one-button conversion from day to night modes of operation.

**Applications:**

- Any business utilizing a DSS/BLF.

**Capacity:**

- One per DSS/BLF.

DSS Speed Calling Forty buttons on the DSS/BLF can be assigned for Station Speed Calling. A maximum of twenty digits can be registered for each Station Speed Call button. Only trunk calls can be assigned as station speed call numbers.

**Benefits:**

- Reduces the need to record and look up numbers.
- Vacant DSS/BLF buttons may be used for Station Speed Calling.
- Single-button access to frequently dialed numbers.
- Addresses the needs of station users requiring a large number of Station Speed Call buttons.

**Applications:**

- Executives requiring more than ten Station Speed Call numbers.
- Telemarketing groups who frequently call the same customers.
- Secretaries responsible for establishing calls for executives.
- Station users who frequently dial multi-digit numbers; e.g., long distance, SCC (Special Common Carrier), and personal authorization codes, etc.

**Capacity:**

- 20 digits per number.
- 40 numbers per DSS/BLF; if two DSS/BLFs are paired with a station, only the first DSS/BLF can have speed calling numbers assigned.



**DSS Line Terminations** This feature allows trunks to be terminated on buttons on the DSS/BLF Console. Call origination and answering functions are identical to those of lines appearing on the button of a station. A maximum of 31 lines may be terminated on a DSS/BLF. The LED associated with each button provides line status (ringing, hold, and busy). Any line may have a combined total of 52 appearances in the system on station or DSS buttons. This parameter applies to any kind of trunk termination group, e.g., key system, but is not applicable to pooled facilities for hold/busy indication. In addition, the DSS can have OSL appearances.

**Benefits:**

- Utilization of vacant buttons on DSS/BLF.
- Expanded line appearances to accommodate medium size businesses and departments.

**Applications:**

- Businesses requiring multiple answering positions.
- Sales and service departments requiring multiple trunk appearances.

**Capacity:**

- 31 lines per DSS/BLF, first DSS/BLF only assigned on the first 30 buttons.

**DSS External Paging** This feature provides direct access to customer-provided external loudspeaker paging equipment by activating (pressing) a feature button on the DSS/BLF.

**Benefits:**

- Assists attendant in locating individuals who receive urgent calls.
- Provides access to paging systems external to the telephone system.

**Applications:**

- Warehouses, remote sites, parts departments.

**Station Alternate Position** This feature allows a digital or electronic station associated with a DSS/BLF to direct all calls to a preassigned station. The station must be a digital or electronic station with an appearance of the same trunks. A programmable **alternate** button must be assigned on the DSS/BLF.

**Benefits:**

- Allows calls to be automatically routed to one alternate position.
- Prevents a back-up of calls at the DSS/BLF.

**Capacity:**

- One alternate digital or electronic station per DSS/BLF.

**Direct Station Selection  
(DSS) 100 Button**

The DSS 100 provides Direct Station Selection (DSS) function and Room Status Indicator (RSI) function. The DSS shows the status of all stations registered in the system.

The DSS 100 has ten screen change buttons for station directory number hundreds groups and one hundred (100) station buttons. This means that up to one thousand (1,000) different stations can be assigned to one DSS 100. A screen change button specifies the current screen number. Only station button assignment is allowed. Other features, such as DSS Camp-On, cannot be assigned.

Two DSS 100s may be installed per system. Each DSS 100 can be paired with an Attendant Console only.

DSS 40 and DSS 80s cannot be used in combination with a DSS 100. This means that when you pair a DSS 100 with an Attendant Console, you cannot add additional DSS/BLFs.

**Benefits and Applications:**

Same as those listed for the DSS 40 and DSS 80.

**Direct Station Selection (DSS) 30, 40, 80, 100 as Room Status Indicator**

This feature allows room status to be visually identified. This is accomplished in the data base by assigning the DSS/BLF as a Room Status Indicator. The LED buttons on the console are used to identify the room status. As many as eighteen DSS/BLFs may be used as RSIs a maximum of three may be DSS 100s). Only six of the ten screen change buttons on a DSS 100 may be used. Therefore, the maximum number of Room Status screens is 18; three DSS 100s times six screens per console.

If a DSS/BLF 100 is assigned as an RSI it may only be used for that purpose, as a Room Status Indicator. You may, however, assign DSS/BLFs in different combinations. For example, one DSS/BLF may function as a RSI, while the others function as regular DSS/BLFs.

**Applications:**

Hotels/Motels

**Capacity:**

- Up to eighteen 30-, 40-, and 80-button DSS/BLFs.
- Up to three 100-button DSS/BLFs.
- Maximum RSI screens: 18.
- One DSS/BLF 100 cannot be used as both a DSS and an RSI.

**Directory Number to Equipment Number Display**

This system maintenance feature allows an MCT to enter a DN (directory number) with a command that references an EN (equipment number). This feature is accessed via CMC 909.

**Benefits:**

- Improves troubleshooting.
- Speeds up installation time.
- Reduces man-hours required to perform data base changes and other maintenance tasks.

**Applications:**

- Reduces the time required to identify the hardware associated with an individual station instrument.

**DISA (Direct Inward System Access)**

DISA provides access to stations, features, and trunks from remote locations. The remote caller must be using a touch call telephone. Bothway trunks (ground start only) are designated as dedicated remote access trunks. If a bothway trunk is utilized, it must be configured for ground start.

Authorization codes are used for security purposes. One to eight digits may be assigned as authorization codes for bothway trunks. Each authorization code can be assigned on a trunk group basis and have a specific COS/COR. Call information (authorization/security code) can be output to the incoming and outgoing SMDR.

DID-DISA access is provided for DID applications. A DISA directory number (up to four digits) is assigned in the data base. The DISA directory number must be a valid DID number sent by the serving CO. Additionally, DID-DISA authorization codes can be assigned. One to four digit authorization codes are allowed with DID-DISA service. A COS/COR is also assigned for each DISA DID directory number or DID-DISA authorization code.

Features accessible with DISA trunks include:

- Stations.
- Attendant.
- Dictation.
- Outgoing trunks.
- SCC (Specialized Common Carrier) routes.
- System speed call list.
- Paging access (internal and external).
- LCR (Least Cost Routing).

The remote caller dials the listed directory number which terminates on a DISA trunk in the system. The caller hears a distinctive tone and inputs the appropriate authorization code. System dial tone is then sent to the remote caller and system facilities are accessible. The internal station user can transfer the call to any other station in the system. Calls directed to a vacant station number or to an invalid feature code are sent a busy tone.

**DISA (Direct Inward System Access (Cont'd))****Benefits:**

- Access to system and station features for field personnel.
- Centralization of network facilities.
- Access to system features after hours.

**Applications:**

- Sales personnel in the field.
- Access to features (i.e., dictation and SCC trunk groups) from a remote location or after business hours.

**Capacities:**

- DISA bothway trunk authorization codes: 500
- DID-DISA authorization codes: 500

**Display Character Assignment**

Information displayed on the LCD screens of equipped stations and the Attendant Console can be programmed in any language available using standard ASCII characters.

**Distinctive Ringing**

The Distinctive Ringing feature allows station users to audibly identify the source of incoming calls that are characterized by distinctive ringing signals.

Distinctive ringing tones can be used to identify the following types of calls:

- Station call from within the system.
- Incoming call from outside the system.
- Call that has been forwarded to the station from another station or is a callback (recall) from the system.

**NOTE:** Distinctive Ringing is not applicable to off-premise stations.

**Benefits:**

- Provides single line stations with key telephone station features.
- Identifies the type of call for stations without a visual display.

**DTMF After Account Code Entry** DTMF codes can be sent from digital and electronic telephones after an account code is entered while engaged in any CO or tie line conversation.

**DTMF Sending During Conference** This feature enables users to send DTMF tones during three-way conferences. This capability is useful in the event the user needs to access the voice mail feature when on a conference call.

**Equal Access** The system can accommodate users in areas where Equal Access is available. Regardless of the primary (and alternate) access carrier selected by the user, the system data base can easily be programmed to use the carrier access codes for feature operation; i.e., LCR (Least Cost Routing), Multi-Digit Toll Restriction, and SMDR (Station Message Detail Recording). Carrier access codes can also be incorporated in speed call lists.

**Benefits:**

- Enhances system operations by allowing the user to easily incorporate carrier access codes into the data base for cost management and control.
- User friendly; user dials single access code no matter which route selected by LCR.

**Applications:**

- Businesses in areas where Equal Access is available.

**Capacity:**

- 10 SCC Equal Access codes.

**Flexible Numbering Plan**

Flexible Numbering allows the user to assign station numbers in accordance with a specified numbering plan. Number assignments are made through the software and can easily be reassigned using CMC (Change and Maintenance Command) codes. Station numbers consisting of one to four digits can be integrated in the station numbering plan.

**Benefits:**

- Room number correlation for Hotel/Motel and healthcare applications.
- Enhances system operations by allowing the user to quickly and easily assign or change station numbers to suit individual requirements.

**Applications:**

- Organizations that need to reassign station numbers because of personnel relocations or installation of new systems.
- Hotel/Motel applications; e.g., room number correlation and single-digit service.

**Capacity:**

- One- to four-digit numbering plan.

**Hotel/Motel and Healthcare Applications**

Hotel/Motel and healthcare features are provided in the Business and Enhanced Network packages. Refer to Chapter 8 in this manual for a detailed description of hotel/motel and healthcare features. A Property Management System interface provides integrated features for Hotel/Motel management. Chapter 8 details this interface to enhance the Hotel/Motel feature capabilities.

**Hunt Groups**

When a call encounters a busy station, this feature allows the caller to hunt the first idle station in a defined hunt group. Each group is defined as circular, terminating, or pilot type.

- **Circular Hunt Group:** The hunting sequence for a busy station starts with the called station and then searches in a prearranged order through all stations in the hunt group to find an available station. The hunt continues in a full circle back to the original station and will try that station again before returning a busy tone.
- **Terminating Hunt Group:** The hunting sequence for a busy station starts with the called station and then proceeds through the hunt group to find an available station. The hunting sequence ends at the last station in the hunt group; therefore, a call placed to any hunt group station except the first one will not make a complete search of all available stations.
- **Pilot Hunt Group:** The hunting sequence for a busy station begins only when the pilot number is dialed. The pilot number is assigned as the first number in the hunt group. The hunting sequence ends at the last station in the hunt group. The pilot station is not rung a second time.

**Hunt Groups (Cont'd)****Benefits:**

- Improved productivity.
- Reduced attendant intervention in locating an idle station.
- Improved customer service.

**Applications:**

- Sales departments, catalog sales operations, parts departments.

**Capacity:**

- 50 voice hunt groups per system/10 data hunt groups per system.
- 16 members per group.

**LCR (Least Cost Routing)**

With LCR, the system chooses the most cost effective outgoing trunk based on the outside number dialed. After the outgoing destination number is dialed, the LCR stores and examines the number on the basis of the area and/or office code used. The LCR then chooses the proper trunk from a programmed route table which can contain up to ten trunk group choices. The system contains two types of routing:

- Office code routing tables.
- Office code routing and area/office code routing tables.

**NOTE:** Area/office code routing contains 63 routing tables and is used for either area codes or office codes within an area code (area/office codes).

Routing tables are assigned for office codes and for area/office codes. They contain ten possible routes. Routes are assigned to specific trunk group numbers.

The station class of service levels determine the caller's ability to advance immediately through the trunk groups listed in the route table.

**NOTE:** With LCR, trunk queuing cannot be activated.

Station class of service (COS) allows access:

- Only to the first trunk group in the route table.
- To all trunk groups, except the last trunk group in the table.
- To all trunk groups in the table.



**LCR (Least Cost Routing)  
(Cont'd)**

Multi-Digit Toll Restriction and Toll Restriction are applied to outgoing calls through this feature. Additionally, time of day and type of day LCR routing is available. LCR calls can be routed by time of day (day, night, midnight), and type of day (weekday, holiday, special holiday; e.g., Saturday and Sunday). A time and type or day route table number is assigned to an area/office code route table for least cost routing. Nine separate time tables can be assigned per system.

Carrier access codes can be assigned to CO trunks in an LCR routing table for specialized call handling.

The following types of extensions can place LCR type calls:

- Stations.
- Attendants.
- Data stations.
- Tie trunks.
- DID-DISA.
- DISA-S.
- ISDN tie trunks.
- ISDN CO trunks.

This feature can be used with:

- Manual dial.
- Save/repeat.
- Speed calling (system, station, DSS all, partial).
- Keyboard dialing.
- Repertory dial.

**Benefits:**

- Provides cost control of communications service by allowing the user to define routing of outgoing calls.
- Improves management of telephone expenses by providing automatic routing of outgoing calls over the most economical facility available.
- User friendly; single-digit access codes may be entered, regardless of the route selected.

**NOTE:** For more information on LCR, refer to the Least Cost Routing feature in Chapter 5 of this manual.

**Applications:**

- Organizations which need to ensure employees use the most economical route for outgoing calls.
- Offices with more than one type of trunk access, (e.g., WATS, tie lines, FX, etc.).

**LCR (Least Cost Routing)  
(Cont'd)**

**Capacity:** Two types of routing tables per system; area code and office code. Within these tables, the following capacities are:

- LCR area code routing tables/system: Maximum 63.
- LCR codes/routing table: Maximum 10.
- LCR area codes/routing table: Maximum 160.
- LCR office code routing tables/system: Maximum 15.
- LCR codes/routing table: Maximum 10.
- LCR office codes/routing table: Maximum 800.
- LCR area/office codes/routing table: Maximum 800 office codes/ 8 area codes.
- LCR time of day routing tables: Maximum 63.
- LCR time tables: Maximum 9

**LCR for International Calls**

LCR service can be provided for international calls (01X +). Calls are routed by the digit dialed after the 01 international access code. Ten LCR (01X) international codes can be assigned to one of the LCR international routing tables.

**Capacity:**

- LCR international code routing tables: Maximum 63
- Maximum of ten LCR routes can be assigned per international code.
- International codes: Maximum 10.

**Line Button Copy**

This feature allows all buttons (except ALARM, D-ICM, and Personal Line buttons) to be copied from an original station to a secondary station via data base (CMC) code. The command also copies the ringing mode as is from the original station. The following conditions apply:

- If you exceed the capacity of buttons you can assign, a warning message appears on your maintenance terminal display.
- The command does not copy the lamp state from the original station. (That is, if the lamp on the original button is lit, the lamp on the copied button will be idle.)
- The **ACD status** button is copied as an **ACD queue size** button. The Call Waiting Indicator lamp is not copied.
- DSS line buttons are not copied.

**Benefits:**

- Reduces time required to install proprietary telephones.
- Effective in group situations with similar feature requirements (ACD, Management, etc.).

**Local/Remote Maintenance  
and Diagnostics**

The Local/Remote Maintenance and Diagnostics feature allows changes to be made in the office dependent data base and is done either locally (on-site) or remotely via the public telephone network and the standard modem installed in the system. Maintenance functions to read alarm status and run diagnostic processes are implemented by entering CMC (Change and Maintenance Command) codes using one of the following methods:

- Master Control Telephone (MCT) - DS20SD and DS32SD, CSDs, CT-20s/-30s.
- Attendant Console as MCT.
- IBM PC or compatible using PcMP software.

The MCT can be used on-site to enter commands. The PcMP can be used either on-site or remotely (via a modem).

**Benefits:**

- Saves time and money by providing an in-house capability to make data base additions/changes and perform troubleshooting.
- Eliminates costly on-site service calls by allowing data base changes via a remote maintenance facility.

**Applications:**

- Businesses with switches at multiple sites.
- Organizations in which operations involve many moves and changes.

**Capacity:**

- 20 MCTs.
- Two Attendant Consoles as MCTs.

**Maintenance Trunk Busy**

When a problem occurs with a trunk, this feature allows maintenance personnel to take the trunk out of service and busy out the trunk with the MCT or PcMP. The system automatically sends an off-hook signal to the serving central office to prevent incoming calls while maintenance is performed. Any station user trying to access the trunk will receive a busy signal.

**Benefits:**

- Saves time in eliminating repeated calls to a bad trunk.
- Allows maintenance personnel to place a trunk out of service until it can be repaired.

**Modular Common Equipment Expansion**

The system can be expanded by adding station and trunk cards as required. Additionally, cabinets (up to a maximum of four) can also be added for further expansion.

Because each cabinet is identical, any cabinet may be removed from one location and moved to another as a stand-alone system simply by adding a common control card and the appropriate power distribution and power units (if required). Expansion at the new location can be accomplished up to the maximum of four cabinets.

**Benefits:**

- System expansions can be made rapidly without significant downtime.
- Moves to secondary locations can be accomplished with a minimum of downtime and is very cost effective.

**Applications:**

- Businesses that are growth oriented.

**Capacities:**

- 120 stations per cabinet.
- 80 trunks per cabinet.
- 4 cabinets maximum.

**Multi-Digit Toll Restriction**

The Multi-Digit Toll Restriction feature allows the system to control area and office code calling on outside trunk groups. The system provides the option of setting various levels of restriction which can be assigned to each station in the system.

These COR (Class of Restriction) levels are defined by programming area code, office code, and area/office code tables when the system data base is generated. These tables are assigned to a certain COR levels on an allowed or denied basis. The system provides for sixteen COR levels.

When a station user initiates an outgoing call, the Multi-Digit Toll Restriction feature examines the first three or six digits (except for the operator toll prefix, customer toll prefix, and carrier access code) of the dialed number and compares them with the area/office code registered for that station. Calls placed to restricted area or office codes are blocked and the station user is provided with reorder tone.

**Benefits:**

- Controls toll calling expenses by allowing the user to define individual station COR levels, preventing use of outside trunk groups.
- Prevents toll abuse by providing automatic blocking of calls placed to restricted area and/or office codes.

**Applications:**

- Cost conscious organizations with a need to control telephone expenses.

**Capacity:**

- 1,500 maximum entries of area, office, and area/office codes.
- 3 restriction groups.
- 16 classes of restriction.

**Multi-Station Appearance Enhancement**

With this feature, the same extension number can appear on more than one digital or electronic station. Each DS/CT station has one PSL (Primary Station Line) and may have OSLs (Other Station Lines) assigned to it. Calls may be originated through either a PSL or OSL line.

OSLs are an appearance of another station's PSL or a phantom station assigned as a button on any of sixteen telephones.

**Benefits:**

- Provides efficient call coverage capabilities.
- Allows other stations to pick up incoming calls, increasing efficiency and productivity.

**Applications:**

- Secretary responsible for answering other lines.
- Telemarketing departments.

**Capacity:**

- 16 line appearances/station.

**Music on Hold/Tone on Hold**

This feature allows the connection of an external music or recorded/playback device source to the 4BWC or 8BWC card. The calling party hears the output of the music or playback device when placed on hold. The RVAC (Recorded Voice Announcement) card may also be used to provide an on hold source. RVAC recordings may contain music or voice announcements for advertising on hold applications.

A hold tone may be designated from the system call progress tone patterns. The default hold tone is silence if music on hold or the RVAC card are not utilized.

**Benefits:**

- Customer service for incoming calls.
- Improved professional image.
- Reduced abandon rate.

**Applications:**

- Advertisement on hold.

**NOTE:** Music on hold per DNIS number or tenant takes precedence over this feature.

**Capacity:**

- One music on hold source for system-wide on hold or recorded/playback music source.

**Hold Message per Tenant or  
DNIS Number**

Each specific DNIS number or tenant can have a custom hold message assigned (music on hold, tone, or voice message). The DNIS message is different than the hold message used for non-DNIS calls. If music on hold is utilized, a trunk circuit must be assigned for each DNIS number or tenant. Voice messages are programmed via the RVAC card. Combinations of music on hold, tones, and voice messages are permitted in the system.

**Night Service**

While the system is in night mode, incoming outside calls or station calls may be directed to specific stations and/or bells. PNA (Predetermined Night Answer) or UNA (Universal Night Answer) are available for all tenants or are split for each tenant group. Any station may answer an incoming call by dialing the night answer access code (if allowed by COS). Night Service is activated at the Attendant Console, DSS/BLF, or at any station so allowed by COS.

Refer to Table 4-2 for day/night change feature specifications.

**Benefits:**

- Users without DID lines can receive after-hours calls.
- Night bell alerts staff to incoming calls when central answering position is unstaffed.

**Applications:**

- Businesses without DID service.
- Offices with employees on site when central answering position is unstaffed.

**Capacity:**

- 32 night answer groups.
- 8 destinations/night answer group.

Table 4-2. Day/Night Change Feature Specifications

TENANT	CHANGE	SITUATION	RESULT OF THE OPERATION		
			COMMON TENANT	OWN TENANT	OTHER
COMMON	DAY to NIGHT	---	Night	Night	Night
	NIGHT to DAY	---	Day	Day	Day
INDIVIDUAL	DAY to NIGHT	Only own and common tenant in DAY mode	Night	Night	No change
		Several individual tenants in DAY mode	No change	Night	No change
		All tenants in DAY mode	No change	Night	No change
	NIGHT to DAY	Only own tenant in NIGHT mode	No change	Day	No change
		Several individual tenants in NIGHT mode	No change	Day	No change
		All tenants in NIGHT mode	Day	Day	No change

**Numbering Plan Enhancement**

In order to comply with the North American Numbering Plan change, the following functions are enhanced:

- Expanded area codes (NXX, where N = 2-9, and X = 0-9).
- Expanded Carrier Access Codes (CACs) to 10XXXXX
- Expanded number of digits for an international call (from 15 to 18, including 01 code).

The application of the NXX area code is determined by setting the required system flag using CMC 102. When dialing a long distance call, the dialing pattern is CTP or OTP + NXX – NXX + XXXX. When dialing a local call, the dialing pattern is (OTP) + NXX + XXXX. + (inter-digit timeout). Refer to Table 4-3 for more information.

Carrier access codes may now be either five digits or seven digits in length. A total of ten 5-digit and 7-digit CACs may be assigned per system.

International call digits are determined by setting the desired system flag (CMC 102).



Table 4-3. Dialing Patterns

CTP	OTP	TYPE OF DIALING	DIALING PATTERN	
			N0/1X AREA CODE	NXX AREA CODE
Yes	Yes	Toll operator	No digit	No digit
		Service code	Not permitted	Not permitted
		Area code	Not permitted	Not permitted
		Office code	Not permitted	Not permitted
		International call	Not permitted	Not permitted
Yes	No	Service code	N11 or 11X	N11 or 11X
		Area code	N0/1X + XXX + XXXX	N0/1X + XXX + XXXX
		Office code	NNX + XXXX N'XX + XXXX N0/1X + XXXX	Not permitted
		International call	Not permitted	Not permitted
No	Yes	Service code	N11 or 11X	N11 or 11X
		Area code	N0/1X + XXX + XXXX N0/1X + X <sub>1</sub> ,...,X <sub>i</sub> + ITO (i ≤ 6)	N0/1X + XXX + XXXX N0/1X + X <sub>1</sub> ,...,X <sub>i</sub> + ITO (i ≤ 6)
		Office code	NNX + XXXX N'XX + XXXX N0/1X + XXXX NNX + X <sub>1</sub> ,...,X <sub>i</sub> + ITO N'XX + X <sub>1</sub> ,...,X <sub>i</sub> + ITO N0/1X + X <sub>1</sub> ,...,X <sub>i</sub> + ITO (i ≤ 3)	NNX + XXX + ITO NXX + XXXX + ITO N0/1X + XXXX + ITO
		International call	Not permitted	Not permitted
		Others	X + ITO XX + ITO	X + ITO XX + ITO
No	No	Service code	N11 or 11X	N11 or 11X
		Area code	N0/1X + XXX + XXXX	Not permitted
		Office code	NNX + XXXX N'XX + XXXX N0/1X + XXXX	NNX + XXXX N'XX + XXXX N0/1X + XXXX
		International call	01 + X <sub>1</sub> ,..., + X <sub>13</sub> 01 + X <sub>1</sub> ,..., + X <sub>i</sub> + ITO (i ≤ 12)	01 + X <sub>1</sub> ,..., + X <sub>16</sub> 01 + X <sub>1</sub> ,..., + X <sub>i</sub> + ITO (i ≤ 15)

**NOTES:**

- 0/1 = 0 to 1, N = 2 to 9, X = 0 to 9, N' = 1 to 9, ITO = interdigit time out. N'XX office codes are assigned using CMC 408; N0/1X office codes are assigned using CMC 402.
- If an OTP is dialed, any digits following will be regarded as an area code. Therefore, office code restriction will not be effective.

**Numbering Plan  
Enhancement (Cont'd)**

Installation of the North American Numbering Plan load is as follows:

1. Perform a Form Save as outlined in the PcMP Data Base Management Manual.

**NOTE:** The system is fully operational at this point.

2. Turn system power OFF.
3. Remove the old version SCPN2M/4M card set. This consists of a mother board (CPU) and a daughter board (memory). Replace with the new version SCxP2x card (as shown below). The new version will be identified with a plastic designation guide attached to the daughter board, and labeled as follows:
  - SC2P2B: Two cabinet basic package.
  - SC2P2E: Two cabinet enhanced package.
  - SC4P2B: Four cabinet basic package.
  - SC4P2E: Four cabinet enhanced package.
4. Restore power to the system.
5. Perform a Form Load to install the modified ODDB on the system. This is described in the PcMP Data Base Management Manual. The system will remain non-operational during the Form Load process.
6. Upon successful completion, it is recommended that a Save be executed. This procedure is described in the PcMP Data Base Management Manual ("Saving the ODDB to Floppy Disk").
7. The ODDB can be modified on-line via the PcMP or directly using a Master Control Telephone (MCT). There are up to five CMCs which may need to be updated to include the new area code assignments. They are:
  - CMC 402: N0/1X Conflicting Area/Office Code Assignment.
  - CMC 413: Area Code Restriction Assignment.
  - CMC 414: Area/Office Code Restriction Assignment.
  - CMC 423: LCR Area Code Assignment.
  - CMC 424: LCR Area/Office Code Assignment.

The new area codes which are currently assigned are:

- 334 (Alabama; effective 1/15/95).
- 360 (Washington State; effective 1/15/95).
- 520 (Arizona; effective 3/19/95).

Select the desired CMC. For Conflicting Area/Office Code Assignments (CMC 402), assign the restriction digit flag (P3) and the restricted digits (P4).

For Area Coder and Area/Office Code Restriction Assignments (CMC 413 and CMC 414), select the affected restriction group number (P1), and input the affected area code(s) in P4.

**Numbering Plan Enhancement (Cont'd)**

For LCR Area Code Assignments and LCR Area/Office Code Assignments (CMC 423 and CMC 424), select the desired route table number in P1, and input the affected area code(s) in P2.

8. After all updates have been made to the data base, perform a Save to save the final version of the data base.

**Office Codes (NXX)**

This feature allows numbers such as 811 to be used as assignable office numbers. (Normally, such numbers are recognized as special service codes.) When this feature is initiated, N may be from 2-9 and X may be from 0-9.

When NXX is assigned as an office code, that code is no longer recognized as a special service code. This feature is subject to multi-digit restrictions and toll restrictions. NXX office code is the same dialing pattern as a normal office code.

The dialing patterns of an NXX area code is as follows:

- For a long distance call: CTP or OTP + NXX + NXX + XXXX
- For a local call: NXX + XXXX

The following priorities are established in the case of an overlap:

RD>CAC>CTP/OTP>NXX

RD: routing digit

CAC: carrier access code

CTP: customer toll prefix code

OTP: operator toll prefix code

**Off-Premise Extensions (OPX)**

This feature allows industry-standard SLTs (Single Line Telephones) at off-premise locations to be connected to the system. This may be accomplished by using one of the following methods:

- **Loop Extenders:** These are available in the commercial marketplace and are used to extend station lines (using 16SLC or 8SLC line cards).
- **CO Conditioned Leased Lines:** A 600 ohms limit includes the telephone (using 16SLC or 8SLC line cards).
- **OPX line (4SLE Card):** The system proprietary off-premise extension card provides up to four circuits used in a long line connection (1600 ohms).
- **T-1 OPX:** A 24T1 card can support up to 24 off-premise extensions. The T-1 span at the off-premise location must be connected to channel bank equipment to provide digital to analog conversion and connection to single line telephones. Additionally, the channel bank must supply ringing voltage to allow ringing of single line telephones.

**Off-Premise Extensions  
(OPX) (Cont'd)**

With the exception of the 4SLE card, this equipment is mounted and powered externally to the equipment cabinet. The 4SLE provides a -48 VDC connection for OPX stations.

The distinctive ringing pattern cannot be used on an off-premises station. Because of this, there is a flag that may be set in the data base to identify off-premise stations. Changing that CMC allows the setting of one of three different ringing patterns (station call, incoming call, recall).

**Benefits:**

- Provides easy access to dial-up features of a company's communications system for employees who are working at off-site locations.
- Reduces need for duplicate systems; i.e., centralized network or centralized control of facilities.
- Reduces equipment cost and space requirements.

**Applications:**

- Businesses with branch offices using SLTs.
- Businesses requiring connection to any off-premise location.

**Phantom Station**

Phantom Station assignment allows the designation of a phantom or secondary station number in addition to the normal station number. CMC 200 assigns this feature. Equipment numbers are assigned as \*000 - \*095 for phantom lines that will be assigned as appearances on a multi-station telephone.

Phantom stations can be assigned on up to sixteen OSL appearances on DS/CT DSS stations.

This feature is useful when a pilot station receives and distributes all ACD calls. By designating a phantom line to the pilot, a pilot telephone is then not required. This eliminates having to install an extra telephone just for the pilot number.

Features that are not available to phantom stations include:

- Message Waiting.
- Night Answer.
- Attendant Overflow.
- Make Busy.

**Benefits:**

- Additional stations can be assigned without additional hardware.

**Phantom Stations (Cont'd)****Applications:**

- ACD agent groups.
- Businesses needing more stations without the need for all features on every line.
- Pilot number for a voice mail system ACD group.

**Capacity:**

- A maximum of 96 per system.

**Positive Disconnect for Single Line Interface**

This feature enables the system to send a loop disconnect signal to an SLT or other equipment connected to the 8PDL card (e.g., VMS) when the other party disconnects from the call.

**Conditions:**

The loop disconnect signal is not sent when:

- The other party presses the **Privacy Release** button, then hangs up.
- The other party breaks into a conversation by using the Privacy Release button, and then hangs up.
- The other party calls the SLT using the OSL<sub>7</sub> button, and then hangs up after the conversation.
- The other party enters the FDC menu mode, and then hangs up.

**Pound (#) Code Dialing**

Pound (#) code dialing is available for CO or tie trunks as one of the address signals if the system is so arranged. This arrangement is useful when the system works as a key system behind a PBX.

**Benefits:**

- Increases the number of features available to a user.

**Applications:**

- Any organization with a key system operating behind a PBX.
- Tie line applications.

**Power Failure Restart** This feature provides automatic reinitialization of the system after a power failure. The Office Dependent Data Base (ODDB) is also restored. Because all updates to the system memory are stored in the battery backed-up memory, the system is able to return to the same call processing configuration that existed before power loss. Features which have been temporarily activated by a station user, e.g., Station Camp-On, must be reinitiated after power is restored.

Three types of automatic system restarts are provided:

- **Reset Restart** (Short Power Restart): When commercial power is restored within one to three seconds after power failure, call processing resumes at point of interruption.
- **Hot Restart** (Power Failure Restart - battery backed-up RAM): When commercial power is restored after a power failure of more than three seconds, the system restarts call processing by using the customer data base stored in the battery backed-up RAM or optional floppy disk drive. This restart puts all stations and trunks in an idle state and cancels certain activated features; e.g., Station Camp-On, Trunk Camp-On, and Call Park.
- **Cold Restart** (Power Failure Restart - ROM): When commercial power is restored after a power failure that has depleted the RAM back-up battery (back-up battery can hold RAM memory for up to two weeks), the system restarts by using the default data base stored in ROM, or may be restarted using the optional disk drive with the ODDB floppy disk in place.

**Benefits:**

- Provides automatic regeneration of system and office dependent data base information after power outage.

**Applications:**

- All businesses and telecommunications operations.

**Power Failure Transfer** When a major fault occurs, the system will activate preprogrammed connections between CO lines and single line telephone sets. The optional Power Failure Transfer card (6PFA) must be installed to support power failure transfer. The 6PFA card provides six connections for CO lines to single line telephones. The 6PFA card supports both ground and loop start operation. This eliminates the need for external ground start equipment or buttons.

**Benefits:**

- Enables outside communications in the event of a power failure.

**Capacity:**

- One 6PFA card per cabinet.
- Maximum 24 power failure transfer stations per system.

**Recorded Voice  
Announcement**

This feature allows the system to play recorded messages to a caller. The RVAC (Recorded Voice Announcement) card controls this feature. The card has eight ports. Seven of these ports are for transmitting the recorded message; the remaining port is used only when recording the actual message.

One card:

- Has fourteen four-second message blocks.
- Allows extension of messages over blocks.
- Does not permit messages to extend to a second card.
- Supports voice messages of lengths up to 56 seconds.

The System Administrator can call and change the recorded message on the RVAC card. Messages provided by the system are as follows:

- 20 ACD answering messages.
- 20 ACD waiting messages.
- 1 DID vacant number message.
- 1 DISA authorization code entry message.
- 1 DISA invalid authorization code message.
- 1 Hotel/Motel wake-up message.
- 10 multiple language Hotel/Motel wake-up messages.
- 1 time reminder message.
- System on hold message.
- ACD on hold message.
- 10 Automated Attendant Messages.
- 10 hold messages for tenant or DNIS numbers.

**Benefits:**

- Provides advertising while customers wait on hold.
- With ACD, reduces call abandon rates.
- Increases sales.
- Provides multi-language wake-up services and time reminders for Hotel/Motel applications.

**Applications:**

- Hotel/Motel operations, customer service, airline reservations, or reservation desks.

**Capacity:**

- Two RVAC cards per equipment cabinet.
- Maximum of eight RVAC cards per system.

**Silent Monitor** This feature allows a supervisor, or any station allowed through COS, to silently monitor a conversation on a station. While the call is being monitored, the supervisor may break-in to the conversation and return to the monitoring state. Once a station is monitored, the monitoring continues regardless of the station's status; i.e., on- or off-hook, dialing, conference, etc. The station activating the monitoring must be allowed through Class of Service and the station being monitored must be allowed to be monitored through data base programming.

**Benefits:**

- Provides the ability to perform quality checks on agents interacting with the public.
- The Silent Monitor feature can be activated on any call involving a station.
- Allows training of new employees by supervisors or trainers.

**Applications:**

- This feature is primarily intended for ACD applications, such as travel and airline reservation offices and customer service departments, although it can be used with any station within the system provided access to this feature has been allowed in station Class of Service.

**Simultaneous Voice/Data Transmission** Simultaneous voice and data can be transmitted over one pair of wires. Both asynchronous and synchronous data terminals can be connected with the system. See Simultaneous Voice/Data Communications in Chapter 9 for further information.

**Single Stage Nonblocking Architecture** The system utilizes time-division multiplexing techniques with pulse code modulation for transmission of voice communications. This digital switching technology uses a speech hiway to transmit all voice traffic to the switching network. Various voice channels are separated from each other by time, with each channel alternately being connected to a transmission line. The microprocessor samples line and trunk circuits 8,000 times per second. When an incoming port and an outgoing port are to be connected, time slot information associated with these ports is exchanged momentarily. This method of system operation makes efficient use of a communications channel and provides capability for nonblocking voice communications.

**Benefits:**

- Allows all system users full access to line or trunk circuits for voice and data communications.

**Capacity:**

- SC2P2X card: up to 512 time slots (in one and two cabinet configurations)
- SC4P2X card: up to 1,024 time slots (in three and four cabinet configurations)



**SMDR (Station Message  
Detail Recording)**

The SMDR (Station Message Detail Recording) feature provides a printed copy of the following information for every outgoing call:

- Time of call origination.
- Duration of call (hours, minutes, seconds).
- Originating station number.
- Trunk access code.
- Trunk identification.
- Trunk number.
- Identification of calling party; e.g., station/attendant.
- Directory number dialed.
- Account code.
- Tenant number.
- SMDR group number.

SMDR has the additional capacity to screen outgoing calls and limit a printout to:

- Outgoing calls through CO lines only.
- Outgoing calls through tie lines only.
- Account code calls only.
- Toll calls only.
- Overtime calls only.
- Trunk group selection.
- COR selection.
- Tenant selection.

Incoming SMDR information is printed out for every call that terminates to a station, attendant, or data terminal. If a trunk (CO or tie) to trunk (CO or tie) call is abandoned by encountering trunk blocking, this information will be printed out on the SMDR printer. This feature can be disabled using a data base command and in the default mode is not active.

As an option, a Call Manager system can be used in conjunction with SMDR. Refer to the specific Call Manager manual for more information.

If an outgoing call satisfies all the screening items, detailed information on the call is automatically sent to a printer connected to the RS-232C port on the equipment cabinet. The service applies to all calls originated through the following features:

- Personal/private lines.
- Key system lines.
- Pooled outgoing lines.
- Pooled bothway lines.
- Tie trunk access.
- System speed calling/station speed calling.
- LCR access.
- SCC access.
- Save/last number redial.
- Individual trunk access.
- Trunk group access.
- DSS speed calling.
- Repertory dialing.

**SMDR (Station Message  
Detail Recording) (Cont'd)**

When an incoming or outgoing call is transferred to another station, depending on the system flag set at CMC 102, FLGN 4, a single or multiple record is produced. When the flag at CMC 102 is set to zero (default), an SMDR record is generated every time a call is transferred. If the flag is set to one, an SMDR record is only generated for the last station caller connected to the trunk call at the time the call disconnected. SMDR provides a programmable threshold for call duration. Incomplete calls (busy tone, reorder tone, or no answer) are not recorded unless they exceed the programmed threshold.

**Benefits:**

- Provides record of telephone usage for billback to departments or tenants.
- Provides an accounting management tool for allocation of telephone expenses.
- Identifies areas for system or feature upgrade.
- Provides record of telephone call duration which can be used in making budgetary and planning forecasts.
- Prevents telephone abuse and misuse by identifying unauthorized outgoing calls.
- Provides an evaluation tool to measure amount of employee's time spent on the telephone.

**Applications:**

- Individuals whose operation requires call tracking capabilities; e.g., lawyers, consultants, etc.

**Specialized Common Carrier (SCC) Access**

This feature allows access to SCC networks (e.g., US SPRINT®, MCI®) by dialing a special access code and destination number. The system automatically dials the local access number and authorization code. SCC access is subject to COR (Class of Restriction). This feature can also be used with the Least Cost Routing feature, and system and station speed calling. If programmed in the data base, a two- or three-digit personal authorization code must be entered.

**Benefits:**

- User friendly.
- Saves money by reducing number of DDD (Direct Distance Dialing) calls.
- Saves time by enabling the user to dial an abbreviated code for simple and easy access to the SCC network.
- Applications:
- Businesses that use US SPRINT, MCI, or other common carriers.

**System Call Forward**

This feature provides Call Forward features, i.e.; Call Forward - All Calls, Call Forward - Busy, Call Forward - Don't Answer, Call Forward - Busy/Don't Answer, to be assigned in the customer's data base to allow automatic call forwarding based on programming. The station can change the call forwarding destination and condition if allowed in the station class of service.

**Benefits:**

- A Call Forward feature can be assigned in a semi-permanent fashion, so that the station user does not have to manipulate this feature. Call Forwarding can also be activated from the station.
- Call Forwarding can be regulated by a System Administrator rather than the user, in the case where one particular user is not responsible for the operation of a given telephone.

**Applications:**

- Business offices, hospital nurses stations, retail stores, hospitality, healthcare, integrated voice mail server.

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**System Speed Calling** This feature is similar to Station Speed Calling, but is applied system-wide. Frequently used numbers may be programmed into the system to be accessed by users who have this included in their Class of Service.

A system speed call list can contain dial code entries for up to one thousand numbers. Each number, including pauses, may have up to twenty digits.

To use system speed calling, dial an access code and either dial the designated entry code or press an assigned feature button. Only one speed calling code may be assigned to each feature button.

**Benefits:**

- Saves time and increases productivity by allowing station user to dial an abbreviated number sequence to access frequently called numbers.

**Applications:**

- Telemarketing businesses.
- Sales organization.
- Purchasing departments.

**Capacity:**

- 1,000 system speed call numbers.

**Tenant Service**

**Soft Tenant:** This feature allows the same PBX communications system to be shared by as many as 63 tenants and as many as eight Attendant Consoles. A typical tenant situation is a professional building where different firms use the same PBX. Each tenant shares the system equipment, but retains control of individual stations and trunks. The numbering plan must be the same for all tenants, but trunking may be tailored for each tenant. There are three system options available in the Tenant Service feature:

- Outgoing/incoming tenant.
- Outgoing only tenant.
- Incoming only tenant.

Station-to-station calls may be made between different tenants.

**Common Tenant:** In addition to the 63 possible tenants another tenant, termed a common tenant, is available. Any station, attendant, or trunk can be registered as a common tenant. The common tenant may be shared by all the tenants. Thus, if a station or an attendant is assigned as the common tenant, that position may receive and originate calls for all the tenants.

**Hard Tenant:** Implementing this feature prevents users in one tenant group from calling a station in another tenant group by dialing the station number. Station-to-station calls in the same tenant group are allowed.

If a station or an attendant is assigned to a hard tenant, the station is allowed to use only the trunks belonging to its own tenant and common tenant(s).

A Front Desk Console for Hotel/Motel services must belong to the common tenant when hard tenant service is registered.

**Benefits:**

- Resale of services; increased profit, reduced expenses.
- Reduces telephone expenses by allowing small businesses in close geographical proximity to each other to use same communications system.

**Applications:**

- Shopping centers.
- Professional office buildings (e.g., doctors, lawyers, accountants).

**Capacity:**

- 63 tenants per system, plus one common (shared) tenant.

**Traffic Measurement** This feature provides a measurement of traffic density according to TGN (Trunk Group Number). Measured traffic density is stored in the system memory and displayed by MCTs or through the PcMP interface. Information is stored based on a traffic measurement period of one to ten hours. Ten separate traffic measurement groups can be programmed simultaneously. Traffic is measured on a traffic density basis during the reporting period. The traffic measurement is displayed in percentage of traffic density only (0 - 100%).

**Benefits:**

- Provides a method of measuring the amount of traffic on specific trunk lines.

**Applications:**

- Offices with a need to control the use of telephone services by their employees.

**Capacity:**

- 10 traffic measurement groups per system.

**Trunk Busy Signal** The Trunk Busy Signal allows the system to send a trunk busy signal to another system when one of the following trunks are made busy by data base command:

- 4BWC.
- 8BWC.
- 2TTL.
- 2TTE.
- 2TE4.
- 4TE4.
- 6DID.

**Benefits:**

- Provides automatic busy signals to other systems when the trunks are being repaired.

**Trunk Individual Access** The Trunk Individual Access feature allows system users to access a specified trunk from the user's telephone by dialing an access code, followed by a trunk directory number.

**NOTE:** This feature does not include tie trunks.

**Benefits:**

- Allows users access to specific trunks.
- Used for maintenance purposes.

**Trunk Priority on ACD  
Queuing**

ACD queued calls can have priority assigned on a per trunk group (CO and tie) basis. A call with a higher priority will terminate to an agent before a call having a lower priority. Also, calls waiting over a specified time will default to the highest priority in the ACD queue.

Internal calls default to the lowest priority level.

**Benefits:**

- Reduces the number of lost calls due to an excessive wait time.
- Allows personalized configuration of types of calls into priority levels.
- Gives priority to 800 lines thereby reducing cost.

**Capacity:**

- Maximum number of levels available is eight.

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<b>Trunk Types</b>	The following trunks are defined in this feature description:
	<ul style="list-style-type: none"><li>• DID trunks.</li><li>• Terminating trunks.</li><li>• T-1 trunks.</li><li>• Tie trunks.</li><li>• DIL trunks.</li></ul>
DID Trunks (Direct Inward Dialing)	<p>DID allows calls to ring directly to a station, bypassing the attendant position. The last one to four digits of the DID number must correspond to a specific station number. Listed directory numbers ring directly to the Attendant Console. DID calls may also directly access a tie/FIPN line.</p> <p>Calls to busy stations receive a busy tone; however, if the busy station is in a hunt group, the call receives hunting treatment. Calls to stations in the "do not disturb" mode receive a busy tone. Calls directed to vacant station numbers are directed to the attendant or receive a busy tone or a recorded voice announcement. DID calls can also be answered with the Group/Directed Pick-Up features.</p> <p>Numbers that are registered in the data base can terminate to an attendant or a specified night station. This Listed Directory Number (LDN) feature allows calls to access an attendant. This is useful when a company wants to use a specific number to reach the attendant instead of stations. Additionally, assigning a specified night station to answer unattended calls makes certain no calls go unanswered.</p> <p><b>Benefits:</b></p> <ul style="list-style-type: none"><li>• Reduces call load to attendant.</li><li>• Allows station users to have direct/individual incoming lines.</li><li>• Allows listed directory numbers to terminate to an attendant.</li></ul> <p><b>Applications:</b></p> <ul style="list-style-type: none"><li>• Large volume of incoming calls to station users.</li><li>• Sales departments requiring direct access.</li><li>• Service departments requiring direct access.</li></ul> <p><b>Capacity:</b></p> <ul style="list-style-type: none"><li>• 240 per system.</li><li>• 6 DID trunk groups.</li><li>• 100 LDN per trunk group.</li></ul>



- Terminating Trunks** Terminating trunks are incoming, outgoing, or bothway CO trunks that have an appearance on buttons on Digital Stations, CT-10s, CT-20s, CT-30s, and CSDs. A maximum of 96 of these stations can have the same terminating trunk assignment. A maximum of 63 terminating trunk groups may be programmed into the system. Tie lines and DID trunks cannot be assigned to a terminating trunk group.
- **Pooled Incoming:** Incoming trunk calls can be directly pooled together and connected to a button on a Digital Station or electronic station without going through the attendant.
  - **Key System:** One or more buttons on a Digital Station, CT-10/20/30, or DSS can be assigned to give access to a given trunk (one per button). These terminations generally appear on some or all stations.
  - **Personal Line:** Used to assign a private line on one button of one station. Access to a personal line is allowed only from the station on which it appears.
  - **Pooled Bothway:** A button on a Digital Station, CT-10/20/30, or DSS can be used to access pooled bothway trunk groups directly. Incoming and outgoing service is provided. There is no limit on the number of trunks that can be assigned to one trunk group.
  - **Pooled Outgoing:** Trunks can be pooled together for outgoing access only. Pooled outgoing trunks are assigned on buttons on Digital Stations, CT-10/20/30 telephones, and DSS consoles.

**T-1 Trunks** T-1 trunks provide a digital connection with a 1.544 Mbps facility under the North American T-1 standard. The 24T1 card provides 24 channels for use with DID, CO, tie, or DNIS multiple services. Eight channels may be assigned per application. The following hardware is required:

- 24T1 card kit (includes 24T1 adapter).
- CLKS card kit (includes all cables).

The T-1 feature supports the following interface functions:

- Loopback and non-loopback testing.
- DS-1 interface (includes equalizer adjustment).
- D4 and ESF format.
- AMI or B8ZS coding.
- FXS/SAS capability.

FXS/SAS is designated in the data base. All other options are set by the hardware switch on the 24T1 card.

Slip errors and bipolar violations are indicated by an alarm on the 24T1 card. A slip error is indicated when more than 30 errors are detected per hour; a bipolar violation is when more than 1,536 such errors are detected in a 1,000 second period.

The T-1 adapter provides a direct connection to the Network Interface Unit (NIU), eliminating the need for external Carrier Service Units (CSU).

The following functions (designated by an "X" in the applicable column) are provided by the T-1 Interface (Table 4-4):

**Table 4-4. T-1 Interface Functions**

FUNCTION	CO INTERFACE	TIE INTERFACE	OPX INTERFACE
Voice call	X	X	X
Data call	-	-	-
Data call via modem	X	X	-
Existing voice features	X	X	X
Existing data features	X	X	-

**Capacity:**

- Maximum of five cards per cabinet (maximum of 240 channels per system)

**Applications:**

- Key systems.
- Large volume of incoming calls to station users.
- Sales departments requiring direct access.
- Service departments requiring direct access.

**Tie Trunks** This feature allows tie trunks to be installed between another PBX and the system. The system treats a tie line call as an incoming station call.

Five types of tie line interfaces are available:

- 24T1 card digital tie lines.
- 2TE4 card 4 wire tie lines (2 circuits).
- 4TE4 card 4 wire tie lines (4 circuits).
- 2TTE card 2 wire tie lines (2 circuits).
- 2TTL card loop tie lines (2 circuits).

**Benefits:**

- Saves money by allowing users to create an internal communications network, reducing use of costly outside facilities.

**Applications:**

- Offices that frequently call one or more specific cities.
- Businesses that have multiple locations (inter- or intra-city installations).

**Capacity:**

- 20 tie trunk groups.

**DIL (Direct-In Line)** This feature provides for the direct termination of separate CO (Central Office) trunks to SLTs (Single Line Telephones), digital and electronic stations, or phantom stations used as pilot numbers for hunt groups or ACD groups, bypassing the Attendant Console. Calls on these trunks can be transferred to or conferences with other trunks or stations. These trunk calls can also be call forwarded, can receive hunting treatment, or can be included in group/directed pick-up.

A DIL can be directed to only one station; however, any station can have multiple DILs. Calls to a busy station that is not located in a hunt group can camp-on to the station. ACD calls directly route to the appropriate station(s).

**Benefits:**

- Reduces the amount of call traffic to the Attendant Console.
- Improves professional image.
- Provides efficient call processing.
- Increases productivity by increasing the number of direct-in trunk calls.

**Applications:**

Organizations with a requirement to direct incoming calls to specialized groups or stations, such as purchasing departments, catalog sales, customer service, sales departments.

A summary of the terminating trunk groups is found in Table 4-5.

Table 4-5. Terminating Trunk Capacity

TYPE	MAX NO. OF BUTTONS/DS, CT, DSS	NO. OF MULT. APPEARANCES	NO. OF TRUNKS ASSIGNABLE TO KEYS	MAX. NO. OF TRUNK GROUPS	REMARKS
Key system line	Buttons other than feature access buttons	72/96 per trunk *	1 trunk group per button	63	1 trunk per group
Personal line	Buttons other than feature access buttons	1 per trunk	1 trunk per button	63	1 trunk per group
Pooled incoming	Buttons other than feature access buttons	72/96 per trunk group *	1 trunk group per button	63	Bothway trunks cannot be simultaneously assigned to a pooled incoming group
Pooled bothway	Buttons other than feature access buttons	72/96 per trunk *	1 trunk group per button	63	Bothway trunks can be assigned
Pooled outgoing	Buttons other than feature access buttons	72/96 per trunk *	1 trunk group per button	63	Outgoing trunks only

\* The SC4P2X card is recommended for a maximum of 96 lines (even for a one or two cabinet system).

**Variety of Stations** The Variety of Stations feature allows the system to use industry standard single line telephones as well as the following types of proprietary telephones:

- DS20.
- DS20S.
- DS20SD.
- DS32SD.
- CSD.
- CT-10.
- CT-20.
- CT-30.

Table 4-6 summarizes the specifications for the types of proprietary telephones:

**Table 4-6. Proprietary Telephone Specifications**

TYPE	NO. OF FEATURE BUTTONS	LED NO. AND COLOR	HANDSFREE	DISPLAY	NO. OF WIRES
DS20	20*	12 Red/Green 04 Red	Monitor only	None	2
DS20S	20*	12 Red/Green 04 Red	Available	None	2
DS20SD	20*	12 Red/Green 04 Red	Available	20 characters x 2 lines	2
DS32SD	32*	24 Red/Green 04 Red	Available	20 characters x 2 lines	2
CSD	14	14 Red	Available	20 characters x 4 lines	2
CT-10	22**	15 Red/Green 03 Red	Monitor only	None	4
CT-20	22**	15 Red/Green 03 Red	Available	20 characters x 2 lines	4
CT-30	34**	27 Red/Green 03 Red	Available	20 characters x 2 lines	6***

\* Includes eight fixed buttons.

\*\* Includes four fixed buttons.

\*\*\* Includes 2-wires for off-hook call announce feature.

**Voice Mail Integration**

This feature allows integration of the integrated voice mail server (IVS) and voice mail systems from other vendors. The voice mail feature sends and receives information between the PBX system and the IVS or other voice mail systems. The information is sent and received via a single line interface using DTMF.

Services provided by the Series 3 system include:

- **Direct Call Service:** This service allows the caller to dial the IVS or voice mail system directly to retrieve or leave messages. The caller's directory number is sent to the IVS or voice mail system automatically, allowing the caller to skip the step of entering a mail box number when the IVS is accessed.
- **Call Answering Service:** If a station is set to forward to the IVS or voice mail system, the call is forwarded and the IVS answers with appropriate message. The caller can then leave a message for the called station.
- **Message Waiting Service:** The IVS or voice mail system issues a message waiting lamp indicator when messages are queued for the station. Retrieval of waiting messages initiates a direct call to the IVS or voice mail system.

**Benefits:**

- Reduces attendant staffing requirements.

**Capacity:**

- One per system.

**Zero "00" Operator Toll Prefix**

The "00" Operator Toll Prefix provides users with a "00" dialing pattern for long distance operator assistance in equal access applications.

**Benefits:**

- User friendly.
- Greater system flexibility
- Allows access to the operator at the common carrier or long distance carrier

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## STATION FEATURES

This chapter describes the system's station features and lists the benefits, market applications, and capacities of each feature.

### Account Code

This feature relates to the SMDR (Station Message Detail Recording) feature discussed in Chapter 4.

The Account Code feature allows a station user to enter:

- A cost accounting code.
- A client billing code (up to 15 digits).

Account codes are entered by one of two methods:

- Pressing a programmable **account code** feature button on a Digital Station or CT-10/20/30.
- Dialing an access code and the account/client billing code.

The dialed account code appears on the station alphanumeric LCD of display telephones. The SMDR call record logs the call. When entering an access code prior to entering an account code, the user hears a confirmation tone and sees "ACCT" displayed on the telephone (if equipped), prompting the user to enter the account code. Once the account code is entered, "DONE" is displayed.

The account code can be reentered or canceled at any time until the call is terminated. The last account code entered appears in the SMDR call record.

Two types of account codes entry are available in the system:

- Standard.
- Forced.

### Standard Account Codes

Standard account codes can be entered any time a call is in progress.



**Forced Account Codes** Forced account codes force the input of an account code when a station originates a call via a trunk access code, speed call, LCR SCC, DSS speed call, save/repeat, or trunk individual seizure. Forced account code is not activated if a call is originated via a terminating CO or tie line.

When forced account code is active for a given station, the originator of a call hears recall dial tone and ACCT appears on the station LCD display. Following the entry of the account code, dial tone from the CO is heard, confirming that the account code was entered and permitting the call to be dialed.

Two types of forced account entry are available:

- Verified.
- Non-verified.

Non-verified account codes allow the user to enter any account code without verification by the system.

It is possible in the data base to activate forced account code in verify mode so that the entered account code is compared against valid account codes. 1,024 account codes (up to fifteen digits in length) can be programmed in the system. Additionally, an account code may be assigned to a trunk group to restrict specific access to certain trunk groups. Trunk camp-on call back does not require reentry of account code.

For LCR access, the system will automatically use a registered personal account code if no other account code is input.

**Benefits:**

- Enhances cost management capabilities.
- Improved ability to track outgoing calls.
- Provides a cost accounting tool to allocate telephone expenses (outgoing calls) to specific clients/departments.
- Provides verification of correct entry by displaying the account code on the station alphanumeric display.
- Provides record keeping without interruption to ongoing conversation.

**Capacity:**

- Up to 1,024 verifiable account codes may be set up in the system; each code may contain up to fifteen digits.

**Applications:**

- Individuals who want to track outgoing calls for billback to clients or expense allocation purposes; e.g., lawyers, accountants.

**Alarms** An alarm can be programmed to appear at a station button on a digital or electronic station, Attendant Console, or DSS/BLF. When an error in the system occurs, the alarm button lights. The alarm button turns off when the fault condition is corrected.

**Benefits:**

- Automatically alerts the user to problems with the system.
- Reduces downtime.

**Analog Modem Port** This feature allows a user to originate a data call from a PC equipped with a modem via an analog modem port on a DS20SD, DS32SD, CT-20, or CT-30. The analog modem port, located on the back of equipped telephones, eliminates the need for an additional analog line to a PC. The PC connects to the analog modem port by an RJ-11 cable.

PC keyboard dialing and the off-hook function is easily accessed by the PC's communication software. An example is an AT command such as "ATDT 9,5551212". Performing such a communication command allows the user to dial:

- A trunk access code.
- A destination number.

When off-hook, this port functions by sending DTMF signals to the 4DMR card. The modem must not require loop current in order to dial.

Using the analog modem port is only possible when the telephone is idle. This port does not accommodate simultaneous voice/data communications. The telephone is not considered idle when:

- A line button is pressed.
- The **FLASH** or programmable **release** button is pressed.
- Calls are terminating and ringing preference is set for that station.

To make a voice call, the user must go back on-hook from the PC. Going back on-hook is done by using PC software communication commands similar to those which established the off-hook condition. This feature may allow PC users to utilize software programs that automatically dial client numbers from their PC. The software must have the ability to allow the modem to go on-hook with a keystroke or command. The handset must be off-hook prior to the PC's modem going on-hook. Once the modem is on hook, the voice connection is transferred to the telephone handset.

Performing any of the following actions will not interrupt a data call while the analog modem port is in an off-hook condition:

- Picking up the handset.
- Pressing the **SPEAKER** button.
- Accessing a headset.

**Analog Modem Port (Cont'd)**

Feature buttons are available when off-hook from the PC. For example, the user could utilize the Call Forward feature button. If, however, the user uses the keypad for any function, subsequent dialing from the analog modem port is ignored. When the analog port initiates dialing, however, the keypad on the telephone is still operational.

Additional features of the analog modem port include:

- Going off-hook from the modem port has higher priority than handset, headset, and speaker communication.
- Dialed number displays after all digits are received.
- Ringing signal is not provided to the analog modem port. (If the telephone is set for ringing line preference, the analog modem port can manually answer terminating calls.)

**Benefit:**

- May allow dialing of phone numbers with PC software programs.
- Eliminates the need for an extra analog line to the PC.

**Call Announce**

The Call Announce feature provides the calling station with a choice of signaling options on internal calls. The call signaling option (tone ringing or voice announcing) is programmed on a system-wide basis; however, an individual station user may elect to change the system option using the programmable **call announce** feature button. This feature is only available with digital and electronic stations, and with the Attendant Console.

If the system calling method is programmed for tone ring signaling, the station user at the calling station can change the calling method to voice announcing by pressing the **call announce** feature button. (This feature operation requires that both stations be programmed for voice calling.) If a speakerphone feature button is programmed, talkback from the called station is made automatically available during the call announce mode. If the station called is a DS20 or CT-10, the speaker is activated to announce the call. However, the called station must pick up the handset to talk to the calling station.

If the system calling method is programmed for voice announcing and the called station is programmed for call announce, the station user at the calling station can change the calling method to tone ringing by pressing the **call announce** button. Call Announce can be disabled at a station that otherwise would not want to receive call announce. A call announce on/off access code can be entered to enable or disable the feature.

**Call Announce (Cont'd)****Benefits:**

- Allows internal stations to obtain advance notice of waiting calls.
- Feature is available on DS20, DS20S, DS20SD, DS32SD, CSD, and CT sets. (Some stations must answer by lifting the handset.)
- Allows flexibility when placing internal calls by providing the station user with a choice of calling methods.

**Applications:**

- Individuals who want station-to-station message communication where verbal response is required (e.g., boss/secretary situations).

**Call Announce Off-Hook**

Another type of call announce is Off-Hook Call Announce. This feature allows users to receive an intercom voice call via the speaker while conversing using the handset or a headset. A CT-30 telephone is the only type of station that can receive an off-hook call announce. Any digital or electronic station can activate off-hook call announce to the CT-30 equipped with this feature. Off-Hook Call Announce works when the called station is engaged in any of the following situations:

- Conversation via handset or headset.
- Data call via the analog modem port.
- Displaying ACD queue size.
- Call Forward - All Calls display.
- Message Waiting.
- Wake-Up/Time Reminder.
- Postselection state using a handset.

To respond to an off-hook call announcement, simply talk in the direction of the microphone.

This feature requires an additional voice port on the 8EKC card connected to the CT-30 station. This means that six wires are necessary for the CT-30 to have the Call Announce Off-Hook feature. This feature works in conjunction with the Intercom feature only. A programmable **intercom** button must be assigned to the originating digital or electronic telephone and to the terminating CT-30 station. Additionally, a **call announce** button must be programmed on the originating station.

Off-hook call announce does not work whenever the speaker on the telephone is already in use. If the speaker is in use when attempting to utilize this feature, the call rings at that station as it would normally.

**Call Announce Off-Hook  
(Cont'd)****Additional conditions of this feature:**

- Disconnecting from off-hook call announce can only be done by the calling party.
- Placing an existing call on hold, or disconnecting from it, changes the off-hook call announcement to a regular voice call.
- A tone alerts the user immediately prior to receiving an off-hook call announcement.
- The Attendant Console may not initiate an off-hook call announce to a CT-30 station.

**Benefits:**

- Allows announcing of important calls while off-hook on another call.
- Enables receiving of internal voice calls while on a data call (Analog modem port).

**Call Forward**

This user- or system-programmable feature automatically reroutes incoming calls to internal destinations. There are four Call Forward conditions:

- All calls - CFA.
- Busy - CFB.
- Busy/No Answer - CFBN.
- No Answer - CFN.

Each condition is programmed via a separate access code. In addition, Call Forward-All Calls mode can be accessed using a feature button on a digital or electronic station. On the CSD, the user can also use the **program** button to implement Call Forwarding.

The system data base can be programmed to provide fixed destinations for different call forward conditions and for internal or external calls or over tie lines. Users can invoke Call Forward-All Calls to override all other conditions in the data base programming.

**Call Forward (Cont'd) Restrictions:**

- Call Forward-Busy and Call Forward-Busy/No Answer cannot be assigned at the same time. However, Call Forward-Busy and Call Forward-No Answer can be assigned concurrently. A call may be forwarded a maximum of two times within the system. A key tone sounds as a registration reminder when users go off-hook while in a Call Forward-All Calls condition.
- A calling extension may be allowed to override an assigned call forward (depending on their class of service).
- If a station equipped with an alphanumeric display activates a call forward condition, the display shows:
  - The type of forwarding condition.
  - The station number which receives the forwarded call.
- If a station equipped with an alphanumeric display receives a forwarded call, the display shows:
  - The called number.
  - The calling party's number.
  - An indication of a forwarded call condition.

**Benefits:**

- Allows calls to be automatically routed to the appropriate destination by providing four types of call forward conditions.
- Provides user friendly operation by visually displaying each forwarded destination and provides key tone upon activation of Call Forward - All Calls.
- Allows calls to be answered in a personal manner by visually displaying at the forwarded to station the calling station number, the called station number, and the forwarded condition.
- Allows calls to be automatically routed to an Integrated Voice Server (IVS).

**Applications:**

- Businesses that require call coverage for busy or unattended stations.

The following call forwarding features are also provided:

- Call Forward-Follow Me.
- Call Forward to Station Speed Call Number.
- Call Forward-Other Extension.

**Call Forward - Follow Me**

Call Forward-Follow Me (CFF) allows users to forward calls from any station to the station where they implement this feature. If Call Forward-All Calls is already implemented from the station being call forwarded, canceling that function is necessary before implementing CFF. If calls are being forwarded on busy or no answer (CFB or CFN), using this feature overrides the previous function and all calls are then forwarded to the new destination.

Users must have the correct Class of Service to implement this feature. Calls may be forwarded a maximum of two times within the system. Canceling Call Forward-Follow Me may be done by either the originating station or the forwarded to station.

In the case of a hard tenant, this feature cannot be registered unless either the source or the destination extension belongs to a common tenant, or both belong to the same tenant.

This feature is not available:

- From an Attendant Console.
- When Do Not Disturb is registered at a forwarded-to station.
- When Call Forward-All Calls is registered at the original station.

**Benefits:**

- Freedom to move about the office without missing calls.

**Call Forward to Station Speed  
Call Number**

The Call Forward to Station Speed Call Number feature allows users to forward all calls to outside trunks via tie (trunk lines) and CO (Central Office) lines.

This feature works only when the registered station is the station called, not a call forwarded from another station. The station user must program the telephone number as one of their ten station speed call entries. The entry must include the trunk access code (typically 9). Calls are then forwarded to the entry programmed.

The following types of terminating calls can forward to the station speed call number:

- Personal line termination call.
- Direct-in line termination call.
- Direct line termination call (terminating trunk) (with one appearance).
- Automated Attendant (DISA-S).
- DID.

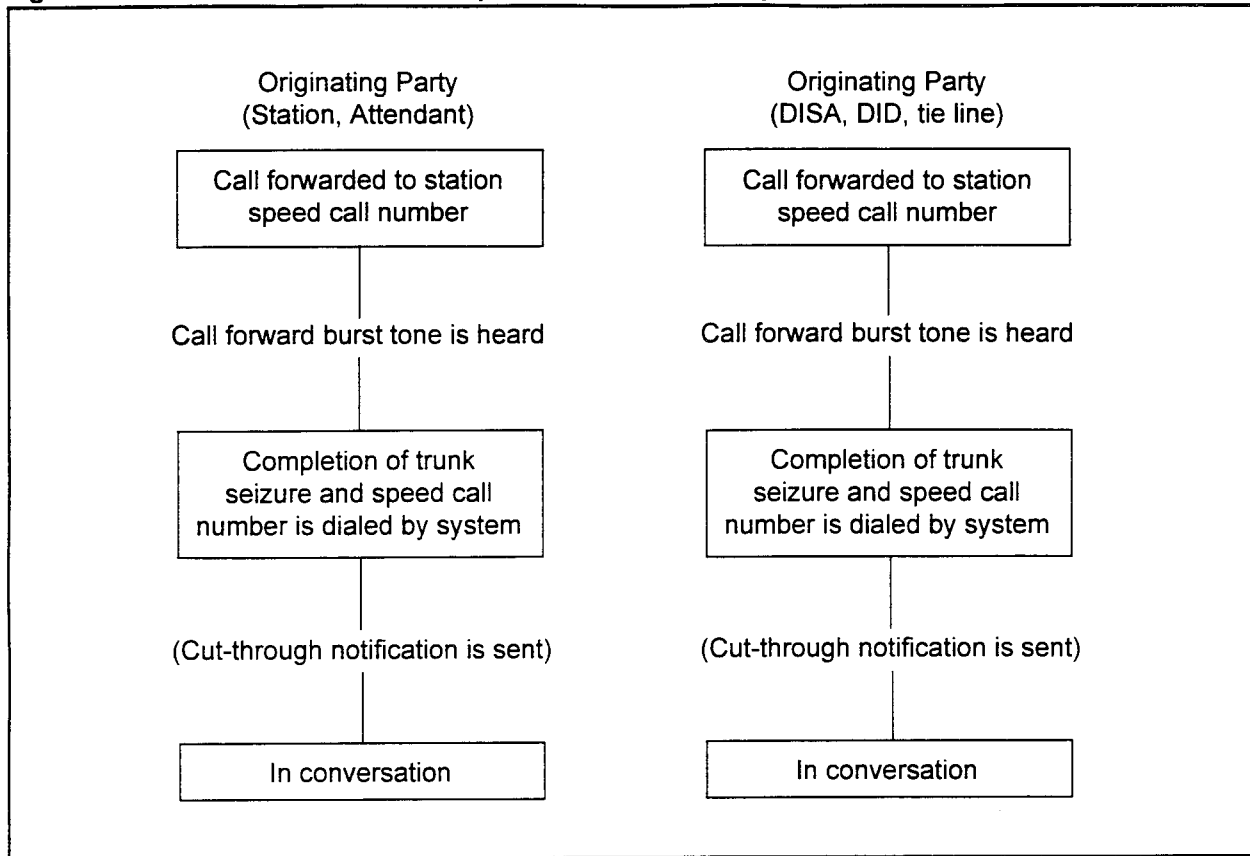
Call Forward to Station Speed  
Call Number (Cont'd)

The following conditions apply:

- Incoming trunks should be ground start.
- When a station or attendant user makes a call to a call forward to speed call number registered station, the calling party hears a burst tone for notification of forwarding prior to the PBX transmitting a destination number to the trunk. The destination number and speed call number appear on the caller's internal digital or electronic station display (if equipped).
- When a call coming in from a CO or tie line (except DISA-S) is directly forwarded due to this feature, transmission is after the transmission of the registered number is completed.
- The system waits for disconnection of the calling party if the answer signal has not been returned.
- For Automated Attendant (DISA-S) termination, the system sends reorder tone when restriction is encountered or when all the trunks are busy.
- When a station or attendant transfers a CO or tie line call to a call forwarding registered station, the same restriction condition is applied as that for an individual transfer.
- If a station or attendant that tries to transfer a call to a call forwarding registered station releases the call before completing transmission of all the digits of destination number, the held call returns to the station or attendant as a lost call.
- The call charge for originating via a CO is billed to the caller calling a call forwarding registered station.
- Forced account code entry is not required in the case of origination due to call forwarding.
- Call forwarding can be registered or canceled by soft-key operation of a CSD telephone.
- Transmitting timing of the burst tone can be changed in the data base.
- Manual or automatic trunk camp-on is not applied.



Figure 5-1. Call Forward to Station Speed Call Number Progress Chart



#### Call Forward - Other Extension

This feature allows an extension to register or cancel the Call Forward - All Calls feature of another extension. If Call Forward was registered to a station in error, the receiving party can cancel the Call Forward from their own station.

An extension number, attendant access, or speed calling access can be registered as a forwarding destination number.

#### Benefits:

- Should a user leave their station for an extended period of time, another user can activate/cancel the Call Forward feature for them without leaving their station.

#### Applications:

- Business office environments.

Call Forward - Internal/External This feature allows the user to register different destinations using the Call Forward features for an internal or external call termination.

**Benefits:**

- Users are able to differentiate answering positions between inside and outside calls.

**Applications:**

- Business office environment, 24-hour service centers who may only take either internal or external calls after regular business hours.

**Call Park** The Call Park feature allows a station user to place an in-progress call in a specific parking orbit, so that additional calls can be made from the station. There is no limit on the number of calls that can be parked by stations in the system. Users can retrieve a parked call from the originating station or from any other station in the system (except a hotline).

The **PARK** button is fixed on DS20, DS20S, DS20SD, and DS32SD stations. Call Park can be assigned to a feature button on the CT-10, CT-20, CT-30, and CSD telephones. This feature is also available using the Attendant Console.

This feature permits the station user to:

- Place a call in a parked state (music, tone or message on hold is heard by the parked caller).
- Associate the call with any station directory number even if the directory number is not an equipped station.

Users can park and retrieve calls by the following methods:

- Single line stations can momentarily press the hookswitch and dial an access code for call park.
- Press the **TRANSFER** button and enter the call park access code (digital and electronic stations only).
- Press the **PARK** feature button (digital and electronic stations only).

Next, enter the parking orbit number (one to four digits). If the parked call is not answered within a predetermined time interval, the call automatically returns to the parking station.

**Call Park (Cont'd)****Benefits:**

- Increases call handling capability by allowing the station user to place calls in a holding status under a parking number and originate or receive other calls.
- Improves call processing by allowing any station user within the system to retrieve a parked call at another station.
- Reduces the number of callbacks.
- Assures that callers are not kept waiting for extended periods of time by automatically returning the parked call to the parking station after a predetermined time interval.

**Applications:**

- Offices where personnel frequently must go to other locations to obtain information.

**Capacity:**

- Unlimited calls can be parked by stations

**Attendant Park Pick-Up**

This feature allows a station user to retrieve a call parked by the attendant.

**Benefits:**

- Provides greater accessibility to attendant-parked calls by station users.

**Applications:**

- Most business environments.

**Call Park Recall**

This feature allows parked calls that remain unanswered for a predetermined time to be recalled to the station that parked them. At that time, visual indications, including the type of recall, are provided on the station alphanumeric display of the recalled station.

**Benefits:**

- Visually reminds users of unanswered calls.
- Helps screen calls.

**Applications:**

- Professional offices.
- Advertising agencies.

**Call Splitting/Consultation**

The Call Splitting feature allows a station user to privately converse with an internal or external party while another party is held on the line. The station user may alternate between parties. Call splitting is accessed through the **TRANSFER** feature button on digital and electronic station plus soft buttons on the CSD. Call splitting can also be assigned to a feature button on DS20, DS20S, DS20SD, DS32SD, and CT-10, CT-20, CT-30 telephones.

**Benefits:**

- Enhances call handling capabilities by giving the station user flexibility to talk with either of two parties.

**Applications:**

- Realtors, lawyers, doctors, etc., who need to converse with two individuals but do not want either party to hear the other conversation.
- Office operations that involve ordering and order status situations; e.g., catalog sales, service order processing, etc.

The Consultation feature allows the station user to place calls on hold by flashing the hookswitch (SLT) or pressing the **TRANSFER** button. A three-party conference can be established by flashing the hookswitch (SLT) or pressing the **TRANSFER** button a second time.

**Benefits:**

- Improves call management by allowing station users to place an internal or external call on hold and place another call to consult or obtain additional information.
- Allows person transferring calls to inform the called party to whom they will be speaking.
- Allows the person transferring calls to confirm that the called party is available before transferring calls.

**Applications:**

- Doctors, lawyers, stock brokers, securities dealers, etc.

**Call Status Display**

This feature provides call status information and call progress information on the LCD (if equipped). On internal calls, the display shows the calling party station number, type of call, and call status information (see Table 5-1). On external calls, the display gives the trunk types and/or trunk name (CO, FX, etc.) and equipment number. The dialed number is also displayed along with a timer.

Call status information can be modified in the data base to allow for multi-language capabilities. Only valid ASCII characters may be entered. Displayed information is provided on a system-wide basis on all stations with displays.

**Benefits:**

- Improves call answering capabilities by providing an advance identification of call status information.

**Elapsed Time**

This feature, available on DS20SDs, DS32SDs, CSDs, CT-20s, and CT-30s, shows the amount of time elapsed during outgoing or incoming calls. The display indicates call duration in minutes and seconds. The time returns to 00:00 after the conversation has exceeded one hour. Any call hold condition does not affect the elapsed time clock.

**Benefits:**

- Provides useful cost accounting tool for professionals by displaying duration of incoming or outgoing calls in minutes and seconds.
- Improves time management since users are visually reminded of time spent in telephone conversations.

**Applications:**

- Individuals who need to bill their clients on an hourly basis; e.g., lawyers, accountants, consultants.

Table 5-1. Call Status Displays

MESSAGE							DESCRIPTION		
B	U	S	Y				Busy (extension and trunk)		
R	I	N	G				Ringing (for called party)		
T	A	L	K				Talking		
X	F	E	R				Transfer		
H	O	L	D				Hold (for proprietary telephone)		
V	O	I	C	E			Voice call		
R	E	T	R	Y			Misdial		
C	O	N	F				Three-way conference		
O	V	R	D				Override		
D	O	N	E				Feature activated		
C	N	C	L				Feature canceled		
	R	P	D				Repertory dial		
	S	C	C				Secondary common carrier access		
	L	C	R				Least cost routing access		
S	A	V	E				Saved number redial		
	S	P	D				Speed dialing (speed calling)		
A	C	C	T				Account code input		
	A	I	A				Automatic intercom access		
P	A	R	K				Call park		
	D	N	D				Do not disturb (DND)		
	M	S	G				Message waiting		
S	.	M	S	G			Silent message		
C	A	L	L	B	A	C	K	Extension camp-on call back	
N	O	A	N	S	W	E	R	No answer recall	
P	R	K	R	E	C	A	L	L	Park recall
L	O	S	T	C	A	L	L	Lost call recall	
C	A	L	L	B	A	C	K	Trunk camp-on call back	
	A	C	D					ACD termination	
	A	L	T					Alternate	
	C	F	A					Call forward - all calls	
	C	F	B					Call forward - busy	
	C	F	N					Call forward - no answer	
H	U	N	T					Hunt group termination	
C	A	L	L					Calling (for called party)	
T	I	E						Trunk name (tie)	
C	O	T						Trunk name (CO)	
F	X							Trunk name (FX)	

Table 5-1. Call Status Displays (Cont'd)

MESSAGE								DESCRIPTION		
W	A	T	S					Trunk name (WATS)		
	S	E	C	T				Secretary register		
	P	A	G	E				Proprietary phone/external page access		
N	I	G	H	T		C	A	L	L	Night call
P	A	G	E						Proprietary telephone/external paging answer	
			C	A	M	P		O	N	Camp-on register
	D	A	T	A					Data communication	
*									Data number receiving	
	M	-	I	D					Modem connection	
			P	R	O	G	R	A	M	Proprietary telephone program mode
			A	T	B		C	H	G	Attribute change
P	K		U	P					Pick-up	
		A	T	T		O	V	F	L	Attendant overflow
V	.	M	S	G					VMC register	
	P	L	A	Y					VMC playing	
		R	E	C					VMC recording	
M	-	A	C	T					Modem activate	
		V	-	D					Voice/data change	
A	A	-	T	O					Automated attendant time-out (recall)	
A	A	-	V	N					Automated attendant (vacant number - recall)	
A	A	-	B	L					Automated attendant (busy recall)	
		V	M	S					VMS information sending	
		A	C	D					ACD queuing (calling party)	
V	M	S							VMS calling	
		P	S	W					Password register	
	S	I	G	N					ACD sign-on register	
		C	F	F					Call forward - follow me	

Table 5-1. Call Status Displays (Cont'd)

MESSAGE										DESCRIPTION	
		L	D	N						Listed directory number termination	
	M	A	I	D						Maid room status	
F	P	N								Trunk name (FIPN)	
D	V	S		N						Call diversion (no answer)	
D	V	S		B						Call diversion (busy)	
D	V	S		D						Call diversion (do not disturb)	
	S	E	L	F		R	I	N	G	Self extension ringing	
		D	N	I	S					DNIS termination	
		W	R	A	P					Wrap-up code register	
	P	E	R	M	A	N	E	N	T	Semi-permanent connection	
C	M	P			R	E	C	A	L	L	Camp-on recall
S	-	M	N	T						Silent monitor	
S	-	O	V	R						Silent monitor break-in	



**Call Waiting** When an incoming call terminates at a busy extension, a call waiting tone is heard by the station. The station user can then do one of the following (using the **FLASH** button, the hookswitch, or the **TRANSFER** button):

- Complete the existing call and hang up.
- Place the existing call on hold and answer the waiting call.
- Alternate between the original call and the waiting call.
- Transfer the connected party and return to the call on hold.

Call waiting tone length can be adjusted in the system data base. Stations will hear call waiting tone unless disabled on a station-by-station basis in the data base.

**Benefits:**

- Calls are not missed due to a busy line.
- Multiple calls can be handled using one extension line.

**Camp-On** There are two types of camp-on in the system:

- Station.
- Trunk.

**Station Camp-On** If a station user encounters a busy signal when dialing an internal station, the user can dial an access code or press a feature button to be placed in a waiting queue for the busy station. The user may then return to the on-hook position. When the busy station becomes idle, the system automatically busies the originating station from receiving or making calls and rings the camp-on originator. When the camp-on originator answers, the system automatically rings the camped-on station.

**Benefits:**

- Reduces "telephone tag".
- Saves time by allowing users to access busy stations without constant redialing.

**Applications:**

- Organizations with a high volume of internal and external call traffic.
- Businesses with a high volume of internal call traffic between departments; e.g., sales department and shipping department.

**Capacity:**

- 30 stations can be simultaneously camped-on in the system.

**Trunk Camp-On** This feature allows stations to go into queues for an available trunk (camp-on) when a particular trunk group is busy. Trunk camp-on is on a first in, first out basis and is accomplished either on-hook or off-hook. In on-hook queuing, the station alphanumeric display shows CALL BACK when the station is rung to indicate trunk availability.

**NOTE:** This feature is not applicable to Least Cost Routing.

**Benefits:**

- Reduces employee frustration.
- Reduces network requirement.
- Saves time and improves productivity by eliminating the need for a station to make repeated attempts to gain access to trunk facilities

**Applications:**

- Organizations with peak calling periods.
- Businesses that have many stations vying for a limited number of circuits; e.g., FX, WATS, tie trunk circuits.

**Capacity:**

- 20 calls can be simultaneously camped-on to trunk groups in the system.

**Conferencing (Three-Party)** This feature allows a connection between two trunks and one station, two stations and one trunk, or three stations. Three-party conferences cannot be initiated by a trunk party.

If the trunks (in any trunk connection) are ground start, the system receives disconnect supervision from the central office, so the system is able to automatically disconnect a trunk-to-trunk connection.

If equipped with a CSD, the station user can transfer a three-party conference call using the appropriate display feature button.

DTMF tones may be sent during three-party conferences. This enables access to voice mail systems, etc. Only the transferring station can send DTMF tones to the other parties.

**Benefits:**

- Increases flexibility in conferencing connections and system operation.

**Applications:**

- Sales, customer service, field offices, lawyers, and accountants.

**Capacity:**

- 10 three-party conferences (using SC2P2x); 15 three-party conferences (using SC4P2x).

**Data Security**

Stations assigned this feature through data base programming are protected from call interruption by warning tones such as call waiting tone. Camp-on to a protected station can still take place although the camp-on indication tone is not sent to the station.

**Benefits:**

- Saves time and money by preventing inadvertent interruption of costly data calls.
- Ensures accurate transmission of information from facsimile devices, data terminals, and remote maintenance stations because other calls cannot gain access to the line or send tones.
- Improves BER (Bit Error Rate).

**Applications:**

- Organizations that transmit/receive data.
- Individuals who do not want their conversations interrupted by camp-on or other warning tones.

**Direct Station Selection/Busy  
Lamp Field (DSS/BLF)  
(Digital and Electronic  
Stations)**

This feature allows a station user to program individual feature buttons for one-step dial access to station numbers. The quantity of programmable DSS/BLF buttons is limited only by the available buttons on the DS or CT station.

**Benefits:**

- Saves time by allowing the station user one-step access to frequently called station numbers.

**Applications:**

- Individuals who desire traditional boss/secretary direct communication.

**Busy Lamp Field** The Busy Lamp Field function can be assigned to a DSS button on proprietary telephones. Pressing this button rings internal stations that have been programmed in the data base.

Additionally, the LED accompanying the DSS button indicates the status of that station. There are three possible status indications:

- Idle: Lamp off.
- Busy: Lamp lights steadily.
- Do Not Disturb: Lamp flashes.

**Benefits:**

- Users can see when the intercom is available.

**Capacity:**

- A maximum of 24 stations can utilize the BLF capability.
- A maximum of 24 stations can utilize this capability.
- A maximum of 200 buttons can be assigned system-wide.

**Direct Trunk Access** Direct Trunk Access allows a user to select a specific trunk (CO, FX, or WATS) by dialing an access code and the desired trunk directory or equipment number (1 to 4 digits). For troubleshooting and other maintenance operations, this feature provides the capability to determine the operational status of a specific trunk within a trunk group. This feature is restricted by COS (Class of Service) assignment.

**Benefits:**

- Provides on-site maintenance capabilities by allowing users to verify operational interface between the Bothway Trunk card and the central office.

**Application:**

- Maintenance purposes.

**Do Not Disturb** This feature allows station users to make the station appear busy to incoming callers. Although callers receive a busy tone, users may still originate calls. A station is assigned the Do Not Disturb feature through its COS (Class of Service) level. A key tone sounds as a registration reminder when users go off-hook while in a do not disturb condition.

This feature can be activated by dialing an access code or by pressing a programmable **DND** button on a digital or electronic station.

Do not disturb can be registered for a station by an originating station (if allowed in class of service). The originating station can register do not disturb with or without a silent message. A registered do not disturb can also be canceled and/or verified by the originating station.

**Benefits:**

Users may busy out their station and not be distracted by telephone calls when quiet worktime is needed.

**Applications:**

- Conference meetings.
- Business executives.

- 
- |                                      |   |
|--------------------------------------|---|
| <b>Do Not Disturb Override</b>       | <p>This feature allows the user to override a do not disturb condition to an internal station by pressing the associated button. The station returns to do not disturb condition upon completion of the phone conversation. A feature button on any digital or electronic station may be assigned the Do Not Disturb Override feature. Additionally, a station user can allow a specific station to override do not disturb by dialing a feature access code and the allowed station directory number. Canceling do not disturb override can also be accomplished with a feature access code.</p> <p><b>Benefits:</b></p> <ul style="list-style-type: none"><li>• Allows access to a busy station to announce important calls or handle emergency situations.</li></ul> <p><b>Applications:</b></p> <ul style="list-style-type: none"><li>• Business executives who want their secretaries to advise them of important telephone calls or messages.</li></ul> <p><b>Capacity:</b></p> <ul style="list-style-type: none"><li>• One-at-a-time override per station.</li></ul> |
| <b>Do Not Disturb Silent Message</b> | <p>The Silent Message feature also allows station users to implement Do Not Disturb and leave a message on the display of the registering telephone. When another station attempts to call that station, the silent message will appear on the calling station's display when busy tone is received. To activate this feature:</p> <ol style="list-style-type: none"><li>1. Press the <b>DND SILENT MSG</b> feature button.</li><li>2. Dial the feature access code and input the appropriate two-digit message identification code (00 to 50).</li></ol>   |
| <b>Executive Override</b>            | <p>This feature allows a user to gain access to a station in a two-way conversation by dialing an access code or by pressing a feature button; or on a CSD, by pressing a display feature button. A warning tone sounds during the existing conversation before access is permitted. The warning tone can be omitted by reprogramming the data base. This feature is restricted by COS (Class of Service) assignment.</p> <p><b>Benefits:</b></p> <ul style="list-style-type: none"><li>• Provides communication with busy stations in emergency situations by allowing the station user to interrupt an existing conversation.</li></ul> <p><b>Applications:</b></p> <ul style="list-style-type: none"><li>• Business executives who wish to be notified of important calls while engaged in other telephone conversations.</li></ul>  |
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**Exclusive Hold** This feature permits station users to maintain private and exclusive access to a call on hold. Only the station placing the call on hold can access the held call again. Exclusive Hold is available for PSL/OSL (Primary Station Lines/Other Station Lines) and CO lines.

If the station does not have an OSL or PSL line appearance, the station must then have an **ICM hold answer** button programmed to retrieve the call from hold.

When a call is placed on exclusive hold by pressing the **HOLD** button on a digital or electronic station, it automatically returns (recalls) after a predetermined period of time. The station receives a recall tone, LED indication of recall, and visual display of the type of recall on the station alphanumeric display. The recall may be answered by pressing the ringing and rapidly flashing line button. For key system lines, Exclusive Hold is activated by pressing the **HOLD** button twice.

Because this is an exclusive hold, the held call cannot be retrieved from another proprietary telephone or SLT.

Additional conditions include:

- Held calls return after a predetermined period of time (1-255 seconds).
- Only one call may be placed on hold at a time.
- CO line buttons are not affected by Exclusive Hold.

**Benefits:**

- Enhances call handling capabilities by allowing station users to retrieve held internal calls.
- Allows privacy on trunk calls by providing the station user with sole access to the trunk facility.
- Prevents inadvertent interruption by other stations via a busy indication on other stations having the same line appearance.

**Applications:**

- Sales departments, parts departments, service departments, airline reservation operations.
- Organizations that require confidentiality in telephone conversations; e.g., financial institutions.

**FLASH/New Call Button** When the system is operating behind a PBX, Centrex, or Centranet, users can press the **FLASH/new call** feature button while on an external call. The action sends a flash indication to the PBX or CO.

If the system is not operating behind a PBX or Centrex/Centranet, pressing the **FLASH/new call** button disconnects the call in progress. If the call was internal, internal dial tone is returned to the user. This feature may be used during dialing, and during the no answer or busy states, as well as during a two-way conversation (with or without a held call). Timing is determined via data base programming.

Pressing the **FLASH/new call** button:

- Once activates flash.
- Twice activates new call.

**Benefits:**

- Increases operations capabilities by providing access to a full complement of PBX and Centrex/Centranet features.
- Reduces need for multiple operations by station users when placing successive calls.

**Applications:**

- Station users originating successive calls (telemarketing groups).
- Individuals who want access to features provided by the PBX or Centrex/Centranet system.

**Flash from SLT** Flash signals may be sent via CO lines from any industry-standard single line telephone. An access code is dialed by the single line telephone after a hookswitch flash to activate the flash to a CO.

**Benefits:**

- Gives single line telephone users the ability to send flash signals over CO trunks to access Centrex or Centranet features.



**Flexible Button Assignment**

With this feature, the buttons on proprietary telephones can be programmed either for termination of any type of line circuit or for feature operation. Alterations and rearrangements of button assignments can be accomplished via a PcMP (Personal Computer Maintenance Program), CSD as MCT (Master Control Telephone), DS20SD, DS32SD, or Attendant Console as MCT. Buttons can also be assigned or changed by digital or electronic station users

**Benefits:**

- Increases operating efficiency by allowing each station instrument to be programmed to suit the particular needs of the user.

**Applications:**

- Businesses that need flexibility in assigning features and line circuits to station instruments.

**NOTE:** Terminating trunk and station line buttons cannot be changed or assigned by station users.

**Floating Loop Line Terminations**

This feature provides the capability for DID and pooled line terminations. This feature accommodates both incoming and outgoing call service for trunks assigned to floating loop line terminations.

**Full Handsfree Operation**

This feature provides speakerphone-type handsfree operations for internal station and outside trunk calls to proprietary digital or electronic station users (DS20S, DS20SD, DS32SD, CT-20, CT-30, and CSD) whose stations have:

- Built-in handsfree speakers.
- Microphones.

A speaker button is assigned to digital or electronic sets to activate the handsfree capability.

**Benefits:**

- Allows users to take notes, type at their computers, etc., while conversing on their phone.

**Applications:**

- Conference calls.
- Professional offices; financial, medical.

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**Hotline Station** A Hotline station is assigned to a specific internal station in the data base. When the Hotline station goes off-hook, its terminating station is automatically rung.

**Benefits:**

- Speeds clearance of visitors.
- Facilitates exchange of information when time is a major factor.
- Eliminates the need for visitors to look up building directory numbers.

**Applications:**

- Information telephones on retail floors.
- Hospital/healthcare facilities and Hotel/Motel.
- Elevator phones.
- Businesses that require clearance of visitors.
- Offices that receive deliveries on a regular basis.

**Capacity:**

- 20 voice Hotline stations.
- 40 data Hotline stations.

**Intercom Groups** This feature allows users to ring an internal station by pressing a programmable **intercom** button on a digital or electronic station, followed by dialing a specific assigned number.

The Intercom Groups feature may also be used to establish a private intercom feature that permits one- to four-digit dialing to other intercom group members. Single line telephones can receive intercom calls from digital and electronic stations, but cannot initiate intercom group calls. The feature is required to access CT-30s with off-hook call announce.

**Benefits:**

- User friendly.
- Fewer keystrokes to access a specified station.
- Provides a secondary voice path for intercom without additional hardware.

**Applications:**

- Key systems.
- Departmental intercom groups.
- Boss/secretary intercom arrangements.

**Capacity:**

- 10 Dial Intercom groups.
- 50 members per group.

**LCR (Least Cost Routing)**

Least Cost Routing (LCR) allows the system to select the most cost-efficient route for outgoing calls. The LCR stores and examines the number dialed, checking the area and/or office codes. Based on this examination, LCR chooses the proper trunk from a preprogrammed route table. The tables can contain several trunk group choices. The first choice route could be the least cost route, with alternate routes available depending on the station COS. Sixty-three route tables are provided to select a trunk group for area/office codes, and an additional fifteen tables are available for office codes only. Each route table can contain up to ten trunk groups. Additional features of Least Cost Routing include:

- **Multi-Digit Restriction:** This provides route restriction by route group number (RGN). Also, the number of digits is determined by the dialing group number (DGN) of the default route.
- **LCR Camp-On:** This is provided when all route trunks searched are busy. Automatic and manual camp-on is available.
- **Delayed Advance:** This provides expanded route selection from LCR camp-on if no trunk becomes available within a predetermined time.
- **Warning Bursts:** These notify the caller of the route selected. Two tones are programmable; one is sent when the highest cost route is selected, the other when a route other than the least cost route is selected.
- **Time of Day Change:** This provides the capability to have the system select route tables depending on the time of day and day of the week. A day can be divided into nine zones with each zone specifying a time of day pattern (day, night, midnight, or spare). Four patterns are available for day of week (business day, week day, holiday, and spare day).
- **Tie Line Access:** This allows inclusion of tie routes into the LCR trunk group.
- **SCC Access without Security Code:** This allows omission of the SCC authorization code, permitting the system to use SCC routes which do not require the code (950-1/0XXX).

**Benefits:**

- Better cost control and tracking of long distance calls.

**Applications:**

- Businesses with high volume of outgoing long distance calls.

**LED Illumination** LED Illumination provides users with a visual line status for each line button. This feature also provides visual feature registration status for most feature buttons. One-color LEDs are available on CSDs, DSS/ BLFs, and Attendant Consoles, and two-color LEDs are available on all CT and DS20, DS20S, DS20SD, and DS32SD telephones.

**Benefits:**

- Provides users with visual verification of each line selected or each feature activated.

**Applications:**

- Offices using proprietary telephones.

**Lost Call Recall** Calls lost by misdialing or accidental use of the hookswitch are automatically recalled to the station. The following alternatives for lost call recalls can be selected:

- Lost call recall can be disabled for accidental use of the hookflash where an open line does not disconnect or a phantom recall is activated.
- Disabling lost call recall can be used to redirect lost calls to the attendant or to automatically disconnect lost calls.

**Message Waiting** This feature allows users at a calling station to activate a message lamp on other stations. A message is left by dialing an access code and the desired station number or by pressing the **MESSAGE** button when calling a station that does not answer or is busy. This operation lights the message waiting lamp on SLTs or the **MESSAGE** LED on digital or electronic stations. A stutter dial tone can be provided to notify the user of waiting messages. A maximum of four messages can wait at an individual station.

**Benefits:**

- Reduces amount of time spent in “telephone tag” situations by providing message leaving capability.
- Minimizes the need for the attendant to take messages for internal calls.
- Provides a method for the attendant to inform station users that they have a message from an external caller.

**Applications:**

- Businesses where personnel are regularly away from their desks.
- Hotel/Motel operation.
- Stockbrokers, lawyers, or doctors who have large volumes of telephone traffic.

<b>Message Waiting (Cont'd)</b>	<b>Capacity:</b>
	<ul style="list-style-type: none"> <li>• Four messages per station.</li> </ul>
Message Waiting (Single Line Telephones)	<p>This feature allows the message waiting lamp to be activated on SLTs. Single Line Telephones do not have the ability to store where the message came from. Therefore, either a Centralized Message Center, Attendant Console, or Integrated Voice Server (IVS) station number must be determined to retrieve and cancel waiting messages.</p>
	<b>Benefits:</b>
	<ul style="list-style-type: none"> <li>• SLTs may have messages from specific stations, the Attendant Console or the IVS.</li> <li>• Provides a Hotel/Motel guest with an indication that a message is waiting at the front desk.</li> </ul>
	<b>Applications:</b>
	<ul style="list-style-type: none"> <li>• Hotel/Motel operation.</li> <li>• Businesses using SLTs rather than digital or electronic stations for cost savings.</li> </ul>
	<b>Capacity:</b>
	<ul style="list-style-type: none"> <li>• Four messages per station, 50 message waiting lights per cabinet.</li> </ul>
Message Cancellation	<p>This feature allows station users to turn off the message waiting lamp and cancel the message waiting queue at their own station or another station, depending on the COS. Station users may cancel a message left at another station by dialing an access code and the station number.</p>
	<b>Benefits:</b>
	<ul style="list-style-type: none"> <li>• Station users can see quantity and source of messages.</li> <li>• Allows station users to cancel waiting messages that may have already been handled.</li> </ul>
	<b>Applications:</b>
	<ul style="list-style-type: none"> <li>• Operations where personnel are frequently away from their desks.</li> </ul>
Message Selective Cancellation	<p>On proprietary telephones equipped with an alphanumeric display, users can screen and cancel waiting messages without returning the calls. When station users press the <b>MESSAGE</b> button in an on-hook condition, the station display shows the directory number of each calling station. Users may cancel a particular message by dialing the number (1, 2, 3, 4) that corresponds to the message display position. Users can also scroll through messages.</p>
	<b>Benefits:</b>
	<ul style="list-style-type: none"> <li>• Station users can see quantity and source of messages.</li> </ul>

**Message Selective  
Cancellation (Cont'd)**

- Allows station users to cancel waiting messages that may have already been handled.

**Applications:**

- Operations where personnel are frequently away from their desks.

**Message Pick-Up**

On proprietary telephones, station users can easily access station that left messages by going off-hook and pressing the **MESSAGE** feature button and going off-hook. This action automatically dials the first station which left a message. Messages are picked up on a circular basis, whether the call was completed or not. When the user presses the **MESSAGE** button to return the first call and that station number is busy, the next pressing of the **MESSAGE** button dials the second station number which left a message. The first message goes to the end of the message queue.

**Benefits:**

- Provides a convenient method for returning messages by simply pressing a feature button.
- Station users can scroll through messages, rearrange them, and select the messages to be returned.

**Capacity:**

- Four messages per station plus one from voice mail.

**Monitor (On-Hook Dialing)**

This feature allows CT-10, CT-20, CT-30, DS20, DS20S, DS20SD, DS32SD, and CSD users to place calls utilizing the built-in speaker without taking the handset off-hook. Users can hear call progress tones from the speaker. These tones allow the status of the call to be monitored during dialing and upon dialing completion. This feature is manually activated or canceled by pressing the **SPEAKER** button or activated automatically when pressing a programmable button, such as a repertory dialing button. Monitor may be automatically canceled by going off-hook. Because the CT-10 and DS20 telephones do not have the speakerphone capability, the user must lift the handset to begin conversation.

**Benefits:**

- Improves productivity by allowing the station user to place calls while performing other activities.
- Allows user to wait for calls to be answered before picking up the handset.
- Makes it easy to wait when placed on hold.

**Applications:**

- Individuals who require on-hook dialing and monitoring of call progress tones while placing telephone calls, but do not require full speakerphone.

**Monitor (On-Hook Dialing)  
(Cont'd)****Capacity:**

- 96 stations per cabinet may be in use simultaneously.

**Multiple Classes of Service**

This feature provides multiple Classes of Service to restrict station access to features. Each station is assigned a Class of Service, providing it with access to all features allowed for that class. In addition, each station and trunk group is assigned a Class of Restriction to restrict the destination of each outgoing call.

**Benefits:**

- System security.
- Limits call abuse.

**Applications:**

- Large businesses with shift operations.
- Offices with extended hours.

**Capacity:**

- 16 Classes of Service.
- 16 Classes of Restriction.

**Mute**

This feature provides privacy during a handsfree conversation by disabling the transmitter portion of the speakerphone operation for a CT-20, CT-30, DS20S, DS20SD, DS32SD, or CSD. The microphone is turned on and off with the **MUTE** feature button.

**Benefits:**

- Provides privacy during handsfree conversation by allowing the station user to temporarily turn off the microphone to confer with another party.

**Applications:**

- Organizations that require privacy in group conference situations; e.g., lending institutions, real estate.

**Capacity:**

- One per CT-20, CT-30, DS20S, DS20SD, DS32SD, and CSD.

**Night Answer** The Night Answer feature provides two options for answering incoming calls after normal working hours:

- **PNA (Predetermined Night Answer)** allows certain stations to be programmed to receive night ringing.
- **UNA (Universal Night Answer)** allows dial access answering of night calls by any station allowed by COS assignment.

Activate the Night Answer mode of operation by dialing the night service code from any phone. Or, press the appropriate feature button on a DSS/BLF or Attendant Console.

**Benefits:**

- Provides flexible night answering service by allowing PNA, UNA, or a combination of both to suit working environment and user needs.

**Applications:**

- Offices with extended hours of operation.
- Businesses with shift operations; e.g., factory operation after administrative offices close.

**Capacity:**

- 32 night answer groups, eight stations per group.

**Off-Hook Incoming Call Signaling**

This feature alerts off-hook stations to incoming calls by a flashing LED lamp on a line button and low level tone ringing. (On DS20, DS20S, DS20SD, and DS32SD telephones, one of three levels can be selected.) Station users may cancel and reactivate this feature (i.e., only receive a flashing LED and no ringing tone) by dialing an access code. Off-hook signaling can be provided on the following trunks:

- Pooled incoming trunk lines.
- Pooled bothway trunk lines.
- PSL, OSL, ICM group feature buttons.
- Key system trunk lines.
- Personal/private trunk lines.

**Benefits:**

- Increases operations capability by providing busy stations with visual and audible indication of incoming external calls.



**Paging (External)**

This feature allows station users and the Attendant Console to access an external paging system. The external paging unit connects to the system via the 4BWC or 8BWC card and both loop or ground start signalling are supported. Up to nine paging zones may be assigned per system. An individual or all zone paging capability is available. This feature may be assigned to a programmable button on the Attendant Console, DS, or CT telephone.

**Benefits:**

- Allows attendant to communicate with employees who are away from their desks.
- Helps employees who are away from their desks to avoid missing important calls.

**Applications:**

- Doctors.
- Lawyers.
- Nursing homes.
- Sales offices.

**Paging (Station)**

This feature allows the Attendant Console to page one of nine station paging zones or an all page to all zones. Paging is accomplished through the speakers in digital and electronic stations. Paging can be activated from a station or the attendant. This feature may be assigned to a programmable button on the Attendant Console, DS, or CT telephone. A new enhancement to the Paging feature enables internal (station) paging to be blocked when the other station has registered Do Not Disturb (FNO = 71 or 137), depending on the system flag (CMC 102). If the system flag is set to "restrict paging access to DND extensions," the paging access is not executed. However, if there is an extension which has not registered DND in that same zone, that extension will hear the page. This restriction is applied to "one zone" or "all zone" paging access.

**Benefits:**

- Improves service by providing faster response time to calling parties.

**Applications:**

- Businesses (warehouses, showrooms, stockrooms).

**Capacity:**

- Nine zones.
- 36 stations/zone maximum.

**Pick-Up** The following features are Call Pick-Up features:

- Group Pick-Up.
- Multiple Group Pick-Up
- Directed Pick-Up.

**Group Pick-Up** This feature is activated by a feature button or a dialed access code. The Group Pick-Up feature allows station users to answer calls directed to another station, in the same pick-up group. A station alphanumeric display, integrated into a station using this feature, provides a display of the calling station number when picked up by a second station.

**NOTE:** Call backs after station camp-on cannot be picked up using this feature.

**Benefits:**

- Provides improved call processing.
- Allows any station user in a pick-up group to answer the phone at any other station in the pick-up group by dialing the pick-up code or pressing the programmable **pick-up** button after going off hook.

**Applications:**

- Customer service environments.
- Busy business environments.

**Capacity:**

- 63 groups maximum per system.
- 64 members maximum per group.

**Multiple Group Pick-Up** This feature allows station users to pick up calls in other pick-up groups via a feature access code.

**Capacity:**

- Maximum number of group pick-up multi-groups: 63

**Directed Pick-Up (Station Pick-Up)**

This feature allows a station user and the attendant to answer calls ringing on any other station by dialing a feature access code or pressing a **station pick-up** feature button followed by the directory number of the station to be answered. This feature is allowed or denied access by COS (Class of Service).

**Benefits:**

- Allows greater flexibility in the operation of the system.
- Provides enhanced call coverage capabilities.
- Allows users to answer calls to their stations from any station in the system.

**Applications:**

- Sales floors, insurance offices, auto dealerships, furniture outlets, showrooms.

**Primary Station Line**

Each station is assigned a Primary Station Line (PSL) number for intercom and internal calls. Stations may also have Other Station Line (OSL) numbers appearing on the telephone. These OSLs may be exclusive to a station or shared by other stations. This allows the user to answer and use extension numbers belonging to other stations or to have extra numbers for just that station.

**Benefits:**

- Improved productivity by providing the user with easy access for station-to-station calling.
- Increases operating efficiency, as Primary Station Lines do not have to be assigned an individual button for this capability.

**Capacity:**

- One per station.

**Primary Station Line Button**

This feature allows station users to originate or terminate primary station line calls on the primary station line of a digital or electronic station by pressing the desired primary station line button.

**Benefits:**

- Simultaneous call handling for internal and external calls.

**Applications:**

- Catalog sales, parts departments, key system emulation.

**Capacity:**

- One button per station (primary station line only).

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- Program** This feature allows a CSD station user to use a single feature button to implement the Call Forward and Do Not Disturb features. These features are accessed by pressing the **program** feature button to display a menu and using the display buttons to select menu features.
- Benefits:**
- Feature selection via a single feature button.
- Applications:**
- Businesses whose operations require the capability of making easy and frequent program changes to Call Forwarding and Do Not Disturb features.
- Capacity:**
- One button per CSD.
- Ring Line Preference** This feature automatically selects a ringing line or PSL/OSL/ICM group, including a recalling line, when the digital or electronic station goes off-hook. Either an internal and/or trunk line is selected as the line preference. When multiple lines are ringing, the line having the highest priority is selected.
- Benefits:**
- Saves time; button activation not necessary.
- Applications:**
- Airlines, telemarketing, customer service.
- Save/Last Number Redial** This feature has the following two functions:
- Saves a number.
  - Repeats the last number dialed.
- Activation of this feature automatically redials the saved or last number as in speed calling.
- These functions are slightly different. Save is initiated by the user; Last Number Redial (LNR) is initiated by the system. The system automatically stores the last number dialed; this is termed Last Number Redial. If, however, the user wishes to store one particular number, Save can be used. Save overrides Last Number Redial; therefore, using Save prevents the system from storing the last number dialed.
- Because the system automatically stores the last number dialed (unless using Save), the user may wish to reserve Save for situations where the saved number is repeatedly called with other numbers.

**Save/Last Number Redial  
(Cont'd)**

A station user at any SLT can repeat the last number by using an access code. Station users can store internal dialed numbers as well as external numbers.

**Benefits:**

- Improves productivity by allowing users to quickly access telephone numbers without redialing.

**Selective Secretarial Override  
Assignment**

This feature allows an assigned secretarial station to automatically override another station that is set in the do not disturb mode, when a secretarial station originates a call by pressing the programmable **DND override** button.

**Benefits:**

- Allows emergency access to lines in the DND mode.

**Applications:**

- Offices with assigned secretarial stations.

**Self Extension Ringing**

This feature enables a user to ring his or her own extension by dialing a feature access code. This feature is applicable for users with digital or electronic stations only.

**Benefits:**

- Lets the user set the ringer/volume tone on the telephone.
- Displays the directory number/name assigned to the extension.

**Silent Messages**

The Silent Messages feature allows display-equipped stations to receive a silent message during a phone conversation. To originate a silent message at any type of station:

1. Dial the feature access code or press the **MESSAGE** button.
2. Dial the station number to send the silent message to.
3. Dial the appropriate two-digit message identification code.

Fifty-one messages, each containing up to fifteen alphanumeric characters, can be programmed into the system. The default data base provides eleven silent messages (these messages can be changed, if desired).

Silent Messages can be sent and received via the Message Leaving and Message Pick-Up features. A silent message sent to a CT-20, CT-30, DS20SD, DS32SD, or CSD that is engaged in a call will override the display of the call in progress and display the silent message. In addition, a station that is on a call can send a silent message without disrupting the ongoing conversation. An option in the data base provides a warning tone that is sent through the speaker of the message-receiving station. A maximum of four messages may be left at one time.

**Silent Messages (Cont'd)**

The Silent Message feature also allows station users to implement Do Not Disturb and leave a silent message on the display associated with the registering telephone. When another station attempts to call that station, the silent message will appear on the calling station's display (if equipped) when busy tone is received. To activate this feature:

1. Press the **DND SILENT MSG** feature button.
2. Dial the feature access code and input the appropriate two-digit message identification code (00 to 50).

This feature may be implemented from a CSD by using the **program** button and following the displayed prompts. An option in data base programming allows the silent message associated with Do Not Disturb to be displayed through COS check.

**NOTE:** Because an alphanumeric character keyboard is required, the PcMP must be used to add or change silent messages in the system data base.

**Benefits:**

- Busy stations are easily notified of important messages.
- Reduces number of callbacks.
- Improves employee productivity.
- Enhances professional image - calls are handled appropriately.

**Applications:**

- Marketing departments.
- Healthcare.
- Telemarketing applications.
- Assistance and messages from supervisor to agents.

**Capacity:**

- 51 silent messages with a maximum of 15 characters.
- Four messages per station at a time plus one from voice mail.

**Speakerphone**

This feature provides access to the speakerphone capability on DS20S, DS20SD, DS32SD, CT-20, CT-30, and CSD telephones for handsfree conversations. The speakerphone is activated via the **SPEAKER** feature button and is automatically disabled by taking the handset off-hook. Associated with this feature is the **MUTE** feature which provides a "listen only" mode for privacy.

**Benefits:**

- Improves productivity by allowing user to perform other activities while engaging in telephone conversations.

**Capacity:**

- One speaker button per digital or electronic station.

**Speed Calling (Station)**

This feature permits a station user to establish a personal directory of up to 10 frequently called numbers for outgoing calls. Each station may assign an entry for as many as 10 speed call numbers. A single-digit code (0-9) is assigned to each entry in the ten member list.

Access to station speed calling is accomplished by dialing the access code assigned and a speed call entry number (0-9). Single line stations and digital or electronic stations may access station speed calling lists, if assigned in the data base. One speed call entry may also be assigned to a feature button on a digital or electronic station and Attendant Console.

Up to twenty digits, including pauses designated by the # key, and access codes for trunk group or LCR, can be assigned to a speed call number. Speed call numbers are subject to Class of Service and Class of Restriction eligibility.

Canceling speed call numbers is easily achieved by assigning a new speed call number to a particular speed call entry.

Station speed call entries also allow stations to call forward their station to one of the speed call numbers programmed by the user.

255 station speed call tables are available to station users. Stations are assigned access to one of the 255 tables in the data base. Additionally, stations can share any one of the 255 speed call tables.

**Benefits:**

- Saves time and improves productivity by allowing station users to enter an abbreviated dialing sequence to access frequently called numbers.

**Applications:**

- Telemarketing businesses.
- Sales organizations.

**Capacity:**

- 255 station speed call tables/system.

**Station Page Access** This feature allows station users to page proprietary telephones through their built-in speakers. The proprietary telephones may be combined into nine different paging zones (plus all zones) with a special code assigned to each zone. All 36 stations may be assigned to one paging zone, if desired. A maximum of 36 proprietary telephones are allowed per system. Activate paging access by:

1. Dialing an access code or pressing a paging feature button.
2. Dialing the special zone code.

The page is then broadcast over the stations programmed for that zone. Paging zones are assigned in the data base.

**Benefits:**

- Improves operating efficiency by providing dial access to designated paging zones.
- Improves customer service by providing faster response time to calling parties.
- Assists attendant in locating individuals who receive urgent calls.

**Applications:**

- Office operations.

**Capacity:**

- Nine zones plus all zone.
- 36 digital or electronic stations per system.

**Paging Answer** This feature allows a station user to answer a paging announcement by:

1. Dialing a feature access code; one for station paging answer or one for external paging answer.
2. Dialing the zone number, enabling the station to answer the built-in speaker page from any telephone and answer back to the paging party.

**Benefits:**

- Prevents continuous paging announcements.
- Permits the paged party to respond rapidly to the paging from any station.



**Paging Answer (Cont'd)****Applications:**

- Businesses where personnel are regularly away from their desks.
- Hotel/motel paging.
- Operations where sales personnel are working in a showroom and are also receiving telephone calls.

**Capacity:**

- Nine zones plus all zone.
- 36 digital or electronic stations per system.

**Station-to-Station Calls**

This feature allows station users to call other stations by:

1. Dialing the directory number.
2. Pressing a programmable direct station selection (DSS) button or pressing the DSS button on the DSS/BLF.

**Benefits:**

- Permits easier internal call access.
- Saves time and increases user efficiency.

**Terminal Password**

This feature provides password control for a station. Stations activated for terminal password control may not be allowed access to features without the correct entry of an access code and a password. This means that the station is "locked" unless users have the correct password. The terminal password feature controls the class of service and class of restriction assigned to a station. Passwords are associated with a specific class of service and class of restriction assigned in the data base. Terminal password activation changes the COS/COR until the user reenters the terminal password control to cancel the password. The station then reverts back to its original COS/COR. Additionally, passwords can be changed by dialing a special access code that allows the user to enter the new and the old passwords. Password control is also available for the Attendant Console.

Passwords can be from one to four digits depending on the system. Up to 100 password groups can be defined in the data base, each group having its own password. Stations are assigned to password groups in the data base. Any one station can belong to only one password group. Passwords for the Attendant Console are not assigned in the data base.

Terminal passwords can be changed or the password control can be disabled/enabled via appropriate access codes by the station.

**Walking Class of Service** By implementing the associated Walking Class of Service feature, users may change the Class of Service (COS) and Class of Restriction (COR) at another telephone. This allows users to have all the privileges and functions that their own class of service and class of restriction provides at another station, without having to permanently change the functions available at that other station. This is done by entering an access code and authorization code at the other station extension.

This feature automatically cancels when going on-hook; the original COS/COR of that station restores automatically (Walking COS only).

**Benefits:**

- Adds flexibility for restricting calls in certain unsupervised locations.
- Improves cost management; reduces phone abuse.
- Allows users to have access to their own features at any station.
- Easy to use.

**Applications:**

- Warehouses.
- Showrooms.
- Public areas.

**Time and Date** The station alphanumeric display provides the time of day and date when the station is idle. This feature applies to DS20SDs, DS32SDs, CT-20s, CT-30s, CSDs, and Attendant Consoles only. For the DS20SD and DS32SDs, the date can be displayed in either English or Spanish, and the time can be displayed in either 12- or 24-hour format. These options are set system-wide using data base commands; individual DS20, DS20S, DS20SD, and DS32SD users cannot select their own options.

**Benefits:**

- Provides the user with a convenient reminder of time and date when the station is idle.
- Synchronization is done on system-wide basis so user does not have to make any adjustment at individual station.

**Time Reminder** This feature allows a station to register time reminder service, providing automatic ringing at a designated time. When a station answers a time reminder call, the station user hears a distinctive tone. If a time reminder call is not answered, it is repeated once after about 2.5 minutes. The ringing tone lasts for 20 seconds and, if not answered, is canceled. If the system is equipped with an RVAC card, a time reminder message may play. Only one time reminder may be registered from a station at a time. The registered time reminder must be within 24 hours of the registration.

**Time Reminder (Cont'd)****Benefits:**

- Provides time reminders of meetings/appointments.

**Applications:**

- Administrative telephones in Hotel/Motel and general business.

**Capacity:**

- 40 SLTs or 80 digital or electronic stations in a five minute time period.
- 8 SLTs and 16 digital or electronic stations in simultaneous calling periods.

**Tone Ringer**

The Tone Ringer feature provides an electronically produced tone (rather than traditional electromechanical ringing) to proprietary telephones. In addition, this feature allows users to control the ringer volume and the ringer pitch of their phone.

**Benefits:**

- Tone level and volume level adjustments can be different for a group of stations in an open area.
- Station ringing can be identified easily.

**Applications:**

- Open departmental areas.

**Capacity:**

- 4 ringer volume levels.
- 3 ringer pitch levels.

**Touch (Key) Tone**

This feature allows digital or electronic station users to enable or disable the key tone. When enabled, key tone is heard whenever number keys or function buttons are pressed. When disabled, the key tone is not heard.

**Benefits:**

- Provides flexibility for businesses to customize service.

**Capacity:**

- One per station.

**Transfer** This feature allows station users to transfer their outside trunk calls or internal station calls without attendant intervention. The transfer operation is activated by a hookswitch flash (SLTs) or by pressing the **TRANSFER** feature button followed by dialing the desired number. Calls may be transferred to other internal stations, to the attendant position, or to external numbers.

The **TRANSFER** lamp is lit during a transfer operation on digital and electronic stations.

**NOTE:** On trunk-to-trunk transfers, the incoming trunk must be a ground start trunk.

**Benefits:**

- Provides efficient call processing since individual station users may transfer their own calls via hookswitch flash (SLTs) or by using the **TRANSFER** feature button (proprietary telephones).

**Applications:**

- Offices with high volumes of Attendant Console traffic.

**Transfer Camp-On** This feature allows a station-transferred call to register a camp-on to a busy station. If the camped-on station does not become available within a specific time, the transferring station will be recalled. The transferring station dials an access code to automatically camp-on the transferred call when a busy station is encountered.

**Capacity:**

- Number of simultaneous camp-ons: 30 (including extension-registered).

**Transfer Release** When a station has initiated a transfer, and the station user presses the **TRANSFER** button, the existing call is released without replacing the handset. Transfer Release is effective in the following situations:

- Two-way conversation with a held call.
- Station calling with a held call (including voice call).
- Three-party conference (only for initiating station).
- Getting a CFT (Confirmation Tone) after service registration or cancellation or success tone.

**Benefits:**

- Enhances call handling capabilities by allowing the user to disconnect the call without replacing the handset.

**Applications:**

- Telemarketing businesses, lawyers, accountants, stock brokers.

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**Transfer with AUTO HOLD** This feature allows station users with digital or electronic stations to activate the Transfer feature for station calls on the following by pressing a feature button assigned to ICM access:

- Pooled line terminations.
- Direct inward line terminations.
- Direct line terminations.
- Personal line terminations.

The calling party is automatically placed on hold when the station button is pressed.

**Benefits:**

- User friendly.
- Saves time by allowing users to transfer calls in one easy step.

**Applications:**

- All businesses.

**Trunk Group Access** This feature allows users to access a trunk assigned to a trunk group via a trunk group access code. These dialed codes are restricted according to each user's Class of Service and Class of Restriction. When the trunk group access code is dialed, the system automatically searches for the next idle trunk in the trunk group.

**Benefits:**

- Allows full utilization of trunks within the system.

**Applications:**

- Sales/customer organizations.
- Telemarketing operations.

**Capacity:**

- Maximum number of trunk groups: 63 (including ones for DMR, CHT, and paging).

**Voice Calling/Handsfree Answer** This feature allows handsfree answerback to Voice Calling for digital or electronic station users. This Class of Service controlled feature is programmed on a per station basis via a special access code from each station.

**Benefits:**

- User friendly.

**Applications:**

- Customer service departments.

## ATTENDANT CONSOLE FEATURES

The Attendant Console is provided for PBX-oriented system applications. This console handles a large volume of incoming calls. The calls can be handled solely by Attendant Console operators or by the Attendant Console and answering positions (proprietary telephones with an attached DSS/BLF Console), depending on the incoming trunk routes. In addition, overflow and/or night answer stations can be arranged to optimize call handling by Attendant Consoles.

Alphanumeric characters are displayed on a four-line by twenty-character LCD display on the Attendant Console. The type of displays are the calling subscriber, trunk number, dialed number, COS/COR (Class of Service/Class of Restriction) of station, recall information, and call type. The current time and date are also displayed.

The Attendant Console can be used as an MCT (Master Control Telephone) data base programming device when it is in the position busy mode. When the system is in the Hotel/Motel mode of operation, the Attendant Console can also be used as an FDC (Front Desk Console).

The following features of the Attendant Console operate in basically the same manner as the corresponding station features and are not repeated in this section. See the Attendant Console User Guide for instructions.

- Account Codes.
- Direct Station Selection.
- Call Announce.
- Call Park.
- Directed Call Pick-Up.
- Save/Last Number Redial.
- Station Speed Calling.
- System Speed Calling.
- Trunk Camp-On.

## ATTENDANT CONSOLE CAPABILITIES

Attendant Consoles have the following dedicated service functions:

- A 20-character x 4 line console display.
- Three fields inside this display:
  - Source Field (for the first party)
  - Destination Field (for displaying the extended-to destination)
  - Call Status Field (for displaying ring, busy, etc.)
- Loop keys used as the selection button for a supervised call.
- Twelve fixed buttons that allow the attendant to:
  - Have conversations with one or more parties
  - Release or hold a call
  - Lock up an extension
  - Answer a call from an outside line, an extension or a recall

**ATTENDANT CONSOLE  
CAPABILITIES (Cont'd)**

- Three **EXTEND** buttons, that, when pressed and held, allow an attendant to set up a one-way speech path for both originating and extended-to parties.
- Programmable buttons for paging, parking, and other service functions.

**Benefits:**

- Allows for central call answering services.

**Applications:**

- Businesses, hotels, etc.

**ACD (Automatic Call  
Distribution)**

This feature allows an attendant to extend incoming calls to an ACD (Automatic Call Distribution) group. The call returns to the Attendant Console after a predetermined period of time. With an RVAC card, the first answering ACD message is not heard when the call is extended; the waiting message, however, is heard.

**Benefits:**

- Attendant directory number can access ACD group.
- Attendant can transfer to ACD route tables.
- Saves time for the caller; redialing to access the ACD group is eliminated.

**Applications:**

- Any business with ACD groups in its telephone system; e.g., catalog sales departments within a retail business.

**Account Code Entry**

This feature allows an attendant to enter an account code during conversations with external calls (with or without a held call), and to print out the account code via an SMDR printer. This feature may be assigned to one of the programmable feature buttons.

**Benefits:**

- Cost accounting for billing.

**Applications:**

- Most business environments.

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<b>Alarm</b>	<p>An alarm feature informs the attendant that the system is experiencing a minor or major problem. The alarm lamp will light regardless of attendant call processing. The alarm feature is programmed on one of the programmable buttons.</p> <p><b>Benefits:</b></p> <ul style="list-style-type: none"><li>• Warns of fault conditions in the system.</li><li>• Speeds troubleshooting and fault isolation.</li></ul> <p><b>Capacity:</b></p> <ul style="list-style-type: none"><li>• One alarm button per console.</li></ul>
<b>Alphanumeric Display</b>	<p>The LCD on the Attendant Console automatically displays the information shown in Table 6-1.</p> <p><b>Benefits:</b></p> <ul style="list-style-type: none"><li>• Gives users an easy-to-read visual reference of what they are dialing.</li></ul>
<b>Call Waiting Indicator</b>	<p>With this feature, the Attendant Console LCD display shows the number of terminating calls that are waiting to be answered by the attendant.</p> <p><b>Benefits:</b></p> <ul style="list-style-type: none"><li>• Improves attendant efficiency by indicating the number of calls waiting to be answered.</li></ul> <p><b>Applications:</b></p> <ul style="list-style-type: none"><li>• Organizations with high volumes of call traffic.</li></ul> <p><b>Capacity:</b></p> <ul style="list-style-type: none"><li>• Up to 99 calls can be waiting simultaneously.</li><li>• Over 100 calls are identified as "00" on display.</li></ul>
<b>Time/Day/Date</b>	<p>The LCD on the Attendant Console also displays time, day, and date information.</p> <p><b>Benefits:</b></p> <ul style="list-style-type: none"><li>• Convenient time and date reference.</li></ul> <p><b>Applications:</b></p> <ul style="list-style-type: none"><li>• Any Attendant Console where time and date information is necessary.</li></ul>



Table 6-1. Attendant Console Call Status Displays

MESSAGE										DESCRIPTION
B	U	S	Y							Busy (extension and trunk)
R	I	N	G							Ringing (for called party)
T	A	L	K							Talking
V	O	I	C	E						Voice call
R	E	T	R	Y						Misdial
C	O	N	F							Three-way conference
O	V	R	D							Override
D	O	N	E							Feature activated
C	N	C	L							Feature canceled
	R	P	D							Repertory dial
	S	C	C							Secondary common carrier access
	L	C	R							Least cost routing access
S	A	V	E							Saved number redial
	S	P	D							Speed dialing (speed calling)
A	C	C	T							Account code input
S	M	S	G							Silent message
C	A	L	L		B	A	C	K		Extension camp-on call back
N	O		A	N	S	W	E	R		No answer recall
P	R	K		R	E	C	A	L	L	Park recall
L	O	S	T		C	A	L	L		Lost call recall
C	A	L	L		B	A	C	K		Trunk camp-on call back
	A	C	D							ACD termination
H	U	N	T							Hunt group termination
T	I	E								Trunk name (tie)
C	O	T								Trunk name (CO)
F	X									Trunk name (FX)
W	A	T	S							Trunk name (WATS)
	P	A	G	E						Proprietary telephone/external paging access
P	K		U	P						Pick-up
S	E	R		C						Serial call
C	A	M	P							Attendant recall (camp-on)
P	A	R	K							Attendant recall (park)
H	O	L	D							Hold (attendant)
C	A	M	P							Extension camp-on register (attendant)

Table 6-1. Attendant Console Call Status Displays (Cont'd)

MESSAGE										DESCRIPTION
:	A									Call status indication (ACD)
:	R									Call status indication (ringing)
:	Rc									Call status indication (recall)
:	U									Call status indication (in use)
:	T									Call status indication (talk)
:	H									Call status indication (hold)
:	C									Call status indication (camp-on)
A	C	D		R	E	C	A	L	L	ACD recall
T	R	A	N	S						Transfer (attendant)
I	S	T								Trunk name (ISDN)
		I	S	T						ISDN access
		A	C	D						Attendant recall type indication (ACD)
		C	N	F	R					Attendant recall type indication (conference)
N	O	A	N	S						Attendant recall type indication (no answer)
		P	A	R	K					Attendant recall type indication (park)
		C	A	M	P					Attendant recall type indication (camp-on)
			M	S	G					Message waiting (attendant)
A	L	E	R	T						Extension lock-out
		C	H	R	G					Attendant recall type indication (charge)
:	G									Call status indication (charge)
V	.	M	S	G						VMC register
		P	L	A	Y					VMC playing
			R	E	C					VMC recording
A	A	-	T	O						Automated attendant time-out (recall)
A	A	-	V	N						Automated attendant (vacant number recall)
A	A	-	B	L						Automated attendant (busy recall)
			V	M	S					VMS information sending
			A	C	D					ACD queuing (calling party)
V	M	S								VMS calling

Table 6-1. Attendant Console Call Status Displays (Cont'd)

MESSAGE										DESCRIPTION
	D	N	I	S						DNIS termination
C	M	P		R	E	C	A	L	L	Camp-on recall
=	>									Attendant password input
				P	L	E	A	S	E	Attendant password input
	D	I	A							Attendant password input
			S	E	C	U	R	I	T	Attendant password input
Y		C	O	D	E					Attendant password input
S	-	M	N	T						Silent monitor
S	-	O	V	R						Silent monitor break-in
R	O	O	M		S	T	T			FDC main menu (room status) *
C	H	A	R	G	E					FDC main menu (call charge) *
W	A	K	E	-	U	P				FDC main menu (wake-up) *
D	N	D								FDC main menu (do not disturb) *
M	S	G		W	A	I	T			FDC main menu (message waiting) *
C	L	E	A	R						R-INF etc. (clear) *
M	E	N	U							R-INF etc. (menu) *
V	A	C	A	N	T					Room status change (vacant) *
O	C	C	U	P	I	E	D			Room status change (occupied) *
N	E	X	T		R	M				Next room *
C	L	E	A	N	-	U	P			Room status change (clean-up) *
W	K	-	U	P		N	A			Wake-up no answer *
R	E	G	I	S	T	E	R			WK-UP, DND, MSG, WT (register) *
A	D	D								Added call charge *
C	A	N	C	E	L					WK-UP, DND, MSG, WT (cancel) *
E	X	E	C	U	T	E				R-INF etc. (execute) *
P	R	I	N	T		A	L	L		Print call charge *
N	O		C	L	E	A	N			Room status change (no clean-up) *
N	O		M	S	G					DND (no message) *
P	R	I	N	T		G	S	T		Call charge (print guest) *
P	R	I	N	T		M	E	R		Call charge (print SMDR) *
M	E	R		N	O	C	L	R		Call charge (SMDR no clear) *

NOTE: The displays marked with an "\*" are Front Desk Console displays.

Table 6-1. Attendant Console Call Status Displays (Cont'd)

MESSAGE										DESCRIPTION
M	E	R		C	L	R				Call charge (SMDR clear) *
A	C	C	T		R	E	G			Call charge *
R	O	O	M		I	N	F			FDC main menu (room information) *
L	A	N	G	U	A	G	E			Room information (multi-language) *
R	E	S	T	R	I	C	T			Room information (COR) *

NOTE: The displays marked with an “\*” are Front Desk Console displays.

Table 6-1. Attendant Console Call Status Displays (Cont'd)

MESSAGE																DESCRIPTION						
															S	T	T	FDC room status change *				
															C	H	A	R	G	E	FDC charge *	
																W	K	-	U	P		FDC charge wake-up *
																T	M		R	M		Time reminder register *
																			D	N	D	FDC DND *
															M	S	G			W	T	FDC message waiting *
																		C	R	R		Controlled restriction register *
F	R	O	N	T		D	E	S	K		C	O	N	S	O	L	E					FDC main menu *
					V	A	C	A	N	T												FDC room status change (vacant) *
					O	C	C	U	P	I	E	D										FDC room status change (occupied) *
					N	E	E	D		C	L	N	-	U	P							FDC room status change (need clean-up) *
					L	O	C	K		O	U	T										FDC room status change (lock-out) *
					R	E	T	R	Y		W	K	-	U	P							FDC wake-up *
					D	N	D															FDC DND *
P	R	I	N	T																		FDC charge (print out) *
W	A	K	E	-	U	P																FDC wake-up *
T	I	M	E		R	E	M	I	N	D	E	R										Time reminder ringing *
					O	N																Do not disturb on
					O	F	F															Do not disturb off *

NOTE: The displays marked with an "\*" are Front Desk Console displays.

Table 6-1. Attendant Console Call Status Displays (Cont'd)

MESSAGE														DESCRIPTION					
					R	E	G	I	S	T	E	R						Do not disturb register *	
					C	A	N	C	E	L								Do not disturb cancel	
							E	R	R	O	R							R-INF etc. (error)	
C	L	O	C	K		F	A	I	L	U	R	E						FDC wake-up (clock failure)	
					C	L	E	A	N	-	U	P						FDC room status change (clean-up)	
					W	K	-	U	P		N	A						FDC room status change (wake-up no answer)	
					N	D		C	L	N		U	P	V				FDC room status change (need clean-up vacant)	
					N	D		C	L	N		U	P	O				FDC room status change (need clean-up occupied)	
														S	M	S	G	FDC message waiting	
														R	-	I	N	F	FDC room information
																	L	G	FDC room information

NOTE: The displays marked with an "\*" are Front Desk Console displays.

**Attendant Overflow** If the attendant experiences heavy traffic and incoming calls are kept waiting longer than a specified time or when the Attendant Console is in the position busy state, the calls are automatically routed to a designated station.

**Benefits:**

- Allows faster, more effective call management.
- Provides for handling external calls when the attendant is away from the Attendant Console.

**Attendant Password** This feature provides an operator with password capability when signing-on to and off from the Attendant Console. The console operator assigns the password for the Attendant Console by activating the feature through an access code.

**Benefits:**

- Unqualified persons are prevented from using the Attendant Console.

**Capacity:**

- One password per Attendant Console.

**Attendant DSS/BLF** When the DSS/BLF is installed accompanying an Attendant Console, the DSS/BLF shows the busy/idle status of each station by lamp. The Direct Station Selection feature of the DSS/BLF allows the attendant to automatically dial the station number assigned to a DSS/BLF button, providing one touch dialing to stations. The busy lamp feature displays the idle, off-hook, do not disturb, and ringing status of assigned stations.

If a call is transferred from the attendant that has a DSS/BLF assigned, the call may be retrieved by pressing the associated station that is showing the LED ringing pattern.

**Benefits:**

- Rapid handling of calls.
- Provides attendants with a quick visual reference of each station's busy status.

**Applications:**

- Most business environments.

**Attendant Transfer** When more than one attendant is installed in a system, this feature allows the transferring of calls to another Attendant Console from:

- CO lines.
- Tie lines.
- Station lines.

The following restrictions apply:

- Overflow transfer is not provided for attendant-to-attendant calls.
- Transfer is stopped if target attendant has a fault.
- Attendant transfer is not functional if the Hard Tenant feature is active and the two attendants belong to different tenants.  
(Transfer from any other tenant to a common tenant is possible.)

**Benefits:**

- More flexible means of call handling in multi-attendant applications.
- Improved support of tenant/executive suite situations.

**Attendant Voice Message** If an incoming CO or DID call to the attendant console terminates in the attendant queue and is not answered within a specific time, an attendant voice message can be sent to the caller. A second message may be sent after another time period elapses, if necessary.

The Recorded Voice Announcement card (RVAC) is required to implement this feature. One message is assigned for day answer message, one message for waiting message, one message for night answer message. Additionally, a music/message on hold may be programmed specifically for this feature.

**Capacity:**

- Total messages per system: 90.
- Total types of music on hold available per system: 10.



**Automatic Recall** This feature allows the Attendant Console to be automatically recalled when a call remains in one of the following states for more than a predetermined time:

- Camped-on.
- Ringing.
- On hold.
- Parked.

The attendant finds out the following information about the call by pressing and holding the **RECALL** button:

- The type of call.
- The type of recall.

The attendant can enter two-way communications with the recall source by releasing the **RECALL** button. If the recall is a conference call recall, an attendant can enter two-way communication with the destination party.

In addition, this feature allows the attendant to extend the call to another extension, take a message, or place the call on hold again.

**Benefits:**

- Provides efficient call handling.

**Applications:**

- Most business applications.

**Break-In** This feature allows the attendant to break into a conversation between two parties. The system sends a warning tone to the parties to notify them of the impending break-in. Breaking-in establishes a three-way conference with the two parties and the attendant. This feature may be assigned to one of the programmable feature buttons.

**Benefits:**

- Allows attendant to reach parties with priority messages.

**Applications:**

- Most business environments.

**Call Announce** This feature allows the attendant to announce call a station by activating the speaker on a digital or electronic station instead of by ringing. The call signaling option (tone ringing or voice announcing) is programmed on a system-wide basis; however, an individual attendant may elect to change the system option using the programmable **call announce** feature button. This feature is only available with digital and electronic stations, and with the Attendant Console.

If the system calling method is programmed for tone ring signaling, the attendant can change the calling method to voice announcing by pressing the **call announce** feature button. (This feature operation requires that both the attendant and the called station be programmed for voice calling.) If a speakerphone feature button is programmed, talkback from the called station is made automatically available during the call announce mode. If the station called is a DS20 or CT-10, the speaker is activated to announce the call. However, the called station must pick up the handset to talk to the attendant.

If the system calling method is programmed for voice announcing and the called station is programmed for call announce, the attendant can change the calling method to tone ringing by pressing the **call announce** button. Call Announce can be disabled at a station that otherwise would not want to receive call announce. A call announce on/off access code can be entered to enable or disable the feature.

**Benefits:**

- Allows internal stations to obtain advance notice of waiting calls.
- Feature is available on DS20, DS20S, DS20SD, DS32SD, CSD, and CT sets. (Some stations must answer by lifting the handset.)
- Allows flexibility when placing internal calls by providing the station user with a choice of calling methods.

**Applications:**

- Individuals who want station-to-station message communication where verbal response is required (e.g., boss/secretary situations).

**Call Park** This feature allows the attendant to park a call by assigning it an orbit number. The parked call can be retrieved by the orbit number from the station allowed by its COS. If the call is not retrieved within a predetermined time, the call is recalled to the attendant who parked it. This feature may be assigned to one of the programmable feature buttons.

**Benefits:**

- An unlimited number calls may be parked by one **PARK** button.

**Applications:**

- Most business applications.

**Call Splitting** Call Splitting allows the attendant to speak privately with either of two parties prior to connecting them together. The attendant can alternate between the source call and the destination call by means of the designated buttons on the Attendant Console. **SOURCE** and **DESTINATION** are fixed feature buttons on the Attendant Console.

**Benefits:**

- Private consultation between two parties.

**Applications:**

- Most business applications.

**Camp-On** This feature allows the attendant to camp on any call to a busy station. When the camped-on station becomes idle, the station will ring. The system sends a call waiting tone to the station when camp-on service is registered. If the station does not answer within a predetermined time, the camped-on call will return to the attendant via the **RECALL** button. The call may be immediately camped-on again by pressing the **CAMP-ON** button.

**Benefits:**

- Faster call connections.
- Saves time and improves productivity by eliminating repeated attempts to connect to a busy station.
- Reduces the number of callbacks and ensures that callers are not left waiting for extended periods of time.

**Applications:**

- Most business environments.
- Sales departments, catalog sales, parts departments, and service departments.

**Capacity:**

- 30 camped-on calls per system and one at a time per station.

**Conference** This feature allows the attendant to establish a three-way conference using the designated fixed feature button.

**Benefits:**

- Improves call processing.
- Provides a quick, easy way to distribute messages to both inside and outside sales representatives.

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**COS/COR (Class of Service/  
Class of Restriction)** During a conversation with a station user or a trunk call, the attendant can press a feature button and display the station's COS and COR or trunk's COS and COR on the Attendant Console. This feature may be assigned to a programmable button on the Attendant Console.

**Benefits:**

- Saves time; the attendant does not have to access the data base.
- Provides the attendant with single button access to a station's or a trunk's COS and COR.

**Directed Call Pick-Up** This feature allows an attendant to pick up a call ringing at a station by pressing the **STA. PICK-UP** button and dialing the ringing station number.

**Benefits:**

- Allows an attendant to answer a call ringing at a station close to the attendant.

**Applications:**

- Most businesses.

**Do Not Disturb Override** With this feature, the attendant can override and ring a station which has registered DND (Do Not Disturb). The feature may be assigned to a programmable feature button on the Attendant Console.

**Benefits:**

- Allows access to stations registering DND in emergency or important call situations.

**Capacity:**

- One **DND override** button per Attendant Console.

**Drop/Cancel** This feature allows both trunk and extension calls to be disconnected from the console by pressing the **DROP/CNCL** fixed feature button.

**Benefits:**

- Easy release of both trunk and extension calls.

**Applications:**

- Most business applications.

**Flash Button** The Flash feature button may produce a flash to access Centrex or Centranet features; or it may operate as a New Call feature, which disconnects from an outside call and allows the attendant to immediately place another call. This feature may be assigned to a programmable feature button.

**Benefits:**

- Saves time.
- Provides automatic access to outside lines.

**Applications:**

- Organizations that handle successive outside calls; e.g., Hotel/Motel applications.

**Floating Loop Keys** After an attendant responds to an incoming call with the **INCOMING**, **RECALL**, or **STA** button, the call can be processed with one of the following buttons:

- **POS.RLSE**
- **DROP/CNCL**
- **SUP.HOLD**
- **SER/LOCK**

The attendant can then respond to the next call.

**Benefits:**

- Faster call processing.

**Applications:**

- All business applications.

- 
- Hold** The attendant may place a call on hold by pressing the **HOLD** fixed feature button. The current call is automatically placed on hold (supervised loop) and is displayed on the Attendant Console LCD next to one of the six soft keys. Access to a call on hold is accomplished by pressing the soft key associated with the call on hold on the display.
- Station Hold** This feature allows an attendant to hold and answer a held station call. The feature also provides the capability for a joint connection between the attendant, the party currently in conversation, and a held station call.
- While in conversation with a station, the attendant can place the call on hold by pressing the **SUP/HOLD** button. To answer a held call, the attendant presses the loop key corresponding to the held call. To create a joint connection, the attendant presses the **CONF/JOIN** button during two-way conversation and then the loop key corresponding to the held call.
- The following restrictions apply:
- Recall of a held station does not overflow.
  - BLF lamp of DSS retains busy indication while held by attendant.
- Benefits:**
- Simplified call processing.
  - User friendly operation.
- INCOMING Button** This feature allows the attendant to answer incoming trunk calls using the fixed **INCOMING** feature button. An associated LED lamp lights when incoming trunk calls are presented to the console.
- Benefits:**
- Allows centralized control of incoming calls.
  - Increases flexibility in call routing.
- Individual Trunk Access** This feature allows an attendant to seize a specific trunk in a trunk group by dialing the trunk access code and equipment number assigned in the data base. This allows the attendant to test system trunks for proper operation.
- Benefits:**
- Enables maintenance of trunks.
  - More efficient system operation.
- Applications:**
- Most businesses.

**Message Leaving**

With this feature, the attendant can activate **MESSAGE WAITING** with or without a silent message to a digital or electronic station and single line telephone. The attendant can use this feature to leave a message before or after attempting to call the station. This feature may be assigned to a programmable feature button on the Attendant Console.

**NOTE:** Messages cannot be left at the Attendant Console.

**Benefits:**

- Reduces amount of time spent in “telephone tag” situations by providing an indication of a waiting message with the attendant.

**Applications:**

- Hotel/Motel.
- Stockbrokers, lawyers, or doctors who have large volumes of telephone traffic.

**Capacity:**

- One button per Attendant Console.

**Multiple Attendants**

The system allows up to eight Attendant Consoles to be installed. Load sharing among the consoles is provided.

**Benefits:**

- Increased tenant usage.
- Increased number of tenants with attendant capabilities.
- Enhanced call processing capabilities.

**Applications:**

- Marketing offices.
- Customer service areas.

**Capacity:**

- Eight Attendant Consoles.

**Night** With this feature, the attendant can activate the night mode for the system. Trunks and stations activate NCOS (Night Class or Service) and NCOR (Night Class or Restriction) for all tenants or for own tenant. All night features are invoked by pressing the programmable **night** button.

**Benefits:**

- Enhances management control of communications by providing different COS and COR options for night operations.

**Applications:**

- Organizations with night shift operations.

**Paging (External)** This feature allows the Attendant Console to access an external paging system. The external paging unit connects to the system via the 4BWC or 8BWC card and both loop or ground start signalling are supported. Up to nine paging zones may be assigned per system. An individual or all zone paging capability is available. Paging (External) may be activated from either a station or the attendant. This feature may be assigned to a programmable button on the Attendant Console, DS, or CT telephone.

**Benefits:**

- Allows attendant to communicate with employees who are away from their desks.
- Helps employees who are away from their desks to avoid missing important calls.

**Applications:**

- Doctors.
- Lawyers.
- Nursing homes.
- Sales offices.

**Paging (Station)** This feature allows the Attendant Console to page one of nine station paging zones or an all page to all zones. Paging is accomplished through the speakers in digital and electronic stations. Paging (Internal) can be activated from a station or the attendant. This feature may be assigned to a programmable button on the Attendant Console, DS, or CT telephone.

**Benefits:**

- Improves service by providing faster response time to calling parties.

**Applications:**

- Businesses (warehouses, showrooms, stockrooms).



<b>Paging (Station) (Cont'd)</b>	<p><b>Capacity:</b></p> <ul style="list-style-type: none"> <li>• Nine zones.</li> <li>• 36 stations/zone maximum.</li> </ul>
<b>Position Busy</b>	<p>With this feature, the Attendant Console can be put into an off-line (position busy) mode where it no longer functions as an answering position. This allows the attendant to leave the station or use the Attendant Console as a Master Control Telephone (MCT). Trunk and station calls still go to the overflow position, if assigned in data base.</p> <p><b>Benefits:</b></p> <ul style="list-style-type: none"> <li>• Permits system programming from an existing station.</li> <li>• Allows the transfer of call processing without having employees leave their desks.</li> </ul> <p><b>Applications:</b></p> <ul style="list-style-type: none"> <li>• Offices with heavy call traffic.</li> <li>• Offices that occasionally need to reprogram the system.</li> </ul>
<b>Position Release</b>	<p><b>Capacity:</b></p> <ul style="list-style-type: none"> <li>• One <b>POS.BUSY</b> button per Attendant Console.</li> </ul> <p>The <b>POS.RLSE</b> (Position Release) button releases the Attendant Console from a call and extends the transferred call to a station or trunk. This allows the attendant to remove the Attendant Console from a call without hanging up on the caller. The fixed <b>DROP/CNCL</b> (Drop/Cancel) button is used to disconnect the caller.</p> <p><b>Benefits:</b></p> <ul style="list-style-type: none"> <li>• Allows faster more efficient call handling.</li> <li>• Allows attendant to extend internal and external calls.</li> </ul> <p><b>Applications:</b></p> <ul style="list-style-type: none"> <li>• Organizations that need central call processing.</li> </ul> <p><b>Capacity:</b></p> <ul style="list-style-type: none"> <li>• One <b>POS.RLSE</b> button per Attendant Console.</li> <li>• Eight Attendant Consoles per system.</li> </ul>
<b>Programming</b>	<p>In addition to the normal attendant operation mode, an Attendant Console can be used for system programming. The Attendant Console can function as a Master Control Telephone or a Front Desk Console; both of these modes allow programming. Refer to the Data Base Manual for further details.</p>

**Save/Last Number Redial**

This feature has the following two functions:

- Saves a number.
- Repeats the last number dialed.

Activation of this feature automatically redials the saved or last number as in speed calling.

These functions are slightly different. Save is initiated by the attendant; Last Number Redial (LNR) is initiated by the system. The system automatically stores the last number dialed; this is termed Last Number Redial. If, however, the attendant wishes to store one particular number, Save can be used. Save overrides Last Number Redial; therefore, using Save prevents the system from storing the last number dialed.

Because the system automatically saves the last number dialed (unless using Save), the attendant may wish to reserve Save for situations where the saved number is repeatedly called with other numbers.

An attendant can activate this feature by pressing the fixed **SAVE/REPEAT** button, or by dialing an access code. Station numbers as well as external numbers can be saved.

**Benefits:**

- Improves productivity by allowing users to quickly access telephone numbers without redialing.

**Serial Call**

This feature is used when an incoming call has more than one internal destination. The attendant presses the fixed **SER/LOCK** button to release from the call and the call is extended to its destination. When the station is finished with the incoming call, it then returns to the console so that it may be extended to another station.

**Benefits:**

- Improves call management and efficiency, as the caller does not have to redial or have the called party attempt to transfer the call.

**Applications:**

- Businesses with sales departments, shipping and receiving departments, and credit departments operating in the same location.

**Capacity:**

- One button per Attendant Console.

**STATION Button** The fixed **STATION** feature button is used to answer incoming station or tie line calls to the Attendant Console. The **STATION** button also has an associated LED lamp which lights to indicate incoming station type calls.

**Benefits:**

- Allows centralized control of incoming calls.
- Increases flexibility in call routing.

**Station Lockout** With this feature, the attendant is allowed to lock out a station when time-out routing occurs. For example, when time-out routing to the attendant is executed due to a station remaining off-hook after receiving error tone, the attendant locks out the station from repeated calls to the Attendant Console by pressing the **SER/LOCK** button.

**Benefits:**

- Allows the attendant to lock out stations that are experiencing problems or have been left in a non-operational state.

**Applications:**

- Any business.
- Hotel/Motel and healthcare applications.

**Capacity:**

- One button per Attendant Console.

**Station Speed Calling** This feature allows the attendant access to station speed calling. Ten speed calling entries can be accessed by the attendant (0-9). Entries can be up to twenty digits in length. One entry may be assigned to a programmable feature button.

**Benefits:**

- Faster call processing.

**Applications:**

- Most business environments.

**Supervised Release** After responding to an incoming trunk call with the **INCOMING** button or **RECALL** button and processing it, the attendant can release and monitor the call using the **SUP/HOLD** button. The call is then associated with one of the six soft keys and is displayed on the LCD. The call can be retrieved by pressing the soft keys (adjacent to the display) indicated in the call display. Call supervision is extended to:

- Camp-on calls.
- Parked calls.
- Held calls.
- Calls extended to the station.

**NOTE:** Pressing the loop button will retrieve the call to the attendant.

**Benefits:**

- Monitors calls so they are not lost in the system.
- Provides monitoring of trunk status.
- Increases call handling capabilities.

**Applications:**

- Organizations handling a large number of calls through an Attendant Console.

**Capacity:**

- Six calls at a time.

**System Speed Calling** This feature allows attendants to access system speed calling. One thousand system speed calling entries may be assigned in the system (00-999). One entry may be assigned to a programmable feature button.

**Benefits:**

- Saves time and increases productivity by allowing the Attendant Console to dial an abbreviated number sequence to access frequently called numbers.

**Applications:**

- Telemarketing.
- Sales.
- Purchasing.

**NOTE:** The Attendant Console can program system speed calling entries through the Master Control Telephone function.

**Through Dialing**

This feature allows an attendant to seize a trunk on behalf of an extension. The attendant can then dial all or part of the destination number.

**Benefits:**

- Allows attendant to seize idle trunks.
- Increases the speed and efficiency of call processing.

**Applications:**

- Most businesses.

**Trunk Group Busy/Trunk Group Access**

This feature allows the attendant to access a busy trunk by pressing the trunk busy/trunk access button. The system then seizes an idle trunk in the assigned trunk group. This button lights when all trunks in a trunk group are busy. Only one trunk group can be assigned to a button.

This feature may be assigned to multiple programmable feature buttons to monitor and access several trunk groups.

**Benefits:**

- Improves the speed and efficiency of call management.
- Informs the attendant of trunk status and allows the seizure of idle trunks for call processing.

**Applications:**

- Brokerage firms.
- Telemarketing groups.

**Trunk Camp-On**

If the attendant seizes a trunk and busy tone sounds, the attendant can register trunk camp-on and wait in the on/off hook condition until a trunk becomes available.

As soon as a trunk becomes idle, the **RECALL** button on the Attendant Console indicates call back termination. This feature may also be assigned to a programmable feature button.

**Benefits:**

- Increases productivity by allowing the Attendant Console to handle call processing and pursue other business activities while waiting for a trunk to clear.

**Applications:**

- Business applications.

**Trunk Priority** This feature sets incoming trunk call priority so that the attendant can answer higher priority trunk calls first. The calls to be answered by the attendant are queued on a first in, first out basis (DID and CO calls only) on a trunk group basis. Trunk priority is assigned in the system data base.

Trunk priority calls are immediately moved to the attendant queue.

**Benefits:**

- Allows for more efficient call management by answering the highest priority calls first.

**Applications:**

- Sales, service organizations.
- Doctors.
- Emergency rooms.
- Police departments.
- Fire departments.

**Trunk-to-Trunk Connection** This feature allows the attendant to monitor disconnection after becoming idle from a trunk-to-trunk connection extended by an attendant or made through the mediation of an attendant. The attendant can also transfer a held party (with or without supervision) to an incoming trunk after a three-way conference.

**Benefits:**

- Avoids trunk lock-up and returns trunk to normal service.

**Applications:**

- Sales personnel.
- High traffic occupations.

**Volume Control** An attendant can adjust voice volume at any time with two **VOL** buttons. One button increases the voice volume, the other decreases the voice volume. Ringer volume is adjusted with the slide volume control located at the right rear of the Attendant Console.

**Benefits:**

- Meets the needs of attendants to adjust voice and ringer volumes at any time.

**Applications:**

- All applications where the Attendant Console is utilized.

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## KEY TELEPHONE SYSTEM FEATURES

The system can be configured to function as a complete or partial key telephone system. Trunks can be terminated directly to station buttons and stations can be configured to have the same trunk appearances. This provides features such as Common Hold to the system.

The DSS/BLF (Direct Station Selection/Busy Lamp Field) is an add-on module for a Proprietary Telephone. It receives all incoming trunk calls except those terminated to Proprietary Telephone buttons or direct-in lines. The DSS/BLF Console can be programmed in the data base to have all installed stations appear as button assignments when it is connected and paired with a Proprietary Telephone.

The different types of DSS/BLF available with a key system are:

- DSS/BLF 30: 30 buttons.
- DSS/BLF 40: 40 buttons.
- DSS/BLF 80: 80 buttons.

These buttons can be used to transfer a call to any station. The DSS/BLF 30, 40, and DSS/BLF 80 button maximum is 640. The total number of DSS/BLF 30, 40, and 80 consoles the system allows is sixteen.

**NOTE:** The DSS/BLF 30 is connected to an 8DTC or 16DTC card. The DSS/BLF 40 and 80 button consoles are connected to 8EKC cards.

The features listed below operate in basically the same manner as the corresponding station features and are not described in this section. (See the appropriate user guide(s) and quick reference guide(s) for operation of the features.)

- Alarm.
- Direct Station Selection (DSS).
- DSS External Page.
- Night Answer.
- Transfer Release (primarily a DSS feature).



**Alternate DSS** If the DSS/BLF Console has a button programmed as alternate, an alternate position is assigned in the data base. Calls are transferred to the alternate position when the operator presses the designated feature button.

**Benefits:**

- Prevents unanswered calls.
- Allows calls to be automatically routed to an alternate position.
- Prevents a back-up of calls at the DSS/BLF Console.

**Applications:**

- Offices that require coverage for vacant stations.
- Businesses with a high volume of calls.

**Capacity:**

- One button on each DSS/BLF Console.

**Common Hold with I-Use  
Indication**

The Common Hold feature allows all station users sharing a line appearance (trunk, PSL, OSL, ICM) to retrieve a call on hold utilizing the appropriate line button on their telephones. When a call is placed on hold, the LED associated with that line on all other stations will flash to indicate Common Hold status. The station user who put the call on hold receives an I-Hold flash on the LED associated with that line. Exclusive Hold is available and is activated by pressing the **HOLD** button twice. This prevents any other station from accessing the call. Exclusive Hold can be activated via data base command.

**Benefits:**

- Provides consoleless operation for small businesses.
- Emulates 10A2 key operation behind PBX.
- Addresses special needs of small businesses for common line appearances.

**Applications:**

- Organizations that require consoleless operation (hardware stores).
- Departments that require common line appearances (sales departments, reservation departments, service departments).

**Delayed Ringing** Trunks, ICM (Intercom) lines, PSL (Primary Station Lines), or OSLs (Other Station Lines) appearing at more than one station or on the DSS/BLF Console can be programmed to ring only after a predetermined period of time. The LED associated with the line appearance will flash, but ringing is initiated only after the call is unanswered at the primary station. Ringing can be delayed up to 255 seconds after initial ringing at the primary station. Ringing can also be stopped after a predetermined period of time.

**Benefits:**

- Stations designated as alternate answering positions can receive delayed ringing.
- DSS/BLF Console users are not distracted by incoming calls ringing for other users.
- Primary answering stations can be immediately notified of incoming calls.

**Applications:**

- Offices that direct back-up call coverage to groups.
- Businesses that require alternate answering positions.
- Organizations with a need to eliminate lost calls due to unstructured answering responsibilities.

**DSS Park** This feature allows the operator to activate or retrieve calls parked at the DSS/BLF Console. Each programmable **park** button holds one call. DSS parked calls can be retrieved from a station by using the parking number assigned at the DSS/BLF Console.

**Benefits:**

- Increases call handling capability by allowing the DSS/BLF Console operator to place calls in a hold status.

**Applications:**

- Offices with a high volume of calls.

**Capacity:**

- Five **park** buttons per DSS/BLF Console.

**DSS Camp-On** The DSS Camp-On feature camps an incoming trunk call onto a busy station. If the camp-on times out, the **camp-on** button flashes and recalls to the DSS/BLF Console. Only one call can be camped on with each **camp-on** button.

**Benefits:**

- Saves time and improves productivity by eliminating repeated attempts to connect calls to busy stations.

**Applications:**

- Offices with a high volume of calls.

**Capacity:**

- Five **camp-on** buttons per DSS/BLF Console.

**DSS Line Terminations** This feature allows trunks to be terminated on buttons on the DSS/BLF Console. Call origination and answering functions are identical to those of lines appearing on the button of a station. A maximum of 31 lines may be terminated on a DSS/BLF Console. The LED associated with each button provides line status (ringing, hold, and busy). Any line may have a combined total of 52 appearances in the system on station or DSS buttons. This parameter applies to any kind of trunk termination group, e.g., key system, but is not applicable to pooled facilities for hold/busy indication. In addition, the DSS can have OSL appearances.

**Benefits:**

- Utilization of vacant buttons on DSS/BLF Console.
- Expanded line appearances to accommodate medium size businesses and departments.

**Applications:**

- Businesses requiring multiple answering positions.
- Sales and service departments requiring multiple trunk appearances.

**Capacity:**

- 31 lines per DSS/BLF Console, first DSS/BLF only assigned on the first 30 buttons.

**DSS Speed Calling** Forty buttons on the DSS/BLF Console can be assigned for Station Speed Calling. A maximum of twenty digits can be registered for each Station Speed Call button. Only trunk calls can be assigned as station speed call numbers.

**Benefits:**

- Reduces the need to record and look up numbers.
- Vacant DSS/BLF buttons may be used for Station Speed Calling.
- Single-button access to frequently dialed numbers.
- Addresses the needs of station users requiring a large number of Station Speed Call buttons.

**Applications:**

- Executives requiring more than ten Station Speed Call numbers.
- Telemarketing groups who frequently call the same customers.
- Secretaries responsible for establishing calls for executives.
- Station users who frequently dial multi-digit numbers; e.g., long distance, SCC (Special Common Carrier), and personal authorization codes, etc.

**Capacity:**

- 20 digits per number.
- 40 numbers per DSS/BLF Console; if two DSS/BLFs are paired with a station, only the first DSS/BLF can have speed calling numbers assigned.

**Flash/New Call** When the system is operating behind a PBX, pressing the **Flash/NEW CALL** button sends a flash indication to the host PBX. Press the **Flash/NEW CALL** button twice to disconnect a trunk call in progress and re seize the trunk.

**Benefits:**

- Reduces the chance of accidentally disconnecting a call when operating behind a PBX.
- Reduces need for multiple operations by the DSS/BLF Console user when placing successive calls.

**Applications:**

- System operating behind a host PBX or Centrex system.
- DSS/BLF Console users originating successive calls (telemarketing groups).

**Headset** A feature button on the station can be programmed to simulate the hookswitch flash operation. This allows the DSS/BLF station user to utilize a headset.

The following headsets can be used without headset adapters:

- Plantronics Starmate E Plus.
- Danavox Stetomike HMT808 Model 3560 Electret Transmitter.

**Benefits:**

- Provides handsfree operation.
- Allows headset to be used without having to use the hookswitch to disconnect calls.

**Applications:**

- Telemarketing groups.
- Catalog departments.
- Sales departments.
- Service departments.
- Reservation departments.

**Idle Line/Ringing Line Preference**

A station user can designate the idle and ringing line preference for a station if allowed by COS (Class of Service). Ringing Line Preference eliminates the need for the user to manually press the line, ICM, PSL, or OSL button to answer an incoming call. Going off-hook automatically connects the user to the ringing line. Idle Line Preference can be established to automatically seize an idle trunk, ICM, PSL, or OSL button upon going off-hook. This eliminates the need for the user to select a button to originate a call. Idle line selection is based on the appearance of the trunks on the station buttons from lowest to highest button number for trunks.

**Benefits:**

- Simplifies operation, saves time.
- User-programmable to meet changing needs.

**Applications:**

- Executives who need immediate line access.
- Station users who have dedicated lines.
- Station users with multiple line appearance and ICM buttons.

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<b>Intercom Line Origination/ Termination</b>	<p>This feature allows a station user to originate and terminate station-to-station calls by pressing the ICM button on Proprietary telephones.</p>
	<b>Capacity:</b>
	<ul style="list-style-type: none"><li>• One ICM button per Proprietary telephone.</li></ul>
<b>Key System Line Access by Trunk Access Code</b>	<p>This feature lets station users dial a trunk access code to seize a trunk registered as a key system line within a trunk group.</p>
	<b>Benefits:</b>
	<ul style="list-style-type: none"><li>• Allows SLT users access to key system lines.</li></ul>
	<b>Applications:</b>
	<ul style="list-style-type: none"><li>• Key system operation.</li></ul>
<b>One-Touch Selection</b>	<p>This feature allows a station user to originate or answer trunk or station calls by pressing one button. The station user presses the programmable <b>intercom group</b> button when the station is in the idle condition to automatically seize the speaker or monitor on proprietary telephones.</p>
	<b>Benefits:</b>
	<ul style="list-style-type: none"><li>• Allows one-touch internal station calls.</li><li>• Permits one-touch access to station features.</li><li>• Increases line capability of individual stations.</li></ul>
	<b>Applications:</b>
	<ul style="list-style-type: none"><li>• Any organization requiring internal station-to-station calls.</li></ul>
<b>Postselection/Preselection</b>	<p>The station user manually selects the Intercom, PSL, OSL, or line to be accessed by pressing a button. Postselection allows the user to select the appropriate facility after going off-hook. Preselection allows the user to select the appropriate facility before going on-hook.</p>
	<b>Benefits:</b>
	<ul style="list-style-type: none"><li>• Appropriate facility may be selected on-hook or off-hook.</li><li>• User-friendly; does not matter when the user makes the line selection.</li><li>• Programmable to meet changing needs.</li><li>• User may selectively decide which facility to use for each incoming or outgoing call.</li></ul>
	<b>Applications:</b>
	<ul style="list-style-type: none"><li>• Individuals who want to select the appropriate facility based on the type of outgoing call being generated or incoming call being answered.</li></ul>

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**Prime Line Preference**

This feature automatically selects the line, PSL, OSL, or Intercom button designated as the prime line when the station user goes off-hook. Both ringing line and idle line preference must be assigned in order to designate the prime line preference.

**Benefits:**

- Simplifies operation for originating calls when using an SLT (Single Line Telephone).

**Applications:**

- Individuals who initiate a large volume of outside or intercom calls.
- Individuals who have a dedicated line.

**Privacy/Privacy Release**

Privacy is an inherent factor in a conversation on any key system line, PSL, or OSL call. While in a two-party conversation on a line, the station user can activate the programmable **privacy release** button. Other stations with an appearance of that line receive a common hold indication. One station user can then enter the two-way conversation by pressing the appropriate line button.

**Benefits:**

- Complete user privacy on all calls (Automatic Privacy).
- User may selectively allow a third station to enter the conversation when necessary (Privacy Release).

**Applications:**

- Businesses where telephone security is a concern.
- Individuals who require three-party conferences; e.g., sales representatives, sales manager, and customers.

**Capacity:**

- One button per station.

**Programming from Station**

This feature allows the station user to program station features to the buttons on the telephone. Features other than trunk, intercom, PSL, OSL, or ICM group appearances may be programmed by the user. The station user dials an access code, presses the feature button to be changed, and enters the necessary information. This feature can be COS restricted.

**Benefits:**

- Allows utilization of vacant buttons for station features.
- Provides user with control of the features assigned to the telephone.
- Reduces the responsibility of the System Administrator for programming station feature buttons.
- Allows Telecom Manager to reprogram feature buttons without an MCT on premises.
- Provides flexibility to meet changing user needs.

**Applications:**

- Station users whose responsibilities and duties frequently change.

**Repertory Dialing**

This feature provides a Repertory Dial button on Proprietary telephones. Up to twenty digits can be registered on each button. When a user presses this button, the system performs in the same manner as when registered digits are dialed on a Proprietary telephone key pad.

**Benefits:**

- Increased productivity.
- Ensures accuracy when dialing a frequently called number.
- Saves time by allowing one-button access to frequently dialed numbers.

**Applications:**

- All business/sales environments.

**Capacity:**

- 20 digits per Repertory Dial button.
- 16 buttons per Proprietary telephone.



**Ringling Line Preference**

This feature automatically selects a ringing line or PSL/OSL/ICM group, including a recalling line when the Proprietary telephone goes off-hook. Either an ICM and/or trunk line is selected as the line preference. When multiple lines are ringing, the line having the highest priority is selected.

**Benefits:**

- Saves time; single button activation not necessary.
- Automatic select sequencing.
- User programmability through access codes provides more efficient handling of calls.

**Applications:**

- Airlines, telemarketing, customer service.

**Square Configuration**

Each key system line can appear on 52 buttons in the system. With the DSS/BLF 30, up to 72 appearances are possible. Lines can be assigned to feature buttons on the Proprietary telephone or vacant buttons on the DSS/BLF Console. The system accommodates a maximum of 52 lines with the basic system configuration. Thirty-one lines can be assigned to any DSS/BLF 40/80 button console.

**Benefits:**

- Provides common access to multiple key system lines.
- Provides multiple answering positions.
- Addresses small business needs and departmental needs to access common lines.

**Applications:**

- Organizations with multiple lines and several coverage positions (car dealers, service bureaus, reservation centers).

**Capacity:**

- 31 lines per DSS/BLF Console (first DSS/BLF only).
- 52 appearances per trunk.
- Sixteen DSS/BLF (30/40/80) consoles per system.

## HOTEL/MOTEL FEATURE PACKAGE

The Hotel/Motel feature package is designed to meet the unique requirements of the Hotel/Motel industry. The feature package assigns an Attendant Console, and/or a CSD paired with a DSS/BLF Console (functioning as a Room Status Indicator), to operate as an FDC (Front Desk Console). A printer is an optional feature that can operate with the FDC. Configuration flexibility makes the system an economic reality for any Hotel/Motel operation regardless of size.

The following features are unique to the Hotel/Motel feature package:

### Front Desk Program

A Front Desk Program button can be assigned to a CSD or Attendant Console. This assignment makes the CSD or Attendant Console an FDC (Front Desk Console).

**NOTE:** The CT-20, CT-30, DS20SD, or DS32SD can be used for front desk functions, but individual feature buttons must be assigned for each function.

### Benefits:

- Single-button access to Hotel/Motel features.
- User-friendly programmability of guest room stations.
- Both CSD and Attendant Console can serve as FDC simply by assigning a feature button.

### Applications:

- CT-20, CT-30, DS20SD, and DS32SD with RSI (Room Status Indicator) for small Hotel/Motel operations.
- Guest room services may be handled by an alternate position for medium/large Hotel/Motel operations.

**Automatic Wake-Up**

This feature enables registration of wake-up service from a guest room station or the FDC (Front Desk Console). Automatic Wake-Up provides for automatic ringing of a guest room station at a predetermined time. When the guest answers the wake-up call, a distinctive tone/music is heard. With the RVAC card, a recorded announcement is sent.

If no answer is received on the first attempt, a second call is rung in 2.5 minutes. If the second call is not answered, the wake-up call is automatically canceled. If the station being called for wake-up is busy, the system checks the station status every 25 seconds up to 2.5 minutes; if the station is still busy, the system cancels the wake-up call. Wake-up time is registered in the 24-hour format.

The Hotel/Motel printer prints out the status of registration and cancellation. Evidence of definite call completion, alarm messages, or a failed call are also printed out.

**Benefits:**

- Eliminates employee time required to manually place wake-up calls.
- Assures guests they will receive a wake-up call (no human error).
- Printed documentation of wake-up service (e.g., answer, no answer).
- User-friendly operation from FDC, guest room telephone.

**Applications:**

- Hotels/Motels that want to provide full service features.

**Capacity:**

- Number of terminals in one five minute time frame - maximum of 40 SLTs and 80 Proprietary telephones.
- Number of simultaneous ringing terminals - maximum of eight SLTs (Single Line Telephones) and sixteen Proprietary telephones.

**Call Charge Message  
Registration**

This is an accounting feature that totals the charges for local calls originated by the guest room stations. The charge for each station can be displayed on the FDC. The charging date, guest room station number, and message registration (charge) can be obtained as a hard-copy printout if the system is equipped with a Hotel/Motel printer.

**Benefits:**

- Increased profits through resale of facilities.
- Flexibility to establish rate tables for multiple facilities.

**Applications:**

- Hotel/Motel resale of telephone services.
- Healthcare and hospitals.

**Call Controlled Restriction**

This feature allows the FDC to control the restriction for outgoing trunk calls and/or station-to-station calls for specific classes of service. This feature can be activated with a feature button or an access code. The types of call restriction are:

- Incoming station to station calls.
- All incoming calls.
- All outgoing calls.
- All incoming and outgoing calls.

**Benefits:**

- Public areas and vacant rooms can be restricted to internal calls only.
- Flexibility to accommodate station calling requirements as business needs change.

**Applications:**

- Hotels/Motels that offer conference room services.
- Hotel/Motel convention floors.
- Hotel/Motel meeting rooms.

**Capacity:**

- All four restrictions may be registered to a single Class of Service.

**DND/DND Override  
by FDC or ATT**

With this feature, the FDC operator can register or cancel DND (Do Not Disturb) for each guest room station. All incoming calls are restricted by the Do Not Disturb state. Wake-Up, Silent Messages, and Message Waiting services are operational when Do Not Disturb is registered.

**Benefits:**

- Assures guests of privacy when desired.
- Eliminates wrong number calls.

**Applications:**

- Conference or meeting rooms.
- Guests who sleep during daytime hours.
- Private meetings held in guest rooms or suites.

**Capacity:**

- One DND mode may be registered per station.

**Hotel/Motel Printers**

Up to two printers for printing out Hotel/Motel related information can be installed in the system. The printer is connected to a DIU (Data Interface Unit) or CSD with DTA (Data Terminal Adapter). System messages are sent through the 4CHT card.

**Benefits:**

- Saves time in check-in/check-out processing.
- Provides a printed copy of guests' charges.

**Applications:**

- All Hotel/Motel or lodging industry operations.
- Healthcare facilities and hospitals.

**Capacity:**

- Two printers per system.

**Hotline to Attendant** This feature allows special stations to be directly connected to the Attendant Console upon being taken off-hook by the user.

Dial tone is not heard on these stations.

Any call can terminate to the station which is programmed as an Attendant Hotline.

**Benefits:**

- Allows immediate access to the attendant from designated stations.

**Applications:**

- Hotel/Motel lobbies, laundry rooms, etc.

**Message Registration** This accounting feature adds the charges for local calls originated by a guest room station. The charge for each call can be viewed at the Front Desk Console.

**Benefits:**

- Allows charges for local calls to be automatically accounted.

**Applications:**

- Hotel/Motel environments.

**Message Waiting** This feature allows the attendant at the FDC to register and cancel messages waiting for each guest room.

**Benefits:**

- Saves time in the message leaving and check-out processes.
- Easy to activate via FDC; no extra feature buttons required.
- Increases guest satisfaction by providing more personalized service.

**Applications:**

- Hotel/Motel telephones in guest rooms.
- Hotels/Motels that want to provide full service features.

**Room Information for  
Multi-Language Wake-Up**

When a guest checks-in to a hotel, the front desk attendant can select one of ten messages for the guest to receive during their stay. Messages can be individually recorded by the hotel staff to deliver specific group information or recorded in a foreign visitor's language. The wake-up message can be selected using one of the following methods:

- A feature access code from a COS enabled station or Attendant Console.
- Front Desk Console operation on an Attendant Console or CSD.
- A Property Management System (PMS).

**Benefits:**

- Improved customer service.

**Applications:**

- Hotels with convention or group tour business.
- Hotels receiving foreign guests.

**Room Information for  
Room Restriction**

This feature allows a user at a Front Desk Console, telephone, Attendant Console, or a PMS, to change the Class of Restriction of a guest room in order to restrict outgoing calls from a particular guest room telephone.

**Benefits:**

- Classes of Restriction of both day and night mode are assigned the same value.
- A particular Class of Restriction can be assigned to a guest room upon check-in.

**Applications:**

- Cash paying customers not allowed to bill charges to their rooms.

**Room Number Correlation** The system can be programmed to match station numbers and room numbers. It then becomes unnecessary to check the station number so long as the room number is known. This feature accommodates:

- One- to four-digit numbering plan.
- Room number-to-station number correlation.
- Station numbers prefixed with floor number.

**Benefits:**

- Simplified room to room calling.
- Simplified telephone usage for guests; easy to remember telephone number.

**Applications:**

- Healthcare/hospitals.
- Hotels/Motels where rooms are located on different floors or buildings.

**Room Status** This feature allows the attendant at the FDC to change or verify the room status for each guest room. The following room status information can be read or displayed from the FDC:

- Vacant.
- Occupied.
- Need clean-up.
  - Vacant status (data base option)
  - Occupied status (data base option)
- Wake-up no answer (data base option).

This status information is shown on the Room Status Indicator corresponding to the guest room number. Each of the room status types can also be displayed on the LCD display of the FDC. All the status types can be changed by the FDC.

**Benefits:**

- Increased room occupancy rate resulting from immediate indication of available rooms.
- Eliminates call abuse from vacant rooms (data base option).
- Reduces need for a separate property management system.
- Reduces time required to register guest.
- Allows housekeeping to change clean-up status directly from the room.
- Reduces time required to identify vacant rooms which require immediate clean-up.

**Applications:**

- Hotels/Motels.



**Room Status Indicator** This feature provides for room status to be visually identified by means of a Room Status Indicator. The lamps on the DSS/BLF Console when assigned as an FDC can be used as a Room Status Indicator (data base option).

**Benefits:**

- Provides information on room status.
- Provides visual indication of guest rooms that did not respond to wake-up calls and rooms that need employee attention.

**Applications:**

- Hotels/Motels.

**Capacity:**

- Eighteen per system - 6 RSIs x 3 groups. (When DSS 100s are used as RSIs, one of the ten screens is regarded as one RSI.)

**Room-to-Room Blocking** The system can be programmed to prevent system-wide room-to-room calling. Guests can originate and receive outside calls but cannot place calls to other guest rooms without going through the FDC, through any attendant, or through a primary answering position.

**Benefits:**

- Ensures guest privacy from wrong numbers.
- Reduces nuisance calls within the Hotel/Motel.

**Applications:**

- Hotels/Motels that desire to control all room-to-room calling.
- Hotels/Motels that offer full service privacy to guests.

**Service Call Routing** This feature is an enhanced version of the Special Service Codes feature. For example, dialing a one- to four-digit service code (the service code - not including any additional numbers - can be up to four digits in length) to receive maid service causes automatic connection to the station of the maid in charge of the caller's floor. Each service location can receive calls from up to twenty floors.

**Benefits:**

- Calls for guest services are routed directly to the station assigned to the caller's floor, thereby reducing response time.
- Improved employee productivity as calls are routed to appropriate personnel.

**Applications:**

- Healthcare/hospitals.
- Hotels with executive floors.
- Medium/large Hotels/Motels with departmental responsibility allocated to specific areas.

**Single Digit Dialing** This feature allows all stations, including guest rooms, to dial a single digit to route calls or to obtain services. For example, in the Hotel/Motel package, numbers may be assigned for guests to call for service or for directly dialing other rooms.

The following is a typical example of a hotel/motel single digit numbering plan:

1: Front Desk	6: Room Service
2: Bell Boy	7: Message
3: Laundry	8: Lobby
4: Restaurant	9: CO Line
5: Bar	0: Operator

**Applications:**

- Hotels/Motels.
- Hospitals and nursing homes.

**Special Service Codes** With this feature, dialing a one- to four-digit Special Service Code enables the guest room station to access special services such as room service, cocktail lounge, or housekeeping. Up to ten special service codes can be assigned. (Refer also to Service Call Routing.)

**Time Out Routing to Attendant** If a guest room station user goes off-hook and does not go on-hook after receiving an error tone, the system automatically routes the call to the Attendant Console after a predetermined time (programmable in data base). This feature is controlled by station COS (Class of Service).

**Benefits:**

- Alerts the attendant of a possible emergency situation.

**Vacant Room Restriction** When this feature is activated and vacant room status is registered, the system automatically restricts CO (Central Office) trunk and station incoming and outgoing calls. This feature is an option in the data base.

**Benefits:**

- Eliminates calling abuse from vacant rooms.
- Reduces possibility of incoming calls being directed to vacant rooms.
- Increases productivity of hotel staff by restricting personal calls made from guest rooms during work hours.

**Applications:**

- Hotels/Motels using room status.
- Hospitals and nursing homes.

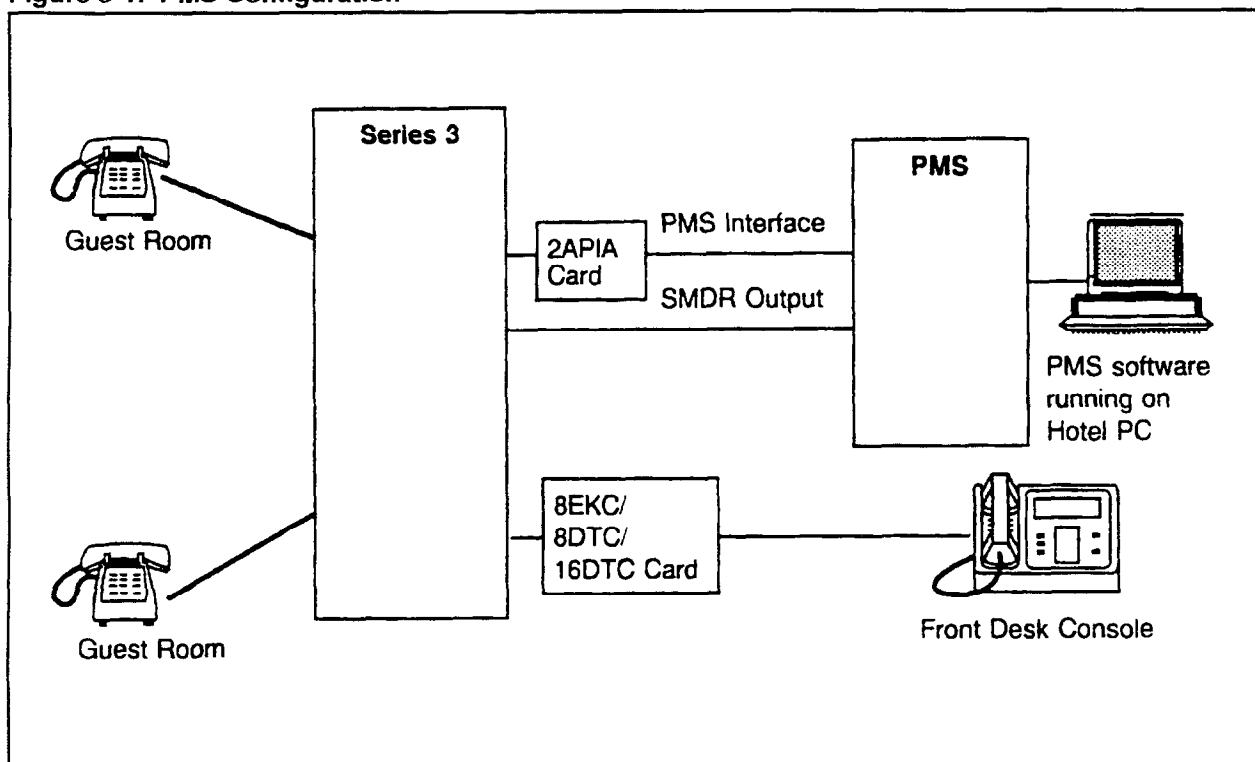
### PROPERTY MANAGEMENT SYSTEM INTERFACE

The Property Management System Interface (PMSI) provides integrated features for Hotel/Motel management to accompany the Hotel/Motel feature package. Only one Property Management System (PMS) may be interfaced. The main features provided by this interface include:

- Maid status.
- Message waiting.
- Check in/out.
- Wake-up (multi-language).
- Guest information (guest name and language code).

Figure 8-1 shows the PMS system configuration.

Figure 8-1. PMS Configuration



The billing information may be passed to PMS through the I/O port as Station Message Detail Recording (SMDR) output.

**General Conditions** The following general conditions should be considered when using the PMS interface:

- Data base changes, such as guest room numbers, should be synchronized between the PBX and the PMS.
- Check in/check out should not be made through the Front Desk Console.
- PMS is not available for business extensions.
- Information is sent by the PBX only when extensions are installed as guest rooms.

Table 8-1 shows PMS features available on specific equipment:

**Table 8-1. PMS Features on Available Equipment**

FEATURE	SUPPORTED BY PMS	AVAILABLE EQUIPMENT	
		PMS CONSOLE	FDC
Maid Status	X	X (*1)	
Message Waiting	X	X	X
Check In/Out	X	X	(*2)
Control of Restriction	X	X	X
Wake-Up (Multi-Language)	X	X	X
Guest Name Display	X	X	
Do Not Disturb			X
Call Billing		X (*3)	X (*3)

**NOTES:**

1. Maid Status is entered by using guest room telephones.
2. If both the PMS console and the FDC are simultaneously used to implement these functions, the data base of the PBX might be inconsistent with the PMS data base.
3. Alternatively used. Either PMS console or FDC should be used.

**PMS and PBX Interface**

An application processor interface (2APIA) card is used to interface between the PMS and the PBX. Chapter 2 describes where the 2APIA card may be installed. There is a port on the 2APIA card for an RS-232C cable which connects to the PC running the PMS software. Table 8-2 shows the interface specifications:

**Table 8-2. PMS and PBX Interface Specifications**

DEFINITIONS	PARAMETER VALUES
Data Speed	300, 600, 1200, 2400, 4800
Type of Synchronization	Asynchronous (fixed)
Type of Communications	Full Duplex (fixed)
Control Signaling	SD, RD, DTR, DSR, RTS
Length of Start Bit	1 (fixed)
Length of Stop Bit	1/1.5/2
Length of Word	8 (fixed)
Parity Bit	Odd/Even/None
Error Correction	BCC
Data Code	4-bit Nibble
Mode	DTE Mode

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## DATA SWITCHING FEATURES

With the Data Switching option, the system can transmit simultaneous voice and data communications. The data option requires:

- DIU as a standalone unit.
- CT-10/20/30 coupled with a DIU.
- DS20, DS20S, DS20SD, DS32SD coupled with a DIU.
- CSD telephone with a DTA (Data Terminal Adapter) installed.

A high speed, end-to-end, digital nonblocking communication path is provided in the system.

Each CSD with a DTA is programmed for data and connected to a data terminal. Each CSD has a data terminal number assigned to it that is paired with its voice extension in the system.

The data option can accommodate asynchronous or synchronous data in half or full duplex operation at speeds up to 19.2 kbps.

The system's data communications network uses a "Star" type approach to network design. The system acts as the central point for interconnecting different users for the processing of data information.



**DATA SWITCHING  
FEATURES (Cont'd)**

For each data station, the following parameters can be assigned through the data base software:

- Data transmission modes:
  - Data terminal speed (up to 19.2 kbps)
  - Synchronous or asynchronous
  - Half or full duplex
- Character dialing mode:
  - Stop bit
  - Word length
  - Parity
- Call control mode:
  - Originate mode (automatic or manual)
  - Answer mode (automatic or manual)
  - Disconnect mode (automatic or manual)
- RS-232C signal mode:
  - DTR (Data Terminal Ready)
  - RTS (Ready to Send)
  - RI (Ringer Indicator)
  - DSR (Data Set Ready)

Data terminal speed and answer mode can be changed from the proprietary telephone associated with the DTA/DIU.

**Add Data Call** This feature provides the station user with the ability to add a data call to an existing voice conversation. To set up a data call with a voice conversation, the station user presses the programmable **add data** button or presses the **DATA CALL** button and dials an access code. Pressing the **add data** button changes the LCD display on CT-20, CT-30, DS20SD, DS32SD, and CSD sets to display data information without interrupting the voice transmission during data call set-up.

**Benefits:**

- Saves time by allowing a station user to add a data call to a voice call by simply pressing a button.
- Increases communications capability by providing the station user with the flexibility to add a data call to a voice conversation.

**Applications:**

- Customer service information entry. Information entry may be initiated only when required.

**Alternate Telephone and Keyboard Dialing**

This feature allows a user to originate a data call by dialing from the Proprietary telephone key pad or entering the phone number from a data terminal. The station must first be set for keyboard dialing via CMC command. A DTA or DIU is required.

**Benefits:**

- Allows an ASCII terminal, used as a standalone data terminal, to initiate a data call with keyboard commands only, saving the user from having to use a telephone.
- Allows a Proprietary telephone to initiate a data call without requiring access to the attached data terminal.

**Applications:**

- Electronic mail users.
- On-line data base retrieval; e.g., stock and insurance brokers.

**Alternate Voice/Data Communication**

This feature allows a proprietary telephone user to switch from a voice call to a data call and vice versa while the call is in progress. The voice line must be associated with a data line (DTA or DIU) via an appropriate pooled modem. The following operations are possible:

**Voice to Data (Originate/Incoming):** Upon completion of the voice portion of a call, the user can press the programmable **voice/data** button to send or receive data. The call is transferred to the data terminal as a data call. The **voice/data** button is ignored if the modem pool is busy. To disconnect the data call, press the **DATA CALL** button.

**Data to Voice:** Upon completion of data communication, the user can press the **voice/data** button to transfer the call to the voice station (Proprietary telephone). When the data terminal is busy (sending or receiving data), the **voice/data** button is ignored.

**Benefits:**

- Allows users to verify with voice call that data call is to be initiated. Initiating the data call does not require a new call (voice to data).
- Allows users to verify that data transmitted was received without initiating a new call (data to voice).

**Applications:**

- Inter-office/department data transfer where voice confirmation contact is desired.
- Organizations that receive inventory, sales or other data from remote locations.

**Automatic Answer**

When a call is placed to a data set which is in the Automatic Answer mode, the data set can automatically answer the call. The data set must be placed in the DTR condition to operate in Automatic Answer mode. A DIU or DTA is required.

**Benefits:**

- Allows unattended data communication with remote terminals.

**Applications:**

- Inter-office/department data transfer.

- Call Control Mode** The system provides three different call control modes in either automatic or manual operation. The three calling modes are originate, answer, and disconnect. A DTA is required.
- **Originate:** Data calls can be set up on the system data stations in either Auto Originate or Manual Originate mode. The Auto Originate or Manual Originate option is set in the data base for each data station. The standalone DIU must be set up for data hotline to originate a call. Using the Hotline feature, Auto Originate provides one-button access to only one data station. Auto Originate operates just like one-button dedicated speed calling; however, only one data station may be accessed. Calls can be released using Manual Disconnect only. Manual Originate requires the input of the receiving station number.
  - **Answer:** When an incoming call is placed to a CSD with a DTA, a CT-10/20/30 with a DIU, a DS20, DS20S, DS20SD, or DS32SD with a DIU, or a standalone DIU in the Auto Answer mode, the data set can automatically answer the call. This option is set in the data base and can be changed from Auto Answer to Manual Answer by using the Data Change feature. Manual Answer requires the user to press the **DATA CALL** feature button to answer a data call.
  - **Disconnect:** Auto Disconnect is a data base selected option. When the remote party disconnects a data call, the data station automatically disconnects from the call. In the manual mode, both stations must disconnect from the call independently.

**Benefits:**

- User friendly operation reduces need for extensive user training (non-productive employee time, user frustration).
- With Auto Answer and Disconnect, remote locations can automatically download information when phone rates are lowest.

**Applications:**

- Electronic mail (Auto Answer and Auto Disconnect).
- Organizations that receive inventory, sales, or other reports from remote locations (Auto Answer and Auto Disconnect).

**Data Call Detail Recording**

Data Call Detail Recording (DCDR) provides a local hard copy printout of statistics of outgoing calls. DCDR is used to manage expenses and identify unauthorized calls. A DIU or DTA is required. The following information is printed for every outgoing call:

- Data call identification.
- Time of call origination.
- Call duration (hours, minutes, seconds).
- Originating station number.
- Trunk number.
- Calling party identification.
- Directory number dialed.
- Account code.
- Modem group ID.

DCDR also provides a screening capability for the following:

- Account code calls only.
- Toll calls only.
- Overtime calls only.
- Trunk selection.
- Station selection.
- Modem group screening.

If the outgoing call satisfies any of the screening items, the communication information is not printed.

DCDR is provided in addition to SMDR for voice calls. In the case of simultaneous voice/data communication, DCDR and SMDR are output separately.

**Benefits:**

- Provides record of telephone usage for billback to departments or tenants.
- Provides accounting management tool for allocation of telephone expenses.
- Identifies areas for system or feature upgrade.
- Provides record of telephone call duration which can be used in making budgetary and planning forecasts.
- Prevents telephone abuse and misuse by identifying unauthorized outgoing calls.
- Provides an evaluation tool to measure amount of data communication traffic.

**Applications:**

- All businesses who want to track data call statistics.

**Data Call Set-Up (External)  
via Modem Pooling**

This feature allows a local data terminal to connect to a remote data terminal through a conventional analog modem which is pooled in the system. Data call set-up using a CT-10/20/30, DS20, DS20S, DS20SD, DS32SD, or CSD, and terminal keyboard are available with this feature. The data call set-up operation is similar to that of an internal data call except for the need to dial a trunk access code and outside directory number.

Modems are arranged in groups, each group having the same attributes. Attributes are:

- Communication mode (full or half duplex).
- Data speed (baud rate).
- Modem type (15 types).
- Operation mode (incoming, outgoing, or bothway).

When the user places a data call to a remote data terminal, the system automatically selects a modem from a modem group having the same attributes as the calling data station. On an incoming call, the system selects a modem from the modem group with the same attributes as the called data station.

To originate a call from a Proprietary telephone, activate Data Terminal Ready (DTR) on the data terminal and press the **DATA CALL** button. Dial the CO access code and the outside station directory number. The system selects the modem with appropriate attributes for the originating data station. When the called data station answers the call, data communication begins.

For incoming data calls, two answering methods are possible; automatic or manual. In automatic mode, the call is received directly by the data station via Direct-In Line, DID, or DISA. In manual mode, the outside call arrives at a voice station and is transferred to the data station by Alternate Voice/Data procedures (see the Alternate Voice/Data Communication feature in this chapter).

**Benefits:**

- Saves on equipment costs by sharing (pooling) modems.
- Eliminates PC to modem wiring by using existing telephone wiring.

**Applications:**

- Businesses that transfer data frequently between remote locations.

**Capacity:**

- Modems per modem group: Maximum 80.
- Modem groups per system: Maximum 15.

**Data Call Set-Up  
(Internal) with CSD,  
CT-10/20/30, DS20,  
DS20S, DS20SD,  
DS32SD, or DIU**

Data speeds up to 19.2 kbps, synchronous or asynchronous, can be switched internally between CSD proprietary telephones equipped with a DTA (Data Terminal Adapter), a CT-10/20/30 or DS20, DS20S, DS20SD, or DS32SD coupled with a DIU (Data Interface Unit), or a standalone DIU unit. An RS-232C cable and connector are used for interface between the DTA/DIU and the data terminal. The **DATA CALL** and **VOICE/DATA** feature buttons are used to initiate and display a data call. The **DATA CALL** feature button initiates the data call. The **VOICE/DATA** feature button changes the instrument LCD display (for CT-20, CT-30, DS32SD, and CSD telephones) from voice call information to data call information or data to voice call information.

**Benefits:**

- Reduced calling costs.
- Shared/pooled resources; e.g., printers and modems.
- Ease of change/rearrangements.
- Enhances communication capability by allowing voice and data transfer using the same station instrument.
- Standalone DIU reduces cost to connect modems and printers to the system.
- Reduces need of extensive user training via user-friendly operation.
- Saves cabling between data entry ports and host computers or between personal computers.

**Applications:**

- After hours/unattended file transfer.
- Interactive applications with computer or centralized data base.
- Data call set-up by non-technical personnel.
- Connection of printers where no telephone instrument is required and data calls are automatically established.

**Data Call Set-Up (Internal)  
with Terminal Keyboard**

This feature allows a user to make an internal data call with a keyboard attached to an asynchronous ASCII terminal with TTY protocol. The call is originated by pressing the **DATA CALL** button on the CT-10/20/30, DS20, DS20S, DS20SD, DS32SD, CSD, or DIU. The data station monitor then prompts for a destination number. The user enters the desired station number and follows with a carriage return (CR). The system rings the target data station and data communication begins. The system provides error codes on the data station monitor for abnormal operations, such as Busy Call, Illegal Number, Protocol Mismatch, and Dial Time Out.

The Character Trunk card (4CHT) is required for this feature. The attributes of the calling and called data terminals must be the same.

**Benefits:**

- Adds convenience and saves time for data station operators.

**Applications:**

- All businesses that exchange data regularly between data stations.

**Data Call Set-Up (Internal) by  
Voice Port**

This feature allows station users to set-up data calls by dialing the station directory number of the instrument paired with the data terminal (CSD with DTA, CT-10/20/30 with DIU, or DS20, DS20S, DS20SD, DS32SD with DIU), instead of dialing the desired data terminal directory number.

When a data call is initiated by pressing the **DATA CALL** button and then dialing the station number, the display on the CSD, CT-20/30, DS20SD, or DS32SD shows an asterisk (\*) and the station number. The display will then show an asterisk and the associated data terminal number.

**Benefits:**

- Increases operation flexibility by allowing the station user to set up a data call by dialing either the station or data terminal directory number.
- Simplifies operation by non-technical personnel.
- Reduces cost of printing extensive internal directories which include data terminal numbers.

**Applications:**

- Offices with data facilities that are used infrequently and/or are used by non-technical personnel.



**Data Class of Service** DCOS (Data Class of Service) allows or denies data stations access to station features. DCOS is available in both Day Class of Service and Night Class of Service. Data and voice Classes of Service are identical for a given station number.

**Benefits:**

- Provides customizing of data communications capabilities by allowing the assignment of data features to suit individual needs.

**Applications:**

- Used to customize communication modes within a group.
- Used to assign different transmission modes to separate groups of terminals within the system.

**Capacity:**

- 16 Day Classes of Service.
- 16 Night Classes of Service.

**Data Hotline** This feature allows users at data stations to automatically place data calls to a predetermined data station without dialing. The originating Data Hotline station can receive calls from another data station, but is prohibited from placing calls to any data station other than the predetermined station. The predetermined data station must be an internal station. A standalone DIU cannot initiate a call unless it is programmed as a hotline and also programmed for Auto Originate. Auto Originate may be used when the maximum number of data hotlines is exceeded.

**Benefits:**

- Restricts data terminals to calling one predetermined data station.
- Saves time by allowing a station user to access a frequently called station without having to dial.

**Applications:**

- Terminals which connect only to a single point (companies that use a central facility; e.g., warehouse to serve branch locations - auto parts, electronics, hardware, etc.).
- Interactive applications requiring minimal response time (e.g., service department checking inventory while on-line with a customer, sales department checking order status while on-line with a customer).

**Capacity:**

- 40 Data Hotlines per system.

**Data Least Cost Routing  
(LCR)**

This feature is similar to that for voice calls. With LCR, the system chooses the most cost effective outgoing trunk based on the outside number dialed. After the outgoing destination number is dialed, the LCR stores and examines the number on the basis of the area and/or office code used. The LCR then chooses the proper trunk from a preprogrammed route table which can contain up to ten trunk group choices. The system contains two route tables:

- Area codes.
- Area/office code.

The LCR class of service levels determine the caller's ability to advance immediately through the trunk groups listed in the route table.

**NOTE:** With LCR, trunk queuing cannot be activated.

A feature number allows access to one of the following:

- Only to the first trunk group in the route table.
- All trunk groups except the last trunk group in the table.
- All trunk groups in the table.

Multi-Digit Toll Restriction and Toll Restriction are applied to outgoing calls through this feature.

**Benefits:**

- Provides management control of communications service by allowing the user to define routing of outgoing data calls.
- Improves management of telephone expenses by providing automatic routing of outgoing data calls over most economical facility available.
- Provides greater security since employees no longer need to know SCC access codes.
- User-friendly; single-digit access codes (regardless of the route selected) are available.

**Applications:**

- Organizations which need to ensure employees use the most economical route for outgoing data calls.
- Offices with more than one type of trunk access, (e.g., WATS, tie lines, FX, etc.).

**Capacity:**

- Two types of tables per system; area code and office code. Within these tables, the following capacities are:
  - LCR area code route group/system: Maximum 63.
  - LCR code route table/group: Maximum 10.
  - LCR area code table/system: Maximum 160.
  - CR office code route group/system: Maximum 15.
  - LCR office code route table/group: Maximum 10.
  - LCR office code table/system: Maximum 800.
  - LCR area/office code table/system: Maximum 800 office codes/8 area codes.

**Data Station Flexible  
Numbering Plan**

The data station numbers are assigned in the same manner as voice station numbers. An individual number is assigned to a voice or data station under the flexible numbering plan. The default data base assigns station numbers to each data terminal. These can be changed to accommodate individual user needs. One- to four-digit numbering is used in the system.

**Benefits:**

- Enhances system operation by allowing quick assignment or change of data station numbers to suit individual requirements.
- Specific data applications can be assigned using easily remembered numbers.

**Applications:**

- Offices whose personnel are frequently moved or reassigned.

**Capacity:**

- One number per terminal.
- One- to four-digit numbering plan.

**Data Status Attribute Change**

This feature allows users to change the attributes of data terminals. Users may change any of the following attributes:

- Data speed (110-19200 bps).
- Communication mode (half or full duplex).
- Stop bit, word length, parity bit, echo.
- Originate mode (auto or manual).
- Answer mode (auto or manual).
- Disconnect mode (normal or forced).
- Modem type (0-15).

This feature is activated by pressing the **DATA CALL** feature button, then dialing an access code, the attribute number, and the new attribute value. The attributes can also be changed via the data terminal keyboard.

**Benefits:**

- Allows users to change data attributes without accessing the data base.

**Applications:**

- Offices with a number of independent data station users; e.g., stock brokerage firms.

**Capacity:**

- One feature button on each CSD with DTA.
- One feature button on each CT-10/20/30 or DS20, DS20S, DS20SD, DS32SD with DIU.

**Data Terminal Group Hunting**

This feature allows data stations to be assigned to hunt groups for data calls. When a call is placed to a busy data station in a hunt group, the system automatically initiates a search among the hunt group members to find and establish a connection with the first available station. The following types of hunt groups can be established:

- **Circular Hunt Group:** The hunting sequence for a non-busy station starts with the called data station and then searches in a prearranged order through all data stations in the hunt group to find an available station. The hunt continues in a full circle back to the original station and will try that station a second time before returning a busy tone to the caller.
- **Terminating Hunt Group:** The hunting sequence for a non-busy station starts with the called data station and then proceeds through the hunt group data stations to find an available station. The hunting sequence ends at the last station in the hunt group; therefore, a call placed to any hunt group station except the first one will not make a complete search of all available data stations.
- **Pilot Hunt Group:** The hunting sequence for a non-busy station begins only when the pilot number is dialed. The pilot number is assigned as the first number in the hunt group. The hunting sequence ends at the last station in the hunt group. The pilot station is not hunted a second time.

**Benefits:**

- Increases data transfer capability by providing a number of data call answering options.
- Facilitates sharing of modems, high speed printers, and storage devices.

**Applications:**

- Printer pools.
- Multiple terminals that have access to a limited number of ports.

**Capacity:**

- 10 hunt groups.
- 16 data stations per group.

**Data Traffic Measurement**

This feature provides data communication traffic measurements by trunk group number (TGN) or pooled modem group ID (MGID). The system calculates usage ratios for the TGN/MGID resources and displays them through command entry facilities. Activation of the traffic measurement feature is accomplished via CMC 600 (to specify the resource to be measured), CMC 601 (to start and stop the measurement), and CMC 602 (to display the measurement information).

Traffic density is displayed as an average one hour time frame of TGN/MGID usage, checked every five seconds by the system. Traffic density is stored in a ten hour storage area. When the storage area fills with ten time frames, the data in the storage area is transferred to a buffer and the storage area is cleared.

**Benefits:**

- Provides a method of measuring the amount of traffic on specified trunk lines and pooled modems.
- Enables the user to rearrange the data communication system for more economical and efficient operation.

**Applications:**

- All businesses wanting to make the most economical use of data communications.

**Capacity:**

- 10 TGNs or MGIDs per system.

**Individual Modem Access**

This feature allows a user to designate a specific modem within a modem pool for an outgoing data call. This feature will generally be used for maintenance purposes.

To initiate the individual modem access, press the **DATA CALL** feature button, dial the feature access code, and the modem group ID, and modem ID. The remainder of the procedure is the same as for a standard data call.

The selected modem is forcibly connected even if the attributes of the modem do not match the originating data station. This feature can be restricted by COS.

**Benefits:**

- Provides maintenance personnel with a means to check on specific modem operation.

**Applications:**

- All businesses using data communication via pooled modems.

**Simultaneous Voice/Data Communications**

This feature provides simultaneous voice/data communications to the user at the following stations; the CSD with DTA, CT-10/20/30 with DIU, or DS20, DS20S, DS20SD, DS32SD with DIU. Voice call operations are unchanged. There is no interruption of either voice or data transmission during simultaneous voice/data calls.

**Benefits:**

- Improves productivity by allowing the station user to implement two methods of communication at the same time.
- Saves time setting up data calls by allowing voice communications to coordinate data connection procedures.

**Applications:**

- Telemarketing groups; e.g., telephone sales, etc.
- May be used any time both voice and data communications are required from the same work station.

**Subordinate Data Call**

This feature allows a user to add a data call to an existing internal voice conversation. The operation is performed by using the programmable **add data** feature button set-up by system data base commands, or with the **DATA CALL** feature button and the feature access code. In either case, the destination station number need not be dialed.

Subordinate Data Calls can be set up in the following voice port situations:

- During internal voice conversation.
- During internal voice conversation with held outside call.
- During internal voice conversation with held tie trunk call.
- During internal voice conversation with held internal call.

**Benefits:**

- Allows simultaneous voice/data transmission over a single line.
- Saves time by avoiding need to stop voice conversation to set up data call.

**Applications:**

- All data communication users who want to maximize use of existing telephone lines.

## ISDN FEATURES

This chapter covers how the system interfaces with the public network using Integrated Service Digital Network (ISDN) facilities.

### Calling Line Identification Display (CLID) Enhancement

This feature prevents the second DN from being overridden with an ISDN DID Calling Line ID display received from the CO, which is over fifteen digits (seven digits for the attendant).

### Calling Line Identification Display (CLID) Sending

When an outgoing call is established via an ISDN CO line, CLID information consisting of up to fifteen digits of the originating telephone is sent to the CO.

### Calling Line Identification Presentation (CLIP)

If the receiving destination has CLIP capability, then the originating number will be displayed at the called system station.

#### Capacity:

- Up to fifteen digits in the calling number can be displayed.

#### Benefits:

- Applications which require special routing or greeting can use the CLID and CLIP features to provide a more personal and professional image.
- Improved call handling.
- Provides a "quasi" screening process for incoming calls.

### Calling Line Identification Restriction (CLIR)

The system provides the option of displaying or not displaying calling party information when an outgoing ISDN call is executed. If this feature is activated, the calling party number will not be displayed at the external station.

#### Benefits:

- User privacy when placing outgoing calls.



**CBC Service** When an outgoing voice call is established via an ISDN CO line, the outgoing line's service type can be set on a Call By Call (CBC) basis by dialing a separate service access code.

**Capacity:**

- TGNs for CBC (including CO, WATS, and MEGACOM 800):  
Maximum 18

**Benefits:**

- Allows maximum compatibility and optimization of various ISDN facilities.

**ISDN Numbering Plan** The system sends the called party number without a prefix code if the prefix code is dialed. This procedure is based on the 4ESS™ numbering condition.

**ISDN PRI Interface** The system provides an ISDN PRI interface connection to the AT&T™ 4ESS or 5ESS™ CO switch, and the Northern Telecom DMS 100™. Both voice and data modem calls can be established via the PRI interface (data calls up to 19.2 Kbps).

**Maintenance** The status of B-channels in the ISDN network can be monitored/controlled via the SERV message when the B-channel is idle.

- **In Service:** Normal condition. This B-channel can be used for both incoming and outgoing calls.
- **Maintenance:** Maintenance status. Only incoming calls are available.
- **Out of Service:** This B-channel cannot be used. Neither incoming nor outgoing calls are available.

AT&T™, 4ESS™, and 5ESS™ are trademarks of American Telephone and Telegraph, Inc.

DMS 100™ is a trademark of Northern Telecom.

## FIPN FEATURES

The Fujitsu ISDN Private Network (FIPN) provides feature transparency between systems via a digital link. PRI trunks are required at both ends of the network. Basic transparency features are:

- Distinctive ringing.
- Calling party number display.
- Connected party number display.
- Connected party status display.
- Trunk signaling check.
- Attendant termination.
- Attendant supervised loop.

### **Attendant Break-In**

An attendant can place a call to a remote PBX and override an ongoing two-way conversation.

#### **Benefits:**

- Provides emergency services to all FIPN nodes from the central location.

### **Attendant Call Transfer**

This feature provides calls in the FIPN network to be transferred to another extension by the attendant. Screened and unscreened transfers are available.

#### **Benefits:**

- Maximizes the effectiveness of the FIPN network.
- Reduces number of attendants required.

### **Attendant Camp-On**

This feature provides the camp-on function to the attendant if the called FIPN extension is busy.

### **Attendant Supervised Loop**

The calling and connected party number via the FIPN network is displayed when held in a supervised loop on the Attendant Console. Calling party and connected party information is sent from the originating or terminating PBX. If no information is received, the type of trunk and the trunk number will be displayed.

#### **Benefits:**

- Provides calling number information on attendant-assisted calls.

#### **Capacity:**

- Up to seven digits of the calling number can be displayed.

**Attendant Termination** This feature provides distinctive call termination to an attendant when a FIPN call is placed. The call will terminate to an attendant button, depending on the type of call (i.e., call from an extension, call from a trunk).

**Call Forward Over FIPN** Calls from a station may be forwarded over FIPN with the following restrictions:

- The Call Forward - CO feature must be used.
- This feature will forward calls in the following modes:
  - Busy
  - No answer
  - Busy/no answer
  - All calls

**Calling Party Number Display** This feature displays a calling extension directory number or a calling trunk number on the alphanumeric display of the called telephone.

The calling party number information is sent from the PBX where the call originates. If no information is received, the type of trunk and the trunk number will be displayed. If a FIPN call terminates to an extension or an attendant, and is answered by an extension using the Call Pick-Up or Other Station Line (OSL) feature, a second directory number (of either nine or seven digits) will be displayed.

Calling party number display information is as follows:

- PBX terminal: Node number and directory number are displayed.
- CO/DID line: Trunk directory number is displayed.
- ISDN line: Calling party number is displayed.

**Capacity:**

- Up to fifteen digits of the calling number may be displayed.

**Connected Party Number Display**

A connected extension directory number or a connected trunk number will be displayed for the duration of the call.

The connected party number information is sent from the PBX where the call terminates. If no information is received, the type of trunk and the trunk number will be displayed.

An actual terminating party number will not be displayed if a call is transferred to another extension using one of the following features:

- Call Forward.
- Group Hunt.
- ACD.

The dialed number will be displayed at the calling party instead. The dialed number will also be displayed if a terminated call is transferred to an outside party.

Calling party number display information is as follows:

- PBX terminal:
  - Calling: Dialed number is displayed
  - Conversation: Node number and directory number are displayed.
  - After hold operation: Node number and directory number are displayed
- CO/DID line or ISDN line:
  - Calling: Dialed number is displayed
  - Conversation: Dialed number is displayed
  - After hold operation: Trunk directory number is displayed

**Capacity:**

- Up to fifteen digits of the calling party number may be displayed.

**Connected Party Status  
Display**

This feature displays the status of a connected station or a connected trunk on the alphanumeric display of the calling party's telephone.

Status will be displayed as follows:

- RING:
  - Calling extension
  - Calling attendant
  - Calling data terminal
  - Transit to ISDN CO line
- BUSY:
  - Extension busy
  - Data terminal busy
  - Do not disturb registered
  - FIPN line busy
- RETRY:
  - CO line busy
  - Analog tie line busy
  - No terminal installed
  - Terminal failure/terminal make-busy
  - Termination restricted
  - Ringer busy
  - Restricted due to class of service
  - Multi-digit restriction
- TALK:
  - Conversation with attendant
  - Conversation with extension
- DATA:
  - Communication with data terminal
- Call Duration:
  - Conversation with CO line party
  - Conversation with ISDN CO line party
  - Conversation with analog tie line party

**Benefits:**

- Provides confirmation of various call states.

- 
- Distinctive Ringing** This feature allows a station user to identify the source of an incoming call by the distinctive ringing. Incoming extension FIPN calls and incoming calls from outside the FIPN network have different ringing patterns.
- **FIPN Extension:** ON for 1 second, OFF 3 seconds.
  - **Call from Outside the FIPN Network:** ON 0.4 seconds, OFF 0.2 seconds, ON 0.4 seconds, OFF 3 seconds.
- FIPN extension calls include stations, attendants, data terminals, and tie line calls. Calls from outside of the FIPN network are CO and ISDN CO calls.
- Benefits:**
- Allows for special call treatment for particular types of calls.
- Extension Break-In** An extension can place a call to a remote PBX and override an ongoing two-way conversation.
- Extension Call Transfer** Calls can be transferred within the FIPN network using the screened or unscreened transfer procedure. See also Call Forward Over FIPN.
- Extension Camp-On** This feature provides the camp-on function to the extension if the called FIPN extension is busy.
- Trunk Signaling Check** This feature provides restriction of certain trunk-to-trunk connections by checking the signaling type if an incoming call is transferred to another trunk. This prevents accidental locking-up of analog trunks.
- The following connections are monitored:
- Loop signaling analog CO trunk to the FIPN network.
  - Outgoing analog tie trunks which do not detect reverse signal to the FIPN network.

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**FUJITSU**

**FUJITSU BUSINESS  
COMMUNICATION SYSTEMS**

# ***SERIES 3***

## **DATA BASE MANUAL**

### **Package 2**

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**INTRODUCTION**

A table has been included on the following pages that shows which programming commands are available for the listed Feature Packages. In some cases, a CMC's parameter(s) may have different value assignments depending on the Feature Package being programmed. To identify the correct parameter value, refer to Chapter 4.

## Feature Package / Command Matrix

COMMAND	FEATURE PACKAGE	
	BUSINESS	ENHANCED
CMC 100	X	X
CMC 101	X	X
CMC 102	X	X
CMC 103	X	X
CMC 104	X	X
CMC 105	X	X
CMC 107		X
CMC 111		X
CMC 120		X
CMC 121		X
CMC 122		X
CMC 200	X	X
CMC 201	X	X
CMC 202	X	X
CMC 203	X	X
CMC 204	X	X
CMC 205	X	X
CMC 206	X	X
CMC 207	X	X
CMC 208	X	X
CMC 209	X	X
CMC 210	X	X
CMC 211	X	X
CMC 212	X	X
CMC 213	X	X
CMC 220		X
CMC 221		X
CMC 222		X
CMC 223		X
CMC 224		X

Feature Package / Command Matrix (Cont'd)

COMMAND	FEATURE PACKAGE	
	BUSINESS	ENHANCED
CMC 230	X	X
CMC 231	X	X
CMC 232	X	X
CMC 233	X	X
CMC 250	X	X
CMC 251	X	X
CMC 252	X	X
CMC 253	X	X
CMC 254	X	X
CMC 255	X	X
CMC 256	X	X
CMC 260	X	X
CMC 261	X	X
CMC 262	X	X
CMC 263	X	X
CMC 270		X
CMC 271		X
CMC 280	X	X
CMC 281	X	X
CMC 300	X	X
CMC 301	X	X
CMC 302	X	X
CMC 303	X	X
CMC 304	X	X
CMC 305	X	X
CMC 306	X	X
CMC 307	X	X
CMC 308	X	X
CMC 309	X	X
CMC 310	X	X
CMC 311	X	X



## Feature Package / Command Matrix (Cont'd)

COMMAND	FEATURE PACKAGE	
	BUSINESS	ENHANCED
CMC 313	X	X
CMC 314	X	X
CMC 315	X	X
CMC 316	X	X
CMC 317	X	X
CMC 318	X	X
CMC 319	X	X
CMC 350	X	X
CMC 351	X	X
CMC 352	X	X
CMC 353	X	X
CMC 354	X	X
CMC 355	X	X
CMC 356	X	X
CMC 357	X	X
CMC 358	X	X
CMC 359	X	X
CMC 370	X	X
CMC 371		X
CMC 372	X	X
CMC 400	X	X
CMC 401	X	X
CMC 402	X	X
CMC 403	X	X
CMC 404	X	X
CMC 405	X	X
CMC 406	X	X
CMC 407		X
CMC 408	X	X
CMC 410	X	X

Feature Package / Command Matrix (Cont'd)

COMMAND	FEATURE PACKAGE	
	BUSINESS	ENHANCED
CMC 411	X	X
CMC 412	X	X
CMC 413	X	X
CMC 414	X	X
CMC 415	X	X
CMC 416	X	X
CMC 417	X	X
CMC 420	X	X
CMC 421	X	X
CMC 422	X	X
CMC 423	X	X
CMC 424	X	X
CMC 425	X	X
CMC 426	X	X
CMC 427	X	X
CMC 428	X	X
CMC 429	X	X
CMC 430	X	X
CMC 431		X
CMC 432	X	X
CMC 433	X	X
CMC 434	X	X
CMC 435	X	X
CMC 347	X	X
CMC 438		X
CMC 439		X
CMC 460		X
CMC 461		X
CMC 462		X
CMC 463		X

## Feature Package / Command Matrix (Cont'd)

COMMAND	FEATURE PACKAGE	
	BUSINESS	ENHANCED
CMC 464		X
CMC 470	X	X
CMC 471	X	X
CMC 472	X	X
CMC 480	X	X
CMC 500	X	X
CMC 501	X	X
CMC 502	X	X
CMC 503	X	X
CMC 504	X	X
CMC 505	X	X
CMC 506	X	X
CMC 510	X	X
CMC 511	X	X
CMC 516	X	X
CMC 600	X	X
CMC 601	X	X
CMC 602	X	X
CMC 700	X	X
CMC 701	X	X
CMC 702	X	X
CMC 704	X	X
CMC 705	X	X
CMC 706	X	X
CMC 800	X	X
CMC 801	X	X
CMC 802	X	X
CMC 803	X	X
CMC 810	X	X
CMC 811	X	X

Feature Package / Command Matrix (Cont'd)

COMMAND	FEATURE PACKAGE	
	BUSINESS	ENHANCED
CMC 813		X
CMC 900	X	X
CMC 901	X	X
CMC 902	X	X
CMC 903	X	X
CMC 904	X	X
CMC 907	X	X
CMC 908	X	X
CMC 909	X	X
CMC 910		X
CMC 913		X
CMC 915		X
CMC 920	X	X
CMC 921	X	X
CMC 922	X	X

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## DATA BASE OVERVIEW

This document contains instructions for programming the Fujitsu Business Communication Systems' Series 3 PBX.

### CMCs (Change and Maintenance Commands)

You can modify the system data base using the CMC (Change and Maintenance Command) code tables. This document provides you with the function of each CMC, parameters, entry procedures, error codes, and any special instructions. Information for verifying system operation, diagnosing faults, and performing system support functions such as ODDB (Office Dependent Data Base) save / load operations is also included. A list of available CMCs can be found in Appendix A (CMC Numerical List) or Appendix B (CMC Alphabetical List) of this manual.

### Configuration Forms

Most CMC commands also reference configuration forms. These forms need to be filled in with data that will be used when programming the system. Information on one form may need to be copied onto another form. The Site Log Manual (123-200-002) contains copies of all pertinent forms.

### Programming Tools

You can perform maintenance and administration functions from any one of the following devices:

- MCT (Master Control Telephone):
  - Attendant Console.
  - CT-20 telephones.
  - CT-30 telephones.
  - DS20SD and DS32SD digital stations.
- PMP (Portable Maintenance Panel).
- PcMP™ software running on an IBM PC or compatible.

You can modify some features such as Call Forwarding - All Calls / Busy / No Answer, Do Not Disturb, and Station Speed Calling from individual telephones. Refer to the appropriate user guide to program and operate these features.

PcMP™ is a trademark of Fujitsu Business Communication Systems.

## DATA BASE MANAGEMENT

### Customer Data Base

The system's data base management software and operating system reside in the PROM chips of the CPU card and can be saved and loaded from the optional 3.5 floppy disk. The specific customer data base (ODDB) resides in the DRAMs of the CPU card.

DIP switch settings on the CPU card (see Figure 1-1) determine whether a default data base is generated when initiating a COLD start. Each subsequent COLD restart clears the ODDB, requiring reloading of the ODDB. A COLD restart is necessary whenever the system's back-up battery is drained due to a power shut off of approximately two weeks or longer.

### Customizing the Default Data Base

The default data base can be customized by modifying CMCs using a programming tool or by loading the contents of a prepared ODDB tape or floppy disk into the system memory.

### Default Data Base / DIP Switch Settings

A four-bit DIP switch is located on the CPU card. Four different DIP switch settings control generation of default data. Figure 1-1 and Table 1-1 show in detail the DIP switch and the possible settings.

Initiating a COLD restart automatically generates the normal system and customer data base default data when the DIP switch is set at two of the four possible settings. The "No Default Data" setting on the dip switch (see Table 1-1) does not generate default data. The "Load from Floppy Disk" setting loads the specific ODDB on the floppy disk.

When initiating a COLD restart with the DIP switch set for "No Default Data," the data concerning CMC 100, 104, 200, 210, 220, 230, and 250 is not generated. Other data, such as CMC 102, is generated.

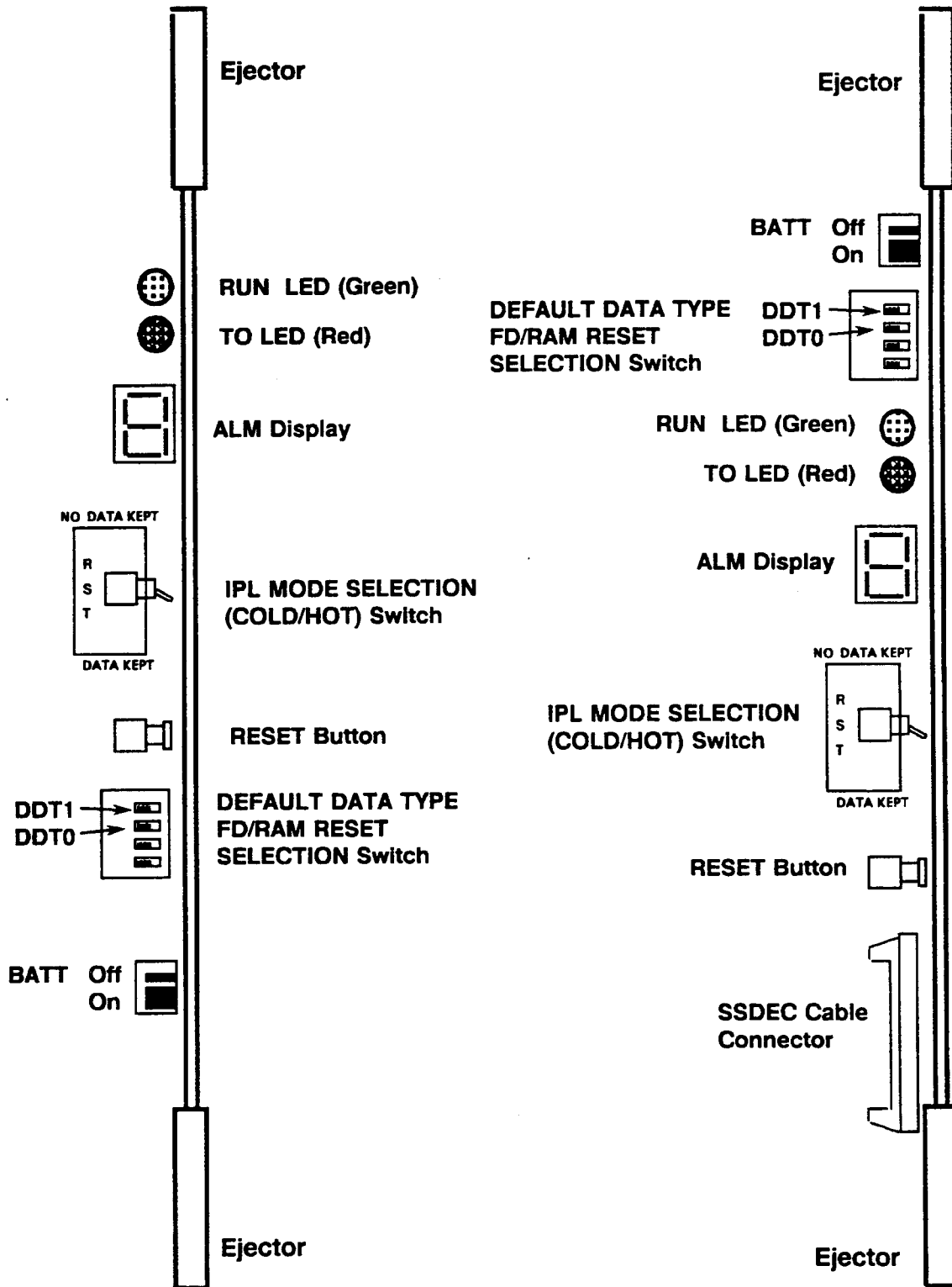
Loading the ODDB data through PcMP requires that the DIP switch be set at "No Default Data" when initiating a COLD restart.

After the initial load, the ODDB can be downloaded and saved onto the floppy disk provided with the system. The save operation is done by CMC 922.

**Table 1-1. DIP Switch Settings**

DIP SWITCH		DEFAULT DATA TYPE
DDT0	DDT1	
Closed	Closed	No default data
Open	Closed	3-digit numbering plan
Open	Open	4-digit numbering plan
Closed	Open	Load from floppy disk

Figure 1-1. Front View of the CPU Cards





**FCC REGISTRATION INFORMATION**

In compliance with FCC regulations, the following information is provided:

1. Before connecting the telephone network, the user must notify the local telephone company of this intention and provide the telephone company with the number of the particular lines on which the system is to be used, and shall provide the telephone company the FCC registration number, the Ringer Equivalence Number (REN), and the model number of the system. This information is located on the registration plate. The FCC registration number for the system is **BJ885Z-60084-KF-E** (key system), **BJ8USA-75355-PF-E** (PBX), and **BJ8USA-60083-MF-E** (multi-function system).
2. The end user must inform the local telephone company of the quantities and type of Universal Service Order Code (USOC) jacks which are required as shown in the following charts.
3. When private line ports are connected to the telephone network, the user must provide the following information to the telephone company:
  - Service Order Code and Facility Interface Code.
  - The quantities and USOC numbers for the required jacks.
  - For each jack, list the sequence in which the lines are to be connected, giving technical description codes by position and the ringer equivalence number or service code where applicable.
4. Since the system does not have signal power limiting, it can only be used with FCC registered, grandfathered devices, or devices which otherwise comply with Section 68.308.
5. The system complies with the following U.S. standards:
  - FCC Part 68.
  - FCC Part 15, Class A.
  - UL 1459 telephone equipment.
  - EIA RS-464-1.

**NOTE:** The 6DID, 8BWC, 24T1, 23PT, 2TE4, and 4TE4 cards meet UL Type I protection. The 4BWC, 2TTL, and 2TTE cards require Type II protection at the MDF.

**MTS / TS Interface**

TRUNK	INTERFACE	REN	NO. OF LEADS	USOC
4BWC	2-Wire Loop	0.2A	2	RJ21X
4BWC	2-Wire G.S.	0.2A	2	RJ21X
8BWC	2-Wire Loop	0.6A	2	RJ21X
8BWC	2-Wire G.S.	0.6A	2	RJ21X
6DID	02RV2-T	0.0B	2	RJ21X

## Digital Interface

TRUNK	PRIVATE LINE FACILITY INTERFACE CODE	SERVICE CODE	NO. OF LEADS	USOC
24T1	04DU9-B 04DU9-C 04DU9-S	6.0Y	4	RJ48C
23PT	04DU9-B 04DU9-C 04DU9-S	6.0Y	4	RJ48C

## Private Line Interface

TRUNK	PRIVATE LINE FACILITY INTERFACE CODE	SERVICE CODE	NO. OF LEADS	USOC
F33SO-2TTE	TL11M	9.0F	4	RJ21X, RJ2EX (2W E&M TYPE 1 SIG)
F33SO-2TTE	TL12M	9.0F	6	RJ21X, RJ2EX (2W E&M TYPE 2 SIG)
2TE4	TL11M TL31M TL12M TL32M	9.0F	4 6 8	RJ21X, RJ2EX (2W E&M TYPE 2 SIG) RJ2EX (2W E&M TYPE 1 SIG) RJ2GX (2W E&M TYPE 1 SIG) RJ2HX (2W E&M TYPE 2 SIG)
4TE4	TL11M TL31M TL12M TL32M	9.0F	4 6 8	RJ21X, RJ2EX (2W E&M TYPE 2 SIG) RJ2FX (2W E&M TYPE 2 SIG) RJ2GX (2W E&M TYPE 1 SIG) RJ2HX (2W E&M TYPE 2 SIG)

## Off-Premise Extension Interface

OPX CARD	FACILITY CODE	SERVICE CODE	NO. OF LEADS	USOC
FS35SO-4SLE	OL13A	9.0F	2	RJ21X
FS35SO-4SLE	OL13B	9.0F	2	RJ21X
FS35SO-4SLE	OL13C	9.0F	2	RJ21X

**FCC REGISTRATION  
INFORMATION (Cont'd)**

6. FCC rules provide that, should the equipment cause harm to the telephone network, the telephone company shall, where practicable, notify the customer that temporary discontinuance of service may be required; however, where prior notice is not practicable, the telephone company may temporarily discontinue service immediately, if such action is reasonable in the circumstances.
7. FCC rules provide that the telephone company may make changes in its communications facilities, equipment operations, or procedures where such action is reasonably required in the operation of its business and is not inconsistent with the rules and regulations of the FCC. If such changes render any customer terminal equipment incompatible with the telephone company's facilities or require modification, or alteration of such terminal equipment, or otherwise materially affect its use or performance, the customer will be given adequate notice in writing to allow the customer an opportunity to maintain uninterrupted service.
8. The user shall not attempt to repair or modify this equipment. Instead, any necessary service or repair shall only be initiated and performed by the manufacturer or its authorized agent.
9. If trouble is experienced, disconnect this equipment from the telephone line to determine if it is causing the malfunction. If the equipment is determined to be malfunctioning, its use shall be discontinued until the problem has been corrected.
10. This equipment shall not be used on party lines or coin telephone lines.
11. The local telephone company must be notified when this equipment is permanently disconnected.

**FCC REGISTRATION  
INFORMATION (Cont'd)**

12. Allowing this equipment to be operated in such a manner as to not provide for proper answer supervision is a violation of part 68 of the FCC's rules.

Proper answer supervision is when:

- A. This equipment returns answer supervision to the Public Switched Telephone Network (PSTN) when DID calls are:
  - Answered by the called station.
  - Answered by the attendant.
  - Routed to a dial prompt.
  - Routed to a recorded announcement that can be administered by the CPE user.
- B. This equipment returns answer supervision on all DID calls forwarded to the PSTN. Permissible exceptions are:
  - A call is unanswered.
  - A busy tone is received.
  - A reorder tone is received.

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## INTRODUCTION

The default data base can be modified by using CMC commands. These commands are issued from any one of the following devices:

- MCT (Master Control Telephone):
  - Attendant Console.
  - CT-20 telephone.
  - CT-30 telephone.
  - DS20SD and DS32SD digital stations.
- PMP (Portable Maintenance Panel).
- PcMP running the switching system installation and maintenance software. (Software and documentation available from Customer Service.)

The following paragraphs provide descriptions of the MCT programming tools. Table 2-1 lists the MCT function keys for each device.

Table 2-1. MCT Function Keys

FUNCTION KEY ASSIGNMENTS	DESCRIPTION
<b>TRM</b> (Terminate)	Terminates the command mode. ( <b>RLS</b> must be used before using <b>TRM</b> .) When pressed on an MCT, the telephone will return to call processing mode.
<b>RMV</b> (Remove)	Deletes all parameter values from a table (except underlined parameters which are required to be entered; refer to Chapter 4 for more information). Required at some tables before entering new values.
<b>RLS</b> (Release)	Permits exit from a CMC at any time. Useful to change to another command or exit from an error condition.
<b>CAN</b> (Cancel)	Cancels an entered parameter value. Useful to erase typing errors. Will not delete a value from memory. (Can be used to enter a blank parameter value.)
<b>ADD / CHG</b> (Add / Change)	Writes (enters) the typed parameter values into data base memory. In some tables, <b>RMV</b> must be used to delete old values before pressing <b>ADD / CHG</b> . Screens indicate whether the values were added or changed.
<b>DUP</b> (Duplicate)	Increments the table's underlined key parameter(s) while causing the remaining parameter values to stay the same as on the previous screen. Useful for entering repetitive parameter values such as used for station and trunk data.
<b>DSP</b> (Display)	Required as a prompt to the system after entering displayable CMC codes. Shows parameter values of a table. If no value exists for a parameter, the parameter value is blank. Pressing <b>DSP</b> a second time increments the key parameters, and their parameter values are displayed. Pressing <b>DSP</b> at the end of a table listing either displays the first parameter value again or releases the table by exiting.
<b>PSC</b> (Pause Code)	The <b>PSC</b> key is used to register a pause when entering a system speed calling number (CMC 300).
<b>RTN</b> (Return)	Required as a prompt to the system after typing the security code or CMC three-digit number. Can be used to move the cursor to the next parameter position.
<b>SCC</b> (Screen Change) <i>CT-20, CT-30, DS20SD and DS32SD only</i>	The <b>SCC</b> key changes the screen when programming, as these telephones are limited to a two-line display. Because programming requires a four-line display, this key changes the screen from upper to lower, and back again.

**ATTENDANT CONSOLE AS MCT**

An Attendant Console can be used as an MCT for on-site entry of CMC commands. An Attendant Console / MCT cannot record the ODDB and can be used only in an interactive mode (live and on-line).

The system automatically assigns as MCTs the first four CT- 20 / CT-30, DS20SD, DS32SD, or Attendant Console instruments installed in the system. Eight of the total of twenty MCTs can be Attendant Consoles. Only one MCT can be in the programming mode at any given time.

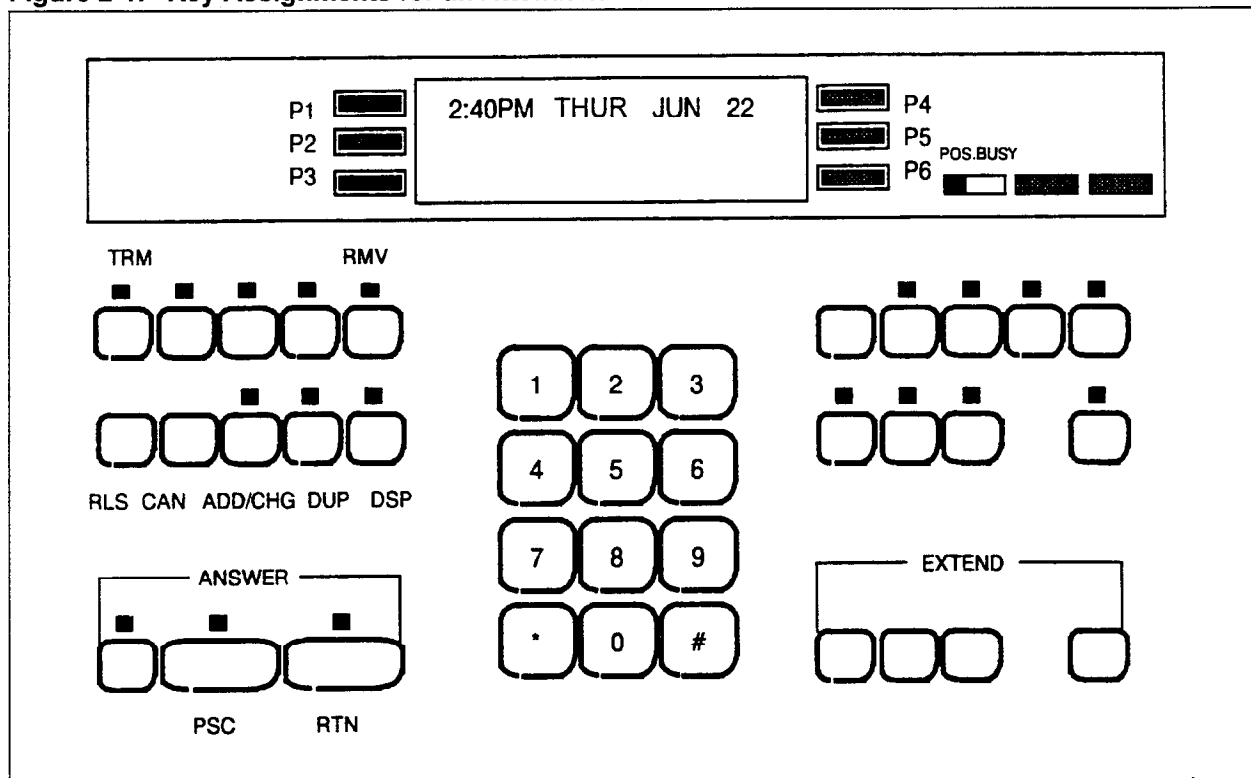
The Attendant Console is a proprietary station with a four-line, twenty-character LCD display. This phone has eleven fixed feature buttons, sixteen programmable feature buttons, and six display buttons. When the Attendant Console is used as an MCT, the feature and display buttons are assigned new functions.

**Attendant Console / MCT Key Assignments**

Figure 2-1 shows the key assignments for an Attendant Console in MCT mode. The key functions are described in Table 2-1.

**NOTE:** The Attendant Console must be in the Position Busy (POS.BUSY) to enter the programming mode. An overflow station should be assigned at CMC 306 when programming an on-line system with the Attendant Console.

**Figure 2-1. Key Assignments for an Attendant Console in MCT Mode**





**Initializing the Attendant Console**

The Attendant Console must be initialized before being used for system programming.

1. Select an Attendant Console which has been assigned as an MCT by default or use CMC 702.
2. Make sure that the Attendant Console has no calls in progress, or that no calls can recall to the Attendant Console.
3. Press the **POS.BUSY** key. If the Attendant Console is password protected, see your Communications Coordinator.
4. Make sure that the display reads **POS.BUSY**.
5. Enter the appropriate security code using the dialpad. You may have to go off-hook before entering the security code.
6. The Attendant Console enters the MCT mode and displays:

<p>CMC = _____ MM / DD / YY</p> <p>COMMAND READY</p>
--

7. The Attendant Console is ready for use in programming the system.

To return the Attendant Console to call processing mode:

1. Press the **RLS** key.
2. Press the **TRM** key.
3. Press **POS.BUSY** key.

**CT-20 / CT-30 AS MCT**

The CT-20 and CT-30 can be used as an MCT for the on-site entry of CMC commands. CT-20s and CT-30s being used as MCTs cannot record the ODDB and can be used only in an interactive mode (live and on-line).

The system automatically assigns as MCTs the first four CT-20 / CT-30, DS20SD, DS32SD, or Attendant Console instruments. Up to twenty total MCTs can be assigned at CMC 702. Only one MCT can be used in the programming mode at any given time.

Both the CT-20 and the CT-30 are proprietary electronic telephones. The CT-20 and CT-30 have two-line, twenty-character LCD displays, and seven fixed feature buttons. The CT-20 features 15 programmable feature buttons, and the CT-30 has 27 programmable feature buttons. When these phones are used as an MCT, the feature buttons and display keys are assigned new functions. Because these telephones have two line displays, a Screen Change (**SCC**) key switches from the upper to the lower screen to accommodate the full four-line display needed for programming.

**CT-20 / CT-30 MCT Key Assignments**

Figure 2-2 shows key assignments for CT-20s and CT-30s in MCT mode. The key functions are described in Table 2-1, with the addition of an **SCC** (Screen Change) key.

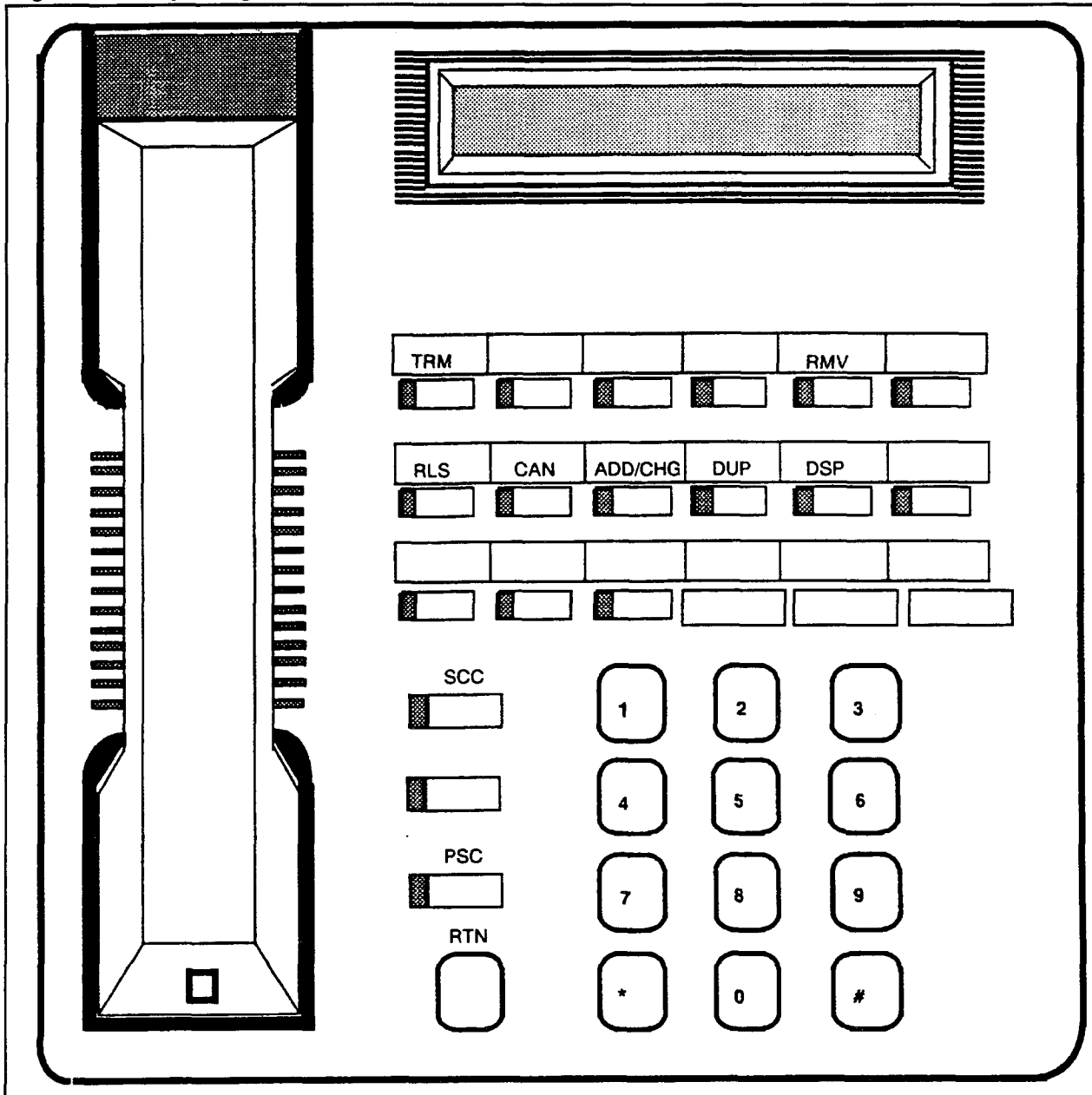
**Initializing the CT-20 / CT-30**

The CT-20 and CT-30 must be initialized before being used for system programming.

1. Select a CT-20 or CT-30 assigned as an MCT by default or use CMC 702.
2. Ensure the phone is in an idle state on-hook (no call is on hold, with no activated features).
3. Enter (from the dialpad) the appropriate system security code for the CMC code(s) to be used. You may have to go off-hook before entering the security code.
4. The CT-20 / CT-30 enters MCT mode and displays:

<p>CMC = _____ MM / DD / YY</p> <p>COMMAND READY</p>
--

Figure 2-2. Key Assignments for a CT-20 / CT-30 in MCT Mode



**NOTE:** CT-30s have two more lines of buttons, but the key assignments for MCT mode are the same as shown here on the CT-20.

**CT-20 / CT-30 Screen Change**

The **SCC** (Screen Change) key switches the two-line display on these phones from upper screen to lower screen to display all parameter values for programming. The upper screen, Screen 1 shown below, displays the CMC, the current time, and P1 and P4. The lower screen, Screen 2, displays the remainder of the parameters, P2, P3, P5, and P6.

**Screen 1**

CMC = _____	Time
P1: _____	P4: _____

**Screen 2**

P2: _____	P5: _____
P3: _____	P6: _____

**DS20SD / DS32SD AS MCT**

The DS20SD and DS32SD can be used as an MCT for the on-site entry of CMC commands. DS20SDs and DS32SDs being used as MCTs cannot record the ODDB and can be used only in an interactive mode (live and on-line).

The system automatically assigns as MCTs the first four CT-20 / CT-30, DS20SD, DS32SD, Attendant Console instruments. Up to twenty total MCTs can be assigned at CMC 702. Only one MCT can be used in the programming mode at any given time.

Both the DS20SD and the DS32SD are proprietary digital stations, each with a two-line, twenty-character LCD display. The DS20SD features 12 programmable feature buttons, and the DS32SD has 24 programmable feature buttons. Both telephones have eight fixed feature buttons. When these phones are used as an MCT, the feature buttons and display keys are assigned new functions. Because the DS32SD telephone has a two line display, a Screen Change (**SCC**) key is used on this telephone to switch from upper to lower screen to accommodate the full four-line display needed for programming.

**DS20SD / DS32SD MCT Key Assignments**

Figure 2-3 shows key assignments for DS20SDs and DS32SDs in MCT mode. The key functions are described in Table 2-1, with the addition of an **SCC** (Screen Change) key.

**Initializing the DS20SD / DS32SD**

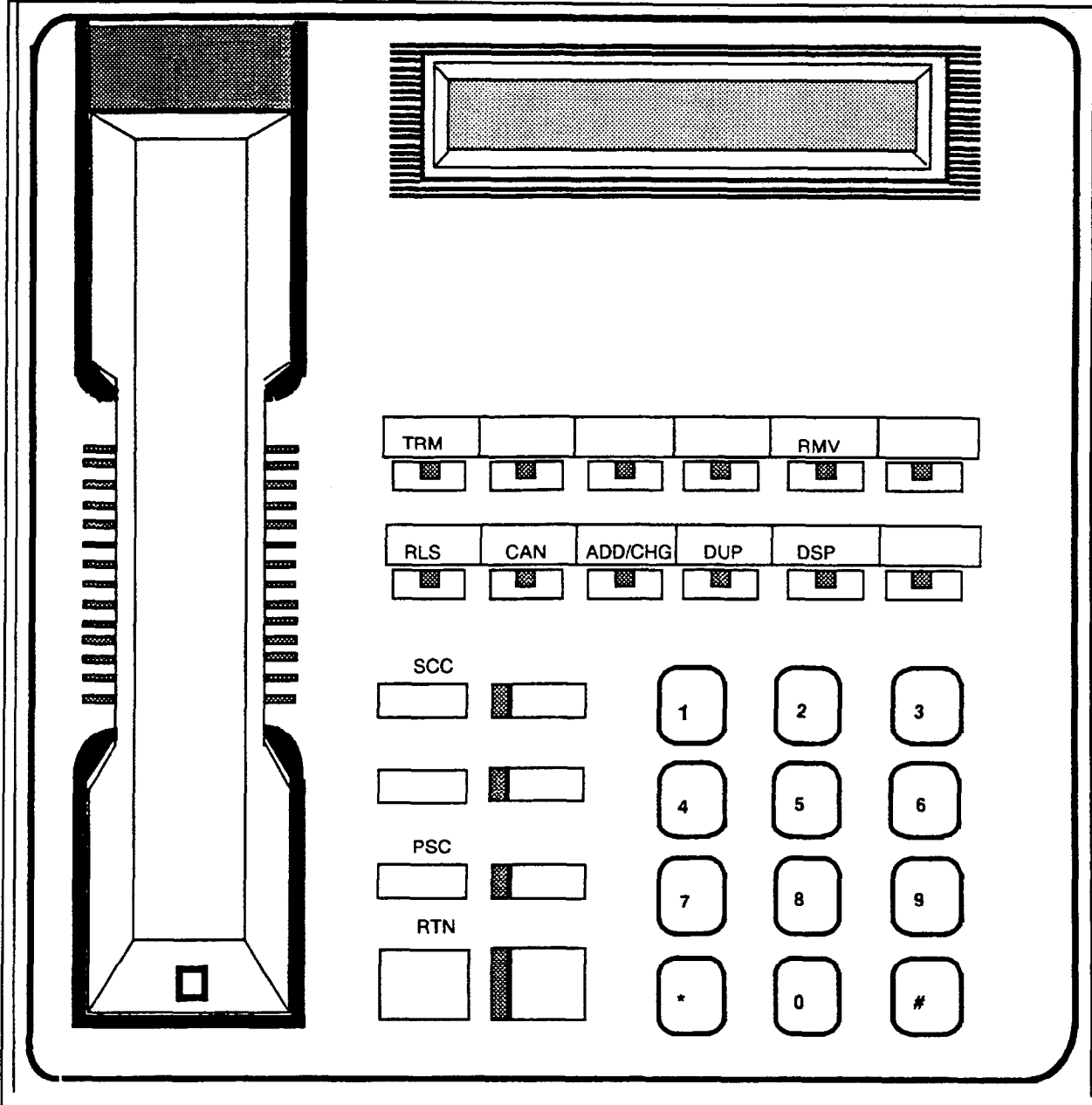
The DS20SD and DS32SD must be initialized before being used for system programming.

1. Select an DS20SD or DS32SD assigned as an MCT by default or use CMC 702.
2. Ensure the phone is in an idle state on-hook (no call is on hold, with no activated features).
3. Enter (from the dialpad) the appropriate system security code for the CMC code(s) to be used. You may have to go off-hook before entering the security code.
4. The DS20SD / DS32SD enters MCT mode and displays:

CMC = \_\_\_\_\_ MM / DD / YY

**COMMAND READY**

Figure 2-3. Key Assignments for a DS20SD / DS32SD in MCT Mode



**NOTE:** DS32SD digital stations have two more lines of buttons, but the key assignments for MCT mode are the same as shown here.

**DS20SD / DS32SD Screen  
Change**

The **SCC** (Screen Change) key switches the two-line display on these phones from upper screen to lower screen to display all parameter values for programming. The upper screen, Screen 1 shown below, displays the CMC, the current time, and P1 and P4. The lower screen, Screen 2, displays the remainder of the parameters, P2, P3, P5, and P6.

**Screen 1**

<b>CMC =</b> _____	<b>Time</b>
<b>P1:</b> _____	<b>P4:</b> _____

**Screen 2**

<b>P2:</b> _____	<b>P5:</b> _____
<b>P3:</b> _____	<b>P6:</b> _____

**MOVING THE CURSOR**

While programming the system, it is often necessary to move from parameter to parameter. Each programming tool provides a quick method for doing so.

**Attendant Console Cursor Control**

The Attendant Console provides six cursor control keys (three keys on either side of the LCD display). Each key corresponds to a parameter position on the display. Press the desired key to move the cursor.

**CT-20 / CT-30 Cursor Control**

CT-20s / CT-30s provide cursor control by pressing the **RTN** key. The **RTN** key is located in the lower left portion of these telephones. The parameter value will increment each time you press **RTN**.

**DS20SD / DS32SD Cursor Control**

DS20SD / DS32SDs provide cursor control by pressing the **SEL** key. The **SEL** key is located in the lower left portion of these telephones. The parameter value will increment each time you press **SEL**.

**PMP Cursor Control**

The PMP provides cursor control through simultaneous use of the **SHIFT** key and one of the alphabetic keys listed in Table 2-2.

**Table 2-2. PMP Parameter Selection Control Keys**

PARAMETER	CORRESPONDING PMP KEYS
P1	SHIFT + J
P2	SHIFT + K
P3	SHIFT + L
P4	SHIFT + U
P5	SHIFT + I
P6	SHIFT + O

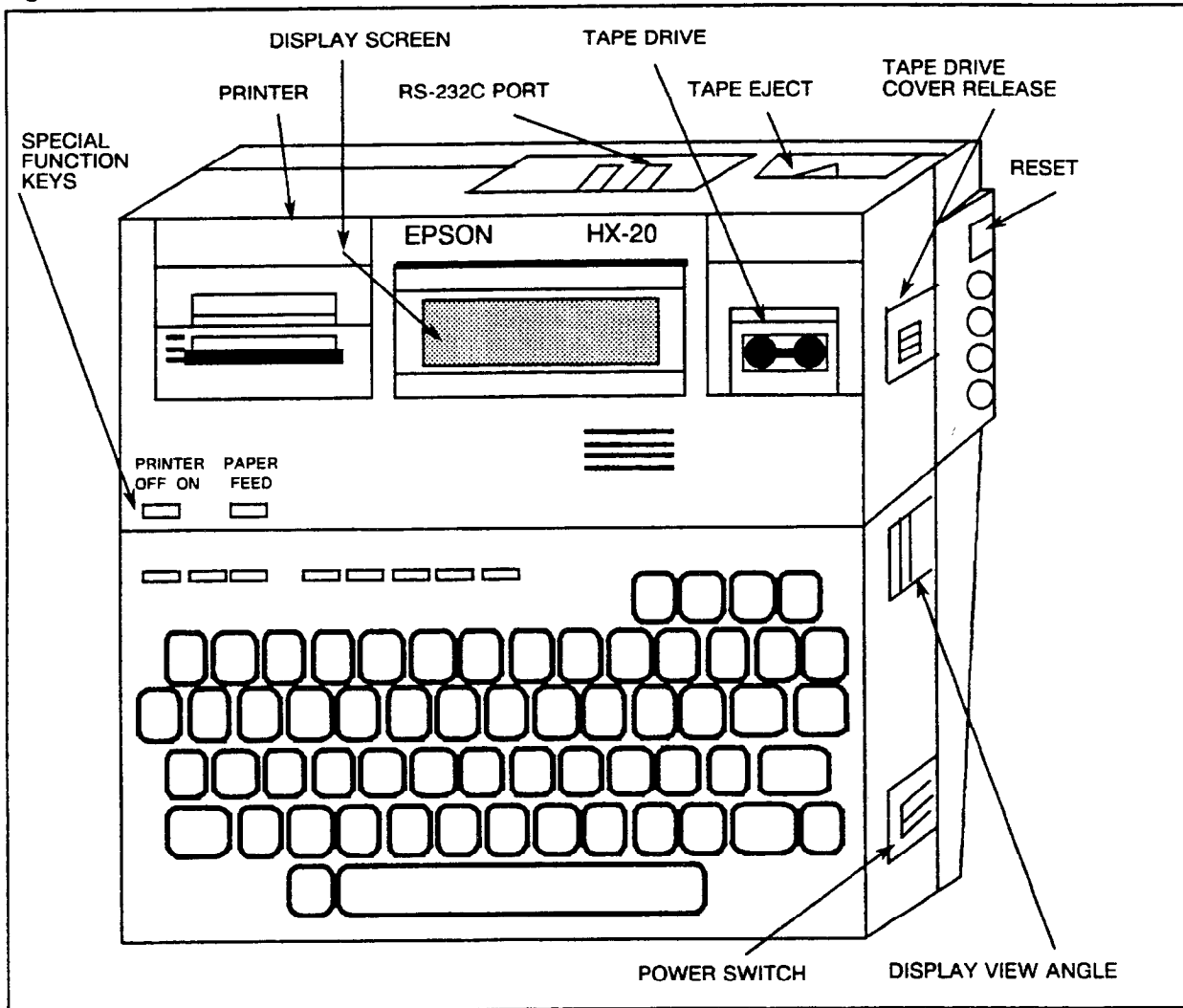


### PORTABLE MAINTENANCE PANEL (PMP)

A PMP can be used on-site or from a remote location to enter CMC codes. A PMP can also be used to make back-up copies of the system ODDB. Similarly, it can be used to write the contents of an ODDB into system memory.

The PMP used with the system for data base administration is an EPSON HX-20 hand-held computer (Figure 2-4). It has a keyboard, a small built-in paper printer, a four-line, twenty-character LCD display, special function keys, a microcassette tape drive, and one RS-232C port for cable interface with the system.

Figure 2-4. Portable Maintenance Panel (EPSON HX-20)



**PMP Keyboard** The PMP keyboard (see Figure 2-5) includes keys in standard typewriter format for entry of CMC codes and a number of special function keys. Table 2-3 lists the functions and corresponding PMP keys that are used for programming.

Figure 2-5. PMP Keyboard Layout

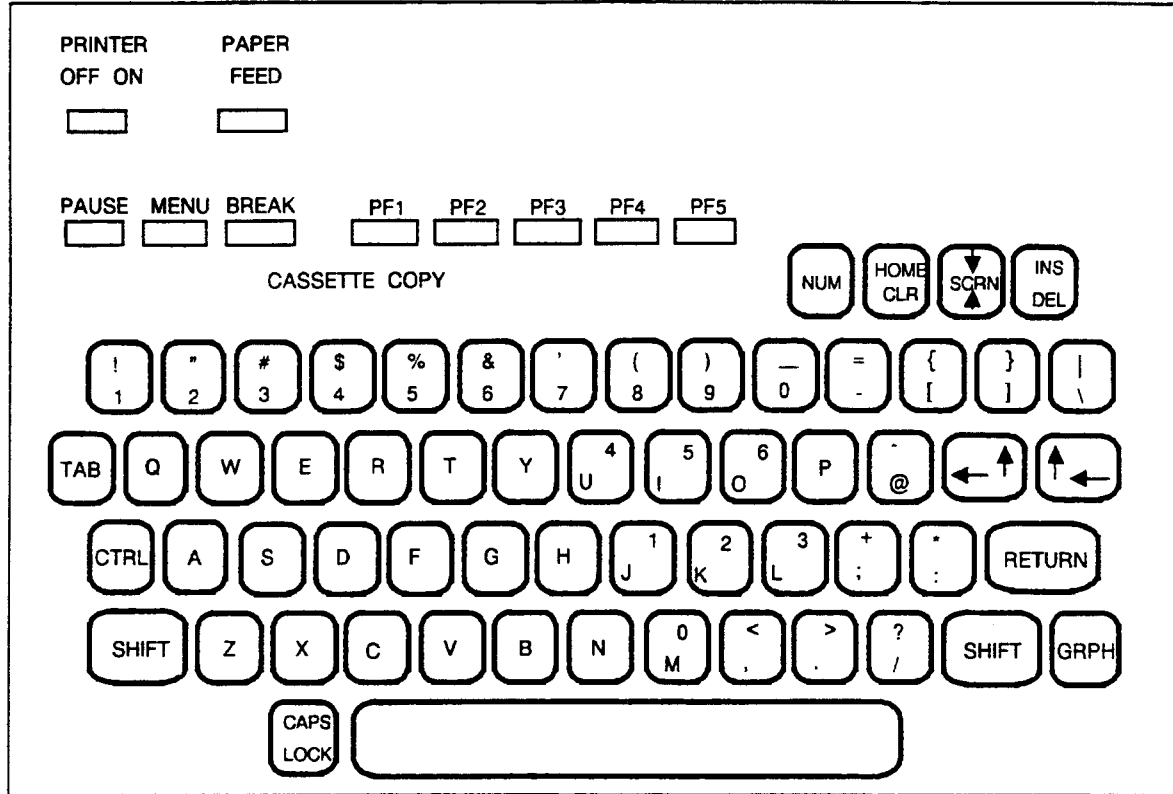


Table 2-3. PMP Function Key Definitions

FUNCTION	PMP KEY	DESCRIPTION
Select / Return	<b>RETURN</b>	Required as a prompt to the system after typing the security code or CMC three-digit number. Can be used to move the cursor to the next parameter position.
<b>RLS</b> (Release)	<b>PF1</b>	Permits exit from a CMC at any time. Useful to change to another command or exit from an error condition.
<b>TRM</b> (Terminate)	<b>SHIFT + PF1</b> <b>(PF6)</b>	Terminates the command mode. ( <b>RLS</b> must be used before using <b>TRM</b> .)
<b>CAN</b> (Cancel)	<b>PF2</b>	Cancels an entered parameter value. Useful to erase typing errors. Will not delete a value from memory. (Can be used to enter a blank parameter value.)
<b>PRINT</b>	<b>CTRL + PF2</b>	Sends the display on the current screen to the printer. One screen is printed at a time. The cursor must be visible on the screen and all PMP / system communications completed before printing.
<b>ADD / CHG</b> (Add / Change)	<b>PF3</b>	Writes (enters) the typed parameter values into data base memory. In some tables, <b>RMV</b> must be used to delete old values before pressing <b>ADD / CHG</b> . The PMP screen indicates whether the values were added or changed.
<b>DUP</b> (Duplicate)	<b>PF4</b>	Increments the table's key parameter(s) while causing the remaining parameter values to stay the same as on the previous screen. Useful for entering repetitive parameter values such as station and trunk data.
Tape Start	<b>SHIFT + PF4</b> <b>(PF9)</b>	Starts the ODDDB back-up tape during the load or save data base procedure.
<b>DSP</b> (Display)	<b>PF5</b>	Required as a prompt to the system after entering displayable CMC codes. Shows parameter values of a table. If no value exists for a parameter, the parameter value is blank. Pressing <b>DSP</b> a second time increments the key parameters, and their parameter values are displayed. Pressing <b>DSP</b> at the end of a table listing either displays the first parameter value again or releases the table by exiting.
<b>RMV</b> (Remove)	<b>SHIFT + PF5</b> <b>(PF10)</b>	Deletes all parameter values from a table. Required at some tables before entering new values.
<b>PSC</b> (Pause Code)	– or # (use # if # is set to PAUSE in CMC 102, P1 = 68)	The <b>PSC</b> key is used to register a pause when entering a system speed calling number (CMC 300).

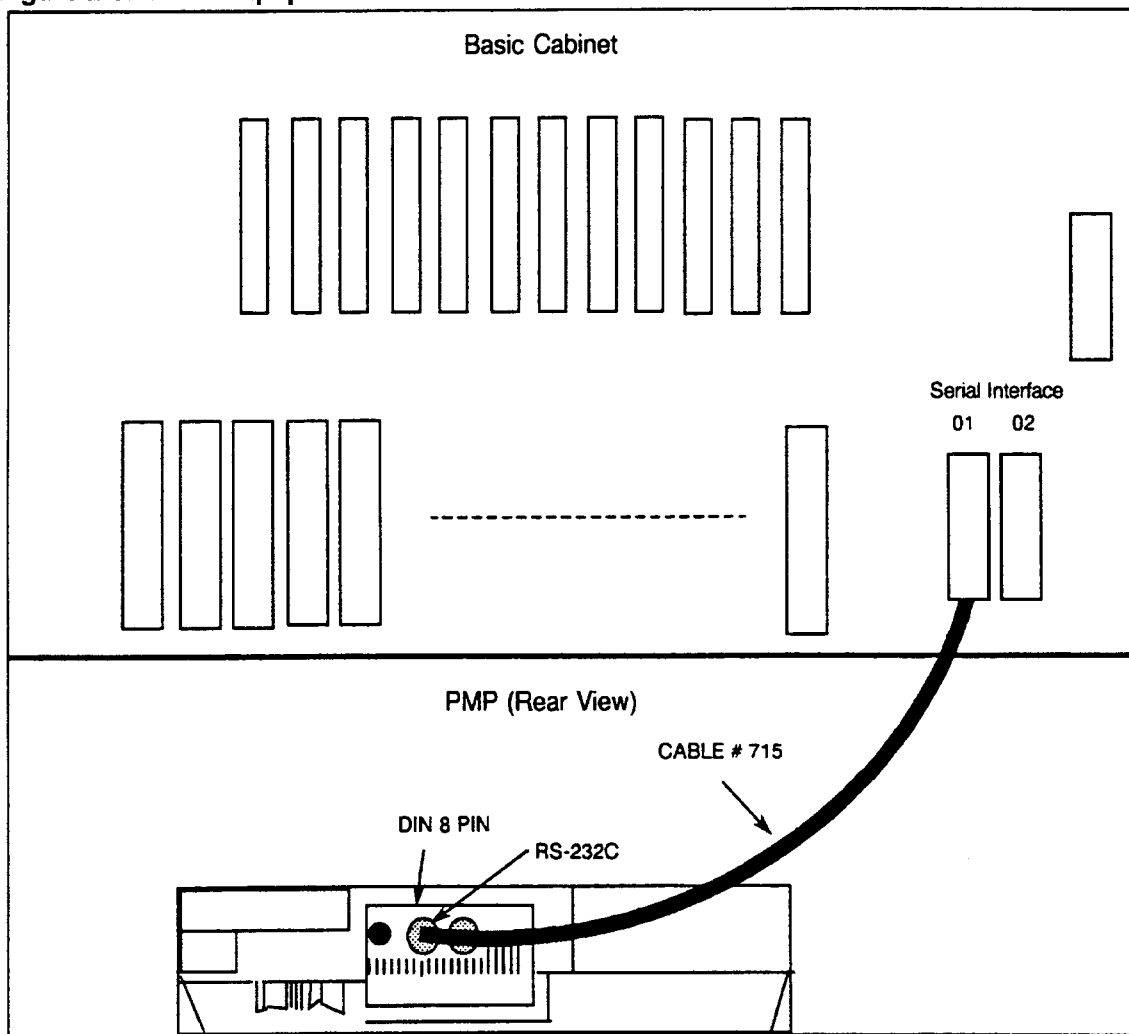
**INSTALLATION PROCEDURES**

The following paragraphs provide instructions for installing the PMP and optional PMP disk drive. Instructions for installing MCTs (CT-20 / CT-30s, Attendant Consoles, and DS20SD and DS32SD digital stations) can be found in the Installation Manual (123-056-002).

**Installing the PMP** To install the PMP (see Figure 2-6):

1. Connect the small end of the PMP connector cable (EPSON No. 715) to the RS-232C port on the rear of the PMP.
2. Connect the large end of the PMP connector cable to I/O port 0 (Serial Interface 01) on the equipment cabinet frame.

**Figure 2-6. PMP / Equipment Cabinet Connection**

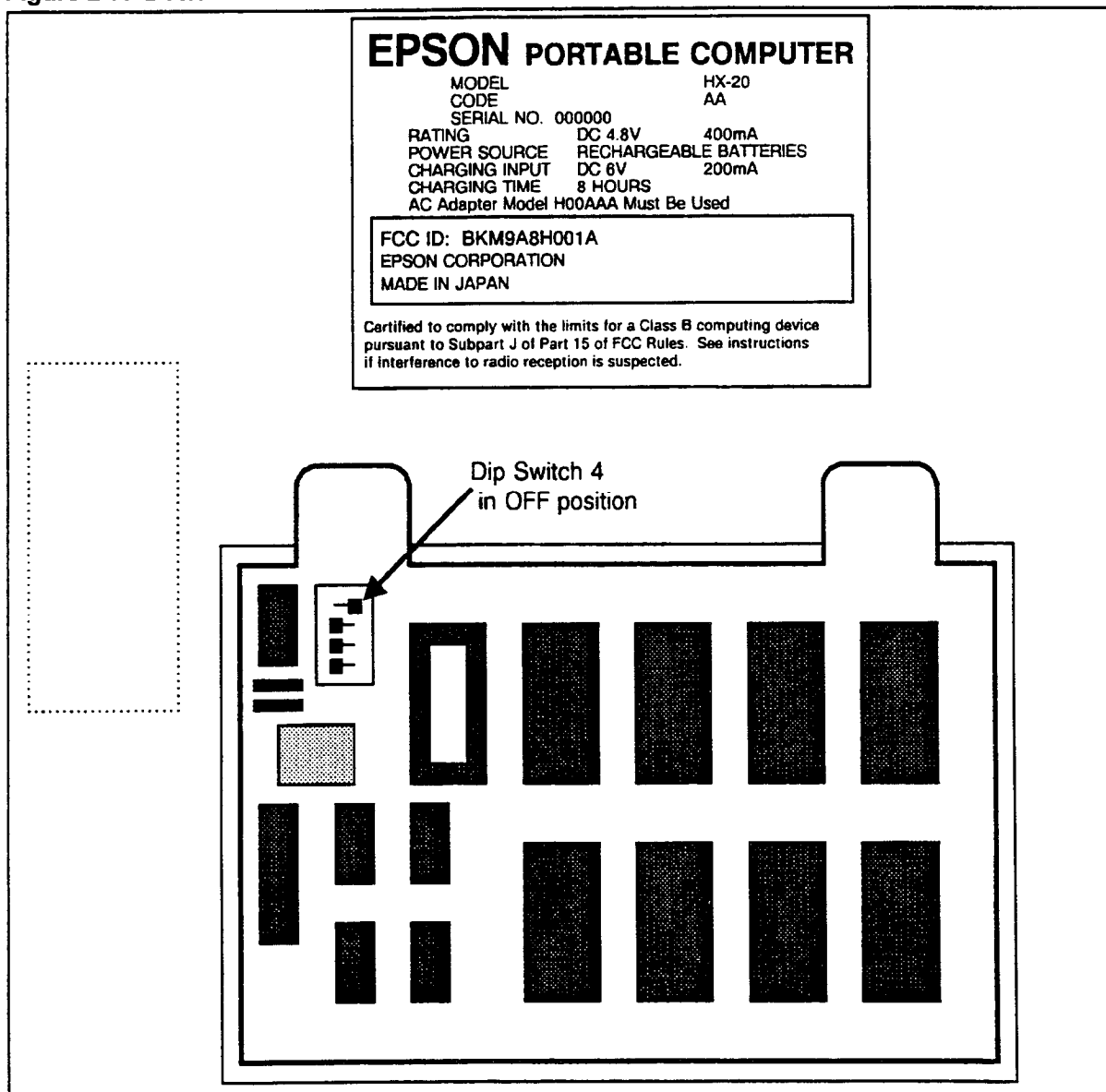


### Installing the Optional PMP Disk Drive

To install the optional PMP disk drive:

1. Verify that the PMP has been upgraded with the expansion RAM module (EPSON No. H20EU). The module must be installed before the optional disk drive can be used. Refer to the manufacturer's instructions.
2. Verify that the power switches of both the PMP and the disk drive are in the OFF position.
3. Remove the bottom panel of the PMP.
4. Set DIP 4 of the DIP switch in the PMP to the ON position (see Figure 2-7). The DIP switch is well inside and to the left as viewed when the bottom panel is open.

Figure 2-7. Bottom of PMP

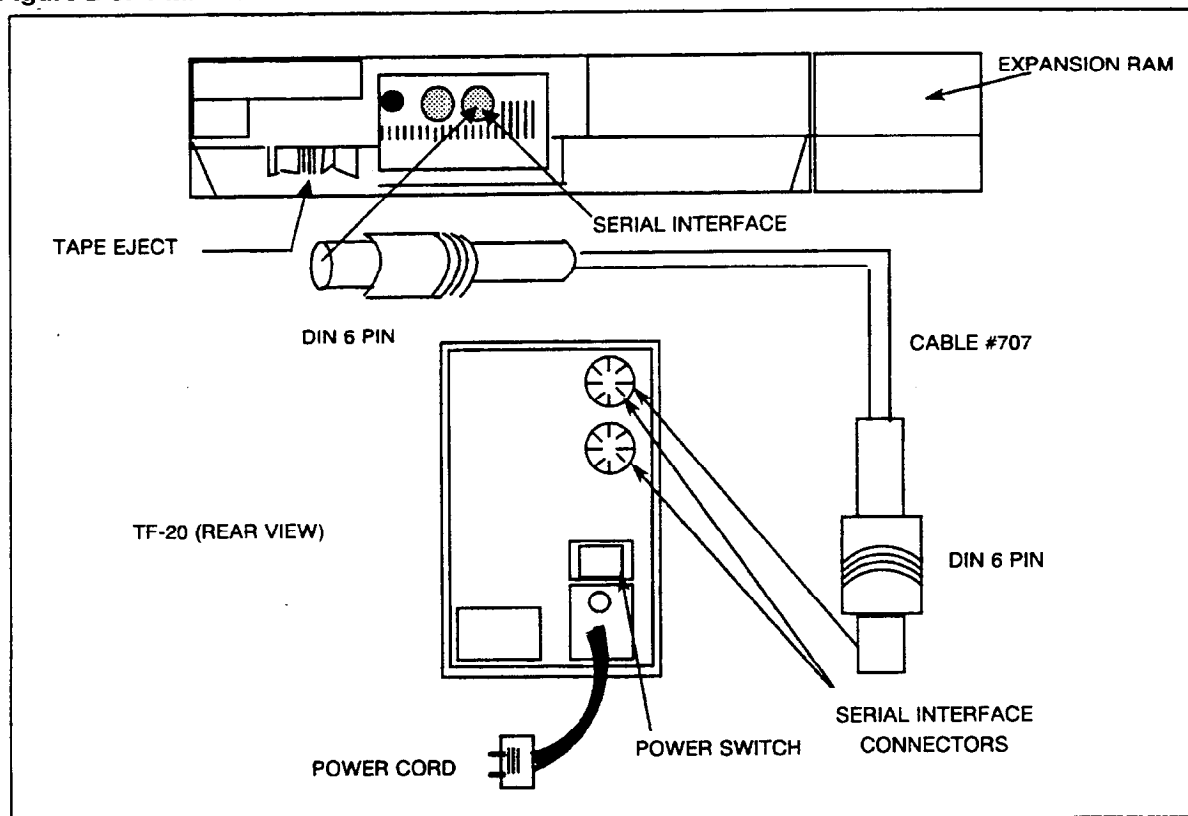


**Installing the Optional PMP  
Disk Drive (Cont'd)**

5. Replace the PMP bottom panel.
6. Connect one end of the disk drive connector cable (EPSON No. 707) to the serial interface connector on the rear of the PMP (Figure 2-8).
7. Connect the other end of the disk drive connector cable to a serial interface connector on the rear of the disk drive.

**CAUTION: Always turn on the PMP disk drive before turning on the PMP power switch.**

**Figure 2-8. PMP Connections to the Disk Drive**



**HARDWARE OPERATION**

The following paragraphs deal with operating the floppy disk drive and the PMP printer.

**Floppy Disk Drive**

The optional PMP disk drive is an EPSON TF-20. It is a separate unit which contains two 5¼-inch floppy disk drives, a controller card, and supporting circuitry. The power indicator LED, disk drive LEDs, and drive eject pushbuttons are located on the front of the unit (see Figure 2-9). The power cord, power switch, and two serial interface connectors are located on the rear of the unit (see Figure 2-10) Use expansion RAM module (Epson No. H20EU) to upgrade the Epson HX-20 in order to use the PMP disk drive.

Figure 2-9. PMP Disk Drive (Front View)

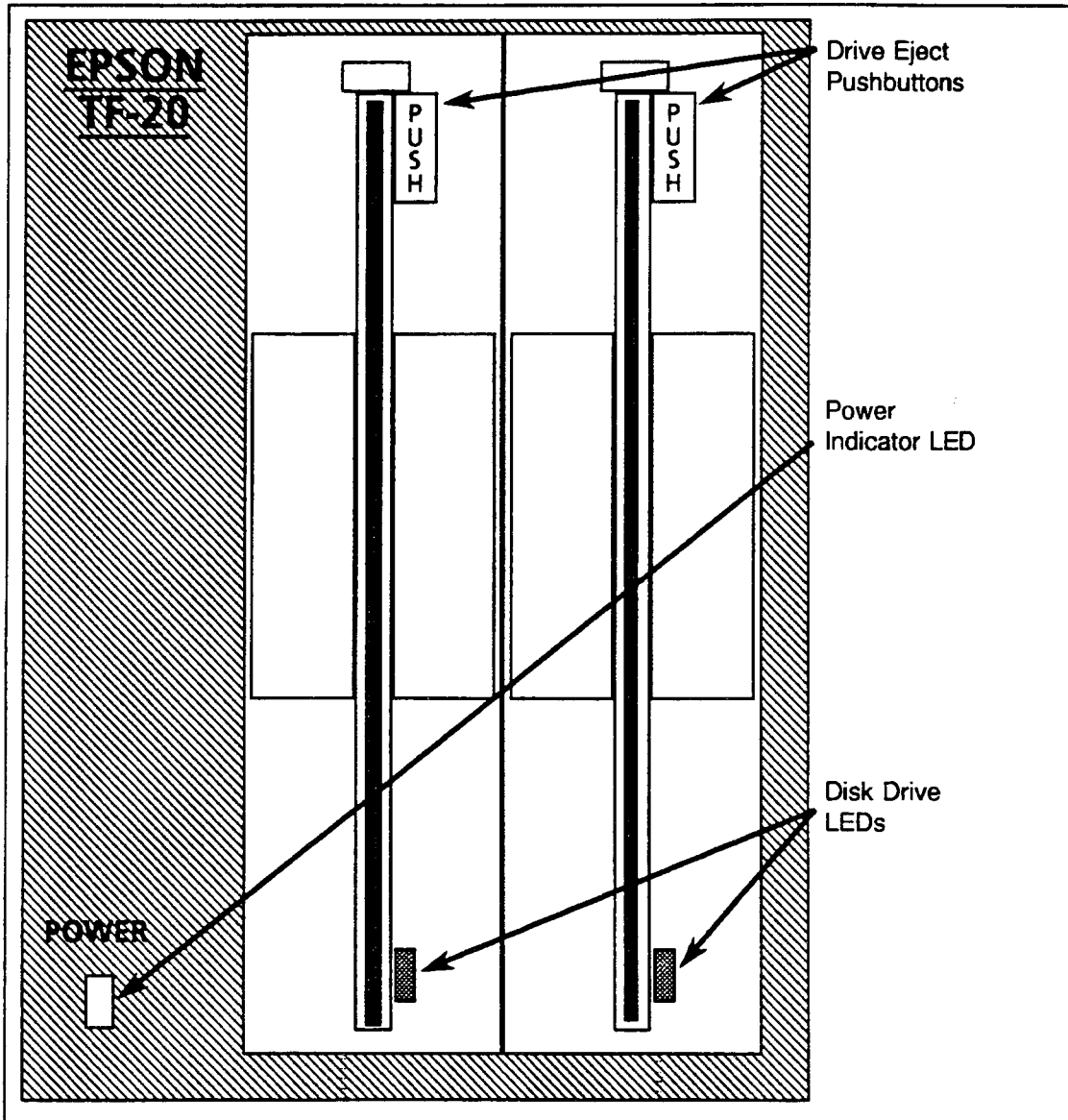
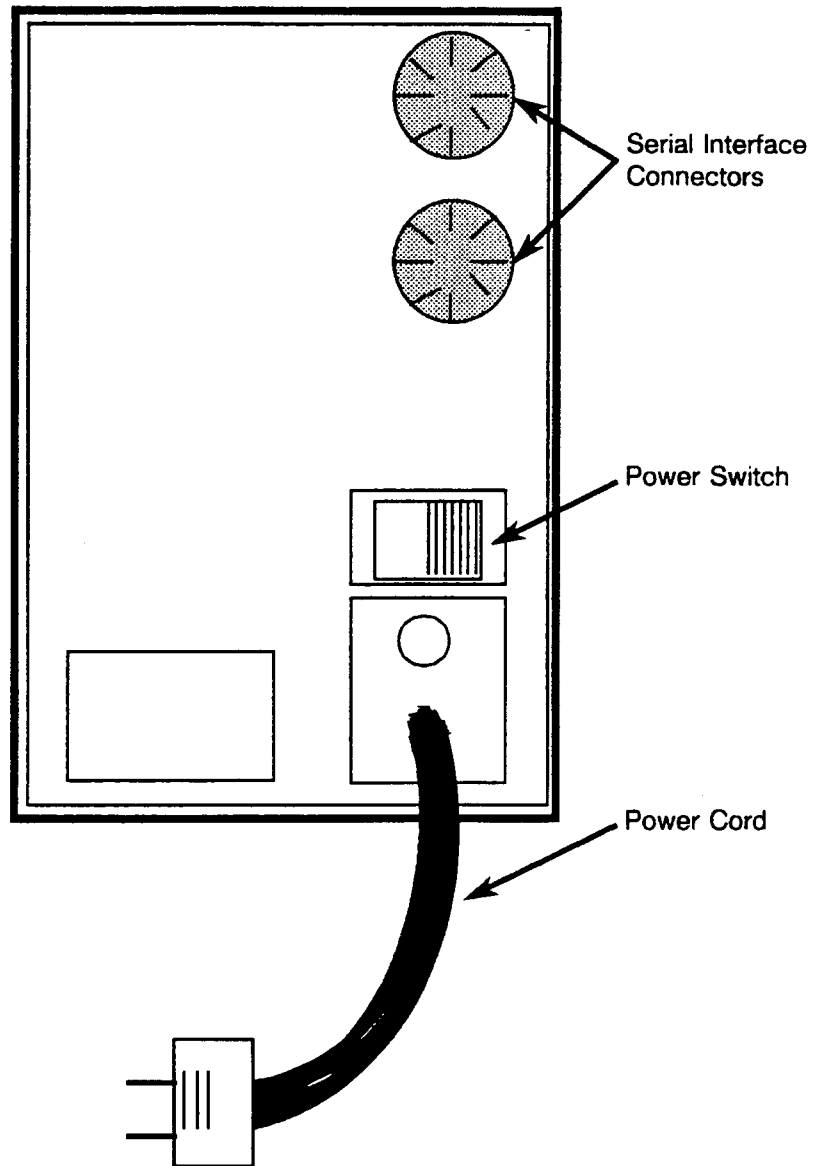


Figure 2-10. PMP Disk Drive (Rear View)





- Loading Floppy Disks** To load a floppy disk:
1. Make sure that the drive pushbutton is out.
  2. Slowly insert the floppy disk into the drive with the write protect notch up and the disk label to the right (see Figure 2-11).

- Ejecting Floppy Disks** To eject a floppy disk:
1. Check that the drive select LED of the drive containing the floppy disk is OFF. If it is ON, wait for the current read or write process to end.
  2. When the LED goes off, press the drive eject pushbutton in to the ON position (see Figure 2-12). The floppy disk is ejected two to three centimeters.
  3. Slowly remove the floppy disk from the drive.

**Figure 2-11. Loading Floppy Disks**

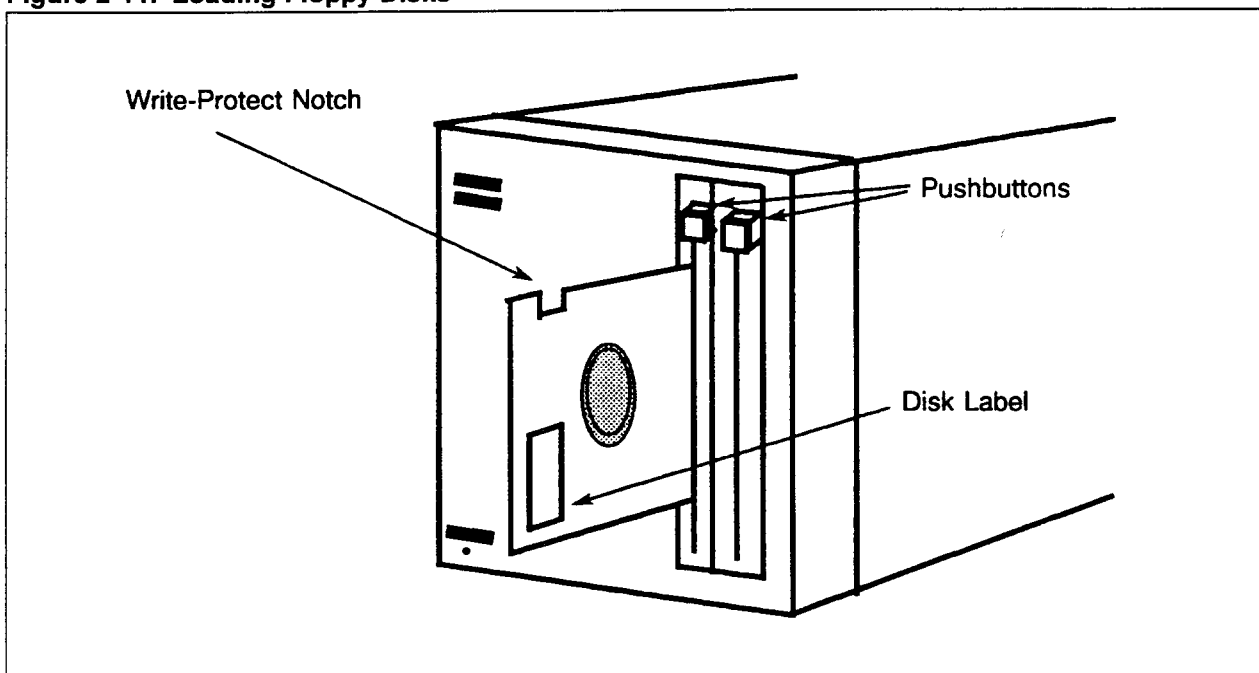
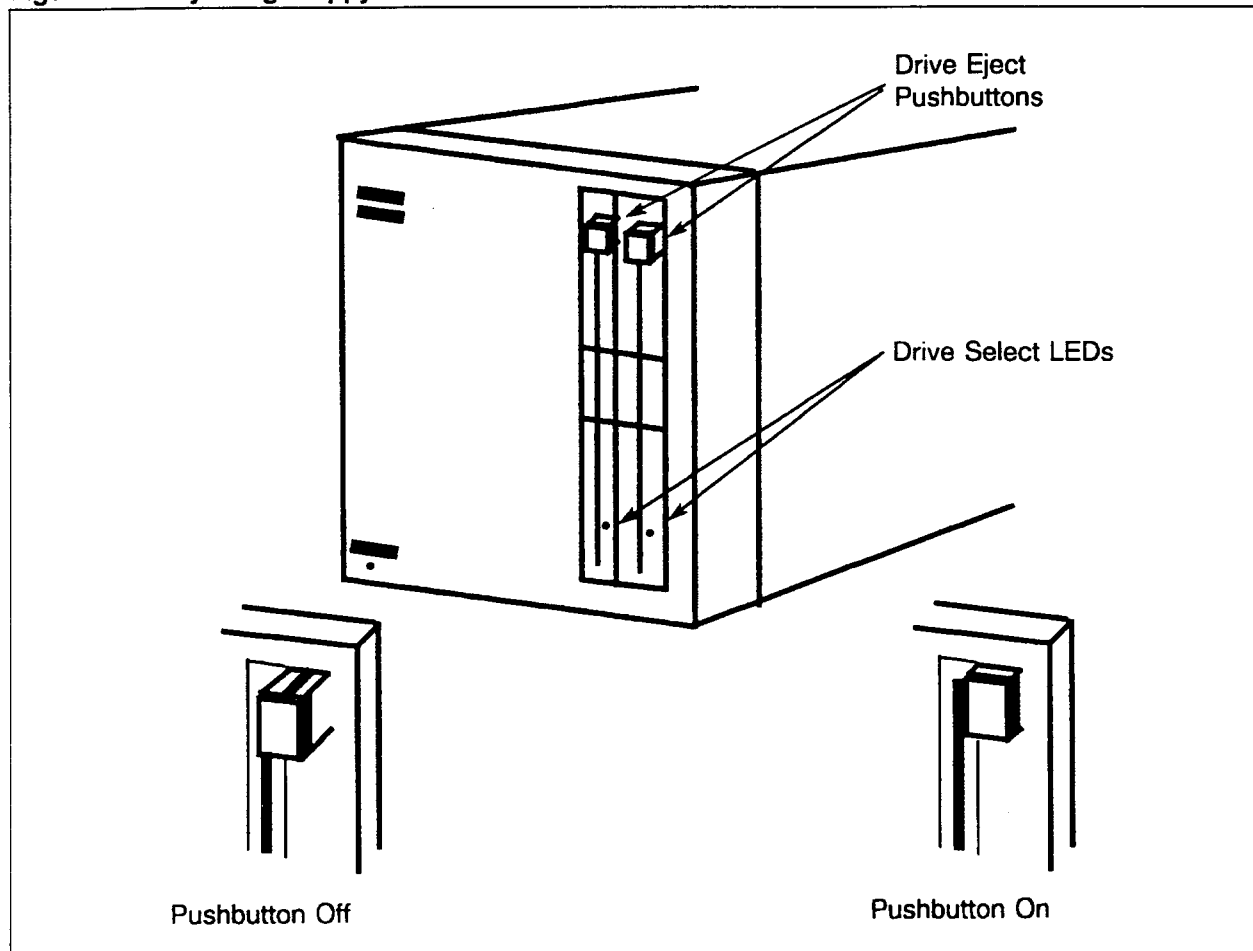


Figure 2-12. Ejecting Floppy Disks

**Using the PMP Printer**

To print the contents of one PMP screen:

1. Complete any CMC code in progress and verify that the cursor is flashing on the screen.
2. Turn the printer on.
3. Press the **CTRL** and **PF2** keys simultaneously.
4. After the contents of the screen have been printed, press the **Paper Feed** key to advance the paper for removal.

**PMP OPERATIONS**

The following paragraphs describe data base procedures that can only be performed on a PMP.

**Loading the PMP Control Program**

The PMP control program must be loaded into the PMP memory if it is new or if the PMP's batteries have discharged. Typically, the program will not need to be reloaded unless the batteries discharge.

1. Power on the PMP by pressing the **POWER ON** switch located on the right side of the PMP.
2. The PMP will display the program menu:

```
CTRL/@ INITIALIZE
  1 MONITOR
  2 BASIC
```

3. Press the **CTRL** and **@** keys simultaneously. The PMP will display the following screen which prompts for year, date, and time:

```
ENTER DATE AND TIME
MM DD YY HH MM SS or
=
PRESS BREAK TO ABORT
```

4. Type the year, date, and time (for example: 062295084500) for June 22, 1995, 8:45 a.m. and press the **Return** key. The PMP displays the following:

```
CTRL/@ INITIALIZE
  1 MONITOR
  2 BASIC
```

5. Press the numeric **2** key to run the program named *BASIC*. **DO NOT PRESS Return.**
6. Push the tape drive cover release (on the right side of the PMP) to open the tape drive.
7. Insert the PMP control program microcassette (version V07 for PMPs without a disk drive or version FDV04 (latest version) for PMPs with a disk drive).

**Loading the PMP Control Program (Cont'd)**

8. Close the tape drive.
9. Type **WIND** and press **Return** to rewind the tape.
10. Type **RUN "CASØ:LOADER"** and press **Return** (making sure the numeric zero is used for the first 0 in the command). The PMP displays:

```
WIND
RUN "CASØ:LOADER"
SEARCHING
```

Then:

```
RUN "CASØ:LOADER"
SEARCHING
FOUND: LOADER
```

indicating the machine code and PMP control program are being loaded.

11. Wait approximately five minutes. When the tape has finished moving, the cursor appears on the screen:

```
RUN "CASØ:LOADER"
SEARCHING
FOUND: LOADER
≥
```

12. Type **TITLE "PMPCTRL"** (exactly as shown) and press **Return**. This identifies the PMP control program on the main menu. The PMP displays the following:

```
SEARCHING
FOUND: LOADER
TITLE "PMPCTRL"
```

**Loading the PMP Control Program (Cont'd)**

13. Type **MON** and press **Return**. The PMP displays:

```
- _____  
A = 00 B = 6E X = AB1C  
C = C4 S = 3CEC P = A3B5
```

14. Type **K3**. **DO NOT PRESS THE Return KEY.**

**NOTE:** The number three (3) in this entry can vary. It identifies the numeric order of the programs in the PMP. The main menu displays all stored programs in order. If three programs already exist, 3 cannot be used in this entry. Enter the next available number (in sequence) instead of 3.

15. Press the **CTRL** key and **@** key simultaneously. **DO NOT PRESS THE Return KEY.**

16. Turn the power off and then on. A screen displaying the main program menu and copyright information appears briefly, then disappears. The PMP port configuration is displayed. This confirms that *PMPCTRL* has been loaded correctly. This completes program loading. HX-20 memory is backed up by a battery. This battery back-up feature preserves the contents of the PMP memory, even if power to the system is turned off.

**NOTE:** It is advisable to make a copy of the PMP control program for back-up purposes. Refer to "Making Back-Up Copies of the PMP Control Program" on the following page.

**Making Back-Up Copies of the PMP Control Program**

To make back-up copies of the PMP control program:

1. Turn the PMP power on.
2. After the main menu appears and the port configuration screen is displayed, press the **Break** key.
3. Type **LOGIN2** and press **Return**.
4. Insert the PMP control program tape into the cassette tape drive.
5. Type **WIND** and press **Return**. The tape rewinds.
6. Type **LOAD "CASØ:LOADER"** and press **Return**. Wait approximately five minutes.
7. After the tape stops moving, insert a blank tape.
8. Type **WIND** and press **Return**. The tape rewinds.
9. After the tape stops, type **RUN2** and press **Return**.
10. After the tape stops and the cursor appears, type **SAVE "CASØ:PMPCTRL.BSC"** and press **Return**.
11. After the tape stops, more tapes can be made by removing the tape and repeating steps 7 through 11.

**Initializing the PMP**

The PMP must be initialized before being used for system programming. The following paragraphs detail the procedure:

1. Turn on the PMP. The main program menu and copyright information will appear briefly, then disappear. The PMP then displays a port configuration screen:

```
PORT CONFIGURATION  
CHANGE?  
YES OR NO (Y / N)
```

2. Type **N**. **DO NOT PRESS THE Return KEY**. This will skip the port configuration screens and assume the default values which are preset to match the system default port 0 configuration.

**NOTE:** If you type **Y**, a series of four configuration screens are displayed.

**Initializing the PMP (Cont'd)**

3. The PMP will then display the following security code prompt:

```
SECURITY CODE =
```

4. Enter the security code and press **Return**. The security code does not appear on the screen.
- a. If the security code is not accepted, the PMP displays:

```
SECURITY CODE =  
ERROR
```

- b. If another terminal has access to the system (a modem, MCT, or another PMP connected to I/O port 1), the PMP displays:

```
SECURITY CODE =  
BUSY
```

- c. If the password is accepted, a screen appears, indicating the user is now in the PMP command mode:

```
CMC = # # #  
COMMAND READY
```

**Formatting Floppy Disks** To format a floppy disk:

**CAUTION: This procedure will erase all data on the disk being formatted.**

1. Perform the Initializing the PMP procedure.
2. Press **Break**.
3. Put the floppy disk to be initialized in drive A .
4. Type **FORMAT "A:"** and press **Return**.
5. You are prompted "**Are you sure?**" Enter **Y**.

**PERSONAL COMPUTER  
MAINTENANCE PROGRAM  
(PcMP)**

The PcMP (Personal Computer Maintenance Program) is a full screen, user friendly software program designed to provide:

- Interactive updates of the system's customer data base.
- An off-line data base.
- Hard copy printouts of the system data base.
- Autodial capability.
- Improved edit functionality.
- Directory look up functionality. A listing of all files can be displayed with PcMP.

PcMP screens present information and options in a user-friendly format. Hard disk usage is supported for file storage. For more information, refer to the PcMP Data Base Management User Guide (117-055-003).



## GENERAL PROGRAMMING OPTIONS

The following paragraphs provide programming operations that can be done from any MCT or PMP connected to the system.

### Entering Security Codes

Security codes are provided to prevent unauthorized users from compromising system data by making command entries or modifications. There are two levels of system security; high and low. A low level security code allows access to the commands needed for daily operation of the system. A high level security code allows access to more powerful commands, particularly those having broader system impact, such as maintenance commands or global commands. Each CMC description indicates whether a high or low security code is required. Table 2-4 lists the default security codes.

**Table 2-4. System Security Codes**

SECURITY CODE LEVEL	DEFAULT CODE
High	#803
Low	#380

When the low level security code is entered, only low level CMC commands can be accessed. When the system displays **LOCKED**, the high security level must be accessed.

If high level security clearance is desired, you must press **RLS**, press **TRM**, type in the high level security code at the **SECURITY CODE =** prompt, and proceed.

**CMC ACCESS**

To access a specific CMC command:

1. Initialize the programming tool.
2. Enter the appropriate high or low level security code. The security code level for each CMC is given in the CMC's description in Chapter 4 of this document.
3. Enter the desired three-digit CMC table number when the **CMC =** prompt is displayed on the programming tool screen.
4. Press **Return**. The system displays the CMC parameter menu:

<b>CMC = # # #</b>	<b>DSP</b>	<b>10:23</b>
<b>P1:</b>	<b>P4:</b>	
<b>P2:</b>	<b>P5:</b>	
<b>P3:</b>	<b>P6:</b>	

Each CMC code contains between one and six parameters. These parameters appear as P1:, P2:, and so forth.

**Display Data**

To display data associated with a specific CMC:

1. Perform the **CMC Access** procedure, outlined above.
2. Enter the key parameter(s) identifying the CMC data to be displayed. Key parameters are underlined in each CMC description.
3. Press **DSP**.

**Add / Change Data**

To add or change data associated with a specific CMC:

1. Perform the **CMC Access** procedure.
2. Enter the parameters to be added or changed.
3. Press **ADD / CHG**.

**NOTE:** You may need to perform the Remove function before you perform the Add / Change function.

- Duplicate Data** To duplicate data associated with a specific CMC:
1. Perform the **CMC Access** procedure.
  2. Perform either the Add / Change or the Display procedure.
  3. Press **DUP**.
  4. Use either the cursor control keys or **Return** to move the cursor to any parameters that need to be changed and type in any corrections.
  5. Press **ADD / CHG**.

- Remove Data** To remove data associated with a specific CMC:
1. Perform the **CMC Access** procedure.
  2. Enter the key parameter(s) identifying the CMC data to be removed. Key parameters are underlined in each CMC description.
  3. Press **RMV**.

**CMC RELEASE**

To release a CMC table:

1. Press **RLS**.
2. Press **TRM**.

The system automatically releases a CMC if any attempt is made to display a key parameter value that is out of range.

**LOAD DATA FROM FLOPPY DISKS**

Bringing up the system requires loading the software supplied on the 3.5 inch floppy disk.

Use CMC 921 to load the data residing on the floppy disk onto the CPU card. All switching processes stop during loading. A Data Kept restart is automatically performed when loading is complete.

Use CMC 921 to display the:

- Date the ODDB was saved (**P2**).
- Version of the ODDB saved (**P3**).

Use the following procedure to load the system data base.

1. Enter the high level security code at P1.
2. Press the **ADD / CHG** key or the **DSP** key to display the information at P2 and P3.
3. Press **ADD / CHG** again to load the data base.
4. The system displays:

**# SYSTEM NOT READY**

during loading of the data base.

5. After the data base is successfully loaded, the system executes a Data Kept restart. The display returns to the **SECURITY CODE =** prompt after a successful data base load.

**NOTES:**

1. If an error occurs while loading the data base, initiate a No Data Kept restart of the system.
2. Logging information is recorded with "CC" as the device name and "5" as the error code by CMC 801 when the data base load is done.

**SAVE DATA TO FLOPPY DISKS**

Use CMC 922 to save the office data to a floppy disk in the floppy disk drive.

Use CMC 922 to display the:

- Date office data saved (**P2**).
- Version of office data (**P3**).

Use the following procedure to save the ODDB to floppy disk:

1. Enter the high level security code and version check flag (**P1** and **P4**).
2. Insert the floppy disk into the drive.

**CAUTION: If this disk has an existing ODDB, it will be overridden when the new ODDB is saved.**

3. Press the **ADD / CHG** key to display the date and the version of saved data on the floppy disk.
4. Press **ADD / CHG** again to save the new ODDB. After this step is initiated, you will see this display:

<b>CMC = 922</b>	<b>HH:MM</b>
<b>P1: SAVE</b>	<b>P4: 1</b>
<b>P2: DATE MM / DD / YY</b>	
<b>P3: VER.XXXXXX.XXX</b>	

5. When the data is saved, **COMPLETION** appears at P2 of the above display.

## INTRODUCTION

Use the customer's system configuration to work through these steps and verify that:

- The proper equipment was ordered.
- There is no conflict with system capacities.

## TRUNK CARDS

Number of Central Office Lines	_____			
Number of WATS Lines	_____			
Number of FX Lines	_____			
Music on Hold	_____ (enter 1)			
Number of Paging Circuits	_____			
ACD Calls Waiting Indicator	_____ *			
	Total Trunk Circuits	_____ ÷ 4 =	_____	4BWC Cards
	OR	_____ ÷ 8 =	_____	8BWC Cards
Number of Loop Tie Lines	_____			
Number of Loop DID Lines	_____			
	Total Loop Circuits	_____ ÷ 2 =	_____	2TTL Cards
Number of E&M Tie Lines	_____	Total E&M Circuits	_____ ÷ 2 =	_____ 2TTE Cards
Number of E&M DID Lines	_____	Total Trunk Circuits	_____ ÷ 24 =	_____ T-1 Cards **
Number of T-1 Trunks	_____	Total Trunk Circuits	_____ ÷ 23 =	_____ ISDN Cards
Number of ISDN Trunks	_____	Total Trunk Circuits	_____ ÷ 23 =	_____ FIPN Cards
Number of FIPN Trunks	_____	Total Trunk Circuits	_____ ÷ 2 =	_____ 2TE4 Cards
No. of E&M 2- / 4-Wire Circuits	_____	Total Trunk Circuits	_____ ÷ 4 =	_____ 4TE4 Cards
No. of E&M 2- / 4-Wire Circuits	_____	Total Trunk Circuits	_____ ÷ 6 =	_____ 6DID Cards
Number of Loop DID Lines	_____			

\* Each ACD calls waiting indicator requires a dedicated trunk card (circuits cannot be used for anything but calls waiting indicators).

\*\* These circuits also require one CLKS card per system that uses the incoming T-1 clock for system timing.

STATION CARDS

Single Line Stations	_____				
Off-Premise Stations	_____	(need extender)			
Dictation Access Circuits	_____				
UNA External Alert	_____				
Off-Premises Stations (OPX)	_____				
Voice Mail Ports	_____				
		Total Station Circuits	_____ ÷ 8 =	_____	8SLC Cards
		OR	_____ ÷ 16 =	_____	16SLC Cards
		Total OPX Circuits	_____ ÷ 4 =	_____	4SLE Cards
CT-10 Instruments	_____				
CT-20 Instruments	_____				
CT-30 Instruments	_____				
40-Button DSS / BLF	_____				
80-Button DSS / BLF	_____				
Attendant Consoles	_____				
100-Button DSS / BLF	_____				
Room Status Indicators	_____				
		Total Electronic Circuits	_____ ÷ 8 =	_____	8EKC Cards

**DIGITAL TERMINALS**

Data Interface Units (DIU)	_____				
DS20, DS20S, DS20SD, and	_____				
DS32SD Digital Stations	_____				
30-Button DSS / BLF	_____				
		Total Digital Circuits	_____ + 8 =	_____	8DTC Cards
		OR	_____ + 16 =	_____	16DTC Cards

**MISCELLANEOUS CARDS**

RGMW	_____	(see Note 1)
6PFA	_____	
4DMR	_____	(see Notes 1 and 2)
4CHT	_____	(see Note 3)

**NOTES:**

1. RGMW and 4DMR cards required for single line telephones.
2. A maximum of eight 4DMR cards can be used per system.
3. The total number of 4CHT cards cannot exceed two per cabinet.



**COMMON CONTROL CARDS**

SCPN2M   \_(1)\_ (required in a 2 cabinet system)  
 SCPN4M   \_(1)\_ (required in a 4 cabinet system)  
 SSDEC     \_(1)\_ (1 card for the second and third expansion cabinets)  
 SFDC       \_\_\_\_\_ (optional)

**SPECIAL CARDS**

Recorded Voice Announcements   \_\_\_\_\_ = \_\_\_\_\_ RVAC Cards  
 Application Processor Interface   \_\_\_\_\_ ÷ 2 = \_\_\_\_\_ 2APIA Cards

**NOTE:** The total number of RVAC cards cannot exceed two per cabinet. The message capacity is 14 blocks X 4 seconds

**4CHT Cards**   4CHT cards are required for the Hotel / Motel printer and for keyboard dialing. A maximum of two 4CHT cards are required (see chart).

NO. OF HOTEL / MOTEL PRINTERS	TRAFFIC	NUMBER OF DATA STATIONS WITH KEYBOARD DIALING				
		0	to 10	to 20	to 50	to 80
0	Low	0	1	1	1	1
	Medium	0	1	1	1	2
	High	0	1	1	2	2
1	Low	1	1	1	1	2
	Medium	1	1	1	2	2
	High	1	1	2	2	2
2	Low	1	1	2	2	2
	Medium	1	1	2	2	2
	High	1	2	2	2	2

Low:           One keyboard operation per hour.  
 Medium:       Two keyboard operations per hour.  
 High:          Three keyboard operations per hour.

## CMC TABLES

The following sections describe in detail the parameters of all the CMC (Change and Maintenance Command) tables associated with the system. Refer to the Index to find the CMC(s) that correspond to a particular feature. Appendix A lists CMCs numerically, and the page on which that CMC can be found. Appendix B lists CMCs alphabetically, and the page on which that CMC can be found.

**NOTE:** Underlined parameters are those key parameters which require an entry to access the CMC.

Configuration forms are used with most commands. These forms will need to be filled in with pertinent data that will be referenced when programming the system. Information on one form may need to be copied onto another form. The Site Log Manual (123-200-002) provides copies of all necessary forms.

The commands are listed in numerical order, with each command number displayed at the top of the page, for easy reference.

### NOTES:

1. Instructions for assigning specific features can be found in the Applications Manual for this system (123-015-002).
2. Further information about the features can be found in the System Description / Features Manual (123-001-002).

The following terms are used throughout this chapter:

<b>Security Codes</b>	System security codes are passwords used to prevent unauthorized access to the data base. There are two levels of system security: HIGH and LOW. A low level security code allows access to the commands needed for daily operation of the system. A high level security code allows additional access to more powerful commands, particularly those having broader system impact, such as maintenance commands or global commands.
<b>Display</b>	The system permits the display of current parameter values for a specific CMC.
<b>Add / Change</b>	The system permits you to add new or to change existing parameter values for the CMC tables.
<b>Duplicate</b>	Existing parameter values may be duplicated for the CMC tables.
<b>Remove</b>	Existing parameter values may be removed from the CMC tables.

**Error Codes** If errors are made during a data base programming session, the system will respond with an error code. These error codes appear in the center of the top line of the LCD display on each of the programming tools.

<b>CMC = 100</b>	<b>ERROR</b>	<b>10:23</b>
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Each CMC description contains specific definitions for the possible error codes which may occur while programming.

**NUMBERING PLAN ASSIGNMENT (CMC 100)**

Use the Numbering Plan Assignment (**CMC 100**) table to assign and/or change access codes pertaining to system trunks and features. The system may or may not be assigned with the default access codes.

This CMC requires a HIGH level security code.

**NOTE:** Before implementing the Change command, verify that any modification of access codes does not conflict with existing access codes or station directory numbers.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	FNO	Feature number	2 to 164	Table 4-1
P2	FAC	Feature access code	4 digits maximum (0 through 9, #, and * )	Table 4-1
P3	TGN	Trunk group number	1 to 63 (if P1 = 4 to 47) Blank (if P1 is any other value)	Table 4-1
P4	OGD	Outgoing digits that may be sent via the accessed trunk (including the access code)	1 to 15 (if P1 = 4 to 47) Blank (if P1 is any other value)	Blank
P5	ACC	Number of digits of the access code to be sent	Blank = Do not send the access code 1 = Send last digit of access code 2 = Send last 2 digits of access code 3 = Send last 3 digits of access code	Blank
P6	SF	Dial or store and forward flag	0 = Send digits as dialed 1 = Store digits in buffer, then send	None

**Parameter Descriptions**

**P1 (FNO):**

Enter the feature number (required). If you wish, you may press **DSP** to display any assigned or default values for the entered feature number, as shown below.

- 2 to 164

**P2 (FAC):**

The access code for the feature is displayed. Each feature number may have a default access code. If you wish, you may enter a new code here.

- 4 digits maximum may be entered, using the characters 0 through 9, #, and \*.

**P3 (TGN):**

The trunk group number applicable to the entered feature number is displayed. Each trunk group (FNO 4 to 47) may be assigned a default trunk group number. If you wish, you may assign a new trunk group number here.

- 1 to 63 (if P1 = 4 to 47)
- Blank (if P1 is any other value)

**Parameter Descriptions  
(Cont'd)**

**P4 (OGD):**

If necessary, enter the total number of outgoing digits that may be sent via the accessed trunk (including the access code). The default for this parameter is to leave it blank.

- 1 to 15 (if P1 = 4 to 47)
- Blank (if P1 is any other value)

**P5 (ACC):**

If necessary, enter the number of digits of the access code to be sent. This parameter is used for tie trunks only (FNO values 22 to 41). The default for this parameter is to leave it blank.

- Blank = Do not send access code
- 1 = Send last digit of access code
- 2 = Send last 2 digits of access code
- 3 = Send last 3 digits of access code

**P6 (SF):**

If necessary, enter the dial or store and forward flag value. This parameter is used for tie trunks only (FNO values 22 to 41).

- 0 = Send digits as dialed
- 1 = Store digits in buffer, then send

**NOTES:**

1. Check that the access codes assigned in P2 do not conflict with the station numbers assigned at CMC 200 and/or CMC 220. If a conflict exists, the system will disable the access code.
2. If P1 does not equal 4 to 47, then P3, P4, P5, and P6 must be left at their default values (blank).
3. If the number value assigned in P4 is equal to or less than the number value assigned in P5 and the DGN (dialing group number) for the TGN is left blank in CMC 400, a call can be made by dialing a trunk access code only.

**Display**

1. Enter an FNO at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of remaining FNOs.
2. The system releases the CMC table if the FNO exceeds a value of 164.

- Change**
1. Display the data to be changed.
  2. Enter the new data for each parameter as needed.
  3. Press **ADD / CHG**.
- Remove**
1. Display the data to be removed.
  2. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The parameter specified in the display command has not been registered in the system.	Add the new parameter, or enter a correct parameter value to be displayed.
OVERLAP	The FAC has already been entered as the access code of another feature.	Select a different access code.
PARA. ERR	The specified TGN does not correspond to the feature number.	Check the P3 value.

Table 4-1. Numbering Plan Assignment and Default Values

Feature Name	Feature Number (P1)	Default Code (P2)	Trunk Group No. (P3)	Numbering Scheme
CO #1 (CO trunks) / ISDN CO #1 access (default)	4	75	13	FAC + outgoing directory no.
CO #2 (CO trunks) / ISDN CO #2 access (default)	5	76	14	FAC + outgoing directory no.
CO / ISDN #3 access	6	85	15	FAC + outgoing directory no.
CO / ISDN #4 access	7	86	16	FAC + outgoing directory no.
CO #5 access	8	None	17	FAC + outgoing directory no.
CO #6 access	9	None	18	FAC + outgoing directory no.
FX #1 access	10	10	19	FAC + outgoing directory no.
FX #2 access	11	12	20	FAC + outgoing directory no.
FX #3 access	12	13	21	FAC + outgoing directory no.
FX #4 access	13	14	22	FAC + outgoing directory no.
FX #5 access	14	15	23	FAC + outgoing directory no.
FX #6 access	15	16	24	FAC + outgoing directory no.
WATS #1 access	16	70	25	FAC + outgoing directory no.
WATS #2 access	17	72	26	FAC + outgoing directory no.
WATS #3 access	18	73	26	FAC + outgoing directory no.
WATS #4 access	19	74	28	FAC + outgoing directory no.
WATS #5 access	20	None	29	FAC + outgoing directory no.
WATS #6 access	21	None	30	FAC + outgoing directory no.
Tie #1 (E&M) / Tie #1 (FIPN) access (default)	22	80	31	FAC + outgoing directory no.
Tie #2 (Loop) / Tie #2 (FIPN) access (default)	23	82	32	FAC + outgoing directory no.
Tie / FIPN #3 access	24	83	33	FAC + outgoing directory no.
Tie / FIPN #4 access	25	84	34	FAC + outgoing directory no.
Tie / FIPN #5 access	26	None	35	FAC + outgoing directory no.
Tie / FIPN #6 access	27	None	36	FAC + outgoing directory no.

Table 4-1. Numbering Plan Assignment and Default Values (Cont'd)

Feature Name	Feature Number (P1)	Default Code (P2)	Trunk Group No. (P3)	Numbering Scheme
Tie / FIPN #7 access	28	None	37	FAC + outgoing directory no.
Tie / FIPN #8 access	29	None	38	FAC + outgoing directory no.
Tie / FIPN #9 access	30	None	39	FAC + outgoing directory no.
Tie / FIPN #10 access	31	None	40	FAC + outgoing directory no.
Tie / FIPN #11 access	32	None	41	FAC + outgoing directory no.
Tie / FIPN #12 access	33	None	42	FAC + outgoing directory no.
Tie / FIPN #13 access	34	None	43	FAC + outgoing directory no.
Tie / FIPN #14 access	35	None	44	FAC + outgoing directory no.
Tie / FIPN #15 access	36	None	45	FAC + outgoing directory no.
Tie / FIPN #16 access	37	None	46	FAC + outgoing directory no.
Tie / FIPN #17 access	38	None	47	FAC + outgoing directory no.
Tie / FIPN #18 access	39	None	48	FAC + outgoing directory no.
Tie / FIPN #19 access	40	None	49	FAC + outgoing directory no.
Tie / FIPN #20 access	41	None	50	FAC + outgoing directory no.
SCC #1 access	42	46	51	FAC + outgoing directory no.
SCC #2 access	43	47	52	FAC + outgoing directory no.
SCC #3 access	44	48	53	FAC + outgoing directory no.
SCC #4 access	45	49	54	FAC + outgoing directory no.
SCC #5 access	46	None	55	FAC + outgoing directory no.
SCC #6 access	47	None	56	FAC + outgoing directory no.



Table 4-1. Numbering Plan Assignment Default Values (Cont'd)

Feature Name	Feature Number (P1)	Default Code (P2)	Numbering Scheme
Account code	154	56	FAC + (max. 15 digits)
Add data call set-up	160	67	FAC
Attendant access	55	0	FAC
Attendant password	158	None	FAC + 0 / 1 + password (max. 4 digits) 0 = Cancel 1 = Register
Call announce receive on / off	126	#8	FAC + 0 / 1 0 = Tone ringer 1 = Voice calling
Call charges message registration add / clear	74	None	FAC + 0 / 1 / 9 + directory number + charge 0 = Cancel 1 = Register 9 = Verify
Call forward - all calls (register)	80	*34	FAC (+ 0 / 1) + directory number (see Note)
Call forward - all calls (cancel)	81	*30	FAC (+ 0 / 1) (see Note)
Call forward - busy (register)	56	*36	FAC (+ 0 / 1) + directory number (see Note)
Call forward - busy (cancel)	57	*38	FAC (+ 0 / 1) (see Note)
Call forward - busy / no answer (register)	82	*33	FAC (+ 0 / 1) + directory number (see Note)
Call forward - no answer (register)	83	*32	FAC (+ 0 / 1) + directory number (see Note)
Call forward - busy / no answer and no answer (cancel)	84	*31	FAC (+ 0 / 1) (see Note)
Call forward - follow me (register / cancel)	110	*35	FAC + 0 / 1 + directory number 0 = Cancel 1 = Register
Call forward - for other station (register / cancel)	112	*37	FAC + 0 / 1 + directory number (forwarded from) + directory number (forwarded to) 0 = Cancel 1 = Register
Call park	153	*9	FAC + (max. 4 digits)
Call park answer	93	#9	FAC + (max. 4 digits)

NOTE: A value of 0 (internal) or 1 (external) must be added to call forwarding register / cancel where indicated if Flag 195 of CMC 102 is set to 1.

Table 4-1. Numbering Plan Assignment Default Values (Cont'd)

Feature Name	Feature Number (P1)	Default Code (P2)	Numbering Scheme
Controlled restriction (register)	75	None	FAC + 1 / 2 / 3 / 4 + 1 + COS 1 = Station incoming calls 2 = All incoming calls 3 = All outgoing trunk calls 4 = All calls
Controlled restriction (cancel)	75	None	FAC + 1 / 2 / 3 / 4 + 0 + COS 1 = Station incoming calls 2 = All incoming calls 3 = All outgoing trunk calls 4 = All calls
Data call attribute (change)	117	69	FAC + changed attribute (see CMC 222)
Day / night mode change -self tenant only	131	* #	FAC + 0 / 1 0 = Day mode 1 = Night mode
Day / night mode change - all tenants	132	8#	FAC + 0 / 1 0 = Day mode 1 = Night mode
Direct station selection	122	#4	FAC + [BTN] + speed calling access code + speed call no. FAC + [BTN] + directory no.
DSS park answer	107	18	FAC + 1 or 2 digit DSS no. + 2 digit DSS button no.
DSS speed call (program)	135	52	FAC + [BTN] + trunk access code + outgoing directory no.
Directed call pick-up	106	17	FAC
Do not disturb (register)	85	None	FAC
Do not disturb (cancel)	86	#6	FAC

Table 4-1. Numbering Plan Assignment Default Values (Cont'd)

Feature Name	Feature Number (P1)	Default Code (P2)	Numbering Scheme
Do not disturb - other (register / cancel / verify)	71	None	FAC + 0 / 1 / 2 / 9 + directory no. + silent message ID (00-50) 0 = Cancel 1 = Register 2 = Register silent message 9 = Verify
Do not disturb override (register)	120	*2	FAC + directory number
Do not disturb override (cancel)	121	#2	FAC
Do not disturb with silent message (register)	137	*6	FAC + silent message ID (00-50)
Proprietary telephone paging access - zone / all zones	51	77	FAC + (0-9 digits)
Proprietary telephone paging answer	52	87	FAC + (0-9 digits)
Executive override	152	#5	FAC
Extension prefix	1	None	FAC + directory number
External paging access	53	78	FAC + (0-9 digits)
External paging answer	54	88	FAC + (0-9 digits)
Flash from SLT	67	6	TRANSFER + FAC
Guest room clean-up	73	None	FAC
Group pick-up	92	*4	FAC
Idle line preference change	129	541	FAC + 0 / 1 / 2 / 3 0 = Not available 1 = ICM 2 = Trunk 3 = D-ICM
Key touch tone control - proprietary telephone only	133	58	FAC + 0 / 1 0 = No touch tone 1 = Touch tone
Least cost routing - system access	3	9	FAC + outgoing directory number
Maid status change	69	None	FAC + status ID (1-6) + maid ID (6 digits)
Message leaving (register)	87	*1	FAC + directory number + silent message ID (00-50)

Table 4-1. Numbering Plan Assignment Default Values (Cont'd)

Feature Name	Feature Number (P1)	Default Code (P2)	Numbering Scheme
Message leaving (cancel)	88	#1	FAC + directory number
Message leaving (cancel from third station)	109	1#1	FAC + 0 (active stations) FAC + 1 + directory number (third stations)
Message pick-up	89	*5	FAC
Modem individual access	164	63*	FAC + modem group ID + modem number + trunk access code + outgoing directory number
Multi-group pick-up	108	60	FAC + pick-up group number
Night answer- any station (this tenant only)	94	#30	FAC
Night answer - any station (all tenants)	95	#31	FAC
Off-hook incoming signal change - user programmability (CT-10, CT-20, CT-30)	124	57	FAC + 0 / 1 0 = No off-hook signaling 1 = Off-hook signaling
Off-hook incoming signal change - user programmability (DS20, DS20S, DS20SD, DS32SD)	124	57	FAC + 0 / 1 / 2 / 3 0 = No off-hook signaling 1 = Set volume level to low 2 = Set volume level to medium 3 = Set volume level to high
Preselection mode change	127	542	FAC + 0 / 1 0 = One-touch off-premise 1 = Preselection
Programming from key telephone (buttons)	134	53	FAC + [BTN] + FNO + X (X = directory number, zone number, ACD number)
Recorded voice announcement	136	89	FAC + 0 / 1 / 9 + voice message ID (01-99 / 001-999) 0 = Cancel 1 = Record 9 = Verify
Repertory dialing (program)	138	62	FAC + [BTN] + outgoing directory number

Table 4-1. Numbering Plan Assignment Default Values (Cont'd)

Feature Name	Feature Number (P1)	Default Code (P2)	Numbering Scheme
Ringling line preference change	128	540	FAC + 0 / 1 / 2 / 3 0 = Not available 1 = ICM 2 = ICM-TRK 3 = D-ICM, ICM, TRK
Room information register	68	None	FAC + 1 / 2 / 9 + directory number + [01 to 16] 1 = Register for multi-language wake-up 2 = Register for COR 9 = Display room restriction
Room status change	72	None	FAC + (see CMC 358) + directory number
Save / last number redial	50	*8	FAC
Secretary station (register)	120	*2	FAC + directory number
Secretary station (cancel)	121	#2	FAC
Self station ringing	66	61#	FAC + on-hook
Service call routing #1	96	None	FAC
Service call routing #2	97	None	FAC
Service call routing #3	98	None	FAC
Service call routing #4	99	None	FAC
Service call routing #5	100	None	FAC
Service call routing #6	101	None	FAC
Service call routing #7	102	None	FAC
Service call routing #8	103	None	FAC
Service call routing #9	104	None	FAC
Service call routing #10	105	None	FAC
Sign-on / sign-off (ACD)	143	5*	Sign-on: FAC + 1 + ACD agent ID Sign-off: FAC + 0
Silent monitor (activation)	144	55	FAC + directory number

Table 4-1. Numbering Plan Assignment Default Values (Cont'd)

Feature Name	Feature Number (P1)	Default Code (P2)	Numbering Scheme
Station camp-on (register)	150	**	FAC
Station camp-on (cancel)	90	#*	FAC
Station speed call - user programmability	123	#0	FAC + X (X = speed call code, trunk access code, outside directory number)
Station speed calling	48	*0	FAC + (0-9)
System speed calling	49	##	FAC + (00-99 / 000-999)
Terminal password	155	*3#	FAC + 0 / 1 / 8 + password + new password 0 = Cancel 1 = Register 8 = Change
Trunk camp-on (register)	151	*7	FAC
Trunk camp-on (cancel)	91	#7	FAC
Trunk access (direct)	130	61*	FAC + trunk directory number + outgoing directory number (see Notes)
Wake-up (other) - guest phone	70	None	FAC + 0 / 1 / 9 + directory number + time 0 = Cancel 1 = Register 9 = Verify
Wake-up self (register)	78	None	FAC + wake-up time
Wake-up self (cancel)	79	None	FAC
Walking COS (assign)	155	*3#	FAC + 0 / 1 / 8 + directory number + password 0 = Cancel 1 = Register 8 = Change
Wrap-up code entry	142	66	FAC + wrap-up code

## NOTES:

1. If the system consists of two or more cabinets, FNO 131 requires the use of a 4-digit trunk access code. (By default, the trunk access code is the same as the trunk equipment number.)
2. If CMC 251 was used to assign trunk directory numbers, the assigned directory number must be used in place of the trunk access code.

**SERVICE PARAMETER  
ASSIGNMENT (CMC 101)**

Use the Service Parameter Description (**CMC 101**) to set service flags for given situations, such as trunk-to-trunk connections and when assigning override warning tone.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>FID</u>	System flag ID	See Table 4-2 <i>2</i>	None
<u>P2</u>	<u>FLG</u>	Flag value	0 or 1 <i>/</i>	Table 4-2

**Parameter Descriptions****P1 (FID):**

Enter a system flag ID (required). If you wish, you may press **DSP** to display any assigned or default values for the entered FID.

**P2 (FLG):**

Each system flag ID must be assigned a value of either 0 or 1. Certain ID values may not be changed. Default values for each FID are shown in Table 4-2.

**Display**

1. Enter an FID at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of FIDS.
2. The system automatically releases the CMC table if the FID exceeds a value of 32.

**Change**

1. Enter the FID to be changed at P1.
2. Enter the selected FLG value at P2.
3. Press **ADD / CHG**.

Table 4-2. Service Parameter Assignment Default Values

Service Parameter Assignment		
Flag ID (P1)	Flag Function	Available Values
1	Send warning burst on override	<b>0 = Send</b> 1 = Do not send
2	Permit trunk-to-trunk connection during transfer (not applied to FIPN)	<b>0 = Do not check CMC 410</b> 1 = Check CMC 410
3	Send warning tone during override	<b>0 = Do not send</b> 1 = Send
4	Voice / tone signal for intercom	<b>0 = Tone</b> 1 = Voice
5-7	<b>RESERVED</b>	<b>NONE</b>
8	No-dial alarm sent to Attendant Console	<b>0 = Do not send</b> 1 = Send
9-12	<b>RESERVED</b>	<b>NONE</b>
13	Disconnect supervision option of CO loop (outgoing) trunk	<b>0 = Detect</b> 1 = Do not detect
14	<b>RESERVED</b>	<b>NONE</b>
15	Speech path before completion of outgoing dialing	<b>0 = One-way speech path</b> 1 = Bothway speech path
16	<b>RESERVED</b>	<b>NONE</b>
17	Make busy for ground start CO trunk	<b>0 = Loop</b> 1 = Ground
18-19	<b>RESERVED</b>	<b>NONE</b>
20	Cancel lost call recall	<b>0 = Lost call recall</b> 1 = Disconnect
21-32	<b>RESERVED</b>	<b>NONE</b>

**NOTE:** Default values are shown in **bold** type.



**SYSTEM PARAMETER  
ASSIGNMENT (CMC 102)**

Use the System Parameter Description (CMC 102) table to set system flags that govern how the system will interpret user input.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	FLGN	Flag number	See Table 4-3 <i>5</i>	None
P2	FTV	Flag value	See Table 4-3 <i>0</i>	Table 4-3

**Parameter Descriptions****P1 (FLGN):**

Enter a flag number (required). If you wish, you may press **DSP** to display any assigned or default values for the entered FLGN.

**P2 (STV):**

Each flag number must be assigned a value. Certain flag numbers may not be changed. Default values for each FLGN are shown in Table 4-3.

**Display**

1. Enter an FLGN at P1.
2. Press **DSP** to display the assigned value.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of FLGNs.
2. The system automatically exits the CMC table if the FLGN exceeds a value of 227.

**Change**

1. Enter the FLGN to be changed at P1.
2. Enter the selected STV at P2.
3. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
RG BUSY	Ringer phase for message waiting is busy (see FLGN 15).	Try again later.
DENIED 5	The specified trunk has already been assigned to a line button on a proprietary telephone.	Enter a correct trunk EN.
NO AREA	The system has no more memory space for this function.	Abandon the attempt or remove unnecessary data to make room.

Table 4-3. System Parameter Assignment Default Values

System Parameter Assignment		
Flag No. (P1)	Flag Function	Available Values
1	Trunk sharing among tenants	<b>0 = Own trunks incoming and outgoing</b> 1 = Own trunks outgoing, share incoming 2 = Own trunks incoming, share outgoing
2	Ringer pattern for off-premise stations (please refer to CMC 204, P3)	<b>1 = Station call</b> 2 = Incoming call 3 = Recall
3	<b>RESERVED</b>	<b>NONE</b>
4	Call charges (SMDR) for transferred call	<b>0 = Divided between stations</b> 1 = Charge transferred station
5	Check trunk signaling before allowing trunk-to-trunk transfer (not applied to FIPN)	<b>0 = Yes</b> 1 = No (Please see Table 4-5)
6	Hunt for outgoing trunks based on tenant number	<b>0 = Yes</b> 1 = No
7	Hunt for outgoing trunks based on tenant number	<b>0 = Yes</b> 1 = No
8-9	<b>RESERVED</b>	<b>NONE</b>
10	Number of digits for call park orbits	1 to 4 digits <b>Default = 3 digits</b>
11	Number of digits in user account codes	1 to 15 digits <b>Default = 15 digits</b>
12	<b>RESERVED</b>	<b>NONE</b>
13	Meaning of pound sign ( # ) sent to tie trunk	<b>0 = End of dialing</b> 1 = Dial code
14	Meaning of pound sign ( # ) sent to CO trunk	<b>0 = End of dialing</b> 1 = Dial code
15	Message waiting for SLTs with message waiting lamp (please refer to CMC 204, P4). <b>The system must be HOT restarted after this flag is changed for it to take effect.</b>	<b>0 = Off</b> 1 = On
16	Digits in personal account code for SCC #1	<b>0 = Not assigned</b> 1, 2, or 3 digits (input required)
17	Digits in personal account code for SCC #2	<b>0 = Not assigned</b> 1, 2, or 3 digits (input required)

NOTE: Default values are shown in **bold type**.

Table 4-3. System Parameter Assignment Default Values (Cont'd)

System Parameter Assignment		
Flag No. (P1)	Flag Function	Available Values
18	Digits in personal account code for SCC #3	<b>0 = Not assigned</b> 1, 2, or 3 digits (input required)
19	Digits in personal account code for SCC #4	<b>0 = Not assigned</b> 1, 2, or 3 digits (input required)
20	Digits in personal account code for SCC #5	<b>0 = Not assigned</b> 1, 2, or 3 digits (input required)
21	Digits in personal account code for SCC #6	<b>0 = Not assigned</b> 1, 2, or 3 digits (input required)
22-27	<b>RESERVED</b>	<b>NONE</b>
28	Type of intercept for a call to a vacant number (DID application)	<b>0 = Attendant</b> 1 = Reorder tone (if using RVAC card, this flag is invalid if MSGID 51 is recorded)
29	Number of times the flash button is effective	0 to 255 times <b>Default = 3 times</b>
30-48	<b>RESERVED</b>	<b>NONE</b>
49	Filler digit for voice mail integration	<b>Default = 8</b> (Please see Table 4-6)
50-55	<b>RESERVED</b>	<b>NONE</b>
56	Direct line access by trunk access code (key system lines)	0 = Not available <b>1 = Available</b>
57-67	<b>RESERVED</b>	<b>NONE</b>
68	Pound ( # ) code treatment in speed calling	<b>0 = Pause</b> 1 = " # "
69	<b>RESERVED</b>	<b>NONE</b>
70	Clock card installation	<b>0 = Not installed</b> 1 = Installed
71-73	<b>RESERVED</b>	<b>NONE</b>
74	Station / trunk installation check assignment command	<b>0 = Check</b> 1 = Do not check
75-76	<b>RESERVED</b>	<b>NONE</b>
77	PSL line busy (see Note 2)	<b>0 = Not available</b> 1 = Available

**NOTES:**

1. Default values are shown in **bold** type.
2. Off-hook call announcement can be performed even when FLGN 77 = 1 (available).

Table 4-3. System Parameter Assignment Default Values (Cont'd)

System Parameter Assignment		
Flag No. (P1)	Flag Function	Available Values
78-82	<b>RESERVED</b>	<b>NONE</b>
83	Attendant overflow from station call	<b>0 = Not available</b> 1 = Available
84-85	<b>RESERVED</b>	<b>NONE</b>
86	Send hold tone during off-hook camp-on	<b>0 = Do not send</b> 1 = Send (hold tone can be either music from music on hold or the RVAC card)
87	LCR delayed advance time	<b>0 = 1 time</b> 1 = 2 times
88	Outgoing route selection when CAC is dialed in LCR access	0 = LCR route <b>1 = TGN #13 route</b>
89-93	<b>RESERVED</b>	<b>NONE</b>
94	Send LCR warning burst tone	0 = Do not send <b>1 = Send in case of hunting most expensive cost route</b> 2 = Send in case of not least cost route
95	Send ring back tone at transfer	<b>0 = Do not send</b> 1 = Send
96	Number of DSS number in DSS call park orbit	<b>0 = 1 digit</b> 1 = 2 digits (recommended when more than nine DSSs are installed)
97	Send cut-through warning burst	0 = Do not send <b>1 = Send</b>
98-105	<b>RESERVED</b>	<b>NONE</b>
106	TGN screening for SMDR	<b>0 = Original TGN</b> 1 = Routed to TGN
107	First level of call waiting indicator for ACD	1 to 254 (must be less than FLGN 108) <b>Default = 1</b>
108	Second level of call waiting indicator for ACD	2 to 255 (must be greater than FLGN 107) <b>Default = 5</b>
109	Auto-disconnect when caller goes on-hook	<b>0 = Not available</b> 1 = Available
110	Stutter dial tone to notify phones without message lamps of waiting messages	<b>0 = Not active</b> 1 = Active
111	Voice mail integration patterns	0 to 4 (Please see Table 4-4) <b>Default = 0</b>

NOTE: Default values are shown in **bold** type.

Table 4-3. System Parameter Assignment Default Values (Cont'd)

System Parameter Assignment		
Flag No. (P1)	Flag Function	Available Values
112	Number of station / trunk digits sent for VMS integration	2 to 8 (includes extension prefix code) An entered value greater than 8 will mean a value of "0." <b>Default = 4</b> (Please see Table 4-6)
113	Tenant type	<b>0 = Soft tenant</b> 1 = Hard tenant
114-128	<b>RESERVED</b>	<b>NONE</b>
129	SMDR for incoming call	<b>0 = Not available</b> 1 = Available
130	SMDR when account code is changed during conversation	<b>0 = The last account code</b> 1 = Every account code
131	PAD control corresponding to TGN for tie route	<b>0 = Not available</b> 1 = Available
132	Type of forced account code service	<b>0 = Not available</b> 1 = Forced 2 = Forced and verified
133-135	<b>RESERVED</b>	<b>NONE</b>
136	Send distinctive busy tone	<b>0 = Send</b> 1 = Do not send (BT instead of DBT)
137-138	<b>RESERVED</b>	<b>NONE</b>
139	Clock Alarm detection	Set to 0 (alarm detected) after CLKS card installation to ensure clock recovery will be enabled. ( <b>Default is 1</b> )
140-152	<b>RESERVED</b>	<b>NONE</b>
153	AC alarm detection for Attendant Console	<b>0 = Detected</b> 1 = Not detected
154-155	<b>RESERVED</b>	<b>NONE</b>
156	Tie trunk (incoming) reverse signal control	<b>0 = Do not transmit reverse signal</b> 1 = Transmit reverse signal
157-160	<b>RESERVED</b>	<b>NONE</b>
161	Presentation indicator in ISDN	<b>0 = Not checked</b> 1 = Check
162	Number of digits of system abbreviation / system speed calling code	<b>0 = 2 digits (SYS ABB / SPD code = 00 to 99)</b> 1 = 3 digits (SYS ABB / SPD code = 000 to 999)
163	Call diversion to attendant	<b>0 = Individual extension assigned by P6, CMC 206</b> 1 = All extensions in the system

NOTE: Default values are shown in **bold** type.

Table 4-3. System Parameter Assignment Default Values (Cont'd)

System Parameter Assignment		
Flag No. (P1)	Flag Function	Available Values
164	SMDR output of authorization code of DISA-S	<b>0 = Not output</b> 1 = Output
165	Incoming SMDR output before answering call	<b>0 = Not output</b> 1 = Output
166	<b>RESERVED</b>	<b>NONE</b>
167	SMDR output for tandem trunking resulting in trunk seizure block	<b>0 = Output as discarded call</b> 1 = Output as incomplete call
168-172	<b>RESERVED</b>	<b>NONE</b>
173	Minimum number of digits of forced account code	0 to 15 <b>0 = Not checked</b>
174	Maximum number of digits of forced account code	0 to 15 <b>0 = Not checked</b>
175	ACD route table	<b>0 = Not apply ACD route table (only ACD fixed routing is applied)</b> 1 = Apply ACD route table
176-183	<b>RESERVED</b>	<b>NONE</b>
184	Type of extension name on the attendant supervised loop area	<b>0 = Display extension name 1</b> 1 = Display extension name 2 registered by CMC 208
185	Detection of T-1 trunk slip error	<b>0 = Do not detect</b> 1 = Detect
186-188	<b>RESERVED</b>	<b>NONE</b>
189	PMSI hotel message counter	<b>0 = MSGCT = "1" to "A"</b> 1 = MSGCT = "1" to "9"
190-191	<b>RESERVED</b>	<b>NONE</b>
192	Type of automatic hold when a trunk key is pressed	<b>0 = Exclusive hold</b> 1 = Common hold
193	Number of digits of MSGID for attendant recorded voice message	<b>0 = 2 digits</b> 1 = 3 digits (see Note 2)
194	LCR default route	13 to 56 = TGN 13 to TGN 56 <b>0 = TGN 13</b>

**NOTES:**

1. Default values are shown in **bold** type.
2. A three-digit MSGID is required when the attendant voice message or music on hold per tenant / DNIS is assigned.

Table 4-3. System Parameter Assignment Default Values (Cont'd)

System Parameter Assignment		
Flag No. (P1)	Flag Function	Available Values
195	Call forward separation for internal / external calls (see Note 2)	<b>0 = Not separated</b> 1 = Separated
196	Default COR at hotel / motel check-in (see Note 3)	1 to 16 <b>Default = 1</b>
197	Day / night DNIS (see Note 4)	<b>0 = Do not apply</b> 1 = Apply
198	Second DN display at receiving calling party number (see Note 5)	<b>0 = Do not display</b> 1 = Display
199	Time out disconnect for ring / no answer DNIS-S calls (see Note 6)	<b>0 = Not disconnected</b> 1 = Disconnected
200	Language display (DS20, DS20S, DS20SD, and DS32SD sets only) (see Note 5)	<b>0 = English</b> 1 = Spanish
201	Front desk console and BS coding flag	0 = Mu-law 1 = A-law
202	<b>RESERVED</b>	<b>NONE</b>
203	Time format (DS20, DS20S, DS20SD, and DS32SD sets only) (see Note 5)	<b>0 = 12-hour</b> 1 = 24-hour
204	<b>RESERVED</b>	<b>NONE</b>
205	Silent monitor start	<b>0 = Start from call in progress</b> 1 = Start at next call
206	Send silent monitor break-in burst tone	0 = Do not send <b>1 = Send</b>
207	Silent monitor waiting message in idle state	0 = Message / music (set at CMC 305) <b>1 = Silence</b>
208-211	<b>RESERVED</b>	<b>NONE</b>
212	Name and DN display for 4-line display digital telephone	0 = Do not apply <b>1 = Apply</b>

**NOTES:**

1. Default values are shown in bold type.
2. **CMC 319 must also be set up to implement this feature.**
3. **CORs are defined in CMCs 411, 412, 413, 414, 416, and 417.**
4. Refer to CMC 461 (day) and CMC 464 (night) for more information.
5. When FLGN 198 is assigned, a maximum of ten characters can be programmed for display. If more than ten characters are used, you may see only nine or less in the display, depending on the calling situation.
6. Refer to CMC 103, flag number 151.
7. After any changes are made, each individual phone where changes are to apply must be unplugged and then plugged back in. Alternatively, a HOT restart may be performed.

Table 4-3. System Parameter Assignment Default Values (Cont'd)

System Parameter Assignment		
Flag No. (P1)	Flag Function	Available Values
213	Name and display for attendant	0 = Do not apply 1 = Apply
214-217	<b>RESERVED</b>	<b>NONE</b>
218	Off-hook call announcement when PSL is busy	0 = Not allowed 1 = Allowed
223	NXX area code flag	0 = Apply 1 = Not apply
224	CAC digit flag	0 = 5 digit CACs only 1 = Both 5 digit and 7 digit CACs 2 = 7 digit CACs only
225	International call digit flag	0 = 15 digits 1 = 18 digits
226	Extension prefix application flag	0 = Standard (extension call only) 1 = Extend (extension call, DN for FAC, VMS integration digits)
227	Paging access for DND registering extension	0 = Allow 1 = Restrict



Table 4-4. Voice Mail Integration Patterns

SERVICE		SLT INTERFACE (DTMF) FORMAT (PBX → VMS)				
CALL TYPE	SRCE / DEST	STV = 0	STV = 1	STV = 2	STV = 3	STV = 4
Direct call (IND1)	from extension	"C1" + (SA) + "#"	"C1" + "#"	None	"#" + (SA)	"*" + (SA)
	from outside	"C2" + (TA) + "#"			None	None
Forwarded call (IND2)	Busy (from ext)	"C3" + (SA) + "#" + (SB) + "#"	(SB)	(SB)	(SB)	(SB)
	N/A (from ext)	"C4" + (SA) + "#" + (SB) + "#"	(SB)	(SB)	(SB)	(SB)
	All (from ext)	"C5" + (SA) + "#" + (SB) + "#"	(SB)	(SB)	(SB)	(SB)
	Busy (from out)	"C8" + (SA) + "#" + (SB) + "#"	(SB)	(SB)	(SB)	(SB)
	N/A (from out)	"C9" + (SA) + "#" + (SB) + "#"	(SB)	(SB)	(SB)	(SB)
	All (from out)	"C0" + (SA) + "#" + (SB) + "#"	(SB)	(SB)	(SB)	(SB)
Message pick-up (IND3)	—	"C1" + (SA) + "#"	"C1" + "#"	None	"#" + (SA)	"*" + (SA)
Transferred call (IND4)	from extension	None	None	None	None	None
	from outside					
Ack of MWI	—	CFT / ROT	CFT / ROT	CFT / ROT	CFT / ROT	CFT / ROT
<b>FORMAT (PBX ← VMS)</b>						
MWI (IND5, IND6)	Lamp on	FAC + (DN)		FAC + (DN)		
	Lamp off	FAC + (DN)		FAC + (DN)		
Outgoing call (IND7)	to outside	FAC + (DN)		FAC + (DN)		
	to extension	(DN)		(DN)		
VMS trans. call (IND8)	to attendant	FL + (DN)		FL + (DN)		
	to extension					

SA: Calling extension number (2, 3, or 4 digits, fixed)  
 SB: Called extension number (2, 3, or 4 digits, fixed)  
 TA: Incoming trunk number (2, 3, or 4 digits, fixed)

FAC: Feature access code  
 TAC: Trunk access code  
 DN: Directory number  
 FL: Hookflash

**NOTES:**

- The same number may be assigned to SA, SB, and TA. For example, a station and a trunk number may both be 2100.
- Number of digits sent for VMS integration is programmable by this CMC command, FLGN = 112.
- The filler value is programmable by CMC command (CMC 102, FLGN = 49; default set to 8). For example, when the filler value is "8":  
 2 digits: 81, 10  
 3 digits: 882, 811, 100  
 4 digits: 8883, 8881, 8121, 1231  
 In the case of the Attendant Console, the attendant access code plus the attendant number is sent.
- If the enhanced station prefix application flag (CMC 102, FLGN = 226) is set to "1," 2 to 8 digits are applied for SA / SB.

**Table 4-5. Default Trunk Signaling Table (FLGN 5)**

FIRST TRUNK	SECOND TRUNK		
	CO LOOP (OG)	CO GROUND (OG)	TIE (OG)
CO loop (outgoing, incoming)	Restricted	Allowed	Restricted *
CO ground (outgoing, incoming)	Allowed	Allowed	Allowed
Tie (outgoing)	Restricted *	Allowed	Restricted *
Tie (incoming)	Allowed	Allowed	Allowed

**NOTE ( \* ):** These trunk connections are allowed if answer and disconnect detection (P2 = 2) CMC 255 is selected. CMC 101, Flag 2; CMC 102, Flag 5; CMC 250; and CMC 410 (P1 and P2) may also be used.

**Table 4-6. Filler Digit for Voice Mail Integration (FLGN 49 and 112)**

<b>FTV</b>	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>Filler Digit</b>	D	1	2	3	4	5	6	7	8	9	0	*	#	A	B	C

**NOTES:**

1. Number of digits sent for VMS integration is programmable by this CMC command, FLGN = 112.
2. The filler value is programmable by CMC command (CMC 102, FLGN = 49; default set to 8).

**SYSTEM TIMING  
PARAMETER ASSIGNMENT  
(CMC 103)**

Use the System Timing Parameter Assignment (**CMC 103**) table to alter the service timing parameters set by the system.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	STID	Service timing ID	1 to 152	Table 4-7
P2	NTIM	Normalized timing	0 to 255	Table 4-7

**Parameter Descriptions**

**P1 (STID):**

Enter the service timing ID (required).

- 1 to 152.

**P2 (NTIM):**

If necessary, enter the normalized timing (number of time units). Certain time units may not be changed. These values are shown in Table 4-7.

- 0 to 255.

**Display**

1. Enter a value at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of STIDs.
2. The system automatically releases the CMC table if the STID value exceeds 152.

**Change**

1. Enter the STID to be changed at P1.
2. Enter the NTIM at P2.
3. Press **ADD / CHG**.

**NOTE:** Unit of time = milliseconds  
1000 milliseconds = 1 second

Table 4-7. System Timing Parameter Assignment Default Values

System Timing Parameter Assignment				
ID (P1)	Service Timing ID Definition	Default Value	Unit of Time (ms)	If Number of Units = 0, Flag is:
1	Station hookswitch timing for SLTs	21	50	Meaningless
2	Length of time after all digits are dialed by the station user before the call is timed for SMDR and shown on the display	16	1000	Infinity
10	Confirmation tone burst timing	7	100	255-156 sec
11	Ready to call timing after service registration	2	1000	Infinity
12	Ringing duration before call is forwarded on no answer condition	13 (approx. 3 rings)	1000	255-256 sec
14	Ringing duration for call return of station camp-on before abandoning call back attempt	31 (approx. 7 rings)	1000	255-256 sec
15	Station camp-on release timing	0	10000	Infinity
16	Trunk camp-on cancel timing	0	10000	Infinity
17	Time interval during which a parked call is held before returning to the parking station	61	1000	Sta=Infinity Trk=255-256
18	Time interval during which a trunk call is held before returning to the holding station (only applicable if trunk appears on a button at the station)	181	1000	255-256 sec
19	Time interval during which a call is camped-on to a station before returning to the DSS	31	1000	Sta=Infinity Trk=255-256
20	Time interval during which a parked call is held before returning to the parking DSS	31	1000	255-256 sec
22	Ringing duration after a call has been transferred to a station, before it returns to the transferring station on a no answer condition	31 (approx. 7 rings)	1000	255-256 sec
23	Duration of burst tone after going off-hook and before dial tone (service registration reminder)	7	100	Infinity
24	Preselection timing	4	100	255-256 sec
25	Camp-on burst timing	2	100	Infinity
27	Direct-in line party busy burst timing	2	100	Infinity
28	Override warning burst timing	2	1000	255-256 sec
29	Paging proprietary telephone warning burst timing	2	1000	Infinity

NOTE: Do NOT change the P2 value for STIDs 10 or 11.

Table 4-7. System Timing Parameter Assignment Default Values (Cont'd)

System Timing Parameter Assignment				
ID (P1)	Service Timing ID Definition	Default Value	Unit of Time (ms)	If Number of Units = 0, Flag is:
30	BT (Busy Tone), ROT (Reorder Tone) duration timing (time out routing to attendant)	31	1000	Sta=Infinity Trk=255-256
34	Duration of warning tone that sounds before a voice announce to a station	2	1000	255-256 sec
35	Confirmation tone time out (time between CFT and ROT)	11	1000	Infinity
36	Call party release timing	1	1000	Infinity
37	Amount of time before a trunk camp-on callback to a station cancels under a no answer condition	11 (approx. 3 rings)	1000	255-256 sec
38	Pre-pause for second DT (LCR, SCC)	1	1000	Infinity
39	Recalled station lock-in timing	2	1000	255-256 sec
40	Station camp-on recall timing	31	1000	255-256 sec
42	Paging proprietary telephone call timing	1	1000	Infinity
43	Station hold loop recall timing	181	1000	255-256 sec
44	Direct-in line called party busy timing	2	1000	255-256 sec
45	Amount of time that a warning tone is sent over the external paging system before the page	2	1000	255-256 sec
46	Account code registration confirmation timing	11	100	255-256 sec
47	Verify display timing	31	1000	255-256 sec
48	Amount of time in seconds that a call returns to an Attendant Console after camp-on to a station	31	1000	255-256 sec
49	Amount of time that a call returns to an Attendant Console from park	31	1000	255-256 sec
51	Amount of time that a call returns to an Attendant Console from supervised hold	61	1000	255-256 sec
52	Amount of time that a transferred call returns to the Attendant Console on a no answer condition	31 (approx. 7 rings)	1000	255-256 sec
53	Amount of time a call waits to be answered at the Attendant Console before it overflows to the alternate destination	61	1000	255-256 sec

Table 4-7. System Timing Parameter Assignment Default Values (Cont'd)

System Timing Parameter Assignment				
ID (P1)	Service Timing ID Definition	Default Value	Unit of Time (ms)	If Number of Units = 0, Flag is:
54	Amount of time before an initial ACD message answers an incoming call	7	1000	255-256 sec
55	Amount of time an incoming ACD call waits in queue before overflowing to an alternate position or returning to the attendant	181	1000	Infinity
56	Time between first and second ACD message	31	1000	255-256 sec
57	Silent message confirmation display timing	4	1000	255-256 sec
60	Time until common hold feature times out after first button depression	16	100	Infinity
61	Amount of time applicable for delayed ringing on key system lines	11	1000	Infinity
62	Automatic pause timing	21	100	255-256 sec
63	Automatic disconnect timing after sending ROT on DISA-standard	11	1000	255-256 sec
64	Confirmation timing for wake-up answer	21	1000	255-256 sec
65	Retry timing for seizure of DTMF port after DTMF seizure failure in tie / DID termination	2	1000	255-256 sec
76	Repertory dial pause timing	10	200	51000-51200
82	Modem pre-activating timing	6	1000	255-256 sec
83	Modem initiating timing	11	1000	255-256 sec
84	Modem guard timing	11	100	25500-25600
86	Modem release timing	11	100	25500-25600
94	LCR #1 to #2 route advance timing off-hook	31	1000	Infinity
95	LCR #2 to #3 route advance timing off-hook	31	1000	Infinity
96	LCR #1 to #2 route advance timing on-hook	18	10000	Infinity
97	LCR #2 to #3 route advance timing on-hook	18	10000	Infinity
98	Automatic camp-on registration timing	5	1000	Infinity
99	Modem reserve timing	19	10000	2550-2560

Table 4-7. System Timing Parameter Assignment Default Values (Cont'd)

System Timing Parameter Assignment				
ID (P1)	Service Timing ID Definition	Default Value	Unit of Time (ms)	If Number of Units = 0, Flag is:
100	Cut-through warning burst timing	2	100	25500-25600
103	LCR warning burst timing	11	100	25500-25600
104	ACD limited work time (automatic)	12	5000	1275-1280
105	Auto answer timing (burst timing)	7	100	Infinity
106	Modem ringing timing	21	100	25500-25600
107	Duration while CFA to CO burst tone is sent out	7	100	25500-25600
108	Timing when "add to ACD group" message (MSG 61) is received after "sign-on" message (MSG 65) was sent out	7	1000	255-256 sec
109	Timing when "disconnect" message (MSG 18) is sent again in IPL sequence	6	1000	255-256 sec
110	Timing when "ACK" message (MSG 17) is received after "connect" message (MSG 19) was sent out in IPL sequence	7	1000	255-256 sec
111	Duration while the response from the hotel AP is received after maid status is sent out from the PBX	7	1000	255-256 sec
130	T-1 ground signal release timing	2	8	0
131	T-1 loop closure timing	0	8	0
137	ACD priority queue advance timing	6	5000	Infinity
145	Amount of time that a call will wait in queue until it is answered with the attendant voice message	7	1000	255-256 sec
147	Camp-on recall timing for transferred call	31	1000	255-256 sec
151	DISA-S no answer disconnect timing (see Note 3 below)	61	1000	255-256 sec
152	Call waiting burst timing	30	100	Infinity

**NOTES:**

1. STIDs 3-9, 13, 21, 26, 31-33, 41, 50, 58-59, 66-75, 77-81, 85, 87-93, 101-102, 112-129, 132-136, 138-144, 146, and 148-150 are reserved. Do **NOT** try to change these STIDs.
2. Actual timing values for the STIDs may be determined by multiplying the Unit of Time by the Number of Time Units (P2). (The actual value used by the system may be as much as one Number of Units less than the calculated value.)
3. Refer to CMC 102, flag number 199.

**COS (CLASS OF SERVICE) ASSIGNMENT (CMC 104)**

The COS (Class of Service) Assignment (**CMC 104**) may be used to register a list of features for each class of service.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	COS	Class of service	1 to 16	Table 4-8
P2	FNO	Feature number	1 to 255	Table 4-8

**Parameter Descriptions**

**P1 (COS):**

Enter the class of service to which you wish to assign features (required).

- 1 to 16

**P2 (FNO):**

If necessary, enter the specific number for each feature that will be assigned to this class of service. The default values are shown in Table 4-8.

- 1 to 255

**Display**

1. Enter a COS at P1.
2. Press **DSP**. Feature numbers assigned to the entered COS will be displayed.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of FNOs.
2. The system releases the CMC table after the last registered FNO has been displayed.
3. Each COS must be displayed separately.

**Add**

1. Enter a COS at P1.
2. Enter an FNO at P2.
3. Press **ADD / CHG**.
4. Repeat steps 2 and 3 for each FNO to be entered to the specified COS.



- Remove**
1. Enter a COS at P1.
  2. Display the FNO to be removed at P2.
  3. Press **RMV**.
  4. Repeat steps 2 and 3 for each FNO to be removed from the specified COS.

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
OVERLAP	An attempt was made to enter an FNO which is already registered.	Check the parameter for accuracy and try again.
NO FOUND	An attempt was made to remove an FNO which was not registered.	Abandon the attempt.

Table 4-8. Class of Service Default Values

FNO	FEATURE DESCRIPTION	TGN	CLASS OF SERVICE															
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
3	Least Cost Routing		X	X	X	X	X	X	X	X	X	X	X					
4	CO / ISDN #1 Access	13	X	X	X	X	X	X	X	X	X	X	X					
5	CO / ISDN #2 Access	14	X	X	X	X	X	X	X									
6	CO / ISDN #3 Access	15	X	X	X	X	X											
7	CO / ISDN #4 Access	16	X	X	X	X												
8	CO #5 Access	17	X	X	X													
9	CO #6 Access	18	X															
10	FX #1 Access	19	X	X	X	X	X	X	X	X	X	X	X					
11	FX #2 Access	20	X	X	X	X	X	X	X	X	X	X	X					
12	FX #3 Access	21	X	X	X	X												
13	FX #4 Access	22	X	X	X													
14	FX #5 Access	23	X	X														
15	FX #6 Access	24	X															
16	WATS #1 Access	25	X	X	X	X	X	X	X	X	X	X	X					
17	WATS #2 Access	26	X	X	X	X	X	X	X	X	X	X	X					
18	WATS #3 Access	27	X	X	X	X												
19	WATS #4 Access	28	X	X	X													
20	WATS #5 Access	29	X	X														
21	WATS #6 Access	30	X															
22	Tie / FIPN #1 Access	31	X	X	X	X	X	X	X	X	X	X	X					
23	Tie / FIPN #2 Access	32	X	X	X	X	X	X	X	X	X	X	X					
24	Tie / FIPN #3 Access	33	X	X	X	X												
25	Tie / FIPN #4 Access	34	X	X	X													
26	Tie / FIPN #5 Access	35	X	X	X													
27	Tie / FIPN #6 Access	36	X	X	X													
28-41	Tie / FIPN #7 Access - Tie / FIPN #20 Access	37 - 50	X	X	X													

NOTE: TGN = Trunk Group Number

Table 4-8. Class of Service Default Values (Cont'd)

FNO	FEATURE DESCRIPTION	TGN	CLASS OF SERVICE															
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
42	SCC #1 Access	51	X	X	X	X	X	X	X	X	X	X	X					
43	SCC #2 Access	52	X	X	X	X	X	X	X	X	X	X	X					
44	SCC #3 Access	53	X															
45	SCC #4 Access	54	X															
46	SCC #5 Access	55	X															
47	SCC #6 Access	56	X															
48	Station / Group Speed Calling		X	X	X	X	X	X	X	X	X	X	X					
49	System Speed Calling		X	X	X	X	X	X	X									
50	Save / Last Number Redial		X	X	X	X	X	X	X									
51	Proprietary Telephone Paging Access (all zone / zone)		X	X	X	X	X	X	X									
52	Proprietary Telephone Paging Answer		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
53	External Paging Access		X	X	X	X	X	X	X									
54	External Paging Answer		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
56	Call Forwarding - Busy (register)		X	X	X	X	X	X	X									
68	Room Information (register)		X															
70	Wake-Up (other) (register)		X															
71	Do Not Disturb (other) (register)		X															
72	Room Status Change		X															
73	Guest Room Clean-Up		X															
74	Message Registration Add / Clear (Call Charge)		X															
75	Controlled Restriction		X															
78	Wake-Up (self) / Time Reminder (register)		X	X	X	X	X	X	X	X	X	X	X					
80	Call Forwarding - All Calls (register)		X	X	X	X	X	X	X									
82	Call Forwarding - Busy / No Answer (register)		X	X	X	X	X	X	X									
83	Call Forwarding - No Answer (register)		X	X	X	X	X	X	X									

NOTE: TGN = Default Trunk Group Number

Table 4-8. Class of Service Default Values (Cont'd)

FNO	FEATURE DESCRIPTION	CLASS OF SERVICE															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
85	Do Not Disturb	X	X	X	X												
87	Message Waiting (register)	X	X	X	X												
88	Message Waiting (cancel)	X	X	X	X												
89	Message Waiting Pick-Up	X	X	X	X												
92	Group Pick-Up	X	X	X	X	X	X										
94	Night Answer Pick-Up (self tenant)	X															
95	Night Answer Pick-Up (all tenants)	X															
106	Direct Call Pick-Up	X	X	X	X	X	X	X	X	X	X	X					
107	DSS Park Answer	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
108	Multi-Group Pick-Up	X															
109	Message Waiting Cancellation	X															
110	Call Forwarding - Follow Me (register)	X	X	X	X	X	X										
112	Call Forwarding - Other Station (register)	X	X	X	X	X	X										
117	Data Call Attribute Change	X	X	X	X	X	X										
120	Secretary Station (register)	X	X	X	X												
122	Direct Station Selection (user programmable)	X	X	X	X	X	X										
123	Station Speed Call (user programmable)	X	X	X	X	X	X	X	X	X	X	X					
124	Off-Hook Incoming Signal Change (user programmable)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
126	Call Announce Receive On / Off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
127	Preselection Mode Change	X	X	X	X	X	X	X	X	X	X	X					
128	Ringing Line Preference Change	X	X	X	X	X	X	X	X	X	X	X					
129	Idle Line Preference Change	X	X	X	X	X	X	X	X	X	X	X					
130	Direct Trunk Access	X	X														
131	Day / Night Mode Change (self tenant only)	X	X														

Table 4-8. Class of Service Default Values (Cont'd)

FNO	FEATURE DESCRIPTION	CLASS OF SERVICE															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
132	Day / Night Mode Change (all tenants)	X	X														
133	Key Touch Tone Control (proprietary telephones only)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
134	Programming from Key Telephone (button programming)	X	X	X	X	X	X	X	X	X	X	X					
135	DSS Speed Call (program)	X	X	X	X	X	X	X	X	X	X	X					
136	Recorded Voice Announcement	X	X	X	X	X	X	X	X	X	X	X					
137	DND with Silent Message (register)	X	X	X	X												
138	Repertory Dial (register)	X	X	X	X	X	X	X	X	X	X	X					
144	Silent Monitor	X															
150	Station Camp-On (register)	X	X	X	X												
151	Trunk Camp-On (register)	X	X	X	X												
152	Executive Override (limited)	X	X	X	X	X											
153	Call Park	X	X	X	X	X											
154	Account Code	X	X	X	X	X	X	X	X	X	X	X					
158	ATT Password	X															
160	Add Data Call Set-Up	X	X	X	X	X	X										
164	Modem Individual Access	X	X														
198	Work Time Automatic																
200	Executive Override (full)	X															
201	LCR #1 (least cost route only)								X	X	X	X	X	X	X	X	X
202	LCR #2 (all routes except highest route - selection #10)				X	X	X										
203	LCR #3 (all routes)	X	X	X													
204	Automatic Camp-On	X															
205	DND Override by DSS / BLF	X	X														
206	Time-Out Routing to Attendant	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
207	Display of DND Silent Message	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
208	Forced Account Code	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Table 4-8. Class of Service Default Values (Cont'd)

FNO	FEATURE DESCRIPTION	CLASS OF SERVICE															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
222	Attendant Break-In Button	X															
223	Attendant DND Override Button	X															
224	Attendant Night Mode Button	X															
234	DID #1 Termination	X	X	X	X	X											
235	DID #2 Termination	X	X	X	X	X											
236	DID #3 Termination	X	X	X	X	X											
237	DID #4 Termination	X	X	X	X	X											
238	DID #5 Termination	X	X	X	X	X											
239	DID #6 Termination	X	X	X	X	X											
248	Digital DID #1 Termination	X	X	X	X	X											
249	Digital DID #2 Termination	X	X	X	X	X											
250	Digital DID #3 Termination	X	X	X	X	X											
251	Digital DID #4 Termination	X	X	X	X	X											

**TRUNK ACCESS (COR)  
ASSIGNMENT (CMC 105)**

Use the COR (Class of Restriction) assignment table to restrict connections to CO, FX, WATS, and tie lines for stations and trunks assigned in the system.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>COR</b>	Class of restriction	1 to 16	None
<b>P2</b>	<b>COO</b>	Outgoing CO, FX, WATS connections	0 = Denied 1 = Allowed	1
<b>P3</b>	<b>COI</b>	Incoming CO, FX, WATS connections	0 = Denied 1 = Allowed	1
<b>P4</b>	<b>TIEO</b>	Outgoing CO, FX, WATS connections	0 = Denied 1 = Allowed	1
<b>P5</b>	<b>TIEI</b>	Incoming CO, FX, WATS connections	0 = Denied 1 = Allowed	1

**Parameter Descriptions****P1 (COR):**

Enter the class of restriction which you wish to define or display (required). For each COR entered, stations and trunks assigned this COR will have access to each type of connection specified in P2 through P5 by default.

- 1 to 16

**P2 (COO):**

If necessary, enter whether or not stations and trunks assigned this COR will have access to outgoing CO, FX, and WATS connections.

- 0 = Denied
- 1 = Allowed (default)

**P3 (COI):**

If necessary, enter whether or not stations and trunks assigned this COR will have access to incoming CO, FX, and WATS connections.

- 0 = Denied
- 1 = Allowed (default)

**P4 (TIEO):**

If necessary, enter whether or not stations and trunks assigned this COR will have access to outgoing tie connections.

- 0 = Denied
- 1 = Allowed (default)

**P5 (TIEI):**

If necessary, enter whether or not stations and trunks assigned this COR will have access to incoming tie connections.

- 0 = Denied
- 1 = Allowed (default)

- Display**
1. Enter a COR at P1.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays each COR and associated data in numerical order of CORs.
2. The system automatically releases the CMC table when the COR value exceeds 16.
3. CMCs 411 through 415 also apply to COR.

- Change**
1. Enter the parameter(s) to be changed.
  2. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA.ERR	The specified parameter is invalid.	Enter a correct value.



**NETWORK CLOCK  
ASSIGNMENT (CMC 107)**

Use the Network Clock Assignment (**CMC 107**) to assign the priority for the network clock extracting T-1 / ISDN trunk.

This CMC requires a HIGH level security code.

**NOTE:** CMC 250 must be assigned before CMC 107.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>CR</u>	Clock priority number	1 to 3	None
<u>P2</u>	<u>EN</u>	Equipment number	See description below	None

**Parameter Descriptions****P1 (CR):**

Enter the priority of the clock extracting T-1 / ISDN trunk (1 is the highest priority). When assigning more than one T-1 / ISDN trunk as a clock extracting trunk, the network clock will be extracted from the T-1 / ISDN trunk with the lowest P1 value (highest priority). If the clock extracting T-1 / ISDN trunk fails, the system will automatically switch to the trunk which has the next highest priority.

- 1 to 3

**P2 (EN):**

If necessary, enter the equipment number of the T-1 ISDN trunk. Equipment numbers are entered in the *XYX* format:

- X = Cabinet number: 0
- YY = Logical card slot number: 00, 06, 12

**NOTES:**

1. For more information on logical card slot numbers, see Appendix C.
2. The CLKS card is installed in physical card slot 09 in the basic cabinet (0) only.

**Display**

1. Enter P1.
2. Press **DSP** to display the assigned equipment number.

**Add**

1. Enter P1 and P2.
2. Press **ADD / CHG**.

**Remove**

1. Enter P1 and P2.
2. Press **RMV** to remove the network clock extracting T-1 trunk.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA.ERR	The specified EN is not an EN of an ISDN, FIPN, or T-1 card.	Enter a correct EN.
ADD OVERLAP	The specified parameter is already registered.	Enter a correct parameter.
DISAGREE	The specified EN is a master mode digital trunk.	Enter a slave mode digital trunk.

**FIPN TIMING TABLE ASSIGNMENT (CMC 111)**

Use the FIPN (Fujitsu ISDN Private Network) Timing Table Assignment (CMC 111) command to change the FIPN service timing parameters.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	STID	Service timing	1 to 100	None
P2	NTIM	Normalized timing	0 to 255	Table 4-9

**Parameter Descriptions**

**P1 (STID):**

Enter the service timing (required).

- 1 to 100

**P2 (NTIM):**

If necessary, enter the normalized timing. Default values are shown below.

- 0 to 255

**Table 4-9. FIPN Timing Default Values**

STID (P1)	Definition	Unit	Default NTIM	Relationship Between P2 and Actual Timing		
				P2 = 0	P2 = n	P2 = 255
1	Busy service (FAC) waiting timing (terminating PBX side)	1 [sec]	30	256 [sec]	(n - 1) to n [sec]	254 to 255 [sec]
2	CCBS* cancel timing	1 [min]	60	0 to 1 [min]	(n - 1) to n [min]	254 to 255 [min]
3 to 100	<b>RESERVED</b>	<b>NONE</b>	<b>NONE</b>	<b>NONE</b>	<b>NONE</b>	<b>NONE</b>

\* Call Completion Busy Subscriber (Camp-On)

**Display**

1. Enter the STID.
2. Press **DSP** to display the NTIM value.

**NOTE:** Pressing **DSP** again displays the NTIM value that corresponds to the next STID. When the STID exceeds 100, pressing **DSP** terminates this command.

**Change**

1. Enter all the necessary parameters.
2. Press **ADD / CHG**.

**ISDN CLIR ASSIGNMENT  
(CMC 120)**

Use the ISDN CLIR (**CMC 120**) command to assign the condition of the Calling Line Identification Restriction (CLIR) feature and the national number for ISDN CO trunk groups. CLIR provides the option of displaying or not displaying calling party information when an outgoing ISDN call is executed.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>TGN</b>	ISDN CO trunk group number	13 to 16	None
<b>P2</b>	<b>FLG</b>	CLIR control flag	0 = CLIR not requested 1 = Request CLIR 2 = Request restriction of CLIR	None
<b>P3</b>	<b>NNO</b>	National number	0 to 15 digits, using 0-9, *, and #	None

**Parameter Descriptions****P1 (TGN):**

Enter the ISDN CO trunk group number which you wish to define (required).

- 13 to 16

**P2 (FLG):**

If necessary, enter the CLIR control flag.

- 0 = CLIR not requested
- 1 = Request CLIR
- 2 = Request restriction of CLIR

**P3 (NNO):**

If necessary, enter the national number.

- 0 to 15 digits, using 0-9, \*, and #.

**Display**

1. Enter the TGN.
2. Press **DSP** to display the FLG and NNO values.

**NOTE:** If the TGN is omitted, the TGN will automatically be assigned a value of 13. After display, pressing **DSP** again updates the TGN and displays the corresponding parameters. The command terminates when **DSP** is pressed after the last TGN has been displayed.

**Change**

1. Enter all the necessary parameters.
2. Press **ADD / CHG**. The original national number is deleted when NNO is omitted.

**ISDN SERVICE DISPLAY (CMC 121)**

Use the ISDN Service Display (**CMC 121**) command to display the condition of service for ISDN CO trunk groups.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>EN</u>	Equipment number	See description below	None
<u>P2</u>	<u>SRV</u>	Service control flag	0 = In service 1 = Maintenance 2 = Out of service	None

**Parameter Descriptions**

**P1 (EN):**

Enter the equipment number of the ISDN CO trunk B-channel (required). Equipment numbers are entered in the XYZ format:

- X = Cabinet number: 0 or 1
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 9

**NOTE:** For more information on logical card slot numbers, refer to Appendix C.

**P2 (SRV):**

After the equipment number is entered, the status of the ISDN trunk will be displayed as one of the following:

- 0 = In service
- 1 = Maintenance
- 2 = Out of service

**Display**

1. Enter the EN.
2. Press **DSP** to display the SRV value.

**NOTE:** After display, pressing **DSP** again updates the EN and displays the corresponding parameters. The command terminates when **DSP** is pressed after the last EN has been displayed.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified EN is not installed.	Enter a correct EN.
DISAGREE	The specified EN is not an ISDN trunk.	Enter a correct EN.

**SPECIFIC ISDN NETWORK  
ASSIGNMENT (CMC 122)**

Use CMC 122 to assign the type of network service with the corresponding ISDN CO trunk group number.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TGN	Trunk group number	13 to 30	None
P2	TNS	Type of network service	0 = Call by call (CBC) 1 = CO 2 = WATS 3 = MEGACOM	None
P3	BND	WATS band (if P2 = 2)	Band number 1 to 8 Blank = Maximum available band	None

**Parameter Descriptions****P1 (TGN):**

Enter the trunk group number.

- 13 to 30

**P2 (TNS):**

If necessary, enter the type of network service to be assigned to the specific trunk group.

- 0 = Call by call (CBC)
- 1 = CO
- 2 = WATS
- 3 = MEGACOM

**P3 (BND):**

If P2 = 2, enter the WATS band.

- Band number 1 to 8
- Blank = Maximum available band

**NOTES:**

1. WATS TGNs (P2 = 2) are applied to #5 ESS, DMS 100, and DMS 250. However, a designated band is available for #5 ESS only.
2. MEGACOM TGNs (P2 = 3) are applied to #4 ESS only.

**Display**

1. Display the TNS and BND corresponding to the TGN. (The TNS and BND corresponding to TGN 13 will be displayed if no parameter is entered.)
2. Press **DSP** to display the TNS and BND corresponding to the next TGN.

**NOTES:**

1. After TGN 30 has displayed, press **DSP** again to terminate the command.
2. Nothing will display in P3 if the value of the TNS is anything other than "2."

**Add**

1. Enter all the necessary parameters.
2. Press **ADD / CHG** to change the data.

**STATION ASSIGNMENT  
(CMC 200)**

Use this CMC to assign or modify directory numbers and instrument types for each voice station connected to the system.

In addition, this CMC may be used to copy most button assignments from one station to another, provided the stations are of the same terminal types. (Personal line buttons, dial intercom buttons, and alarm buttons are not copied.)

System maximums are as follows:

	Stations	Ports
• One cabinet system:	120	144
• Two cabinet system:	240	292
• Three cabinet system:	360	440
• Four cabinet system:	480	588

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>EN</u>	Equipment number	See descriptions on the next page	None
P2	DN	Directory number	1 to 4 digits	Tables 4-10 to 4-15
P3	TOT	Type of terminal	1 = Single line telephone 2 = CS-10 (no longer manufactured) 3 = CS-20 (no longer manufactured) 4 = CSD (no longer manufactured) 8 = Hotline to attendant 18 = Off-premise SLT (via 4SLE) 19 = CT-10 20 = CT-20 21 = CT-30 22 = CT-30 (off-hook call announce) 23 = T-1 off-premise station 24 = DS20, DS20S, DS20SD, DS32SD	None
P4	CDN	Copied station directory number	1 to 4 digits	None
P5	SF	T-1 signaling (if P3 = 23)	1 = FXS 2 = SAS	1

**NOTE: Assign CMCs 200, 202, and 203 before attempting to copy a station.**

**Parameter Descriptions****P1 (EN):**

Enter the equipment number of the station to be defined (required). Equipment numbers are entered in the XYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7

**NOTES:**

1. When programming phantom stations, use the following procedure:
  - EN is entered as \*00-\*95 (asterisks must be entered).
  - P2 is 1 to 4 digits.
  - P3 must be 1.
  - P4 and P5 must be blank.
2. For more information on entering equipment numbers, refer to Appendix C.

**P2 (DN):**

If necessary, enter the directory number to be assigned to this station. Default station directory numbers are shown in Tables 4-10 to 4-15.

- 1 to 4 digits

**P3 (TOT):**

If necessary, enter the type of terminal.

- 1 = Single line telephone
- 2 = CS-10 (no longer being manufactured)
- 3 = CS-20 (no longer being manufactured)
- 4 = CSD (no longer being manufactured)
- 8 = Hotline to attendant
- 18 = Off-premise single line telephone (via 4SLE card)
- 19 = CT-10
- 20 = CT-20
- 21 = CT-30
- 22 = CT-30 with off-hook call announce
- 23 = T-1 off-premise station
- 24 = DS20, DS20S, DS20SD, DS32SD

**P4 (CDN):**

If the station will have its button assignments copied from another station, enter the copied station directory number here.

- 1 to 4 digits (leave blank if no station is being copied, or if the station being assigned is a phantom station)

**P5 (SF):**

Enter the T-1 signaling (if P3 = 23)

- **1 = FXS (default)**
- 2 = SAS

**Parameter Descriptions  
(Cont'd)**

**NOTES:**

1. When P4 is used, personal line buttons, dial intercom buttons, and alarm buttons are not copied. The type of terminal of the original and copied stations must be the same.
2. The ACD status button is copied as an ACD queue size button. The Call Waiting Indicator lamp is not copied.
3. Ensure that the directory numbers do not duplicate access codes assigned at CMC 100. If a duplication exists, the system will automatically disable the access code.
4. If a CT-30 with the Off-Hook Call Announce feature is installed, two ports are required on the same 8EKC card. These two ports should be installed as ENa and ENa+1. Only the voice tip and ring leads from the second circuit are used.

**Display**

1. Enter an EN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of installed ENs.
2. The display mode automatically terminates after the last installed EN is displayed.
3. P4 is always displayed as blank.

**Add**

1. Enter all required parameters.
2. Press **ADD / CHG**.

**Change**

1. Enter the EN for the station which is being changed.
2. Press **DSP**.
3. Move the cursor to the parameter(s) to be changed using the cursor control keys or **Return**.
4. Enter the new data.
5. Repeat steps 3 and 4 until all desired changes have been made.
6. Press **ADD / CHG**.

**Remove**

1. Enter the EN of the station to be removed.
2. Press **RMV**.

**Duplicate**

1. Enter at least one set of data using Add or Display.
2. Press **DUP**.
3. The next installed EN will be displayed at P1.
4. Make any needed changes.
5. Press **ADD / CHG**.



**Table 4-10. Default 3-Digit Voice Directory Numbers - Basic Cabinet (Cabinet 0 or Blank)**

CIRCUIT NUMBER	CARD SLOT NUMBER																	
	0	1	2	3	4	5	6	7	8	9								
0	<b>200</b>	208	216	<b>224</b>	<b>232</b>	240	<b>248</b>	256	264	<b>272</b>	<b>280</b>	288	<b>296</b>	304	312	<b>320</b>	<b>328</b>	<b>336</b>
1	<b>201</b>	209	217	<b>225</b>	<b>233</b>	241	<b>249</b>	257	265	<b>273</b>	<b>281</b>	289	<b>297</b>	305	313	<b>321</b>	<b>329</b>	<b>337</b>
2	<b>202</b>	210	218	<b>226</b>	<b>234</b>	242	<b>250</b>	258	266	<b>274</b>	<b>282</b>	290	<b>298</b>	306	314	<b>322</b>	<b>330</b>	<b>338</b>
3	<b>203</b>	211	219	<b>227</b>	<b>235</b>	243	<b>251</b>	259	267	<b>275</b>	<b>283</b>	291	<b>299</b>	307	315	<b>323</b>	<b>331</b>	<b>339</b>
4	<b>204</b>	212	220	<b>228</b>	<b>236</b>	244	<b>252</b>	260	268	<b>276</b>	<b>284</b>	292	<b>300</b>	308	316	<b>324</b>	<b>332</b>	<b>340</b>
5	<b>205</b>	213	221	<b>229</b>	<b>237</b>	245	<b>253</b>	261	269	<b>277</b>	<b>285</b>	293	<b>301</b>	309	317	<b>325</b>	<b>333</b>	<b>341</b>
6	<b>206</b>	214	222	<b>230</b>	<b>238</b>	246	<b>254</b>	262	270	<b>278</b>	<b>286</b>	294	<b>302</b>	310	318	<b>326</b>	<b>334</b>	<b>342</b>
7	<b>207</b>	215	223	<b>231</b>	<b>239</b>	247	<b>255</b>	263	271	<b>279</b>	<b>287</b>	295	<b>303</b>	311	319	<b>327</b>	<b>335</b>	<b>343</b>

**NOTE:** When using 4 / 8 circuit cards, the **bolded** directory numbers represent the default values.

**Table 4-11. Default 3-Digit Voice Directory Numbers - Expansion Cabinet 1**

CIRCUIT NUMBER	CARD SLOT NUMBER																		
	0	1	2	3	4	5	6	7	8	9									
0	<b>344</b>	352	360	<b>368</b>	<b>376</b>	384	<b>392</b>	400	408	<b>416</b>	<b>424</b>	432							
1	<b>345</b>	353	361	<b>369</b>	<b>377</b>	385	<b>393</b>	401	409	<b>417</b>	<b>425</b>	433							
2	<b>346</b>	354	362	<b>370</b>	<b>378</b>	386	<b>394</b>	402	410	<b>418</b>	<b>426</b>	434							
3	<b>347</b>	355	363	<b>371</b>	<b>379</b>	387	<b>395</b>	403	411	<b>419</b>	<b>427</b>	435							
4	<b>348</b>	356	364	<b>372</b>	<b>380</b>	388	<b>396</b>	404	412	<b>420</b>	<b>428</b>	436							
5	<b>349</b>	357	365	<b>373</b>	<b>381</b>	389	<b>397</b>	405	413	<b>421</b>	<b>429</b>	437							
6	<b>350</b>	358	366	<b>374</b>	<b>382</b>	390	<b>398</b>	406	414	<b>422</b>	<b>430</b>	438							
7	<b>351</b>	359	367	<b>375</b>	<b>383</b>	391	<b>399</b>	407	415	<b>423</b>	<b>431</b>	439							

**NOTE:** When using 4 / 8 circuit cards, the **bolded** directory numbers represent the default values.

Table 4-12. Default 4-Digit Voice Directory Numbers - Basic Cabinet (Cabinet 0 or Blank)

CIRCUIT NUMBER	CARD SLOT NUMBER																	
	0		1		2		3		4		5		6		7		8	9
0	2000	2010	2020	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	2160	2170
1	2001	2011	2021	2031	2041	2051	2061	2071	2081	2091	2101	2111	2121	2131	2141	2151	2161	2171
2	2002	2012	2022	2032	2042	2052	2062	2072	2082	2092	2102	2112	2122	2132	2142	2152	2162	2172
3	2003	2013	2023	2033	2043	2053	2063	2073	2083	2093	2103	2113	2123	2133	2143	2153	2163	2173
4	2004	2014	2024	2034	2044	2054	2064	2074	2084	2094	2104	2114	2124	2134	2144	2154	2164	2174
5	2005	2015	2025	2035	2045	2055	2065	2075	2085	2095	2105	2115	2125	2135	2145	2155	2165	2175
6	2006	2016	2026	2036	2046	2056	2066	2076	2086	2096	2106	2116	2126	2136	2146	2156	2166	2176
7	2007	2017	2027	2037	2047	2057	2067	2077	2087	2097	2107	2117	2127	2137	2147	2157	2167	2177

Table 4-13. Default 4-Digit Voice Directory Numbers - Expansion Cabinet 1

CIRCUIT NUMBER	CARD SLOT NUMBER																					
	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9		
0	2200	2210	2220	2230	2240	2250	2260	2270	2280	2290	2300	2310	2320	2330	2340	2350	2360	2370				
1	2201	2211	2221	2231	2241	2251	2261	2271	2281	2291	2301	2311	2321	2331	2341	2351	2361	2371				
2	2202	2212	2222	2232	2242	2252	2262	2272	2282	2292	2302	2312	2322	2332	2342	2352	2362	2372				
3	2203	2213	2223	2233	2243	2253	2263	2273	2283	2293	2303	2313	2323	2333	2343	2353	2363	2373				
4	2204	2214	2224	2234	2244	2254	2264	2274	2284	2294	2304	2314	2324	2334	2344	2354	2364	2374				
5	2205	2215	2225	2235	2245	2255	2265	2275	2285	2295	2305	2315	2325	2335	2345	2355	2365	2375				
6	2206	2216	2226	2236	2246	2256	2266	2276	2286	2296	2306	2316	2326	2336	2346	2356	2366	2376				
7	2207	2217	2227	2237	2247	2257	2267	2277	2287	2297	2307	2317	2327	2337	2347	2357	2367	2377				

Table 4-14. Default 4-Digit Voice Directory Numbers - Expansion Cabinet 2

CIRCUIT NUMBER	CARD SLOT NUMBER																	
	0	1	2	3	4	5	6	7	8	9								
0	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500	2510	2520	2530	2540	2550	2560	2570
1	2401	2411	2421	2431	2441	2451	2461	2471	2481	2491	2501	2511	2521	2531	2541	2551	2561	2571
2	2402	2412	2422	2432	2442	2452	2462	2472	2282	2492	2502	2512	2522	2532	2542	2552	2562	2572
3	2403	2413	2423	2433	2443	2453	2463	2473	2483	2493	2503	2513	2523	2533	2543	2553	2563	2573
4	2404	2414	2424	2434	2444	2454	2464	2474	2484	2494	2504	2514	2524	2534	2544	2554	2564	2574
5	2405	2415	2425	2435	2445	2455	2465	2475	2485	2495	2505	2515	2525	2535	2545	2555	2565	2575
6	2406	2416	2426	2436	2446	2456	2466	2476	2486	2496	2506	2516	2526	2536	2546	2556	2566	2576
7	2407	2417	2427	2437	2447	2457	2467	2477	2487	2497	2507	2517	2527	2537	2547	2557	2567	2577

Table 4-15. Default 4-Digit Voice Directory Numbers - Expansion Cabinet 3

CIRCUIT NUMBER	CARD SLOT NUMBER																	
	0	1	2	3	4	5	6	7	8	9								
0	2600	2610	2620	2630	2640	2650	2660	2670	2680	2690	2700	2710	2720	2730	2740	2750	2760	2770
1	2601	2611	2621	2631	2641	2651	2661	2671	2681	2691	2701	2711	2721	2731	2741	2751	2761	2771
2	2602	2612	2622	2632	2642	2652	2662	2672	2282	2692	2702	2712	2722	2732	2742	2752	2762	2772
3	2603	2613	2623	2633	2643	2653	2663	2673	2683	2693	2703	2713	2723	2733	2743	2753	2763	2773
4	2604	2614	2626	2634	2644	2654	2664	2674	2684	2694	2704	2714	2726	2734	2744	2754	2764	2774
5	2605	2615	2627	2635	2645	2655	2665	2675	2685	2695	2705	2715	2727	2735	2745	2755	2765	2775
6	2606	2616	2626	2636	2646	2656	2666	2676	2686	2696	2706	2716	2726	2736	2746	2756	2766	2776
7	2607	2617	2627	2637	2647	2657	2667	2677	2687	2697	2707	2717	2727	2737	2747	2757	2767	2777

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	EN has not been installed.	Check or install the EN.
DISAGREE	The specified TOT does not match the other terminal types on the circuit card.  The next EN for the CT-30 (TOT = 22) is already registered.	Change the EN or remove the next one and try again.
CHK PKG	The card for the specified TOT is not installed or the TOT is mismatched.	Install or change the card.
OVERLAP	DN has already been registered.	
CHK KEY	The line button is not copied because the capacity of line button appearances has been exceeded.	Remove line buttons from other terminals and try again.
CHK SPD	The installed station is not assigned to speed calling because of the capacity of station speed calling group (up to 255)	Assign the speed calling group number using CMC 201.
CHK SLF	The power supply unit of the cabinet where the specified EN is located is off.  The cabinet is not properly installed.	Turn cabinet power on.  Check the cabinet installation.
DENIED 1	EN already registered as MCT.	Remove at CMC 702.
DENIED 2	EN registered as ACD group member.	Remove at CMC 308.
DENIED 3	EN registered as hunt group member.	Remove at CMC 301.
DENIED 4	EN registered as pick-up group member.	Remove at CMC 302.
DENIED 5	EN registered as line button on proprietary telephone.	
DENIED 6	EN paired with DSS / BLF.	Remove DSS at CMC 210 or 212.
DENIED 7	EN registered as hotline.	Remove at CMC 304.
DENIED 8	EN registered as proprietary telephone paging zone number.	Remove at CMC 303.
DENIED 9	EN paired with data station.	Remove data station at CMC 220.
DENIED 10	EN registered as night answer group member.	Remove at CMC 306.

## ERROR CODES (Cont'd)

ERROR CODE	CAUSE	CORRECTION
DENIED 11	EN registered as terminating trunk group member.	Remove at CMC 253.
DENIED 12	EN has assigned direct-in line station.	Remove at CMC 307.
DENIED 20	Hotel / Motel printer being registered.	
DENIED 21	EN registering auto wake-up.	
DENIED 24	EN registered as music source.	Remove at CMC 305.
DENIED 27	EN registered as API.	Remove at CMC 281.
DENIED 28	Specified agent in sign-on.	

**STATION DATA  
ASSIGNMENT (I) (CMC 201)**

Use the Station Data Assignment (I) (CMC 201) table to register data or the operation of the station.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DN	Directory number	1 to 4 digits	None
P2	OPM	Operation mode	1 = Two-way 2 = Originating only 3 = Terminating only 4 = No service	1
P3	TOD	Type of dialing	1 = Dial pulse (10 pps) 2 = Dial pulse (20 pps) 3 = DTMF	3 (installed 4DMR)
P4	TNN	Tenant number	1 to 63 Blank = Not assigned	None
P5	ACCT	SC / SMDR personal account code	1 to 255 Blank = Not assigned	None
P6	SPDT	Shared speed calling table	1 to 255 0 = Not assigned Blank = Leave as is	Assigned by EN

**Parameter Descriptions**

**P1 (DN):**

Enter the directory number of the station which you wish to define (required).

- 1 to 4 digits.

**P2 (OPM):**

If necessary, enter the operation mode to be assigned to this station. Operation mode defines which types of calls this station is allowed to place.

- 1 = Two-way (default)
- 2 = Originating only
- 3 = Terminating only
- 4 = No service

**P3 (TOD):**

If necessary, enter the type of dialing which the station will use.

- 1 = Dial pulse (10 pps)
- 2 = Dial pulse (20 pps)
- 3 = DTMF (default if 4DMR card is installed)

**NOTE:** If no 4DMR card has been installed in the system, P3 for an SLT will default to DP 10 pps on a COLD restart.

**P4 (TNN):**

If necessary, enter the tenant number where this station shall be assigned.

- 1 to 63
- Blank = Not assigned



**Parameter Descriptions  
(Cont'd)****P5 (ACCT):**

If necessary, enter the Specialized Common Carrier (SCC) account code, if any, that would have to be entered to access the SCC feature from this station. This parameter can also be used to enter the SMDR personal account code.

- 1 to 255
- Blank = Not assigned

**P6 (SPDT):**

If necessary, enter the shared speed calling table, if any, that the station may use to dial preprogrammed system speed call numbers.

- 1 to 255
- 0 = Not assigned
- Blank = Leave as is

**Display**

1. Enter a DN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of DNs.
2. The system releases this CMC table after the last registered DN is displayed.

**Change**

1. Enter the parameters to be added or changed.
2. Press **ADD / CHG**.

**Duplicate**

1. Enter at least one complete record using the Change or Display procedure.
2. Press **DUP**.
3. The DN (P1) increments to the next registered DN; all other parameters will be carried forward on the screen.
4. Make any needed changes to the parameters.
5. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified DN has not yet been installed.	Install the DN at CMC 200.

**STATION COS (CLASS OF SERVICE) / COR (CLASS OF RESTRICTION) ASSIGNMENT (CMC 202)**

Use this CMC to define which classes of service and classes of restriction are assigned to a station for both day and night modes of operation. The actual services provided by each COS are assigned at CMC 104. CORs are defined at CMC 105, 411, 412, 413, 414, 415, 416, and 417.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DN	Directory number	1 to 4 digits	None
P2	COS	Day mode class of service	1 to 16	1
P3	NCOS	Night mode class of service	1 to 16	1
P4	COR	Day mode class of restriction	1 to 16	1
P5	NCOR	Night mode class of restriction	1 to 16	1

**Parameter Descriptions**

**P1 (DN):**

Enter the directory number of the station which you wish to define (required).

- 1 to 4 digits

**P2 (COS):**

If necessary, enter the day mode class of service for this station. Class of service defines which features will be available for the station.

- 1 to 16
- **1 (default)**

**P3 (NCOS):**

If necessary, enter the night mode class of service. Each station may have one day COS and one night COS.

- 1 to 16
- **1 (default)**

**P4 (COR):**

If necessary, enter the day mode class of restriction for this station. Restriction mode defines the station's calling privileges.

- 1 to 16
- **1 (default)**

**P5 (NCOR):**

If necessary, enter the night mode class of restriction. Each station may have one day COR and one night COR.

- 1 to 16
- **1 (default)**

- Display**
1. Enter a DN at parameter P1.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of registered DNs.
2. The system exits the CMC table after the last registered DN has been displayed.

- Change**
1. Enter the parameters to be changed.
  2. Press **ADD / CHG**.

- Duplicate**
1. Enter at least one complete record using the Change or Display procedure.
  2. Press **DUP**.
  3. The DN (P1) will increment to the next registered DN; all other parameters will be carried forward on the screen.
  4. Make any needed changes to the parameters.
  5. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified DN has not yet been installed.	Install the DN at CMC 200.

**PROPRIETARY TELEPHONE  
BUTTON ASSIGNMENT (CMC  
203)**

Use the Proprietary Telephone Button Assignment (CMC 203) table to assign features to the programmable buttons on a proprietary instrument. This CMC must be used in connection with CMCs 200 and 202.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>DN</b>	Directory number	1 to 4 digits	None
<b>P2</b>	<b>BTN</b>	Button number	1 to 32 (see Figures 4-1 to 4-14)	None
<b>P3</b>	<b>FNO</b>	Feature number	See Table 4-16	Figures 4-1 to 4-14
<b>P4</b>	<b>SUP</b>	Supplemental data	See Table 4-17	None
<b>P5</b>	<b>LTT</b>	Line termination type	See Table 4-17	None
<b>P6</b>	<b>RGM</b>	Ringing mode	See Table 4-17	1

**Parameter Descriptions**

**P1 (DN):**

Enter the directory number of the station which you wish to define (required).

- 1 to 4 digits

**P2 (BTN):**

Enter the button number (required). Button number positions for each type of telephone are shown in Figures 4-1 through 4-14.

- 1 to 32

**P3 (FNO):**

Enter the number corresponding to the feature which you wish to assign to the entered button number. A list of available features can be found in Table 4-16. Any already assigned values may be displayed.

- 1 to 255

**P4 (SUP):**

Depending on the feature number entered, supplemental data may need to be entered to further define the specific feature. Table 4-17 provides information on which FNOs require additional information. If no supplemental data is required, leave this parameter blank.

**P5 (LTT):**

Depending on the feature number entered, line termination information may need to be specified. Table 4-17 shows which FNOs require this information. If no line termination data is required, leave this parameter blank.

**P6 (RGM):**

Depending on the feature number entered, you may need to specify the ringing mode of the station (refer to Table 4-17). If no ringing mode information is required, leave this parameter blank.

- 1 (default)

- Display**
1. Enter a DN at P1 and a BTN at P2.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of BTNs (buttons).
  2. The system exits the CMC table when the BTN value exceeds 48 (CT-10 / CT-20 / CT-30) or 32 (DS phones).
  3. Each DN must be displayed separately.
- Add**
1. Enter P1 and P2 values, then press **DSP**.
  2. Enter new data.
  3. Press **RMV**.
  4. Press **ADD / CHG**.
- Remove**
1. Enter the DN of the instrument at P1.
  2. Enter the BTN to be removed at P2.
  3. Press **RMV**.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	<p>The specified DN has not been registered.</p> <p>The specified DN is not a proprietary telephone.</p> <p>No instrument is installed at the DN.</p> <p>The specified TTGN is not registered at CMC 253, P1.</p>	<p>Return to CMC 200 and register the DN.</p> <p>Buttons can only be assigned to proprietary telephones.</p> <p>Install a proprietary telephone.</p> <p>Return to CMC 253 and register the terminating trunk group.</p>
NO AREA	The system has no more memory space for this function.	Abandon the attempt or remove a button feature to make room.
OVERLAP	<p>This button has already been assigned a feature or service.</p> <p>This feature has already been assigned to another button.</p>	<p>Abandon the attempt or remove the currently assigned feature or service.</p> <p>Abandon the attempt or remove the feature from the other button and try again.</p>
NO FOUND	An attempt has been made to cancel a service from a button which is not yet assigned.	Abandon the attempt.
DISAGREE	The specified LTT does not match the TTF assigned at CMC 253, P3.	Return to CMC 253 and correct the TTF.

**NOTE:** The system permits one or more OSL (other station line) buttons to be registered without checking for an associated PSL (primary station line). However, the OSL registrations will not operate unless the PSL is assigned.

Table 4-16. Available Feature Numbers

FNO	FEATURE NAME	BUTTON NAME
1	Direct Station Selection	DSS
4	CO #1 Access Default TGN 13	LINE
5	CO #2 Access Default TGN 14	LINE
6	CO #3 Access Default TGN 15	LINE
7	CO #4 Access Default TGN 16	LINE
8	CO #5 Access Default TGN 17	LINE
9	CO #6 Access Default TGN 18	LINE
10	FX #1 Access Default TGN 19	LINE
11	FX #2 Access Default TGN 20	LINE
12	FX #3 Access Default TGN 21	LINE
13	FX #4 Access Default TGN 22	LINE
14	FX #5 Access Default TGN 23	LINE
15	FX #6 Access Default TGN 24	LINE
16	WATS #1 Access Default TGN 25	LINE
17	WATS #2 Access Default TGN 26	LINE
18	WATS #3 Access Default TGN 27	LINE
19	WATS #4 Access Default TGN 28	LINE
20	WATS #5 Access Default TGN 29	LINE
21	WATS #6 Access Default TGN 30	LINE
48	Station Speed Calling	STATION SPEED CALL
49	System Speed Calling	SYSTEM SPEED CALL
50	Save / Last Number Redial	SAVE / LNR
51	Proprietary Telephone Paging Access - Zone / All Zone	STATION PAGE
52	Proprietary Telephone Paging Answer	PAGE ANSWER
53	External Page Access	EXTERNAL PAGE
68	Room Information (register)	ROOM INFORMATION
70	Wake-Up (other) (register / cancel)	FRONT DESK WAKE-UP
71	Do Not Disturb (other) (register / cancel)	FRONT DESK DND
72	Room Status Change	ROOM STATUS
74	Call Charges (add / clear)	CALL CHARGES
75	Controlled Restriction	CALL RESTRICT

Table 4-16. Available Feature Numbers (Cont'd)

FNO	FEATURE NAME	BUTTON NAME
78	Wake-Up (self) / Time Reminder (register / cancel)	TIME REMINDER
80	Call Forward - All Calls (register)	FORWARD ALL
85	Do Not Disturb (register)	DO NOT DISTURB
87	Message Leaving (register)	MESSAGE LEAVING
89	Message Pick-Up	MESSAGE PICK-UP
92	Group Pick-Up	GROUP PICK-UP
106	Directed Call Pick-Up	STATION PICK-UP
108	Multi-Group Pick-Up	MULTIGROUP PICK-UP
110	Call Forward - Follow Me (register)	---
117	Data Call Attribute Change	DATA CHANGE
136	Recorded Voice Announcement	RECORDED VOICE
137	DND with Silent Message (register)	DND SILENT MESSAGE
142	ACD Wrap-Up Code Entry Button	WRAP-UP CODE ENTRY
143	ACD Agent Sign-On / Sign-Off	SIGN-ON / SIGN-OFF
144	Silent Monitor	SILENT MONITOR
150	Station Camp-On (register)	CAMP-ON
151	Trunk Camp-On (register)	TRUNK CAMP-ON
152	Executive Override (limited)	OVERRIDE
153	Call Park	PARK
154	Account Code	ACCOUNT CODE
160	Add Data Call Set-Up	ADD DATA
170	Proprietary Telephone Handsfree Button (Monitor / Speaker)	MONITOR
171	Proprietary Telephone Speaker Button	SPEAKERPHONE
172	Proprietary Telephone Microphone - Mute Button	MUTE
173	Proprietary Telephone Hold Button	HOLD
174	Proprietary Telephone Flash Button	FLASH / NEW CALL
175	Proprietary Telephone Transfer Button	TRANSFER
176	Proprietary Telephone Release Button	TRANSFER / RELEASE
177	Proprietary Telephone Voice Announce / Off-Hook Call Announce Button	CALL ANNOUNCE
179	Proprietary Telephone Alarm Button	ALARM



Table 4-16. Available Feature Numbers (Cont'd)

FNO	FEATURE NAME	BUTTON NAME
180	Proprietary Telephone Intercom - Hold / Answer Button	ICM HOLD ANSWER
181	Proprietary Telephone Call Splitting Button	CALL SPLIT
182	Hookswitch Button (for headset operation)	HEADSET
183	Other / Primary Station Line Button *	PSL / OSL
184	Privacy Release Button	PRIVACY RELEASE
185	Proprietary Telephone Data Call Button	DATA CALL
186	Proprietary Telephone Voice / Data Change - Mode Button	VOICE / DATA MODE
187	Proprietary Telephone Program Button	PROGRAM
188	Front Desk Console Program Button	FRONT DESK
191	ACD Queue Size Display Button / Call Waiting Indicator	ACD STATUS
192	Repertory Dialing	REPERTORY DIAL
194	Intercom Group Button	ICM GROUP
196	Alternate Voice / Data Button	TALK / DATA
197	Auto Answer Button	---
198	ACD Work Time Button	WORK
223	DND Override Button	DND OVERRIDE

\* For Multi-Station Appearance, an extension line is referred to as a Station Line (STATION \_\_\_\_\_), not an Intercom (ICM).

**Table 4-17. Proprietary Telephone Feature Button Supplementary Data**

IF FNO (P3) =	THEN SUP (P4) =	AND LTT (P5) =	AND RGM (P6) =
1 (direct station selection)	Directory number (1 to 4 digits)	Blank	Blank
4-21 (CO, FX, WATS access)	TTGN (1-63)	1 = Personal line 2 = Key system line 3 = Pooled outgoing 4 = Pooled incoming 5 = Pooled bothway	0 = No ringing 1 = Ringing 2 = Delayed start 3 = Delayed stop (key system only)
48 (station speed calling)	Speed calling code (0-9)	Blank	Blank
49 (system speed calling)	Speed calling code (000-999)	Blank	Blank
51 (proprietary telephone paging / internal paging)	Internal paging zone (1-9)	Blank	Blank
53 (external paging)	External paging zone (1-9)	Blank	Blank
180 (proprietary telephone hold / answer)	Blank	Blank	0 = No ringing 1 = Ringing
183 (station line)	Blank = Prime line 0 = Prime line 1 = Other line	Directory number (1 to 4 digits)	0 = No ringing 1 = Ringing 2 = Delayed start 3 = Delayed stop
191 (ACD status display)	ACD group number	0 or blank = Call waiting indicator OFF 1 = Call waiting indicator ON	Blank
194 (ICM group)	ICM number (1 to 10)	ICM directory number (1 to 4 digits, 0-9999)	0 = No ringing 1 = Ringing

**NOTE:** Up to fifty members can be assigned per ICM group.

**Proprietary Telephone Button Assignments**

Figures 4-1 through 4-14 show the button positions and default button assignments for CT-10, CT-20, CT30, and DS20, DS20S, DS20SD, and DS32SD telephones in a PBX (attendant console exists) and Key (no attendant console exists) system arrangement.

**Figure 4-1. CT-10 / CT-20 Button Number Positions**

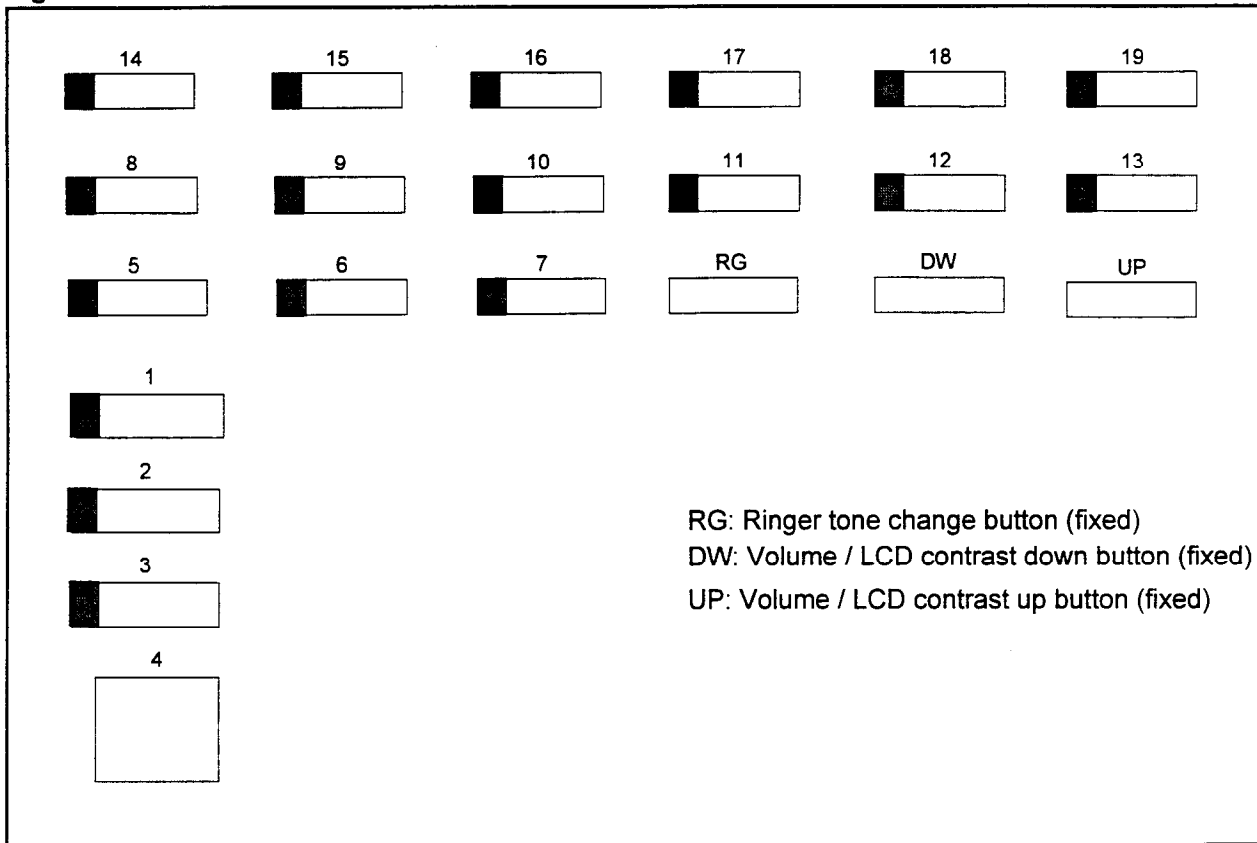


Figure 4-2. CT-30 Button Number Positions

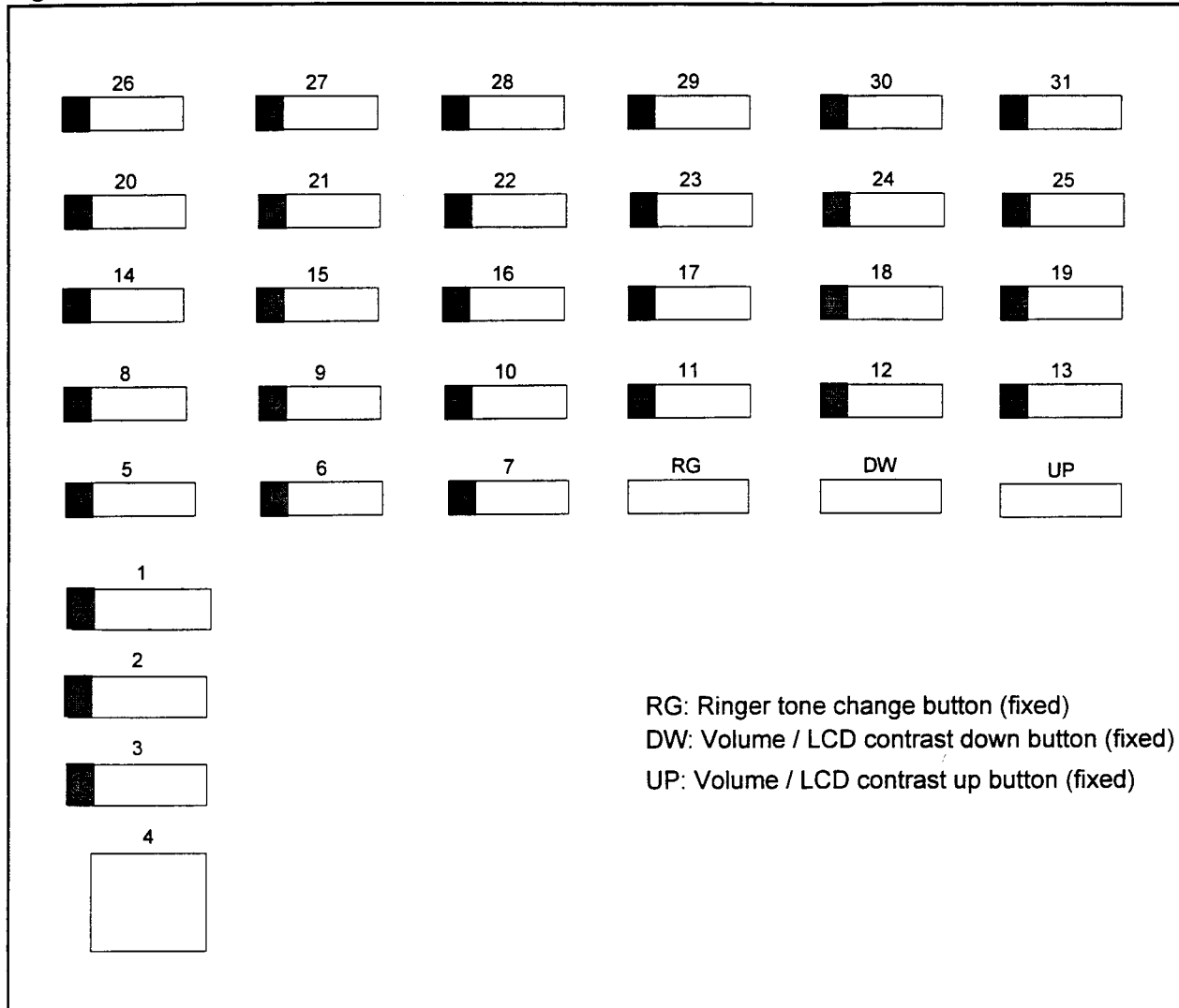


Figure 4-3. DS20, DS20S, and DS20SD Button Number Positions

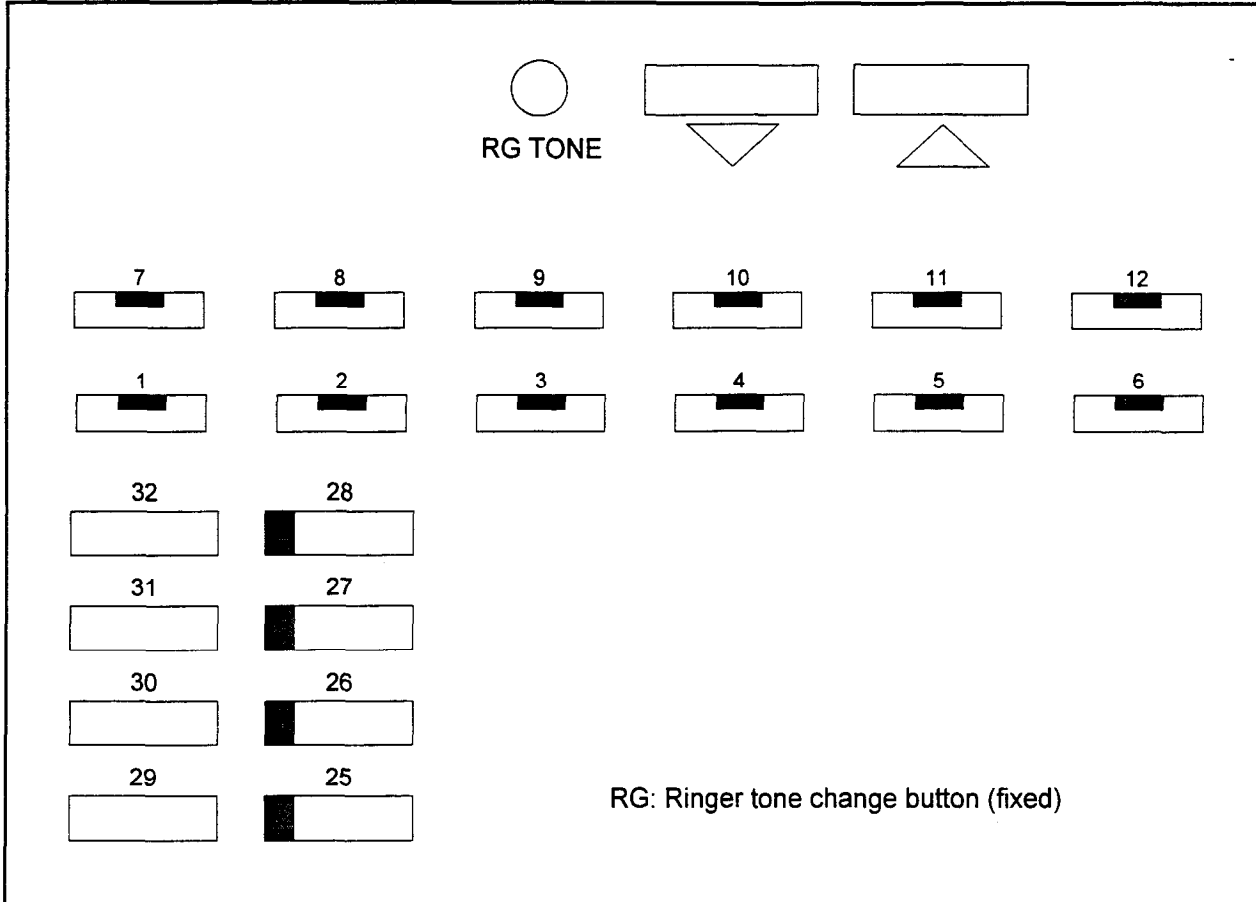


Figure 4-4. DS32SD Button Number Positions

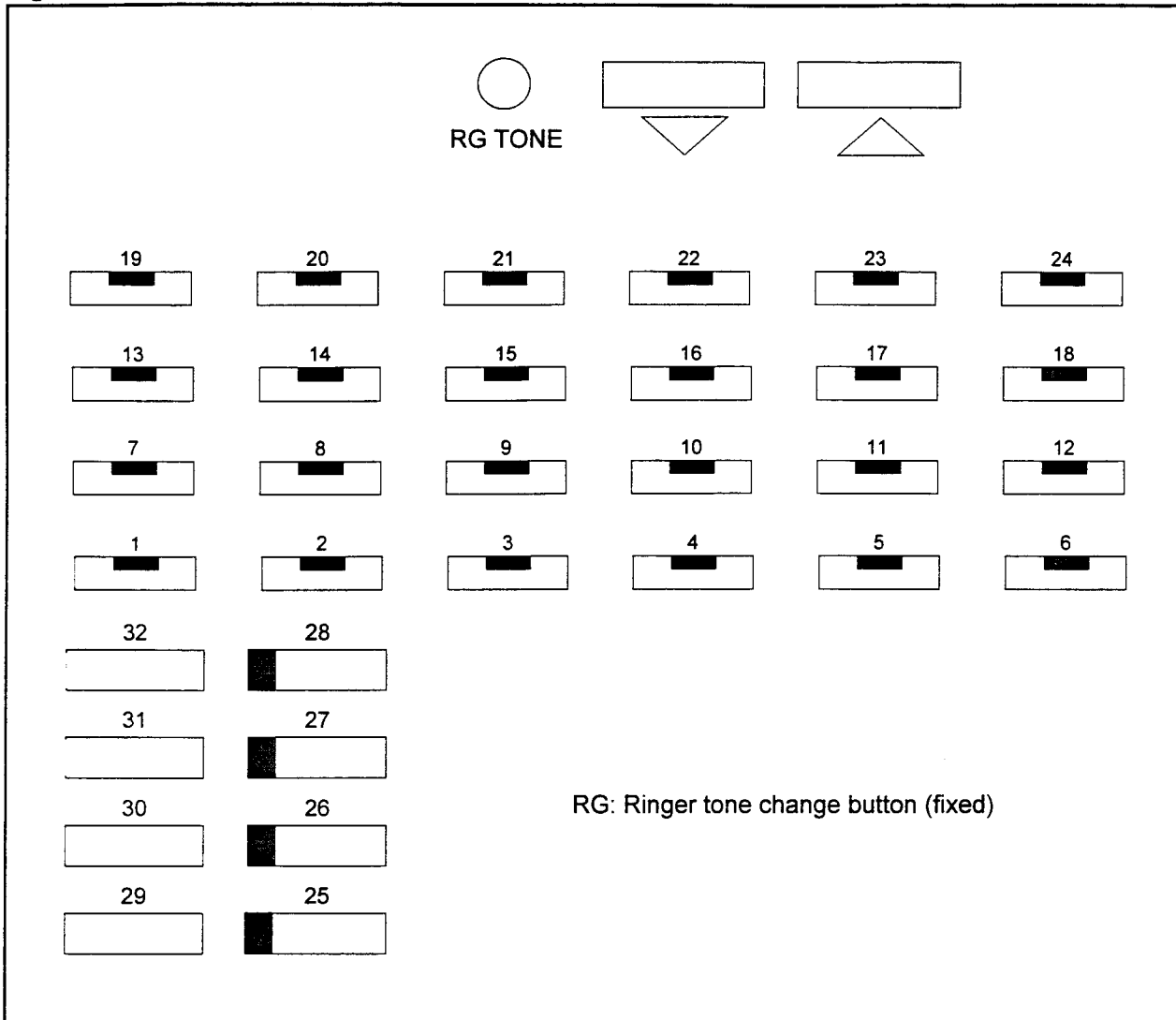
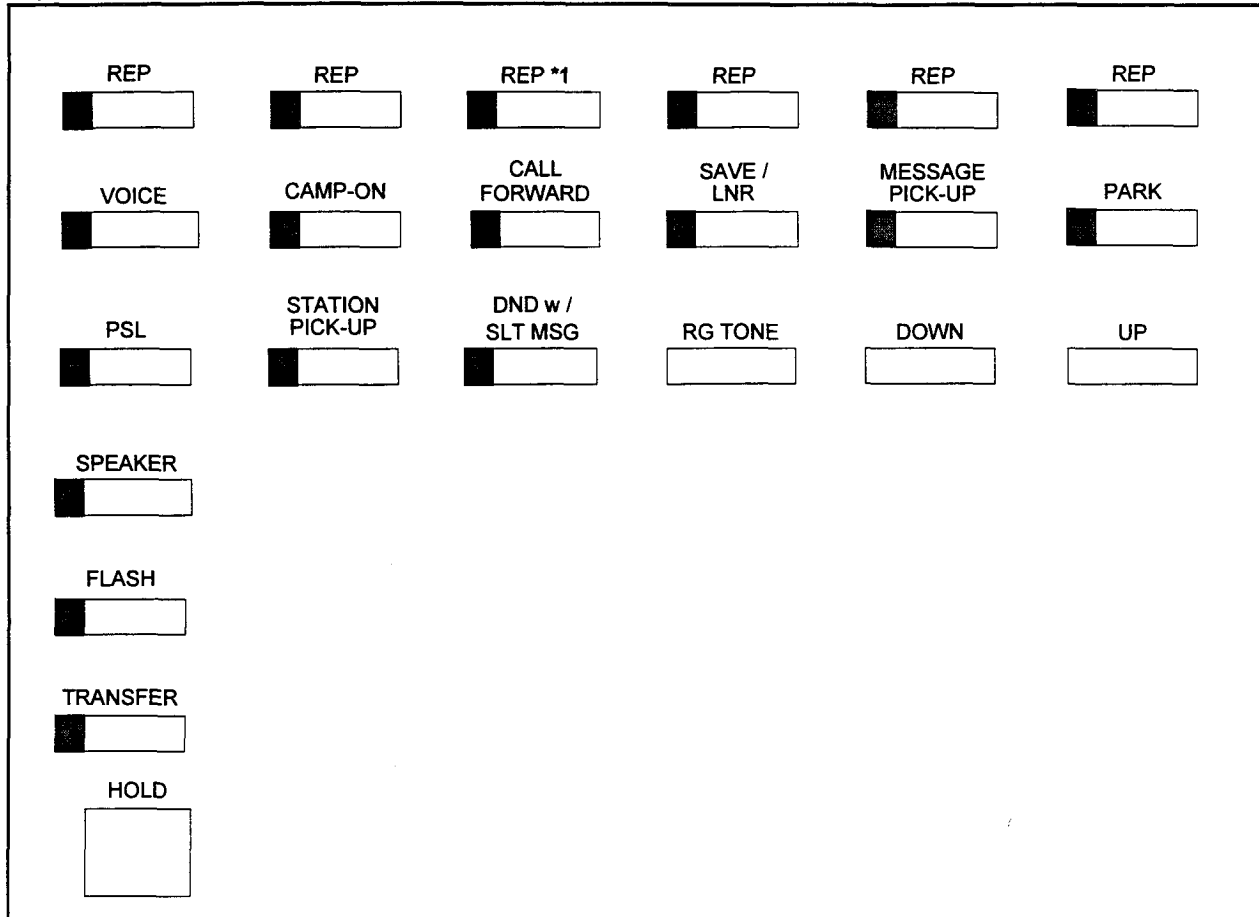


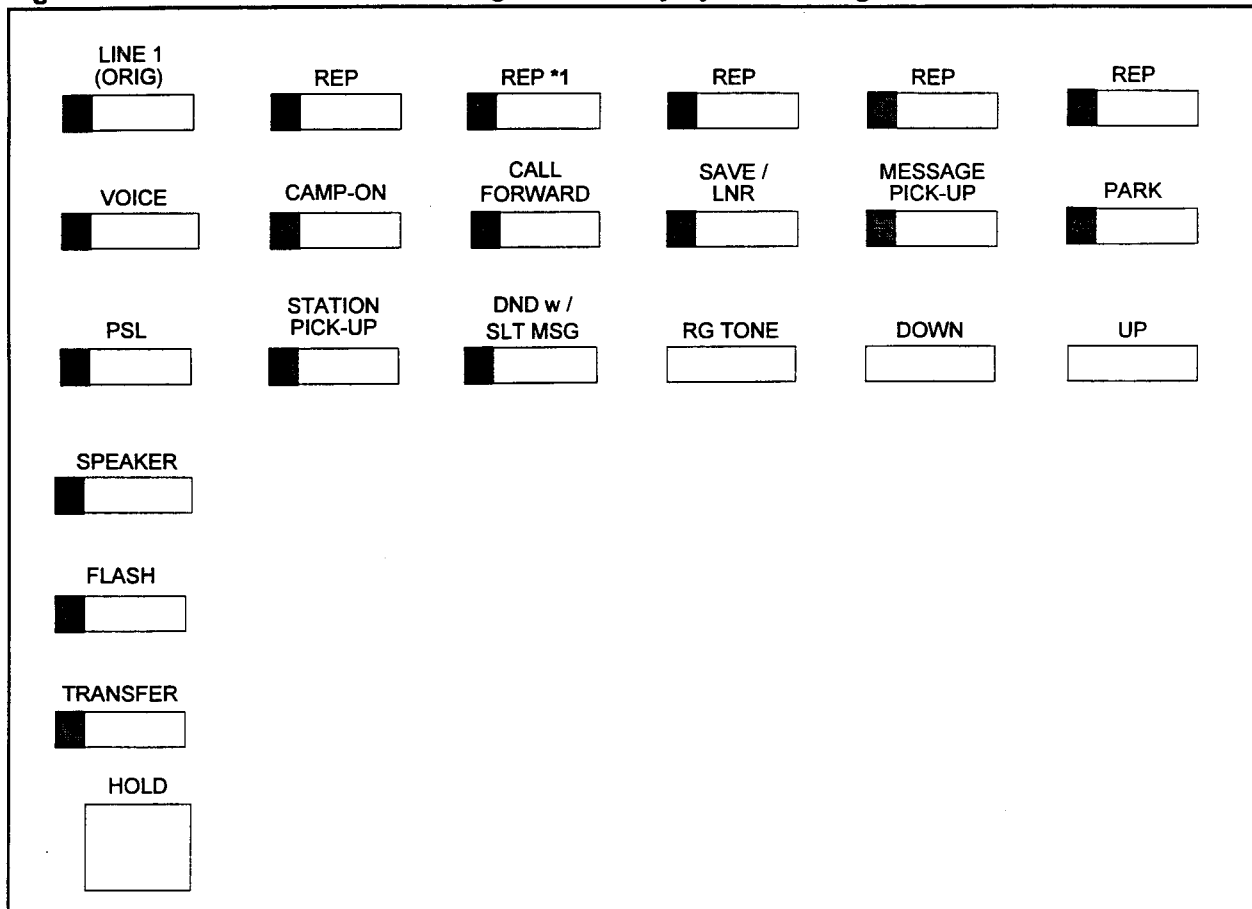
Figure 4-5. CT-10 Default Button Assignments - PBX System Arrangement



**NOTE:** \*1 This button is the DATA CALL button when the CT-10 is paired with a DIU.

Abbreviations used  
 DND = Do Not Disturb  
 PSL = Primary Station Line  
 REP = Repertory Dial  
 RG Tone = Ringer Tone  
 SLT MSG = Silent Message

Figure 4-6. CT-10 Default Button Assignments - Key System Arrangement

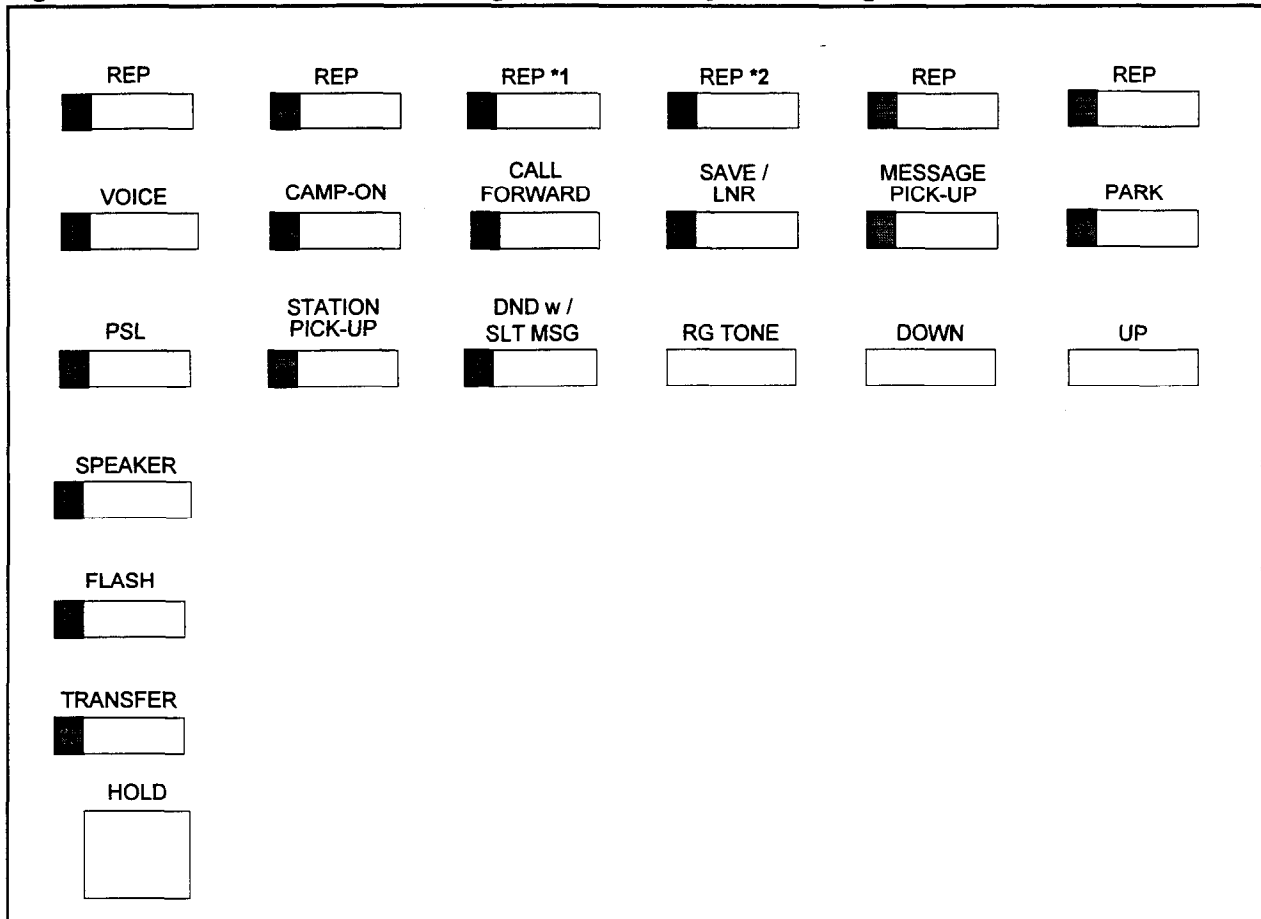


NOTE: \*1 This button is the DATA CALL button when the CT-10 is paired with a DIU.

Abbreviations used  
 DND = Do Not Disturb  
 PSL = Primary Station Line  
 REP = Repertory Dial  
 RG Tone = Ringer Tone  
 SLT MSG = Silent Message



Figure 4-7. CT-20 Default Button Assignments - PBX System Arrangement

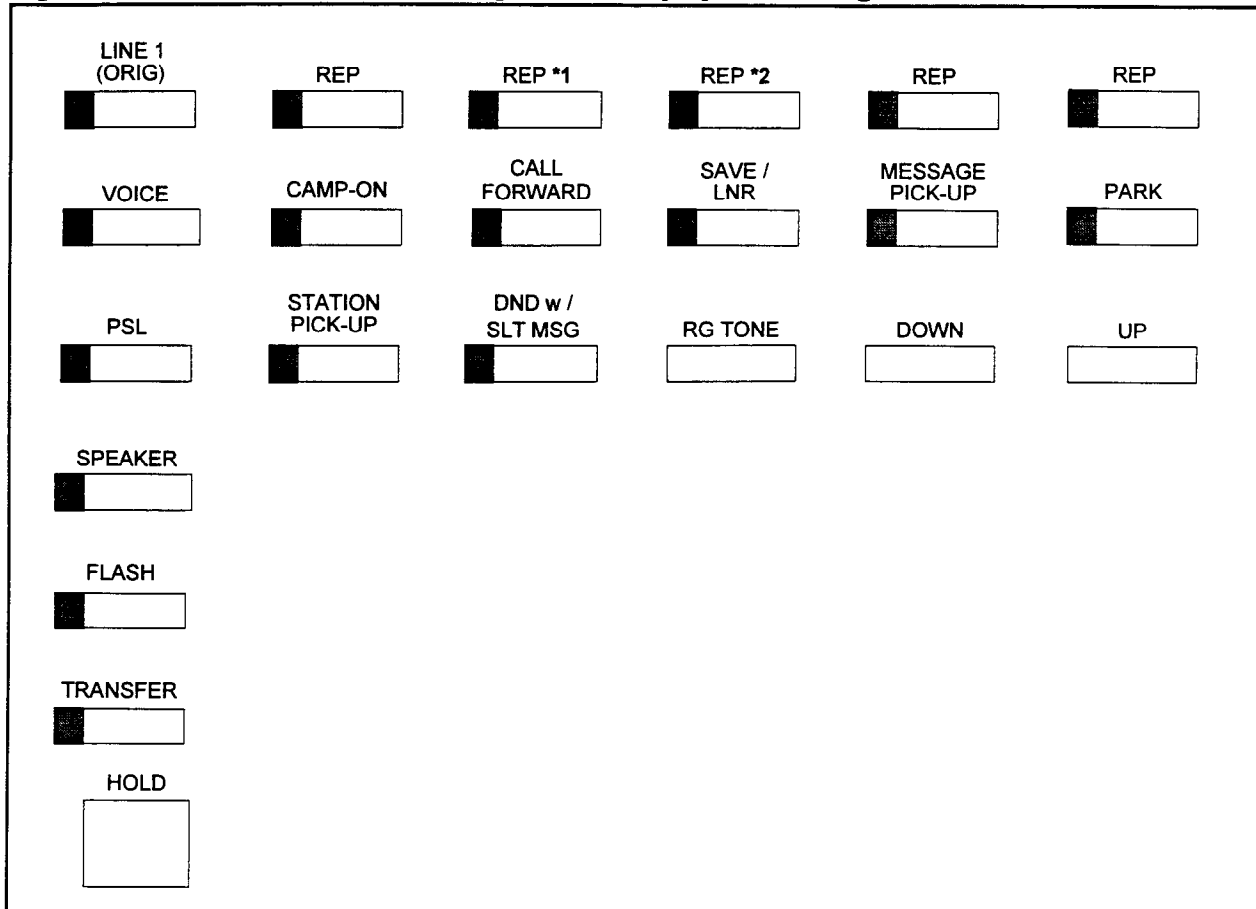


- NOTES:**
- \*1 This button is the MODE CHANGE button when the CT-20 is paired with a DIU.
  - \*2 This button is the DATA CALL button when the CT-20 is paired with a DIU.

Abbreviations used

- DND = Do Not Disturb
- PSL = Primary Station Line
- REP = Repertory Dial
- RG Tone = Ringer Tone
- SLT MSG = Silent Message

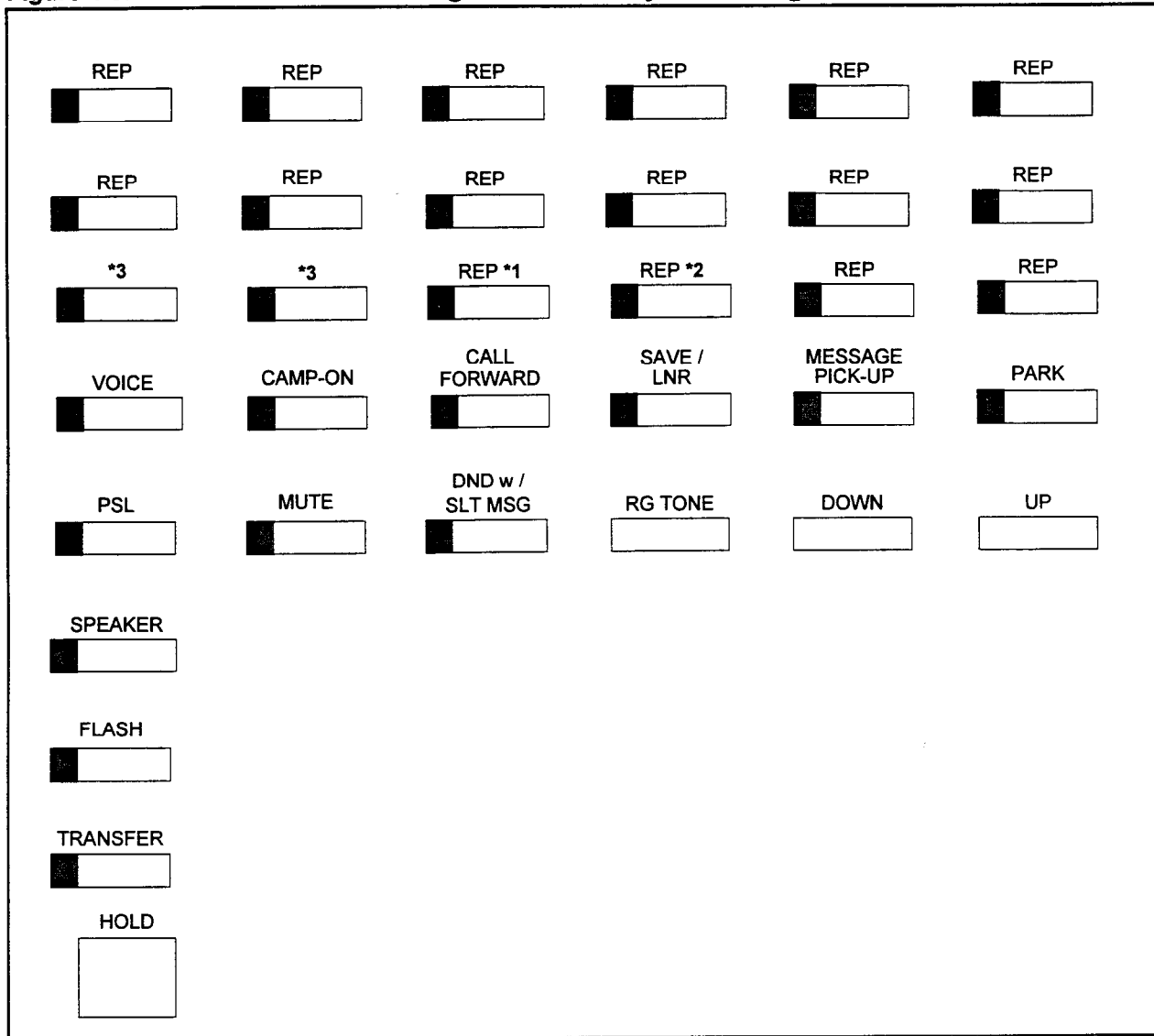
Figure 4-8. CT-20 Default Button Assignments - Key System Arrangement



**NOTES:** \*1 This button is the MODE CHANGE button when the CT-20 is paired with a DIU.  
 \*2 This button is the DATA CALL button when the CT-20 is paired with a DIU.

Abbreviations used  
 DND = Do Not Disturb  
 PSL = Primary Station Line  
 REP = Repertory Dial  
 RG Tone = Ringer Tone  
 SLT MSG = Silent Message

Figure 4-9. CT-30 Default Button Assignments - PBX System Arrangement

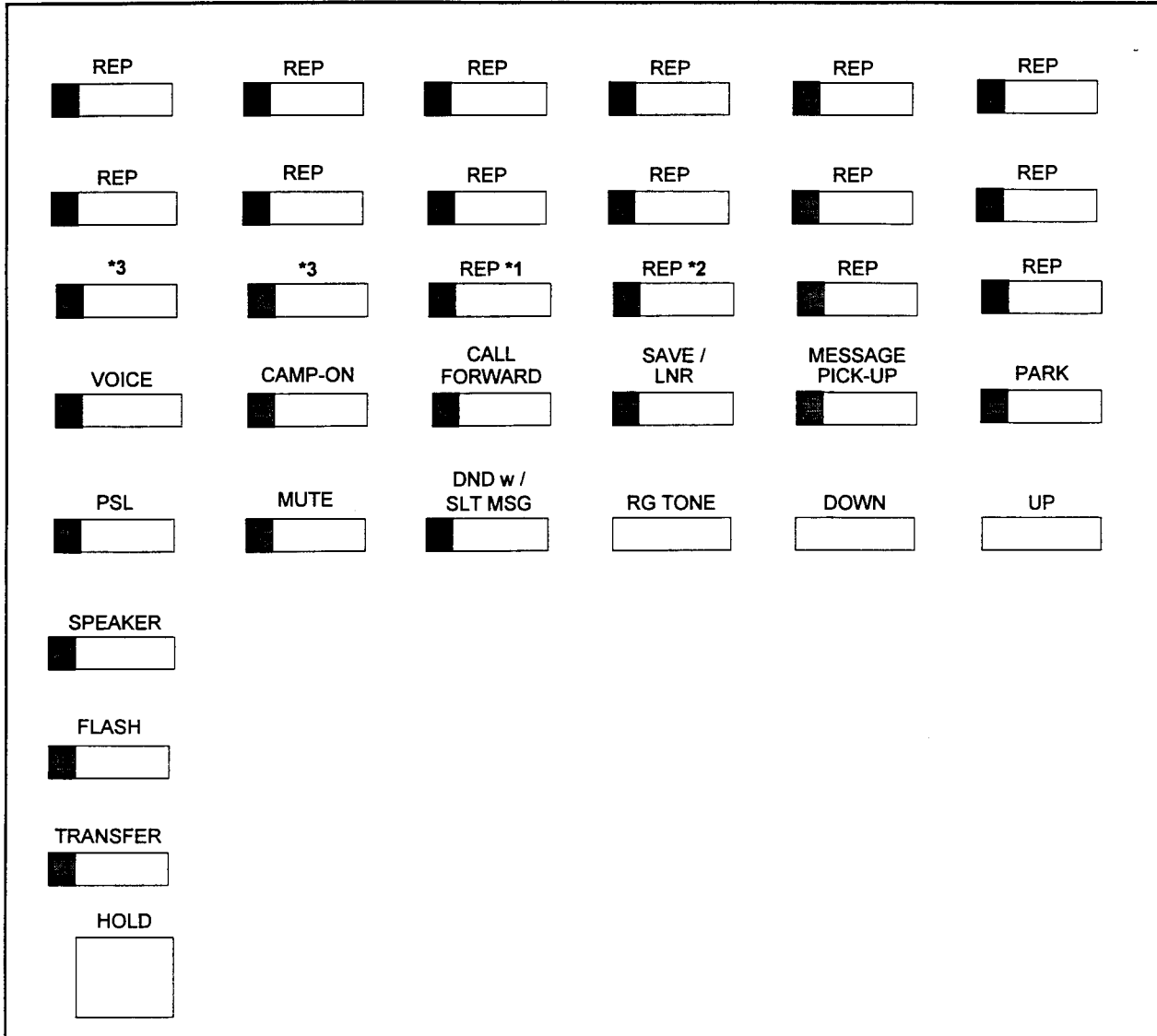


- NOTES:**
- \*1 This button is the DATA CALL button when the CT-20 is paired with a DIU.
  - \*2 This button is the MODE CHANGE button when the CT-20 is paired with a DIU.
  - \*3 There are no defaults for these buttons (14 and 15).

Abbreviations used

- DND = Do Not Disturb
- PSL = Primary Station Line
- REP = Repertory Dial
- RG Tone = Ringer Tone
- SLT MSG = Silent Message

Figure 4-10. CT-30 Default Button Assignments - Key System Arrangement

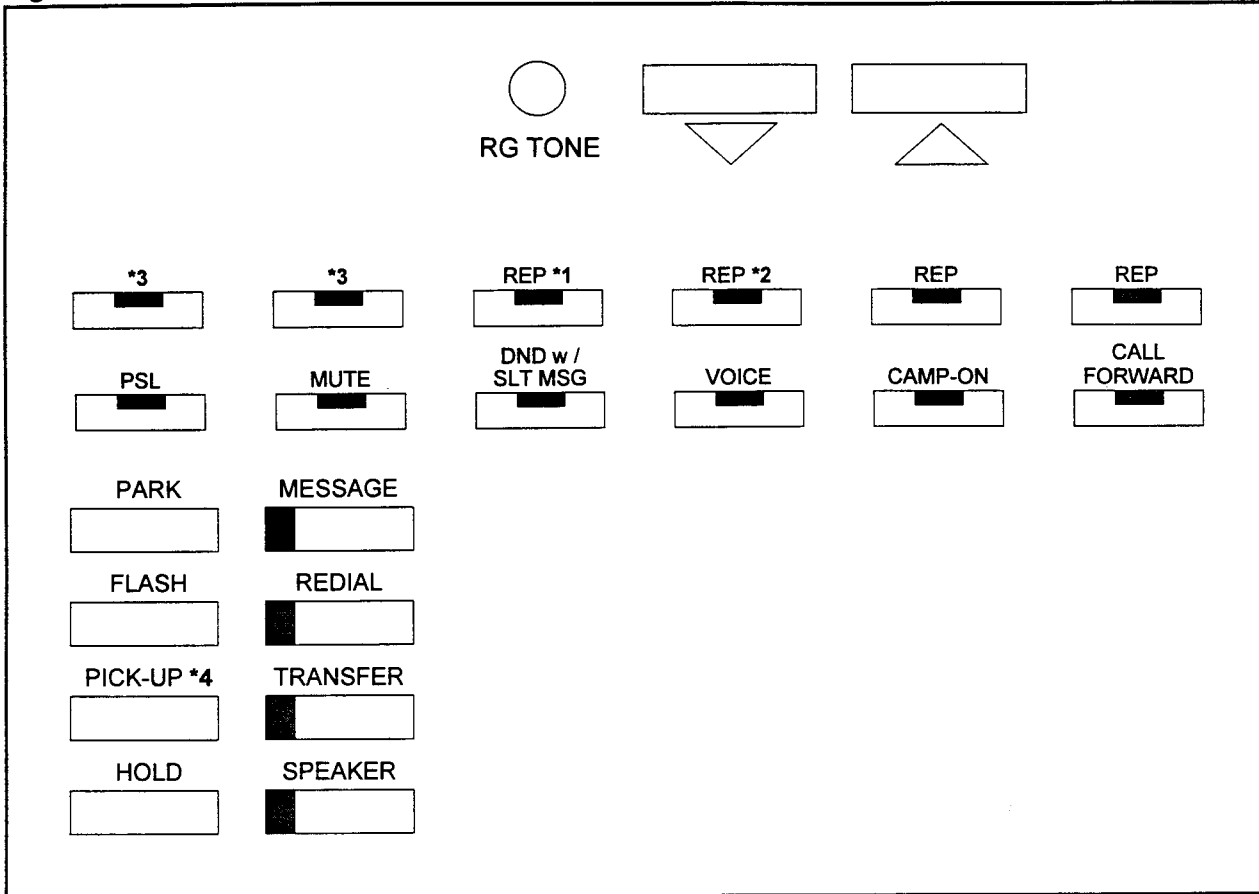


- NOTES:**
- \*1 This button is the DATA CALL button when the CT-20 is paired with a DIU.
  - \*2 This button is the MODE CHANGE button when the CT-20 is paired with a DIU.
  - \*3 There are no defaults for these buttons (14 and 15).

Abbreviations used

- DND = Do Not Disturb
- PSL = Primary Station Line
- REP = Repertory Dial
- RG Tone = Ringer Tone
- SLT MSG = Silent Message

Figure 4-11. DS20, DS20S, and DS20SD Default Button Assignments - PBX System Arrangement

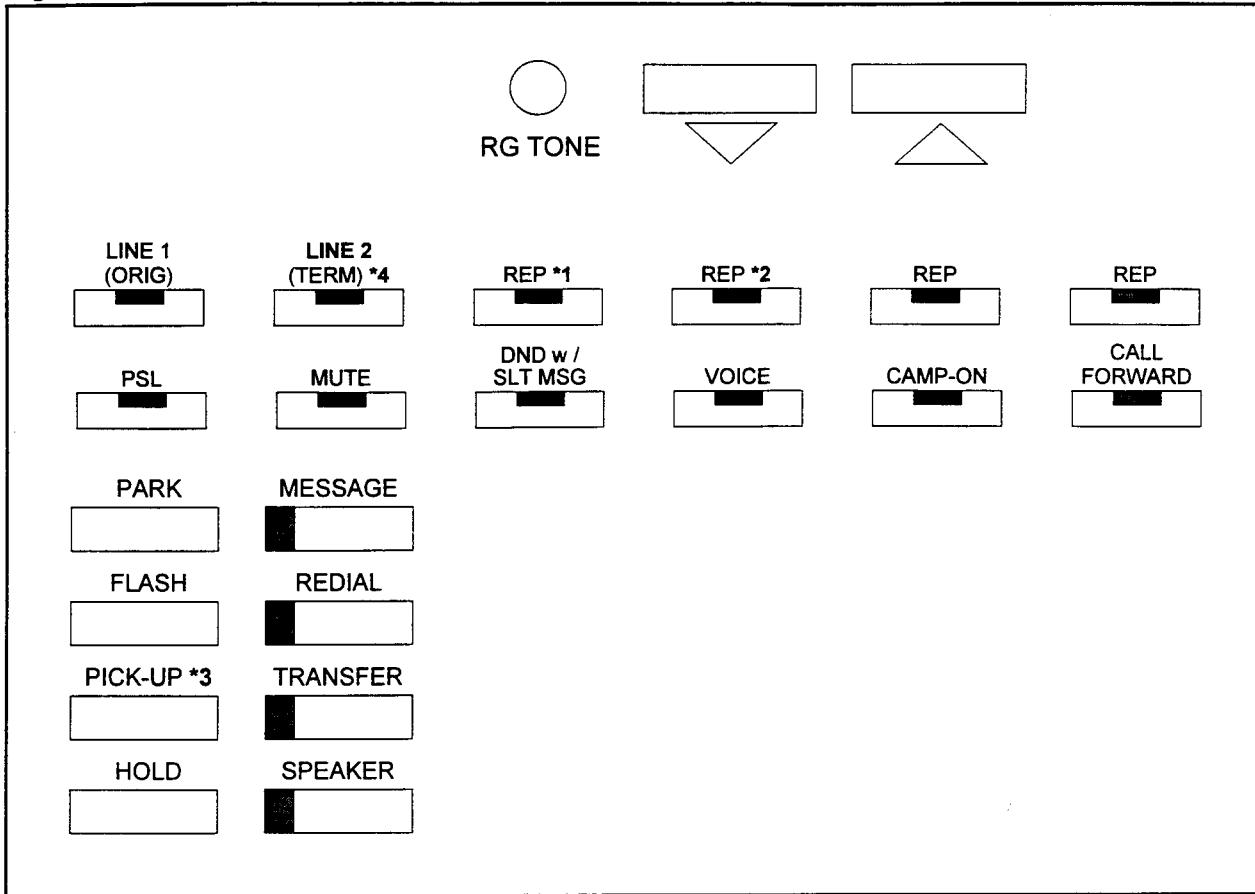


- NOTES:**
- \*1 This button is the DATA CALL button when the telephone is paired with a DIU.
  - \*2 This button is the MODE CHANGE button when the telephone is paired with a DIU.
  - \*3 No feature is assigned to this button.
  - \*4 This button is assigned with the Directed Call Pick-Up feature.

Abbreviations used

- DND = Do Not Disturb
- PSL = Primary Station Line
- REP = Repertory Dial
- RG Tone = Ringer Tone
- SLT MSG = Silent Message

Figure 4-12. DS20, DS20S, and DS20SD Default Button Assignments - Key System Arrangement

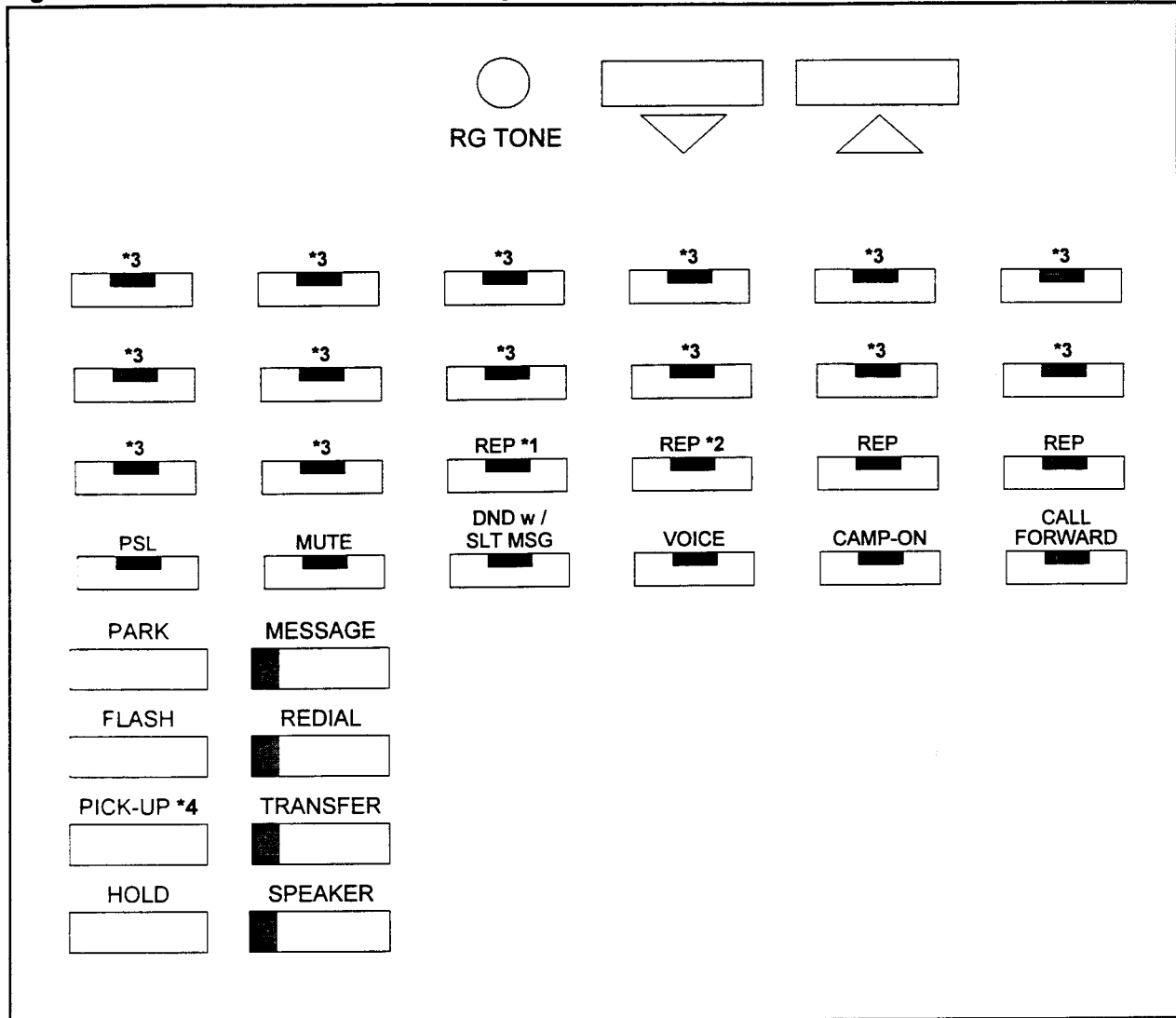


- NOTES:**
- \*1 This button is the DATA CALL button when the telephone is paired with a DIU.
  - \*2 This button is the MODE CHANGE button when the telephone is paired with a DIU.
  - \*3 This button is assigned with the Directed Call Pick-Up feature.
  - \*4 In logical slot 01 only. For other slots, no feature is assigned on this button.

Abbreviations used

- DND = Do Not Disturb
- PSL = Primary Station Line
- REP = Repertory Dial
- RG Tone = Ringer Tone
- SLT MSG = Silent Message

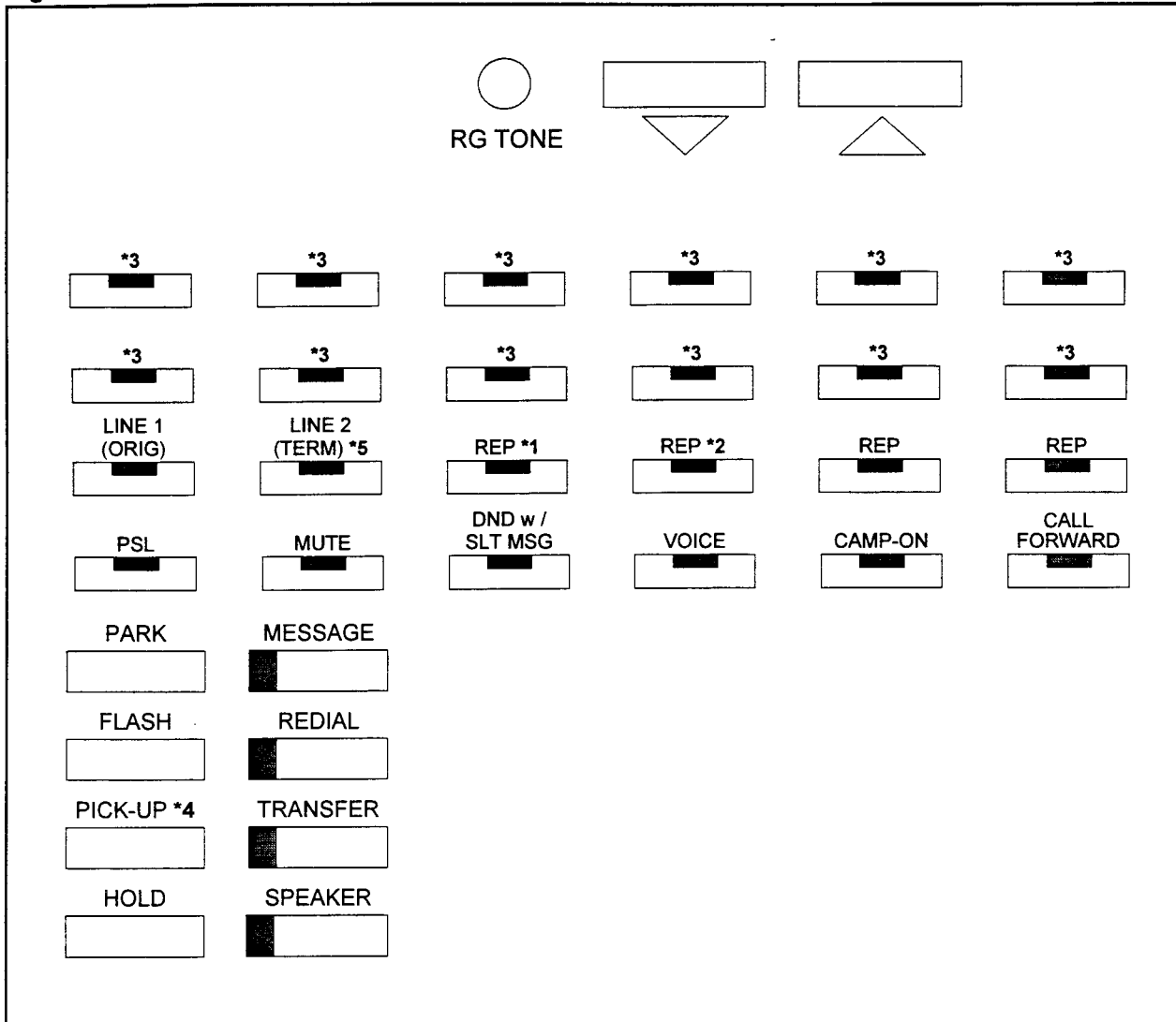
Figure 4-13. DS32SD Default Button Assignments - PBX System Arrangement



- NOTES:**
- \*1 This button is the DATA CALL button when the telephone is paired with a DIU.
  - \*2 This button is the MODE CHANGE button when the telephone is paired with a DIU.
  - \*3 No feature is assigned to this button.
  - \*4 This button is assigned with the Directed Call Pick-Up feature.

Abbreviations used  
 DND = Do Not Disturb  
 PSL = Primary Station Line  
 REP = Repertory Dial  
 RG Tone = Ringer Tone  
 SLT MSG = Silent Message

Figure 4-14. DS32SD Default Button Assignments - Key System Arrangement



- NOTES:**
- \*1 This button is the DATA CALL button when the telephone is paired with a DIU.
  - \*2 This button is the MODE CHANGE button when the telephone is paired with a DIU.
  - \*3 No feature is assigned to this button.
  - \*4 This button is assigned with the Directed Call Pick-Up feature.
  - \*5 In logical slot 01 only. For other slots, no feature is assigned to this button.

Abbreviations used

- DND = Do Not Disturb
- PSL = Primary Station Line
- REP = Repertory Dial
- RG Tone = Ringer Tone
- SLT MSG = Silent Message



**STATION DATA  
ASSIGNMENT (II) (CMC 204)**

Use the Station Data Assignment (II) (CMC 204) table to register or remove additional data associated with a station, such as:

- Data security.
- Fixed ringing.
- Message waiting lamps for SLT stations.
- Guest rooms.
- Dictation machine interface.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DN	Directory number	1 to 4 digits	None
P2	INTD	Data secure speech path assignment	0 = Data not secure 1 = Data secure	0
P3	OPS	Fixed ringing for off-premise extension	0 = No 1 = Yes (see description below)	0
P4	MW	SLT message waiting lamp assignment	0 or blank = No 1 = Yes (see description below)	0 or blank
P5	GST	Guest room assignment	0 or blank = No 1 = Yes	0 or blank
P6	DM	Dictation machine interface assignment	0 or blank = No 1 = Yes	0 or blank

**Parameter Descriptions****P1 (DN):**

Enter the directory number of the station which you wish to define (required).

- 1 to 4 digits.

**P2 (INTD):**

If necessary, enter whether or not this station will be assigned as a data secure speech path. Data security protects from call interruption by warning tones, such as call waiting tone.

- **0 = Data not secure (default)**
- 1 = Data secure

**P3 (OPS):**

If necessary, enter whether or not this station will have a fixed ringing pattern for off-premises extensions.

- **0 = No (default)**
- 1 = Yes (Distinctive ringing for off-premises stations is set at CMC 102, P1 = 2. This flag is applied to the off-premise station accompanied by a customer-provided line extender. There is no need to set this flag when using a 4SLE card.)

**P4 (MW):**

If necessary, enter whether or not this station is an SLT with a message waiting lamp.

- **0 or blank = No (default)**
- 1 = Yes (activate MW for SLT at CMC 102, P1 = 15)

**Parameter Descriptions  
(Cont'd)**

**P5 (GST):**

If necessary, enter whether or not this station is a guest room. (When the guest room flag is set, the room is initialized to Vacant status.)

- 0 or blank = No (default)
- 1 = Yes

**P6 (DM):**

If necessary, define if this station is equipped with an 8SLC / 16SLC interface for a dictation machine or silence on disconnect.

- 0 or blank = No (default)
- 1 = Yes

**Display**

1. Enter a DN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of DNs.
2. The system automatically releases this CMC after displaying the last registered DN.

**Change**

1. Enter all required parameters.
2. Press **ADD / CHG**.

**Duplicate**

1. Enter at least one complete record using the Change or Display procedure.
2. Press **DUP**.
3. The DN (P1) will increment to the next registered DN; all other parameters will be carried forward on the screen.
4. Make any needed changes to the parameters.
5. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DISAGREE	A message is waiting at the station.	Turn off the Message Waiting lamp.
BUSY	The specified DN is busy (when changing P5).	Try again after the station becomes idle.
NOT RGTR	The specified DN is not registered.	Return to CMC 200 and register the DN.

**STATION ASSIGNMENT FOR  
BLF BUTTON (CMC 205)**

Use the Station Assignment for BLF Button (CMC 205) table to assign BLF areas on a proprietary telephone so that the Direct Station Selection button(s) can operate as a busy lamp. This means that any Automatic Intercom Access (AIA) button assigned on the station can be used to give a visual indication of whether or not the station assigned to a particular button is busy. When the station is busy, the associated AIA lamp will light.

**NOTE:** The buttons must be assigned the AIA feature (FNO 1) using CMC 203 before entering this command.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	BLFA	BLF area number	1 to 24	None
P2	DN	Directory number	1 to 4 digits	None
P3	SBTN	First button in the assigned range	1 to 31	None
P4	EBTN	Last button in the range	1 to 31	Blank

**Parameter Descriptions****P1 (BLFA):**

Enter the BLF area number (required). This is an arbitrary number used to coordinate the stations that are given this capability.

- 1 to 24

**P2 (DN):**

Enter the directory number of the station which you are defining.

- 1 to 4 digits

**P3 (SBTN):**

Enter the first button for the range of buttons that you will be assigning busy lamp field capability. Any or all of the previously assigned AIA buttons on the telephone can be given this capability.

- 1 to 31

**P4 (EBTN):**

Enter the last button of the range, if any. If you are only defining one button, leave this parameter blank.

- 1 to 31

**NOTE:** The SBTN value should not be a higher number than the EBTN value.

- Display**
1. Enter BLFA.
  2. Press **DSP** to display assigned P2, P3, and P4 values.
  3. Press **DSP** again to display assigned P2, P3, and P4 values corresponding to next BLFA.
  4. To terminate this command, press **DSP** after the last BLFA has been displayed.
- Add**
1. Enter all necessary parameters.
  2. Press **ADD / CHG**.
- Remove** Press **RMV** to remove the parameters.

#### ERROR CODES

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	The BLFA entered is incorrect.	Check whether the BLFA is a number between 1 and 24.
OVERLAP	The specified BLFA has already been registered.	Change the BLFA.
NOT RGTR	The entered DN is not installed.	Check the DN.
NO AREA	The sum of the buttons registered for BLF functions exceeds 200.	Reduce the number of buttons.

**STATION DATA  
ASSIGNMENT (III) (CMC 206)**

Use the Station Data (III) (CMC 206) table to designate whether a particular station will receive a warning burst of tone when a silent message is being sent. In addition, this table controls whether a silent message will be displayed while the receiving station is engaged in a conversation and is also used to assign the manual telephone, VMS ports, and password group number.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DN	Directory number	1 to 4 digits	None
P2	SMGF	Message waiting warning tone	0 = Yes 1 = No	0
P3	MTEL	Manual telephone	0 = No 1 = Yes	0
P4	VPF	VMS port	0 = Not a VMS port 1 = Is a VMS port	0
P5	PWGN	Password group	1 to 100 0 or blank = Password not assigned	0 or blank
P6	DVSF	Call diversion to attendant	0 = Not activated 1 = Activated	0

**Parameter Descriptions**

**P1 (DN):**

Enter the directory number of the station which you wish to define (required).

- 1 to 4 digits

**P2 (SMGF):**

If necessary, enter whether or not this station will receive a warning tone when a silent message is sent.

- 0 = Yes (default)
- 1 = No

**P3 (MTEL):**

If necessary, enter whether or not this station is a manual telephone.

- 0 = No (default)
- 1 = Yes

**P4 (VPF):**

If necessary, enter whether or not this station will be flagged as a VMS port.

- 0 = Not a VMS port (default)
- 1 = Is a VMS port

**P5 (PWGN):**

If necessary, enter the password group number. Passwords are used for the Authorization Code feature (walking class of service). Please refer to CMC 311.

- 1 to 100
- 0 or blank = Password not assigned (default)

**Parameter Descriptions  
(Cont'd)**

**P6 (DVSF):**

If necessary, enter whether or not the call diversion to attendant feature will be activated for this station.

- **0 = Not activated (default)**
- 1 = Activated

**NOTE:** This information may also be assigned system-wide using CMC 102, FLGN 163.

**Display**

1. Enter a DN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of DNs.
2. The system automatically releases this CMC after the last registered DN is displayed.

**Change**

1. Enter all required parameters.
2. Press **ADD / CHG**.

**Duplicate**

1. Enter at least one complete record using the Change or Display procedure.
2. Press **UP**.
3. The DN (P1) will increment to the next registered DN. All other parameters will be carried forward on the screen.
4. Make any needed changes to the parameters.
5. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified DN is not registered.	Return to CMC 200 and register the DN.

**SLT D-ICM GROUP  
ASSIGNMENT (CMC 207)**

This feature allows single line station users to receive dial intercom calls originated from a proprietary telephone using the **D-ICM** button. This feature can have an independent numbering plan in the intercom group separate from the access codes or station directory numbers.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>DN</u>	Directory number	1 to 4 digits	None
P2	DMNO	Dial intercom group number	1 to 10	None
P3	DMDN	Dial intercom directory number	1 to 4 digits	None

**Parameter Descriptions**
**P1 (DN):**

Enter the directory number of the station which you wish to assign as a D-ICM directory number (required).

- 1 to 4 digits

**P2 (DMNO):**

Enter the dial intercom group number. Each group can have a maximum of 50 members.

- 1 to 10

**P3 (DMDN):**

Enter the associated dial intercom directory number. This is the number that will reference the directory number entered in P1 for the group being defined. For example, a station in D-ICM group 1 presses the intercom button and dials 5. The number 5 has been defined (for D-ICM group 1) as providing access to extension number 1212. Therefore, the number is dialed for the station.

- 1 to 4 digits.

**Display**

1. Enter a DN.
2. Press **DSP** to display the DMNO and DMDN. Pressing **DSP** without entering a DN displays the parameters corresponding to the lowest DN.
3. Press **DSP** again to display the DMNO and DMDN corresponding to the next DN.
4. Terminate this command by pressing **DSP** after the last DN displays.

**Add**

1. Enter the necessary parameters.
2. Press **ADD / CHG** to add the new D-ICM member.

**Remove**

1. Enter the necessary parameters, or Display the information to be removed.
2. Press **RMV**.

---

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
NOT RGTR	The entered DN is not assigned to a D-ICM group.	Check the DN.
OVERLAP	The DN has already been registered. The DN is not registered as an ICM.	Check the DN.
NO AREA	There is no available area in this DMNO for the assignment.	Change the DMNO.

**NOTE:** Proprietary telephones must be assigned to D-ICM Groups at CMC 203 in order to utilize this feature.



**STATION NAME  
ASSIGNMENT (CMC 208)**

Use this CMC to assign the name that will be displayed on a proprietary telephone or Attendant Console instead of a directory number. A PMP or PcMP must be used to enter this command. Trunk names can also be displayed.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DN	Directory number	1 to 4 digits	None
P2	NM1	Name 1 (abbreviated)	1 to 5 characters or blank	None
P3	NM2	Name 2 (full)	1 to 15 characters or blank	None

**Parameter Descriptions**

**P1 (DN):**

Enter the directory number of the station which you wish to define (required).

- 1 to 4 digits

**P2 (NM1):**

Enter the name of the user assigned to this station. This is the name that will be displayed when the display area is limited; e.g., when displayed with other call information, such as forwarding information, etc.

- 1 to 5 characters or blank

**P3 (NM2):**

Enter additional name information for the user assigned to this station. This information will be displayed as space permits.

- 1 to 15 characters

**NOTE:** Character codes usable for the name registration are as follows:

SP, !, ", #, \$, %, &, ', (, ), \*, +, ,, -, ., /, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, :, ;, >, =, <, ?, @, A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z

An example display is shown below. In this example (which would be shown on the ringing station's LCD), "Name 1" is the originating station, and "Name 2" is the called station.

Name 1	Name 2	CFA
--------	--------	-----

**Display**

1. Enter a DN at P1.
2. Press **DSP** to display NM1 and NM2. A blank displays if NM1 or NM2 is not registered.

**NOTES:**

1. Pressing **DSP** again displays the next DN, NM1, and NM2.
2. Pressing **DSP** without entering P1(DN) displays the NM1 and NM2 of the lowest assigned DN.

- Change**
1. Enter all the necessary parameters.
  2. Press **ADD / CHG**.

**NOTE:** Pressing **ADD / CHG** without entering NM1 or NM2 removes them.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified DN is not registered.	Check the DN.

**STATION DATA  
ASSIGNMENT (IV) (CMC 209)**

Use this CMC to register data for the Call Waiting and Silent Monitor features.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DN	Directory number	1 to 4 digits	None
P2	HACW	Hookflash capability (for Call Waiting only)	0 = Allowed 1 = Not allowed	0
P3	SMON	Allow station to be silent monitored	0 = Not allowed 1 = Allowed	0

**Parameter Descriptions**
**P1 (DN):**

Enter the directory number of the station which you wish to define (required).

- 1 to 4 digits

**P2 (HACW):**

This parameter assigns hookflash capability for incoming calls when the station user is currently on a call in progress. Enter the value to define whether or not the station will have hookflash answer for call waiting capability. (For proprietary telephones, the **TRANSFER** button is used.)

- **0 = Allowed (default)**
- 1 = Not allowed

**P3 (SMON):**

If necessary, enter a value to determine whether or not this station will be defined as a station that can be silently monitored by another station with the appropriate class of service.

- **0 = Not allowed (default)**
- 1 = Allowed

**Display**

1. Enter a DN at P1.
2. Press **DSP** to display any assigned HACW and SMON values.

**NOTES:**

1. Pressing **DSP** again displays the next DN and assigned HACW and SMON value.
2. The command terminates when **DSP** is pressed after the last assigned DN is displayed.

**Change**

1. Enter all the necessary parameters.
2. Press **ADD / CHG**.

**Duplicate**

1. Display a complete record.
2. Press **DUP** to display the next DN and copy the entered HACW and SMON values.

**NOTE:** The command terminates when **DUP** is pressed after the last assigned DN is displayed.

---

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
PARA. ERR	The specified DN is not registered.	Check the DN.

**DSS / BLF ASSIGNMENT  
(CMC 210)**

Use the DSS / BLF Assignment (CMC 210) table to assign a DSS / BLF 30, 40, or 80 button console. DSS / BLF consoles are paired with proprietary telephone stations and Attendant Consoles, and provide either 30, 40, or 80 additional buttons.

**NOTES:**

1. For each DSS / BLF 40 or 80 button console to be installed, a 2-pair 24 AWG cable needs to be provided with a maximum loop length of 2,000 feet. An available port on an 8EKC card is also required.
2. For each DSS / BLF 30 button console to be installed, a single pair of wires is required to connect to a port on the 8DTC or 16DTC card.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DSN	DSS / BLF console number	1 to 16	None
P2	TYP	DSS / BLF type	1 = 40 button 2 = 80 button 3 = 30 button	None
P3	EN	Equipment number	See description below	None
P4	DN	Paired station directory number	1 to 4 digit proprietary telephone directory number Attendant access code + attendant number	None
P5	CDSN	Copied DSS / BLF number	1 to 16 Blank = No buttons copied	None
P6	DSO	DSS / BLF order	Blank = No DSS / BLF, or one DSS / BLF paired with a proprietary telephone / attendant console 1 = Two DSS / BLFs paired with a proprietary telephone / attendant console, and this is the first DSS / BLF 2 = Two DSS / BLFs paired with a proprietary telephone / attendant console, and this is the second DSS / BLF	None

**Parameter Descriptions****P1 (DSN):**

Enter the DSS / BLF console number. This is an arbitrary number that will be used to reference the DSS / BLF being defined.

- 1 to 16

**P2 (TYP):**

If necessary, enter the DSS / BLF type.

- 1 = 40 button
- 2 = 80 button
- 3 = 30 button

**Parameter Descriptions  
(Cont'd)****P3 (EN):**

If necessary, enter the equipment number of the console in the XYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7

**NOTE:** For more information on entering equipment numbers, refer to Appendix C.

**P4 (DN):**

If necessary, enter the station directory number that the BLF / DSS is paired with.

- 1 to 4 digit proprietary telephone directory number
- Attendant access code plus attendant number

**P5 (CDSN):**

If copying button assignments from another previously defined DSS / BLF, enter the console number of the DSS / BLF to be copied.

- 1 to 16
- Blank = No buttons copied

**P6 (DSO):**

Enter the order for the DSS / BLF (a maximum of two DSS / BLF consoles can be paired with one station).

- Blank = No DSS / BLF or one DSS / BLF paired with a proprietary telephone / Attendant Console
- 1 = Two DSS / BLF consoles paired with a proprietary telephone / Attendant Console and this is the first DSS / BLF
- 2 = Two DSS / BLF consoles paired with a proprietary telephone / Attendant Console and this is the second DSS / BLF

**NOTES:**

1. Eight 80-button DSS / BLF consoles can be assigned.
2. The total number of DSS buttons cannot exceed 640.
3. A 30-button DSS will count as 40 buttons in the 640 button maximum.
4. A maximum of sixteen 30 and 40 button DSS / BLF consoles can be assigned.

**Display**

1. Enter a DSN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly will display data in numerical order of DSNs.
2. The system will release this CMC when the DSN value exceeds 16.

- Add**
1. Enter P1 value.
  2. Press **DSP**.
  3. Enter new data.
  4. Press **RMV**.
  5. Press **ADD / CHG**.

**NOTES:**

1. A second DSS / BLF console may not be installed on a proprietary telephone / Attendant Console until the first console is installed.
2. The station paired with a DSS / BLF console must be a proprietary telephone or Attendant Console.
3. Only direct station selection buttons can be assigned to a DSS / BLF paired with an Attendant Console.
4. The following buttons are not copied when the CDSN is set:
  - ALT button (when paired with an Attendant Console).
  - Line buttons.
  - Alarm buttons.
  - Direct station selection.
  - Feature buttons other than automatic intercom buttons (in the case of a second DSS / BLF).
5. The destination directory number registered on DSS speed calling is not copied when CDSN is set.

- Remove**
1. Enter a DSN at P1.
  2. Press **RMV**.

**NOTES:**

1. If any DSS / BLF buttons are in use when **RMV** is pressed, the system will wait until those stations are idle before acting on the Remove command.
2. The first DSS / BLF cannot be removed until after the second DSS / BLF is removed.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
OVERLAP	An attempt was made to register a DSN, EN, or DN which is already registered as a DSS / BLF.	Check the entry for accuracy and try again.
NOT RGTR	An attempt was made to specify an EN or DN which is not registered.	Check the entry for accuracy and try again.
DISAGREE	There is a mismatch between the specified DN and the equipment which is installed.  The specified EN is already installed as another instrument.  The specified DN is not a proprietary telephone or Attendant Console.	Try a different EN or change the installation.  Try a different EN.  Try a different DN or change the installation.
CKG PKG	There is a mismatch between the specified DN and the installed hardware.	Check the installed instrument, and, if necessary, change the hardware.
NO FOUND	An attempt was made to display a DSN which is not installed.	Check the DSN and try again.
DENIED	An attempt was made to remove a first DSS / BLF when the second DSS / BLF was still registered.	Remove the second DSS / BLF before removing the first.



**DSS / BLF BUTTON  
ASSIGNMENT (CMC 211)**

Use the DSS / BLF Button Assignment (**CMC 211**) table to register the functions of the individual buttons on DSS / BLF consoles. Terminating trunk groups must be assigned at CMC 253 before they can be registered in this CMC.

Only direct station selection buttons can be assigned to a second DSS / BLF console paired with an Attendant Console or a proprietary telephone.

**NOTE:** Refer to the end of this CMC for Default Data Base Button Arrangement tables for each specific type of DSS / BLF.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>DN</u>	Directory number	1 to 4 digits	None
<u>P2</u>	<u>BN</u>	Button number	1 to 160	Tables 4-18 to 4-23
<u>P3</u>	<u>TYP</u>	Button type	1 = Direct station selection 2 = DSS hold / park 3 = DSS camp-on 4 = Alternate DSS 5 = DSS alarm 6 = DSS day / night change 7 = External paging access 8 = DSS speed calling 9 = CO trunk access 10 = Not used 11 = ICM / OSL	1
<u>P4</u>	<u>SUP</u>	Supplemental data	See descriptions on next page	None
<u>P5</u>	<u>LTT / DN</u>	Line termination types	See descriptions on next page	None
<u>P6</u>	<u>RGM</u>	Ringling mode	See descriptions on next page	None

**Parameter Descriptions****P1 (DN):**

Enter the station directory number of the instrument paired with the DSS / BLF which you wish to define (required).

- 1 to 4 digits
- Attendant access code and the attendant number

**P2 (BN):**

Enter the button number. (Tables 4-18 through 4-23 list the default button numbers for each specific type of DSS / BLF.)

- 1 to 160

**NOTE:** Features can only be programmed on button numbers 1 through 40.

**Parameter Descriptions  
(Cont'd)****P3 (TYP):**

If necessary, enter the button type.

- 1 = **Direct station selection (default)**
- 2 = DSS hold / park
- 3 = DSS camp-on
- 4 = Alternate DSS
- 5 = DSS alarm
- 6 = DSS day / night change
- 7 = External paging access
- 8 = DSS speed calling
- 9 = CO trunk access
- 10 = Not used
- 11 = ICM / OSL

**P4 (SUP):**

Depending on the value entered in P3, additional information may be needed. Otherwise, leave this parameter blank.

- If P3 = 1, enter the 1- to 4-digit intercom station directory number.
- If P3 = 4, enter the 1- to 4-digit alternate answering station directory number.
- If P3 = 7, enter the zone number (0-9).
- If P3 = 9, enter the terminating trunk group number (1-63)
- If P3 = 11, enter the type of station line (this value is fixed as 1)

**P5 (LTT / DN):**

Depending on the value entered in P3, additional information may be needed. Otherwise, leave this parameter blank.

- If P3 = 9, enter one of the following to define the type of trunk:
  - 1 = Personal line
  - 2 = Key system line
  - 3 = Pooled outgoing
  - 4 = Pooled incoming
  - 5 = Pooled bothway
- If P3 = 11, enter the 1- to 4-digit directory number for station line access

**P6 (RGM):**

If necessary, enter the ringing mode for the DSS / BLF.

- 0 = No ringing
- 1 = Ringing
- 2 = Delayed start ringing
- 3 = Delayed stop ringing

- Display**
1. Enter a DN at P1 and a BN at P2.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of BNs.
2. The system releases the CMC after displaying the last BN.
3. Each DN must be entered and displayed separately.

- Add / Change**
1. Enter P1 and P2 values.
  2. Press **DSP**.
  3. Enter new data.
  4. Press **RMV**.
  5. Press **ADD / CHG**.

**NOTES:**

1. Any previously assigned service must be removed from a specific button before implementing the Add / Change command.
2. The Alternate DSS feature (TYP = 4) can only be assigned to one button per pair of DSS / BLF consoles.
3. A DN can only be assigned to one button for each DSS / BLF Console(s) paired with a proprietary telephone or Attendant Console.
4. Alternate (TYP = 4) and line access (TYP = 9, 10) buttons cannot be assigned to a DSS / BLF console paired with an Attendant Console. All other button types (1, 2, 3, 5, 6, 7, 8) can be assigned.
5. Line access buttons should be assigned on buttons 1 through 30 (up to 30 line access buttons can be assigned on the first DSS / BLF console).
6. Up to 40 **DSS speed calling** buttons (TYP = 8) can be assigned on the first DSS / BLF console.
7. Up to five **DSS park** (TYP = 2) and five **DSS camp-on** (TYP = 3) feature buttons can be assigned on the first DSS / BLF console.
8. Only direct station selection buttons (TYP = 1) can be assigned on a second DSS / BLF console.

- Remove**
1. Enter a DN at P1 and a BN at P2.
  2. Press **RMV**.

**NOTES:**

1. IF **RMV** is pressed while a specified button is in use, removal processing automatically enters a wait state until use of the specified button ends. The alarm, night, speaker, paging, and DSS feature buttons are the only exceptions to this rule.
2. If **RLS** is pressed while removal processing is in a wait state, the system cancels the Remove command.

**ERROR CODES**

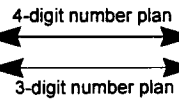
ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified DSN or DN number does not exist.	Check the parameters for accuracy and try again.
NO AREA	There is no system memory available for the addition of an alarm button.	Abandon the attempt or remove a previously assigned alarm button.
NO FOUND	An attempt was made to remove a BN which was not registered.	Abandon the attempt.
OVERLAP	Service already registered on this button.  ALT is already registered on another button.  The specified station number is already registered.	Select another button.  Abandon the attempt.  Check the station number for accuracy and try again.

**Table 4-18. 30-Button Proprietary Type  
DSS / BLF Default Assignment (First)**

4DN	2000	2001	2002
3DN	200	201	202
BN	28	29	30
4DN	2003	2004	2005
3DN	203	204	205
BN	25	26	27
4DN	2006	2007	2010
3DN	206	207	208
BN	22	23	24
4DN	2011	2012	2013
3DN	209	210	211
BN	19	20	21
4DN	2014	2015	2016
3DN	212	213	214
BN	16	17	18
4DN	2017	2020	2021
3DN	215	216	217
BN	13	14	15
4DN	2022	2023	2024
3DN	218	219	220
BN	10	11	12
4DN	2025	2026	2027
3DN	221	222	223
BN	7	8	9
4DN	2030	2031	2032
3DN	224	225	226
BN	4	5	6
4DN	2033	2034	2035
3DN	227	228	229
BN	1	2	3

**Table 4-19. 30-Button Proprietary Type  
DSS / BLF Default Assignment (Second)**

4DN	2100	2101	2102
3DN	280	281	282
BN	108	109	110
4DN	2103	2104	2105
3DN	283	284	285
BN	105	106	107
4DN	2106	2107	2110
3DN	286	287	288
BN	102	103	104
4DN	2111	2112	2113
3DN	289	290	291
BN	99	100	101
4DN	2114	2115	2116
3DN	292	293	294
BN	96	97	98
4DN	2117	2120	2121
3DN	295	296	297
BN	93	94	95
4DN	2122	2123	2124
3DN	298	299	300
BN	90	91	92
4DN	2125	2126	2127
3DN	301	302	303
BN	87	88	89
4DN	2130	2131	2132
3DN	304	305	306
BN	84	85	86
4DN	2133	2134	2135
3DN	307	308	309
BN	81	82	83



DN = Dial Number (Station Number)  
BN = Button Number

Table 4-20. 40-Button DSS / BLF Default Assignment (First)

4DN	2047	2035	2023	2011
3DN	239	229	219	209
BN	10	20	30	40
4DN	2046	2034	2022	2010
3DN	238	228	218	208
BN	9	19	29	39
4DN	2045	2033	2021	2007
3DN	237	227	217	207
BN	8	18	28	38
4DN	2044	2032	2020	2006
3DN	236	226	216	206
BN	7	17	27	37
4DN	2043	2031	2017	2005
3DN	235	225	215	205
BN	6	16	26	36
4DN	2042	2030	2016	2004
3DN	234	224	214	204
BN	5	15	25	35
4DN	2041	2027	2015	2003
3DN	233	223	213	203
BN	4	14	24	34
4DN	2038	2026	2014	2002
3DN	232	222	212	202
BN	3	13	23	33
4DN	2037	2025	2013	2001
3DN	231	221	211	201
BN	2	12	22	32
4DN	2036	2024	2012	2000
3DN	230	220	210	200
BN	1	11	21	31

Table 4-21. 40-Button DSS / BLF Default Assignment (Second)

4DN	2147	2135	2123	2111
3DN	319	309	299	289
BN	90	100	110	120
4DN	2146	2134	2122	2110
3DN	318	308	298	288
BN	89	99	109	119
4DN	2145	2133	2121	2107
3DN	317	307	297	287
BN	88	98	108	118
4DN	2144	2132	2120	2106
3DN	316	306	296	286
BN	87	97	107	117
4DN	2143	2131	2117	2105
3DN	315	305	295	285
BN	86	96	106	116
4DN	2142	2130	2116	2104
3DN	314	304	294	284
BN	85	95	105	115
4DN	2141	2127	2115	2103
3DN	313	303	293	283
BN	84	94	104	114
4DN	2140	2126	2114	2102
3DN	312	302	292	282
BN	83	93	103	113
4DN	2137	2125	2113	2101
3DN	311	301	291	281
BN	82	92	102	112
4DN	2136	2124	2112	2100
3DN	310	300	290	280
BN	81	91	101	111

**Table 4-22. 80-Button DSS / BLF Default Assignment (First)**

4DN	2097	2085	2073	2061	2047	2035	2023	2011
3DN	279	269	259	249	239	229	219	209
BN	10	20	30	40	50	60	70	80
4DN	2096	2084	2072	2060	2046	2034	2022	2010
3DN	278	268	258	248	238	228	218	208
BN	9	19	29	39	49	59	69	79
4DN	2095	2083	2071	2057	2045	2033	2021	2007
3DN	277	267	257	247	237	227	217	207
BN	8	18	28	38	48	58	68	78
4DN	2094	2082	2070	2056	2044	2032	2020	2006
3DN	276	266	256	246	236	226	216	206
BN	7	17	27	37	47	57	67	77
4DN	2093	2081	2067	2055	2043	2031	2017	2005
3DN	275	265	255	246	235	225	215	205
BN	6	16	26	36	46	56	66	76
4DN	2092	2080	2066	2065	2042	2030	2016	2004
3DN	274	264	254	244	234	224	214	204
BN	5	15	25	35	45	55	65	75
4DN	2091	2077	2065	2053	2041	2027	2015	2003
3DN	273	263	253	243	233	223	213	203
BN	4	14	24	34	44	54	64	74
4DN	2090	2076	2064	2052	2038	2026	2014	2002
3DN	272	262	252	242	232	222	212	202
BN	3	13	23	33	43	53	63	73
4DN	2087	2075	2063	2051	2037	2025	2013	2001
3DN	271	261	251	241	231	221	211	201
BN	2	12	22	32	42	52	62	72
4DN	2086	2074	2062	2050	2036	2024	2012	2000
3DN	270	260	250	240	230	220	210	200
BN	1	11	21	31	41	51	61	71



Table 4-23. 80-Button DSS / BLF Default Assignment (Second)

4DN	2237	2225	2213	2201	2147	2135	2123	2111
3DN	359	349	339	329	319	309	299	289
BN	90	100	110	120	130	140	150	160
4DN	2236	2224	2212	2200	2146	2134	2122	2110
3DN	358	348	338	328	318	308	298	288
BN	89	99	109	119	129	139	149	159
4DN	2235	2223	2211	2157	2145	2133	2121	2107
3DN	357	347	337	327	317	307	297	287
BN	88	98	108	118	128	138	148	158
4DN	2234	2222	2210	2156	2144	2132	2120	2106
3DN	356	346	336	326	316	306	296	286
BN	87	97	107	117	127	137	147	157
4DN	2233	2221	2207	2155	2143	2131	2117	2105
3DN	355	345	335	325	315	305	295	285
BN	86	96	106	116	126	136	146	156
4DN	2232	2220	2206	2154	2142	2130	2116	2104
3DN	354	344	334	324	314	304	294	284
BN	85	95	105	115	125	135	145	155
4DN	2231	2217	2205	2153	2141	2127	2115	2103
3DN	353	343	333	323	313	303	293	283
BN	84	94	104	114	124	134	144	154
4DN	2230	2216	2204	2152	2140	2126	2114	2102
3DN	352	342	332	322	312	302	292	282
BN	83	93	103	113	123	133	143	153
4DN	2227	2215	2203	2151	2137	2125	2113	2101
3DN	351	341	331	321	311	301	291	281
BN	82	92	102	112	122	132	142	152
4DN	2226	2214	2202	2150	2136	2124	2112	2100
3DN	350	340	330	320	310	300	290	280
BN	81	91	101	111	121	131	141	151

**DSS 100 ASSIGNMENT (CMC 212)**

Use the DSS 100 Assignment (**CMC 212**) table to assign a DSS 100 Console.

**NOTE:** For each DSS / BLF console to be installed, a 2-pair 24 AWG cable needs to be provided with a maximum loop length of 2,000 feet. An available port on an 8EKC card for each DSS / BLF to be installed is also required.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DSN	DSS 100 number	1 to 2 consoles	None
P2	EN	Equipment number	See description below	None
P3	DN	Attendant console directory number	Attendant access code + attendant number	None
P4	CDSN	DSS 100 to be copied	1 or 2 Blank = No buttons copied	None

**Parameter Descriptions**

**P1 (DSN):**

Enter the DSS 100 number (required).

- 1 of 2, or 2 of 2

**P2 (EN):**

Enter the equipment number of the DSS 100 in the XYZ format:

- X = Cabinet number: 0 or 1.
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

**P3 (DN):**

Enter the directory number of the Attendant Console with which this DSS 100 is to be paired.

- Attendant access code plus the attendant number

**P4 (CDSN):**

If copying button assignments from another previously defined DSS 100, enter the console number of the DSS 100 to be copied.

- 1 or 2
- Blank = None copied

**NOTE:** A maximum of two DSS 100s can be assigned as DSS or three DSS 100s assigned as RSI. These button assignments do not count against the 640-button total.

- Display**
1. Enter a DSN at P1.
  2. Press **DSP**.
  3. Pressing **DSP** again displays the EN and DN corresponding to the next DSN.
  4. Pressing **DSP** when the last DSN displays terminates the command.

**NOTE:** No data displays if the specified DSN is not installed.

- Add**
1. Enter all necessary parameters.
  2. Press **ADD / CHG**.

**NOTE:** DSS 100s cannot be paired together. Each DSS 100 requires an Attendant Console. Therefore, while two DSS 100s may be added, each must be accompanied by an Attendant Console.

- Remove** Press **RMV** to remove a DSS 100 during the display or after entering the DSN.

**NOTES:**

1. If any DSS 100s are in use when **RMV** is pressed, the system waits until those stations are idle before initiating the Remove command.
2. The first DSS 100 cannot be removed before the second DSS 100.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
OVERLAP	The entered DSN, EN, or DN is already specified as a DSS 100.	Enter another DSN, EN, or DN.
NOT RGTR	The specified DN or CDSN is not assigned.	Enter an assigned DN or CDSN.
DISAGREE	There is a discrepancy between the EN and the installed equipment.  The specified EN has already been installed as another terminal.  The specified DN is not an attendant.	Check the EN.  Check the EN.  Check the DN.
CHK PKG	The specified EN is not the installed package.	Check the package.
CHK SLF	The cabinet where the specified EN is installed is faulty.	Check the cabinet.
NO FOUND	The specified DSN is not assigned.	Check the DSN.

**DSS 100 BUTTON ASSIGNMENT (CMC 213)**

Use the DSS 100 Button Assignment (CMC 213) table to register information to the individual buttons on a DSS 100 console.

Only direct station selection buttons can be assigned to a DSS 100.

**NOTE:** Refer to the end of this CMC for the Default Data Base Button Arrangement.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>DN</u>	Directory number of paired attendant console	Attendant access code + the attendant number	None
<u>P2</u>	<u>BN</u>	Button number	Button number to be assigned (see descriptions below)	Tables 4-24 to 4-29
<u>P3</u>	<u>TYP</u>	Button type	1 = Direct station selection (only)	None
<u>P4</u>	<u>DN</u>	Directory number assigned to entered BN	1 to 4 digits	None

**Parameter Descriptions**

**P1 (DN):**

Enter the directory number of the Attendant Console paired with the DSS 100 (required).

- Attendant access code plus the attendant number

**P2 (BN):**

Enter the button number in the XYYYY format (required).

- XX = Screen number (01 to 10)
- YYY = Button number (001 to 100)

**P3 (TYP):**

Enter the button type.

- 1 = Direct station selection (only)

**P4 (DN):**

Enter the directory number for each assigned BN. This defines the station that will be called whenever the button number entered in P2 is pressed.

- 1 to 4 digits

- Display**
1. Enter a DN at P1 and a BN at P2.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** without entering P1 or P2 displays the lowest DSN (CMC 212) and P2 = 01001.
2. Pressing **DSP** repeatedly displays data in numerical order of BNs.
3. The system releases this CMC after displaying the last BN.

- Add**
1. Enter any required parameters.
  2. Press **ADD / CHG**.

- Remove**
1. Enter a DN at P1 and a BN at P2.
  2. Press **RMV**.

**NOTE:** If any station buttons are in use when **RMV** is pressed, the system automatically waits until those stations are idle before initiating the Remove command. The alarm button is the only exception to this rule.

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
NOT RGTR	The specified DN (P4) does not exist.  The specified attendant console does not exist or is not paired with DSS 100.	Enter the existing DN.
OVERLAP	Service is already registered to the specified button.  The specified DN (P4) is already registered.	Assign DN to unused button.  Check the DN.
NO FOUND	The specified button is not assigned the data.	Check the BN.

Table 4-24. DSS 100 Default Button Arrangement (Screen 1)

3DN/4DN BN	200/2000 91	201/2001 92	202/2002 93	203/2003 94	204/2004 95	205/2005 96	206/2006 97	207/2007 98	208/2010 99	209/2011 100
3DN/4DN BN	210/2012 81	211/2013 82	212/2014 83	213/2015 84	214/2016 85	215/2017 86	216/2020 87	217/2021 88	218/2022 89	219/2023 90
3DN/4DN BN	220/2024 71	221/2025 72	222/2026 73	223/2027 74	224/2030 75	225/2031 76	226/2032 77	227/2033 78	228/2034 79	229/2035 80
3DN/4DN BN	230/2036 61	231/2037 62	232/2040 63	233/2041 64	234/2042 65	235/2043 66	236/2044 67	237/2045 68	238/2046 69	239/2047 70
3DN/4DN BN	240/2050 51	241/2051 52	242/2052 53	243/2053 54	244/2054 55	245/2055 56	246/2056 57	247/2057 58	248/2060 59	249/2061 60
3DN/4DN BN	250/2062 41	251/2063 42	252/2064 43	253/2065 44	254/2066 45	255/2067 46	256/2070 47	257/2071 48	258/2071 49	259/2071 50
3DN/4DN BN	260/2074 31	261/2075 32	262/2076 33	263/2077 34	264/2080 35	265/2081 36	266/2082 37	267/2083 38	268/2084 39	269/2085 40
3DN/4DN BN	270/2086 21	271/2087 22	272/2090 23	273/2091 24	274/2092 25	275/2093 26	276/2094 27	277/2095 28	278/2096 29	279/1097 30
3DN/4DN BN	280/2100 11	281/2101 12	282/2102 13	283/2103 14	284/2104 15	285/2105 16	286/2106 17	287/2107 18	288/2110 19	289/2111 20
3DN/4DN BN	290/2112 1	291/2113 2	292/2114 3	293/2115 4	294/2116 5	295/2117 6	296/2120 7	297/2121 8	298/2122 9	299/2123 10

**NOTES:**

1. Button numbers must be entered in 3-digit format. Hence, button 1 is entered as "001."
2. Screen numbers are entered in 2-digit format (screen 1 becomes screen "01").

Table 4-25. DSS 100 Default Button Arrangement (Screen 2)

3DN/4DN BN	300/2124 91	301/2125 92	302/2126 93	303/2127 94	304/2130 95	305/2131 196	306/2132 97	307/2133 98	308/2134 99	309/2135 100
3DN/4DN BN	310/2136 81	311/2137 82	312/2140 83	313/2141 84	314/2142 85	315/2143 86	316/2144 87	317/2145 88	318/2146 89	319/2147 90
3DN/4DN BN	320/2150 71	321/2151 72	322/2152 73	323/2153 74	324/2154 75	325/2155 76	326/2156 77	327/2157 78	328/2200 79	329/2201 80
3DN/4DN BN	330/2202 61	331/2203 62	332/2204 63	333/2205 64	334/2206 65	335/2207 66	336/2210 67	337/2211 68	338/2212 69	339/2225 70
3DN/4DN BN	340/2214 51	341/2215 52	342/2216 53	343/2217 54	344/2220 55	345/2221 56	346/2222 57	347/2223 58	348/2224 59	349/2225 60
3DN/4DN BN	350/2226 41	351/2227 42	352/2230 43	353/2231 44	354/2232 45	355/2233 46	356/2234 47	357/2235 48	358/2236 49	359/2237 50
3DN/4DN BN	360/2240 31	361/2241 32	362/2242 33	363/2243 34	364/2244 35	365/2245 36	366/2246 37	367/2247 38	368/2250 39	369/2251 40
3DN/4DN BN	370/2264 21	371/2253 22	372/2254 23	373/2255 24	374/2256 25	375/2257 26	376/2260 27	377/2261 28	378/2262 29	379/2263 30
3DN/4DN BN	380/2264 11	381/2265 12	382/2266 13	383/2267 14	384/2270 15	385/2271 16	386/2272 17	387/2273 18	388/2274 19	389/2275 20
3DN/4DN BN	390/2276 1	391/2277 2	392/2280 3	393/2281 4	394/2282 5	395/2283 6	396/2284 7	397/2285 8	398/2286 9	399/2287 10

**NOTES:**

1. Button numbers must be entered in 3-digit format. Hence, button 1 is entered as "001."
2. Screen numbers are entered in 2-digit format (screen 1 becomes screen "01").

Table 4-26. DSS 100 Default Button Arrangement (Screen 3)

3DN/4DN BN	400/2290 91	401/2291 92	402/2292 93	403/2293 94	404/2294 95	405/2295 96	406/2296 97	407/2297 98	408/2300 99	409/2301 100
3DN/4DN BN	410/2302 81	411/2303 82	412/2304 83	413/2305 84	414/2306 85	415/2307 86	416/2310 87	417/2311 88	418/2312 89'	419/2313 90
3DN/4DN BN	420/2314 71	421/2315 72	422/2316 73	423/2317 74	424/2320 75	425/2321 76	426/2322 77	427/2323 78	428/2324 79	429/2325 80
3DN/4DN BN	430/2326 61	431/2327 62	432/2330 63	433/2331 64	434/2332 65	435/2333 66	436/2334 67	437/2335 68	438/2336 69	439/2337 70
4DN BN	2340 51	2341 52	2342 53	2343 54	2344 55	2345 56	2346 57	2347 58	2350 59	2351 60
4DN BN	2352 41	2353 42	2354 43	2355 44	2356 45	2357 46	2360 47	2361 48	2362 49	2363 50
4DN BN	2364 31	2365 32	2366 33	2367 34	2370 35	2371 36	2372 37	2373 38	2374 39	2375 40
4DN BN	2376 21	2377 22	2380 23	2381 24	2382 25	2383 26	2384 27	2385 28	2386 29	2387 30
4DN BN	2390 11	2391 12	2392 13	2393 14	2394 15	2395 16	2396 17	2397 18	2400 19	2401 20
4DN BN	2402 1	2403 2	2404 3	2405 4	2406 5	2407 6	2410 7	2411 8	2412 9	2413 10

**NOTES:**

1. Button numbers must be entered in 3-digit format. Hence, button 1 is entered as "001."
2. Screen numbers are entered in 2-digit format (screen 1 becomes screen "01").



Table 4-27. DSS 100 Default Button Arrangement (Screen 4)

4DN BN	2414 91	2415 92	2416 93	2417 94	2420 95	2421 96	2422 97	2423 98	2424 99	2425 100
4DN BN	2426 81	2427 82	2430 83	2431 84	2432 85	2433 86	2434 87	2435 88	2436 89'	2437 90
4DN BN	2440 71	2441 72	2442 73	2443 74	2444 75	2445 76	2446 77	2447 78	2450 79	2451 80
4DN BN	2452 61	2453 62	2454 63	2455 64	2456 65	2457 66	2460 67	2461 68	2462 69	2463 70
4DN BN	2464 51	2465 52	2466 53	2467 54	2470 55	2471 56	2472 57	2473 58	2474 59	2475 60
4DN BN	2476 41	2477 42	2480 43	2481 44	2482 45	2483 46	2484 47	2485 48	2486 49	2487 50
4DN BN	2490 31	2491 32	2492 33	2493 34	2494 35	2495 36	2496 37	2497 38	2500 39	2501 40
4DN BN	2502 21	2503 22	2504 23	2505 24	2506 25	2507 26	2510 27	2511 28	2512 29	2513 30
4DN BN	2514 11	2515 12	2516 13	2517 14	2520 15	2521 16	2522 17	2523 18	2524 19	2525 20
4DN BN	2526 1	2527 2	2530 3	2531 4	2532 5	2533 6	2534 7	2535 8	2536 9	2537 10

**NOTES:**

1. Button numbers must be entered in 3-digit format. Hence, button 1 is entered as "001."
2. Screen numbers are entered in 2-digit format (screen 1 becomes screen "01").

Table 4-28. DSS 100 Default Button Arrangement (Screen 5)

4DN BN	2540 91	2541 92	2542 93	2543 94	2544 95	2545 96	2546 97	2547 98	2550 99	2551 100
4DN BN	2552 81	2553 82	2554 83	2555 84	2556 85	2557 86	2560 87	2561 88	2562 89'	2563 90
4DN BN	2564 71	2565 72	2566 73	2567 74	2570 75	2571 76	2572 77	2573 78	2574 79	2575 80
4DN BN	2576 61	2577 62	2580 63	2581 64	2582 65	2583 66	2584 67	2585 68	2586 69	2587 70
4DN BN	2590 51	2591 52	2592 53	2593 54	2594 55	2595 56	2596 57	2597 58	2600 59	2601 60
4DN BN	2602 41	2603 42	2604 43	2605 44	2606 45	2607 46	2610 47	2611 48	2612 49	2613 50
4DN BN	2614 31	2615 32	2616 33	2617 34	2620 35	2621 36	2622 37	2623 38	2624 39	2625 40
4DN BN	2626 21	2627 22	2630 23	2631 24	2632 25	2633 26	2634 27	2635 28	2636 29	2637 30
4DN BN	2640 11	2641 12	2642 13	2643 14	2644 15	2645 16	2646 17	2647 18	2650 19	2651 20
4DN BN	2652 1	2653 2	2654 3	2655 4	2656 5	2657 6	2660 7	2661 8	2662 9	2663 10

**NOTES:**

1. Button numbers must be entered in 3-digit format. Hence, button 1 is entered as "001."
2. Screen numbers are entered in 2-digit format (screen 1 becomes screen "01").

Table 4-29. DSS 100 Default Button Arrangement (Screen 6)

4DN BN	2664 91	2665 92	2666 93	2667 94	2670 95	2671 96	2672 97	2673 98	2674 99	2675 100
4DN BN	2676 81	26773 82	2680 83	2681 84	2782 85	2683 86	2684 87	2685 88	2686 89'	2687 90
4DN BN	2690 71	2691 72	2692 73	2693 74	2694 75	2695 76	2696 77	2697 78	2700 79	2701 80
4DN BN	2702 61	2703 62	2704 63	2705 64	2706 65	2707 66	2710 67	2711 68	2712 69	2713 70
4DN BN	2714 51	2715 52	2716 53	2717 54	2720 55	2721 56	2722 57	2723 58	2724 59	2725 60
4DN BN	2726 41	2727 42	2730 43	2731 44	2732 45	2733 46	2734 47	2735 48	2736 49	2737 50
4DN BN	2740 31	2741 32	2742 33	2743 34	2744 35	2745 36	2746 37	2747 38	2750 39	2751 40
4DN BN	2752 21	2753 22	2754 23	2755 24	2756 25	2757 26	2760 27	2761 28	2762 29	2763 30
4DN BN	2764 11	2765 12	2766 13	2767 14	15	16	17	18	19	20
4DN BN	1	2	3	4	5	6	7	8	9	10

**NOTES:**

1. Button numbers must be entered in 3-digit format. Hence, button 1 is entered as "001."
2. Screen numbers are entered in 2-digit format (screen 1 becomes screen "01").

**DATA STATION ASSIGNMENT (CMC 220)**

Use the Data Station Assignment (CMC 220) table to register or remove data station information. This CMC also allows you to create a link between a data station and an associated voice station.

System maximums are as follows:

- One or two cabinet system: 80 data stations.
- Three or four cabinet system: 160 data stations.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	EN	Equipment number	See description below	None
P2	DN	Data directory number	1 to 4 digits	Table 4-30 to Table 4-35
P3	DTT	Data terminal type	1 = CSD (manufacturer discontinued) with DTA 2 = CT-10 / CT-20 / CT-30 or Digital Station (DS) with DIU 3 = CSD (manufacturer discontinued) with DIU 4 = DIU (stand-alone)	None
P4	DNV	Voice directory number	1 to 4 digits	None

**Parameter Descriptions**

**P1 (EN):**

Enter the equipment number of the data station in the XYZ format (required):

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number:
  - 00 to 17 (for DIUs)
  - 00, 03, 06, 09, 12 (for DTAs)
- Z = Circuit number:
  - 0 to 7 (for DIUs)
  - 0 to 5 (for DTAs)

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

**P2 (DN):**

Enter the directory number to be assigned to the data station. This is not the associated voice station directory number, which is assigned at P4. Default data station directory numbers are listed in Tables 4-30 to 4-35.

- 1 to 4 digits

**P3 (DTT):**

If necessary, enter the data terminal type.

- 1 = CSD (manufacturer discontinued) with DTA
- 2 = CT-10 / 20 / 30 or Digital Station (DS) with DIU
- 3 = CSD (manufacturer discontinued) with DIU
- 4 = DIU (stand-alone)

- Parameter Descriptions (Cont'd)**
- P4 (DNV):**  
Enter the directory number of the associated CT-10 / 20 / 30 or Digital Station (DS) voice extension. This parameter is left blank when DTT (P3) is set to 1 or 4.
- 1 to 4 digits
- Display**
1. Enter an EN at P1.
  2. Press **DSP**.
- NOTES:**
1. Pressing **DSP** repeatedly displays data in numerical order of ENs.
  2. The system automatically releases this CMC after the last registered EN has been displayed.
- Add**
1. Enter the new EN at P1.
  2. Enter the new DN (data station directory number) at P2.
  3. Enter the appropriate DTT at P3.
  4. If P3 is not 1 or 4, enter the DN (associated voice station directory number) at P4.
  5. Press **ADD / CHG**.
- NOTE:** Make sure that the DN assigned at P2 does not conflict with the access codes assigned at CMC 100. If such conflicts exist, the system automatically disables the access code.
- Remove**
1. Enter the EN to be removed at P1.
  2. Press **RMV**.
- Duplicate**
1. Enter at least one record using the Add or Display procedure.
  2. Press **DUP**.
  3. The EN (P1) parameter will increment. All other parameters will be carried forward on the screen.
  4. Use the cursor control commands or **Return** to move the cursor to parameters which must be changed.
  5. Enter any changes.
  6. Press **ADD / CHG**.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	An attempt was made to enter an EN or voice DN which is not registered.	Check the data and try again, or go to CMC 200 and register the EN.
DENIED 1	The station registered to the entered EN is assigned as an MCT.	Remove the MCT assignment at CMC 702.
DENIED 2	The station registered to the entered EN is an ACD group.	Remove the station from the ACD group at CMC 308 and try again.
DENIED 3	The station registered to the entered EN is in a hunt group.	Remove the station from the hunt group at CMC 301 and try again.
DENIED 7	The station registered to the entered EN is a hotline.	Remove the station's hotline status at CMC 304 and try again.
DENIED 20	The station registered to the entered EN is a hotel / motel printer.	Remove the station's hotel / motel printer status at CMC 356 and try again.
DESAGREE	An attempt was made to enter an EN which is not a data port.	Check the data and try again.
	A mismatch exists between the entered DTT and the installed equipment.	Check the data and try again.
	An attempt was made to enter a voice DN which cannot support data.	Check the data and try again.
CHK PKG	An attempt was made to enter an EN in which no card, or a card mismatched to the DDT, is installed.	Check the installed card and try again.
OVERLAP	An attempt was made to enter a data DN which is already registered.	Check the data and try again or abandon the attempt.
	An attempt was made to enter a voice DN which is already associated with a data station.	Check the data and try again or abandon the attempt.
NOT EXEC	The CHT or DIU is faulty.	Check the installed card and try again.
	The specified hardware is in the make busy condition.	Release the make busy condition at CMC 706 and try again.
CHK SLF	The cabinet is not physically installed.	Check the cabinet.
	The power supply in the cabinet is faulty.	

Table 4-30. Default 3-Digit Data Directory Numbers - Basic Cabinet (Cabinet 0 or Blank)

CIRCUIT NUMBER	CARD SLOT NUMBER									
	00	01	02	03	04	05	06	07	08	09
0	4400	4406		4412	4418		4424			
1	4401	4407		4413	4419		4425			
2	4402	4408		4414	4420		4426			
3	4403	4409		4415	4421		4427			
4	4404	4410		4416	4422		4428			
5	4405	4411		4417	4423		4429			
6	-	-		-	-		-			
7	-	-		-	-		-			

Table 4-31. Default 3-Digit Data Directory Numbers - Expansion Cabinet 1

CIRCUIT NUMBER	CARD SLOT NUMBER									
	00	01	02	03	04	05	06	07	08	09
0	4436	4442		4448	4454					
1	4437	4443		4449	4455					
2	4438	4444		4450	4456					
3	4439	4445		4451	4457					
4	4440	4446		4452	4458					
5	4441	4447		4453	4459					
6	-	-		-	-		-			
7	-	-		-	-		-			

**NOTE:** The 3-digit numbering plan refers to the voice directory number assigned in the system that accompanies each station. Only four digit numbers are assigned as data directory numbers in the system.

Table 4-32. Default 4-Digit Data Directory Numbers - Basic Cabinet (Cabinet 0 or Blank)

CIRCUIT NUMBER	CARD SLOT NUMBER									
	00	01	02	03	04	05	06	07	08	09
0	3000	3030		3060	3090		3120			
1	3001	3031		3061	3091		3121			
2	3002	3032		3062	3092		3122			
3	3003	3033		3063	3093		3123			
4	3004	3034		3064	3094		3124			
5	3005	3035		3065	3095		3125			
6	-	-		-	-		-			
7	-	-		-	-		-			

Table 4-33. Default 4-Digit Data Directory Numbers - Expansion Cabinet 1

CIRCUIT NUMBER	CARD SLOT NUMBER									
	00	01	02	03	04	05	06	07	08	09
0	3200	3230		3260	3290		3320			
1	3201	3231		3261	3291		3321			
2	3202	3232		3262	3292		3322			
3	3203	3233		3263	3293		3323			
4	3204	3234		3264	3294		3324			
5	3205	3235		3265	3295		3325			
6	-	-		-	-		-			
7	-	-		-	-		-			



Table 4-34. Default 4-Digit Data Directory Numbers - Expansion Cabinet 2

CIRCUIT NUMBER	CARD SLOT NUMBER									
	00	01	02	03	04	05	06	07	08	09
0	3400	3430		3460	3490		3520			
1	3401	3431		3461	3491		3521			
2	3402	3432		3462	3492		3522			
3	3403	3433		3463	3493		3523			
4	3404	3434		3464	3494		3524			
5	3405	3435		3465	3495		3525			
6	-	-		-	-		-			
7	-	-		-	-		-			

Table 4-35. Default 4-Digit Data Directory Numbers - Expansion Cabinet 3

CIRCUIT NUMBER	CARD SLOT NUMBER									
	00	01	02	03	04	05	06	07	08	09
0	3600	3630		3660	3690		3720			
1	3601	3631		3661	3691		3721			
2	3602	3632		3662	3692		3722			
3	3603	3633		3663	3693		3723			
4	3604	3634		3664	3694		3724			
5	3605	3635		3665	3695		3725			
6	-	-		-	-		-			
7	-	-		-	-		-			

**DATA STATION COS / COR  
(CLASS OF SERVICE /  
CLASS OF RESTRICTION)  
ASSIGNMENT (CMC 221)**

Use this CMC to designate the class of service and class of restriction for a data station for both day and night modes of operation. The actual services provided by each COS are assigned at CMC 104. The CORs are defined at CMCs 105, 411, 412, 413, 414, and 415.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DN	Directory number	1 to 4 digits	None
P2	COS	Day mode class of service	1 to 16	1
P3	NCOS	Night mode class of service	1 to 16	1
P4	COR	Day mode class of restriction	1 to 16	1
P5	NCOS	Night mode class of restriction	1 to 16	1

**Parameter Descriptions**

**P1 (DN):**

Enter the directory number of the station which you wish to define (required).

- 1 to 4 digits

**P2 (COS):**

If necessary, enter the day mode class of service for this station. Class of service defines which features will be available for the station.

- 1 to 16
- **1 (default)**

**P3 (NCOS):**

If necessary, enter the night mode class of service. Each station may have one day COS and one night COS.

- 1 to 16
- **1 (default)**

**P4 (COR):**

If necessary, enter the day mode class of restriction for this station. Restriction mode defines the station's calling privileges.

- 1 to 16
- **1 (default)**

**P5 (NCOR):**

If necessary, enter the night mode class of restriction. Each station may have one day COR and one night COR.

- 1 to 16
- **1 (default)**

- Display**
1. Enter a DN at P1.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of registered DNs.
2. The system releases the CMC after the last registered DN displays.

- Add / Change**
1. Enter the parameters to be added or changed.
  2. Press **ADD / CHG**.

- Duplicate**
1. Enter at least one complete record using the Add / Change or Display procedure.
  2. Press **DUP**.
  3. The DN (P1) will increment to the next registered DN; all other parameters will be carried forward on the screen.
  4. Make any needed changes to the parameters.
  5. Press **ADD / CHG**.

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
NOT RGTR	The specified DN has not yet been installed.	Install the DN at CMC 220.

**DATA STATION DATA  
ASSIGNMENT (I) (CMC 222)**

Use the Data Station Data Assignment (I) (CMC 222) table to establish the communications attributes for data terminals.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>DN</u>	Data station directory number	1 to 4 digits	None
P2	DSP	Data speed	1 = 110 bps 2 = 150 bps 3 = 300 bps 4 = 600 bps 5 = 1200 bps 6 = 2400 bps 7 = 4800 bps 8 = 9600 bps 9 = 19200 bps 10 to 16 are reserved	5
P3	SYNC / COM	Synchronization / communication mode	1 = Synchronous / full duplex 2 = Synchronous / half duplex 3 = Asynchronous / full duplex 4 = Asynchronous / half duplex	3
P4	STB / WLE	Word structure (stop bits / word length)	1 = (1 / 7) 2 = (1.5 / 7) 3 = (2 / 7) 4 = (1 / 8) 5 = (1.5 / 8) 6 = (2 / 8) Blank = Not assigned	1
P5	PAR	Parity	1 = Odd 2 = Even 3 = None 4 = Mark 5 = Space Blank = Not assigned	5
P6	ECH	Echoplex	0 = Not used 1 = Used Blank = Not assigned	0

**Parameter Descriptions**

**P1 (DN):**

Enter the data station directory number which you wish to define (required).

- 1 to 4 digits

**Parameter Descriptions  
(Cont'd)****P2 (DSP):**

If necessary, enter the data speed which will apply to this station.

- 1 = 110 bps
- 2 = 150 bps
- 3 = 300 bps
- 4 = 600 bps
- **5 = 1200 bps (default)**
- 6 = 2400 bps
- 7 = 4800 bps
- 8 = 9600 bps
- 9 = 19200 bps
- 10 to 16 are reserved

**P3 (SYNC / COM):**

If necessary, enter the synchronization and communication modes which this data station will use.

- 1 = Synchronous / full duplex communication
- 2 = Synchronous / half duplex communication
- **3 = Asynchronous / full duplex communication (default)**
- 4 = Asynchronous / half duplex communication

**NOTE:** If P3 is set to 1 or 2, do not assign values to P4, P5, and P6.

**P4 (STB / WLE):**

If necessary, enter word structure (stop bits / word length) information.

- **1 = (1 / 7) (default)**
- 2 = (1.5 / 7)
- 3 = (2 / 7)
- 4 = (1 / 8)
- 5 = (1.5 / 8)
- 6 = (2 / 8)
- Blank = Not assigned

**P5 (PAR):**

If necessary, enter the parity for this data station.

- 1 = Odd
- 2 = Even
- 3 = None
- 4 = Mark
- **5 = Space (default)**
- Blank = Not assigned

**P6 (ECH):**

If necessary, enter echoplex information.

- **0 = Not used (default)**
- 1 = Used
- Blank = Not assigned

- Display**
1. Enter a DN at P1.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of DNs.
2. The system releases this CMC after the last registered DN is displayed.

- Change**
1. Enter the parameters to be changed.
  2. Press **ADD / CHG**.

**NOTES:**

1. If parameter P3 = 1 or 2, then parameters P4, P5, and P6 must be blank.
2. If parameter P2 = 1, 2, or 3, then parameter P3 ≠ 1 or 2.

- Duplicate**
1. Change or Display a complete record.
  2. Press **DUP**.

**NOTE:** The DN (P1) will increment to the next registered DN; all other parameters will be carried forward on the screen.

3. Make any needed changes to the parameters.
4. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified DN has not yet been installed.	Install the DN at CMC 220.
PARA. ERR	An attempt was made to enter data in P4, P5, and/or P6 when P3 = 1 or 2.	Remove the entries in P4, P5, and P6, and try again.
NO PARA	Blank was entered in P4, P5, and/or P6, when P3 = 3 or 4.	Enter appropriate values in P4, P5, and P6.
DENIED 20	The hotel / motel printer is busy.	Release hotel / motel printer at CMC 706.

**DATA STATION DATA  
ASSIGNMENT (II) (CMC 223)**

Use the Data Station Data Assignment (II) (CMC 223) table to set the control and interface modes for each data terminal.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>DN</b>	Data station directory number	1 to 4 digits	None
<b>P2</b>	<b>CCM</b>	Call control mode	4 digits (see description below)	0001
<b>P3</b>	<b>RSM1</b>	RS-232C interface signal (mode 1)	3 digits (see description below)	000
<b>P4</b>	<b>RSM2</b>	RS-232C interface signal (mode 2)	0 = RI steady on 1 = RI on 1 sec. / off 3 sec. Blank = RI not assigned	0

**Parameter Descriptions**

**P1 (DN):**

Enter the data station directory number which you wish to define.

- 1 to 4 digits

**P2 (CCM):**

Enter the call control mode.

- 4 digits (default values are shown in bold):
  - First digit: Originate mode (**0 = manual**; 1 = auto)
  - Second digit: Answer mode (**0 = manual**; 1 = auto)
  - Third digit: Disconnect mode (**0 = manual**; 1 = auto)
  - Fourth digit: One burst ring option in auto answer mode (0 = not used; **1 = used**)

Therefore, the default for this parameter would be displayed as **0001**.

**NOTE:** If you wish auto answer (allowing unattended data communications with remote terminals), enter **0101**.

**P3 (RSM1):**

Enter the RS-232C interface signal / mode 1.

- 3 digits (default values are shown in bold):
  - First digit: DTR option (**0 = normal**; 1 = forced on)
  - Second digit: RTS option (**0 = normal**; 1 = forced on)
  - Third digit: DSR option (**0 = normal**; 1 = DSR on after DTR off)

Therefore, the default for this parameter would be displayed as **000**.

**P4 (RSM2):**

Enter the RS-232C interface signal / mode 2.

- **0 = RI steady on (default)**
- 1 = RI on 1 sec. / off 3 sec.
- Blank = RI not assigned

- Display**
1. Enter a DN at P1.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of DNs.
2. The system releases this CMC after the last registered DN is displayed.

- Change**
1. Enter the parameters to be changed.
  2. Press **ADD / CHG**.

**NOTES:**

1. Digits 1 and 3 of parameter P2 cannot both be set to 1.
2. Parameter P2, digit 1, and parameter P3, digit 1, cannot both be set to 1 (i.e., auto originate and forced DTR option cannot be assigned simultaneously).

- Duplicate**
1. Change or Display a complete record.
  2. Press **DUP**.
  3. The DN (P1) increments to the next registered DN. All other parameters will be carried forward on the screen.
  4. Make any needed changes to the parameters.
  5. Press **ADD / CHG**.

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
NOT RGTR	The specified DN has not yet been installed.	Install the DN at CMC 220.
PARA. ERR	An attempt was made to enter conflicting data.	Check the data and try again. (See the Notes in the Change section.)
DENIED 5	Originate mode cannot be set when the DN has been assigned with the subordinate button.	Check the data and try again.
DENIED 20	The hotel / motel printer is busy.	Release the station's hotel / motel printer at CMC 706 and try again.



**DATA STATION DATA  
ASSIGNMENT (III) (CMC 224)**

Use the Data Station Data Assignment (**CMC 224**) table to register information pertaining to the operation of the data station.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DN	Data station directory number	1 to 4 digits	None
P2	OPM	Operating mode	1 = Two-way 2 = Originating 3 = Terminating 4 = Inoperative	1
P3	DM	Dialing mode	0 or blank = Telephone dial 1 = Character dial	0 or blank
P4	TNN	Tenant number	1 to 63 Blank = No tenant service	None
P5	MTRG	SMDR group number	1 to 99 Blank = No assignment	None
P6	MTP	Modem type	1 = Radcal Vadic - Model VA4400S or Anderson Jacobson - Model VA1681D 2 = Hayes Smartmodem 2400 3 = Hayes Smartmodem 1200 Blank = No assignment	1

**Parameter Descriptions**
**P1 (DN):**

Enter the data station directory number which you wish to define (required).

- 1 to 4 digits

**P2 (OPM):**

If necessary, enter the operating mode that this data station will use.

- **1 = Two-way (default)**
- 2 = Originating
- 3 = Terminating
- 4 = Inoperative

**P3 (DM):**

If necessary, enter the dialing mode of this data station.

- **0 or blank (default) = Telephone dial**
- 1 = Character dial

**NOTE:** Character (or keyboard) dialing allows a user to originate a call via an ASCII terminal (used as a stand-alone data terminal) with keyboard commands only. A 4CHT card must be installed at CMC 250.

**P4 (TNN):**

If necessary, enter the tenant number where the station is assigned.

- 1 to 63
- Blank = No tenant service

**Parameter Descriptions  
(Cont'd)**

**P5 (MTRG):**

Enter the SMDR group number, if applicable.

- 1 to 99
- Blank = No assignment

**P6 (MTP):**

Enter the modem type assigned to this data station, if applicable.

- **1 = Radcal Vadic - Model VA4400S or Anderson Jacobson - Model VA1681D (default)**
- 2 = Hayes Smartmodem 2400
- 3 = Hayes Smartmodem 1200
- Blank = No assignment

**NOTE:** The same modem can be assigned to multiple modem groups.

**Display**

1. Enter a DN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of DNs.
2. The system releases this CMC after the last registered DN is displayed.

**Change**

1. Enter the parameters to be added or changed.
2. Press **ADD / CHG**.

**Duplicate**

1. Change or Display a complete record.
2. Press **DUP**.
3. The DN (P1) increments to the next registered DN. All other parameters will be carried forward on the screen.
4. Make any needed changes to the parameters.
5. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified DN has not yet been installed.	Install the DN at CMC 220.
DENIED 20	The hotel / motel printer is busy.	Release the station's hotel / motel printer at CMC 706 and try again.

### ATTENDANT CONSOLE ASSIGNMENT (CMC 230)

Use the Attendant Console Assignment (CMC 230) table to register one to eight Attendant Consoles for use with the system. An 8EKC card is required for the Attendant Console and an 8DTC / 16DTC card is required for the Attendant PC Console (APCC). Each Attendant Console must be physically connected to a port on the card. If the Attendant Console is to be placed more than 300 feet from the system cabinet, a second circuit port is required. (Refer to the Attendant PC Console Manual for the installation of an APCC.)

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	ATTN	Attendant console number	1 to 8	None
P2	EN	Equipment number	See description below	None
P3	TNN	Tenant number	0 to 63 Blank = Not assigned	Blank
P4	ATTN	Copied attendant console	1 to 8 Blank = No console is copied	Blank
P5	SPDT	Shared speed calling table	1 to 255 0 or blank = Not assigned	Blank

#### Parameter Descriptions

##### **P1 (ATTN):**

Enter the Attendant Console number (required). This is an arbitrary number which will be used when referencing this Attendant Console.

- 1 to 8

##### **P2 (EN):**

Enter the equipment number of the Attendant Console being defined.

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

##### **P3 (TNN):**

Enter the tenant number where this Attendant Console is located.

- 1 to 63
- **Blank = Not assigned (default)**

##### **P4 (ATTN):**

If desired, button information may be directly copied from an already installed Attendant Console. If you wish to do this, enter the number of the Attendant Console to be copied.

- 1 to 8 = The number of the console
- **Blank = No console is copied (default)**

**Parameter Descriptions  
(Cont'd)****P5 (SPDT):**

Enter the shared speed calling table, if any, that the attendant may use to dial preprogrammed station speed call numbers.

- 1 to 255
- **0 or blank = Not assigned**

**NOTE:** When an Attendant Console is first installed, it will be in the position busy mode by default.

**Display**

1. Enter an ATTN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** again displays the other installed Attendant Consoles in numerical order.
2. The system releases this CMC after the last installed Attendant Console has been displayed.

**Add**

1. Enter any required parameters.
2. Press **ADD / CHG**.

**NOTE:** If an ATTN is not specified, no button functions are copied.

**Remove**

1. Remove all DSS / BLF consoles associated with the Attendant Console at CMC 210 and CMC 212.
2. Place the Attendant Console in position busy mode.
3. Enter an ATTN at P1.
4. Press **RMV**.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	An attempt was made to display an ATTN which is not installed.	Specify P1 as an installed ATTN and try again.
PARA. ERR	An attempt was made to copy an ATTN which is not yet installed.	Specify P4 as an installed ATTN for copying.
OVERLAP	The specified EN has already been installed as a proprietary telephone or Attendant Console.	Specify P2 as an uninstalled EN.
DISAGREE	ATTN installation is refused.	Check all parameters for accuracy and try again.
CKG PKG	The attendant console specified for the EN has not been physically installed.	Install the attendant console on the EN.
NO FOUND	An attempt was made to remove data which is not installed.	Abandon the attempt.
CHK SPD	Speed calling group number is not assigned to the installed attendant.	Assign speed calling group number.
DENIED 1	An attempt was made to remove an ATTN having MCT assignment.	Remove the MCT assignment at CMC 702 and try again.
DENIED 6	An attempt was made to remove an ATTN which is associated with a DSS / BLF console.	Remove the DSS / BLF console at CMC 210 or CMC 212.
CHK SLF	The cabinet is not installed.  The power supply in the cabinet has failed.	Check the cabinet.

**ATTENDANT CONSOLE  
BUTTON ASSIGNMENT (CMC  
231)**

Use the Attendant Console Button Assignment (**CMC 231**) table to program the button functions on an Attendant Console.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>ATTN</b>	Attendant console number	1 to 8	None
<b>P2</b>	<b>BTN</b>	Button number	1 to 16	None
<b>P3</b>	<b>FNO</b>	Feature number	1 to 255	None
<b>P4</b>	<b>SUP</b>	Supplemental data	See description below	None

**Parameter Descriptions**

**P1 (ATTN):**

Enter the Attendant Console number to which you wish to assign features (required).

- 1 to 8

**P2 (BTN):**

Enter the button number which you wish to define. Default feature button locations are shown in Figure 4-15.

- 1 to 16

**P3 (FNO):**

If necessary, enter the feature number to assign to the specified button.

- 1 to 255 (please refer to Table 4-36)

**P4 (SUP):**

Depending on the value entered in P3, enter any necessary supplemental data, as shown below. If no additional data is necessary, leave this parameter blank.

- If P3 = 1 (automatic intercom access), enter the directory number (1 to 4 digits) here.
- If P3 = 48 (station speed calling), enter the speed calling code (0 to 9) here.
- If P3 = 49 (system speed calling), enter the speed calling code (00 to 99, or 000 to 999) here. Refer to CMC 102, Flag 162.
- If P3 = 227 (trunk busy access), enter the trunk group number (13 to 63).

**Display**

1. Enter an ATTN at P1 and a BTN at P2.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of BTNs.
2. The system releases this CMC when the BTN value exceeds 16.
3. Each ATTN must be entered and displayed separately.

- Add**
1. Enter P1 and P2 values.
  2. Press **DSP**.
  3. Enter new data.
  4. Press **RMV**.
  5. Press **ADD / CHG**.

- Remove**
1. Enter an **ATTN** at P1 and a **BTN** at P2.
  2. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified <b>ATTN</b> has not been installed.	Check the <b>ATTN</b> and try again.
PARA. ERR	An incorrect parameter has been entered.	Check all the parameters for accuracy and try again.
NO PARA	A parameter has been omitted.	Enter all parameters.
OVERLAP	An attempt was made to register a service / feature on a button which already has a service / feature.	Remove old service and try again.
NO FOUND	An attempt was made to remove a button which has no registered service.	Check the button number and try again.
NO AREA	The system has no memory left for this assignment.	Remove a button to make space.

**Figure 4-15. Attendant Console Default Button Assignments**

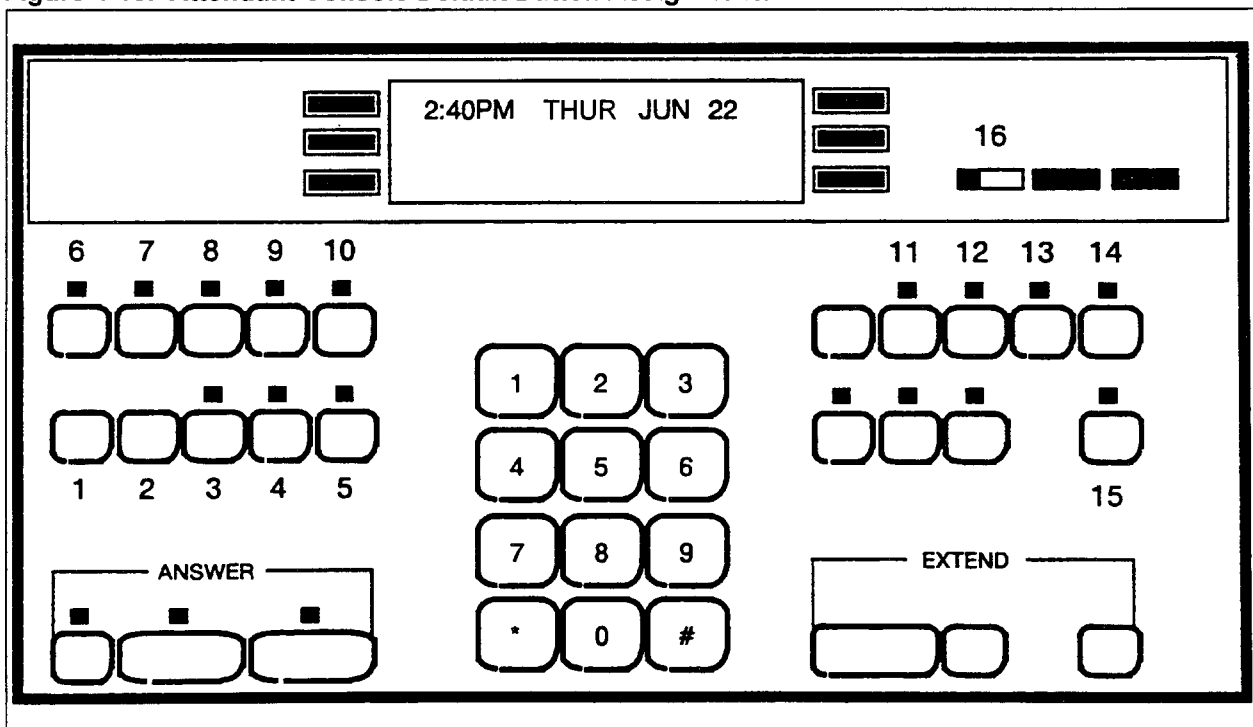


Table 4-36. Attendant Console Available Feature Assignments

DEFAULT BUTTON	DEFAULT FEATURE NUMBER	FEATURE NAME
1	221	Class of Service / Class of Restriction
2	87	Message Waiting (register)
3	151	Trunk Camp-On
4	53	External Page
5	51	Station Page
6	179	Alarm
7	227	Trunk Access (TGN 13)
8	224	Day/Night Mode Change
9	50	Save / Last Number Redial
10	154	Account Code
11	153	Call Park (register)
12	177	Call Announce
13	223	Do Not Disturb Override
14	222	Break-In
15	150	Station Camp-On
16	225	Position Busy
-	1	Direct Station Selection
-	48	Station Speed Calling
-	49	System Speed Calling
-	68	Room Information (register)
-	75	Controlled Restriction
-	106	Directed Call Pick-Up
-	136	Voice Message
-	188	Front Desk Console
-	174	Flash



**ATTENDANT COS / COR  
ASSIGNMENT (CMC 232)**

Use the Attendant COS / COR Assignment (CMC 232) table to assign day and night mode classes of service and restriction to Attendant Consoles. The actual features contained in each COS are assigned at CMC 104. The actual restrictions comprising the CORs are assigned at CMCs 411 through 417.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	ATTN	Attendant console number	1 to 8	None
P2	COS	Day mode class of service	1 to 16	1
P3	NCOS	Night mode class of service	1 to 16	1
P4	COR	Day mode class of restriction	1 to 16	1
P5	NCOR	Night mode class of restriction	1 to 16	1

**Parameter Descriptions****P1 (ATTN):**

Enter the Attendant Console number to which you wish to assign class of service and class of restriction information (required).

- 1 to 8

**P2 (COS):**

If necessary, enter the day mode class of service for this Attendant Console. Class of service defines which features will be available for the Attendant Console.

- 1 to 16
- **1 (default)**

**P3 (NCOS):**

If necessary, enter the night class of service. Each Attendant Console may have one day COS and one night COS.

- 1 to 16
- **1 (default)**

**P4 (COR):**

If necessary, enter the day mode class of restriction for the Attendant Console. Restriction mode defines the Attendant Console's calling privileges.

- 1 to 16
- **1 (default)**

**P5 (NCOR):**

If necessary, enter the night mode class of restriction. Each Attendant Console may have one day COR and one night COR.

- 1 to 16
- **1 (default)**

- Display**
1. Enter an ATTN at P1.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** again will display the other Attendant Console, if it is installed.
2. The system will release this CMC after the last installed ATTN has been displayed.

- Change**
1. Enter any required parameters.
  2. Press **ADD / CHG**.

- Duplicate**
1. Enter at least one complete set of data using the Change or Display procedures.
  2. Press **DUP**.
  3. The ATTN value displayed on the screen from the last Add procedure will be incremented by one. All other parameters will be carried forward on the screen.
  4. Make any needed changes to the parameters.
  5. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified ATTN has not yet been installed.	Try again with an installed ATTN, or install the ATTN at CMC 230.

**ATTENDANT PRIORITY ASSIGNMENT (CMC 233)**

Use the Attendant Priority Assignment (**CMC 233**) table to change the answering priority level for CO, FX, DID, and WATS trunk groups.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TGN	Trunk group number	13 to 30 57 to 62	None
P2	ICMP	Answering priority	1 = High 2 = Medium 3 = Low	1

**Parameter Descriptions**

**P1 (TGN):**

Enter the trunk group number which will be defined as having a specific answering priority level (required).

- 13 to 30
- 57 to 62

**P2 (ICMP):**

If necessary, enter the answering priority for the entered trunk group.

- 1 = High (default)
- 2 = Medium
- 3 = Low

**NOTE:** Use this CMC *only* for adjusting the answering priority for CO, FX, DID, and WATS trunk groups.

**Display**

1. Enter a TGN at parameter P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of TGNs.
2. The system releases this CMC when the TGN value exceeds 62.

**Change**

1. Enter a TGN and an ICMP.
2. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	An incorrect parameter has been entered.	Check all the parameters for accuracy and try again.
	The specified TGN is out of range.	Enter a correct TGN and try again.

**TRUNK ASSIGNMENT (CMC 250)**

Use the Trunk Assignment (**CMC 250**) table to assign or remove a trunk to or from a trunk group. In addition, use this table to assign trunk types, operation mode, signaling, and start mode.

System maximums are as follows:

- One cabinet system: 80 trunks.
- Two cabinet system: 120 trunks.
- Three cabinet system: 240 trunks.
- Four cabinet system: 240 trunks.

This CMC requires a HIGH level security code.

**CAUTION: Changes to this table will return the circuit parameters at CMC 251 to the default values. When removing a trunk, you must first remove it from these CMCs: 107, 203, 211, 253, 305, 306, and 307.**

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>EN</u>	Equipment number	See description on next page	None
P2	TOT	Type of trunk	1 = 4DMR / MUFN (see Note) 2 = Tie (loop) 3 = Tie (E&M) 5 = DID (E&M) 6 = CO, ISDN-CO 7 = FX 8 = WATS 9 = External paging 11 = Music source 12 = 4CHT 13 = DID (loop) 14 = Calls waiting indicator (ACD) 17 = 6DID 19 = T-1 CO 20 = T-1 FX 21 = T-1 WATS 22 = T-1 tie 23 = T-1 DID 27 = FIPN (23 channel) 29 = DID (loop) bothway 30 = DID (E&M) bothway 31 = T-1 DID bothway	None

**NOTE:** If the MUFN card is installed, the DMR circuits are assigned as trunk type 1.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P3	TGN	Trunk group number	1 to 63	Table 4-37
P4	OPM	Operating mode	1 = Incoming only (fixed when P2 = 5, 13, or 23) 2 = Outgoing only (fixed when P2 = 9) 3 = Bothway Blank (fixed when P2 = 1, 11, 12, or 14)	Table 4-38
P5	SG	Signaling mode	1 = Ground (fixed when P2 = 3, 5, 22, or 23) 2 = Loop (fixed when P2 = 2, 13, 17, or 29) Blank (fixed when P2 = 1, 11, 12, 14, 27, 30, or 31)	Table 4-38
P6	SM/ZN/ DIS/ ACD/ SF/MS/ ISDN	Start mode / Zone number / DISA-S mode / ACD number / Start format / Master-slave mode / ISDN type	See description on next page	Table 4-38

**Parameter Descriptions****P1 (EN):**

Enter the trunk equipment number which you wish to define (required).

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

**P2 (TOT):**

The number corresponding to the type of trunk will be displayed, if assigned.

- 1 = 4DMR / MUFN card
- 2 = Tie (loop)
- 3 = Tie (E&M)
- 5 = DID (E&M)
- 6 = CO, ISDN-CO
- 7 = FX
- 8 = WATS
- 9 = External paging
- 11 = Music source
- 12 = 4CHT
- 13 = DID (loop)
- 14 = Calls waiting indicator for ACD
- 17 = 6DID
- 19 = T-1 CO
- 20 = T-1 FX
- 21 = T-1 WATS
- 22 = T-1 tie
- 23 = T-1 DID
- 27 = FIPN (23 channel)

**Parameter Descriptions  
(Cont'd)****P2 (TOT) (Cont'd):**

- 29 = DID (loop) bothway
- 30 = DID (E&M) bothway
- 31 = T-1 DID bothway

**NOTE:** Leave P3 blank when P2 is set to 11 or 14.

**P3 (TGN):**

Enter the trunk group number where this trunk is to be assigned (refer to Table 4-37).

- 1 to 63

**P4 (OPM):**

When P2 is set to 2-9, 13 or 17, 19-23, 27, 29-31, enter one of the values corresponding the operation mode for the trunk. Otherwise, leave this parameter blank (refer to Table 4-38).

- 1 = Incoming only (fixed when P2 = 5, 13, or 23)
- 2 = Outgoing only (fixed when P2 = 9)
- 3 = Bothway
- Blank (fixed when P2 = 1, 11, 12, or 14)

**P5 (SG):**

When P2 is set to 6-9 or 19-21, enter one of the following values corresponding to the signaling mode for the trunk. Otherwise, leave this parameter blank (refer to Table 4-38).

- 1 = Ground (fixed when P2 = 3, 5, 22-23)
- 2 = Loop (fixed when P2 = 2, 13, 17, 29)
- Blank (fixed when P2 = 1, 11, 12, 14, 27, 30-31)

**P6 (SM / ZN / DIS / ACD / SF / MS / ISDN):**

Depending on P2, enter one of the following values. Otherwise, leave this parameter blank (refer to Table 4-38).

- Start mode (when P2 = 2-5, 13, 17, 22-23, 29-31)
  - 1 = Wink start
  - 2 = Delay start
  - 3 = Immediate start
- Zone number (when P2 = 9)
  - 1 to 9
- DISA-S mode (when P2 = 6-8)
  - 1 = Not DISA-S
  - 2 = DISA-S
- ACD number (when P2 = 14)
  - ACD group number 1 to 20
- Start format (when P2 = 19-21)
  - 1 = FXS
  - 2 = FXS (DISA-S)
  - 3 = SAS
  - 4 = SAS (DISA-S)

**Parameter Descriptions  
(Cont'd)**

**P6 (SM / ZN / DIS / ACD / SF / MS / ISDN) (Cont'd):**

- Master / slave mode (when P2 = 27)
  - 1 = Master
  - 2 = Slave
- ISDN type on 23PT card (when P2 = 6)
  - 7 = Attendant terminating, terminating trunk group, direct-in line
  - 8 = DID
  - Blank (when P2 = 1, 11, or 12)

**NOTES:**

1. When P2 is 11 (music source), **do not** enter values in parameters P3, P4, P5, and P6. These parameters will be displayed as blanks.
2. When P2 is 1 (4DMR), **do not** enter values in parameters P4, P5, and P6. These parameters will be displayed as blanks.
3. When P2 is 12 (character trunk), **do not** enter values in parameters P4, P5, and P6. These parameters will be displayed as blanks.
4. A character trunk (P2 = 12) is a 4CHT that interfaces between the system and a hotel / motel printer and allows keyboard dialing for data calls.
5. When using DISA-S, P5 must = 1 (ground).
6. The TOT for the T-1 card can be specified by 8 circuits. If the T-1 card is installed in slot 00, then the TOT for the following EN's should correspond to the T-1 trunk channels as follows:
  - EN = X000-X007 (T-1 channels 0-7)
  - EN = X010-X017 (T-1 channels 8-15)
  - EN = X020-X027 (T-1 channels 16-23)
7. The 24T1 card and the 23PT card can be installed in card slot 00, 01, 03, 04, 06, and 07. When either card is installed in slot 00, 03, or 06, the next slot can only be used for a 2 / 4 / 6 / 8 circuit card or another 24T1 / 23PT card. When either card is installed in card slot 01 or 04, the following slot must remain empty. When either card is installed in card slot 07, the next two card slots cannot be used.

**Parameter Descriptions  
(Cont'd)**

**NOTES: (Cont'd)**

8. The following format is used to assign ENs to a 23PT card:

- X = Cabinet number (0)
- YY = Card slot number (00-17)
- Z = Circuit number (0-9)

For example, when the 23PT card is installed in slot 07, the following ENs should be used:

- ENs 0150 through 0159
- ENs 0160 through 0169
- ENs 0170 through 0172

9. When the trunk card is physically installed at default, the following data is automatically assigned:

- Dial mode and break ratio: DTMF (if 4DMR is present)
- Trunk directory number: EN
- Tenant number: not assigned

10. When assigning FIPN (23PT), P5 must be blank.

11. When assigning ISDN (23PT), P5 should be 1.

12. When assigning trunks for RVAC Auto Attendant, P5 must be 1 (ground) and P6 must be 2 (DISA).

13. When assigning bothway E&M DID, bothway loop DID, and bothway T-1 DID, P3 (TGN) must be 13 through 16.

**Display**

1. Enter the EN of the installed trunk at P1.
2. Press **DSP** to display the P2 through P6 values.

**Add**

1. Display the EN for the trunk data set which is to be installed.
2. Press **DSP**. If P2 through P6 are blank, skip Step 4.
3. Enter all the required parameter values.
4. Press **RMV**.
5. Press **ADD / CHG**.

**Remove**

1. Enter the EN for the trunk data set to be removed.
2. Press **RMV**.

**NOTES:**

1. Pressing **DSP** again displays the P2 values corresponding to the next P1 parameter.
2. This command terminates when **DSP** is pressed after the last EN has been displayed.



- Duplicate**
1. Add or Display a complete record.
  2. Press **DUP** to display the next EN. This will duplicate the parameters.
  3. The EN value displayed on the screen will be incremented. All other parameters will be carried forward on the screen.
  4. Make any needed changes to the parameter(s).
  5. Press **ADD / CHG**.

**Table 4-37. Trunk Group Assignment Numbers**

TGN	TYPE OF TRUNK	TGN	TYPE OF TRUNK
1	4DMR	37	Tie / FIPN #7
2	4CHT	38	Tie / FIPN #8
3	External paging	39	Tie / FIPN #9
13	CO #1 / ISDN CO #1	40	Tie / FIPN #10
14	CO #2 / ISDN CO #2	41	Tie / FIPN #11
15	CO #3 / ISDN CO #3	42	Tie / FIPN #12
16	CO #1 / ISDN CO #4	43	Tie / FIPN #13
17	CO #5	44	Tie / FIPN #14
18	CO #6	45	Tie / FIPN #15
19	FX #1	46	Tie / FIPN #16
20	FX #2	47	Tie / FIPN #17
21	FX #3	48	Tie / FIPN #18
22	FX #4	49	Tie / FIPN #19
23	FX #5	50	Tie / FIPN #20
24	FX #6	51	SCC #1
25	WATS #1	52	SCC #2
26	WATS #2	53	SCC #3
27	WATS #3	54	SCC #4
28	WATS #4	55	SCC #5
29	WATS #5	56	SCC #6
30	WATS #6	57	DID #1
31	Tie / FIPN #1	58	DID #2
32	Tie / FIPN #2	59	DID #3
33	Tie / FIPN #3	60	DID #4
34	Tie / FIPN #4	61	DID #5
35	Tie / FIPN #5	62	DID #6
36	Tie / FIPN #6		

**NOTE:** E&M tie trunks default to TGN 31; loop tie trunks default to TGN 32

Table 4-38. Trunk Group Assignment Information

Card	Type of Trunk (P2)	Trunk Group Number (P3)	Operation Mode (P4)	Signaling Mode (P5)	Start Mode (P6)
4DMR	DTMF (1)	1 (fixed)	Blank	Blank	Blank
2TTE/ 2TE4/ 4TE4	E&M tie (3)	31-50	1-3	1	Start mode
	E&M DID (5)	57-62	1	1	Start mode
	E%M DID bothway (30)	13-16	1-3	Blank	Start mode
2TTL	Loop DID (13)	57-62	1	2	1
	Loop tie (2)	31-50	1-3	2	Start mode
	Loop DID bothway (29)	13-16	1-3	2	Start mode
4BWC/ 8BWC	CO (6)	13-18	1-3	1-2	DISA-S mode
	FX (7)	19-24	1-3	1-2	DISA-S mode
	WATS (8)	25-30	1-3	1-2	DISA-S mode
	Paging (9)	3	2	1-2	Zone no.
	Music source (11)	Blank	Blank	Blank	Blank
	ACD call wait. ind. (14)	Blank	Blank	Blank	Blank
4CHT	CHT (12)	2	Blank	Blank	Blank
6DID	DID (17)	57-62	1	2	Start mode
24T1	CO (19)	13-18	1-3	1-2	Start format
	FX (20)	19-24	1-3	1-2	Start format
	WATS (21)	25-30	1-3	1-2	Start format
	Tie (22)	31-50	1-3	1	Start mode
	DID (23)	57-62	1	1	Start mode
	T-1 DID bothway (31)	13-16	1-3	Blank	Start mode
23PT	FIPN (23 ch) (27)	31-50	1-3	Blank	Master / slave
	ISDN CO (23 ch) (6)	13-16	1-3	1	ISDN type

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified EN has not been installed.	Install a trunk card in the required card slot.
DENIED 5	The specified EN has been assigned to a line button on a proprietary telephone.	Remove the button assignment (CMCs 203 and 211) and try again.
DENIED 10	The specified EN has been registered as a night answer group member.	Remove the EN from the night answer group (CMC 306) and try again.
DENIED 11	The specified EN has been assigned to a terminating trunk group.	Remove the assignment at CMC 253 and try again.
DENIED 12	The specified EN has been assigned as a direct-in line.	Remove the assignment at CMC 307 and try again.
DENIED 20	The hotel / motel printer is being registered.	Release the hotel / motel printer (CMC 706) and try again.
DENIED 24	The specified EN is assigned as a music source.	Remove the trunk EN assigned as a music source with CMCs 305, 317, and 463, and try again.
DENIED 30	The T-1 card (24T1 / 23PT) is currently assigned as the clock master (extracting) card.	Change the clock master (extracting) card (CMC 107).
DISAGREE	<p>The specified type of trunk does not match the trunk type of the other circuits on the card.</p> <p>The specified EN is out of range for the card.</p> <p>The specified EN has already been installed.</p> <p>An RVAC card is installed on the specified EN.</p>	<p>All trunks on a trunk card must be the same type.</p> <p>Attempt was made to assign more circuits than provided by hardware. Check hardware configuration.</p> <p>Try a different EN, or remove then reassign.</p> <p>Try a different EN, or remove the RVAC at CMC 250.</p>

## ERROR CODES (Cont'd)

ERROR CODE	CAUSE	CORRECTION
DISAGREE	<p>Other type of trunk is assigned to the specified card.</p> <p>Call indicator is assigned to the specified card.</p>	<p>Remove other type of trunk.</p> <p>Remove call indicator assigned to card.</p>
CHK PKG	The card for the specified EN is not installed, or the type of trunk does not match the type of trunk card.	Install or change the trunk card.
CHK SLF	<p>The power supply in the cabinet is faulty.</p> <p>The cabinet is not physically installed.</p>	Check the cabinet.
OVERLAP	The paging zone number (ZN) in P6 has already been assigned to another paging trunk.	Select another paging zone number.
NO AREA	There is no space for an additional ACD call waiting indicator.	

**TRUNK DATA ASSIGNMENT  
(CMC 251)**

Use the Trunk Data Assignment (**CMC 251**) table to modify the default dialing mode, equipment / directory number, and tenant number associated with an installed trunk.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>EN</b>	Equipment number	See description below	None
<b>P2</b>	<b>DM</b>	Dial mode and break ratio	1 = DP 10 pps / 66% 2 = DP 10 pps / 60% 5 = DTMF	5
<b>P3</b>	<b>TDN</b>	Trunk directory number	1 to 4 digits Blank = Not assigned	EN
<b>P4</b>	<b>TNN</b>	Tenant number	1 to 63 Blank = Not assigned	Blank

**Parameter Descriptions****P1 (EN):**

Enter the equipment number of the trunk which you wish to define (required).

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

**P2 (DM):**

If necessary, enter the dial mode and break ratio.

- 1 = DP 10 pps / 66%
- 2 = DP 10 pps / 60%
- 5 = DTMF (default if 4DMR is assigned)

**P3 (TDN):**

If necessary, enter the trunk directory number.

- 1 to 4 digits
- Blank = Not assigned
- **Default = Equipment number**

**NOTE:** If P3 is blank, the trunk cannot be direct trunk accessed.

**P4 (TNN):**

If necessary, enter the tenant number where this trunk DN will be assigned.

- 1 to 63
- **Blank = Not assigned (default)**

- Display**
1. Enter an EN at parameter P1.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly will display data in numerical order of the installed ENs.
2. The system will release this CMC after the last installed EN has been displayed.

- Change**
1. Enter all the required parameters.
  2. Press **ADD / CHG**.

- Duplicate**
1. Change or Display a complete set of data.
  2. Press **DUP**.
  3. The EN value displayed on the screen from the last Change procedure will be incremented to the next installed EN. All other parameters will be carried forward on the screen.
  4. Modify the parameters as needed.
  5. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified EN has not been installed.	Install a trunk card in the required card slot and register the trunks at CMC 250.
OVERLAP	The specified TDN has been assigned to another trunk.	Check the data and try again.
DISAGREE	The specified EN is not assigned to a trunk card.	Check the EN and try again.

**TRUNK COS / COR (CLASS OF SERVICE / CLASS OF RESTRICTION) ASSIGNMENT (CMC 252)**

Use this CMC to change the COS and COR assigned to a given trunk for both day and night modes of operation. Make the feature assignments for each COS at CMC 104, and the restriction assignments associated with each COR at CMCs 105, 411, 412, 413, 414, 415, 416, 417.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TGN	Trunk group number	1 to 63	None
P2	COS	Day mode class of service	1 to 16	1
P3	NCOS	Night mode class of service	1 to 16	1
P4	COR	Day mode class of restriction	1 to 16	1
P5	NCOR	Night mode class of restriction	1 to 16	1

**Parameter Descriptions**

**P1 (TGN):**

Enter the trunk group number to which you wish to assign a class of service and a class of restriction (required).

- 1 to 63

**P2 (COS):**

If necessary, enter the day mode class of service for this trunk group. Class of service defines which features will be available for this trunk group.

- 1 to 16
- **1 (default)**

**P3 (NCOS):**

If necessary, enter the night class of service. Each trunk group may have one day COS and one night COS.

- 1 to 16
- **1 (default)**

**P4 (COR):**

If necessary, enter the day mode class of restriction. Restriction mode defines the calling privileges of the trunk group.

- 1 to 16
- **1 (default)**

**P5 (NCOR):**

If necessary, enter the night mode class of restriction. Each trunk group may have one day COR and one night COR.

- 1 to 16
- **1 (default)**

- Display**
1. Enter a TGN at P1.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of TGNs.
2. The system releases this CMC after the TGN value exceeds 63.

- Change**
1. Enter a TGN at P1.
  2. Press **DSP**.
  3. Modify the displayed parameters as required.
  4. Press **ADD / CHG**.



**TERMINATING TRUNK  
GROUP ASSIGNMENT (CMC  
253)**

Use the Terminating Trunk Group Assignment (CMC 253) table to create or remove a terminating trunk group (trunks or trunk groups having an appearance on one or more proprietary telephone / BLF / DSS line buttons). Direct-in lines, tie lines, and DID lines cannot be assigned to a terminating trunk group. A maximum of 96 stations can have the same terminating trunk group assignment.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TTGN	Terminating trunk group number	1 to 63	None
P2	EN	Equipment number	See descriptions below.	None
P3	TTF	Trunk termination flag	1 = Personal line 2 = Key system line 3 = Pooled outgoing 4 = Pooled incoming 5 = Pooled bothway	Table 4-39

**Parameter Descriptions**
**P1 (TTGN):**

Enter the terminating trunk group number which you wish to define (required).

- 1 to 63

**P2 (EN):**

Enter the equipment number of each trunk that will be assigned to this terminating trunk group. Equipment numbers are entered in the XYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

**P3 (TTF):**

If necessary, enter the trunk termination flag that applies to this terminating trunk group.

- 1 = Personal line
- 2 = Key system line
- 3 = Pooled outgoing
- 4 = Pooled incoming
- 5 = Pooled bothway

Refer to Table 4-39 for system trunk group capacities.

**Parameter Descriptions  
(Cont'd)**

**NOTE:** The defaults for this CMC differ according to the instrument where the trunks will terminate:

Parameter	When Attendant Console is Assigned	Proprietary Telephone without Attendant Console
P1	None	1
P2	None	ENs
P3	None	3-5

**Display**

1. Enter a TTGN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays the next EN and TTF for the same TTGN. If no EN has been assigned to a TTGN, or if all ENs associated with a TTGN have been displayed, pressing **DSP** causes blanks to be displayed in P2 and P3. Pressing **DSP** after these blanks have been displayed returns the display to the first EN.
2. Each TTGN must be displayed separately.

**Add**

1. Enter P1, P2, and P3.
2. Press **ADD / CHG**.

**Remove**

1. Enter the TTGN which is to be removed at parameter P1.
2. Press **DSP**.
3. Press **RMV**.

**Table 4-39. Trunk Group Capacities**

TERMINATING TRUNK TYPE	NUMBER OF APPEARANCES	NUMBER OF TRUNKS PER GROUP
Personal Line	1	1
Key System Line	72 / 96 *	1
Pooled Outgoing	72 / 96 *	System Capacity
Pooled Incoming	72 / 96 *	System Capacity
Pooled Bothway	72 / 96 *	System Capacity

\* For acceptable performance, 72 is for the SCPN2M card, and 96 is for the SCPN4M card.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
DISAGREE	<p>An attempt was made to assign or remove an EN with a TTGN which does not match the TTGN of the existing trunks in the group.</p> <p>An attempt was made to assign or remove an EN with a TTF which does not match the TTF of the existing trunks in the group.</p>	<p>Check the data and try again.</p> <p>Check the data and try again.</p>
OVERLAP	<p>An attempt was made to assign an EN which already belongs to another terminating trunk group.</p> <p>An attempt was made to assign two ENs to a personal line termination.</p>	<p>Remove the EN from the group to which it currently belongs before trying to reassign it.</p> <p>Select a different termination and try again.</p>
NOT RGTR	An attempt was made to assign an EN which is not valid.	Check the EN and try again.
DENIED 5	An attempt was made to remove a TTGN which terminates on a proprietary telephone / DSS button.	Remove the line button assignment using CMC 203 (proprietary telephone) or CMC 211 (DSS).
PARA. ERR	The specified EN is not CO, WATS, or FX.	Check the EN data and try again.

**TRUNK ROUTE TIMING  
PARAMETER ASSIGNMENT  
(CMC 254)**

Use the Trunk Route Timing Parameter Description (CMC 254) table to alter the trunk route timing set by system default.

**NOTE:** This CMC is generally only altered when suggested by the Fujitsu Technical Assistance Center.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>TGN</u>	Trunk group number	0 = Station 13-30 = CO 31-50 = Tie / FIPN 57-62 = DID 64 = Attendant	None
<u>P2</u>	<u>RTID</u>	Route timing ID	1 to 15	Table 4-40
<u>P3</u>	<u>NTIM</u>	Number of timing units	0 to 255	Table 4-40

**Parameter Descriptions**

**P1 (TGN):**

Enter the trunk group number which you wish to change default trunk route timing (required).

- 0 = Station
- 13-30 = CO
- 31-50 = Tie / FIPN
- 57-62 = DID
- 64 = Attendant

**P2 (RTID):**

Enter the route timing ID for the specific trunk group (required). The default values are shown in Table 4-40.

- 1 to 15

**P3 (NTIM):**

If necessary, enter the number of timing units for each desired trunk group. The default values are shown in Table 4-40.

- 0 to 255

**Display**

1. Enter a TGN at P1 and an RTID at P2.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly will display NTIMs in numerical order of RTIDs.
2. The system releases this CMC if the RTID value exceeds 15.
3. Each TGN must be entered separately.

- Change**
1. Enter a TGN at P1 and an RTID at P2 respectively.
  2. Enter an NTIM at P3.
  3. Press **ADD / CHG**.

**Table 4-40. Trunk Route Timing Default Values**

RTID (P2)	Description	Unit of Time (ms)	Number of Timing Units (P3)					
			STA TGN 0	CHT TGN 2	CO TGN 13-30	TIE TGN 31-50	DID TGN 57-62	ATT TGN 64
1	Permanent signal timing	1024	11	31	11	11	26	0
2	Interdigit timing	1024	7	7	7	7	16	0
3	CO line withdrawal timing	50	-	-	101	-	-	-
4	CT timing (protect tip/ring noise	50	-	-	3	-	-	-
6	Pre-pause timing (manual)	1024	0	-	2	2	-	-
7	Pre-pause timing (speed calling)	1024	-	-	3	3	-	-
8	Minimum pause (DP 10 pps)	64	-	-	12	12	-	-
9	Minimum pause (DP 20 pps)	64	-	-	8	8	-	-
10	Minimum pause (DTMF)	64	1	-	1	1	1	-
11	Digit pause (speed calling)	100	-	-	2	2	-	-
12	Flash timing	100	-	-	10	10	-	-
13	Ground trunk seizure timing	100	-	-	51	51	-	-
15	Trunk guard timing	100	-	-	10	10	10	-

**NOTES:**

1. Do NOT change the NTIM values for RTIDs 5 and 14.
2. Actual timing may be up to 200 ms less than the calculated value (RTID x NTIM).
3. The minimum NTIM value of RTID 12 (flash timing) is 4.

**REVERSE SIGNAL DATA ASSIGNMENT (CMC 255)**

Use this table to assign answer detection for outgoing trunk groups and reverse control for tie / DID incoming trunk groups.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>TGN</b>	Trunk group number	13-16 = CO 31-50 = Tie / FIPN 57-62 = DID	None
<b>P2</b>	<b>OGT</b>	Outgoing trunk group answer detection	0 = No answer detection 1 = Answer detection 2 = Answer and disconnect detection	0
<b>P3</b>	<b>ICT</b>	Incoming DID / tie trunk reverse control	0 = No reverse control 1 = Reverse control	0

**Parameter Descriptions**

**P1 (TGN):**

Enter the trunk group number to which you wish to assign information (required).

- 13 to 16 = CO
- 31 to 50 = Tie / FIPN
- 57 to 62 = DID

**P2 (OGT):**

If an outgoing trunk group is specified in P1, enter the answer detection. Otherwise, leave this parameter blank.

- **0 = No answer detection (default)**
- 1 = Answer detection
- 2 = Answer and disconnect detection

**P3 (ICT):**

If an incoming tie / DID trunk group is specified in P1, enter the reverse control. Otherwise, leave this parameter blank.

- **0 = No reverse control (default)**
- 1 = Reverse control

**Display**

1. Enter a TGN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of TGNs.
2. The system releases this CMC when the TGN value exceeds 63.

**Change**

1. Enter the parameters to be changed.
2. Press **ADD / CHG**.

**TRUNK NAME ASSIGNMENT (CMC 256)**

Use the Trunk Name Assignment (**CMC 256**) command to assign a name to each trunk using alphanumeric characters. The trunk name will be displayed during call origination and termination instead of the trunk directory number. A PcMP or PMP must be used to enter this command.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>EN</b>	Equipment number	See description below	None
<b>P2</b>	<b>NM</b>	Trunk name	1 to 15 characters	None

**Parameter Descriptions**

**P1 (EN):**

Enter the equipment number of the trunk to which you want to assign a name (required). Equipment numbers are entered in the following format:

- X = Cabinet: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

**P2 (NM):**

If necessary, enter the name which you wish to assign to this trunk. This name will be displayed on all equipped telephones and Attendant Consoles.

- 1 to 15 characters

**NOTE:** Available characters for the name registration are as follows: SP, !, ", #, \$, %, &, ', (, ), \*, +, ,, -, ., /, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, :, ;, >, =, <, ?, @, A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z

- Display**
1. Enter P1.
  2. Press **DSP**.

**NOTE:** Press **DSP** again to display the next EN and NM. Pressing **DSP** without entering a P1 value displays the NM of the lowest EN.

- Change**
1. Enter all the necessary parameters.
  2. Press **ADD / CHG**. Pressing **ADD / CHG** without entering a P2 value removes the NM.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified EN is not registered.	Check the EN.

**RVAC (RECORDED VOICE ANNOUNCEMENT CARD) ASSIGNMENT (CMC 260)**

Use this table to register and/or display the equipment number of card slots where RVAC cards have been physically installed.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	VEN	RVAC equipment number 1170	See description below	None

**Parameter Descriptions**

**P1 (VEN):**

Enter the equipment number of the RVAC card. Equipment numbers are entered in the following format:

- X = Cabinet: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

- Add**
1. Enter a VEN.
  2. Press **ADD / CHG**.

- Display**
- Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of VENS.
2. The system releases the CMC after the last registered VEN has been displayed.

- Remove**
1. Enter a VEN.
  2. Press **RMV**.



## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
CHK PKG	An attempt was made to display a VEN which has not been installed.	Check the data and try again; ensure that the RVAC is installed.
NOT RGTR	An attempt was made to display a VEN which is not registered.	Check the data and try again.
NO FOUND	An attempt was made to remove a VEN which has not been installed.	Check the data and try again; ensure that the RVAC is installed.
DISAGREE	<p>The specified VEN contains a card which is not an RVAC.</p> <p>An attempt was made to install more than two RVACs in one cabinet, or this VEN is already programmed into the data base.</p>	<p>Check the data and try again; ensure that the RVAC is installed.</p> <p>Check the data and try a different cabinet or abandon the attempt.</p>
DENIED	An attempt was made to remove an RVAC which has been assigned messages.	Remove the previously entered messages using CMC 261 and try again.

**RECORDED VOICE  
ANNOUNCEMENT  
ASSIGNMENT (CMC 261)**

Use the Recorded Voice Announcement Assignment (CMC 261) table to assign or remove recorded voice announcements.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	VEN	RVAC card equipment number	See description below	None
P2	MSGID	Message ID number	1 to 255	None
P3	BLK	Message ID block number	14-digit binary number	None
P4	RF	Recording status value	0 or blank = Not recorded 1 = Recorded	None
P5	RDCNT	Number of playbacks	0 = Endless 1 to 255 times	0 or 1

**Parameter Descriptions**

**P1 (VEN):**

Enter the equipment number of the RVAC card in the following format (required):

- X = Cabinet: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7:  
where 0 = regular messages; or 0 = hunt for first available circuit  
1 to 7 (if P2 = shared message)

**NOTES:**

1. Each shared message must be assigned to an individual circuit number (1 to 7). Regular messages are always assigned to circuit 0.
2. More information on entering equipment numbers can be found in Appendix C.

**P2 (MSGID):**

If necessary, enter the message ID number. Please refer to Table 4-41 for a list of available ID numbers.

- 1 to 255

**P3 (BLK):**

If necessary, enter the voice message ID block number. The BLK must be entered as a 14 digit binary number; for example:

M<sub>0</sub>M<sub>1</sub>M<sub>2</sub>M<sub>3</sub>M<sub>4</sub>M<sub>5</sub>M<sub>6</sub>M<sub>7</sub>M<sub>8</sub>M<sub>9</sub>M<sub>10</sub>M<sub>11</sub>M<sub>12</sub>M<sub>13</sub>, where:

- M<sub>n</sub> = 0 (voice announcement block n is not used)
- M<sub>n</sub> = 1 (voice announcement block n is used)

**P4 (RF):**

If necessary, enter the value to set the recording status.

- 0 or blank = Not recorded
- 1 = Recorded

**Parameter Descriptions  
(Cont'd)**

**P5 (RDCNT):**

If necessary, enter the number of times that the recorded message will playback per call. (If P5 is left blank, 1 is assigned for a regular message and 0 is assigned for a shared message.)

- 0 = Endless
- 1 to 255 times

**NOTES:**

1. If the RVAC message is a shared message, the P5 default is 0. If the message is a regular message, the P5 default is 1.
2. If an RVAC port is to be used for a music source interface, refer to CMC 305.
3. A message ID cannot be shared between two RVAC cards. A message must be complete on a single RVAC.
4. RVAC messages can be maximum of 56 seconds long (14 message blocks of 4 seconds each).

**Add**

1. Enter all parameters.
2. Press **ADD / CHG**.

**Display**

1. Enter a VEN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of MSGIDs. Continue pressing **DSP** after displaying the last registered MSGID to start the data display for the next VEN.
2. The system releases this CMC after displaying the last registered VEN and associated data.

**Remove**

1. Enter the VEN associated with the message to be removed.
2. Press **DSP** as needed to display the data to be removed.
3. Press **RMV**.

Table 4-41. Available Message ID Numbers

MESSAGE ID	DEFINITION	MESSAGE TYPE
01-10	Announcement Message	Regular
11	ACD Answering Message (Reserved for ACD Group 1 using fixed routing)	Regular
12	ACD Answering Message (Reserved for ACD Group 2 using fixed routing)	Regular
13	ACD Answering Message (Reserved for ACD Group 3 using fixed routing)	Regular
14-30	ACD Answering Message (for ACD Groups 4-20 respectively w / fixed routing)	Regular
31	ACD Waiting Message (Reserved for ACD Group 1 using fixed routing)	Regular
32	ACD Waiting Message (Reserved for ACD Group 2 using fixed routing)	Regular
33	ACD Waiting Message (Reserved for ACD Group 3 using fixed routing)	Regular
34-50	ACD Waiting Message (for ACD Groups 4-20 respectively w / fixed routing)	Regular
51	DID Vacant Number Message	Regular
52	DISA Authorization Code Entry Message	Regular
53	DISA Invalid Authorization Code Message	Regular
54	Hotel / Motel Wake-Up Message	Regular
55	Time Reminder Message	Regular
56	Hold Message (endless)	Shared
57	ACD Music (endless)	Shared
58	Waiting Message for H / M Wake-Up / Time Reminder (see Note 3)	Shared
59-69	Reserved	
70-79	Automated Attendant Message	Regular
80-90	Reserved	
91-99	Multi-Language Wake-Up	Regular
100-189	Common Message (Attendant Queue Message)	Regular
190-199	Hold Message for each Tenant / DNIS Number	Shared
230-255	Dummy Messages	Shared

**NOTES (for fixed routing only):**

1. A shared message is a message which can be played back continuously to callers which have been placed on hold.
2. A regular message is a message which is played back at intervals to a caller for some particular reason (office closed, all agents busy, show times, etc.).
3. The waiting message for Hotel / Motel Wake-Up / Time Reminder should be activated if MSG ID number 54 is activated.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	An attempt was made to display a VEN which is not registered.	Check the data and try again.
OVERLAP	An attempt was made to add an MSGID which is already registered.  An attempt was made to assign a memory block which is already in use.  An attempt was made to assign a VEN which is already in use.	Check the data and try again, or abandon the attempt.  Check the data and try again, or abandon the attempt.  Check the data and try again, or abandon the attempt.
DISAGREE	The final digit of the VEN disagrees with the entered MSGID.	Check the data and try again.
DENIED	An attempt was made to remove an MSGID which is in endless playback.	Check the data and try again.
DENIED 24	The specified EN is a music source.	Remove the EN assigned to the music source using CMCs 305, 317, and 463; then try again.
NO FOUND	An attempt was made to display an MSGID which is not registered.	Check the data and try again, or abandon the attempt.
PARA. ERR	All message blocks are zero (unused).	Assign the message blocks to be used.

**Recording a Recorded Voice Announcement**

An RVAC card contains a total of 14 blocks of RAM memory. Each block can contain 4 seconds of message recording time. The following procedures can be used to record a voice message or music.

To register the RVAC message in the data base:

1. Use CMC 260 to register an installed RVAC card.
2. Use CMC 261 to register the message.
  - (a) If the message is to be a regular message, enter circuit 0 as the final digit of the VEN in parameter P1. If the message is to be a shared message, enter a circuit in the 1 through 7 range as the final digit of the VEN in parameter P1.
  - (b) Enter the message ID for the type of message to be recorded in parameter P2.
  - (c) Assign the recording time (number of message blocks) needed to record the message. (Each message block on the RVAC card is represented by a 0 or 1 in the 14 digit number at parameter P3. A 1 represents a block to be used, a 0 represents a block which is not to be used.)
  - (d) Enter a 0 or 1 in parameter P4.
  - (e) Enter the number of times the message is to be played back in parameter P5. Enter 0 at P5 if the message is to be played back endlessly.

The message can only be recorded from an SLT, proprietary telephone, or Attendant Console which has been given access to FNO 136, Recorded Voice Announcement, in its class of service (CMC 104).

**NOTE:** A station cannot cancel or rerecord a protected message (see CMC 263).

To record the RVAC message:

1. Enter the feature access code, enter 1, and then enter the message ID from step 2(b) of the registration procedure.
2. Speak or play the text of the message into the mouth piece of the station.

**NOTE:** A message must be canceled before a new message can be recorded.

**Recording a Recorded Voice Announcement (Cont'd)**

3. The message will be played back twice for confirmation after the recording time set in step 2(c) of the registration has expired.
4. If the message is correct, hang up the station and go on to step 5. If the message is incorrect, press \* and rerecord the message.
5. Use CMC 263 to protect the message from accidental erasure.
6. If the message is to be used as music on hold, register the VEN from step 2(a) at CMC 305, parameter P1.

**NOTE:** A Recorded Voice Message cannot be continued from one RVAC card to another. Therefore, the maximum length of a recorded message is 56 seconds.

**Removing a Recorded Voice Announcement**To remove a Recorded Voice Announcement:

1. Use CMC 263 to remove any assigned message protection.
2. From any station with access to FNO 136 (Recorded Voice Announcement), enter the feature access code, enter 0, and then enter the message ID. (Access to FNO 136 is given at CMC 104. The feature access code for FNO 136 is set at CMC 100.)
3. Hang up the station when confirmation tone is heard.
4. Use the Remove procedure at CMC 261.
5. If the message was used as music on hold, use the Remove procedure at CMC 305.

**RECORDED VOICE  
ANNOUNCEMENT COPY  
ASSIGNMENT (CMC 262)**

Use the Recorded Voice Announcement Copy (CMC 262) table to copy the recording associated with one message ID to another message ID.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	RVAC1	Target message ID	1 to 255	None
P2	RVAC2	Source message ID	Blank = Not active 1 to 255 " * " = Hold tone or music source	None

**Parameter Descriptions**

**P1 (RVAC1):**

Enter the target message ID (refer back to Table 4-41 if necessary).

- 1 to 255

**P2 (RVAC2):**

If necessary, enter the source message ID.

- Blank = Not active
- 1 to 255 (refer to Table 4-41 if needed)
- " \* " = Hold tone (used for the message) or music source (if assigned at CMC 305)

- Add**
1. Enter an RVAC1 at P1.
  2. Enter an RVAC2 at P2.
  3. Press **ADD / CHG**.

- Display**
1. Enter an RVAC1 at P1.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of RVAC1s.
2. The system releases the CMC if the RVAC1 value exceeds 255.

- Remove**
1. Enter an RVAC1 at P1.
  2. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The source MSGID (RVAC2) has not been registered.	Check the data and try again, or abandon the attempt.
DISAGREE	The target MSGID (RVAC1) has already been registered.	Check the data and try again, or remove the previously registered MSGID.



**RECORDED VOICE  
ANNOUNCEMENT PROTECT  
ASSIGNMENT (CMC 263)**

Use the Recorded Voice Announcement Protect Assignment (CMC 263) table to protect a message block defined in CMC 261 or 262 from being erased.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	MSGID	Message ID number	1 to 255	None
P2	PRO	Protection	0 = Protection off 1 = Protection on	0

**Parameter Descriptions**

**P1 (MSGID):**

Enter the message ID number which you wish to protect or unprotect (required).

- 1 to 255

**P2 (PRO):**

If necessary, enter whether or not you want to protect or unprotect the message.

- 0 = Protection off (default)
- 1 = Protection on

**WARNING: THE MESSAGE MUST BE RECORDED PRIOR TO  
ACTIVATING THE PROTECTION MODE.**

- Change**
1. Enter the MSGID at P1
  2. Enter the new PRO value at P2.
  3. Press **ADD / CHG**.

- Display**
1. Enter an MSGID at P1.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays the protection mode in numerical order of MSGIDs.
2. The system releases this CMC when the MSGID value exceeds 255.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	An attempt was made to add or change an MSGID which is not registered.	Check the data and try again, or abandon the attempt.

**MODEM POOLING  
ASSIGNMENT (CMC 270)**

Assign or remove the modem pooling feature or change the set-up parameters associated with it using this CMC. Options set with this command include modem group ID, modem number, MI / MIC control signal pattern, MI / MIC timing, and RS-232C signal mode. A modem must be connected to a DIU in the DCE mode and to a single line port.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DEN	DIU equipment number	See description below	None
P2	SEN	Single line card equipment number	See description below	None
P3	MID	Modem group ID and modem group number	XXYY XX = 01 to 15 (modem group ID) YY = 00 to 99 (modem number)	None
P4	PTN	MI / MIC pattern	See Figure 4-19	None
P5	MTIM	MI / MIC timing	0 to 255 ms Blank (when P4 = 0, 2, or 4)	None
P6	RSM	RS-232C interface signaling mode	2 digits First digit is disconnect option (0 = normal, 1 = forced) Second digit is DSR option (0 = normal, 1 = forced on)	None

**Parameter Descriptions**

**P1 (DEN):**

Enter the DIU equipment number (required). Equipment numbers are entered in the XYYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7

**P2 (SEN):**

Enter the single line card equipment number where the DIU is assigned is displayed in the XYYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

**P3 (MID):**

If necessary, enter the modem group ID and the modem group number. The MID must be entered in the format XXYY, where:

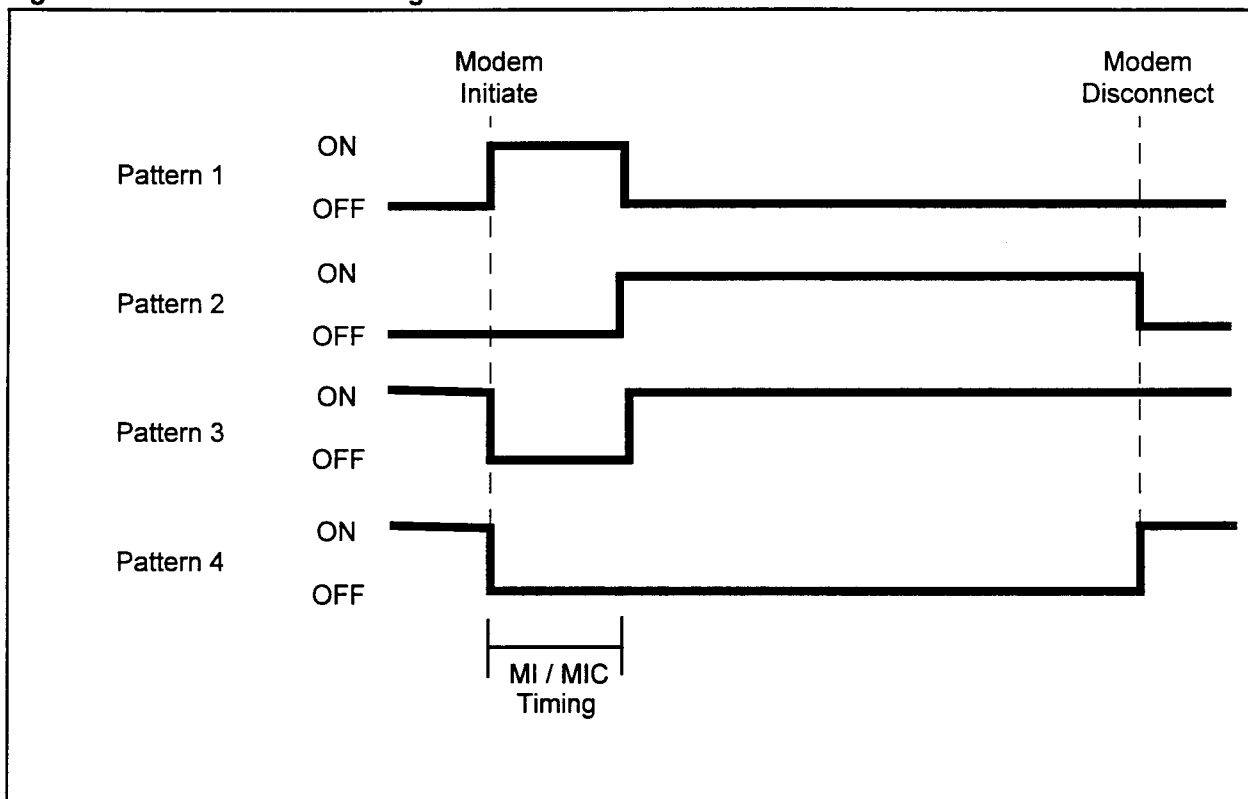
- XX = 01-15 (modem group ID)
- YY = 00-99 (modem number)

<b>Parameter Descriptions (Cont'd)</b>	<p><b>P4 (PTN):</b> If necessary, enter the number corresponding to the pattern for the MI / MIC control signal. Patterns are shown in Figure 4-16.</p> <p><b>P5 (MTIM):</b> If necessary, enter the MI / MIC timing in 100 ms units.</p> <ul style="list-style-type: none"> <li>• 0 to 255</li> <li>• Blank (when P4 = 0, 2, or 4)</li> </ul> <p><b>P6 (RSM):</b> If necessary, enter the RS-232C interface signaling mode.</p> <ul style="list-style-type: none"> <li>• 2 digits <ul style="list-style-type: none"> <li>– First digit is disconnect option (0 = normal, 1 = forced)</li> <li>– Second digit is DSR option (0 = normal, 1 = forced on)</li> </ul> </li> </ul> <p><b>NOTE:</b> If 0 is set in P5 for MI / MIC timing, the system does not control the MI / MIC signal.</p>
<b>Display</b>	<ol style="list-style-type: none"> <li>1. Enter a DEN at P1.</li> <li>2. Press <b>DSP</b>.</li> </ol> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>1. Pressing <b>DSP</b> displays SEN, MID, PTN, MTIM, and RSM values. Continue pressing <b>DSP</b> to display parameters corresponding to the next DEN.</li> <li>2. The system releases this CMC after displaying the last registered DEN and associated data.</li> </ol>
<b>Add</b>	<ol style="list-style-type: none"> <li>1. Enter all the necessary parameters.</li> <li>2. Press <b>ADD / CHG</b>.</li> </ol>
<b>Remove</b>	<ol style="list-style-type: none"> <li>1. Enter the DEN associated with the message to be removed.</li> <li>2. Press <b>DSP</b> as needed to display the data to be removed.</li> <li>3. Press <b>RMV</b>.</li> </ol>
<b>Change</b>	<ol style="list-style-type: none"> <li>1. Enter a new parameter for the PTN, MTIM, or RSM of an existing modem pool.</li> <li>2. Press <b>ADD / CHG</b>.</li> </ol>

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DISAGREE	The specified EN is not a DIU.	Check the EN and try again.
NOT RGTR	The specified EN is not installed.	Check the data / install correct equipment and try again.
NO PARA	MI / MIC timing value not entered when P4 = 1 or 3.	Check parameters.
CHK PKG	The card or DIU for the entered EN is not installed or is out of order.	Check that DIU is installed and operating. Try again.
CHK SLF	The cabinet power is off.  The cabinet is not physically installed.	Check the cabinet.

**Figure 4-16. MI / MIC Control Signal Patterns**



**MODEM GROUP ATTRIBUTE ASSIGNMENT (CMC 271)**

This CMC is used to assign or change the attributes of each modem group. The modem is hunted according to the attributes of the originating / destination data station. The modem must be connected to a DIU associated with a modem pool. The DIU must be set to DCE mode.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	MGID	Modem group ID	1 to 15	None
P2	COM	Communication mode	1 = Full duplex 2 = Half duplex	None
P3	DSP	Data speed	9 digits (see description below)	None
P4	MTP	Modem type	1 = Radcal Vadic - Model VA4400S or Anderson Jacobson - Model VA1681D 2 = Hayes Smartmodem 2400 4 = Hayes Smartmodem 1200	None
P5	OPM	Operation mode	1 = Incoming 2 = Outgoing 3 = Bothway	None

**Parameter Descriptions**

**P1 (MGID):**

Enter the modem group ID to which you wish to assign or change attributes (required).

- 1 to 15

**P2 (COM):**

Enter the communication mode which this modem group will use.

- 1 = Full duplex
- 2 = Half duplex

**P3 (DSP):**

Enter the data speed for this modem group. It is possible to set multiple data speeds for the modem group by entering any combination of the values listed below, up to 9 digits in length, using the following format:

P3 =    1  2  3  4  5  6  7  8  9  
      X  X  X  X  X  X  X  X  X     (X = 0 or 1)

Each bit corresponds to a different data speed as follows:

- 1 = 110 bps
- 2 = 150 bps
- 3 = 300 bps
- 4 = 600 bps
- 5 = 1200 bps
- 6 = 2400 bps
- 7 = 4800 bps
- 8 = 9600 bps
- 9 = 19200 bps

**Parameter Descriptions  
(Cont'd)**

**P4 (MTP):**

Enter the modem type.

- 1 = Radcal Vadic - Model VA4400S or Anderson Jacobson - Model VA1681D
- 2 = Hayes Smartmodem 2400
- 4 = Hayes Smartmodem 1200

**P5 (OPM):**

Enter the operation mode that this modem group will use.

- 1 = Incoming
- 2 = Outgoing
- 3 = Bothway

**NOTE:** The same modem type can be assigned to multiple modem groups.

**Display**

1. Enter the MGID at parameter P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** displays COM, DSP, MTP, and OPM value(s). Continue pressing **DSP** to display parameters corresponding to the next MGID.
2. The system releases this CMC after displaying the last registered MGID and associated data.

**Change**

1. Enter a new value for the COM, DSP, MTP, or OPM parameter(s) of an existing modem group.
2. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	The data speed is set to 0 (no P3 bits are set).	Check the data, correct DSP, and try again.

**API ASSIGNMENT (CMC 280)**

Use the API Assignment (**CMC 280**) command to install or remove the 2APIA card and set or change the attributes.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>EN</b>	Equipment number	See description below	None
<b>P2</b>	<b>COP</b>	Communication protocol	1 = Reserved 2 = ACD Report Manager 3 = Property Management System	2
<b>P3</b>	<b>DSP</b>	Data speed	1 = 300 bps 2 = 600 bps 3 = 1200 bps 4 = 2400 bps 5 = 4800 bps 6 = 9600 bps	5
<b>P4</b>	<b>COM</b>	Communication mode	1 = Full duplex (asynchronous) 2 = Half duplex (synchronous)	1
<b>P5</b>	<b>STB/ WLE</b>	Word structure (stop bit / word length)	1 = (1 / 7) 2 = (1.5 / 7) 3 = (2 / 7) 4 = (1 / 8) 5 = (1.5 / 8) 6 = (1 / 8)	1
<b>P6</b>	<b>PAR</b>	Parity	1 = Odd 2 = Even 3 = None	2

**Parameter Descriptions****P1 (EN):**

Enter the equipment number of the 2APIA card (required).

Equipment numbers are entered in the XYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

**P2 (COP):**

Enter the communication protocol for the 2APIA card.

- 1 = Reserved
- **2 = ACD Report Manager (default).** Report Manager provides on-screen or printed reports to aid in making effective use of ACD.
- 3 = Property Management System Interface (PMSI). The PMS features for Hotel / Motel include Maid Status, Guest Name Display, and Multi-Language Wake-Up.

**Parameter Descriptions  
(Cont'd)****P3 (DSP):**

Enter the data speed.

- 1 = 300 bps
- 2 = 600 bps
- 3 = 1200 bps
- 4 = 2400 bps
- **5 = 4800 bps (default)**
- 6 = 9600 bps

**P4 (COM):**

Enter the communication mode.

- **1 = Full duplex (asynchronous) (default)**
- 2 = Half duplex (asynchronous)

**P5 (STB / WLE):**

Enter the word structure information (stop bit, word length).

- **1 = (1 / 7) (default)**
- 2 = (1.5 / 7)
- 3 = (2 / 7)
- 4 = (1 / 8)
- 5 = (1.5 / 8)
- 6 = (2 / 8)

**P6 (PAR):**

Enter the parity.

- 1 = Odd
- **2 = Even (default)**
- 3 = None

**Display**

1. Enter value for P1.
2. Press **DSP** to display values for P2 through P6 corresponding to the entered EN.

**NOTES:**

1. Pressing **DSP** without entering a P1 value displays the parameters corresponding to the lowest EN value.
2. Pressing **DSP** again displays the data for the next EN.
3. Pressing **DSP** when the last EN is displayed terminates the command.



- Add** 1. Enter all the necessary parameters.  
2. Press **ADD / CHG** to install the 2APIA card.
- Change** 1. Enter the new parameters corresponding to the displayed EN.  
2. Press **ADD / CHG**.
- Remove** If **RMV** is pressed after entering a value for P1, the installed 2APIA card corresponding to the entered EN is removed.

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
DISAGREE	The specified EN is already assigned.	Check the EN.
	A package other than the 2APIA card is installed.	Check the EN.
	The allowable number of installed APIs is exceeded.	Check the number of installed 2APIA cards.
NOT RGTR	The 2APIA card corresponding to the specified EN is not installed.	Check the EN.
NO PARA	When P2 = 2, a value for P5 or P6 must be entered.	Enter a value for P5 or P6.
DENIED 27	The API type is assigned to the specified EN.	Remove the API type (CMC 281).
CHK PKG	The API corresponding to the specified EN is not installed.	
CHK SLF	The cabinet power is off.	Check the cabinet.
	The cabinet is not physically installed.	

**AP TYPE ASSIGNMENT (CMC 281)**

Use the AP Type Assignment (**CMC 281**) command to assign the AP type corresponding to the desired service.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	EN	Equipment number	See description below	None
P2	TYP	Type of application processor	1 = Automatic Call Distribution 2 = Property Management System	None

**Parameter Descriptions**

**P1 (EN):**

Enter the equipment number of the Application Processor (required). Equipment numbers are entered in the XYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

**P2 (TYP):**

Enter the type of application processor.

- 1 = Automatic Call Distribution (ACD). ACD provides automatic distribution of incoming trunk and internal calls to idle agent stations in the ACD group.
- 2 = Property Management System (PMS) hotel / motel interface

**NOTE:** Only one ACD AP per 2APIA card is allowed. The second port on a 2APIA card can be used for PMS (the hotel / motel management system).

**Display**

1. Enter P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** without entering a P1 value displays the parameters corresponding to the lowest EN.
2. Pressing **DSP** again displays the data for the next EN.
3. Pressing **DSP** when the last EN is displayed terminates the command.
4. Data is not generated across the API link until a HOT restart is done.

- Add**
1. Enter all the necessary parameters.
  2. Press **ADD / CHG** to assign the AP type.

**Remove** If the **RMV** key is pressed after entering the EN, the assigned AP type corresponding to the entered EN is removed.

#### ERROR CODES

ERROR CODE	CAUSE	CORRECTION
DISAGREE	A package other than the API card is installed.	Check the EN.
NOT RGTR	The API card corresponding to the specified EN is not installed.	Check the EN.
OVERLAP	The AP type is already assigned to the specified EN.	Remove the AP type.
	The ACD AP type is already assigned to another EN.	Remove the AP type.
NO FOUND	The AP type is not assigned to the specified EN.	Check the EN.
PARA. ERR	The specified TYP is not correct.	Check the service type.

**SYSTEM SPEED CALLING ASSIGNMENT (CMC 300)**

Use the System Speed Calling Assignment (CMC 300) table to establish a directory of up to 1,000 telephone numbers in the system speed calling table. System speed calling numbers are frequently used numbers available for access on a system-wide basis by users who have this feature included in their class of service.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	SPD	System speed calling number	00-99 or 000-999	None
P2	ACC	Access code	Use the access code for a trunk group, or enter 9	None
P3	DG	Sent digits	1 to 15 digits (0-9, *, #, pause code)	None

**Parameter Descriptions**

**P1 (SPD):**

Enter the system speed calling number. This is the code that will be entered to dial the number in P3.

- 00-99 or 000-999

**NOTE:** CMC 102, FLGN 162, determines whether a 2-digit or 3-digit number will be entered.

**P2 (ACC):**

Enter the access code. Use the access code for a trunk group, or enter 9.

**P3 (DG):**

Enter the sent digits (area code and telephone number).

- 1 to 15 digits (0-9, \*, #, pause code)

**NOTE:** For a CT-20 / CT-30 phone, the **TRANSFER** button is used to enter the pause code. For a Digital Station (DS), the **PICK-UP** button is used. For an Attendant Console, **RECALL** is used to enter the pause code. For PMP or PcMP, the “-” key is used.

- Display**
1. Enter an SPD value at P1.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly will display data in numerical order of SPDs.
2. The system will release this CMC when the SPD value exceeds 999.

- Change**
1. Enter an SPD at P1.
  2. Enter an ACD at P2.
  3. Enter a DG at P3.
  4. Press **ADD / CHG**.

- Remove**
1. Enter an SPD at P1.
  2. Press **RMV**.

---

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
NOT RGTR	An attempt was made to display an SPD which is not registered.	Check the data and try again.
PARA. ERR	P2 + P3 is more than 20 digits.	Check the data and try again.

**HUNT GROUP NUMBER ASSIGNMENT (CMC 301)**

Use the Hunt Group Number Assignment (CMC 301) table to create hunt groups and to add or delete stations from hunt groups. There are three types of hunt groups: circular, terminating, and pilot. When a call encounters a busy station, this feature allows the call to hunt to the first idle station in a defined hunt group. Each station can only belong to one hunt group. Separate voice and data hunt groups may be defined.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	STHN	Hunt group number	Voice = 1 to 50 Data = 51 to 60	None
P2	TO	Terminating sequence number	1 to 16	None
P3	DN	Station directory number	1 to 4 digits	None
P4	HT	Hunt group type	1 = Circular 2 = Terminating 3 = Pilot	None

**Parameter Descriptions**

**P1 (STHN):**

Enter the number which you wish to assign to this hunt group (required).

- Voice: 1 to 50
- Data: 51 to 60

**P2 (TO):**

Enter the terminating sequence number for each station which will be assigned to this group (required).

- 1 to 16 (when the hunting type is defined as "pilot," the first station entered will be the pilot station)

**P3 (DN):**

Enter the station directory number which will occupy this position in the hunt group being defined.

- 1 to 4 digits

**P4 (HT):**

Enter the number corresponding to the type of hunt group which you wish this to be.

1 = Circular. (A circular hunting sequence starts with the called hunt group member and continues through all other members until an idle group member is found, or until all group members have been tried once.)

2 = Terminating. (A terminating hunting sequence starts with the called hunt group member and continues through the remaining group members (members with a higher terminating sequence number only) until an idle member is found or the last group member has been tried.)

**Parameter Descriptions  
(Cont'd)****P4 (Cont'd):**

3 = Pilot. (The hunting sequence starts only when a call is directed to a pilot number. The pilot number must always be assigned as the first number in the group.

**Display**

1. Enter an STHN at P1 and a TO at P2.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays the DNs in numerical order of TOs.
2. Data display mode terminates after the last TO (16) has been displayed.
3. Each STHN must be displayed separately.

**Change**

1. Enter an STHN at P1.
2. Enter the TO to be added / changed at P2.
3. Enter the DN to be added at P3.
4. Enter the HT for the TO at P4.
5. Press **ADD / CHG**.

**Remove**

1. Enter an STHN at P1 and a TO at P2.
2. Enter the DN to be removed at P3.
3. Press **DSP**.
4. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
OVERLAP	An attempt was made to add a DN which is already a part of another hunt group.	Remove the DN from the other hunt group and try again.
	The specified STHN and TO are already registered to another station.	Try another TO.
NO FOUND	An attempt was made to delete a DN which is not registered.	Abandon the attempt.
NOT RGTR	The specified DN has not been installed.	Install the needed EN at CMC 200, or abandon the attempt.
	The terminal type for the specified DN is mismatched.	Check the entered data for accuracy and try again.
PARA. ERR	The STHN or TO value is greater than the available system maximum.	Check the parameter values.

**GROUP PICK-UP MEMBER ASSIGNMENT (CMC 302)**

Use the Group Pick-Up Member Assignment (**CMC 302**) table to assign or remove stations from specified pick-up groups. Group pick-up allows a station user to answer calls for other stations in the same pick-up group using a feature button or an access code. A station with an alphanumeric display shows the originating trunk or station which was originally called. Each station can only belong to one pick-up group. Up to 64 members may be in one group.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	PKUN	Pick-up group number	1 to 63	None
P2	DN	Station directory number	1 to 4 digits	None

**Parameter Descriptions**

**P1 (PKUN):**

Enter the number which you wish to assign to this pick-up group being defined (required).

- 1 to 63

**P2 (DN):**

Enter the station directory number of each station which you wish to assign to this group.

- 1 to 4 digits

**NOTE:** The maximum number of member stations per group is 64.

**Display**

1. Enter a PKUN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of DNs.
2. Each PKUN must be displayed separately.

**Add**

1. Enter a PKUN at P1.
2. Enter the DN to be added at P2.
3. Press **ADD / CHG**.

**Remove**

1. Enter a PKUN at P1.
2. Enter the DN to be removed at P2.
3. Press **DSP**.
4. Press **RMV**.



## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	An attempt was made to enter a DN which is not registered.	Return to CMC 200 and register the station DN.
OVERLAP	An attempt was made to enter a DN which is already registered.	Abandon the attempt.
NO FOUND	An attempt was made to remove a DN which is not registered.	Check the entry for accuracy and try again.
NO AREA	Available system memory is exhausted.	Abandon the attempt, or delete a different DN and try again.

**INTERNAL SPEAKER  
PAGING GROUP  
ASSIGNMENT (CMC 303)**

Use the Internal Speaker Paging Group Assignment (CMC 303) table to assign stations to each of nine paging zones. A maximum of 36 stations per system is allowed. All 36 stations may be assigned to one paging zone if desired. Each station can only belong to one paging zone.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	PGUN	Paging zone number	1 to 9	None
P2	DN	Station directory number	1 to 4 digits	None

**Parameter Descriptions**

**P1 (PGN):**

Enter the paging zone number which you wish to define (required).

- 1 to 9

**P2 (DN):**

Enter each station directory number that you wish to assign to this zone as a member station.

- 1 to 4 digits

**Display**

1. Enter a PGN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of DNs.
2. After the last registered DN has been displayed, pressing **DSP** will display a blank. Pressing **DSP** again will recycle the DN list.
3. Each PGN must be displayed separately.

**Add**

1. Enter a PGN at P1.
2. Enter a DN at P2.
3. Press **ADD / CHG**.

**Remove**

1. Enter a PGN at P1.
2. Enter a DN at P2.
3. Press **RMV**.

---

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
NO AREA	An attempt was made to add a DN to a group which already has 36 members.	Remove one or more entries from the existing list of stations, or select a different zone.
OVERLAP	An attempt was made to enter a DN which is already registered.	Check the entry and try again, or abandon the attempt.
NO FOUND	An attempt was made to display a DN which is not registered.	Check the entry and try again, or register the DN.
NOT RGTR	An attempt was made to add a DN which is not installed.	Check the entry and try again, or install the DN at CMC 200.
DISAGREE	The entered DN is not a proprietary telephone.	Check the entry and try again.

**HOTLINE STATION ASSIGNMENT (CMC 304)**

Use the Hotline Station Assignment (**CMC 304**) table to assign or remove voice and data hotlines. When the hotline station goes off-hook, its terminating station is automatically rung. The originating station can receive calls from other sources, but is prohibited from placing calls to any other station other than the specified destination.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	HNO	Hotline number	Voice = 1 to 20 Data = 51 to 90	None
P2	ODN	Originating station number	1 to 4 digits	None
P3	TDN	Terminating station number	1 to 4 digits	None

**Parameter Descriptions**

**P1 (HNO):**

Enter the number that will be used to reference this particular hotline connection (required).

- Voice: 1 to 20
- Data: 51 to 90

**P2 (ODN):**

Enter the originating station directory number (calling station).

- 1 to 4 digits

**P3 (TDN):**

Enter the terminating directory number (called station).

- 1 to 4 digits

**Display**

1. Enter an HNO at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of HNOs.
2. The system releases this CMC after the HNO value exceeds the maximum flag value.

**Change**

1. Enter an HNO at P1.
2. Enter the ODN to be added at P2.
3. Enter the TDN to be added at P3.
4. Press **ADD / CHG**.

**Remove**

1. Enter an HNO at P1.
2. Press **DSP**.
3. Press **RMV**.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	A specified DN has not been installed.  The terminal type for the specified DN is mismatched.	Install the needed DN at CMC 200 (voice) or CMC 220 (data), or abandon the attempt.  Check the entered data for accuracy and try again.
PARA. ERR	The specified HNO is out of range.	Enter a correct HNO.

**MUSIC ON HOLD  
ASSIGNMENT (CMC 305)**

Use the Music on Hold Assignment (**CMC 305**) to designate a tone or music source for music on hold. Music on hold can be provided to the system through one of two different methods; via an external music source, or by using the RVAC card.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	EN / TPN	Equipment number / tone pattern number	See descriptions below	None

**Parameter Descriptions**

**P1 (EN / TPN):**

Enter one of the following:

- Equipment number for the external music source or RVAC card (4 digits):
  - X = Cabinet number: 0, 1, 2, or 3
  - YY = Logical card slot number: 00 to 17
  - Z = Circuit number: 0 to 7

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

- Tone pattern number for the tone source (0 to 15; please refer to Table 4-42)

**NOTES:**

1. You can record a maximum of 56 seconds of music (RVAC card) via the speaker on the telephone prior to music on hold assignment.
2. A tone pattern for tone source can also be used for music on hold.

**Display**

Press **DSP**.

**NOTES:**

1. If no music source is registered, the display shows a blank.
2. Pressing **DSP** again will release the CMC.

**Add / Change**

1. Enter the EN where the music source / tone pattern has been connected.
2. Press **ADD / CHG**.

**NOTES:**

1. CMC 250 for trunk terminations or CMC 260 / 261 for RVAC port terminations should be entered prior to this CMC.
2. RVAC EN cannot be assigned until music has been recorded on the card.

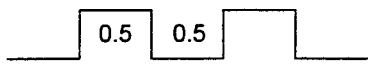
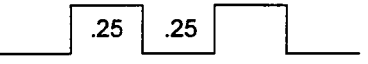
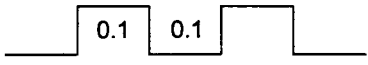
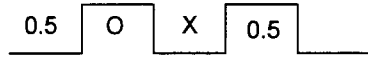

**Remove**

Press **RMV**.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
DISAGREE	The specified EN is neither a trunk nor an RVAC.	Enter the correct EN.
NOT RGTR	<p>The specified trunk EN is not the music source.</p> <p>The specified RVAC circuit EN is not the playback port.</p> <p>The specified RVAC circuit EN was not marked for endless playback.</p>	<p>Confirm that the EN is marked as TOT = 11 at CMC 250 and try again.</p> <p>Confirm that the EN is marked as MSGID = 56 at CMC 261 and try again.</p> <p>Confirm that the EN is marked for endless playback (RDCNT = 0) at CMC 261 and try again.</p>
PARA. ERR	The specified EN or TPN value is out of range.	Enter a correct EN or TPN.

Table 4-42. Tone Patterns for Music on Hold

TPN	Frequency (Hz)	Interval	Signal Level (dBm) *
0	–	Silent	–
1	350 to 440	Continuous	-16
2	440 to 480	Continuous	-16
3	480 to 620		-21
4	480 to 620		-21
5	350 to 440		-16
6	620	Continuous	-21
7	350 to 440 (O) 480 to 620 (X)		-21
8	350 to 440		-21
9	440	Continuous	-14
10 to 15	Reserved	–	–

\* At trunk interface



**NIGHT ANSWER STATION /  
ATTENDANT OVERFLOW  
ASSIGNMENT (CMC 306)**

Use the Night Answer Station / Attendant Overflow Assignment (CMC 306) table to create night answer groups. In addition, use this CMC to establish attendant overflow. Attendant overflow enables calls to a busy Attendant Console to be routed to a designated station.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>NTAG</b>	Night answer group number	1 to 32	None
<b>P2</b>	<b>TSFG</b>	Overflow type	1 = Station 2 = Trunk 3 = Attendant overflow	None
<b>P3</b>	<b>EN / TNN</b>	Equipment number / tenant number	See descriptions below	None

**Parameter Descriptions**

**P1 (NTAG):**

Enter the night answer group number which you wish to define (required).

- 1 to 32

**P2 (TSFG):**

Enter the number corresponding to one of the following types of overflow stations (required):

- 1 = Station
- 2 = Trunk
- 3 = Tenant

**P3 (EN / TNN):**

Enter one of the following, depending on the value entered in P2:

- The equipment number of the overflow station (when P2 = 1 or 2). Equipment numbers are entered in the following format:
  - X = Cabinet number: 0, 1, 2, or 3
  - YY = Logical card slot number: 00 to 17
  - Z = Circuit number: 0 to 7

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

- The tenant number (when P2 = 3)
  - 1 to 63
  - “ \* ” = All tenants
  - 0 = Common tenant

**Parameter Descriptions  
(Cont'd)**

To assign night answer / attendant overflow:

- Assign P1 (night answer group number), P2 (1), and P3 (station's EN; a maximum of eight stations can be assigned).
- or -
- Assign P1 (night answer group number), P2 (2), and P3 (trunk's EN; all system trunks can be assigned, if desired).
- or -
- Assign P1 (night answer group number), P2 (3), and P3 (0 for common tenant, \* for all tenants, or tenant number 1-63).

**NOTES:**

1. When P2 is 3 (tenant), P3 must be 1-63, \*, or 0.
2. Each station can only belong to one night answer or attendant overflow group.
3. The Attendant Console cannot belong to a night answer group.
4. Attendant overflow and night answer calls cannot be call forwarded or be sent to a hunt group. The station, however, that is designated as the night answer / attendant overflow station, can use these features to process normal calls.
5. Overflow calls can be picked up by using the Night Answer Pick-Up feature.

**Display**

1. Enter an NTAG at P1 and a TSFG at P2.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of subsequent ENs or TNNs.
2. After all registered data displays, pressing **DSP** causes blanks to display. Pressing **DSP** again recycles the first EN or EN / TNN.
3. Each NTAG / TSFG pair must be displayed separately.

**Add**

1. Enter the key (underlined> parameters.
2. Enter the EN / TNN at P3.
3. Press **ADD / CHG**.

**Remove**

1. Enter the required parameters (NTAG and TSFG).
2. Enter the EN / TNN to be removed at P3.
3. Press **RMV**.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
NO AREA	An attempt was made to assign an EN to a group which already has eight members.	Remove one or more entries from the existing list of stations.
NO FOUND	An attempt was made to remove data which is not registered.	Check the entry and try again.
NOT RGTR	The specified TSFG does not match the specified EN.	Check the entry and try again.
OVERLAP	An attempt was made to enter an EN which is already registered.	Check the entry and try again, or abandon the attempt.
PARA. ERR	The specified TNN is out of range.	Check the entry and try again.

**DIRECT-IN LINE  
ASSIGNMENT (CMC 307)**

Use the Direct-In Line Assignment (**CMC 307**) table to enter or remove a direct-in line. A direct-in line rings directly to a station, bypassing the Attendant Console. Direct-in lines can be assigned to day and night mode independently.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	EN	Trunk equipment number	See description below	None
P2	DN	Station directory number	1 to 4 digits	None
P3	DNM	Day / night answer mode	0 or blank = Day and night 1 = Night only 2 = Day only	None

**Parameter Descriptions**

**P1 (EN):**

Enter the trunk equipment number from which the direct-in lines will terminate (required). Equipment numbers are entered in the following format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

**P2 (DN):**

Enter the station directory number which will receive the direct-in calls.

- 1 to 4 digits

**P3 (DNM):**

Enter the day / night answer mode.

- 0 or blank = Day and night
- 1 = Night only
- 2 = Day only

**Display**

1. Enter an EN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays each subsequent EN and the DN and DNM associated with it.
2. The system releases this CMC when the last EN is displayed.

**Add / Change**

1. Enter an EN at P1 and a DN at P2.
2. Enter the DNM at P3.
3. Press **ADD / CHG**.

**Remove**

1. Enter the EN of the data to be removed.
2. Press **DSP**.
3. Press **RMV**.

---

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
NOT RGTR	The specified EN is not for a trunk.	Select a trunk circuit EN and try again.
	The specified DN is not registered yet.	Register the DN and try again.
PARA. ERR	The specified EN is an ISDN-CO trunk.	Select a correct EN and try again.

**ACD (AUTOMATIC CALL DISTRIBUTION) GROUP ASSIGNMENT (CMC 308)**

Use this table to establish the pilot and agents in each of the ACD groups. ACD provides automatic distribution of incoming trunk and internal calls to idle stations within an ACD group. If all stations in the ACD group are busy, the call is placed in the ACD queue to await the next available station. When a particular group is busy, calls can be programmed to overflow to another station, attendant, or ACD group.

This CMC requires a LOW security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	<u>ACDNO</u>	ACD group number	1 to 20	None
P2	DN	Directory number	1 to 4 digits	None
P3	TYP	Type of station	0 = Agent 1 = Pilot	None

**Parameter Descriptions**

**P1 (ACDNO):**

Enter the number that you wish to assign to this ACD group (required). There is no limit to the number of stations that can be assigned to one ACD group (up to the system maximum).

- 1 to 20

**P2 (DN):**

Enter the directory number of each station to be assigned to this group.

- 1 to 4 digits

**P3 (TYP):**

Enter the type of member that this station is.

- 0 = Agent
- 1 = Pilot

**NOTES:**

1. This command assigns agents into an ACD group. The Supervisor does not have to be a member of the ACD group and is not assigned by this command.
2. A maximum of 192 agents per group and per system may be assigned when using ACD Report Manager.

- Display**
1. Enter an ACDNO at P1.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays subsequent DNs and TYPs in numerical order of DNs.
2. Pressing **DSP** after the last registered DN has been displayed causes blanks to be displayed. Pressing **DSP** again recycles the DN list for the same ACDNO.
3. Each ACDNO must be displayed separately.

- Add**
1. Enter an ACDNO at P1, a DN at P2, and a TYP at P3.
  2. Press **ADD / CHG**.

- Remove**
1. Enter the ACDNO and DN of the extension to be removed from ACD service.
  2. Press **RMV**.

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
NOT RGTR	The EN that corresponds to the entered DN has not been installed.  The specified DN is assigned as PS.  The terminal that corresponds to the entered DN is not an extension.	Enter a correct (installed) DN.   Enter a correct DN.
OVERLAP	An attempt was made to enter a DN which is already registered as an ACD member.  An attempt was made to enter a pilot DN when one is already registered for that ACDNO.	Check the data and try again, or abandon the attempt.  Remove the pilot status from its current station and try again.
NO FOUND	An attempt was made to remove a station which is not registered.	Check the data and try again.
DENIED 28	The specified agent is in the sign-on status.	Sign-off from the agent position.
PARA. ERR	The specified ACDNO is out of range.	Select a correct ACDNO and try again.

**SILENT MESSAGE ASSIGNMENT (CMC 309)**

Use the Silent Message Assignment (**CMC 309**) table to create, change, or remove up to 51 silent messages with a maximum of 15 characters in each message. The silent message feature allows display-equipped stations to receive a silent message during a telephone conversation. This CMC can only be assigned from a PMP or PcMP.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	MID	Message ID	00 to 50	None
P2	MSG	Message text	1 to 15 characters (including spaces)	None

**Parameter Descriptions**

**P1 (MID):**

Enter the message ID number that you wish to assign to the message created in P2 (required). Message IDs 00 to 09 and 50 are assigned default silent messages. Please refer to Table 4-43.

- 00 to 50.

**P2 (MSG):**

Enter the text of the message.

- 1 to 15 characters.

**Display**

1. Enter an MID at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of MIDs.
2. The system releases this CMC when the MID value exceeds 50.
3. If no message has been entered for an MID, blanks are displayed.

**Change**

1. Enter an MID at P1.
2. Enter the text of an MSG at P2.
3. Press **ADD / CHG**.

**Remove**

1. Enter an MID at P1.
2. Press **DSP**.
3. Press **RMV**.



**Table 4-43. Default Silent Message Number Assignment**

00	CALL ME BACK (default) *
01	WILL CALL BACK
02	RETURNED CALL
03	URGENT
04	TO MY OFFICE
05	IN A MEETING
06	OUT TO LUNCH
07	IN TOMORROW
08	OUT OF TOWN
09	ON VACATION
10-49	Not Assigned
50	YOU HAVE MAIL

**NOTE:** If the message leaving feature is activated, but no message is specified, the system will send message 00 by default. Message 00 may not be used with DND. It requires PMP or PcMP to assign.

**FORCED ACCOUNT CODE /  
VERIFY CODE ASSIGNMENT  
(CMC 310)**

Use **CMC 310** to activate and register verification codes for the Forced Account Code feature. The Forced Account Code feature forces the input of an account code when a station originates a call via a trunk access code, speed call, LCR SCC, auto ICM, DSS speed call, save / repeat, or individual trunk seizure. Forced account code cannot be activated for tie trunk calls.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	VID	Verify code ID number	1 to 1024	None
P2	VCD	Verify code	1 to 15 digits	None
P3	TGN	Trunk group number	13 to 30 51 to 56 Blank = System-wide verify code	None

**Parameter Descriptions**

**P1 (VID):**

Enter the verify code ID number (required).

- 1 to 1024

**P2 (VCD):**

If necessary, enter the verify code.

- 1 to 15 digits

**P3 (TGN):**

If necessary, enter the trunk group number.

- 13 to 30
- 51 to 56
- Blank = System-wide verify code

**Display**

1. Enter a VID at P1.
2. Press **DSP**.

**NOTES:**

1. Each verify code consists of the code itself (VCD) and an identifying sequence number (VID).
2. If no VCD is active for the entered VID, the display shows blanks.
3. Pressing **DSP** without entering a VID displays the parameter corresponding to the lowest VID.
4. This command terminates after the largest VID with an associated VCD displays.

**Add**

1. Enter a VID at P1.
2. Enter a VCD at P2.
3. Press **ADD / CHG**.

- Remove**
1. Enter a VID at P1.
  2. Press **DSP**.
  3. Press **RMV**.

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
OVERLAP	The VCD is already assigned to the specified VID.	Check the VID.
NOT RGTR	The VCD is not assigned to the specified VID.	Check the VID.
PARA. ERR	The entered VID is invalid.	Enter a correct VID.

**WALKING CLASS OF SERVICE / PASSWORD ASSIGNMENT (CMC 311)**

Use **CMC 311** to register a password and Class of Service / Class of Restriction (COS / COR) corresponding to the terminal password group. This feature is used to change one telephone's COS to another's. This allows users to have all the privileges and functions that their own telephone provides at another station, without permanently changing the functions available at that other station. When the call placed using the code is terminated, the telephone may automatically return to the original COS and COR.

This CMC requires a LOW level security code.

P#	MNEM.	DESCG213RIPTION	DATA RANGE	DEFAULT
P1	PWGN	Password group number	1 to 100	None
P2	PW	Password	1 to 4 digits	None
P3	COS	Class of service	1 to 16	None
P4	COR	Class of restriction	1 to 16	None

**Parameter Descriptions**

**P1 (PWGN):**

Enter the password group number (required).

- 1 to 100

**P2 (PW):**

If necessary, enter the password that will apply to this group.

- 1 to 4 digits

**P3 (COS):**

If necessary, enter the class of service for this password group.

- 1 to 16

**P4 (COR):**

If necessary, enter the class of restriction for this password group.

- 1 to 16

**Display**

1. Enter a PWGN at P1.
2. Press **DSP**.

**NOTES:**

1. If no password is active for the entered PWGN, the display is blank.
2. Pressing **DSP** without inputting a PWGN displays the parameters corresponding to the lowest PWGN with a PW.
3. Pressing **DSP** continuously increments the PWGN and the corresponding PW, COS, and COR are consecutively displayed (except for the PWGN that is not assigned the PW).
4. This command terminates after the largest PWGN with an associated PW displays.

- Change**
1. Enter a PWGN at P1.
  2. Enter the changed or new parameters.
  3. Press **ADD / CHG**.

**FORCED ACCOUNT CODE BY TGN ASSIGNMENT (CMC 313)**

Use **CMC 313** to assign the forced account code flag corresponding to a specific trunk group number. This forces the input of an account code when a station originates a call via the designated trunk group.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TGN	Trunk group number	13 to 30 51 to 56	None
P2	TYPE	Forced account code type	0 = No forced account code 1 = Forced 2 = Verified Blank = Applied to CMC 102, flag 132	None
P3	ETF	RESERVED. DO NOT CHANGE	RESERVED. DO NOT CHANGE	0

**Parameter Descriptions**

**P1 (TGN):**

Enter the trunk group number which you wish to define (required).

- 13 to 30
- 51 to 56

**P2 (TYPE):**

Enter the forced account code type that will apply to this specific trunk group.

- 0 = No forced account code
- 1 = Forced
- 2 = Verified
- Blank = Applied to CMC 102, flag 132

**P3 (ETF):**

**RESERVED. DO NOT CHANGE.**

**Display**

1. Enter the TGN.
2. Press the **DSP** key to display the TYPE and ETF.

**NOTE:** Pressing **DSP** again updates the TGN and displays the corresponding parameters. After the last TGN has been displayed, press **DSP** to terminate this command.

**Add**

1. Enter all the necessary parameters.
2. Press **ADD / CHG**.

**ACD TRUNK PRIORITY  
ASSIGNMENT (CMC 314)**Use **CMC 314** to assign trunk priority for ACD queuing.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>TGN</b>	Trunk group number	13 to 62	None
<b>P2</b>	<b>PRT</b>	Priority level	1 (highest) to 8 (lowest)	None

**Parameter Descriptions****P1 (TGN):**

Enter the trunk group number which you wish to define (required).

- 13 to 62

**P2 (PRT):**

Enter the priority level for the trunk group entered in P1.

- 1 (highest) to 8 (lowest)

**Display**

1. Enter the TGN.
2. Press the **DSP** key to display the PRT.

**NOTE:** Pressing **DSP** again updates the TGN and displays the corresponding parameters. After the last TGN (P1 = 62) has been displayed, press **DSP** to terminate this command.

**Change**

1. Enter all the necessary parameters.
2. Press the **ADD / CHG** key.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DENIED	The 2APIA (ACD interface) card is installed.	Reassign the priority level after removing the 2APIA. This change must be made from the ACD Report Manager system.

**ACD AUTOMATIC WORK TIME (CMC 315)**

Use **CMC 315** to assign ACD Automatic Work Time by ACD group.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>AGN</b>	ACD group number	1 to 20	None
<b>P2</b>	<b>WTM</b>	Work time	1 to 255, in units of 5 seconds 0 = The group will use the system timing set at CMC 103, P1 = 104	None

**Parameter Descriptions**

**P1 (AGN):**

Enter the ACD group number which you wish to define (required).

- 1 to 20

**P2 (WTM):**

Enter the work time to apply to this ACD group.

- 1 to 255, in units of 5 seconds
- 0 = The group will use the system timing set at CMC 103, P1 = 104

**Display**

1. Enter the AGN.
2. Press the **DSP** key to display the WTM.

**NOTE:** Pressing **DSP** again updates the AGN and displays the corresponding parameters. After the last AGN has been displayed, press **DSP** to terminate this command.

**Change**

1. Enter all the necessary parameters.
2. Press **ADD / CHG** to change the data.

**NOTE:** If the WTM is not entered and this key is pressed, the WTM corresponding to the AGN will not be changed.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DENIED	The 2APIA (ACD interface) card is installed.	Reassign the priority level after removing the ACD AP interface using CMC 281.



**Parameter Descriptions  
(Cont'd)****P6 (MSTM):**

If necessary, enter the music timing value.

- 1 to 255 seconds.
- Blank = Endless playback

**NOTES:**

1. If blank is assigned at P6, the waiting message specified in P3 will not be played.
2. To provide message waiting (assigned in P3), a value must be entered in P6.
3. Flag 193 in CMC 102 must be set to 1 to allow a 3-digit voice message ID.

**Display**

1. Enter the TNN.
2. Press **DSP** to display the DMSG, WMSG, NMSG, MMSG, and MSTM corresponding to the specific TNN. A blank is displayed if there is no corresponding data.

**NOTE:** The DMSG, WMSG, NMSG, MMSG, and MSTM values for the lowest registered TNN are displayed if P1 is not entered. Press DSP again to display the next TNN and its corresponding data.

3. After the last TNN is displayed, press **DSP** again to end the command.

**Add**

1. Enter the necessary parameters.
2. Press **ADD / CHG**.

**Remove**

1. Enter the TNN.
2. Press **RMV** to remove the data corresponding to the specified TNN.

**ATTENDANT QUEUE VOICE  
MESSAGE ASSIGNMENT  
(CMC 316)**

Use **CMC 316** to assign MSGID and music timing for attendant automatic answer, waiting in queue, night answer, and music as attendant voice message. If an incoming CO or DID call to the Attendant Console terminates in the Attendant Console queue and is not answered within a specific time, and attendant voice message can be sent to the caller.

**NOTE:** Must be incoming call to attendant. (Transferred calls do not apply and station calls do not apply.)

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TNN	Tenant number	0 to 63	None
P2	DMSG	Day mode message identification number	100 to 189	None
P3	WMSG	Waiting message identification number	100 to 189	None
P4	NMSG	Night mode message identification number	100 to 189	None
P5	MMSG	Music message identification number	190 to 199	None
P6	MSTM	Music timing value	1 to 255 seconds Blank = Endless playback	None

**Parameter Descriptions**

**P1 (TNN):**

Enter the tenant number to which you wish to assign voice message information (required).

- 0 to 63

**P2 (DMSG):**

If necessary, enter the message identification number that will be heard by callers in the queue during day mode.

- 100 to 189

**P3 (WMSG):**

If necessary, enter the message identification number for the waiting message.

- 100 to 189

**P4 (NMSG):**

If necessary, enter the message identification number that will be heard by callers in the queue during night mode.

- 100 to 189

**P5 (MMSG):**

If necessary, specify the message identification number for the music message.

- 190 to 199

**MUSIC ON HOLD PER  
TENANT ASSIGNMENT (CMC  
317)**

Use **CMC 317** to assign hold tone or a music source per tenant as a source for music on hold.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TNN	Tenant number	0 to 63	None
P2	TSF	Tone source flag value	Blank = Not installed 1 = Tone pattern 2 = Trunk equipment number 3 = Message ID number	None
P3	TPTM / EN / MSGID	Tone pattern / Trunk EN / Message ID	Depending on the value defined in P2, enter one of the following: Tone pattern: 0 to 9 (see below) Trunk equipment number: 4 digits Message ID number: 190 to 199, or blank (not installed)	None

**Parameter Descriptions**

**P1 (TNN):**

Enter the tenant number to which you wish to assign music on hold (required).

- 0 to 63

**P2 (TSF):**

Enter the flag value corresponding to the tone source.

- Blank = Not installed
- 1 = Tone pattern
- 2 = Trunk equipment number
- 3 = Message ID number

**P3 (TPTN / EN / MSGID):**

Depending on the value defined in P2, enter one of the following:

- Tone pattern: 0 to 9
  - 0 = Silent tone (ST)
  - 1 = Dial tone (DT)
  - 2 = Not used
  - 3 = Busy tone (BT)
  - 4 = Reorder tone (ROT)
  - 5 = Confirmation tone (CFT)
  - 6 = Intrusion tone (INR)
  - 7 = Trunk busy tone (TBT) or congestion tone (CGT)
  - 8 = Distinctive busy tone (DBT) or override warning tone (OWT)
  - 9 = Call waiting tone (CWT)
- Trunk equipment number: 4 digits
- Message ID number: 190 to 199, or blank (not installed)

- Display**
1. Enter the TNN.
  2. Press **DSP** to display the corresponding data.

**NOTE:** The lowest registered TNN and its corresponding data are displayed if P1 is not entered.

3. Press **DSP** again to display the next TNN and its corresponding data.
4. After the last TNN is displayed, press **DSP** again to terminate the command.

- Add / Change**
1. Enter the necessary parameters.
  2. Press **ADD / CHG** to assign the data.

- Remove**
1. Enter the TNN.
  2. Press **RMV** to remove the TNN and its corresponding data.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DISAGREE	If P2 = 2, P3 is not the trunk EN for the music source.	Enter the trunk EN for the music source.
PARA. ERR	If P2 = 2, P3 is not the trunk EN.	Enter the trunk EN.
	If P2 = 3, P3 is out of range.	Enter a correct message ID.
	If P2 = 1, P3 is out of range.	Enter a correct tone pattern.

**DISPLAY CHARACTER  
ASSIGNMENT (CMC 318)**

Use **CMC 318** to assign characters for alphanumeric display service. Refer to Tables 4-44 to 4-47 for more information on messages that can be displayed using this command.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>IND</b>	Type of message	1 = Common service message 2 = FDC / program menu message 3 = ACD queue size message 4 = Hotel / motel message	None
<b>P2</b>	<b>MID</b>	Message identification number	1 to 256	None
<b>P3</b>	<b>CHR1</b>	Character 1	1 to 15 characters	None
<b>P4</b>	<b>CHR2</b>	Character 2	1 to 5 characters	None
<b>P5</b>	<b>MLEN</b>	Maximum number of displayed characters	0 to 20	None

**Parameter Descriptions****P1 (IND):**

Enter the number corresponding to the type of message which you wish to have displayed (required).

- 1 = Common service messages
- 2 = FDC / program menu messages
- 3 = ACD queue size messages
- 4 = Hotel / motel messages

**P2 (MID):**

Enter the message identification number (required).

- 1 to 256

**P3 (CHR1):**

Enter the first character(s).

- 1 to 15 characters

**P4 (CHR2):**

Enter the second character(s).

- 1 to 5 characters

**P5 (MLEN):**

Enter the maximum number of characters that will be displayed.

- 0 to 20

**Display**

1. Enter the IND and MID.
2. Press **DSP** to display the corresponding data.

**NOTE:** Press **DSP** again to display the next MID and its corresponding data. This command is terminated if **DSP** is pressed after the last MID for IND = 4 is displayed.

- Change**
1. Enter the necessary parameters.
  2. Press **ADD / CHG** to change the data.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	There is no message corresponding to the specified MID.	Check the MID.

Table 4-44. Common Service Messages (IND = 1)

MSGID	MESSAGE							DIGITS	DESCRIPTION			
1	B	U	S	Y				5	Busy (extension and trunk)			
2	R	I	N	G				5	Ringing (for called party)			
3	T	A	L	K				5	Talking			
4	X	F	E	R				5	Transfer			
5	H	O	L	D				5	Hold (for proprietary telephone)			
7	V	O	I	C	E			5	Voice call			
8	R	E	T	R	Y			5	Misdial			
9	C	O	N	F				5	Three-way conference			
10	O	V	R	D				5	Override			
11	D	O	N	E				5	Feature activated			
12	C	N	C	L				5	Feature canceled			
13		R	P	D				5	Repertory dial			
14		S	C	C				5	Secondary common carrier access			
15		L	C	R				5	Least cost routing access			
16	S	A	V	E				5	Saved number redial			
17		S	P	D				5	Speed dialing (speed calling)			
18	A	C	C	T				5	Account code input			
19		A	I	A				5	Automatic intercom access			
20	P	A	R	K				5	Call park			
21		D	N	D				5	Do not disturb			
22		M	S	G				5	Message waiting			
23	S	.	M	S	G			5	Silent message			
24		C	A	L	L	B	A	C	K	10	Extension camp-on call back	
25		N	O		A	N	S	W	E	R	10	No answer recall
26	P	R	K		R	E	C	A	L	L	10	Park recall
27		L	O	S	T		C	A	L	L	10	Lost call recall
28		C	A	L	L		B	A	C	K	10	Trunk camp-on call back
29		A	C	D							5	ACD termination
30		A	L	T							5	Alternate
31		C	F	A							5	Call forward - all calls
32		C	F	B							5	Call forward - busy
33		C	F	N							5	Call forward - no answer
34		H	U	N	T						5	Hunt group termination
35		C	A	L	L						5	Calling (for called party)
36	T	I	E								3	Trunk name (tie)
37	C	O	T								3	Trunk name (CO)
38	F	X									3	Trunk name (FX)

Table 4-44. Common Service Messages (IND = 1) (Cont'd)

MSGID	MESSAGE										DIGITS	DESCRIPTION
39	W	A	T	S							3	Trunk name (WATS)
40		S	E	C	T						5	Secretary register
41		P	A	G	E						5	Proprietary phone / external page access
42	N	I	G	H	T		C	A	L	L	10	Night call
43	P	A	G	E							4	Proprietary phone / external page answer
44				C	A	M	P		O	N	10	Camp-on register
45		D	A	T	A						5	Data communication
46	*										1	Data number receiving
47		M	-	I	D						5	Modem connection
48				P	R	O	G	R	A	M	10	Proprietary telephone program mode
49				A	T	B		C	H	G	10	Attribute change
50	P	K		U	P						5	Pick-up
51	A	T	T								5	Attendant ringing (calling party)
52	S	E	R		C						5	Serial call
53		C	A	M	P						5	Attendant recall (camp-on)
54		P	A	R	K						5	Attendant recall (park)
55		H	O	L	D						5	Hold (attendant)
56		C	A	M	P						5	Extension camp-on register (attendant)
57	:	A									2	Call status indication (ACD)
58	:	R									2	Call status indication (ringing)
59	:	Rc									2	Call status indication (recall)
60	:	U									2	Call status indication (in use)
61	:	T									2	Call status indication (talk)
62	:	H									2	Call status indication (hold)
63	:	C									2	Call status indication (camp-on)
64				O	G						5	Outgoing data call
65	A	C	D		R	E	C	A	L	L	10	ACD recall
66		C	A	L	L						5	Attendant calling
67	T	R	A	N	S						5	Transfer (attendant)
68	I	S	T								5	Trunk name (ISDN)
69			I	S	T						5	ISDN access
70			A	C	D						5	Attendant recall type indication (ACD)
71		C	N	F	R						5	Att. recall type indication (conference)
72	N	O	A	N	S						5	Att. recall type indication (no answer)
73		P	A	R	K						5	Att. recall type indication (park)
74		C	A	M	P						5	Att. recall type indication (camp-on)



Table 4-44. Common Service Messages (IND = 1) (Cont'd)

MSGID	MESSAGE										DIGITS	DESCRIPTION
75			V	N	I						5	Att. recall type indication (vacant number)
76				P	O	S	I	T	I	O	10	Position busy (see Note)
77	N		B	U	S	Y					10	Position busy (see Note)
78	D	I	D								3	Trunk name (DID)
79		L	O	N	G		H	O	L	D	10	Long hold recall
80		R	I	N	G		P	R	E	F	10	Ringing preference register
81		I	D	L	E		P	R	E	F	10	Idle line preference register
82		C	A	M	P						5	Camp-on register (attendant)
83				P	R	E		S	E	L	10	Pre-selection
84			M	S	G						5	Message waiting (attendant)
85	A	L	E	R	T						5	Extension lock-out
86			C	H	R	G					10	Attendant recall type indication (charge)
87											0	
88	:	G									2	Call status indication (charge)
89			A	T	T		O	V	F	L	10	Attendant overflow
91	V	.	M	S	G						5	VMC register
92		P	L	A	Y						5	VMC playing
93			R	E	C						5	VMC recording
94											0	
95											0	
96											0	
97											0	
98	M	-	A	C	T						5	Modem activate
99			V	-	D						5	Voice / data change
101	A	A	-	T	O						5	Automated attendant time out (recall)
102	A	A	-	V	N						5	Auto. att. (vacant number - recall)
103	A	A	-	B	L						5	Automated attendant (busy recall)
104			V	M	S						5	VMS information sending
105			A	C	D						5	ACD queuing (calling party)
106	V	M	S								9	VMS calling
107											0	
108			P	S	W						5	Password register
109		S	I	G	N						5	ACD sign-on register
110											0	
111												Att. recall type indication (camp-on)

**NOTE:** The Position Busy message uses two MSGIDs, 76 and 77.

Table 4-44. Common Service Messages (IND = 1) (Cont'd)

MSGID	MESSAGE										DIGITS	DESCRIPTION
112			L	D	N						5	Listed directory number termination
113		M	A	I	D						5	Maid room status
114											0	
115											0	
116	F	P	N								3	Trunk name (FIPN)
117											0	
118											0	
119											0	
120											0	
121											0	
122											0	
123											0	
124											0	
125											0	
126											0	
127	D	V	S		N						5	Call diversion (no answer)
128	D	V	S		B						5	Call diversion (busy)
129	D	V	S		D						5	Call diversion (do not disturb)
130		S	E	L	F		R	I	N	G	10	Self extension ringing
131		D	N	I	S						5	DNIS termination
132		W	R	A	P						5	Wrap-up code register
133											0	
134		P	E	R	M	A	N	E	N	T	10	Semi-permanent connection
135											0	
136	C	M	P		R	E	C	A	L	L	10	Camp-on recall
137	=	>									2	Attendant password input (see Note)
138					P	L	E	A	S	E	10	Attendant password input (see Note)
139		D	I	A	L						10	Attendant password input (see Note)
140				S	E	C	U	R	I	T	10	Attendant password input (see Note)
141	Y		C	O	D	E					10	Attendant password input (see Note)
144	S	-	M	N	T						5	Silent monitor
145	S	-	O	V	R						5	Silent monitor break-in
146 - 256												Att. recall type indication (camp-on)

NOTE: The Attendant Password input message uses MSGIDs 137, 138, 139, 140, and 141.

Table 4-45. Front Desk Console (FDC) / Program Menu Messages (IND = 2)

MSGID	MESSAGE														DIGITS	DESCRIPTION		
1	P	L	E	A	S	E	D	I	A	L							20	Program forward register *
2																0		
3																0		
4																0		
5																0		
6																0		
7																0		
8																0		
9																0		
10																0		
11	E	X	I	T												14	Program main menu *	
12	N	E	X	T												14	Program forward / DND register *	
13	R	E	G	I	S	T	E	R								14	Program forward / DND register *	
14	C	A	N	C	E	L										14	Program forward / DND cancel *	
15	F	O	R	W	A	R	D									14	Program main menu (call forward) *	
16	D	N	D													14	Program forward register *	
17	A	L	L	C	A	L	L	S								14	Program forward register *	
18	B	U	S	Y	/	N	O	A	N	S	W	E	R				14	Program forward register *
19	N	O	A	N	S	W	E	R								14	Program forward register *	
20	C	O	N	F	E	R	E	N	C	E						18	Conference	
21	I	N	D	I	V	I	D	U	A	L	X	F	E	R			18	Individual transfer

NOTE: "\*" = Proprietary telephone

Table 4-45. Front Desk Console (FDC) / Program Menu Messages (IND = 2) (Cont'd)

MSGID	MESSAGE																DIGITS	DESCRIPTION
22	S	P	L	I	T												18	Call split
23	C	A	M	P		O	N										18	Camp-on
24	O	V	E	R	R	I	D	E									18	Override
25	T	R	U	N	K		C	A	M	P		O	N				18	Trunk camp-on
26	C	O	N	F	/	R	E	L	E	A	S	E					18	Call back transfer
27	N	O		M	E	S	S	A	G	E							10	Program DID register (no message) *
28	B	U	S	Y													4	Program forward register *
29																	0	
30																	0	
31																	0	
32																	0	
33																	0	
34																	0	
35																	0	
36																	0	
37																	0	
38																	0	
39																	0	
40																	0	
41																	0	
42																	0	

NOTE: "\*" = Proprietary telephone

Table 4-45. Front Desk Console (FDC) / Program Menu Messages (IND = 2) (Cont'd)

MSGID	MESSAGE	DIGITS	DESCRIPTION
43		0	
44		0	
45		0	
46		0	
47		0	
48		0	
49		0	
50		0	
51	R O O M S T T	8	FDC main menu (room status)
52	C H A R G E	8	FDC main menu (call charge)
53	W A K E - U P	8	FDC main menu (wake-up)
54	D N D	8	FDC main menu (do not disturb)
55	M S G W A I T	8	FDC main menu (message waiting)
56	C L E A R	8	R-INF, RM STT, charge, WK-UP, N = DND MSG, WT (clear)
57	M E N U	8	R-INF, RM STT, charge, WK-UP, N = DND MSG, WT (menu)
58	V A C A N T	8	Room status change (vacant)
59	O C C U P I E D	8	Room status change (occupied)
60	N E X T R M	8	Next room
61	C L E A N - U P	8	Room status change (clean-up)
62	W K - U P N A	8	Wake-up no answer

Table 4-45. Front Desk Console (FDC) / Program Menu Messages (IND = 2) (Cont'd)

MSGID	MESSAGE												DIGITS	DESCRIPTION	
	R	E	G	I	S	T	E	R							
63														8	WK-UP, DND, MSG, WT (register)
64	A	D												8	Added call charge
65	C	A	N	C	E	L								8	WK-UP, DND, MSG, WT (cancel)
66	E	X	E	C	U	T	E							8	R-INF, RM STT, charge, WK-UP, DND (execute)
67	P	R	I	N	T		A	L	L					8	Print call charge
68	N	O		C	L	E	A	N						8	Room status change (no clean-up)
69	N	O		M	S	G								8	DND (no message)
70	P	R	I	N	T		G	S	T					8	Call charge (print guest)
71	P	R	I	N	T		M	E	R					8	Call charge (print SMDR)
72	M	E	R		N	O	C	L	R					8	Call charge (SMDR no clear)
73	M	E	R		C	L	R							8	Call charge (SMDR clear)
74	A	C	C	T		R	E	G						8	Call charge
75	R	O	O	M		I	N	F						8	FDC main menu (room information)
76	L	A	N	G	U	A	G	E						8	Room information (multi-language)
77	I	N	T	E	R	N	A	L						14	Program forward register *
78	E	X	T	E	R	N	A	L						14	Program forward register *
79	R	E	S	T	R	I	C	T						8	Room information (COR)
80														0	
81														0	
82														0	
83														0	

NOTE: " \* " = Proprietary telephone

Table 4-45. Front Desk Console (FDC) / Program Menu Messages (IND = 2) (Cont'd)

MSGID	MESSAGE	DIGITS	DESCRIPTION
84		0	
85		0	
86		0	
87		0	
88		0	
89		0	
90		0	
91		0	
92		0	
93		0	
94		0	
95		0	
96		0	
97		0	
98		0	
99		0	
100		0	

Table 4-46. ACD Queue Size Message (IND = 3)

MSGID	MESSAGE								DIGITS	DESCRIPTION
1	I	D	L	E	:				6	ACD queue size indication (idle)
2	B	U	S	Y	:				6	ACD queue size indication (busy)
3	D	N	D		:				6	ACD queue size indication (do not disturb)
4	C	O			:				6	ACD queue size indication (CO)
5	T	I	E		:				6	ACD queue size indication (tie)
6	S	T	A		:				6	ACD queue size indication (station)
7	W	O	R	K	:				6	ACD queue size indication (work)
8									0	
11	A	C	D		G	R	P		8	ACD queue size indication (ACD group)
12									0	
13									0	
14									0	
15									0	
16									0	



Table 4-47. Hotel / Motel Messages (IND = 4)

MSGID	MESSAGE													DIGITS	DESCRIPTION
1														20	FDC room status change
2														20	FDC charge
3														20	FDC charge wake-up
4														20	Time reminder register
5														20	FDC do not disturb
6														20	FDC message waiting
7														20	Controlled restriction register
8														20	FDC main menu
9														13	FDC room status change (vacant)
10														13	FDC room status change (occupied)
11														16	FDC room status change (need clean-up)
12														13	FDC room status change (lock out)
13														20	FDC wake-up
14														13	FDC do not disturb
15														20	FDC charge (print out)
16														20	FDC wake-up
17														20	Time reminder ringing
18														13	Do not disturb on
19														13	Do not disturb off
20														13	Do not disturb register
21														13	Do not disturb cancel

Table 4-47. Hotel / Motel Messages (IND = 4) (Cont'd)

MSGID	MESSAGE																DIGITS	DESCRIPTION							
22								E	R	R	O	R									13	FDC, R-INF, RM STT, charge, WK-UP, DND, MSG WT (error)			
23	C	L	O	C	K		F	A	I	L	U	R	E									20	FDC wake-up (clock failure)		
24						C	L	E	A	N	-	U	P									16	FDC room status change (clean-up)		
25						W	K	-	U	P		N	A									14	FDC room status change (wake-up no answer)		
26						N	D		C	L	N		U	P	V									16	FDC room stat. change (need clean-up vacant)
27						N	D		C	L	N		U	P	O									16	FDC room stat. change (need cln-up occupied)
28															S	M	S	G					20	FDC message waiting	
29															R	-	I	N	F					20	FDC room information
30																	L	G					20	FDC room information	

**SYSTEM CALL FORWARD  
ASSIGNMENT (CMC 319)**

The System Call Forward Assignment (CMC 319) may be used to register or cancel call forwarding assignments to/from a station.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DN	Directory number	1 to 4 digits	None
P2	CFT	Call forwarding type	1 = Call forward - all calls 2 = Call forward - busy / no answer 3 = Call forward - no answer 4 = Call forward - busy	None
P3	FWI	Destination for internal calls (when P2 = 1, 2, 3, or 4) (see Note)	Station directory number (1-4 digits) Attendant access code (1-4 digits) System speed calling access code + number (2-7 digits)	None
P4	FWE	Destination for external calls (when P2 = 1, 2, 3, or 4) (see Note)	Station directory number (1-4 digits) Attendant access code (1-4 digits) System speed calling access code + number (2-7 digits)	None

**NOTE:** Flag number 195 in CMC 102 must also be set to activate this feature.

**Parameter Descriptions****P1 (DN):**

Enter the station directory number which you wish to define (required).

- 1 to 4 digits

**P2 (CFT):**

If necessary, enter the type of call forwarding which you wish to assign to the station.

- 0 = Cancel all assignments
- 1 = Call forward - all calls
- 2 = Call forward - busy / no answer
- 3 = Call forward - no answer
- 4 = Call forward - busy

**P3 (FWI):**

When P2 = 1, 2, 3, or 4, enter one of the following forwarding destination for internal calls.

- Station directory number (1 to 4 digits)
- Attendant access code (1 to 4 digits)

When P2 = 2, 3, or 4, you may enter the following.

- System speed calling access code + number (2 to 7 digits):

**CAUTION:** If the user has the capability to change his or her call forwarding status from the telephone, then the information entered here will be altered.

**Parameter Descriptions  
(Cont'd)**

**P4 (FWE):**

When P2 = 1, 2, 3, or 4, enter one of the following forwarding destination for external calls.

- Station directory number (1 to 4 digits)
- Attendant access code (1 to 4 digits)
- System speed calling access code + number (2 to 7 digits): This may only be entered when P2 = 1

**CAUTION: If the user has the capability to change his or her call forwarding status from the telephone, then the information entered here will be altered.**

**Display**

1. Enter a DN at P1.
2. Press **DSP**. All call forwarding assignments registered to the entered DN will be displayed.

**NOTES:**

1. The lowest assigned DN will be displayed if not specified at P1.
2. Press **DSP** repeatedly to display data in numerical order of DNs.
3. The system releases the CMC table after the last registered DN has been displayed.

**Add**

1. Enter a DN at P1.
2. Enter any necessary changes to the displayed data.
3. Press **ADD / CHG**.

**Remove**

1. Enter a DN at P1.
2. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DISAGREE	The specified DN is not assigned.	Check the DN.
PARA. ERR	The specified parameter is not correct.	Check the parameter(s) and reenter the CMC.
NO PARA	Necessary parameters have not been entered.	Enter all necessary data.
OVERLAP	The specified parameter is already registered.	Check the parameter for accuracy and try again.

**CALL CHARGE TGN  
SCREENING ASSIGNMENT  
(CMC 350)**

Use the Call Charge TGN Screening Assignment (**CMC 350**) table to assign TGNs (Trunk Group Numbers) for the call charge feature. Call charge is an accounting feature that totals the charges for calls originated by guest room stations.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>TGN</b>	Trunk group number	13 to 18 (CO) 19 to 24 (FX) 25 to 30 (WATS) 51 to 56 (SCC)	None
<b>P2</b>	<b>FLG</b>	Flag value	0 = Trunk group not subject to call charge 1 = Trunk group subject to call charge	0

**Parameter Descriptions**

**P1 (TGN):**

Enter the trunk group number that will be assigned the call charge feature (required).

- 13 to 18 (CO)
- 19 to 24 (FX)
- 25 to 30 (WATS)
- 51 to 56 (SCC)

**P2 (FLG):**

Enter the flag value.

- **0 = Trunk group not subject to call charge (default)**
- 1 = Trunk group subject to call charge

**Display**

1. Enter P1.
2. Press **DSP** to display the corresponding FLG.

**NOTE:** To terminate this command, press **DSP** after the FLG corresponding to the last TGN has been displayed.

**Change**

Press **ADD / CHG** to change the corresponding flag after the display, or after entering TGN and FLG.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified TGN is invalid.	Enter a correct TGN.

**CALL CHARGE OFFICE  
CODE ASSIGNMENT (CMC  
351)**

Use the Call Charge Office Code Assignment (**CMC 351**) table to assign each office code that will be assigned to the specified billing rate number.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	BRN	Billing rate number	1 to 6	None
P2	OC	Office code	100 to 999	None

**Parameter Descriptions**

**P1 (BRN):**

Enter the value corresponding to the billing rate number (required). Billing rate numbers are defined in CMC 352.

- 1 to 6

**P2 (OC):**

Enter the office code.

- 100 to 999

**Display**

1. Enter BRN.
2. Press **DSP** to display the corresponding OC.
3. Press **DSP** again to display the next assigned OC.

**NOTE:** After the last OC corresponding to a BRN has been displayed, repeated pressing of **DSP** displays a blank space, followed by the first OC assigned to this BRN.

**Add**

Press **ADD / CHG** to set the OC corresponding to the BRN which follows the display, or to enter a new BRN and OC.

**Remove**

Press **RMV** to remove the OC after the display or after entering BRN and OC.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	The specified OC is out of range.	Enter an OC within the specified range (100 to 999).
OVERLAP	The specified OC has already been specified.	Reenter an OC
NO FOUND	The specified OC has not been registered yet.	Reenter an OC.

**CALL CHARGE BILLING  
RATE ASSIGNMENT (CMC  
352)**

Use the Call Charge Billing Rate Assignment (**CMC 352**) table to assign the following data according to the billing rate number.

- Initial time for the telephone call.
- Initial charge for the telephone call.
- Additional time for the telephone call.
- Additional charge for a telephone call.

Assign specific office codes to be billed the rate(s) specified using CMC 351. This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	BRN	Billing rate number	1 to 6	None
P2	ITIM	Initial time	1 to 400 seconds	1
P3	ICST	Initial charge	0 to 255 cents	0
P4	DTIM	Additional time	1 to 400 seconds	1
P5	DCST	Additional charge	0 to 255 cents	0

**Parameter Descriptions**

**P1 (BRN):**

Enter the billing rate number (required).

- 1 to 6

**P2 (ITIM):**

Enter the initial time for the telephone call. This is the length of time that the call must last (in seconds) before call charges begin accruing.

- 1 to 400 seconds (**default = 1**)

**P3 (ICST):**

Enter the initial charge (in cents) for the telephone call. This is the amount that is registered the moment the call begins.

- 0 to 255 cents (**default = 0**)

**P4 (DTIM):**

Enter the additional time (in seconds). Each unit of this time will be charged the amount entered in P5 below.

- 1 to 400 seconds (**default = 1**)

**P5 (DCST):**

Enter the additional charge. This is the amount that will be charged for each additional time unit (entered in P4).

- 0 to 255 cents (**default = 0**)

**Display**

1. Enter BRN.
2. Press **DSP** to display the corresponding data.
3. Press **DSP** again to display parameters related to the next BRN.
4. To terminate this command, press **DSP** after data corresponding to the last BRN is displayed.

**Change** Press **ADD / CHG** to change data corresponding to BRN after the display or entering BRN to DCST.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	The entered parameter value is out of range.	Enter a parameter value within the specified range.



**SPECIAL SERVICE CODE /  
SERVICE CALL ROUTING  
ASSIGNMENT (CMC 353)**

Use the Special Service Code / Service Call Routing Assignment (CMC 353) table to register special service codes and service call routing for hotel / motel use. A special service code permits the user to call hotel services such as room service or housekeeping. These services are accessed by dialing access codes assigned at CMC 100. Service call routing permits the system to route these service calls for efficiency. For example, dialing the code for maid service causes the call to be routed to the maid-in-charge of the floor of the calling room.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	FAC	Feature access code	1 to 4 digits	None
P2	CTL	Feature selection control value	1 = Special service code 2 = Service call routing	None
P3	DN	Destination directory number	1 to 4 digits	None
P4	FLR	Guest room floor number	1 to 99 (when P2 = 2) Blank (when P2 = 1)	None

**Parameter Descriptions**
**P1 (FAC):**

Enter the feature access code (assigned at CMC 100).

- 1 to 4 digits

**P2 (CTL):**

Enter the feature selection control value.

- 1 = Special service code
- 2 = Service call routing

**P3 (DN):**

Enter the destination directory number where the call will be routed, such as room service, etc. This must be an internal station.

- 1 to 4 digits

**P4 (FLR):**

Enter the guest room floor number (refer to CMC 358, flag 15). This enables separate service call routing codes to be assigned based on floor number.

- 1 to 99 (when P2 = 2)
- Blank (when P2 = 1)

**NOTE:** P4 must correspond to the first digit of the room directory number for a 3-digit number plan or to the first two digits of the room directory number for a 4-digit number plan.

**Display** Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of FACs.
2. Up to 20 floors can be assigned (P4). The base floor number is determined in CMC 358 (flag 15). Floor numbers must be assigned consecutively. For example, if CMC 358, flag 15 = 10, then the assignable floor numbers are 10 through 30.
3. The system releases this CMC after the last registered FAC is displayed.

- Add**
1. Enter the required information to be added (P1).
  2. Press **ADD / CHG**.

- Remove**
1. Enter the information to be removed (P1).
  2. Press **DSP**.
  3. Press **RMV**.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	<p>An attempt was made to register floor routing when no base floor has been registered.</p> <p>An attempt was made to enter a DN which is not registered.</p>	<p>Register flag number 15 at CMC 358.</p> <p>Check the data entry and try again.</p>
PARA. ERR	<p>An attempt was made to register more than 20 floors.</p> <p>An attempt was made to enter an FLR when the CTL = 1.</p> <p>An attempt was made to enter an FAC which is not registered.</p>	<p>Check the data entry and try again.</p> <p>Remove the FLR entry, set CTL to 2, and try again.</p> <p>Return to CMC 100 and register the FAC, or use a registered FAC.</p>
NO FOUND	<p>An attempt was made to enter an unregistered DN.</p> <p>An attempt was made to enter a DN which is not registered on the indicated FLR.</p> <p>An attempt was made to enter an FAC which is not registered.</p>	<p>Check the data and try again.</p> <p>Check the data and try again.</p> <p>Return to CMC 100 and register the FAC, or use a registered FAC.</p>
OVERLAP	<p>An attempt was made to enter an FAC which has already been used.</p> <p>An attempt was made to enter an FLR which has already been used.</p>	<p>Remove the service previously assigned to the FAC, or try a different FAC.</p> <p>Remove the service previously assigned to the FAC, or try a different FAC.</p>

**ROOM STATUS INDICATOR ASSIGNMENT (CMC 354)**

Use the Room Status Indicator (RSI) Assignment (CMC 354) table to register up to eighteen DSS / BLF consoles as Room Status Indicators (6 RSIs x 3 RSI groups). This means six RSIs with different room numbers may be duplicated and put into as many as three groups. The Room Status Indicator uses a series of light patterns to show room vacant, room occupied, etc.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	RSIN	Room status pattern number	1 to 6	None
P2	TYP	Room status indicator type	1 = 40 button 2 = 80 button 3 = 100 button 4 = 30 button	None
P3	EN	Equipment number	See description below	None
P4	SNO	Screen number	1 to 10 (when TYP = 3)	None

**Parameter Descriptions**

**P1 (RSIN):**

Enter the room status pattern number (required).

- 1 to 6

**P2 (TYP):**

Enter the room status indicator type.

- 1 = 40 button
- 2 = 80 button
- 3 = 100 button
- 4 = 30 button

**P3 (EN):**

Enter the equipment number of the RSI. Equipment numbers are entered in the following format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: (0 to 7)

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

**P4 (SNO):**

Enter the screen number. When using a DSS 100, one screen is regarded as one RSI.

- 1 to 10 (only when P2 = 3)

**Parameter Descriptions  
(Cont'd)**

**NOTES:**

1. A maximum of three Room Status Indicators can be assigned to each RSIN. A total of eighteen Room Status Indicators can be assigned. The RSIs assigned to the same RSIN have the same button assignment.
2. A 30 / 40 / 80 DSS / BLF assigned at CMC 210 or a DSS 100 assigned at CMC 212 must be removed before being assigned at CMC 354.

**Display**

1. Enter RSIN.
2. Press **DSP** to display the corresponding EN.
3. Press **DSP** repeatedly to display the parameters corresponding to the next RSIN.
4. To terminate this command, press **DSP** after displaying the EN corresponding to the last RSIN.

**Add**

Press **ADD / CHG** to assign the RSI equipment after the display, or after entering RSIN, TYP and EN, and SNO (DSS 100).

**Remove**

Press **RMV** to remove the RSI equipment after the display or entering P1.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NO FOUND	The specified RSIN's EN is not installed.	Ensure that the EN has been installed and try again.
OVERLAP	The specified EN is already registered as an RSIN	Remove the current service registered to the EN and try again.
CHK PKG	The Room Status Indicator is not installed on the specified EN.	Check the physical installation and try again.
DISAGREE	The specified EN has been registered as a 30 / 40 / 80 DSS / BLF at CMC 210 or DSS 100 at CMC 212.	Go to CMC 210 or CMC 212 and remove the DSS / BLF before registering the Room Status Indicator.
NO AREA	Three RSIs have already been assigned.  Two DSS 100s have already been assigned.	Remove the RSI and try again.
PARA. ERR	Entered RSIN not correct.	Enter a correct RSIN.
NO PARA	SNO is not entered when TYP = 3 (DSS 100).	Enter an SNO value when specifying a DSS 100.

**ROOM STATUS INDICATOR  
BUTTON ASSIGNMENT (CMC  
355)**

Use the Room Status Indicator Button Assignment (CMC 355) table to assign directory numbers (as guest rooms) to the Room Status Indicator(s).

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	RSIN	Room status indicator number	1 to 6	None
P2	BTN	Button number	1 to 100	None
P3	DN	Directory number	1 to 4 digits	None

**Parameter Descriptions**

**P1 (RSIN):**

Enter the room status indicator number (required).

- 1 to 6

**P2 (BTN):**

Enter the button number to which you wish to assign a directory number. Default button diagrams are shown in CMCs 211 and 213.

- 1 to 100, depending on the type of RSI entered in P1

**P3 (DN):**

Enter the directory number to be assigned to the specified button.

- 1 to 4 digits

**NOTE:** Buttons 41 (or 31) through 80 may be assigned even if the Room Status Indicator is the 40 (or 30) button type.

**Display**

1. Enter an RSIN at P1 and a BTN at P2.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of BTNs.
2. The system releases this CMC when the BTN value exceeds 80.
3. Each RSIN must be displayed separately.

**Add**

1. Enter an RSIN at P1.
2. Enter a BTN at P2.
3. Enter the new DN value at P3.
4. Press **ADD / CHG**.

**Remove**

1. Enter an RSIN at P1 and a BTN at P2.
2. Press **DSP**.
3. Press **RMV**.

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
NOT RGTR	An attempt was made to enter a DN which is not installed.	Enter an installed DN and try again.
OVERLAP	The specified BTN is already registered.  The specified DN is already registered.	Remove the previously registered data or try a different BTN.  Remove the previously registered data or try a different DN.
NO FOUND	An attempt was made to display a BTN which is not registered.	Check the data and try again.

**HOTEL / MOTEL PRINTER  
ASSIGNMENT (CMC 356)**

Use the Hotel / Motel Printer Assignment (CMC 356) table to register up to two hotel / motel printers.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	PRN	Printer number	1 or 2	None
P2	CEN	Character trunk equipment number	See description below	None
P3	DEN	DIU directory number	1 to 4 digits	None

**Parameter Descriptions**

**P1 (PRN):**

Enter the printer number (required).

- 1 or 2

**P2 (CEN):**

If necessary, enter the character trunk equipment number.

Equipment numbers are entered in the following format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7

**NOTES:**

1. Only even-numbered circuits (0, 2, 4, 6) can be used to install a hotel / motel printer.
2. Information on entering equipment numbers can be found in Appendix C.

**P3 (DEN):**

If necessary, enter the DIU directory number.

- 1 to 4 digits

**NOTE:** Data line attributes must be assigned prior to assigning the printer (see CMCs 220 through 224).

**Display**

1. Enter 1 at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** again displays the other printer if it is installed.
2. The system releases this CMC when the PRN value exceeds 2.



- Add**
1. Enter a PRN at P1.
  2. Enter a CEN value at P2.
  3. Enter a DEN value at P3.
  4. Press **ADD / CHG**.

- Remove**
1. Enter the PRN of the printer to be removed at P1.
  2. Press **DSP**.
  3. Press **RMV**.

#### ERROR CODES

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified CEN or DEN has not been installed yet.	Check that the CEN and DEN have been installed and try again.
DISAGREE	Terminal types disagree.  The DIU attributes are set to synchronous mode and half duplex mode and forced RTS signal on option is set.	Check the data and try again.  Adjust P3 at CMC 222 and P3 at CMC 223.
DENIED 1	An attempt was made to assign the printer to an instrument having MCT registration.	Cancel the MCT registration at CMC 702.
OVERLAP	An attempt was made to register a PRN which is already installed.	Try another PRN or abandon the attempt.

**HOTEL / MOTEL PRINT OUT  
MESSAGE ALLOCATION  
(CMC 357)**

Use the Hotel / Motel Print Out Message Allocation (CMC 357) table to mark messages for print out on specific printers.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	PRTN	Printer number	1 or 2	None
P2	MID	Message type ID code	1 = Independent 2 = Common	None
P3	FDC	Front desk console directory number	1 to 4 digits Attendant access code + attendant number	None

**Parameter Descriptions**

**P1 (PRTN):**

Enter the printer number (required).

- 1 or 2

**P2 (MID):**

Enter the message type identification code. Refer to Table 4-48 for more information.

- 1 = Independent
- 2 = Common

**P3 (FDC):**

Enter the front desk console directory number (only required when P2 = 1).

- 1 to 4 digits
- Attendant access code + attendant number

**Display**

1. Enter 1 at P1.
2. Press **RMV**.

**NOTES:**

1. Pressing **DSP** again displays the other printer if it is installed.
2. The system releases this CMC when the PRTN value exceeds 2.
3. Up to eight FDCs can be assigned to printer 1 or 2.

**Add**

1. Enter a PRTN at P1.
2. Enter the new MID value at P2.
3. If P2 = 1, then enter the new FDC value at P3. If P2 = 2, leave P3 blank.
4. Press **ADD / CHG**.

**Remove**

1. Enter the necessary parameters or Display the data to be removed.
2. Press **RMV**.

Table 4-48. Independent and Common Messages

INDEPENDENT MESSAGES
Automatic wake-up status (for all guest rooms with wake-up activated)
Automatic wake-up activation / cancellation by front desk console (can be omitted at CMC 358)
Call charge status (for all guest room stations with charges)
Call charge added / initialized / verified (can be omitted at CMC 358)
COMMON MESSAGES
Automatic wake-up activation / cancellation by guest room (can be omitted at CMC 358)
Automatic wake-up attempt successful (can be omitted at CMC 358)
Real time source failure (system clock)
Wake-up no answer (can be omitted at CMC 358)

**NOTE:** Independent messages belonging to one FDC cannot be printed out to two hotel / motel printers.

#### ERROR CODES

ERROR CODE	CAUSE	CORRECTION
OVERLAP	The PRTN which was entered has already been registered to the specified FDC.	Try another PRTN or FDC, or abandon the attempt.
PARA. ERR	An attempt was made to enter an FDC when MID = 2.	Cancel the FDC entry and try again, or make the MID = 1.
NOT RGTR	The specified FDC has not been installed.	Check that the FDC has been installed and try again.
NO FOUND	An attempt was made to display a printer which is not installed.	Check the data at CMC 356 and try again.
NO AREA	An attempt was made which exceeds the system maximum of eight FDCs associated with the hotel / motel printer.	Remove one or more of the registered FDCs, or abandon the attempt.
NO PARA	An FDC was not entered and MID = 1.	Enter an FDC and try again, or make the MID = 2.

**HOTEL / MOTEL  
PARAMETER ASSIGNMENT  
(CMC 358)**

Use the Hotel / Motel Parameter Description (CMC 358) table to revise or confirm the system defaults for the hotel / motel parameters.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	FLGN	Flag number	1 to 32	None
P2	STV	Status value	0 to 99	Table 4-49

**Parameter Descriptions**

**P1 (FLGN):**

Enter the flag number which you wish to define (required). Flag numbers and their available values are listed in Table 4-49.

- 1 to 32

**P2 (STV):**

Enter the status value for each flag number. Available values are listed in Table 4-49.

- 0 to 99

**Display**

1. Enter a FLGN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of FLGNs.
2. The system releases this CMC when the FLGN value exceeds 32.

**Change**

1. Enter an FLGN at P1.
2. Enter the new STV value at P2.
3. Press **ADD / CHG**.

Table 4-49. Hotel / Motel Parameter Default Values

Flag (P1)	Identification	Available Values
1	Print out wake-up registration on printer	0 = Do not print out <b>1 = Print out</b>
2	Print out wake-up cancellations on printer	0 = Do not print out <b>1 = Print out</b>
3	Print out wake-up answered	0 = Do not print out <b>1 = Print out</b>
4	Print out wake-up no answer	0 = Do not print out <b>1 = Print out</b>
5	Print out when call charge is added to guest room	0 = Do not print out <b>1 = Print out</b>
6	Print out when call charge is initialized for guest room	0 = Do not print out <b>1 = Print out</b>
7	Print out when call charge is verified for a vacant room	0 = Do not print out <b>1 = Print out</b>
8	When room status is changed from occupied to vacant, automatically apply "need clean-up" state	0 = Do not apply clean up <b>1 = Apply clean up</b>
9	Display guest room "line lockout" on the room status indicator	0 = Do not display <b>1 = Display</b>
10	Display a wake-up no answer condition on the room status indicator	0 = Do not display <b>1 = Display</b>

NOTE: Default values are shown in **bold** type.

Table 4-49. Hotel / Motel Parameter Default Values (Cont'd)

Flag (P1)	Identification	Available Values
11	Display do not disturb condition on the room status indicator	0 = Do not display <b>1 = Display</b>
12	Should room to room calling be allowed or denied	<b>0 = Allowed</b> 1 = Denied
13	When room status is changed to vacant, should incoming calls be allowed	0 = Allowed <b>1 = Denied</b>
14	When room status is changed to vacant, should outgoing trunk calls be allowed	0 = Allowed <b>1 = Denied</b>
15	If service call routing is activated in the system, establish the base floor number	1 to 99 <b>Default = 1</b>
16	Will wake-up be a continuous success tone or a music source	<b>0 = Success tone</b> 1 = Music source
17	Indicate needs clean up for occupied room on room status indicator	0 = Do not apply <b>1 = Apply</b>
18	FDC menu display (room information for multi-language wake-up and room restriction)	0 = Do not display <b>1 = Display</b>
19-99	<b>RESERVED</b>	<b>NONE</b>

**NOTE:** Default values are shown in **bold** type.

**PAIRED STATION / ATTENDANT FOR HOTEL / MOTEL SYSTEM ASSIGNMENT USING PMS (CMC 359)**

Use the Paired Station / Attendant for Hotel System Assignment (CMC 359) to assign a guest phone message waiting target station. Message waiting cancellation cannot be activated by the Property Management System (PMS) without this command.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DN / ATTN	Directory number or attendant number	Station destination (1 to 4 digits) Attendant destination (attendant access code + attendant number)	None

**Parameter Descriptions**

**P1 (DN / ATTN):**

Enter the station directory number or attendant number which you wish to assign as the guest phone message waiting destination.

Only one such station may be specified.

- Station destination (1 to 4 digits)
- Attendant destination (attendant access code + attendant number)

**Display**

1. Press **DSP** without a P1 value to display entered DN / ATTNs.
2. Press **DSP** again to terminate the command.

**Add**

1. Enter P1 value.
2. Press **ADD / CHG** to assign DN / ATTN.

**Remove**

1. Enter P1 value.
2. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified DN / ATTN is not installed.  No DN / ATTN is assigned.	Check the DN / ATTN.
OVERLAP	The DN / ATTN has already been assigned.	Enter an unassigned DN / ATTN.

**ACD ROUTE TABLE ASSIGNMENT (CMC 370)**

Use **CMC 370** to assign the ACD Route Tables without the ACD Report Manager Application Processor. ACD route tables provide the user with the ability to determine the action of incoming ACD pilot or attendant-transferred calls to busy agents, until an agent in the group is able to answer the call.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>AGN</b>	ACD group number	1 to 20	None
<b>P2</b>	<b>RSTN</b>	Route table block number and route step	First digit: 1 = Day mode route table 2 = Night mode route table Second and third digits: 01 to 10 (step number)	None
<b>P3</b>	<b>PRID</b>	Processing identification number	1 to 10 (see Table 4-50)	None
<b>P4</b>	<b>ADD1</b>	Supplemental data	See Table 4-50	None
<b>P5</b>	<b>ADD2</b>	Supplemental data	0 to 255 (see Table 4-50)	None
<b>P6</b>	<b>ADD3</b>	Supplemental data	1 to 7 digits (see Table 4-50)	None

**Parameter Descriptions**

**P1 (AGN):**

Enter the ACD group number (required).

- 1 to 20

**P2 (RSTN):**

Enter the route table block number and route step (required). This information is entered in a three digit format:

- First digit:
  - 1 = Day mode route table
  - 2 = Night mode route table
- Second and third digits:
  - 01 to 10 (step number)

**NOTE:** A maximum of ten steps can be assigned per route table.

**P3 (PRID):**

Enter the processing identification number.

- 1 to 10

**P4 (ADD1):**

Enter any necessary supplemental data; e.g., the RVAC message number, tone ID, loop start step number, and/or jump step number.

**P5 (ADD2):**

Enter any necessary supplemental data; e.g., the skip flag, timing, loop count, and/or waiting count.

- 0 to 255



**Parameter Descriptions  
(Cont'd)****P6 (ADD3):**

Enter any necessary supplemental data; e.g., the transferred-to party number.

- 1 to 7 digits

**NOTE:** Refer to Table 4-50 when assigning values to P3 through P6.

**Display**

1. Enter the AGN / RSTN.
2. Press **DSP** to display the ACD route table step.

**NOTE:** After displaying the parameters, pressing **DSP** again displays the next data. After the last data has been displayed, pressing **DSP** terminates this command.

**Add**

1. Enter all the necessary parameters.
2. Press **ADD / CHG** to assign the step corresponding to the route table.

**Remove**

1. Enter the AGN / RSTN.
2. Press **RMV** to remove the step corresponding to the route table.

**NOTES:**

1. The loop step function can be performed only once per route table.
2. Incoming calls may be transferred out of route tables up to two times only.

Table 4-50. ACD Route Table Assignment Parameter Information

IF P3 =	THEN P4 =	AND P5 =	AND P6 =
1 (Announce RVAC ACD message)	RVAC message number (11 to 50)	Skip flag 0 = Do not skip 1 = Skip	<b>Leave blank</b>
2 (Transfer call after announcing RVAC ACD message)	RVAC message number (11 to 50)	Skip flag 0 = Do not skip 1 = Skip	Directory number Attendant access code System speed calling access code + number
3 (Announce RVAC ACD music; message ID = 57)	Tone ID sent out instead of RVAC ACD music while it is failed (0 to 32)	Timing 1 to 255 (sec) 0 = Endless	<b>Leave blank</b>
4 (Transfer call after announcing RVAC ACD music)	Tone ID sent out instead of RVAC ACD music while it is failed (0 to 32)	Timing 1 to 255 (sec) 0 = Endless	Directory number Attendant access code System speed calling access code + number
5 (Announce tone)	Tone ID (0 to 32)	Timing 1 to 255 (sec) 0 = Endless	<b>Leave blank</b>
6 (Transfer call after announcing tone)	Tone ID (0 to 32)	Timing 1 to 255 (sec) 0 = Endless	Directory number Attendant access code System speed calling access code + number
7 (Forced disconnection)	<b>Leave blank</b>	<b>Leave blank</b>	<b>Leave blank</b>
8 (Make step loop)	Start loop step (1 to 9)	Loop count (1 to 255)	<b>Leave blank</b>
9 (Jump step according to the number of calls in ACD queue)	Jump step (1 to 10)	The number of calls in ACD queue (1 to 255)	<b>Leave blank</b>
10 (Queue active)	<b>Leave blank</b>	<b>Leave blank</b>	<b>Leave blank</b>

**NOTES:**

1. The skip flag is used to skip the specified step if ACD overflow occurs between different ACD groups.
2. Tone IDs are defined in Table 4-51.
3. For the Transfer step (P3 = 2, 4, or 6), the directory number entered in P6 can be an ACD pilot number, so as to perform ACD overflow into different ACD groups.
4. Route tables are activated at CMC 102, Flag 175.

Table 4-51. Tone Types and Tone IDs

TONE PATTERN	TYPE OF TONE
0	Silent Tone (ST)
1	Dial Tone (DT)
2	Not Used
3	Busy Tone (BT)
4	Reorder Tone (ROT)
5	Confirmation Tone (CFT)
6	Intrusion Tone (INR)
7	Trunk Busy Tone (TBT) Congestion Tone (CGT)
8	Distinctive Busy Tone (DBT) Override Warning Tone (OWT)
9	Call Waiting Tone (CWT)
10 - 30	Not Used
31	Ring Back Tone (RBT)
32	Hold Tone (Music on Hold) (HT)

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
DENIED	The 2APIA (ACD interface) card is installed.	Assign the route table after turning off FLGN = 175 in CMC 102, and/or removing the 2APIA in CMC 281.
PARA. ERR	<p>The entered parameters are not correct.</p> <p>The specified loop start step is a forward number in the route table.</p> <p>The specified jump step is the controlled step.</p> <p>There are no executable steps (P3 = 1 to 7) before the loop step.</p> <p>The specified transferred-to party number is wrong.</p> <p>The number of digits of the system speed calling number is wrong.</p>	<p>Check the parameter values.</p> <p>Assign the loop start step a route table number that has a backward reference.</p> <p>Assign a correct jump step.</p> <p>Assign executable steps before the loop step.</p> <p>Assign a correct transferred-to party number.</p> <p>Check the number of digits of system speed calling number in FLGN = 162, CMC 102.</p>
OVERLAP	Another loop step exists in one route table.	Remove the other loop step from the table.
NO PARA	Necessary parameters have not been entered yet.	Enter all necessary parameters.
ADD DISAGREE	The specified table is in use.	Assign / change the route table after turning off FLGN = 175 in CMC 102, and then turn on the flag.

**AP MODE ACD ROUTE  
TABLE DISPLAY (CMC 371)**

Use **CMC 371** to display the ACD route table data assigned by the ACD Report Manager Application Processor.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	AGN	ACD group number	1 to 20	None
P2	RSTN	Route table block number and route step	First digit: 1 = Day mode route table 2 = Night mode route table Second and third digits: 01 to 10 (step number)	None
P3	PRID	Processing identification number	1 to 10 (refer back to Table 4-50, if necessary)	None
P4	ADD1	Supplemental data	See Table 4-50	None
P5	ADD2	Supplemental data	0 to 255 (see Table 4-50)	None
P6	ADD3	Supplemental data	1 to 7 digits (see Table 4-50)	None

**Parameter Descriptions****P1 (AGN):**

Enter the ACD group number (required).

- 1 to 20

**P2 (RSTN):**

The route table block number and route step are displayed. This information is shown in a three digit format:

- First digit:
  - 1 = AP mode route table A
  - 2 = AP mode route table B
- Second and third digits:
  - 01 to 10 (step number)

**P3 (PRID):**

The processing identification number is displayed.

- 1 to 10

**P4 (ADD1):**

Supplemental data is displayed; e.g., the RVAC message number, tone ID, loop start step number, and/or jump step number.

**P5 (ADD2):**

Supplemental data is displayed; e.g., the skip flag, timing, loop count, and/or waiting count.

- 0 to 255

**P6 (ADD3):**

Supplemental data is displayed; e.g., the transferred-to party number.

- 1 to 7 digits

**Parameter Descriptions  
(Cont'd)**

**NOTE:** Refer back to Table 4-50 and Table 4-51 when values P3 through P6 are displayed.

**Display**

1. Enter the AGN / RSTN.
2. Press **DSP** to display the ACD route table step and any additional information.

**NOTE:** After displaying the parameters, pressing **DSP** again displays the next data. After the last data has been displayed, press **DSP** to terminate this command.

**ACD ROUTE TABLE STATUS  
DISPLAY (CMC 372)**

Use **CMC 372** to display the ACD Route Table block that is currently working.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	ACDN	ACD group number	1 to 20	None
P2	RSTN	ACD route table	0 = No ACD table currently active 2 = Day mode route table currently active 3 = Night mode route table currently active 4 = AP route table A currently active 5 = AP route table B currently active	None

**Parameter Descriptions****P1 (ACDN):**

Enter the ACD group number for which you wish to display information (required).

- 1 to 20

**P2 (RSTN):**

This parameter will display a code defining which ACD route table is currently working.

- 0 = No ACD table currently active
- 1 = Day mode route table currently active
- 2 = Night mode route table currently active
- 3 = AP route table A currently active
- 4 = AP route table B currently active

**Display**

1. Enter the ACDN.
2. Press **DSP** to display what route table is currently in use in the system corresponding to the ACDN.

**NOTE:** After this display, pressing **DSP** again updates the ACDN and displays the corresponding parameter. After the last ACDN has been displayed, press **DSP** to terminate this command.

**TRUNK DIALING GROUP /  
RESTRICTION GROUP  
ASSIGNMENT (CMC 400)**

Use the Trunk Dialing Group / Restriction Group (DGN / RGN) Assignment (CMC 400) table to assign trunk groups to a dialing group and a restriction group. Each trunk group can be assigned to only one dialing group and only one restriction group.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TGN	Trunk group number	13 to 56	None
P2	DGN	Dialing group number	1 to 3	Table 4-52
P3	RGN	Restriction group number	1 to 3	Table 4-52

**Parameter Descriptions**

**P1 (TGN):**

Enter the trunk group number which you wish to assign to a dialing group and/or a restriction group (required).

- 13 to 56

**NOTE:** If the system is operating behind a PBX or Centrex, leave P2 and P3 blank (the PBX will handle all restrictions)

**P2 (DGN):**

If necessary, enter the dialing group number to which you wish to assign this trunk group. Default values for certain system trunk groups are shown in Table 4-52.

- 1 to 3

**P3 (RGN):**

If necessary, enter the restriction group number to which you wish to assign this trunk group. Default values for certain system trunk groups are shown in Table 4-52.

- 1 to 3

**Display**

1. Enter a TGN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of TGNs.
2. The system releases this CMC when the TGN value exceeds 63.



Table 4-52. Trunk Group / Dialing Group Default Values

TRUNK GROUP	DIALING GROUP	RESTRICTION GROUP
13 - 18	1	1
19 - 24	1	1
25 - 30	1	Blank
31 - 50	Blank	Blank
51 - 56	1	1

**NOTE:** When DGN is not assigned, or TGN = 13, LCR is not available.

- Change**
1. Enter a TGN at P1.
  2. Press **DSP**.
  3. Use the cursor control keys or **Return** to move the cursor to the parameter to be changed.
  4. Enter the new parameter over any old data which may have been displayed.
  5. Press **ADD / CHG**.
- Cancel**
1. Enter a TGN at P1.
  2. Press **DSP**.
  3. Use the cursor control keys or **Return** to move the cursor to the parameter to be changed.
  4. Press **CAN**.
  5. Press **ADD / CHG**.

**CUSTOMER AND OPERATOR  
TOLL PREFIX CODES  
ASSIGNMENT (CMC 401)**

Use this command to assign the customer and operator toll prefix codes for each dialing group.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DGN	Dialing group number	1 to 3	None
P2	CTP	Customer toll prefix code	1 to 3 digits (or blank)	1
P3	OTP1	First operator toll prefix	1 to 3 digits (or blank)	0
P4	OTP2	Second operator toll prefix	1 to 3 digits (or blank)	00

**Parameter Descriptions**

**P1 (DGN):**

Enter the dialing group number to which you wish to assign customer and operator toll prefix codes (required).

- 1 to 3

**P2 (CTP):**

Enter the customer toll prefix code to be assigned to this dialing group.

- 1 to 3 digits (or blank)
- **1 (default)**

**P3 (OTP1):**

Enter the first operator toll prefix to be assigned to this dialing group.

- 1 to 3 digits (or blank)
- **0 (default)**

**P4 (OTP2):**

Enter the second operator toll prefix to be assigned to this dialing group.

- 1 to 3 digits (or blank)
- **00 (default)**

**NOTE:** If P3 or P4 = 100, then P2 should not be 1.

**Display**

1. Enter a DGN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of DGNs.
2. The system releases this CMC when the DGN value exceeds 3.

- Add**
1. Enter a DGN at P1.
  2. Enter a CTP at P2.
  3. Enter an OTP1 at P3.
  4. Enter an OTP2 at P4.
  5. Press **ADD / CHG**.

- Cancel**
1. Enter a DGN at P1.
  2. Press **DSP**.
  3. Use the cursor control keys or **Return** to move the cursor to the toll prefix code to be canceled.
  4. Press **CAN**.
  5. Press **ADD / CHG**.

**NOTE:** In CMC 100, assign a trunk access code for the selected TGN.

**N0 / 1X CONFLICTING AREA / OFFICE CODE ASSIGNMENT (CMC 402)**

Use the Conflicting Area / Office Code Assignment (**CMC 402**) table to register conflicting area and office codes. This list is limited to 30 conflicting codes in each dialing group. (Refer to Note 4 of the Display section on the following page.)

When the NXX area code is applied by using a system flag (CMC 102, FLGN = 223), the registered code assigned at this CMC is not valid.

**NOTE:** For information on assigning North American Dialing Plan, refer to the System Description / Features Manual (Section 123-001-002)

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>TPC</u>	Toll prefix code	0 = Provided 1 = Not provided	None
<u>P2</u>	<u>DGN</u>	Dialing group number	1 to 3	None
<u>P3</u>	<u>FLG</u>	Restriction digit flag	0 = Office code 1 = Area code	None
<u>P4</u>	<u>DG</u>	Restriction digit(s)	3 digits	None

**Parameter Descriptions**

**P1 (TPC):**

Enter a value to determine whether or not the toll prefix code will be provided (required).

- 0 = Provided
- 1 = Not provided

**P2 (DGN):**

Enter the dialing group number which you wish to define (required).

- 1 to 3

**P3 (FLG):**

Enter the restriction digit flag, used to define whether the digits entered in P4 are an office code or an area code.

- 0 = Office code
- 1 = Area code

**P4 (DG):**

Enter the office code or area code (depending on the value entered in P3) which is to be restricted.

- 3 digits

- Display**
1. Enter a TPC at P1 and a DGN at P2.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays subsequent DGs in numerical order.
2. A blank is displayed after the last registered DG is displayed. Pressing **DSP** again will recycle the list.
3. Each TPC / DGN combination must be displayed separately.
4. In order to allow area codes to be used as office codes beyond the system capacity (30), make the following entries (always enter the toll prefix code for long distance calls):

P1: 0	P1: 1
P2: 1	P2: 1
P3: 0	P3: 1
P4: Blank	P4: Blank

- Add**
1. Enter the required parameters.
  2. Press **DSP**.
  3. Use the cursor controls or **Return** to move the cursor to the parameter to be added.
  4. Enter the new value over any previously entered value which may be displayed.
  5. Press **ADD / CHG**.

- Remove**
1. Enter the appropriate TPC and DGN values.
  2. Press **DSP**.
  3. Press **RMV**.

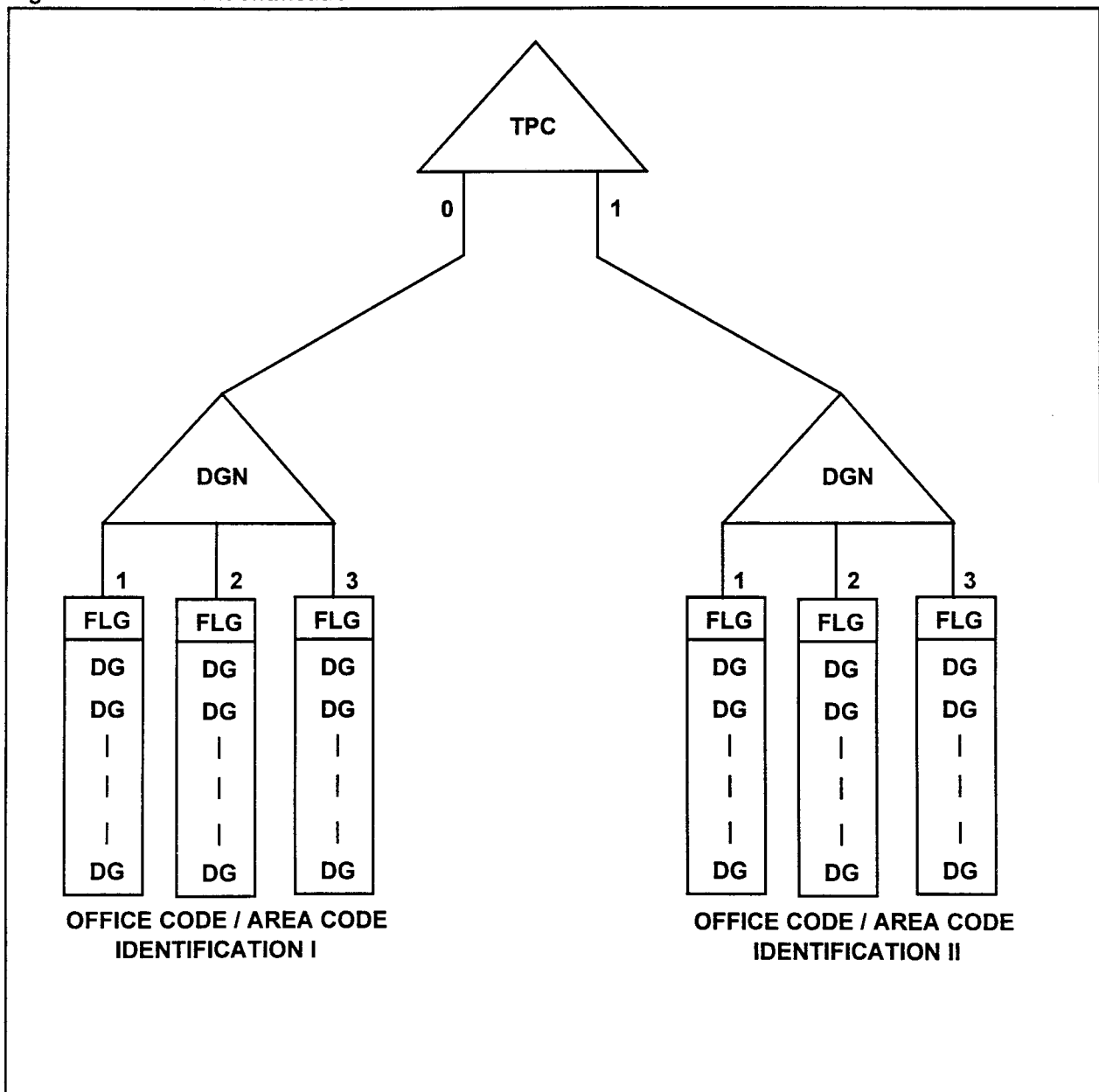
**NOTES:**

1. The value of TPC determines the office code / area code identification table. The value of DGN determines the registration digit setting area.
2. Use the registration digit flag (FLG) to set the identification of the office code or area code. The FLG does not correspond to the DG on a one-to-one basis, but since it corresponds to the DGN, all DGs of the DGN are covered, as shown in Figure 4-17.
3. A maximum of 30 DGs can be registered under one DGN.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NO AREA	An attempt was made to make an entry when no more system memory was available.	Remove one or more entries on this table.
OVERLAP	An attempt was made to add a DG which is already registered.	Check the data and try again, or abandon the attempt.
NO FOUND	An attempt was made to remove a DG which is not currently registered.	Check the data and try again, or abandon the attempt.

**Figure 4-17. Code Identification Table**



**ROUTING DIGIT  
ASSIGNMENT (CMC 403)**

Use the Routing Digit Assignment (CMC 403) table to set the routing digit prefix needed for some of the dialing patterns which may be selected in CMC 420, P4 and CMC 421, P4.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DGN	Dialing group number	1 to 3	None
P2	RD1	First set of routing digits	1 or 2 digits Blank = No routing digits assigned	None
P3	RD2	Second set of routing digits	1 or 2 digits Blank = No routing digits assigned	None
P4	RD3	Third set of routing digits	1 or 2 digits Blank = No routing digits assigned	None
P5	RD4	Fourth set of routing digits	1 or 2 digits Blank = No routing digits assigned	None
P6	RD5	Fifth set of routing digits	1 or 2 digits Blank = No routing digits assigned	None

**Parameter Descriptions****P1 (DGN):**

Enter the dialing group number which you wish to define (required).

- 1 to 3

**P2 (RD1):**

Enter the first set of routing digits.

- 1 or 2 digits
- Blank = No routing digits assigned

**P3 (RD2):**

Enter the second set of routing digits.

- 1 or 2 digits
- Blank = No routing digits assigned

**P4 (RD3):**

Enter the third set of routing digits.

- 1 or 2 digits
- Blank = No routing digits assigned

**P5 (RD4):**

Enter the fourth set of routing digits.

- 1 or 2 digits
- Blank = No routing digits assigned

**P6 (RD5):**

Enter the fifth set of routing digits.

- 1 or 2 digits
- Blank = No routing digits assigned

- Display**
1. Enter a DGN at P1.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of DGNs.
2. The system releases this CMC when the DGN value exceeds 3.

- Change**
1. Enter a DGN at P1.
  2. Enter RD numbers 1-5 at parameters P2 through P6.
  3. Press **ADD / CHG**.

- Cancel**
1. Enter a DGN at P1.
  2. Press **DSP**.
  3. Use the cursor control keys or **Return** to move the cursor to the RD to be canceled.
  4. Press **CAN**.
  5. Press **ADD / CHG**.



**SCC ASSIGNMENT (CMC 404)**

Use the SCC Assignment (**CMC 404**) table to register the Specialized Common Carrier (SCC) gateway telephone number, SCC security access code, and signal timing values for each SCC-connection.

**NOTE:** Refer to CMC 250, Trunk Assignment, for a listing of trunk group assignment numbers.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	RTNO	SCC route number	1 to 6	None
P2	SDN	SCC gateway telephone number	1 to 15 digits, using 0-9	None
P3	SCO	SCC security access code	1 to 15 characters, using 0-9, *, #, or blank	None
P4	TIM	Signal timing value	See description below	0000000

**Parameter Descriptions****P1 (RTNO):**

Enter the SCC route number (required).

- 1 to 6

**P2 (SDN):**

Enter the SCC gateway telephone number.

- 1 to 15 digits, using 0-9

**P3 (SCO):**

Enter the SCC security access code.

- 1 to 15 characters, using 0-9, \*, #, or blank.

**P4 (TIM):**

Enter the signal timing value, in the XXYY or XXYYZZA format.

In the XXYY format, parameter P4 is in two parts. The first two digits are the time in seconds between sending the SCC gateway directory number and sending the security access code. The second two digits are the time in seconds between sending the security access code and sending the called party's directory number.

- XX = 00-15
- YY = 00-15

**Parameter Descriptions  
(Cont'd)**

In the XXYZZA format, parameter P4 is in four parts. The first two digits are the time in seconds between sending the SCC gateway directory number and sending the security access code. The second two digits are the time in seconds between sending the security access code and sending the called party's directory number. The third two digits are the time in seconds between the sending of the called party directory number and the sending of any additional numbers. The last digit is the location of the additional digits that are added.

- XX = 00-15
- YY = 00-15
- ZZ = 00-15
- A = 0 (before called party directory number) or 1 (after called party directory number)

**NOTES:**

1. If the characters \* or # are part of the SCO (P3), the outgoing trunk must have DTMF assigned at CMC 251, P2 (DTMF = 5).
2. When displayed, P4 is shown in seven digits. The last three zeros are to be ignored.

**Display**

1. Enter an RTNO at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of RTNOs.
2. The system releases the CMC when the RTNO value exceeds 6.

**Change**

1. Enter P1 through P4.
2. Press **ADD / CHG**. Pressing **ADD / CHG** when the SCC gateway telephone number is omitted (P2) clears the parameter values.

**Remove**

1. Enter an RTNO at P1.
2. Press **DSP**.
3. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	P4 value exceeds system maximum.	Reenter correct value.

SCC ROUTE NUMBER	TRUNK GROUP NUMBER
1	51
2	52
3	53
4	54
5	55

SCC ROUTE NUMBER	TRUNK GROUP NUMBER
6	56

### SCC ROUTING TGN ASSIGNMENT (CMC 405)

Use the SCC Routing TGN Assignment (CMC 405) table if there are no dedicated SCC trunks. This table routes outgoing SCC calls through standard CO lines. (Use in non-equal access areas only.)

This table may also be used to create trunk group rollovers. For example, when P1 = 13 and P2 = 14, if all trunks in TGN 13 are busy, calls will automatically rollover to TGN 14. Trunks should be of the same type; i.e., CO to CO, tie to tie

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	STGN	SCC trunk group number	13 to 56	None
P2	RTGN	Routing destination trunk group number	13 to 50	None

#### Parameter Descriptions

##### **P1 (STGN):**

Enter the SCC trunk group number (required).

- 13 to 56

##### **P2 (RTGN):**

If necessary, enter the routing destination trunk group number.

- 13 to 50

#### Display

1. Enter an STGN at P1.
2. Press **DSP**.

**NOTE:** Pressing **DSP** repeatedly displays data in numerical order of STGNs.

#### Change

1. Enter an STGN / RTGN pair at P1 and P2 respectively.
2. Press **ADD / CHG**.

#### Remove

1. Enter an STGN at P1.
2. Press **DSP**.
3. Press **RMV**.

**TIE TRUNK LEVEL CHANGE ASSIGNMENT (CMC 406)**

Use the Tie Trunk Level Change Assignment (**CMC 406**) table to add, replace, or change 1-4 digits of an incoming tie trunk call.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TGN	Trunk group number	31 to 50	None
P2	ADD	Additional digits to be added	1 or 2 digits Blank = No additional digits	None
P3	RPD	Digits to be compared	1 to 4 digits Blank = No digits compared	None
P4	LCD	Number of digits to be removed	1 to 4 digits Blank = No digits removed	None

**Parameter Descriptions**

**P1 (TGN):**

Enter the trunk group number which you wish to define (required).

- 31 to 50

**P2 (ADD):**

Enter the additional digits, if any, to be assigned to the call.

- 1 or 2 digits
- Blank = No additional digits

**P3 (RPD):**

This is the value to be compared to an incoming value from another system. Enter the digits, if any, to be compared for possible removal.

- 1 to 4 digits
- Blank = No digits compared

**P4 (LCD):**

This is the number of digits to be removed from the beginning of the incoming value if the comparison done in P3 is true. Enter the digits, if any, to be removed.

- 1 to 4
- Blank = No digits removed

**NOTE:** Comparison steps in P3 and P4 are done after any additional digits (specified in P2) are added to the beginning (left) of the incoming value.

**Display**

1. Enter a TGN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of TGNs.
2. The system releases this CMC when the TGN value exceeds 63.

- Change**
1. Enter the TGN for entries which are to be added or changed at P1.
  2. Press **DSP**.

**NOTE:** If any data is returned by the system, press **RMV**.

3. Enter appropriate values for the other parameters.
  4. Press **ADD / CHG**.
- Cancel**
1. Use the cursor control codes or the **Return** key to move the cursor to the parameter to be canceled.
  2. Press **CAN**.
- Remove**
1. Enter the TGN of the data to be removed at P1.
  2. Press **DSP**.
  3. Press **RMV**.

#### ERROR CODES

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	An attempt was made to add a TGN for which an LCD was entered but an RPD was not.	Enter the missing parameter and try again.
NO PARA	An attempt was made to add a TGN for which an RPD was entered but an LCD was not.	Enter the missing parameter and try again.

**FIPN NODE NUMBER  
ASSIGNMENT (CMC 407)**

To form an uncoordinated number system over a network, a FIPN node number should be assigned, using **CMC 407**, to identify each node. This node number is dialed as the access code from other nodes. The FIPN node number is not required for a coordinated number network.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TGN	Trunk group number	31 to 50	None
P2	NODE	Node number	1 to 4 digits	None

**Parameter Descriptions**

**P1 (TGN):**

Enter the trunk group number which you wish to define (required).

- 31 to 50

**P2 (NODE):**

If necessary, enter the node number to be assigned to this trunk group.

- 1 to 4 digits

**Display**

1. Enter the TGN.
2. Press **DSP** to display the NODE.

**NOTE:** By pressing **DSP** again, the registered NODE corresponding to the next registered TGN is displayed. By pressing **DSP** after the last registered TGN has been displayed, the command is terminated.

**Add**

1. Enter the TGN and the NODE.
2. Press **ADD / CHG**.

**Remove**

1. Enter the TGN and the NODE.
2. Press **RMV**.

**NXX / N11 OFFICE CODE  
ASSIGNMENT (CMC 408)**

Use **CMC 408** to assign an NXX office code per DGN. This assignment includes "N11" type (e.g., 811) office codes. This command has a higher priority than CMC 402.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>DGN</b>	Dialing group number	1 to 3	None
<b>P2</b>	<b>OC</b>	Office code	NXX N = 1 to 9 X = 0 to 9	None

**Parameter Descriptions****P1 (DGN):**

Enter the dialing group number to which you wish to assign NXX office code information (required).

- 1 to 3

**P2 (OC):**

Enter the office code. Office codes are entered in the NXX format:

- N = 1-9
- X = 0-9

**Display**

1. Enter the DGN and press **DSP**. This displays the OC corresponding to the DGN.
2. Pressing **DSP** repeatedly displays the next OC.
3. The system releases the CMC after displaying the largest OC.

**Add**

1. Enter the DGN at P1, and the OC at P2.
2. Press **ADD / CHG** to register the OC.

**Remove**

Press **RMV** to remove the OC.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
OVERLAP	The specified OC is already registered.	Check the OC.
NO FOUND	The specified OC is not registered.	Check the OC.
NO AREA	Number of OCs for the specified DGN exceeds 30.	Remove other OC and try again.
PARA. ERR	The specified OC is not correct.	Check the OC.

**TRUNK-TO-TRUNK  
CONNECTION ASSIGNMENT  
(CMC 410)**

Use the Trunk-to-Trunk Connection Assignment (**CMC 410**) table to list trunk to trunk connections which are to be allowed. (See also CMC 102, flag 5.)

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TGN	Originating trunk group number	1 to 63 <i>13</i>	None
P2	TGN	Connected trunk group number	1 to 63 <i>3</i>	None

**Parameter Descriptions**

**P1 (TGN):**

Enter the trunk group number of the originating trunk (required).

- 1 to 63

**P2 (TGN):**

Enter the trunk group number of the connected trunk. Multiple connections are allowed.

- 1 to 63

**NOTE:** Tie trunk-to-tie trunk connections and tie trunk-to-DID trunk connections are allowed by default. For further information, refer to CMC 101 and CMC 102.

**Display**

1. Enter a TGN at P1.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays the list of TGNs which can be connected to the TGN entered at parameter P1. Blanks are displayed when the list is complete. Continued pressing of **DSP** displays the list again.
2. To display the next originating TGN, repeat this procedure from step 1.

**Add**

1. Enter an originating TGN at P1.
2. Enter a connecting TGN at P2.
3. Press **ADD / CHG**.

**Remove**

1. Enter an originating TGN at P1.
2. Enter the connecting TGN to be removed at P2.
3. Press **RMV**.



---

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
OVERLAP	An attempt was made to add a connecting TGN which has already been entered.	Check to be sure the TGN was not typed incorrectly.
NO FOUND	An attempt was made to display an originating TGN which has not been entered.	Check to be sure the TGN was not typed incorrectly, or add the TGN.

**TOLL AND OPERATOR CALL  
RESTRICTION ASSIGNMENT  
(CMC 411)**

Use the Toll and Operator Call Restriction Assignment (CMC 411) table to define the ability of each class of restriction to access international calls, operator toll calls, customer toll calls, etc.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>RGN</u>	Restriction group number	1 to 3	Table 4-53
<u>P2</u>	<u>COR</u>	Class of restriction	1 to 16	Table 4-53
<u>P3</u>	<u>FLID</u>	Flag ID	1 to 9 (see below and next page)	Table 4-53
<u>P4</u>	<u>FVA</u>	Flag value	0 or 1	Table 4-53

**Parameter Descriptions**
**P1 (RGN):**

Enter the restriction group number to which you wish to assign toll and operator call restriction information (required).

- 1 to 3

**P2 (COR):**

Enter the class of restriction to which you wish to assign toll and operator call restriction information (required).

- 1 to 16

**P3 (FLID):**

Enter the flag ID (required).

- 1 = International toll prefix (011)
- 2 = Operator toll prefix (0)
- 3 = Customer toll prefix (1) (see also CMC 401)
- 4 = Toll assistance (555-1212 or 411)
- 5 = All area codes (XXX)
- 6 = All office codes (XXX)
- 7 = Long distance directory assistance ((XXX) + 555-1212)
- 8 = Reserved
- 9 = Operator toll prefix #2 (00) (see also CMC 401)

**P4 (FVA):**

Enter the allow / deny flag value.

- 0 or 1

**NOTES:**

1. Default values are shown in Table 4-53.
2. If P3 = 4 (toll assistance) and P4 = 0 (deny), it means that CMC 412 is disabled with reference to office codes containing a "one one" (11) pattern.
3. If P3 = 7 (long distance directory assistance) and P4 = 1 (allow), it means that CMC 412 is enabled with reference to office codes containing a "five five five" (55) pattern.

**Display**

1. Enter an RGN, COR, and FLID at parameters P1, P2, and P3.
2. Press **DSP**.

**Parameter Descriptions  
(Cont'd)**

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of FLIDs.

2. Each RGN / COR combination must be displayed separately.

**Change**

1. Enter the required parameters.

2. Press **DSP**.

3. Enter the new flag value over any previously entered value which may be displayed.

4. Press **ADD / CHG**.

P3	FLAG DEFINITION	(P4) When FVA = 1
1	International Toll Prefix	Denied
2	Local Operator Toll Prefix Code ( 0 )	Denied
3	Customer Toll Prefix	Denied
4	Local Direct. Assistance (X11; e.g., 411) (local service codes)	Allowed
5	All Area Code	Denied
6	All Office Code	Denied
7	Long Distance Assistance (XXX / 555-XXXX; e.g., 555-1212)	Allowed
8	Reserved	
9	Long Distance Operator Toll Prefix Code ( 00 )	Denied

**NOTE:** When FVA = 0, there is no allowance or denial for its type of calls. Further restrictions assigned by CMC 412, 413, 414, and 416 will determine whether a call should go through or not.

**Table 4-53. Toll and Operator Restriction Default Assignments**

CLASS OF RESTRICTION (P2)	RESTRICTION GROUPS 1, 2, AND 3 (P1)							
	011 + (P3 = 1)	0 + (P3 = 2)	1 + (P3 = 3)	X11 (P3 = 4)	ALL AC (P3 = 5)	ALL OC (P3 = 6)	XXX / 555-XXXX (P3 = 7)	00 + (P3 = 9)
1	∅	∅	∅	1	∅	∅	1	∅
2	∅	∅	∅	1	∅	∅	1	∅
3	∅	∅	∅	1	∅	∅	1	∅
4	1	1	∅	1	∅	∅	1	1
5	1	1	∅	1	∅	∅	1	1
6	1	1	∅	1	∅	∅	1	1
7	1	1	∅	1	∅	∅	∅	1
8	1	1	1	1	1	∅	∅	1
9	1	1	1	∅	1	∅	∅	1
10 - 16	1	1	1	∅	1	1	∅	1

**NOTE:** ∅ and 1 = FVA default values. (Refer to the table above to determine whether the P3 value is allowed or denied when FVA = 1.)

**OFFICE CODE RESTRICTION  
ASSIGNMENT (CMC 412)**

Use the Office Code Restriction Assignment (**CMC 412**) table to create a list of office codes within your home area code to which connections are allowed or denied for each class of restriction within a restriction group. Figure 4-18 shows the hierarchy of this table's organization.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>RGN</u>	Restriction group number	1 to 3	None
<u>P2</u>	<u>COR</u>	Class of restriction	1 to 16	None
<u>P3</u>	<u>FLG</u>	Flag value	0 = Allowed 1 = Denied	None
<u>P4</u>	<u>OC</u>	Office code	3 digits	None

**Parameter Descriptions****P1 (RGN):**

Enter the restriction group number to which you wish to assign office code restriction information (required).

- 1 to 3

**P2 (COR):**

Enter the class of restriction which will apply to this restriction group (required).

- 1 to 16

**P3 (FLG):**

Enter a value for the allowed / denied flag. This value determines whether this table is a list of office codes that are allowed the restriction group being defined, or a list of office codes that are denied the restriction group.

- 0 = Allowed
- 1 = Denied

**P4 (OC):**

Enter the specific office code(s) that will either be allowed or denied this restriction group.

- 3 digits

**Parameter Descriptions  
(Cont'd)**

**NOTE:** CMCs 412, 413, and 414 use the same data blocks for storage of assigned area and office codes. The Series 3 has 150 total data blocks for use by all three CMCs. Each data block can have ten 0 area codes assigned using CMC 413 (1,500 maximum when only area codes are assigned; 150 blocks x 10 codes). Each data block can also have ten office codes assigned using CMC 412 (1,500 maximum when only office codes are assigned; 150 blocks x 10 codes). And finally, when area / office codes are entered via CMC 414, one data block contains five different area codes and each additional data block will provide ten office codes for the same area code. As a result, six data blocks have five area codes and one to ten 0 office codes per area code. In the worst case, if each area code has only one office code, the system will have 125 area / office codes.

Therefore, the system capacity is determined by the combination of restricted office codes, area codes, and area / office codes, up to the system available maximum of 150 data blocks.

- Display**
1. Enter an RGN and COR at P1 and P2.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of OCs.
2. A blank is displayed after the last registered OC has been displayed. Pressing **DSP** again will recycle the OC list.
3. Each RGN / COR combination must be displayed separately.

- Add**
1. Enter the required parameters.
  2. Press **DSP**.
  3. Use the cursor controls or **Return** to move the cursor to the parameter to be added.
  4. Enter the new value over any previously entered value which may be displayed.
  5. Press **ADD / CHG**.

- Remove**
1. Enter the required parameters.
  2. Enter the appropriate FLG and OC values.
  3. Press **DSP**.
  4. Press **RMV**.

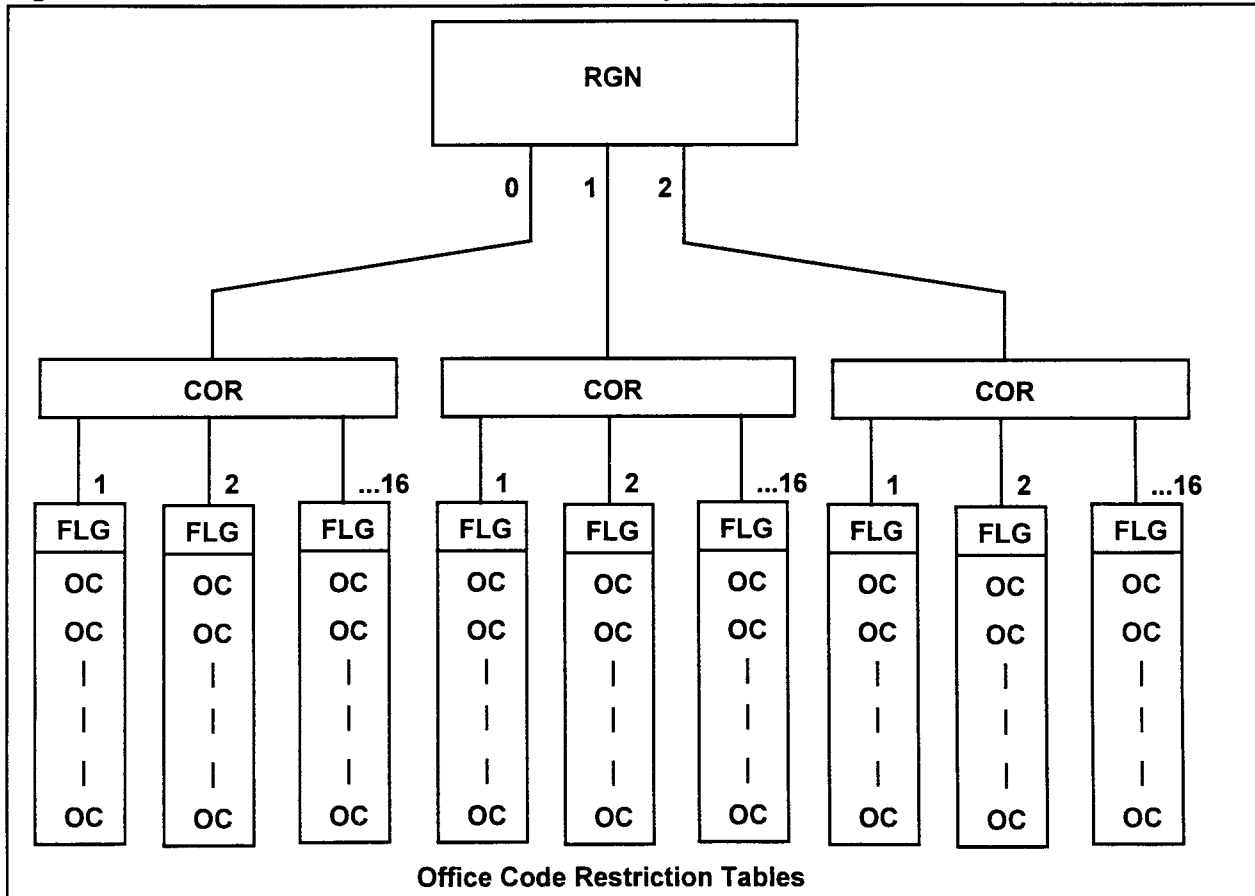
The Office Code Restriction Table's hierarchical structure is shown in Figure 4-21. Office codes are selected according to the combination of key parameters RGN and COR.

**NOTE:** FLGs do not correspond to OCs on a one-to-one basis. Therefore, changing any FLG causes the FLG of the entire table to change.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NO AREA	An attempt was made to add an OC when no more system memory was available.	Remove one or more OCs from any RGN.
OVERLAP	An attempt was made to add an OC which is not currently registered.	Check the entry and try again, or abandon the attempt.
NO FOUND	An attempt was made to remove an OC which is not currently registered.	Check the entry and try again, or abandon the attempt.

Figure 4-18. Office Code Restriction Table Hierarchy



**AREA CODE RESTRICTION  
ASSIGNMENT (CMC 413)**

Use the Area Code Restriction Assignment (**CMC 413**) table to create a list of area codes to which connections are allowed or denied for each class of restriction within a restriction group. Figure 4-19 shows the hierarchy of this table's organization.

**NOTE:** For information on assigning North American Dialing Plan, refer to the System Description / Features Manual (Section 123-001-002)

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>RGN</b>	Restriction group number	1 to 3	None
<b>P2</b>	<b>COR</b>	Class of restriction	1 to 16	None
<b>P3</b>	<b>FLG</b>	Flag value	0 = Allowed 1 = Denied	None
<b>P4</b>	<b>AC</b>	Area code	3 digits	None

**Parameter Descriptions****P1 (RGN):**

Enter the restriction group number to which you wish to assign area code restriction information (required).

- 1 to 3

**P2 (COR):**

Enter the class of restriction that will apply to this restriction group (required).

- 1 to 16

**P3 (FLG):**

Enter a value for the allowed / denied flag. This value determines whether this table is a list of area codes that are allowed the restriction group being defined, or a list of area codes that are denied the restriction group.

- 0 = Allowed
- 1 = Denied

**P4 (AC):**

Enter the specific area code(s) that will either be allowed or denied this restriction group.

- 3 digits

**NOTE:** Refer to CMC 412 for information on data storage capacity.

- Display**
1. Enter an RGN and COR at P1 and P2.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays data in numerical order of ACs.
2. A blank is displayed after the last registered AC is displayed. Pressing **DSP** again will recycle the AC list.
3. Each RGN / COR combination must be displayed separately.

- Add**
1. Enter the required parameters.
  2. Press **DSP**.
  3. Use the cursor controls or **Return** to move the cursor to the parameter to be added.
  4. Enter the new value over any previously entered value which may be displayed.
  5. Press **ADD / CHG**.

- Remove**
1. Enter the required parameters.
  2. Enter the appropriate FLG and AC values.
  3. Press **DSP**.
  4. Press **RMV**.

Figure 4-19 shows the Area Code Restriction Table's hierarchical structure. Area codes are selected according to the combination of key parameters RGN and COR.

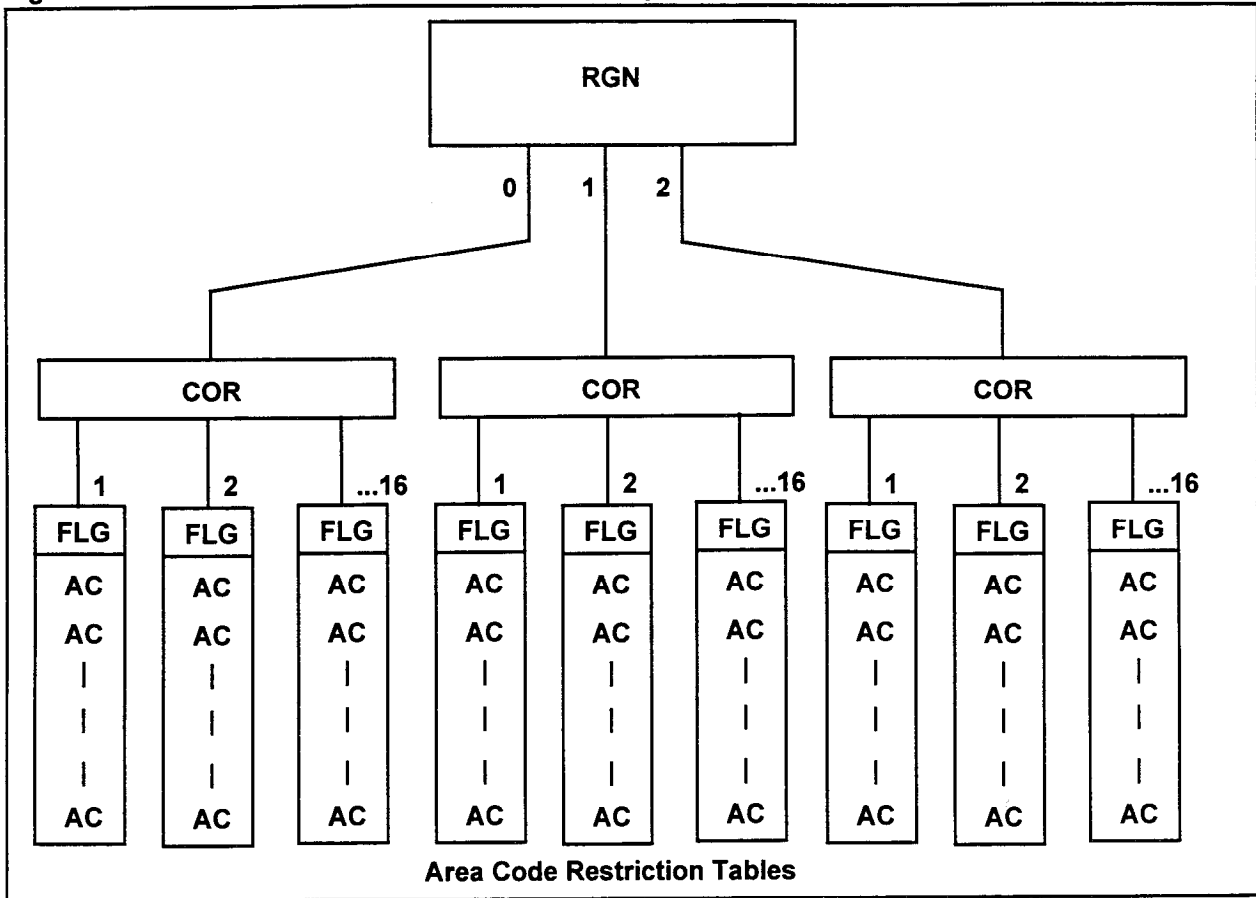
**NOTE:** FLGs do not correspond to ACs on a one-to-one basis. Therefore, changing any FLG causes the FLG of the entire table to change.

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
NO AREA	An attempt was made to add an AC when no more system memory was available.	Remove one or more ACs from any RGN.
OVERLAP	An attempt was made to add an AC which is already registered.	Check the entry and try again, or abandon the attempt.
NO FOUND	An attempt was made to remove an AC which is not registered.	Check the entry and try again, or abandon the attempt.



Figure 4-19. Area Code Restriction Table Hierarchy



**AREA / OFFICE CODE  
RESTRICTION ASSIGNMENT  
(CMC 414)**

Use the Area / Office Code Restriction Assignment (**CMC 414**) table to create a list of office codes within a specified area code. For each list, connections are allowed or denied for each class of restriction within a restriction group. Figure 4-20 shows the hierarchy of this table's organization.

**NOTE:** For information on assigning North American Dialing Plan, refer to the System Description / Features Manual (Section 123-001-002)

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>RGN</u>	Restriction group number	1 to 3	None
<u>P2</u>	<u>COR</u>	Class of restriction	1 to 16	None
<u>P3</u>	<u>FLG</u>	Flag value	0 = Allowed 1 = Denied	None
<u>P4</u>	<u>AC</u>	Area code	3 digits	None
<u>P5</u>	<u>OC</u>	Office code	3 digits	None

**Parameter Descriptions**

**P1 (RGN):**

Enter the restriction group number to which you wish to assign area and office code restriction information (required).

- 1 to 3

**P2 (COR):**

Enter the class of restriction that will apply to this restriction group (required).

- 1 to 16

**P3 (FLG):**

Enter a value for the allowed / denied flag. This value determines whether this table is a list of area / office codes that are allowed the restriction group being defined, or a list of area / office codes that are denied the restriction group.

- 0 = Allowed
- 1 = Denied

**P4 (AC):**

Enter the specific area code(s) that will either be allowed or denied this restriction group.

- 3 digits

**P5 (OC):**

Enter the specific office code(s) that will either be allowed or denied this restriction group.

- 3 digits

**NOTE:** Refer to CMC 412 for information on data storage capacity.

- Display**
1. Enter RGN and COR at P1 and P2.
  2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays subsequent AC / OC combinations in numerical order.
2. A blank is displayed after the last registered AC / OC combination has been displayed. Pressing **DSP** again recycles the list.
3. Each RGN / COR combination must be displayed separately.

- Add**
1. Enter the required parameters.
  2. Press **DSP**.
  3. Use the cursor controls or **Return** to move the cursor to the parameter to be added.
  4. Enter the new value over any previously entered value which may be displayed.
  5. Press **ADD / CHG**.

- Remove**
1. Enter the required parameters.
  2. Enter the appropriate FLG, AC, and OC values.
  3. Press **DSP**.
  4. Press **RMV**.

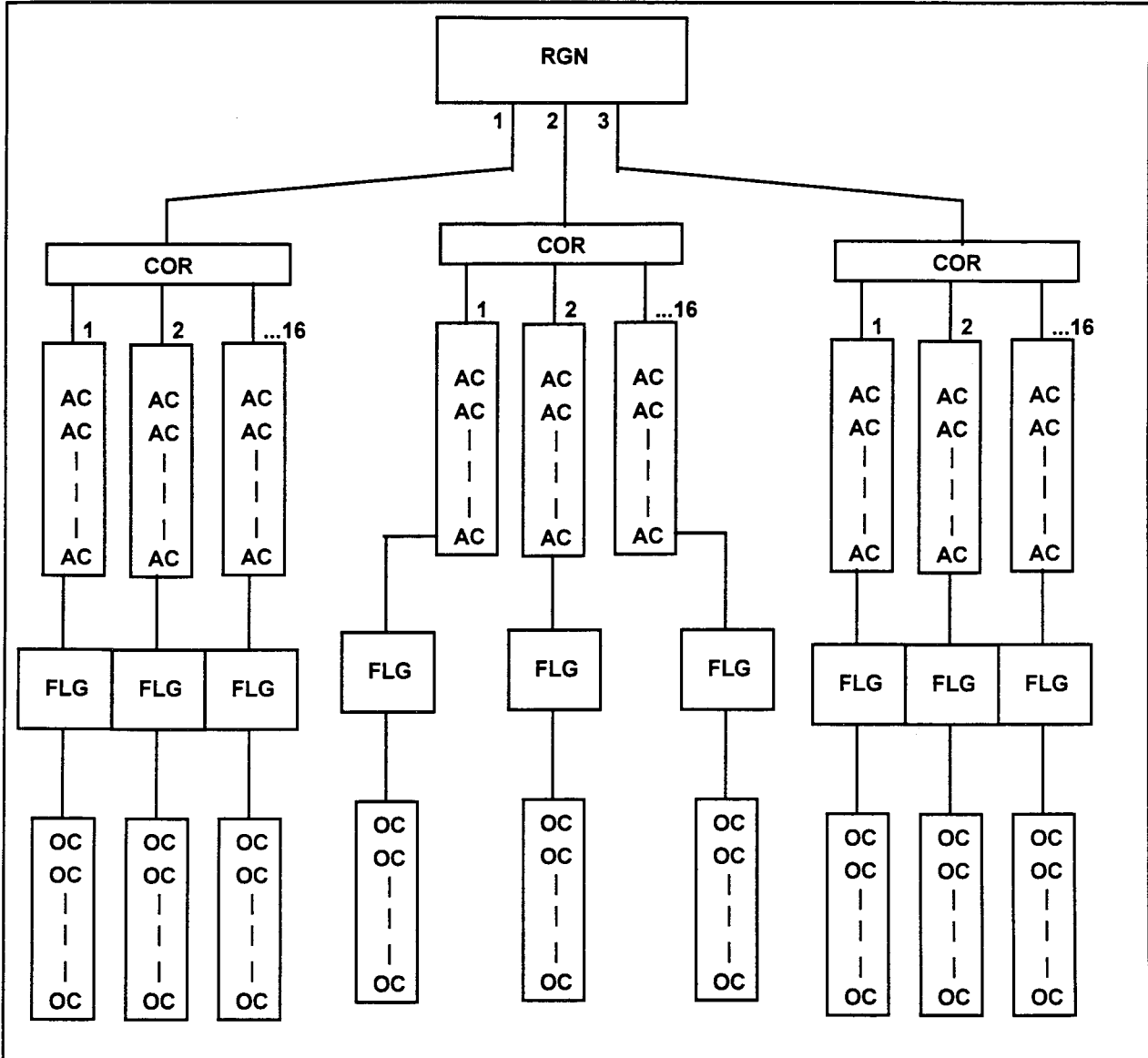
Figure 4-20 shows the area / office code restriction table's hierarchical structure. Area / office codes are selected according to the combination of key parameters RGN and COR; however, the area / office restriction table is selected by searching for the area code.

**NOTE:** FLGs do not correspond to OCs on a one-to-one basis. Therefore, changing an FLG causes the FLG of the entire OC table under an AC to change.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
NO AREA	An attempt was made to add an AC / OC combination when no more system memory was available.	Remove one or more AC / OC combinations from any RGN.
OVERLAP	An attempt was made to add an AC / OC combination which is already registered.	Check the entry and try again, or abandon the attempt.
NO FOUND	An attempt was made to remove an AC / OC combination which is not registered.	Check the entry and try again, or abandon the attempt.

Figure 4-20. Area / Office Code Restriction Table Hierarchy



**CARRIER IDENTIFICATION CODE (5-DIGIT CACs) RESTRICTION CHECKING ASSIGNMENT (CMC 415)**

In equal access areas, the system assigns each secondary carrier a five-digit carrier access code (CAC), 10XXX. **CMC 415** allows stations in a restriction group within a class of restriction access to specific secondary carriers by manually dialing the CAC.

If a station is restricted from area codes, office codes, etc., through class of restriction and restriction group assignment and/or by least cost routing assignment, programming a carrier access code for that class of restriction and restriction group through **CMC 415** overrides all other restrictions. However, the station user must manually dial the 10XXX code to access the desired secondary carrier. This feature can be used to force stations to use a secondary carrier for outgoing trunk calls. Up to ten total (5-digit CACs and 7-digit CACs) can be registered. All ten may be assigned to one COR.

Please note that seven-digit CACs are assigned using **CMC 470**.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>RGN</b>	Restriction group number	1 to 3	None
<b>P2</b>	<b>COR</b>	Class of restriction	1 to 16	None
<b>P3</b>	<b>CAC</b>	Carrier access code	5 digits (10XXX)	None

**Parameter Descriptions**

**P1 (RGN):**

Enter the restriction group to which you wish to assign secondary carrier information (required).

- 1 to 3

**P2 (COR):**

Enter the class of restriction which will apply to this restriction group (required).

- 1 to 16

**P3 (CAC):**

Enter the carrier access code which stations in this restriction group must dial to access the secondary carrier.

- 5 digits, in the 10XXX format

**Display**

1. Enter an RGN and COR at P1 and P2.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays subsequent data in numerical order of COR and CAC within each class.
2. Pressing **DSP** again will recycle the list.
3. Each RGN must be displayed separately.

- Add**
1. Enter the required parameters.
  2. Press **DSP**.
  3. Use the cursor controls or **Return** to move the cursor to the parameter to be added.
  4. Enter the new value.
  5. Press **ADD / CHG**.

- Remove**
1. Enter the required parameters.
  2. Press **DSP**.
  3. Press **RMV**.

#### ERROR CODES

ERROR CODE	CAUSE	CORRECTION
NO AREA	An attempt was made to add a CAC combination when no more system memory was available.	Remove one or more CAC combinations from any RGN.
OVERLAP	An attempt was made to add a CAC combination which is already registered.	Check the entry and try again, or abandon the attempt.
NO FOUND	An attempt was made to remove a CAC combination which is not currently registered.	Check the entry and try again, or abandon the attempt.
PARA. ERR	The specified CAC is not in the correct format.	Check the CAC.

**OFFICE CODE RESTRICTION  
FOR ALL AREA CODES  
(CMC 416)**

Use **CMC 416** to assign office codes which will be restricted within all area codes; for example, 976. The specified office code(s) will be restricted regardless of the area code with which it is dialed (refer to Figure 4-21).

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>RGN</b>	Restriction group number	1 to 3	None
<b>P2</b>	<b>COR</b>	Class of restriction	1 to 16	None
<b>P3</b>	<b>FLG</b>	Flag value	0 = Allowed 1 = Denied	None
<b>P4</b>	<b>OC</b>	Office code	3 digits	None

**Parameter Descriptions**

**P1 (RGN):**

Enter the restriction group number to which you wish to assign restriction information (required).

- 1 to 3

**P2 (COR):**

Enter the class of restriction which will apply to this restriction group (required).

- 1 to 16

**P3 (FLG):**

Enter the value for the allowed / denied flag. This value determines whether this table is a list of office codes that are allowed the restriction group being defined, or a list of office codes that are denied the restriction group.

- 0 = Allowed
- 1 = Denied

**P4 (OC):**

Enter the specific office code(s) that will either be allowed or denied this restriction group.

- 3 digits

**Display**

1. Enter the RGN and COR.
2. Press **DSP** to display the corresponding FLG and OC.

**NOTE:** Press **DSP** again to display the next OC(s). After the last OC is displayed, a blank value will be shown. Press **DSP** again to start the list over from the beginning.

**Add**

1. Enter all the necessary parameters.
2. Press **ADD / CHG**.

**Remove**

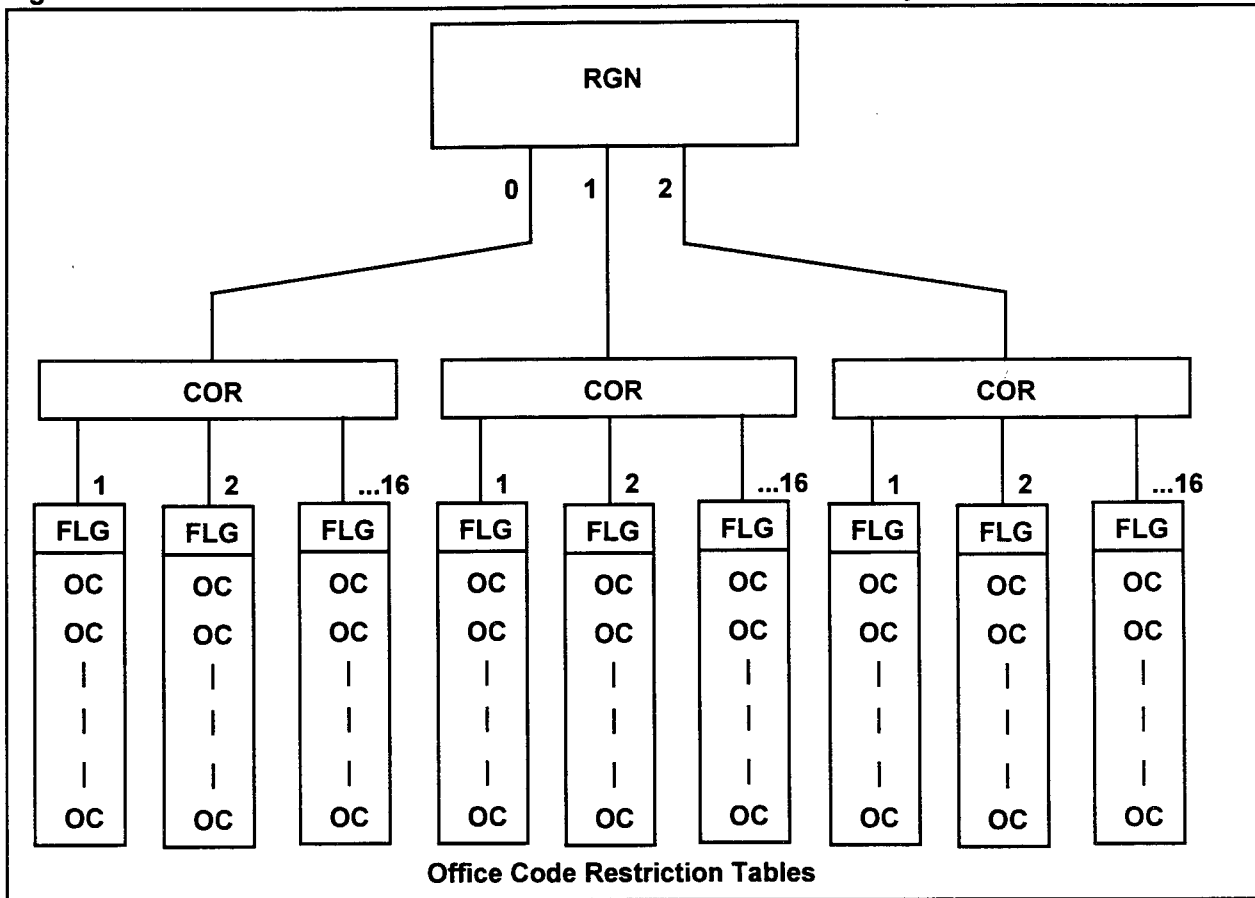
1. Display the OC to be deleted.
2. Pressing **RMV**.



ERROR CODES

ERROR CODE	CAUSE	CORRECTION
OVERLAP	An attempt was made to add an office code which is already registered.	Remove one or more office codes from any RGN.
NO FOUND	An attempt was made to remove an office code which is not registered.	Check the entry and try again, or abandon the attempt.
NO AREA	No available memory to add an office code.	Remove code(s) from the restriction table.

Figure 4-21. Office Code Restriction for All Area Codes Table Hierarchy



**NOTE:** The office code restriction table is configured as shown. One office code table is designated by the combination of one RGN and one COR. Note that the FLG corresponds to an office code restriction table, not to each office code.

**TOLL RESTRICTION 2  
ASSIGNMENT (CMC 417)**

Use **CMC 417** to override the toll restriction when 10XXX is dialed. Refer to the Note of Table 4-54 for further information.

This command requires a HIGH security level.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>RGN</u>	Restriction group number	1 to 3	None
<u>P2</u>	<u>COR</u>	Class of restriction	1 to 16	None
<u>P3</u>	<u>FLID</u>	Flag ID number	1 to 7	None
<u>P4</u>	<u>FVA</u>	Flag value	0 or 1	None

**Parameter Descriptions**

**P1 (RGN):**

Enter the restriction group number to which you wish to assign toll restriction information (required).

- 1 to 3

**P2 (COR):**

Enter the class of restriction which will apply to this restriction group (required).

- 1 to 16

**P3 (FLID):**

If necessary, enter a identification number for each flag which you wish to assign a value.

- 1 to 7

**P4 (FVA):**

Enter a specific value for each identification number entered (see Table 4-54).

- 0 or 1

**Display**

1. Enter the required parameters.
2. Press **DSP** to display FVA.

**NOTE:** Press **DSP** again to display the FVA corresponding to the next FLID in the same COR. The command is terminated after displaying the last FLID of each COR.

**Change**

1. Enter all parameters.
2. Press **ADD / CHG**.

**Table 4-54. Toll Restriction Default Values**

ID	Description (P3)	Flag Value (P4)
1	CAC (10XXX / 10XXXXXX) + OTP1	1 = Allow
2	CAC (10XXX / 10XXXXXX) + OTP2	1 = Allow
3	Toll Free Dial (1 + 800)	1 = Allow
4	CAC (950) + 0XXX	1 = Allow
5	CAC (10XXX / 10XXXXXX) + CTP	1 = Deny
6	CAC (950) + 1XXX	1 = Deny
7	CAC (10XXX / 10XXXXXX) + International Direct Dial (001)	1 = Deny

**NOTE:** When FVA = 0, there is no allowance or denial for its type of calls. Further restrictions assigned by CMCs 411, 412, 413, 414, and 416 will determine whether or not a call should go through, based on the rest of the dialed number. When FVA = 1, this command has priority over other restrictions assigned by CMC 411, 412, 413, 414, and 416.

**LCR OFFICE CODE ROUTE SELECTION ASSIGNMENT (CMC 420)**

Use the LCR Office Code Route Selection Assignment (CMC 420) table to assign up to fifteen different routing tables for least cost routing. Each of these routes can contain up to ten different route selections. With LCR, the system chooses the most cost-effective outgoing trunk based on the number dialed.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	ORTN	Office code routing table number	1 to 15	None
P2	RSC	Route selection sequence	1 to 10	None
P3	TGN	Trunk group number	13 to 56	None
P4	FLAG	Dialing pattern flag	See description below	None

**Parameter Descriptions**

**P1 (ORTN):**

Enter the office code routing table number (required).  
 • 1 to 15

**P2 (RSC):**

Enter the route selection sequence (required).  
 • 1 to 10

**P3 (TGN):**

Enter the trunk group number which you wish to assign to this routing table.  
 • 13 to 56

**P4 (FLAG):**

Enter the dialing pattern flag. Refer to Table 4-55 for dialing pattern assignment information.  
 • 3 to 10, 13, 14, 17, 18, 21, 22, 25, 26, 29, 30, 33, 34, 37, 38, 41, 42, 45, 46, 49, 50, 56 to 60

**Display**

1. Enter an ORTN at P1.
2. Enter an RSC at P2.
3. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of RSCs.
2. The system releases this CMC when the RSC value exceeds 10.
3. Each ORTN must be displayed separately.
4. To activate FNO 201, 202, and 203 in class of service, the most expensive route must be entered as RSC #10.

- Change**
1. Enter an ORTN at P1.
  2. Enter an RSC at P2.
  3. Enter a TGN at P3.
  4. Enter a FLAG at P4.
  5. Press **ADD / CHG**.
  6. Repeat steps 1 through 5 for each change being made.

- Remove**
1. Enter an ORTN at P1.
  2. Enter an RSC at P2.
  3. Press **DSP**.
  4. Press **RMV**.

#### ERROR CODES

ERROR CODE	CAUSE	CORRECTION
OVERLAP	An attempt was made to create two identical routing tables under different ORTNs.	Each ORTN must be unique. Check the data and try again.
PARA. ERR	The specified parameter is not correct.	Check the parameter.

**NOTE:** The phone numbers 411, 911, 555-XXXX, and international go out over the TGN defined in CMC 102, flag 194, regardless of the route selection table. (The default for flag 194 is TGN 13.) See the note at CMC 400. For international calls, see CMCs 428 and 429.

Table 4-55. Dialing Pattern Assignments

FLAG (P4)	DEFINITION	For Use With CMC	
		420 (Office Code)	421 (Area Code)
1	CTP + 10 digits (CTP, if not dialed, added)		X
2	10 digits (CTP, if dialed, deleted)		X
3	7 digits (CTP, if dialed, deleted)	X	X
4	CTP + 7 digits (CTP, if not dialed, added)	X	X
5	RD #1 + 7 digits	X	X
6	RD #2 + 7 digits	X	X
7	RD #3 + 7 digits	X	X
8	RD #4 + 7 digits	X	X
9	RD #5 + 7 digits	X	X
10	All received digits	X	X
11	CAC #1 + CTP + 10 digits		X
12	CAC #1 + 10 digits		X
13	CAC #1 + CTP + 7 digits	X	X
14	CAC #1 + 7 digits	X	X
15	CAC #2 + CTP + 10 digits		X
16	CAC #2 + 10 digits		X
17	CAC #2 + CTP + 7 digits	X	X
18	CAC #2 + 7 digits	X	X
19	CAC #3 + CTP + 10 digits		X
20	CAC #3 + 10 digits		X
21	CAC #3 + CTP + 7 digits	X	X
22	CAC #3 + 7 digits	X	X
23	CAC #4 + CTP + 10 digits		X
24	CAC #4 + 10 digits		X
25	CAC #4 + CTP + 7 digits	X	X

CTP: Customer toll prefix code (see CMC 401)

RD: Routing digit (see CMC 403)

CAC: Carrier access code (see CMC 425)

Table 4-55. Dialing Pattern Assignments (Cont'd)

FLAG (P4)	DEFINITION	For Use With CMC	
		420 (Office Code)	421 (Area Code)
26	CAC #4 + 7 digits	X	X
27	CAC #5 + CTP + 10 digits		X
28	CAC #5 + 10 digits		X
29	CAC #5 + CTP + 7 digits	X	X
30	CAC #5 + 7 digits	X	X
31	CAC #6 + CTP + 10 digits		X
32	CAC #6 + 10 digits		X
33	CAC #6 + CTP + 7 digits	X	X
34	CAC #6 + 7 digits	X	X
35	CAC #7 + CTP + 10 digits		X
36	CAC #7 + 10 digits		X
37	CAC #7 + CTP + 7 digits	X	X
38	CAC #7 + 7 digits	X	X
39	CAC #8 + CTP + 10 digits		X
40	CAC #8 + 10 digits		X
41	CAC #8 + CTP + 7 digits	X	X
42	CAC #8 + 7 digits	X	X
43	CAC #9 + 10 digits		X
44	CAC #9 + CTP + 7 digits	X	X
45	CAC #9 + 7 digits	X	X
46	CAC #9 + CTP + 10 digits		X
47	CAC #10 + 10 digits		X
49	CAC #10 + CTP + 7 digits	X	X
49	CAC #10 + 7 digits	X	X
50	CAC #10 + CTP + 7 digits	X	X

CTP: Customer toll prefix code (see CMC 401)

CAC: Carrier access code (see CMC 425)

Table 4-55. Dialing Pattern Assignments (Cont'd)

FLAG (P4)	DEFINITION	For Use With CMC	
		420 (Office Code)	421 (Area Code)
51	RD #1 + 10 digits		X
52	RD #2 + 10 digits		X
53	RD #3 + 10 digits		X
54	RD #4 + 10 digits		X
55	RD #5 + 10 digits		X
56	RD #1 + CTP + 7 digits	X	X
57	RD #2 + CTP + 7 digits	X	X
58	RD #3 + CTP + 7 digits	X	X
59	RD #4 + CTP + 7 digits	X	X
60	RD #5 + CTP + 7 digits	X	X
61	RD #1 + CTP + 10 digits		X
62	RD #2 + CTP + 10 digits		X
63	RD #3 + CTP + 10 digits		X
64	RD #4 + CTP + 10 digits		X
65	RD #5 + CTP + 10 digits		X

RD: Routing digit (see CMC 403)

CTP: Customer toll prefix code (see CMC 401)



**LCR AREA AND AREA /  
OFFICE CODE ROUTE  
SELECTION ASSIGNMENT  
(CMC 421)**

Use the LCR Area and Area / Office Code Route Selection Assignment (**CMC 421**) table to assign up to 63 different routing tables for least cost routing. Each of these routes can contain up to 10 different route selections.

This CMC requires a HIGH level security code.

**NOTE:** In each routing table, route number 10 is not selected for access if feature number 202 is selected at CMC 104. RSC numbers may be skipped to assign route number 10.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>ARTN</b>	Area and area / office code routing table number	1 to 63	None
<b>P2</b>	<b>RSC</b>	Route selection sequence	1 to 10	None
<b>P3</b>	<b>TGN</b>	Trunk group number	13 to 56	None
<b>P4</b>	<b>FLAG</b>	Dialing pattern flag	See description below	None

**Parameter Descriptions**

**P1 (ARTN):**

Enter the area and area / office code routing table number (required).

- 1 to 63

**NOTE:** These route tables are the same as those utilized in CMCs 424, 427, and 429.

**P2 (RSC):**

Enter the route selection sequence (required).

- 1 to 10

**P3 (TGN):**

Enter the trunk group number which you wish to assign to this routing table.

- 13 to 56

**P4 (FLAG):**

Enter the dialing pattern flag. Refer to Table 4-55 (located in CMC 420) for dialing pattern assignment information.

- 1 to 65

**Display**

1. Enter an ARTN at P1.
2. Enter an RSC at P2.
3. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of RSCs.
2. The system releases this CMC when the RSC value exceeds 10.
3. Each ARTN must be displayed separately.

- Change**
1. Enter an ARTN at P1.
  2. Enter an RSC at P2.
  3. Enter a TGN at P3.
  4. Enter a FLAG at P4.
  5. Press **ADD / CHG**.
  6. Repeat steps 1 through 5 for each change being made.

- Remove**
1. Enter an ARTN at P1.
  2. Enter an RSC at P2.
  3. Press **DSP**.
  4. Press **RMV**.

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
OVERLAP	An attempt was made to create two identical routing tables under different ARTNs.	Each ARTN must be unique. Check the data and try again.

**LCR OFFICE CODE  
ASSIGNMENT (CMC 422)**

Use the LCR Office Code Assignment (**CMC 422**) table to assign office code numbers to an office code route table (see CMC 420).

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>ORTN</b>	Office code routing table number	1 to 15	None
<b>P2</b>	<b>OC</b>	Office code(s)	XYX X = 1-9 Y = 0-9	None

**Parameter Descriptions**

**P1 (ORTN):**

Enter the office code route table number to which you wish to assign numbers (required).

- 1 to 15

**P2 (OC):**

Enter the office code(s) which you wish to assign to the specified table. Office codes are entered in the XYX format:

- X = 1 to 9
- Y = 0 to 9

**Display**

1. Enter an ORTN at P1.
2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of OCs.
2. After the last registered OC is displayed, press **DSP** again to display a blank. Continued pressing of **DSP** recycles the OC list again.
3. Each ORTN must be displayed separately.

**Add**

1. Enter an ORTN at P1.
2. Enter an OC at P2.
3. Press **ADD / CHG**.

**Remove**

1. Enter an ORTN at P1.
2. Enter an OC at P2.
3. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DENIED	An attempt was made to enter an OC which is already registered to a different ORTN.	Remove the OC from the other ORTN list and try again.

**LCR AREA CODE ASSIGNMENT (CMC 423)**

Use the LCR Area Code Assignment (**CMC 423**) table to assign area code numbers to an area code route table (see CMC 421).

**NOTE:** For information on assigning North American Dialing Plan, refer to the System Description / Features Manual (Section 123-001-002)

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	<u>ARTN / TRTN</u>	Area code / time of day route table number	1 to 63	None
P2	AC	Area code(s)	XYY X = 0-9 Y = 0-9	None

**Parameter Descriptions**

**P1 (ARTN / TRTN):**

Enter the area code / time of day route table number (required).

- 1 to 63

**P2 (AC):**

Enter the area code(s) to assign to this route table. Area codes are entered in the X 0 / 1 Y format:

- X = 0 to 9
- Y = 0 to 9

**Display**

1. Enter an ARTN / TRTN or at P1.
2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of ACs.
2. Each ARTN / TRTN must be displayed separately.
3. After the last registered AC is displayed, press **DSP** again to display a blank. Continued pressing of **DSP** recycles the AC list.

**Add**

1. Enter an ARTN / TRTN at P1.
2. Enter an AC at P2.
3. Press **ADD / CHG**.

**Remove**

1. Enter an ARTN / TRTN at P1.
2. Enter an AC at P2.
3. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DENIED	An attempt was made to enter an AC which is already registered to a different route table or ARTN / TRTN.	Remove the AC from the route table list or ARTN / TRTN and try again.
PARA. ERR	The specified are code is not correct.	Check the AC.

**LCR AREA / OFFICE CODE  
ASSIGNMENT (CMC 424)**

Use the LCR Area / Office Code Assignment (**CMC 424**) table to assign an office code within an area code to an area / office code route table (see CMC 421).

**NOTE:** For information on assigning North American Dialing Plan, refer to the System Description / Features Manual (Section 123-001-002)

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>ARTN / TRTN</b>	Area code / time of day route table number	1 to 63	None
<b>P2</b>	<b>AC</b>	Area code(s)	X 0 / 1 Y X = 0 to 9 Y = 0 to 9	None
<b>P3</b>	<b>OC</b>	Office code(s)	XXY X = 1 to 9 Y = 0 to 9	None

**Parameter Descriptions****P1 (ARTN / TRTN):**

Enter the area code / time of day route table number (required).

- 1 to 63

**NOTE:** These route tables are the same as those utilized in CMCs 421, 427, and 429.

**P2 (AC):**

Enter the area code(s) to be assigned to this route table. Area codes are entered in the X 0 / 1 Y format:

- X = 0 to 9
- Y = 0 to 9

**P3 (OC):**

Assign the office code(s) which will apply within the defined area code. Office codes are entered in the XYY format:

- X = 1 to 9
- Y = 0 to 9

**NOTE:** The maximum number of ACs which may be registered with this CMC is eight. All possible office codes may be registered with each AC in this CMC.

- Display**
1. Enter an ARTN / TRTN at P1.
  2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of area / office code combinations.
2. After the last registered area / office combination is displayed, press **DSP** again to display a blank. Continued pressing of **DSP** recycles the area / office code combination list.
3. Each ARTN / TRTN must be displayed separately.

- Add**
1. Enter an ARTN / TRTN at P1.
  2. Enter an AC at P2.
  3. Enter an OC at P3.
  4. Press **ADD / CHG**.

- Remove**
1. Enter an ARTN / TRTN at P1.
  2. Enter an AC at P2.
  3. Enter an OC at P3.
  4. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DENIED	An attempt was made to enter an area / office code combination which is already registered to a different ARTN / TRTN.	Remove the area / office code combination from the other ARTN / TRTN and try again.
NO AREA	An attempt was made to enter an area / office code combination and eight other area codes have already been entered.	Abandon the attempt or remove all records connected to one of the other area codes and try again.
NO FOUND	An attempt was made to display an ARTN / TRTN which is not registered.	Check the data and try again.
PARA. ERR	The specified office code is not correct.	Check the OC.

**LCR CARRIER ACCESS  
CODE (5-DIGIT CACs)  
ASSIGNMENT (CMC 425)**

Use the LCR Carrier Access Code Assignment (**CMC 425**) table to record 5-digit carrier access codes which will be outpulsed to the CO if LCR selects an alternate carrier in an equal access area. If the specified CAC is one that has been registered as having seven digits, it cannot be registered using this CMC.

Please note that seven-digit CACs are assigned using CMC 471.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	LCN	Least cost routing carrier	1 to 10	None
P2	CAC	Carrier access code	5 digits (10XXX)	None

**Parameter Descriptions**

**P1 (LCN):**

Enter the number that will be used for this Least Cost Routing carrier access (required).

- 1 to 10

**P2 (CAC):**

Enter the carrier access code.

- 5 digits (10XXX)

**Display**

1. Enter an LCN at P1.
2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of LCNs.
2. The system releases this CMC when the LCN value exceeds 10.

**Add**

1. Enter an LCN at P1.
2. Enter a CAC at P2.
3. Press **ADD / CHG**.

**Remove**

1. Enter an LCN at P1.
2. Press **DSP**.
3. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	The specified CAC is not correct.	Check the CAC.
DENIED	The specified LCN is registered as a seven digit CAC.	Check the CAC.

**PERSONAL ACCOUNT CODE FOR 5-DIGIT CACs ASSIGNMENT (CMC 426)**

Use the Personal Account Code for CAC Assignment (CMC 426) table to assign the personal account code, the sending position of the personal account code, and length of outgoing call to the LCR feature. Each 5-digit carrier identification code contains this information.

Please note that seven-digit CACs are assigned using CMC 472. A maximum of ten 5-digit and 7-digit CACs can be registered per system.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	CAC	Carrier access code	5 digits (10XXX)	None
P2	FLG	Flag value	0 = Send personal account code after dialed number 1 = Send personal account code before dialed number	None
P3	PAC	Personal account code	1 to 15 digits Blank = Not assigned	None
P4	TIM	Personal account code send timing	4 digits	None

**Parameter Descriptions**

**P1 (CAC):**

Enter the carrier access code (required).

- 5 digits (10XXX)

**P2 (FLG):**

If necessary, enter a value to determine the send position of the personal account code, entered below.

- 0 = Send after dialed number
- 1 = Send before dialed number

**P3 (PAC):**

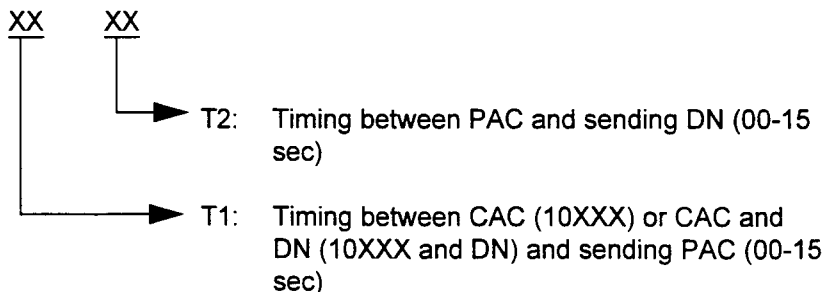
Enter the personal account code.

- 1 to 15 digits
- Blank = Not assigned

**P4 (TIM):**

Enter the personal account code send timing.

- 4 digits





**Parameter Descriptions  
(Cont'd)**

**NOTE:** The outgoing digit sending patterns in LCR are as follows:

	P2	SENT DIGITS
Pattern 1	0	CAC + DN + T1 + PAC
Pattern 2	1	CAC + T1 + PAC + T2 + DN

- Display**
1. Enter the carrier access code.
  2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display the parameters corresponding to the next CAC.
2. The system releases the CAC when the last CAC has been displayed.

- Change**
1. Enter all parameters.
  2. Press **ADD / CHG**.

**NOTE:** Press **ADD / CHG** to change the parameters corresponding to a specified CAC.

- Remove** After the display, or, after entering the necessary parameters, press **RMV** to remove FLG, PAC and TIM.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NO FOUND	The specified CAC is not assigned (Remove command).	Enter a correct CAC.
PARA. ERR	The specified CAC or TIM is not correct.	Assign a correct CAC or TIM.
NO AREA	There is no area available for CAC registration.	
NOT RTGR	The specified CAC is not assigned (Display command).	Enter a correct CAC.

**LCR TIME OF DAY ROUTE  
TABLE NUMBER  
ASSIGNMENT (CMC 427)**

Use the LCR Time of Day Route Table Number Assignment (CMC 427) table to assign the LCR route table number corresponding to the type of day (weekday, holiday, etc.) and the time of day. Figure 4-22 shows the LCR Time of Day Rate Table Structure.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TRTN	Time of day route table number	1 to 63	None
P2	TYOD	Type of day	1 = Weekday 2 = Holiday 3 = Special holiday 4 = Reserved	None
P3	TIOD	Time of day	1 = Day 2 = Night 3 = Midnight 4 = Reserved	None
P4	ARTN	Area code route table number	1 to 63	None

**Parameter Descriptions**

**P1 (TRTN):**

Enter the time of day route table number (required).  
1 to 63

**NOTE:** These route tables are the same as those utilized in CMCs 421, 424, and 429.

**P2 (TYOD):**

If necessary, enter the type of day to which this route table will apply.

- 1 = Weekday
- 2 = Holiday
- 3 = Special holiday
- 4 = Reserved

**P3 (TIOD):**

Enter the time of day which will apply to this route table.

- 1 = Day
- 2 = Night
- 3 = Midnight
- 4 = Reserved

**P4 (ARTN):**

Enter the area code route table number.

- 1 to 63

**NOTES:**

1. The TRTN corresponds to P1 of CMC 423 and 424.
2. The ARTN corresponds to P1 of CMC 421.
3. If TRTN is not assigned in this command, the system will recognize the ARTN as TRTN.

- Display**
1. Enter TRTN, TYOD, and TIOD.
  2. Press **DSP** to display ARTN.

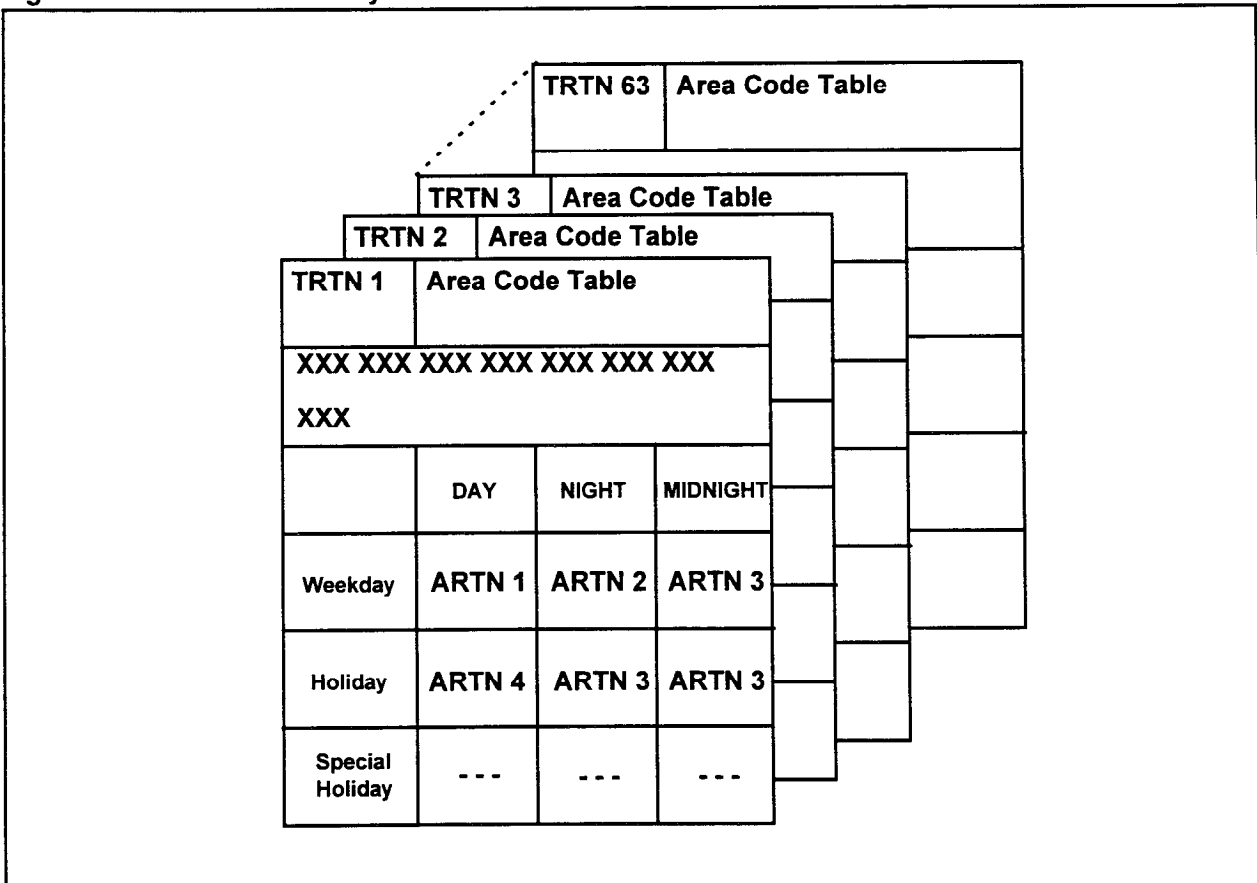
**NOTES:**

1. If **DSP** is pressed without entering TYOD and TIOD, the ARTN corresponding to TYOD = 1 and TIOD = 1 is displayed.
2. Repeated pressing of **DSP** displays the ARTN corresponding to the next TIOD.
3. If TIOD is 4, repeated pressing of **DSP** increments the value of TYOD and displays the ARTN.
4. If both TYOD and TIOD are 4, repeated pressing of **DSP** displays the ARTN corresponding to the next TRTN.
5. This command terminates when **DSP** is pressed after the TRTN exceeds 63 or all the assigned ARTNs have been displayed.

- Change**
1. Enter all necessary parameters.
  2. Press **ADD / CHG** to change the ARTN corresponding to the TRTN, TYOD and TIOD.

**Remove** After entering all necessary parameters, press **RMV** to remove the ARTN.

**Figure 4-22. LCR Time of Day Route Table Structure**



**LCR INTERNATIONAL CODE  
ROUTING TABLE  
ASSIGNMENT (CMC 428)**

Use **CMC 428** to assign a maximum of ten TGNs to each international routing table.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	IRTN	International code routing table number	1 to 63	None
P2	RSC	Routing sequence	1 to 10	None
P3	TGN	Trunk group number	13 to 56	None

**Parameter Descriptions**

**P1 (IRTN):**

Enter the number which you wish to assign to this international code routing table number (required).

- 1 to 63

**P2 (RSC):**

If necessary, enter the routing sequence which will apply to this table.

- 1 to 10

**P3 (TGN):**

Enter the trunk group number(s) to be assigned to this table.

- 13 to 56

**Display**

1. Press **DSP** to display the TGN corresponding to the IRTN and RSC.
2. Press **DSP** again to display the next TGNs, respectively. After the last TGN has been displayed, pressing **DSP** terminates this command.

**Add**

Press **ADD / CHG** to add the TGN with a specified routing sequence number if the same TGN does not exist in the route table.

**Remove**

Press **RMV** to remove the TGN which is designated by the IRTN and RSC.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
OVERLAP	The same TGN is already registered in a routing table.	

**LCR INTERNATIONAL CODE  
ASSIGNMENT (CMC 429)**

Use **CMC 429** to assign international codes to each LCR international code routing table.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>IRTN</u>	International code routing table number	1 to 63	None
<u>P2</u>	<u>IC</u>	International code(s)	01 X X = 0 to 9	None

**Parameter Descriptions**

**P1 (IRTN):**

Enter the international code routing table number (required).

- 1 to 63

**NOTE:** These route tables are the same as those utilized in CMCs 421, 424, and 427.

**P2 (IC):**

Enter the international code(s) which you wish to assign to this table. International codes are entered in the 01 X format:

- X = 0 to 9

**Display**

1. Enter the number of the table which you wish to display.
2. Press **DSP** to display assigned international codes.
3. Press **DSP** again to display the next IC, respectively.

**NOTES:**

1. If an IC is specified, the ICs after the specified IC are displayed.
2. After the last IC has been displayed, press **DSP**. A blank will be displayed, indicating that you have reached the end of the list. Press **DSP** again to display the first IC.

**Add**

1. Enter the IRTN and IC.
2. Press **ADD / CHG** to add the IC to the international code route table.

**Remove**

1. Enter the IRTN and IC.
2. Press **RMV** to remove the specified IC from the international code route table.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	The specified international code is not within 010 to 019.	Enter a correct international code.
DENIED	The specified international code is registered to another route table.	When an error occurs after pressing <b>ADD / CHG</b> , delete the international code from another route table. When an error occurs after pressing <b>RMV</b> , correct the route table number in which the specified international code is registered.

**DID-DISA ADDITIONAL CODE ASSIGNMENT (CMC 430)**

Use the DID-DISA Additional Code Assignment (**CMC 430**) table to record the length of the received digit string and to assign prefix codes, DISA directory numbers, and DISA access codes.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>TGN</b>	Trunk group number	13 to 16 57 to 62	None
<b>P2</b>	<b>RDN</b>	Number of received digits	1, 2, 3, or 4	None
<b>P3</b>	<b>PFX</b>	Prefix code	1 to 3 digits Blank = No prefix is needed	None
<b>P4</b>	<b>DDN</b>	DISA directory number	1 to 4 digits Blank = DISA is not assigned	None
<b>P5</b>	<b>AZC</b>	DISA authorization code	1 to 4 digits Blank = DISA is not assigned	None
<b>P6</b>	<b>COSR</b>	DISA class of service and class of restriction	XXXX First two digits = COS value (01 to 16) Last two digits = COR value (01 to 16)	None

**Parameter Descriptions****P1 (TGN):**

Enter the DID trunk group number which you wish to assign (required).

- 13 to 16
- 57 to 62

**P2 (RDN):**

If necessary, enter the number of digits which this trunk group will expect to receive.

- 1, 2, 3, or 4

**P3 (PFX):**

If necessary, enter the prefix code which will apply to this trunk group.

- 1 to 3 digits
- Blank = No prefix is needed

**P4 (DDN):**

If necessary, enter the DISA directory number.

- 1 to 4 digits
- Blank = DISA is not assigned

**P5 (AZC):**

If necessary, enter the DISA authorization code.

- 1 to 4 digits
- Blank = DISA is not assigned

---

<b>Parameter Descriptions (Cont'd)</b>	<b>P6 (COSR):</b> Enter the DISA class of service and class of restriction. This value is entered in the XXXX format: <ul style="list-style-type: none"><li>• First two digits = COS value (01 to 16)</li><li>• Last two digits = COR value (01 to 16)</li></ul> <b>NOTE:</b> Up to 500 DISA authorization codes may be assigned in a system.
<b>Display</b>	<ol style="list-style-type: none"><li>1. Enter a TGN at P1.</li><li>2. Press <b>DSP</b>.</li></ol> <b>NOTES:</b> <ol style="list-style-type: none"><li>1. Press <b>DSP</b> repeatedly to display data in numerical order of TGNs.</li><li>2. The system releases this CMC when the last TGN is displayed.</li><li>3. Assigning a DISA directory number, without assigning a DISA authorization code, sends a fast busy signal. An authorization code must be assigned to make DISA work.</li></ol>
<b>Add</b>	<ol style="list-style-type: none"><li>1. Enter a TGN at P1.</li><li>2. Enter the appropriate RDN at P2.</li><li>3. Enter a PFX at P3 (if required).</li><li>4. Enter a DDN at P4 (if required).</li><li>5. Enter an AZC at P5 (if required).</li><li>6. Enter the appropriate COSR at P6.</li><li>7. Press <b>ADD / CHG</b>.</li></ol>
<b>Remove</b>	<ol style="list-style-type: none"><li>1. Enter the TGN with the parameters to be removed at P1.</li><li>2. Press <b>DSP</b>.</li><li>3. Press <b>RMV</b>.</li></ol>



## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
OVERLAP	An attempt was made to register data for a trunk before removing old data.	Remove old data and try again.
PARA. ERR	RDN plus PBX is more than four digits.  RDN plus PBX does not match DDN.	Change RDN or PFX to correct values.  Change RDN or PFX to correct values.
NO PARA	An attempt was made to add an AZC for which no COS / COR was entered.  An attempt was made to enter a COS / COR value with no AZC value registered.	Enter the missing parameter and try again.  Enter an AZC value when assigning a COS / COR.
NO AREA	Over 500 ACD values have been registered.	Remove old data and try again.
NOT RTGR	The specified AZC is not assigned.	Enter a correct AZC value.

**DID LISTED DIRECTORY  
NUMBER ASSIGNMENT  
(CMC 431)**

Use the Listed Directory Number Assignment (**CMC 431**) table to assign listed directory numbers for DID. Numbers which are assigned here will ring directly to the Attendant Console. This CMC assignment is overwritten if CMC 435 is implemented.

DID (Direct Inward Dialing) allows calls to ring directly to a station, bypassing the attendant position.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TGN	Trunk group number	13 to 16 57 to 62	None
P2	LDN1	Listed directory number	1 to 4 digits, or blank	None
P3	LDN2	Listed directory number	1 to 4 digits, or blank	None
P4	LDN3	Listed directory number	1 to 4 digits, or blank	None
P5	LDN4	Listed directory number	1 to 4 digits, or blank	None
P6	LDN5	Listed directory number	1 to 4 digits, or blank	None

**Parameter Descriptions**

**P1 (TGN):**

Enter the trunk group number which you wish to define (required).

- 13 to 16
- 57 to 62

**P2 (LDN1):**

Enter the first listed directory number to be assigned to this trunk group.

- 1 to 4 digits, or blank

**P3 (LDN2):**

Enter the second listed directory number to be assigned to this trunk group.

- 1 to 4 digits, or blank

**P4 (LDN3):**

Enter the third listed directory number to be assigned to this trunk group.

- 1 to 4 digits, or blank

**P5 (LDN4):**

Enter the fourth listed directory number to be assigned to this trunk group.

- 1 to 4 digits, or blank

**P6 (LDN5):**

Enter the fifth listed directory number to be assigned to this trunk group.

- 1 to 4 digits, or blank

- Display**
1. Enter a TGN at P1.
  2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of TGNs.
2. The system releases this CMC when the TGN value exceeds 62.
3. Numbers listed in this table will ring at the Attendant Console rather than to a station.

- Change**
1. Enter the TGN for which additions or changes are to be made at P1.
  2. Press **DSP**.
  3. Use the cursor control keys or **Return** to move the cursor to the parameter at which the add or change is to be made.
  4. Enter the desired parameter value.
  5. Press **ADD / CHG**.

- Cancel**
1. Enter the TGN at which the LDN is registered at P1.
  2. Press **DSP**.
  3. Use the cursor control keys or **Return** to move the cursor to the parameter which is to be canceled.
  4. Press **CAN**.
  5. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	<p>A required RDN was not registered at CMC 430.</p> <p>The number of digits in an LDN does not match the number of digits registered at CMC 430, P2 (RDN).</p>	<p>Return to CMC 430 and register the appropriate RDN.</p> <p>Return to CMC 430 and adjust the RDN value.</p>

**DISA-STANDARD DISA AUTHORIZATION CODE ASSIGNMENT (CMC 432)**

Use the DISA Authorization Code Assignment (CMC 432) table to register the access code that will allow an outside caller using a touch tone telephone access to system features over a standard ground start trunk.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	AZC	Authorization code	1 to 8 digits Blank = DISA not available	None
P2	TGN	Trunk group number	13 to 30 0 or blank = System authorization code	None
P3	COSR	DISA class of service and class of restriction	XXXX First two digits = COS value (01 to 16) Last two digits = COR value (01 to 16)	None

**Parameter Descriptions**

**P1 (AZC):**

Enter the authorization code which users must enter to access the DISA feature.

- 1 to 8 digits

**P2 (TGN):**

Enter the trunk group number which will be used as a DISA trunk.

- 13 to 30
- 0 or blank = System authorization code

**P3 (COSR):**

Enter the DISA class of service and class of restriction. This value is entered in the XXXX format:

- First two digits = COS value (01 to 16)
- Last two digits = COR value (01 to 16)

**Display** Press **DSP**.

**NOTE:** Press **DSP** again to release the CMC.

**Change** 1. Enter an authorization code at P1.  
2. Press **ADD / CHG**.

**Remove** 1. Press **CAN**.  
2. Press **ADD / CHG**.

**NOTE:** When an authorization code is assigned, the RVAC Auto Attendant function is disabled.

---

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
PARA. ERR	The specified COSR is not correct.	Check the COSR.
OVERLAP	The AZC or TGN is already assigned.	Check the parameter values.
NO AREA	Over 500 AZC values have been registered.	Remove old data and try again.
NO FOUND	The specified AZC or TGN is not assigned.	Enter a correct AZC or TGN value.

**DID TRUNK LEVEL CHANGE ASSIGNMENT (CMC 433)**

Use this table to strip the first digit of the DID digit stream transmission and replace it with another digit. If any prefix digits were added in CMC 430, this feature is not available.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>TGN</u>	Trunk group number	13 to 16 57 to 62	None
<u>P2</u>	<u>RPD</u>	Replaced digit	0 to 9	None
<u>P3</u>	<u>LDN</u>	Replacement digit	0 to 9	None

**Parameter Descriptions**

**P1 (TGN):**

Enter the DID trunk group number which you wish to define (required).

- 13 to 16
- 57 to 62

**P2 (RPD):**

Enter the digit to be replaced (digit sent) (required).

- 0 to 9

**P3 (LDN):**

Enter the replacement digit (digit translated to).

- 0 to 9

**Display**

1. Enter a TGN at P1 and an RPD at P2.
2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numeric order of RPDs.
2. The system releases this CMC when the last registered RPD has been displayed.
3. Each TGN must be displayed separately.

**Change**

1. Enter the TGN and RPD for which an LDN is to be added or changed.
2. Press **DSP**.
3. Enter the LDN.
4. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RTGR	The specified TGN is not correct.	Check the TGN.

**AUTOMATED ATTENDANT  
ANSWERING MESSAGE AND  
OVERFLOW STATION  
ASSIGNMENT (CMC 434)**

Use this CMC to assign the Automated Attendant answering message and overflow station. The Automated Attendant feature allows incoming calls to reach the desired station without operator or attendant assistance. The system will answer an incoming call with a recorded voice announcement which prompts the caller to enter the desired station number. The caller dials the number on the touch tone keypad and the call is transferred to the appropriate station. The trunk must be defined as ground start and DISA-S in CMC 250.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TNN	Tenant number	0 to 63	None
P2	VMID	Answering message ID (day mode)	70 to 79, or leave blank	None
P3	DN	Overflow station directory number (day mode)	1 to 4 digits, or leave blank	None
P4	NVMID	Answering message ID (night mode)	70 to 79, or leave blank	None
P5	NDN	Overflow station directory number (night mode)	1 to 4 digits, or leave blank	None
P6	ODF	Single digit automated attendant flag	0 or blank = Not applied 1 = Applied	0

**Parameter Descriptions**

**P1 (TNN):**

Enter the tenant number which you want to define (required).

- 0 to 63

**P2 (VMID):**

If necessary, enter the answering message ID number which will be used when the system is in day mode.

- 70 to 79, or leave blank (refer to CMC 261)

**P3 (DN):**

Enter the directory number of the station which will be used to handle overflow calls when the system is in the day mode.

- 1 to 4 digits, or leave blank

**P4 (NVMID):**

If necessary, enter the answering message ID number which will be used when the system is in night mode.

- 70 to 79, or leave blank (refer to CMC 261)

**P5 (NDN):**

Enter the directory number of the station which will be used to handle overflow calls when the system is in the night mode.

- 1 to 4 digits, or leave blank

**Parameter Descriptions  
(Cont'd)**

**P6 (ODF):**

Enter whether or not the Single Digit Automated Attendant feature has been assigned. This assignment is made at CMC 480.

**0 or blank = Not applied** (default)

1 = Applied

**NOTES:**

1. In the following cases, the system sends out dial tone instead of the Automated Attendant answering message:
  - If VMID (NVMID) is not specified.
  - If the Recorded Voice Announcement data for Automated Attendant is not specified in CMC 261.
  - If the Automated Attendant answering message is not recorded.
  - If the RVAC card is not assigned in CMC 260.
  - If the RVAC card fails.
2. When the overflow station is not assigned, the attendant is identified as the overflow station.
3. When a speed calling number is assigned as a destination in CMC 480 and the call is blocked via an all trunks busy, the incoming call is not transferred to the attendant console or the assigned extension. The caller will hear reorder tone.

**Display**

1. Press **DSP** without P1 to display the data corresponding to TNN = 0.
2. Enter P1 data.
3. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numeric order of TNNs.
2. The system releases this CMC when the last registered TNN has been displayed.
3. There is no display if data is not assigned.

**Change**

1. Enter the parameters to be changed.
2. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified directory number is not correct.	Enter the correct directory number.



**LISTED DIRECTORY  
NUMBER ASSIGNMENT  
(CMC 435)**

Use the Listed Directory Number Assignment command (**CMC 435**) to assign the listed directory number for the termination of night mode and to the attendant tenant for the termination of the day mode (per TGN). This command has a higher priority level than CMC 431.

This command requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>TGN</b>	Trunk group number	13 to 16 57 to 62	None
<b>P2</b>	<b>IND</b>	Index number	1 to 100	None
<b>P3</b>	<b>LDN</b>	Listed directory number	1 to 4 digits	None
<b>P4</b>	<b>TNN</b>	Tenant number	1 to 63 0 or blank = Common tenant	None
<b>P5</b>	<b>DN</b>	Directory number of night answer telephone	1 to 4 digits	None

**Parameter Descriptions**

**P1 (TGN):**

Enter the trunk group number which you wish to define (required).

- 13 to 16
- 57 to 62

**P2 (IND):**

If necessary, enter the index number for the listed directory number table.

- 1 to 100

**P3 (LDN):**

Enter the listed directory number(s) to be assigned to the specified table.

- 1 to 4 digits

**P4 (TNN):**

Enter the tenant number which this LDN table will service.

- 1 to 63
- 0 or blank = Common tenant

**P5 (DN):**

If necessary, enter the directory number of the night answer telephone.

- 1 to 4 digits

- Display**
1. Enter a TGN.
  2. Press **DSP** to display the registered data of IND = 1. Enter a TGN with IND and press **DSP** to display the registered data of that IND.

**NOTES:**

1. Pressing **DSP** again displays the data of the next IND.
2. This command terminates when **DSP** is pressed after displaying the last IND of the last TGN.

- Change**
1. Enter the necessary parameters.
  2. Press **ADD / CHG**.

- Remove**
1. Enter a TGN and IND.
  2. Press **RMV**.

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
PARA. ERR	The specified TGN is not correct.	Enter a correct TGN.
OVERLAP	The same LDN has already been registered to the same TGN.	Check the LDN.
	The LDN has already been registered to the specified IND.	Check the IND.
NOT RGTR	The specified DN is not registered.	Enter a registered DN.

**DISA-STANDARD DAY / NIGHT MODE ASSIGNMENT (CMC 437)**

Use **CMC 437** to assign DISA-Standard Day / Night mode. This CMC can also be used to assign RVAC Auto Attendant Day / Night operation.

**NOTE:** The trunk must be assigned DISA-S service at CMC 250 (P6) before entering this CMC.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>EN</b>	Equipment number	See description below	None
<b>P2</b>	<b>FLAG</b>	Flag value	0 = All day 1 = DISA-S only in night mode 2 = DISA-S only in day mode	None

**Parameter Descriptions**

**P1 (EN):**

Enter the equipment number of the DISA-standard trunk (required). Equipment numbers are entered in the XYYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

**P2 (FLAG):**

If necessary, enter one of the following values to define the DISA-standard operating mode:

- 0 = All day
- 1 = DISA-S only in night mode
- 2 = DISA-S only in day mode

**Display**

1. Enter the EN.
2. Press **DSP** to display the FLAG value.

**NOTE:** Pressing **DSP** again updates the EN and displays the corresponding parameters. After the last EN has been displayed, press **DSP** again to terminate this command.

**Change**

1. Enter the necessary parameters.
2. Press **ADD / CHG** to change the data.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DISAGREE	The specified EN is not a DISA-S trunk.	Assign the DISA-S trunk an EN.

**CLID EXTENSION DATA ASSIGNMENT (CMC 438)**

Use the CLID Extension Data Assignment (**CMC 438**) to assign ISDN CLID (Calling Line Identification Display) data for a voice extension. When an outgoing call is established via an ISDN CO line, CLID information is sent to the CO.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DN	Directory number	1 to 4 digits	None
P2	RDN	DID number	1 to 4 digits	None

**Parameter Descriptions**

**P1 (DN):**

Assign the directory number which will be used to display CLID data (required).

- 1 to 4 digits

**P2 (RDN):**

If necessary, enter the DID number which will be sent to the ISDN network.

- 1 to 4 digits

**Display**

1. Enter the DN.
2. Press **DSP** to display the RDN that corresponds to this DN. A blank is displayed if no RDN is registered.

**NOTE:** Press **DSP** again to display the next DN registering RDN. After the last DN is displayed, press **DSP** again to terminate the command.

**Add**

1. Enter the DN and the RDN.
2. Press **ADD / CHG** to add the data.

**Remove**

1. Enter the DN.
2. Press **RMV** to remove the data corresponding to this DN.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified extension is not installed.	Install the extension.
DISAGREE	The RDN is already registered to the specified extension.	Remove the RDN.
NO FOUND	The RDN is not registered to the specified extension.	Enter a registered RDN.

**CLID DATA EXTENSION  
DATA ASSIGNMENT (CMC  
439)**

Use the CLID Data Extension Data Assignment (**CMC 439**) to assign ISDN CLID (Calling Line Identification Delivery) data for a data extension.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DN	Directory number	1 to 4 digits	None
P2	RDN	DID number	1 to 4 digits	None

**Parameter Descriptions**

**P1 (DN):**

Assign the directory number which will be used to display CLID data (required).

- 1 to 4 digits

**P2 (RDN):**

If necessary, enter the DID number which will be displayed.

- 1 to 4 digits

**Display**

1. Enter the DN.
2. Press **DSP** to display the RDN that corresponds to this DN. A blank is displayed if no RDN is registered.

**NOTE:** Press **DSP** again to display the next DN registering RDN. After the last DN is displayed, press **DSP** again to terminate the command.

**Add**

1. Enter the DN and the RDN.
2. Press **ADD / CHG** to add the data.

**Remove**

1. Enter the DN.
2. Press **RMV** to remove the data corresponding to this DN.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified data extension is not installed.	Install the data extension.
DISAGREE	The RDN is already registered to the specified data extension.	Remove the RDN.
NO FOUND	The RDN is not registered to the specified data extension.	Enter a registered RDN.

**DNIS TGN ASSIGNMENT  
(CMC 460)**

Use the DNIS TGN Assignment (CMC 460) to activate / deactivate DNIS service, and to assign the number of receiving DNIS digits and the DNIS rerouting station. In addition, DNIS numbers not assigned in CMCs 461 and/or 464 are routed to the rerouting directory number(s) specified here. DNIS allows digits to be received from a CO, across an ISDN-PRI, T-1, or analog DID type service, and then automatically routed to predetermined stations in the system.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TGN	Trunk group number	13 to 16 57 to 62	None
P2	DNIS	DNIS activation flag	0 = Disabled (standard DID service) 1 = Activated	None
P3	DDC	DNIS receiving digits	1 to 10, or leave blank	None
P4	DN	Day re-routing directory number for unassigned DNIS numbers	1 to 4 digits, or blank	None
P5	NDN	Night re-routing directory number for unassigned DNIS numbers	1 to 4 digits, or blank	None

**Parameter Descriptions**

**P1 (TGN):**

Enter the trunk group number which you wish to define.

- 13 to 16
- 57 to 62

**P2 (DNIS):**

Enter one of the following flag values to activate or disable DNIS service for the specified trunk group:

- 0 = Disabled (standard DID service)
- 1 = Activated

**P3 (DDC):**

Enter the number of DNIS receiving digits.

- 1 to 10, or leave blank

**P4 (DN):**

Enter the day re-routing directory number.

- 1 to 4 digits, or leave blank

**P5 (NDN):**

Enter the night re-routing directory number.

- 1 to 4 digits, or leave blank

**NOTE:** If the received DNIS number is not registered by CMC 461, or if no digits are received, the incoming call terminates to the station which is specified by P4 and/or P5 (when P2 = 1).

- Display**
1. Enter the TGN.
  2. Press **DSP** to display P2 to P5 values.

**NOTE:** Pressing **DSP** again displays parameters P2 to P5 corresponding to the TGN, respectively. If P1 is not specified, the value of TGN 13 is displayed. After the last TGN has been displayed, press **DSP** again to terminate this command.

- Change**
1. Enter the necessary parameters.
  2. Press **ADD / CHG** to enter or change the parameters. If the parameter value is not entered, the registered parameter is cleared.

#### ERROR CODES

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	Invalid TGN is entered.	Enter the correct TGN.
NOT RGTR	The specified station number is not installed in the system.	Enter a station number which is installed.
NO PARA	No DCC is entered when P2 is set to 1.	Enter the DCC (P3).
IGNORED	Pressed key has no effect.	Press different key.

**DNIS NUMBER  
REGISTRATION (CMC 461)**

Use the DNIS Number Registration (**CMC 461**) command to register DNIS numbers and assign an answering priority level to the DNIS number. DNIS allows digits to be received from a long distance carrier across a T-1 or DID-type service, and then automatically routed to predetermined stations in the system.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DNIS	DNIS number received	1 to 10 digits	None
P2	TRMN	Terminating station where DNIS call is routed	1 to 7 digits (station directory number, attendant access code, system abbreviated access code + abbreviated code)	None
P3	LVL	Priority level	1 to 8 (1 being the highest, and 8 being the lowest), or leave blank	None

**Parameter Descriptions****P1 (DNIS):**

Enter the DNIS number which you wish to define.

- 1 to 10 digits

**P2 (TRMN):**

Enter the terminating station number.

- 1 to 7 digits (station directory number, attendant access code, system abbreviated access code + abbreviated code)

**P3 (LVL):**

Enter the priority level.

- 1 to 8 (1 being the highest and 8 being the lowest), or leave blank

**NOTES:**

1. If an AP is installed, only the Display can be done. You may not use the Add option.
2. When the FLGN = 197 value in CMC 102 is set to 0, this command is applied when the system is in day and/or night mode.
3. When the FLGN = 197 value in CMC 102 is set to 1, this command is applied to day mode only. CMC 464 is used when the system is in night mode.

**Display**

1. To display the first DNIS number registered and its corresponding data, **DSP** is pressed without entering P1.
2. If **DSP** is pressed after entering P1, the corresponding P1 data is displayed. At this time, if the entered DNIS number is not registered, the next DNIS number larger than the entered DNIS number and the corresponding DNIS number information is displayed.



- Add**
1. Enter the necessary parameter(s).
  2. Press **ADD / CHG** to add or register data.

**Remove** Press **RMV** to remove data (after displaying data by pressing **DSP**).

#### ERROR CODES

ERROR CODE	CAUSE	CORRECTION
DENIED	The AP is installed.	Remove AP at CMC 281, then retry operation.
OVERLAP	The DNIS number is already registered.	Register after removing the DNIS number already registered.
NOT RGTR	The specified station number, access code, or DNIS number is not installed.	Specify the station number, access code, or DNIS number which is installed.
NO AREA	No area to register the data.	Register after removing other data.

**DNIS NAME ASSIGNMENT.  
(CMC 462)**

Use the DNIS Name Assignment (**CMC 462**) to assign a name to each DNIS number. Use a PcMP to enter this command.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DNIS	DNIS number	1 to 10 digits	None
P2	NAME	DNIS name	1 to 15 characters	None

**Parameter Descriptions**

**P1 (DNIS):**

Enter the DNIS number which you wish to define.

- 1 to 10 digits

**P2 (NAME):**

Enter the name which you wish to assign.

- 1 to 15 characters

**NOTES:**

1. If an AP is installed, only the Display can be done. You cannot use the Change option.
2. Character codes usable for the name registration are as follows:  
SP, !, ", #, \$, %, &, ', (, ), \*, +, (,), -, ., /, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, :, ;, >, =, <, ?, @, A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z.

**Display**

1. Enter the DNIS number.
2. Press **DSP** to display the corresponding DNIS name.

**NOTE:** If no name is registered, nothing is displayed at P2 (blank). By pressing **DSP** again, the next DNIS number (which has a name) and the name are displayed, respectively. If P1 is not specified, the name of the lowest DNIS number among registered DNIS numbers is displayed.

**Change**

1. Enter the necessary parameter.
2. Press **ADD / CHG** to add or change the name corresponding to the specified DNIS number. If **ADD / CHG** is pressed without a name (blank), the name is removed.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DENIED	AP is assigned.	Remove AP using CMC 281, then retry operation.
NOT RGTR	The specified DNIS number is not assigned.	Check the DNIS number.

**MUSIC ON HOLD PER DNIS  
NUMBER ASSIGNMENT  
(CMC 463)**

Use the Music on Hold per DNIS Number Assignment (CMC 463) to assign the hold tone or music source for each DNIS number as a source for music on hold.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DNIS	DNIS number	1 to 10 digits	None
P2	TSF	Tone source flag	1 = Tone pattern 2 = Trunk equipment number 3 = Message ID Blank = Not registered	None
P3	TPTN / EN / MSGID	Tone pattern / Trunk EN / Message ID	Tone pattern = 0 to 9 (see below) Trunk EN = 4 digits Message ID = 190 to 199 Blank = Not registered	None

**Parameter Descriptions**

**P1 (DNIS):**

Enter the DNIS number which you wish to define.

- 1 to 10 digits

**P2 (TSF):**

Enter the number corresponding to the desired tone source.

- 1 = Tone pattern
- 2 = Trunk equipment number
- 3 = Message ID
- Blank = Not registered

**P3 (TPTN / EN / MSGID):**

Depending on the value entered in P2, enter one of the following:

- Tone pattern: 0 to 9
  - 0 = Silent tone (ST)
  - 1 = Dial tone (DT)
  - 2 = Not used
  - 3 = Busy tone (BT)
  - 4 = Reorder tone (ROT)
  - 5 = Confirmation tone (CFT)
  - 6 = Intrusion tone (INR)
  - 7 = Trunk busy tone (TBT) or congestion tone (CGT)
  - 8 = Distinctive busy tone (DBT) or override warning tone (OWT)
  - 9 = Call waiting tone (CWT)
- Four-digit trunk equipment number
- Message ID 190 to 199
- Blank = Not registered

- Display**
1. Enter the DNIS.
  2. Press **DSP** to display the corresponding data.

**NOTE:** The lowest registered DNIS and its corresponding data are displayed if P1 is not entered. Press **DSP** again to display the next DNIS and the corresponding data. After the last registered DNIS is displayed, pressing **DSP** again will terminate the command.

- Add / Change**
1. Enter the necessary parameters.
  2. Press **ADD / CHG** to add or change the data.

- Remove**
1. Enter the DNIS.
  2. Press **RMV** to remove the DNIS and its corresponding data.

#### ERROR CODES

ERROR CODE	CAUSE	CORRECTION
DISAGREE	In case of P2 = 2, P3 is not a trunk EN for music source.	Enter trunk EN for music source.
NOT RGTR	The specified DNIS number is not assigned.	Assign the DNIS number.
PARA. ERR	EN is not entered in P3 when P2 = 2.  Message ID not entered in P3 when P2 = 3.  Tone pattern not entered in P3 when P2 = 1.	Check parameter values.

**DNIS NIGHT NUMBER  
ASSIGNMENT (CMC 464)**

Use the DNIS Night Number Assignment (CMC 464) to assign a night DNIS number, priority level, and terminating station number. A different destination can be assigned for day or night mode for calls that terminate through DNIS.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DNIS	DNIS number	1 to 10 digits	None
P2	NTRM	Terminating station number where calls for the DNIS night number will be routed	<ul style="list-style-type: none"> <li>• Station directory number</li> <li>• Attendant access code</li> <li>• System speed calling code + number</li> </ul>	None
P3	NLVL	Night priority level	1 to 8, with 1 being the highest Blank = Assigned trunk priority	None

**Parameter Descriptions****P1 (DNIS):**

Enter the DNIS number which you wish to define as a night number.

- 1 to 10 digits

**P2 (NTRM):**

Enter the terminating station number for this DNIS night number.

- Station directory number
- Attendant access code
- System speed calling code + number

**P3 (NLVL):**

Enter the night priority level.

- 1 to 8, with 1 being the highest.
- Blank = Assigned trunk priority

**NOTE:** This command is only effective when the system option flag set in CMC 102 (FLGN = 197) has a value of 1.

**Display**

1. Enter the DNIS number.
2. Press **DSP** to display the corresponding DNIS information.

**Add**

1. Enter the necessary parameter.
2. Press **ADD / CHG** to add or change the data.

**Remove**

1. Enter any necessary parameter(s) or use the Display option.
2. Press **RMV**.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
DENIED	AP is assigned.	Remove AP using CMC 281, then retry operation.
OVERLAP	The night DNIS number is already registered.	Remove the DNIS number and try again.
NOT RGTR	The specified station number, access code, or DNIS number is not assigned.	Check the parameter value.
NO AREA	There is no available area to register the data.	Remove unnecessary data and try again.

**CARRIER IDENTIFICATION  
CODE (7-DIGIT CACs)  
RESTRICTION CHECKING  
ASSIGNMENT (CMC 470)**

In equal access areas, the system assigns each secondary carrier a seven-digit carrier access code (CAC), 10XXXXX. **CMC 417** allows stations in a restriction group within a class of restriction access to specific secondary carriers by manually dialing the CAC.

If a station is restricted from area codes, office codes, etc., through class of restriction and restriction group assignment and/or by least cost routing assignment, programming a carrier access code for that class of restriction and restriction group through **CMC 417** overrides all other restrictions. However, the station user must manually dial the 10XXXXX code to access the desired secondary carrier. This feature can be used to force stations to use a secondary carrier for outgoing trunk calls. Up to ten total (5-digit CACs and 7-digit CACs) can be registered. All ten may be assigned to one COR.

Please note that five-digit CACs are assigned using **CMC 415**.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>RGN</u>	Restriction group number	1 to 3	None
<u>P2</u>	<u>COR</u>	Class of restriction	1 to 16	None
<u>P3</u>	<u>CIC</u>	Carrier identification code	7 digits (10XXXXXX)	None

**Parameter Descriptions**

**P1 (RGN):**

Enter the restriction group to which you wish to assign secondary carrier information (required).

- 1 to 3

**P2 (COR):**

Enter the class of restriction which will apply to this restriction group (required).

- 1 to 16

**P3 (CIC):**

Enter the carrier identification (access) code which stations in this restriction group must dial to access the secondary carrier.

- 7 digits, in the 10XXXXXX format

**Display**

1. Enter an RGN and COR at P1 and P2.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** repeatedly displays subsequent data in numerical order of COR and CIC within each class. If the COR is not entered, or after all CICs have been displayed, pressing **DSP** will display a blank line. Pressing **DSP** again will recycle the list.
2. Each RGN must be displayed separately.

- Add**
1. Enter the required parameters.
  2. Use the cursor controls or **Return** to move the cursor to the parameter to be added.
  3. Enter the new value.
  4. Press **ADD / CHG**.

- Remove**
1. Enter the required parameters or press **DSP**.
  2. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NO AREA	An attempt was made to add a CIC combination when no more system memory was available.	Remove one or more CIC combinations from any RGN.
OVERLAP	An attempt was made to add a CIC combination which is already registered.	Check the entry and try again, or abandon the attempt.
NO FOUND	An attempt was made to remove a CIC combination which is not currently registered.	Check the entry and try again, or abandon the attempt.



**LCR CARRIER ACCESS  
CODE (7-DIGIT CACs)  
ASSIGNMENT (CMC 471)**

Use the LCR Carrier Access Code Assignment (CMC 4715) table to record 7-digit carrier access codes which will be outpulsed to the CO if LCR selects an alternate carrier in an equal access area. If the specified CIC is one that has been registered using CMC 425, it cannot be registered using this CMC.

Please note that five-digit CACs are assigned using CMC 425.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>LCN</u>	Least cost routing carrier	1 to 10	None
<u>P2</u>	<u>CIC</u>	Carrier identification code	7 digits (10XXXXXX)	None

**Parameter Descriptions**

**P1 (LCN):**

Enter the number that will be used for this Least Cost Routing carrier access (required).

- 1 to 10

**P2 (CIC):**

Enter the carrier identification (access) code.

- 7 digits (10XXXXXX)

**Display**

1. Enter an LCN at P1.
2. Press **DSP** to display the corresponding CIC.

**NOTES:**

1. Press **DSP** repeatedly to display CIC data in numerical order of LCNs. Five-digit CACs are not displayed.
2. The system releases this CMC when the LCN value exceeds 10.

**Change**

1. Enter an LCN at P1.
2. Enter a CIC at P2.
3. Press **ADD / CHG**.

**NOTE:** Five-digit CACs are not changed.

**Remove**

1. Enter an LCN at P1.
2. Press **DSP**.
3. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	The specified CIC is not correct.	Check the CIC.
DENIED	The specified LCN is registered as a five-digit CIC.	Check the CIC.

**PERSONAL ACCOUNT CODE FOR 7-DIGIT CACs ASSIGNMENT (CMC 472)**

Use the Personal Account Code for CAC Assignment (CMC 472) table to assign the personal account code, the sending position of the personal account code, and length of outgoing call to the LCR feature. Each 7-digit carrier identification code contains this information. Up to ten 5-digit and 7-digit CACs can be registered.

Please note that five-digit CACs are assigned using CMC 426.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	CIC	Carrier identification code	7 digits (10XXXXX)	None
P2	FLG	Flag value	0 = Send personal account code after dialed number 1 = Send personal account code before dialed number	None
P3	PAC	Personal account code	1 to 15 digits Blank = Not assigned	None
P4	TIM	Personal account code send timing	4 digits	None

**Parameter Descriptions**

**P1 (CIC):**

Enter the carrier identification (access) code (required).

- 7 digits (10XXXXX)

**P2 (FLG):**

If necessary, enter a value to determine the send position of the personal account code, entered below.

- 0 = Send after dialed number
- 1 = Send before dialed number

**P3 (PAC):**

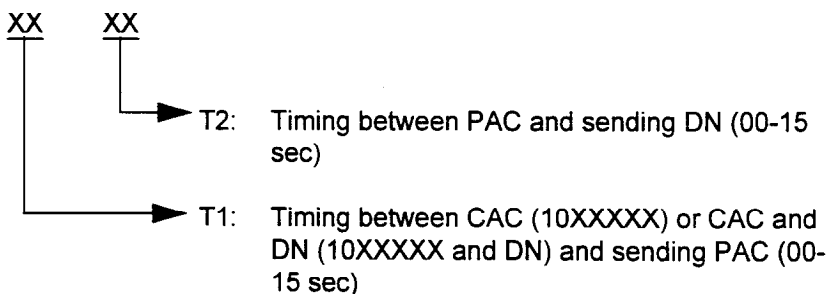
Enter the personal account code.

- 1 to 15 digits
- Blank = Not assigned

**P4 (TIM):**

Enter the personal account code send timing.

- 4 digits



**Parameter Descriptions  
(Cont'd)**

**NOTE:** The outgoing digit sending patterns in LCR are as follows:

	P2	SENT DIGITS
Pattern 1	0	CAC + DN + T1 + PAC
Pattern 2	1	CAC + T1 + PAC + T2 + DN

**Display**

1. Enter the CIC.
2. Press **DSP** to display FLG, PAC, and TIM data.

**NOTES:**

1. If **DSP** is pressed without entering a CIC, the lowest CIC and associated parameters will be displayed.
2. Press **DSP** repeatedly to display the parameters corresponding to the next CIC.
3. The system releases the CIC when the last CIC has been displayed.

**Change**

1. Enter all parameters.
2. Press **ADD / CHG**.

**NOTE:** Press **ADD / CHG** to change the parameters corresponding to a specified CIC.

**Remove**

After the display, or, after entering the necessary parameters, press **RMV** to remove FLG, PAC and TIM.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NO FOUND	The specified CIC is not assigned (Remove command).	Enter a correct CIC.
PARA. ERR	The specified CIC or TIM is not correct.	Assign a correct CIC or TIM.
NO AREA	There is no area available for CIC registration.	
NOT RTGR	The specified CIC is not assigned (Display command).	Enter a correct CIC.

**SINGLE DIGIT AUTOMATED ATTENDANT ASSIGNMENT (CMC 480)**

Use this table (CMC 480) to assign the single digit automated attendant mode and destination for each attendant. DISA-S is required for this feature.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TNN	Tenant number	0 to 63	None
P2	DNO	Dial number	0 to 9, *, #	None
P3	MID	Automated attendant in day mode	0 = Listen to answering message again 1 = Terminates to destination assigned below 2 = Manual dial	0
P4	DID	Destination in day mode (when P3 = 1)	When MID = 0 or 2, leave blank When MID = 1, enter extension DN, attendant access code, or system speed calling FAC + code	Blank
P5	MIN	Automated attendant in night mode	0 = Listen to answering message again 1 = Terminates to destination assigned below 2 = Manual dial	0
P6	DIN	Destination in night mode (when P5 = 1)	When MIN = 0 or 2, leave blank When MIN = 1, enter extension DN, attendant access code, or system speed calling FAC + code	Blank

**Parameter Descriptions**

**P1 (TNN):**

Enter the tenant number (required).

- 0 to 63

**P2 (DNO):**

Enter the one-digit dial number.

- 0 to 9, \*, #

**P3 (MIN):**

Enter how the automated attendant in day mode operation will interpret the single digit dial number entered in P2.

- **0 = Listen to answering message again** (default)
- 1 = Terminates to destination specified in P4
- 2 = Manual dial

**P4 (DID):**

Enter the day mode destination routing number, when P3 = 1

- Extension directory number
- Attendant access code
- System speed calling number + code
- **Default = Leave blank**

**Parameter Descriptions  
(Cont'd)**

**P5 (MIN):**

Enter how the automated attendant in night mode operation will interpret the single digit dial number entered in P2.

- **0 = Listen to answering message again** (default).
- 1 = Terminates to destination specified in P6.
- 2 = Manual dial

**P6 (DIN):**

Enter the night mode destination routing number, when P5 = 1

- Extension directory number.
- Attendant access code.
- System speed calling number + code
- **Default = Leave blank**

**NOTE:** When a speed calling number is assigned as a destination and the call is blocked via an all trunks busy, the incoming call is not transferred to the attendant console or the assigned extension. The caller will hear reorder tone.

- Display**
1. Enter the TNN.
  2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display the MID, DID, MIN, and DIN data corresponding to the next assigned DNO.
2. If no TNN or DNO information is entered, data corresponding to TNN = 0 and DNO = 0 is displayed.
3. Pressing the DSP key after DNO " #" is displayed will show the parameters corresponding to the next assigned TNN.

- Change**
1. Enter all parameters.
  2. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NO PARA	The required TNN parameter is not entered.	Enter a TNN value.
PARA. ERR	The specified parameter is not correct.	Enter a correct value.

**SMDR OUTGOING CONNECTION SCREENING ASSIGNMENT (CMC 500)**

Use the SMDR Outgoing Connection Screening Assignment (CMC 500) table to assign SMDR output for CO outgoing, tie outgoing, account code calls, and toll calls. The SMDR (Station Message Detail Recording) feature provides a printed copy of information, such as originating station number, number dialed, call duration, and cost of call, for every outgoing call.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	COGF	CO outgoing connection	0 = No SMDR 1 = SMDR	1
P2	POGF	Tie outgoing connection	0 = No SMDR 1 = SMDR	1
P3	ACC	Account flag	0 = SMDR for all calls 1 = SMDR for account calls only	0
P4	TLC	Toll call flag	0 = SMDR for all calls 1 = SMDR for toll calls only	0

**Parameter Descriptions**

**P1 (COGF):**

Enter whether or not outgoing CO connections will be subject to SMDR.

- 0 = No SMDR
- 1 = SMDR (default)

**P2 (POGF):**

Enter whether or not outgoing tie connections will be subject to SMDR.

- 0 = No SMDR
- 1 = SMDR (default)

**P3 (ACC):**

Enter whether or not account code calls will be subject to SMDR.

- 0 = SMDR for all calls (default)
- 1 = SMDR for account calls only

**P4 (TLC):**

Enter whether or not toll calls will be subject to SMDR.

- 0 = SMDR for all calls (default)
- 1 = SMDR for toll calls only

**Display** Press **DSP**.

**NOTES:**

1. The values for parameters 1 through 4 will be displayed.
2. Pressing **DSP** again will release the CMC.

**Change**

1. Press **DSP**.
2. Use **Return** or the cursor control keys to move the cursor to the parameter(s) to be changed.
3. Enter the new data.
4. Press **ADD / CHG**.

**SMDR TRUNK GROUP  
SCREENING ASSIGNMENT  
(CMC 501)**

Use the SMDR Trunk Group Screening Assignment (**CMC 501**) table to mark each trunk group as subject to or exempt from SMDR.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TGN	Trunk group number	13 to 56	All
P2	FLAG	Output ID flag	0 = No SMDR 1 = SMDR	1

**Parameter Descriptions**

**P1 (TGN):**

Enter the trunk group number which you wish to define (required).

- 13 to 56

**P2 (FLAG):**

Enter the value corresponding to whether or not you want SMDR assigned to the trunk group.

- 0 = No SMDR
- 1 = SMDR (default)

**Display**

1. Enter a TGN at P1.
2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of CORs.
2. The system releases this CMC when the TGN value exceeds 56.

**Change**

1. Enter the TGN to be changed at P1.
2. Enter the new FLAG value at P2.
3. Press **ADD / CHG**.

**SMDR STATION COR  
SCREENING ASSIGNMENT  
(CMC 502)**

Use the SMDR Station COR Screening Assignment (CMC 502) table to assign the COR for SMDR output.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	COR	Class of restriction	1 to 16	All
P2	FLAG	Output ID flag	0 = No SMDR 1 = SMDR	1

**Parameter Descriptions**

**P1 (COR):**

Enter the COR which you wish to define (required).

- 1 to 16

**P2 (FLAG):**

Enter the value corresponding to whether or not you want SMDR assigned to the class of restriction.

- 0 = No SMDR
- 1 = SMDR (default)

**Display**

1. Enter COR at P1.
2. Press **DSP** to display the FLAG.
3. Press **DSP** again to display the FLAG for the next COR.

**NOTE:** The command terminates when the COR exceeds 16.

**Change**

1. Enter the parameters.
2. Press **ADD / CHG** to change the FLAG.



**SMDR TENANT SCREENING  
ASSIGNMENT (CMC 503)**

Use the SMDR Tenant Screening Assignment (**CMC 503**) table to mark each tenant group as subject to or exempt from SMDR.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>TEN</b>	Tenant group	1 to 63	All
<b>P2</b>	<b>FLAG</b>	Output ID flag	0 = No SMDR 1 = SMDR	1

**Parameter Descriptions****P1 (TEN):**

Enter the tenant group which you wish to define (required).

- 1 to 63

**P2 (FLAG):**

Enter the value corresponding to whether or not you want SMDR assigned to the tenant.

- 0 = No SMDR
- **1 = SMDR (default)**

**Display**

1. Enter a TEN at P1.
2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of TENS.
2. The system releases this CMC when the TEN value exceeds 63.

**Change**

1. Enter the TEN to be changed at P1.
2. Enter the new FLAG value at P2.
3. Press **ADD / CHG**.

**SMDR CALL DURATION  
SCREENING ASSIGNMENT  
(CMC 504)**

Use the SMDR Call Duration Screening Assignment (**CMC 504**) table to register the minimum duration of a call before an SMDR record is created.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	HH	Hours of minimum duration	0 to 23	0
P2	MM	Minutes of minimum duration	0 to 59	0
P3	SS	Seconds of minimum duration	0 to 59	0

**Parameter Descriptions**

**P1 (HH):**

Enter the minimum duration (in hours):

- 0 to 23
- **0 (default)**

**P2 (MM):**

Enter the minimum duration (in minutes):

- 0 to 59
- **0 (default)**

**P3 (SS):**

Enter the minimum duration (in seconds):

- 0 to 59
- **0 (default)**

**Display**

Press **DSP**.

**NOTES:**

1. The values for parameters 1 through 3 will be displayed.
2. Press **DSP** again to release this CMC.

**Change**

1. Press **DSP**.
2. Use **Return** or the cursor control keys to move the cursor to the parameter(s) to be changed.
3. Enter the new data.
4. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	The entered value is not correct.	Enter a correct value.

**SMDR MODEM GROUP  
SCREENING ASSIGNMENT  
(CMC 505)**

Use the SMDR Modem Group Screening Assignment (CMC 505) table to assign the modem group for SMDR output.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>MGID</b>	Modem group	1 to 15	None
<b>P2</b>	<b>FLAG</b>	Output ID flag	0 = No SMDR 1 = SMDR	1

**Parameter Descriptions**

**P1 (MGID):**

Enter the modem group which you wish to define (required).

- 1 to 15

**P2 (FLAG):**

Enter the value corresponding to whether or not you want SMDR assigned to the modem group.

- 0 = No SMDR
- 1 = SMDR (default)

**Display**

1. Enter the MGID.
2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display succeeding MGIDs.
2. The command terminates when the MGID exceeds 15.

**Add / Change**

1. Enter the new data.
2. Press **ADD / CHG**.

**SMDR OUTGOING DIGITS  
SCREENING ASSIGNMENT  
(CMC 506)**

Use the SMDR Outgoing Digits Screening Assignment (CMC 506) table to mark each digit group as subject to or exempt from SMDR.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	FLAG	Flag value	0 = SMDR output unnecessary 1 = SMDR output necessary	None
P2	CD	Dialing code	1 to 10 digits	None

**Parameter Descriptions**

**P1 (FLAG):**

Enter the value corresponding to whether or not you want SMDR.

- 0 = SMDR output unnecessary
- 1 = SMDR output necessary

**P2 (CD):**

Enter the dialing code. Up to 100 codes can be registered.

- 1 to 10 digits

**NOTES:**

1. This command applies only to CO calls.
2. Outgoing digits not assigned in this command have the opposite flag value which is assigned.

**Example:** If a CD is assigned to FLAG "1," the other CDs, which are unassigned in this command, will be set to FLAG "0."

3. Outgoing digits are applied from the head of the dialed digit, regardless of customer toll prefix, area code, office code, etc.

**Display**

1. Press **DSP** to display the contents of the parameters. Pressing **DSP** without entering any parameters displays the lowest FLAG and CD value.
2. Press **DSP** again to display the next CD corresponding to the FLAG.
3. To terminate this command, press **DSP** after the last CD has been displayed.

**Add**

1. Enter all necessary parameters.
2. Press **ADD / CHG** to assign the specified CD.

**Remove**

1. Enter the OGD that needs to be removed.
2. Press **RMV** to remove the specified CD.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	The specified FLAG value is not correct.	Enter a correct value.
NO AREA	There is no available area left for registration.	Abandon the attempt, or try again after removing unnecessary code(s).
OVERLAP	The entered CD is already registered.	Change the CD.
NO FOUND	The specified CD is not registered.	Enter a correct CD value.

**SYSTEM CALENDAR ASSIGNMENT (CMC 510)**

Use the System Calendar Assignment (**CMC 510**) table to assign holidays in a year for LCR usage. The system automatically recognizes Sundays as holidays.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TOC	Type of call	1 (fixed) = LCR only	None
P2	TYOD	Type of day	1 = Weekday 2 = Holiday (Sunday) 3 = Special holiday 4 = Reserved	None
P3	DAY	Date	MM = Month (01 to 12) DD = Day (01 to 31)	None

**Parameter Descriptions**

**P1 (TOC):**

Enter the type of call (required).

- 1 (fixed in the system)

**P2 (TYOD):**

Enter the type of day which will define the date to be entered in P3.

- 1 = Weekday
- 2 = Holiday (Sunday)
- 3 = Special holiday
- 4 = Reserved

**P3 (DAY):**

Enter the date that will be recognized as the type of day entered in P2.

- 4 digits
  - MM = Month (01 to 12)
  - DD = Day (01 to 31)

**NOTES:**

1. Blank is displayed at P3 if **DSP** is pressed when TYOD = 1.
2. The system's calendar automatically recognizes Sundays as holidays; therefore, Sunday does not have to be entered as a holiday.

**Display**

1. Enter the required parameters (TOC and TYOD).
2. Press **DSP** to display the DAY.

**Change**

1. Enter all necessary parameters.
2. Press **ADD / CHG** to change the parameters.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	The entered date is not correct.	Enter the correct date.

**SYSTEM TIME TABLE  
ASSIGNMENT (CMC 511)**

Use the System Time Table Assignment (**CMC 511**) table to assign system time tables for LCR time of day routes.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	<u>TOC</u>	Type of call	1 (fixed) = LCR only	None
P2	<u>TYOD</u>	Type of day	1 = Weekday 2 = Holiday (Sunday) 3 = Special holiday 4 = Reserved	None
P3	TTN	Time table number	1 to 9	None
P4	TIOD	Time of day	1 = Day 2 = Night 3 = Midnight 4 = Reserved	None
P5	DTIM	Delimited time	HH = Hour (00 to 24) MM = Minute (00 to 59)	None

**Parameter Descriptions****P1 (TOC):**

Enter the type of call (required).

- 1 (fixed in the system)

**P2 (TYOD):**

Enter the type of day (required).

- 1 = Weekday
- 2 = Holiday
- 3 = Special holiday
- 4 = Reserved

**P3 (TTN):**

Enter the time table number.

- 1 to 9

**P4 (TIOD):**

Enter the time of day.

- 1 = Day
- 2 = Night
- 3 = Midnight
- 4 = Reserved

**P5 (DTIM):**

Enter the delimited time.

- 4 digits
  - HH = Hour (00 to 24)
  - MM = Minute (00 to 59)

**Parameter Descriptions  
(Cont'd)**

**NOTE:** A time table starts at midnight ("0000") and should be registered as delimited time in ascending order to "2400." The "2400" means "end of time table" and must be registered in a time table. If any delimited time is assigned after "2400," the system ignores the registration. Refer to Table 4-56 for examples.

- Display**
1. Enter the key parameters (TOC and TYOD).
  2. Press **DSP** to display the TTN, TIOD, and DTIM.
  3. To display the next TTN, press **DSP** again.

- Change**
1. Enter all necessary parameters.
  2. Press **ADD / CHG** to change the parameters.

**Table 4-56. Example Time Table Assignments**

	0000-0800	0800-1700	1700-2100	2100-2400
TNN	1	2	3	4
TIOD	3 (midnight)	1 (day)	2 (night)	3 (midnight)
DTIM	0800	1700	2100	2400

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	The entered DTIM is not correct.	Enter a correct DTIM.



**SYSTEM HOLIDAY  
ASSIGNMENT (CMC 516)**

Use the System Holiday Assignment (CMC 516) table to assign the day of a holiday. The system automatically recognizes Sundays as holidays.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>TOC</u>	Type of call	1 (fixed)	None
P2	DOH	Day of holiday	1 = Sunday 2 = Monday 3 = Tuesday 4 = Wednesday 5 = Thursday 6 = Friday 7 = Saturday	None

**Parameter Descriptions****P1 (TOC):**

Enter the type of call (required).

- 1 (fixed in the system)

**P2 (DOH):**

Enter the day of holiday.

- 1 = Sunday
- 2 = Monday
- 3 = Tuesday
- 4 = Wednesday
- 5 = Thursday
- 6 = Friday
- 7 = Saturday

**NOTE:** Plural DOHs can be assigned using this command.

**Display**

1. Enter the TOC.
2. Press **DSP** to display the DOH.
3. Press **DSP** again to display the next DOH.
4. When all DOHs have been assigned or no DOH is assigned, pressing **DSP** displays a blank field.

**Add**

1. Enter all necessary parameters.
2. Press **ADD / CHG** to change the DOH.

**Remove**

1. Enter the TOC and DOH that you want to remove.
2. Press **RMV** to remove the DOH.

**TGN SCREENING  
ASSIGNMENT (CMC 600)**

Use the TGN Screening Assignment (CMC 600) table to list trunk groups for traffic measurement.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	RNO	Traffic registration number	1 to 10	None
P2	TGN	Trunk group number	1 to 63 10 = Modem group	None
P3	MGID	Modem group ID	1 to 15	None

**Parameter Descriptions**

**P1 (RNO):**

Enter the number you wish to assign to this trunk group as a traffic registration number (required).

- 1 to 10

**P2 (TGN):**

Enter the trunk group number which will be referenced by the registration number entered above.

- 1 to 63
- 10 = Modem group

**P3 (MGID):**

Enter the modem group ID (when TGN = 10). Otherwise, leave blank.

- 1 to 15

**Display**

1. Enter an RNO at P1.
2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of TGNs.
2. The system releases this CMC after the last registered TGN displays.

**Change**

1. Enter an RNO at P1.
2. Press **DSP**.
3. Press **ADD / CHG**.

**Remove**

1. Enter an RNO at P1.
2. Press **DSP**.
3. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
TRF MEAS	An attempt was made to add, change, or remove a TGN or MGID while traffic measurement was active.	Use CMC 601 to shut off traffic measurement before using CMC 600.

**TRAFFIC MEASUREMENT  
ACTIVATION (CMC 601)**

Use the Traffic Measurement Activation (**CMC 601**) table to display and change the traffic measurement activation flag. This feature provides a measurement of traffic density according to trunk group number.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	TSF	Traffic measurement start / stop flag	0 = Stop traffic measurement 1 = Start traffic measurement	None

**Parameter Descriptions****P1 (TSF):**

Enter the value you wish to assign regarding starting or stopping traffic measurement.

- 0 = Stop traffic measurement
- 1 = Start traffic measurement

**Display**

Press **DSP** to display the TSF.

**Change**

1. Enter the TSF.
2. Press **ADD / CHG** to change the TSF.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
TRF MEAS	Now measuring the traffic.	

**TRAFFIC MEASUREMENT  
DATA DISPLAY (CMC 602)**

Use the Traffic Measurement Data Display (CMC 602) table to display traffic density.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	FLG	Traffic measurement data area flag	1 = Measurement data storing area 2 = Measurement data stored area	None
P2	RNO	Registration sequence number	1 to 10	None
P3	TGN	Trunk group number	1 to 63	None
P4	TIM	Traffic measurement period	1 to 10 hours	None
P5	TRF	Traffic density	0 to 100%	None
P6	MGID	Modem group ID	1 to 15	None

**Parameter Descriptions**

**P1 (FLG):**

Enter the traffic measurement data area flag. This value determines which area will be displayed (required).

- 1 = Measurement data storing area
- 2 = Measurement data saved area

**P2 (RNO):**

Enter the registration sequence number (required).

- 1 to 10 (see CMC 600)

**P3 (TGN):**

The registered trunk group number will be displayed.

- 1 to 63

**P4 (TIM):**

The assigned traffic measurement period will be displayed. This is the elapsed time in hours from the time the traffic measurement was started.

- 1 to 10 (hours)

**P5 (TRF):**

The traffic density will be displayed.

- 0 to 100%

**P6 (MGID):**

When the TGN has been assigned as 10, the modem group ID will be displayed here.

- 1 to 15

- Display**
1. Enter the FLG and RNO.
  2. Press **DSP** to display the TGN, TIM, TRF, and MGID corresponding to the RNO.

**NOTES:**

1. If the traffic measurement has not been registered, blanks are displayed for the TGN parameter.
2. Press **DSP** repeatedly to display subsequent TIMs and their TRFs.
3. Press **DSP** when the TRF corresponding to the last TIM has been displayed to terminate the command.
4. TRF corresponding to the period not measured displays as 0.

**TIME AND DATE SETTING .  
(CMC 700)**

Use the Time and Date Setting (CMC 700) table to set the system hardware and software clocks. The time and date are used when faults are logged in the system (see CMC 801). The time and date are also displayed on LCD display telephones.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	YEAR	Current year	4 digits (0001 to 9999)	None
P2	DAY	Current month and day	MM = Month (01 to 12) DD = Day (01 to 31)	None
P3	WEEK	Current day of the week	1 = Sunday 2 = Monday 3 = Tuesday 4 = Wednesday 5 = Thursday 6 = Friday 7 = Saturday	None
P4	TIME	Current hour and minute	HH = Hour (00 to 23) MM = Minute (00 to 59)	None

**Parameter Descriptions**

**P1 (YEAR):**

Enter the current year.  
 • 4 digits (0001 to 9999)

**P2 (DAY):**

Enter the current month and day, in an MMDD format:  
 • MM = Month (01 to 12)  
 • DD = Day (01 to 31)

**P3 (WEEK):**

Enter the current day of the week.  
 • 1 = Sunday  
 • 2 = Monday  
 • 3 = Tuesday  
 • 4 = Wednesday  
 • 5 = Thursday  
 • 6 = Friday  
 • 7 = Saturday

**P4 (TIME):**

Enter the current hour and minute in the HHMM format:  
 • HH = Hour (00 to 23)  
 • MM = Minute (00 to 59)

**Display** 1. Press **DSP** to display:

- Minute
- Hour
- Day of the week
- Month and day
- Year

specified for the software clock.

## 2. Blanks are displayed when:

- The clock is not set after a COLD restart has occurred.
- The hardware clock is out of order.

**Change** 1. Enter the **YEAR** to **TIME** parameters.2. Press **ADD / CHG** to change the software and hardware clock for:

- Second
- Minute
- Hour
- Day of the week
- Month and day
- Year

**NOTES:**

1. Seconds will always start from 00 when setting the clock.
2. There is no check for dates which are within range but are illegal; e.g., February 30. However, the system will not display an illegal date on phone instruments or consoles.

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
HARD ERR	The hardware clock is faulty.	Check the hardware clock.
PARA. ERR	The specified <b>YEAR</b> , <b>DAY</b> , <b>WEEK</b> , or <b>TIME</b> is out of range.	Enter a correct value.

**MAKE BUSY ASSIGNMENT  
(CMC 701)**

Use the Make Busy Assignment (**CMC 701**) table to make a card circuit busy or to release a make-busy condition. When a trunk is made busy, the system sends a trunk-busy signal to the connected system.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>EN</u>	Equipment number	See description below	None
<u>P2</u>	<u>BI</u>	Make busy status	0 = Release make-busy 1 = Busy-out the circuit Blank = Not installed	0

**Parameter Descriptions**

**P1 (EN):**

Enter the equipment number of the circuit card which you wish to make busy (required). Equipment numbers are entered in the XYYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00-18
- Z = Circuit number: 0-7

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

**P2 (BI):**

Enter the value corresponding to the make busy status you desire.

- **0 = Release make-busy (default)**
- 1 = Busy-out the circuit
- Blank = Not installed

**Display**

1. Enter an EN at P1.
2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of ENs.
2. To release this CMC, press **DSP** after the last EN has been displayed.



- Change**
1. Enter the EN to be changed at P1.
  2. Enter the new value for BI at P2.
  3. Press **ADD / CHG**.

**NOTES:**

1. When using CMC 701 to make a 4BWC, 8BWC, 2TTL, 2TTE, 2TE4, 4TE4, or 6DID trunk busy, the system sends a trunk-busy signal to the connecting system. The type of signal sent is as follows:

TRUNK TYPE	SIGNAL TYPE
4BWC, 8BWC (ground start)	Send a ground signal - then close the loop
4BWC, 8BWC (loop start)	Close the loop
2TTE, 2TTL, 2TE4, 4TE4, 6DID (wink start, delay dial, immediate start)	Close the loop

2. With a DID trunk, the trunk-busy signal is sent to the connected system.
3. When a power failure or HOT restart occurs, the system closes the loop of any trunk in the made-busy state.
4. If an MCT is used to perform this function, the system denies any attempt to make the MCT circuit busy.
5. Use CMC 705 to make the SMDR printer busy.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	An attempt was made to enter an EN which is not registered.	Check the data and try again.
DENIED 1	The station registered to the entered EN or the station paired with the data station registered to the entered EN is assigned as an MCT.	Remove the MCT assignment at CMC 702 and try again.
DENIED 27	API is assigned to the specified EN.	Remove API at CMC 281 and try again.
DENIED 31	Trunk in loop back mode.	Cancel the loop back and try again.
DISAGREE	An attempt was made to enter an EN which is assigned as an RVAC port.	Abandon the attempt.

**MASTER CONTROL  
TELEPHONE (MCT)  
ASSIGNMENT (CMC 702)**

Use the MCT Assignment (**CMC 702**) table to give Master Control Telephone duties to the following types of instruments:

- CT-20 / CT-30 telephones.
- Attendant Consoles.
- DS20SD and DS32SD digital stations.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>MNO</b>	MCT number	1 to 20	None
<b>P2</b>	<b>MDN</b>	Directory number	Station DN (1 to 4 digits) Director number of attendant console (attendant access code + attendant number)	None

**Parameter Descriptions**

**P1 (MNO):**

Enter the MCT number (required).

- 1 to 20

**P2 (MDN):**

Enter one of the following:

- Station directory number (1 to 4 digits)
- Directory number of Attendant Console (attendant access code + attendant number)

**NOTE:** The system automatically assigns the first four CT-20 / CT-30, Attendant Consoles, or DS20SD / DS32SD instruments to the MCT assignment table based on EN sequence.

**Display**

1. Enter an MNO at P1.
2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of MNOs.
2. The system releases this CMC when the MNO value exceeds 20.

**Change**

1. Enter an MNO at P1 and a MDN at P2.
2. Press **ADD / CHG**.

**Remove**

1. Enter an MNO at P1.
2. Press **RMV**.

**NOTE:** The system will deny any attempt to remove an active MCT.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified DN is not registered.	Check the entry for accuracy or register the specified DN.
DENIED	An attempt was made to remove your own MCT.	Abandon the attempt or try again from a different MCT.
DENIED 20	Hotel / motel printer is being registered.	Remove the hotel / motel printer using CMC 356 and try again.
DISAGREE	<p>The specified DN is not for an Attendant Console.</p> <p>The specified DN is not assigned to a CT-20, CT-30, or DS20SD / DS32SD.</p>	<p>Specify only DNs for Attendant Consoles.</p> <p>Specify only DNs for CT-20s, CT-30s, or DS20SD / DS32SDs.</p>

**SECURITY CODE ASSIGNMENT (CMC 704)**

Use the Security Code Assignment (**CMC 704**) table to assign the system data base access security codes.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	LSD	Low level security code	4 digits, using 0-9, #, and *	#380
P2	HSD	High level security code	4 digits, using 0-9, #, and *	#803

**Parameter Descriptions**

**P1 (LSD):**

Enter the security code that must be used to access low level commands.

- 4 digits, using 0-9, #, and \*

**NOTE:** The default low level security code is **#380**.

**P2 (HSD):**

Enter the security code that must be used to access high level commands.

- 4 digits, using 0-9, #, and \*

**NOTE:** The default high level security code is **#803**.

**Display** Press **DSP**.

- Change**
1. Enter the LSD or HSD to be changed at parameter(s) P1 and/or P2.
  2. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	Character other than one available has been entered.	Enter an available character (see P1 and P2) and try again.

**SMDR PRINTER MAKE BUSY  
ASSIGNMENT (CMC 705)**

Use the SMDR Printer Make Busy (**CMC 705**) command to create an artificial busy state on the SMDR printer port.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>PORT</b>	Port number	0 or 1	None
<b>P2</b>	<b>MBF</b>	Make busy / release flag	0 = Release make busy 1 = Place in a make-busy state	0

**Parameter Descriptions****P1 (PORT):**

Enter the port number of the SMDR printer which you wish to make busy (required).

- 0 or 1

**P2 (MBF):**

If necessary, enter the value corresponding to the release or make busy state.

- **0 = Release make busy (default)**
- 1 = Place in a make busy state

**Display**

1. Enter the PORT at P1.
2. Press **DSP**.

**NOTE:** Press **DSP** again to release the CMC.

**Change**

1. Enter the PORT at P1.
2. Press **DSP**.
3. Enter the new value for MBF at P2.
4. Press **ADD / CHG**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	An attempt was made to display a PORT which does not host an SMDR printer.	Enter the other PORT and try again.

**HOTEL / MOTEL PRINTER  
MAKE BUSY ASSIGNMENT  
(CMC 706)**

The Hotel / Motel Printer Make Busy Assignment (**CMC 706**) command is used to put a hotel / motel printer into the busy state for maintenance.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>PNO</u>	Printer number	1 or 2	None
<u>P2</u>	<u>MBF</u>	Make busy / release flag	0 = Release make busy 1 = Place in a make-busy state	0

**Parameter Descriptions**

**P1 (PNO):**

Enter the printer number of the hotel / motel printer which you wish to make busy (required).

- 0 or 1

**P2 (MBF):**

If necessary, enter the value corresponding to the release or make busy state.

- **0 = Release make busy (default)**
- 1 = Place in a make busy state

**Display**

1. Enter a P1 value.
2. Press **DSP**.

**NOTES:**

1. Pressing **DSP** again will display the other printer if it is installed.
2. The system will release this CMC when the PNO value exceeds 2.

**Change**

1. Enter a PNO at P1.
2. Enter the new MBF value at P2.
3. Press **ADD / CHG**.

**DEVICE STATUS DISPLAY  
(CMC 800)**

Use the Device Status Display table (CMC 800) to determine the current status of each device connected to the system. The status information is shown in six screen displays:

- Screen 1: Device name faults.
- Screen 2: Cabinet and ring generator faults.
- Screen 3: ICG card and I/O faults.
- Screen 4: Terminal faults.
- Screen 5: ISDN and/or FIPN faults.
- Screen 6: T-1 faults.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DVN	Device name	3 characters	None
P2	DVN	Device name	3 characters	None
P3	DVN	Device name	3 characters	None

**Parameter Descriptions****P1 (DVN):**

The first set of faulty devices (if any) is displayed.

- 3 characters (see screens 1-1 and 1-2 on the next page)

**P2 (DVN):**

The second set of faulty devices is displayed.

- 3 characters (see screens 1-1 and 1-2 on the next page)

**P3 (DVN):**

The third set of faulty devices is displayed.

- 3 characters (see screens 1-1 and 1-2 on the next page)

**Display** 1. Press **DSP**.

**NOTE:** If the system detects a faulty device the following screen is displayed. Refer to Table 4-57 for information on the abbreviations listed in P1, P2, and P3. This CMC is released if no faults are detected.

**Screen 1-1. Device Name Fault**

<b>P1:</b>	<b>CC</b>	<b>RAM</b>	<b>RTS</b>	<b>BAT</b>
<b>P2:</b>	<b>SWC</b>	<b>ICG</b>	<b>TRM</b>	<b>SCI</b>
<b>P3:</b>	<b>RG</b>	<b>VMC</b>	<b>POW</b>	<b>CAB</b>

**Screen 1-2. Device Name Fault**

<b>P1:</b>	<b>ISD</b>	<b>DIF</b>
<b>P2:</b>		
<b>P3:</b>		

**NOTE:** Each fault indicator will be shown in the actual position illustrated above.

**Table 4-57. Device Names (DVN)**

<b>ABBR.</b>	<b>DEVICE NAME</b>
CC	CPU card
RAM	RAM on CPU card
RTS	Real-time source on CPU card
BAT	Battery on CPU card
SWC	CPU card / CLKS card
ICG	Trunk or line card
TRM	Proprietary telephone terminal
SCI	Serial communication interface (RS-232C port)
RG	RGMW
VMC	RVAC card
POW	Power
CAB	Cabinet
ISD	ISDN PRA / FIPN
DIF	T-1 digital trunk



Display (Cont'd) 2. Press **DSP** again.

**NOTE:** When faulty cabinets or faulty ring generators are detected, the system displays 0s (no fault) or 1s (fault). This screen is skipped if there are no faulty cabinets or ring generators. Screen 2-1 shows an example of cabinet and ring generator faults.

**Screen 2-1. Example of Cabinet and Ring Generator Faults**

<p><b>CMC = 800</b></p> <p><b>P1: CAB &amp; RGMW STATUS</b></p> <p><b>P2: C<sub>0</sub>C<sub>1</sub>C<sub>2</sub>C<sub>3</sub></b></p> <p><b>P3: R<sub>0</sub>R<sub>1</sub>R<sub>2</sub>R<sub>3</sub></b></p>	<p>C<sub>0</sub> = Basic cabinet fault                  C<sub>1</sub> = Expansion cabinet 1                  C<sub>2</sub> = Expansion cabinet 2                  C<sub>3</sub> = Expansion cabinet 3</p> <p>R<sub>0</sub> = Basic cabinet fault                  R<sub>1</sub> = Expansion cabinet 1                  R<sub>2</sub> = Expansion cabinet 2                  R<sub>3</sub> = Expansion cabinet 3</p>
---	---

3. Press **DSP** again.

**NOTES:**

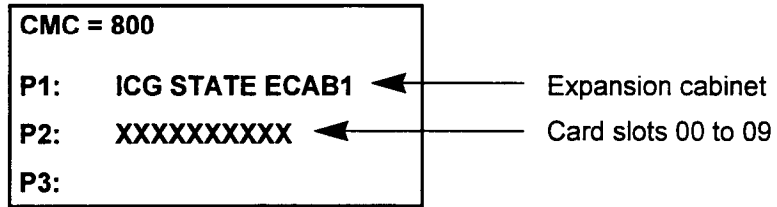
1. When faulty cards are detected, the system displays 0s (no fault) and 1s (fault).
2. Press **DSP** again to display other cabinets in a two cabinet system. This screen is skipped if there are no faulty devices in ICG cards and/or I/O ports.

**Screen 3-1. Example of ICG Card Faults and I/O Faults**

<p><b>CMC = 800</b></p> <p><b>P1: ICG &amp; SCI BCAB</b></p> <p><b>P2: 0001000000</b></p> <p><b>P3: 01</b></p>	<p>← Basic cabinet</p> <p>← Card slots 00 to 09</p> <p>← I/O ports 0 and 1</p>
--	--

Screen 3-1 shows that in the basic cabinet, the card in card slot three and I/O port 1 are faulty. Continued pressing of **DSP** shows any faults in cabinets two, three, and four (if applicable).

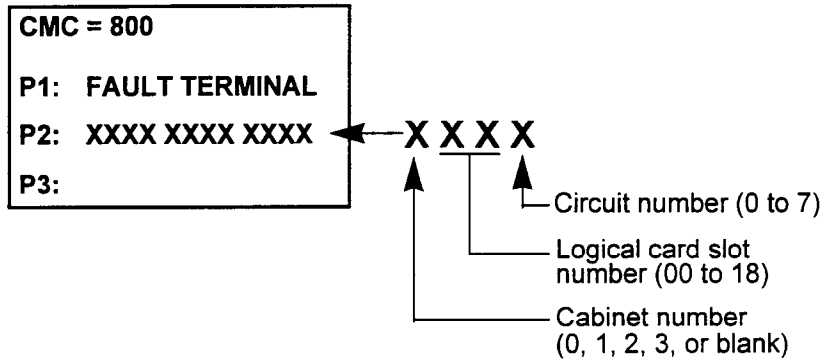
Display (Cont'd) Screen 3-2. Example of ICG Card Faults, Cabinet 1



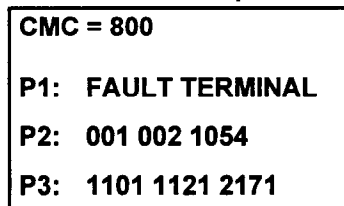
4. Press DSP again.

**NOTE:** When faulty terminals are detected, the system displays the terminal ENs. The screen can only display a maximum of three faulty terminal ENs per line for a maximum of six on the screen. If more than six terminals are faulty, display them again by pressing DSP. If no terminals are faulty, this screen is skipped. The system releases this CMC after the last EN has been displayed.

Screen 4-1. Terminal Faults



Screen 4-2. Example of Terminal Faults

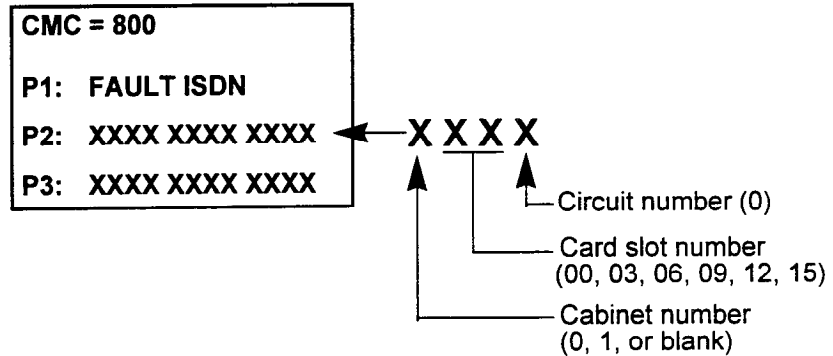


This example shows faulty terminals in EN = 001, 002, 1054, 1101, 1121, and 2171.

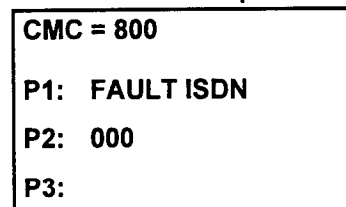
Display (Cont'd) 5. Press **DSP** again.

**NOTE:** When a faulty ISDN card(s) is detected, the system displays the equipment number of the faulty card(s). The screen is skipped if there are no faulty cards. If there are more than six faulty cards, repeated pressing of the **DSP** key displays the next EN. The system releases this CMC after the last EN has been displayed.

**Screen 5-1. ISDN / FIPN Faults**



**Screen 5-2. Example of ISDN Faults**

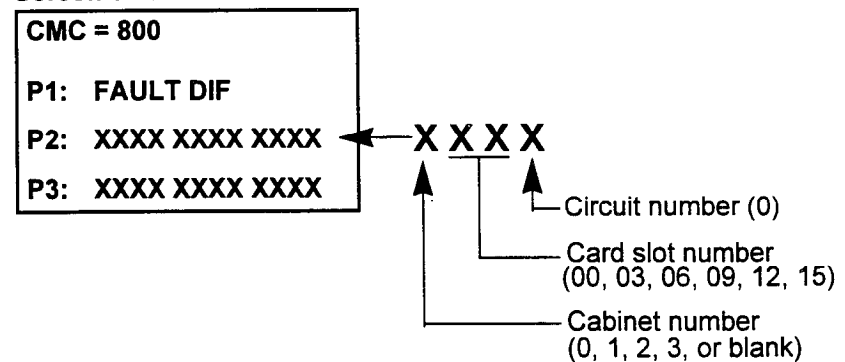


This example shows that terminal EN 000 is faulty.

6. Press **DSP** again.

**NOTE:** When faulty T-1 cards are detected, the system displays the equipment number of the faulty T-1 trunk. Only the first EN of the T-1 card (ENXXX0) is displayed at P2 and/or P3. To determine, if more than six T-1 cards are faulty, press **DSP** again. If no T-1 trunk cards are faulty, this screen is skipped. The system releases this CMC after the last EN has been displayed.

**Screen 6-1. T-1 Faults**



**FAULT INFORMATION DISPLAY (CMC 801)**

The Fault Information Display (**CMC 801**) table provides a display of currently logged fault data. Displaying this data will reset the ALM and TO lamps. Possible ALM codes that may be displayed are shown in Table 4-58.

After displaying all the faults, the TO lamp will go off, the TOF counter will be reset, and the following faults will be cleared with no condition:

- SRAM stack.
- SRAM protect.
- CM stack.
- SSM stack.
- RSM stack.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DVN	Device name	3 characters	Table 4-59
P2	TIME	Time and date of fault or repair	HH:MM MM / DD	None
P3	FACT	Fault cause and data	X HHHHHHHHHHHH	Table 4-59 and Figure 4-23
P4	DN / EN	Directory number or equipment number of the faulty equipment	4 digits	Table 4-59

**Parameter Descriptions**

**P1 (DVN):**

The faulty device name will be displayed (refer to Table 4-59).

- 3 characters

**P2 (TIME):**

The time and date of the fault or repair will be displayed.

- HH:MM MM / DD

**P3 (FACT):**

The fault cause and data will be displayed (refer to Table 4-59 and Figure 4-23).

- X HHHHHHHHHHHH

**P4 (DN / EN):**

The directory number or equipment number of the faulty equipment is displayed (refer to Table 4-59).

- 4 digits

**Display**

Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display the remaining fault data.
2. Data display mode terminates when the last faulty device displays.
3. If the following faults occur, SCI is reset:
  - SCI data transmission error (I/O Port #0,1)
  - SCI send data timing out (I/O Port #0,1)

Table 4-58. ALM Indicator Codes

ERROR CODE	PROBLEM	SYSTEM ACTION
1	Floppy disk drive fault during IPL.	IPL stop.
2	No floppy disk in the unit during IPL.	IPL stop.
3	Floppy disk media fault during IPL.	IPL stop.
5	Bit stack of IPL RAM.	IPL stop.
6	Wrong floppy disk inserted (wrong format).	IPL stop.
7	Wrong floppy disk inserted (wrong type of floppy).	IPL stop.
8	Wrong floppy disk inserted (wrong memory capacity).	IPL stop.
9	Wrong floppy disk inserted (wrong customer data).	IPL stop.
A	Wrong floppy disk inserted (sequence error).	IPL stop.
AC	AC power down.	Call processing in progress (by back-up battery if equipped).
APxxxx	API communication failure.      xxxx: equipment number.	The card is made busy.
b	Wrong floppy disk inserted (wrong density).	IPL stop.
bLx	Ring generator fault.              x: cabinet number (0-3).	Makes RGMW busy.
C	FD1 to FD2 VID mismatch.	IPL stop.
Cbx	Expansion cabinet power down.    x: cabinet number (1-3)	The cabinet is made busy.
CF	1) PRI line failed. 2) Network clock or data link lost.	The card is made busy.
CFxxxx	PRI line fault.                      xxxx: equipment number	The faulty PRI trunk is made busy.
CL0	RTS stop.	Call processing in progress.
CL1	RTS fault.	Call processing in progress.
CP0x	Parity or framing error in I/O port.    x: port number (0 or 1)	Call processing in progress.
CP1x	Response time out in I/O port.	Call processing in progress.
d	No customer data on floppy.	Customer data load operation is stopped.
dFxxxx	T-1 trunk fault.                      xxxx: equipment number	Faulty T-1 trunk is made busy.
E1	SRAM stack.	Call processing in progress.
E2	Memory protect error.	Call processing in progress.
E3	DRAM parity error.	Automatic reset.
Eb	SRAM back-up battery fault.	Call processing in progress.
Hy	Network clock fault; busy flag stack	System down.
Hy0	Network memory (CM) read / write error.	Call processing in progress.
Hy1	Network memory (RSM) read / write error.	Call processing in progress.
Hy2	Network memory (SSM) read / write error.	Call processing in progress.
Hy3	No input / output or out of sync. error on CLKS card.	Call processing in progress.
Lxxxx	CO line fault.                      xxxx: equipment number	Faulty CO line is made busy.
pbxxxx	RVAC battery fault.                xxxx: equipment number	Call processing in progress.
pxxxx	PCB fault.                          xxxx: equipment number	Faulty PCB is made busy.
uxxxx	Terminal fault.                      xxxx: equipment number	Faulty terminal is made busy.

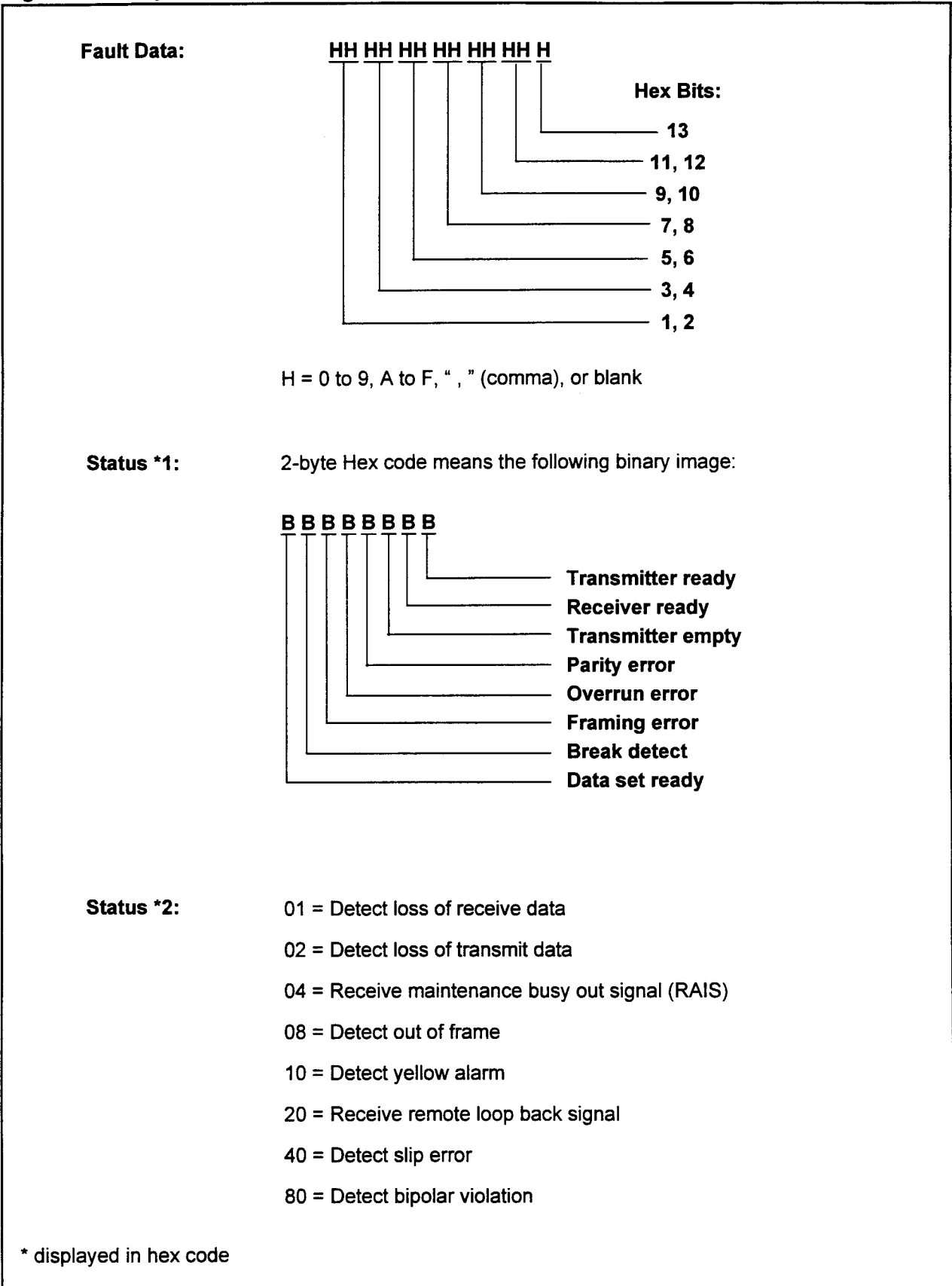
Table 4-59. Key to CMC 801 Parameters

DVN (P1)	DN (P4)	FACT (P3)	
		CAUSE X	FAULT DATA HHHHHHHHHHHHH (see Figure 4-23)
CC	None	0 = COLD restart 1 = Watchdog timer overflow 2 = Software maze 3 = RAM data problem 4 = Illegal interruption 5 = Command processing maze 6 = Traffic overflow 7 = Illegal reset interruption 8 = HOT restart 9 = Automatic HOT restart is experienced due to CMC 921 operation or PcMP LOAD command	None
SRAM	None	1 = SRAM memory stack	1, 4 Segment address 5, 8 Offset address 9 10, 13 Stack data
		2 = SRAM protection	1, 4 Segment address 5, 8 Offset address 9 10, 11 Read data 12, 13 Write data
RTS	None	1 = Stop incrementing 2 = Illegal time	
BAT	None	1 = Discharge	
SWC	None	1 = Clock down	
		2 = CM memory stack	1, 4 Read after write data 6, 9 CM address
		3 = RSM memory stack	1, 2 Read after write data 6, 9 RSM address
		4 = SSM memory stack	1, 2 Read after write data 6, 9 SSM address
		5 = CLKS failure	0001 Loss of receive data 0002 Loss of transmit data 0004 Out of frame
ICG	First EN on card	1 = Data transmission error 2 = ICG audit error	
TRM	EN	1 = Terminal failure 2 = CO line failure	

Table 4-59. Key to CMC 801 Parameters (Cont'd)

DVN (P1)	DN (P4)	FACT (P3)	
		CAUSE X	FAULT DATA HHHHHHHHHHHHHH (see Figure 4-23)
SCI	Port number 000 / 001  EN	1 = Data transmission error 2 = Send data time out 3 = 2APIA line failure 4 = 2APIA line recovery	See Status *1
RG	Cabinet number (000-003)	1 = Ring generator fault	
VMC	EN	1 = RVAC battery discharge	
POW	None	1 = AC power failure	
CAB	Cabinet number (000-003)	1 = Expansion cabinet failure	
DIF	First EN on card	1 = T-1 trunk block	See Status *2
ISD	First EN on card	1 = ISDN trunk block	See Status *3

Figure 4-23. Key to Fault and Status Data





**Figure 4-23. Key to Fault and Status Data (Cont'd)**

<b>Status *3:</b>	0001 = ROM check sum error
	0002 = ROM stack error
	0003 = Interface fault
	0004 = Loss of input clock
	0005 = Data link fault
	0006 = CRC-4 error
	0007 = Bipolar violation
	0008 = Remote loop back
	0009 = Loss of transmit signal

\* displayed in hex code

**DIAGNOSTIC TRUNK  
CONNECTION ASSIGNMENT  
(CMC 802)**

Use the Diagnostic Trunk Connections Assignment (CMC 802) table to create connections between specified stations (and specified trunks) for testing purposes.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	DN	Directory number	1 to 4 digits	None
P2	EN	Equipment number	See description below	None

**Parameter Descriptions**

**P1 (DN):**

Enter the station directory number which you wish to have tested.

- 1 to 4 digits

**P2 (EN):**

Enter the trunk equipment number which you wish to have tested.

Equipment numbers are entered in the XYYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7

**NOTES:**

1. When this CMC is activated, the specified station always seizes the assigned trunk when the TGN access code is dialed until the values for P1 and P2 are deleted using the Remove procedure.
2. Information on entering equipment numbers can be found in Appendix C.

**Display**

Press **DSP** to display the current test connections.

**NOTE:** Press **DSP** a second time to release the CMC.

**Change**

1. Enter the DN of the station to be tested at P1.
2. Enter the EN of the trunk to be tested at P2.
3. Press **ADD / CHG**.

**Remove**

1. Press **DSP**.
2. Press **RMV**.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The entered DN has not yet been installed, or the entered EN is not a trunk.	Check the data entry and physical equipment for accuracy and try again.
DISAGREE	An attempt has been made to enter a DN which is not yet registered.	Check the data and try again. If necessary, return to CMC 200 and register the DN.

**FAULT TIME DISPLAY (CMC 803)**

Use the Fault Time Display (**CMC 803**) table to display the number of times each fault occurred and the reason why the fault occurred.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>CL</b>	Counter reset flag	0 = Not reset 1 = Reset	None
<b>P2</b>	<b>TMS1</b>	Faulty device, caused factor, number of times	See Table 4-55	None
<b>P3</b>	<b>TMS2</b>	Faulty device, caused factor, number of times	See Table 4-55	None
<b>P4</b>	<b>DATE</b>	Last day the counter was reset	MM = Month (01 to 12) DD = Day (1 to 31)	None

**Parameter Descriptions****P1 (CL):**

Enter the counter reset flag (required).

- 0 = Not reset
- 1 = Reset

**P2 (TMS1):**

The faulty device, the cause of the fault, and the number of times the fault occurred is displayed for the first faulty item.

- Refer to Table 4-60 for display information

**P3 (TMS2):**

The faulty device, the cause of the fault, and the number of times the fault occurred is displayed for the second faulty item.

- Refer to Table 4-60 for display information

**P4 (DATE):**

The last day that the counter was reset is displayed in the MM / DD format.

- MM = Month (1 to 12)
- DD = Day (1 to 31)

**Parameter Descriptions  
(Cont'd)**

**NOTE:** Each parameter is displayed in the following format:

<b>CMC = 803</b>	
<b>P1: CL</b>	<b>P4: MM / DD</b>
<b>P2: DVN FACT CNT</b>	
<b>P3: DVN FACT CNT</b>	

CL = Counter reset flag  
DVN = Faulty device name  
FACT = Cause factor  
CNT = Counted data  
MM / DD = Date

This screen will not be displayed unless a device is faulty. The counter can be reset when the screen displays all faulty devices and the number of times each device has malfunctioned.

**Display**

1. Enter the CMC.
2. Enter a CL at parameter P1.
3. Press **DSP** to display the faulty device names, the reason why the fault occurred, and the number of times each device malfunctioned.
4. Press **DSP** again to display additional fault information.

**NOTE:** If no fault information occurs, this command automatically terminates.

Table 4-60. Device Name and Fault Cause (P2, P3)

DEVICE NAME	FAULT CAUSE
CC	0 = COLD restart 1 = Watchdog timer overflow 2 = Software maze 3 = RAM data problem 4 = Illegal interruption 5 = Software endless loop (command) 6 = Traffic overflow 7 = Illegal reset interruption 8 = HOT restart 9 = Automatic HOT restart is experienced due to CMC 921 operation or PcMP LOAD command
RAM	1 = SRAM memory stack 2 = SRAM protection
RTS	0 = Recovery 1 = Stop incrementing 2 = Illegal time
BAT	1 = RAM battery discharge
SWC	1 = Clock down 2 = CM memory stack 3 = RSM memory stack 4 = SSM memory stack 5 = CLKS failure
ICG	1 = Data transmission error
TRM	1 = Terminal failure 2 = CO line failure
SCI	1 = Data transmission error 2 = Send data timing out 3 = API failure
RG	1 = Ringer generator fault
POW	1 = Power failure
CAB	1 = Expansion cabinet fault
ISD	1 = ISDN / FIPN line fault
VMC	1 = RVAC battery discharge
DIF	1 = T-1 trunk block

**4CHT LOOP BACK TEST  
(CMC 810)**

Use **CMC 810** to perform a loop back test on the 4CHT card or between the 4CHT card and the DIU.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>TTP</b>	Test type	0 = Loop back test on the 4CHT card 1 = Loop back test between the 4CHT card and a DIU	None
<b>P2</b>	<b>CEN</b>	4CHT equipment number	See description below	None
<b>P3</b>	<b>DEN</b>	DIU or DTA directory number	3 or 4 digits	None
<b>P4</b>	<b>ANS1</b>	Test result 1	See Figure 4-24	None
<b>P5</b>	<b>ANS2</b>	Test result 2	See Figure 4-24	None

**Parameter Descriptions**

**P1 (TTP):**

Enter the test type which you wish to run (required).

- 0 = Loop back test on the 4CHT card
- 1 = Loop back test between the 4CHT card and a DIU

**P2 (CEN):**

Enter the equipment number of the 4CHT card which will be used for the test (required). Equipment numbers are entered in the XYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0, 2, 4, or 6

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

**P3 (DEN):**

Enter the DIU directory number (when P1 = 1).

- 3 or 4 digits

**P4 (ANS1):**

Test result 1 is displayed (refer to Figure 4-24)

**P5 (ANS2):**

Test result 2 is displayed (refer to Figure 4-24)

**NOTE:** If TTP = 1 is selected, the associated DIU test switch must be set to ON (see Figure 4-25 for the location of the test switch).

- Display**
1. Enter the TTP for the desired test at P1.
  2. Enter the CEN for the 4CHT to be tested at P2.
  3. Press **DSP**.
  4. The results are displayed in ANS1 and ANS2.

**NOTES:**

1. Pressing **DSP** repeatedly tests and displays data in numerical order of CENs.
2. The system releases this CMC when all registered CENs have been tested and displayed.
3. ANS1 and ANS2 will be blank if the test fails before completion.
4. When implementing the loop back test between the CHT and the DIU (P1 = 1), set the DIU test switch to on.
5. Figure 4-25 shows the location of the DIU test switch used for extended loop testing (P1 = 1).

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
NOT RGTR	The entered CEN is not installed.	Check the data entry and installation and try again.
DISAGREE	An attempt was made to test a trunk which is not a CHT.  The DIU is set to synchronous mode.	Check the data entry and installation and try again.  Return to CMC 222 and remove the synchronous mode from the terminal.
DENIED 20	An attempt was made to test a hotel / motel printer which is in the make-busy state.	Return to CMC 706 and release the hotel / motel printer.
NOT EXEC	The CHT or DIU is faulty or in the make-busy state.	Replace faulty cards. Return to CMC 701 to release equipment.

Figure 4-24. Key to P4 and P5: ANS1 and ANS2

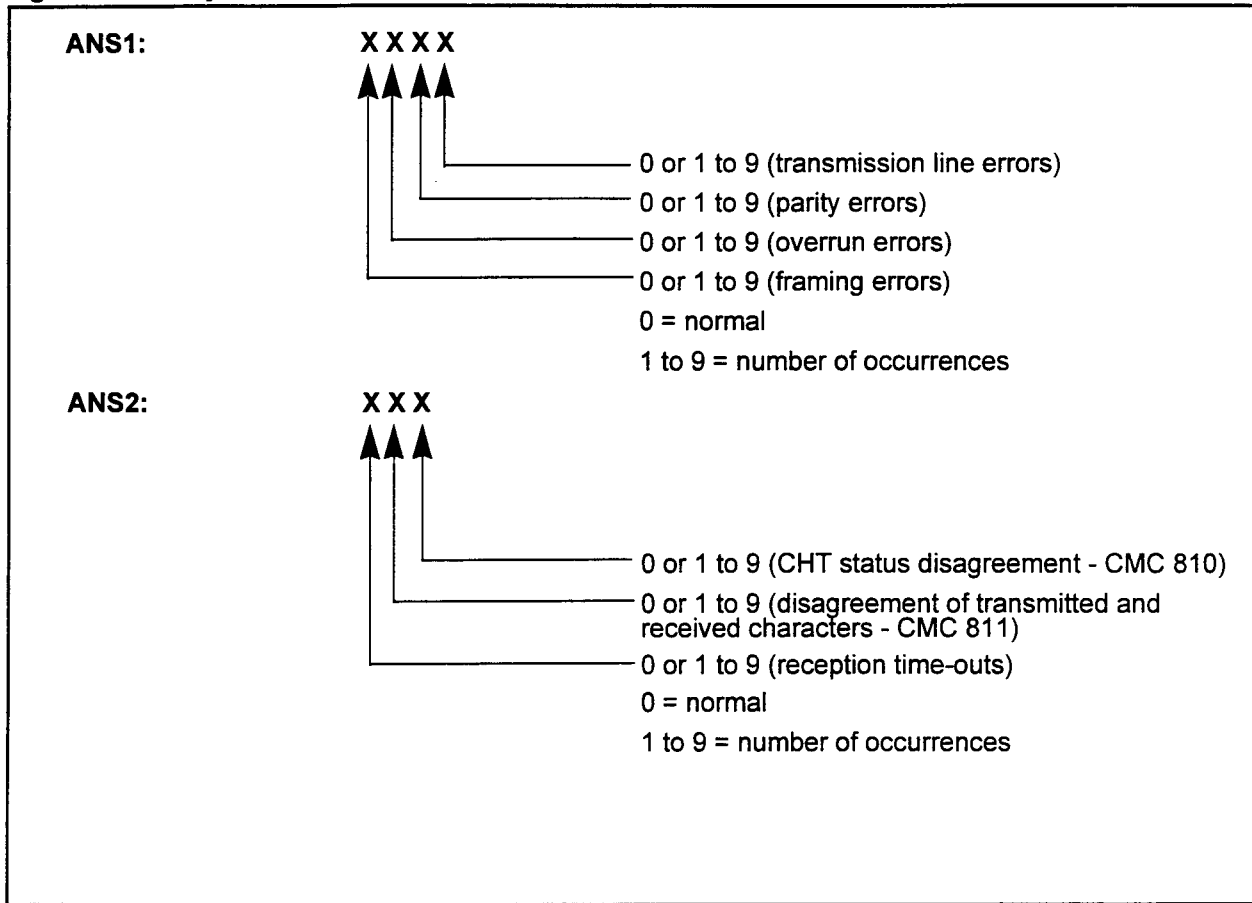
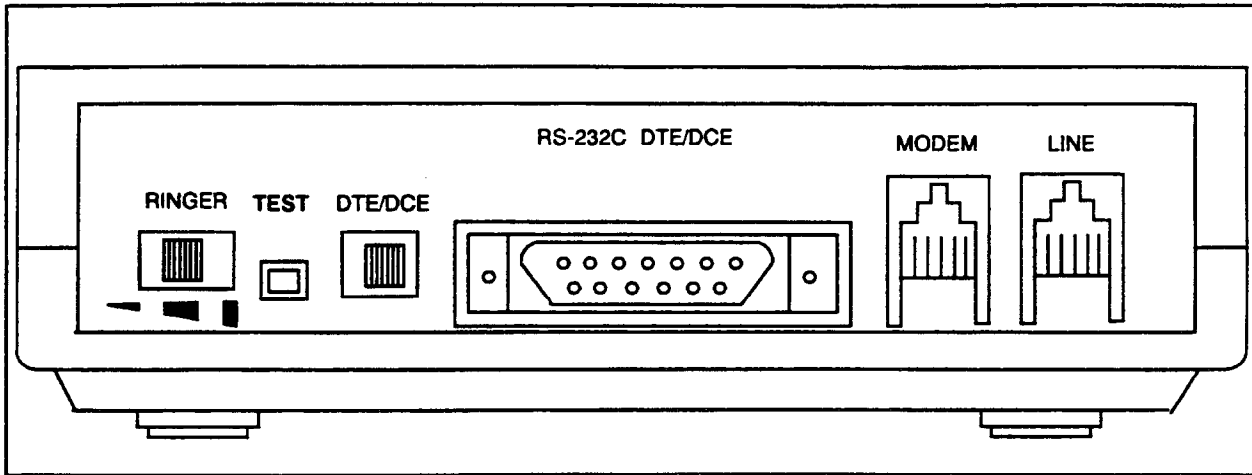




Figure 4-25. DIU Back Panel



**2APIA LOOP BACK TEST  
(CMC 811)**

Use this CMC to perform the loop back test inside or outside the 2APIA card.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>EN</b>	2APIA equipment number	See description below	None
<b>P2</b>	<b>TTP</b>	Test type	0 = Loop back test inside the 2APIA card 1 = Loop back test outside the 2APIA card	None
<b>P3</b>	<b>ANS1</b>	Test result 1	4 digits (see Notes)	None
<b>P4</b>	<b>ANS2</b>	Test result 2	3 digits (see Notes)	None

**Parameter Descriptions****P1 (EN):**

Enter the equipment number of the 2APIA card which will be used for the test (required). Equipment numbers are entered in the XYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 or 1

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

**P2 (TTP):**

Enter the test type which you wish to run (required) (refer to Figure 4-26).

- 0 = Loop back test inside the 2APIA card
- 1 = Loop back test outside the 2APIA card

**P3 (ANS1):**

Test result 1 is displayed. See further on in this CMC for more information.

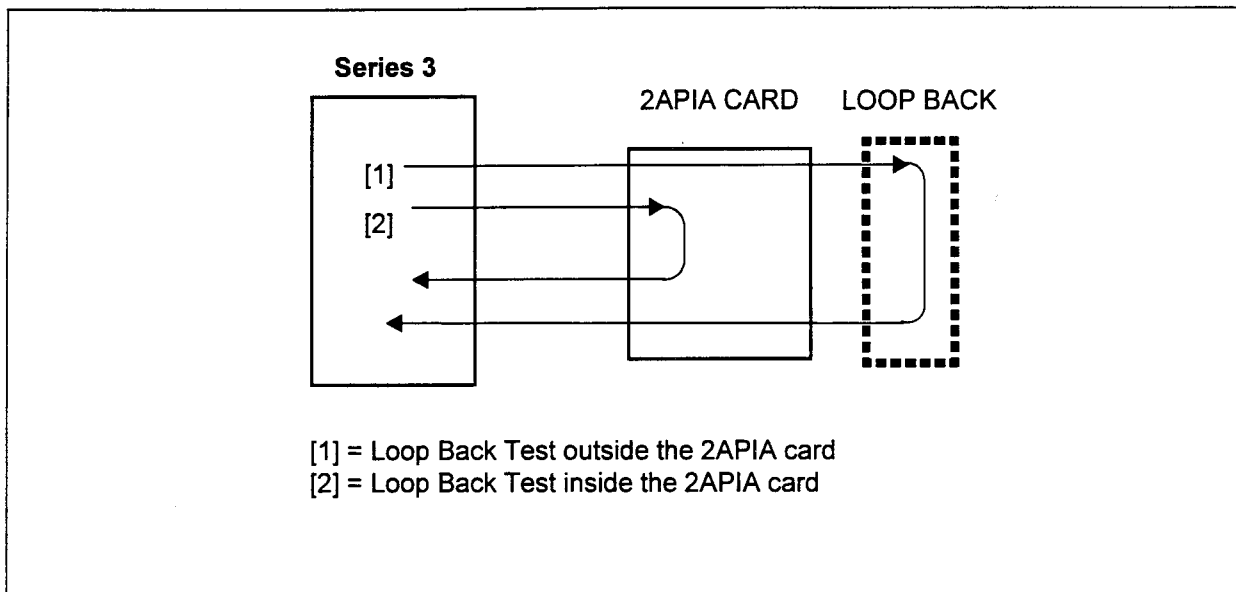
**P4 (ANS2):**

Test result 2 is displayed. See further on in this CMC for more information.

- Display / Perform Test**
1. Enter the EN at P1 and the TTP at P2.
  2. Press **DSP**.

**NOTES:**

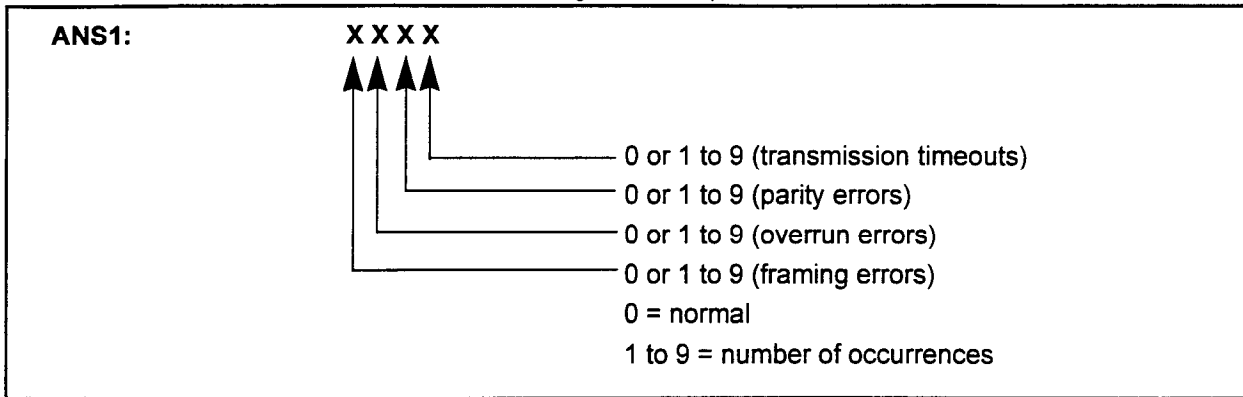
1. Pressing **DSP** performs the loop back test. Results are displayed in ANS1 and ANS2.
2. Nine tests are automatically performed for each loop test. Test results can take up to 30 seconds to appear after pressing **DSP**.
3. Pressing **DSP** repeatedly increments the EN automatically and performs the loop back test.
4. The command terminates when all 2APIAs are tested.
5. ANS1 and ANS2 are blank when a failure has occurred in the specified 2APIA card.

**Figure 4-26. 2APIA Loop Back Test**

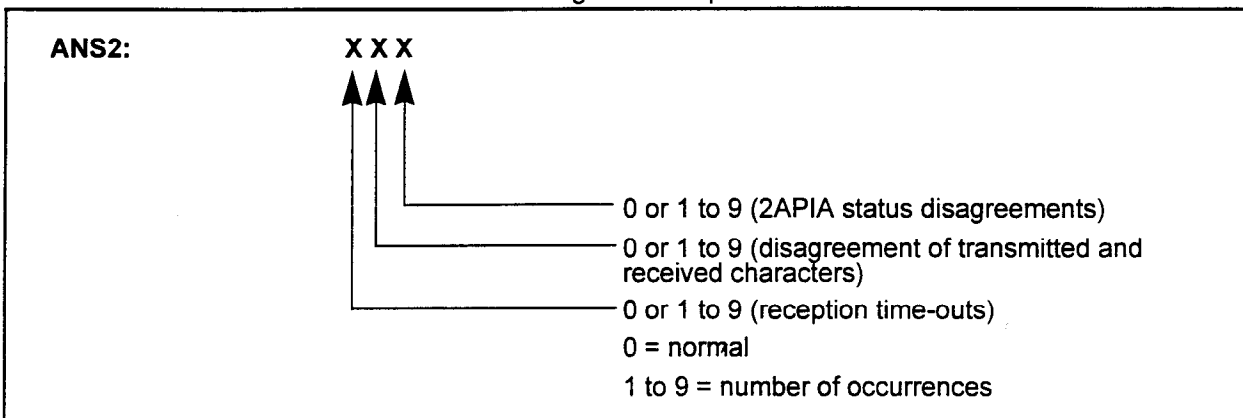
**NOTE:** When performing an outside loop back test the data signal connections must be as follows:

- SD to RD
- RTS to CTS and CD
- DTR to DSR

• Meaning of the P3 parameter:



• Meaning of the P4 parameter:



**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified EN has not yet been installed.	Check the EN.
DISAGREE	A package other than a 2APIA card is assigned to the specified EN.	Check the EN.
DENIED 27	AP type is assigned to the specified EN.	Remove AP type (CMC 281).
NOT EXEC	The 2APIA card is faulty or made-busy.	The test is disabled if the 2APIA is faulty. Release the make-busy.

### T-1 TRUNK LOOP BACK TEST (CMC 813)

Use this CMC to perform the loop back test inside or outside the 24T1 trunk card. Figure 4-27 shows a diagram of the T-1 loop back test. This test can only be performed when all channels of the 24T1 trunk card are idle. In addition, this test cannot be performed when the following conditions exist:

- Network clock is extracted.
- Trunk failure.
- Trunk made busy.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>EN</u>	Equipment number	See description below	None
<u>P2</u>	<u>TTP</u>	Type of test	0 = Run the loop back test inside the trunk card 1 = Run the loop back test outside the trunk card 2 = Set the card to loop back mode	None
<u>P3</u>	<u>ANS</u>	Test results	When P2 = 0 or 1, the number of errors detected (0 to 9) is displayed When P2 = 2, 0 (normal) or 1 (loop back) is displayed	None

#### Parameter Descriptions

##### P1 (EN):

Enter the equipment number of the T-1 card which you wish to test (required).

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

##### P2 (TTP):

Enter the type of test which you wish to run (required).

- 0 = Run the loop back test inside the trunk card
- 1 = Run the loop back test outside the trunk card
- 2 = Set the card to loop back mode

##### P3 (ANS):

Test results are displayed.

- When P2 = 0 or 1, the number of errors detected (0 to 9) is displayed
- When P2 = 2, 0 (normal) or 1 (loop back) is displayed

- Display**
1. Enter the EN and the TTP.
  2. Press **DSP** to perform the test. The results are displayed in ANS.

**NOTES:**

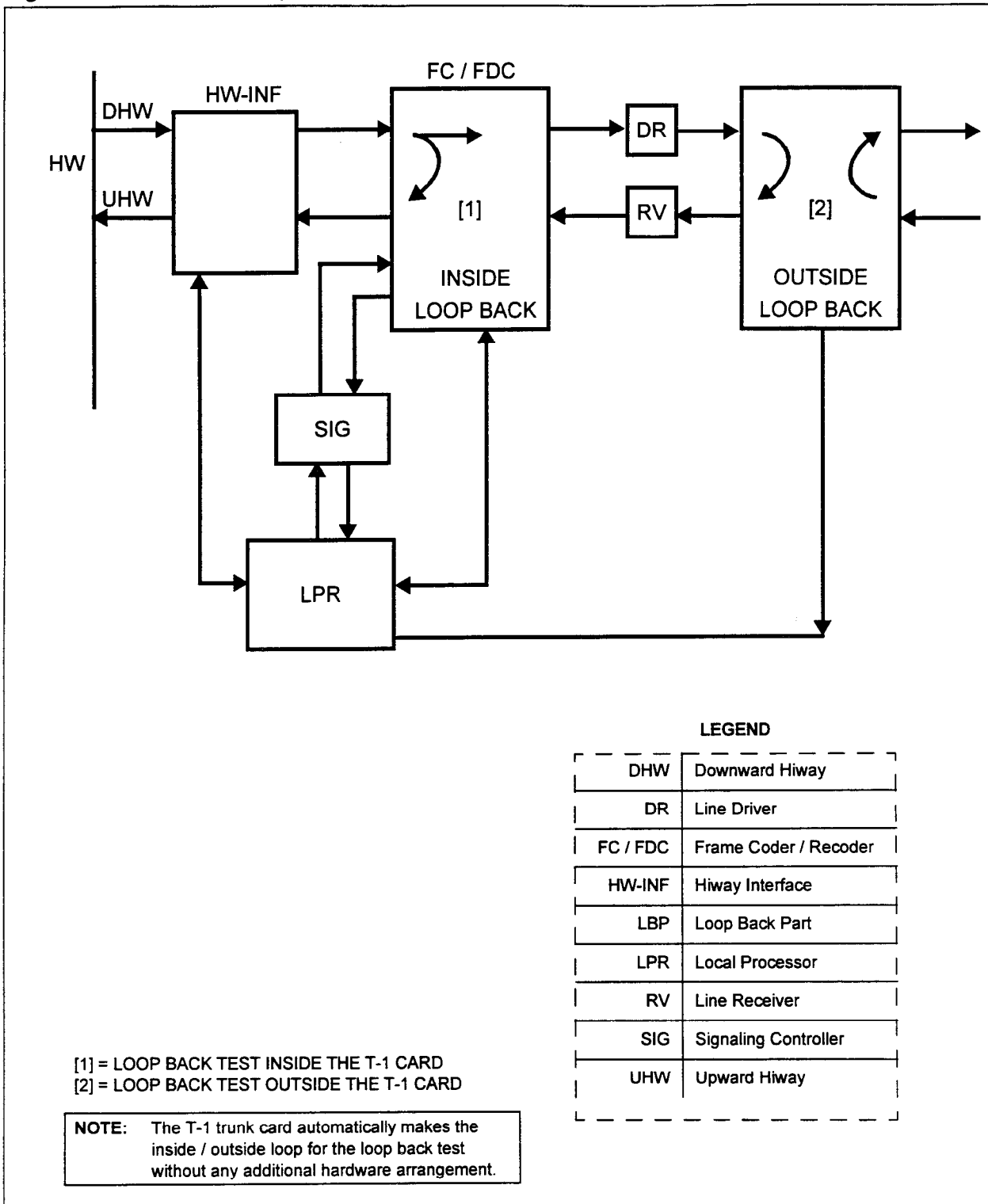
1. Physical card slots available for the T-1 card are 00, 01, 03, 04, 06, or 07.
2. Up to five T-1 cards can be installed in each cabinet; however, *the maximum number of T-1 channels allowed is 240 channels.*
3. Pressing **DSP** repeatedly automatically updates P1 to the next T-1 trunk card EN and performs the loop back test.
4. Pressing **DSP** after testing the T-1 trunk card with the largest EN terminates this command.
5. If you attempt to perform the loop back test when the specified T-1 trunk card is busy, the system monitors the trunk until it is idle, and then performs the test. Pressing **RLS** terminates the command, and releases the system from this monitor status.
6. P3 tells the number of errors detected after a total of nine tests.

- Change** Enter EN, TTP, and ANS and press **ADD / CHG** to set / cancel the loop back mode.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DISAGREE	The specified EN is not a T-1 trunk.	Check the EN and try again.
NOT EXEC	The specified T-1 is faulty or made-busy.	Cancel the make-busy.
NOT RGTR	The specified EN is not registered.	Check the EN and try again.
PARA. ERR	<b>ADD / CHG</b> has been pressed when P2 is not set to 2.	Check P2 value.
	The specified ANS is not correct.	Check P3 value.
DENIED 30	Extracting network clock.	Stop extracting network clock.

Figure 4-27. T-1 Trunk Loop Back Test



**RS-232C PORT  
CONFIGURATION  
ASSIGNMENT (CMC 900)**

Use the RS-232C Port Configuration Assignment (CMC 900) table to change the configuration of the system I/O ports.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	PORT	Port number	0 or 1	None
P2	RATE	Bit rate	1 = 110 bps 2 = 150 bps 3 = 300 bps 4 = 600 bps 5 = 1200 bps 6 = 2400 bps 7 = 4800 bps	6
P3	PRTY	Parity	1 = None 2 = Odd 3 = Even	3
P4	CHR	Character length	7 = 7 bits 8 = 8 bits	7
P5	STOP	Stop bit	1 = 1 bit 2 = 2 bits	1
P6	ECHO	Echo back	1 = Echo off 2 = Echo on	1

**Parameter Descriptions**

**P1 (PORT):**

Enter the port which you wish to configure (required).

- 0 or 1

**P2 (RATE):**

Enter the bit rate for this port.

- 1 = 110 bps
- 2 = 150 bps
- 3 = 300 bps
- 4 = 600 bps
- 5 = 1200 bps
- **6 = 2400 bps (default)**
- 7 = 4800 bps

**NOTE:** If assigning a PcMP, set the bit rate for 2400 bps.

**P3 (PRTY):**

Enter the parity for the port being defined.

- 1 = None
- 2 = Odd
- **3 = Even (default)**



**Parameter Descriptions  
(Cont'd)**

**P4 (CHR):**  
Enter the character length for this port.  
 • 7 = 7 bits (default)  
 • 8 = 8 bits

**P5 (STOP):**  
Enter the stop bit.  
 • 1 = 1 bit (default)  
 • 2 = 2 bits

**P6 (ECHO):**  
Enter the echo back.  
 • 1 = Echo off (default)  
 • 2 = Echo on

- Display**
1. Enter the port number at P1.
  2. Press **DSP**.

**NOTES:**

1. Press **DSP** again to display the other port.
2. The system releases this CMC when the PORT exceeds 1.

- Change**
1. Enter the number of the port to be changed.
  2. Press **DSP**.
  3. Use the cursor control keys or **Return** to move the cursor to the parameter(s) to be changed.
  4. Enter any new values.
  5. Press **ADD / CHG**.

**NOTE:** Changes cannot be implemented if CMC 901 is active..

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DENIED	The specified port is being used for your PMP command mode or SMDR printer.	Remove the SMDR assignment using CMC 901 before making any changes.
I/O BUSY	The specified port is in use.	

**SMDR PRINTER CONTROL  
(CMC 901)**

Use the SMDR Printer Control (CMC 901) table to assign a printer to a system port which will print SMDR data. In addition, use this table to establish the control codes needed for printer operation.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	PORT	Port number	0 or 1	None
P2	XON	X-on / X-off control characters	See Table 4-61	None
P3	PC	Power control characters	See Table 4-62	None
P4	ONT	Power on timing	1 to 255 (200 ms)	None
P5	OFFT	Power off timing	1 to 255 (10 sec)	None
P6	PRTF	Printer format	1 = 80 digits / one line 2 = 80 digits / two lines 3 = 136 digits / one line	None

**Parameter Descriptions**

**P1 (PORT):**

Enter the port which you wish to configure.

- 0 or 1
- Blank = No printers installed

**P2 (XON):**

Enter the X-on / X-off control characters (please refer to Table 4-61).

**P3 (PC):**

Enter the power control characters for the port being defined (please refer to Table 4-62).

- 1 to 12, or leave blank

**P4 (ONT):**

Enter the power on timing for this port, in units of 200 ms.

- 1 to 255, or leave blank

**P5 (OFFT):**

Enter the power off timing for this port, in units of 10 sec.

- 1 to 255, or leave blank

**NOTE:** The actual timing generated by the ONT and OFFT values may be up to one time unit less than the calculated timing.

**P6 (PRTF):**

Enter printer format.

- 1 = 80 digits / one line
- 2 = 80 digits / two lines
- 3 = 136 digits / one line

**NOTE:** Execute a warm restart for records to be generated.

Table 4-61. X-On / X-Off Characters

P2	X-ON CHARACTERS	X-OFF CHARACTERS
1	DC1	DC3
2	DC2	DC4
Blank	None	None

Table 4-62. Power On / Power Off Characters

P3	POWER ON CHARACTER	POWER OFF CHARACTER
1	Null	None
2	Null	Null
3	Null	Del
4	Null	Esc J
5	Del	None
6	Del	Null
7	Del	Del
8	Del	Esc J
9	Esc H	None
10	Esc H	Null
11	Esc H	Del
12	Esc H	Esc J
Blank	None	None

**Display** Press **DSP**.

**NOTES:**

1. The values for parameters 1 through 6 will be displayed.
2. Pressing **DSP** again will terminate data display mode.

**Change**

1. Press **DSP**.
2. Use **Return** or the cursor control keys to move the cursor to the parameter(s) to be modified.
3. Enter the new data.
4. Press **ADD / CHG**.

**Remove**

1. Press **DSP**.
2. Press **RMV**.

## ERROR CODES

ERROR CODE	CAUSE	CORRECTION
OVERLAP	An attempt was made to register an SMDR printer when one is already installed.	Abandon the attempt.
NOT RGTR	The specified port has not been installed.	Check the PORT value.
DENIED	An attempt was made to designate a port for use by the SMDR printer which is already being used by a programming tool.	Attempt to designate the other port for use by the SMDR printer.
I/O BUSY	An attempt was made to designate a port for use by the SMDR printer which is already being used.	Attempt to designate the other port for use by the SMDR printer.
PARA. ERR	P4 or P5 entered without corresponding P3 value.  P3 entered without corresponding P4 and P5 values.	Check the parameter(s).

**LOAD ODDB INTO SYSTEM  
MEMORY (CMC 902)**

Use **CMC 902** to load the ODDB data base into the system using the PMP. This CMC cannot be entered from an MCT.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	CHK	Verification parameter	LOAD	None

**Parameter Descriptions****P1 (CHK):**

Enter the verification parameter (**LOAD**).

**NOTE:** The complete procedure for using the PMP can be found in Chapter 2 of this document.

**Loading the ODDB Using the  
PMP**

1. Perform the **Initializing the PMP** procedure.
2. Enter the high level security code.
3. Enter **902** at the **CMC =** prompt.
4. Type **LOAD** at P1 and press **ADD / CHG**.
5. If using a PMP disk drive, verify that the EPSON operating system disk is in drive A. Then insert the floppy disk containing the ODDB in drive B.  
  
If using the PMP tape drive, insert the tape containing the ODDB into the tape drive.
6. Press **SHIFT + PF4** (tape start).
7. Make sure that the save data and file versions are displayed. Then press **SHIFT + PF4** again to start the loading process. The system will enter the off-line mode automatically, stopping all switching operations.
8. The system TO (Timer Overflow) lamp (on the CPU card edge) lights upon completion of the loading procedure. The system automatically performs a HOT restart. The PMP screen displays **SECURITY CODE =**. Enter the high level security code to put the system in command mode.
9. Use CMC 801 to confirm the data base loading history and to turn the TO lamp off.

**SAVE SYSTEM ODDB (CMC 903)**

Use **CMC 903** to record the system ODDB using the PMP. This CMC cannot be entered from an MCT.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	CHK	Verification parameter	SAVE	None

**Parameter Descriptions**

**P1 (CHK):**  
Enter the verification parameter (**SAVE**).

**NOTE:** The complete procedure for using the PMP can be found in Chapter 2 of this document.

**Saving the ODDB Using the PMP**

1. Perform the **Initializing the PMP** procedure.
2. Enter the high level security code.
3. Enter **903** at the **CMC =** prompt.
4. Enter **SAVE** at P1 and press **ADD / CHG**.
5. If using a PMP disk drive, verify that the EPSON operating system disk is in drive A. Then insert a blank, formatted floppy disk into drive B.  
  
If using the PMP tape drive, insert a blank tape into the tape drive.
6. Press **SHIFT + PF4** (tape start).
7. Make additional back-up copies of the ODDB by repeating steps 3 through 6.

See the following page for screens which may appear when initiating these steps.

**Saving the ODDB Using the  
PMP (Cont'd)**

This screen appears after step 4 (described on previous page).

```
*SAVE PROCESS

Set DATA TAPE
Hit PF9 to start
```

This screen appears after step 6 (described on previous page).

```
*SAVE PROCESS
START
```

This screen appears immediately after the above screen.

```
*SAVE PROCESS
SAVED DATE MM / DD / YY
TAPE VER.xxx / VOL.xx
```

Definitions shown on the above screen are as follows:

- SAVED DATE: Day when the customer data is saved
- TAPE VER: Customer data tape version
- VOL.: Volume serial number

This screen appears after step 7 (described on previous page).

```
*SAVE PROCESS
COMPLETION
```

**Saving the ODDB Using the  
PMP (Cont'd)**

The following shows error messages which may occur.

- **No tape screen:** This screen appears when the customer data tape does not exist or when the selected microcassette tape is protected from overwriting. After setting the tape, pressing **PF9** returns you to step 6.

```
*SAVE PROCESS
TAPE DOES NOT EXIST
Set DATA TAPE
Hit PF9 to start
```

- **Change tape screen:** This screen appears when the tape ends, but the **SAVE** is not complete.

```
*SAVE PROCESS
DATA TAPE END
Change DATA TAPE
Hit PF9 to start
```

- **Quit screen:** This screen appears after pressing **RLS**.

```
*SAVE PROCESS
QUIT
```



**SYSTEM SOFTWARE  
VERSION ID DISPLAY (CMC  
904)**

Use the system software version display (CMC 904) table to determine the software version operating the system.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	VID	Version ID	15 characters (maximum)	None

**Parameter Descriptions**

**P1 (VID):**

The version ID will be displayed as shown below.

- 15 characters (maximum)

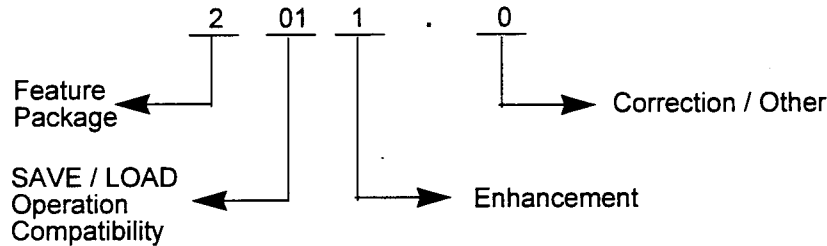
**NOTE:** In addition, the code to determine whether the Basic (1.0B) or Enhanced (1.0E) software is installed can be found on the memory daughter board on the CPU card.

**Display**

Press **DSP**.

**NOTE:** Press **DSP** again to release this CMC.

**FORMAT**



- **Save / Load Operation Compatibility:** Customer data in RAM can be backed up by PMP onto a microcassette tape or by PcMP onto a disk and loaded back to the system in the SAVE / LOAD operation. However, if the new software to be loaded is a different version than the already existing saved data base, then the two versions will be incompatible.
- **Enhancement:** This shows any updated versions containing enhancements to the operation of the system.
- **Correction / Other:** This shows the correction version when any corrections or improvements are made that do not affect the user's operation of the system.

**DISTRIBUTED PROCESSOR  
VERSION ID DISPLAY (CMC  
907)**

Use the Distributed Processor Version ID Display (**CMC 907**) command to display the processor version of cards installed in card slots 00-18 in each cabinet of the system.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>EN</u>	Equipment number	See description below	None
P2	TYP	Card type	1 = 8SLC / 16SLC / 8PDL 2 = 4BWC 3 = 2TTE / 2TE4 4 = 2TTL 5 = 4DMR 6 = 4CHT 7 = RVAC 8 = 4SLE 9 = 2APIA 10 = Reserved 11 = ISDN 23PT 12 = FIPN 23PT 13 = Reserved 14 = 24T1 15 = 6DID 16 = Reserved 17 = Reserved 18 = 8BWC 19 = 4TE4	None
P3	VNO	Version number	0 to 127	None

**Parameter Descriptions**

**P1 (EN):**

Enter the equipment number of the card which you wish to display (required). Equipment numbers are entered in the XYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 18
- Z = Circuit number: 0 to 7

**NOTE:** Information on entering equipment numbers can be found in Appendix C.

**Parameter Descriptions  
(Cont'd)**

**P2 (TYP):**

The card type will be displayed, using one of the values shown below.

- 1 = 8SLC / 16SLC / 8PDL
- 2 = 4BWC
- 3 = 2TTE / 2TE4
- 4 = 2TTL
- 5 = 4DMR
- 6 = 4CHT
- 7 = RVAC
- 8 = 4SLE
- 9 = 2APIA
- 10 = Reserved
- 11 = ISDN 23PT
- 12 = FIPN 23PT
- 13 = Reserved
- 14 = 24T1
- 15 = 6DID
- 16 = Reserved
- 17 = Reserved
- 18 = 8BWC
- 19 = 4TE4

**P3 (VNO):**

The version number of the card will be displayed.

- 0 to 127

**NOTES:**

1. The system displays the processor versions for the cards which are installed in the system cabinet.
2. If an EN is not installed, or if the EN contains an 8EKC, 8DTC, or 16DTC, the EN is skipped and the next installed EN is displayed.
3. P3 only identifies the processor version, not the card revision. The card revision is located on the card itself.

**Display**

1. Enter an EN at P1.
2. Press **DSP**.

**NOTES:**

1. Press **DSP** repeatedly to display data in numerical order of ENs.
2. The system releases this CMC after the last installed EN has been displayed.

**SERVICE INFORMATION DISPLAY (CMC 908)**

Use the Service Information Display (CMC 908) table to display service information, showing whether or not a value added service is available. Depending on the configuration of your system, different screens and parameters may be displayed.

This CMC requires a LOW level security code.

**Copyright Display Screen** No data need be entered. This is a display screen only.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	PT	System prompt	COPYRIGHT (C)	None
P2	PT	System prompt	FUJITSU LIMITED	None
P3	PT	System prompt	1993	None

**Version ID Screen** No data need be entered. This is a display screen only.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	VID	Version ID	15 characters maximum	None
P2	SD	Service data	8 characters maximum	None

**P1 (VID):**  
The version ID (maximum 15 characters) will be displayed.

**P2 (SD):**  
Any additional service data (8 characters) will be displayed.

**Service Information Display** Enter data in P1 only.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	SVN	Service name	See Table 4-63	None
P2	SVA	Service availability	See Table 4-63	None

**P1 (SVN):**  
Enter the desired service name (maximum 15 characters). Please refer to Table 4-63 for more information.

**P2 (SVA):**  
The specific service availability will be displayed.

**Service Information Display  
(Cont'd)**

**NOTE:** Repeated pressing of DSP displays the next SVN and SVA.  
For example:

<p><b>P1: ACD</b> <b>P2: AVAILABLE</b></p>
--

**Table 4-63. Service Information**

SERVICE NUMBER BITS	SERVICE NAME	SERVICE DATA
00 01 02 03	Reserved Reserved Basic (200A) Basic (400)	First hex character
04 05 06 07	Attendant Multi-Line Data	Second hex character
08 09 10 11	SMDR Reserved	Third hex character
12 13 14 15	Hotel Hotel Interface Recorded Voice Voice Mail	Fourth hex character
16 17 18 19	DID DISA DNIS	Fifth hex character
20 21 22 23	ACD ACD Interface	Sixth hex character
24 25 26 27	LCR FIPN Reserved T-1	Seventh hex character
28 29 30 31	ISDN PRI	Eighth hex character

**NOTE:** Service names of reserved numbers are not displayed. Service data is the hex character coded from a four-bit pattern which shows the service availability of each four services.

**DN-EN CONVERSION  
COMMAND (CMC 909)**

Use the DN-EN Conversion Assignment (**CMC 909**) to display the equipment number corresponding to the type of terminal and the directory number.

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>TID</b>	Terminal ID	1 = Station 2 = Trunk 3 = Data station	None
<b>P2</b>	<b>DN</b>	Directory number	1 to 4 digits	None
<b>P3</b>	<b>EN</b>	Equipment number	See description below	None

**Parameter Descriptions**
**P1 (TID):**

Enter the terminal ID for which you wish to display information (required).

- 1 = Station
- 2 = Trunk
- 3 = Data station

**P2 (DN):**

Enter the directory number.

- 1 to 4 digits

**P3 (EN):**

The equipment number corresponding to the data entered in P1 and P2 will be displayed. Equipment numbers are displayed in the XYYZ format:

- X = Cabinet number: 0, 1, 2, or 3
- YY = Logical card slot number: 00 to 17
- Z = Circuit number: 0 to 7

**Display**

Press **DSP** after entering P1 and P2 to display the EN corresponding to the DN.

**NOTES:**

1. Pressing **DSP** without entering a P2 value displays the parameters corresponding to the lowest DN of the entered TID.
2. Pressing **DSP** increments the DN and displays the corresponding ENs consecutively.
3. Pressing **DSP** after the last DN is displayed causes P2 and P3 to display blanks. Press **DSP** again to terminate the command.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
NOT RGTR	The specified DN is not assigned.	Check the DN.

**ISDN PACKAGE DIAGNOSIS TEST (CMC 910)**

The ISDN Package Diagnosis Test (CMC 910) consists of the following:

- Loop back test inside and outside package.
- LPR test.
- Loop back cancel request to CO.

**NOTE:** During the loop back test, the line connector should be removed.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<u>P1</u>	<u>TTP</u>	Type of test	1 = Loop back test inside the circuit card 2 = Loop back test outside the circuit card 3 = LPR test 4 = Loop back cancel request to CO	None
<u>P2</u>	<u>EN</u>	Equipment number	See description below	None
<u>P3</u>	<u>ANS</u>	Test results	See description below	None

**Parameter Descriptions**

**P1 (TTP):**

Enter the type of test you wish to run (required).

- 1 = Loop back test inside the circuit card
- 2 = Loop back test outside the circuit card
- 3 = LPR test
- 4 = Loop back cancel request to CO

**P2 (EN):**

Enter the equipment number of the ISDN card which you wish to test (required). Equipment numbers are entered in the XYZ format:

- X = Cabinet number: 0 or 1
- YY = Logical card slot number: 00, 03, 06, 09, 12, 15
- Z = Circuit number: 0

**NOTE:** Information on entering equipment numbers can be found in Appendix C.



**Parameter Descriptions  
(Cont'd)**

**P3 (ANS):**

Test results will be displayed.

- When P1 = 1, 2, or 3, the information will be displayed as shown in the figures below and on the following page.
- When P1 = 4, 0 (cancel) or 1 (request) will be displayed.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DISAGREE	The entered EN is not ISDN.	Specify an ISDN EN.
NOT EXEC	Corresponding channel failure or busy.  There is no loop back function of the entered EN.	Recover the failure or make the channel idle.
NOT RGTR	The entered EN is not installed.	Specify an installed ISDN EN.
DENIED 31	The entered EN is in loop back mode.	Release the loop back mode.

**Loop back test:**

P3:    X        X            00000 - 0000000

          |        |

          └───┬───┘

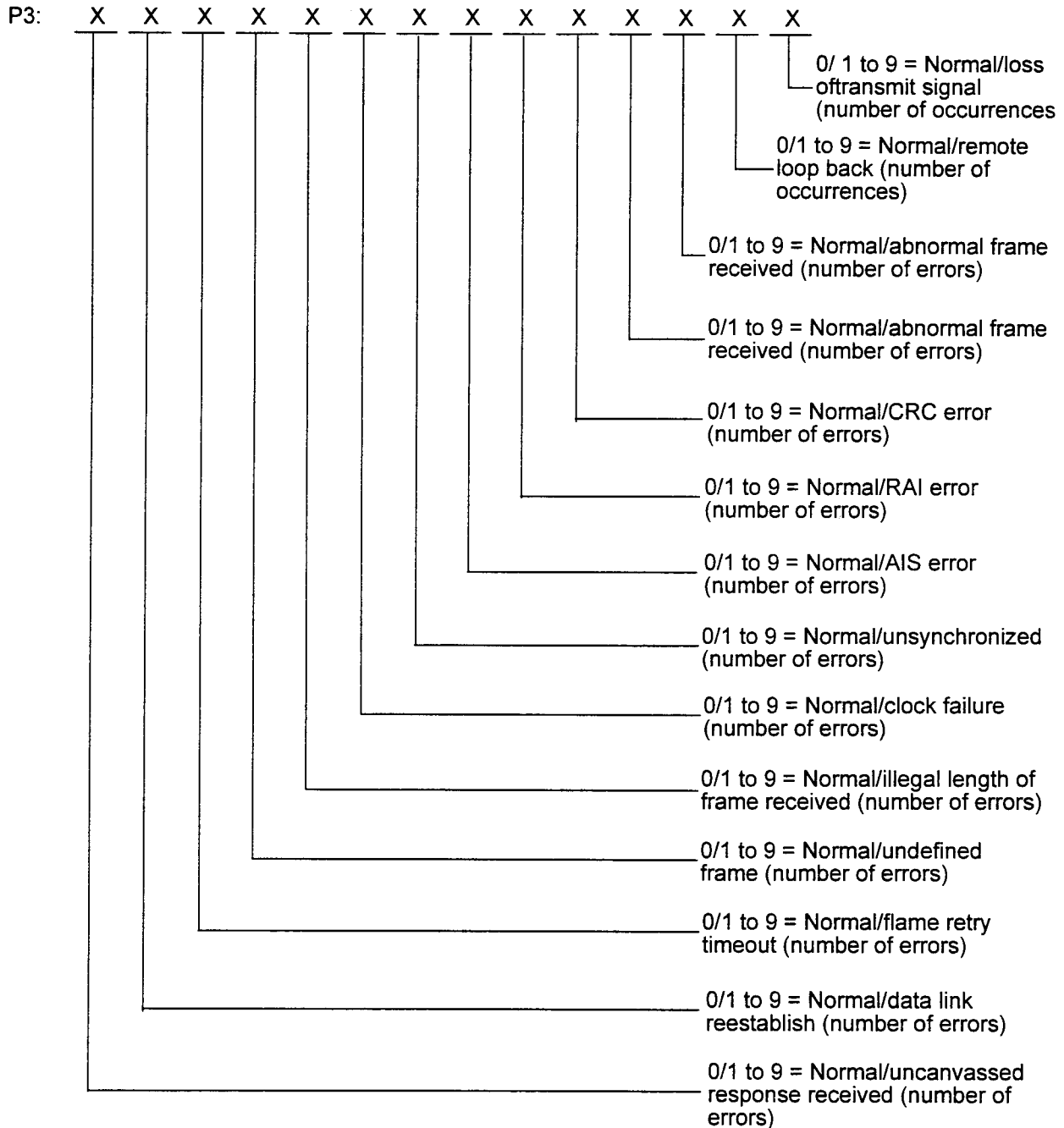
                  0 / 1 to 9 = Normal / sending data and receiving data mismatch (number of errors)

                  0 / 1 to 9 = Normal / sending or receiving timing out (number of errors)

The total number of errors is displayed. (A maximum 54 sec. delay may occur.)

The result of the LPR error count is displayed (maximum 9 times).  
 When the count is read, the counter is reset.

**LPR test:**



**Test examples:**

```
CMC = 910
P1 : 3
P2 : 090
P3 :
```

P1: Type of test  
P2: Equipment number of  
ISDN card

Press **DSP**

```
CMC = 910 PROGRESS
P1 : 3
P2 : 090
P3 :
```

Testing in progress  
(During progress, you may  
press **RLS** to abort the  
command)

```
CMC = 910 DSP
P1 : 3
P2 : 090
P3 : 007000-000000
```

Display of test results

**Abnormal abort:**

- During the test, if an LPR failure occurs, the test is aborted and "spare" is displayed in P3.
- The loop back test is done when the entire channel is idle in a package. During a test, the package cannot be used.

**B-CHANNEL LOOP BACK CODE REGISTRATION (CMC 913)**

Use the B-Channel Loop Back Code Registration (**CMC 913**) to change and remove codes.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>BNO</b>	B-channel loop back code number	1 to 23	None
<b>P2</b>	<b>COD</b>	B-channel loop back code	0 to 15 digits	None

**Parameter Descriptions**

**P1 (BNO):**

Enter the B-channel loop back code number which you wish to define (required).

- 1 to 23

**P2 (COD):**

The B-channel loop back code is displayed.

- 0 to 15 digits

**Display**

1. Enter the BNO.
2. Press **DSP** to display the COD of the specified BNO.

**NOTE:** If any codes are registered, blank is displayed. If **DSP** is pressed again, without BNO, the COD of BNO = 1 is displayed. By pressing **DSP** again, the COD of the next BNO is displayed.

**Change**

Use **ADD / CHG** to register or change the COD.

**Remove**

1. Enter the BNO.
2. Press **RMV** to remove the COD of the BNO.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
PARA. ERR	Invalid BNO is entered.	Enter the correct BNO.

**PRI PROTOCOL  
ASSIGNMENT (CMC 915)**

Use the PRI Protocol Assignment (**CMC 915**) to change the type of PRI protocol.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	PID	Protocol type	1 = AT&T #4 ESS 2 = AT&T #5 ESS 3 = Northern Telecom DMS 100 4 = Northern Telecom DMS 250	1

**Parameter Descriptions****P1 (PID):**

Enter the value corresponding to the type of protocol which you wish to assign.

- 1 = AT&T #4 ESS (default)
- 2 = AT&T # 5 ESS
- 3 = Northern Telecom DMS 100
- 4 = Northern Telecom DMS 250

**Display** Press **DSP** to display the PID.

**Change** 1. Enter the PID.  
2. Press **ADD / CHG** to change the data.

**NOTE:** Data registered in CMC 912 is automatically changed to the default value corresponding to the PID when **ADD / CHG** is pressed.

**FLOPPY DISK DRIVE HEAD  
CLEANING (CMC 920)**

Use **CMC 920** to clean the floppy disk drive heads. The floppy disk cleaning operation should be done every three months. The directions with the cleaning disk specify how long the disk can be used (usually it must be replaced after two operating hours).

This CMC requires a LOW level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
P1	FDDN	Floppy disk number	0	0

**Parameter Descriptions****P1 (FDDN):**

Enter the number of the floppy disk which you wish to be cleaned.

- 0

To clean the floppy disk drive:

1. Insert the floppy disk.
2. Enter the target drive number (0).
3. Press **ADD / CHG** to start cleaning.

**NOTE:** Cleaning cannot be interrupted.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DRIV ERR	The floppy disk drive is faulty.	Check the floppy disk drive.
NO FLPPY	The cleaning floppy disk is not inserted into the FDD.	Insert a cleaning floppy disk.

**LOAD DATA FROM FLOPPY  
DISK (CMC 921)**

Use this CMC to load customer data saved by the Save command. The switching process stops during loading. The system automatically performs a data kept start after the loading is complete.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>HSD</b>	High level security code	4 digits	None
<b>P2</b>	<b>DATE</b>	Last date office data was saved	MM = Month DD = Day YY = Year	None
<b>P3</b>	<b>VER</b>	Version of office data	VER.XXXXX.XXX	None

**Parameter Descriptions****P1 (HSD):**

Enter the high level security code (required).

- 4 digits

**P2 (DATE):**

The last date that the office data was saved is displayed in the MM / DD / YY format:

- MM = Month
- DD = Day
- YY = Year

**P3 (VER):**

The version of the office data is also displayed.

- VER.XXXXX.XXX

**Add / Display**

1. Place the floppy disk with the saved office data into the floppy disk drive.

**NOTE:** The floppy disk drive is optional in the Series 3 system.

2. Enter P1 value.
3. Press **ADD / CHG** to display P2 and P3 information.
4. Press **ADD / CHG** again to load the office data from the floppy disk.

**NOTE:** Loading cannot be interrupted.

**Office Data Load Procedure**

1. Enter the high level security code.
2. Press **ADD / CHG** to display information on the saved office data.
3. Press **ADD / CHG** again to load the data.
4. After the data is loaded the system will execute a "Data Kept" restart.

**NOTES:**

1. If an error occurs during the data loading procedure, perform a "No Kept" (COLD) restart.
2. Logging information is recorded as "CC" (device name) and "9" (error code) by CMC 801 when the load process is finished.

**ERROR CODES**

<b>ERROR CODE</b>	<b>CAUSE</b>	<b>CORRECTION</b>
DRIV ERR	The floppy disk drive is faulty.	Check the floppy disk drive.
DISK ERR	The floppy disk is faulty.	Check the floppy disk.
NO DATA	The office data is not saved.	Check the floppy disk.
FRMT ERR	Floppy disk format error.	Check the floppy disk.
TYPE ERR	Floppy disk type error.	Check the floppy disk.
VER ERR	Floppy disk version error.	Check the floppy disk.
NO FLPPY	No floppy disk is inserted.	Insert a floppy disk.
PARA. ERR	The specified security code is not correct.	Enter a correct security code.
NO DRIV	The floppy disk drive is not installed correctly.	Install a floppy disk drive, or connect the FDD and CPU with the required cable.



**SAVE DATA TO FLOPPY DISK (CMC 922)**

Use the Save Data to Floppy Disk command (**CMC 922**) to save the office data to a floppy disk. Use an IBM-DOS formatted high-density (1.44 Mb) floppy disk.

This CMC requires a HIGH level security code.

P#	MNEM.	DESCRIPTION	DATA RANGE	DEFAULT
<b>P1</b>	<b>HSD</b>	High level security code	4 digits	None
<b>P2</b>	<b>DATE</b>	Last date office data was saved	MM = Month DD = Day YY = Year	None
<b>P3</b>	<b>VER</b>	Version of office data	VER.XXXXX.XXX	None
<b>P4</b>	<b>VCF</b>	Version check flag	0 (or blank) = With version check 1 = Without version check	None

**Parameter Descriptions****P1 (HSD):**

Enter the high level security code (required).

- 4 digits

**P2 (DATE):**

The last date that the office data was saved is displayed in the MM / DD / YY format:

- MM = Month
- DD = Day
- YY = Year

**P3 (VER):**

The version of the office data is also displayed.

- VER.XXXXX.XXX

**P4 (VCF):**

Enter the version check flag (a value of either 0 or 1), depending upon your data save requirements.

- 0 (or blank) = With version check
- 1 = Without version check

**Add / Display**

To save data to a disk with no data saved:

1. Place the data floppy disk with no saved office data in the floppy disk drive.
2. Enter values for P1 and P4.
3. Press **ADD / CHG** to save the office data to the floppy disk.

**Add / Display (Cont'd)**

To save data to a disk with data saved:

1. Place the data floppy disk with the saved office data into the floppy disk drive.
2. Enter values for P1 and P4.
3. Press **DSP** to display the parameter information for P2 and P3.
4. Press **ADD / CHG** to execute the save.

**NOTES:**

1. The new office data will override the existing office data.
2. Saving cannot be interrupted.

**Office Data Save Procedure**

1. Enter the high level security code and version check flag.
2. If the floppy disk with no data is inserted, press **ADD / CHG** to save the office data.
3. If the floppy disk with data is inserted, press **ADD / CHG** to display the date and the version of the saved data on the floppy disk. Press **ADD / CHG** again to save the new office data.
4. When the save is complete, a **COMPLETION** message is displayed on the terminal screen.

**ERROR CODES**

ERROR CODE	CAUSE	CORRECTION
DRIV ERR	The floppy disk drive is faulty.	Check the floppy disk drive.
DISK ERR	The floppy disk is faulty.	Check the floppy disk.
FRMT ERR	Floppy disk format error.	Check the floppy disk.
TYPE ERR	Floppy disk type error.	Check the floppy disk.
VER ERR	Floppy disk version error.	Check the floppy disk.
NO FLPPY	No floppy disk is inserted.	Insert a floppy disk.
WRT PROT	Floppy disk write-protected.	Release write-protection.
PARA. ERR	The specified security code is not correct.	Enter a correct security code.
NO AREA	There is no available area for the data save.	Delete unnecessary information and try again.
NO DRIV	The floppy disk drive is not installed correctly.	Install a floppy disk drive, or connect the FDD and CPU with the required cable.

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## INTRODUCTION

The Series 3 can automatically generate station and trunk assignment data from the default data base to provide a working network for instruments and trunks physically connected to the system. The default data base is generated when the system is first powered on, and each time the system goes through a COLD restart.

### DIP Switch Settings

The DIP switches on the CPU card determine if the system generates default data. Table 5-1 shows the available the DIP switch settings. Four different settings are available on the DIP switch. These settings generate default data for:

- 3-digit numbering plans.
- 4-digit numbering plans.

If the DIP switches are not set to the default mode, then the following CMCs are not generated: **CMCs 100, 104, 200, 210, 220, 230, and 250.**

**Table 5-1. DIP Switch Default Data Settings**

SWITCH		DEFAULT DATA
DDT0	DDT1	
Open	Open	4-digit numbering plan
Open	Closed	3-digit numbering plan
Closed	Open	Load from floppy disk
Closed	Closed	None

The system assigns default data depending upon the above DIP switch settings and Attendant Console installation. Instrument button assignments differ based on whether an Attendant Console is installed.

- The system defaults to a PBX if an Attendant Console is installed.
- The system defaults to a Key Telephone System (KTS) if no Attendant Console is installed.

The ICM button and line buttons are assigned to feature buttons on custom telephones in a KTS, but not assigned in a PBX system.

**System Capacities**

Table 5-2 lists the capacity and default status of items in the data base. Installed cards and instruments are assigned to specific groups, features, COS, and station numbers.

Definitions of items listed in the DEFAULT STATUS column are as follows:

- **Assigned:** These items are automatically assigned in the default data base, but *can be changed by CMC code*.
- **Fixed:** These items are automatically assigned in the default data base and *cannot be changed by CMC code*.
- **CMC:** These items are not automatically assigned in the default data base and *must be programmed by CMC codes*.
- **Station:** These items are not assigned in the default data base and *can be programmed by station users*.

Table 5-2. System Capacities

ITEM DESCRIPTION	SYSTEM MAXIMUM	DEFAULT STATUS
ACD Group	20	CMC
ACD Member	240	CMC
Area and Office Code Restriction Table	1000 codes	CMC
Attendant Console	8	CMC
BLF Area on Proprietary Telephone	24	CMC
Call Waiting Indicator	40	CMC
Conflicting Area / Office Code Table	30	CMC
DGN (Trunk Dialing Group)	3	Assigned
DIU	152	Assigned
DTA	120	Assigned
Dial Intercom Group	10	CMC
Dial Intercom Member	50	CMC
DSS 30 Button	16	Assigned
DSS 40 Button	16	Assigned
DSS 80 Button	8	Assigned
DSS 100 Button	2	Assigned
Proprietary Telephones	480	Assigned
Proprietary Telephone Speaker Paging Zone	9	CMC
Proprietary Telephone Speaker Paging Members / Paging Zone	36	CMC
External Paging Zone	9	CMC

**NOTE:** The maximum number of DSS 30s and 40s (combined) is 16. The maximum number of DSS 40s and 80s (combined) is 16. The maximum number of DSS 30, DSS 40, DSS 80, and DSS 100s cannot exceed 640 buttons total.

Table 5-2. System Capacities (Cont'd)

ITEM DESCRIPTION	SYSTEM MAXIMUM	DEFAULT STATUS
Front Desk Console	200	CMC
Forced Account Code - Verify Code	1024	CMC
Hotel / Motel Printer	2	CMC
Hotline (Voice)	20	CMC
Hotline (Data)	40	CMC
Hunt Group	50 voice / 10 data	CMC
Hunt Group Member	16	CMC
LCR Area Code Route Table	63	CMC
LCR Area Code Routes	10	CMC
LCR Area Codes	160	CMC
LCR International Code Routes	10	CMC
LCR Office Code Route Table	15	CMC
LCR Office Code Routes	10 per table	CMC
LCR Office Codes	800	CMC
Master Control Telephone	20	Assigned
Message Waiting / Instrument (Silent Messages / Instrument)	4	Station
Modem Group	15	CMC
Modem Type	15	CMC
Multi-Station Line Appearance (Number of Line Appearances)	16	CMC
Night Answering Group	32	CMC
Night Answering Member - Stations / Group	8	CMC
Pick-Up Group	20 or 63	CMC
Pick-Up Group Members	32	CMC

**NOTE:** The default data base assigns up to four MCTs (the first four, or lowest, assigned equipment numbers).

Table 5-2. System Capacities (Cont'd)

ITEM DESCRIPTION	SYSTEM MAXIMUM	DEFAULT STATUS
Repertory Dial Buttons	640	CMC
RGN (Trunk Restriction Group)	3	Assigned
Simultaneous Calls	254	Fixed
Simultaneous TGN Traffic Measurement	10	CMC
Simultaneous Message Waiting Ringer (per Cabinet)	24	Fixed
Simultaneous Trunk Camp-On	20	Station
Simultaneous Speakerphone Use	48	Fixed
SCC Route	6	CMC
SMDR Screening Digits	100	CMC
Stations	480	Assigned
Station Camp-On	30	Station
Station Speed Calling Lists (Number of Entries per Station)	10	Station
System Speed Calling Directory Numbers	100 or 1,000	CMC
Tenants	63	Assigned
Terminal Password Group	100	CMC
Terminating TGN	63	CMC
TGN (Trunk Group)	63	Assigned
Three-Way Conference	10	Fixed
Trunks	240	Assigned
Trunk Line Appearance	96	CMC



**Feature Numbers** Table 5-3 gives the feature numbers that can be assigned to feature buttons on the Attendant Console, proprietary telephones, and DSS / BLF consoles.

**Table 5-3. Button Assignment Feature Numbers**

FNO	FEATURE NAME	PHONE
1	Direct Station Selection	Proprietary Telephone, ATT
4	CO #1 Access	Proprietary Telephone, DSS
5	CO #2 Access	Proprietary Telephone, DSS
6	CO #3 Access	Proprietary Telephone, DSS
7	CO #4 Access	Proprietary Telephone, DSS
8	CO #5 Access	Proprietary Telephone, DSS
9	CO #6 Access	Proprietary Telephone, DSS
10	FX #1 Access	Proprietary Telephone, DSS
11	FX #2 Access	Proprietary Telephone, DSS
12	FX #3 Access	Proprietary Telephone, DSS
13	FX #4 Access	Proprietary Telephone, DSS
14	FX #5 Access	Proprietary Telephone, DSS
15	FX #6 Access	Proprietary Telephone, DSS
16	WATS #1 Access	Proprietary Telephone, DSS
17	WATS #2 Access	Proprietary Telephone, DSS
18	WATS #3 Access	Proprietary Telephone, DSS
19	WATS #4 Access	Proprietary Telephone, DSS
20	WATS #5 Access	Proprietary Telephone, DSS
21	WATS #6 Access	Proprietary Telephone, DSS
48	Station Speed Calling	Proprietary Telephone, ATT
49	System Speed Calling	Proprietary Telephone, ATT, DSS
50	Save / Last Number Redial	Proprietary Telephone, ATT
51	Proprietary Telephone Paging Access - All Zone / Zone	Proprietary Telephone, ATT
52	Proprietary Telephone Paging Answer	Proprietary Telephone
53	External Paging Access	Proprietary Telephone, ATT, DSS
70	Wake-Up (Other) Register / Cancel	Proprietary Telephone
71	Do Not Disturb (Other) Register / Cancel	Proprietary Telephone

Table 5-3. Button Assignment Feature Numbers (Cont'd)

FNO	FEATURE NAME	PHONE
72	Room Status Change	Proprietary Telephone
74	Message Registration - Add / Clear	Proprietary Telephone
75	Controlled Restriction	Proprietary Telephone, ATT
78	Wake-Up (Self) / Time Reminder - Register / Cancel	Proprietary Telephone
80	Call Forward All Calls - Register	Proprietary Telephone
85	Do Not Disturb - Register	Proprietary Telephone
87	Message Waiting - Register	Proprietary Telephone, ATT
89	Message Waiting (Pick-Up) - Register	Proprietary Telephone
92	Group Pick-Up	Proprietary Telephone
106	Direct Call Pick-Up	Proprietary Telephone, ATT
108	Multi-Group Pick-Up	Proprietary Telephone
110	Call Forward Follow Me - Register / Cancel	Proprietary Telephone
117	Data Call Attribute Change	Proprietary Telephone
136	Recorded Voice Announcement Button	Proprietary Telephone, ATT
137	Do Not Disturb with Silent Message Button	Proprietary Telephone
142	Wrap-Up Button	Proprietary Telephone
143	ACD Sign-On / Sign-Off	Proprietary Telephone
150	Station Camp-On - Register	Proprietary Telephone, ATT
151	Trunk Camp-On - Register	Proprietary Telephone, ATT
152	Executive Busy Override	Proprietary Telephone
153	Call Park Registration	Proprietary Telephone, ATT
154	Account Code	Proprietary Telephone, ATT
160	Subordinate Data Call	Proprietary Telephone
170	Proprietary Telephone Speaker Button	Proprietary Telephone
171	Proprietary Telephone Handsfree Button	Proprietary Telephone

Table 5-3. Button Assignment Feature Numbers (Cont'd)

FNO	FEATURE NAME	PHONE
172	Proprietary Telephone Microphone Mute Button	Proprietary Telephone
173	Proprietary Telephone Hold Button	Proprietary Telephone
174	Flash Button	Proprietary Telephone, ATT
175	Proprietary Telephone Transfer Button	Proprietary Telephone
176	Proprietary Telephone Release Button	Proprietary Telephone
177	Voice Call/Call Announce/Off-Hook Call Announce Button	Proprietary Telephone, ATT
179	Alarm Button	Proprietary Telephone, ATT, DSS
180	Proprietary Telephone ICM-Hold / Answer Button	Proprietary Telephone
181	Proprietary Telephone Call Splitting Button	Proprietary Telephone
182	Hookswitch Button (for Headset Operation)	Proprietary Telephone
183	Primary Station Line / Intercom Button	Proprietary Telephone, DSS
184	Privacy Release Button	Proprietary Telephone
185	Proprietary Telephone Data Call Button	Proprietary Telephone
186	Proprietary Telephone Voice / Data Mode Change Button	Proprietary Telephone
187	Proprietary Telephone Program Button	Proprietary Telephone
188	Front Desk Console Program Button	ATT
191	ACD Status Display Button	Proprietary Telephone
192	Repertory Dial Button	Proprietary Telephone
194	Intercom Group Button	Proprietary Telephone
196	Alternate Voice / Data Button	Proprietary Telephone
197	Auto Answer Button	Proprietary Telephone
198	Work Time Button	Proprietary Telephone
221	COS / COR Display Button	ATT
222	Attendant Break-In Button	ATT

**NOTE:** In the case of a multi-station appearance feature, an extension line is referred to as a Station Line (SL) not an Intercom (ICM).

Table 5-3. Button Assignment Feature Numbers (Cont'd)

FNO	FEATURE NAME	PHONE
223	DND Override Button	Proprietary Telephone, ATT
224	Attendant Night Mode Button	ATT
225	Attendant Position Busy Button	ATT
227	Attendant Trunk Busy / Trunk Access Button	ATT

**Trunk Group Data Defaults** The system sets the following default assignments for trunk groups.

**Table 5-4. Trunk Group Data**

TRUNK GROUP NUMBER	DEFINITION	TRUNK DIALING GROUP	TRUNK RESTRICTION GROUP
13	CO #1	1	1
14	CO #2	1	1
15	CO #3	1	1
16	CO #4	1	1
17	CO #5	1	1
18	CO #6	1	1
19	FX #1	1	1
20	FX #2	1	1
21	FX #3	1	1
22	FX #4	1	1
23	FX #5	1	1
24	FX #6	1	1
25	WATS #1	1	Not Assigned
26	WATS #2	1	Not Assigned
27	WATS #3	1	Not Assigned
28	WATS #4	1	Not Assigned
29	WATS #5	1	Not Assigned
30	WATS #6	1	Not Assigned
31	Tie #1	Not Assigned	Not Assigned
32	Tie #2	Not Assigned	Not Assigned
33	Tie #3	Not Assigned	Not Assigned
34	Tie #4	Not Assigned	Not Assigned
35	Tie #5	Not Assigned	Not Assigned
36	Tie #6	Not Assigned	Not Assigned
37	Tie #7	Not Assigned	Not Assigned
38	Tie #8	Not Assigned	Not Assigned
39	Tie #9	Not Assigned	Not Assigned
40	Tie #10	Not Assigned	Not Assigned
41	Tie #11	Not Assigned	Not Assigned
42	Tie #12	Not Assigned	Not Assigned
43	Tie #13	Not Assigned	Not Assigned
44	Tie #14	Not Assigned	Not Assigned
45	Tie #15	Not Assigned	Not Assigned
46	Tie #16	Not Assigned	Not Assigned
47	Tie #17	Not Assigned	Not Assigned

Trunk Group Data Defaults  
(Cont'd)

Table 5-4. Trunk Group Data (Cont'd)

TRUNK GROUP NUMBER	DEFINITION	TRUNK DIALING GROUP	TRUNK RESTRICTION GROUP
48	Tie #18	Not Assigned	Not Assigned
49	Tie #19	Not Assigned	Not Assigned
50	Tie #20	Not Assigned	Not Assigned
51	SCC #1	1	1
52	SCC #2	1	1
53	SCC #3	1	1
54	SCC #4	1	1
55	SCC #5	1	1
56	SCC #6	1	1
57	DID #1	Not Assigned	Not Assigned
58	DID #2	Not Assigned	Not Assigned
59	DID #3	Not Assigned	Not Assigned
60	DID #4	Not Assigned	Not Assigned
61	DID #5	Not Assigned	Not Assigned
62	DID #6	Not Assigned	Not Assigned

**Toll Prefix Assignments** The system sets the following default values for customer and operator toll prefixes for each trunk dialing group number.

**Table 5-5. Toll Prefix Assignments**

TOLL PREFIX ASSIGNMENTS			
DIALING GROUP NUMBER	CUSTOMER TOLL PREFIX	OPERATOR TOLL PREFIX (1)	OPERATOR TOLL PREFIX (2)
1	1	0	00
2	1	0	00
3	1	0	00

**Outgoing Call Access** The system defaults to permit or deny access to outgoing calls based on the COR and restriction group membership. Any blank entries mean that a call is not allowed or restricted at this restriction table. The system will check other tables such as area / office code restriction before determining whether or not the call will be allowed or denied.

**Table 5-6. Outgoing Call Connection Default Matrix**

CLASS OF RESTRICTION	RESTRICTION GROUPS 1, 2, AND 3							
	011 +	0 +	00 +	1 +	X11	ALL AC	ALL OC	XXX / 555-1212
1	-	-	-	-	A	-	-	A
2	-	-	-	-	A	-	-	A
3	-	-	-	-	A	-	-	A
4	D	D	D	-	A	-	-	A
5	D	D	D	-	A	-	-	A
6	D	D	D	-	A	-	-	A
7	D	D	D	-	A	-	-	-
8	D	D	D	D	A	D	-	-
9	D	D	D	D	-	D	-	-
10 - 16	D	D	D	D	-	D	D	-

A = Allowed

D = Denied

" - " = Not determined

**Trunk-to-Trunk Connections** The system's default data base permits all trunk-to-trunk connections.

**Trunk Card Default Data** The system sets the following defaults for the various trunk card types.

**Table 5-7. Default System Data for Trunk Cards**

DATA TYPE	TRUNK CARD TYPE							
	2TTE 2TE4 / 4TE4	2TTL	4DMR	4BWC / 8BWC	4CHT	T-1	23PT	6DID
Termination Type	Tie E&M	Tie Loop	DTMF	CO	Data	T-1 CO	ISDN PRI	DID Loop
Incoming / Outgoing	Bothway	Bothway	-	Bothway	-	Bothway	Bothway	Inc
Trunk Group Number	31	32	1	13	2	13	14	57
Line Type	(E&M)	Loop	None	Loop	None	Loop	-	Loop
Dial Receive / Send	Delay Dial	Delay Dial	None	None	None	None	-	Delay Dial
Dial Signal Type and Break Ratio	DTMF	DTMF	None	DTMF	None	DTMF	-	DTMF
COS (day mode)	1	1	None	1	None	1	1	1
COS (night mode)	1	1	None	1	None	1	1	1
COR (day mode)	1	1	None	1	None	1	1	1
COR (night mode)	1	1	None	1	None	1	1	1
Master / Slave	-	-	-	-	-	-	-	-
ISDN (CO) / ISDN (DID)	-	-	-	D	-	-	ISDN (DID)	-
Start Format	-	-	-	-	-	FXS	-	-



**Station Default Data** The system sets the following values for the data associated with the various station types.

**Table 5-8. Default Data Assignment for Stations (Part 1)**

TYPE OF DATA	SLT	CT-10	CT-20	CT-30	DS
OPM	2 Way	2 Way	2 Way	2 Way	2 Way
Dialing Type	DP 20* pps	DTMF	DTMF	DTMF	DTMF
COS (day mode)	1	1	1	1	1
COS (night mode)	1	1	1	1	1
COR (day mode)	1	1	1	1	1
COR (night mode)	1	1	1	1	1
Data Secure	No	No	No	No	No
Off-Premises Station	No	No	No	No	No
SLT w / MSG Wait Lamp	No	No	No	No	No
Guest Room Station	No	No	No	No	No
Dictation Access	No	No	No	No	No

\* If 4DMR cards are installed, the dialing type for SLTs is DTMF.

Table 5-9. Default Data Assignment for Stations (Part 2)

FEATURE TYPE	ASSIGNMENT
Call Forward - All Calls	Not registered
Call Forward - Busy / No Answer	Not registered
Call Forward - Don't Answer	Not registered
Do Not Disturb with / without Silent Message	Not registered
Message Waiting	Not registered
Station Camp-On	Not registered
Trunk Camp-On	Not registered
Secretary	Not registered
Direct Station Selection	Not registered
Station Speed Calling	Not registered
Off-Hook Signaling	In off-hook signal mode
Call Announce	Call announce receive
System Mode (day / night)	In day mode
Key Touch System	System available
DSS Speed Call	Not registered
Idle Line Preference	Intercom
One Touch ICM / Line Button	Available
Ringing Line Preference	Intercom and trunk preference
Automatic Wake-Up	Not registered
Controlled Restriction	Not registered
Room Status	Vacant
Call Charge	Not registered
Silent Message Display	Display with burst tone indication

**Data Port Defaults**

The system provides the following default settings for I/O ports 0 and 1 (PcMP and SMDR). Changes may be made at **CMC 900** and **CMC 901**.

**Table 5-10. RS-232C Port Default Assignments (Part 1)**

ITEM DESCRIPTION	PORT 0	PORT 1
Mode	Full duplex	Full duplex
Speed	2400 bps	2400 bps
Character Length	7 bits	7 bits
Parity Bit	Even	Even
Stop Bit	1 bit	1 bit
Echo Back	Not used	Not used
X-ON / X-Off Control	Not used	Not used
Power Control	Not used	Not used

**Table 5-11. RS-232C Port Default Assignments (Part 2)**

ITEM DESCRIPTION	DEFAULT VALUE
Line Disconnect Timing	1 second
Character Transmission Completion Timing	1 second
X-Off Character Receive Timing	30 seconds
Character Receive Timing	1 minute

**DSS / BLF Button Arrangements**

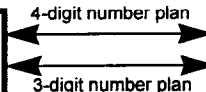
Tables 5-12 through 5-23 list the default button numbers for each specific type of DSS / BLF.

**Table 5-12. 30-Button Proprietary Type DSS / BLF Default Assignment (First)**

**Table 5-13. 30-Button Proprietary Type DSS / BLF Default Assignment (Second)**

4DN	2000	2001	2002
3DN	200	201	202
BN	28	29	30
4DN	2003	2004	2005
3DN	203	204	205
BN	25	26	27
4DN	2006	2007	2010
3DN	206	207	208
BN	22	23	24
4DN	2011	2012	2013
3DN	209	210	211
BN	19	20	21
4DN	2014	2015	2016
3DN	212	213	214
BN	16	17	18
4DN	2017	2020	2021
3DN	215	216	217
BN	13	14	15
4DN	2022	2023	2024
3DN	218	219	220
BN	10	11	12
4DN	2025	2026	2027
3DN	221	222	223
BN	7	8	9
4DN	2030	2031	2032
3DN	224	225	226
BN	4	5	6
4DN	2033	2034	2035
3DN	227	228	229
BN	1	2	3

4DN	2100	2101	2102
3DN	280	281	282
BN	108	109	110
4DN	2103	2104	2105
3DN	283	284	285
BN	105	106	107
4DN	2106	2107	2110
3DN	286	287	288
BN	102	103	104
4DN	2111	2112	2113
3DN	289	290	291
BN	99	100	101
4DN	2114	2115	2116
3DN	292	293	294
BN	96	97	98
4DN	2117	2120	2121
3DN	295	296	297
BN	93	94	95
4DN	2122	2123	2124
3DN	298	299	300
BN	90	91	92
4DN	2125	2126	2127
3DN	301	302	303
BN	87	88	89
4DN	2130	2131	2132
3DN	304	305	306
BN	84	85	86
4DN	2133	2134	2135
3DN	307	308	309
BN	81	82	83



DN = Dial Number (Station Number)  
 BN = Button Number

Table 5-14. 40-Button DSS / BLF Default Assignment (First)

4DN	2047	2035	2023	2011
3DN	239	229	219	209
BN	10	20	30	40
4DN	2046	2034	2022	2010
3DN	238	228	218	208
BN	9	19	29	39
4DN	2045	2033	2021	2007
3DN	237	227	217	207
BN	8	18	28	38
4DN	2044	2032	2020	2006
3DN	236	226	216	206
BN	7	17	27	37
4DN	2043	2031	2017	2005
3DN	235	225	215	205
BN	6	16	26	36
4DN	2042	2030	2016	2004
3DN	234	224	214	204
BN	5	15	25	35
4DN	2041	2027	2015	2003
3DN	233	223	213	203
BN	4	14	24	34
4DN	2038	2026	2014	2002
3DN	232	222	212	202
BN	3	13	23	33
4DN	2037	2025	2013	2001
3DN	231	221	211	201
BN	2	12	22	32
4DN	2036	2024	2012	2000
3DN	230	220	210	200
BN	1	11	21	31

Table 5-15. 40-Button DSS / BLF Default Assignment (Second)

4DN	2147	2135	2123	2111
3DN	319	309	299	289
BN	90	100	110	120
4DN	2146	2134	2122	2110
3DN	318	308	298	288
BN	89	99	109	119
4DN	2145	2133	2121	2107
3DN	317	307	297	287
BN	88	98	108	118
4DN	2144	2132	2120	2106
3DN	316	306	296	286
BN	87	97	107	117
4DN	2143	2131	2117	2105
3DN	315	305	295	285
BN	86	96	106	116
4DN	2142	2130	2116	2104
3DN	314	304	294	284
BN	85	95	105	115
4DN	2141	2127	2115	2103
3DN	313	303	293	283
BN	84	94	104	114
4DN	2140	2126	2114	2102
3DN	312	302	292	282
BN	83	93	103	113
4DN	2137	2125	2113	2101
3DN	311	301	291	281
BN	82	92	102	112
4DN	2136	2124	2112	2100
3DN	310	300	290	280
BN	81	91	101	111

Table 5-16. 80-Button DSS / BLF Default Assignment (First)

4DN	2097	2085	2073	2061	2047	2035	2023	2011
3DN	279	269	259	249	239	229	219	209
BN	10	20	30	40	50	60	70	80
4DN	2096	2084	2072	2060	2046	2034	2022	2010
3DN	278	268	258	248	238	228	218	208
BN	9	19	29	39	49	59	69	79
4DN	2095	2083	2071	2057	2045	2033	2021	2007
3DN	277	267	257	247	237	227	217	207
BN	8	18	28	38	48	58	68	78
4DN	2094	2082	2070	2056	2044	2032	2020	2006
3DN	276	266	256	246	236	226	216	206
BN	7	17	27	37	47	57	67	77
4DN	2093	2081	2067	2055	2043	2031	2017	2005
3DN	275	265	255	246	235	225	215	205
BN	6	16	26	36	46	56	66	76
4DN	2092	2080	2066	2065	2042	2030	2016	2004
3DN	274	264	254	244	234	224	214	204
BN	5	15	25	35	45	55	65	75
4DN	2091	2077	2065	2053	2041	2027	2015	2003
3DN	273	263	253	243	233	223	213	203
BN	4	14	24	34	44	54	64	74
4DN	2090	2076	2064	2052	2038	2026	2014	2002
3DN	272	262	252	242	232	222	212	202
BN	3	13	23	33	43	53	63	73
4DN	2087	2075	2063	2051	2037	2025	2013	2001
3DN	271	261	251	241	231	221	211	201
BN	2	12	22	32	42	52	62	72
4DN	2086	2074	2062	2050	2036	2024	2012	2000
3DN	270	260	250	240	230	220	210	200
BN	1	11	21	31	41	51	61	71

**Table 5-17. 80-Button DSS / BLF Default Assignment (Second)**

4DN	2237	2225	2213	2201	2147	2135	2123	2111
3DN	359	349	339	329	319	309	299	289
BN	90	100	110	120	130	140	150	160
4DN	2236	2224	2212	2200	2146	2134	2122	2110
3DN	358	348	338	328	318	308	298	288
BN	89	99	109	119	129	139	149	159
4DN	2235	2223	2211	2157	2145	2133	2121	2107
3DN	357	347	337	327	317	307	297	287
BN	88	98	108	118	128	138	148	158
4DN	2234	2222	2210	2156	2144	2132	2120	2106
3DN	356	346	336	326	316	306	296	286
BN	87	97	107	117	127	137	147	157
4DN	2233	2221	2207	2155	2143	2131	2117	2105
3DN	355	345	335	325	315	305	295	285
BN	86	96	106	116	126	136	146	156
4DN	2232	2220	2206	2154	2142	2130	2116	2104
3DN	354	344	334	324	314	304	294	284
BN	85	95	105	115	125	135	145	155
4DN	2231	2217	2205	2153	2141	2127	2115	2103
3DN	353	343	333	323	313	303	293	283
BN	84	94	104	114	124	134	144	154
4DN	2230	2216	2204	2152	2140	2126	2114	2102
3DN	352	342	332	322	312	302	292	282
BN	83	93	103	113	123	133	143	153
4DN	2227	2215	2203	2151	2137	2125	2113	2101
3DN	351	341	331	321	311	301	291	281
BN	82	92	102	112	122	132	142	152
4DN	2226	2214	2202	2150	2136	2124	2112	2100
3DN	350	340	330	320	310	300	290	280
BN	81	91	101	111	121	131	141	151



Table 5-18. DSS 100 Default Button Arrangement (Screen 1)

3DN/4DN BN	200/2000 91	201/2001 92	202/2002 93	203/2003 94	204/2004 95	205/2005 96	206/2006 97	207/2007 98	208/2010 99	209/2011 100
3DN/4DN BN	210/2012 81	211/2013 82	212/2014 83	213/2015 84	214/2016 85	215/2017 86	216/2020 87	217/2021 88	218/2022 89	219/2023 90
3DN/4DN BN	220/2024 71	221/2025 72	222/2026 73	223/2027 74	224/2030 75	225/2031 76	226/2032 77	227/2033 78	228/2034 79	229/2035 80
3DN/4DN BN	230/2036 61	231/2037 62	232/2040 63	233/2041 64	234/2042 65	235/2043 66	236/2044 67	237/2045 68	238/2046 69	239/2047 70
3DN/4DN BN	240/2050 51	241/2051 52	242/2052 53	243/2053 54	244/2054 55	245/2055 56	246/2056 57	247/2057 58	248/2060 59	249/2061 60
3DN/4DN BN	250/2062 41	251/2063 42	252/2064 43	253/2065 44	254/2066 45	255/2067 46	256/2070 47	257/2071 48	258/2071 49	259/2071 50
3DN/4DN BN	260/2074 31	261/2075 32	262/2076 33	263/2077 34	264/2080 35	265/2081 36	266/2082 37	267/2083 38	268/2084 39	269/2085 40
3DN/4DN BN	270/2086 21	271/2087 22	272/2090 23	273/2091 24	274/2092 25	275/2093 26	276/2094 27	277/2095 28	278/2096 29	279/1097 30
3DN/4DN BN	280/2100 11	281/2101 12	282/2102 13	283/2103 14	284/2104 15	285/2105 16	286/2106 17	287/2107 18	288/2110 19	289/2111 20
3DN/4DN BN	290/2112 1	291/2113 2	292/2114 3	293/2115 4	294/2116 5	295/2117 6	296/2120 7	297/2121 8	298/2122 9	299/2123 10

**NOTES:**

1. Button numbers must be entered in 3-digit format. Hence, button 1 is entered as "001."
2. Screen numbers are entered in 2-digit format (screen 1 becomes screen "01").

Table 5-19. DSS 100 Default Button Arrangement (Screen 2)

3DN/4DN BN	300/2124 91	301/2125 92	302/2126 93	303/2127 94	304/2130 95	305/2131 196	306/2132 97	307/2133 98	308/2134 99	309/2135 100
3DN/4DN BN	310/2136 81	311/2137 82	312/2140 83	313/2141 84	314/2142 85	315/2143 86	316/2144 87	317/2145 88	318/2146 89	319/2147 90
3DN/4DN BN	320/2150 71	321/2151 72	322/2152 73	323/2153 74	324/2154 75	325/2155 76	326/2156 77	327/2157 78	328/2200 79	329/2201 80
3DN/4DN BN	330/2202 61	331/2203 62	332/2204 63	333/2205 64	334/2206 65	335/2207 66	336/2210 67	337/2211 68	338/2212 69	339/2225 70
3DN/4DN BN	340/2214 51	341/2215 52	342/2216 53	343/2217 54	344/2220 55	345/2221 56	346/2222 57	347/2223 58	348/2224 59	349/2225 60
3DN/4DN BN	350/2226 41	351/2227 42	352/2230 43	353/2231 44	354/2232 45	355/2233 46	356/2234 47	357/2235 48	358/2236 49	359/2237 50
3DN/4DN BN	360/2240 31	361/2241 32	362/2242 33	363/2243 34	364/2244 35	365/2245 36	366/2246 37	367/2247 38	368/2250 39	369/2251 40
3DN/4DN BN	370/2264 21	371/2253 22	372/2254 23	373/2255 24	374/2256 25	375/2257 26	376/2260 27	377/2261 28	378/2262 29	379/2263 30
3DN/4DN BN	380/2264 11	381/2265 12	382/2266 13	383/2267 14	384/2270 15	385/2271 16	386/2272 17	387/2273 18	388/2274 19	389/2275 20
3DN/4DN BN	390/2276 1	391/2277 2	392/2280 3	393/2281 4	394/2282 5	395/2283 6	396/2284 7	397/2285 8	398/2286 9	399/2287 10

**NOTES:**

1. Button numbers must be entered in 3-digit format. Hence, button 1 is entered as "001."
2. Screen numbers are entered in 2-digit format (screen 1 becomes screen "01").

Table 5-20. DSS 100 Default Button Arrangement (Screen 3)

3DN/4DN BN	400/2290 91	401/2291 92	402/2292 93	403/2293 94	404/2294 95	405/2295 96	406/2296 97	407/2297 98	408/2300 99	409/2301 100
3DN/4DN BN	410/2302 81	411/2303 82	412/2304 83	413/2305 84	414/2306 85	415/2307 86	416/2310 87	417/2311 88	418/2312 89'	419/2313 90
3DN/4DN BN	420/2314 71	421/2315 72	422/2316 73	423/2317 74	424/2320 75	425/2321 76	426/2322 77	427/2323 78	428/2324 79	429/2325 80
3DN/4DN BN	430/2326 61	431/2327 62	432/2330 63	433/2331 64	434/2332 65	435/2333 66	436/2334 67	437/2335 68	438/2336 69	439/2337 70
4DN BN	2340 51	2341 52	2342 53	2343 54	2344 55	2345 56	2346 57	2347 58	2350 59	2351 60
4DN BN	2352 41	2353 42	2354 43	2355 44	2356 45	2357 46	2360 47	2361 48	2362 49	2363 50
4DN BN	2364 31	2365 32	2366 33	2367 34	2370 35	2371 36	2372 37	2373 38	2374 39	2375 40
4DN BN	2376 21	2377 22	2380 23	2381 24	2382 25	2383 26	2384 27	2385 28	2386 29	2387 30
4DN BN	2390 11	2391 12	2392 13	2393 14	2394 15	2395 16	2396 17	2397 18	2400 19	2401 20
4DN BN	2402 1	2403 2	2404 3	2405 4	2406 5	2407 6	2410 7	2411 8	2412 9	2413 10

**NOTES:**

1. Button numbers must be entered in 3-digit format. Hence, button 1 is entered as "001."
2. Screen numbers are entered in 2-digit format (screen 1 becomes screen "01").

Table 5-21. DSS 100 Default Button Arrangement (Screen 4)

4DN BN	2414 91	2415 92	2416 93	2417 94	2420 95	2421 96	2422 97	2423 98	2424 99	2425 100
4DN BN	2426 81	2427 82	2430 83	2431 84	2432 85	2433 86	2434 87	2435 88	2436 89'	2437 90
4DN BN	2440 71	2441 72	2442 73	2443 74	2444 75	2445 76	2446 77	2447 78	2450 79	2451 80
4DN BN	2452 61	2453 62	2454 63	2455 64	2456 65	2457 66	2460 67	2461 68	2462 69	2463 70
4DN BN	2464 51	2465 52	2466 53	2467 54	2470 55	2471 56	2472 57	2473 58	2474 59	2475 60
4DN BN	2476 41	2477 42	2480 43	2481 44	2482 45	2483 46	2484 47	2485 48	2486 49	2487 50
4DN BN	2490 31	2491 32	2492 33	2493 34	2494 35	2495 36	2496 37	2497 38	2500 39	2501 40
4DN BN	2502 21	2503 22	2504 23	2505 24	2506 25	2507 26	2510 27	2511 28	2512 29	2513 30
4DN BN	2514 11	2515 12	2516 13	2517 14	2520 15	2521 16	2522 17	2523 18	2524 19	2525 20
4DN BN	2526 1	2527 2	2530 3	2531 4	2532 5	2533 6	2534 7	2535 8	2536 9	2537 10

**NOTES:**

1. Button numbers must be entered in 3-digit format. Hence, button 1 is entered as "001."
2. Screen numbers are entered in 2-digit format (screen 1 becomes screen "01").

Table 5-22. DSS 100 Default Button Arrangement (Screen 5)

4DN BN	2540 91	2541 92	2542 93	2543 94	2544 95	2545 96	2546 97	2547 98	2550 99	2551 100
4DN BN	2552 81	2553 82	2554 83	2555 84	2556 85	2557 86	2560 87	2561 88	2562 89	2563 90
4DN BN	2564 71	2565 72	2566 73	2567 74	2570 75	2571 76	2572 77	2573 78	2574 79	2575 80
4DN BN	2576 61	2577 62	2580 63	2581 64	2582 65	2583 66	2584 67	2585 68	2586 69	2587 70
4DN BN	2590 51	2591 52	2592 53	2593 54	2594 55	2595 56	2596 57	2597 58	2600 59	2601 60
4DN BN	2602 41	2603 42	2604 43	2605 44	2606 45	2607 46	2610 47	2611 48	2612 49	2613 50
4DN BN	2614 31	2615 32	2616 33	2617 34	2620 35	2621 36	2622 37	2623 38	2624 39	2625 40
4DN BN	2626 21	2627 22	2630 23	2631 24	2632 25	2633 26	2634 27	2635 28	2636 29	2637 30
4DN BN	2640 11	2641 12	2642 13	2643 14	2644 15	2645 16	2646 17	2647 18	2650 19	2651 20
4DN BN	2652 1	2653 2	2654 3	2655 4	2656 5	2657 6	2660 7	2661 8	2662 9	2663 10

**NOTES:**

1. Button numbers must be entered in 3-digit format. Hence, button 1 is entered as "001."
2. Screen numbers are entered in 2-digit format (screen 1 becomes screen "01").

Table 5-23. DSS 100 Default Button Arrangement (Screen 6)

4DN BN	2664 91	2665 92	2666 93	2667 94	2670 95	2671 96	2672 97	2673 98	2674 99	2675 100
4DN BN	2676 81	26773 82	2680 83	2681 84	2782 85	2683 86	2684 87	2685 88	2686 89'	2687 90
4DN BN	2690 71	2691 72	2692 73	2693 74	2694 75	2695 76	2696 77	2697 78	2700 79	2701 80
4DN BN	2702 61	2703 62	2704 63	2705 64	2706 65	2707 66	2710 67	2711 68	2712 69	2713 70
4DN BN	2714 51	2715 52	2716 53	2717 54	2720 55	2721 56	2722 57	2723 58	2724 59	2725 60
4DN BN	2726 41	2727 42	2730 43	2731 44	2732 45	2733 46	2734 47	2735 48	2736 49	2737 50
4DN BN	2740 31	2741 32	2742 33	2743 34	2744 35	2745 36	2746 37	2747 38	2750 39	2751 40
4DN BN	2752 21	2753 22	2754 23	2755 24	2756 25	2757 26	2760 27	2761 28	2762 29	2763 30
4DN BN	2764 11	2765 12	2766 13	2767 14	15	16	17	18	19	20
4DN BN	1	2	3	4	5	6	7	8	9	10

**NOTES:**

1. Button numbers must be entered in 3-digit format. Hence, button 1 is entered as "001."
2. Screen numbers are entered in 2-digit format (screen 1 becomes screen "01").

**Data Terminal Defaults**

The system presumes the following parameters for each connected data terminal. These attributes may be changed at **CMCs 222, 223, and CMC 224.**

**Table 5-24. Data Terminal Default Attributes**

CMC	ITEM DESCRIPTION	DEFAULT VALUE
222	Speed Synchronous / Asynchronous Duplex Mode Stop Bit Length Word Length Parity Echoplex	1,200 bps Asynchronous Full 1 Bit 7 Bits Space Not Used
223	Originate Mode Answer Mode Disconnect Mode Auto Answer Option DTR Option RTS Option DSR Option RI Option	Manual Manual Manual One Burst Ringing Normal Normal Normal Steady On
224	Dial Mode Operation Mode Modem Type	Telephone Two-Way Model VA4400S or Model VA1681D

**FIPN Default Data** Table 5-25 lists the FIPN service timing parameters.

**Table 5-25. FIPN Timing Default Values**

STID (P1)	Definition	Unit	Default NTIM	Relationship Between P2 and Actual Timing		
				P2 = 0	P2 = n	P2 = 255
1	Busy service (FAC) waiting timing (terminating PBX side)	1 [sec]	30	256 [sec]	(n - 1) to n [sec]	254 to 255 [sec]
2	CCBS* cancel timing	1 [min]	60	0 to 1 [min]	(n - 1) to n [min]	254 to 255 [min]
3 to 100	<b>RESERVED</b>	<b>NONE</b>	<b>NONE</b>	<b>NONE</b>	<b>NONE</b>	<b>NONE</b>

**Abbreviations** Table 5-26 is a key to abbreviations in the system.

**Table 5-26. Key to Abbreviations**

ABBREVIATION	DEFINITION
ATT	Attendant
BT	Busy tone
CO	Central office trunk
CFT	Success tone
CWT	Call waiting tone
DBT	Distinctive busy tone
DID	Direct-in dialing trunk
DT	Dial tone
DTMF	Dual-tone multi-frequency for ICR / DTMF receiver for OGR
E&M1	E&M type 1 trunk
E&M2	E&M type 2 trunk
ICR	Incoming route
LD	Loop dial trunk
MXT	Mixing circuit
OGR	Outgoing route
OVT	Override tone
RBT	Ringback tone
RDT	Recall dial tone
ROT	Reorder tone
RVAC	Recorded voice announcement circuit
STA	Station
SLE	Off-premise single line telephone



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# APPENDIX A

# CMC NUMERICAL LIST

CMC	DESCRIPTION	SECURITY LEVEL	PAGE NO.
100	Numbering Plan Assignment	High	4-3
101	Service Parameter Assignment	High	4-14
102	System Parameter Assignment	High	4-16
103	System Timing Parameter Assignment	High	4-26
104	COS (Class of Service) Assignment	Low	4-31
105	Trunk Access (COR) Assignment	Low	4-38
107	Network Clock Assignment	High	4-40
111	FIPN Timing Table Assignment	High	4-41
120	ISDN CLIR Assignment	High	4-42
121	ISDN Service Display	High	4-43
122	Specific ISDN Network Assignment	High	4-44
200	Station Assignment	Low	4-45
201	Station Data Assignment (I)	Low	4-55
202	Station COS / COR Assignment	Low	4-57
203	Proprietary Telephone Button Assignment	Low	4-59
204	Station Data Assignment (II)	Low	4-80
205	Station Assignment for BLF Button	Low	4-82
206	Station Data Assignment (III)	Low	4-84
207	SLT D-ICM Group Assignment	Low	4-86
208	Station Name Assignment	Low	4-88
209	Station Data Assignment (IV)	Low	4-90
210	DSS / BLF Assignment	High	4-92
211	DSS / BLF Button Assignment	Low	4-96
212	DSS 100 Assignment	High	4-105
213	DSS 100 Button Assignment	Low	4-107
220	Data Station Assignment	Low	4-115
221	Data Station COS / COR Assignment	Low	4-121
222	Data Station Data Assignment (I)	Low	4-123
223	Data Station Data Assignment (II)	Low	4-1262

CMC	DESCRIPTION	SECURITY LEVEL	PAGE NO.
224	Data Station Data Assignment (III)	Low	4-128
230	Attendant Console Assignment	High	4-130
231	Attendant Console Button Assignment	Low	4-133
232	Attendant COS / COR Assignment	Low	4-136
233	Attendant Priority Assignment	High	4-138
250	Trunk Assignment	High	4-139
251	Trunk Data Assignment	High	4-148
252	Trunk COS / COR Assignment	High	4-150
253	Terminating Trunk Group Assignment	High	4-152
254	Trunk Route Timing Parameter Assignment	High	4-155
255	Reverse Signal Data Assignment	High	4-157
256	Trunk Name Assignment	Low	4-158
260	RVAC (Recorded Voice Announcement Card)	High	4-159
261	Recorded Voice Announcement Assignment	High	4-161
262	Recorded Voice Announcement Copy	High	4-167
263	Recorded Voice Announcement Protect Assignment	High	4-168
270	Modem Pooling Assignment	Low	4-169
271	Modem Group Attribute Assignment	Low	4-172
280	API Assignment	Low	4-174
281	AP Type Assignment	Low	4-177
300	System Speed Calling Assignment	Low	4-179
301	Hunt Group Number Assignment	Low	4-181
302	Group Pick-Up Member Assignment	Low	4-183
303	Internal Speaker Paging Group Assignment	Low	4-185
304	Hotline Station Assignment	Low	4-187
305	Music on Hold Assignment	Low	4-189
306	Night Answer Station / Attendant Overflow Assignment	Low	4-192
307	Direct-In Line Assignment	Low	4-195
308	ACD Group Assignment	Low	4-197
309	Silent Message Assignment	Low	4-199
310	Forced Account Code / Verify Code Assignment	Low	4-201

CMC	DESCRIPTION	SECURITY LEVEL	PAGE NO.
311	Walking Class of Service / Password Assignment	Low	4-203
313	Forced Account Code by TGN Assignment	Low	4-205
314	ACD Trunk Priority Assignment	Low	4-206
315	ACD Automatic Work Time	Low	4-207
316	Attendant Queue Voice Message Assignment	High	4-208
317	Music on Hold per Tenant Assignment	High	4-210
318	Display Character Assignment	Low	4-212
319	System Call Forward Assignment	Low	4-226
350	Call Charge TGN Screening Assignment	High	4-228
351	Call Charge Office Code Assignment	High	4-229
352	Call Charge Billing Rate Assignment	High	4-230
353	Special Service Code / Service Call Routing Assignment	High	4-232
354	Room Status Indicator Assignment	High	4-235
355	Room Status Indicator Button Assignment	Low	4-237
356	Hotel / Motel Printer Assignment	High	4-239
357	Hotel / Motel Print Out Message Allocation	High	4-241
358	Hotel / Motel Parameter Assignment	High	4-243
359	Paired Station / Attendant for Hotel System Assignment for PMS	High	4-246
370	ACD Route Table Assignment	Low	4-247
371	AP Mode ACD Route Table Display	Low	4-252
372	ACD Route Table Status Display	Low	4-254
400	Trunk Dialing Group / Restriction Group Assignment	High	4-255
401	Customer and Operator Toll Prefix Codes Assignment	High	4-257
402	N0 / 1X Conflicting Area / Office Code Assignment	High	4-259
403	Routing Digit Assignment	High	4-262
404	SCC Assignment	High	4-264
405	SCC Routing TGN Assignment	High	4-266
406	Tie Trunk Level Change Assignment	High	4-267
407	FIPN Node Number Assignment	High	4-269
408	NXX / N11 Office Code Assignment	High	4-270
410	Trunk-to-Trunk Connection Assignment	High	4-271

CMC	DESCRIPTION	SECURITY LEVEL	PAGE NO.
411	Toll and Operator Call Restriction Assignment	High	4-273
412	Office Code Restriction Assignment	High	4-275
413	Area Code Restriction Assignment	High	4-278
414	Area / Office Code Restriction Assignment	High	4-281
415	Carrier ID Code (5-Digits) Restrictions Checking Assignment	High	4-285
416	Office Code Restriction for all Area Codes	High	4-287
417	Toll Restriction 2 Assignment	High	4-289
420	LCR Office Code Route Selection Assignment	High	4-291
421	LCR Area and Area / Office Code Route Selection Assignment	High	4-296
422	LCR Office Code Assignment	High	4-298
423	LCR Area Code Assignment	High	4-299
424	LCR Area / Office Code Assignment	High	4-300
425	LCR Carrier Access Code (5-Digit) Assignment	High	4-302
426	Personal Account Code for 5-Digit CAC Assignment	High	4-303
427	LCR Time of Day Route Table Number Assignment	High	4-305
428	LCR International Code Routing Table Assignment	High	4-307
429	LCR International Code Assignment	High	4-308
430	DID-DISA Additional Code Assignment	High	4-310
431	DID Listed Directory Number Assignment	High	4-313
432	DISA-Standard DISA Authorization Code Assignment	High	4-315
433	DID Trunk Level Change Assignment	High	4-317
434	Automated Attendant Answering Message and Overflow Station Assignment	High	4-318
435	Listed Directory Number Assignment	High	4-320
437	DISA-Standard Day / Night Mode Assignment	High	4-322
438	CLID Extension Data Assignment	High	4-323
439	CLID Data Extension Data Assignment	High	4-324
460	DNIS TGN Assignment	High	4-325
461	DNIS Number Assignment	Low	4-327
462	DNIS Name Assignment	Low	4-329
463	Music on Hold per DNIS Number Assignment	High	4-330
464	DNIS Night Number Assignment	Low	4-332

CMC	DESCRIPTION	SECURITY LEVEL	PAGE NO.
470	Carrier ID Code (7-Digits) Restrictions Checking Assignment	High	4-334
471	LCR Carrier Access Code (7-Digit) Assignment	High	4-336
472	Personal Account Code for 7-Digit CAC Assignment	High	4-337
480	Single Digit Automated Attendant Assignment	High	4-339
500	SMDR Outgoing Connection Screening Assignment	Low	4-341
501	SMDR Trunk Group Screening Assignment	Low	4-342
502	SMDR Station COR Screening Assignment	Low	4-343
503	SMDR Tenant Screening Assignment	Low	4-344
504	SMDR Call Duration Screening Assignment	Low	4-345
505	SMDR Modem Group Screening Assignment	Low	4-346
506	SMDR Outgoing Digits Screening Assignment	Low	4-347
510	System Calendar Assignment	High	4-349
511	System Time Table Assignment	High	4-350
516	System Holiday Assignment	High	4-352
600	TGN Screening Assignment	Low	4-353
601	Traffic Measurement Activation	Low	4-354
602	Traffic Measurement Data Display	Low	4-355
700	Time and Date Setting	High	4-357
701	Make Busy Assignment	High	4-359
702	Master Control Telephone Assignment	High	4-361
704	Security Code Assignment	High	4-363
705	SMDR Printer Make Busy	Low	4-364
706	Hotel / Motel Printer Make Busy Assignment	Low	4-365
800	Device Status Display	High	4-366
801	Fault Information Display	High	4-371
802	Diagnostic Trunk Connection Assignment	High	4-377
803	Fault Time Display	High	4-378
810	4CHT Loop Back Test	High	4-381
811	2APIA Loop Back Test	High	4-385
813	T-1 Trunk Loop Back Test	High	4-388
900	RS-232C Port Configuration Assignment	High	4-391

CMC	DESCRIPTION	SECURITY LEVEL	PAGE NO.
901	SMDR Printer Control	High	4-393
902	Load ODDB into System Memory	High	4-396
903	Save System ODDB	High	4-397
904	System Software Version ID Display	Low	4-400
907	Distributed Processor Version ID Display	Low	4-401
908	Service Information Display	Low	4-403
909	DN-EN Conversion Command	Low	4-406
910	ISDN Package Diagnosis Test	High	4-407
913	B-Channel Loop Back Code Registration	High	4-411
915	PRI Protocol Assignment	High	4-412
920	Floppy Disk Drive Head Cleaning	Low	4-413
921	Load Data from Floppy Disk	High	4-414
922	Save Data to Floppy Disk	High	4-416

# APPENDIX B

# CMC ALPHABETICAL LIST

DESCRIPTION	CMC	SECURITY LEVEL	PAGE NO.
ACD Automatic Work Time	315	Low	4-207
ACD Group Assignment	308	Low	4-197
ACD Route Table Assignment	370	Low	4-247
ACD Route Table Status Display	372	Low	4-254
ACD Trunk Priority Assignment	314	Low	4-206
AP Mode ACD Route Table Display	371	Low	4-252
AP Type Assignment	281	Low	4-177
API Assignment	280	Low	4-174
Area Code Restriction Assignment	413	High	4-278
Area / Office Code Restriction Assignment	414	High	4-281
Attendant Console Assignment	230	High	4-130
Attendant Console Button Assignment	231	Low	4-133
Attendant COS / COR Assignment	232	Low	4-136
Attendant Priority Assignment	233	High	4-138
Attendant Queue Voice Message Assignment	316	High	4-208
Automated Attendant Answering Message and Overflow Station Assignment	434	High	4-318
B-Channel Loop Back Code Registration	913	High	4-411
Call Charge Billing Rate Assignment	352	High	4-230
Call Charge Office Code Assignment	351	High	4-229
Call Charge TGN Screening Assignment	350	High	4-228
Carrier ID Code (5-Digit) Restrictions Checking Assignment	415	High	4-285
Carrier ID Code (7-Digit) Restrictions Checking Assignment	470	High	4-334
CLID Data Extension Data Assignment	439	High	4-324
CLID Extension Data Assignment	438	High	4-323
COS (Class of Service) Assignment	104	Low	4-31
Customer and Operator Toll Prefix Codes Assignment	401	High	4-257
Data Station Assignment	220	Low	4-115
Data Station COS / COR Assignment	221	Low	4-121
Data Station Data Assignment (I)	222	Low	4-123
Data Station Data Assignment (II)	223	Low	4-126



DESCRIPTION	CMC	SECURITY LEVEL	PAGE NO.
Data Station Data Assignment (III)	224	Low	4-128
Device Status Display	800	High	4-366
Diagnostic Trunk Connection Assignment	802	High	4-377
DID Listed Directory Number Assignment	431	High	4-313
DID Trunk Level Change Assignment	433	High	4-317
DID-DISA Additional Code Assignment	430	High	4-310
Direct-In Line Assignment	307	Low	4-195
DISA-Standard DISA Authorization Code Assignment	432	High	4-315
DISA-Standard Day / Night Mode Assignment	437	High	4-322
Display Character Assignment	318	Low	4-212
Distributed Processor Version ID Display	907	Low	4-401
DN-EN Conversion Command	909	Low	4-406
DNIS Name Assignment	462	Low	4-329
DNIS Night Number Assignment	464	Low	4-332
DNIS Number Assignment	461	Low	4-327
DNIS TGN Assignment	460	High	4-325
DSS 100 Assignment	212	High	4-105
DSS 100 Button Assignment	213	Low	4-107
DSS / BLF Assignment	210	High	4-92
DSS / BLF Button Assignment	211	Low	4-96
Fault Information Display	801	High	4-371
Fault Time Display	803	High	4-378
FIPN Node Number Assignment	407	High	4-269
FIPN Timing Table Assignment	111	High	4-41
Floppy Disk Drive Head Cleaning	920	Low	4-413
Forced Account Code by TGN Assignment	313	Low	4-205
Forced Account Code / Verify Code Assignment	310	Low	4-201
4CHT Loop Back Test	810	High	4-381
Group Pick-Up Member Assignment	302	Low	4-183
Hotel / Motel Parameter Assignment	358	High	4-243
Hotel / Motel Print Out Message Allocation	357	High	4-241

DESCRIPTION	CMC	SECURITY LEVEL	PAGE NO.
Hotel / Motel Printer Assignment	356	High	4-239
Hotel / Motel Printer Make Busy Assignment	706	Low	4-365
Hotline Station Assignment	304	Low	4-187
Hunt Group Number Assignment	301	Low	4-181
Internal Speaker Paging Group Assignment	303	Low	4-185
ISDN CLIR Assignment	120	High	4-42
ISDN Package Diagnosis Test	910	High	4-407
ISDN Service Display	121	High	4-43
LCR Area and Area / Office Code Route Selection Assignment	421	High	4-296
LCR Area Code Assignment	423	High	4-299
LCR Area / Office Code Assignment	424	High	4-300
LCR Carrier Access Code (5-Digit) Assignment	425	High	4-302
LCR Carrier Access Code (7-Digit) Assignment	471	High	4-336
LCR International Code Assignment	429	High	4-308
LCR International Code Routing Table Assignment	428	High	4-307
LCR Office Code Assignment	422	High	4-298
LCR Office Code Route Selection Assignment	420	High	4-291
LCR Time of Day Route Table Number Assignment	427	High	4-305
Listed Directory Number Assignment	435	High	4-320
Load Data from Floppy Disk	921	High	4-414
Load ODDB into System Memory	902	High	4-396
Make Busy Assignment	701	High	4-359
Master Control Telephone Assignment	702	High	4-361
Modem Group Attribute Assignment	271	Low	4-172
Modem Pooling Assignment	270	Low	4-169
Music on Hold Assignment	305	Low	4-189
Music on Hold per DNIS Number Assignment	463	High	4-330
Music on Hold per Tenant Assignment	317	High	4-210
Network Clock Assignment	107	High	4-40
Night Answer Station / Attendant Overflow Assignment	306	Low	4-192
Numbering Plan Assignment	100	High	4-3
NXX / N11 Office Code Assignment	408	High	4-270

DESCRIPTION	CMC	SECURITY LEVEL	PAGE NO.
N0 / 1X Conflicting Area / Office Code Assignment	402	High	4-259
Office Code Restriction Assignment	412	High	4-275
Office Code Restriction for all Area Codes	416	High	4-287
Paired Station / Attendant for Hotel System Assignment for PMS	359	High	4-246
Personal Account Code for 5-Digit CAC Assignment	426	High	4-303
Personal Account Code for 7-Digit CAC Assignment	472	High	4-337
PRI Protocol Assignment	915	High	4-412
Proprietary Telephone Button Assignment	203	Low	4-59
Recorded Voice Announcement Assignment	261	High	4-161
Recorded Voice Announcement Copy	262	High	4-167
Recorded Voice Announcement Protect Assignment	263	High	4-168
Reverse Signal Data Assignment	255	High	4-157
Room Status Indicator Assignment	354	High	4-235
Room Status Indicator Button Assignment	355	Low	4-237
Routing Digit Assignment	403	High	4-262
RS-232C Port Configuration Assignment	900	High	4-391
RVAC (Recorded Voice Announcement Card)	260	High	4-159
Save Data to Floppy Disk	922	High	4-416
Save System ODDB	903	High	4-397
SCC Assignment	404	High	4-264
SCC Routing TGN Assignment	405	High	4-266
Security Code Assignment	704	High	4-363
Service Information Display	908	Low	4-403
Service Parameter Assignment	101	High	4-14
Silent Message Assignment	309	Low	4-199
Single Digit Automated Attendant Assignment	480	High	4-339
SLT D-ICM Group Assignment	207	Low	4-86
SMDR Call Duration Screening Assignment	504	Low	4-345
SMDR Modem Group Screening Assignment	505	Low	4-346
SMDR Outgoing Connection Screening Assignment	500	Low	4-341
SMDR Outgoing Digits Screening Assignment	506	Low	4-347
SMDR Printer Control	901	High	4-393

DESCRIPTION	CMC	SECURITY LEVEL	PAGE NO.
SMDR Printer Make Busy	705	Low	4-364
SMDR Station COR Screening Assignment	502	Low	4-343
SMDR Tenant Screening Assignment	503	Low	4-344
SMDR Trunk Group Screening Assignment	501	Low	4-342
Special Service Code / Service Call Routing Assignment	353	High	4-232
Specific ISDN Network Assignment	122	High	4-44
Station Name Assignment	208	Low	4-88
Station Assignment	200	Low	4-45
Station Assignment for BLF Button	205	Low	4-82
Station COS / COR Assignment	202	Low	4-57
Station Data Assignment (I)	201	Low	4-55
Station Data Assignment (II)	204	Low	4-80
Station Data Assignment (III)	206	Low	4-84
Station Data Assignment (IV)	209	Low	4-90
System Calendar Assignment	510	High	4-349
System Call Forward Assignment	319	Low	4-226
System Holiday Assignment	516	High	4-352
System Parameter Assignment	102	High	4-16
System Software Version ID Display	904	Low	4-400
System Speed Calling Assignment	300	Low	4-179
System Time Table Assignment	511	High	4-350
System Timing Parameter Assignment	103	High	2-26
Terminating Trunk Group Assignment	253	High	4-152
TGN Screening Assignment	600	Low	4-353
Tie Trunk Level Change Assignment	406	High	4-267
Time and Date Setting	700	High	4-357
Toll and Operator Call Restriction Assignment	411	High	4-273
Toll Restriction 2 Assignment	417	High	4-289
Traffic Measurement Activation	601	Low	4-354
Traffic Measurement Data Display	602	Low	4-355
Trunk Access (COR) Assignment	105	Low	4-38
Trunk Assignment	250	High	4-139

DESCRIPTION	CMC	SECURITY LEVEL	PAGE NO.
Trunk COS / COR Assignment	252	High	4-150
Trunk Data Assignment	251	High	4-148
Trunk Dialing Group / Restriction Group Assignment	400	High	4-255
Trunk Name Assignment	256	Low	4-153
Trunk Route Timing Parameter Assignment	254	High	4-155
Trunk-to-Trunk Connection Assignment	410	High	4-271
T-1 Trunk Loop Back Test	813	High	4-388
2APIA Loop Back Test	811	High	4-385
Walking Class of Service / Password Assignment	311	Low	4-203

# APPENDIX C

# CARD SLOTS / EQUIPMENT NUMBERS

## CARD SLOTS

The Basic cabinet has ten card slots available for line, trunk, and other cards. Expansion cabinets two, three, and four each have eleven card slots available. Each card slot has a capacity of sixteen ports. Refer to Table C-1 for card placement data.

**Table C-1. Card Slot Usage**

Physical Slot	00	01	02	03	04	05	06	07	08	09	10 <sup>1</sup>
Logical Slot <sup>2</sup>	0	2	4	6	8	10	12	14	16	17	18
	1	3	5	7	9	11	13	15			
16DTC	X	X	X	X	X	X	X	X	3	-	-
16SLC	X	X	X	X	X	X	X	X	3	-	-
8DTC	4	4	5	4	4	5	4	5	5	5	-
8EKC	X	X	X	X	X	X	X	X	X	X	-
8PDL	X	X	X	X	X	X	X	X	X	-	-
8SLC	X	X	X	X	X	X	X	X	X	X	-
8BWC	X	X	X	X	X	X	X	X	X	X	-
4BWC	X	X	X	X	X	X	X	X	X	X	-
6DID	X	X	X	X	X	X	X	X	X	X	-
4TE4	X	X	X	X	X	X	X	X	X	X	-
2TE4	X	X	X	X	X	X	X	X	X	X	-
2TTE	X	X	X	X	X	X	X	X	X	X	-
2TTL	X	X	X	X	X	X	X	X	X	X	-
4DMR	X	X	X	X	X	X	X	X	X	X	10
4CHT	X	X	X	X	X	X	X	X	X	X	-
2APIA	X	X	X	X	X	X	X	X	X	X	-
24T1	6	7	-	6	7	-	6	8	-	-	-
23PT	6	7	-	6	7	-	6	8	-	-	-
RVAC	X	X	X	X	X	X	X	X	X	X	-
CLKS	-	-	-	-	-	-	-	-	-	9	-
CACC / H	X	X	X	X	X	X	X	X	X	X	10

Refer to next page for explanation of notes.

<b>Notes for Table C-1</b>	Note 1	Physical slot 10 is not available in the Basic cabinet (cabinet 0).
	Note 2	<p>When a 2, 4, 6, 8 circuit card, a 24T1, or a 23PT card is assigned, the logical slot number shown as bold in the table is used for the equipment numbers. An 8EKC assigned to physical slot 2 of cabinet 2 (the first expansion cabinet) will use equipment numbers 2040 to 2047. An 8EKC assigned to physical slot 1 of cabinet 2 will use equipment numbers 2030 to 2037. The equipment numbers of a 24T1 card in physical slot 3 of cabinet 2 are 2060 to 2067, 2070 to 2077, and 2080 to 2087.</p> <p>When a 16 circuit card is assigned, two logical slot numbers are used. If a 16DTC card is installed in physical slot 2 of the basic (first) cabinet, the equipment numbers are 0040 to 0047 and 0050 to 0057.</p>
	Note 3	When a 16 circuit card (16DTC or 16SLC) is installed in physical slot 8, physical slot 9 must be empty. The exceptions to this rule are the CLKS or the Call Manager card(s)
	Note 4	The first six circuits of the 8DTC card can be used for simultaneous voice and data.
	Note 5	Simultaneous voice and data is not available for phones using DTAs.
	Note 6	When a 24T1 or 23PT card is installed in physical slot 0, 3 or 6, the next physical slot (1, 4, or 7) can be used only for a 1, 2, 4, 6, or 8 circuit card or another 24T1 or 23PT card.
	Note 7	When either a 24T1 or 23PT is installed in physical slot 1 or 4, the next physical slot (2 and 5) must be empty. <b>Clock extraction can be made from the basic (0) cabinet only.</b>
	Note 8	When either a 24T1 or a 23PT is installed in physical slot 7, the next three physical slots (8, 9 and 10) must be empty.
	Note 9	CLKS card can be installed only in physical slot 9 of the Basic cabinet.
	Note 10	This card is used in the expansion cabinet(s) only.

**Logical Card Slots** Each card slot in a Series 3 cabinet has a maximum capacity of 16 circuits. These 16 circuits are recognized in the data base as two eight circuits slots. Each PHYSICAL card slot has two LOGICAL card slots. The circuits in each logical slot are numbered 0 to 7. Physical card slot 00 has 16 circuits. Physical card slot 00 is shown in the data base as logical slot 00, circuits 0 to 7 and logical slot 01, circuits 0 to 7. Refer to Table C-1 for this physical to logical card slot relationship.

**EQUIPMENT NUMBERS**

In the Command Codes (CMC) used for data base programming of the Series 3 system, circuits on the interface cards are referred to by unique equipment numbers.

Equipment numbers (EN) are four digits in length. The EN is always in the pattern XYYZ.

- X = Cabinet number: 0 to 3.
- YY = Logical slot number: 00 to 17 (or 18).
- Z = Circuit number: 0 to 7.

The cabinet numbers used in the EN are:

- 0 = Basic cabinet.
- 1 = First expansion (second) cabinet.
- 2 = Second expansion cabinet.
- 3 = Third expansion cabinet.

Equipment numbers for each physical card slot are shown in Table C-2. Notice that in physical card slots 08 and 09 eight circuits are available. Card slot 10 has four circuits available. Card slot 10 is not available in the Basic cabinet.

**Table C-2. Equipment Numbers**

Slot Number	00	01	02	03	04	05	06	07	08	09	10
Cabinet 0 (Basic Cabinet)	0000 to 0017	0020 to 0037	0040 to 0057	0060 to 0077	0080 to 0097	0100 to 0117	0120 to 0137	0140 to 0157	0160 to 0167	0170 to 0177	N/A
Cabinet 1	1000 to 1017	1020 to 1037	1040 to 1057	1060 to 1077	1080 to 1097	1100 to 1117	1120 to 1137	1140 to 1157	1160 to 1167	1170 to 1177	1180 to 1183
Cabinet 2	2000 to 2017	2020 to 2037	2040 to 2057	2060 to 2077	2080 to 2097	2100 to 2117	2120 to 2137	2140 to 2157	2160 to 2167	2170 to 2177	2180 to 2183
Cabinet 3	3000 to 3017	3020 to 3037	3040 to 3057	3060 to 3057	3080 to 3097	3100 to 3117	3120 to 3137	3140 to 3157	3160 to 3167	3170 to 3177	3180 to 3183



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