

focus[®] **960**

**CUSTOMER
SYSTEM
SPECIFICATIONS**

focus[®] **960**

**CUSTOMER
SYSTEM
SPECIFICATIONS**

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PREFACE

1.01 This document, **focus 960** Customer System Specifications, Volume I, contains hardware information forms used for new **focus 960** systems and upgrading **focus** and **focus** multi-module systems. For additional information refer to the **focus** Installation/Maintenance manual, Section 105-056-000.

1.02 This document was developed to be used in conjunction with the **focus 960** Customer System Specifications, Section 105-214-002, Volume II which contains the software information forms.

**FUJITSU BUSINESS COMMUNICATIONS
CUSTOMER SYSTEM SPECIFICATIONS (CSS)**

CUSTOMER INFORMATION	
CUSTOMER	INSTALLATION LOCATION
NAME: _____	NAME: _____
ADDRESS: _____	ADDRESS: _____
CITY/STATE/ZIP: _____	CITY/STATE/ZIP: _____
P.O. NUMBER: _____	PHONE NUMBER INCLUDING AREA CODE: _____
SHIP TO ADDRESS: _____	CUTOVER DATE: _____
CITY/STATE/ZIP: _____	INSTALLATION AND MAINTENANCE SUPERVISOR: _____
PREPARED BY: _____	PHONE NUMBER INCLUDING AREA CODE: _____
PHONE NUMBER INCLUDING AREA CODE: _____	
REQUESTED SHIP DATE: _____	

SPECIAL INSTRUCTIONS

MODULE	NUMBER OF CABINETS		VALUE-ADDED FEATURES ACTIVATED								
									APPLICATION PROCESSORS		
	ONE	TWO	ARS	SMDR-IN	SMDR-OUT	ACD/RA	Call-Collector	ACD/MIS	Iocus Mail	SMDA	LOGGING
PRIMARY											
SECONDARY A											
SECONDARY B											
SECONDARY C											
SECONDARY D											
SECONDARY E											
SECONDARY F											
SECONDARY G											

NOTES: 1. Check only the boxes that apply to the system ordered.
2. Check only the Primary box for the 960S system.

CSS CHANGE HISTORY

CSS ISSUE NO.	TYPE OF RELEASE	PROGRAM TAPE NUMBER	AUTHORIZATION	DATE
1	INITIAL			

SYSTEM REQUIREMENTS

COMPLETE SYSTEM SUMMARY

NUMBER OF CABINETS	PRIMARY MODULE *	SECONDARY MODULES **						
		A	B	C	D	E	F	G
1								
2								

* For 960S Systems, use only the Primary Module Column.

** Complete this part of the table for each Secondary Module in the 960E System only.

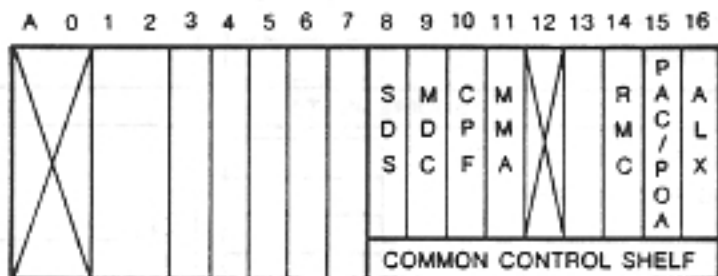
CCS/LINE _____

ITEM	LOCATION/QTY							
	PM	SM A	SM B	SM C	SM D	SM E	SM F	SM G
LINES								
TRUNKS								
ATTENDANT CONSOLES (4 MAX. PER SYSTEM)								
FRONT DESK CONSOLES (4 MAX. PER MODULE)								
FDC PRINTERS (2 MAX. MODULE)								
CALLING, CALLED, AND COMBINED CALLING/CALLED NO. DISPLAYS (14 MAX./MODULE)								
POWER FAIL TRANSFER (PFX) (REMOTE MAINT. BYPASS) NO. OF PFX TRUNKS (12 MAX./CAB.)								
REDUNDANT PROCESSING								
REMOTE MAINTENANCE	✓	✓	✓	✓	✓	✓	✓	✓
AIOD: ANI CARDS (10 MAX./MODULE)								
TENANT ASSIGNMENT								
ARS								
Call Collector								
APPLICATIONS PROCESSOR								
SMDR-INCOMING								
SMDR-OUTGOING								
SMDR PRINTERS (1/MODULE)								
ACD/RECORDED ANN.								
PAGING ZONES (8 MAX.)								
CODE CALL ZONES (2 MAX.)								
UNA ZONES (4 MAX.)								

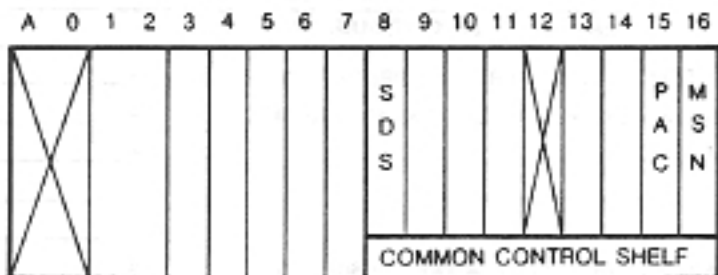
SYSTEM REQUIREMENTS (Cont'd)

LINE REQUIREMENTS															
STATIONS (DTMF/ROTARY)	<table border="1"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>											} → 8 = _____ LINE CARDS			
PAGING/CODE CALL (1 LINE ZONE)															
DICTATION MACHINE LINE I/F (1 LINE/MACHINE)															
ANNOUNCEMENT MACHINE (1 LINE/MACHINE)															
ATTENDANT CONSOLES (1 LINE/MACHINE)															
TRUNK REQUIREMENTS															
DICTATION MACHINE TRUNK I/F (2 TRUNKS/MACHINE)	<table border="1"> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> </table>														} → 4 = _____ BOTHWAY TRUNK CARDS
CALLS WAITING DISPLAY (1 CIRCUIT PER LAMP PAIR)															
CO TRUNKS															
FX TRUNKS	} → 4 = _____ TDA/B CARDS														
WATS TRUNKS															
TOLL TRUNKS	} → 2 = _____ FWA/B CARDS														
E & M TIE AND DID TRUNKS															
FOUR WIRE E & M TIE/CCSA TRUNKS	} → 2 = _____ LTA/B CARDS														
LOOP TIE/CCSA TRUNKS															
LOOP DID TRUNKS	} → 2 = _____ LDA/B CARDS														
SERVICE TRUNK REQUIREMENTS															
3 CCS/LINE AND 6 CCS/LINE SYSTEMS: 2 DMX CARD REQUIRED/MODULE	= _____	DMX CARDS													
9 CCS/LINE SYSTEMS: 3 DMXs FOR EACH 2-CAB. MODULE, 2 DMXs/1 CAB. MOD.	= _____	DMX CARDS													
NCC CARD REQUIREMENTS (960E ONLY)	= _____	NCC CARDS													
CONFERENCE CIRCUITS REQUIRED = _____	÷ 1 = _____	CFT CARDS *													
tone SENDER CIRCUITS REQUIRED = _____	÷ 4 = _____	TNS CARDS * *													
TIME SLOT CONVERTER (TSC) CARDS (1 REQUIRED/MODULE, 960E ONLY)	= _____	TSC CARDS													
* If CFT cards are installed, they must be installed in each module of the system.															
** TNS cards must be installed in each module of the system.															
APPLICATION PROCESSOR REQUIREMENTS															
APPLICATION PROCESSORS	<input type="text"/>	÷ 4 = _____ PAC CARDS													
focus Electronic Terminal REQUIREMENTS															
NUMBER OF ET SETS	<input type="text"/>	÷ 8 = _____ LND CARDS													
focus DATA SWITCHING REQUIREMENTS															
NUMBER OF DATA TERMINALS	<input type="text"/>	÷ 8 = _____ DLD CARDS													
NUMBER OF CHARACTER CALL CIRCUITS	<input type="text"/>	÷ 2 = _____ CHT CARDS													
NOTE: Card quantities must always be whole numbers. Increase all fractions to the next highest number.															
① Each DMX card combines two DTMF receiver circuits and two mixer circuits.															
T1 INTERFACE REQUIREMENTS															
TOTAL T1 CHANNELS	<input type="text"/>	÷ 24 = _____ TCI CARDS													
T1 VOICE CHANNELS	<input type="text"/>	÷ 8 = _____ VDP CARDS													
T1 DATA CHANNELS	<input type="text"/>	÷ 8 = _____ DCC CARDS													

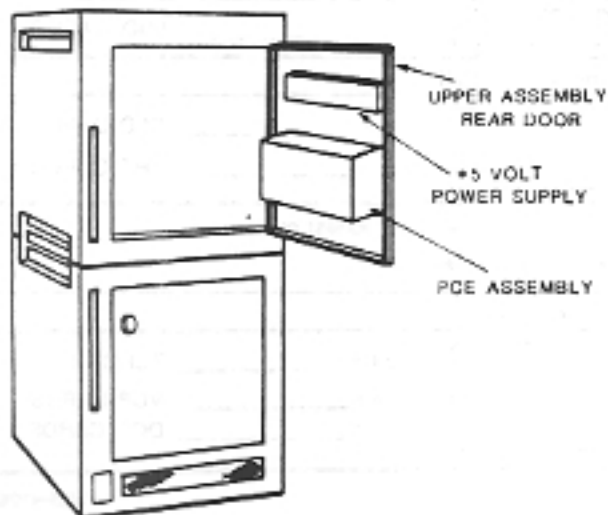
BASIC CABINET AND EXTENSION CABINET A-SHELF CARD LOCATIONS



BASIC CABINET A SHELF



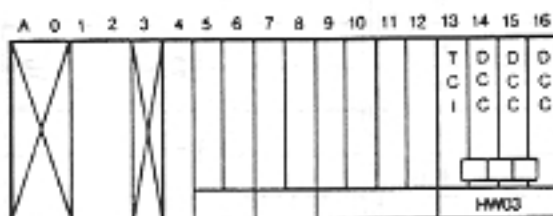
EXTENSION CABINET A SHELF



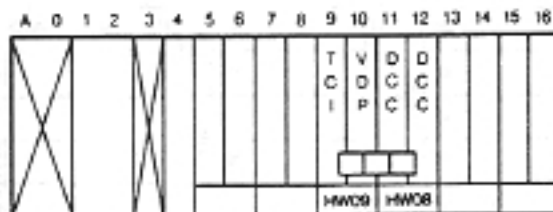
NOTES:

1. The PAC can be installed in Slot A15 of the Basic Cabinet only when consoles are not required.
2. In a two cabinet configuration the PAC can be installed in Slot A15 of the extension cabinet.
3. When Slot A15 is not available to install a PAC, A PCE can be installed in the upper assembly rear door of the basic or extension cabinet. One PCE will support up to four PAC cards or PCC channels.

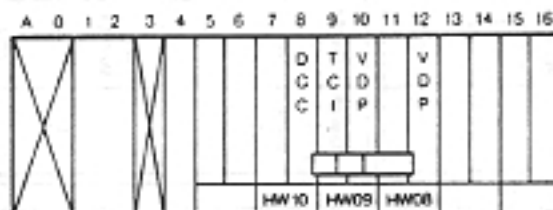
T1 CARD SET



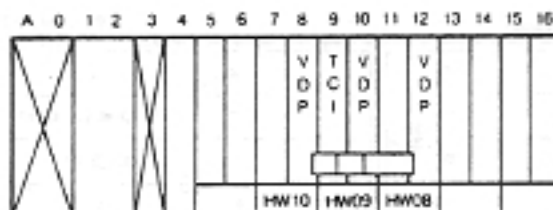
(DATA ONLY)



(16 DATA CHANNELS, 8 VOICE CHANNELS)



(18 VOICE CHANNELS, 8 DATA CHANNELS)



(VOICE ONLY)

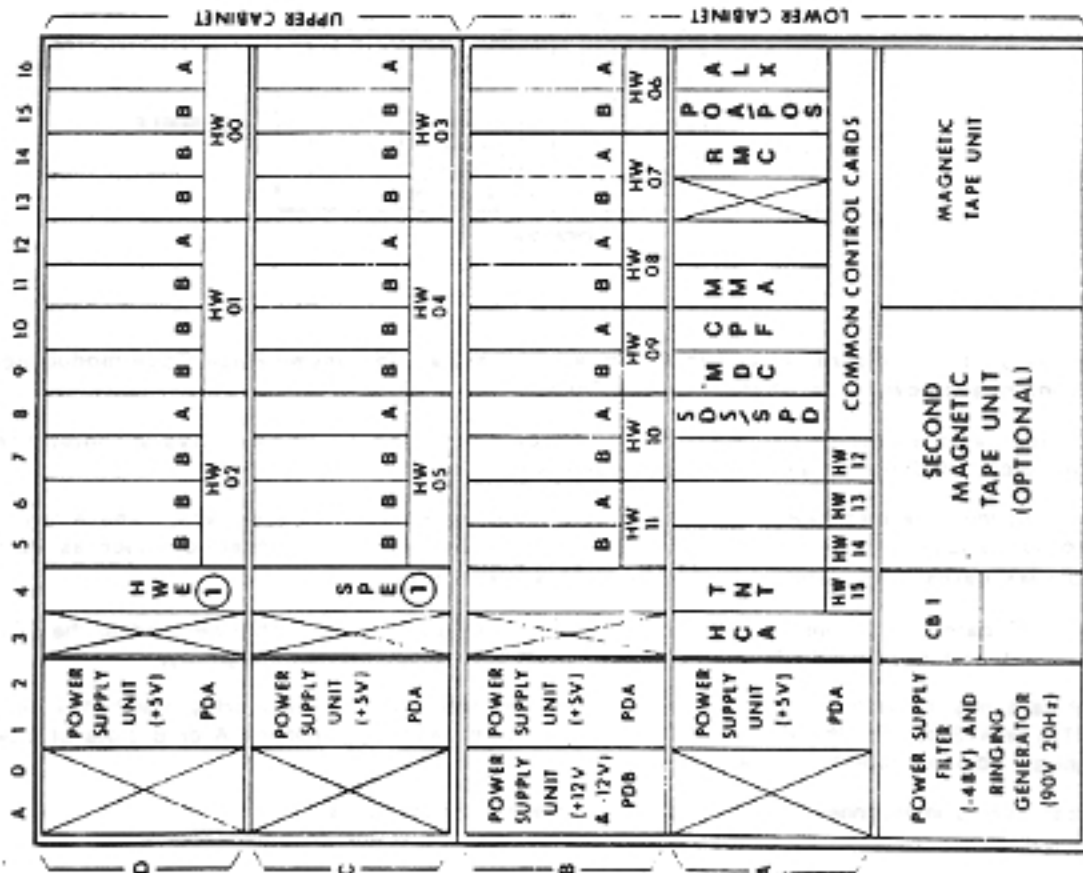
GENERAL

- The integrated T1-T3/D4 card set allows the **focus 960** system to transmit Pulse Code modulated (PCM) voice and data information over a 24 Channel Digital Trunk.
- The T1 card set consists of one T Carrier Interface card (TCI), up to three System Interface cards (VDP for voice; DCC for data), and an Interface Adapter.
- The TCI card must be installed in the B slot of a highway where the cards which share the same MDF cable do not require an MDF connection. Cards not requiring an MDF connection, such as VDP, DCC, RTS and DMX cards, may safely occupy the affected MDF area.
- VDP and DCC cards require installation in highways that are adjacent to each other and to the TCI card. To prevent circuitry interference, VDP and DCC cards must not occupy the same highway.
- The VDP card must be installed in the A slot of a two card highway. The neighboring B slot may be occupied by either a TCI or RTS card, or left vacant. DCC cards may be installed in either the A or B slots of a two or four card highway, adjacent to either a TCI card or another DCC card.
- The T1 card set is interconnected by a data bus on the front of the cards.

CABINET CARD LOCATION DIAGRAM

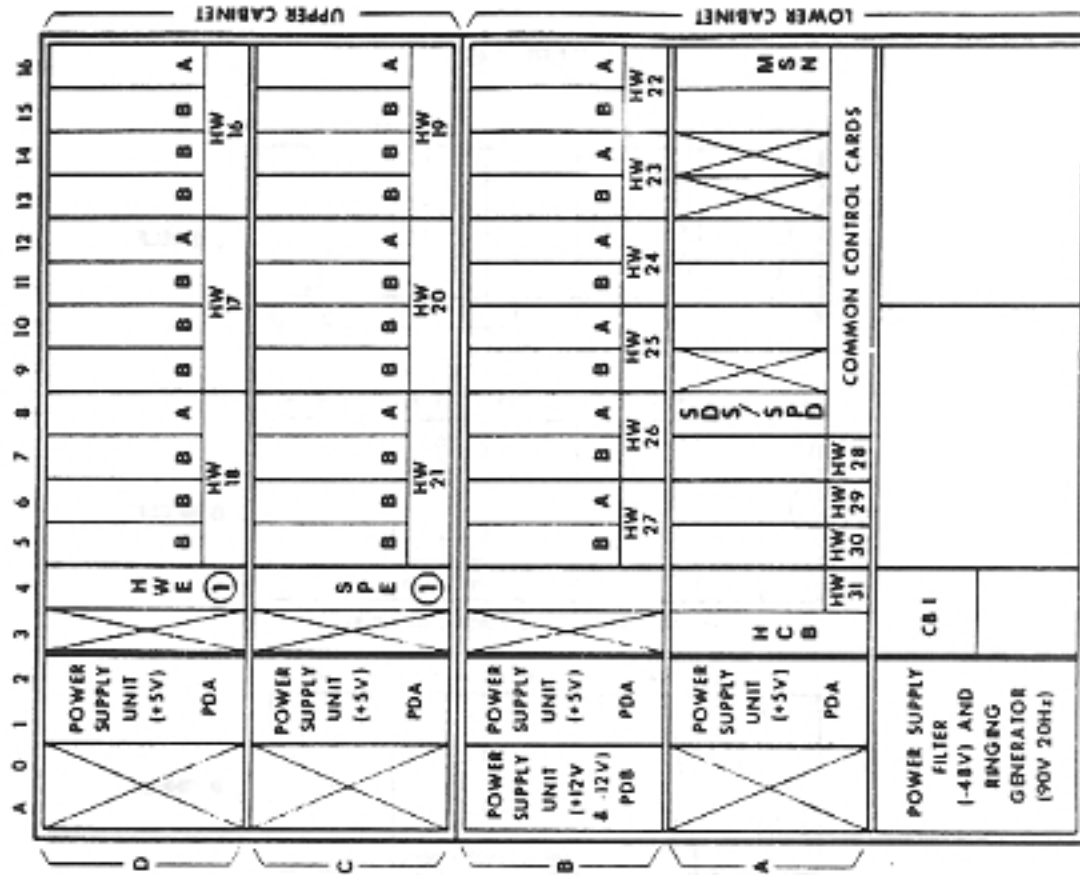
BASIC CABINET

NUMBER OF POWER FAIL TRANSFER TRUNKS _____ (MAXIMUM 12 PER CABINET)



EXTENSION CABINET

NUMBER OF POWER FAIL TRANSFER TRUNKS _____ (MAXIMUM 12 PER CABINET)



① HWE and SPE cards are required when the O-Shell is used.

CARD PLACEMENT DIAGRAM

CARD TYPES ALLOWED	BASIC CABINET															EXTENSION CABINET															CKTS PER CARD				
	HIWAY NUMBER																																		
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29		30	31		
TRANSMISSION CARDS	LNA/B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	8
	LXA/B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	8
	LND	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	8
	NCC	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	16
	LTA/B			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	
	LDA/B			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	
	FWA/B			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	
	ANI			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1	
	BWA/B				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	4	
	BXA/B				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	4	
	TDA/B				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	4	
	DLD	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	8	
	CHT	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	
	VDP					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	8	
	DCC	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	8	
TCI	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	24		
FEATURE SUPPORT CARDS	RTS					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1			
	NME					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1			
	CDC					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	8			
SERVICE TRUNK CARDS	XTS/TNS					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1			
	DTA/B					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2			
	TSC	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	4		
	DMX					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	4			
	CFT										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1			
	DTT/TNT															X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1			

NOTES: 4 CARD HWAYS 2 CARD HWAYS 1 CARD HWAYS 4 CARD HWAYS 2 CARD HWAYS 1 CARD HWAYS

- ① B slot of a 2 or 4 card hiway; supported by a line card.
- ② Can be only card in hiway.
- ③ Must go in A slot only.
- ④ Must go in B slot only. Choose a B slot where no line or trunk share the same MDF connector with the TCI card.
- ⑤ Must go in A slot, cannot support B type cards.
- ⑥ Must go in B slot only.
- ⑦ When used in a 2 or 4 card hiway-Must go in A slot.
- ⑧ Same as NCC.
- ⑨ In a 2 card hiway, strap for DTA. Use in A slot: supports B cards.

FEATURE SUPPORT HARDWARE

9608 MODULE OR BASIC CABINET OF 960E MODULE		
FEATURE	CARDS	LOCATION(S)
FIRST THROUGH FOURTH CONSOLE DEVICES (DRIVE)	POS	SLOT A15
BLF OR DSS ATTENDANT CAPABILITY	POA	SLOT A15
INTERFACE FOR THIRD OR FOURTH CONSOLE DEVICE (REQUIRED IN EVERY 960E MODULE)	ADB	RIGHT SIDE OF LOWER CABINET
REMOTE MAINTENANCE	RMC	SLOT A14
tone SENDING	TNS	ANY A SLOT HWY 6, 12 THRU 14
APPLICATION PROCESSOR'S INTERFACE	PAC	PCE, A15
FIRST THRU FOURTH PAGING PORT, FIRST CODE CALL PORT, UNA, OR ATTENDANT OVERFLOW TO UNA	PCU	SLOT B4
SINGLE CABINET D-SHELF SPEECH CAPABILITY	SPE/HWE	SPE-SLOT C4, HWE-SLOT D4
TWO CABINET SPEECH CAPABILITY	HCA	SLOT A3
SMDR/SMDA (IN/OUT)	RTS/CDC ①	CO-LOCATED IN HWY 6 THRU 11
AUTOMATIC WAKE-UP/MESSAGE REGISTRATION	RTS/NME ①	CO-LOCATED IN HWY 6 THRU 11
ONE FDC PRINTER AND/OR 7 CND/CCD DISPLAY	1 CDC ③	ANY SLOT HWY 6 THRU 11
TWO FDC PRINTERS AND/OR 14 CND/CCD DISPLAYS	2 CDC ③	ANY SLOT HWY 6 THRU 11
locus Electronic Terminal	LND	B SLOT OF ANY 2 OR 4 CARD HWY SUPPORTED BY AN A TYPE CARD
locus DATA SWITCHING TERMINALS	DLD/CHT	ANY SLOT HWY 00 THRU 04 AND 06 THRU 10
MESSAGE WAITING	MWP	INCLUDED IN SYSTEM
960E CABINET		
FEATURE	CARDS	LOCATION(S)
INTERFACE FOR THIRD OR FOURTH CONSOLE DEVICES (2-CAB. APPL)	POJ	SLOT A15
FIFTH THROUGH EIGHTH CONSOLE DEVICES (H/M APPL)	POS	SLOT A15
INTERFACE FOR FIFTH THROUGH EIGHTH CONSOLE DEVICES (H/M APPL)	ADY	RIGHT SIDE OF LOWER CABINET (BASIC)
tone SENDING	TNS	ANY SLOT HWY 22 THRU 28, 30 AND 31
APPLICATION PROCESSOR'S INTERFACE	PAC	PCE, A15
REDUNDANT PROCESSING	②	SLOT A10, A11 AND A12
FIFTH THROUGH EIGHTH PAGING PORT OR SECOND CODE CALL PORT	PCU	SLOT B4
ONE FDC PRINTER AND/OR 7 CND/CCD DISPLAYS	1 CDC ③	ANY SLOT HWY 22 THRU 27
TWO FDC PRINTERS AND/OR 14 CND/CCD DISPLAYS	2 CDC ③	ANY SLOT HWY 22 THRU 27
MESSAGE WAITING	MWP	INCLUDED IN SYSTEM
locus Electronic Terminal	LND	B SLOT OF ANY 2 OR 4 CARD HWY SUPPORTED BY AN A TYPE CARD
locus DATA SWITCHING TERMINALS	DLD/CHT	ANY SLOT HWY 16 THRU AND 22 THRU 26

① When system includes a NME card, it must be installed in the B-Slot of the hiway containing the RTS card. The CDC card for SMDR/SMDA is then placed in any available slot of a 2-card hiway. (The CDC card will not support B-type cards).

② CPF and Memory cards of basic cabinet must be duplicated exactly.

③ Limit of three CDC cards per module.

APPENDIX A

CARD STRAPPING CONFIGURATIONS

1. PURPOSE

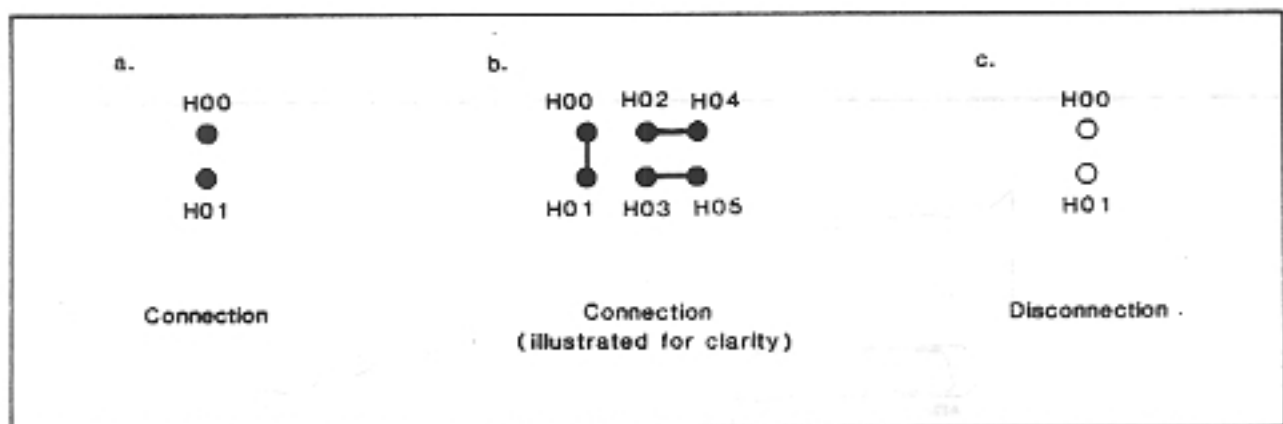
1.01 This appendix allows the technician to record the strapping configuration of PC cards contained within the customer's system. Diagrams of the various cards are provided to show the strapping points. Associated tables specify strapping options.

1.02 The Data Interface Units (DIUs) diagrams are included in this appendix. These diagrams provide the locations and functions of switches for each DIU.

2. RECORDING STRAPS

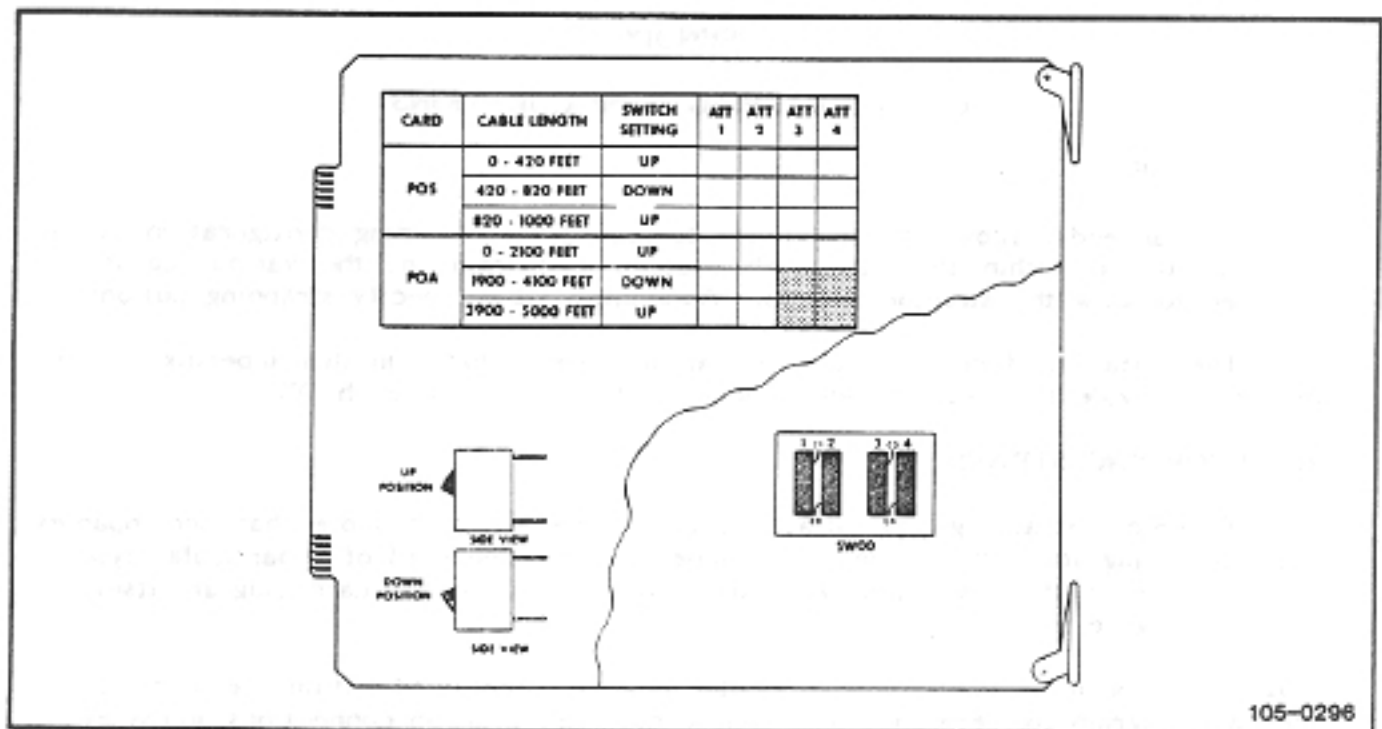
2.01 To record strapping configurations, fill in the selection table that accompanies each card diagram with the choice(s) made. If only one card of a particular type is contained within the system, draw in the connection(s) on the card diagram itself as shown in Figure A-1.

2.02 If two or more cards of a particular type are contained within the system, use the card diagram for reference only and do not draw in strap connections unless every card of that type is strapped in exactly the same way.



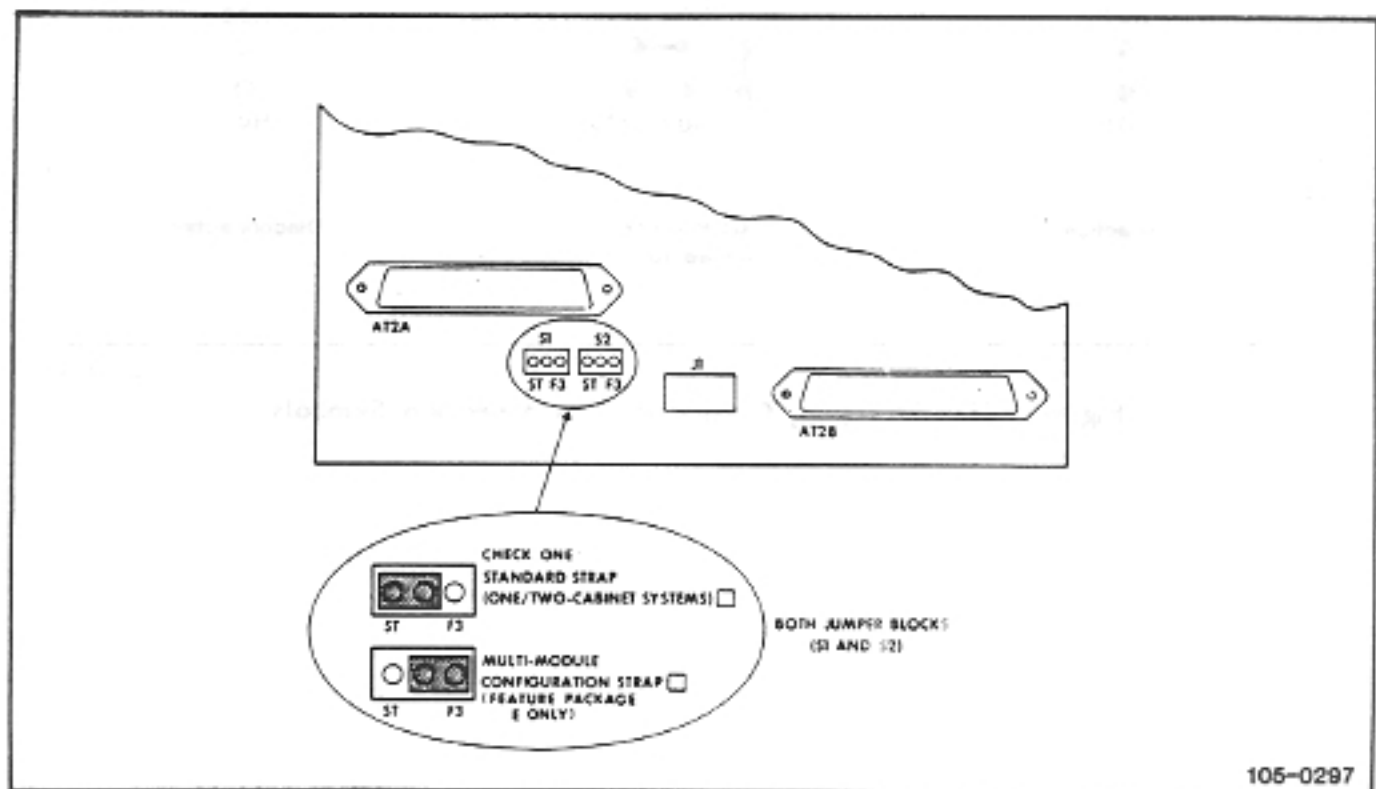
105-0295

Figure A-1. Strapping Connection/Disconnection Symbols



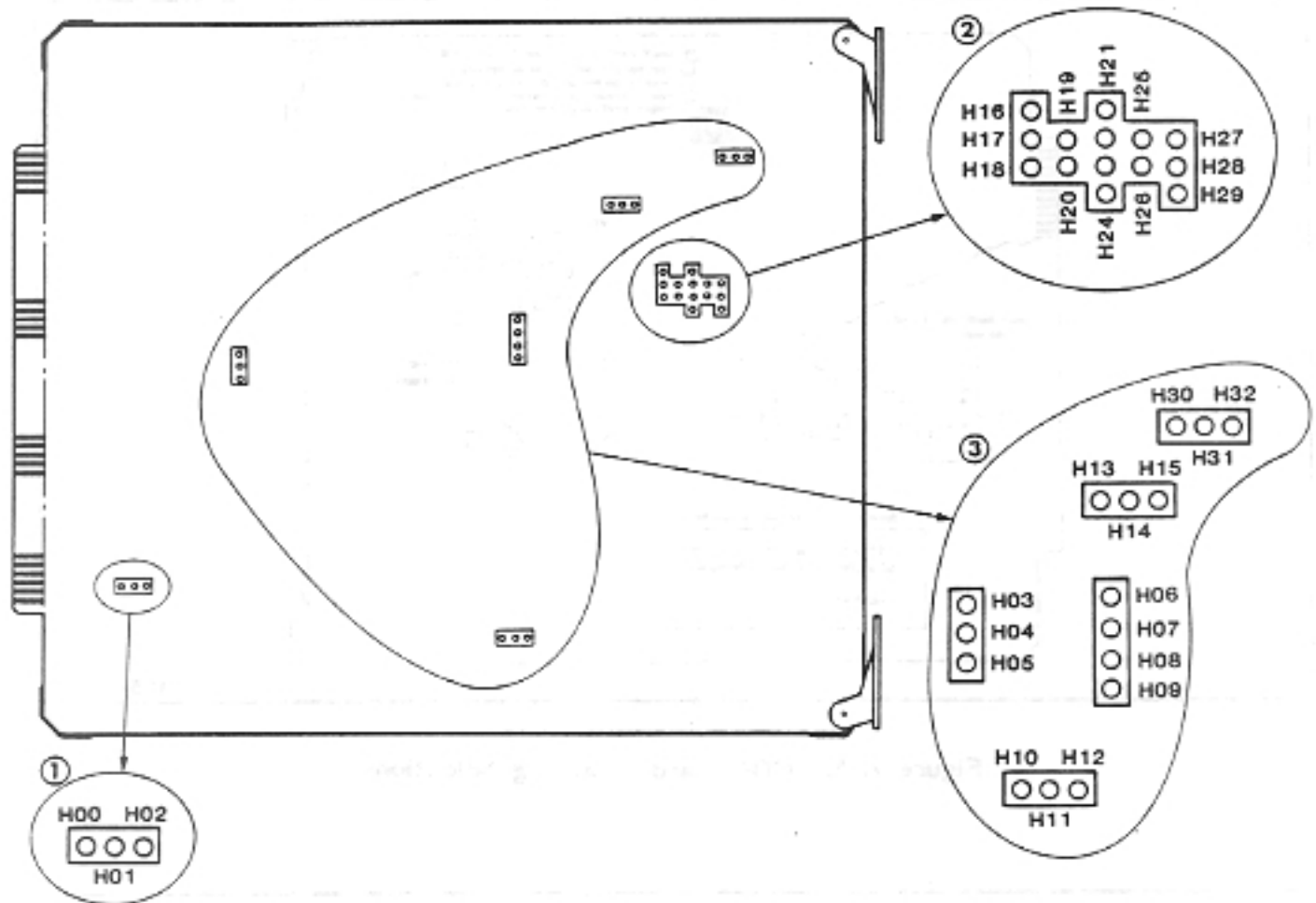
105-0296

Figure A-2. POS/POA Card Inverter Switch Selections



105-0297

Figure A-3. ADB Card Strapping Selections



① SYSTEM CONFIGURATION STRAP

OPTION	STRAP
BASIC CABINET *	H00 TO H01
BASIC PLUS EXTENSION CABINET	H01 TO H02

② RING GENERATOR/MESSAGE WAITING CONTROL STRAP

OPTION	STRAP
BASIC CABINET *	H17 TO H18 H19 TO H20
EXTENSION * CABINET	H25 TO H26 H27 TO H28

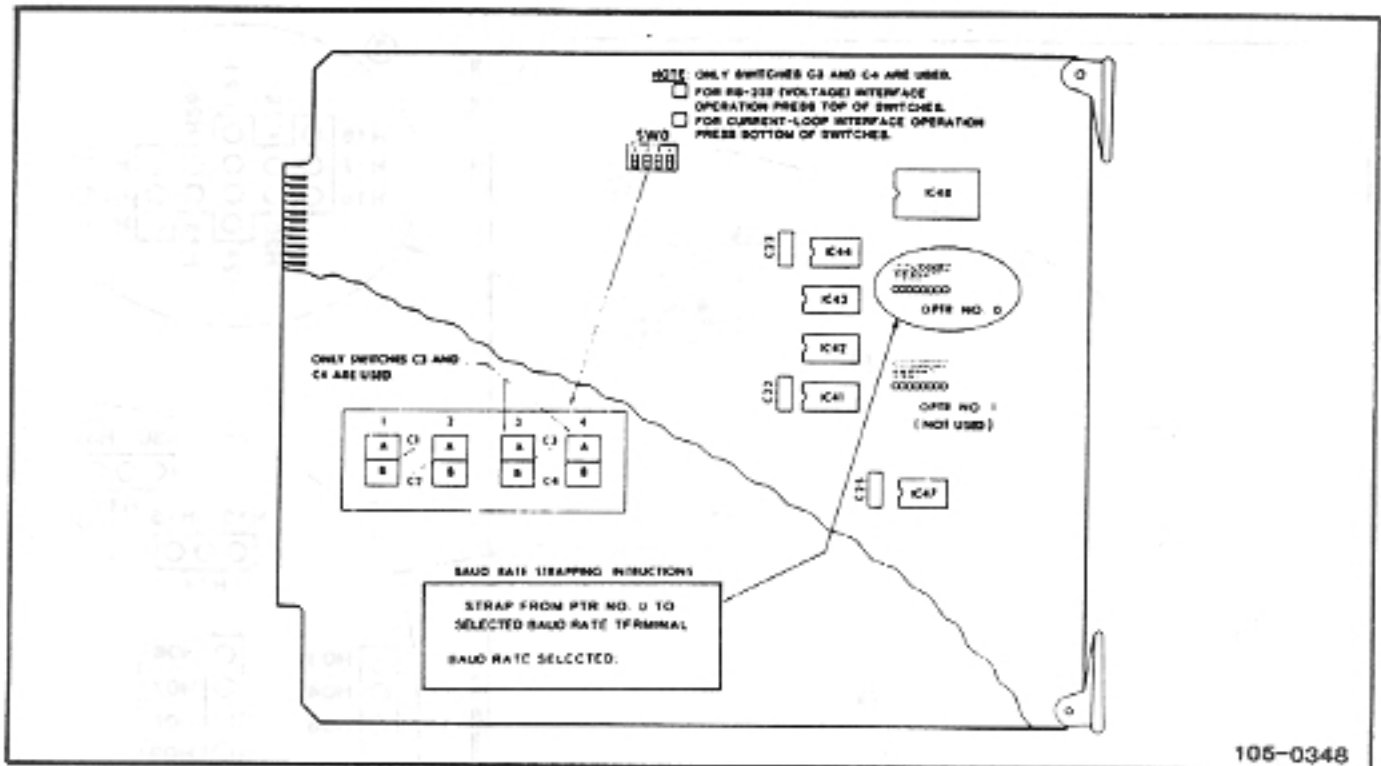
* As shipped from the factory.

③ FUNCTIONAL STRAP

OPTION	STRAP
ALX *	H04 TO H05 H06 TO H07 H08 TO H09 H10 TO H11 H13 TO H14 H30 TO H31
ALM	H03 TO H04 H07 TO H08 H11 TO H12 H14 TO H15 H31 TO H32

105-0298

Figure A-4. ALX/ALM Card Strapping Selections



105-0348

Figure A-5. CDC Card Strapping Selections

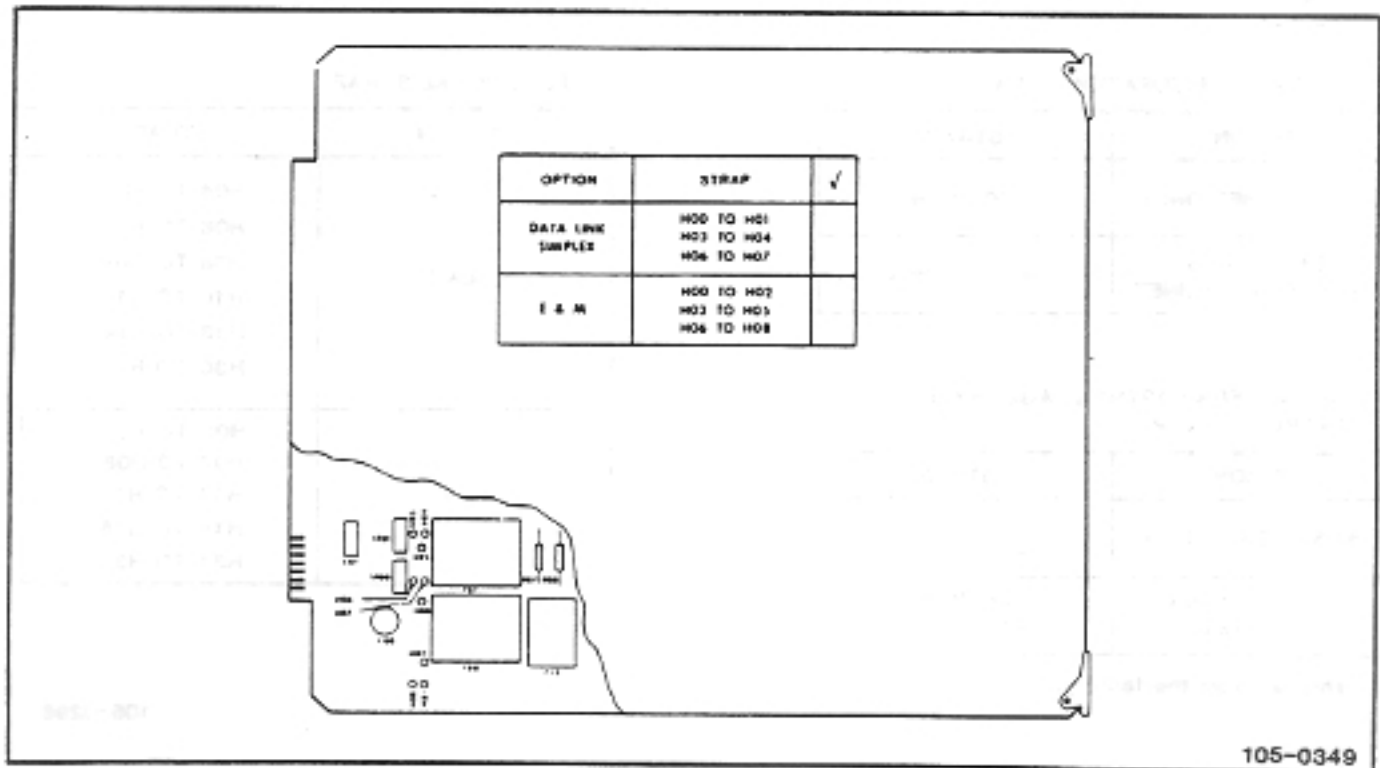


Figure A-6. ANI Card Strapping Selections

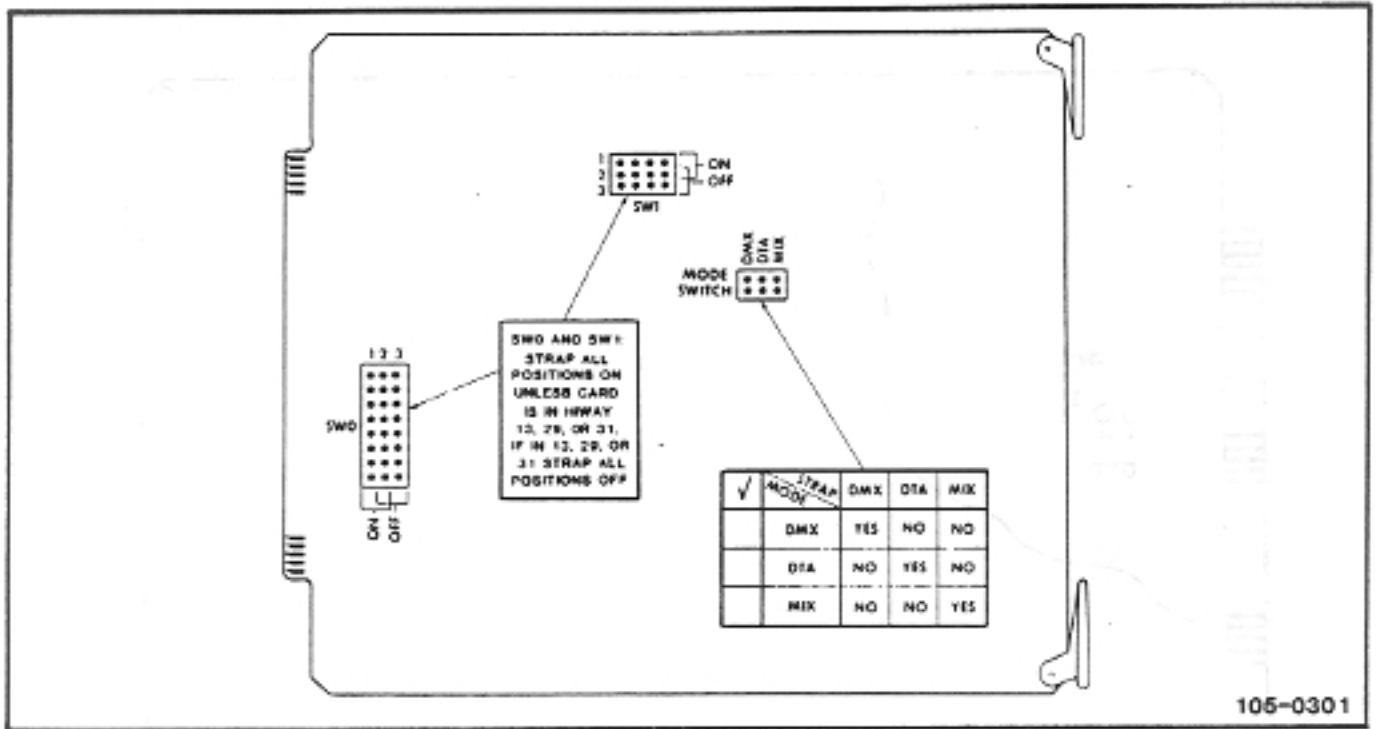


Figure A-7. DMX Card Strapping Selections

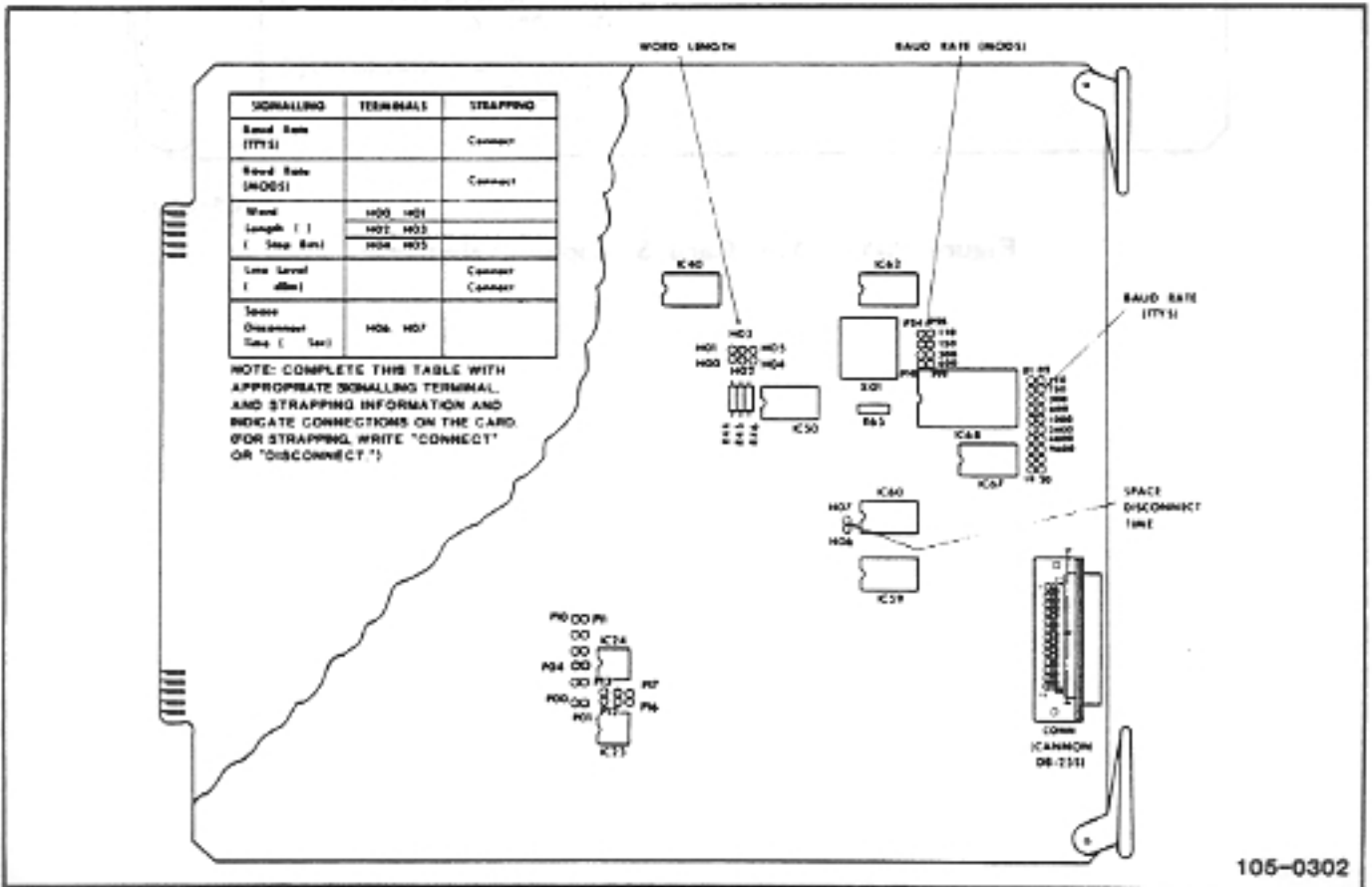
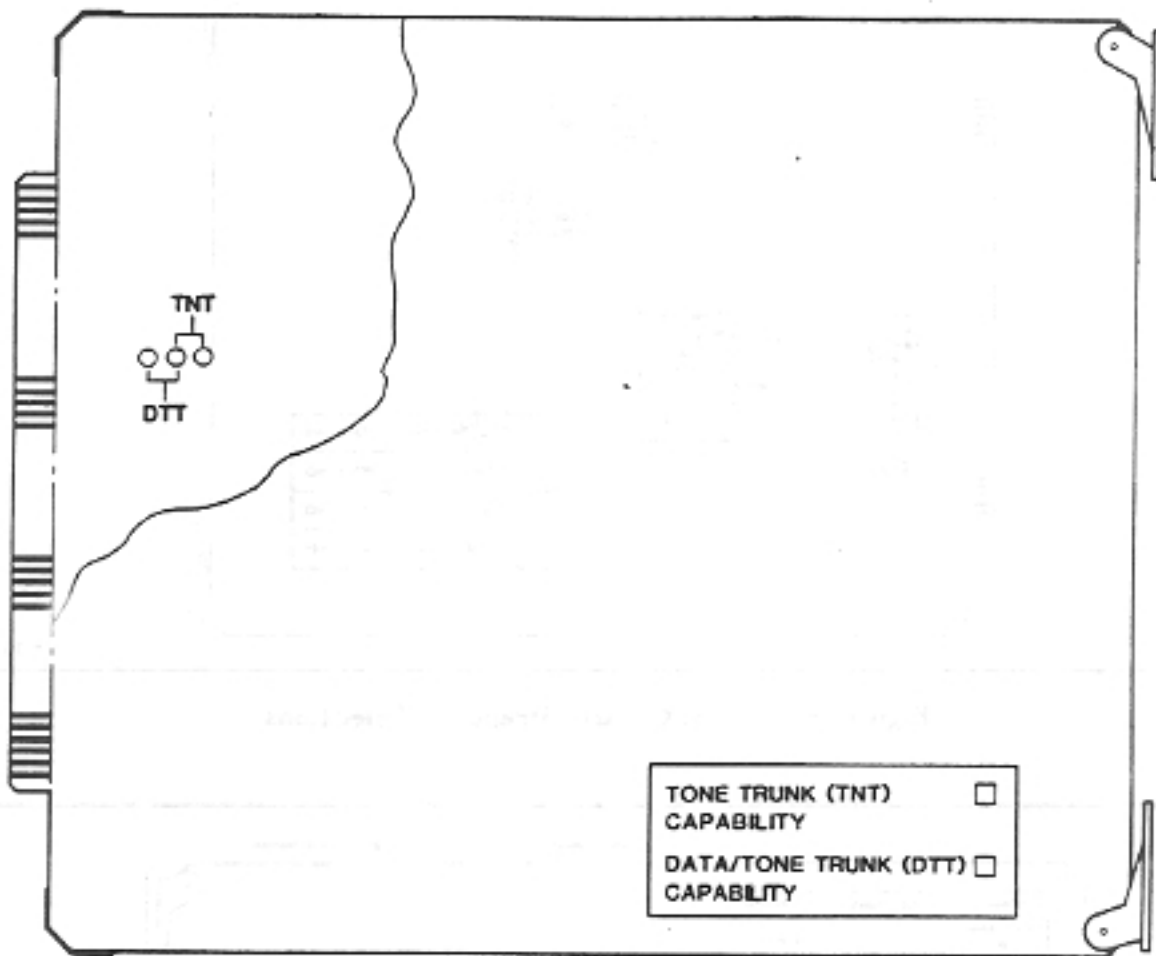
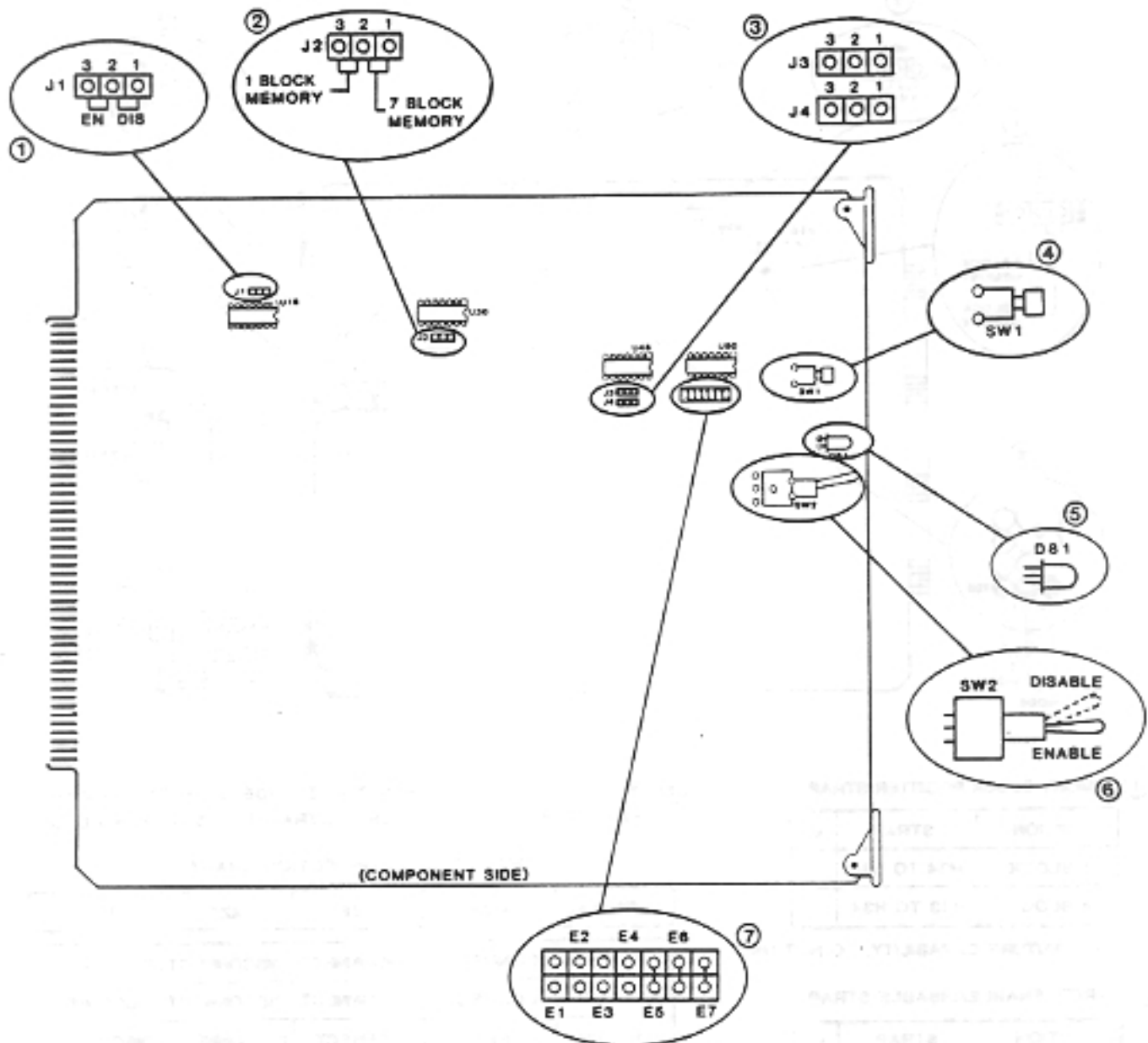


Figure A-8. RMC Card Strapping Selections



105-0303

Figure A-9. DTT Card Strapping Selections

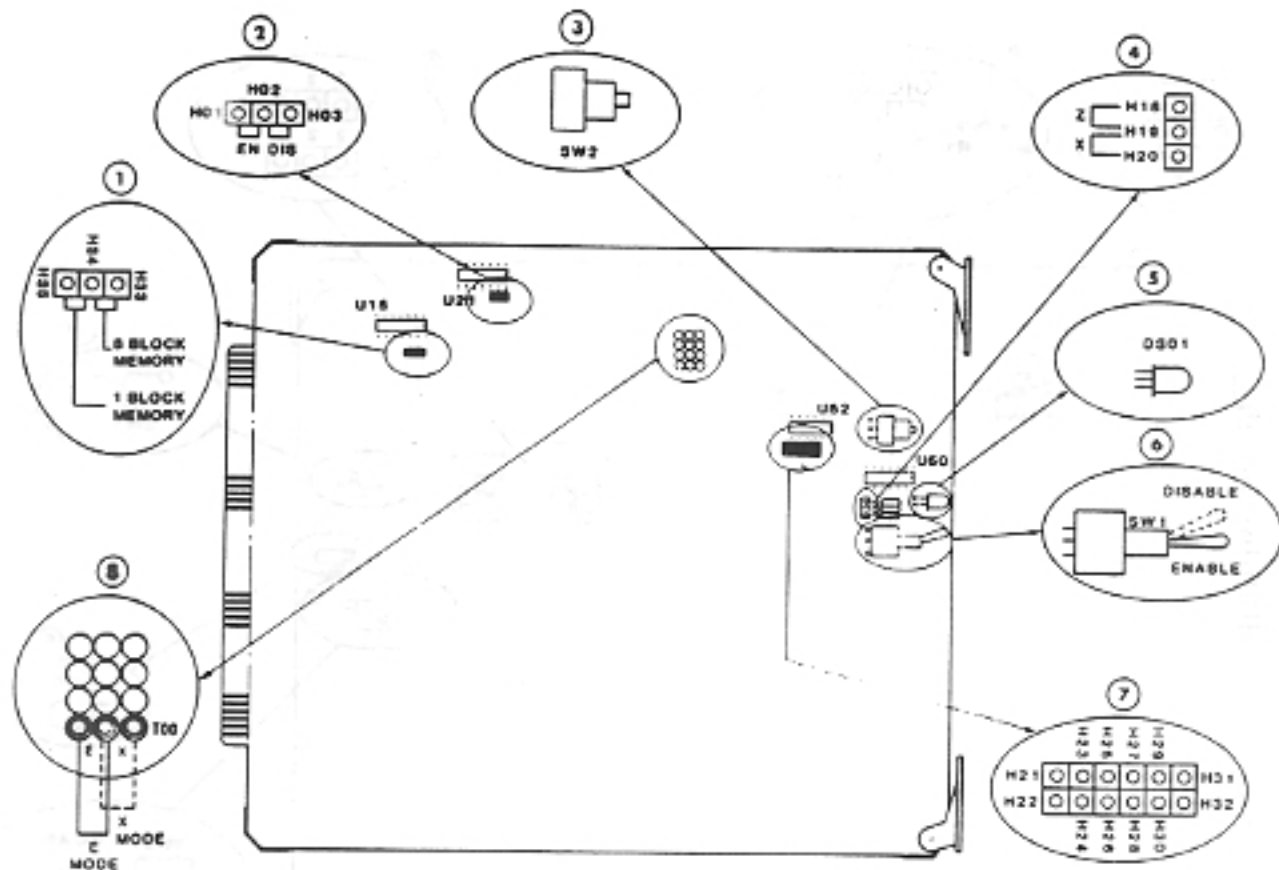


NOTES:

- ① PARITY ENABLE/DISABLE STRAP.
- ② MEMORY BLOCK ADDRESS REGISTER STRAP.
- ③ MODE SELECTION STRAP.
- ④ PARITY ERROR LED RESET SWITCH (SW 1). PUSH TO RESET PARITY ERROR LED ⑤.
- ⑤ PARITY ERROR LED (D81).
- ⑥ PARITY INTERRUPT ENABLE/DISABLE SWITCH (SW 2). SWITCH UP TO DISABLE, DOWN TO ENABLE.
- ⑦ MMA CONNECTION STRAPS, DO NOT CHANGE STRAPPING.

Figure A-10. MMA Card Strapping Selections

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① MEMORY BLOCK REGISTER STRAP

OPTION	STRAP	✓
1 BLOCK	H34 TO H35	
8 BLOCK	H33 TO H34	

NOTE: FUTURE CAPABILITY. DO NOT USE.

② PARITY ENABLE/DISABLE STRAP

OPTION	STRAP	✓
ENABLE	H01 TO H02	
DISABLE	H02 TO H03	

NOTE: PARITY IS FACTORY-SET TO ENABLE. USE SW1 IN ⑥ TO DISABLE.

③ PUSH BUTTON (SW2) TO RESET PARITY ERROR LED ⑤.

④ MODE SELECT STRAP

OPTION	STRAP	✓
Z MODE	H18 TO H19	
X MODE	H19 TO H20	

⑦ MZ-TYPE SELECT STRAP. IF THE Z MODE IS SELECTED IN ④, VERIFY THAT THIS LOCATION IS STRAPPED AS SHOWN BELOW:

MZA, B, C, D CONNECTION CHART

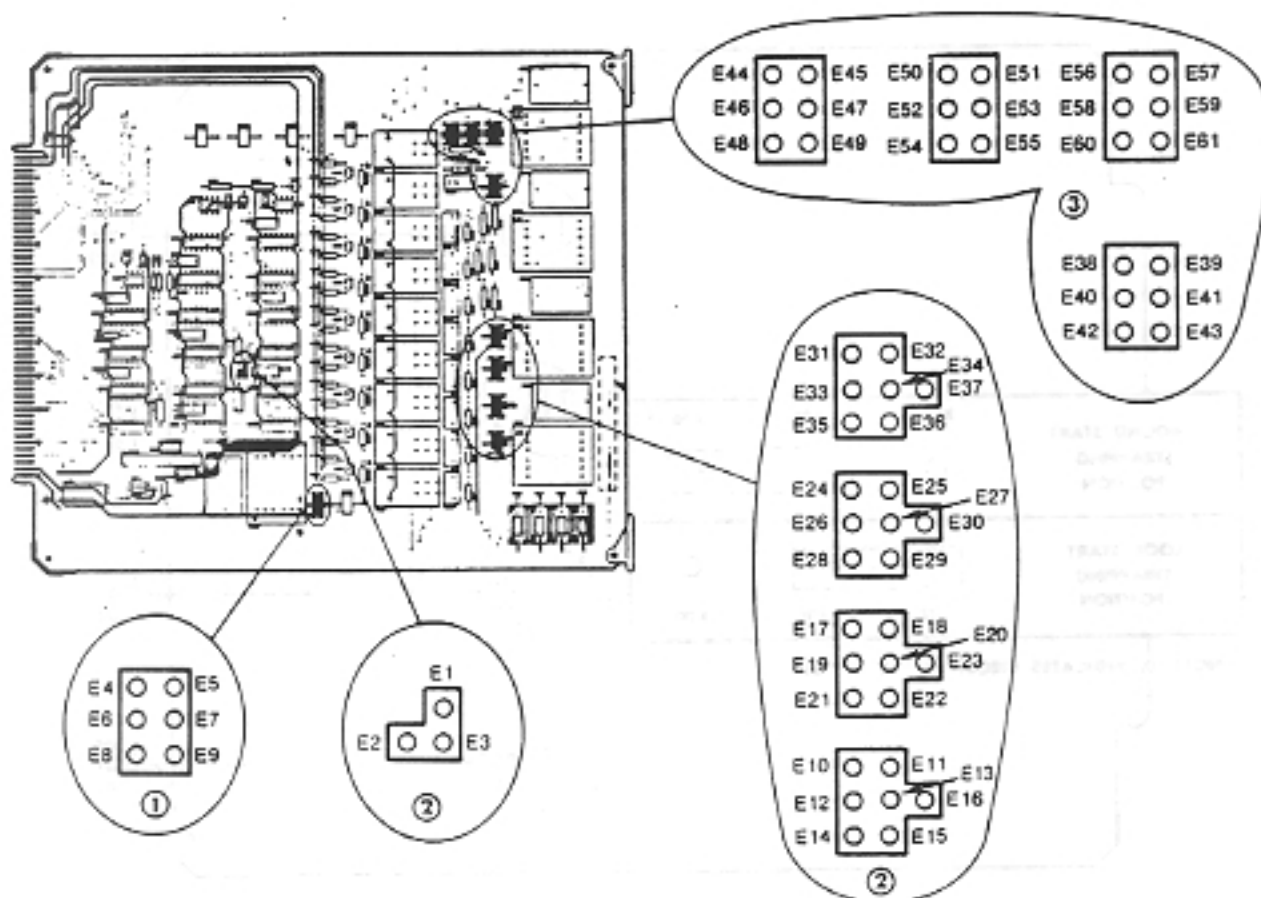
TERMINAL	MZA	MZB	MZC	MZD
H21-H22	CONNECT	DISCONNECT	DISCONNECT	DISCONNECT
H23-H24	CONNECT	DISCONNECT	DISCONNECT	DISCONNECT
H25-H26	CONNECT	CONNECT	DISCONNECT	DISCONNECT
H27-H28	CONNECT	CONNECT	DISCONNECT	DISCONNECT
H29-H30	CONNECT	CONNECT	CONNECT	DISCONNECT
H31-H32	CONNECT	CONNECT	CONNECT	DISCONNECT

CAUTION: THESE STRAPS ARE NOT FIELD-CHANGEABLE. CALL AMERICAN TELECOM FIELD SERVICE IF THE CARD IMPROPERLY STRAPPED.

⑧ MX-TYPE SELECT STRAP (IF THE X-MODE IS SELECTED IN ④).

OPTION	STRAP	✓
X MODE	CENTER AND RIGHT PIN	
E MODE	CENTER AND LEFT PIN	

Figure A-11. MZ-Series Card Strapping Selections



NOTES:

① Code Call Strapping

- Battery and Ground Signaling: E6 to E7 and E8 to E9.
- Loop Signaling: E7 to E9 and E4 to E5.
- Interrupted Battery: E6 to E7 and E4 to E5.
- Interrupted Ground: E5 to E7 and E4 to E6.

② Night Bell Strapping

- Interrupted Night Bell: E2 to E3.
- Constant Night Bell: E1 to E3.
- Battery and Ground Signaling:
 - E11 to E13 and E14 to E15 (NB0)
 - E18 to E20 and E21 to E22 (NB1)
 - E25 to E27 and E28 to E29 (NB2)
 - E32 to E34 and E35 to E36 (NB3)
- 20Hz and Ground Signaling:
 - E12 to E13 and E14 to E15 (NB0)
 - E19 to E20 and E21 to E22 (NB1)
 - E26 to E27 and E28 to E29 (NB2)
 - E33 to E34 and E35 to E36 (NB3)
- Loop Signaling:
 - E13 to E15 and E10 to E11 (NB0)
 - E20 to E22 and E17 to E18 (NB1)
 - E27 to E29 and E24 to E25 (NB2)
 - E34 to E36 and E31 to E32 (NB3)
- Interrupted Battery:
 - E11 to E13 and E10 to E12 (NB0)
 - E18 to E20 and E17 to E19 (NB1)
 - E25 to E27 and E24 to E26 (NB2)
 - E32 to E34 and E31 to E33 (NB3)

g. Interrupted Ground:

- E13 to E16 and E10 to E11 (NB0)
- E20 to E23 and E17 to E18 (NB1)
- E27 to E30 and E24 to E25 (NB2)
- E34 to E37 and E31 to E32 (NB3)

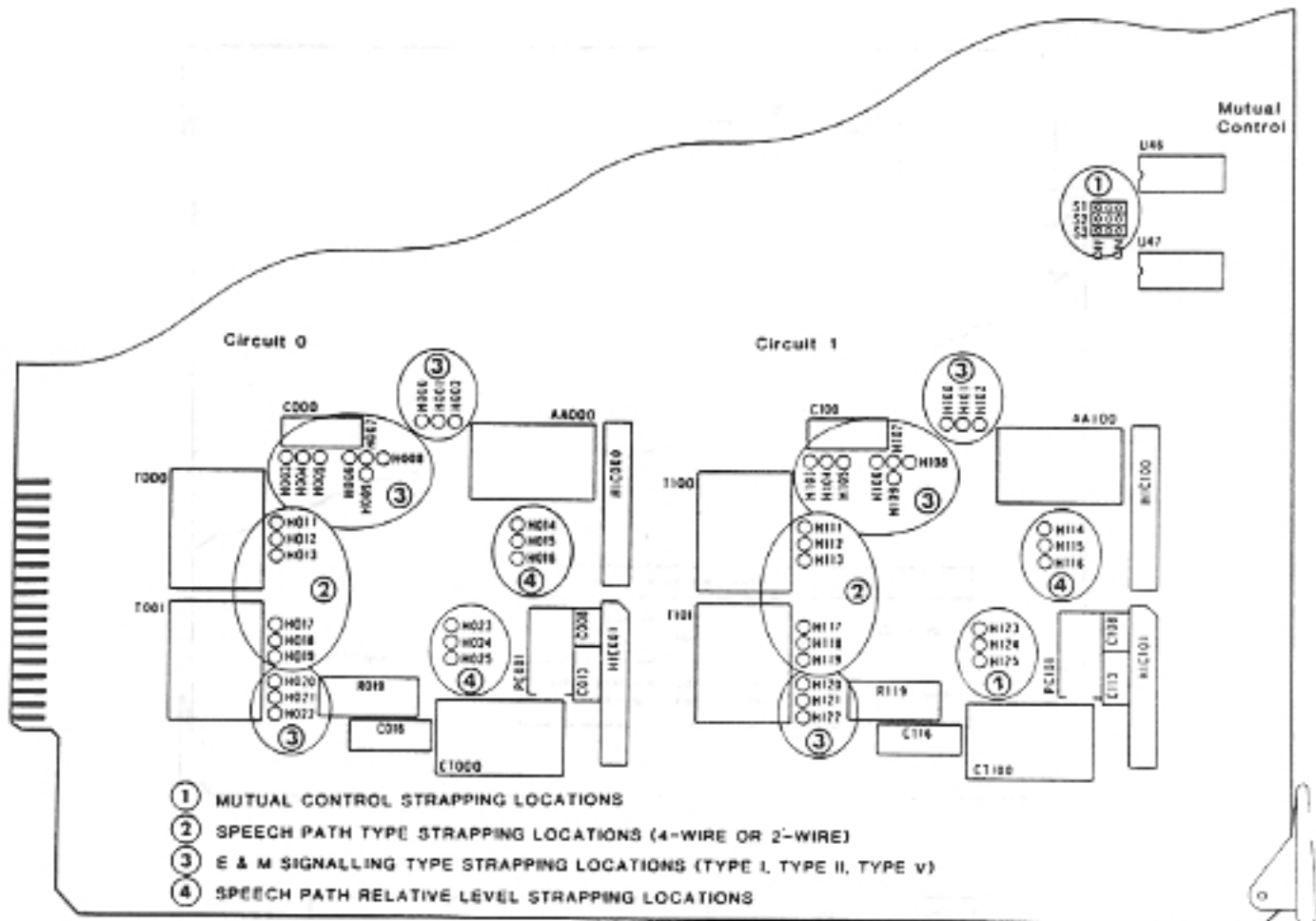
③ Page Strapping

- Battery and Ground Signaling:
 - E48 to E47 and E48 to E49 (P0)
 - E52 to E53 and E54 to E55 (P1)
 - E58 to E59 and E60 to E61 (P2)
 - E40 to E41 and E42 to E43 (P3)
- Loop Signaling:
 - E44 to E46 and E47 to E49 (P0)
 - E50 to E52 and E53 to E55 (P1)
 - E56 to E58 and E59 to E61 (P2)
 - E38 to E40 and E41 to E43 (P3)
- Interrupted Battery:
 - E46 to E47 and E44 to E45 (P0)
 - E52 to E53 and E50 to E51 (P1)
 - E58 to E59 and E56 to E57 (P2)
 - E40 to E41 and E38 to E39 (P3)
- Interrupted Ground:
 - E45 to E47 and E44 to E46 (P0)
 - E51 to E53 and E50 to E52 (P1)
 - E57 to E59 and E56 to E58 (P2)
 - E39 to E41 and E38 to E40 (P3)

- ④ This card can be used in combination or can replace the earlier PCU card. The function of the Revision 12 PCU is identical to earlier PCU cards. The location of the straps and the number of pin connectors has been changed.

Figure A-12. PCU Card Strapping Selections

105-0027



- ① MUTUAL CONTROL STRAPPING LOCATIONS
- ② SPEECH PATH TYPE STRAPPING LOCATIONS (4-WIRE OR 2-WIRE)
- ③ E & M SIGNALING TYPE STRAPPING LOCATIONS (TYPE I, TYPE II, TYPE V)
- ④ SPEECH PATH RELATIVE LEVEL STRAPPING LOCATIONS

STRAP	ON*	OFF
S1	MUST BE STRAPPED ON	
S2	IMMEDIATE START	DELAY DIAL
S3	2WS PAD CONTROL ON	2WS PAD CONTROL OFF

* S1-S3 are strapped in the ON Position

CARD TYPE	HWAY LOCATION	ON/OFF		
		S1	S2	S3
		ON		
		ON		
		ON		
		ON		
		ON		
		ON		

OPTION	CIRCUIT 0 STRAPS	CIRCUIT 1 STRAPS	CIRCUIT 0 / CIRCUIT 1			
			4-WIRE	2-WIRE	4-WIRE	2-WIRE
4-WIRE*	H011 TO H012 H017 TO H018	H111 TO H112 H117 TO H118				
2-WIRE	H013 TO H015 H018 TO H019	H113 TO H115 H118 TO H119				

* As strapped

CARD TYPE	HWAY LOCATION	CIRCUIT 0 / CIRCUIT 1			
		4-WIRE	2-WIRE	4-WIRE	2-WIRE

OPTION	CIRCUIT 0 STRAPS	CIRCUIT 1 STRAPS	CIRCUIT 0 / CIRCUIT 1			
			E&M	CMV	CMV	E&M
E&M I SIGNALING	H001 TO H002 H003 TO H004 H007 TO H008 H020 TO H021	H101 TO H102 H103 TO H104 H107 TO H108 H120 TO H121				
E&M II SIGNALING	H002 TO H001 H003 TO H004 H007 TO H008 H020 TO H021	H100 TO H101 H103 TO H104 H107 TO H108 H120 TO H121				
CMV V SIGNALING	H000 TO H001 H004 TO H005 H007 TO H008 H021 TO H022	H100 TO H101 H104 TO H105 H107 TO H108 H121 TO H122				

* As strapped

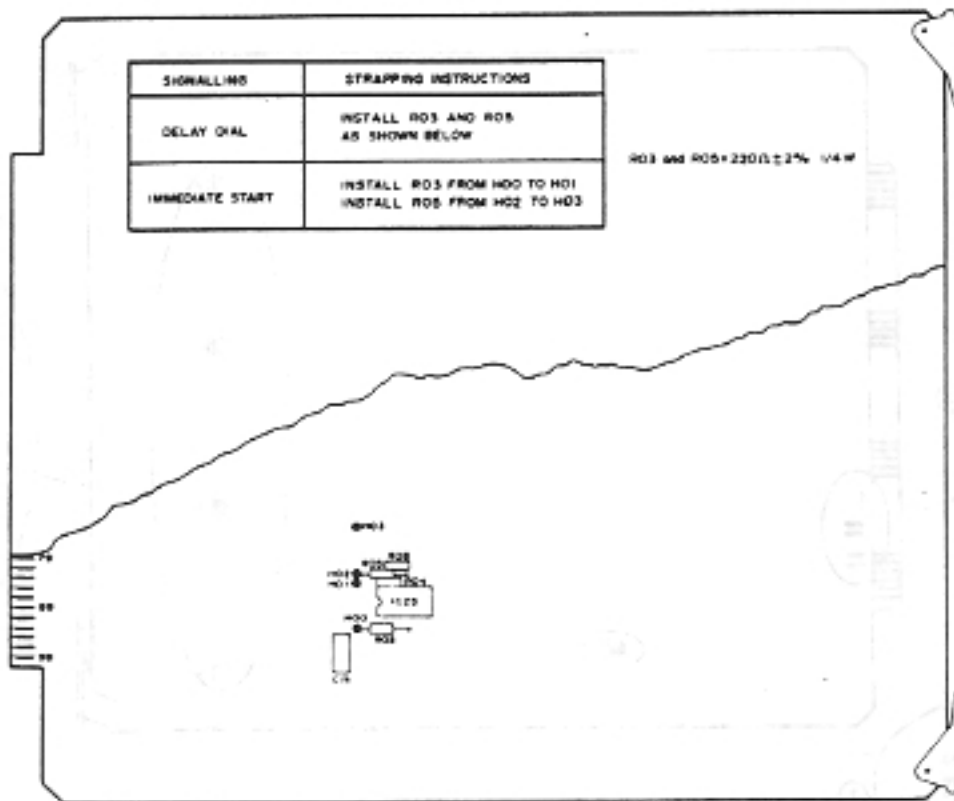
CARD TYPE	HWAY LOCATION	CIRCUIT 0 / CIRCUIT 1			
		E&M	CMV	CMV	E&M

OPTION	CIRCUIT 0 STRAPS	CIRCUIT 1 STRAPS	CIRCUIT 0 / CIRCUIT 1			
			CMV	LOSS LESS	CMV	LOSS LESS
CMV I FORM SET 0-18 - FULL	H015 TO H016 H024 TO H025	H116 TO H118 H124 TO H125				
LOSS LESS INTERFACE 4-WIRE - 2 Wds. 3-WIRE - 0 - 0 5881	H018 TO H019 H023 TO H024	H114 TO H115 H122 TO H124				

* As strapped

CARD TYPE	HWAY LOCATION	CIRCUIT 0 / CIRCUIT 1			
		CMV	LOSS LESS	CMV	LOSS LESS

Figure A-15. FWA/B-Card Strapping Selections

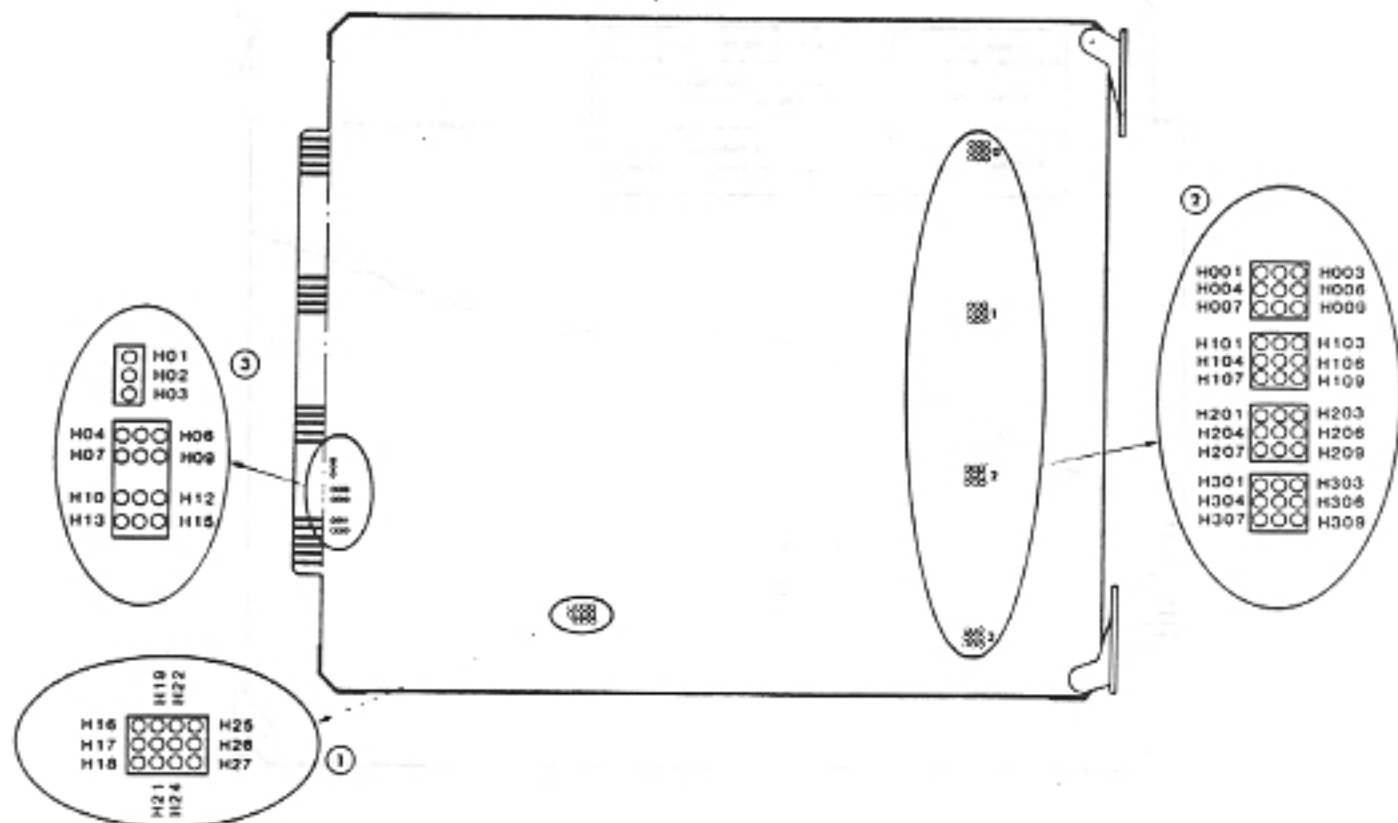


DESCRIPTION		✓	
CARD TYPE	HIWAY LOCATION	DELAY DIAL STRAP*	IMMEDIATE START STRAP

*FACTORY-SHIPED

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Figure A-16. LDA/B, LTA/B Card Strapping Selections



STRAP OPTIONS:

- ① 1. PAD CONTROL: H22 TO H23
- ② 2. TRUNKS: H25 TO H28
- ③ 3. DDMULTI-ROUTE: H26 TO H27
- ④ 4. PPS AND ABOVE, TRUNK START: H16 TO H17

NOTE: Strap option 1 is required for all cards.

- ⑤ 4. ESM I SIGNALING: H02 TO H03
H04 TO H09
H08 TO H09
- ⑥ 5. ESM V SIGNALING: H02 TO H03
H04 TO H09
H07 TO H08

NOTE: "2" refers to the circuit number (0, 1, 2, or 3).
ESM signaling is assigned on a per-circuit basis.

- ⑦ and ⑧ 7. 2-CIRCUIT: H16 TO H17
H02 TO H03
H04 TO H05
H07 TO H08
H10 TO H11
H13 TO H14
- ⑨ 8. 4-CIRCUIT: H20 TO H21
H01 TO H02
H05 TO H06
H08 TO H09
H11 TO H12
H14 TO H15

STRAP CONFIGURATIONS:

TYPE OF CIRCUIT	NO. OF TRUNKS	ESM TYPE	START MODE	OPTION REQUIRED
TR	2	I	ALL MODES	1, 2, 4, 6, 7
TR	2	V	ALL MODES	1, 2, 5, 6, 7
DD	2	I	ALL MODES	1, 3, 4, 6, 7
DD	2	V	ALL MODES	1, 3, 5, 6, 7
TR	4	I	ALL MODES	1, 2, 4, 6, 8
TR	4	V	ALL MODES	1, 2, 5, 6, 8
DD	4	I	ALL MODES	1, 3, 4, 6, 8
DD	4	V	ALL MODES	1, 3, 5, 6, 8

STRAP SELECTIONS:

DESCRIPTION		OPTION					
CARD TYPE	HWAY LOCATION	OPTION #1	OPTION #2	OPTION #3	OPTION #6	OPTION #7	OPTION #8
		✓					
		✓					
		✓					
		✓					
		✓					
		✓					
		✓					
		✓					
		✓					
		✓					

DESCRIPTION		INDICATE OPTION #4 OR 5			
CARD TYPE	HWAY LOCATION	CIRCUIT 0	CIRCUIT 1	CIRCUIT 2	CIRCUIT 3

Figure A-17. TDA/B Card Strapping Selections

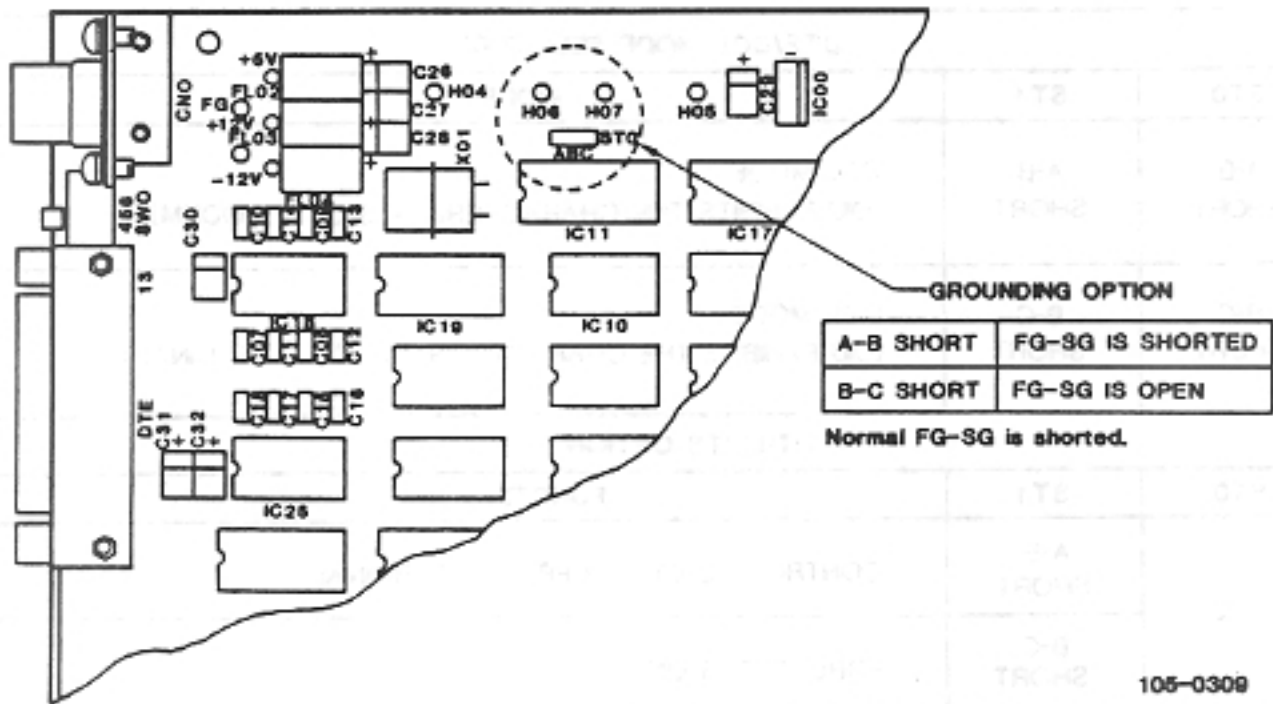


Figure A-18. Strapping Instructions for PC Board (DIUC)
P/N 769031-01

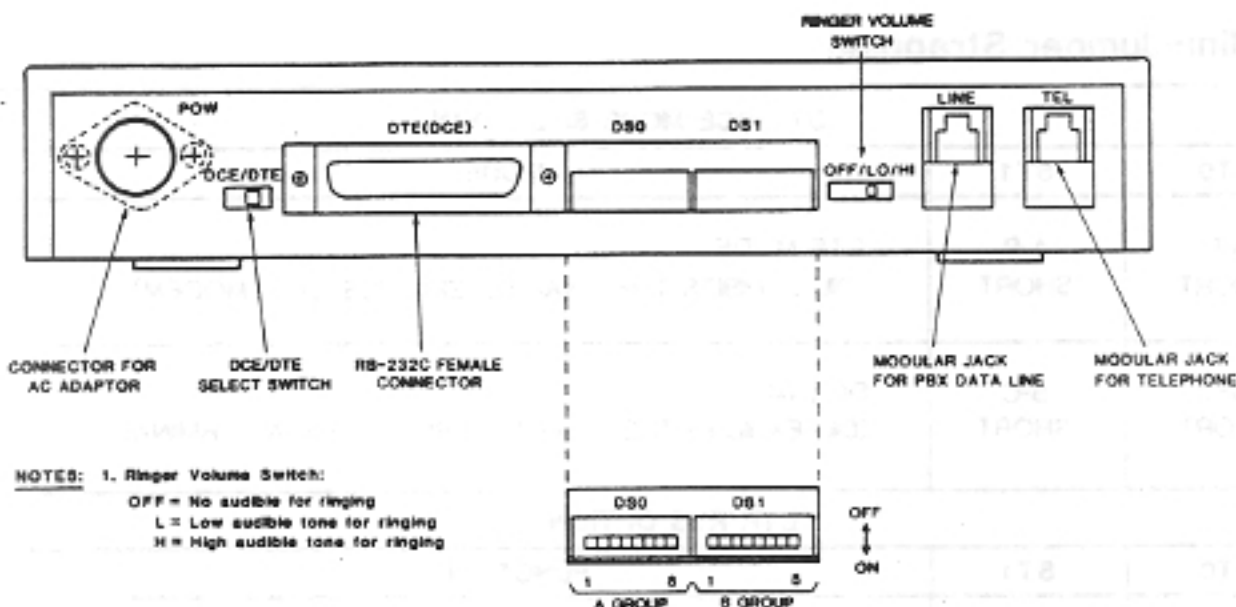
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⑤ Mini-Jumper Strapping

DTE/DCE MODE SELECTION		
ST0	ST1	MODE
A-B SHORT	A-B SHORT	DTE MODE (DIU EXHIBITS THE CHARACTERISTICS OF A MODEM)
B-C SHORT	B-C SHORT	DCE MODE (DIU EXHIBITS THE CHARACTERISTICS OF A TERMINAL)
DTR/RTS OPTION		
ST0	ST1	FUNCTION
ST2	A-B SHORT	CONTROLLED BY DTR FROM A TERMINAL
	B-C SHORT	FORCED DTR ON
ST3	A-B SHORT	CONTROLLED BY RTS FROM A TERMINAL
	B-C SHORT	FORCED RTS ON

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Figure A-20. DIU Rear Panel, P/N F10L-0473-5000 (Cont'd)



① DIP SWITCH FUNCTIONS

BIT	FUNCTION	OFF	ON	DEFAULT	
					OFF/ON
DS0	A1 DTR Option	④		Forced	X
	A2 RTS Option	④		Forced	X
	A3 ASYNC/SYNC	ASYNC	SYNC	SYNC	X
	A4				X
	A5 Mode Select	②		Button Operat.	X
	A6				X
	A7				X
	A8 Test	OFF	ON	OFF	X
DS1	B1 Stop Bits	1	2	1	X
	B2 Parity	DIS	ENA	DIS	X
	B3 Parity	EVN	ODD	EVN	X
	B4 Data Bits	8	7	8	X
	B5			18.2KBPS	X
	B6 Baud Rate Select	③			X
	B7				X
	B8				X

* Local Loopback Test

② BUTTON OPERATION

DS0 BIT				FUNCTION	TRANS*
A2	A3	A4	A5		
OFF	OFF	OFF	OFF	Button Operation	NO
OFF	OFF	OFF	ON	Button Operation with Auto ANS	NO
OFF	OFF	ON	OFF	Button Operation with Auto DBC	NO
OFF	OFF	ON	ON	Button Operation with Auto ANS & DBC	NO
OFF	ON	OFF	OFF	Terminal Operation	NO
OFF	ON	OFF	ON	Modem Interface	NO
ON	OFF	OFF	OFF	Button Operation	YES
ON	OFF	ON	OFF	Button Operation with Auto DBC	YES
ON	ON	ON	ON	Permanent Connection	YES

* DTR/DSR Signal Transparency

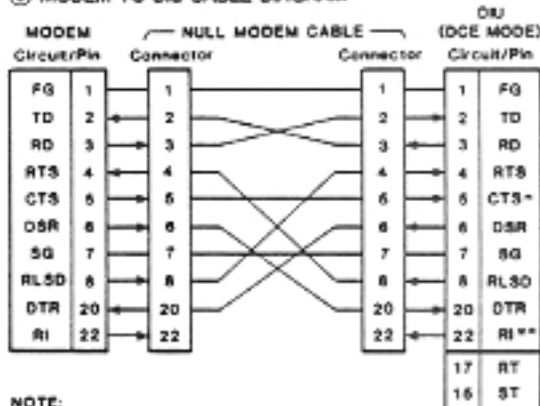
③ BAUD RATE

RATE	B6	B5	B7	B8	RATE	B6	B5	B7	B8
19200	OFF	OFF	OFF	OFF	1200	ON	OFF	OFF	OFF
9600	OFF	OFF	OFF	ON	800	ON	OFF	OFF	ON
7200	OFF	OFF	ON	OFF	300	ON	OFF	ON	OFF
4800	OFF	OFF	ON	ON	150	ON	OFF	ON	ON
3600	OFF	ON	OFF	OFF	134.5	ON	ON	OFF	ON
2400	OFF	ON	OFF	ON	110	ON	ON	OFF	OFF
2000	OFF	ON	ON	OFF	75	ON	ON	ON	OFF
1800	OFF	ON	ON	ON	50	ON	ON	ON	ON

④ DTR/RTS OPTIONS

		FUNCTION	
A1	ON	CONTROLLED BY DTR FROM A TERMINAL	
	OFF	FORCED DTR ON	
A2	ON	CONTROLLED BY RTS FROM A TERMINAL	
	OFF	FORCED RTS ON	

⑤ MODEM TO DIU CABLE DIAGRAM



NOTE:
 * CTS circuit of DIU functions as a receiver.
 ** Ri circuit of DIU is not allowed to be connected with that of a modem.

Figure A-20. DIU Rear Panel, P/N 769031-01

③ Mini-Jumper Strapping

DTE/DCE MODE SELECTION		
ST0	ST1	MODE
A-B SHORT	A-B SHORT	DTE MODE (DIU EXHIBITS THE CHARACTERISTICS OF A MODEM)
B-C SHORT	B-C SHORT	DCE MODE (DIU EXHIBITS THE CHARACTERISTICS OF A TERMINAL)
DTR/RTS OPTION		
ST0	ST1	FUNCTION
ST2	A-B SHORT	CONTROLLED BY DTR FROM A TERMINAL
	B-C SHORT	FORCED DTR ON
ST3	A-B SHORT	CONTROLLED BY RTS FROM A TERMINAL
	B-C SHORT	FORCED RTS ON

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Figure A-20. DIU Rear Panel, P/N F10L-0473-S000 (Cont'd)

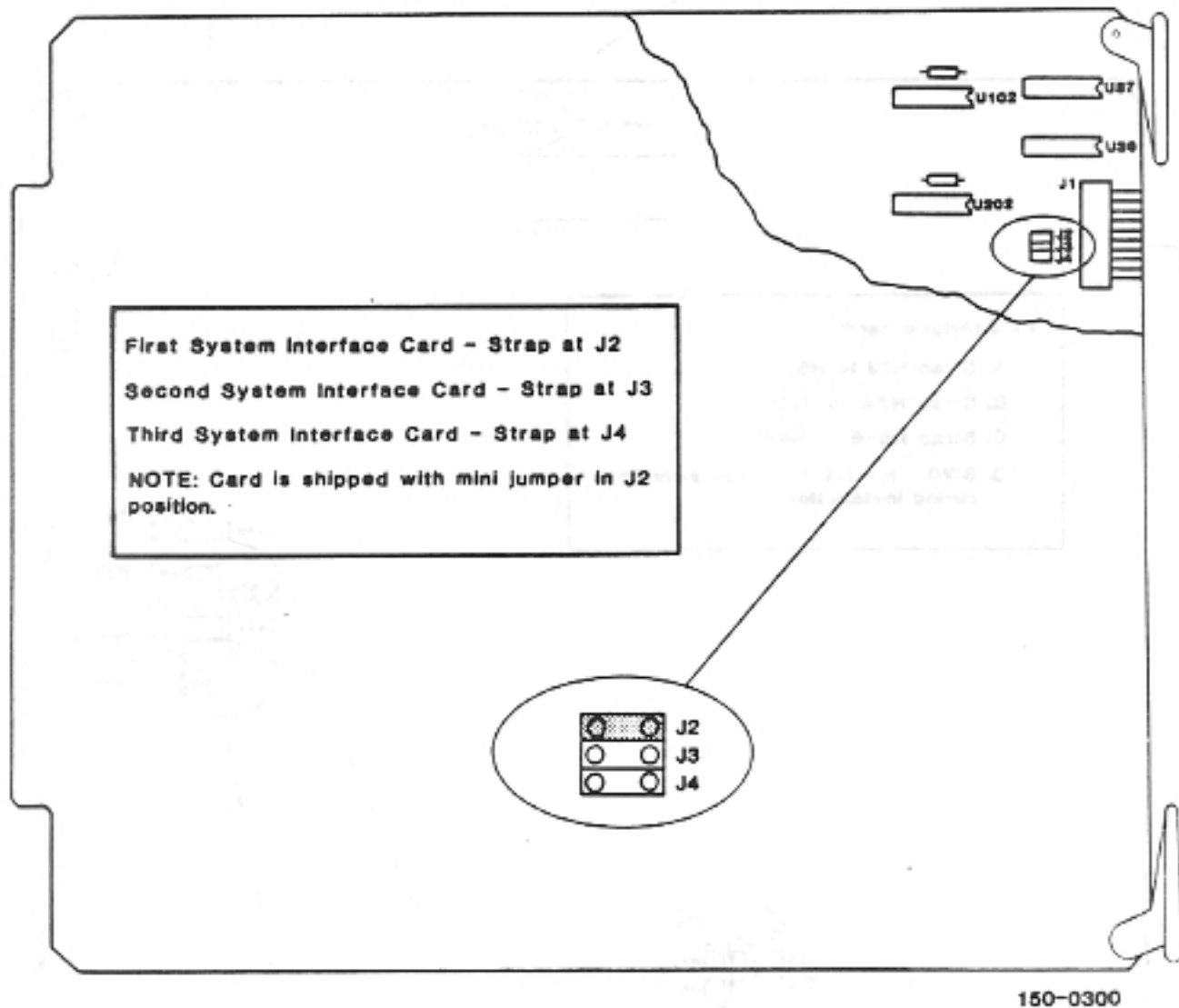
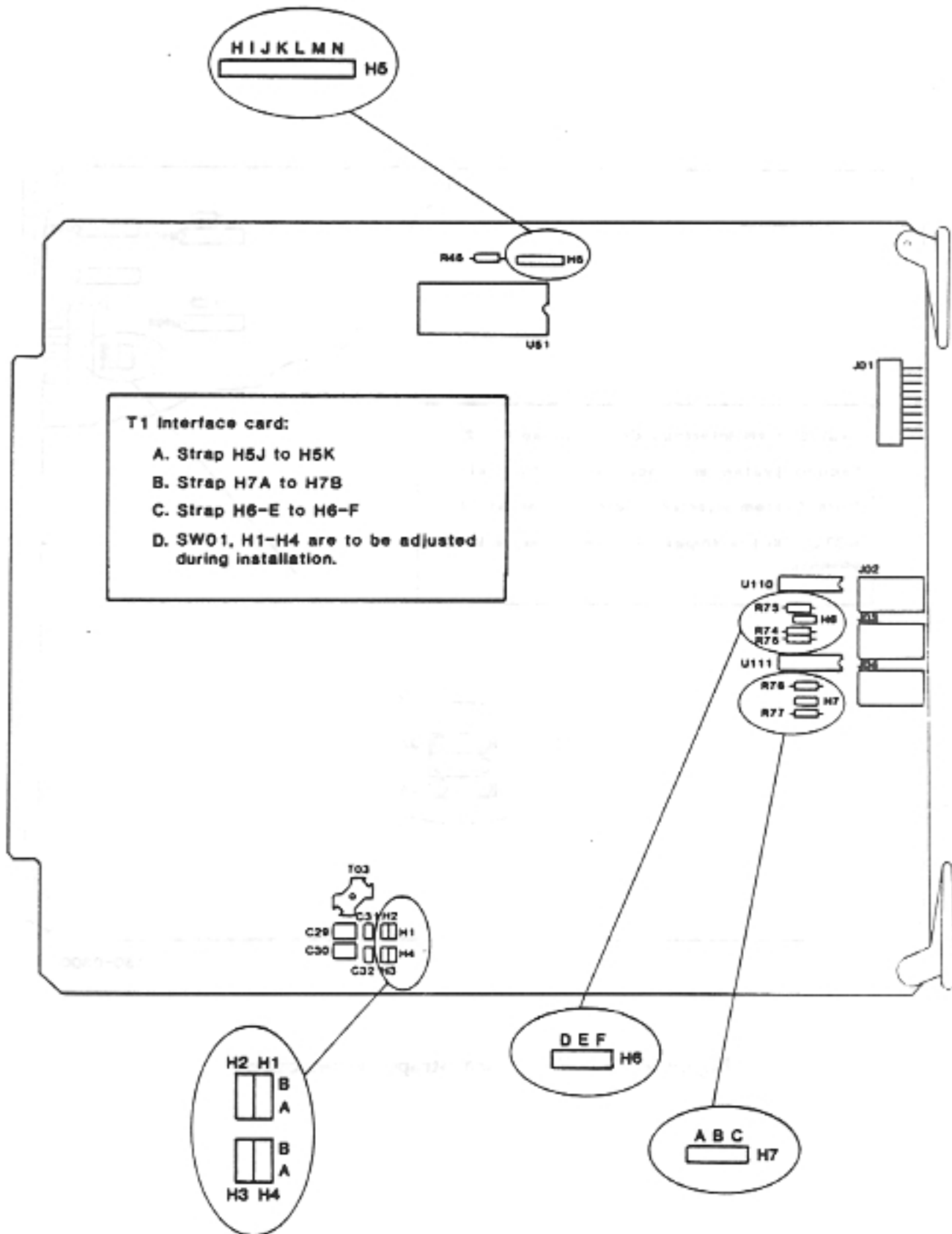


Figure A-21. VDP Card Strapping Selections



105-0346

Figure A-22. TCI Card Strapping Selections



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(714) 630-7721





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