

ND-46248 (E) ISSUE 2 STOCK # 151937

# NEAX®2000 IVS

**WCS System Manual** 

**JULY, 1998** 

NEC America, Inc.

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# **GENERAL**

This addendum supplements the "NEAX2000 IVS WCS System Manual [ND-46248 (E)]."

# **REASON FOR ISSUE**

This addendum is issued in order to add the 1900 Series Release 2 enhancements and to correct errors.

# PAGE REPLACEMENT INSTRUCTION

Replace pages: i, ii, 12 ~ 16, 87, 115, 116 ~118, 122, 123, 136, 137, 144, 149, 154, 157, 158, 161, 175, 178, 180, 199.

Add pages: 15-1, 15-2, 115-1, 115-2, 143-1, 143-2, 198-1, 198-2.

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This page is for your notes.

## CHAPTER 1 INTRODUCTION

#### 1. PURPOSE

This manual provides the information needed for installing and programming the system data to provide the Wireless Communication System (WCS) on the NEAX2000 IVS/1000 IVS (PBX).

# 2. OUTLINE OF THE MANUAL

This manual consists of four chapters. The contents of Chapters 2 through 4 are as outlined as follows.

- CHAPTER 2 (SYSTEM DESCRIPTION)
  - This chapter explains the system configuration and system specifications required to provide the WCS on the PBX.
- CHAPTER 3 (INSTALLATION)
  - This chapter explains the procedure for hardware installation which is required to provide the WCS on the PBX.
- CHAPTER 4 (SYSTEM DATA PROGRAMMING)
   This chapter explains the system data programming procedure required to assign the WCS.

#### 3. REFERENCE MANUALS

When installing the WCS and assigning the relevant system data, refer to the following manuals in addition to this manual.

- Installation Procedure Manual
- Feature Programming Manual
- Command Manual
- Office Data Programming Manual
- SMDR System Manual
- Circuit Card Manual
- MAT Operation Guide
- CCIS System Manual
- Small Platform System Manual
- NEAX1000 IVS System Manual

This page is for your notes.

#### CHAPTER 2 SYSTEM DESCRIPTION

#### 1. GENERAL

This chapter explains the system configuration, additional hardware and system specifications pertaining to the WCS.

## 2. SYSTEM CONFIGURATION

#### 2.1 System Outline

The wireless communication system (WCS) is interfaced with a Personal Station (PS) via a Zone Transceiver (ZT).

When installing the WCS, there are three types of systems:

- Integrated Type
   The NEAX2000 IVS/1000 IVS provides both PBX and WCS functions.
- Adjunct Type [1]
   The WCS is an adjunct system to the existing PBX linked by LC-COT connection.
- 3. Adjunct Type [2]
  The WCS is an adjunct system to the existing PBX linked by CCIS.

Figure 2-1 shows the system diagram of the WCS.

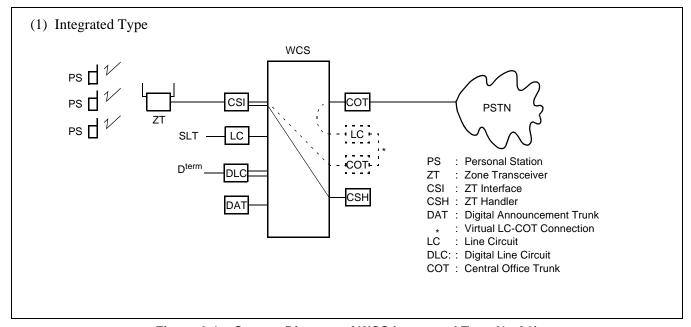


Figure 2-1 System Diagram of WCS Integrated Type (1 of 2)

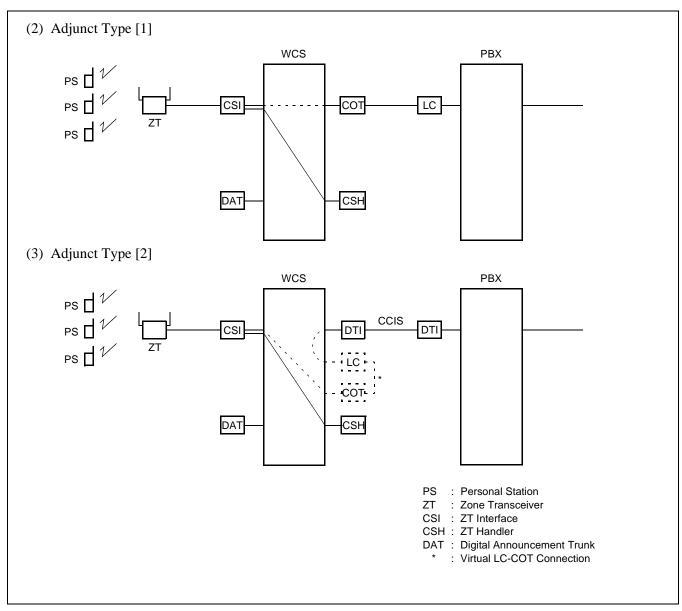


Figure 2-1 System Diagram of WCS (2 of 2)

# 2.2 CSH

Examples of module configurations are shown in Figure 2-2.

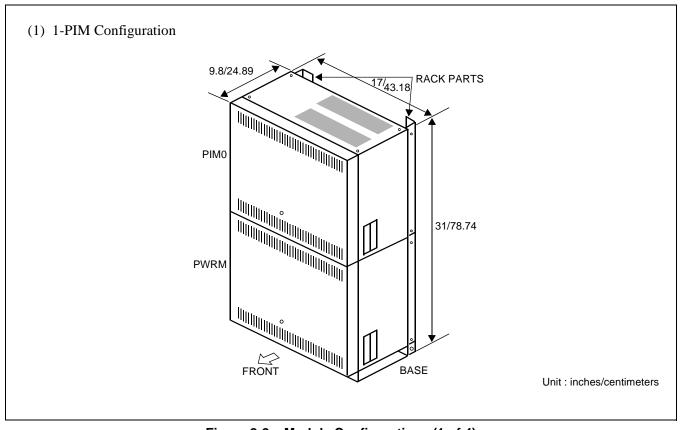


Figure 2-2 Module Configurations (1 of 4)

**Note:** For WCS application, ICSVS PIMN-UB is required for each PIM.

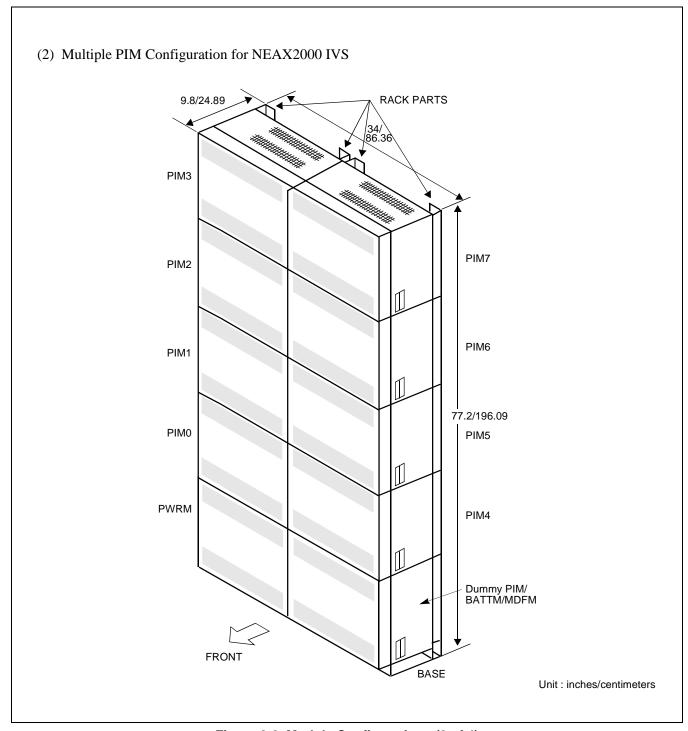
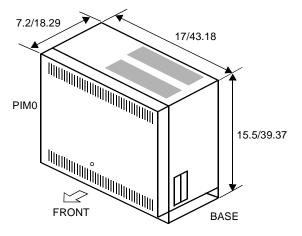
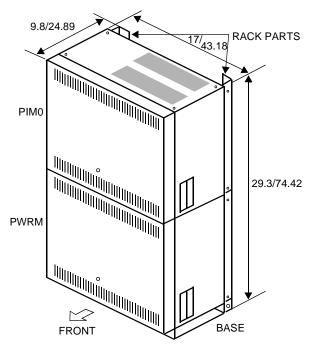


Figure 2-2 Module Configurations (2 of 4)

# (3) Minimum Configuration for Small Platform System



# (4) Maximum Configuration for Small Platform System



Unit: inches/centimeters

Figure 2-2 Module Configurations (3 of 4)

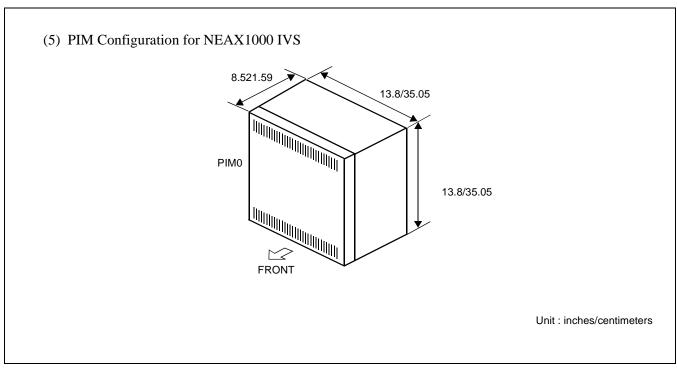


Figure 2-2 Module Configurations (4 of 4)

# 2.3 Outline of Circuit Cards

Table 2-1 shows the functional outline of circuit cards used for WCS.

**Table 2-1 Functional Outline of Circuit Card** 

CARD NAME	FUNCTIONAL NAME	FUNCTIONAL OUTLINE
PN-SC03	CSH	ZT Handler card. This card controls 4 CSI cards and is equipped with 8 circuits of D channel signalling interface.
PN-2CSIA	CSI	ZT Interface card. This card is used to interface with ZT, based on ISDN S-interface. Max. 2 ZTs can be connected with 1 CSI card.
PZ-PW91	PW91	-48 V power supply card for ZT. A PW91 card provides -48V DC power for a maximum of 24 ZTs. Max. 4 cards per PWRM.
PZ-PW86	PW86	Main Power Supply card. This card provides power to all circuit cards mounted in the PIM. 1 card per PIM.
PZ-PW00	PW00	Power Supply card for ZT. This card provides -48 V DC power for a maximum of 2 ZTs and is mounted in the LT/AP slot of PIM. Max 3 cards per system.
PN-2DATA	DAT	2-line Digital Announcement Trunk card. This card is used for Announcement Service on the WCS. Recording time: Max. 60 seconds.
PN-4COTB	СОТ	4-line Central Office Trunk card. This card is used for Adjunct Type 1 (LC-COT connection). A 4 COT card is required per 4 PSs.
PN-24DTA	DTI	24 Channel Digital Trunk Interface card. This card accommodates 24 channel PCM digital line and is used for CCIS connection of Adjunct Type 2.
PN-30DTC	DTI	30 Channel Digital Trunk Interface card. This card accommodates 30 channel digital PCM line and is used for CCIS connection of Adjunct Type 2, or for Multi-Site Roaming connection between the PBXs.
PN-SC00	ССН	Common Channel Handler card. This card controls common signalling channels of No.7 CCIS and is used for CCIS connection of Adjunct Type 2.
PN-SC01	DCH	D-Channel Handler card. This card transmits/receives control signals for Multi-Site Roaming connection between the PBXs.

#### SYSTEM DESCRIPTION

Table 2-1 Functional Outline of Circuit Card

CARD NAME FUNCTIONAL NAME		FUNCTIONAL OUTLINE		
PN-AP00-A	DBM	Data Base Module card for Multi-Site Roaming. This card stores data related to Multi-Site Roaming. 1 card per system is required on each PBX in the network which provides Multi-Site Roaming.		
PWRU-A Note	-48V/50W DC/DC PWR	Power Supply Unit for ZT. (for NEAX1000 IVS only) This unit provides –48V DC power for a maximum of 6 ZTs, and is mounted in the vacant space at the lower left side of a Main Power Supply card. 1 unit per PIM is available.		

**Note:** When the PWRU-A is equipped with the PZ-PW112 for NEAX1000 IVS, follow the following accommodation limitations.

- Max. five 8DLC cards
- Max. four 8DLC cards and two 4DIT cards.

# 3. SYSTEM SPECIFICATIONS

# 3.1 System Specifications

**Table 2-2 System Specifications** 

DESCRIPTION	SPECIFICATIONS			REMARKS			
Wireless Protocol	Based on second generation wireless telephone system standard RCR-STD-28 FCC Sub part D, UTAM complied						
	WIRE DIAMETER	26 AWG		24 AWG		22 AWG	
Distance between PBX and	POWER SUPPLY	WCS	LOCAL	WCS	LOCAL	WCS	LOCAL
ZT	DISTANCE	1500 ft. (457 m)	2000 ft. (609 m)	2000 ft. (609 m)	3000 ft. (914 m)	3000 ft. (914 m)	3300 ft. (1000 m)
	Note: At Nominal Voltage of -48V.						
Interface with a PBX	Analog station line interface			For Adjunct Type [1]			
interface with a LDA	TI or EI interface wi	th CCIS			For Adjunct Type [2]		

#### SYSTEM DESCRIPTION

# 3.2 System Capacity

Table 2-3 NEAX2000 IVS WCS System Capacity

DESCRIPTION	Adj		ct Type	REMARKS
	Integrated Type	Type1 (LC-COT)	Type2 (CCIS)	
Number of PS Note 1	168 (250) <b>Note 2</b>	248	162 (232) <b>Note 2</b>	
Number of simultaneous connections for PS <b>Note 1</b>	152 (159) <b>Note 2</b>	219 (234) <b>Note 2</b>	146 (153) <b>Note 2</b>	
Number of B channels per ZT (Simultaneous connections per ZT)	3	3	3	
Number of ZT	96	96	80	
Number of ZT per CSI	2	2	2	
Number of Calling Areas	32	32	32	
Number of ZT per Calling Area	96	96	80	
Number of CSI	48	48	40	Max. 12 per PIM (No local power supplied)
Number of CSH	12	12	10	

**Note 1:** When Multi-Site Roaming is provided, "Number of PS" and "Number of simultaneous connections for PS" equal the sum of the Number of the Home PS and the Visitor PS.

Table 2-4 Small Platform System WCS System Capacity

DESCRIPTION					
		Integrated Type	Adj	REMARKS	
		Integrated Type	(LC-COT)	(CCIS)	
Number of PS	Type 1 (PW00)	168 (250) <b>Note 2</b>	4COT: 32 8COT: 64	162 (232) <b>Note 2</b>	
Note 1	Type 2 (PW91)	168 (250) <b>Note 2</b>	4COT: 36 8COT: 64	162 (232) <b>Note 2</b>	
Number of simultaneous connections for PS	Type 1 (PW00)	18	4COT: 12 8COT: 16	18	
Note 1	Type 2 (PW91)	48	4COT: 24 8COT: 32	48	
Number of B channel per ZT (Simultaneous connections per section)	er ZT)	3	3	3	
Number of ZT	Type 1 (PW00)	6	6	6	
Number of 21	Type 2 (PW91)	16	16	16	
Number of ZT per CSI		2	2	2	
Calling Areas	Type 1 (PW00)	6	6	6	
Cannig Areas	Type 2 (PW91)	16	16	16	
ZT per Calling Area	Type 1 (PW00)	6	6	6	
21 per Canning Area	Type 2 (PW91)	16	16	16	
Number of CSI	Type 1 (PW00)	3	3	3	
Trunilled of C31	Type 2 (PW91)	8	8	8	
Number of CSH	Type 1 (PW00)	1	1	1	
Trufficer of CS11	Type 2 (PW91)	2	2	2	

**Note 1:** When Multi-Site Roaming is provided, "Number of PS" and "Number of simultaneous connections for PS" equal the sum of the Number of the Home PS and the Visitor PS.

Table 2-5 NEAX1000 IVS WCS System Capacity (1 PIM Configuration)

			CAPACITY			
DESCRI	PTION		Adjunct Type			
		Integrated Type	(LC-COT)	(CCIS)		
	Type 1 (PW00)	168 (250) <b>Note 2</b>	4COT: 16 8COT: 32	162 (232) <b>Note 2</b>		
Number of PS Note 1	Type 2* (Local)	168 (250) <b>Note 2</b>	4COT: 24 8COT: 40	162 (232) <b>Note 2</b>		
	Type 3 (PWRU-A)	168 (250) <b>Note 2</b>	4COT: 24 8COT: 40	162 (232) <b>Note 2</b>		
	Type 1 (PW00)	12	4COT: 6 8COT: 8	6		
Number of simultaneous connections for PS  Note 1	Type 2* (Local)	30	4COT: 16 8COT: 24	24		
Note 1	Type 3 (PWRU-A)	18	4COT: 16 8COT: 18	18		
Number of B channel per ZT (Simultaneous connections p		3	3	3		
	Type 1 (PW00)	4	4	2		
Number of ZT	Type 2* (Local)	10	10	8		
	Type 3 (PWRU-A)	6	6	6		
Number of ZT per CSI		2	2	2		
	Type 1 (PW00)	4	4	2		
Calling Areas	Type 2* (Local)	10	10	8		
	Type 3 (PWRU-A)	6	6	6		
	Type 1 (PW00)	4	4	2		
ZT per Calling Area	Type 2* (Local)	10	10	8		
	Type 3 (PWRU-A)	6	6	6		
	Type 1 (PW00)	2	2	1		
Number of CSI	Type 2* (Local)	5	5	4		
	Type 3 (PWRU-A)	3	3	3		
	Type 1 (PW00)	1	1	1		
Number of CSH	Type 2* (Local)	2	2	1		
* 48V nower is provided to 7	Type 3 (PWRU-A)	1	1	1		

<sup>\*-48</sup>V power is provided to ZT by optional Local AC/DC power

**Note 1:** When Multi-Site Roaming is provided, "Number of PS" and "Number of simultaneous connections for PS" equal the sum of the Number of the Home PS and the Visitor PS.

Table 2-6 NEAX1000 IVS WCS System Capacity (2 PIM Configuration)

	DESCRIPTION		CAPACITY			
DESCRI			Adjunct Type			
			(LC-COT)	(CCIS)		
	Type 1 (PW00)	168 (250) <b>Note 2</b>	4COT: 48 8COT: 80	162 (232) <b>Note 2</b>		
Number of PS <b>Note 1</b>	Type 2* (Local)	168 (250) <b>Note 2</b>	4COT: 56 8COT: 88	162 (232) <b>Note 2</b>		
	Type 3 (PWRU-A)	168 (250) <b>Note 2</b>	4COT: 56 8COT: 88	162 (242) <b>Note 2</b>		
	Type 1 (PW00)	24	4COT: 18 8COT: 24	24		
Number of simultaneous connections for PS  Note 1	Type 2* (Local)	72	4COT: 32 8COT: 40	66		
Note 1	Type 3 (PWRU-A)	36	4COT: 32 8COT: 36	36		
Number of B channel per Z7 (Simultaneous connections p		3	3	3		
	Type 1 (PW00)	8	8	8		
Number of ZT	Type 2* (Local)	24	24	22		
	Type 3 (PWRU-A)	12	12	12		
Number of ZT per CSI		2	2	2		
	Type 1 (PW00)	8	8	8		
Calling Areas	Type 2* (Local)	24	24	22		
	Type 3 (PWRU-A)	12	12	12		
	Type 1 (PW00)	8	8	8		
ZT per Calling Area	Type 2* (Local)	24	24	22		
	Type 3 (PWRU-A)	12	12	12		
	Type 1 (PW00)	4	4	4		
Number of CSI	Type 2* (Local)	12	12	11		
	Type 3 (PWRU-A)	6	6	6		
	Type 1 (PW00)	1	1	1		
Number of CSH	Type 2* (Local)	3	3	3		
	Type 3 (PWRU-A)	2	2	2		

<sup>\* –48</sup>V power is provided to ZT by optional Local AC/DC power.

**Note 1:** When Multi-Site Roaming is provided, "Number of PS" and "Number of simultaneous connections for PS" equal the sum of the Number of the Home PS and the Visitor PS.

#### SYSTEM DESCRIPTION

## 3.3 Expanding PS Capacity

The maximum number of Wireless PS stations has been expanded from 168 to 250 when an Integrated type system is being used. Previously, each PS line reduced the capacity of CM10 by three ports [One port for CM1C and two ports for CM10 (one Virtual Trunk and one Virtual Station)]. With a CPXX-C card and 1900 Series Release 2 software, each PS line reduces the capacity of CM10 by only two ports. A new memory area has been added for CM1C and this command no longer impacts the memory capacity of CM10.

To perform backups of the new memory area (save and load), an updated version of MATWorX-32 (Version 2.6 or higher) with the "MP4" file extension type must be used. (MP4 = Areas 1-6).

To expand the system capacity for the PS, the CP00-C/CP03-C card and 1900 Series Release 2 or later MP program are required. The table below shows the MP program upgrading procedure.

UPGRADE FROM	UPGRADE TO	UPGRADING PROCEDURE
MP Program:	MP Program:	(1) Save office data (MP 3 area) of CP00-B/CP03 by
1900 Series or earlier	1900 Series Release 2 or	MAT.
	later	(2) Exchange CP00-B/CP03 to the CP00-C/CP03-C.
MP Card: CP00-B		(3) Load 1900 Series Release 2 MP program to CP00-
CP03	MP Card: CP00-C	C/CP03-C.
	CP03-C	(4) Clear all office data by CM00 1st: 1, 2nd: CCC.
		(5) Load saved office data of CP00-B/CP03.
MP Program:	MP Program:	(1) Load 1900 Series Release 2 MP program.
1900 Series or earlier	1900 Series Release 2 or	(2) Clear office data for new memory area by CM00
	later	1st: 3, 2nd: CCC.
MP Card: CP00-C		
CP03-C	MP Card: CP00-C	
	CP03-C	

1D21--Default is "None." No PS-ID. Must be reassigned.

1D15--Default is "15." Mode 1.

1D01--Default is "None." No Subline.

1202--Default is "1515." Service Restriction Class A/B.

1216--Default is "None." Must be reassigned.

1D20--Download the PS's. Must be executed.

Note: The Down does not need to be successful, but Command 1D20 must be executed.

The maximum number of PSs that can be added to the system depends on the number of existing PSs in the system before upgrading. The following number of ports are required to provide a PS.

Before system upgrade: 3 ports per PS (for the PS, the virtual LC and the virtual COT)

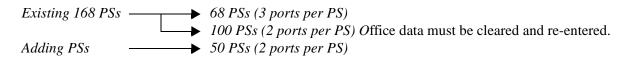
After system upgrade: 2 ports per PS (for the virtual LC and the virtual COT)

The table below shows the example of the system capacity on NEAX2000 IVS.

INSTALLING CONDITION	EXISTING PS	ADDING PS	cs	D <sup>term</sup>	REQUIRED PORTS	REMARKS
When upgrading a system	168 100 50	0 100 175	1 1 1	0 4 4	511 511 511	Note
When installing a new system	0	168 250	1 1	168 4	511 511	

**Note:** When the 168 PSs have been provided in the system, and more PSs are required, the all existing PSs' office data must be cleared by the CM1C individually and re-entered. By this means, up to 250 PSs can be provided.

For example, if 50 PSs will be added, 100 existing PSs' office data must be cleared and re-entered.



## 3.4 Time Slot Assignment Conditions

## 3.4.1 Time Slots for CSH Card

As shown in Figure 2-3, the CSH card uses the time slot on the same highway as the other application cards such as [PN-AP00 (AP00)/PN-ME00 (EXTMEM)]. Therefore, the total number of time slots for all CSH card must be less than 128 time slots including all other application cards.

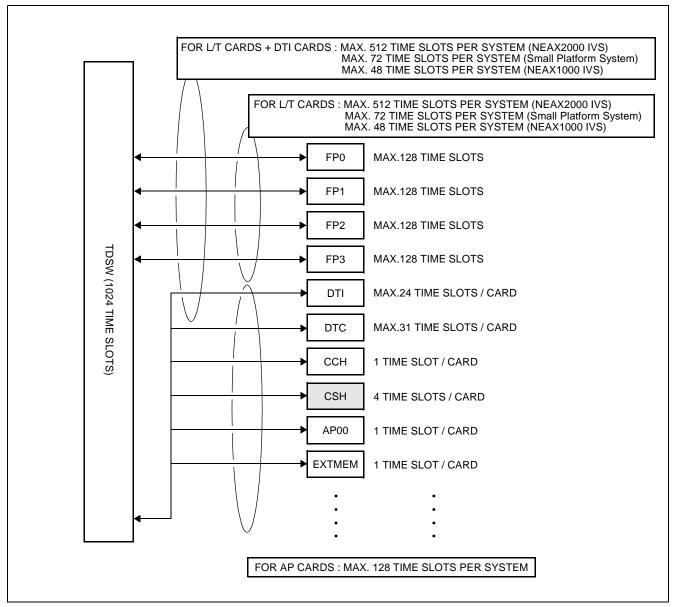


Figure 2-3 Accommodation of CSH into TDSW

#### 3.4.2 Time Slots for CSI Card

The CSI (PN-2CSIA) card uses seven (7) time slots per card.

### 4. OUTLINE OF MULTI-SITE ROAMING

### 4.1 Functional Outline

The PBX supports the JT-Q931a protocol and JT-11582 for signaling at Q-reference point between PBXs on the private network. By supporting this protocol, the PSs can be used in any Calling Area on the private network.

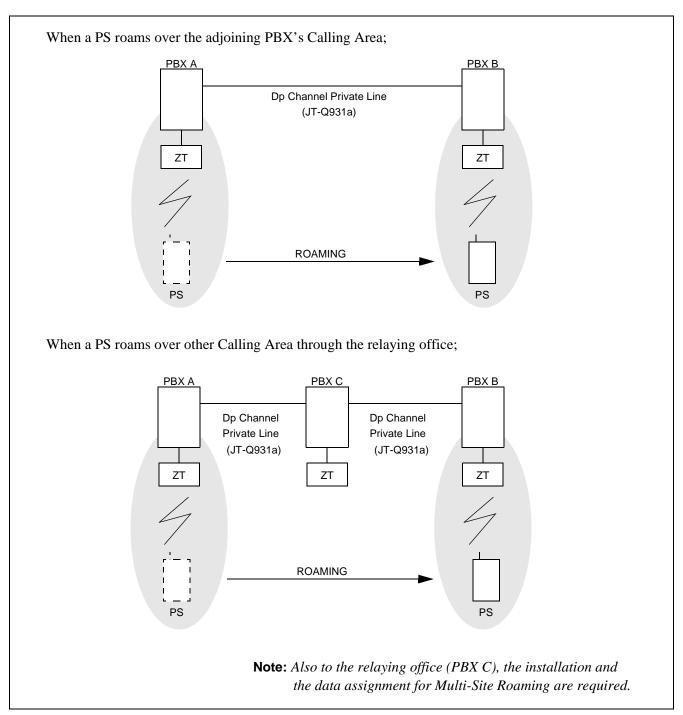


Figure 2-4 Functional Outline of Multi-Site Roaming

# 4.2 Multi-Site Roaming System Configuration

System Configuration
 The following figure shows the system configuration for Multi-Site Roaming.

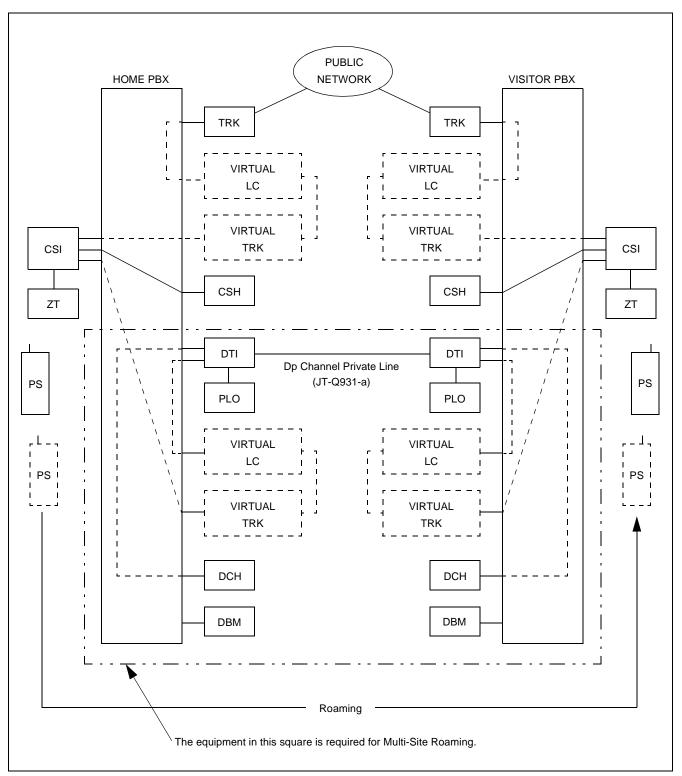


Figure 2-5 System Configuration of Multi-Site Roaming

#### 2. Words definition for Multi-Site Roaming

Virtual LC: Virtual LC exists only on the system data, provided via non-hardware supported

LEN's. The Virtual LC must be assigned by the system data programming for operating Home PSs and Visitor PSs used for Multi-Site Roaming, together with the

Virtual TRK.

Virtual TRK: Virtual TRK (trunk) exists only on the system data, provided via non-hardware

supported LENs. The Virtual TRK must be assigned by the system data programming for operating Home PSs and Visitor PSs used for Multi-Site Roaming, togeth-

er with the Virtual LC.

Individual PS Number: Individual PS Number is assigned to a PS to identify the PS on the Roaming Net-

work. It must be an unique number in the network.

Network ID Method: Network ID Method is one Method to operate Multi-Site Roaming. A Roaming PS

must have two SYS-ID on the Network ID Method. One is Main SYS-ID for Home PBX, and another is Network ID for Roaming Network. The Network ID is used to define whether the PS can operate under the control of PBXs on the Roaming Network. The network ID must be the same for all PBXs within the same network.

Visitor PBX: When a PS leaves control of a PBX to which it belongs originally, and is operating

in a zone of another PBX, the PBX is called "Visitor PBX".

Visitor PS: When a PS leaves control of a PBX to which it belongs originally, and is operating

in a zone of another PBX, the PS is called "Visitor PS".

Home PBX is a PBX to which a PS ordinarily belongs.

Home PBX ID: Home PBX ID is a unique number to identify the PBX on the Roaming Network.

Home PS: When a PS operates under control of a PBX to which the PS originally belongs, the

PS is called "Home PS".

Roaming Number: Roaming Number is assigned to a Visitor PS temporarily, when the PS is roaming

to a Visitor PBX. The Actual Roaming Number is Virtual LC Station number as-

signed as a Pilot Station of Station Hunting Group on the Visitor PBX.

HLR: Home Location Register. A database to store the location registration data of the

Home PS.

VLR: Visitor Location Register. A database to store the location registration data of the

Visitor PS temporarily, when the Visitor PS is in the zone of another PBX.

#### 4.3 Summary of Multi-Site Roaming System Operation

- 1. Location Registration of PS
  - a. In the zone of the Visitor PBX, the Visitor PS requests the Visitor PBX for location registration of its own.
  - b. The Visitor PBX analyses the number sent from the Visitor PS, and detects the Home PBX of Visitor PS.
  - c. The Visitor PBX inquires of the Home PBX about the profiles; various data which is assigned to the PS for the operation as a Visitor PS.
  - d. The Home PBX analyses the number included with the inquiry, and detects whether the Visitor PS is one of the Home PS of its own.
    - If the Visitor PS is detected as a PS which belongs to another PBX, the PBX forwards the inquiry to the corresponding route.
  - e. If the Visitor PS is detected as a Home PS, the Home PBX sends the Visitor PS profiles to the Visitor PBX.
  - f. The Visitor PBX confirms the profiles sent from the Home PBX, and determines the Roaming Number for the Visitor PS.
    - The actual Roaming Number is Virtual LC Station number assigned as a Pilot Station of Station Hunting Group on the Visitor PBX.
  - g. The Visitor PBX registers the profile data of the Visitor PS to the VLR.
  - h. Then notifies the completion of registration to the Home PBX. The notification contains the Roaming Number determined.
  - i. The Home PBX receives the notification, and stores the Roaming Number to the HLR.

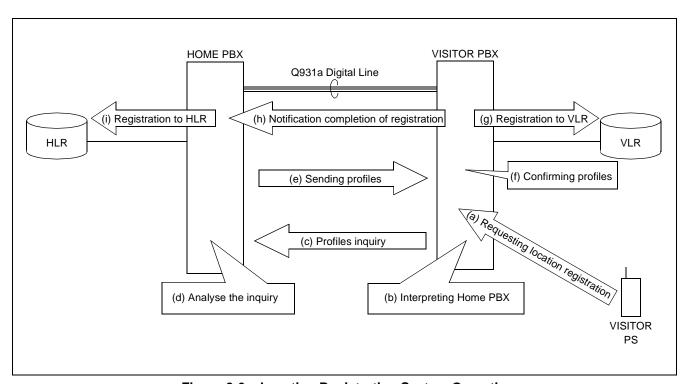


Figure 2-6 Location Registration System Operation

#### 2. Call Termination to Visitor PS

- a. The Home PBX receives the call to a Home PS from another PBX.
- b. The Home PBX refers the HLR information of the PS.
- c. From the Roaming Number contained in the HLR information, the Home PBX detects whether the Home PS is roaming.
- d. The Home PBX inquires of the Visitor PBX about the call termination to the Visitor PS. The inquiry contains the roaming data of the Visitor PS, such as Roaming Number and Individual PS Number.
- e. The Visitor PBX analyses the Roaming Number, and refers to the VLR information of the Visitor PS in accordance with the Individual PS Number.
- f. The Visitor PBX confirms the VLR information.
- g. The Visitor PBX terminates the call to the Visitor PS.

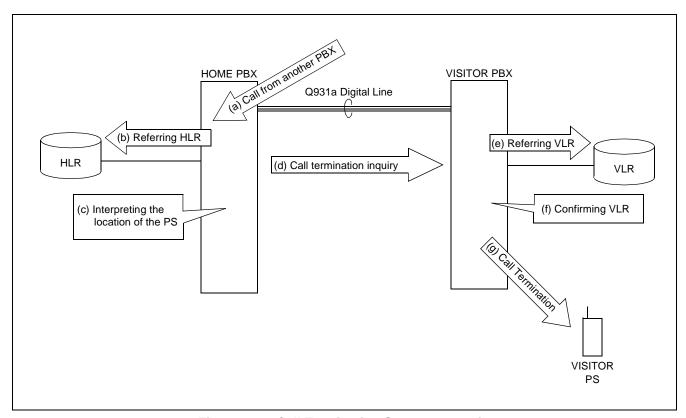


Figure 2-7 Call Termination System Operation

#### SYSTEM DESCRIPTION

#### 4.4 Multi-Site Roaming System Condition

#### 1. Trunk

- Multi-Site Roaming can be executed only on trunk connection between PBXs based on JT-Q931a protocol
- To each trunk route of JT-Q931a trunks, it can be specified whether Multi-Site Roaming is provided or not.
- The JT-Q931a trunks can be used by Single Line Telephone stations and Dterm stations for originating or receiving calls as same as common trunks.

#### 2. Data Base Module

- An AP00 card for Data Base Module (DBM) is required per PBX.
  - The AP00 card can not be used as Billing Application Processor (for SMDR, MCI, PMS or Hotel/Motel features).
- System data stored in the memory of the AP00 card can be saved, loaded and verified from a MAT. (Memory Area No.:A, Memory Address: 00900-10870, File Extension: DMA)
- A Roaming network can consist of maximum 512 PBXs.
- Visitor Location Register (VLR) information for maximum 512 Visitor PSs can be recorded to a system.

VLR information is the various information of Visitor PS and is made in the memory of AP00 on the Visitor PBX when the PS is roaming.

When the VLR information exceeds for more than 512 PSs, AP00 overwrites the oldest VLR information.

### 3. Home PS/Visitor PS

- To use the PSs for Multi-Site Roaming, the following must be assigned to the PSs.
  - SYS-ID; SYS-ID of Home PBX.
  - PS-ID; An unique number for identifying the PS.
  - Individual PS Number; The same number with the Home PBX ID.
  - Extension Number; The same number with the Individual PS Number.
  - Network ID; It must be assigned when the Roaming Network adopts Network ID Methods.
  - Home PBX ID; An unique number for identifying the PBX on the Roaming Network.

# CHAPTER 3 INSTALLATION

### 1. GENERAL

This chapter details the installation procedure to provide WCS functions to the PBX.

# 2. PRECAUTION IN HANDLING

The installer must wear the grounded wrist strap to protect the circuit card from static electricity, when handling cards, and the installer must engage in the work on a grounded conductive work surface.

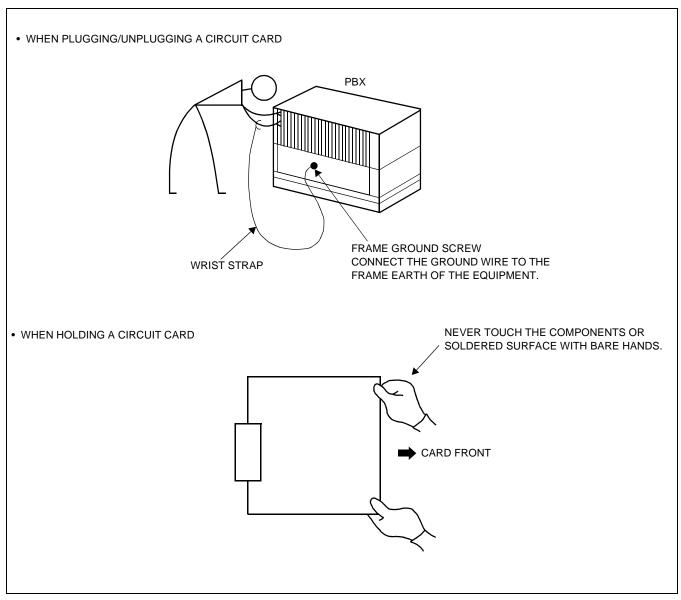


Figure 3-1 Static Electricity Precautions (1 of 2)

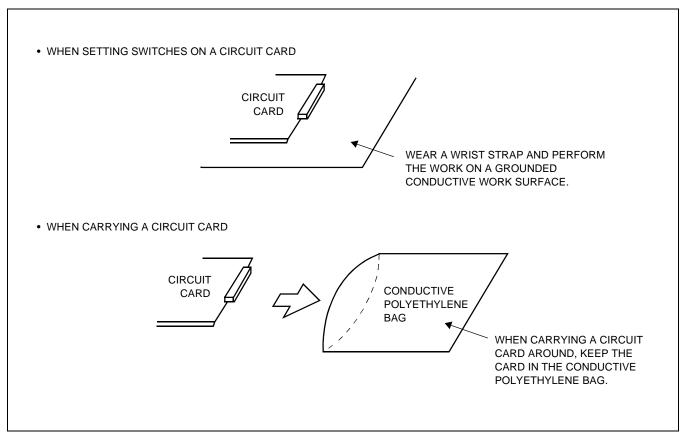


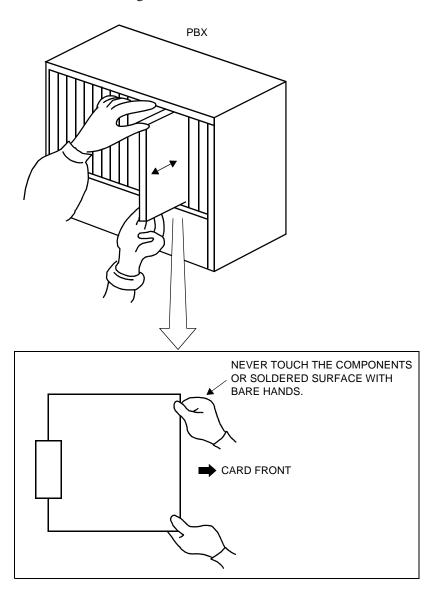
Figure 3-1 Static Electricity Precautions (2 of 2)

The mark shown below is attached to the sheet for the work in which circuit cards are handled. When engaging in such work, the installer must be careful not to cause damage by static electricity.



# CAUTION

You must hold the card name label area, when plugging or unplugging the circuit card. If you touch another area, you may be exposed to hazardous voltages.



# 3. EQUIPMENT AND CABLES

Table 3-1 below shows the equipment required when providing the WCS interface to the system.

Table 3-1 Required Equipment for WCS

	EQUIPMENT	DESCRIPTION	QUANTITY	REMARKS			
(1	(1) For Integrated Type/Adjunct Type						
•	ICS VS PIMN-UB - SN1273 PIMN-A - PZ-PW86 - PWR CNT (CA-A) - AC CORD-B-U - RACK PARTS	Port Interface Module for WCS	N	N: 1-8			
•	POWER MODULE-UB - SN1302 PWRMC-A - PWR CNT CA-B - RACK PARTS - BATT BRACKET ASSEM - BATT CA-PSI - AC CORD (A)	Power Module for PW91 card	1				
•	ICS VS BASE/TOP-UB - SN1317 BASEG-A - AC CORD (A)	Base unit and top cover	N	N: 1-2			
•	PZ-PW91 W/CA - PZ-PW91 - PWR-1.7 CA-WA - AC CORD-B-U1 - PWR CA-A	- 48V Power supply card for ZT	N	N: 1-4			
•	PN-PW00	- 48V Power supply card for ZT (for Small Platform System/1000IVS)	N	N: 1-3			
•	PWRU-A	- 48V Power supply card for ZT (for 1000IVS)	N	N: 1-2			
•	PN-2CSIA	ZT Interface card $\rightarrow$ 2 ZT/card	N	N: 1-48			
•	PN-SC03 8CSH (AP)	ZT Handler card $\rightarrow$ 4 2CSIA/card	N	N: 1-12			
•	PN-2DATA (DAT)	Digital Announcement Trunk	N	N: As required for Announcement Service			
W	When providing Roaming Service						
•	PN-24DTA-A/ 30DTC/30DTC-A (DTI)	24/30 channels DTI card	N	N: 1-5			
•	PN-SC01 (DCH)	D-channel Handler card	N	N: 1-5			
•	PN-AP00-A (DBM)	Roaming Data Base Module card	1				
•	ZT	Zone Transceiver	N	N: 1-96			
•	PS	Personal Station	N	N: 1-168			

Table 3-1 Required Equipment for WCS (Continued)

EQUIPMENT	DESCRIPTION	QUANTITY	REMARKS			
(2) For Adjunct Type [1] The equipment above (1) except the PS are required with the following:						
• PN-4COTB (COT)	Central Office Trunk	N	N: Number of PS/4			
• PS	Personal Station	N	N: 1-248			
(3) For Adjunct Type [2] The equipment above (1) except the PS are required with the following:						
• PN-24DTA-A/ 30DTC/30DTC- (DTI)	24 channels DTI card	N	N: 1-5			
PN-SC00 (CCH)	Common Channel Handler card	N	N: 1-4			
• PS	Personal Station	N	N: 1-162			

# 4. INSTALLATION PROCEDURE

Perform the installation of the equipment according to the procedure shown in Figure 3-2.

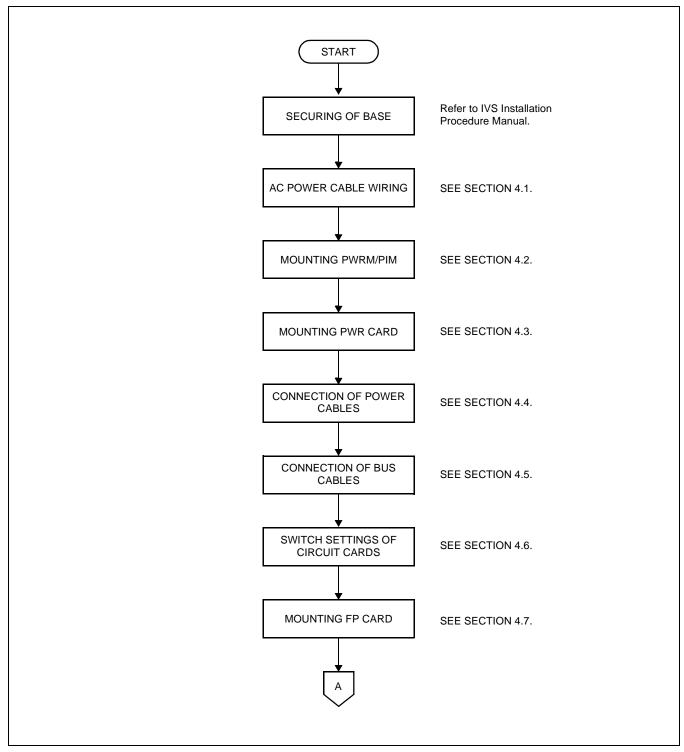


Figure 3-2 Installation Procedure (1 of 2)

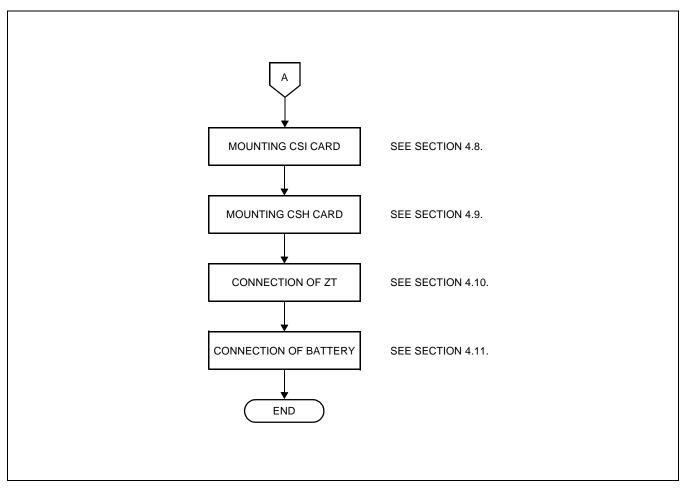


Figure 3-2 Installation Procedure (2 of 2)

### 4.1 AC Power Cable Wiring

- STEP 1: Secure the BASE to the floor. For details, refer to the IVS Installation Procedure Manual.
- STEP 2: Secure the AC CORD-B-U/AC CORD-B-U1 cables to the FG, NEUTRAL and LINE terminals on the BASE as shown in Figure 3-3 and 3-4.

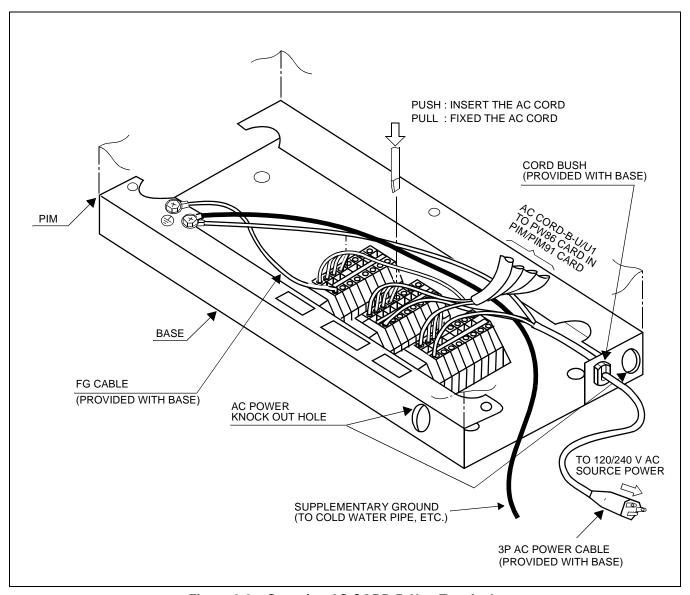


Figure 3-3 Screwing AC CORD-B-U to Terminals

**Note:** AC CORD - B - U ... to PW86 card in each PIM AC CORD - B - U1 ... to PW91 card in Power Module

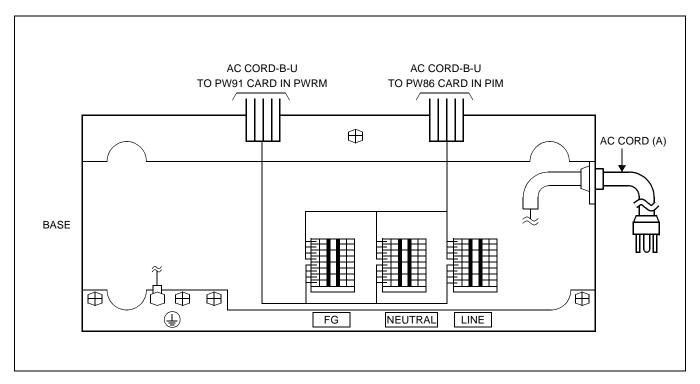


Figure 3-4 Wiring AC CORD-B to Terminals

STEP 3: The AC CORD (A) and the FG Cable are pre-installed with the BASE.

**WARNING:** For configurations with 3 or more PIMs plus one Power Module, secure the additional AC CORD (A) to the BASE as shown in Figure 3-5.

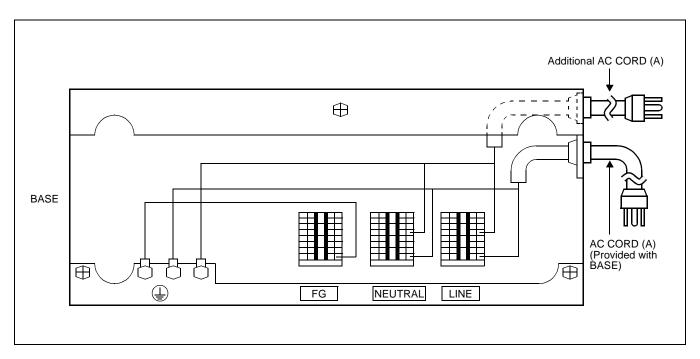


Figure 3-5 Wiring AC CORD (A) to Terminals

# 4.2 Mounting PWRM/PIM

STEP 4: Mount the PWRM on the BASE, and connect them together using three (3) bolts (provided) as shown in Figure 3-6.

**Note:** The PWRM must be mounted over the 4 RACK PART screws previously installed.

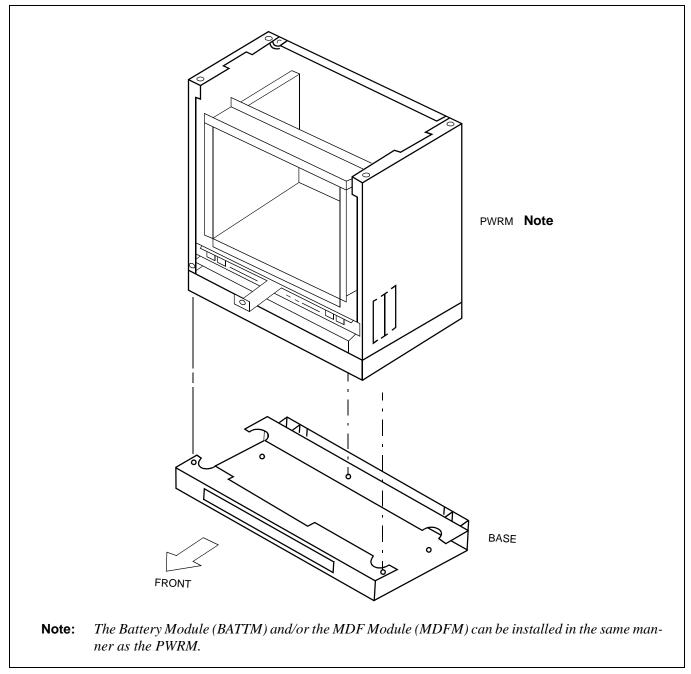


Figure 3-6 Mounting of PWRM

STEP 5: Mount and connect the PIM on the PWRM with three bolts provided.

When the system is a multiple-PIM configuration, connect PIMs to each other in the same manner.

# 4.3 Mounting PWR Card

# 4.3.1 Mounting PW91 Card

Mount the PW91 card into the Power Module (PWRM) as shown in Figure 3-7.

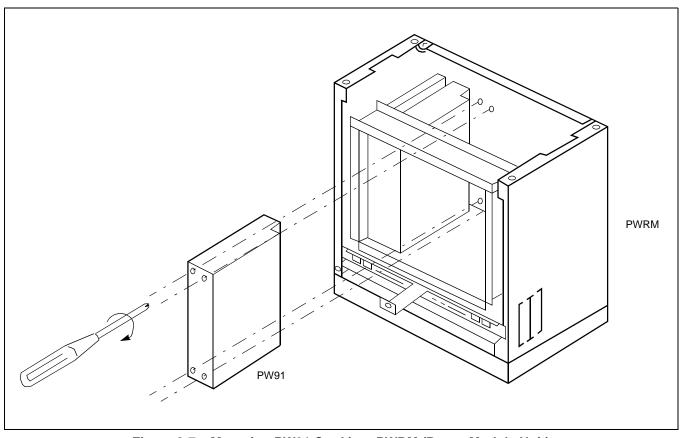


Figure 3-7 Mounting PW91 Card into PWRM (Power Module Unit)

# 4.3.2 Mounting PW00 Card

Small Platform System
 Mount the PW00 card into the LT00-LT10 slot or AP5 slot.
 A maximum of three PW00 cards can be mounted in one PIM.

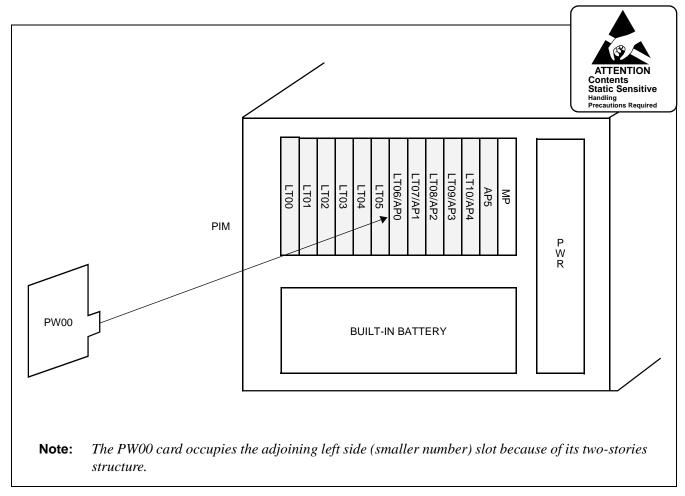


Figure 3-8 Mounting PW00 Card into PIM (1 of 2)

# 2. NEAX1000 IVS

Mount the PW00 card into the LT00-LT08 slot.

A maximum of three PW00 cards can be mounted in one PIM.

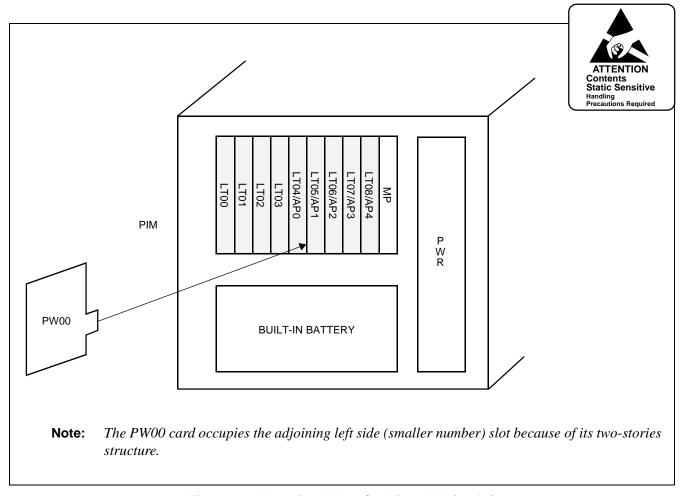


Figure 3-8 Mounting PW00 Card into PIM (2 of 2)

# 4.3.3 Mounting -48V PWR Unit to NEAX1000 IVS

STEP 1: Screw the -48V PWR unit on PWR MOUNT.

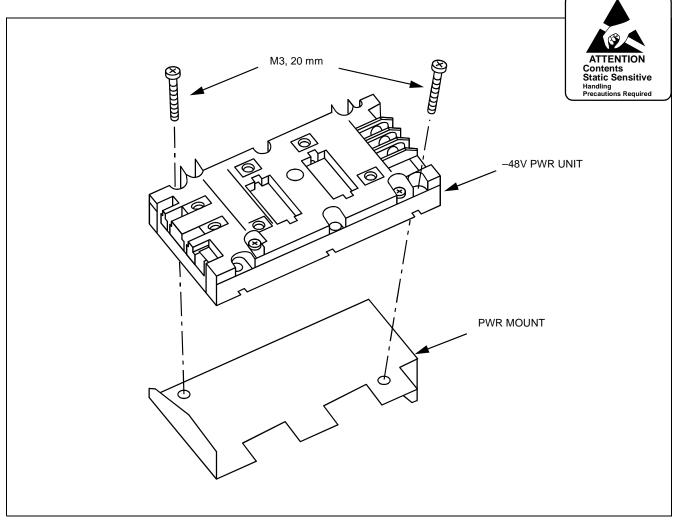


Figure 3-9 Fixing –48V PWR Unit to PWR MOUNT

STEP 2: Connect the PWR CA-WK to the -48V PWR unit.

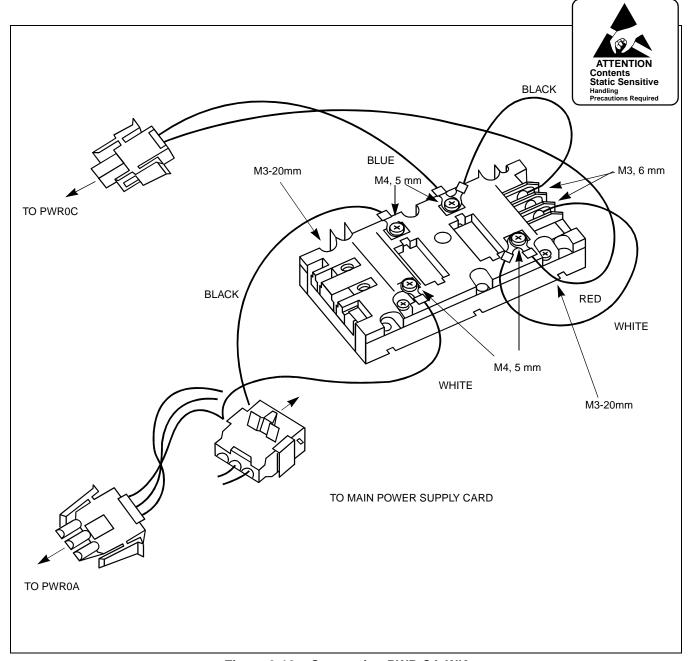


Figure 3-10 Connecting PWR CA-WK

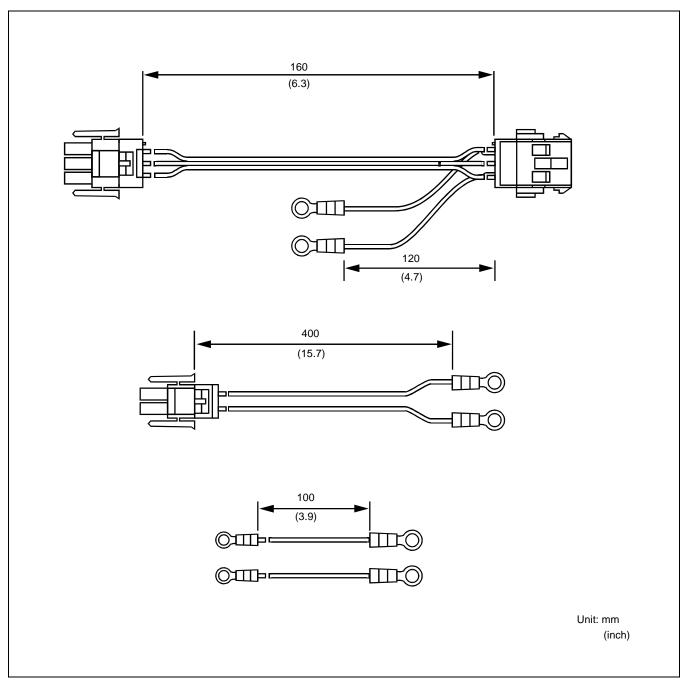


Figure 3-11 PWR CA-WK

STEP 3: Secure the PWR MOUNT to the PIM by two screws.

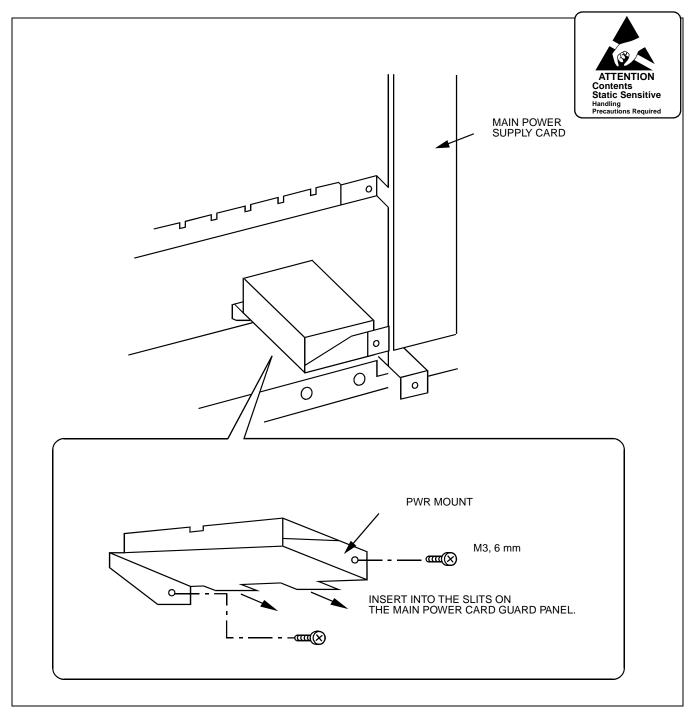


Figure 3-12 Securing PWR MOUNT to PIM

### 4.4 Connection of Power Cables

### 4.4.1 AC CORD

STEP 1: Connect the AC CORD-B-U to the PW86 and AC CORD-B-U1 to the PW91 card as shown in Figure 3-13.

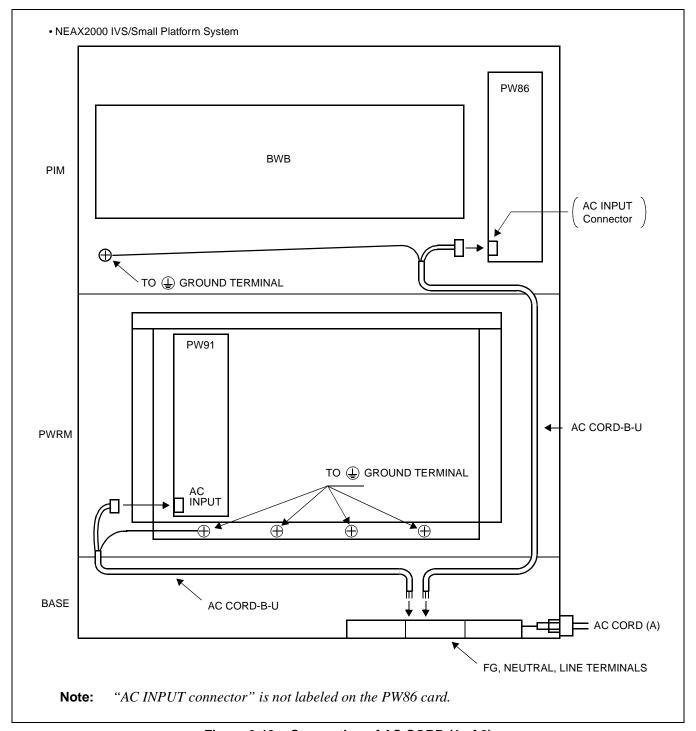


Figure 3-13 Connection of AC CORD (1 of 2)

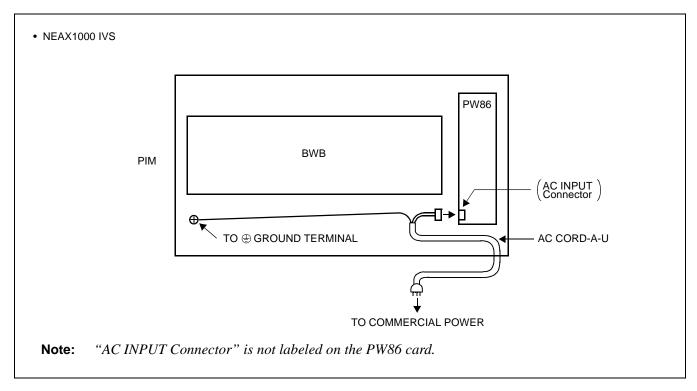


Figure 3-13 Connection of AC CORD (2 of 2)

# 4.4.2 1-PIM Configuration

Connect the PWR-1.7 CA-WA cable and the PWR CNT CA-B cable as shown in Figure 3-14.

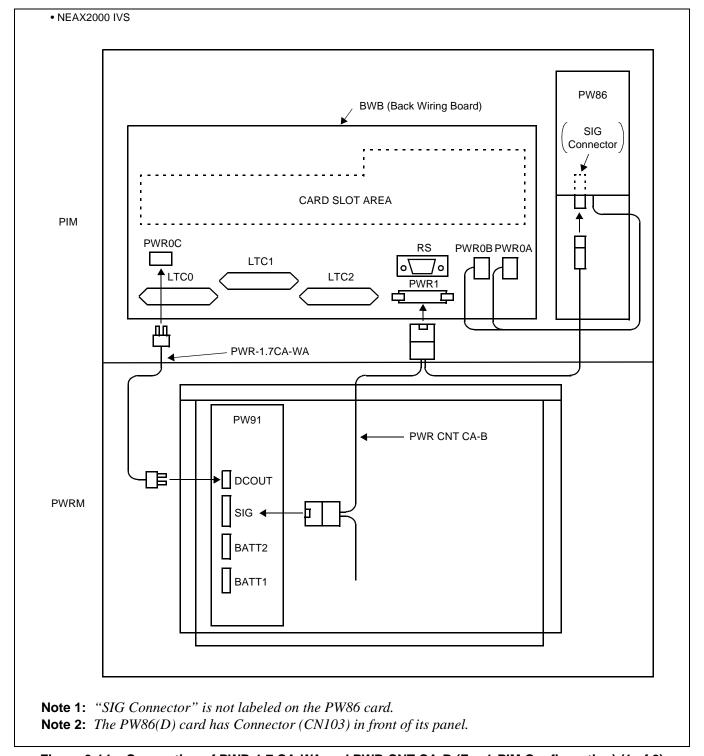


Figure 3-14 Connection of PWR-1.7 CA-WA and PWR CNT CA-B (For 1-PIM Configuration) (1 of 2)

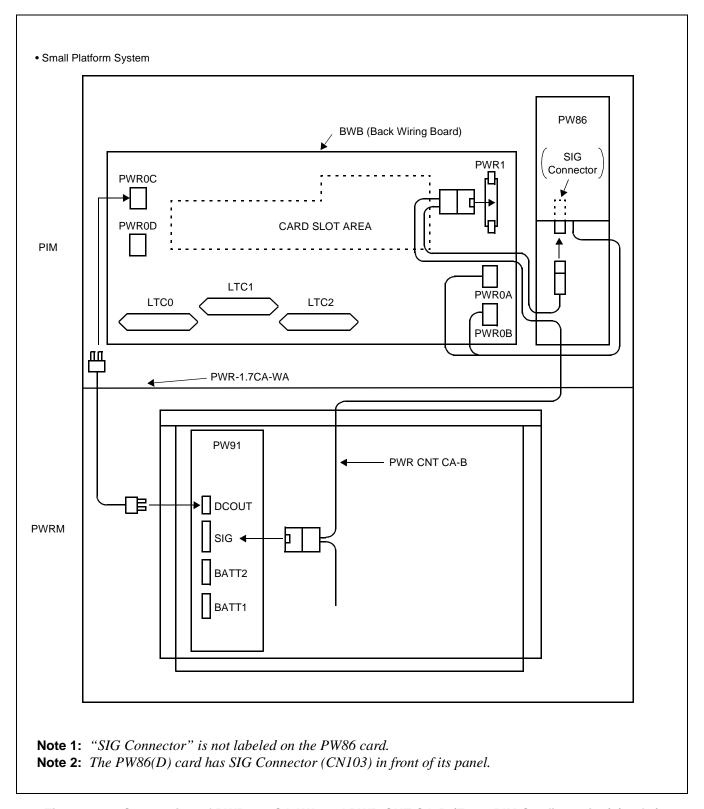


Figure 3-14 Connection of PWR-1.7 CA-WA and PWR CNT CA-B (For 1-PIM Configuration) (2 of 2)

# 4.4.3 Multiple-PIM Configuration

STEP 1: Connect the PWR-1.7 CA-WA cable as shown in Figure 3-15 (Case 1).

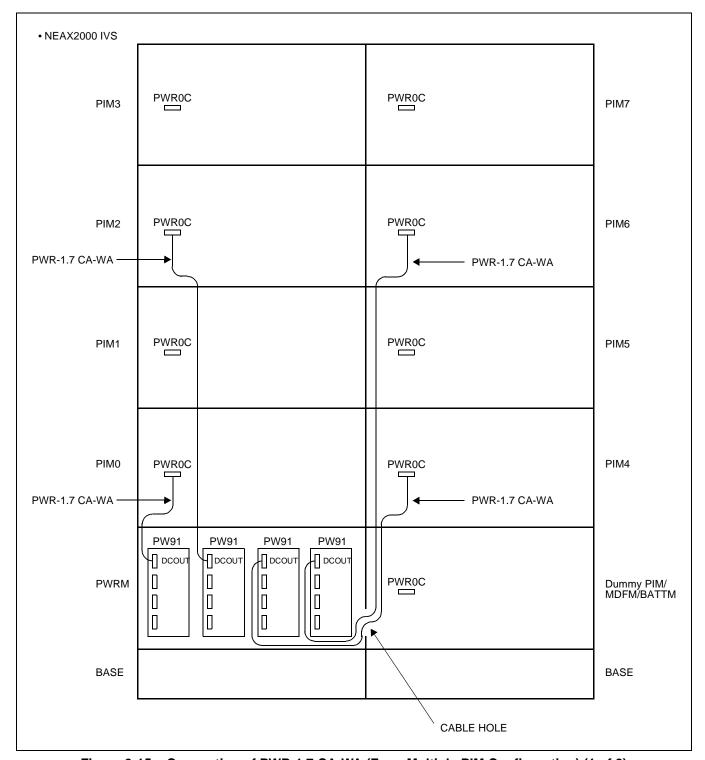


Figure 3-15 Connection of PWR-1.7 CA-WA (For a Multiple PIM Configuration) (1 of 2)

STEP 1: Connect the PWR-1.7 CA-WA cable as shown in Figure 3-15 (2 of 2) (Case 2).

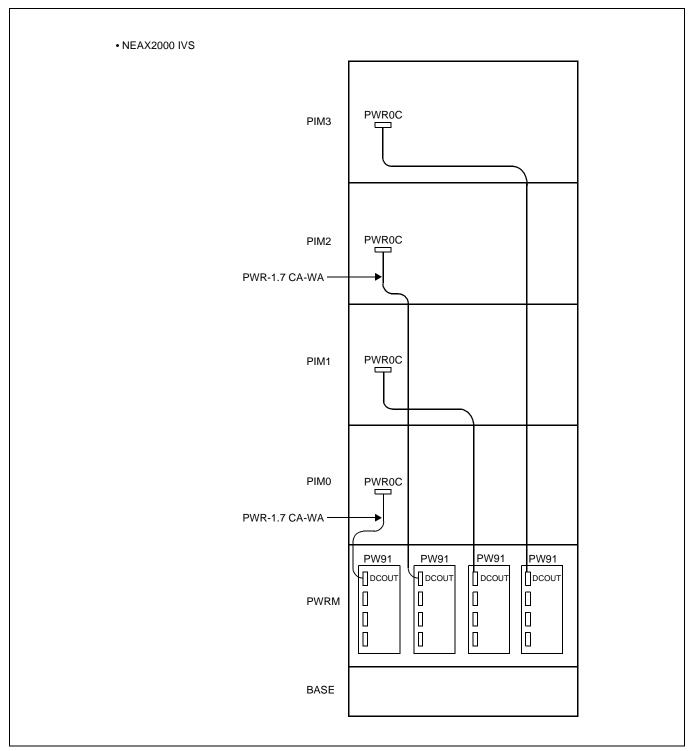


Figure 3-15 Connection of PWR-1.7 CA-WA (For a Multiple PIM Configuration) (2 of 2)

STEP 2: Connect the PWR CNT CA-A cable and the PWR CNT CA-B cable as shown in Figure 3-16.

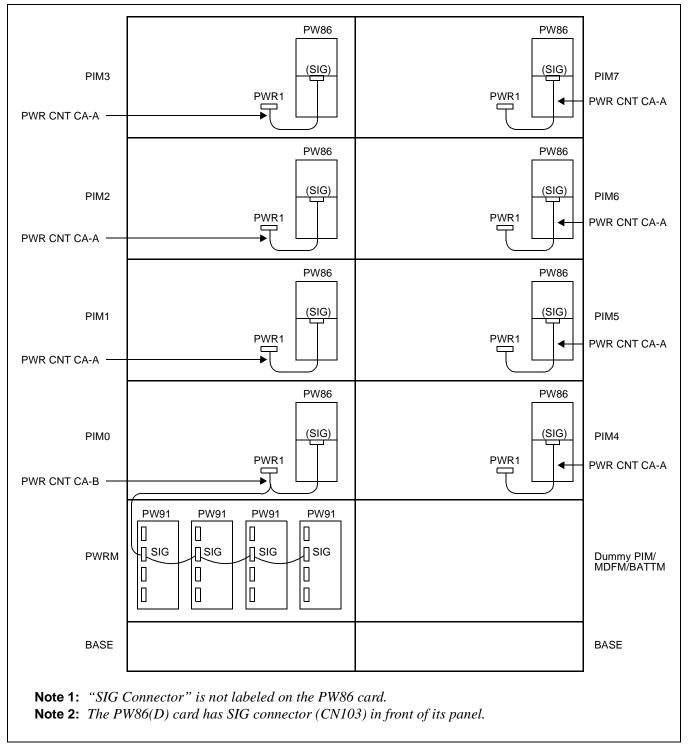


Figure 3-16 Connection of PWR CNT CA-A and PWR CNT CA-B (For a Multiple PIM Configuration)

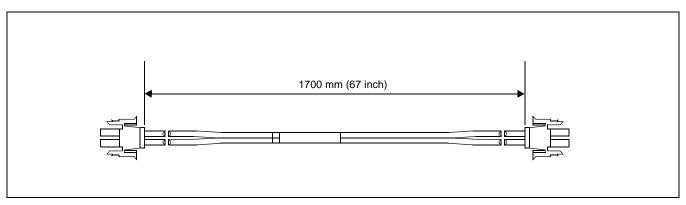


Figure 3-17 PWR-1.7 CA-WA

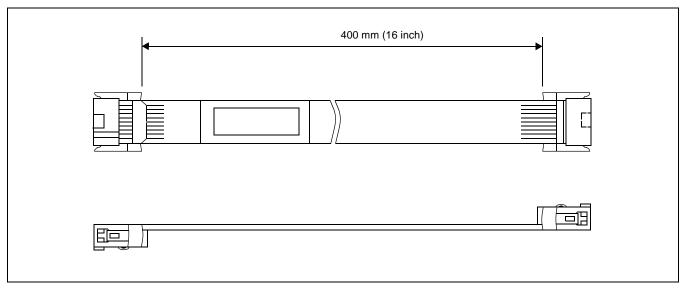


Figure 3-18 PWR CNT CA-A

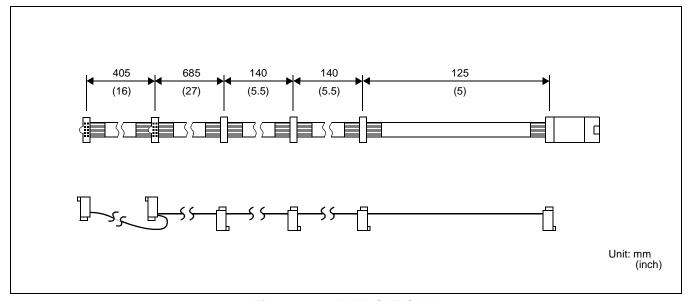


Figure 3-19 PWR CNT CA-B

### 4.4.4 PW00 Card and PW86 Card Connection

Connect the PWR CA-WC cable, PWR CNT CA-A cable and the 4Q-TW-0.3 CONN CA cable as shown in Figure 3-20. The 4Q-TW-0.3 CONN CA cable is used only when multiple PW00 cards are equipped.

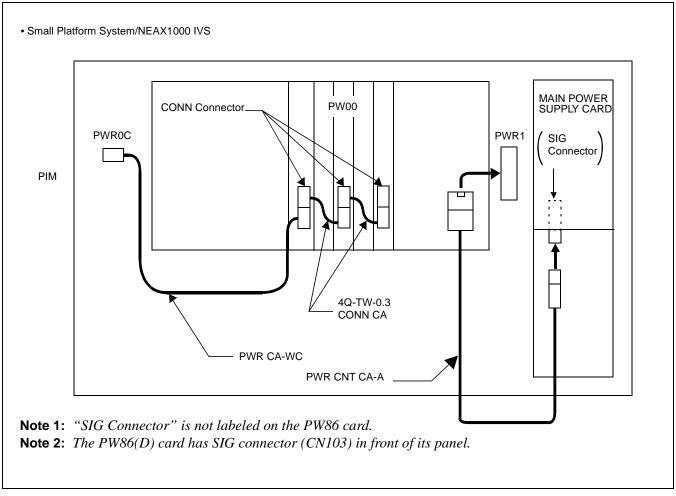


Figure 3-20 Connection of PWR CA-WC/4Q-TW-0.3 CONN CA/PWR CNT CA-A

# 4.4.5 PWR CNT CA-A and PWR CA-WK Connection

When the -48 PWR unit is equipped for NEAX1000 IVS, connect the PWR CNT CA-A cable and the PWR CA-WK as shown in Figure 3-21.

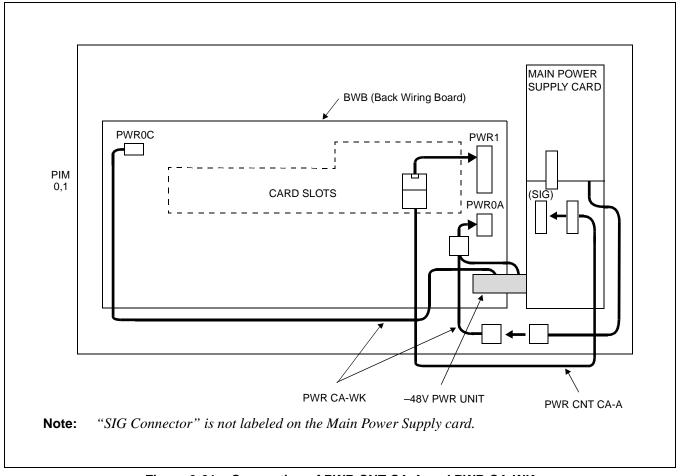


Figure 3-21 Connection of PWR CNT CA-A and PWR CA-WK

# 4.5 Connection of BUS Cables

STEP 1: When the system is a multiple-PIM configuration, mount the BS00 card in the BUS slot of PIM0. Mount the BS01 card in each BUS slot of PIM1 through PIM7.

When the system is a single-PIM configuration, neither BS00 nor BS01 card is needed.

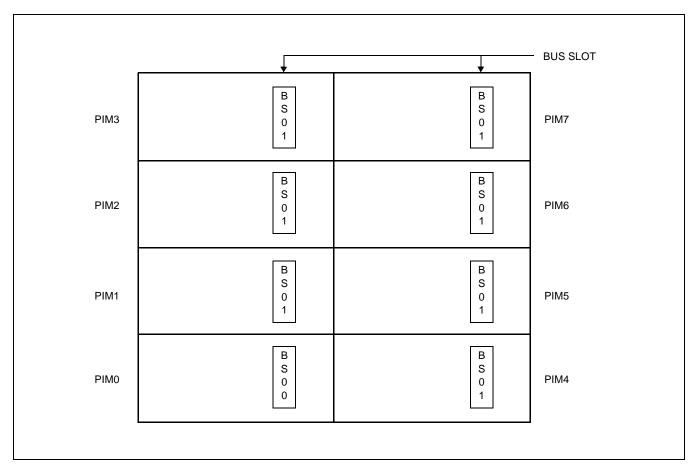


Figure 3-22 Mounting of BUS Cards

STEP 2: When the system is a multiple-PIM configuration, connect all the BUS cards to each other using BUS cables, as shown in Figure 3-23 and Figure 3-24.

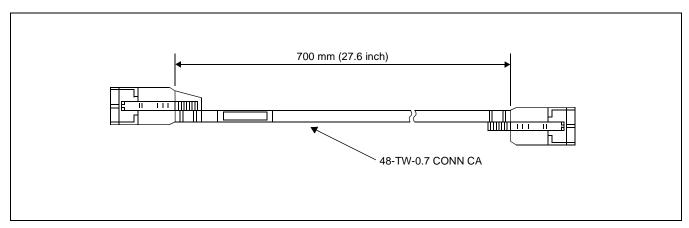


Figure 3-23 BUS Cable

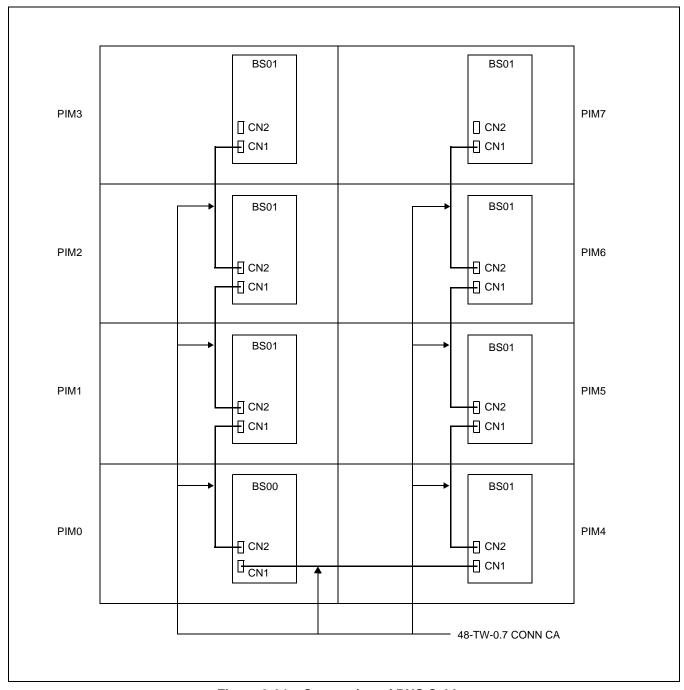


Figure 3-24 Connection of BUS Cables

# 4.6 Switch Settings of Circuit Cards

Table 3-2 shows the circuit cards to be explained in this section.

**Table 3-2 List of Circuit Cards** 

NAME	SWITCHES X: PROVIDED —: NOT PROVIDED	LAMPS X: PROVIDED —: NOT PROVIDED	EXTRACTION/INSERTION WITH POWER ON X: ALLOWED $\Delta$ : ALLOWED AFTER MB* —: NOT ALLOWED	REFERENCE
PW91 card	X	Х	_	Section 4.6.1
PW00 card	Х	Х	Δ	Section 4.6.2
CSH card	Х	Х	Δ	Section 4.6.3
CSI card	X	Х	X	Section 4.6.4

<sup>\*</sup> MB = Make Busy

For the other circuit cards, refer to the Circuit Card Manual.

# 4.6.1 Switch Settings of PW91 Card

On the PW91 card, set the switches as shown in Figure 3-25 and Table 3-3.

Table 3-4 shows lamp indications on the PW91 card.

## **CAUTION**

- When the operating power is being supplied to this circuit card, <u>do not plug/unplug this circuit card</u> <u>into/from its mounting slot.</u>
- Set the appropriate voltage by using the AC voltage select switch (slide switch) before powering on.

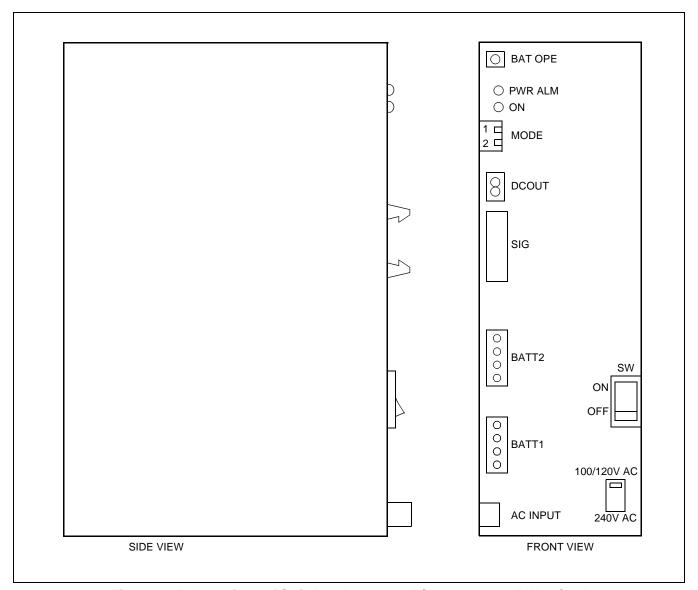


Figure 3-25 Locations of Switches, Lamps and Connectors on PW91 Card

Table 3-3 Switch Settings on PW91 Card

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
BAT OPE		PRESS MOMENTARILY	To start each PIM on battery power, when AC power is not provided (Switch "SW" must be ON).	
MODE	1	OFF	Not used	
→ ON 1 ●			Standard setting for equalize battery charging (Set to equalize for Gel cell or no battery. Typically 54.6V (52.7 ~ 56.5V))	
2 •	2	OFF	For float battery charging Typically 51.6V (49.8 ~ 53.5V)	
SW		ON	For turning AC source power on	
OFF		OFF	For turning AC source power off	
100/120VAC		UP	AC INPUT: 90 V - 138 V	
240VAC		DOWN	AC INPUT: 180 V - 276 V	

The figure in the SWITCH NAME column and the position in \_\_\_\_\_ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and \_\_\_\_\_, the setting of the switch varies with the system concerned.

Table 3-4 Lamp Indications on PW91 Card

LAMP NAME	COLOR	FUNCTION
PWR ALM	Red	Lights upon occurrence of a major trouble
ON	Green	Remains lit while the operating power is being supplied

# 4.6.2 Switch Settings of PW00 Card

On the PW00 card, set the switches as shown in Figure 3-26 and Table 3-5. Table 3-6 shows lamp indications on the PW00 card.

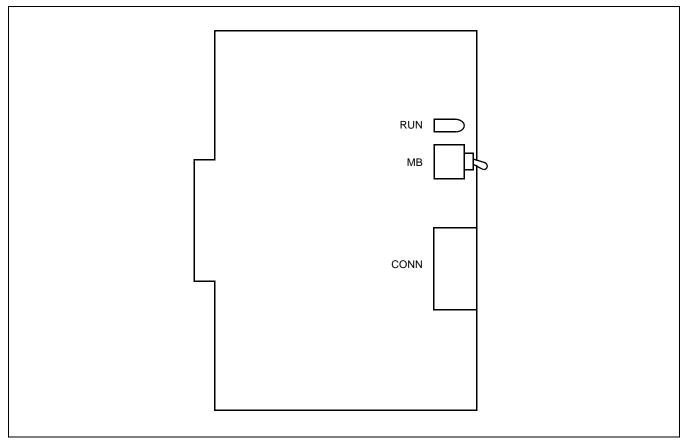


Figure 3-26 Locations of Switches, Lamps and Connectors on PW00 Card

Table 3-5 Switch Settings on PW00 Card

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
MB (Toggle SW)		UP	For make-busy (–48 V power off)	
Note		DOWN	For normal operation (–48 V power on)	

The figure in the SWITCH NAME column and the position in \_\_\_\_\_ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and \_\_\_\_\_, the setting of the switch varies with the system concerned.

**Note:** When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.

Table 3-6 Lamp Indication on PW00 Card

LAMP NAME	COLOR	FUNCTION
RUN	Green	Remains lit while –48 V power is being supplied

# 4.6.3 Switch Settings of CSH Card

On the CSH card, set the switches as shown in Figure 3-27 and Table 3-7.

Table 3-8 shows lamp indications on the CSH card.

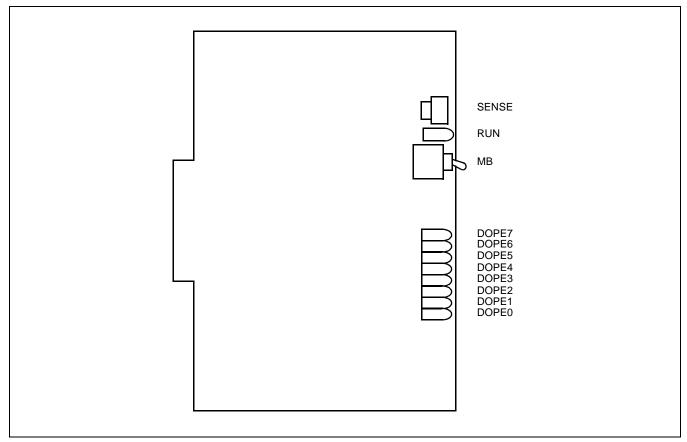


Figure 3-27 Locations of Switches and Lamps on CSH Card

Table 3-7 Switch Settings on CSH Card

SWITCH NAME	SWITCH NUMBER		SETTING POSITION FUNCTION				CHECK								
SENSE (Rotary SW)	4 ~ F		et the switch to match the AP Number (04 ~ 15) to be set by 2M05.												
	AP No.	04	05	06	07	08	09	10	11	12	13	14	15		  -
	SW No.	4	5	6	7	8	9	A	В	С	D	Е	F		
Note 1	0 ~ 3	Not u	ised												
MB (Toggle SW)		1	UP		For m	ake-t	ousy								
Note 2		DOWN			For normal operation										

The figure in the SWITCH NAME column and the position in \_\_\_\_\_ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and \_\_\_\_\_, the setting of the switch varies with the system concerned.

**Note 1:** *Set the groove on the switch knob to the intended switch position.* 

**Note 2:** When the power is on flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.

# INSTALLATION

Table 3-8 Lamp Indications on CSH Card

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while the card is operating normally.
DOPE7	Green	Lights when No.7 circuit D channel link is connected.
DOPE6	Green	Lights when No.6 circuit D channel link is connected.
DOPE5	Green	Lights when No.5 circuit D channel link is connected.
DOPE4	Green	Lights when No.4 circuit D channel link is connected.
DOPE3	Green	Lights when No.3 circuit D channel link is connected.
DOPE2	Green	Lights when No.2 circuit D channel link is connected.
DOPE1	Green	Lights when No.1 circuit D channel link is connected.
DOPE0	Green	Lights when No.0 circuit D channel link is connected.

# 4.6.4 Switch Settings of CSI Card

On the CSI card, set the switches as shown in Figure 3-28 and Table 3-9.

Table 3-10 shows lamp indications on the CSI card.

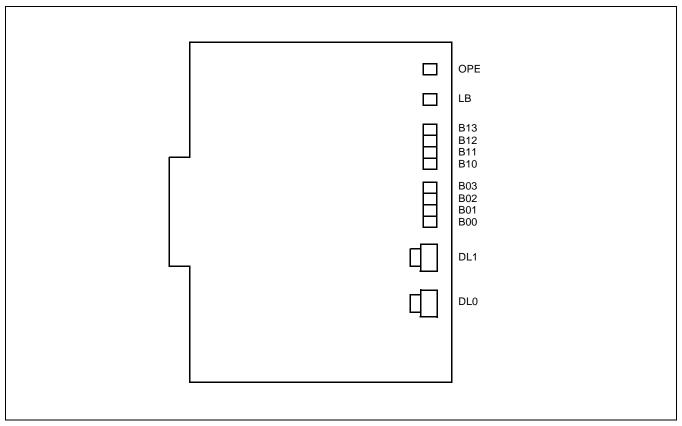


Figure 3-28 Locations of Switches and Lamps on CSI Card

Table 3-9 Switch Settings on CSI Card

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
DL0 (Rotary SW)	0 ~ F	0	For normal operation	
Note		1 ~ F	Not used	
DL1 (Rotary SW)	0 ~ F	0	For normal operation	
Note		1 ~ F	Not used	

The figure in the SWITCH NAME column and the position in \_\_\_\_\_ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and \_\_\_\_\_, the setting of the switch varies with the system concerned.

**Note:** *Set the groove on the switch knob to the intended switch position.* 

Table 3-10 Lamp Indications on CSI Card

LAMP NAME	COLOR	FUNCTION				
OPE	Green	Lights when the corresponding circuit is in use.				
LB	Red	Lights when a loop-back is in progress.				
B13	Red	Not used (Flash [60IPM])				
B12	Red	B channel status  ON: B2 channel of the No. 1 circuit is in use.  OFF: B2 channel of the No. 1 circuit is in idle.  Flash (60 IPM): ZT is not connected to the No. 1 circuit.  ZT is in make-busy status.				
B11	Red	B channel status  ON: B1 channel of the No. 1 circuit is in use.  OFF: B1 channel of the No. 1 circuit is in idle.  Flash (60 IPM): ZT is not connected to the No. 1 circuit.  ZT is in make-busy status.				
B10	Red	B channel status  ON: B0 channel of the No. 1 circuit is in use.  OFF: B0 channel of the No. 1 circuit is in idle.  Flash (60 IPM): ZT is not connected to the No. 1 circuit.  ZT is in make-busy status.				

# **INSTALLATION**

Table 3-10 Lamp Indications on CSI Card (Continued)

LAMP NAME	COLOR	FUNCTION
В03	Red	Not used (Flash [60 IPM])
B02	Red	B channel status  ON: B2 channel of the No. 0 circuit is in use.  OFF: B2 channel of the No. 0 circuit is in idle.  Flash (60 IPM): ZT is not connected to the No. 0 circuit.  ZT is in make-busy status.
B01	Red	B channel status  ON: B1 channel of the No. 0 circuit is in use.  OFF: B1 channel of the No. 0 circuit is in idle.  Flash (60 IPM): ZT is not connected to the No. 0 circuit.  ZT is in make-busy status.
B00	Red	B channel status  ON: B0 channel of the No. 0 circuit is in use.  OFF: B0 channel of the No. 0 circuit is in idle.  Flash (60 IPM): ZT is not connected to the No. 0 circuit.  ZT is in make-busy status.

# 4.7 Mounting FP Card

Mount one FP (PN-CP01) card in the FP slot of PIM0 in any configuration. When the system is equipped with more than two PIMs – depending on the number of additional PIMs used – mount one FP card in the FP slot of PIM0 and one FP card in the MP/FP slot of PIM2, PIM4 and PIM6.

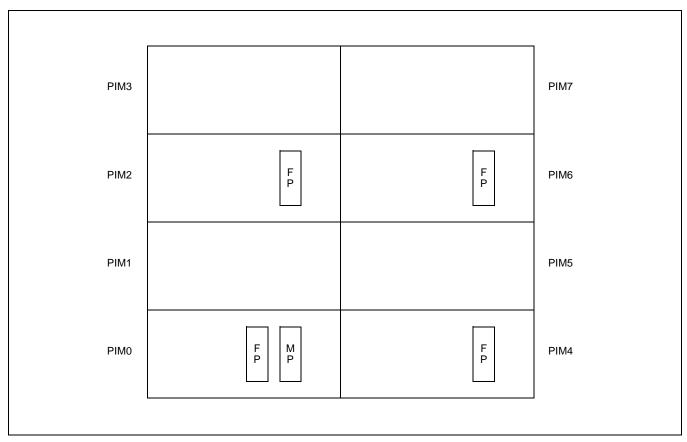


Figure 3-29 MP/FP Card Mounting Slots

# 4.8 Mounting CSI Card

Mount the CSI card in the LT slots of PIM0 through PIM7.

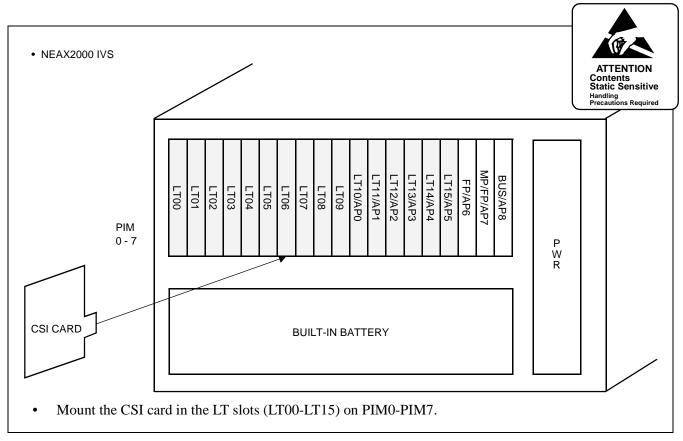


Figure 3-30 Mounting Location of CSI Card (1 of 3)

**Note:** The maximum number of four PIMs can be powered by PW91. (Figure 3-15). If a CSI card is remounted in a PIM that is not powered by PW91, an external AC/DC adapter can be used to power the ZT. A maximum of 16 cards can be used; however, this number cannot be exceeded.)

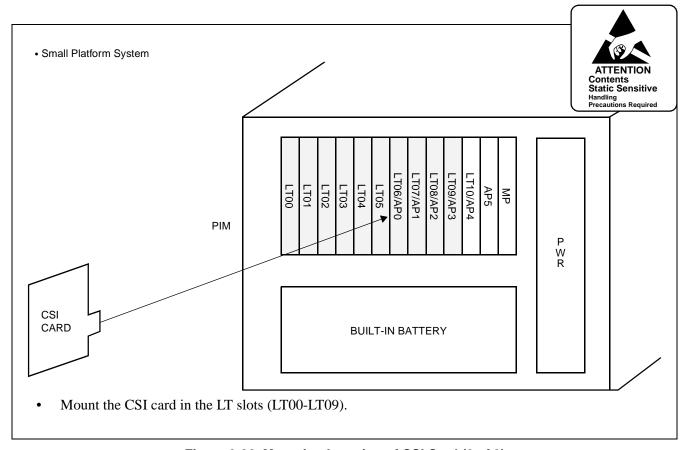


Figure 3-30 Mounting Location of CSI Card (2 of 3)

**Note:** When mounting 8 circuits LT card with cabling in the LT08 slot, the CSI card cannot be mounted in the LT09 slot.

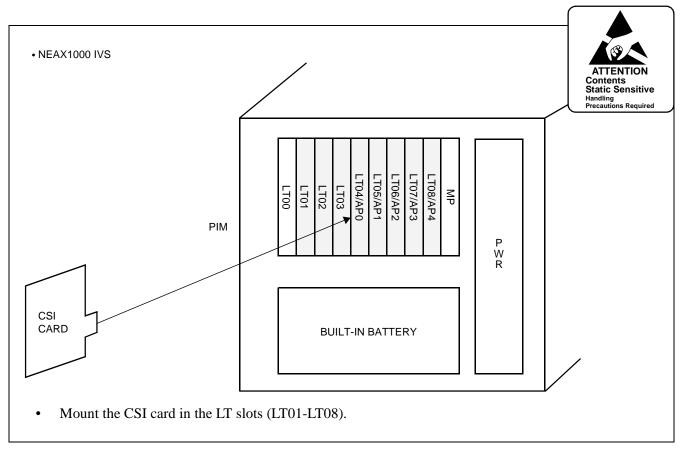


Figure 3-30 Mounting Location of CSI Card (3 of 3)

## 4.9 Mounting CSH Card

- STEP 1: Mount the CSH card in the AP slots of PIM0 through PIM7.
- STEP 2: After mounting the card, set the SENSE switch to match an unequipped AP number in CM05. Set the MB switch to the down position to place the card in service.

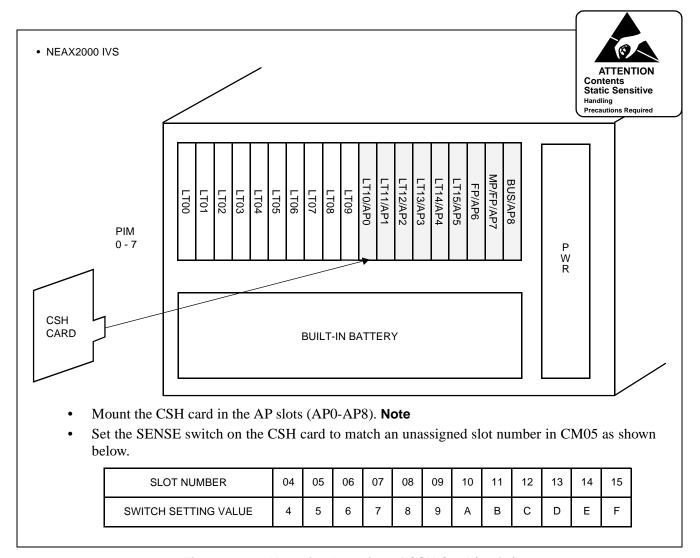


Figure 3-31 Mounting Location of CSH Card (1 of 3)

**Note:** (1) When the system is equipped with only PIM0:

- The CSH card can be mounted in the AP0 through AP5, and AP8 slots.
- (2) When the system is equipped with more than one PIM:
- The CSH card can be mounted in the AP0 through AP5 slots of PIM0.
- The CSH card can be mounted in the AP0 through AP6 slots of PIM2, 4 and 6.
- The CSH card can be mounted in the AP0 through AP7 slots of PIM1, 3, 5 and 7.

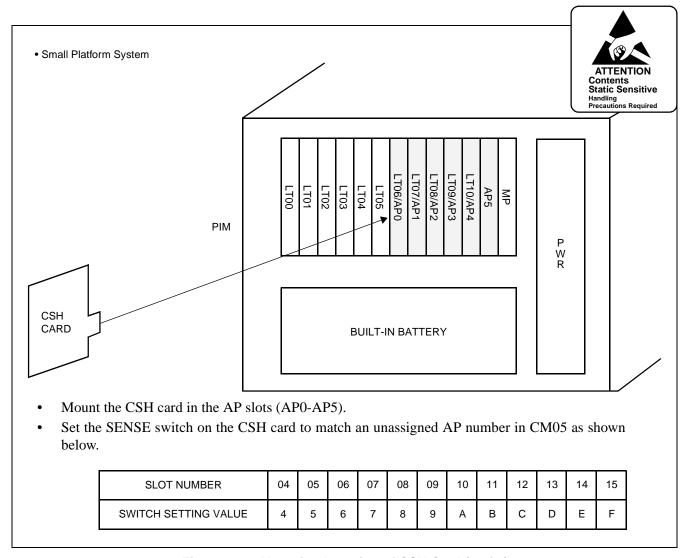


Figure 3-31 Mounting Location of CSH Card (2 of 3)

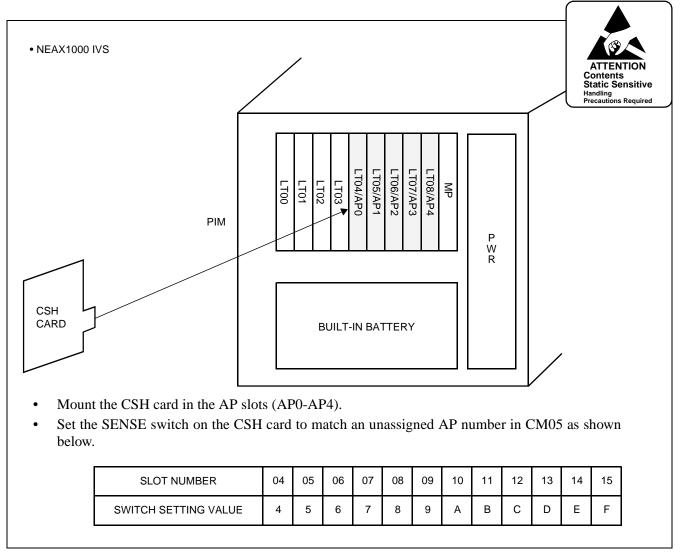


Figure 3-31 Mounting Location of CSH Card (3 of 3)

## 4.10 Connection of ZT

Connect the cable to a ZT via the MDF as shown in Figure 3-32.

Figure 3-33 shows LTC connector corressponds with the LT slots, and CSI pin assignment for each LT slot, and Figure 3-34 shows an example of the cable connection when the CSI card is mounted in the LT00 slot of PIM0.

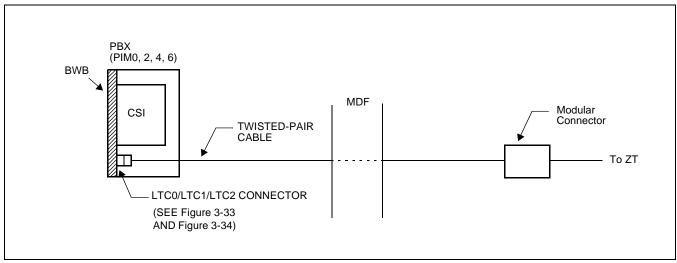


Figure 3-32 Cable Connection via MDF for ZT

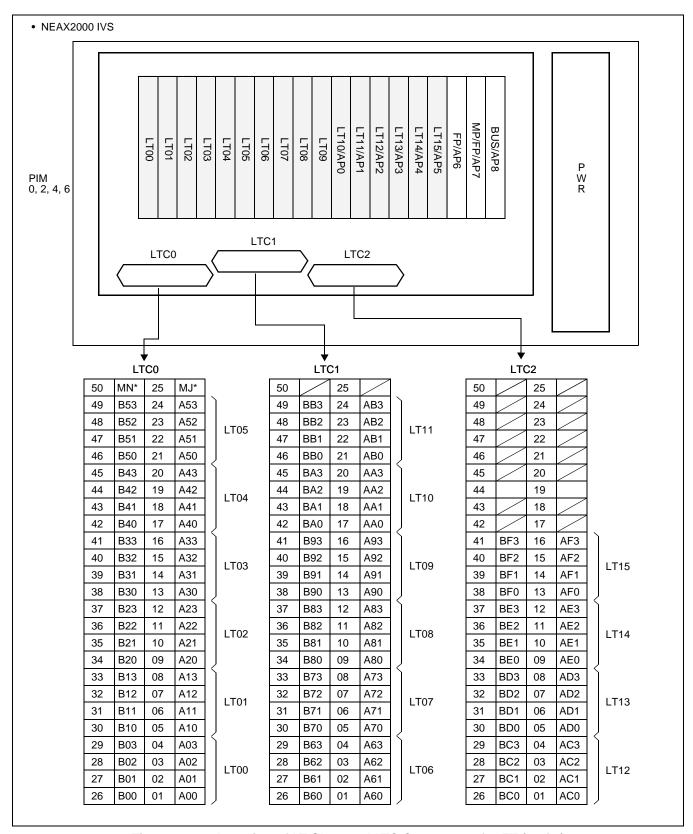


Figure 3-33 Location of LT Slots and LTC Connectors for ZT (1 of 3)

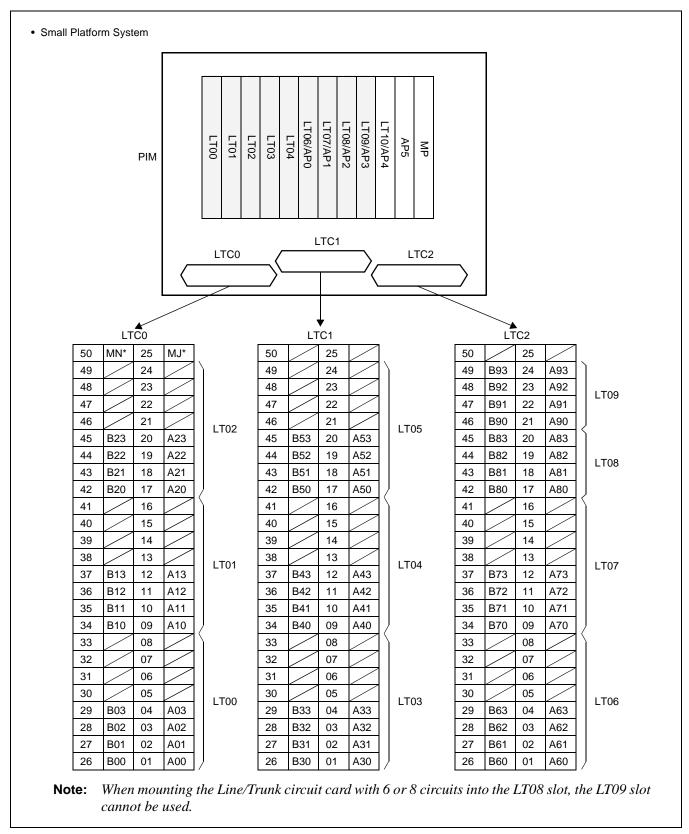


Figure 3-33 Location of LT Slots and LTC Connectors for ZT (2 of 3)

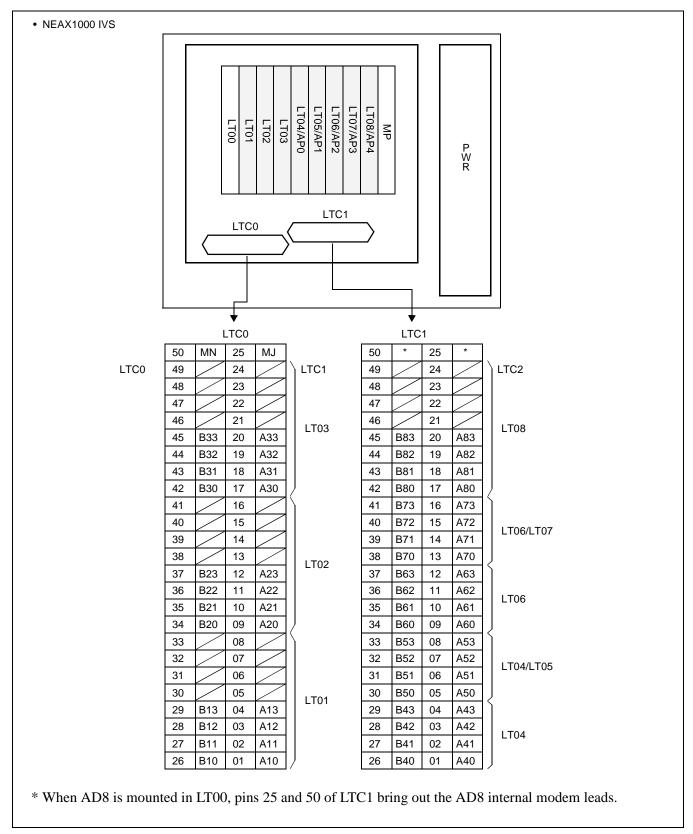


Figure 3-33 Location of LT Slots and LTC Connectors for ZT (3 of 3)

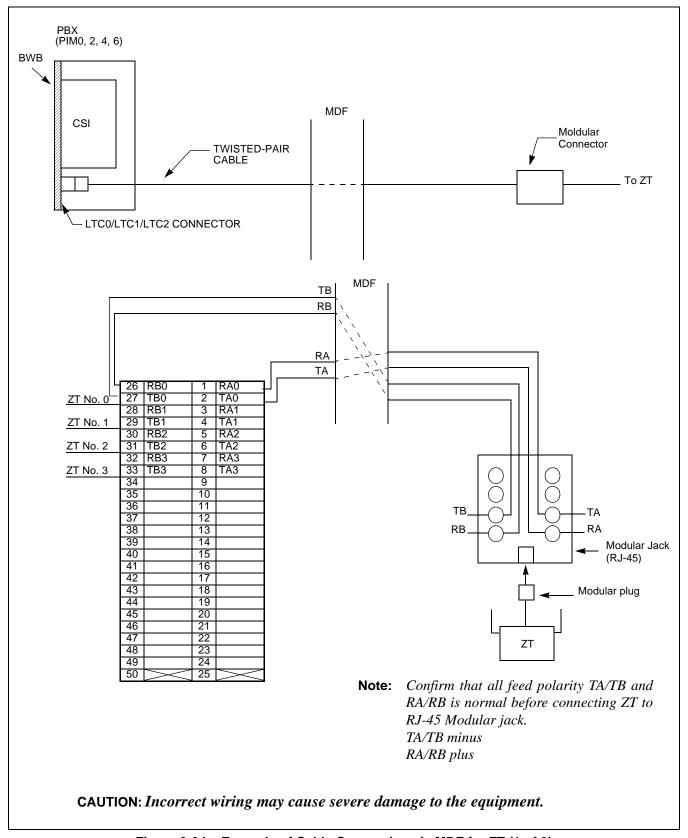
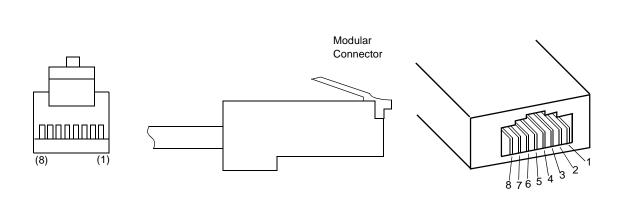


Figure 3-34 Example of Cable Connection via MDF for ZT (1 of 2)



TERMINAL		TERMINAL	FUNCTION			POLARITY		
NUMBER	COLOR	NUMBER	TERMINAL EQUIPMENT	CSI	SIGNAL	FEED	CSI TERMINAL	
1	blue	a	Not used	Not used				
2	orange	b	Not used	Not used				
3	black	c	Transmission	Reception	+	-	RA	
4	red	d	Reception	Transmission	+	-	TA	
5	green	e	Reception	Transmission	-	+	TB	
6	yellow	f	Transmission	Reception	-	+	RB	
7	brown	g	Not used	Not used				
8	slate	h	Not used	Not used				

**Note:** *RJ-45 Modular Jack is highly recommended.* 

Keep all wiring straight to the jack and perform all reverses at the cross connect for future changes.

Assuming the PN-2CSI-A is in slot LTC0, please make the following connections.

LTC0RJ-45White-BlueYellowBlue-WhiteBlackWhite-OrangeGreenOrange-WhiteRed

Figure 3-34 Example of Cable Connection via MDF for ZT (2 of 2)

#### **INSTALLATION**

## 4.11 Connection of Battery

#### CAUTION -

If battery terminals (+, -) contact with the module while connecting the battery cable to the PW86/PW91 card, the PW86/PW91 card or the BWB may be shorted. Therefore, the installer must perform work in accordance with the following steps when mounting or removing the batteries.

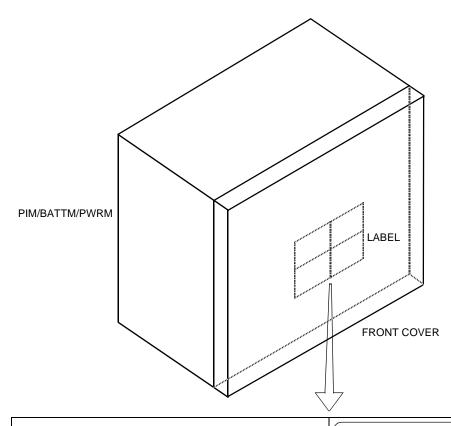
- (1) When mounting batteries:
  - (a) Connect the battery cable to the batteries.
  - (b) Mount the batteries into the appointed position of the PIM or the BATTM.
  - (c) Connect the battery cable to the PW86/PW91 card.
- (2) When removing batteries:
  - (a) Disconnect the battery cable from the PW86/PW91 card.
  - (b) Remove the batteries from the PIM or the BATTM.

#### CAUTION

Battery Replacement Table and Battery Warnings

The label which shows battery replacement table and battery warnings is attached to the reverse side of Front Cover for PIM, BATTM and PWRM.

During the battery installation process, the warning statements must be observed. When replacing batteries, the battery replacement table should be observed in order to increase battery life and insure a safe operation.



#### **BATTERY REPLACEMENT TABLE**

INSTALLATION DATE:

AMBIENT	LESS THAN	25 ~ 30°C	30 ~ 40°C
TEMPERATURE	25°C (77°F)	(77 ~ 86°F)	(86 ~ 104°F)
REPLACEMENT	2.5 ~ 3.0	2.0 ~ 2.5	1.5 ~ 2.0
INTERVAL	YEARS	YEARS	YEARS

O ELECTROLYTE LEAKAGE OR OTHER HAZARDS MAY RESULT IF THE BATTERY IS NOT REPLACED IN ACCORDANCE WITH THE SPECIFIED INTER-VALS.

# **CAUTION** TO PREVENT INJURY AND SKIN BURN, PAY ATTENTION TO THE FOLLOWING.

- o DO NOT STRIKE A MATCH OR CAUSE A SPARK IN VICINITY OF BATTERY.
- o PLACE THE EQUIPMENT WELL VENTILATED AREA.
- o DO NOT SHORT.
- o REPLACE BATTERY ONLY AFTER BATTERY GASES HAVE BEEN DISPERSED.

# 4.11.1 Internal Battery Connection

STEP 1: Mount the two batteries (12V DC, 3.0–3.4AH for PW86 card) into each PIM as shown in Figure 3-35.

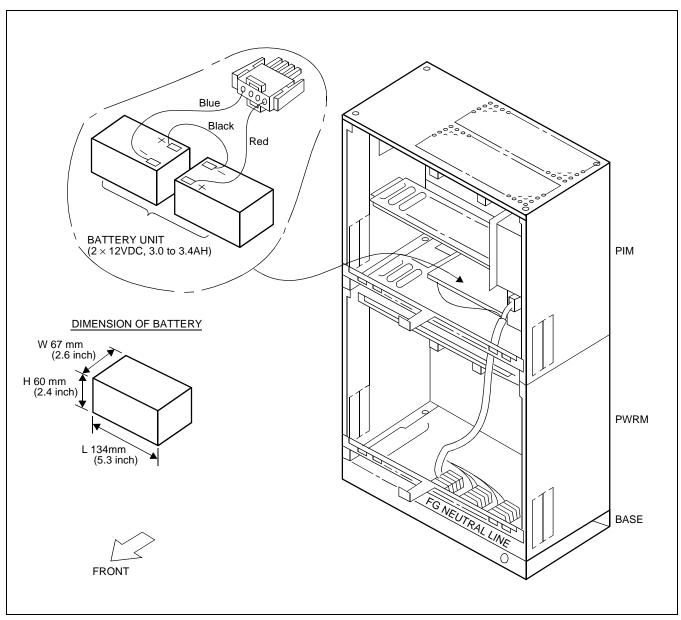


Figure 3-35 Internal Battery Mounting (1 of 2)

**Note:** The two 2/12V batteries do not backup power feeding 2Ts, which can be backed up by adding 48V battery. See Section 4.11.2.

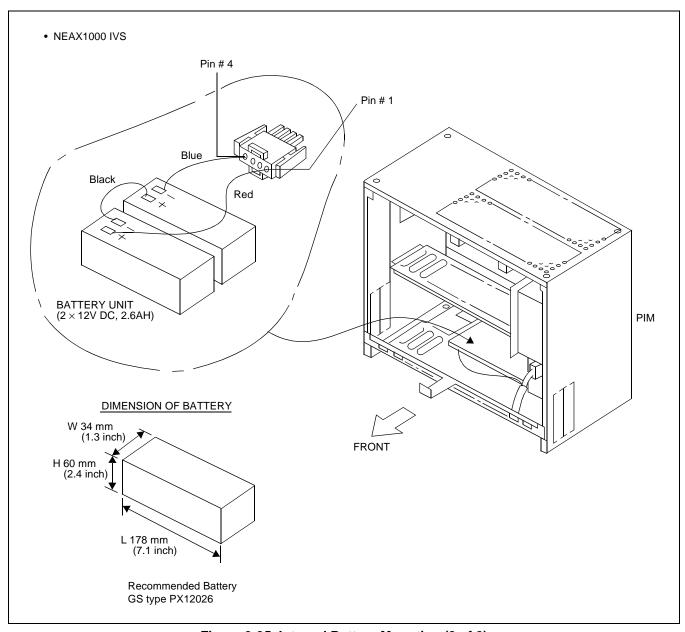


Figure 3-35 Internal Battery Mounting (2 of 2)

**Note:** The two (2) 12V batteries do not backup power feeding ZTs, which can be backed up by adding 48V battery. See Section 4.11.2.

#### **INSTALLATION**

- STEP 2: Plug the battery cable connector into the BATT1 connector on the PW86 card as shown in Figure 3-36.
- STEP 3: Secure the batteries and battery cable using tie wraps as shown in Figure 3-36.

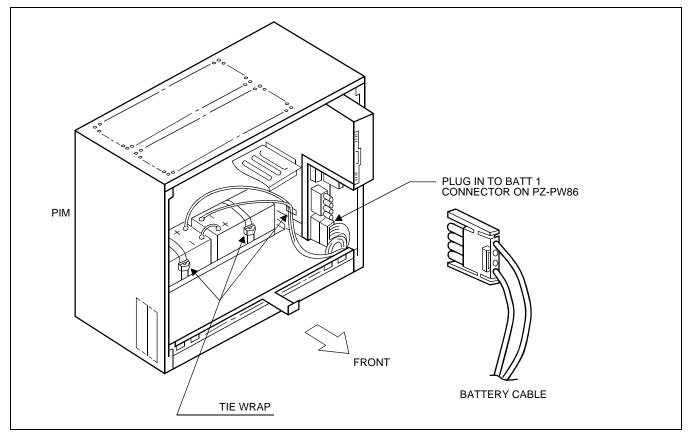


Figure 3-36 Internal Battery Connection

STEP 4: When the system is a multiple PIM configuration, plug the PWR CA-A into the BATT2 connector on the PW86 card as shown in Figure 3-37.

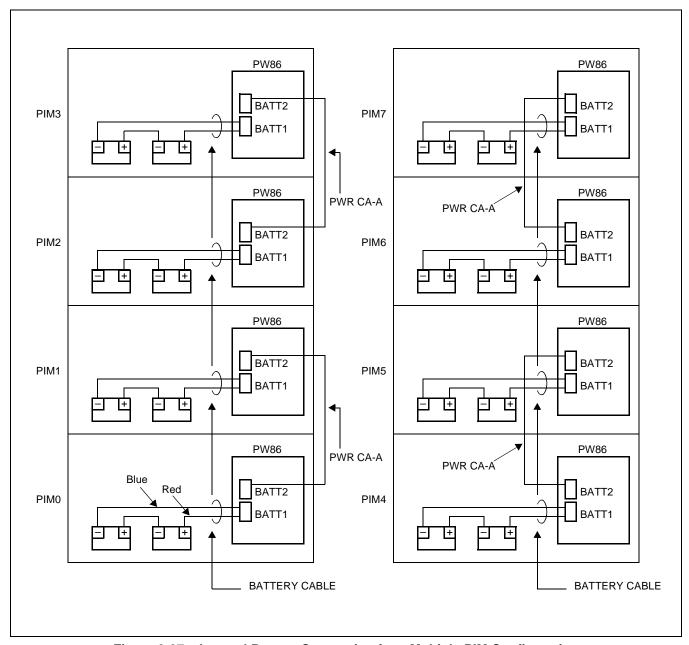


Figure 3-37 Internal Battery Connection for a Multiple PIM Configuration

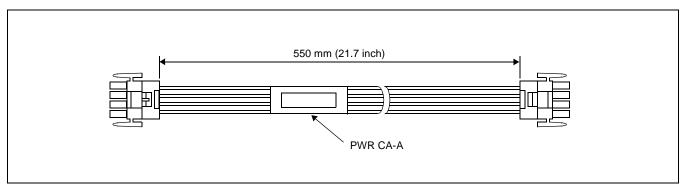


Figure 3-38 PWR CA-A

# 4.11.2 Battery Connection in PWRM

When the system is equipped with one or two PW91 card, the battery for PW91 card can be mounted into the Power Module (PWRM). When the system is equipped with more than two PW91 card, refer to Section 4.11.3.

**Note:** A 48V battery (4x12 VDC) is required to back up PW91 for ZT power feeding.

STEP 1: Connect the battery cables to the batteries as shown in Figure 3-39.

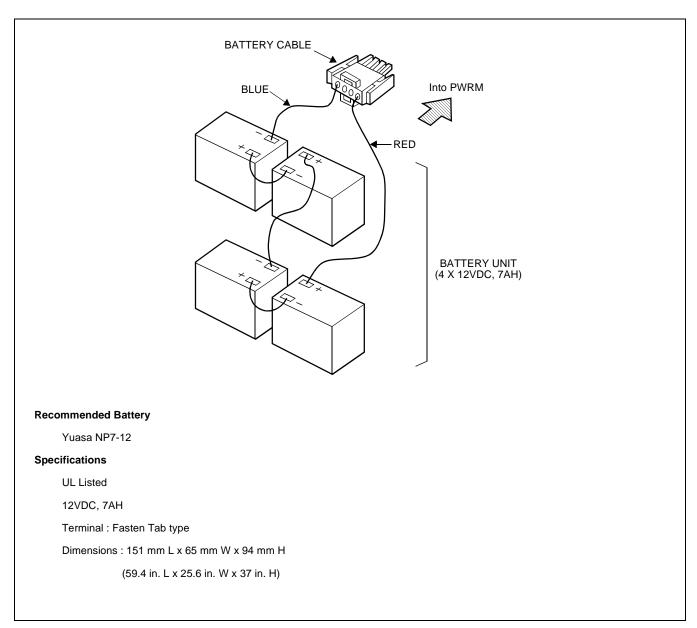


Figure 3-39 Battery Connection into PWRM

#### **INSTALLATION**

- STEP 2: Secure the Battery Bracket (1) and (2) to the PWRM as shown in Figure 3-40.
- STEP 3: Mount the battery unit (4x12 VDC, 7AH per unit) into the PWRM as shown in Figure 3-40.
- STEP 4: Secure the Battery Bracket 3 to the PWRM as shown in Figure 3-40.

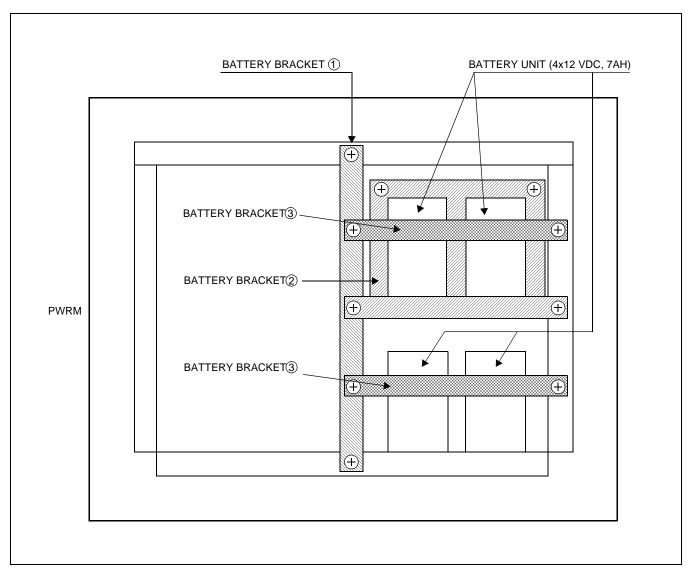


Figure 3-40 Battery Mounting into PWRM

- STEP 5: Plug the battery cable connector into the BATT2 connector on the PW91 card as shown in Figure 3-41.
- STEP 6: Connect the PW91 cards to each other using the PWR CA-A as shown in Figure 3-41.

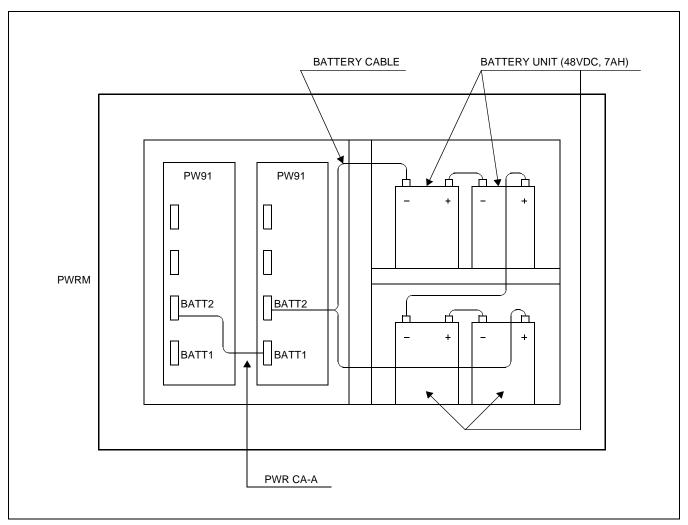


Figure 3-41 Battery Connection in PWRM

# 4.11.3 Battery Connection in BATTM

1. For PW86 card (-24 V DC)

STEP 1: Connect the battery cables to the batteries, and mount the battery units (2×12 V DC, 24AH per unit) into the Battery Module (BATTM) as shown in Figures 3-42 and 3-43.

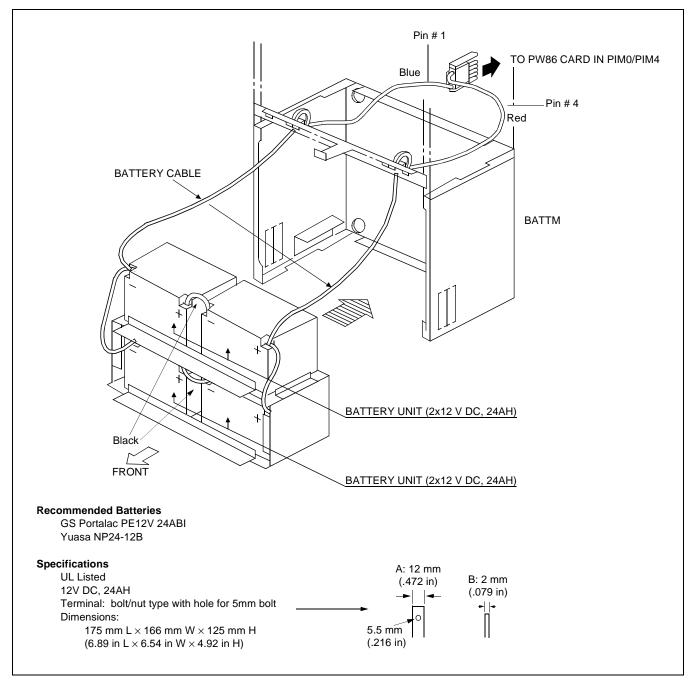


Figure 3-42 Battery Mounting into BATTM for PW86 Card

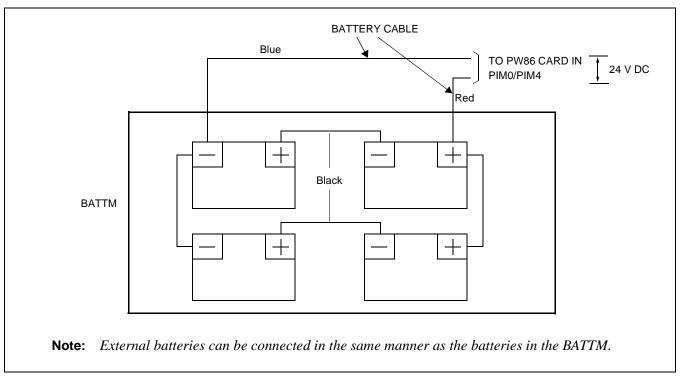


Figure 3-43 Battery Connection in BATTM for PW86 Card

STEP 2: Plug the battery cable connector into the BATT1 connector on the PW86 card in PIM0 or PIM4 as shown in Figure 3-44.

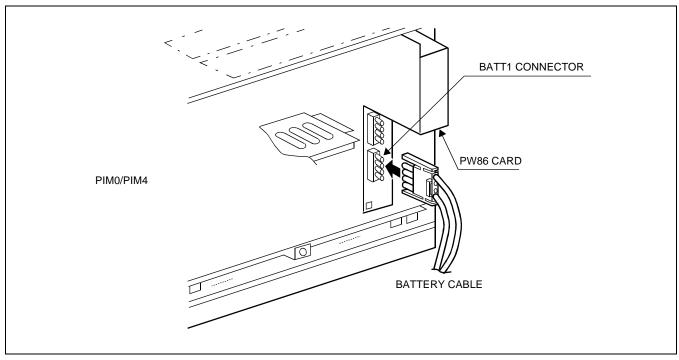


Figure 3-44 Connection to PW86 Card

STEP 3: When the system is a multiple-PIM configuration, connect the PW86 cards to each other using the PWR CA-A as shown in Figure 3-45.

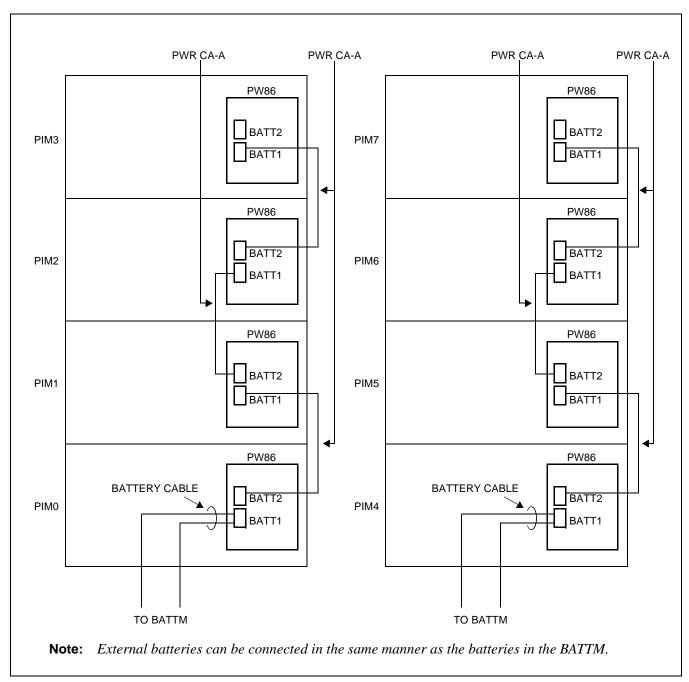


Figure 3-45 Connection of PWR CA-A for a Multiple PIM Configuration

### 2. For PW91 card (-48 V DC)

STEP 1: Connect the battery cables to the batteries, and mount the battery units (4x12 VDC, 24AH per unit) into the Battery Module (BATTM) as shown in Figure 3-46 and 3-47.

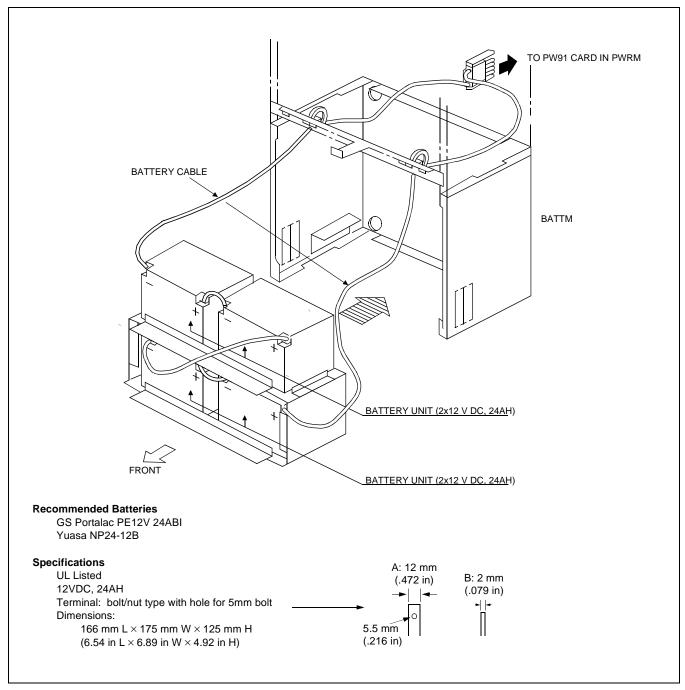


Figure 3-46 Battery Mounting into BATTM for PW91 Card

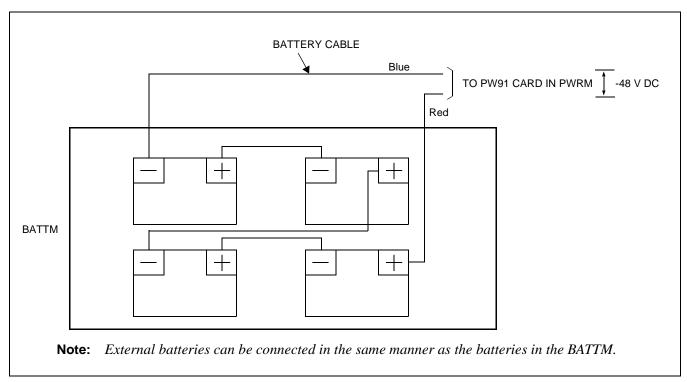


Figure 3-47 Battery Connection in BATTM for PW91 Card

STEP 2: Plug the battery cable connector into the BATT2 connector on the PW91 card in the PWRM as shown in Figure 3-48.

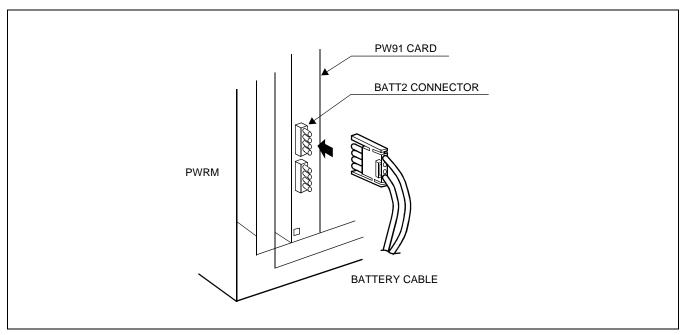


Figure 3-48 Connection to PW91 Card

STEP 3: When the system is equipped with more than two PW91 cards, connect the PW91 cards to each other using the PWR CA-A as shown in Figure 3-49.

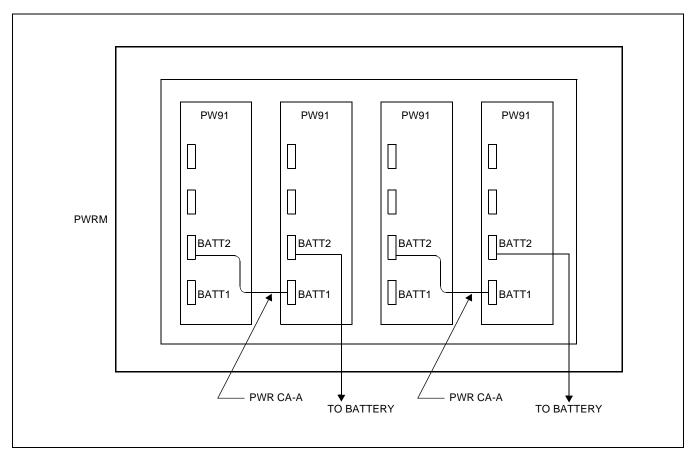


Figure 3-49 Connection of PWR CA-A/BATTERY CABLE

# 5. INSTALLATION FOR MULTI-SITE ROAMING

# 5.1 Installation Procedure for Multi-Site Roaming

Perform the installation procedure shown in Figure 3-50.

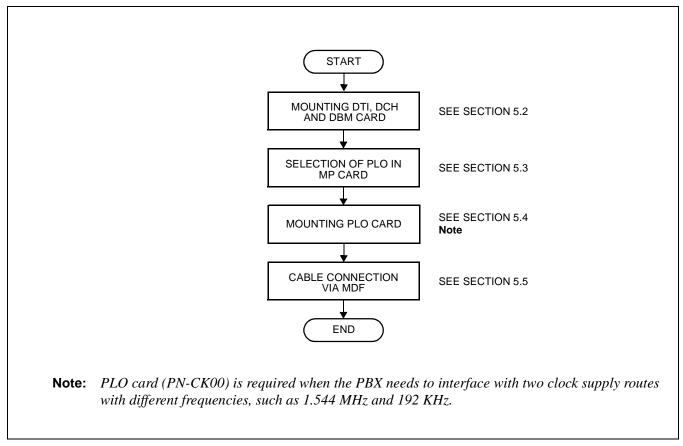


Figure 3-50 Installation Procedure for Multi-Site Roaming

### 5.2 Mounting DTI, DCH and DBM Card

STEP 1: On the DTI (PN-24DTA-A/30DTC/30DTC-A) card, DCH (PN-SC01) card and DBM (PN-AP00) card, set the switches as shown in Figures 3-51 through 3-53.

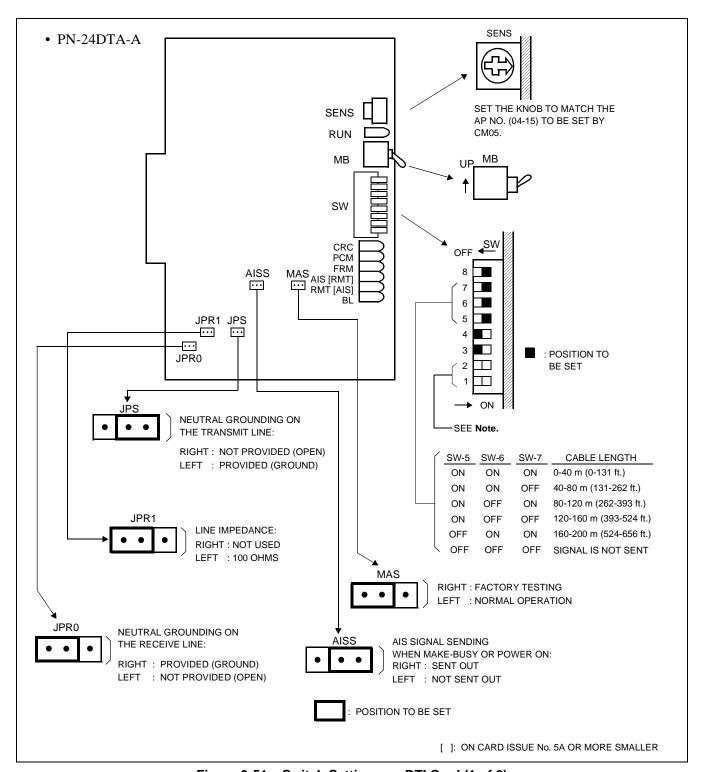


Figure 3-51 Switch Settings on DTI Card (1 of 2)

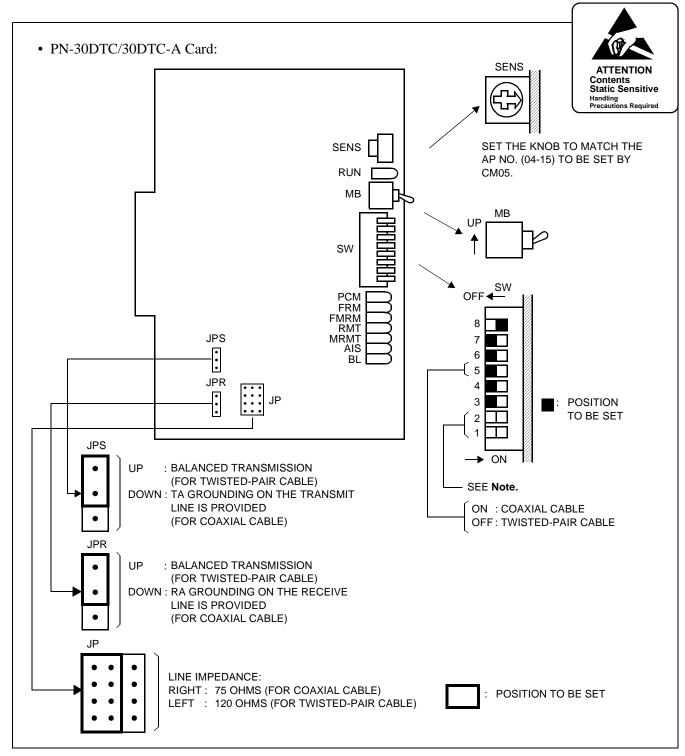


Figure 3-51 Switch Settings on DTI Card (2 of 2)

**Note:** When only one DTI is provided, the clock signals are supplied to the PLO through DTI 0. The DTI 0 card must be mounted in PIM 0 and the SW settings are:

DTI 0		
SW-1	SW-2	
ON	OFF	

When multiple number of DTIs are provided, the system can supply the clock signals from DTI 0 or DTI 1. The system is synchronized to the DTI 0 clock signals normally, and if the DTI 0 clock supply route is failed, the DTI 1 takes over. Both DTI 0 and DTI 1 cards must be mounted in PIM 0. The SW settings of DTI cards are:

DTI 0		DTI 1		
SW-1	SW-2	SW-1	SW-2	
ON	OFF	OFF	ON	

The SW settings of the DTI which is not a clock supply route are:

DTI 2		DTI 3		
SW-1	SW-2	SW-1	SW-2	
OFF	OFF	OFF	OFF	

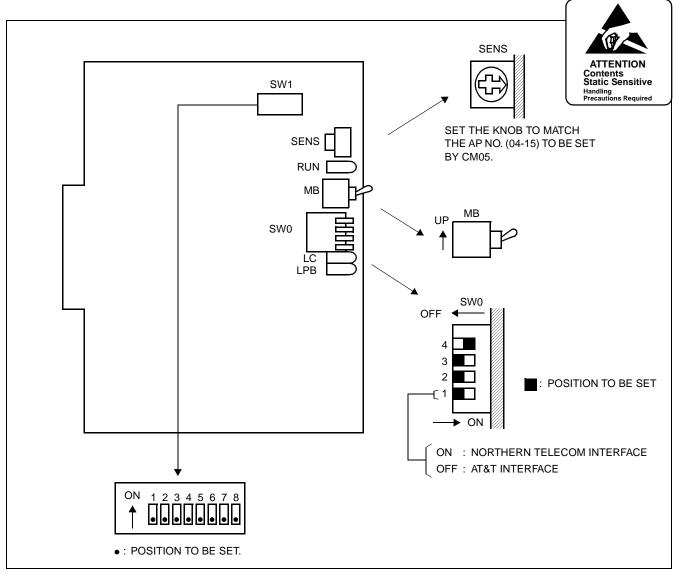


Figure 3-52 Switch Settings on DCH Card

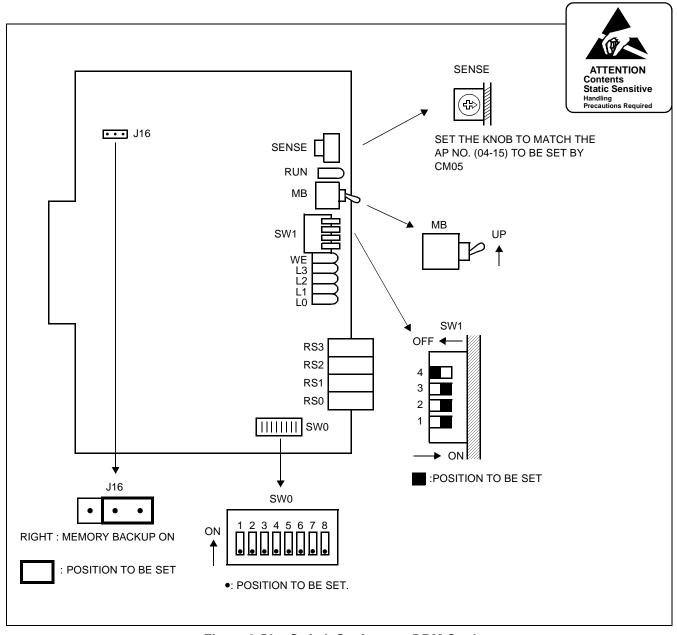


Figure 3-53 Switch Settings on DBM Card

### **INSTALLATION**

STEP 2: Mount the DTI, DCH and DBM card in AP slots on PIM0-PIM7 as follows.

• 2000 IVS • 1000 IVS

DTI card: AP0-AP6
DCH card: AP0-AP8
DBM card: AP0-AP8
DBM card: AP0-AP8
DBM card: AP0-AP4

• Small Platform System

DTI card: AP0-AP3 DCH card: AP0-AP5 DBM card: AP0-AP5

After mounting the card, set the SENS switch to match an unequipped AP number in CM05. And set the MB switch to down position to put the card in service. For details on mounting locations, refer to the Circuit Card Manual.

### 5.3 Selection of PLO in MP Card

STEP 1: On the MP (PN-CP00/CP00-B/CP03) card, set the switches as shown in Figure 3-54.

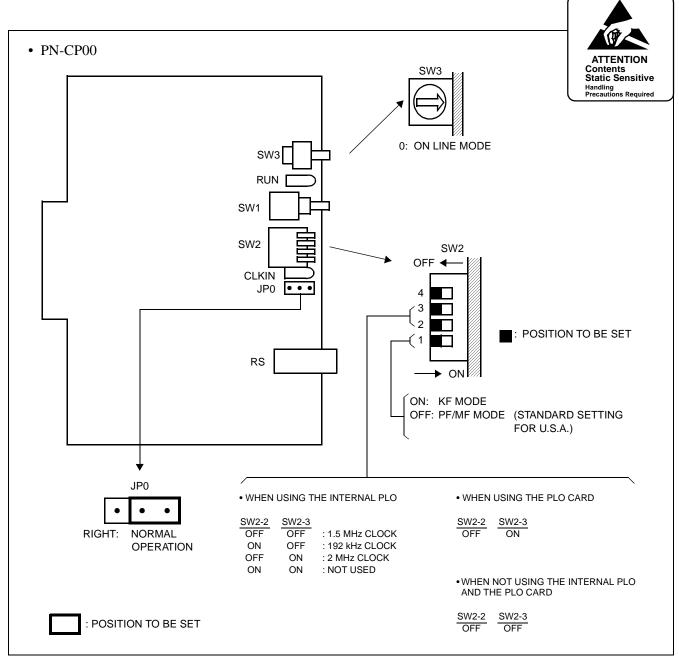


Figure 3-54 Switch Settings on MP Card (1 of 3)

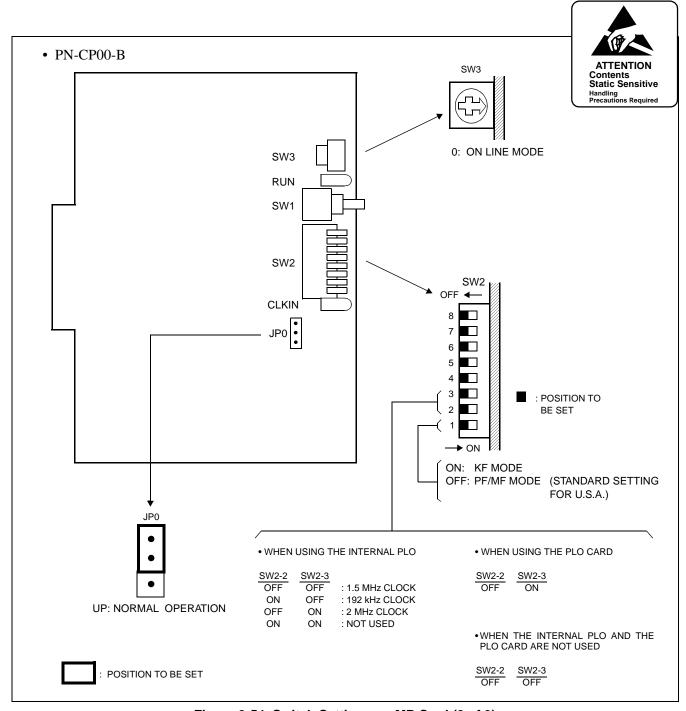


Figure 3-54 Switch Settings on MP Card (2 of 3)

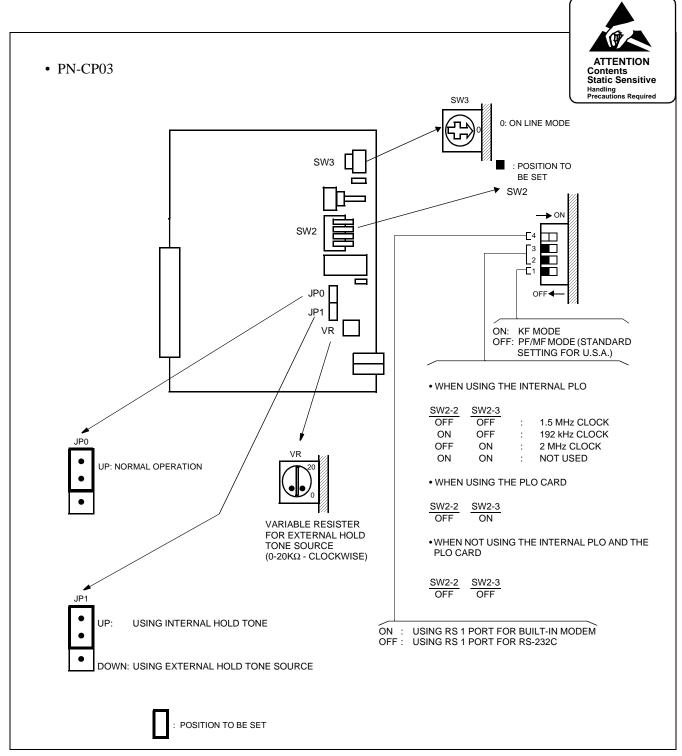


Figure 3-54 Switch Settings on MP Card (3 of 3)

STEP 2: Mount the MP card on the MP slot of PIM0.

# 5.4 Mounting PLO Card

STEP 1: On the PLO (PN-CK00) card, set the switches as shown in Figure 3-55.

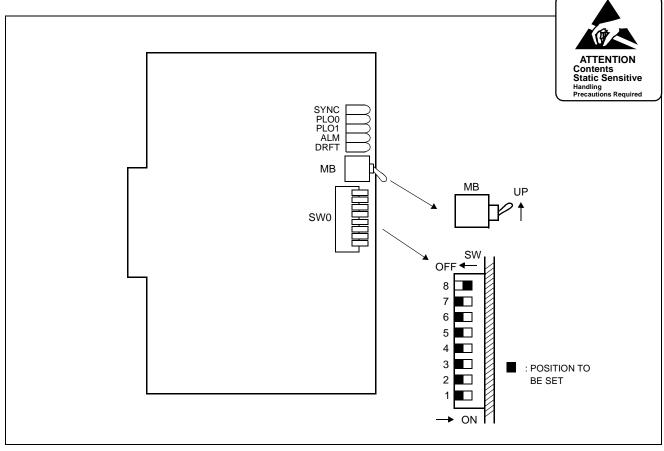


Figure 3-55 Switch Settings on PLO Card

STEP 2: On the MP card, set the SW2-2 to OFF and SW2-3 to ON.

STEP 3: Mount the PLO card in an AP slot on PIM0.

• 2000 IVS: AP0-AP8

• Small Platform System: AP0-AP5

• 1000 IVS: AP0-AP4

After mounting the card, set the MB switch to down position to put the card in service.

### 5.5 Cable Connection via MDF for DTI

Connect the cable to a CSU via the MDF as shown in Figure 3-56.

Figure 3-57 shows the LTC connector corresponds with the AP slots, and DTI pin assignment for each AP slot, and Figure 3-58 shows an example of the cable connection when the DTI card is mounted in the AP0 slot of PIM0 on the NEAX2000 IVS.

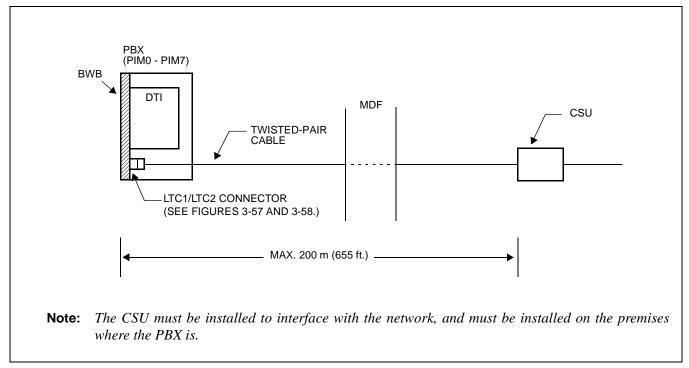


Figure 3-56 Cable Connection via MDF

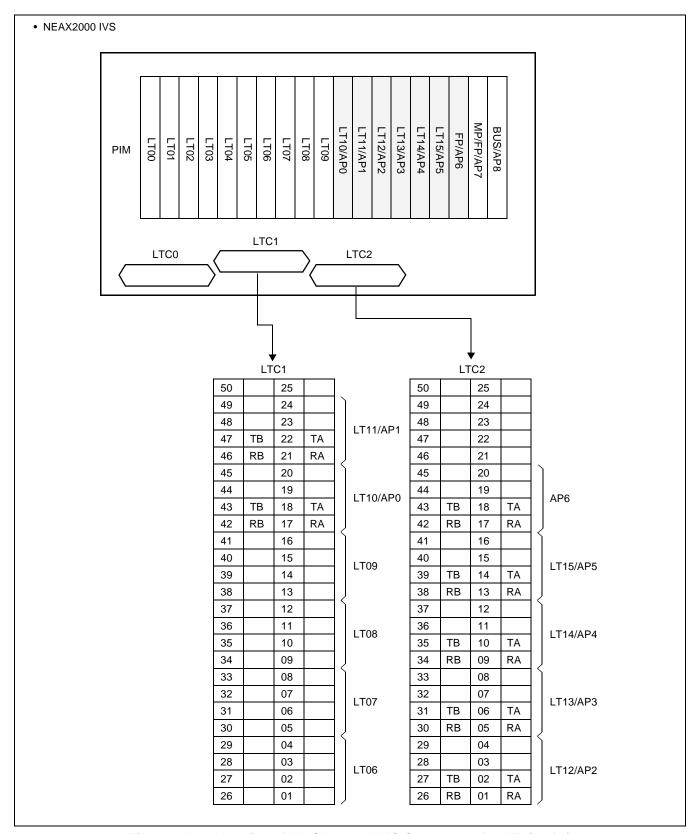


Figure 3-57 Location of AP Slots and LTC Connectors for DTI (1 of 3)

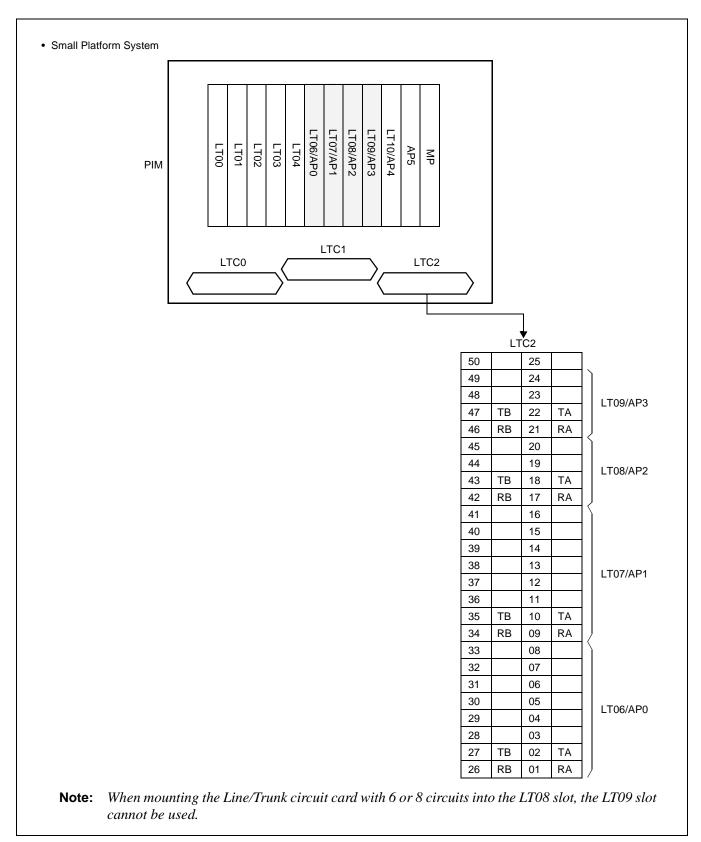


Figure 3-57 Location of AP Slots and LTC Connectors for DTI (2 of 3)

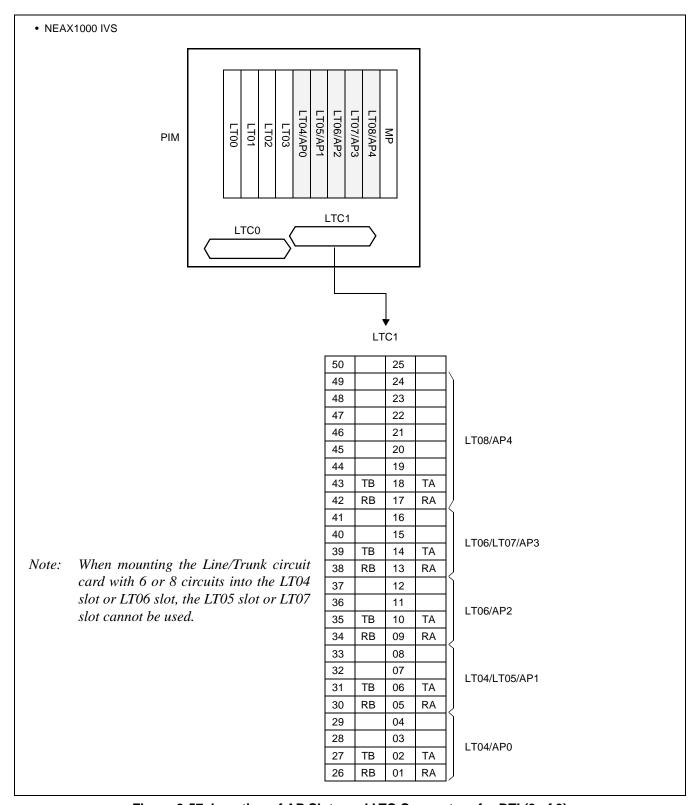


Figure 3-57 Location of AP Slots and LTC Connectors for DTI (3 of 3)

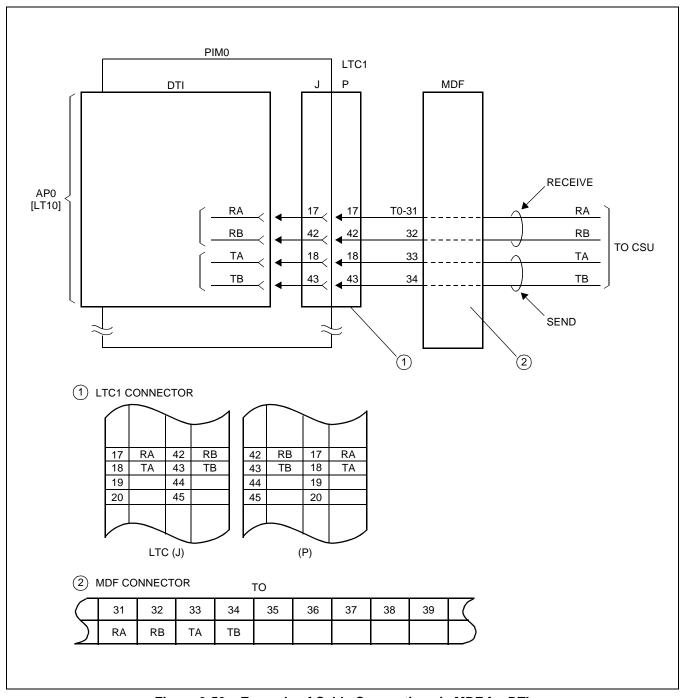


Figure 3-58 Example of Cable Connection via MDF for DTI

This page is for your notes.

# CHAPTER 4 SYSTEM DATA PROGRAMMING

# 1. GENERAL

This chapter describes the programming procedure for providing the WCS to the PBX.

# 2. SYSTEM DATA PROGRAMMING INFORMATION

In the programming procedure, the meaning of (1), (2) and markings are as follows.

(1) : 1st Data

(2) : 2nd Data

: Initial Data

With the system data clear command (CM00, CM01), the data with this marking is automatically assigned for each command.

(INITIAL): System Initialization

After entering the data, system reset is required (press SW1 on the MP card).

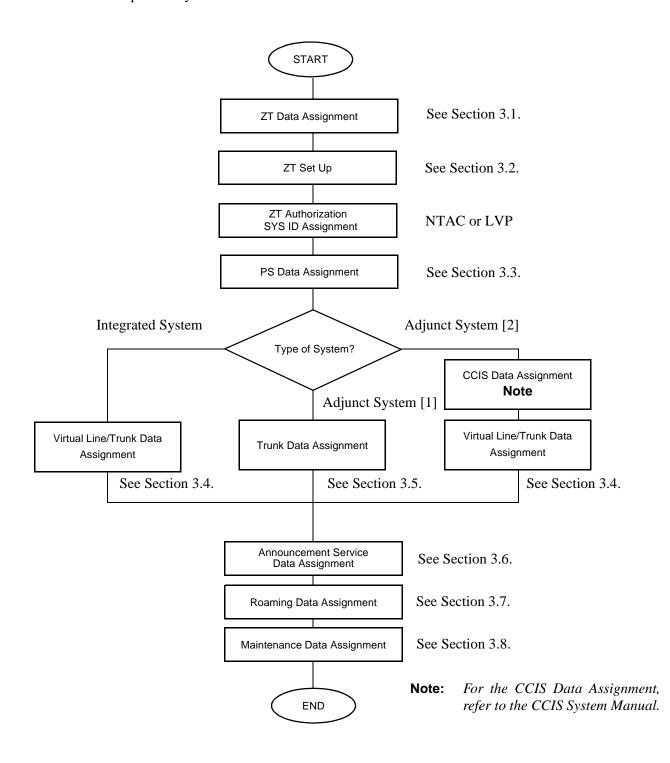
#### SYSTEM DATA PROGRAMMING

### 3. PROGRAMMING PROCEDURE

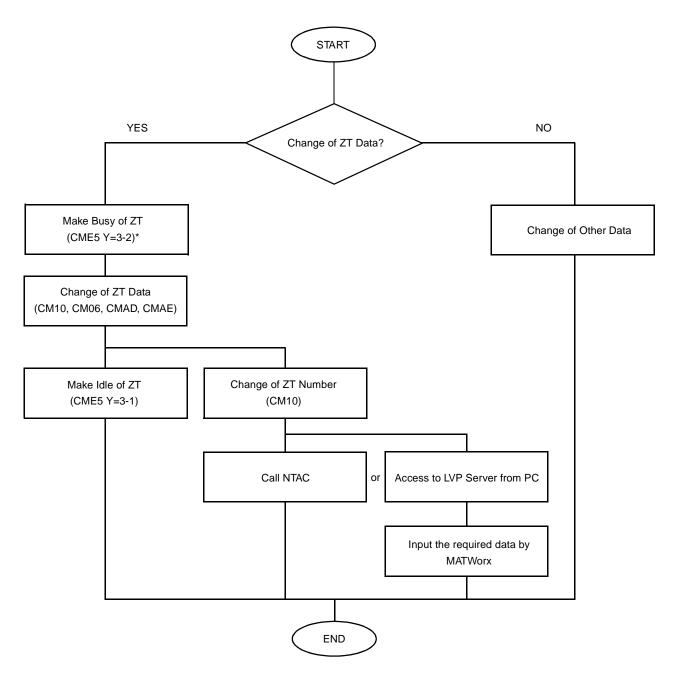
Assign the system data related to the WCS, according to the following procedure.

For other system data related to the PBX, refer to the Command Manual, the Feature Programming Manual, and the Office Data Programming Manual.

# 1. Initial set up of the system



2. When changing the ZT data in service When changing the ZT data in section 3.1 (CM10, CM06, CMAD, CMAE) in service, make busy of the ZT is required. In this case, do the following procedure.



\* To make busy the ZT in service, assign as follows:

CME5 Y=3

- (1) ZT No.  $(000 \sim 255)$
- (2) 2: Make busy after calls finished.

#### SYSTEM DATA PROGRAMMING

3. When changing the PS operation data

If you change the PS operation data previously downloaded to a PS, repeat PS data download.

CM1D YY=20

- (1) X-XXXX: PS Station No.
- (2) 1
- 4. When replacing the PS

When replacing the PS with a new one, and assigning the same PS number to the new PS, it is required to delete the PS number registered to the WCS by CM1C before downloading the new PS operation data.

#### CM1C

- (1) Virtual PS No.
- (2) CCC: Clear

Before clearing this office data, the following commands should be reviewed and the data should be noted. These commands are effected when a PS is deleted then ressigned in CM1C. The commands will need to be reassigned if the default value is not desired.

1D21--Default is "None." No PS-15. Must be reassigned.

1D15--Default is "15." Mode 1.

1D01--Default is "None." No Subline.

1202--Default is "1515." Service Restriction Class A/B.

1216--Default is "None." Must be reassigned.

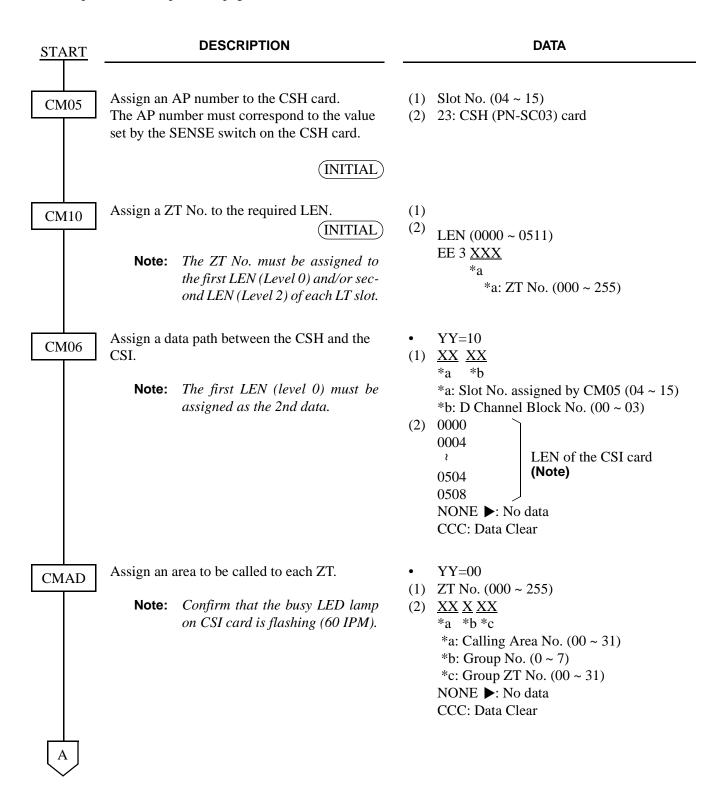
1D20--Download the PSs. Must be executed.

This page is for your notes.

#### SYSTEM DATA PROGRAMMING

### 3.1 ZT Data Assignment

When changing the ZT data (CM10, CM06, CMAD, CMAE) in service, make busy of the ZT (CME5 Y=3-2) is required. See the previous page.



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### **DESCRIPTION**

#### **DATA**

CMAD

Specify the type of ZT

**Note:** After reassigning this data, the ZT must be reset by either

unplugging it, then plugging it back in or by Make Busy/Made

Idle with CME53.

Assign a PAD data to each ZT, if required.

- YY=19
- (1) ZT No. (000-255)
- (2) 00: ZT II type (Mode 2)

15**◄**: Previous ZT Type (Mode 1)

- YY=01/08/09/10 (Connecting Patterns)
- (1) ZT No. (000-255)
- (2) See the following Table:

	PAD DATA (T/R)					
2ND DATA	YY=01 (CSI-COT/ODT/DID)	YY=08 (CSI-DTI)	YY=09 (CSI-LC/DLC)	YY=10 (CSI-CSI)		
00	0/0	0/0	0/0	0/0		
01	0/+3	0/+3	0/+3	0/+3		
02	0/+6	0/+6	0/+6	0/+6		
03	0/-3	0/-3	0/-3	0/-3		
04	+3/+3	+3/+3	+3/+3	+3/+3		
05	+3/+6	+3/+6	+3/+6	+3/+6		
06	+3/-3	+3/-3	+3/-3	+3/-3		
07	-3/-3	-3/-3	-3/-3	-3/-3		
08	+3/0	+3/0	+3/0	+3/0		
09	+6/0	+6/0	+6/0	+6/0		
10	-3/0	-3/0	-3/0	-3/0		
11	-3/0	-3/0	-3/0	-3/0		
12	0/-3	0/-3	0/-3	0/-3		
15 ◀	0/0	0/0	0/+6	0/+6		

- T: Transmitter (PS to ZT) PAD (dB) /R: Receiver (ZT to PS) PAD (dB)
- +: Gain
- -: Loss

CMAE

Specify the Nation Code.

- YY=00
- (1) 03 (Nation Code Assignment)
- (2) 003: North America 310
  - 004: North America 311
  - 005: North America 312
  - 006: North America 313
  - 007: North America 314
  - 008: North America 315
  - 009: North America 316
  - 255**◀**: Not used

В



#### DESCRIPTION

#### DATA

When providing Roaming Service, assign the Network ID.

(AP INITIAL)

- YY=42
- (1) 00 (Network ID Assignment)
- (2) 00000-65534: Network ID NONE ◀: Invalid (No Network ID)

**Note:** *Network ID Method:* 

Network ID Method is one Method to operate multi-site roaming. A Roaming PS must have two SYS-IDs on the Network ID Method. One is main SYS-ID for Home PBX and the other is Network ID for Roaming Network. The Network ID is used to define whether the PS can operate under the control of PBXs on the Roaming Network. The Network ID must the same for all PBXs within the same network. This data must be assigned only if roaming service is provided.

Assign a ZT Operation Mode.

Assign a Control Carrier Information.

- **Note 1:** Set 1st priority to the 3rd priority and assign 00 on the 4th and 5th priority (10 digits).
- **Note 2:** Select the Control Carrier No. as follows:

For example:

\*a : 02 \*b : 04

\*c:06

- Note 3: After changing this data, a system reset is required for the change to take effect and PS operation data must be downloaded every time the control carrier number is changed.
- Note 4: When roaming service is provided, assign the same control carrier information in all PBXs in the network.

Call NTAC or get your LVP code before proceeding.

**Note:** This data must be assigned when providing roaming only.

• YY=15 (Control Carrier Information)

(1) 00 (Assignment of Carrier Priority)

XX XX XX 00 00 (Control Carrier

(2) \*a \*b \*c No.: See below.)

\*a: 1st Priority
\*b: 2nd Priority
\*c: 3rd Priority

Control Carrier No. (01-06)

01: 1920. 35 MHz

02: 1920. 65 MHz 03: 1920. 95 MHz

04: 1921. 55 MHz

05: 1921. 85 MHz

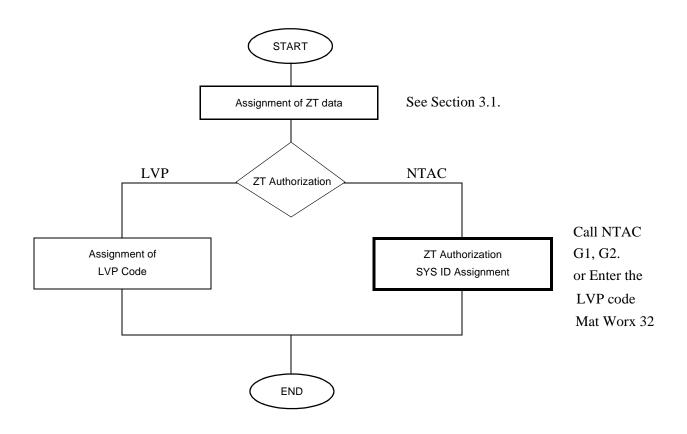
06: 1922. 15 MHz

<u>END</u>

# 3.2 ZT Set Up

# 3.2.1 Initial Set Up of ZT

Do the following procedure to set up the ZT.

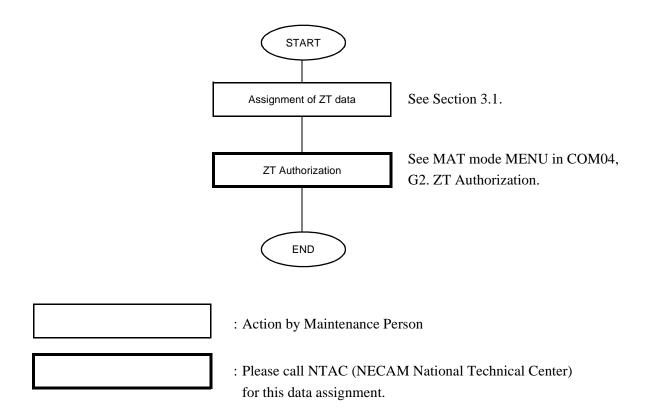


**Note:** When reinstalling the system after power down exceeding 8 hours, the System ID will be cleared. Reentry of the System ID must be required.

: Action by Maintenance Person
: Please call NTAC (NECAM National Technical Center) for this data assignment.

# 3.2.2 Setting Up of Additional ZT

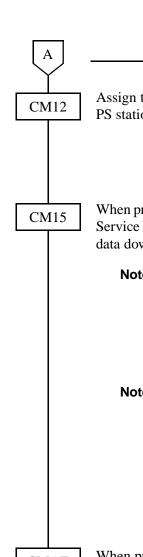
Do the following procedure to add the ZT.



# 3.3 PS Data Assignment

Proceed with the following procedure after SYS ID Assignment and ZT Authorization by NTAC.

<u>START</u>	DESCRIPTION		DATA
CM1C	Assign a PS Station No. to the required virtual PS No.	(1) (2)	Virtual PS No. (0001 ~ 0255) X-XXXX: PS Station No. (X=0-9, *, #)
CM1D	Assign a PS-ID. (Primary PS Station only)  Note 1: Insert leading zeroes in the PS-ID for a mzximum of nine digits. For example, if PS ID is 1234, enter 000001234 as the PS-ID.  Note 2: When a PS is assigned as a sub- line (second line), this data should not be assigned and must be set to default "NONE".  See Section 3.6.6 for multi-line operation PS programming.	• (1) (2)	YY = 21 X-XXXX: PS Station No. XX···XX: PS-ID (Max. 9 digits, Decimal)  Note: PS-ID as shown inside the battery compartment of your PS.
	For the D <sup>term</sup> PS II, Specify the terminal kind of the PS as "D <sup>term</sup> PS II".  Set this data also to the Sub-line PS station number, if provided.	• (1) (2)	YY=15 X-XXXX: PS Station No./Sub-line PS Station No. 00 : D <sup>term</sup> PS II 15◀: Former D <sup>term</sup> PS
A	Assign the sub-line PS number to each primary PS station.	• (1) (2)	YY=01 X-XXXX: Primary PS Station No. X-XXXX: Sub-line PS Station No.



### **DESCRIPTION**

DATA

Assign the Service Restriction Class to each PS station.

(1) X-XXXX: PS Station No.

(2) XX XX
Service Restriction Class A
(00-15◀)

When providing Roaming Service, specify the Service Restriction Class for Roaming Service data down load.

• YYY=117

YY=02

(1) 00-15: Service Restriction Class A assigned by CM12 YY=02

- (2) 0: Allowed 1◀: Restricted
- Note 1: Assign the same Service Restriction Class data to the PS station number and the Virtual LC Station number (see section 3.7.4) for Roaming Service.

Note 2: When the roaming service is provided, in the system where the second line service is also provided, it is recommended to set the primary PS-stations in different service restriction class than sub-lines, since sub-lines do not support the roaming feature.

- YY=00
- (1) 04 (Assignment of Home PBX ID)
- (2) X-XXXX: Home PBX ID (1-4 digits, Decimal)

CMAE

When providing Roaming Service, assign the Home PBX ID of the PBX to which the PS belongs. Assign the same number with the first 4 digits of the Individual PS Number.



**DATA** 

Download the PS operation data to each PS by assigning the 2nd data 1.

Note 1: All steps for setting up ZTs and all wiring must be successfully completed and ZTs must be idle before downloading PS operation data.

Note 2: When a PS is set up initially, set the PS in Data Download Mode by applying power to the PS while pressing the SEND key, and then execute the CM1D YY=20 in Calling Area No. 00.

**Note 3:** Set the D<sup>term</sup> PSII to download mode by simultaneously applying power to the D<sup>term</sup> PSII and pressing the "L1" key.

Note 4: If the download is successful, it will display the D<sup>term</sup> PSII number for 2 seconds. automatically reset, then return to stand-by mode. If the download failed, an error tone will sound and the Dterm **PSII** displays "Download Failed". Download must be performed again. this procedure continues to fail, contact the Service Center.

**Note 5**: *The following will be displayed on the MAT.* 

<u>STATUS</u> <u>DISPLAY</u> Loading succeeded OK

PS is busy WAIT BUSY NOW
PS is out of area WD ERROR
Lack of PS data DATA ERROR

END

• When changing the PS operation data

If you change the PS operation data in this section already downloaded to a PS, repeat PS data download (CM1D YY=20 second data: 1).

• YY=20

- (1) X-XXXX: PS Station No.
- (2) 1: To be executed

See "D<sup>term</sup> PS User Manual".

# 3.4 Virtual Line/Trunk Data Assignment

For Integrated Type/Adjunct Type2 (CCIS)

START	DESCRIPTION		DATA
CM10	Assign a Virtual Line/Trunk Circuit No. to the required LEN.  Note 1: Be sure to assign the Station No.	(1) (2)	LEN: (0511-0000) X-XXXX: Virtual Station No. D000-D255: Virtual Trunk No.
	to the Level 1 and Level 3.  Be sure to assign the Trunk No. to the Level 0 and Level 2.		
	Note 2: The Virtual Line/Trunk Circuit No. must be assigned from the last LEN No. 0511.		
CM12	Specify type for signal as DP to each Virtual Station No.	• (1)	CM12 YY=00 (DP or DTMF) X-XXXX: Virtual Station No. assigned by CM10
		(2)	1: DP
CM13	Specify the Reverse Signal (answer/release signal) to be sent to station, to each Virtual Station No.	• (1)	CM13 YY=18 (Reverse Signal) X-XXXX: Virtual Station No. assigned by CM10
	Station 140.	(2)	0: To be sent
CM30	Assign the data for the Virtual Line/Trunk to the Virtual Trunk No. assigned by CM10.	• (1) (2)	YY=00 Virtual Trunk No. (000–255) Trunk Route No. (00–63)
		•	YY=02 (Terminating System in Day
		•	Mode) YY=03 (Terminating System in Night Mode)
		(1) (2)	Virtual Trunk No. (000-255) 04 (Direct-In Termination
		• (1) (2)	YY=04 (Destination in Day Mode) YY=05 (Destination in Night Mode) Virtual Trunk No. (000-255) X-XXXX: PS Station No. assigned by CM1C.
A			

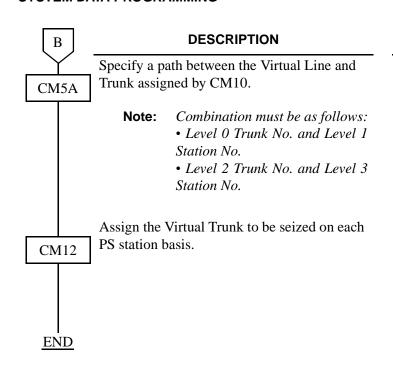
		SYSTEM DATA PROGRAMMING
A	DESCRIPTION	DATA
CM35	Assign the data for the Virtual Line/Trunk to the Trunk Route No. assigned by CM30 YY=00.	<ul> <li>YY=00 (Kind of Route)</li> <li>(1) Trunk Route No. (00-63)</li> <li>(2) 00: DDD</li> </ul>
		<ul> <li>YY=01 (Type of Signal)</li> <li>(1) Trunk Route No. (00-63)</li> <li>(2) 4: DTMF</li> </ul>
		<ul> <li>YY=04 (Answer Signal Condition)</li> <li>(1) Trunk Route No. (00-63)</li> <li>(2) 1: Answer Signal by Polarity Reversal</li> </ul>
		<ul> <li>YY=05 (Release Signal Condition)</li> <li>(1) Trunk Route No. (00-63)</li> <li>(2) 1◀: Release Signal from C.O.</li> </ul>
		<ul> <li>YY=09 (Incoming Connection Signaling)</li> <li>(1) Trunk Route No. (00-63)</li> <li>(2) 15◀: Ring Down (Loop Start)</li> </ul>
		<ul> <li>YY=20 (Sender Start Condition)</li> <li>(1) Trunk Route No. (00-63)</li> <li>(2) 15◀: Timing Start</li> </ul>
		<ul> <li>YY=98 (Designated Seizure of trunks)</li> <li>(1) Trunk Route No. (00-63)</li> <li>(2) 0: Allowed</li> </ul>

Specify the CDT card Terminating Impedance.

- YY=100
- (1) Trunk Route No. (00-63)
- (2) 0 :  $600 \Omega$ /complex BNW for Integrated Type and Adjunct Type (2)

2 ≤ : 600 Ω/600 Ω for Adjunct Type (1) (LC-COT)

#### SYSTEM DATA PROGRAMMING



### **DATA**

- YY=00
- (1) Block No. (000-169)
- (2) DXXX (Virtual Trunk No. 000-255) + + X-XXXX (Virtual Station No.)
- YY=16
- (1) X-XXXX: PS Station No.
- (2) D000-D255: Virtual Trunk No.

The example of the data setting for the Virtual Line/Trunk is as follows:

LEN No.	LEVEL	EVEL CM10		CM13		CM30			
LLIN NO.		Civilo	YY=00	YY=18	YY=00	YY=02	YY=03	YY=04	YY=05
0511	LEVEL 3	201	1	0					
0510	LEVEL 2	D001			ROUTE No.	04	04	PS Station No. ex.)A201	PS Station No. ex.)A201
0509	LEVEL 1	200	1	0					
0508	LEVEL 0	D000			ROUTE No.	04	04	PS Station No. ex.)A200	PS Station No. ex.)A200

LEN No.	LEVEL	CM35						
LEN NO.	LEVEL	YY=00	YY=01	YY=04	YY=05	YY=09	YY=20	YY=98
0511	LEVEL 3							
0510	LEVEL 2	00	4	1	1	15	15	0
0509	LEVEL 1							
0508	LEVEL 0	00	4	1	1	15	15	0

1st Data.	CM5A	
isi Dala.	YY=00	
BLOCK No.000	D000, 200	
BLOCK No. 001	D001, 201	
BLOCK No. 002	D002, 202	
BLOCK No. 003	D003, 203	
BLOCK No. 169	DXXX, XXXX	

1st Data	CM12		
13t Data	YY=16		
PS Station No. A200	D000		
PS Station No. A201	D001		
PS Station No. A202	D002		
PS Station No. A203	D003		
PS Station No. XXXX	DXXX		

## SYSTEM DATA PROGRAMMING

# 3.5 Trunk Data Assignment

For Adjunct Type1

START	DESCRIPTION	DATA
CM10	Assign a Trunk No. to the required LEN.	(1) LEN (0000-0511) (2) Trunk No. (D000-D255)
CM30	Assign the Trunk Route No. to the Trunk No.	<ul> <li>YY=00 (DP or DTMF)</li> <li>Trunk No. (000-255)</li> <li>Trunk Route No. (00-63)</li> </ul>
	Assign the data for terminating system.	<ul> <li>YY=02 (Day Mode)</li> <li>YY=03 (Night Mode)</li> <li>(1) Trunk No. (000-255)</li> <li>(2) 04: DIT</li> </ul>
	Assign the PS Station No. to be terminated by DIT.	<ul> <li>YY=04 (Day Mode)</li> <li>YY=05 (Night Mode)</li> <li>Trunk No. (000-255)</li> <li>X-XXXX: PS Station No.</li> </ul>
CM35	Assign the kind of trunk to the trunk route.	<ul> <li>YY=00</li> <li>(1) Trunk Route No. (00-63)</li> <li>(2) 00: C.O. Trunk</li> </ul>
	Specify the Dialing Signal Type to the trunk route.	<ul> <li>YY=01</li> <li>Trunk Route No. (00-63)</li> <li>2 : Call Origination—DP         <ul> <li>Call Termination—DP</li> </ul> </li> <li>Call Origination—DTMF             <ul> <li>Call Termination—DTMF</li> <li>Call Origination—DP/DTMF</li> <li>Call Termination—DTMF</li> <li>Call Termination</li></ul></li></ul>
	Assign the Call Direction to the trunk route.	• YY=02 (1) Trunk Route No. (00-63) (2) 3◀: Bothway Trunk
A		

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### DATA

Specify the Application of answer signal from **CM35** the distant office for outgoing connection to the trunk route.

• YY=04

- (1) Trunk Route No. (00-63)
- (2) 1 : Battery Reversal

7**◄**: Answer signal does not arrive from C.O. Line (Answer timing shall be set by CM41Y=0 Function No. 03)

Specify the Application of release signal from the distant office for an outgoing connection of an incoming connection to the trunk route. YY=05

- (1) Trunk Route No. (00-63)
- (2) 0 : Release signal does not arrive

1**◄**: Release signal arrives

Note:

In case of Adjunct Type1 (LC-COT), using a line card over the Main PBX is recommended to provide the release signal (i.e., momentarily, an open

circuit).

Assign the Sending of the dial pulse on an outgoing call to the trunk route.

- YY=08
- (1) Trunk Route No. (00-63)
- (2) 3**◄**: Dial pulses are sent out

Assign the Incoming Connection Signaling to the trunk route.

- YY=09
- (1) Trunk Route No. (00-63)
- (2) 15**◄**: Ring Down (Loop Start C.O.)

Assign the Sending of Hook Flash to outside to the trunk route.

- YY=16
- (1) Trunk Route No. (00-63)
- (2) 1**◄**: Sending

Assign the Sender Start Condition to the trunk route.

- YY=20
- (1) Trunk Route No. (00-63)
- (2) 15**◀**: Timing Start



#### DATA

CM35

Specify the Sender Prepause Timing to the trunk route.

- YY=21
- (1) Trunk Route No. (00-63)
- (2) 00: 0 sec. 08: 6.0 sec. 01: 0.5 sec. 09: 7.0 sec. 02: 1.0 sec. 10: 8.0 sec. 03: 1.5 sec. 11: 9.0 sec. 04: 2.0 sec. 12: 10.0 sec. 05: 2.5 sec. 13: 11.0 sec. 06: 4.0 sec. 14: 12.0 sec. 07: 5.0 sec. 15**◀**: 3.0 sec.

**Note:** To reduce the connecting time, shorten the prepause timing (i.e., second data=03 (1.5 sec.))

Specify the DP Inter-Digital Pause to the trunk route.

- YY=23
- (1) Trunk Route No. (00-63)
- (2) 0: 300 ms. 4: 700 ms. 1: 400 ms. 5: 900 ms. 2: 500 ms. 6: 1100 ms. 3: 600 ms. 7◀: 800 ms.

Specify the DTMF-Inter-Digital Pause to the trunk route.

- YY=24
- (1) Trunk Route No. (00-63)
- (2) 0: 32 ms. 4: 160 ms. 1: 64 ms. 5: 192 ms. 2: 80 ms. 6: 240 ms. 3: 96 ms. 7◀: 128 ms.

Note: To reduce the connecting time, it is recommended to shorten the DTMF inter-digital Pause timing (YY=24), i.e., second data=2 (80ms). YY=26, i.e., second data=0 (64ms)

Assign the DP Make Ratio to the trunk route.

- YY=25
- (1) Trunk Route No. (00-63)
- (2) 0 : 39% Make Ratio 1**◄**: 33% Make Ratio





#### DATA

CM35

Assign the DTMF Signal Width to the trunk route.

- YY=26
- (1) Trunk Route No. (00-63)
- (2) 0 : 64 ms.  $1 \blacktriangleleft : 128 \text{ ms.}$

Note:

To reduce the connecting time, it is recommended to shorten the DTMF inter-digital Pause timing (YY=24), i.e., second data=2 (80ms). YY=26, i.e., second data=0 (64ms)

Assign the Trunk Release by detection of reversal of tip and ring to the trunk route.

- YY=39
- (1) Trunk Route No. (00-63)
- (2) 0 : Not to be released 1◀: To be released

**CAUTION:** Check the timing on Main PBX before making any change on timing function (after PBX).

Specify the DP Sender Release Timing to the trunk route.

- YY=45
- (1) Trunk Route No. (00-63)
- (2) 0: 2 sec.
  - 1: 4 sec.
  - 2: 6 sec.
  - 3: 8 sec.
  - 4: 12 sec.
  - 5: 14 sec. 6: 16 sec.
  - 7**4**: 10 sec.

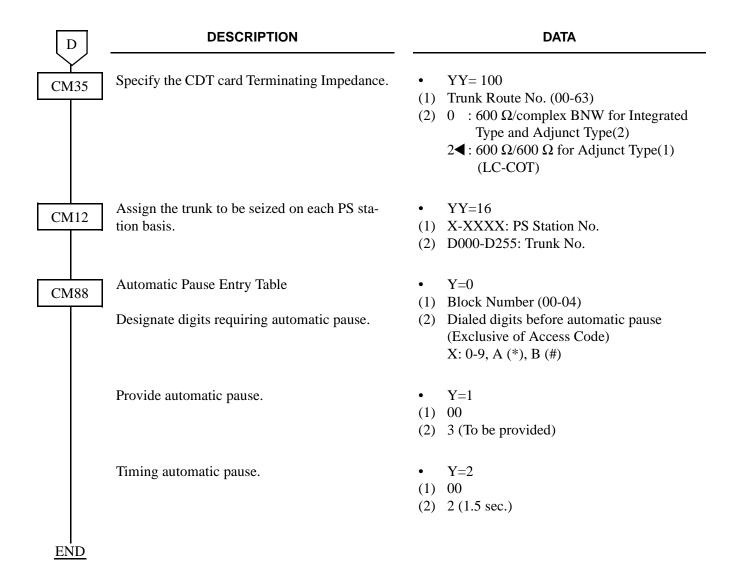
Specify the DTMF Sender Release Timing to the trunk route.

- YY=46
- (1) Trunk Route No. (00-63)
- (2) 0: 2 sec.
  - 1: 4 sec.
  - 2: 6 sec.
  - 3: 8 sec.
  - 4: 12 sec.
  - 5: 14 sec.
  - 6: 16 sec.
  - 7**<** : 10 sec.

Specify the designated seizure of trunks on each station basis.

- YY=98
- (1) Trunk Route No. (00-63)
- (2) 0: Allowed

D



### 3.6 Service Feature Data Assignment

#### 3.6.1 Announcement Service

Refer to Appendix A for the operating procedure.

To provide the Announcement Service:

**START DESCRIPTION DATA** (1) LEN (0000-0511) Assign a Digital Announcement Trunk Circuit CM10 No. to the required LEN. (2) EB000-EB127: Digital Announcement Trunk Circuit No. For PIM 0/1: EB000-EB031 Note: The Digital Announcement Trunk For PIM 2/3: EB032-EB063 Circuit No. must be assigned to the first LEN (Level 0) and/or the For PIM 4/5: EB064-EB095 third LEN (Level 2) of each LT For PIM 6/7: EB096-EB127 slot. **INITIAL** CM12 Assign a tenant No. to a PS station. (1) YY=04 (2) X-XXXX: PS Station No. 00: Tenant 00 **1<** : Tenant 01 63: Tenant 63 CM08 (1) 086 Specify whether PS Out of Cell/PS Power Off are separated from No-Answer. (2) 0 : Separated 1◀: Not Separated (Handled as No-An-Specify types of No-Answer Timer. (1) 085 (2) Note: This data is effective only when 0 : No-Answer timer (CM41·Y=0-86) CM08-086 is set to 0. 1 ≤: No-Answer timer (CM41·Y=0-01) CM41 Specify the message reply timer for the An-Y=0nouncement Service when a PS does not an-(1) 01swer. (2) 01-30: 4-120 sec. in 4 sec. increments Note: This data is effective only when If no data is set, the default setting is 32-36 CM08-085 and 086 are set to 1. seconds. Y=0Specify the message reply timer for the Announcement Service when a PS does not an-(1) 86 (2) 01-99: 4-396 sec. in 4 sec. increments swer. This data is effective only when Note: If no data is set, the default setting is 36-40 CM08-085 and 086 are set to 0. seconds

A	DESCRIPTION	DATA
CM41	Specify the message reply timer for the Announcement Service when a PS is out of cell/PS power is off.  Note: This data is effective only when CM08-086 is set to 0.	<ul> <li>Y=0</li> <li>(1) 85</li> <li>(2) 01-99: 4-396 sec. in 4 sec. increments</li> <li>If no data is set, the default setting is 8-12 seconds.</li> </ul>
	Specify the duration of message for the Announcement Service when a PS does not answer.	<ul> <li>Y=0</li> <li>(1) 75</li> <li>(2) 01-99: 4-396 sec. in 4 sec. increments</li> <li>If no data is set, the default setting is 116-120 seconds.</li> </ul>
	Specify the duration of message for the Announcement Service when a PS is out of cell/PS power is off.  Note: This data is effective only when CM08-086 is set to 0.	<ul> <li>Y=0</li> <li>(1) 84</li> <li>(2) 01-99: 4-396 sec. in 4 sec. increments</li> <li>If no data is set, the default setting is 116-120 seconds.</li> </ul>
CM48	Provide the Announcement Service.	<ul> <li>Y=5</li> <li>(1) 00: PS No-Answer</li> <li>02: PS Out of Cell/PS Power Off</li> <li>(2) 0500: To be provided</li> <li>1500: Not to be provided</li> <li>NONE ◀: Not to be provided</li> </ul>
CM49	Assign the function for each Digital Announcement Trunk.	<ul> <li>YY=00</li> <li>(1) 000-127: Digital Announcement Trunk assigned by CM10         (EB000-EB127)</li> <li>(2) 1300-1363: PS No Answer Message Group No. 00-63         1500-1563: PS Power Off/Out of Cell Message Group No. 00-63         NONE ◀: None</li> </ul>
	Assign the message group for each tenant when a PS does not answer.	<ul> <li>YY=10</li> <li>(1) 00-63: Tenant No.</li> <li>(2) 00-63: Message Group No. NONE ◀: None</li> </ul>
END	Assign the message group for each tenant when a PS is out off cell/PS power is off.	<ul> <li>YY=12</li> <li>(1) 00-63: Tenant No.</li> <li>(2) 00-63: Message Group No. NONE ◀: None</li> </ul>

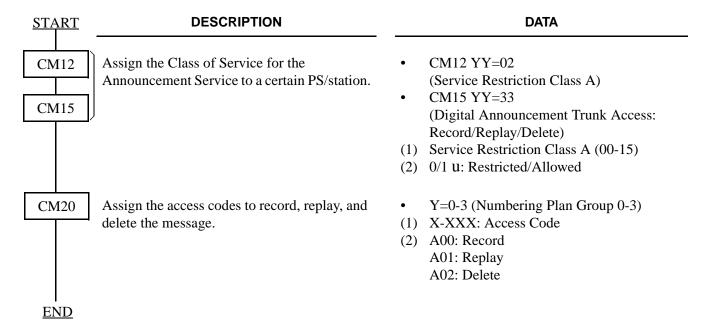
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To record/replay/delete a message from a station:

There are two methods to record/replay/delete a message from a PS or a station, as mentioned below.

1. To record/replay/delete a message from a station or a PS by dialling an access code assigned by CM20, do the following programming.

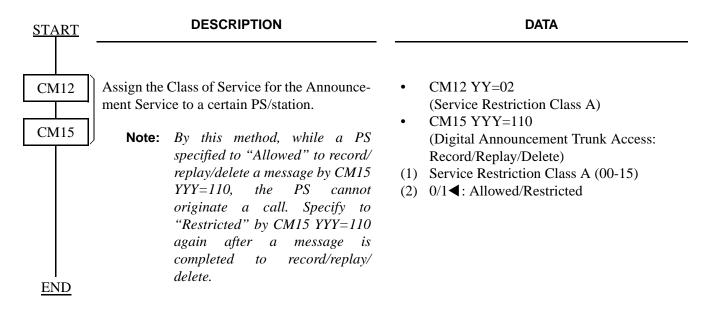
This method is available for only the Integrated Type.



Refer to Appendix A for the operating procedure.

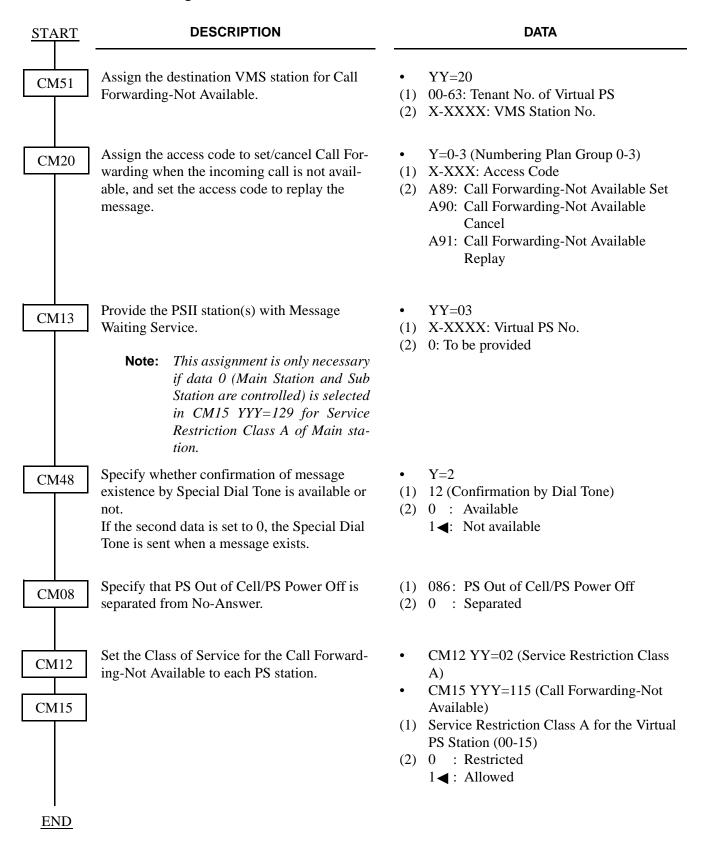
#### SYSTEM DATA PROGRAMMING

2. To record/replay/delete a message from a PS by dialing "1", "2", "3", do the following programming. This method is available for both the Integrated Type and the Adjunct Type.

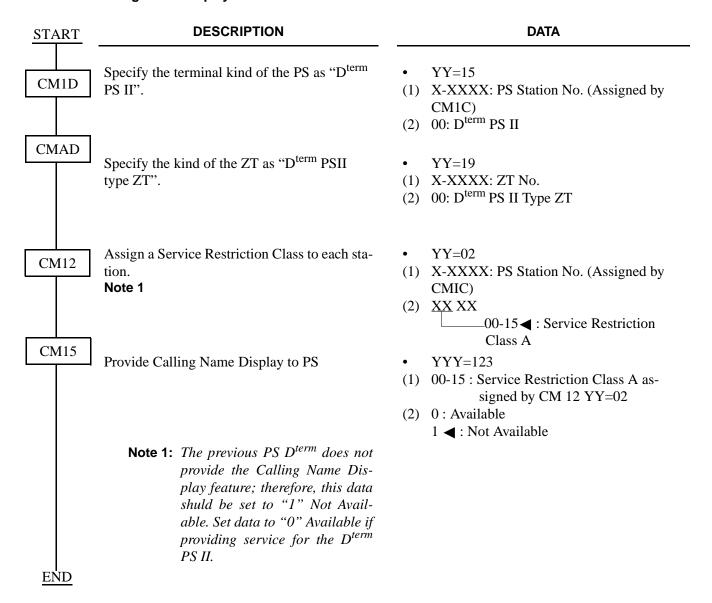


Refer to Appendix A for the operating procedure.

## 3.6.2 Call Forwarding-Not Available



### 3.6.3 Calling Name Display-PS



Refer to the following manuals for the name display feature programming.

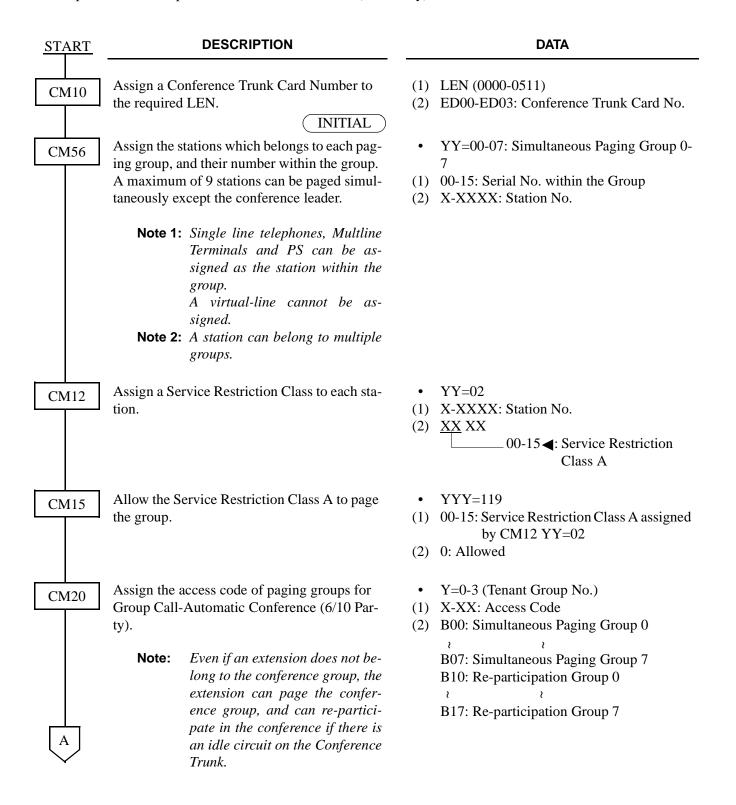
Feature Programming Manual; Alphanumeric Display, Caller ID Class

CCIS System Manual; Calling Name Display-CCIS

PMS System Manual; Guest Name Display

## 3.6.4 Group Call-Automatic Conference (6/10 Party) Data Assignment

To provide the Group Call-Automatic Conference (6/10 Party):





**END** 

### **DESCRIPTION**

Assign a Group Call-Automatic Conference (6/10 Party) key of each paging group to the Multiline Terminal, if required.

Note:

Even if an extension does not belong to the conference group, the extension can page the conference group, and can re-participate in the conference if there is an idle circuit on the Conference Trunk.

Specify the duration of simultaneous paging.

#### **DATA**

- Y=00
- (1) X-XXXX: Primary Extension No. + +key No.
- (2) F0B00: Simultaneous Paging Group 0

F0B07: Simultaneous Paging Group 7 F0B10: Re-participation Group 0

F0B17: Re-participation Group 7

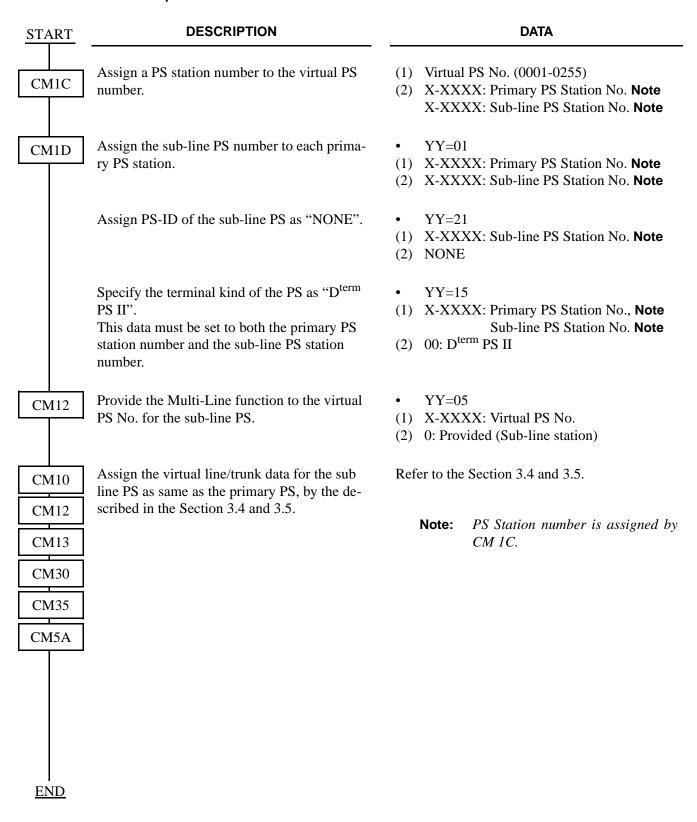
- Y=0
- (1) 95
- (2) 01-99: 4-396 sec. in 4 sec. increments If no data is set, the default setting is 32-36 seconds.

# 3.6.5 Group Call-2 Way Calling

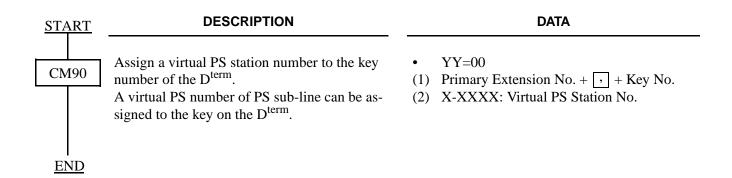
To provide the Group Call-2 Way Calling:

<u>START</u>	DESCRIPTION	DATA		
CM56	Assign the stations which belongs to each paging group, and their number within the group.  A maximum of 9 stations can be paged simultaneously except the conference leader.  Note 1: Single line telephones, Multline Terminals and PS can be assigned as the station within the group.  A virtual-line cannot be assigned.  Note 2: A station can belong to multiple groups.	<ul> <li>YY=00-07: Simultaneous Paging Group 0-7</li> <li>(1) 00-15: Serial No. within the Group</li> <li>(2) X-XXXX: Station No.</li> </ul>		
CM15	Assign a Service Restriction Class to each station.	• YY=02 (1) X-XXXX: Station No. (2) XX XX  00-15 ✓: Service Restriction Class A		
CM20	Allow the Service Restriction Class A to page the group.	<ul> <li>YYY=119</li> <li>(1) 00-15: Service Restriction Class A assigned by CM12 YY=02</li> <li>(2) 0: Allowed</li> </ul>		
CM90	Assign the access code of paging groups for Group Call-2 Way Calling.  Note: Even if an extension does not belong to the conference group, the extension can page the conference group.	<ul> <li>Y=0-3 (Tenant Group No.)</li> <li>X-XX: Access Code</li> <li>B20: Simultaneous Paging Group 0</li> <li>B27: Simultaneous Paging Group 7</li> </ul>		
	Assign a Group Call-2 Way Calling key of each paging group to the Multiline Terminal, if required.	<ul> <li>Y=00</li> <li>(1) X-XXXX: Primary Extension No. + ,</li> <li>+ key No.</li> <li>(2) F0B20: Simultaneous Paging Group 0</li> </ul>		
<u>END</u>	Note: Even if an extension does not belong to the conference group, the extension can page the conference group.	F0B27: Simultaneous Paging Group 7		

### 3.6.6 Multi-Line Operation-PS



To assign the PS station to the line key on the D<sup>term</sup>, assign the following data.

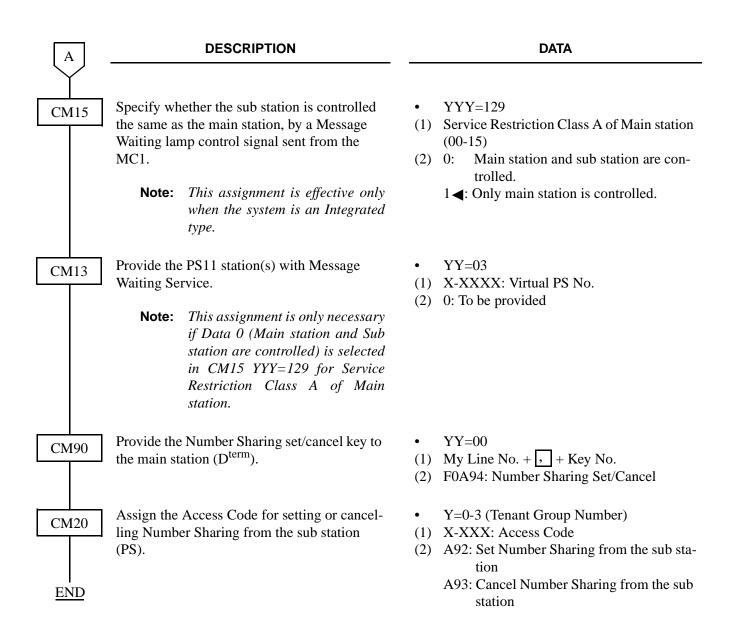


### 3.6.7 Number Sharing

DESCRIPTION DATA **START** Specify the combination of the main station YY=16 (Assignment of the main station CM12 and the sub station, also the contrary and the sub station) (1) X-XXXX: Main station (D<sup>term</sup> My Line) combination, as follows. (1st data: Main station (D<sup>term</sup> My Line) No./sub station (PS) No. 2nd data: Sub station (PS) (2) X-XXXX: Sub station (PS) No./main station (D<sup>term</sup> My Line) No. (1st data: Sub station (PS) 2nd data: Main station (D<sup>term</sup> My Line) **Note:** As the main station number,  $D^{term}$ My Line number must be assigned. As the sub station number, following number must assigned. Integrated type/Adjunct type (CCIS): Virtual PS number assigned by CM10. Adjunct type (LC-COT): PS station number assigned by CM30 YY=04. Assign the Class of Service to required sta-YY=02tions. (1) X-XXXX (Station No.) Note: For the Trunk Restriction Class Service Restriction Class A (CM12 YY=01) and the Tenant (00-15)Number (CM12 YY=04), the same data must be assigned to the sub station and the main station. YYY=127 To the sub station (PS), specify the number CM15 which is informed to calling/called party, (1) Service Restriction Class A of sub station SMDR and MCI as the main station number. (00-15)(2) 0: Main station number is informed Provide the capability of setting/cancelling the YYY=128 Number Sharing from the sub station. (1) Service Restriction Class A of sub station (00-15)

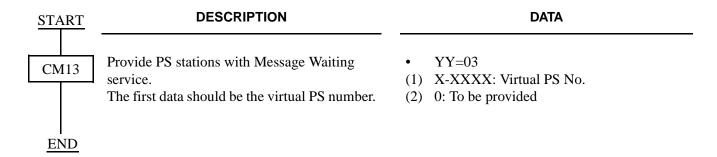
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(2) 0: To provide



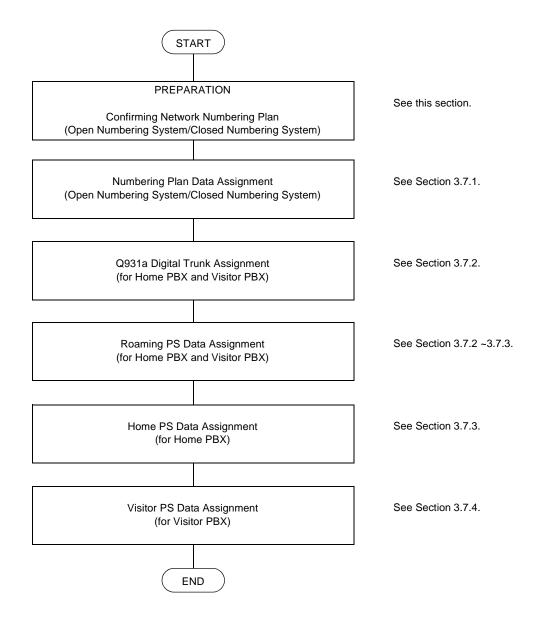
#### SYSTEM DATA PROGRAMMING

## 3.6.8 Voice Mail Indication



## 3.7 Multi-Site Roaming Data Assignment

According to the following procedure, assign the system data for Roaming service.



Confirming Network Numbering Plan
 Confirm whether the network adopts Open Numbering System or Closed Numbering System for the network numbering plan.

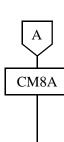
**Note:** The System data stored in the memory of the DBM (AP00) card can be saved, loaded and verified from the MAT.

To save; Memory Area No.: A, Memory Address: 00900-10870

To load or verify; File Extension: DMA

# 3.7.1 Network Numbering Plan Assignment

<u>START</u>	DESCRIPTION		DATA
CM20	Assign an access code for LCR Group 0-3. For Closed Numbering System, assign the second data to A29 (LCR Group 3).	(1) (2)	Y=0-3 (Numbering Group 0-3) X-XXXX: Access Code A26: LCR Group 0 A27: LCR Group 1 A28: LCR Group 2 A29: LCR Group 3
	Specify the number of digits and the first digit for station number.	(1) (2)	Y=0-3 (Numbering Group 0-3) X: First Digit of Station No. 801: 1 digit 802: 2 digits 803: 3 digits 804: 4 digits
CM8A	Assign an Area Code Development Pattern No. to each LCR Group. For Closed Numbering System, assign the first data to 3.	(1)	YYY=A00 0-3: LCR Group 0-3 0-7: Area Code Development Pattern No. 0-7
	Assign a Route Pattern No. to each area code for the Area Code Development Pattern No. assigned by CM8A YYY=A00.	(1)	YYY=400-407 (Area Code Development Pattern No. 0-7) XXXX (Area Code, Max. 8 digits) 000-063 (Route Pattern No. 00-63)
	Assign an area code including LCR access code assigned by CM20-A29.	(1) (2)	YYY=400-407 (Area Code Development Pattern No. 0-7) X-XXXXX (Area Code, 1-5 digits) 800 (Intra-Office Termination) 801 (1-digit intra-office station) 802 (2-digit intra-office station) 803 (3-digit intra-office station) 804 (4-digit intra-office station) 805 (5-digit intra-office station)
A			



#### DATA

Specify the order of LCR selection for the Route Pattern No. assigned by YYY=400-407.

YYY=000-063 (Route Pattern No. 00-63)

(1) 1-4: Order of LCR Selection

1: 1st

2: 2nd

3: 3rd

4: 4th

 $(2) \quad \underline{XXX} \quad \underline{XX} \\ *a \quad *b$ 

\*a: 000-255 (LCR Pattern No. 000-255)

\*b: 00-63 (Trunk Route No. 00-63)

To delete the designated digit of an area code:

- YYY=500-755
- (1) 153 (Designation of digit to be deleted)
- (2) 00: No digits deleted 01: First digit deleted

10: First 10 digits deleted CCC: No digits deleted

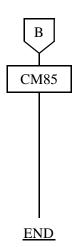
Assign the digits to be added to the digits sent to the distant office.

For Closed Numbering System, this assignment is not required.

- YYY=500-755
- (1) 100 (Designation of digit Addition Pattern-No.)
- (2) 00-49 (Digit Addition Pattern No. 00-49) CCC: No digits added
- YYY=900-949 (Digit Addition Pattern No. 00-49)
- (1) 0
- (2) X-X...X [Digits to be added (Max. 32 digits)]

X=0-9, A (\*), B (#), C (Fixed Pause)

В



Specify the maximum number of digits to be dialed by the calling party.

The maximum number of digits including the area codes should be assigned to each area code.

## **DATA**

- Y=0-7 (Area Code Development Pattern No. 0-7 assigned by CM8A, YYY=A00)
- (1) X-X...X (Area Code dialed, Max. 8 digits)

79 : 79 digits

**DATA** 

## 3.7.2 Q931a Digital Trunk Assignment

1. DTI Assignment

START

**DESCRIPTION** 

(1) AP No. (04-15)

Assign an AP number to the DTI card.

The AP number assigned must coincide with the value set by the SENS switch on the DTI card.

(INITIAL)

(2) 09: DTI card

CM07

CM05

Assign the trunk number to each channel number on the DTI card.

**INITIAL** 

Note:

The system allocates time slots to consecutive channels from lowest to highest channel number assigned. To minimize the number of time slots allocated, assign trunk numbers to the consecutive channels on each card. Never skip channels in CM07.

• YY=01

(1) <u>XX XX</u>

\*a \*b

\*a: AP No. assigned by CM05

\*b: Channel No. of DTI 00-23

For 24-DTI

00-22: B channel

23: D channel

For 30-DTI

01-15, 17-30: B channel

16: D channel

(2) Trunk No. (D000-D255)

Trunk number already assigned by CM10 cannot be used.

**CMAA** 

Assign the necessary functions to the 24-DTI card.

After entering the data, set the MB switch on the DTI card to UP, and then to DOWN, for DTI intialization.

**Note 1:** These commands are only applicable for the 24-DTI card.

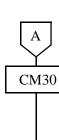
**Note 2:** The following table shows the relationship between CMAA YY=01 and CMAA YY=02.

CMAA YY=01 (FRAME CON- FIGURATION)	CMAA YY=02 (ZERO CODE SUPPRESSION)	SIGNALING
24-multiframe [1]		B8ZS
12-multiframe [0]	Not Available [1]	Transparent
12-maiimame [o]	Available [0]	B7

[]: Indicates 2nd data.

• YY=00 (Data Mode)

- (1) Slot No. (04-15) assigned by CM05
- (2) 0: Based on AT&T Spec.
- YY=01 (Frame Configuration)
- (1) Slot No. (04-15) assigned by CM05
- (2) 0 : 12-Multiframe
  - 1**◄**: 24-Multiframe
- YY=02 (Zero Code Suppression)
- (1) Slot No. (04-15) assigned by CM05
- (2) 0 : Available
  - 1**◄**: Not Available
- YY=03
- (1) Slot No. (04-15) assigned by CM05
- (2) 7**◄**: Channel Associated Interoffice Signaling



rate route for B channels and D channels.

Assign a Trunk Route to each trunk number used for voice channel (B channel), and also to signaling channel (D channel). Make a sepa-

YY=00
(1) B Channel, D channel Trunk No. (000-255) assigned by CM07 YY=01
(2) Trunk Route No. (00-63)

**DATA** 

**Note:** *DTI* route must be separated from analog trunk routes

Assign the terminating system to each incom-

YY=02 (Day Mode) YY=03 (Night Mode)

(1) B Channel Trunk No. (000-255) assigned by CM07 YY=01

(2) 21: Dial-in

ing trunk used for voice channel, as "dial-in".

- YY=07
- (1) B Channel Trunk No. (000-255)

(2) 000-022: CIC 000-CIC 022

Assign the CIC (Circuit Identification Code) to each voice channel trunk.

В

В	DESCRIPTION	DATA
CM35	Assign trunk route data to each channel trunk route number assigned by CM30 YY=00.	<ul> <li>YY=00 (Kind of Trunk Route)</li> <li>(1) B Channel, D Channel Route No. (00-63)</li> <li>(2) 04: Tie Line</li> </ul>
		<ul> <li>YY=01 (Dialing Signal Type)</li> <li>(1) B Channel Route No. (00-63)</li> <li>(2) 7◄: Call Termination; DP/DTMF Call Origination; DTMF</li> </ul>
		<ul> <li>YY=04 (Answer Signal from Distant Office)</li> <li>(1) B Channel Route No. (00-63)</li> <li>(2) 2 : Answer signal arrives.</li> <li>7◄: Answer signal does not arrive.</li> </ul>
		<ul> <li>YY=05 (Release Signal from Distant Office)</li> <li>(1) B Channel Route No. (00-63)</li> <li>(2) 0 : Release signal does not arrive.</li> <li>1 ◄: Release signal arrives.</li> </ul>
		<ul> <li>YY=09 (Incoming Connection Signaling)</li> <li>(1) B Channel Route No. (00-63)</li> <li>(2) 08: Q931a</li> </ul>



## DATA

CM35

	PAD DATA OF DTI [dB]			
CONNECTION PATTERNS	DATA =4 (T/ R)	DATA =5 (T/ R)	DATA =6 (T/ R)	DATA =7 (T/ R)
Station – DTI	-3/-8	-3/-3	-3/-3	-3/-8
Tone – DTI	0/0	0/0	0/0	0/0
COT/LDT – DTI	0/0	0/0	0/0	0/0
ODT – DTI	+3/-3	0/0	0/0	+3/-3
DTI –DTI	0/–6	0/0	0/-6	0/0

T/R: Transmitter PAD/Receiver PAD

+: Gain -: Loss

•	Y	Y=1	19

(1) B Channel Route No. (00-63)

(1)	D Chamier Route 110. (00 03		
(2)	0:		
	1:	Programmable PAD	
	2:	(See CM42)	
	3:		
	4:		
	5:	Fixed PAD	
	6:	(See left table)	
	7 <b>⊿</b> ·		

CM42

When using the programmable PAD (CM35 YY=19, 2nd Data=0-3), assign the PAD data.

- (1) 50-65 See the following tables.
- (2) 00-15

PATTERN	PAD DATA PATTERNS			CONNECTING		
1ST DATA	CM35 YY=19 2ND DATA=0	CM35 YY=19 2ND DATA=1	CM35 YY=19 2ND DATA=2	CM35 YY=19 2ND DATA=3	PATTERNS	
50	50	54	58	62	STA/TONE-DTI	
30 }	51	55	59	63	COT/LDT-DTI	
65	52	56	60	64	ODT-DTI	
0.5	53	57	61	65	DTI-DTI	

2ND DATA	PATTERN	PAD DATA OF DTI (T/R) [dB]	REMARKS
	00	0/0	
	01	-2/-2	
	02	-3/-3	
	03	0/–6	
00	04	-3/-8	
₹	05	+3/-3	
15	06	-6/-6	
	07	-8/-8	
	08	Not Used	
	≀		
	15		

T/R: Transmitter PAD/Receiver PAD

+: Gain

-: Loss

**END** 

# 2. DCH Assignment

<u>START</u>	DESCRIPTION	DATA
CM05	Assign an AP number to the DCH card (PN-SC01). The AP number assigned must coincide with the value set by the SENS switch on the PN-SC01 card.  INITIAL	<ul><li>(1) AP No. (04-15)</li><li>(2) 35: DCH for Roaming</li></ul>
CM06	Assign the DCH number to the AP number of DCH assigned by CM05.  [INITIAL]	<ul> <li>YY=08</li> <li>(1) DCH No. (0-4)</li> <li>(2) XX: AP No. assigned by CM05</li> </ul>
CM35	Execute CM35 YY=90 for the B channel route and D channel route.	<ul> <li>YY=90 (Special Facilities)</li> <li>(1) B Channel, D Channel Route No. (00-63)</li> <li>(2) 6: PBX-PBX Interface.</li> </ul>
	Assign the DCH number to the voice channel trunk route assigned by CM30 YY=00.	<ul> <li>YY=93 (Assignment of D Channel Handler)</li> <li>(1) B Channel Route No. (00-63)</li> <li>(2) 00-04: DCH No. (0-4)</li> <li>15 <ul> <li>Not used</li> </ul> </li> </ul>
A		

A	DESCRIPTION	DATA
CM35	Specify the LAPD Mode of the D channel route as "Network Mode" or "User Mode". This data must be set differently between the opposite DTIs. When the opposite office is a master office, set this data to 1 (User Mode), and when the opposite office is a slave office, set this data to 0 (Network Mode).  (AP INITIAL)	<ul> <li>YYY=113 (LAPD Mode)</li> <li>(1) D Channel Route No. (00-63)</li> <li>(2) 0: Network Mode 1   : User Mode</li> </ul>
	Assign the roaming service to each B channel and D channel route.	<ul> <li>YYY=140 (Roaming Service)</li> <li>(1) B Channel, D Channel Route No. (00-63)</li> <li>(2) 0: Available</li> </ul>
	Provide pursuit function after the roaming PS to each B channel route.	<ul> <li>YYY=141 (Roaming PS Pursuit)</li> <li>(1) B Channel Route No. (00-63)</li> <li>(2) 0: Provided</li> </ul>
	Specify the protocol type between the PBXs as "Q931a-Digital".  (AP INITIAL)	<ul> <li>YYY=142 (Protocol between PBXs)</li> <li>(1) B Channel, D Channel Route No. (00-63)</li> <li>(2) 1: Q931a-Digital</li> </ul>
CMA9	Assign the trunk number assigned by CM07 YY=01 to each DCH Number for providing D Channel path between DTI and DCH.  (INITIAL)	• YY=00 (1) DCH No. (0-4) (2) Trunk No. (000-255)
	<b>Note:</b> Confirm that the SC01 Run LED is flashing.	
	When the Network Numbering Plan is the Open Numbering System, assign the Home PBX ID for the indication on the PS/D <sup>term</sup> .	<ul> <li>YY=01</li> <li>(1) DCH No. (0-4)</li> <li>(2) X-XXXX: Home PBX ID</li> </ul>

**END** 

(2) X-XXXX: Home PBX ID (1-4 digits, Decimal)

## 3.7.3 Home PS Data Assignment

**START** 

#### DESCRIPTION

## **DATA**

CM05

Assign an AP number to the DBM (Data Base Module) card (PN-AP00).

The AP number must be coincide with the value set by SENSE switch of the card.

(INITIAL)

CM12

Assign the Trunk Restriction Class for Home PS. This data is sent to the visitor PBX when the PS is roaming.

Note: When the location registration of a Visitor PS is executed, the Trunk Restriction Class assigned on the Home PBX is notified to the Visitor PBX being substituted as follows.

CM12 YY=01 Settings on the Home PBX	Notified Class
1: Unrestricted (RCA)	1
2: Non-Restricted 1 (RCB)	2
3: Non-Restricted 2 (RCC)	3
4: Semi-Restricted 1 (RCD)	4
5: Semi-Restricted 2 (RCE)	4
6: Restricted 1 (RCF)	5
7: Restricted 2 (RCG)	5
8: Fully-Restricted (RCH)	6

• YY=01 (Trunk Restriction Class)

(1) X-XXXX: Virtual LC Station No.

(2) XY

(1) AP No. (04-15)

(2) 34: DBM (AP00)

X: Trunk Restriction Class in Day Mode (1 ◀-8)

Y: Trunk Restriction Class in Night Mode (1 ◀-8)

1**◄**: Unrestricted (RCA)

2 : Non-Restricted 1 (RCB)

3 : Non-Restricted 2 (RCC)

4 : Semi-Restricted 1 (RCD)

5 : Semi-Restricted 2 (RCE)

6 : Restricted 1 (RCF)

7 : Restricted 2 (RCG)

8 : Fully-Restricted (RCH)

Assign the Service Restriction Class for Home PS

Note 1: Different Service Restriction Class for Multi-Site Roaming must be assigned to the PSs according as whether the PS is used for Roaming.

Assign the Tenant Number to the Home PS. This data is sent to the visitor PBX when the PS is roaming.

Note 2: It is recommended to assign the PS station (CM1C) and its related virtual LC station number to the same service restriction class when roaming is provided. See Section 3.3.

- YY=02 (Service Restriction Class)
- (1) X-XXXX: Virtual LC Station No.
- (2) XXYY

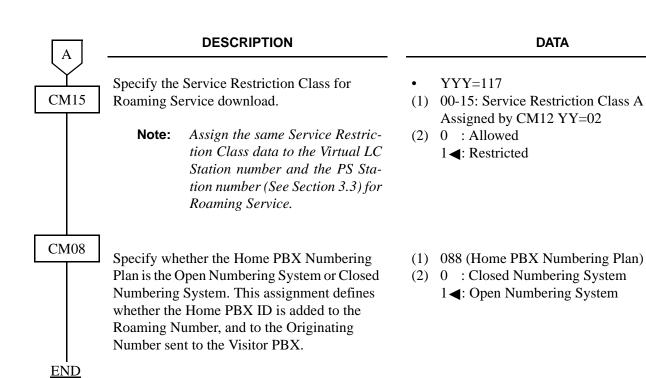
XX: Service Restriction Class A (00-15◀)

YY: Service Restriction Class B (00-15◀)

- YY=04 (Service Restriction Class)
- (1) X-XXXX: Virtual LC Station No.
- (2) 00 -63 : Tenant No. 00-63

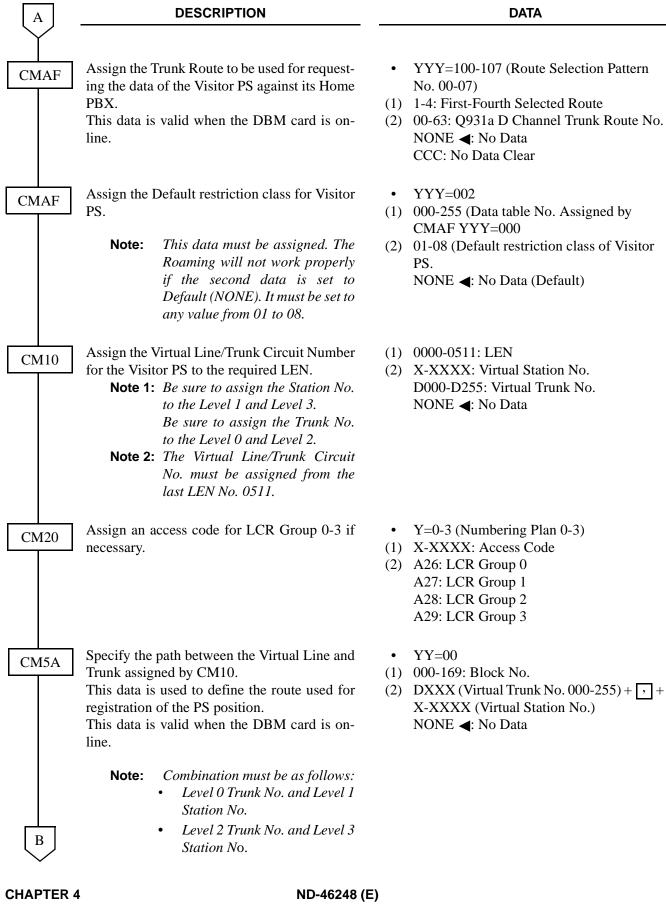
01





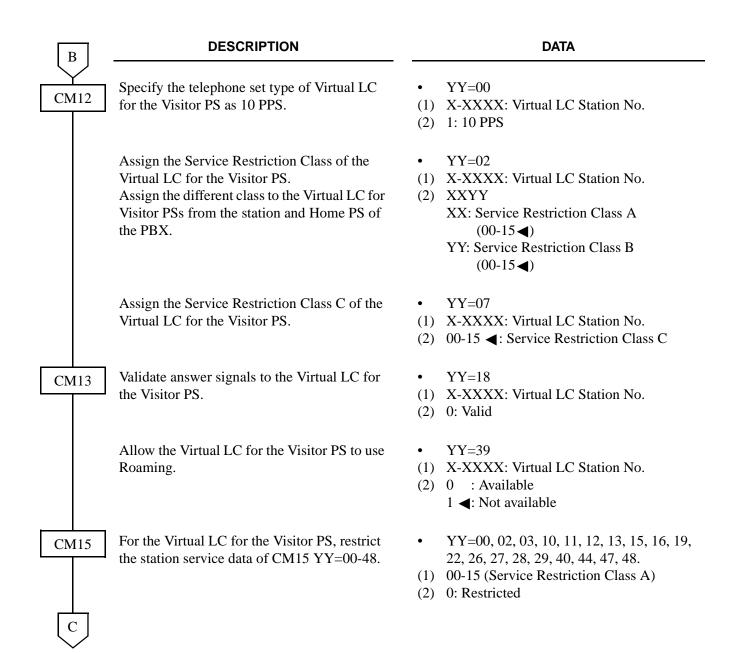
# 3.7.4 Visitor PS Data Assignment

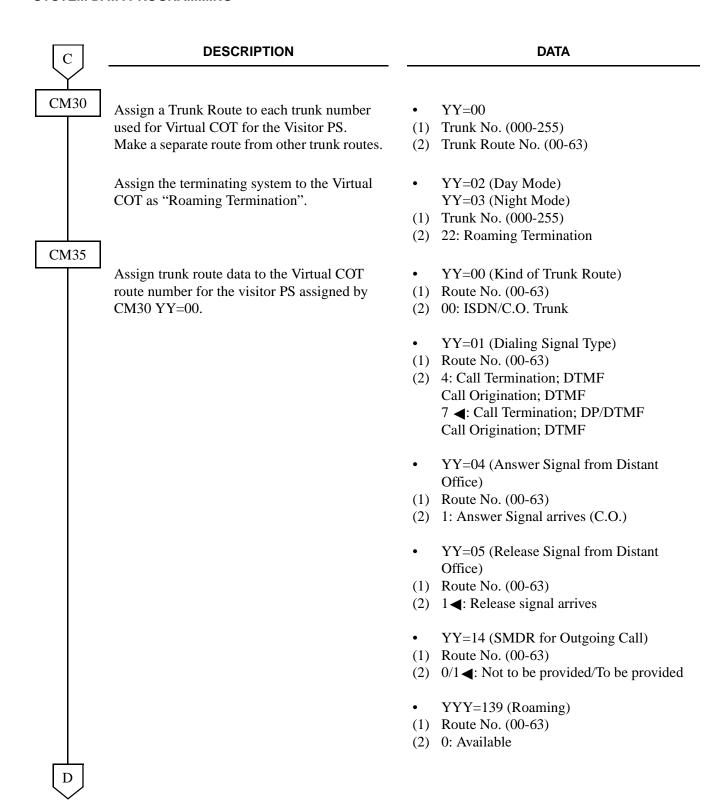
<u>START</u>	DESCRIPTION	DATA
CMAF	Execute System Data Memory All Clear of the DBM (AP00) card. The System Data Memory All Clear must be done at the initial setup. This data is valid when the DBM card is online.	• YYY=999 (1) 1 (All Clear) (2) CCC
	Execute Work Memory All Clear of the DBM card.  The Work Memory All Clear must be done before the system starts operating. All HLR, VLR data is cleared by this command.  This data is valid when the DBM card is online.	• YYY=998 (1) 1 (All Clear) (2) CCC
	Assign the Home PBX ID of Visitor PS and its data table number.  This data is used to define the PBX for which the PS can perform Roaming.  This data is valid when the DBM card is online.	<ul> <li>YYY=000</li> <li>(1) X-XXXX: Home PBX ID</li></ul>
	Assign the Home PBX ID of Visitor PS and its data table number.  This data is used to define the route used for registration of the PS location.  This data is valid when the DBM card is online.	<ul> <li>YYY=001</li> <li>(1) 000-255: Data Table No. assigned by CMAF YYY=000</li> <li>(2) 00-07: Route Selection Pattern No. CCC: Data Clear NONE ◀</li> </ul>



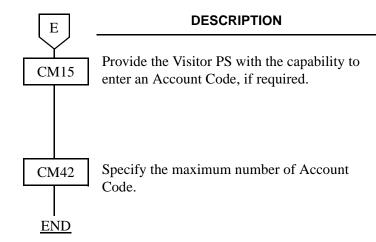
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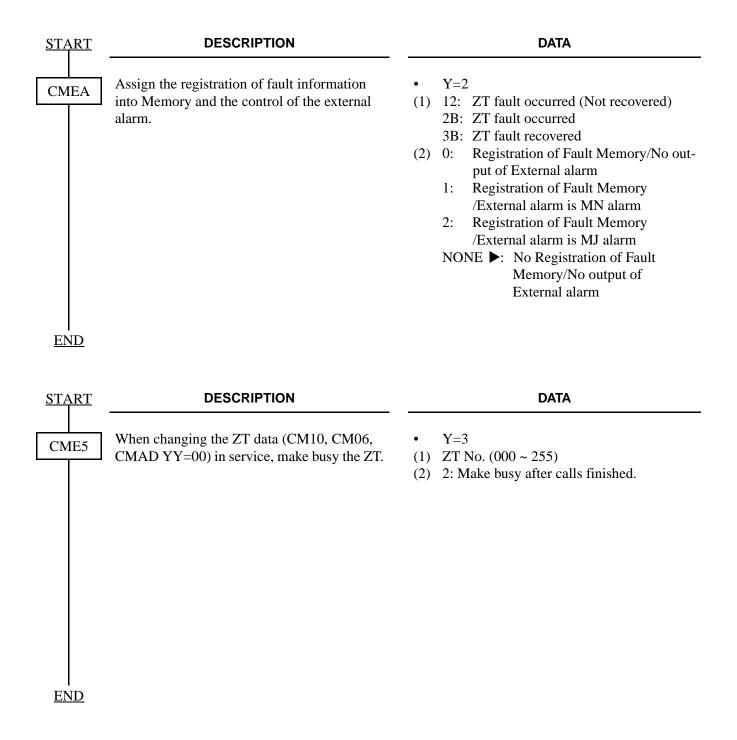
D	DESCRIPTION	DATA	
CMAF	Specify the Route Selection Pattern Number as "Pattern Number 0", for all classes of the Trunk Restriction Class (01-06) sent from the Home PBX.  This data is valid when the DBM card is online.	<ul> <li>YYY=208</li> <li>(1) 01-06: Trunk Restriction Class sent from the Home PBX</li> <li>(2) 00: Route Selection Pattern 0</li> </ul>	om
	Specify the Virtual COT Trunk route to be used for originating/terminating calls from/to the Visitor PS.  This data is valid when the DBM card is online.	<ul> <li>YYY=200 (Route Selection Pattern 0)</li> <li>(1) 1: First Selected Route</li> <li>(2) 00-63: Trunk Route NONE ◀: No Data</li> </ul>	
CM18	Assign the Station Hunting Group of the virtual LCs for the Visitor PSs. All the Virtual LC Stations in one Hunting Group must be the Virtual LC Station corresponds to the Virtual COTs for which the same Trunk Route is assigned.	<ul> <li>Y=0</li> <li>X-XXXX: Virtual LC Station No.</li> <li>X-XXXX: Virtual LC Station No.</li> </ul>	
	Specify the kind of station for a Virtual LC Station as a Pilot Station, and for other Virtual LC stations as a Member Station.	<ul> <li>Y=1</li> <li>(1) X-XXXX: Virtual LC Station No.</li> <li>(2) 0: Member Station</li> <li>1 ◄: Pilot Station</li> </ul>	
CMAF	Assign the Roaming Station Number for the Visitor PS. For the Roaming Station Number, set the Virtual LC Pilot Station Number specified by CM18 Y=1. This data is valid when the DBM card is online.	<ul> <li>YYY=210</li> <li>(1) 00 (Roaming Number Assignment)</li> <li>(2) X-XXXX: Roaming Station Number</li> </ul>	
E			



**DATA** 

- YY=30
- (1) 00-15 (Service Restriction Class A assigned by CM12 YY=02)
- (2) 0 : Restricted 1 **◄**: Allowed
- (1) 10 (Max. Digits for Account Code)
- (2) 01-16**∢**: 01-16 digits

## 3.8 Maintenance Data Assignment



#### SYSTEM DATA PROGRAMMING

## 3.9 Maintenance Administration Terminal (MAT)

The figures below describe the installation for the WCS Maintenance Administration Terminal (MAT). For more information about system-required equipment, system description and MAT Operation, refer to your MAT Operation Guide.

#### 3.9.1 Direct Connection

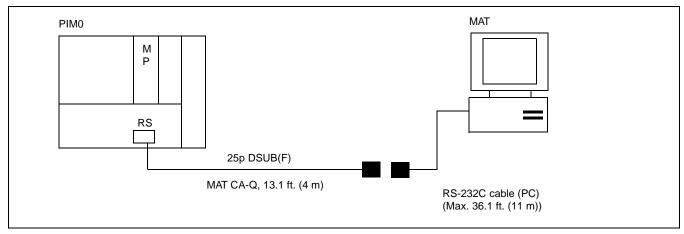


Figure 4-1 Cable Connection (Direct)

Table 4-1 MAT Cable (Direct)

DESCRIPTION	QUANTITY	REMARKS
MAT CA-Q	1/Sys	RS-232C Cable, 13.1 ft. (4.0 m)

#### 3.9.2 Remote Connection

Remote connection is available via an internal modem in the MP or an external modem.

Remote Connection via Internal Modem

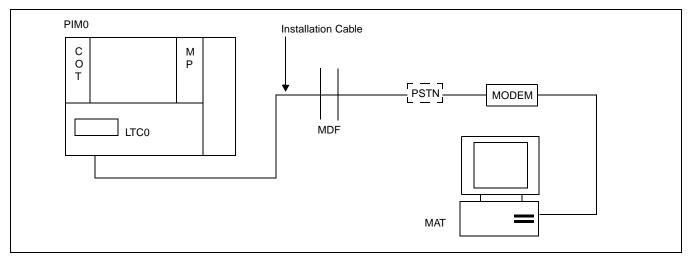


Figure 4-2 MAT Cable Connection (Remote Connection via Internal Modem)

**Note 1:** The Installation Cable is connected to LTC0, LTC1, or LTC2 connector depending on the installed loction of the COT card.

Note 2: The MP to COT connection is made through internal switching of the Time Division Switch.

Remote Connection via External Modem

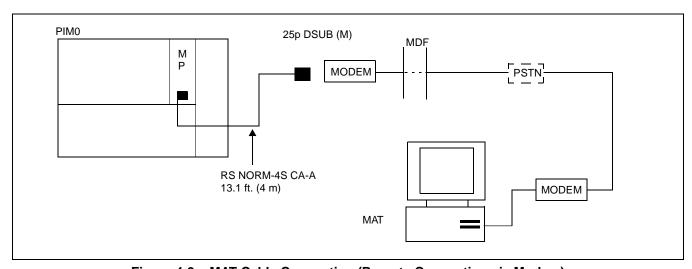


Figure 4-3 MAT Cable Connection (Remote Connection via Modem)

**Table 4-2 MAT Cable (Remote Connection)** 

DESCRIPTION	QUANTITY	REMARKS
RS NORM-4S CA-A	1/MAT	RS-232C Cable, 13.1 ft. (4.0 m)

## **SYSTEM DATA PROGRAMMING**

## 4. DATA PROGRAMMING SHEETS

This section provides the sheets of WCS data, on a command basis. Complete the blank with data assigned. The following symbol with the meaning indicated below is used within the data sheets.

(INITIAL): System Initialization

After data setting, system initialization is required by the SW1 switch on the MP card.

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CI	M05 (INITIAL)
AP NUMBER	SETTING DATA
04	
05	
06	
07	
08	
09	
10	
11	
12	
13	
14	
15	

CM06 YY=10							
AP NUMBER + D CHANNEL BLOCK NUMBER	LEN NUMBER	AP NUMBER + D CHANNEL BLOCK NUMBER	LEN NUMBER				

Use copies if space is insufficient.

	CM07 YY=	:01 (INITIAL)
AP No.	CH No.	TRK No.
	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	

	CM07 YY=01	(INITIAL)
AP No.	CH No.	TRK No.
	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	

**Note:** If space is insufficient, use copies.

CM08							
FEATURE NUMBER SETTING DATA							
085							
086							
088							

	CM10						
LEN	SETTING DATA	LEN	SETTING DATA	LEN	SETTING DATA	LEN	SETTING DATA
0000		0032		0128		0160	
0001		0033		0129		0161	
0002		0034		0130		0162	
0003		0035		0131		0163	
0004		0036		0132		0164	
0005		0037		0133		0165	
0006		0038		0134		0166	
0007		0039		0135		0167	
0008		0040		0136		0168	
0009		0041		0137		0169	
0010		0042		0138		0170	
0011		0043		0139		0171	
0012		0044		0140		0172	
0013		0045		0141		0173	
0014		0046		0142		0174	
0015		0047		0143		0175	
0016		0048		0144		0176	
0017		0049		0145		0177	
0018		0050		0146		0178	
0019		0051		0147		0179	
0020		0052		0148		0180	
0021		0053		0149		0181	
0022		0054		0150		0182	
0023		0055		0151		0183	
0024		0056		0152		0184	
0025		0057		0153		0185	
0026		0058		0154		0186	
0027		0059		0155		0187	
0028		0060		0156		0188	
0029		0061		0157		0189	
0030		0062		0158		0190	
0031		0063		0159		0191	

	CM10						
LEN	SETTING DATA	LEN	SETTING DATA	LEN	SETTING DATA	LEN	SETTING DATA
0256		0288		0384		0416	
0257		0289		0385		0417	
0258		0290		0386		0418	
0259		0291		0387		0419	
0260		0292		0388		0420	
0261		0293		0389		0421	
0262		0294		0390		0422	
0263		0295		0391		0423	
0264		0296		0392		0424	
0265		0297		0393		0425	
0266		0298		0394		0426	
0267		0299		0395		0427	
0268		0300		0396		0428	
0269		0301		0397		0429	
0270		0302		0398		0430	
0271		0303		0399		0431	
0272		0304		0400		0432	
0273		0305		0401		0433	
0274		0306		0402		0434	
0275		0307		0403		0435	
0276		0308		0404		0436	
0277		0309		0405		0437	
0278		0310		0406		0438	
0279		0311		0407		0439	
0280		0312		0408		0440	
0281		0313		0409		0441	
0282		0314		0410		0442	
0283		0315		0411		0443	
0284		0316		0412		0444	
0285		0317		0413		0445	
0286		0318		0414		0446	
0287		0319		0415		0447	

	CM10						
LEN	SETTING DATA	LEN	SETTING DATA	LEN	SETTING DATA	LEN	SETTING DATA
0448		0480					
0449		0481					
0450		0482					
0451		0483					
0452		0484					
0453		0485					
0454		0486					
0455		0487					
0456		0488					
0457		0489					
0458		0490					
0459		0491					
0460		0492					
0461		0493					
0462		0494					
0463		0495					
0464		0496					
0465		0497					
0466		0498					
0467		0499					
0468		0500					
0469		0501					
0470		0502					
0471		0503					
0472		0504					
0473		0505					
0474		0506					
0475		0507					
0476		0508					
0477		0509					
0478		0510					
0479		0511					

			(	CM12, CN	/l13					
STATION NUMBER	CM12 YY=00	CM12 YY=01	CM12 YY=02	CM12 YY=04	CM12 YY=05	CM12 YY=07	CM12 YY=16	CM13 YY=03	CM13 YY=18	CM13 YY=39

Use copies if space is insufficient.

COMMAND 12: 
$$ST + 12YY + DE + STATION No. + DE + SETTING DATA + EXE$$

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CM15	YY=127	CM15	YY=128	CM15 Y	YY=129
SERVICE RESTRICTION CLASS A	SETTING DATA	SERVICE RESTRICTION CLASS A	SETTING DATA	SERVICE RESTRICTION CLASS C	SETTING DATA
00		00		00	
01		01		01	
02		02		02	
03		03		03	
04		04		04	
05		05		05	
06		06		06	
07		07		07	
08		08		08	
09		09		09	
10		10		10	
11		11		11	
12		12		12	
13		13		13	
14		14		14	
15		15		15	

CM	115 YYY=115	CN	115 YYY=117	CM	115 YYY=119
SERVICE RESTRICTION CLASS A	SETTING DATA	SERVICE RESTRICTION CLASS A	SETTING DATA	SERVICE RESTRICTION CLASS A	SETTING DATA
00		00		00	
01		01		01	
02		02		02	
03		03		03	
04		04		04	
05		05		05	
06		06		06	
07		07		07	
08		08		08	
09		09		09	
10		10		10	
11		11		11	
12		12		12	
13		13		13	
14		14		14	
15		15		15	

	CM18	
VIRTUAL LC STATION No.	Y=0	Y=1

CN	/11C	CM1D YY=01	CM1D YY=15	CM1D YY=21	CM1D YY=20
VIRTUAL PS No.	PS STATION No.	SUB-LINE PS STATION No.	TERMINAL KIND	PS-ID	SETTING DATA

**Note:** If space is insufficient, use copies.

Y (0-3)	ACCESS CODE	SETTING DATA

			ACCESS CODE		SETTING DATA		
COMMAND 20:	ST + 20Y +	DE +	ACCESS CODE (1-2 digits)	+ DE +	(3 digit)	+	EXE

		С	M30			
VIRTUAL TRUNK No.	YY=00	YY=02	YY=03	YY=0	YY=05	YY=07

**Note:** *If space is insufficient, use copies.* 

			С	M35					
TRUNK ROUTE No.	YY=00	YY=01	YY=02	YY=04	YY=05	YY=08	YY=09	YY=14	YY=16
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									

			С	M35					
TRUNK ROUTE No.	YY=00	YY=01	YY=02	YY=04	YY=05	YY=08	YY=09	YY=14	YY=16
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									
51									
52									
53									
54									
55									
56									
57									
58									
59									
60									
61									
62									
63									

			С	M35					
TRUNK ROUTE No.	YY=19	YY=20	YY=21	YY=23	YY=24	YY=25	YY=26	YY=39	YY=45
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									

			С	M35					
TRUNK ROUTE No.	YY=19	YY=20	YY=21	YY=23	YY=24	YY=25	YY=26	YY=39	YY=45
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									
51									
52									
53									
54									
55									
56									
57									
58									
59									
60									
61									
62									
63									

CM35								
TRUNK ROUTE No.	YY=46	YY=90	YY=93	YY=98	YYY=100	YYY=113	YYY=139	YYY=140
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								

CM35								
TRUNK ROUTE No.	YY=46	YY=90	YY=93	YY=98	YYY=100	YYY=113	YYY=139	YYY=140
32								
33								
34								
35								
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								
49								
50								
51								
52								
53								
54								
55								
56								
57								
58								
59								
60								
61								
62								
63								

CM35					
TRUNK ROUTE No.	YYY=141	YYY=142			
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					

CM35					
TRUNK ROUTE No.	YYY=141	YYY=142			
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					
51					
52					
53					
54					
55					
56					
57					
58					
59					
60					
61					
62					
63					

CM41					
Y	1ST DATA	SETTING DATA			
	01				
0	75				
	84				
	85				
	86				
	95				

CM42				
FIRST DATA SETTING DATA				
10				

CM48					
Y	1ST DATA	SETTING DATA			
0	00				
Ü	02				
2	12				
5	00				
3	02				

	CM49 YY=00					
DAT CIRCUIT No.	MESSAGE GROUP No.	MESSAGE				

Use copies if space is insufficient.

	CM49 YY=10					
TENANT No.	MESSAGE GROUP No.	TENANT No.	MESSAGE GROUP No.			
+						

Use copies if space is insufficient.

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	CM49 YY=12			
TENANT No.	MESSAGE GROUP No.	TENANT No.	MESSAGE GROUP No.	

	CM51 YY=20			
TENANT No.	VMS STATION No.	TENANT No.	VMS STATION No.	

CM56			
YY (00-07)	SERIAL No.	STATION NUMBER	
	00		
	01		
	02		
	03		
	04		
	05		
DAOINO	06		
PAGING GROUP	07		
( )	08		
,	09		
	10		
	11		
	12		
	13		
	14		
	15		

	CM56			
YY (00-07)	SERIAL No.	STATION NUMBER		
	00			
	01			
	02			
	03			
	04			
	05			
DAGING	06			
PAGING GROUP	07			
( )	08			
	09			
	10			
	11			
	12			
	13			
	14			
	15			

CM56			
YY (00-07)	SERIAL No.	STATION NUMBER	
	00		
	01		
	02		
	03		
	04		
	05		
D4 01110	06		
PAGING GROUP	07		
( )	08		
	09		
	10		
	11		
	12		
	13		
	14		
	15		

	CM5A YY=00	
BLOCK No.	VIRTUAL TRUNK No. +, + VIRTUAL STATION No.	
	,	
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	CM85			
Υ	AREA/OFFICE CODE (MAX. 8 DIGITS)	MAX. No. OF SENDING DIGITS		

	CM85			
Υ	AREA/OFFICE CODE (MAX. 8 DIGITS)	MAX. No. OF SENDING DIGITS		

	OFFICE CODE	MAX. No. OF	
COMMAND 85:	(1-8 digits)		EXE
	 (1-0 digits)	(2 digits)	

## ◄: Initial Data

	CM88			
BLOCK Y=0 (1-7 Y=1 (0/ Y=2 (1-7 NUMBER DIGITS) 3 ◀) 3 ◀)				

CM8A		
YYY	1ST DATA	2ND DATA

	CM8A		
YYY	1ST DATA	2ND DATA	
	_		

# D<sup>term</sup>

MAT	CM90 Y	Y=00		
KEY NUMBER	MY LINE NUMBER			
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
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37				

**Note:** If space is insufficient, use copies.

This page is for your notes.

CMA9 YY=0	O (INITIAL)
DCH No.	TRUNK No.
0	
1	
2	
3	

CMA9 YY=01		
DCH No.	HOME PBX ID	
0		
1		
2		
3		

			CMAD			
ZT No.	YY=00	YY=01	YY=08	YY=09	YY=10	YY=19

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			CMAD			
ZT No.	YY=00	YY=01	YY=08	YY=09	YY=10	YY=19

CMAE YY=00		
FIRST DATA SETTING DATA		
03		
04		

	CMAE YY=10			
CALLING AREA No.	SETTING DATA	CALLING AREA No.		
00		16		
01		17		
02		18		
03		19		
04		20		
05		21		
06		22		
07		23		
08		24		
09		25		
10		26		
11		27		
12		28		
13		29		
14		30		
15		31		

CMAE YY=15		
FIRST DATA SETTING DATA		
00		

CMAE YY=42		
FIRST DATA SETTING DATA		
00		

CMAF			
YYY	1ST DATA	2ND DATA	

	CMAF			
YYY	1ST DATA	2ND DATA		

	CMEA Y=2
FIRST DATA	SETTING DATA
12	
2B	
3B	

## APPENDIX A OPERATING PROCEDURE FOR ANNOUNCEMENT SERVICE

By dialing predetermined access code from a station or a PS (for Integrated Type)

## To replay an announcement:

- 1. Dial the access code to replay the announcment assigned by CM20.
- 2. Dial the Digital Announcement Trunk Circuit Number (000 ~ 127).
- 3. Press the SEND button.
- 4. Receive a message.
- 5. Press END button.

### To record an announcement:

- 1. Dial the access code to record the announcment assigned by CM20.
- 2. Dial the Digital Announcement Trunk Circuit Number (000 ~ 127).
- 3. Press the SEND button.
- 4. Receive three (3) seconds of service set tone.
- 5. Record a message. Note
- 6. Press END button.

#### To delete an announcement:

- 1. Dial the access code to delete the announcment assigned by CM20.
- 2. Dial the Digital Announcement Trunk Circuit Number (000 ~ 127).
- 3. Press the SEND button.
- 4. Receive three (3) seconds of service set tone.
- 5. Press END button.

**Note:** The recording of an announcement is limited to 60 seconds.

### **OPERATING PROCEDURE FOR ANNOUNCEMENT SERVICE**

By dialing "1", "2", "3" from a PS (for the Integrated Type and the Adjunct Type)

### To replay an announcement:

- 1. Dial "2".
- 2. Dial the Digital Announcement Trunk Circuit Number (000 ~ 127).
- 3. Press the SEND button.
- 4. Receive a message.
- 5. Press END button.

#### To record an announcement:

- 1. Dial "1".
- 2. Dial the Digital Announcement Trunk Circuit Number (000 ~ 127).
- 3. Press the SEND button.
- 4. Receive a service set tone.
- 5. Record a message. **Note**
- 6. Press END button.

# To delete an announcement:

- 1. Dial "3".
- 2. Dial the Digital Announcement Trunk Circuit Number (000 ~ 127).
- 3. Press the SEND button.
- 4. Receive a service set tone.
- 5. Press END button.

**Note:** *The recording of an announcement is limited to 60 seconds.*