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# NEAX 2000 IVS INTEGRATED VOICE SERVER

**Installation Procedure Manual** 

JANUARY, 2000

NEC America, Inc.

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This page is for your notes.

### REGULATORY INFORMATION

#### REGULATORY REQUIREMENTS

The Federal Communications Commission (FCC) has established rules that permit the PBX to be directly connected to the telephone network. A jack is provided on party lines or coin lines.

The telephone company may make changes in its technical operations and procedures. If such changes affect the compatibility or use of the PBX, the telephone company must provide adequate notice of the changes.

This equipment complies with the requirements in Part 15 of FCC Rules for a Class A computing device. Operation of this equipment in a residential area may cause unacceptable interference to radio and TV reception requiring the operator to take whatever steps are necessary to correct this interference.

#### **FCC PART 15 REQUIREMENTS**

In compliance with FCC Part 15 Rules, the following statement is provided:

#### **WARNING**

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

#### **FCC PART 68 REGISTRATION**

#### **Company Notification**

Before installing the PBX to the telephone network, the telephone company must be provided with the following:

- Your telephone number
- The FCC registration numbers:

	JAPAN	USA
PBX	AY5JPN-20542-PF-E	AY5USA-21582-PF-E
Hybrid	AY5JPN-20543-MF-E	AY5USA-21583-MF-E
Key system	AY5JPN-20586-KF-E	AY5USA-21584-KF-E

The Ringer Equivalence Number is 1.6B; the required USOC jacks are RJ21X, RJ2EX, RJ2GX, and RJ49C.

**NOTE:** Limitations on features exist if the system is registered as a KF system. Refer to Features and Specifications for details.

#### **Service Requirements**

In the event of equipment malfunction, all repairs will be performed by NEC or an authorized distributor of NEC. It is the responsibility of users requiring service to report the need for service to NEC or to one of their authorized distributors.

If trouble is experienced with this equipment, please contact NEC America, Inc., at 800-TEAM NEC (800-832-6632) for repair and/or warranty information. If the trouble is causing harm to the telephone network, the telephone company may request that you remove the equipment from the network until the problem is resolved.

If the equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that affect the operation of the equipment. If this happens, the telephone company

will provide advance notice so that you can make necessary modifications in order to maintain uninterrupted service.

NO REPAIRS CAN BE DONE BY THE CUSTOMER.

#### **Location of FCC Compliance Labels**

Labels stating the NEAX2000 IVS<sup>2</sup> FCC registration number and compliance with FCC Parts 15 and 68 are attached on the inside of the system's front cover. Label examples are as follows:

"This equipment complies with the requirements in Part 15 of FCC Rules for a Class A computing device. Operation of this equipment in a residential area may cause unacceptable interference to radio and TV reception requiring the operator to take whatever steps are necessary to correct the interference."

NEAX2000 IVS<sup>2</sup>
Complies With Part 68 FCC Rules
FCC Registration Numbers:

Ringer Equivalence: 1.6B

**NEC** NEC America, Inc. MADE IN USA

#### **FCC Requirements for Private Line Operations**

In order to connect this system to the private line network, provide the telephone company with:

- The quantities and USOC numbers of the required jacks (See the following table.)
- The sequence in which the trunks are to be connected
- The facility interface codes by position
- The Ringer Equivalence Number or service order code, as applicable, by position

Mfg's Port ID	Facility Interface Code	Network Jacks	Service Order Code
PN-4COTB	02LS2	RJ21X	
PN-4COTB	02GS2	RJ21X	
PN-4COTG	02LS2	RJ21X	
PN-4COTG	02ES2	RJ21X	
PN-AUCA	02RV2-T	RJ21X	
PN-4DITB	02RV2-T	RJ21X	
PZ-8PFTA	02LS2	RJ21X	
PN-8COTQ	02LS2	RJ21X	
PN-8COTS	02LS2	RJ21X	
PN-8COTS	02GS2	RJ21X	
PN-AUCA	0L13A,0L13B,0L13C	RJ21X	9.0F
PN-20DTA	TL11M	RJ2EX	9.0F
PN-20DTA	TL31M	RJ2GX	9.0F

Mfg's Port ID	Facility Interface Code	Network Jacks	Service Order Code
PN-24DTA	04DU9-BN	N/A	6.0P
PN-24DTA	04DU9-DN	N/A	6.0P
PN-24DTA	04DU9-1KN	N/A	6.0P
PN-24DTA	04DU9-1SN	N/A	6.0P
PN-24DTA	04DU9-1ZN	N/A	6.0P
PN-BRTA	02IS5	RJ49C	6.0Y
PN-DAIA	04DU9-BN	N/A	6.0N
PN-DAIA	04DU9-DN	N/A	6.0N
PN-DAIA	04DU9-1KN	N/A	6.0N
PN-DAIA	04DU9-1SN	N/A	6.0N
PN-DAIA	04DU9-1ZN	N/A	6.0N
PN-DAIA	04DU9-BN	N/A	6.0N
PN-DAIB	04DU9-BN	N/A	6.0N
PN-DAIB	04DU9-DN	N/A	6.0N
PN-DAIB	04DU9-1KN	N/A	6.0N
PN-DAIB	04DU9-1SN	N/A	6.0N
PN-DAIB	04DU9-1ZN	N/A	6.0N
PN-24PRT-A	05DU9-BN	N/A	6.0P
PN-24PRT-A	04DU9-DN	N/A	6.0P
PN-24PRT-A	04DU9-1KN	N/A	6.0P
PN-24PRT-A	04DU9-1SN	N/A	6.0P
PN-24PRT-A	04DU9-1ZN	N/A	6.0P
PN-24CCT-A	04DU9-BN	N/A	6.0P
PN-24CCT-A	04DU9-DN	N/A	6.0P
PN-24CCT-A	04DU9-1KN	N/A	6.0P
PN-24CCT-A	04DU9-1SN	N/A	6.0P
PN-24CCT-A	04DU9-1ZN	N/A	6.0P
PN-24DTA-C	04DU9-BN	N/A	6.0P
PN-24DTA-C	04DU9-DN	N/A	6.0P
PN-24DTA-C	04DU9-1KN	N/A	6.0P
PN-24DTA-C	04DU9-1SN	N/A	6.0P
PN-24DTA-C	04DU9-1ZN	N/A	6.0P
PN-2BRTC	02IS5	N/A	6.0Y

### **DIRECT-INWARD DIALING (DID) CALLS**

Allowing this equipment to be operated in such a manner as to not provide for proper answer supervision is a violation of Part 68 of the FCC's rules.

#### PROPER ANSWER SUPERVISION IS WHEN:

- (a) This equipment returns answer supervision to the PSTN when DID calls are:
  - Answered by the called station
  - Answered by the attendant
  - · Routed to a recorded announcement that can be administered by the CPE user
  - Routed to a dial prompt
- (b) This equipment returns answer supervision on all DID calls forwarded to the PSTN. Permissible exceptions are:
  - · A call is unanswered
  - · A busy tone is received
  - · A reorder tone is received

#### **EQUAL ACCESS REQUIREMENTS**

This equipment is capable of providing users access to interstate providers of operator services through the use of access codes. Modification of this equipment by call aggregators to block access dialing codes is a violation of the Telephone Operator Consumers Act of 1990.

#### CAUTION

The act of monitoring or recording telephone conversations under certain circumstances may violate federal or state statutes. Consultation with your legal counsel prior to engaging in such practices would be advisable.

# REGULATORY INFORMATION ON SINGLE-LINE ANALOG TELEPHONES

NEC single-line telephones comply with Part 68 of FCC Rules. On the bottom of the equipment is a label that states, among other information, the FCC registration number and ringer equivalence number (REN) for the equipment. If requested, this information should be provided to the telephone company.

The equipment uses the following USOC jacks: RJ11C.

The equipment should be used only behind a PBX or KTS. The REN is used to determine the number of devices that may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all, areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

#### **HEARING AID COMPATIBILITY**

The D<sup>term</sup> terminals provided for the NEAX2000 IVS<sup>2</sup> are hearing aid compatible. FCC rules prohibit the use of non-hearing aid compatible telephones.

NEC-type single-line telephone sets used in conjunction with the NEAX2000 IVS<sup>2</sup> are hearing aid compatible. If other than NEC-type single-line telephone sets are to be used with this system, ensure that these are hearing aid compatible.

#### **INDUSTRY CANADA CS-03**

Certification number: 140 5976 A

Load Number of the equipment: 1.0

NOTICE: The Industry Canada label identifies certified equipment. The certification means that the equipment meets certain telecommunications network protective operational and safety requirements. The department does not guarantee the equipment will operate to the user's satisfaction.

Before installing the equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or installations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request that the user disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This protection may be particularly important in rural areas.

#### CAUTION

Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

NOTICE: The Load Number assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the load numbers of all the devices does not exceed 100.

#### SAFETY CERTIFICATIONS

This equipment has been listed by Underwriters Laboratories and found to comply with all the applicable requirements of the standard for telephone equipment U.L. 1459. This equipment complies with Canadian Standards Association's standard C 22.2 No. 225.

#### **Safety Considerations**

When using telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and injury. Precautions include the following:

- Never install telephone wiring during a lightning storm.
- Never install a telephone jack in a wet location, unless the jack is specifically designed for wet locations.
- Never touch an uninsulated telephone wire or terminal, unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.

**NOTE:** More detailed precautions are included in this manual.

# SAFETY INSTRUCTIONS

- (1) Never install telephone wiring during a lightning storm.
- (2) Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- (3) Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- (4) Use caution when installing or modifying telephone lines.
- (5) Read and understand all instructions.
- (6) Follow all warnings and instructions marked on the product.
- (7) Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- (8) Do not use this product near water; for example, under water pipes near a bath tub, sink, or laundry tub, in a wet basement, or near a swimming pool.
- (9) Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
- (10) Slots and openings in the cabinet and the back or bottom are provided for ventilation, to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.
- (11) This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power source available, consult with your local power company.
- (12) This product normally connected with a three wire grounding type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding type plug.

- (13) Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.
- (14) Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock.
- (15) Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.
- (16) To reduce the risk of electric shock, do not disassemble this product, but take it to a qualified serviceman when some service or repair work is required. Opening or removing covers may expose you to dangerous voltages or other risks. Incorrect reassembly can cause electric shock when the appliance is subsequently used.
- (17) Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
  - (a) When the power supply cord or plug is damaged or frayed.
  - (b) If liquid has been spilled into the product.
  - (c) If the product has been exposed to rain or water.
  - (d) If the product does not operate normally by following the operating instructions. Adjust only those controls, that are covered by the operating instructions because improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
  - (e) If the product has been dropped or the cabinet has been damaged.
  - (f) If the product exhibits a distinct change in performance.
- (18) Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- (19) Do not use the telephone to report a gas leak in the vicinity of the leak.

# INTRODUCTION

#### **PURPOSE**

This manual explains the installation procedure for the NEAX2000 IVS<sup>2</sup>. This equipment can only be serviced by a qualified service person. You should perform each installation step according to the procedures described in CHAPTER 2.

#### **OUTLINE OF THIS MANUAL**

This manual consists of the following chapters:

#### CHAPTER 1 GENERAL INFORMATION

This chapter explains the outline of system configuration, the name and functions of equipment, the line conditions of each terminal, and the mounting conditions of circuit cards used in the system.

#### CHAPTER 2 INSTALLATION

This chapter explains how to install the PBX and the peripheral equipment, system initialization and data entry, and operation test procedures you should follow after completing the installation.

#### CHAPTER 3 LAMP INDICATIONS AND SWITCH SETTINGS

This chapter explains the meaning of lamp indications and the method of switch settings of each circuit card used in the system.

#### REFERENCE MANUALS

During installation, refer to the following manuals:

Command Manual Describes Customer Administration Terminal (CAT) opera-

tion, command function and setting data reguired for pro-

gramming the system, and Resident System Program.

Office Data Programming Manual Contains the Customer Specification Sheets and Office

Data Entry Sheets.

Feature Programming Manual Describes procedure of each feature programming.

Maintenance Manual Describes maintenance service features and the recom-

mended troubleshooting procedure.

# **CHAPTER 1**

# **GENERAL INFORMATION**

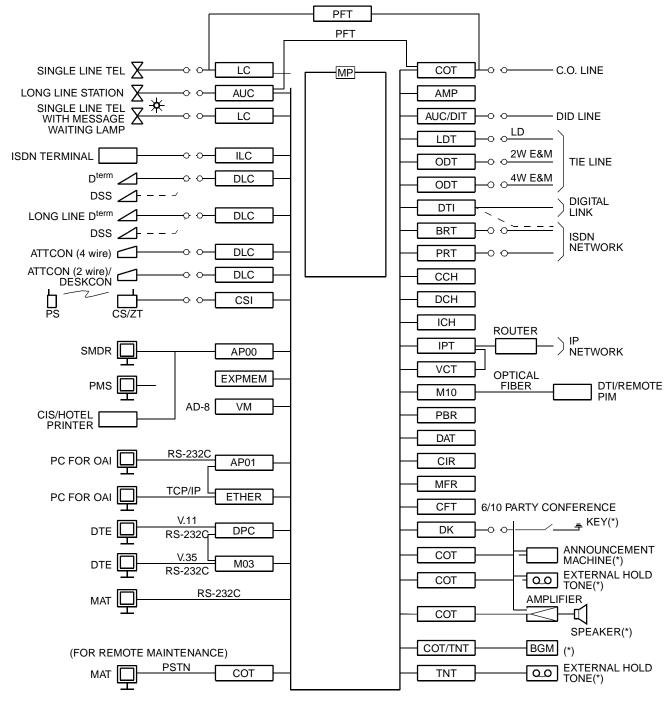
This chapter explains the outline of system configuration, the name and functions of equipment, the line conditions of each terminal, and the mounting conditions of circuit cards used in the system.

#### TRUNKING DIAGRAM

This figure shows a typical trunking diagram for the system.

Figure 1-1 Trunking Diagram

**NOTE:** The equipment marked with (\*) is provided by the customer



SYMBOL	DESCRIPTION
AMP	Amplifier Trunk Card
AP00	SMDR/Hotel Application Card
AP01	OAI Interface Card
AUC	Analog Universal Circuit Card (Long Line Circuit, DID Trunk)
BGM	External Music Source for D <sup>term</sup> Back Ground Music Service
BRT	Basic Rate Interface Trunk Card
ССН	Common Channel Handler Card
CFT	6/10 Party Conference Trunk Card
CIS	Call Information System
CIR	CALLER ID Receiver Trunk Card
COT	C.O. Trunk Card
CSI	CS/ZT Interface Card
CS/ZT	Cell Station (For Australia/Others) Zone Transceiver (For North America/ Latin America)
DAT	Digital Announcement Trunk Card
DCH	D-channel Handler Card
DIT	DID Trunk Card
DK	External Relay/Key Interface Card
DLC	Digital Line Circuit Card (for D <sup>term</sup> , ATTCON, DESKCON)
DPC	Data Port Controller Card
DSS	DSS Console
DTE	Data Terminal Equipment
DTI	Digital Trunk Interface Card
DTG	Digital Tone Generator
ETHER	Ethernet Control Card
EXPMEM	Memory Expansion Card
ICH	ISDN-channel Handler Card
ILC	ISDN Line Circuit Card
IPT	IP Trunk Card

SYMBOL	DESCRIPTION
KEY	External Key
LC	Line Circuit Card
	(for Single Line Telephone)
LDT	LD Trunk Card
M03	V.35 DTE Interface Card
M10	Optical Interface Card
MAT	Maintenance Administration Terminal
MDF	Main Distribution Frame
MEM	Main Memory
MFR	MF Receiver/
	MFC Receiver/Sender Card
MLDT	Melody Trunk
MODEM	Modem
MP	Main Processor Card
PFT	Power Failure Transfer
PMS	Property Management System
OAI	Open Application Interface
ODT	OD Trunk Card (2/4 wire E&M)
PBR	PB Receiver Card
PBSND	PB Sender
PLO	Phase Locked Oscillator
PS	Personal Station
PRT	ISDN Primary Rate Interface Trunk Card
SMDR	Station Message Detail Recording
TDSW	Time Division Switch
TNT	Tone/Music Source Interface Card
VCT	CODEC Card
VM	Voice Mail Card
16CFT	16 Circuit Four Party Conference Trunk
KEY	External Key

#### SYSTEM CONFIGURATION

The system provides three installation methods as follows:

- Floor Standing Installation
- Wall Mounting Installation
- 19-inch Rack Mounting Installation

Example of system configurations for each installation method is shown below.

#### **Floor Standing Installation**

PIM 416.6 (16.4)

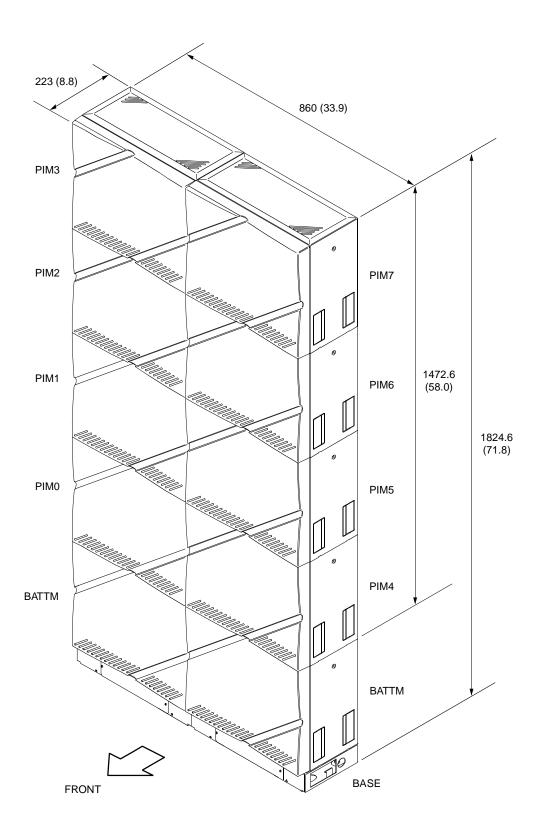
PRONT BASE

Figure 1-2 1-PIM Configuration for Floor Standing Installation

PIM/BATTM
PIM/BATTM
PASSE
UNIT: mm (inch)

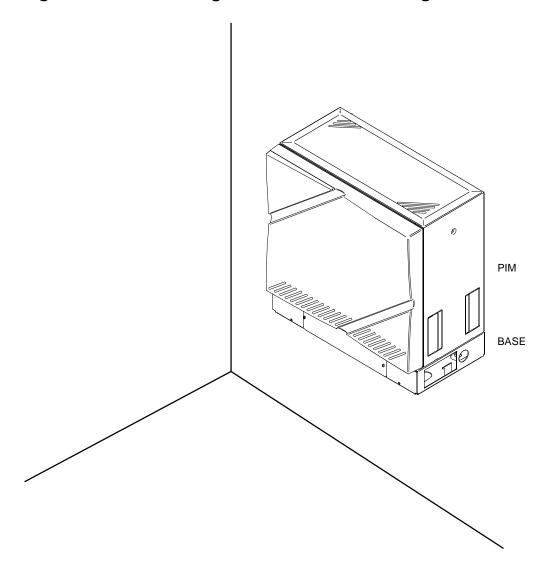
Figure 1-3 2-PIM Configuration for Floor Standing Installation

Figure 1-4 Maximum Configuration for Floor Standing Installation



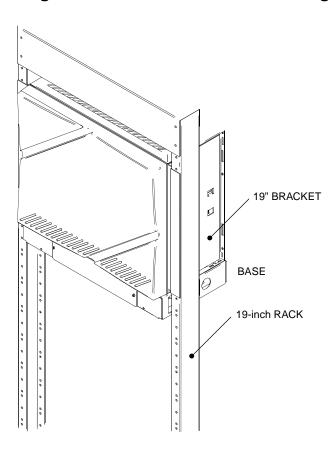
# **Wall Mounting Installation**





# 19-inch Rack Mounting Installation

Figure 1-6 1-PIM Configuration for 19-inch Rack Mounting Installation



# **EQUIPMENT NAME AND FUNCTION**

This section explains the names and functions of the equipment (modules, installation hardware, circuit cards) used in the system.

### Module/Installation Hardware

This table shows the names and functions of the modules.

**Table 1-1 Module Name and Function** 

EQUIPMENT NAME	FUNCTIONAL NAME	FUNCTION
SN1480 PIMAF	PIM	Port Interface Module (PIM) Max. 64 physical ports per PIM. Houses two batteries for protection from short power interruption (for 30 minutes). At maximum configuration, the system consists of eight PIMs and provides a total of 512 physical ports (64 ports x 8).
SN1545 BASERE	BASE/TOP ASSEM	Base/Top Cover Assembly One base and top cover assembly is required for each stack.
TOP COVER ASSEM		
SN1526 BATTMF	BATTM	Battery Module for housing PIM or CS (ZT) backup batteries Houses two pairs of batteries for protection from long power interruption (for 3 hours).

This table shows the names and functions of installation hardware.

**Table 1-2 Installation Hardware Name and Function** 

EQUIPMENT NAME	FUNCTIONAL NAME	FUNCTION
HANGER ASSEM (B)		Wall Hanger Assembly One HANGER ASSEM per PIM is required for Wall Mounting Installation.
MOUNTING BRACKET		Safety Mounting Bracket Used as an overhead hanger for Floor Standing Installation. Wire, chain or eyebolts to secure the bracket are to be locally provided. To be installed on the top PIM in four or more modules of stack. It provides 1.1G shockproof construction.
19" RACK BRACKET (A)		19-inch Rack Mounting Bracket Type A One bracket is required for one PIM configuration. One bracket is required for the top PIM in a multiple module configuration.
19" RACK BRACKET (B)		19-inch Rack Mounting Bracket Type B One bracket is required for the bottom module in a multiple module configuration.
I/F BRACKET ASSEM		Inter Frame Bracket Assembly Used to joint the frames in two-frame configuration; for Floor Standing Installation.
BASE TRAY ASSEM		Base Tray Assembly One BASE TRAY is required per one frame for Floor Standing Installation of Stationary Equipment.

### **Control Card**

This table shows the names and functions of each control card.

**Table 1-3 Control Card Name and Function** 

EQUIPMENT NAME	FUNCTIONAL NAME	FUNCTION
PN-CP14	MP	Main Processor Card Provides Memory, TDSW (1024CH x 1024CH), 16-line CFT, PB sender, Clock, PLO 2 ports (receiver mode/source mode), two RS-232C ports, 2-line DAT (Recording duration: Max. 128sec.), DK, 4-line PB receiver, Modem for remote maintenance (19.2 kbps), internal Music-on-Hold tone source and BUS interface. BUS interface functions as a driver/receiver of various signals, adjusts gate delay timing and cable delay timing, monitors I/O Bus and PCM BUS. One card is required per system.
PN-CP15	FP	Firmware Processor Card Provides Line/Trunk interface, Memory (RAM 768KB), and inter-module BUS interface. BUS interface functions as a driver/receiver of various signals, adjusts gate delay timing and cable delay timing, monitors I/O Bus and PCM BUS. When the system consists of three PIMs or more, one each of this card is mounted respectively in PIM0, PIM2, PIM4, and PIM6.
PN-PW00	EXTPWR	Power Supply Card for DESKCON Provides –48V DC power. Max. four cards per frame (four PIMs). Max. three cards per PIM. Occupies two physical slots width per card.
PZ-PW121	AC/DC PWR	Main Power Supply Card Input: AC120V/240V (50Hz/60Hz) Output: -27V (4.4A), +5V (7.2A), CR (38mA), +90V (80mA) One card is pre-installed per PIM.
PZ-PW122	DC/DC PWR	Power Supply Card for Cell Station (Zone Transceiver) Input: -24V DC Output: -48V DC (1.7A) One card per PIM. Max. 16 CS (ZT)s backed up by one card.

### **Application Processor Card**

This table shows the names and functions of each application processor card.

**Table 1-4 Application Processor Card Name and Function** 

EQUIPMENT NAME	FUNCTIONAL NAME	FUNCTION
PN-AP00-A [For North America/ Latin America Only]	DBM	Data Base Module Card for WCS Roaming function One card per WCS system.
PN-AP00-B	AP00	Application Processor Card Provides four RS-232C ports and is used for SMDR, Hotel Printer, CIS, PMS, MCI, CS report functions. One card per system.
PN-AP01	AP01	Application Processor Card Provides one RS-232C port and one Ethernet interface port. Used for OAI function, ID code expansion. One card per system.
PN-BRTA	BRT	1-line Basic Rate (2B+D) Interface Trunk Card Accomodates one 2-channel PCM digital lines.
PN-2BRTC	BRT	2-line Basic Rate (2B+D) Interface Trunk Card Accomodates two 2-channel PCM digital lines.
PN-CC01	ETHER	Ethernet Control Card Used with the PN-AP01 card to accommodate the Ethernet and transmit/receive a signal of TCP/IP protocol. 10 BASE-T twisted pair cable is connected directly to this card.

**Table 1-4 Application Processor Card Name and Function (Continued)** 

EQUIPMENT NAME	FUNCTIONAL NAME	FUNCTION
PN-DAIA	DAI	Digital Trunk Interface (23B+D, 1.5 Mbps) Card for Remote PIM Accomodates 24-channel PCM digital lines, and provides Firmware Processor and BUS interface.  One through three cards, corresponding to the number of remote site, must be provided at main site.
PN-DAIB	DAI	Digital Trunk Interface (23B+D, 1.5 Mbps) Card for Remote PIM Accomodates 24-channel PCM digital lines, and provides Firmware Processor. One card is required per Remote PIM at remote site.
PN-DAIC	DAI	Digital Trunk Interface (23B+D, 1.5 Mbps) Channel Expansion Card Accomodates 24-channel PCM digital lines. One through six cards can be provided at main site. Two cards can be provided at remote site.
PN-DAID	DAI	Digital Trunk Interface (2 Mbps) Card for Remote PIM Accomodates 30-channel PCM digital lines, and provides Firmware Processor and BUS interface.  One through three cards, corresponding to the number of remote site, must be provided at main site.
PN-DAIE	DAI	Digital Trunk Interface (2 Mbps) Card for Remote PIM Accomodates 30-channel PCM digital lines, and provides Firmware Processor.  One card is required per Remote PIM at remote site.
PN-DAIF	DAI	Digital Trunk Interface (2 Mbps) Channel Expansion Card Accomodates 30-channel PCM digital lines. One through three cards can be provided at main site. One card can be provided at remote site.
PN-24DTA-C	DTI	Digital Trunk Interface (23B+D, 1.5 Mbps) Card Accommodates 24-channel PCM digital lines.
PN-30DTC-A	DTI	Digital Trunk Interface (2 Mbps) Card Accommodates 30-channel PCM digital lines.

**Table 1-4 Application Processor Card Name and Function (Continued)** 

EQUIPMENT NAME	FUNCTIONAL NAME	FUNCTION
PN-IPTA	IPT	IP Trunk Card Accommodates the IP network and transmit/receive compressed voice or signals over IP network. Used with max. four PN-4VCTH cards (16 channels). 10 BASE-T/100 BASE-TX twisted pair cable is connected directly to this card.
PN-24PRTA	PRT	ISDN Primary Rate (23B+D) Interface Card Provides a built-in D-channel Handler (DCH).
PN-4RSTB	MFR	4-line MF Receiver, MFC Receiver/Sender Card Used for MF/MFC-R2 Signaling on DID/DOD trunks. Max. four cards can be provided per system, including the PN-4RSTC card.
PN-4RSTC	CIR	4-line Caller ID Receiver Trunk Card Used for Caller ID (CLASS SM) on analog trunks. Max. four cards per system, including the PN-4RSTB card.
PN-SC00	CCH	Common Channel Handler Card Transmits/receives signals on the common signalling channel of No. 7 CCIS.
PN-SC01	DCH	D-channel Handler Card Transmits/receives signals on the D-channel of ISDN Primary Rate (23B+D) interface or WCS Roaming interface.
PN-SC03	ICH	ISDN-channel Handler Card Provides the D-channel signaling interface and controls max. four ILC cards (Layer 2 and 3).
PN-SC03-A	CSH	CS(ZT) Handler Card Provides the D-channel signaling interface and controls max. four CSI cards, eight CS(ZT)s.

**Table 1-4 Application Processor Card Name and Function (Continued)** 

EQUIPMENT NAME	FUNCTIONAL NAME	FUNC	CTION	
PZ-M537	EXPMEM	Memory Expansion Card for MP/AP00 Card The system capacity is expanded as follows: When mounted on PN-CP14 (MP) card:		
		System Capacity	w/o EXPMEM	with EXPMEM
		Line/Trunk	384	768
		DID dial conversion	500	1000
		IP trunk	1	4
		Analog Station	256	512
		D <sup>term</sup>	256	512
		Analog Station+D <sup>term</sup>	256	512
		Analog Station+D <sup>term</sup> +PS	256	512
		D <sup>term</sup> (24/32 button)	256	512
		PS	128	256
		ISDN terminal	64	128
		Data station	64	128
		Call Forwarding-Outside set	240	496
		Authorization Code/ Forced Account Code/ Remote Access to System (DISA) Code	1000	3000
		Message Remider set	512	1024
		Name Display/ Guest Name Display	256	512
		Speed Calling-Station (Station Speed Dial) set	4000	10000
		MP built-in SMDR call record	256	1280
		When mounted on PN-AP00-E	3 (AP00) card:	
		System Capacity	w/o EXPMEM	with EXPMEM
		SMDR call record	1600	27000
PZ-M542 [For Other Countries]	CONN	Coaxial Cable Connection Car Used to connect a coaxial cab Max. two cards can be conne PIM.	le for Digital Tru	
PZ-M557 [For Australia]	CONN	Coaxial Cable Connection Car Used to connect a coaxial cab Max. two cards can be conne PIM.	le for Digital Tru	

### **Line/Trunk Card**

This table shows the names and functions of each line/trunk card.

Table 1-5 Line/Trunk Card Name and Function

EQUIPMENT NAME	FUNCTIONAL NAME	FUNCTION
PN-2AMPA	AMP	2-line Amplifier Trunk Card Provides Echo Canceller (EC), Automatic Gain Controller (AGC) and Tone Disabler (TD) functions.
PN-AUCA	AUC	2-line Analog Long Line Circuit Card provided with Power Failure Transfer (PFT) Function, or 2-line Direct Inward Dialing Trunk Card Line resistance in the case of a long line circuit: Max. 2500 ohms (inclusive of the internal resistance of the distant office equipment) Equipped with –48V DC-DC on-board power supply.
PN-CFTA	CFT	6/10 Party Conference Trunk Card Use of one card: Can control a conference of up to six participants. Use of two cards: Can control a conference of up to ten participants.
PN-CFTB	CFT	6 Party Conference Trunk Card One card can control a conference of up to ten participants. Occupies 8 time slots per one card.
PN-2COTD [For Austra- lia/Others]	СОТ	2-line Central Office Trunk Card (Loop Start Trunk) Provides metering pulse detection function.
PN-4COTA-A	СОТ	4-line Central Office Trunk Card (Loop Start Trunk)
PN-4COTB	СОТ	4-line Central Office Trunk Card (Ground Start Trunk) Provides loop detection, sending/detecting ground on Tip/Ring wire.
PN-4COTF [For N.Z.]	СОТ	4-line Central Office Trunk Card (Loop Start/Ground Start Trunk) Provides loop holding, pulse sender, and a detector for ground signals.

**Table 1-5 Line/Trunk Card Name and Function (Continued)** 

EQUIPMENT NAME	FUNCTIONAL NAME	FUNCTION
PN-4COTE [For Australia]	СОТ	4-line Central Office Trunk Card (Loop Start Trunk) Provides a detector for line fault conditions.
PN-4COTG	СОТ	4-line Central Office Trunk Card (Loop Start trunk) Provides loop detection, receiving/sending the Caller ID (CLASS SM) signal.
PN-6COTJ [For Australia]	СОТ	6-line Central Office Trunk Card (Loop Start Trunk) Provides a detector for line fault conditions.
PN-8COTR	СОТ	8-line Central Office Trunk Card (Loop Start Trunk)
PN-8COTS	СОТ	8-line Central Office Trunk Card (Ground Start Trunk) Provides loop detection, sending/detecting ground on Tip/Ring wire.
PN-8COTT [For Australia]	СОТ	8-line Central Office Trunk Card (Loop Start Trunk) Provides a detector for line fault conditions.
PN-8COTQ	СОТ	8-line Central Office Trunk Card (Loop Start Trunk) Provides loop detection, receiving/sending the Caller ID (CLASS SM) signal.
PN-2CSIA [For North America/ Latin America]	CSI	2-line Zone Transceiver Interface Card Used to interface with the ZT, based on ISDN S-interface. Max. two ZTs can be connected per CSI card. Occupies eight time slots per one card.
PN-2CSIA-A [For Austra- lia/Others]	CSI	2-line Cell Station Interface Card Used to interface with the CS, based on ISDN S-interface. Max. two CSs can be connected per one card. Occupies eight time slots per one card.
PN-4DATC	DAT	4-line Digital Announcement Trunk Card Recording duration: Max. 120 seconds Occupies eight time slots per one card.

**Table 1-5 Line/Trunk Card Name and Function (Continued)** 

EQUIPMENT NAME	FUNCTIONAL NAME	FUNCTION
PN-2DITA [For Hong Kong]	DIT	2-line Direct Inward Dialing Trunk Card Provides loop detection, sending reverse signal and PB to DP signal conversion. Equipped with –48V DC-DC on-board power supply.
PN-4DITB	DIT	4-line Direct Inward Dialing Trunk Card Provides loop detection, sending reverse signal and PB to DP signal conversion. Equipped with –48V DC-DC on-board power supply.
PN-DK00	DK	8-circuit External Relay Control/External Key Scan Card Provides the above-mentioned control functions on a per cir- cuit basis.
PN-2DLCB/ PN-2DLCN	DLC	2-line Digital Long Line Circuit Card for D <sup>term</sup> 75/65 (Series E/III), D <sup>term</sup> 70/60 (Elite/Electra Pro), DSS Console, ATTCON [–48V version, 2-wire type] Equipped with –48V DC-DC on-board power supply.
PN-2DLCC	DLC	2-line Digital Long Line Circuit Card for SN610 ATTCON [–48V version, 4-wire type] Equipped with –48V DC-DC on-board power supply.
PN-4DLCF	DLC	4-line Digital Line Circuit Card for SN610 ATTCON [–27V version, 4-wire type]
PN-4DLCM	DLC	4-line Digital Line Circuit Card for D <sup>term</sup> 75/65 (Series E/III), D <sup>term</sup> 70/60 (Elite/Electra Pro), DSS Console, ATTCON, DESKCON [–27V version, 2-wire type]
PN-4DLCQ	DLC	4-line Digital Line Circuit Card for D <sup>term</sup> 75/65(Series E/III), DSS Console, ATTCON, DESKCON [–27V version, 2-wire type]
PN-8DLCL	DLC	8-line Digital Line Circuit Card for D <sup>term</sup> 75/65 (Series E/III), D <sup>term</sup> 70/60 (Elite/Electra Pro), DSS Console, ATTCON, DESKCON [–27V version, 2-wire type]

**Table 1-5 Line/Trunk Card Name and Function (Continued)** 

EQUIPMENT NAME	FUNCTIONAL NAME	FUNCTION
PN-8DLCP	DLC	8-line Digital Line Circuit Card for D <sup>term</sup> 75/65 (Series E/III), DSS Console, ATTCON, DESKCON [–27V version, 2-wire type]
PN-2DPCB	DPC	2-line Data Port Controller Card Used for intra-office or inter-office digital data transmission on nailed down connection. Accommodates max. two DTEs with V.11 (X.21) interface or V.24/V.28 (RS-232C) interface.
PN-2ILCA	ILC	2-line ISDN Line Circuit Card Provides a physical interface to ISDN Terminals. Occupies eight time slots per one card.
PN-4LCC [For Others]	LC	4-line Analog Line Circuit Card for Single Line Telephones Loop resistance: Max. 600 ohms (including telephone set)
PN-4LCD-A	LC	4-Line Analog Line Circuit Card for Single Line Telephones Loop resistance: Max. 600 ohms (including telephone set) Provides momentary open and Message Waiting Lamp control functions for each circuit. Equipped with +80V DC-DC on-board power supply.
PN-4LCE [For Australia]	LC	4-line Analog Line Circuit Card for Single Line Telephones Loop resistance: Max. 600 ohms (including telephone set)
PN-4LCF [For Australia]	LC	4-line Analog Line Circuit Card for Single Line Telephones Loop resistance: Max. 600 ohms (including telephone set) Provides Message Waiting Lamp control function for each circuit, and reverse function for only No. 3 circuit. Equipped with +80V DC-DC on-board power supply.
PN-4LCK [For China]	LC	4-Line Analog Line Circuit Card for Single Line Telephones Loop resistance : Max. 600 ohms (including telephone set)

**Table 1-5 Line/Trunk Card Name and Function (Continued)** 

EQUIPMENT NAME	FUNCTIONAL NAME	FUNCTION
PN-4LCL [For China]	LC	4-line Analog Line Circuit Card for Single Line Telephones Loop resistance: Max. 600 ohms (including telephone set) Provides Message Waiting Lamp control function for each circuit, and reverse function for only No. 3 circuit. Equipped with +80V DC-DC on-board power supply.
PN-4LCV [For Brazil]	LC	4-Line Analog Line Circuit Card for Single Line Telephones Loop resistance : Max. 600 ohms (including telephone set)
PN-4LCW [For Brazil]	LC	4-line Analog Line Circuit Card for Single Line Telephones Loop resistance: Max. 600 ohms (including telephone set) Provides Message Waiting Lamp control function for each circuit, and reverse function for only No. 3 circuit. Equipped with +80V DC-DC on-board power supply.
PN-8LCAA	LC	8-line Analog Line Circuit Card for Single Line Telephones Loop resistance: Max. 600 ohms (including telephone set) Provides Message Waiting Lamp control, momentary open functions for each circuit.
PN-2LDTA [For Australia/Oth- ers]	LDT	2-line Loop Dial Trunk Card Line resistance: Max. 2500 ohms (including internal resistance of the distant office equipment) Equipped with –48V DC-DC on-board power supply.
PN-M03	M03	V.35 Data Terminal Equipment Interface Card Used together with the PN-2DPCB card to provide the V.35 interface.
PN-M10	M10	Optical Interface Card Provides internal optical modem to T1/E1 network or Remote PIM. Line length : 10 km or less Line coding : CMI

**Table 1-5 Line/Trunk Card Name and Function (Continued)** 

EQUIPMENT NAME	FUNCTIONAL NAME	FUNCTION	
PN-2ODTA	ODT	2-line Out Band Dialling Trunk Card Used as either a 2-wire E&M trunk or a 4-wire E&M trunk. Equipped with –48V DC-DC on-board power supply. Both No. 0 and No. 1 circuits must be set to the same purpose (2-wire or 4-wire) in one card.	
PN-2ODTB [For N.Z.]	ODT	2-line Out Band Dialling Trunk Card Used as either a 2-wire E&M trunk or a 4-wire E&M tru Equipped with –48V DC-DC on-board power supply. Both No. 0 and No. 1 circuits must be set to the same p pose (2-wire or 4-wire) in one card.	
PN-8RSTA	PBR	8-line PB Receiver Card Used for a PB station line, DID or tie line.	
PN-TNTA	TNT	2-line Tone/Music Source Interface Card Used for BGM or Music on Hold. Provides two jacks for an external tone/music source.	
PN-4VCTH	VCT	4-channel CODEC Card for IP Trunk Voice compression protocols: G723.1, G729/G729A, G711, FAX (14.4 kbps), DTMF signals Used together with PN-IPTA card.	
PZ-8PFTB	PFT	8-line Power Failure Transfer Card To be mounted in PFT slot of PIM. One card per PIM.	
PZ-VM00-M	VM	4-port Voice Mail Card (NEAXMail AD-8) One card per system. Number of ports: four ports (Up to eight ports when PZ-VM01 is mounted) Occupies three physical slots width per card. To be mounted in LT00 slot of PIM.	
PZ-VM01	VM	4-port Voice Mail Extension Card To be mounted on PZ-VM00-M.	

## LINE CONDITIONS OF EACH TERMINAL

The cable length between the DLC card and terminal varies depending on the type of terminal. This table shows the line conditions of each D<sup>term</sup>, DSS/BLF Console, and Attendant Console.

**Table 1-6 Line Conditions of Each Terminal** 

TERMINAL TYPE	CARD TYPE	CABLE LENGTH* (Cable 0.5φ/24 AWG)	REMARKS
D <sup>term</sup> 75 (Series E) (8 button)	PN-8DLCL/8DLCP (STANDARD)	984 ft. (300 m)	NOTE 1
	PN-4DLCM/4DLCQ (STANDARD)	984 ft. (300 m) [3937 ft. (1200 m)]	
	PN-2DLCB/2DLCN (LONG)	2788 ft. (850 m) [3937 ft. (1200 m)]	
D <sup>term</sup> 75 (Series E) (16 button)	PN-8DLCL/8DLCP (STANDARD)	656 ft. (200 m)	NOTE 1
	PN-4DLCM/4DLCQ (STANDARD)	656 ft. (200 m) [3937 ft. (1200 m)]	
	PN-2DLCB/2DLCN (LONG)	2788 ft. (850 m) [3937 ft. (1200 m)]	
D <sup>term</sup> 75 (Series E) (32 button)	PN-8DLCL/8DLCP (STANDARD)	656 ft. (200 m)	NOTE 1
	PN-4DLCM/4DLCQ (STANDARD)	656 ft. (200 m) [3937 ft. (1200 m)]	
	PN-2DLCB/2DLCN (LONG)	2788 ft. (850 m) [3937 ft. (1200 m)]	

<sup>\*</sup>The value in brackets [ ] shows the cable length when local power is supplied.

**Table 1-6 Line Conditions of Each Terminal (Continued)** 

TERMINAL TYPE	CARD TYPE	CABLE LENGTH* (Cable 0.5φ/24 AWG)	REMARKS
D <sup>term</sup> 65 (Series III) (8 button)	PN-8DLCL/8DLCP (STANDARD)	984 ft. (300 m)	NOTE 1
	PN-4DLCM/4DLCQ (STANDARD)	984 ft. (300 m) [3937 ft. (1200 m)]	
	PN-2DLCB/2DLCN (LONG)	2788 ft. (850 m) [3937 ft. (1200 m)]	
D <sup>term</sup> 65 (Series III) (24 button)	PN-8DLCL/8DLCP (STANDARD)	492 ft. (150 m)	NOTE 1
	PN-4DLCM/4DLCQ (STANDARD)	492 ft. (150 m) [3937 ft. (1200 m)]	
	PN-2DLCB/2DLCN (LONG)	2788 ft. (850 m) [3937 ft. (1200 m)]	
DSS/BLF Console NOTE 2	PN-8DLCL/8DLCP (STANDARD)	984 ft. (300 m)	NOTE 1
	PN-4DLCM/4DLCQ (STANDARD)	984 ft. (300 m)	
	PN-2DLCB/2DLCN (LONG)	2788 ft. (850 m)	
SN610 ATTCON (4-wire type ATTCON)	PN-4DLCF (STANDARD)	984 ft. (300 m)	
	PN-2DLCC (LONG)	3937 ft. (1200 m)	

<sup>\*</sup>The value in brackets [ ] shows the cable length when local power is supplied.

**Table 1-6 Line Conditions of Each Terminal (Continued)** 

TERMINAL TYPE	CARD TYPE	CABLE LENGTH* (Cable 0.5φ/24 AWG)	REMARKS
SN708/709/712 ATTCON	PN-8DLCL/8DLCP (STANDARD)	984 ft. (300 m)	NOTE 1
(2-wire type ATTCON)	PN-4DLCM/4DLCQ (STANDARD)	984 ft. (300 m) [3937 ft. (1200 m)]	
	PN-2DLCB/2DLCN (LONG)	2788 ft. (850 m) [3937 ft. (1200 m)]	
SN716 DESKCON	PN-8DLCL/8DLCP and PN-PW00 or AC Adapter	1000 ft. (304 m)	
	PN-4DLCM/4DLCQ and PN-PW00 or AC Adapter	1500 ft. (457 m)	

<sup>\*</sup>The value in brackets [ ] shows the cable length when local power is supplied.

**NOTE 1:** When using PN-8DLCL or PN-8DLCP card, it is not available long line function, even if D<sup>term</sup> is equipped with Long Line Adapter.

NOTE 2: The DSS/BLF Console requires local AC/DC power supply.

## MOUNTING CONDITIONS OF CIRCUIT CARD

This section explains the conditions for mounting circuit cards used in the system.

### **Circuit Card Mounting Slots**

The figure below shows circuit card mounting slots allocated in the PIM based on circuit card type.

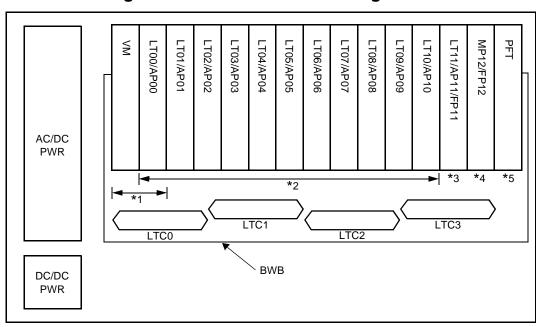


Figure 1-7 Circuit Card Mounting Slots

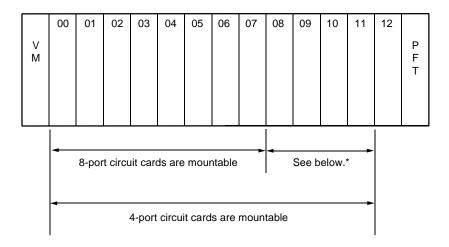
FRONT

FP : PN-CP15 mounting slots

- \*1 PZ-VM00-M card is to be mounted in LT00 slot to use VM slot.
- \*2 Either line/trunk cards or application processor cards can be mounted in LT00/AP00-LT10/AP10 slots.
- \*3 Either PN-CP15 or a line/trunk card or an application processor card is to be mounted in LT11/AP11/FP11 slot according to the system configuration.
- \*4 PN-CP14 or PN-CP15 card is to be mounted in MP12/FP12 slot according to the system configuration.
- \*5 PZ-8PFTB card is to be mounted in PFT slot.

Mountable slots according to the number of ports

The PIM can mount 8-port circuit cards. Available slots are defined by the number of ports of the circuit card.



\* In Slots 08-11, 8-port circuit cards are not mountable. The number of physical ports which can be provided by Slots 08-11 depends on the number of ports of the circuit cards mounted in Slots 04-07.

MOUNTING CIRCUIT CARDS IN SLOT 04-07	MOUNTABLE CIRCUIT CARDS IN SLOT 08-11	
8-port circuit cards such	Any application processor cards	
as;	Such as;	
PN-8COT, PN-8DLC,	PN-AP00-A, PN-AP00-B, PN-AP01, PN-BRTA, PN-2BRTC,	
PN-8LC, PN-8RSTA,	PN-CC01, PN-24DTA-C, PN-30DTC-A, PN-IPTA, PN-M03,	
PN-4DAT, PN-CFTB,	PN-24PRTA, PN-4RSTB, PN-4RSTC, PN-SC01, PN-SC02,	
PN-2CSI, PN-2ILC	PN-SC03, PN-SC03-A	
4-port circuit cards	4-port line/trunk cards or any application processor cards	

### **Control Card Mounting Conditions**

- (1) PN-CP14 (MP)

  Mount the PN-CP14 card in the MP slot (Slot 12) of PIM0.
- (2) PN-CP15 (FP) When the system is configured with three PIMs or more, mount one PN-CP15 card in the FP slot (PIM0: Slot 11, PIM2, 4, 6: Slot 12) of PIM0, PIM2, PIM4, and PIM6. When the system is configured with one or two PIMs, the PN-CP15 card needs not to be mounted.

**NOTE:** For the correct number of FPs per system, refer to the Business/Hotel/Data Features and Specifications manual.

PIM3 PIM7 PIM2 PIM6 Р Ρ 12 12 PIM1 PIM5 Μ PIM<sub>0</sub> PIM4 Ρ Ρ Ρ 11 12 12

Figure 1-8 MP/FP Card Mounting Slots

## **Application Processor Card Mounting Conditions**

(1) System Capacity for Application Processor Card

Max. 24 cards per system Max. 256 ports per system

(2) Mounting Application Processor Cards in PIM0 Use slots AP00 to AP11 to mount application processor cards in PIM0. AP11 Slot (FP11 slot) of PIM0 is not available for application processor if the system is configured with three or more PIMs, as this slot is used to mount FP card for that configuration.

AP03 AP04 AP06 AP07 AP10 MP12 ≦ AP00 AP02 AP08 AP09 PFT AP11/FP11 AC/DC **PWR** PIM 0 LTC1 LTC3 LTC0 LTC2 BWB DC/DC **PWR** 

Figure 1-9 Application Processor Card Mounting Slots (PIM0)

- FRONT
- \*1 Application processor cards can be mounted in AP00 to AP10 slots.
- \*2 AP11 slot is available for application processor cards only when the system is configured with two or less PIMs.

(3) Mounting Application Processor Cards in PIM1-7 Use Slots AP00 to AP11 to mount application processor cards in PIM1 through 7.

 $\leq$ AP00 AP01 AP02 AP03 AP04 AP06 AP07 AP08 AP09 **AP10** AP11 FP12 PFT AC/DC PIM **PWR** 1 - 7 LTC1 LTC3 LTC0 LTC2 BWB DC/DC **PWR** 

Figure 1-10 Application Processor Card Mounting Slots (PIM1-7)

**FRONT** 

<sup>\*1</sup> Application processor cards can be mounted in AP00 to AP11 slots.

# (4) Mounting Conditions of Each Card

CARD NAME	MOUNTING CONDITIONS	
PN-PW00	No circuit card can be mounted in the adjoining left side slot because one card occupies two physical slots width.	
PN-CC01	Mount the PN-CC01 card in the slot that adjoins the PN-AP01 card. Connect both cards using cable (48-TW-0.3 CONN CA).	
PN-BRTA PN-2BRTC PN-24DTA-C PN-30DTC-A PN-24PRTA	Mount at least one card in PIM0 to receive source clock signals.	
PZ-M542 PZ-M557	Mount the PZ-M542/PZ-M557 card into any LTC connector of PIM BWB.  Max. two cards can be mounted per PIM as follows:  LTC0 and LTC2  LTC0 and LTC3  LTC1 and LTC3	

## **Line/Trunk Card Mounting Conditions**

(1) System Capacity for Line/Trunk Card

Max. 64 ports per PIM

Max. 512 ports per system

(2) Mounting Line/Trunk Cards in PIM0

Use Slots LT00 to LT11 to mount line/trunk cards in PIM0.

LT11 slot (FP11 slot) of PIM0 is not available for line/trunk cards if the system is configured with three or more PIMs, as this slot is used to mount FP card for that configuration.

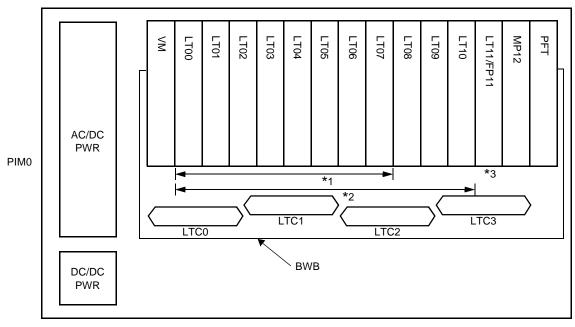


Figure 1-11 Line/Trunk Card Mounting Slots (PIM0)

FRONT

- \*1 8-port Line/Trunk cards can be mounted in LT00 to LT07 slots.
- \*2 4-port Line/Trunk cards can be mounted in LT00 to LT10 slots.
- \*3 LT11 slot is available for 4-port line/trunk cards only when the system is configured with two or less PIMs.

(3) Mounting Line/Trunk Cards in PIM1-7 Use Slots LT00 to LT11 to mount line/trunk cards in PIM1 through 7.

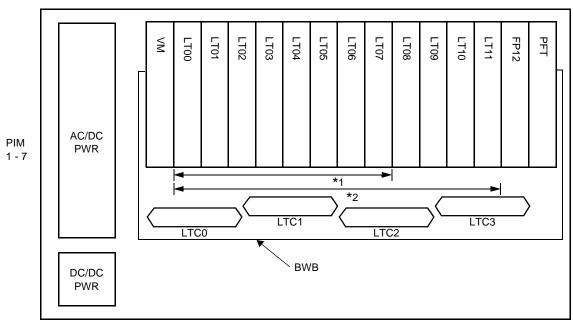


Figure 1-12 Line/Trunk Card Mounting Slots (PIM1-7)

**FRONT** 

- \*1 8-port Line/Trunk cards can be mounted in LT00 to LT07 slots.
- \*2 4-port Line/Trunk cards can be mounted in LT00 to LT11 slots.

# CHAPTER 2 INSTALLATION

This chapter explains how to install the PBX and the peripheral equipment, system initialization and data entry, and operation test procedures you should follow after completing the installation.

## **PRECAUTIONS**

### **Grounding Requirements**

The system grounding must have a specific ground resistance and AC noise level, and is to be connected to a predetermined terminal in the PBX. Standard grounding requirements are as shown below:

Communication grounding: Less than 10 ohm
Protective ground for PIM: Less than 10 ohm

**NOTE:** The AC ripple on these various grounds should be less than 0.5Vp-p.

### **CAUTION**

Grounding circuit continuity is vital for safe operation of telecommunication equipment. Never operate this equipment with the grounding conductor disconnected.

The following specific requirements apply to ground wiring.

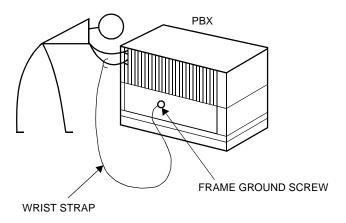
- An equipment grounding conductor that is at least as large as the ungrounded branch-supply conductors is to be installed as part of the circuit that supplies the NEAX2000 IVS<sup>2</sup>. Bare, covered, or insulated grounding conductors are acceptable. Individually covered or insulated equipment grounding conductors shall have a continuous outer finish that is either green, or green with one or more yellow stripes. The equipment grounding connector is to be connected to ground at the service equipment.
- The attachment-plug receptacles in the vicinity of the NEAX2000 IVS<sup>2</sup> are all to be of a grounding type, and the equipment grounding conductors serving these receptacles are to be connected to earth ground at the service equipment.

### **Static Electricity Guard**

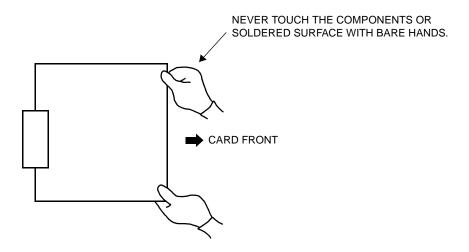
You must wear a grounded wrist strap to protect circuit cards from static electricity.

Figure 2-1 Static Electricity Guard (1 of 2)

• WHEN PLUGGING/UNPLUGGING A CIRCUIT CARD

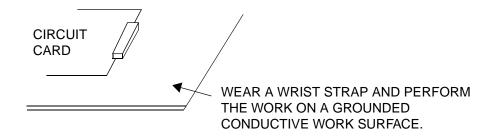


• WHEN HOLDING A CIRCUIT CARD

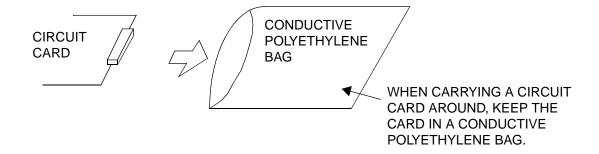


### Figure 2-1 Static Electricity Guard (2 of 2)

• WHEN MAKING A SWITCH SETTING ON A CIRCUIT CARD



WHEN CARRYING A CIRCUIT CARD



# **Procedure for Unplugging/Plugging Circuit Cards**

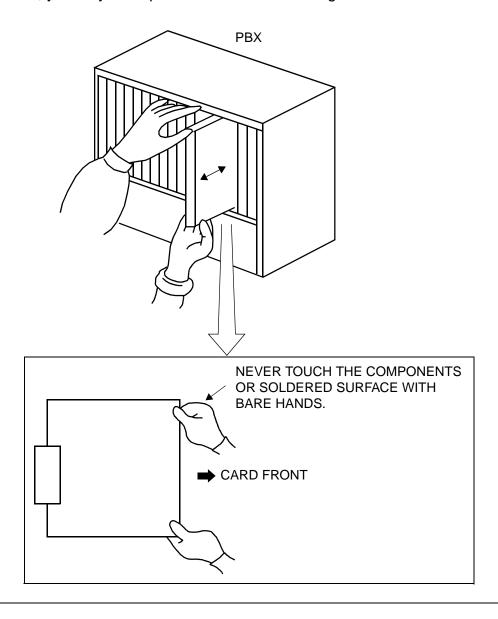
When removing a circuit card from the PIM or when mounting a circuit card in the PIM, follow the procedure in Table 2-1.

**Table 2-1 Procedure for Unplugging/Plugging Circuit Cards** 

CIRCUIT CARD	PROCEDURE		CONDITION
CIRCUIT CARD	PLUG	UNPLUG	CONDITION
<ul> <li>PN-CP14 (MP)</li> <li>PZ-PW121 (AC/DC PWR)</li> <li>PZ-PW122 (DC/DC PWR)</li> <li>PZ-M537 (EXTMEM)</li> </ul>	<ul><li>(1) Power off</li><li>(2) Plug in</li><li>(3) Power on</li></ul>	<ul><li>(1) Power off</li><li>(2) Unplug</li><li>(3) Power on</li></ul>	These circuit cards must be plugged in or unplugged only with power off to prevent damage to the card or other system circuitry.
<ul> <li>PN-AP00-A (DBM)</li> <li>PN-AP00-B (AP00)</li> <li>PN-AP01 (AP01)</li> <li>PN-BRTA (BRT)</li> <li>PN-2BRTC (BRT)</li> <li>PN-CP15 (FP)</li> <li>PN-DAIA (DAI)</li> <li>PN-DAIB (DAI)</li> <li>PN-DAID (DAI)</li> <li>PN-DAIE (DAI)</li> <li>PN-DAIF (DAI)</li> <li>PN-DAIF (DAI)</li> <li>PN-24DTA-C (DTI)</li> <li>PN-30DTC-A (DTI)</li> <li>PN-1PTA (IPT)</li> <li>PN-24PRTA (PRT)</li> <li>PN-4RSTB (MFR)</li> <li>PN-4RSTB (MFR)</li> <li>PN-SC00 (CCH)</li> <li>PN-SC03 (ICH)</li> <li>PN-SC03-A (CSH)</li> <li>PZ-M542 (CONN)</li> <li>PZ-M557 (CONN)</li> <li>PZ-VM00-M (VM)</li> <li>PZ-VM01 (VM)</li> </ul>	(1) Power off or MB switch on (2) Plug in (3) Power on or MB switch off	(1) Power off or MB switch on (2) Unplug (3) Power on	These circuit cards must be plugged in or unplugged under Make Busy condition or power off to prevent damage to the card or other system circuitry.

### **CAUTION**

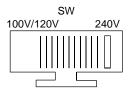
You must hold the edge of a circuit card when plugging or unplugging the circuit card. If you touch another area, you may be exposed to hazardous voltages.



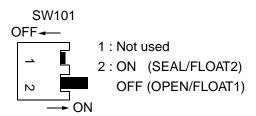
### **Turning Power ON**

#### **CAUTION**

- 1. When the operating power is being supplied to the PZ-PW121 card, do not plug/unplug this circuit card into/from its mounting slot.
- 2. When the system is configured with two or more PIMs, the BUS cable provides gang control for the PZ-PW121 card of PIM0 and other PIMs. Therefore, if the power of PIM0 is off, no power is supplied to the whole system even when the power switch(es) of other PIMs are left on. Note, however, that the battery continues to charge even under these circumstances.
- 3. Do not turn off the PZ-PW121 card on PIM1 to PIM7 when the system is operating.
- (1) Check the switch position of each PZ-PW121 card before turning power on.
  - Make sure that the AC120V/240V selector switch is positioned to appropriate voltage for each country (AC120V or AC240V).



 Make sure that the battery mode selector switch is positioned as shown below to meet the kind of battery:



(2) Turn the SW1 switches of all the PZ-PW121 cards to ON. First, turn ON PIM1 to PIM7. Then, turn ON PIM0 last of all.

### **Turning Power OFF**

- (1) Before turning power off, make sure that all line/trunk cards are not operating by no busy lamps indication.
- (2) Turn the SW1 switches of all the PZ-PW121 cards to OFF. First, turn OFF PIM0. Then, turn OFF PIM1 to PIM7.

### **PROCEDURE**

This flowchart explains the procedures for installing the PBX system. Follow the procedures in Figure 2-2.

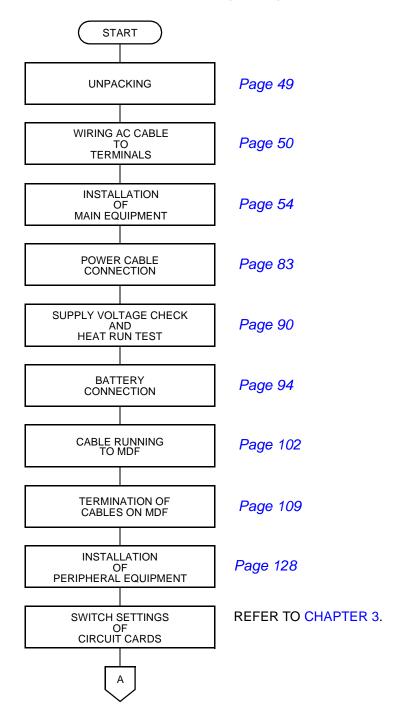


Figure 2-2 Procedure Flowchart (1 of 2)

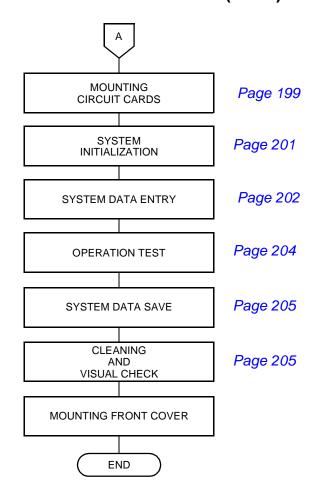


Figure 2-2 Procedure Flowchart (2 of 2)

For Floor Standing Installation, there are three methods to install the equipment. It depends on the country according to the UL/cUL/ACA.

**NOTE:** UL = Underwriters Laboratories (U.S.A.)

cUL = Canadian Underwriters Laboratories (Canada)

ACA = Australian Communication Authority (Australia)

<sup>&</sup>quot;Stationary Equipment (For North America/ Australia)"

<sup>&</sup>quot;Fixed Equipment (For North America/ Australia)"

<sup>&</sup>quot;Fixed Equipment (For Other Countries)"

# Stationary Equipment (For North America/Australia)

The equipment is placed on the BASE TRAY which is fixed on the floor, and is connected to 120V/240V AC Power Source using AC CORD-D cable.

For installation of Stationary Equipment, see the following pages.

```
WIRING AC CABLE TO TERMINALS - Using AC CORD-D Page 50
INSTALLATION OF MAIN EQUIPMENT - Floor Marking for BASE TRAY Page 58
```

Installation of PIM, For Stationary Equipment
 Page 55

### **Fixed Equipment (For North America/Australia)**

The equipment is fixed on the floor by BASE PLATE and anchor bolts, and is connected to AC Power Distribution Board using installation cable.

For installation of this equipment, see the following pages.

```
WIRING AC CABLE TO TERMINALS - Using installation Cable Page 52
INSTALLATION OF MAIN EQUIPMENT - Floor Marking for BASE PLATE Page 58
- Installation of PIM, For Fixed Equipment
Page 55
```

## **Fixed Equipment (For Other Countries)**

The equipment is fixed on the floor by BASE PLATE and anchor bolts, and is connected to 120V/240V AC Power Source using AC CORD-D cable.

For installation of this equipment, see the following pages.

```
WIRING AC CABLE TO TERMINALS - Using AC CORD-D Page 50
INSTALLATION OF MAIN EQUIPMENT - Floor Marking for BASE PLATE Page 58
- Installation of PIM, For Fixed Equipment
Page 55
```

The mark shown below is attached to each procedure in which circuit cards are handled. When doing such a procedure, the installer must perform the procedure with caution, to prevent damage caused by static electricity (See "Static Electricity Guard" on *Page 39*).



### **UNPACKING**



- (1) Check the received quantity of packages containing the PBX system with the description on the shipping document.
- (2) Check the packaging for external damage done by transportation and record it as necessary.
- (3) Unpack the packaging.
  - For unpacking the packages containing circuit cards, a grounded wrist strap should be worn.
- (4) Check the quantity of equipment and materials unpacked with the shipping document.
- (5) Perform visual inspection, checking for the following items.

• PIMs —	Overall distortion.
_	Scratches and dents on the surface.
	Scratches and cracks on the PIM Backplane.
	Broken or bent pins on the PIM Backplane.
• Covers —	Scratches and dents.
Circuit Cards	Overall distortion
	Scratches and cracks
	Loss, or damage of parts on the circuit cards.
Attendant Console	Scratches and cracks on the keyboard
_	Overall distortion
	Damage to Keys and lamps.

## WIRING AC CABLE TO TERMINALS

There are two kinds of AC cable: AC CORD-D For Stationary Equipment/Fixed Equipment (For

Other Countries)

: Installation Cable For Fixed Equipment (For North America/

Australia)

### **Using AC CORD-D**

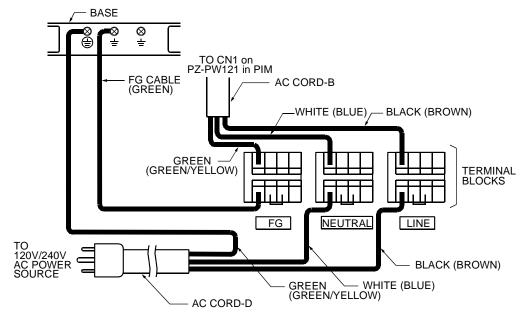
(1) Take the AC CORD-D out of the hole on the left side of the BASE, then secure the code to the BASE with the cord bush.

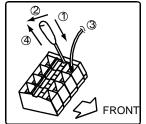
**NOTE:** Cord bush is attached to the AC CORD-D.

- (2) Wire the AC CORD-D and the FG cable to the FG, NEUTRAL, LINE and Ground terminals on the BASE.
- (3) Wire the AC CORD-B to the FG, NEUTRAL and LINE terminals on the BASE.

Figure 2-3 Wiring AC CORD to Terminals

**NOTE:** Cable colors in the parentheses are for Australia.





HOW TO SECURE CABLES TO TERMINAL BLOCK

- ①INSERT A SCREW DRIVER INTO THE INSIDE HOLE OF TERMINAL BLOCK.
- 2 PULL DOWN THE SCREW DRIVER TOWARD INSIDE AND OPEN THE METAL PLATE.
- ③ INSERT A POWER CABLE INTO THE OUTSIDE HOLE OF TERMINAL BLOCK.
- @ REMOVE THE SCREW DRIVER.

(4) When the system is two-frame configuration, the AC CORD-D of the right side frame can go through the BASE of the left side frame.

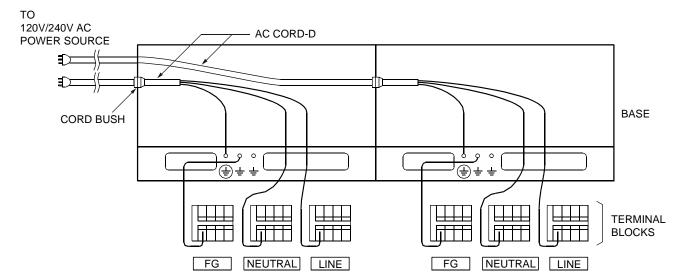


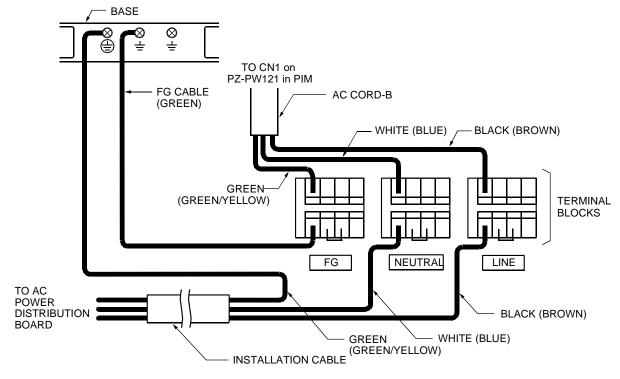
Figure 2-4 AC CORD Wiring for Two-Frame Configuration

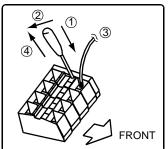
# **Using Installation Cable**

- (1) Take the Installation cable out of the hole on the left side of the BASE, then secure the cable to the BASE with the cord bush.
  - **NOTE:** The installer is to use minimum 16 AWG (1.3φ) size wire, maximum 9 mm size cable
- (2) Wire the Installation cable and the FG cable to the FG, NEUTRAL, LINE and Ground terminals on the BASE.
- (3) Wire the AC CORD-B to the FG, NEUTRAL and LINE terminals on the BASE.

Figure 2-5 Wiring Installation Cable to Terminals

**NOTE:** Cable colors in the parentheses are for Australia.





HOW TO SECURE CABLES TO TERMINAL BLOCK

- ① INSERT A SCREW DRIVER INTO THE INSIDE HOLE OF TERMINAL BLOCK.
- ② PULL DOWN THE SCREW DRIVER TOWARD INSIDE AND OPEN THE METAL PLATE.
- ③ INSERT A POWER CABLE INTO THE OUTSIDE HOLE OF TERMINAL BLOCK.
- ④ REMOVE THE SCREW DRIVER.

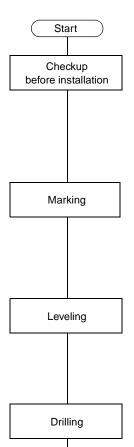
(4) When the system is two-frame configuration, the Installation cable of the right side frame can go through the BASE of the left side frame.

TO AC POWER **INSTALLATION CABLE** DISTRIBUTION **BOARD** BASE CORD BUŚH (<del>\_\_\_\_\_</del> ÷ ÷ (<del>+</del>) + + TERMINAL **BLOCKS** NEUTRAL NEUTRAL FG LINE FG LINE

Figure 2-6 Installation Cable Wiring for Two-Frame Configuration

### INSTALLATION OF MAIN EQUIPMENT

## Floor Standing Installation



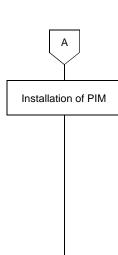
**Detaching Front Cover** 

- Check the site for installing the PBX with the work drawing to verify that
  the required floor space is ensured and that service entrances and
  ducts for trunk/extension cables, power cables and bus cables have
  been properly worked at correct positions. See Figure 2-7 and Figure
  2-8.
- Mark positions for installation of the PBX main equipment.
   For Fixed Equipment, detach the BASE PLATE from the BASE. See Figure 2-9.

For Stationary Equipment, see Figure 2-10.

**NOTE:** Measure the level of the floor surface before installing the PBX main equipment.

- Check the level of the floor. If necessary, adjust the level by inserting spacers beneath the equipment.
- First open necessary number of preliminary prepared holes using the drill bit for small-diameter holes, then use the finishing drill bit for finishing drill holes. See "Drilling" on Page 59.
- Detach the front cover of each PIM. See "Detaching FRONT COVER" on Page 60.



- For Fixed Equipment
  - (1) Fix the BASE PLATE to the floor with anchor bolts.
  - (2) Fix the BASE to the BASE PLATE with screws. See Figure 2-12.
  - (3) Fix the PIM onto the BASE with screws. See Figure 2-13.
- For Stationary Equipment
  - (1) Fix the BASE TRAY to the floor with anchor bolts.
  - (2) Fix the PIM onto the BASE with screws. See Figure 2-13.
  - (3) Place the Module and the BASE on the BASE TRAY. See Figure 2-14.

Installation of Multiple-Module

Installation of Top Cover

Installation of Mounting Bracket

Connect PIMs with screws. See Figure 2-17.

 Install the I/F BRACKET to the top-stack PIMs if the equipment is stacked with five or more PIMs. See "Installation of I/F BRACKET" on Page 69.

 Install the TOP COVER to the top-stack PIM. See "Installation of TOP COVER" on Page 70.

- Install the MOUNTING BRACKET to the top-stack PIM if the equipment is stacked with four or more PIMs. See "Installation of MOUNTING BRACKET" on Page 71.
- Carefully review every step above to ensure that all necessary screws are properly placed and tightened.

UNIT : mm (inch)

223 (8.8)

430 (16.9)

200 (7.9)

PIM/BATTM

BASE

Figure 2-7 Floor Space

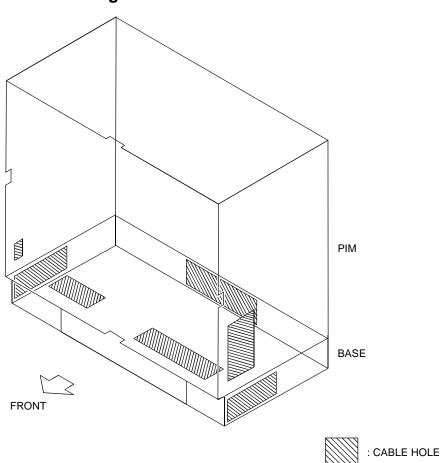


Figure 2-8 Cable Hole Location

Using MOUNTING BRACKET : 10 (0.4)
Not Using MOUNTING BRACKET : 1.7 (0.1)
(WALL)

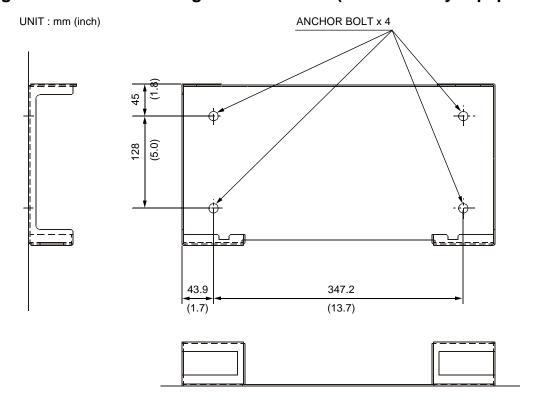
ANCHOR BOLT x 4

30
(1.2)

347.2 (13.7)
412.4 (16.2)

Figure 2-9 Floor Marking for BASE PLATE (for Fixed Equipment)

Figure 2-10 Floor Marking for BASE TRAY (for Stationary Equipment)



#### Drilling

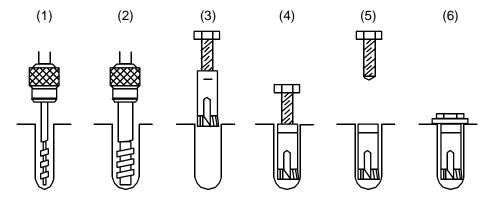
- (1) Make a preliminary hole in the concrete, using a drill bit for small-diameter holes.
- (2) Drill a hole in the concrete with a drill suitable for a plug bolt a little deeper than the plug bolt length.

Anchor Bolt Size: 10mm (0.39 inch) DIA for Fixed Equipment

6mm (0.24 inch) DIA for Stationary Equipment

- (3) Insert the anchor bolt into the hole.
- (4) Push anchor bolt until the bolt stays permanently in place.
- (5) Turn bolt counterclockwise and remove.
- (6) Insert bolts correctly into the holes for equipment installation, then tighten them properly.

Figure 2-11 Drilling Instructions for Anchor Bolt

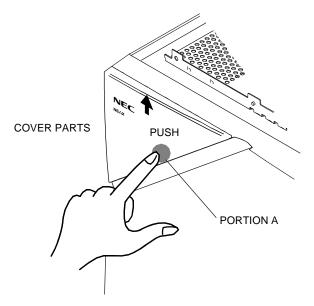


#### Detaching FRONT COVER

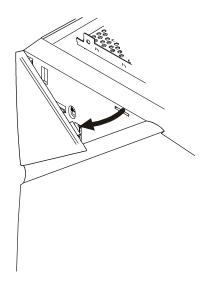
- (1) Push portion A of the COVER PARTS to release the LATCH.
- (2) Pivot the COVER PARTS on its left side to remove it.
- (3) Loosen its one screw.
- (4) Lift up the STOPPER to unlock.
- (5) Pivot the FRONT COVER on its bottom to remove it.

### **Detaching FRONT COVER**

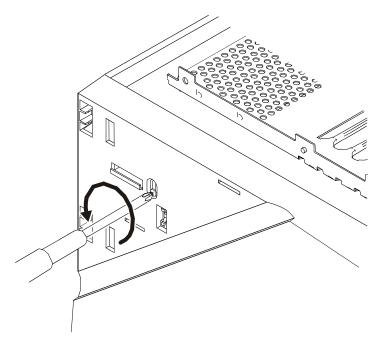
#### (1) PUSH COVER PARTS.



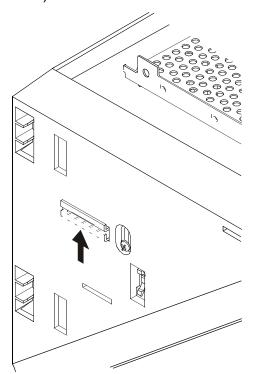
(2) REMOVE COVER PARTS.



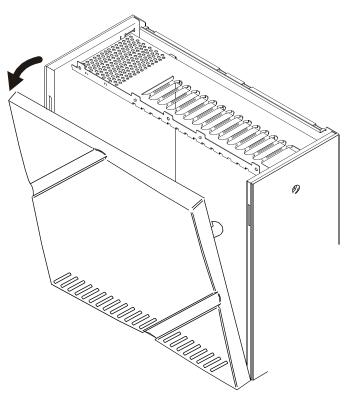
### (3) LOOSEN A SCREW.



# (4) LIFT UP STOPPER (UNLOCK).



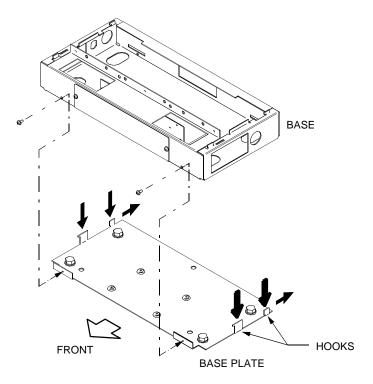
### (5) REMOVE FRONT COVER.

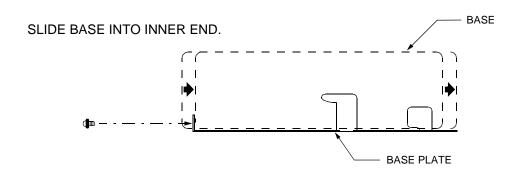


- Connection of BASE and BASE PLATE for Fixed Equipment
  - (1) Mount the BASE on the BASE PLATE by placing it over the hooks.
  - (2) Slide the BASE into the inner end.
  - (3) Secure the BASE to the BASE PLATE with two screws.

**NOTE:** Screws are attached to the BASE PLATE.

Figure 2-12 Connection of BASE and BASE PLATE





- Connection of PIM and BASE for Fixed/Stationary Equipment
  - (1) Mount the PIM on the BASE by placing it over the hooks.
  - (2) Slide the PIM into the inner end.
  - (3) Fix the PIM to the BASE with three screws.

**NOTE:** Screws are attached to the Module.

**SCREWS** BASE HOOKS PIM SLIDE PIM INTO INNER END. BASE

Figure 2-13 Connection of PIM and BASE

• Placing PIM on BASE TRAY for Stationary Equipment Place the PIM and the BASE on the BASE TRAY.

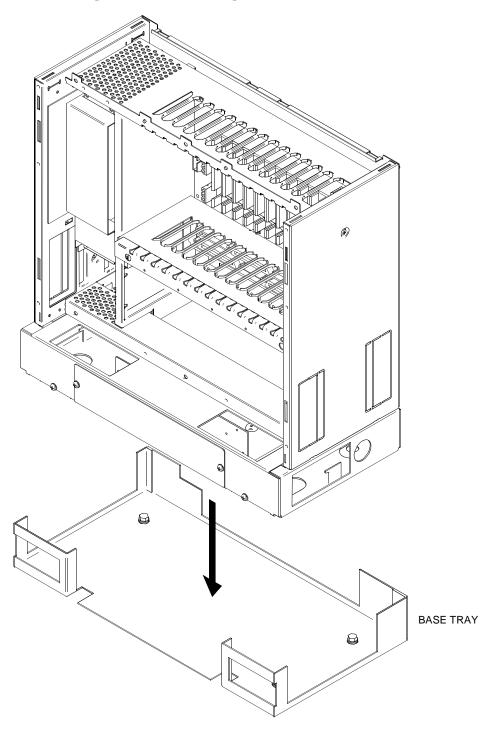


Figure 2-14 Placing PIM on BASE TRAY

Connection of PIMs

**NOTE:** The FRONT STOPPER, BUILD PLATES, and screws are attached to the PIM.

- (1) Insert the BUILD PLATES (R)/(L) into the slits of the SIDE FRAME, then slide them backward and lock them.
- (2) Place the FRONT STOPPER on the PIM, then secure it with three screws.

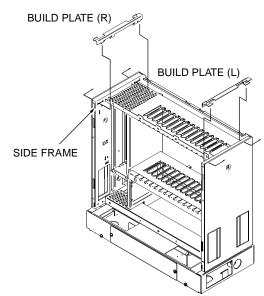
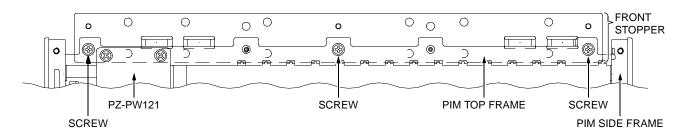
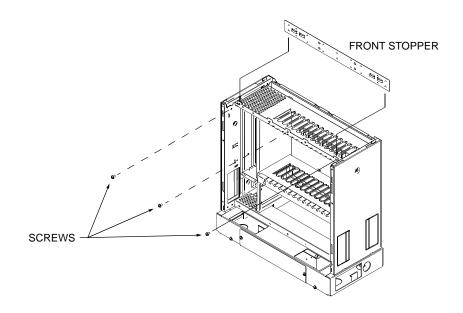


Figure 2-15 Connection of BUILD PLATE

Figure 2-16 Connection of FRONT STOPPER





- (3) Hook the PIM onto the BUILD PLATE's hooks.
- (4) Slide the PIM backward until it comes to the back end.
- (5) Secure the PIM with three screws.

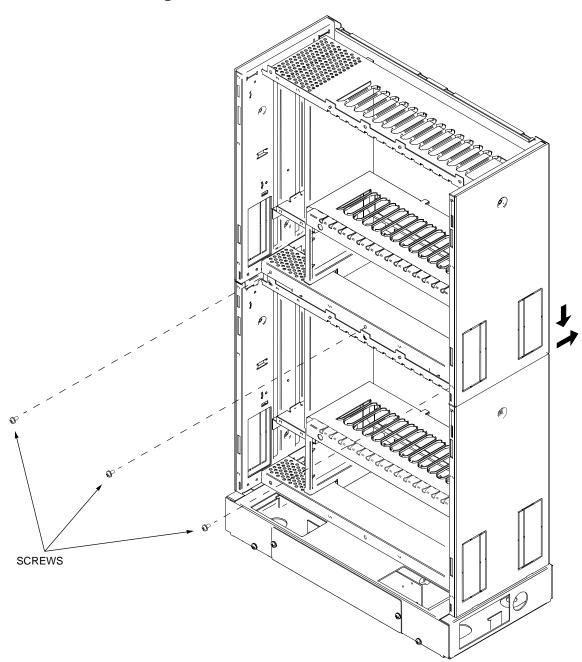
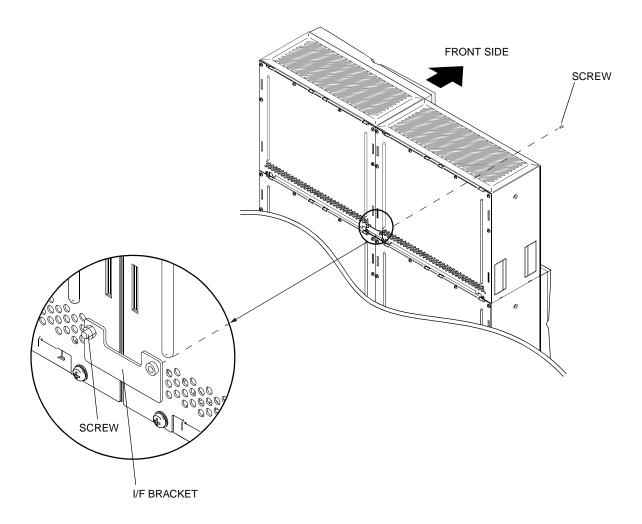


Figure 2-17 Connection of Modules

 Installation of I/F BRACKET
 Install the I/F BRACKET to the top-stack PIMs if the equipment is stacked with four or more PIMs.

Secure the I/F BRACKET to rear side of top-stack PIMs with two screws from inside of PIMs.

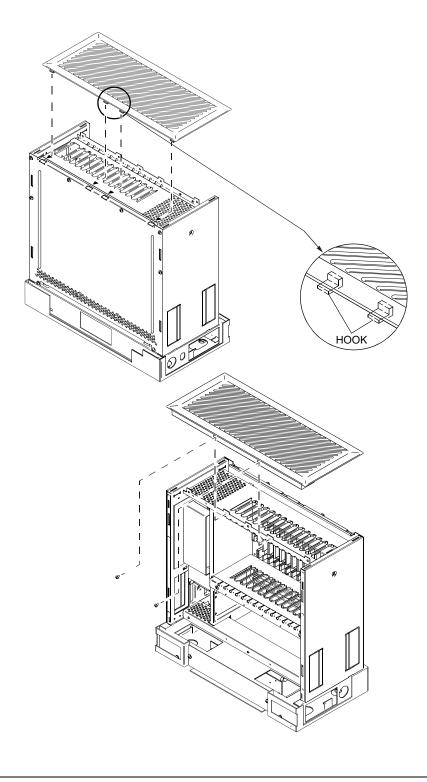
**NOTE:** Screws are attached to the I/F BRACKET.



#### • Installation of TOP COVER

- (1) Hang four hooks of the TOP COVER on the back board of PIM as shown below.
- (2) Secure the TOP COVER to the front side of the PIM with two screws.

**NOTE:** Screws are attached to BASE/TOP ASSEM.



- Installation of MOUNTING BRACKET Install the MOUNTING BRACKET to the top-stack PIM if the equipment is stacked with four or more PIMs.
  - (1) Remove four screws located on the rear side of the top-stack PIM.
  - (2) Secure the MOUNTING BRACKET to the PIM with the removed screws.
  - (3) Secure the PIM to the wall or ceiling by using wires, chains and eyebolts (locally provided).

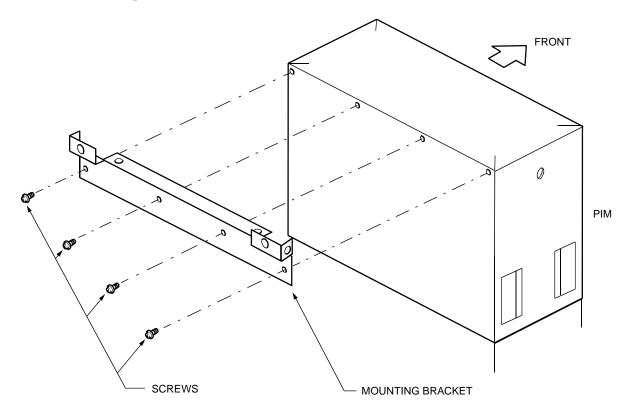
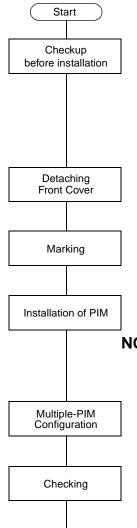


Figure 2-18 Installation of MOUNTING BRACKET

### **Wall Mounting Installation**



End

- Check the site for installing the PBX with the work drawing to verify that
  the required floor space is ensured and that service entrances and ducts
  for trunk/extension cables, power cables and grounding conductors
  have been properly worked at correct positions.
   See Figure 2-7 and Figure 2-8.
- Detach the front cover of each PIM. See "Detaching FRONT COVER" on Page 60.
- Mark hole positions for installation of the PBX main equipment. See Figure 2-19.
- Secure the HANGER ASSEM to the wall.
- Hang the PIM to the HANGER ASSEM. See Figure 2-20.

**NOTE:** The BATTM cannot be installed on the wall.

- After hanging each PIM to the respective HANGER ASSEMs, connect PIMs using screws. See "Connection of PIMs" on Page 66.
- Carefully review every step above to ensure that all necessary screws are properly placed and tightened.

UNIT : mm (inch) 167.5 167.5 (7.0) (7.0) (8.3) 352 (13.9) 210.8 (8.3) 352 (13.9) 210.8 (8.3)352 (13.9) (8.3) (13.9)ANCHOR/ SCREW (x 3/PIM) 210.8 (8.3)HANGER ASSEM 356.5 (14.0) BASE

Figure 2-19 Wall Marking for HANGER ASSEM

- Hanging PIM to HANGER ASSEM
  - (1) Secure the HANGER ASSEM to the surface of a wall with three screws. Select screws to match with the wall type as follows.

WALL TYPE	RECOMMENDED SCREW	
CONCRETE	ANCHOR BOLT TYPE	Recommended 4 mm (0.16 inch) by 25 mm (0.98 inch)
WOOD	WOOD TYPE SCREWS	Min. 3.5 mm (0.14 inch) DIA Max. 4.5 mm (0.17 inch) DIA
PLASTER BOARD [THICKNESS Min. 9.6 mm (0.38 inch)]	MOLLY ANCHOR TYPE	Min. 3.5 mm (0.14 inch) DIA Max. 4.5 mm (0.17 inch) DIA

A concrete wall is recommended because it is the most firm to mount the PBX of the three. The plaster board is the least firm wall of the three.

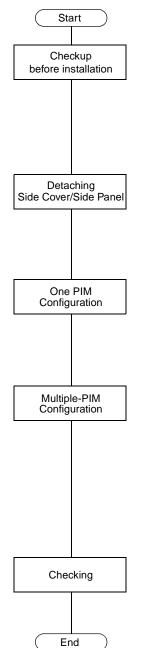
- (2) Hang the slits of the rear of a PIM to the hooks of the HANGER ASSEM.
- (3) Secure the PIM to the HANGER ASSEM with two screws.

NOTE: Screws are attached to the HANGER ASSEM.

HANGER ASSEM
HOOK
PIM
BASE
SCREWS
FRONT

Figure 2-20 Hanging PIM to HANGER ASSEM

## 19-inch Rack Mounting Installation



- Check the site for installing the PBX with the work drawing to verify that
  the required floor space is ensured and that service entrances and ducts
  for trunk/extension cables, power cables and grounding conductors
  have been properly worked at correct positions.
   See Figure 2-7 and Figure 2-8.
- Detach the SIDE COVER and SIDE PANEL of the Module for 19" RACK BRACKET (A) mounting. For 19" RACK BRACKET (B), this procedure is not required. See "Detaching SIDE COVER/SIDE PANEL" on Page 76.
- Mount the 19" RACK BRACKET (A) to the PIM. See "Connection of 19" RACK BRACKET (A)" on Page 78.
- Mount the PIM with the 19" RACK BRACKET (A) to the 19-inch RACK.
   See "Mounting PIM to 19-inch RACK" on Page 79.
- Mount the 19" RACK BRACKET (B) to the bottom-stack PIM. See "Connection of 19" RACK BRACKET (B)" on Page 80.
- Mount the 19" RACK BRACKET (A) to the top-stack PIM. See "Connection of 19" RACK BRACKET (A)" on Page 78.
- Mount the PIMs with the 19" RACK BRACKET (A) and (B) to the 19-inch RACK. See Figure 2-25.
- Carefully review every step above to ensure that all necessary screws are properly placed and tightened.

- Detaching SIDE COVER/SIDE PANEL
  - (1) Remove the two screws fixing the SIDE COVER.
  - (2) Pivot the SIDE COVER on its bottom to remove it.
  - (3) Remove the SIDE PANEL fixed by three screws, from the left side flame of the PIM.

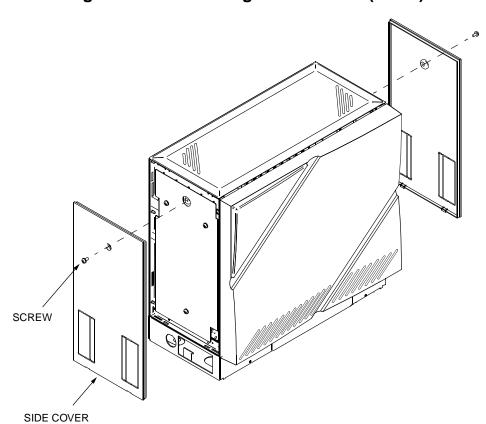


Figure 2-21 Detaching SIDE COVER (1 of 2)

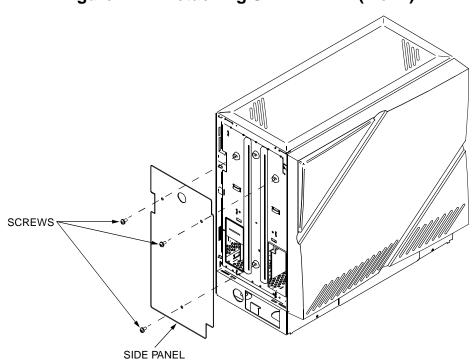


Figure 2-21 Detaching SIDE PANEL (2 of 2)

- Connection of 19" RACK BRACKET (A)
  - (1) Insert the nails of the 19" RACK BRACKET (A) into the side frame of the PIM.
  - (2) Secure them with four screws each.

**NOTE:** Screws are attached to the 19" RACK BRACKET (A).

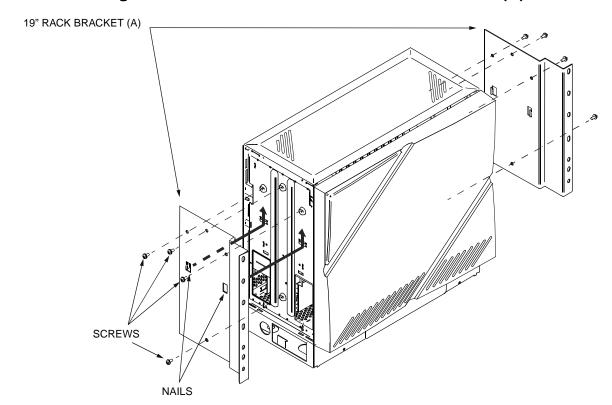


Figure 2-22 Connection of 19" RACK BRACKET (A)

- Mounting PIM to 19-inch RACK
  - (1) Mount the PIM with 19" RACK BRACKET (A) into the 19-inch RACK.
  - (2) Secure them with four screws (locally provided).

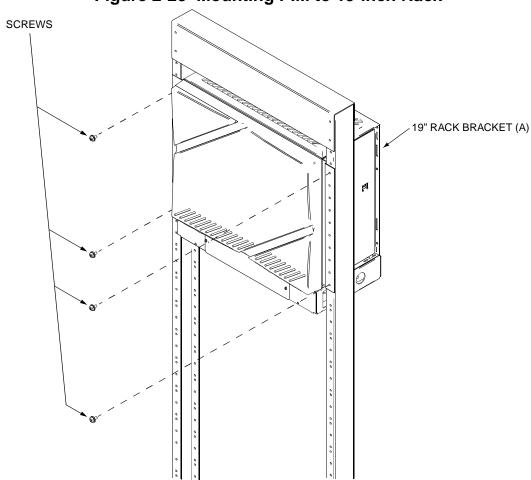


Figure 2-23 Mounting PIM to 19-inch Rack

- Connection of 19" RACK BRACKET (B)
  - (1) Place the BASE PLATE on the 19" RACK BRACKET (B).
  - (2) Secure the BASE PLATE with four washers and nuts.
  - (3) Mount the BASE to the BASE PLATE. (See Figure 2-12.)
  - (4) Mount the PIM to the BASE. (See Figure 2-13.)

NOTE: Nuts and washers are attached to the 19" RACK BRACKET (B).

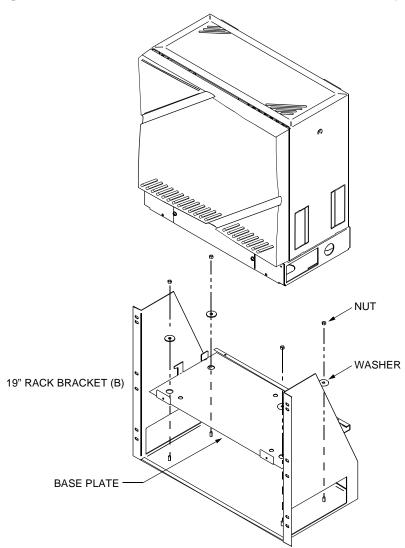


Figure 2-24 Connection of 19" RACK BRACKET (B)

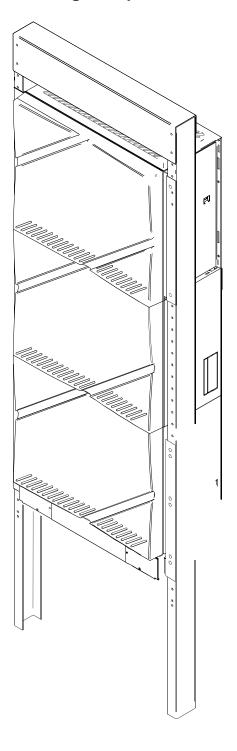


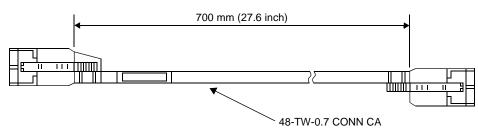
Figure 2-25 Mounting Multiple-PIM to 19-inch RACK

#### **BUS Cable Connection**

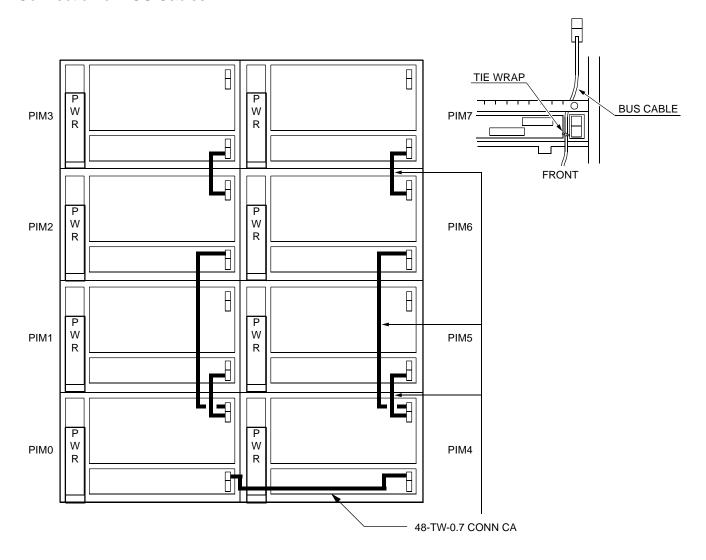
When the system is a multiple-PIM configuration, connect all the BUS Connector to each other using BUS cables, as shown below.

Be sure to secure the BUS cables using tie wraps to avoid obstructing a PFT card.

Figure 2-26 BUS Cable



Connection of BUS Cables



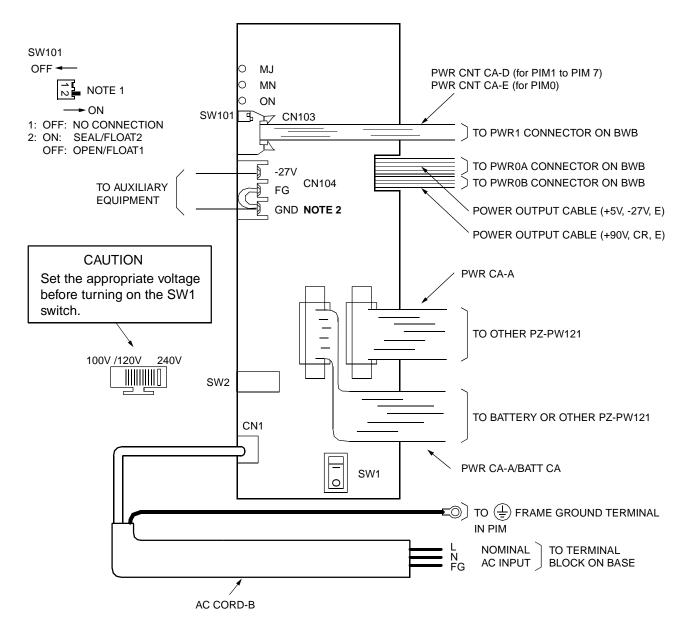
# POWER CABLE CONNECTION

The cable connections on the PZ-PW121 card are shown below.

Figure 2-27 Cable Connection on PZ-PW121

**NOTE 1:** Follow the Label on Front Plate of PZ-PW121.

**NOTE 2:** If GND (Signal GND) has to be separated from FG (Frame GND), remove the link between GND and FG terminals.



#### Connection of AC CORD-B

- (1) Connect the AC CORD-B to the CN1 connector on the PZ-PW121 card.
- (2) Screw the ground cable of the AC CORD-B to the frame ground terminal on the PIM.

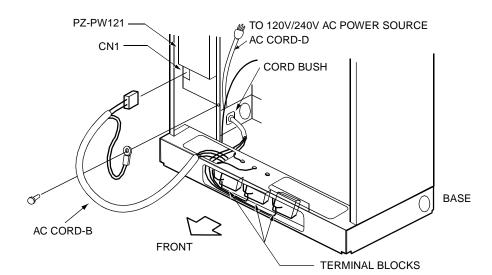


Figure 2-28 Connection of AC CORD-B

#### **Connection of DC Power Cable**

- (1) Confirm the connection of power output cables, as shown below (These cables are pre-installed).
- (2) For PIM0, connect the PWR CNT CA-E to the CN103 connector on the PZ-PW121 card and the PWR1 connector on the BWB.
  - For PIM1 to PIM7, connect the PWR CNT CA-D to the CN103 connector on the PZ-PW121 card and the PWR1 connector on the BWB.

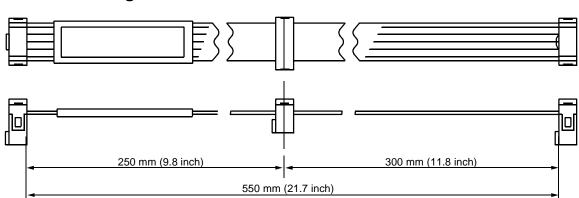
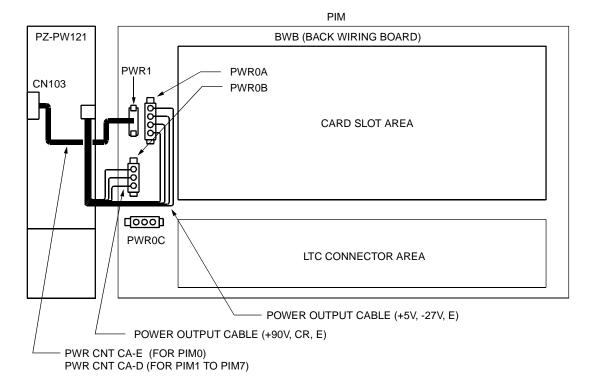


Figure 2-29 PWR CNT CA-D/PWR CNT CA-E





- (3) When you need a –48V DC power supply installed for a Cell Station (Zone Transceiver) in WCS system, do the following procedure. If not, skip this procedure and go to item (4) on *Page 88*.
- STEP 1: Attach four screws preliminary to the PZ-PW122 card.
- STEP 2: Mount the PZ-PW122 card into the PIM which accommodates the CSI cards, and fasten the screws.

**NOTE:** Screws are attached to the PZ-PW122 card.

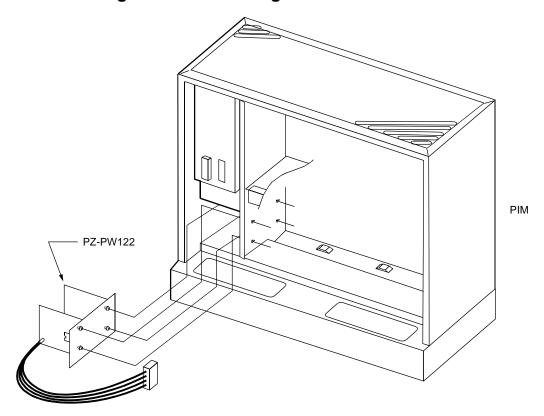


Figure 2-31 Mounting PZ-PW122 into PIM

STEP 3: Connect the PWR CNT CA-E or PWR CNT CA-D, and POWER OUTPUT CABLE (-48V, E) as shown below.

PIM PZ-PW121 BWB (BACK WIRING BOARD) PWR1 PWR0A CN103 PWR0B **CARD SLOT AREA [** LTC CONNECTOR AREA PZ-PW122 POWER OUTPUT CABLE (+5V, -27V, E) POWER OUTPUT CABLE (-48V, E) POWER OUTPUT CABLE (+90V, CR, E) PWR CNT CA-E (FOR PIM0) PWR CNT CA-D (FOR PIM1 TO PIM7)

Figure 2-32 Cable Connection between PZ-PW121/PZ-PW122 and BWB

(4) When the system is configured with two or more PIMs, connect the PZ-PW121 cards to each other using the PWR CA-A for power multi-connection.

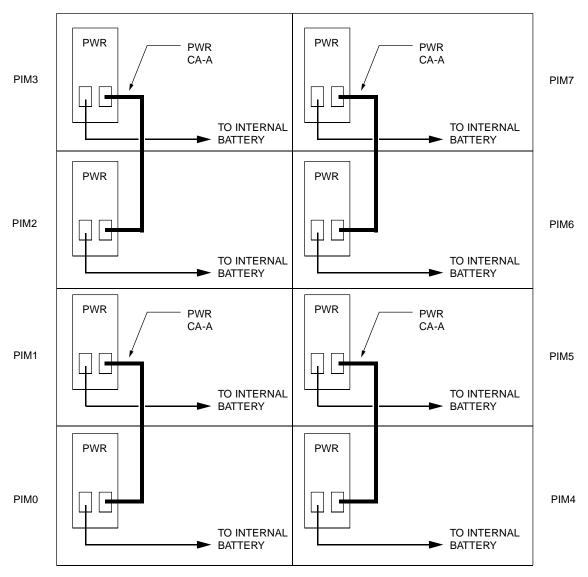
550 mm (21. 7inch)

PWR CA-A

Figure 2-33 PWR CA-A

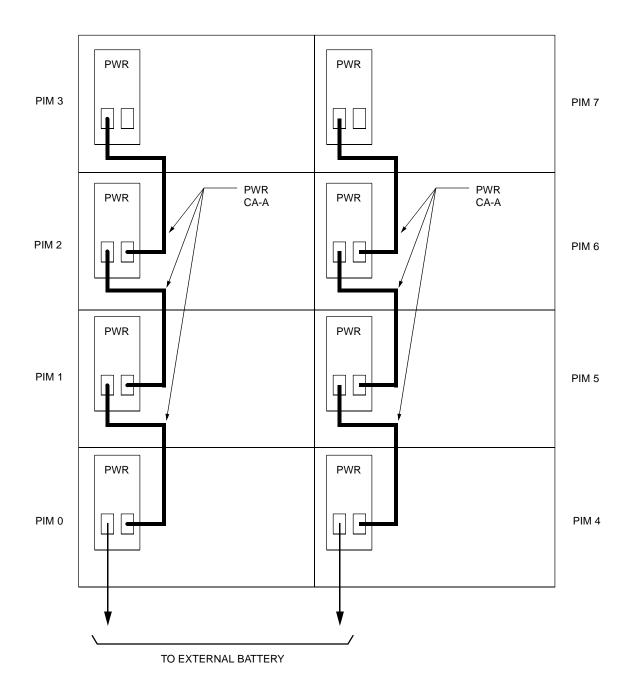
Figure 2-34 Connection of PWR CA-A Cables

(a) When using an Internal Battery



# Figure 2-35 Connection of PWR CA-A Cables

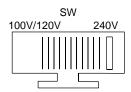
## (b) When using an External Battery



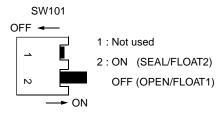
### SUPPLY VOLTAGE CHECK AND HEAT RUN TEST

#### **Precautions**

- (1) Check the switch position of each PZ-PW121 card before turning power on.
  - Make sure that the AC120V/240V selector switch is positioned to appropriate voltage for each country (AC120V or AC240V).



 Make sure that the battery mode selector switch is positioned as shown below to meet the kind of battery:



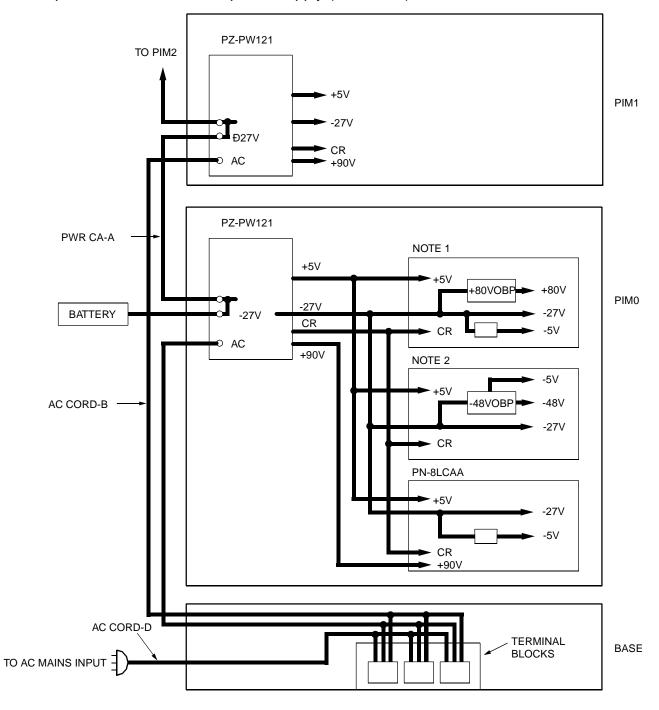
- (2) When the operating power is being supplied to the PZ-PW121 card, do not plug/unplug this circuit card into/from its mounting slot.
- (3) Immediately follow the instructions below if the MJ lamp on the PZ-PW121 lights up or smoke or an unpleasant odor is produced during the test:
  - a) Turn power off of all PZ-PW121 cards.
  - b) Unplug the AC code from the wall outlet.
  - c) Carefully check for cause(s) of the failure occurring.

**NOTE:** Do not turn power on again until the cause is detected.

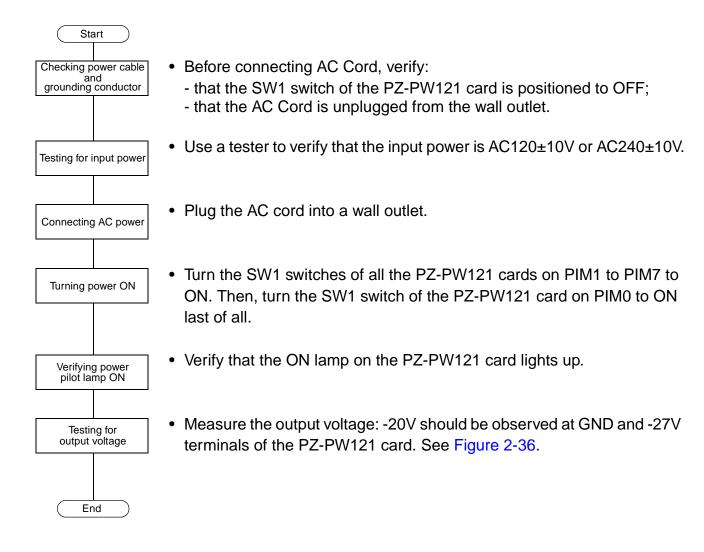
(4) When the system is configured with two or more PIMs, the BUS cable is providing gang control for the PZ-PW121 card of PIM0 and other PIMs. Therefore, if the power of PIM0 is off, no power is supplied to the whole system even when the power switch(es) of other PIMs are left on. Note, however, that the battery charging is continuing even under these circumstances.

## **Power Routing**

NOTE 1: PN-4LCD/4LCF/4LCL/4LCW card provides +80V on-board power supply (+80VOBP). NOTE 2: PN-AUCA, PN-2DLCB/PN-2DLCN, PN-2DLCC, PN-2LDTA, PN-2ODTA/2ODTB card provides –48V on-board power supply (–48VOBP).



### **Checking for Supply Voltage**



#### **Heat Run Test**

Turn the SW1 switch ON. Keep it on for 5 minutes to check for no abnormal voltage. After completing the test, turn OFF the SW1 switch of the PZ-PW121 card on PIM0. Then, turn OFF the SW1 switches of all the PZ-PW121 cards.

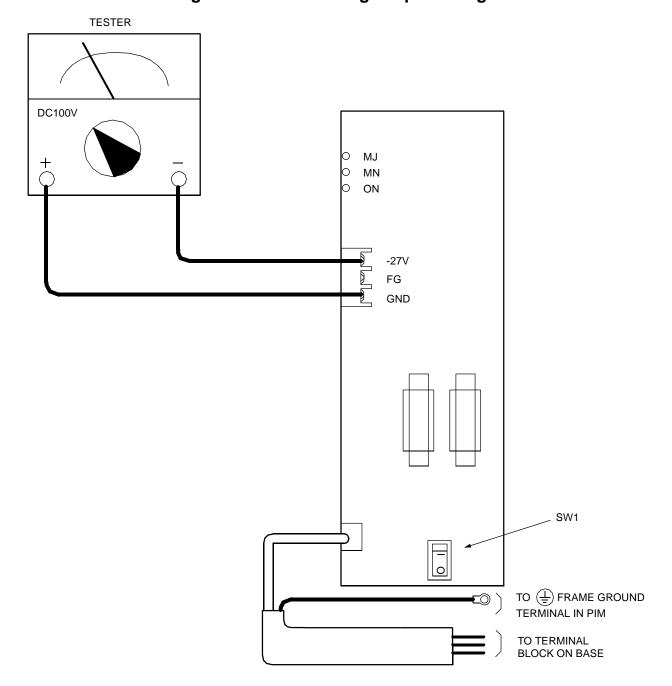


Figure 2-36 Confirming Output Voltage

# **BATTERY CONNECTION**

#### **WARNING**

#### TURN OFF AC POWER BEFORE CONNECTING BATTERIES.

#### **CAUTION**

- 1. 24V batteries must be used in this system.
- 2. If battery terminals (+, –) come in contact with the module while connecting the battery cable to the PZ-PW121 card, the PZ-PW121 card or the BWB may be broken. Therefore, you 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 PZ-PW121 card.
- (2) When removing batteries:
  - (a) Disconnect the battery cable from the PZ-PW121 card.
  - (b) Remove the batteries from the PIM or the BATTM.

Recommended Battery

Internal Battery: YUASA type NPH-3.2-12

MATSUSHITA type LCR-12V3.4NE

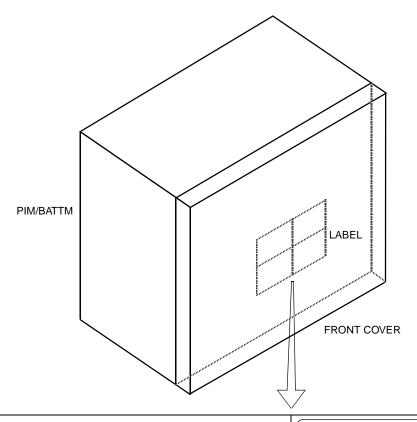
External Battery: YUASA type NP-24-12B (BATTM) MATSUSHITA type LCL-12V-24

#### **CAUTION**

3. 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 and BATTM.

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	5 ~ 35°C	0 ~ 50°C	0 ~ 50°C
TEMPERATURE	(AVERAGE 25°C)	(AVERAGE 25°C)	(AVERAGE 40°C)
REPLACEMENT INTERVAL	3 YEARS	2 YEARS	1 YEAR

 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.
- REPLACE BATTERY ONLY AFTER BATTERY GASES HAVE BEEN DISPERSED.

### **Internal Battery Connection**

- (1) Connect the BATT CA INT cable to the batteries as shown below.
- (2) Mount the battery unit (24V DC, 3.2-3.4AH) into the PIM.
- (3) Plug the BATT CA INT connector into the BATT1 connector on the PZ-PW121 card.
- (4) Secure the batteries and battery cable using tie wraps.

DIMENSION OF BATTERY 67 mm (2.6 inch) 60 mm (2.4 inch) PIM 134 mm TO BATT1 (5.3 inch) CONNECTOR ON PZ-PW121 **Recommended Batteries** Yuasa NPH-3.2-12 Matsushita LCR-12V 3.4NE BATT CA INT RED BLUE/BLACK **BLACK** INTERNAL BATTERY UNIT

Figure 2-37 Internal Battery Mounting (1 of 2)

(24V DC, 3.2 TO 3.4AH)

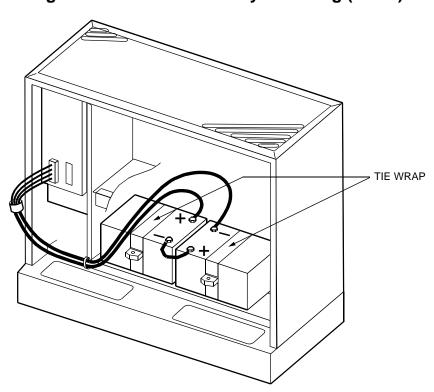


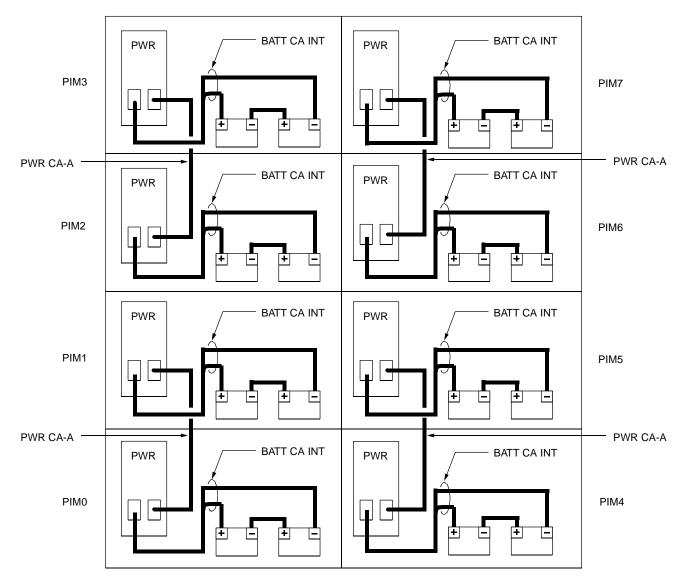
Figure 2-37 Internal Battery Mounting (2 of 2)

(5) When the system is configured with two or more PIMs, connect the BATT CA INT and the PWR CA-A as shown below.

Figure 2-38 Internal Battery Connection for Multiple-PIM Configuration

NOTE 1: One Internal Battery unit (24V DC, 3.2-3.4AH) can be mounted in each PIM.

NOTE 2: Internal Batteries are multi-connected for each two PIMs.

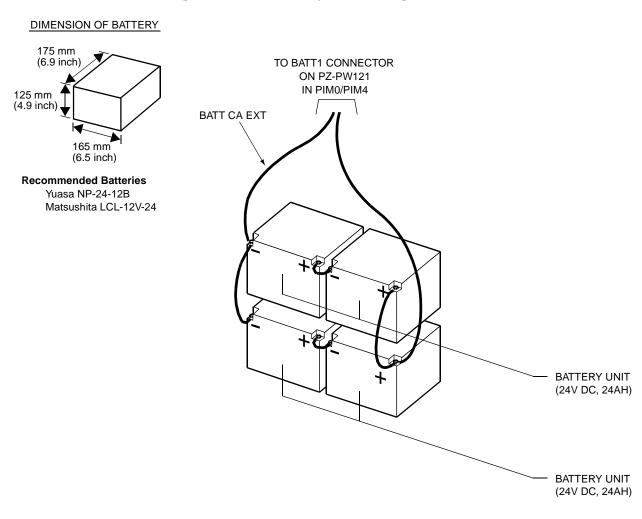


# **External / BATTM Battery Connection**

- (1) Connect the BATT CA EXT cable to the batteries as shown below.
- (2) Mount the battery units (24V DC, 24AH per unit) into the Battery Module (BATTM), if the BATTM required.
- (3) Plug the BATT CA EXT connector into the BATT1 connector on the PZ-PW121 card in PIM0 or PIM4.

**NOTE:** Screws are attached to the BATTM.

Figure 2-39 Battery Mounting into BATTM



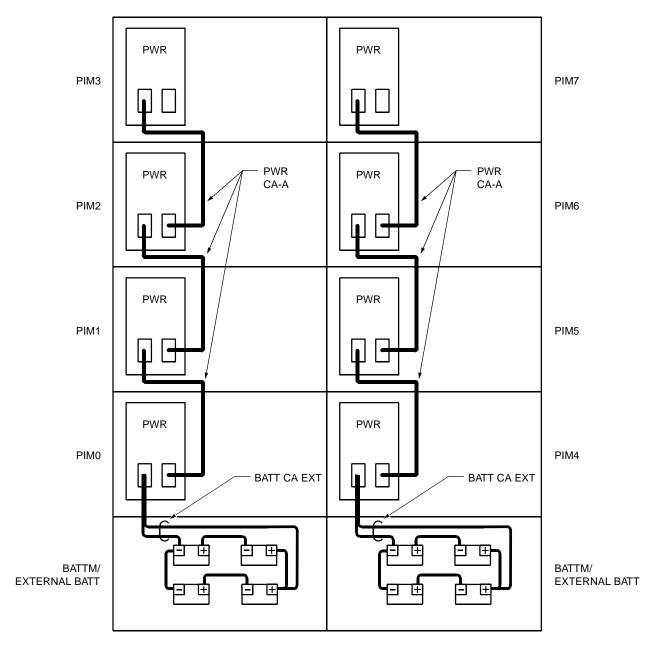
TO BATT1 CONNECTOR ON PZ-PW121 IN PIM0/PIM4 BATTM FRONT

Figure 2-40 Battery Mounted into BATTM

(3) When the system is configured with two or more PIMs, connect the BATT CA EXT and the PWR CA-A as shown below.

### Figure 2-41 External/BATTM Battery Connection for Multiple-PIM Configuration

- **NOTE 1:** One pair each of battery unit (24V DC, 24AH) can be housed in a BATTM, for each two PIMs.
- NOTE 2: External Batteries are multi-connected for each four PIMs.



## **CABLE RUNNING TO MDF**

### **Installation of External MDF**

- Secure the external MDF onto the floor or the wall.
- Mount the required MDF components.
- If required, install the cable ducts for the cables to be laid between the MDF and the Main Equipment. In this case, confirm the locations of the cable holes for the Main Equipment.

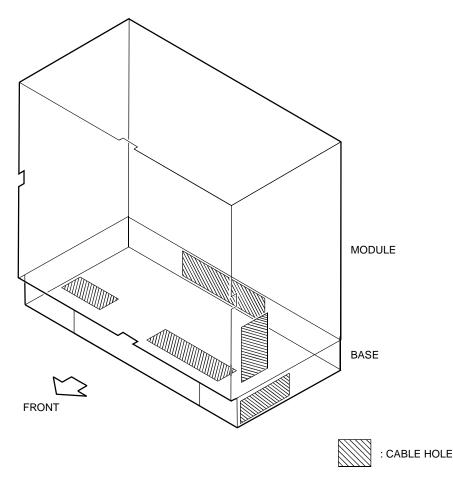


Figure 2-42 MDF Cable Hole Location

#### **MDF Cable**

To facilitate the termination of the 25 pair cables (MDF cables) from the system to the MDF shown in Figure 2-43, the length of each cable to be used should be predetermined according to the distance between the MDF and the system. Each cable should be labeled at both ends using a cable number or cable designation as shown in Table 2-2.

TO PIM

TO MDE

Figure 2-43 MDF Cable

Table 2-2 MDF Cables for each PIM

FI	FROM		ТО	CABLE
MODULE	CONNECTION	NUMBER	ТО	DESIGNATION
PIM 0	LTC0	1	MDF	0 LTC0
	LTC1	2		0 LTC1
	LTC2	3		0 LTC2
	LTC3	4		0 LTC3
PIM 1	LTC0	5	MDF	1 LTC0
	LTC1	6		1 LTC1
	LTC2	7		1 LTC2
	LTC3	8		1 LTC3
PIM 2	LTC0	9	MDF	2 LTC0
	LTC1	10		2 LTC1
	LTC2	11		2 LTC2
	LTC3	12		2 LTC3
PIM 3	LTC0	13	MDF	3 LTC0
	LTC1	14		3 LTC1
	LTC2	15		3 LTC2
	LTC3	16		3 LTC3
PIM 4	LTC0	17	MDF	4 LTC0
	LTC1	18		4 LTC1
	LTC2	19		4 LTC2
	LTC3	20		4 LTC3
PIM 5	LTC0	21	MDF	5 LTC0
	LTC1	22		5 LTC1
	LTC2	23		5 LTC2
	LTC3	24		5 LTC3

Table 2-2 MDF Cables for each PIM (Continued)

FR	OM	CABLE	то	CABLE
MODULE	CONNECTION	NUMBER	10	DESIGNATION
PIM 6	LTC0	25	MDF	6 LTC0
	LTC1	26		6 LTC1
	LTC2	27		6 LTC2
	LTC3	28		6 LTC3
PIM 7	LTC0	29	MDF	7 LTC0
	LTC1	30		7 LTC1
	LTC2	31		7 LTC2
	LTC3	32		7 LTC3

### **Cable Running to External MDF**

- (1) When using the cable hole of the BASE, bring the MDF cable up to the Main Equipment through the cable hole of the BASE.
- (2) When using the cable hole of the PIM, make the cable hole on the right side of PIM. Then, bring the MDF cable up to PIM 0 through the cable hole of the BASE, and bring the MDF cable up to the other PIM through the cable hole (right side) of each PIM.

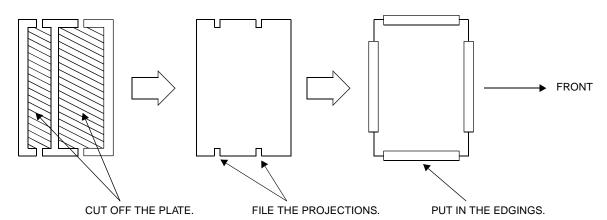
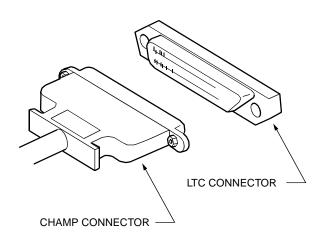


Figure 2-44 Making Cable Hole on PIM

- (3) Connect the champ connector of each MDF cable to the LTC connector located on the PIM using the screws provided, as shown below.
- (4) Secure the MDF cables to the PIM using tie wraps.

Figure 2-45 Cable Running to the External MDF (1 of 2)

(a) Using cable hole of BASE



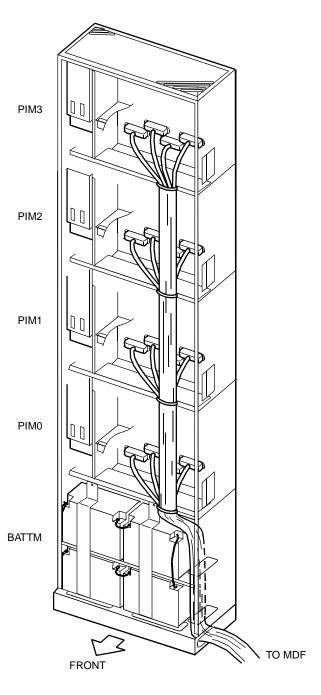
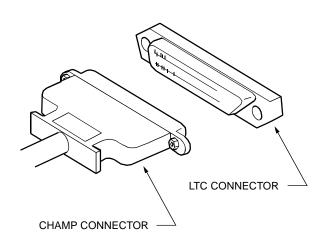
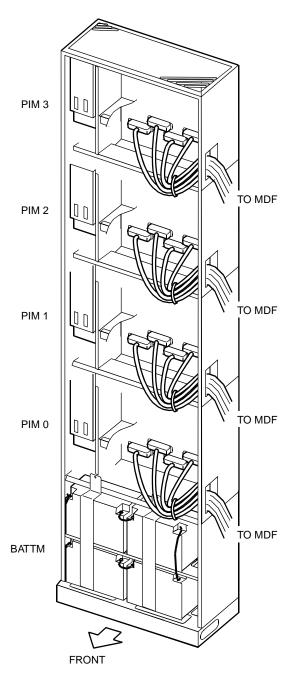


Figure 2-45 Cable Running to the External MDF (2 of 2)

# (b) Using cable hole of PIM





# **TERMINATION OF CABLES ON MDF**

#### **Cable Connection to MDF**

Connect the cables to the MDF by referring to Figure 2-46 and Table 2-3.

≦ LT01/AP01 LT04/AP04 LT05/AP05 LT09/AP09 LT10/AP10 LT11/AP11/FP11 MP12/FP12 LT00/AP00 LT02/AP02 LT03/AP03 LT06/AP06 LT07/AP07 LT08/AP08 AC/DC **PWR** PIM0 - 7 LTC1 LTC3 LTC2 LTC0 **BWB** DC/DC **PWR FRONT** 

Figure 2-46 Card Slots and the LTC Connectors

**Table 2-3 LTC Connector Accommodation** 

LTC CONNECTOR	CARD SLOT NUMBER	REMARKS
LTC0	LT00 - LT02/AP00 - AP02	
LTC1	LT03 - LT05/AP03 - AP05	
LTC2	LT06 - LT08/AP06 - AP08	
LTC3	LT09 - LT11/AP09 - AP11	

#### **Location of Each LEN**

This figure shows the relationship between each Line Equipment Number (LEN) and each Card Slot Number (LT Number).

- LEN 000 363 (PIM0 3) Page 111
- LEN 400 763 (PIM4 7) Page 112

### • LEN 000 - 363 (PIM 0 - 3)

### **Location of each LEN**

	XYY		E EQUIPMI X : PIM I YY : PORT	NUMBER NUMBEF	?							
PIM 3	307 306 305 304 303 302 301 300 (LT00)	315 314 313 312 311 310 309 308 (LT01)	323 322 321 320 319 318 317 316 (LT02)	331 330 329 328 327 326 325 324 (LT03)	339 338 337 336 335 334 333 332 (LT04)	347 346 345 344 343 342 341 340 (LT05)	355 354 353 352 351 350 349 348 (LT06)	363 362 361 360 359 358 357 356 (LT07)	339 338 337 336 (LT08)	347 346 345 344 (LT09)	355 354 353 352 (LT10)	363 362 361 360 (LT11)
PIM 2	207 206 205 204 203 202 201 200 (LT00)	215 214 213 212 211 210 209 208 (LT01)	223 222 221 220 219 218 217 216 (LT02)	231 230 229 228 227 226 225 224 (LT03)	239 238 237 236 235 234 233 232 (LT04)	247 246 245 244 243 242 241 240 (LT05)	255 254 253 252 251 250 249 248 (LT06)	263 262 261 260 259 258 257 256 (LT07)	239 238 237 236 (LT08)	247 246 245 244 (LT09)	255 254 253 252 (LT10)	263 262 261 260 (LT11)
PIM 1	107 106 105 104 103 102 101 100 (LT00)	115 114 113 112 111 110 109 108 (LT01)	123 122 121 120 119 118 117 116 (LT02)	131 130 129 128 127 126 125 124 (LT03)	139 138 137 136 135 134 133 132 (LT04)	147 146 145 144 143 142 141 140 (LT05)	155 154 153 152 151 150 149 148 (LT06)	163 162 161 160 159 158 157 156 (LT07)	139 138 137 136 (LT08)	147 146 145 144 (LT09)	155 154 153 152 (LT10)	163 162 161 160 (LT11)
PIM 0	007 006 005 004 003 002 001 000 (LT00)	015 014 013 012 011 010 009 008 (LT01)	023 022 021 020 019 018 017 016 (LT02)	031 030 029 028 027 026 025 024 (LT03)	039 038 037 036 035 034 033 032 (LT04)	047 046 045 044 043 042 041 040 (LT05)	055 054 053 052 051 050 049 048 (LT06)	063 062 061 060 059 058 057 056 (LT07)	039 038 037 036 (LT08)	047 046 045 044 (LT09)	055 054 053 052 (LT10)	063 062 061 060 (LT11)

<sup>\*</sup> In Slot 08-11, only 4-port line/trunk cards are mountable. When 8-port cards are mounted in Slot 04-07, only application processor cards are mountable in Slot 08-11.

• LEN 400 - 763 (PIM 4 - 7)

### **Location of each LEN**

PIM 7	707 706 705 704 703 702 701 700 (LT00)	715 714 713 712 711 710 709 708 (LT01)	723 722 721 720 719 718 717 716 (LT02)	731 730 729 728 727 726 725 724 (LT03)	739 738 737 736 735 734 733 732 (LT04)	747 746 745 744 743 742 741 740 (LT05)	755 754 753 752 751 750 749 748 (LT06)	763 762 761 760 759 758 757 756 (LT07)	739 738 737 736 (LT08)	747 746 745 744 (LT09)	755 754 753 752 (LT10)	763 762 761 760 (LT11)
PIM 6	607 606 605 604 603 602 601 600 (LT00)	615 614 613 612 611 610 609 608 (LT01)	623 622 621 620 619 618 617 616 (LT02)	631 630 629 628 627 626 625 624 (LT03)	639 638 637 636 635 634 633 632 (LT04)	647 646 645 644 643 642 641 640 (LT05)	655 654 653 652 651 650 649 648 (LT06)	663 662 661 660 659 658 657 656 (LT07)	639 638 637 636 (LT08)	647 646 645 644 (LT09)	655 654 653 652 (LT10)	663 662 661 660 (LT11)
PIM 5	507 506 505 504 503 502 501 500 (LT00)	515 514 513 512 511 510 509 508 (LT01)	523 522 521 520 519 518 517 516 (LTO2)	531 530 529 528 527 526 525 524 (LT03)	539 538 537 536 535 534 533 532 (LT04)	547 546 545 544 543 542 541 540 (LT05)	555 554 553 552 551 550 549 548 (LT06)	563 562 561 560 559 558 557 556 (LT07)	539 538 537 536 (LT08)	547 546 545 544 (LT09)	555 554 553 552 (LT10)	563 562 561 560 (LT11)
PIM 4	407 406 405 404 403 402 401 400 (LT00)	415 414 413 412 411 410 409 408 (LT01)	423 422 421 420 419 418 417 416 (LT02)	431 430 429 428 427 426 425 424 (LT03)	439 438 437 436 435 434 433 432 (LT04)	447 446 445 444 443 442 441 440 (LT05)	455 454 453 452 451 450 449 448 (LT06)	463 462 461 460 459 458 457 456 (LT07)	439 438 437 436 (LT08)	447 446 445 444 (LT09)	455 454 453 452 (LT10)	463 462 461 460 (LT11)

<sup>\*</sup> In Slot 08-11, only 4-port line/trunk cards are mountable. When 8-port cards are mounted in Slot 04-07, only application processor cards are mountable in Slot 08-11.

# **LTC Connector Pin Arrangement**

This figure shows the LTC Connector Pin Arrangement.

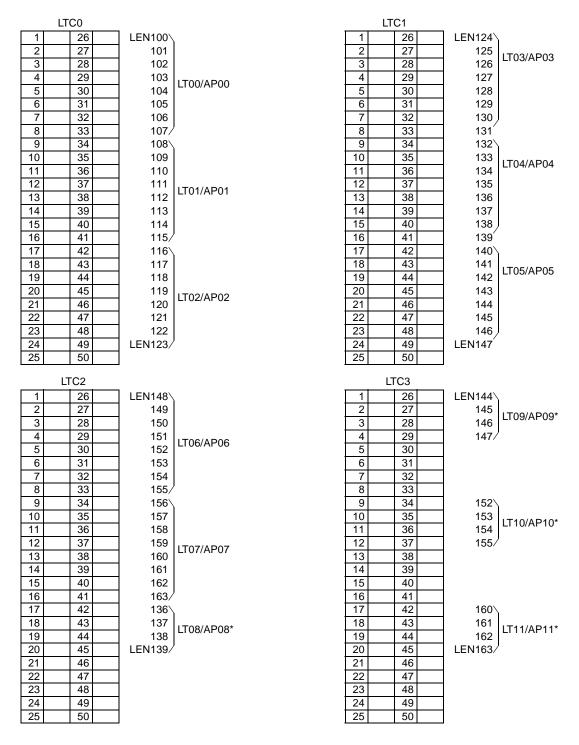
Page 114 • PIM0 (LTC0 - LTC3) • PIM1 (LTC0 - LTC3) Page 115 • PIM2 (LTC0 - LTC3) Page 116 • PIM3 (LTC0 - LTC3) Page 117 • PIM4 (LTC0 - LTC3) Page 118 • PIM5 (LTC0 - LTC3) Page 119 • PIM6 (LTC0 - LTC3) Page 120 • PIM7 (LTC0 - LTC3) Page 121

### • PIM0 (LTC0 - LTC3)

LT	C0			Ľ	TC1		
1	26	LEN000		1	26	LEN024	
2	27	001		2	27	025	1.T00/A.D00
3	28	002		3	28	026	LT03/AP03
4	29	003	LT00/AD00	4	29	027	
5	30	004	LT00/AP00	5	30	028	
6	31	005		6	31	029	
7	32	006		7	32	030	
8	33	007/	)	8	33	031	
9	34	∕800		9	34	032\	
10	35	009		10	35	033	LT04/AD04
11	36	010		11	36	034	LT04/AP04
12	37	011	LT04/AD04	12	37	035	
13	38	012	LT01/AP01	13	38	036	
14	39	013		14	39	037	
15	40	014		15	40	038	
16	41	015/	)	16	41	039	
17	42	016\		17	42	040\	
18	43	017		18	43	041	LTOE/A DOE
19	44	018		19	44	042	LT05/AP05
20	45	019	LT00/A D00	20	45	043	
21	46	020	LT02/AP02	21	46	044	
22	47	021		22	47	045	
23	48	022		23	48	046	
24	49	LEN023/	J	24	49	LEN047	
25 MJ	50 MN			25	50		
1.	TC2				TC3	<u> </u>	
	TC2	I FN048\		-	LTC3		
1	26	LEN048\ 049	]	1	26	LEN044\	
1 2	26 27	049		1 2	26 27	045	LT09/AP09*
1 2 3	26 27 28	049 050		1 2 3	26 27 28	045 046	LT09/AP09*
1 2 3 4	26 27 28 29	049 050 051	LT06/AP06	1 2 3 4	26 27 28 29	045	LT09/AP09*
1 2 3 4 5	26 27 28 29 30	049 050 051 052	LT06/AP06	1 2 3 4 5	26 27 28 29 30	045 046	LT09/AP09*
1 2 3 4 5 6	26 27 28 29 30 31	049 050 051 052 053	LT06/AP06	1 2 3 4 5 6	26 27 28 29 30 31	045 046	LT09/AP09*
1 2 3 4 5 6 7	26 27 28 29 30 31 32	049 050 051 052 053 054	LT06/AP06	1 2 3 4 5 6 7	26 27 28 29 30 31 32	045 046	LT09/AP09*
1 2 3 4 5 6 7 8	26 27 28 29 30 31 32 33	049 050 051 052 053 054 055/	LT06/AP06	1 2 3 4 5 6 7 8	26 27 28 29 30 31 32 33	045 046 047/	LT09/AP09*
1 2 3 4 5 6 7 8 9	26 27 28 29 30 31 32 33 34	049 050 051 052 053 054 055/	LT06/AP06	1 2 3 4 5 6 7 8 9	26 27 28 29 30 31 32 33 34	045 046 047/	
1 2 3 4 5 6 7 8 9 10	26 27 28 29 30 31 32 33 34 35	049 050 051 052 053 054 055/ 056\	LT06/AP06	1 2 3 4 5 6 7 8 9 10	26 27 28 29 30 31 32 33 34 35	045 046 047/ 052\ 053	LT09/AP09* LT10/AP10*
1 2 3 4 5 6 7 8 9 10 11	26 27 28 29 30 31 32 33 34 35 36	049 050 051 052 053 054 055/ 056\ 057		1 2 3 4 5 6 7 8 9 10	26 27 28 29 30 31 32 33 34 35 36	045 046 047/ 052\ 053 054	
1 2 3 4 5 6 7 8 9 10 11 12	26 27 28 29 30 31 32 33 34 35 36 37	049 050 051 052 053 054 055/ 056\ 057 058 059	LT06/AP06 LT07/AP07	1 2 3 4 5 6 7 8 9 10 11	26 27 28 29 30 31 32 33 34 35 36 37	045 046 047/ 052\ 053	
1 2 3 4 5 6 7 8 9 10 11 12 13	26 27 28 29 30 31 32 33 34 35 36 37 38	049 050 051 052 053 054 055/ 056 057 058 059		1 2 3 4 5 6 7 8 9 10 11 12 13	26 27 28 29 30 31 32 33 34 35 36 37 38	045 046 047/ 052\ 053 054	
1 2 3 4 5 6 7 8 9 10 11 12 13 14	26 27 28 29 30 31 32 33 34 35 36 37 38 39	049 050 051 052 053 054 055/ 056\ 057 058 059 060 061		1 2 3 4 5 6 7 8 9 10 11 12 13 14	26 27 28 29 30 31 32 33 34 35 36 37 38 39	045 046 047/ 052\ 053 054	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	26 27 28 29 30 31 32 33 34 35 36 37 38 39	049 050 051 052 053 054 055/ 056 057 058 059 060 061		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	045 046 047/ 052\ 053 054	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	049 050 051 052 053 054 055/ 056\ 057 058 059 060 061 062		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	045 046 047/ 052 053 054 055/	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42	049 050 051 052 053 054 055/ 056\ 057 058 059 060 061 062 063/ 036\	LT07/AP07	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41	045 046 047/ 052 053 054 055/	LT10/AP10*
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43	049 050 051 052 053 054 055/ 056 057 058 059 060 061 062 063/ 036 037		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43	045 046 047/ 052 053 054 055/ 060 061	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44	049 050 051 052 053 054 055/ 056 057 058 059 060 061 062 063/ 036 037 038	LT07/AP07	1 2 3 4 5 6 7 8 8 9 10 11 12 13 14 15 16 17 18 19	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43	045 046 047/ 052 053 054 055/ 060 061 062	LT10/AP10*
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 44	049 050 051 052 053 054 055/ 056 057 058 059 060 061 062 063/ 036 037	LT07/AP07	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44	045 046 047/ 052 053 054 055/ 060 061	LT10/AP10*
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	049 050 051 052 053 054 055/ 056 057 058 059 060 061 062 063/ 036 037 038	LT07/AP07	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	045 046 047/ 052 053 054 055/ 060 061 062	LT10/AP10*
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	049 050 051 052 053 054 055/ 056 057 058 059 060 061 062 063/ 036 037 038	LT07/AP07	1 2 3 4 5 6 7 8 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	045 046 047/ 052 053 054 055/ 060 061 062	LT10/AP10*
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	049 050 051 052 053 054 055/ 056 057 058 059 060 061 062 063/ 036 037 038	LT07/AP07	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	045 046 047/ 052 053 054 055/ 060 061 062	LT10/AP10*
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	049 050 051 052 053 054 055/ 056 057 058 059 060 061 062 063/ 036 037 038	LT07/AP07	1 2 3 4 5 6 7 8 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	045 046 047/ 052 053 054 055/ 060 061 062	LT10/AP10*

<sup>\*</sup> In Slot 08-11, only 4-port line/trunk cards are mountable. When 8-port cards are mounted in Slot 04-07, only application processor cards are mountable in Slot 08-11.

#### • PIM1 (LTC0 - LTC3)



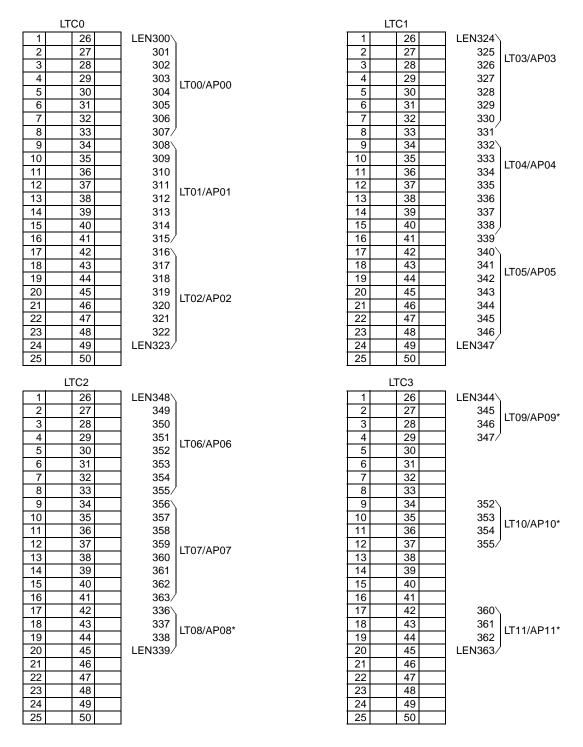
<sup>\*</sup> In Slot 08-11, only 4-port line/trunk cards are mountable. When 8-port cards are mounted in Slot 04-07, only application processor cards are mountable in Slot 08-11.

### • PIM2 (LTC0 - LTC3)

L	_TC0			L	TC1	
1	26	LEN200\		1	26	LEN224\
2	27	201		2	27	225
3	28	202		3	28	226 LT03/AP03
4	29	203	L T00/4 D00	4	29	227
5	30	204	LT00/AP00	5	30	228
6	31	205		6	31	229
7	32	206		7	32	7 230
8	33	207/	)	8	33	231
9	34	208\		9	34	232
10	35	209		10	35	233 1704/4504
11	36	210		11	36	234 LT04/AP04
12	37	211	LT04/AD04	12	37	235
13	38	212	LT01/AP01	13	38	236
14	39	213		14	39	237
15	40	214		15	40	238
16	41	215/	)	16	41	239
17	42	216\		17	42	240\
18	43	217		18	43	241 1705/4 505
19	44	218		19	44	242 LT05/AP05
20	45	219	LT02/AD02	20	45	243
21	46	220	LT02/AP02	21	46	244
22	47	221		22	47	245
23	48	222		23	48	246
24	49	LEN223/	)	24	49	LEN247
25	50			25	50	
	LTC2				LTC3	_
		LEN248\		-	LTC3	
1	LTC2 26 27	LEN248\ 249		1	26	LEN244\ 245
1 2	26 27			1 2	26 27	245 IT09/AP09*
1 2 3	26	249 250		1	26 27 28	245 246 LT09/AP09*
1 2 3 4	26 27 28	249	LT06/AP06	1 2 3 4	26 27	245 IT09/AP09*
1 2 3	26 27 28 29	249 250 251	LT06/AP06	1 2 3	26 27 28 29	245 246 LT09/AP09*
1 2 3 4 5	26 27 28 29 30	249 250 251 252	LT06/AP06	1 2 3 4 5	26 27 28 29 30	245 246 LT09/AP09*
1 2 3 4 5	26 27 28 29 30 31	249 250 251 252 253	LT06/AP06	1 2 3 4 5 6	26 27 28 29 30 31	245 246 LT09/AP09*
1 2 3 4 5 6 7	26 27 28 29 30 31 32	249 250 251 252 253 254	LT06/AP06	1 2 3 4 5 6 7	26 27 28 29 30 31 32	245 246 LT09/AP09*
1 2 3 4 5 6 7 8	26 27 28 29 30 31 32 33	249 250 251 252 253 254 255/	LT06/AP06	1 2 3 4 5 6 7	26 27 28 29 30 31 32 33	245 246 247 247 252
1 2 3 4 5 6 7 8 9 10 11	26 27 28 29 30 31 32 33 34 35 36	249 250 251 252 253 254 255/ 256\	LT06/AP06	1 2 3 4 5 6 7 8 9 10	26 27 28 29 30 31 32 33 34 35 36	245 246 247 247 252 253 254 LT10/AP10*
1 2 3 4 5 6 7 8 9 10 11 12	26 27 28 29 30 31 32 33 34 35 36 37	249 250 251 252 253 254 255/ 256\ 257 258 259		1 2 3 4 5 6 7 8 9 10 11	26 27 28 29 30 31 32 33 34 35 36 37	245 246 247 247 252 253 1T10/AP10*
1 2 3 4 5 6 7 8 9 10 11 12 13	26 27 28 29 30 31 32 33 34 35 36 37 38	249 250 251 252 253 254 255/ 256\ 257 258 259 260	LT06/AP06 LT07/AP07	1 2 3 4 5 6 7 8 9 10 11 12	26 27 28 29 30 31 32 33 34 35 36 37 38	245 246 247 247 252 253 254 LT10/AP10*
1 2 3 4 5 6 7 8 9 10 11 12 13 14	26	249 250 251 252 253 254 255/ 256\ 257 258 259		1 2 3 4 5 6 7 8 9 10 11 12 13	26 27 28 29 30 31 32 33 34 35 36 37 38	245 246 247 247 252 253 254 LT10/AP10*
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	249 250 251 252 253 254 255/ 256\ 257 258 259 260 261 262		1 2 3 4 5 6 7 8 9 10 11 12 13 14	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	245 246 247 247 252 253 254 LT10/AP10*
1 2 3 4 5 6 7 8 9 10 11 12 13 14	26	249 250 251 252 253 254 255/ 256\ 257 258 259 260 261		1 2 3 4 5 6 7 8 9 10 11 12 13	26 27 28 29 30 31 32 33 34 35 36 37 38	245 246 247 247 252 253 254 LT10/AP10*
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	26	249 250 251 252 253 254 255/ 256\ 257 258 259 260 261 262 263/ 236\		1 2 3 4 4 5 6 6 7 8 9 10 11 12 13 14 15 16 17	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42	245 246 247 252 253 254 255 254 255 260
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	26	249 250 251 252 253 254 255/ 256\ 257 258 259 260 261 262 263/ 236\ 237	LT07/AP07	1 2 3 4 4 5 6 6 7 8 9 10 11 12 13 14 15 16 17 18	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43	245 246 247 252 253 254 255 254 255 260 261
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19	26	249 250 251 252 253 254 255/ 256\ 257 258 259 260 261 262 263/ 236\ 237		1 2 3 4 4 5 6 6 7 8 9 10 11 12 13 14 15 16 17 18 19	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43	245 246 247 252 253 254 255 254 255 260 261 262 261 262 261 262 261 262 261 262 261 262
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	26	249 250 251 252 253 254 255/ 256\ 257 258 259 260 261 262 263/ 236\ 237	LT07/AP07	1 2 3 4 4 5 6 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	245 246 247 252 253 254 255 254 255 260 261
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	26	249 250 251 252 253 254 255/ 256\ 257 258 259 260 261 262 263/ 236\ 237	LT07/AP07	1 2 3 4 4 5 6 6 7 8 8 9 10 11 12 13 14 15 16 17 18 19 20 21	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	245 246 247 252 253 254 255 254 255 260 261 262 261 262 261 262 261 262 261 262 261 262
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	26	249 250 251 252 253 254 255/ 256\ 257 258 259 260 261 262 263/ 236\ 237	LT07/AP07	1 2 3 4 4 5 6 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	245 246 247 252 253 254 255 254 255 260 261 262 261 262 261 262 261 262 261 262 261 262
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	26	249 250 251 252 253 254 255/ 256\ 257 258 259 260 261 262 263/ 236\ 237	LT07/AP07	1 2 3 4 4 5 6 6 7 8 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	245 246 247 252 253 254 255 254 255 260 261 262 261 262 261 262 261 262 261 262 261 262
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	26	249 250 251 252 253 254 255/ 256\ 257 258 259 260 261 262 263/ 236\ 237	LT07/AP07	1 2 3 4 4 5 6 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	245 246 247 252 253 254 255 254 255 260 261 262 261 262 261 262 261 262 261 262 261 262

<sup>\*</sup> In Slot 08-11, only 4-port line/trunk cards are mountable. When 8-port cards are mounted in Slot 04-07, only application processor cards are mountable in Slot 08-11.

#### • PIM3 (LTC0 - LTC3)



<sup>\*</sup> In Slot 08-11, only 4-port line/trunk cards are mountable. When 8-port cards are mounted in Slot 04-07, only application processor cards are mountable in Slot 08-11.

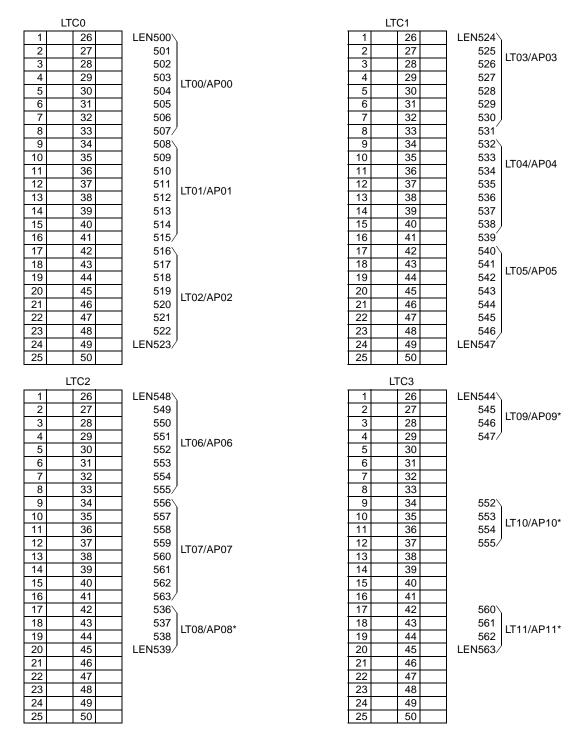
### • PIM4 (LTC0 - LTC3)

LTC0			LTC	C1		
1 26	LEN400\	\ \	1	26	LEN424\	<b>)</b>
2 27	401		2	27	425	1 T00 / 1 D00
3 28	402		3	28	426	LT03/AP03
4 29	403	LT00/4 B00	4	29	427	
5 30	404	LT00/AP00	5	30	428	
6 31	405		6	31	429	
7 32	406		7	32	430	
8 33	407/	)	8	33	431	
9 34	408\		9	34	432\	<b>,</b>
10 35	409		10	35	433	/
11 36	410		11	36	434	LT04/AP04
12 37	411		12	37	435	
13 38	412	LT01/AP01	13	38	436	
14 39	413		14	39	437	
15 40	414		15	40	438	J
16 41	415/	J	16	41	439	
17 42	416		17	42	440\	,
18 43	417		18	43	441	
19 44	418		19	44	442	LT05/AP05
20 45	419	L T00/4 D00	20	45	443	
21 46	420	LT02/AP02	21	46	444	
22 47	421		22	47	445	
23 48	422		23	48	446 /	J
24 49	LEN423/	)	24	49	LEN447	
25 50			25	50		
ITC2			IT	C3		
LTC2				C3 26	LEN444	
1 26	LEN448\ 449		1	26	LEN444\ 445	). <b>_</b>
1 26 2 27	449		1 2	26 27	445	LT09/AP09*
1 26 2 27 3 28		LT20/A DOC	1	26 27 28		LT09/AP09*
1 26 2 27 3 28	449 450	LT06/AP06	1 2 3	26 27	445 446	LT09/AP09*
1 26 2 27 3 28 4 29	449 450 451	LT06/AP06	1 2 3 4	26 27 28 29	445 446	LT09/AP09*
1 26 2 27 3 28 4 29 5 30	449 450 451 452	LT06/AP06	1 2 3 4 5	26 27 28 29 30	445 446	LT09/AP09*
1 26 2 27 3 28 4 29 5 30 6 31	449 450 451 452 453	LT06/AP06	1 2 3 4 5 6	26 27 28 29 30 31	445 446	LT09/AP09*
1 26 2 27 3 28 4 29 5 30 6 31 7 32	449 450 451 452 453 454	LT06/AP06	1 2 3 4 5 6 7	26 27 28 29 30 31 32	445 446	LT09/AP09*
1 26 2 27 3 28 4 29 5 30 6 31 7 32 8 33 9 34 10 35	449 450 451 452 453 454 455/	LT06/AP06	1 2 3 4 5 6 7 8 9 10	26 27 28 29 30 31 32 33	445 446 447/	
1 26 2 27 3 28 4 29 5 30 6 31 7 32 8 33 9 34	449 450 451 452 453 454 455/ 456\	LT06/AP06	1 2 3 4 5 6 7 8	26 27 28 29 30 31 32 33 34	445 446 447/ 452\ 453 454	LT09/AP09* LT10/AP10*
1 26 2 27 3 28 4 29 5 30 6 31 7 32 8 33 9 34 10 35	449 450 451 452 453 454 455/ 456\ 457		1 2 3 4 5 6 7 8 9 10	26 27 28 29 30 31 32 33 34 35	445 446 447/ 452\ 453	
1     26       2     27       3     28       4     29       5     30       6     31       7     32       8     33       9     34       10     35       11     36       12     37       13     38	449 450 451 452 453 454 455/ 456\ 457 458	LT06/AP06	1 2 3 4 5 6 7 8 9 10 11 12 13	26	445 446 447/ 452\ 453 454	
1 26 2 27 3 28 4 29 5 30 6 31 7 32 8 33 9 34 10 35 11 36 12 37	449 450 451 452 453 454 455/ 456\ 457 458 459		1 2 3 4 5 6 7 8 9 10 11 12	26	445 446 447/ 452\ 453 454	
1     26       2     27       3     28       4     29       5     30       6     31       7     32       8     33       9     34       10     35       11     36       12     37       13     38       14     39       15     40	449 450 451 452 453 454 455/ 456\ 457 458 459 460 461 462	LT07/AP07	1 2 3 4 4 5 6 6 7 8 9 10 11 12 13 14 15	26	445 446 447/ 452\ 453 454	
1     26       2     27       3     28       4     29       5     30       6     31       7     32       8     33       9     34       10     35       11     36       12     37       13     38       14     39       15     40       16     41	449 450 451 452 453 454 455/ 456\ 457 458 459 460 461 462 463/	LT07/AP07	1 2 3 4 4 5 6 6 7 8 8 9 10 11 12 13 14 15 16	26	445 446 447/ 452\ 453 454 455/	
1     26       2     27       3     28       4     29       5     30       6     31       7     32       8     33       9     34       10     35       11     36       12     37       13     38       14     39       15     40       16     41       17     42	449 450 451 452 453 454 455/ 456\ 457 458 459 460 461 462 463/ 436\	LT07/AP07	1 2 3 4 4 5 6 6 7 8 9 10 11 12 13 14 15 16 17	26	445 446 447/ 452\ 453 454 455/	
1     26       2     27       3     28       4     29       5     30       6     31       7     32       8     33       9     34       10     35       11     36       12     37       13     38       14     39       15     40       16     41       17     42       18     43	449 450 451 452 453 454 455/ 456\ 457 458 459 460 461 462 463/ 436\ 437	LT07/AP07	1 2 3 4 4 5 6 6 7 8 8 9 10 11 12 13 14 15 16 17 18	26	445 446 447/ 452\ 453 454 455/	LT10/AP10*
1     26       2     27       3     28       4     29       5     30       6     31       7     32       8     33       9     34       10     35       11     36       12     37       13     38       14     39       15     40       16     41       17     42       18     43       19     44	449 450 451 452 453 454 455/ 456\ 457 458 459 460 461 462 463/ 436\ 437 438	LT07/AP07 LT08/AP08*	1 2 3 4 4 5 6 6 7 8 8 9 10 11 12 13 14 15 16 17 18 19	26	445 446 447/ 452\ 453 454 455/ 460\ 461 462	
1     26       2     27       3     28       4     29       5     30       6     31       7     32       8     33       9     34       10     35       11     36       12     37       13     38       14     39       15     40       16     41       17     42       18     43       19     44       20     45	449 450 451 452 453 454 455/ 456\ 457 458 459 460 461 462 463/ 436\ 437	LT07/AP07 LT08/AP08*	1 2 3 4 4 5 6 6 7 8 8 9 10 11 12 13 14 15 16 17 18 19 20	26	445 446 447/ 452\ 453 454 455/	LT10/AP10*
1     26       2     27       3     28       4     29       5     30       6     31       7     32       8     33       9     34       10     35       11     36       12     37       13     38       14     39       15     40       16     41       17     42       18     43       19     44       20     45       21     46	449 450 451 452 453 454 455/ 456\ 457 458 459 460 461 462 463/ 436\ 437 438	LT07/AP07 LT08/AP08*	1 2 3 4 4 5 6 6 7 8 8 9 10 11 12 13 14 15 16 17 18 19 20 21	26	445 446 447/ 452\ 453 454 455/ 460\ 461 462	LT10/AP10*
1     26       2     27       3     28       4     29       5     30       6     31       7     32       8     33       9     34       10     35       11     36       12     37       13     38       14     39       15     40       16     41       17     42       18     43       19     44       20     45       21     46       22     47	449 450 451 452 453 454 455/ 456\ 457 458 459 460 461 462 463/ 436\ 437 438	LT07/AP07 LT08/AP08*	1 2 3 4 4 5 6 6 7 8 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	26	445 446 447/ 452\ 453 454 455/ 460\ 461 462	LT10/AP10*
1     26       2     27       3     28       4     29       5     30       6     31       7     32       8     33       9     34       10     35       11     36       12     37       13     38       14     39       15     40       16     41       17     42       18     43       19     44       20     45       21     46       22     47       23     48	449 450 451 452 453 454 455/ 456\ 457 458 459 460 461 462 463/ 436\ 437 438	LT07/AP07 LT08/AP08*	1 2 3 4 4 5 6 6 7 8 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	26	445 446 447/ 452\ 453 454 455/ 460\ 461 462	LT10/AP10*
1     26       2     27       3     28       4     29       5     30       6     31       7     32       8     33       9     34       10     35       11     36       12     37       13     38       14     39       15     40       16     41       17     42       18     43       19     44       20     45       21     46       22     47	449 450 451 452 453 454 455/ 456\ 457 458 459 460 461 462 463/ 436\ 437 438	LT07/AP07 LT08/AP08*	1 2 3 4 4 5 6 6 7 8 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	26	445 446 447/ 452\ 453 454 455/ 460\ 461 462	LT10/AP10*

<sup>\*</sup> In Slot 08-11, only 4-port line/trunk cards are mountable. When 8-port cards are mounted in Slot 04-07, only application processor cards are mountable in Slot 08-11.

#### • PIM5 (LTC0 - LTC3)

### LTC Connector Pin Arrangement



In Slot 08-11, only 4-port line/trunk cards are mountable. When 8-port cards are mounted in Slot 04-07, only application processor cards are mountable in Slot 08-11.

### • PIM6 (LTC0 - LTC3)

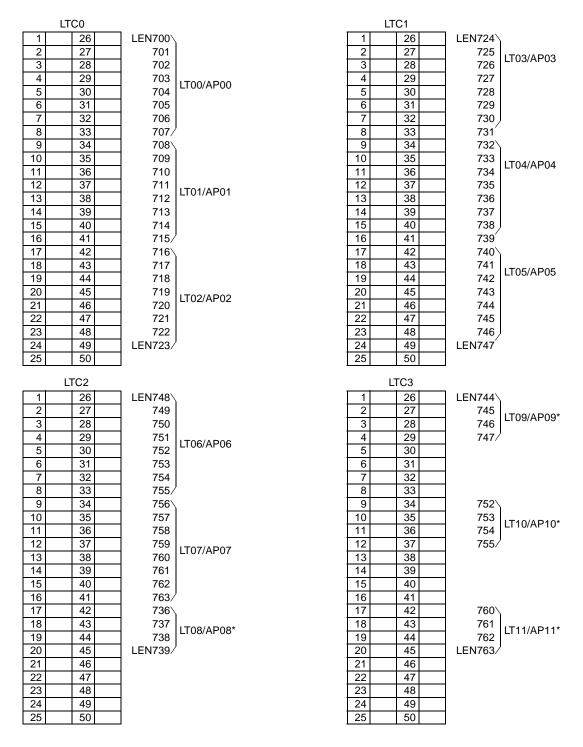
# **LTC Connector Pin Arrangement**

	LTC0			Ľ	TC1	
1	26	LEN600\		1	26	LEN624\
2	27	601		2	27	625 1,700/4,500
3	28	602		3	28	626 LT03/AP03
4	29	603	LT00/AP00	4	29	627
5	30	604	LT00/AP00	5	30	628
6	31	605		6	31	629
7	32	606		7	32	630
8	33	607/	)	8	33	631
9	34	608		9	34	632
10	35	609		10	35	633
11	36	610		11	36	634 LT04/AP04
12	37	611	LT04/AD04	12	37	635
13	38	612	LT01/AP01	13	38	636
14	39	613		14	39	637
15	40	614		15	40	638
16	41	615/	)	16	41	639
17	42	616\		17	42	640\
18	43	617		18	43	641
19	44	618		19	44	642 LT05/AP05
20	45	619	LT00/4 D00	20	45	643
21	46	620	LT02/AP02	21	46	644
22	47	621		22	47	645
23	48	622		23	48	646
24	49	LEN623/	J	24	49	LEN647
25	50	,		25	50	
	ITC2				ITC3	_
1	LTC2	I FN648\			LTC3	
1 2	26	LEN648\ 649		1	26	LEN644\ 645
2	26 27	649		1 2	26 27	645 LT00/AB00*
3	26 27 28	649 650		1 2 3	26 27 28	645 646 LT09/AP09*
3 4	26 27 28 29	649 650 651	LT06/AP06	1 2 3 4	26 27 28 29	645 LT00/AB00*
2 3 4 5	26 27 28 29 30	649 650 651 652	LT06/AP06	1 2 3 4 5	26 27 28 29 30	645 646 LT09/AP09*
2 3 4 5 6	26 27 28 29 30 31	649 650 651 652 653	LT06/AP06	1 2 3 4 5 6	26 27 28 29 30 31	645 646 LT09/AP09*
2 3 4 5 6 7	26 27 28 29 30 31 32	649 650 651 652 653 654	LT06/AP06	1 2 3 4 5 6 7	26 27 28 29 30 31 32	645 646 LT09/AP09*
2 3 4 5 6 7 8	26 27 28 29 30 31 32 33	649 650 651 652 653 654 655/	LT06/AP06	1 2 3 4 5 6 7	26 27 28 29 30 31 32 33	645 646 647 LT09/AP09*
2 3 4 5 6 7 8 9	26 27 28 29 30 31 32 33 34	649 650 651 652 653 654 655/	LT06/AP06	1 2 3 4 5 6 7 8	26 27 28 29 30 31 32 33 34	645 646 647 652
2 3 4 5 6 7 8 9	26 27 28 29 30 31 32 33 34 35	649 650 651 652 653 654 655/ 656\	LT06/AP06	1 2 3 4 5 6 7 8 9	26 27 28 29 30 31 32 33 34 35	645 646 647 652 653 1T10/AP10*
2 3 4 5 6 7 8 9 10	26 27 28 29 30 31 32 33 34 35 36	649 650 651 652 653 654 655/ 656\ 657 658		1 2 3 4 5 6 7 8 9	26 27 28 29 30 31 32 33 34 35 36	645 646 647 652 653 654 LT10/AP10*
2 3 4 5 6 7 8 9 10 11	26 27 28 29 30 31 32 33 34 35 36 37	649 650 651 652 653 654 655/ 656 657 658 659	LT06/AP06 LT07/AP07	1 2 3 4 5 6 7 8 9 10	26 27 28 29 30 31 32 33 34 35 36 37	645 646 647 652 653 1T10/AP10*
2 3 4 5 6 7 8 9 10 11 12	26 27 28 29 30 31 32 33 34 35 36 37	649 650 651 652 653 654 655/ 656 657 658 659 660		1 2 3 4 5 6 7 8 9 10 11 12	26 27 28 29 30 31 32 33 34 35 36 37 38	645 646 647 652 653 654 LT10/AP10*
2 3 4 5 6 7 8 9 10 11 12 13	26 27 28 29 30 31 32 33 34 35 36 37 38	649 650 651 652 653 654 655/ 656 657 658 659 660 661		1 2 3 4 5 6 7 8 9 10 11 12 13	26 27 28 29 30 31 32 33 34 35 36 37 38 39	645 646 647 652 653 654 LT10/AP10*
2 3 4 5 6 7 8 9 10 11 12 13 14	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	649 650 651 652 653 654 655/ 656 657 658 659 660 661 662		1 2 3 4 5 6 7 8 9 10 11 12 13 14	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	645 646 647 652 653 654 LT10/AP10*
2 3 4 5 6 7 8 9 10 11 12 13 14 15	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41	649 650 651 652 653 654 655/ 656 657 658 659 660 661 662 663/		1 2 3 4 4 5 6 6 7 8 9 10 11 12 13 14 15 16	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	645 646 647 652 653 654 655 LT10/AP10*
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42	649 650 651 652 653 654 655/ 656 657 658 659 660 661 662 663/ 636	LT07/AP07	1 2 3 4 4 5 6 6 7 8 9 10 11 12 13 14 15 16 17	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41	645 646 647 652 653 654 655 LT10/AP10*
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43	649 650 651 652 653 654 655/ 656 657 658 659 660 661 662 663/ 636 637		1 2 3 4 4 5 6 6 7 8 9 10 11 12 13 14 15 16 17 18	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43	645 646 647 652 653 654 655 660 661 661
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44	649 650 651 652 653 654 655/ 656 657 658 659 660 661 662 663/ 636 637	LT07/AP07	1 2 3 4 4 5 6 6 7 8 8 9 10 11 12 13 14 15 16 17 18 19	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43	645 646 647 652 653 654 655 660 661 662 LT11/AP11*
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	649 650 651 652 653 654 655/ 656 657 658 659 660 661 662 663/ 636 637	LT07/AP07	1 2 3 4 4 5 6 6 7 8 8 9 10 11 12 13 14 15 16 17 18 19 20	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	645 646 647 652 653 654 655 660 661 661
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	649 650 651 652 653 654 655/ 656 657 658 659 660 661 662 663/ 636 637	LT07/AP07	1 2 3 4 4 5 6 6 7 8 8 9 10 11 12 13 14 15 16 17 18 19 20 21	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	645 646 647 652 653 654 655 660 661 662 LT11/AP11*
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	649 650 651 652 653 654 655/ 656 657 658 659 660 661 662 663/ 636 637	LT07/AP07	1 2 3 4 4 5 6 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	645 646 647 652 653 654 655 660 661 662 LT11/AP11*
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	649 650 651 652 653 654 655/ 656 657 658 659 660 661 662 663/ 636 637	LT07/AP07	1 2 3 4 4 5 6 6 7 8 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	645 646 647 652 653 654 655 660 661 662 LT11/AP11*
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	649 650 651 652 653 654 655/ 656 657 658 659 660 661 662 663/ 636 637	LT07/AP07	1 2 3 4 4 5 6 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	645 646 647 652 653 654 655 660 661 662 LT11/AP11*

<sup>\*</sup> In Slot 08-11, only 4-port line/trunk cards are mountable. When 8-port cards are mounted in Slot 04-07, only application processor cards are mountable in Slot 08-11.

#### • PIM7 (LTC0 - LTC3)

### LTC Connector Pin Arrangement



<sup>\*</sup> In Slot 08-11, only 4-port line/trunk cards are mountable. When 8-port cards are mounted in Slot 04-07, only application processor cards are mountable in Slot 08-11.

#### **MDF Cross Connections**

This table shows the cross connections on the MDF for LTC0 - LTC3.

Table 2-4 LTC0 - LTC3 MDF Cross Connection

						I	TYPE	OF INT	ERFA	CE			
PIN	RUNNING CABLE	STATION CABLE	SLOTS	С	0	LDT	2-W E&M	4-W E&M	D	ID		SLT	
				8СОТ	4COT	2LDT	20DT	20DT	AUC	4DIT	8LC	4LC	AUC
26	WH-BL	GN		T0	T0	T0	T0	TxT0	T0	T0	T0	T0	T0
1	BL-WH	RD		R0	R0	R0	R0	TxR0	R0	R0	R0	R0	R0
27	WH-OR	BK		T1	T1	T1		RcvT0	T1	T1	T1	T1	T1
2	OR-WH	YL		R1	R1	R1		RcvR0	R1	R1	R1	R1	R1
28	WH-GN	GN		T2	T2		T1	TxT1		T2	T2	T2	
3	GN-WH	RD		R2	R2		R1	TxR1		R2	R2	R2	
29	WH-BR	BK		T3	T3			RcvT1		Т3	Т3	Т3	
4	BR-WH	YL	1 1	R3	R3			RcvR1		R3	R3	R3	
30	WH-SL	GN	] '/	T4							T4		
5	SL-WH	RD		R4							R4		
31	RD-BL	BK		T5							T5		
6	BL-RD	YL	NOTE 1	R5							R5		
32	RD-OR	GN		T6							Т6		
7	OR-RD	RD		R6							R6		
33	RD-GN	BK		T7							T7		
8	GN-RD	YL		R7							R7		

Table 2-4 LTC0 - LTC3 MDF Cross Connection (Continued)

						•	TYPE	OF INT	ERFA	CE			
PIN	RUNNING CABLE	STATION CABLE	SLOTS	С	0	LDT	2-W E&M	4-W E&M	D	ID		SLT	
				8СОТ	4COT	2LDT	20DT	20DT	AUC	4DIT	8LC	4LC	AUC
34	RD-BR	GN		T0	T0	T0	T0	TxT0	T0	T0	T0	T0	T0
9	BR-RD	RD		R0	R0	R0	R0	TxR0	R0	R0	R0	R0	R0
35	RD-SL	BK		T1	T1	T1	T1	RcvT0	T1	T1	T1	T1	T1
10	SL-RD	YL		R1	R1	R1	R1	RcvR0	R1	R1	R1	R1	R1
36	BK-BL	GN		T2	T2			TxT1		T2	T2	T2	
11	BL-BK	RD		R2	R2			TxR1		R2	R2	R2	
37	BK-OR	BK		T3	T3			RcvT1		Т3	Т3	Т3	
12	OR-BK	YL	2 /	R3	R3			RcvR1		R3	R3	R3	
38	BK-GN	GN		T4							T4		
13	GN-BK	RD		R4							R4		
39	BK-BR	BK		T5							T5		
14	BR-BK	YL	NOTE 1	R5							R5		
40	BK-SL	GN		T6							T6		
15	SL-BK	RD		R6							R6		
41	YL-BL	BK		T7							T7		
16	BL-YL	YL		R7							R7		

**Table 2-4 LTC0 - LTC3 MDF Cross Connection (Continued)** 

				TYPE OF INTERFACE									
PIN	RUNNING CABLE	STATION CABLE	SLOTS	С	0	LDT	2-W E&M	4-W E&M	D	ID		SLT	
				8COT	4COT	2LDT	2ODT	20DT	AUC	4DIT	8LC	4LC	AUC
42	YL-OR	GN		T0	T0	T0	T0	TxT0	T0	T0	T0	T0	T0
17	OR-YL	RD		R0	R0	R0	R0	TxR0	R0	R0	R0	R0	R0
43	YL-GN	BK		T1	T1	T1		RcvT0	T1	T1	T1	T1	T1
18	GN-YL	YL		R1	R1	R1		RcvR0	R1	R1	R1	R1	R1
44	YL-BR	GN		T2	T2		T1	TxT1		T2	T2	T2	
19	BR-YL	RD		R2	R2		R1	TxR1		R2	R2	R2	
45	YL-SL	BK		T3	T3			RcvT1		Т3	Т3	Т3	
20	SL-YL	YL	3 /	R3	R3			RcvR1		R3	R3	R3	
46	VI-BL	GN	3 /	T4							T4		
21	BL-VI	RD		R4							R4		
47	VI-OR	BK		T5							T5		
22	OR-VI	YL	NOTE 2	R5							R5		
48	VI-GN	GN		T6							T6		
23	GN-VI	RD		R6							R6		
49	VI-BR	BK		T7							T7		
24	BR-VI	YL		R7							R7		
50	VI-SL	MN*											
25	SL-VI	MJ*											

<sup>\*</sup> PIN No. 50, 25 in PIM0 is connected to external indication equipment for major card minor alarm.

NOTE 1: PIN No. 46, 21 to 49, 24 on LTC3 cannot be used.

NOTE 2: PIN No. 46, 21 to 49, 24 on LTC2 and LTC3 cannot be used.

Table 2-5 LTC0 - LTC3 MDF Cross Connection Information

						TYP	E OF INTERF	ACE		
PIN	RUNNING CABLE	RUNNING STATION CABLE SI		2 wire D <sup>term</sup> / SMARTCON/ DSSCON/ DESKCON		4 wire SMARTCON (SN610 ATTCON)	EXT. KEY/ EXT. RELAY	EXT. PAGE/ MOH/ BGM	Digital TRK NOTE 3	
				8DLC	4DLC	2DLC	2DLCC	DK00	4COT	DTI
26	WH-BL	GN		T0	T0	T0	RA0	K1	Т	RA
1	BL-WH	RD		R0	R0	R0	TA0	K0	R	RB
27	WH-OR	BK		T1	T1	T1	RB0	K3	Т	TA
2	OR-WH	YL		R1	R1	R1	TB0	K2	R	TB
28	WH-GN	GN		T2	T2		RA1	K5	Т	
3	GN-WH	RD		R2	R2		TA1	K4	R	
29	WH-BR	BK		T3	T3		RB1	K7	Т	
4	BR-WH	YL	1 ,	R3	R3		TB1	K6	R	
30	WH-SL	GN	' /	T4						
5	SL-WH	RD		R4						
31	RD-BL	BK		T5						
6	BL-RD	YL	NOTE 1	R5						
32	RD-OR	GN		T6						
7	OR-RD	RD		R6						
33	RD-GN	BK		T7						
8	GN-RD	YL		R7						

Table 2-5 LTC0 - LTC3 MDF Cross Connection Information (Continued)

						TYP	E OF INTERF	ACE		
PIN	N RUNNING STATION CABLE		SLOTS	2 wire D <sup>term</sup> / SMARTCON/ DSSCON/ DESKCON			4 wire SMARTCON (SN610 ATTCON)	EXT. KEY/ EXT. RELAY	EXT. PAGE/ MOH/ BGM	Digital TRK NOTE 3
				8DLC	4DLC	2DLC	2DLCC	DK00	4COT	DTI
34	RD-BR	GN		T0	T0	T0	RA0	K1	Т	RA
9	BR-RD	RD		R0	R0	R0	TA0	K0	R	RB
35	RD-SL	BK		T1	T1	T1	RB0	K3	Т	TA
10	SL-RD	YL		R1	R1	R1	TB0	K2	R	TB
36	BK-BL	GN		T2	T2		RA1	K5	Т	
11	BL-BK	RD		R2	R2		TA1	K4	R	
37	BK-OR	BK		T3	T3		RB1	K7	Т	
12	OR-BK	YL	2 /	R3	R3		TB1	K6	R	
38	BK-GN	GN		T4						
13	GN-BK	RD		R4						
39	BK-BR	BK		T5						
14	BR-BK	YL	NOTE 1	R5						
40	BK-SL	GN		T6						
15	SL-BK	RD		R6						
41	YL-BL	BK		T7						
16	BL-YL	YL		R7						

Table 2-5 LTC0 - LTC3 MDF Cross Connection Information (Continued)

						TYP	E OF INTERF	ACE		
PIN	RUNNING CABLE	STATION CABLE	SLOTS	SN C	wire D <sup>tel</sup> MARTCO SSCON ESKCO	)N/ I/			EXT. PAGE/ MOH/ BGM	Digital TRK NOTE 3
				8DLC	4DLC	2DLC	2DLCC	DK00	4COT	DTI
42	YL-OR	GN		T0	T0	T0	RA0	K1	Т	RA
17	OR-YL	RD		R0	R0	R0	TA0	K0	R	RB
43	YL-GN	BK		T1	T1	T1	RB0	K3	Т	TA
18	GN-YL	YL		R1	R1	R1	TB0	K2	R	TB
44	YL-BR	GN		T2	T2		RA1	K5	Т	
19	BR-YL	RD		R2	R2		TA1	K4	R	
45	YL-SL	BK		T3	T3		RB1	K7	Т	
20	SL-YL	YL	3 /	R3	R3		TB1	K6	R	
46	VI-BL	GN	3 /	T4						
21	BL-VI	RD		R4						
47	VI-OR	BK		T5						
22	OR-VI	YL	NOTE 2	R5						
48	VI-GN	GN		T6						
23	GN-VI	RD		R6						
49	VI-BR	BK		T7						
24	BR-VI	YL		R7						
50	VI-SL	MN*								
25	SL-VI	MJ*								

PIN No.50, 25 in PIM0 are connected to external indication equipment for major card minor alarm.

**NOTE 1:** PIN No. 46, 21 to 49, 24 on LTC3 cannot be used.

NOTE 2: PIN No. 46, 21 to 49, 24 on LTC2 and LTC3 cannot be used.

**NOTE 3:** For the Digital Trunk Interface card, use the different LTC connector from the analog line/trunk card. The digital line should be separated from the analog line.

# **INSTALLATION OF PERIPHERAL EQUIPMENT**

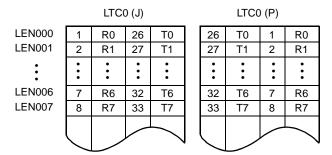
**Table 2-6 Peripheral Equipment and Card List** 

PERIPHERAL EQUIPMENT	CIRCUIT CARD	REFERENCE Page
Analog C.O. Trunk	PN-2COT/PN-4COT/PN-6COT/PN-8COT	Page 129
Tie Line Trunk	PN-2LDT PN-2ODT	Page 130
DID Trunk	PN-AUC PN-4DIT	Page 135
Digital Trunk Interface	PN-24DTA/PN-30DTC PZ-M542/PZ-M557 <b>[For Others/Australia]</b>	Page 137
Single Line Telephone	PN-4LC/PN-8LC PN-AUC	Page 144
D <sup>term</sup> /DSS Console	PN-2DLC PN-4DLC/PN-8DLC	Page 146
SN716 DESKCON	PN-4DLC/PN-8DLC	Page 148
SN610/708/709/712 ATTCON	PN-2DLC/PN-4DLC/PN-8DLC	Page 158
Day/Night Mode Change by External Key	PN-DK00/PN-CP14	Page 168
External TAS Indicator	PN-DK00/PN-CP14	Page 169
Paging Equipment	PN-2COT/PN-4COT/PN-6COT/PN-8COT PN-DK00/PN-CP14	Page 172
External Tone Source/Announcement Machine	PN-2COT/PN-4COT/PN-6COT/PN-8COT PN-TNTA PN-DK00/PN-CP14	Page 175
External BGM Source	PN-2COT/PN-4COT/PN-6COT/PN-8COT PN-TNTA PN-DK00/PN-CP14	Page 180
Power Failure Transfer	PN-2COT/PN-4COT/PN-6COT/PN-8COT PN-AUC	Page 182
Power Failure Transfer	PN-8PFTB PN-8LC PN-8COT	Page 185
Alarm Display Panel	PN-CP14	Page 190
Built-in SMDR	PN-CP14	Page 191
SMDR/PMS/MCI/CIS Printer/ Hotel Printer	PN-AP00-B	Page 194

# **Analog C.O. Trunk (COT)**

PIM0 LTC0 PN-8COT MDF R0 LEN000 (No. 0) **₹**26 <u>26</u> T0 2 LEN001 (No. 1) T1 27 **4**27 LT00 TO C.O. LINE LEN006 (No. 6) **√**32 32 **8** 8 LEN007 (No. 7) 33\_ **√**33

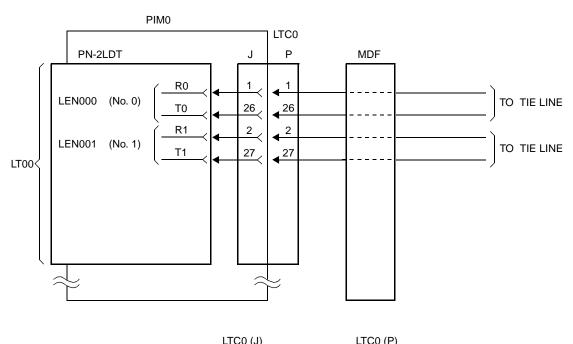
Figure 2-47 MDF Cross Connection for C.O. Trunk Card



### Tie Line Trunk (LDT/ODT)

• LD Trunk (PN-2LDT)

Figure 2-48 MDF Cross Connection for LD Trunk Card



		LICO	) (J)	
LEN000	1	R0	26	T0
LEN001	2	R1	27	T1
	3		28	
	4		29	

	2100	, (i )	
26	T0	1	R0
27	T1	2	R1
28		3	
29		4	

4W E&M Trunk (PN-2ODT)
 When connecting the E and M, make the installation cable by using the connector attached with the PN-2ODT card.

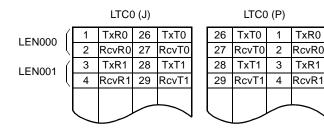
**NOTE:** Both No. 0 and No. 1 circuits must be set to same purpose (2-wire or 4-wire) in one PN-2ODT card.

PIM0 **INSTALLATION CABLE** PN-2ODT MDF CN1  $\cdot$  (2) 80 07 06 05 04 LEN001 (No. 1) \_03 02 M0 LEN000 (No. 0) (E) **◄** 01 LTC0 LT00 Ρ TxR0 (Tx Ring) -26 (Tx <u>Tip)</u> TxT0 TO TIE LINE LEN000 (No. 0) RcvR0 2 (Rcv Ring) ◀ RcvT0 27 (Rcv Tip) TxR1 3 28 TxT1 LEN001 (No. 1) RcvR1 RcvT1 29

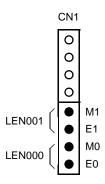
Figure 2-49 MDF Cross Connection for 4W E&M Trunk Card (1 of 2)

# Figure 2-49 MDF Cross Connection for 4W E&M Trunk Card (2 of 2)

(1) LTC CONNECTOR



② CN1 CONNECTOR (FRONT CONNECTOR)



2W E&M Trunk (PN-2ODT)
 When connecting the E and M, make the installation cable by using the connector attached with the PN-2ODT card.

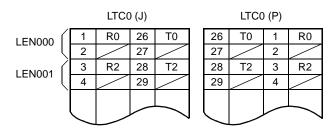
**NOTE:** Both No. 0 and No. 1 circuits must be set to same purpose (2-wire or 4-wire) in one PN-2ODT card.

PIM0 **INSTALLATION CABLE** PN-2ODT MDF CN1 (2) 05 LEN001 (No. 1) M0 LEN000 (No. 0) (E) **◄** LTC0 LT00 Ρ (Ring) R0 (Tip) 26 TO TIE LINE LEN000 (No. 0) **√** 3 28 LEN001 (No. 1)

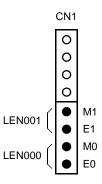
Figure 2-50 MDF Cross Connection for 2W E&M Trunk Card (1 of 2)

# Figure 2-50 MDF Cross Connection for 2W E&M Trunk Card (2 of 2)

(1) LTC CONNECTOR



② CN1 CONNECTOR (FRONT CONNECTOR)



# **DID Trunk (AUC/DIT)**

• 2 Line DID Trunk (PN-AUC)

Figure 2-51 MDF Cross Connection for 2 Line DID Trunk Card

T0

T1

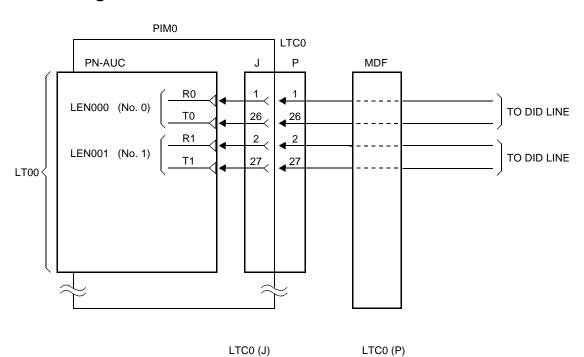
2

3

4

R0

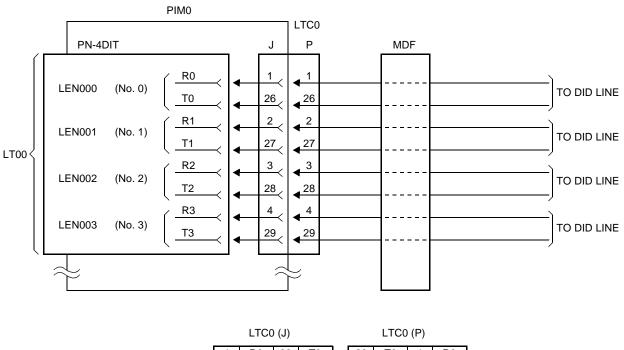
R1



		LIC	0 (3)		
LEN000	1	R0	26	T0	26
LEN001	2	R1	27	T1	27
	3		28		28
	4		29		29

### • 4 Line DID Trunk (PN-4DIT)

Figure 2-52 MDF Cross Connection for 4 Line DID Trunk Card



	LTC0 (J)					LTC0 (P)				
LEN000	1	R0	26	T0		26	T0	1	R0	
LEN001	2	R1	27	T1		27	T1	2	R1	
LEN002	3	R2	28	T2		28	T2	3	R2	
LEN003	4	R3	29	T3		29	T3	4	R3	

### **Digital Trunk Interface (DTI)**

• DTI for using a twisted pair cable (PN-24DTA/PN-30DTC)
When using a twisted-pair cable, connect the cable to a CSU via the MDF as shown below.

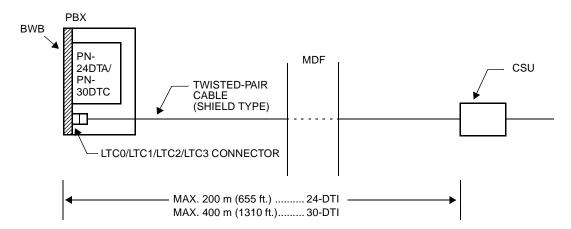


Figure 2-53 DTI Cable Connection via MDF

PIM 0 LTC1 PN-24DTA/PN-30DTC Р MDF RECEIVE AP05 **◆**17 RA RA **◆**<sup>42</sup> RB RB TO CSU **▲** 18 TA TΑ ТВ 43 43 TB TRANSFER LTC1 (J) LTC1 (P)

17 RA

18

19

20

TΑ

42

43

44

45

RB

ТВ

42

43

44

45

RB

17

18

19

20

RA

TΑ

Figure 2-54 MDF Cross Connection for DTI Card

DTI for using a coaxial cable (PN-30DTC/PZ-M542/PZ-M557)
 When using an coaxial cable, connect the cable to a CSU via the CONN (PZ-M542/PZ-M557) card as shown below.

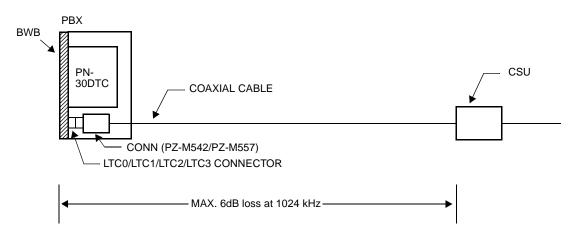
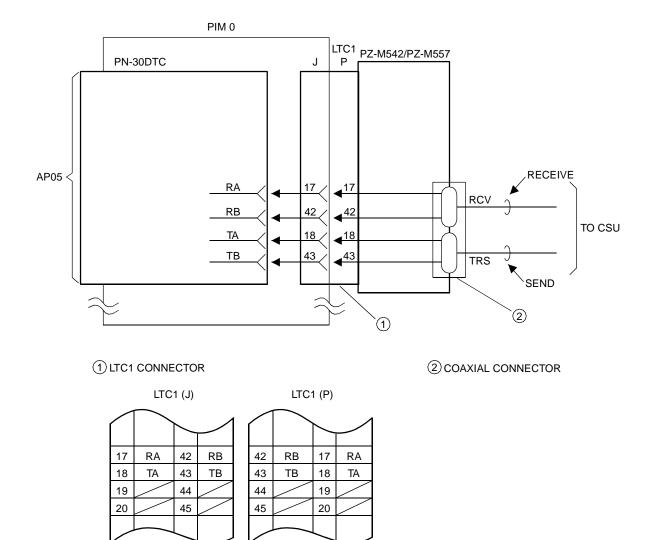


Figure 2-55 DTI Cable Connection via CONN Card

Figure 2-56 Coaxial Cable Connection for DTI Card



Mounting of CONN Card (PZ-M542/PZ-M557)

STEP 1: When using LTC0 or LTC2 connector to mount the PZ-M542/PZ-M557 card, take off the PLATE from the PZ-M542/PZ-M547 card. Then, overturn the PLATE and secure it to the card with screws.

When using LTC1 or LTC3 connector to mount the PZ-M542/PZ-M557 card, skip STEP 1.

**NOTE:** The PLATE and screws are attached to the PZ-M542/PZ-M557 card.

PLATE

PZ-M542/PZ-M557

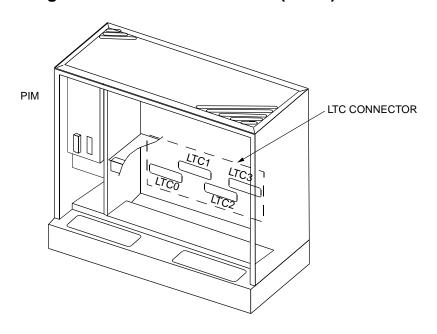
PZ-M542/PZ-M557

Figure 2-57 Connection of PZ-M542/PZ-M557 and PLATE

STEP 2: Connect the LT connector on the PZ-M542/PZ-M557 card to the LTC connector on BWB in PIM.

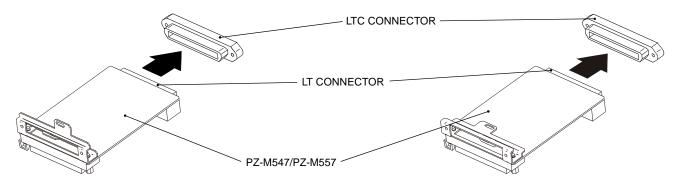
**NOTE:** Two PZ-M542/PZ-M557 cards can not be mounted on the adjoining LTC connectors. LTC0 and LTC2/LTC0 and LTC3/LTC1 and LTC3 are mountable.

Figure 2-58 Mounting of PZ-M542/PZ-M557 Card (1 of 2)



When connecting to LTC1 or LTC3

When connecting to LTC0 or LTC2



- STEP 3: Secure the PZ-M542/PZ-M557 card to the PIM CARD STOPPER with one screw.
- **NOTE 1:** Screw is attached to the PZ-M542/PZ-M557 card.
- **NOTE 2:** Before securing the PZ-M542/PZ-M557 card to the PIM CARD STOPPER, all cards should be mounted on the card slots and the PIM CARD STOPPER should be secured with screws. See "MOUNTING CIRCUIT CARDS" on *Page 199*.

PZ-M542/PZ-M557

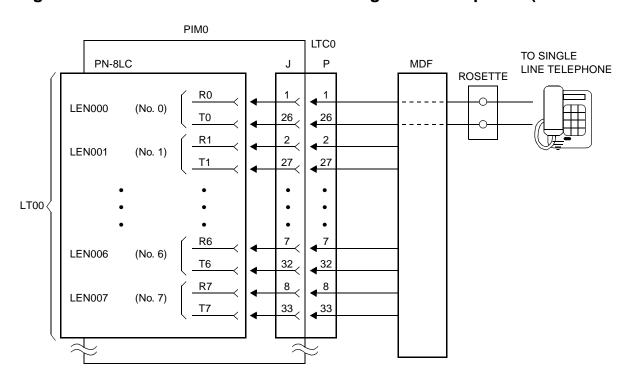
CARD STOPPER

Figure 2-58 Mounting of PZ-M542/PZ-M557 Card (2 of 2)

# Single Line Telephone (LC/AUC)

• Standard Line (PN-8LC/PN-4LC)

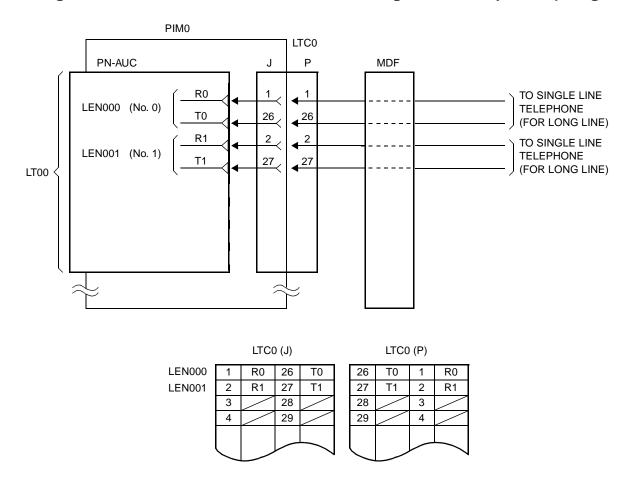
Figure 2-59 MDF Cross Connection for Single Line Telephone (Standard Line)



	LTC0 (J)				LTC0 (P)			
LEN000	1	R0	26	T0	26	T0	1	R0
LEN001	2	R1	27	T1	27	T1	2	R1
:	••	:	:	:	•••	:	:	••
LEN006	7	R6	32	T6	32	T6	7	R6
LEN007	8	R7	33	T7	33	T7	8	R7

• Long Line (PN-AUC)

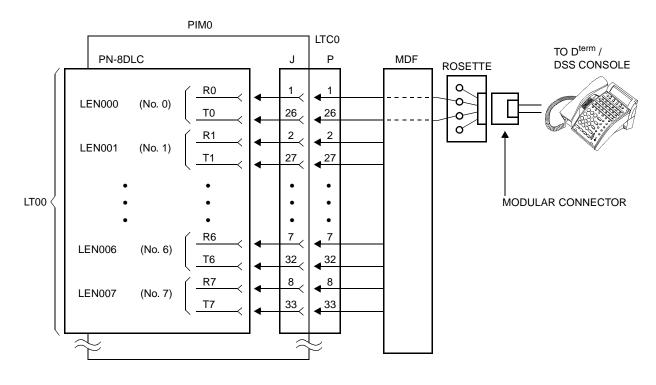
Figure 2-60 MDF Cross Connection for Single Line Telephone (Long Line)



# D<sup>term</sup>/DSS Console (DLC)

• Standard Line (PN-8DLC/PN-4DLC)

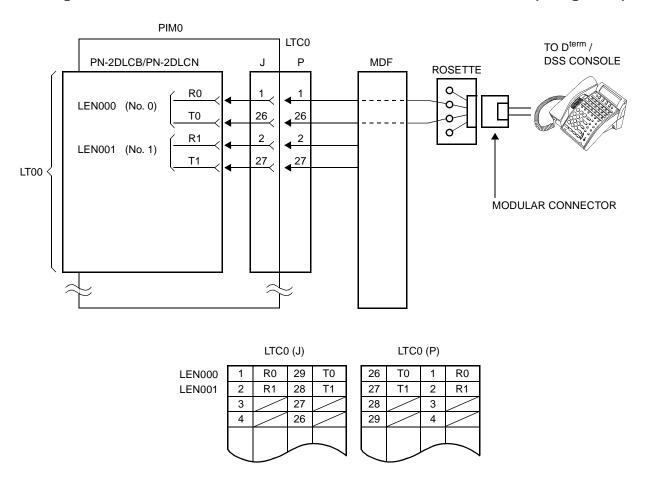
Figure 2-61 MDF Cross Connection for D<sup>term</sup>/DSS Console (Standard Line)



	LTC0 (J)				LTC0 (P)				
LEN000	1	R0	26	T0		26	T0	1	R0
LEN001	2	R1	27	T1		27	T1	2	R1
:	•••	• •	:	•		•••	•••	•••	•••
LEN006	7	R6	32	T6		32	T6	7	R6
LEN007	8	R7	33	T7		33	T7	8	R7

• Long Line (PN-2DLCB/PN-2DLCN)

Figure 2-62 MDF Cross Connection for D<sup>term</sup>/DSS Console (Long Line)

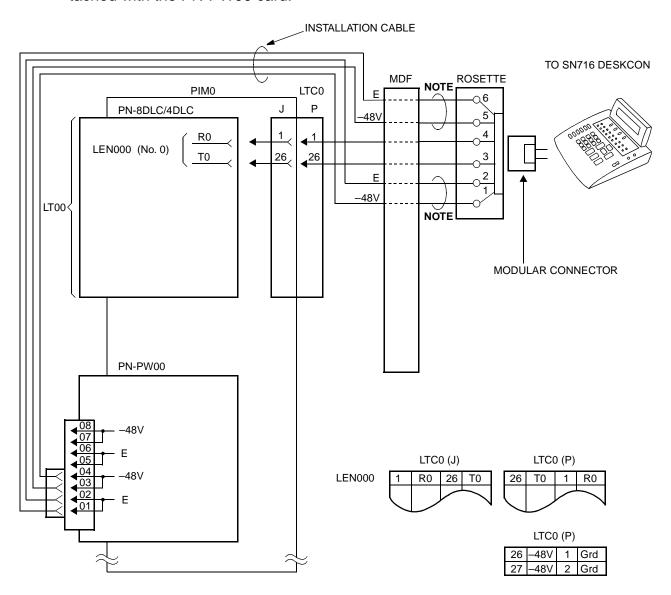


### **SN716 DESKCON (DLC)**

- (1) MDF Cross Connection
  - PN-PW00 Power Option

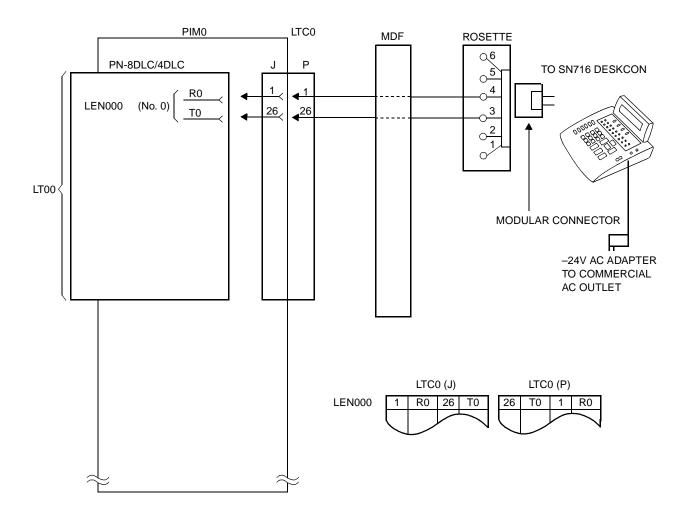
Figure 2-63 MDF Cross Connection for SN716 DESKCON (PN-PW00 Power Option)

**NOTE:** When using PN-PW00 card, make the installation cable by using the connector attached with the PN-PW00 card.



### • AC Adapter Power Option

Figure 2-64 MDF Cross Connection for SN716 DESKCON (AC Adapter Power Option)





#### (2) Installation of SN716 DESKCON

STEP 1: Insert the handset cord through the hole on the side of the handset support as shown below.

#### **CAUTION**

Handle the cord with care. Be careful not to snap a hook on the modular plug of the cord when you insert the cord through the hole.

Figure 2-65 Mounting of Handset Support to SN716 DESKCON (1 of 4)

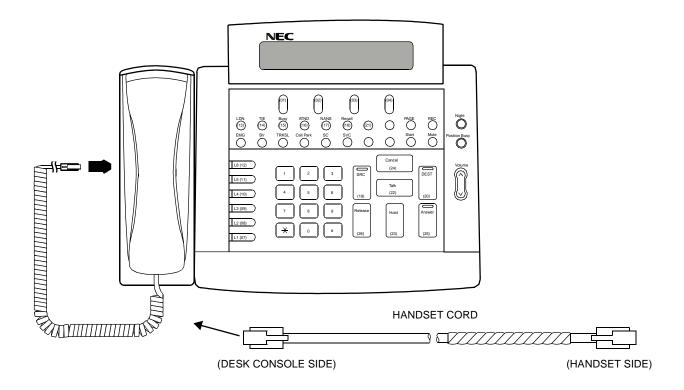
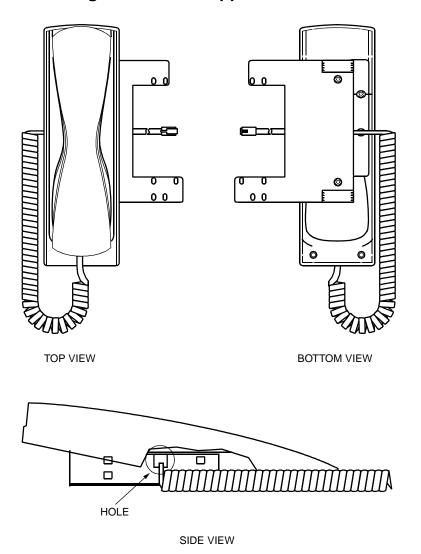




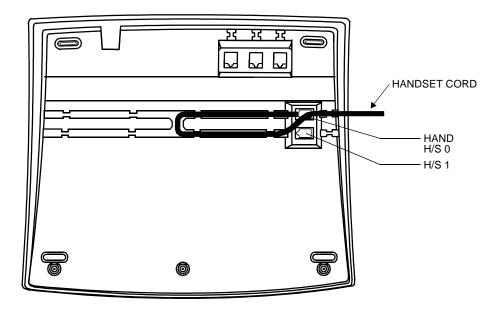
Figure 2-65 Mounting of Handset Support to SN716 DESKCON (2 of 4)





STEP 2: Insert the modular plug into the HAND H/S 0 jack, and trail the cord along the groove at the bottom of the console.





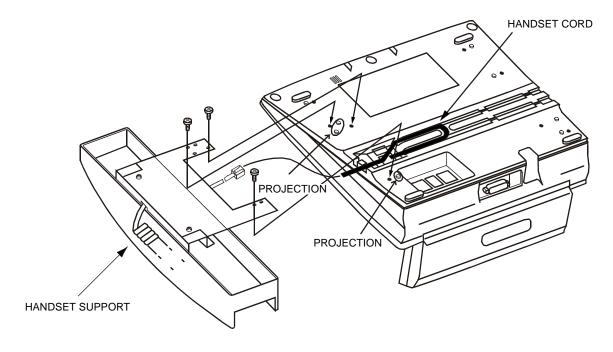


STEP 3: Fit the three small holes of the handset support fitting to the projections on the bottom of the console, and secure the fitting using three screws.

### **CAUTION**

To avoid damage to the console, do not tighten the screws too tightly.

Figure 2-65 Mounting of Handset Support to SN716 DESKCON (4 of 4)





STEP 4: Plug the headset into the modular jack (H/S 0 or H/S 1) located at the bottom of the console, if required.

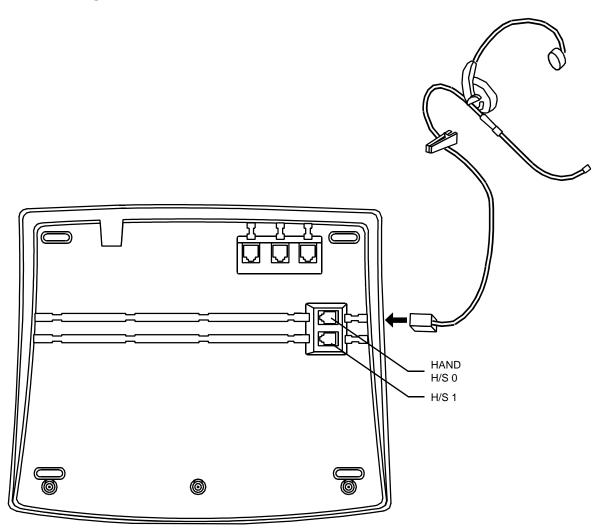
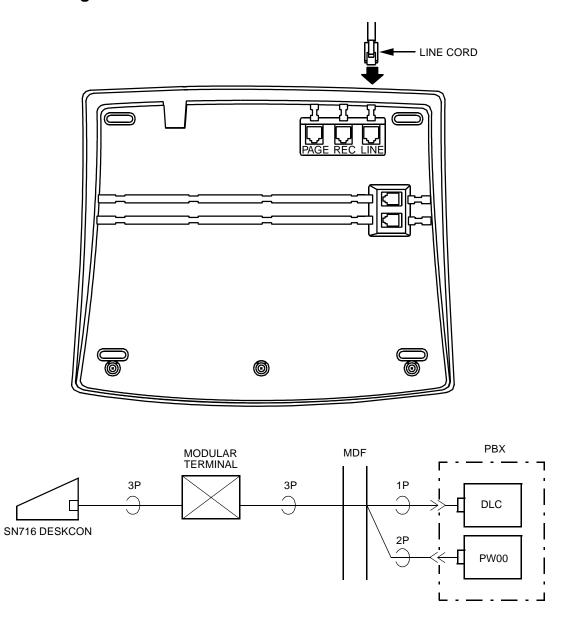


Figure 2-66 Headset Installation for SN716 DESKCON



STEP 5: Plug the line cord into the modular jack (LINE) located at the bottom of the console. For the MDF cross connection for the SN716 DESKCON. Refer to "MDF Cross Connection for SN716 DESKCON (PN-PW00 Power Option)" on *Page 148*.

Figure 2-67 Cable Connection to SN716 DESKCON





STEP 6: When using an AC-DC ADAPTER for power supply, plug the AC-DC ADAPTER into the "12-24V DC" terminal located at the rear of the console.

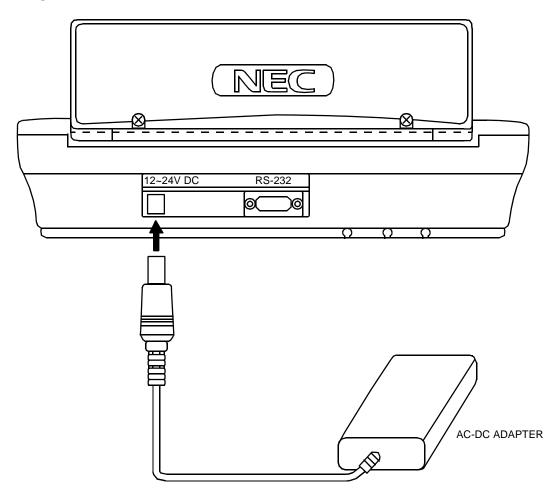
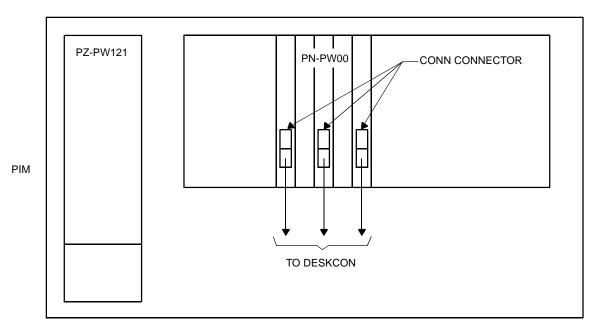


Figure 2-68 AC-DC ADAPTER Connection to SN716 DESKCON



STEP 7: When using the PN-PW00 card for power supply, connect the PN-PW00 card and SN716 DESKCON by Installation cable as shown below and in Figure 2-63.

Figure 2-69 PN-PW00 Card Connection to the SN716 DESKCON

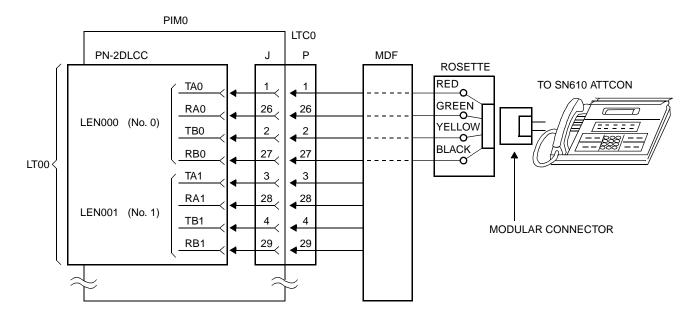


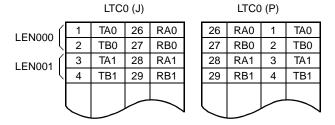
**NOTE:** The PN-PW00 card occupies the adjoining left side (smaller number) slot because of its two-card structure.

## SN610/708/709/712 ATTCON (DLC)

- (1) SN610 ATTCON
  - Standard Line (PN-2DLCC)

Figure 2-70 MDF Cross Connection for SN610 ATTCON (Standard Line)

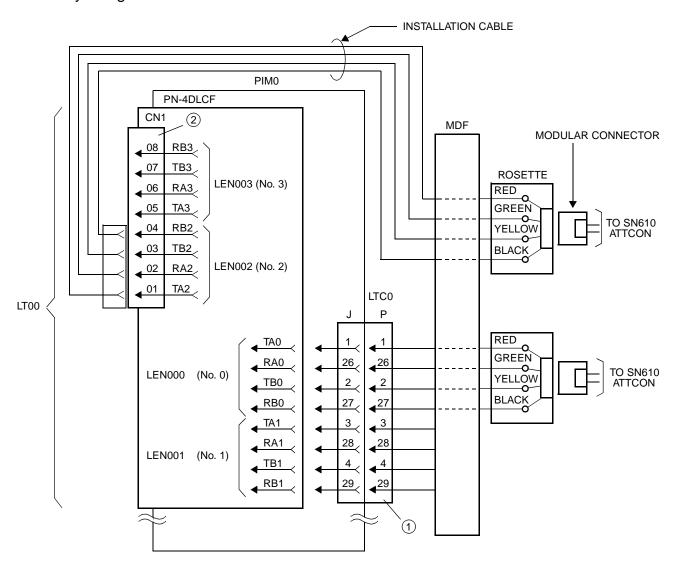




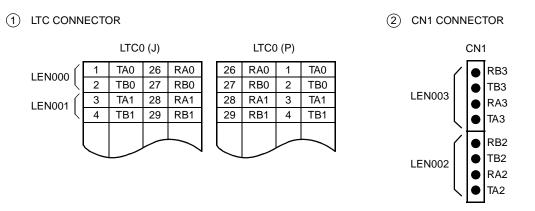
• Long Line (PN-4DLCF)

## Figure 2-71 MDF Cross Connection for SN610 ATTCON (Long Line) (1 of 2)

**NOTE:** When using the No. 2 and No. 3 circuits of PN-4DLCF card, make the installation cable by using the connector attached with the PN-4DLCF card.



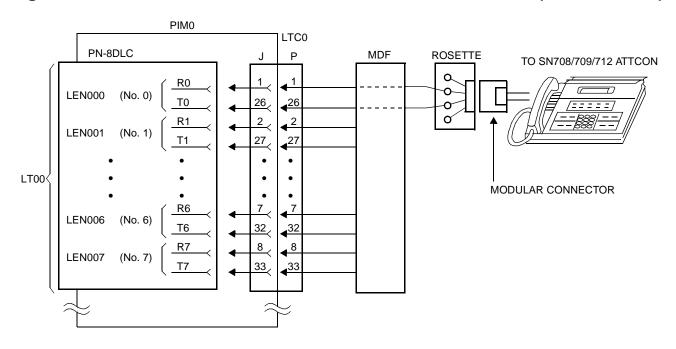
# Figure 2-71 MDF Cross Connection for SN610 ATTCON (Long Line) (2 of 2)



### (2) SN708/709/712 ATTCON

• Standard Line (PN-8DLC/PN-4DLC)

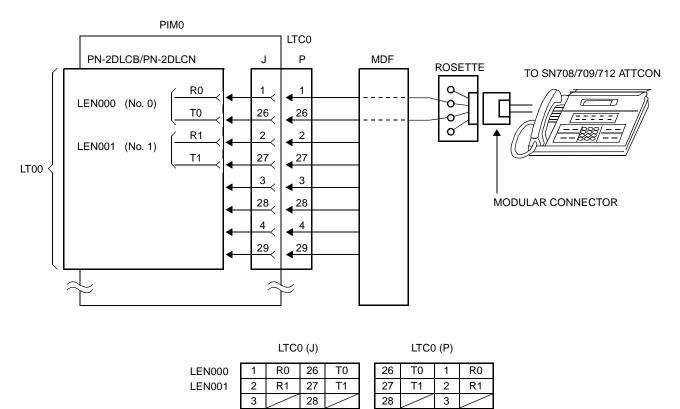
Figure 2-72 MDF Cross Connection for SN708/709/712 ATTCON (Standard Line)



LTC0 (J)				LTC0 (P)				
LEN000	1	R0	26	T0	26	T0	1	R0
LEN001	2	R1	27	T1	27	T1	2	R1
:	•••	•••	:	• • •	•••	:	•••	:
LEN006	7	R6	32	T6	32	T6	7	R6
LEN007	8	R7	33	T7	33	T7	8	R7

• Long Line (PN-2DLCB/PN-2DLCN)

Figure 2-73 MDF Cross Connection for SN708/709/712 ATTCON (Long Line)



29

29

4



### (3) Installation of SN610/708/709/712 ATTCON

STEP 1: To provide the console with the headset in place of the handset, unplug the modular cord from the handset and then plug the modular cord to the Jack Set.

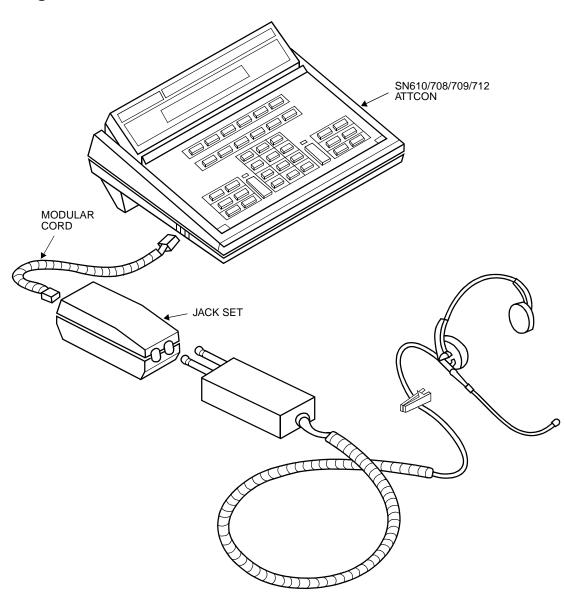


Figure 2-74 Jack Set Installation for SN610/708/709/712 ATTCON



STEP 2: Set the switch located inside the console according to the type of headset/handset connected. Refer to next page.

### Figure 2-75 Switch Setting on the SN610/708/709/712 ATTCON (1 of 2)

Slide the directory out of the way.
 Then insert a flat screw driver's blade into the notched opening and apply light upward pressure until the access panel is clear of the front lip. At the same time apply pressure (toward you) at the rear of the pedestal to move the access panel.

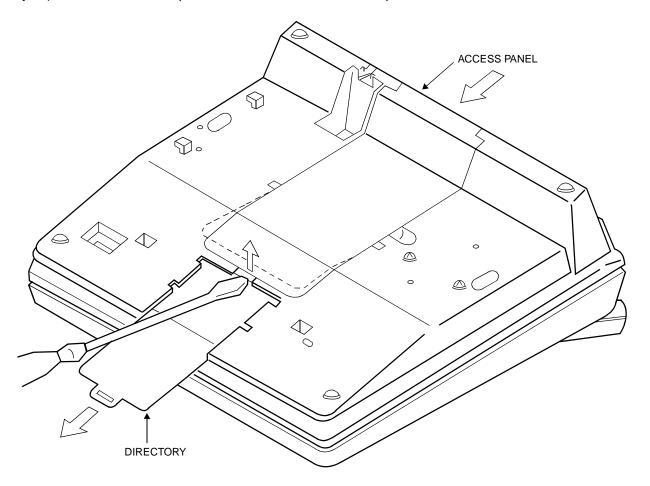
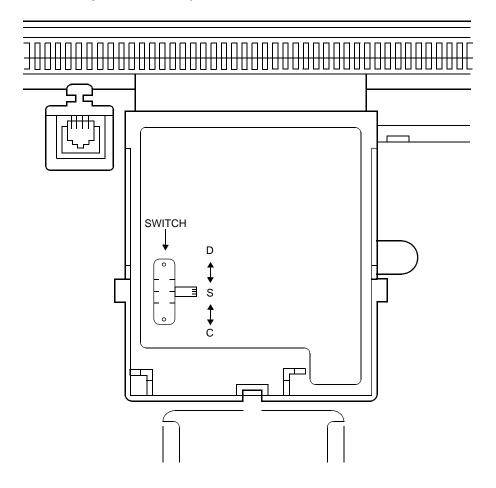




Figure 2-75 Switch Setting on the SN610/708/709/712 ATTCON (2 of 2)

- Set the switch according to the type of headset/handset connected.
  - C: Carbon Type Handset/Headset
  - S: SUPRA Headset
  - D: D<sup>term</sup> Type Handset
- Replace the directory and access panel.

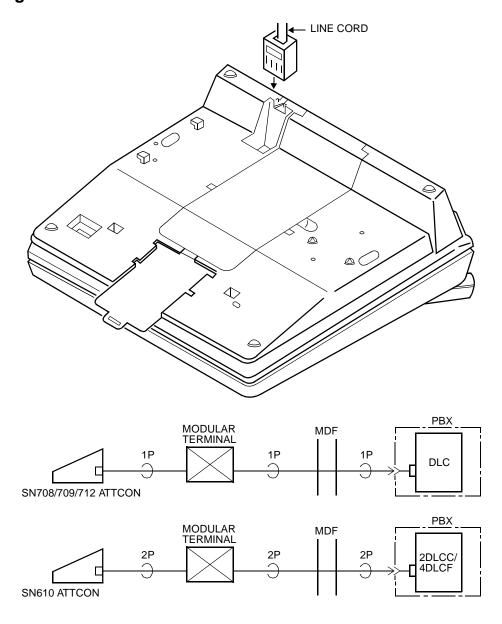




STEP 3: Plug the line cord into the modular jack located at the bottom of the console. For the MDF cross connection refer to the following;

- SN610 ATTCON (*Page 158*)
- SN708/709/712 ATTCON (Page 161)

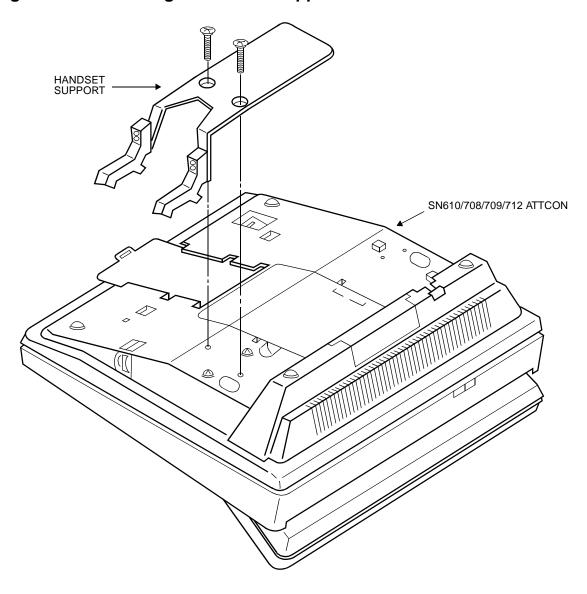
Figure 2-76 Cable Connection to SN610/708/709/712 ATTCON





STEP 4: Screw the handset support onto the bottom of the console as shown below.

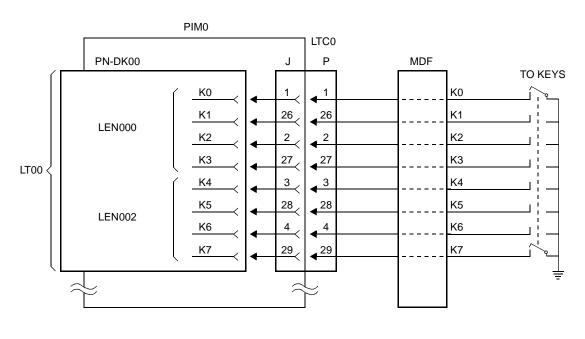
Figure 2-77 Mounting of Handset Support to SN610/708/709/712 ATTCON

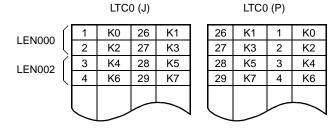


# Day/Night Mode Change by External Key (DK/MP)

## Figure 2-78 MDF Cross Connection for Day/Night Mode Change by External Key

• When using PN-DK00





• When using DK on PN-CP14

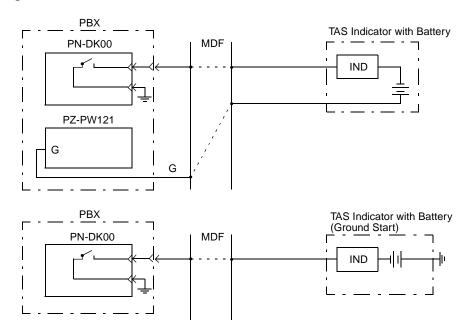


# **External TAS Indicator (DK/MP)**

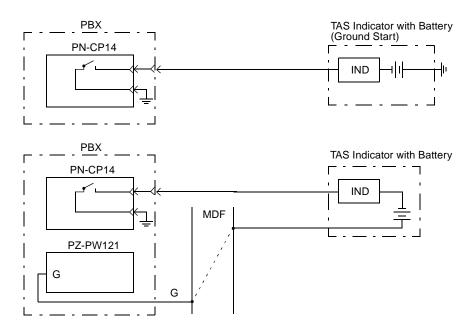
### (1) Connection Outline

Figure 2-79 External TAS Indicator Connection Outline

• When using PN-DK00



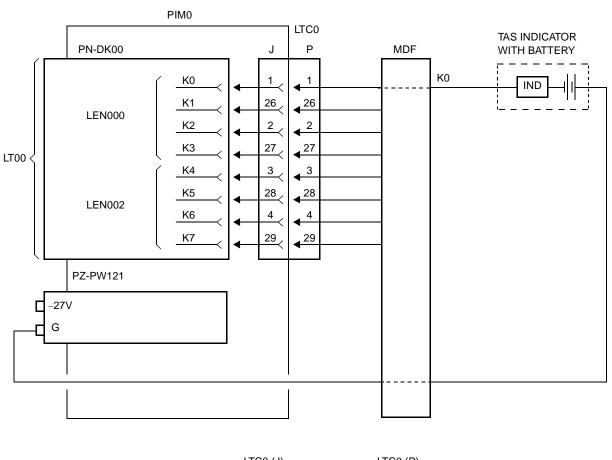
• When using DK on PN-CP14

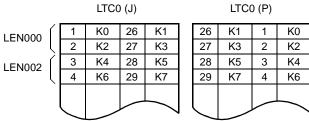


#### (2) MDF Cross Connection

• When using a TAS Indicator with a Battery

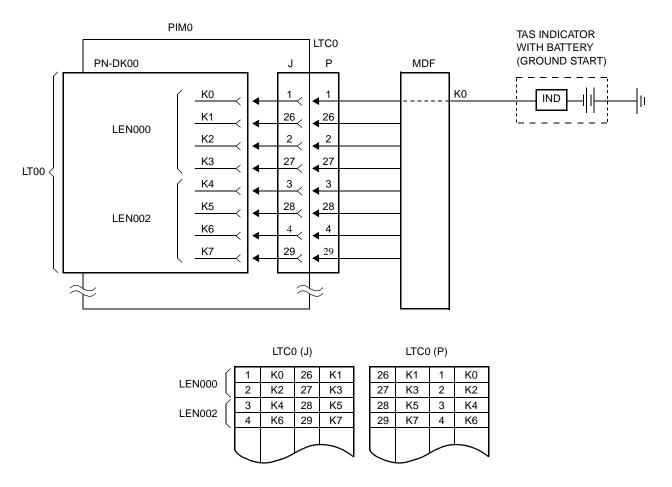
Figure 2-80 MDF Cross Connection for TAS Indicator with Battery





• When using a TAS Indicator with a Battery (Ground Start)

Figure 2-81 MDF Cross Connection for TAS Indicator with Battery (Ground Start)



### Paging Equipment (COT and DK/MP)

(1) Requirement for Customer-owned Paging Equipment

Input Impedance: 600 ohm

Control Method : Start - Ground Start NOTE

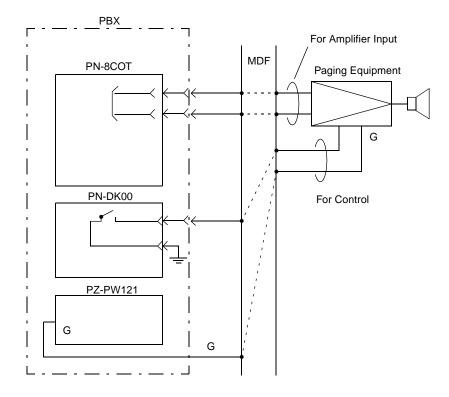
Stop - Ground Off (Open)

**NOTE:** The current capacity of relay contact (PN-DK00 card) is 0.125A.

(2) Connection Outline

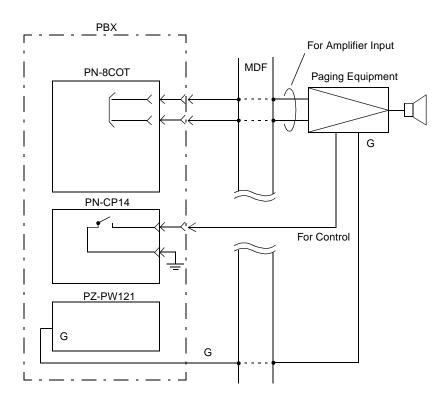
### Figure 2-82 Paging Equipment Connection Outline (1 of 2)

• When using PN-8COT and PN-DK00



# Figure 2-82 Paging Equipment Connection Outline (2 of 2)

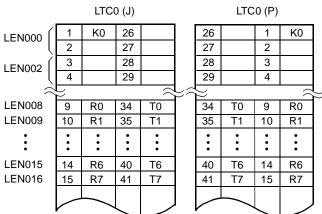
• When using PN-8COT and DK on PN-CP14



#### (3) MDF Cross Connection

PIM0 MDF LTC0 P PN-DK00 K0 **√**26 K1 LEN000 **√**2 K2 К3 27 **4**27 LT00 K4 **4**28 K5 28 LEN002 K6 **4**<sup>29</sup> K7 29 PN-8COT LEN008 (No. 0) **4**34 T0 34 PAGING EQUIPMENT CONTROL CIRCUIT LT01 **SPEAKER ◆**15 1<u>5</u> R6 LEN014 (No. 6) Т6 40 **√**16 Ring R7 16 SPEECH PATH CIRCUIT LEN015 (No. 7) **◆**41 T7 Tip 41 G PZ-PW121

Figure 2-83 MDF Cross Connection for Paging Equipment



# **External Tone Source/Announcement Machine (DK/TNT/MP)**

(1) Requirement for Customer-owned External Tone Source/Announcement Machine

Output level : Less than 0 dbm (Adjustable)

Output impedance: Less than 1 kohms (When using PN-4COT/8COT and PN-DK00)

Less than 10 kohms (When using Pin Jacks on PN-TNTA)

Control Method : Start - Ground Start NOTE 1

: Stop - Ground Off (Open)

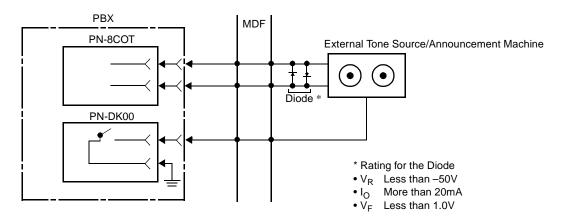
**NOTE 1:** The current capacity of relay contact (PN-DK00 card) is 0.125A.

**NOTE 2:** When connecting the external tone source/announcement machine using the PN-4COT/8COT and PN-DK00 cards, an appropriate diode must be installed on the MDF, as shown in Figure 2-84.

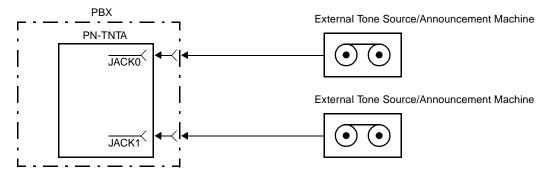
#### (2) Connection Outline

# Figure 2-84 External Tone Source/Announcement Machine Connection Outline

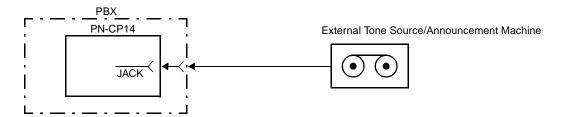
• When using PN-8COT and PN-DK00



• When using Pin Jacks on PN-TNTA



• When using Pin Jack on PN-CP14



#### (3) MDF Cross Connection

Figure 2-85 MDF Cross Connection for External Tone Source/Announcement Machine (1 of 2)

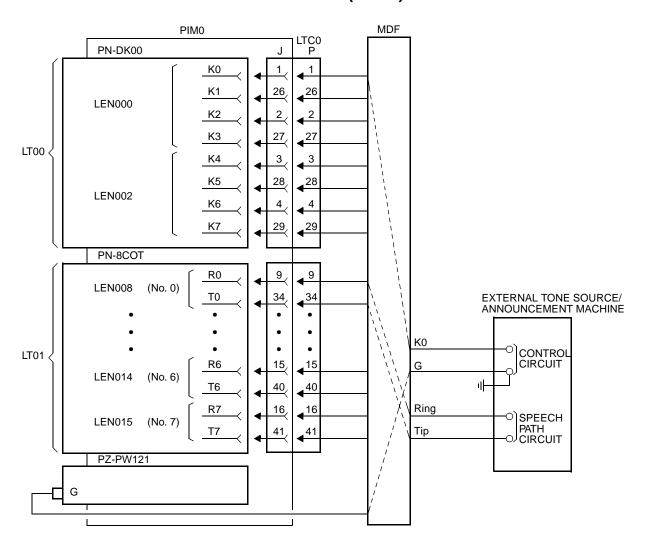
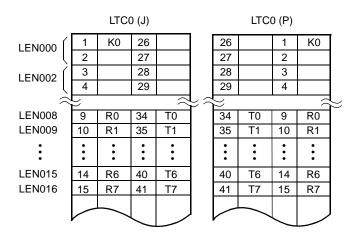
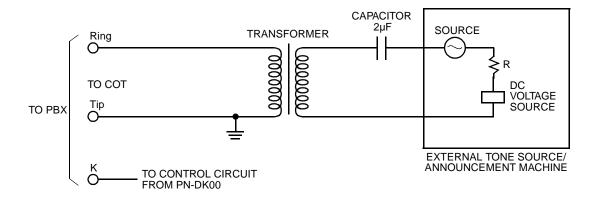


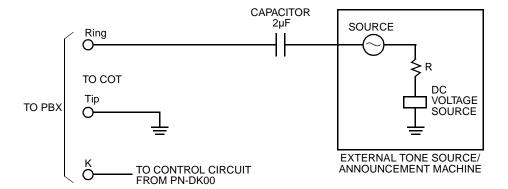
Figure 2-85 MDF Cross Connection for External Tone Source/Announcement Machine (2 of 2)



• If a D.C. voltage is supplied with the tone from the external tone source/announcement machine, a transformer or coupling capacitor should be used as shown below.

Figure 2-86 Connecting External Tone Source/Announcement Machine Supplied with D.C.





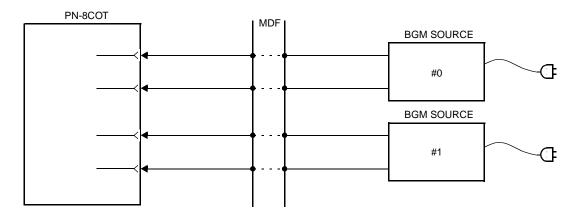
## **External BGM Source (COT/TNT/MP)**

The system can connect a maximum of 10 customer-owned BGM sources.

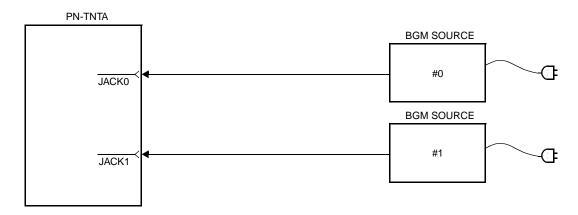
#### (1) Connection Outline

Figure 2-87 External BGM Sources Connection Outline

• When using PN-8COT



• When using Pin Jacks on PN-TNTA



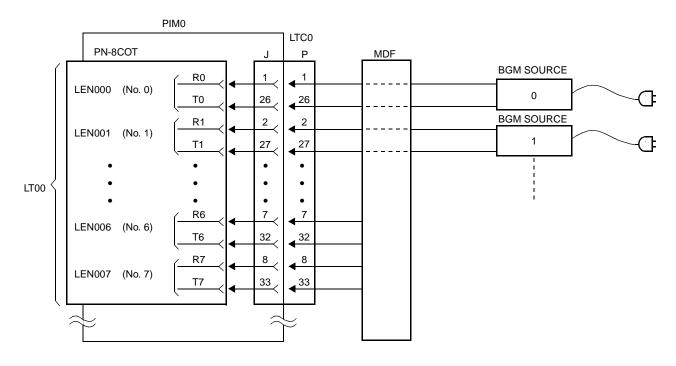
• When using Pin Jack on PN-CP14



### (2) MDF Cross Connection

• When using PN-8COT

Figure 2-88 MDF Cross Connection for External BGM Sources



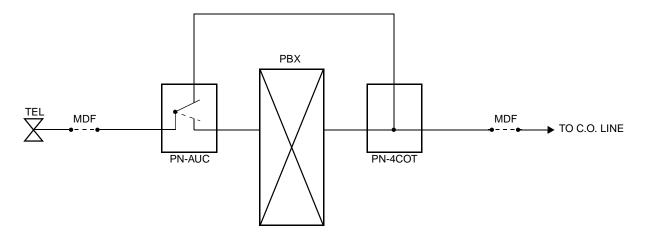
	LTC0 (J)				
LEN000	1	R0	26	T0	
LEN001	2	R1	27	T1	
:	:	:	:	:	
LEN006	7	R6	32	T6	
LEN007	8	R7	33	T7	

LTC0 (P)						
26	T0	1	R0			
27	T1	2	R1			
•••	•••	:	•••			
32 33	T6	7	R6			
22	T7	8	R7			
SS	17	0	$\Gamma I$			

# **Power Failure Transfer (AUC)**

### (1) Connection Outline

Figure 2-89 PFT Connection Outline (AUC)



### (2) MDF Cross Connection

### Figure 2-90 MDF Cross Connection for PFT (AUC) (1 of 2)

NOTE 1: The No. 2 and No. 3 circuit in the PN-4COT card cannot be used for PFT function.

**NOTE 2:** When using Ground Start trunks with PFT function, the single line stations must have a ground sending button and a ground lead must be run to the station.

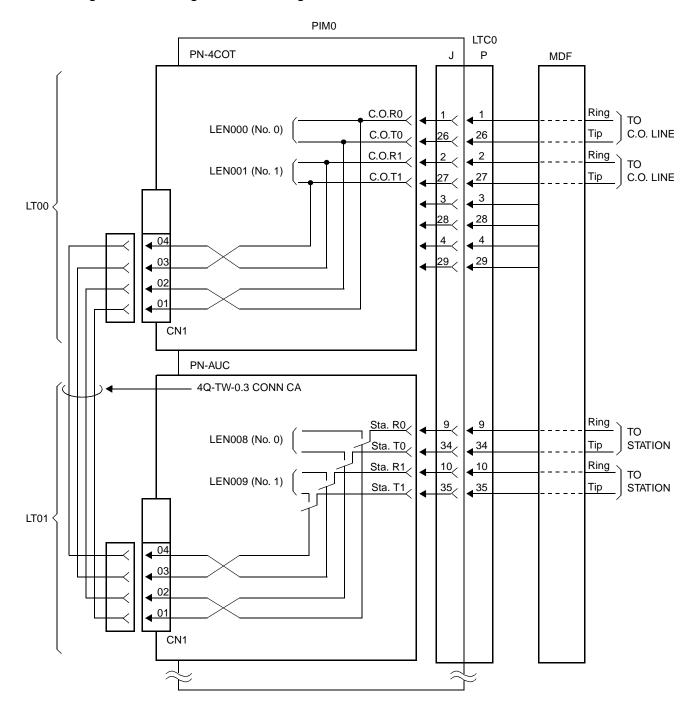
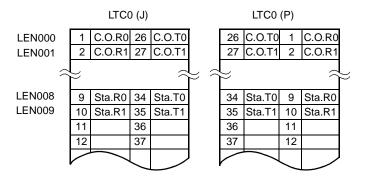


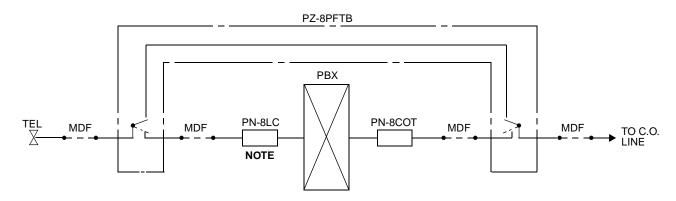
Figure 2-90 MDF Cross Connection for PFT (AUC) (2 of 2)



## **Power Failure Transfer (8PFT)**

### (1) Connection Outline

Figure 2-91 PFT Connection Outline (8PFT)

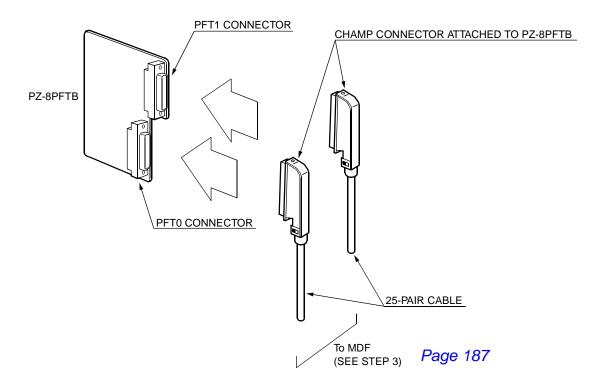


**NOTE:** Using the PN-AUCA card (long line card) instead of the PN-8LC card is not recommended due to the variations from Central Office to the PBX; line quality cannot be assured.

#### (2) Installation of PZ-8PFTB

- STEP 1: Mount the PZ-8PFTB card into the PFT slot of the PIM.
- STEP 2: Connect the champ connectors of 25-pair cables to the PFT0 and PFT1 connectors on the PZ-8PFTB card as shown below.

Figure 2-92 Connection of 25-Pair Cable and PZ-8PFTB



### STEP 3: Connect the 25-pair cables on the MDF.

• This figure shows the PFT connector pin assignment for each PFT circuit number (No. 0 - No. 7).

Figure 2-93 PFT Connector Pin Assignment

	PI	FT0		
1	Sta. R0	26	Sta. T0	
2	8LC. R0	27	8LC. T0	No 0
3	C.O. R0	28	C.O. T0	No. 0
4	8COT. R0	29	8COT. T0	IJ
5	Sta. R1	30	Sta. T1	
6	8LC. R1	31	8LC. T1	No. 1
7	C.O. R1	32	C.O. T1	INO. I
8	8COT. R1	33	8COT. T1	IJ
9	Sta. R2	34	Sta. T2	
10	8LC. R2	35	8LC. T2	No. 2
11	C.O. R2	36	C.O. T2	NO. Z
12	8COT. R2	37	8COT. T2	IJ
13	Sta. R3	38	Sta. T3	
14	8LC. R3	39	8LC. T3	No. 3
15	C.O. R3	40	C.O. T3	140. 3
16	8COT. R3	41	8COT. T3	Į
17	Sta. R4	42	Sta. T4	
18	8LC. R4	43	8LC. T4	No. 4
19	C.O. R4	44	C.O. T4	NO. 4
20	8COT. R4	45	8COT. T4	J
21	Sta. R5	46	Sta. T5	
22	8LC. R5	47	8LC. T5	No. 5
23	C.O. R5	48	C.O. T5	140. 5
24	8COT. R5	49	8COT. T5	Ų
25		50		

	P	FT1		
1	Sta. R6	26	Sta. T6	1
2 3 4	8LC. R6	27	8LC. T6	No 6
3	C.O. R6	28	C.O. T6	No. 6
	8COT. R6	29	8COT. T6	J
5	Sta. R7	30	Sta. T7	)
6	8LC. R7	31	8LC. T7	No. 7
7	C.O. R7	32	C.O. T7	100. 7
8	8COT. R7	33	8COT. T7	J
9	/	34	/	
10	/	35	/	
11		36	/	
12		37	/	
13		38	/	
14	/	39	/	
15	/	40	/	
16	/	41	/	
17	/	42	/	
18	/	43	/	
19	/	44	/	
20	/	45	/	
21	/	46	/	
22		47		
23		48		
24		49	Е	
25	7	50	-27V	

• This figure shows MDF cross connection for No. 0 circuit on the PZ-8PFTB.

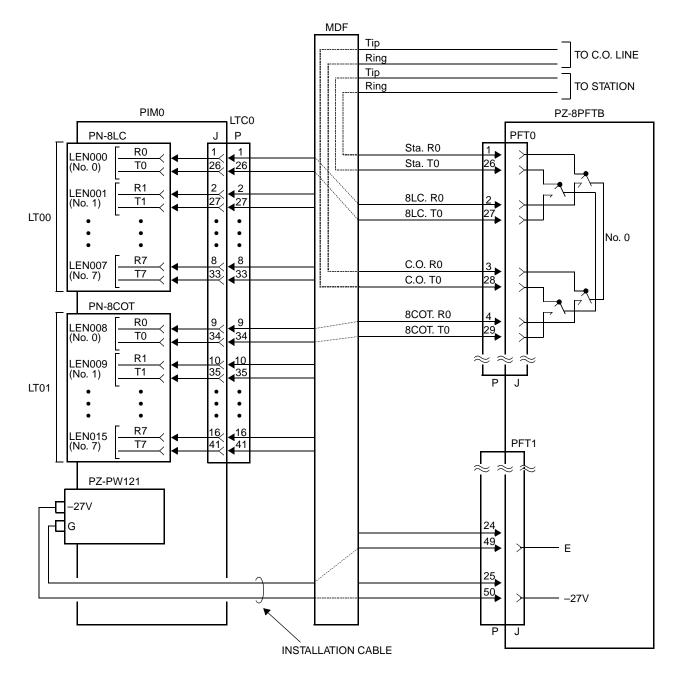
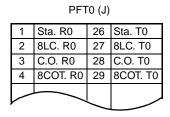


Figure 2-94 MDF Cross Connection for PFT (8PFT) (1 of 2)

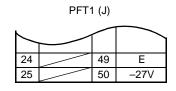
# Figure 2-94 MDF Cross Connection for PFT (8PFT) (2 of 2)

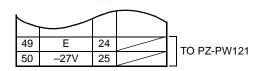
#### ① PFT0 CONNECTOR



	PFT			
26	Sta. T0	1	Sta. R0	TO STATION
27	8LC. T0	2	8LC. R0	TO PN-8LC
28	C.O. T0	3	C.O. R0	TO C.O. LINE
29	8COT. TO	4	8COT. R0	TO PN-8COT

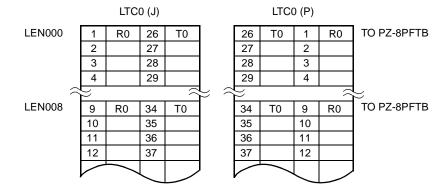
#### ② PFT1 CONNECTOR





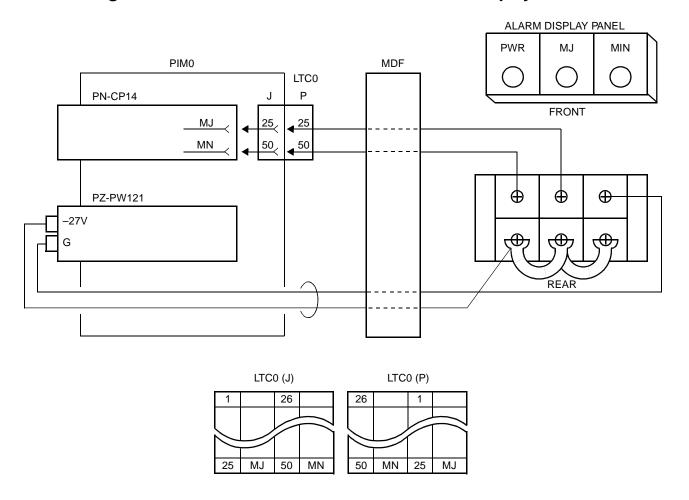
PFT1 (P)

#### ③ LTC0 CONNECTOR



# **Alarm Display Panel (MP)**

Figure 2-95 MDF Cross Connection for Alarm Display Panel



## **Built-in SMDR (MP)**

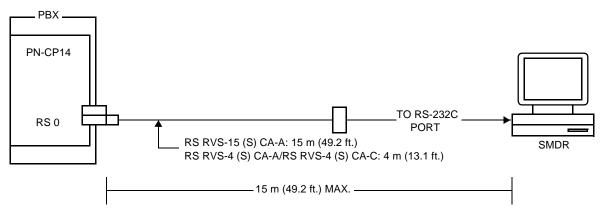
The MP card provides a RS-232C interface port for SMDR connection.

No.0 Port : Async.: 1200/2400/4800/9600/19200 bps

#### · Direct connection

Connect the SMDR terminal to the RS 0 Port of the PN-CP14 card using the RS RVS-15 (S) CA-A/RS RVS-4 (S) CA-A/RS RVS-4 (S) CA-C as shown below.

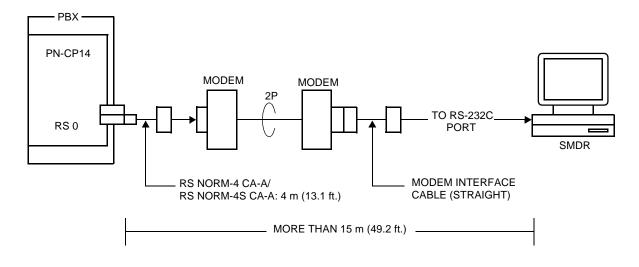
Figure 2-96 SMDR Terminal Direct Connection



#### Connection via MODEM

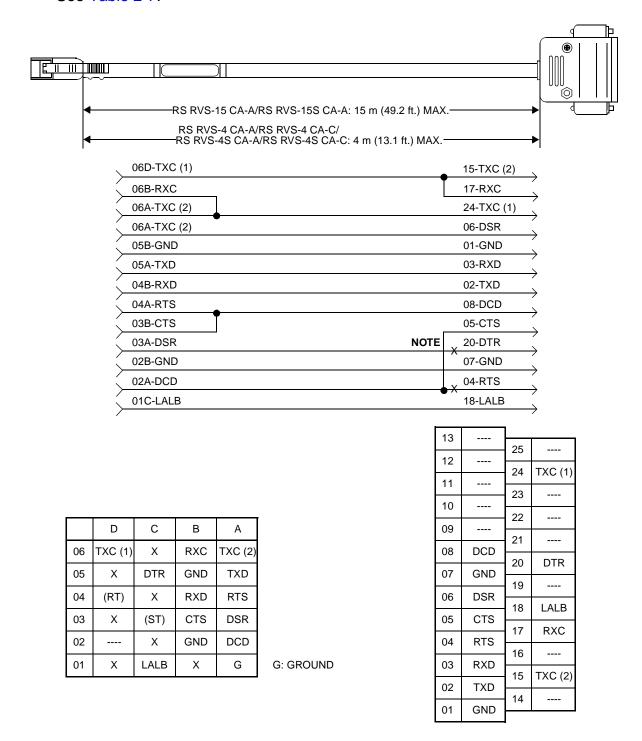
When the cable length between the PBX and the terminal is more than 15 m (49.2 ft.), connect the SMDR terminal to the RS0 Port of the PN-CP14 card through the MODEMs using the RS NORM-4 (S) CA-A as shown below.

Figure 2-97 SMDR Terminal Connection via MODEMs



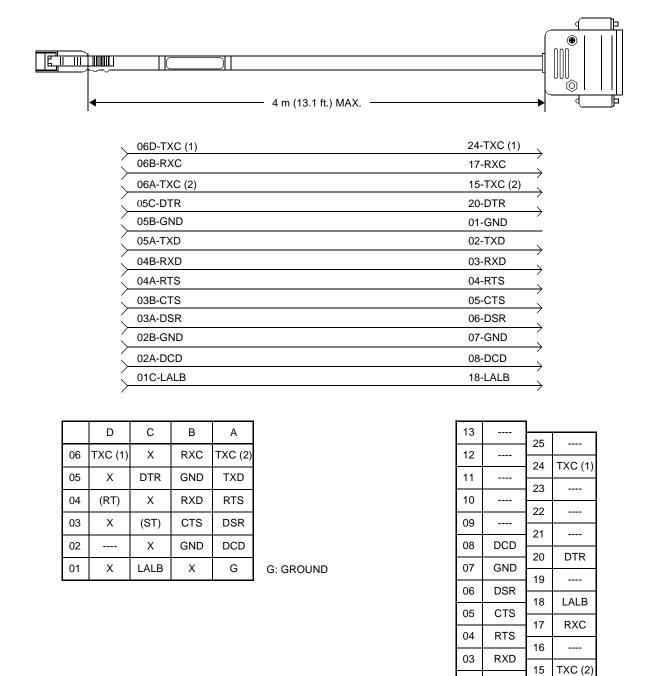
# Figure 2-98 RS RVS-15 CA-A/RS RVS-15S CA-A/ RS RVS-4 CA-A/RS RVS-4 CA-C/ RS RVS-4S CA-A/RS RVS-4S CA-C

**NOTE:** If the SMDR terminal does not send DTR or RTS signal, cut the signal lead marked by X in the D-Sub connector (SMDR terminal side) as shown in the wiring diagram above. See Table 2-7.



## Figure 2-99 RS NORM-4 CA-A/RS NORM-4S CA-A

#### See Table 2-7.



02

01

TXD

GND

14

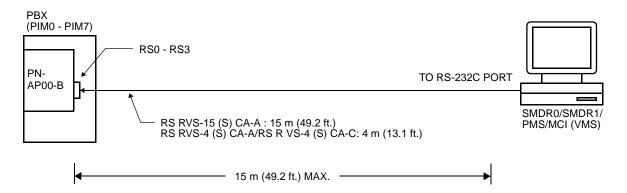
# SMDR/PMS/MCI/CIS Printer/Hotel Printer (AP00)

The PN-AP00-B card provides 4 RS-232C interface ports for SMDR, PMS, MCI, CIS Printer, Hotel Printer.

#### (1) SMDR/PMS/MCI (VMS)

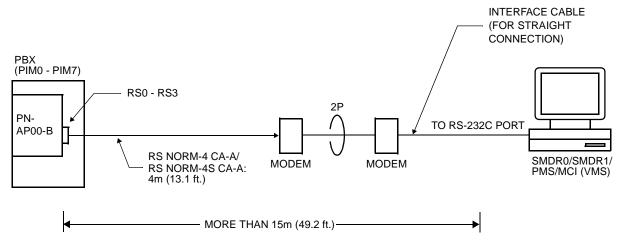
Direct Connection
 Connect the terminal to the RS0-RS3 port of the PN-AP00-B card using the RS RVS-15 (S)
 CA-A/RS RVS-4 (S) CA-A/RS RVS-4 (S) CA-C as shown below. See also Figure 2-98.

Figure 2-100 SMDR/PMS/MCI Terminal Direct Connection



Connection via MODEM
 When the cable length between the PBX and the terminal is more than 15 m (49.2 ft), MODEMs are required. Use RS RORM-4(S) CA-A as shown below. See also Figure 2-99.

Figure 2-101 SMDR/PMS/MCI Terminal Connection via MODEMs

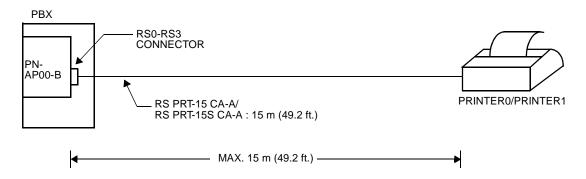


MODEM: FULL DUPLEX (4W)
1200 bps (LEASED TYPE)

#### (2) CIS Printer/Hotel Printer

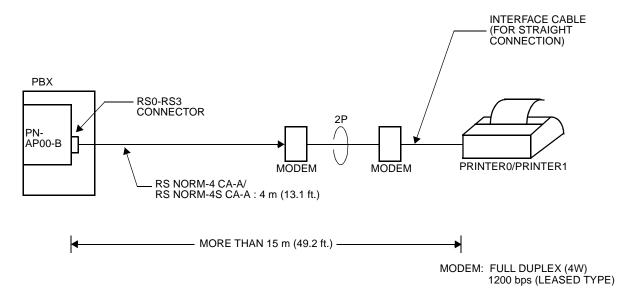
Direct Connection
 Connect a maximum of two printers to the PN-AP00-B using the RS PRT-15(S) CA-A as shown below.

**Figure 2-102 Printer Direct Connection** 



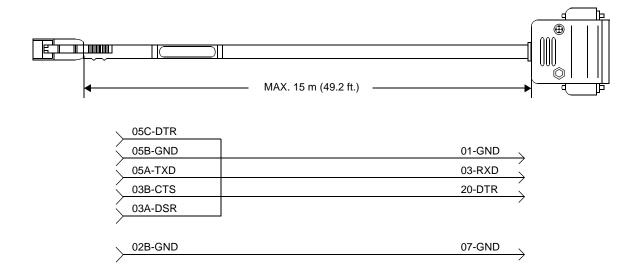
Connection via MODEM
 When the cable length between the printer and the PBX is more than 15 m (49.2 ft.), MODEMs are required.

Figure 2-103 Printer Connection via MODEMs



# Figure 2-104 RS PRT-15 CA-A/RS PRT-15S CA-A

#### See Table 2-7.



	D	С	В	Α
06	TXC (1)	Х	RXC	TXC (2)
05	X	DTR	GND	TXD
04	(RT)	X	RXD	RTS
03	X	(ST)	CTS	DSR
02		X	GND	DCD
01	Х	LALB	Х	G

G: GROUND

13			
12		25	
1		24	
11		23	
10			
09		22	
08		21	
<b>†</b>	CND	20	DTR
07	GND	19	
06		18	
05			
04		17	
03	DVD	16	
1	RXD	15	
02		14	
01	GND	14	

Table 2-7 RS-232C Connector Layout

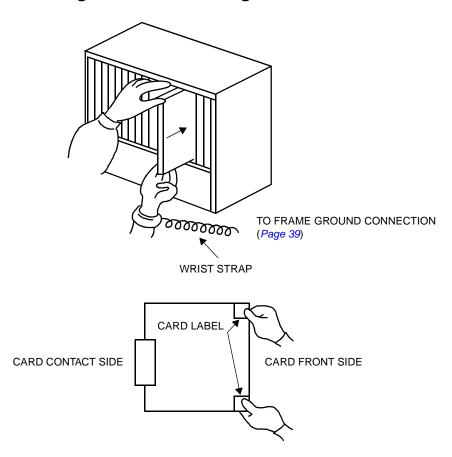
DIN		SIGNAL-NAME		CIONAL		
PIN NO.	RS-232C	JIS C6361	ITU-T V.24	ANOTHER	SIGNAL DIRECTION	MEANING
1	AA	(FG)	101	GND		Frame Ground
2	BA	SD	103	TXD	DTE→	Send Data
3	BB	RD	104	RXD	←DCE	Receive Data
4	CA	RS	105	RTS	DTE→	Request to Send
5	СВ	CS	106	CTS	←DCE	Clear to Send
6	СС	DR	107	DSR	←DCE	Data Set Ready
7	AB	SG	102	GND		Signal Ground
8	CF	CD	109	DCD	←DCE	Data Channel Receive Carrier Detect
9						Not Used
10						Not Used
11		PB				Peripheral Busy
12	SCF	BCD	122		←DCE	Backward Channel Receive Carrier Detect
13	SCB	BCS	121		←DCE	Backward Channel Send (OK)
14	SBA	BSD	118		DTE→	Backward Channel Send Data
15	DB	ST2	114	TXC (2)	←DCE	Send Signal Element Timing
16	SBB	BRD	119		←DCE	Backward Channel Receive Data
17	DD	RT	115	RXC	←DCE	Receive Signal Element Timing
18						Not Used
19	SCA	BRS	120		DTE→	Backward Channel Send Detect
20	CD	ER	108/2	DTR	DTE→	Data Terminal Ready
21	CG	SQD	110		←DCE	Data Signal Quality Detect
22	CE	CI	125	RI	←DCE	Call Indication
23	CI, CH	SRS	112, 111		← − →	Data Signal Speed Choice
24	DA	ST1	113	TXC (1)	←DCE	Send Signal Element Timing
25						Not Used

# **MOUNTING CIRCUIT CARDS**

- (1) Before mounting the circuit cards, confirm the following items.
  - Wrist Strap is connected to Frame Ground.

- ATTENTION
  Contents
  Static Sensitive
  Handling
  Precautions Required
- Switch settings of circuit cards are already completed. See CHAPTER 3.
- The "SW1" switches of all PZ-PW121 cards are turned off.
- (2) Mount circuit cards into their mounting positions according to the "Bay Face Layout" and "Port Assignment Table" given in the Office Data Programming Manual. See CHAPTER 1 "MOUNTING CONDITIONS OF CIRCUIT CARD" on Page 29.
  This figure shows the mounting method of circuit cards.

Figure 2-105 Mounting of Circuit Cards



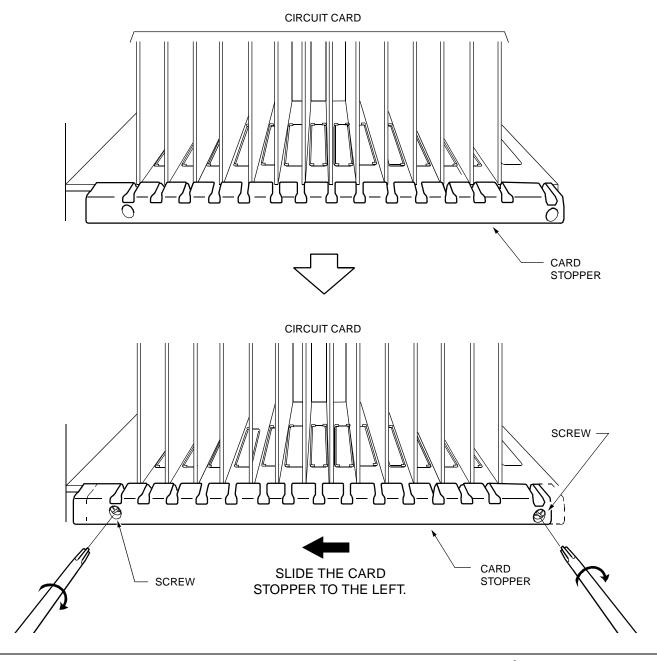
(3) Fix the CARD STOPPER according to the following procedure.

STEP 1: After mounting all circuit cards slide the CARD STOPPER to the left.

STEP 2: Tighten the screws of the CARD STOPPER as shown below.

**NOTE:** When sliding the PIM CARD STOPPER, loosen all of the screws securing the PIM CARD STOPPER and the PZ-M542/PZ-M557 card (the screws need not to be removed).

Figure 2-106 Installation of the CARD STOPPER



# SYSTEM INITIALIZATION

There are two methods for System Initialization. The first method is to Clear All Data, except LEN000 as a CAT terminal, then program the System Data. The second method is to use the Resident System Program, which causes the system to configure itself automatically to the default settings, wherever the line/trunk cards are installed.



**NOTE 1:** See CHAPTER 3 for MP switch settings. *Page 209* 

**NOTE 2:** Refer to the Command Manual for default settings on the Resident System Program.

#### All Clear, Except LEN000 CAT

STEP 1: Turn on the "SW1" switch on all the PZ-PW121 cards.

- The "ON" lamp must be lit on all the PZ-PW121 cards.

STEP 2: On the MP Card, set SW3 to "B" and press SW1.

STEP 3: When the "MN" lamp on the system is lit, set SW3 to the "0" position and press SW1.

- The operating mode has been changed to the ON LINE mode.

# **Resident System Program**

STEP 1: Mount the line/trunk cards into PIM.

STEP 2: Turn on the "SW1" switch on all the PZ-PW121 cards.

- The "ON" lamp must be lit on all the PZ-PW121 cards.

STEP 3: On the MP card, set SW3 to "C" and press SW1.

- After 30 to 40 seconds, the "MN" lamp turns on.
- The system has loaded the Resident System Program.

**NOTE:** If the "MJ" lamp is lit, repeat Step 3.

STEP 4: On the MP card, set SW3 to the "0" position and press SW1.

- The operating mode has been changed to the ON LINE mode.

# SYSTEM DATA ENTRY

There are two methods for data entry, using a Customer Administration Terminal (CAT) or a Maintenance Administration Terminal (MAT).



**NOTE:** For assigning system data, refer to the Command Manual.

#### CAT

Any D<sup>term</sup> can be assigned as a CAT through programming. The D<sup>term</sup> can still be used as a regular telephone when it is not in CAT mode. If the system is initialized by "C" (Resident System Program), every D<sup>term</sup> will be able to go into CAT mode. If the system is initialized by "B" (All Clear), only LEN000 is assigned as a CAT port (the DLC card must be installed in slot LT00).

To use a D<sup>term</sup> as a CAT, follow the procedures shown below.

**NOTE:** It is necessary to complete steps 1 through 6 within 4 seconds.

To set CAT mode:

- 1. Press TRF or Transfer
- 2. Press CNF or Conf
  - CNF/Conf lamp flashes
- 3. Press \*
  - CNF/Conf lamp is off
- 4. Press TRF or Transfer
- 5. Press CNF or Conf
  - CNF/Conf lamp flashes
- 6. Press #
  - CNF/Conf, SPKR/Speaker, FNC/Feature lamps are lit
  - "CAT MODE" is displayed on the LCD
- 7. Press LNR/SPD or Redial
  - "COMMAND = -" is displayed on the LCD

To reset CAT mode:

While "COMMAND = -" is displayed on the LCD:

- 1. Lift the handset (off hook)
  - SPKR/Speaker lamp turns off.
- Restore the handset (on hook)
  - CNF/Conf, FNC/Feature lamps turn off.
  - LCD returns to clock.



Refer to the MATWorX User Guide.

# **Cofirming Lamp Indication**

After system data entry, confirm proper operation of the system using indicator lamps.

- RUN Lamp Flashing (120 IPM)
   Check that the RUN lamps of PN-CP14 card and other application circuit cards are flashing.
- ON Lamps of All PZ-PW121 Cards Lightning
   Check that the ON lamps of all the PZ-PW121 cards are lightning and their MJ/MN lamps have gone out.
- BL Lamps Gone Out
   Check that the BL lamps of all the line/trunk circuit cards have gone out. If BL lamps are flashing, it means that the corresponding circuit is in make-busy state or the system data for this card is not assigned.

For more details of lamp indication, see CHAPTER 3. For information of maintenance servicing and troubleshooting of the equipment, refer to the Maintenance Manual.



# **OPERATION TEST**

Confirm the entered system data and hardware, including cable connection, by completing the following operational tests.

Basic Connection Test at MDF

Station Line Test (Operator Call from all stations) Central Office Trunk Test (Incoming, Outgoing) Tie Line Trunk Test (Incoming, Outgoing)

Service Feature Test

Call Transfer

Step Call

Executive Right of Way (Executive Override)

Call Hold

Call Back

Call Forwarding-All Calls/Don't Answer (No Answer)/Busy Line

Call Pickup

Station Hunting-Pilot/Circular

Speed Calling-Station/System (Station Speed Dial/System Speed Dial)

Paging Access (External Paging with Meet-me)

Announcement Service

Other selected features

**NOTE:** Feature names in parentheses are for North America.

# SYSTEM DATA SAVE

After system data entry, save the system data to floppy diskette. Refer to "MATWorX Users Guide" for the operation of system data save.

# **CLEANING AND VISUAL CHECK**

# **Cleaning**

Clean the following places:

- Inside of the main equipment, especially the bottom of the base.
- On the Top Cover.
- Around the Main Equipment and the MDF.
- · Keyboard on the Attendant Console.

#### **Visual Check**

- (1) Check to see if all circuit cards are in their positions correctly.
- (2) Check that the cable connections in the PIM are correctly and completely connected, and the routing of the cables has been done smoothly and neatly.
- (3) Check to see if the MAT is removed.

This page is for your notes.

# **CHAPTER 3**

# LAMP INDICATIONS AND SWITCH SETTINGS

This chapter explains the meaning of lamp indications and the method of switch settings of each circuit card used in the system.

# **HOW TO READ THIS CHAPTER**

This chapter explains each circuit card used in this system about the following items. Explanations are given in alphabetical order of the circuit card names within each circuit card category (Control, Application Processor, and Line/Trunk).

#### (1) Locations of Lamps, Switches, and Connectors

The locations of lamps, switches, and connectors of each circuit card are shown by a face layout.

#### (2) Lamp Indications

The name, color, and functions of each indicator lamp equipped on each circuit card are described in a table.

#### (3) Switch Settings

The name, settings, and functions of each switch equipped on each circuit card are described in a table.

Each switch setting table has a "CHECK" column. Make necessary entries in the CHECK column during and/or after the system installation and maintenance, and use each table as a reference for subsequent system maintenance and operations.

# **CONTROL CARD**

The table below shows the control cards explained in this section.

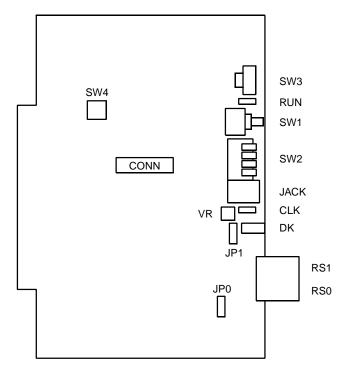
**Table 3-1 List of Control Cards** 

NAME (FUNCTIONAL NAME)	LAMP X: PROVIDED -: NOT PROVIDED	SWITCH X: PROVIDED -: NOT PROVIDED	EXTRACTION/ INSERTION WITH POWER ON X: ALLOWED  A: ALLOWED  AFTER MB*  -: NOT ALLOWED	REFERENCE PAGE
PN-CP14 (MP)	X	X	_	Page 210
PN-CP15 (FP)	X	X	Δ	Page 215
PN-PW00 (EXTPWR)	Х	Х	Δ	Page 217
PZ-PW121 (AC/DC PWR)	Х	Х	-	Page 219
PZ-PW122 (DC/DC PWR)	Х	Х	-	Page 222

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

# PN-CP14 (MP)

Locations of Lamps, Switches, and Connectors



CONN: To CONNR connector on PZ-M537 (EXPMEM)

# Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
CLK	Green	Remains lit while receiving clock signals to the PLO.

## **Switch Settings**

# **CAUTION**

When the operating power is being supplied to this circuit card, <u>do not plug/unplug this circuit card into/from its mounting slot</u>.

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW3 (Rotary SW)		0	On Line (Call processing is in progress)	
		2	Off Line (Call processing is stopped) • I/O port: As per CM40 YY=08	
		3	Off Line (Call processing is stopped) • I/O port: 9600 bps (Fixed)	
NOTE 1	0-F	5 <b>NOTE 2</b>	Off Line (Call processing is stopped) • I/O port: 9600 bps	
NOTE		6 <b>NOTE 2</b>	Off Line (Call processing is stopped) • I/O port: 19200 bps	
		7 <b>NOTE 2</b>	Off Line (Call processing is stopped) • I/O port: 38400 bps	
		8 <b>NOTE 2</b>	Off Line (Call processing is stopped) • I/O port: 57600 bps	
		В	For clearing the office data	
		С	For setting the resident system program	
		1, 4, 9 A, D-F	Not used	

(Continued)

**NOTE 1:** Set the groove on the switch to the desired position.

NOTE 2: Only when executing "MP Program Download" in MATWorX, set the SW3 to 5-8.

SWITCH NAME	SWITCH NUMBER	SETTIN	_	FUNCTION	CHECK
SW1 (Push SW)			Fo	or initializing CPU	
SW2	1	ON	A-	law (Australia)	
(Piano Key SW)		OFF	μ-l	aw (North America)	
OFF ←		`	_ocked (	00 input Oscillator) ver office:	
→ ON		SW2-2	SW2-3	FUNCTION	
		OFF	OFF	1.5MHz clock [For PN-24DTA-C/PN-24PRTA]	
	2, 3	ON	OFF	192kHz clock [For PN-BRTA]	
		OFF	ON	2MHz clock [For PN-30DTC-A/PN-2BRTC]	
		ON	ON	Not used	
		• For clo SW2 OF	<u>2-2</u>	ce office: SW2-3 OFF	
	4	ON		hen using RS1 port for built-in ODEM	
		OFF	W	hen using RS1 port for RS-232C	

(Continued)

SWITCH NAME	SWITCH NUMBER	SETTIN	_		FUNCTION	CHECK
SW4 (DIP SW)	1	OFF	) N	Vot	used	
ON 1 2 3 4	2	OFF	)	Vot	used	
		Selection of PLO1 input (Phase Locked Oscillator) • For clock receiver office:				
		SW4-3	SW4	-4	FUNCTION	
		OFF	OFF		1.5MHz clock [For PN-24DTA-C/PN-24PRTA]	
	3, 4	ON	OFF		192kHz clock [For PN-BRTA]	
		OFF	ON		2MHz clock [For PN-30DTC-A/PN-2BRTC]	
		ON	ON		Not used	
		• For clock SW4	<u>-3</u>	SI	office: <u>W4-4</u> DFF	
VR (Rotary SW)			/   '		able Resistor for External Hold	
20					e Source 20 Kohms : Clockwise)	
DK (Connector)	02	Ground o	detecti	ion		
02	01	Ground s	endin	g		

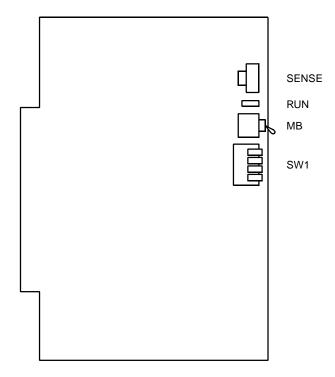
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SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
JP0 (Jumper pin)		UP	Not used (Memory backup OFF)	
Front		DOWN	For normal operation (Memory backup ON)	
JP1 (Jumper pin)		UP	For using internal tone source	
• Front		DOWN	For using external tone source	

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.

# PN-CP15 (FP)

Locations of Lamps, Switches, and Connectors



# Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while the circuit card is operating normally.

## **Switch Settings**

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK	
SENSE		For setting F	P No.		
(Rotary SW)		0	For mounting this card in PIM0		
	0-3	1	For mounting this card in PIM2		
321		2	For mounting this card in PIM4		
NOTE1		3	For mounting this card in PIM6		
	4-F		Not used		
MB (Toggle SW)		UP	For make-busy		
NOTE 2		DOWN	For normal operation		
SW1 (Piano Key SW)	1 - 3	OFF	Not used		
OFF ←	4	ON	For normal operation		
2 1 ON	4		OFF	Not used	

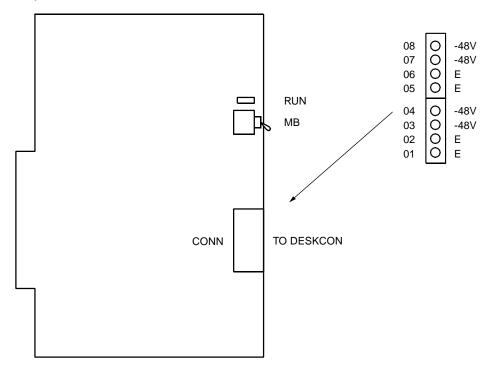
The figure in the SWITCH NAME column and the position in in the SETTING POSITION
column indicate the standard setting of the switch. When the switch is not set as shown by the
figure and, the setting of the switch varies with the system concerned.

**NOTE 1:** Set the groove on the switch to the desired position.

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

# PN-PW00 (EXTPWR)

Locations of Lamps, Switches, and Connectors



# Lamp Indications

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

# Switch Settings

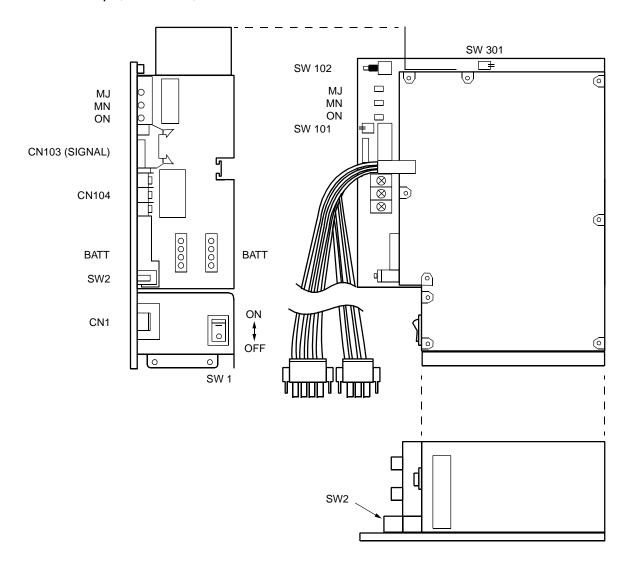
SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
MB (Toggle SW)		UP	For make-busy (–48V power off)	
NOTE		DOWN	For normal operation (–48V power on)	

The figure in the SWITCH NAME column and the position in $\begin{tabular}{c} \end{tabular}$ 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.

# PZ-PW121 (AC/DC PWR)

Locations of Lamps, Switches, and Connectors



## Lamp Indications

LAMP NAME	COLOR	FUNCTION
MJ	Red	Remains lit when a major trouble occurres or resident system program is not properly loaded
MN	Yellow	Remains lit when a minor trouble occurres or resident system program is successfully loaded, or a station line is locked out
ON	Green	Remains lit while the operating power is being supplied

# **Switch Settings**

# **CAUTION**

When the operating power is being supplied to this circuit card, <u>do not plug/unplug this circuit card into/from its mounting slot</u>.

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW1		ON	For turning AC power and the battery on	
OFF		OFF	For turning AC power and the battery off	
SW2 100/120V AC 240V AC		FORWARD	AC INPUT: 90V-132V	
		BACKWARD	AC INPUT: 180V-264V	
SW101 (Piano key)	1	OFF	Not used	
1 D	2	ON	Float charging, for sealed batteries (Normal Setting). OPTION: Periodic Equalize charging of external vented batteries.	
OFF ←		OFF	Float charging, for vented batteries only.	

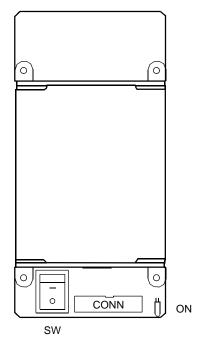
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SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW301 (DIP SW)	1	ON	CR Voltage: 75Vrms	
1 🗆	'	OFF	CR Voltage: 90Vrms	
OFF 2 ON	2	ON	Frequency: 20 Hz	
25Hz 20Hz		OFF	Frequency: 25 Hz	
SW102		PRESS MOMEN- TARILY	To start each PIM on battery power when AC power is not provided	

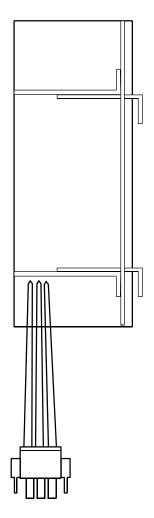
The figure in the SWITCH NAME column and the position in in the SETTING POSITION
column indicate the standard setting of the switch. When the switch is not set as shown by the
figure and, the setting of the switch varies with the system concerned.

# PZ-PW122 (DC/DC PWR)

# Locations of Lamps, Switches, and Connectors



CONN connector: To PWR1 connector on PIM BWB



POWER OUTPUT CABLE (-48V, E): To PWR0C connector on PIM BWB

## Lamp Indications

LAMP NAME	COLOR	FUNCTION
ON	Green	Remains lit while the operating power is being supplied

# **Switch Settings**

# **CAUTION**

When the operating power is being supplied to this circuit card, <u>do not plug/unplug this circuit card into/from its mounting slot</u>.

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
sw		ON	For turning AC power on	
ON OFF		OFF	For turning AC power off	

# **APPLICATION PROCESSOR CARD**

The table below shows the application cards to be explained in this section.

**Table 3-2 List of Application Processor Cards** 

NAME (FUNCTIONAL NAME)	LAMP X: PROVIDED -: NOT PROVIDED	SWITCH X: PROVIDED -: NOT PROVIDED	EXTRACTION/ INSERTION WITH POWER ON X: ALLOWED  Δ: ALLOWED  AFTER MB*  -: NOT ALLOWED	REFERENCE PAGE
PN-AP00-A (DBM)	X	X	Δ	Page 226
PN-AP00-B (AP00)	X	X	Δ	Page 229
PN-AP01 (AP01)	X	Х	Δ	Page 235
PN-BRTA (BRT)	X	Х	Δ	Page 238
PN-2BRTC (BRT)	Х	Х	Δ	Page 243
PN-CC01 (ETHER)	X	Х	X	Page 248
PN-DAIA (DAI)	X	X	Δ	Page 252
PN-DAIB (DAI)	X	X	Δ	Page 257
PN-DAIC (DAI)	X	Х	Δ	Page 261
PN-DAID (DAI)	Х	Х	Δ	Page 264
PN-DAIE (DAI)	Х	Х	Δ	Page 270
PN-DAIF (DAI)	Х	Х	Δ	Page 274
PN-24DTA-C (DTI)	Х	Х	Δ	Page 278
PN-30DTC-A (DTI)	Х	Х	Δ	Page 284
PN-IPTA (IPT)	Х	Х	Δ	Page 290
PN-24PRTA (PRT)	X	Х	Δ	Page 294

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

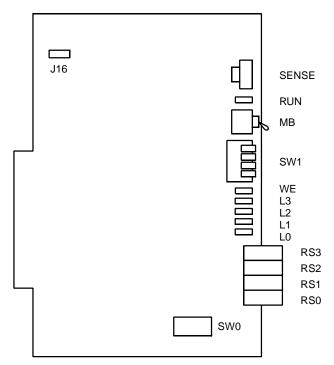
**Table 3-2 List of Application Processor Cards (Continued)** 

NAME (FUNCTIONAL NAME)	LAMP X: PROVIDED -: NOT PROVIDED	SWITCH X: PROVIDED -: NOT PROVIDED	EXTRACTION/ INSERTION WITH POWER ON X: ALLOWED Δ: ALLOWED AFTER MB* -: NOT ALLOWED	REFERENCE PAGE
PN-4RSTB (MFR)	X	X	X	Page 300
PN-4RSTC (CIR)	X	X	Δ	Page 302
PN-SC00 (CCH)	X	X	Δ	Page 304
PN-SC01 (DCH)	X	Х	Δ	Page 307
PN-SC03 (ICH)	X	Х	Δ	Page 310
PN-SC03-A (CSH)	Х	Х	Δ	Page 312
PZ-M537 (EXPMEM)	_	Х	-	Page 314
PZ-M542 (CONN)	_	Х	Х	Page 317
PZ-M557 (CONN)	_	Х	X	Page 319

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

# PN-AP00-A (DBM)

Locations of Lamps, Switches, and Connectors



## Lamp Indications

LA NA		COLOR	FUNCTION								
RUN Green			Flashes at 120 IPM while this card is operating normally.								
WE		Red	Not used								
L0-L3 Green			Second data setting value for	CMD001 > 250							
			0	1 (Port 0)-3 (Port 2)							
	L3		Indication of transmitting status of Port 0	Indication of CTS signal status on Port 0-2							
	L2		Indication of transmitting status of Port 1	Indication of DCD signal status on Port 0-2							
	L1		Indication of transmitting status of Port 2	Indication of TXD signal status on Port 0-2							
	L0		Indication of transmitting status of Port 3	Indication of RXD signal status on Port 0-2							

### Switch Settings

SWITCH NAME	SWITCH NUMBER	_	SETTING FUNCTION								CHECK			
SENSE (Rotary SW)	4-F		Set the switch to match the AP Number (04-15) to be set by CM05.											
<b>₽</b> F	AP No.	04	05		07	08	09	10 A	11 B	12 C	13 D	14 E	15 F	
NOTE 1	0-3	<b>SW No.</b> 4 5 6 7 8 0-3 Not used						A	Ь		D			
MB (Toggle SW)	0-3	INC	UF		F	For make-busy								
NOTE 2	DOWN F						For normal operation							

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW1	(A O)A()		For normal operation	
(Piano Key SW)	1	OFF	Not used	
OFF ←	2	ON	For normal operation	
3	2	OFF	Not used	
1	3	ON	For normal operation	
→ ON M	3	OFF	Not used	
	4	OFF	Not used	
SW0 (DIP SW)				
ON 1 2 3 4 5 6 7 8	1 - 8	OFF	Not used	
J16 (Jumper pin)			For normal operation (Memory backup ON)	
Front		LEFT	Not used (Memory backup OFF)	

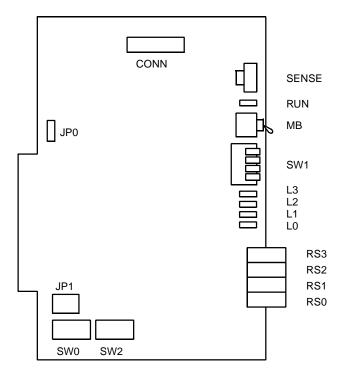
The figure in the SWITCH NAME column and the position in \_\_\_\_ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and \_\_\_\_ , the setting of the switch varies with the system concerned.

**NOTE 1:** Set the groove on the switch to the desired position.

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

# PN-AP00-B (AP00)

Locations of Lamps, Switches, and Connectors



CONN: To CONNR connector on PZ-M537 (EXPMEM)

### Lamp Indications

LAMF NAME		COLOR	FUNCTION								
RUN Green			Flashes at 120 IPM while this card is operating normally.								
L0-L3 Green		Green	Second data setting value for	CMD001 > 250							
			0	1 (Port 0)-3 (Port 2)							
L	3		Indication of transmitting status of Port 0	Indication of CTS signal status on Port 0-2							
L2	2		Indication of transmitting status of Port 1	Indication of DCD signal status on Port 0-2							
L'	1		Indication of transmitting status of Port 2	Indication of TXD signal status on Port 0-2							
L	0		Indication of transmitting status of Port 3	Indication of RXD signal status on Port 0-2							

## Switch Settings

SWITCH NAME	SWITCH NUMBER					FUNCTION								CHECK	
SENSE	0-3	Not use	ot used												
(Rotary SW)	4-F Set the be set b			vitch to match the AP Number (04-31) to CM05.											
	AP No.	1-4: ON 1-4: OFF	04	05 21	06 22	07 23	08 24	09 25	10 26		12 28	13 29	14	_	
NOTE 1		SW No.					8	9	Α	В	С	D	E	F	
MB (Toggle SW)		UP	UP For ma					nake-busy							
NOTE 2		DOW	/N	) <b>F</b>	-or	nor	mal	ope	erat	ion					

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW0 (DIP SW)	1-3	ON	Not used	
ON 1 2 3 4 5 6 7 8	1-3	OFF	For normal operation	
	4, 5	ON	For normal operation	
	4, 5	OFF	Not used	
	6 <b>NOTE 3</b>	ON	Sets No. 0 Port forcibly in a state which DSR signal is always provided.	
	NOTE 3	OFF	Receives DSR signal from the DCE on No. 0 Port.	
	7	ON	Sets No. 1 Port forcibly in a state which DSR signal is always provided.	
	NOTE 3	OFF	Receives DSR signal from the DCE on No. 1 Port.	
	8	ON	Sets No. 2 Port forcibly in a state which DSR signal is always provided.	
	NOTE 3	OFF	Receives DSR signal from the DCE on No. 2 Port.	
SW1 (Piano Key SW)	1	ON	For normal operation	
OFF ← 🗸	ı	OFF	Not used	
4		ON	For normal operation	
3 2 1	2	OFF	For AP data clearing by CMD100/CMD101	
→ ON		ON	For normal operation	
	3	OFF	For AP data clearing by CMD100/CMD101	
	4	ON	AP No. 4-15	
	4	OFF	AP No. 20-31	

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW2 (DIP SW)  ON	1 NOTE 3	ON	Sets No. 3 Port forcibly in a state which DSR signal is always provided.	
	NOTES	OFF	Receives DSR signal from the DCE on No. 3 Port.	
	2	ON	Enables the receive clock from the DCE (Modem) when No. 1 Port is synchronous. (Clock is received at the RXC terminal)	
	2	OFF	<ul> <li>Uses internal clock as the receive clock when No. 1 Port is synchronous.</li> <li>When No. 1 Port is asynchronous.</li> </ul>	
	3	ON	Enables transmit clock from the DCE (Modem) when No. 1 Port is synchronous. (Clock is received at the TXC (2) terminal.)	
	3	OFF	<ul> <li>Uses internal clock as the send clock when No. 1 Port is synchronous.</li> <li>When No. 1 Port is asynchronous.</li> </ul>	
	4	ON	Transmit the send clock from the DTE (this card) when No. 1 Port is synchronous. (Clock is transmitted from the TXC (1) terminal)	
	4	OFF	<ul> <li>Not transmit the send clock from the DTE (this card) when No. 1 Port is synchronous.</li> <li>When No. 1 Port is asynchronous.</li> </ul>	
	5	ON	When No. 1 Port is asynchronous.	
	J	OFF	When No. 1 Port is synchronous.	

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW2 (DIP SW)  ON  1 2 3 4 5 6 7 8	6	ON	<ul> <li>Uses internal clock as the receive clock when No. 1 Port is synchronous.</li> <li>When No. 1 Port is asynchronous.</li> </ul>	
	NOTE 4	OFF	Enables receive clock from the DCE (Modem) when No. 1 Port is synchronous. (Clock is received at the RXC terminal)	
	7	OFF	Not used	
	8	OFF	Not used	
JP0 (Jumper SW)		UP	For normal operation (Memory backup ON)	
•		DOWN	Not used (Memory backup OFF)	
JP1 (Jumper SW)	(Jumper SW)		Not used	
• • •		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 to the desired position.
- **NOTE 2:** When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.
- **NOTE 3:** When the DCE connected to the port does not provide a function to send the DSR signals, set the switch to ON. In this case, the AP00 card cannot recognize the actual state of the DCE, so that the call records or system messages will not be stored in the mem-

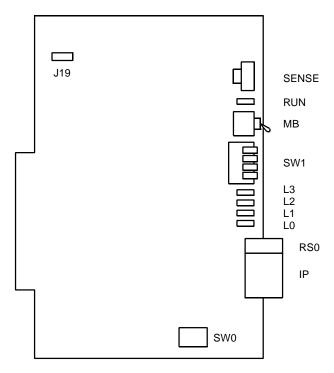
ory buffer on the AP00 card even if the cable is disconnected from the DCE. When the switch is set to OFF, the call records or system messages will be stored when the cable is disconnected, and will be sent when the cable is re-connected.

**NOTE 4:** The use of the external clock (from the distant end) or the internal clock is determined by the following table:

CLOCK	SW2									
CLOCK	2	6								
External	ON	OFF								
Internal	OFF	ON								

# PN-AP01 (AP01)

Locations of Lamps, Switches, and Connectors



### Lamp Indications

LAMP	NAME	COLOR	FUNCTION							
RUN		Green	Flashes at 120 IPM while this card is operating normally.							
L0-L3	.0-L3 L3 Green		Indication of CTS signal status on RS-232C port.							
	L2		Indication of DCD signal status on RS-232C port.							
	L1		Indication of TXD signal status on RS-232C port.							
	L0		Indication of RXD signal status on RS-232C port.							

### Switch Settings

SWITCH NAME	SWITCH NUMBER		SETTING POSITION				FUNCTION							
SENSE (Rotary SW)	4-F Set the switch to match the AP Number (04-15) to be set by CM05.													
	AP No.	04	05	06	07	08	09	10	11	12	13	14	15	
4	SW No.	4	5	6	7	8	9	Α	В	С	D	Ε	F	
NOTE 1	0-3	No	ot us	ed										
MB (Toggle SW)			UP				For make-busy							
NOTE 2			DOWN				For normal operation							
SW1 (Piano Key SW)	1	ON				For normal operation								
(Flano Rey SW)	ı		OFF			Not used								
OFF ←	2		10	N		For normal operation								
3	2		OFF				Not used							
1	3		10	1		For normal operation								
→ ON	3		OF	F	Not used									
	4		ON				For normal operation							
	7		OFF			Not used								

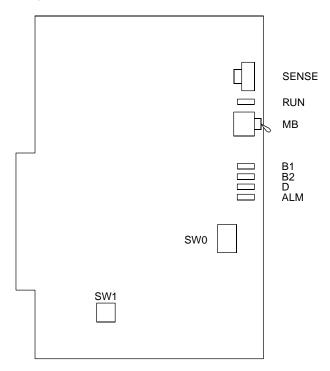
SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW0 (DIP SW)	1	ON	Receives RT clock	
ON 1 2 3 4	l	OFF	Uses internal clock	
	2	ON	Receives ST2 clock	
	2	OFF	Uses internal clock	
	3	ON	Sends ST1 clock	
	3	OFF	Not send ST1 clock	
	4	OFF	Not used	
J19 (Jumper pin)		RIGHT	For normal operation (Memory backup ON)	
Front		LEFT	Not used (Memory backup OFF)	

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

## PN-BRTA (BRT)

Locations of Lamps, Switches, and Connectors



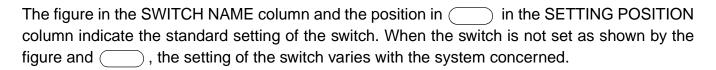
## Lamp Indications

LAMP NAME	COLOR	FUNCTION							
RUN	Green	Flashes at 120 IPI	Flashes at 120 IPM while this card is operating normally.						
B1	Green	B1 channel status ON: OFF: Flash (60 IPM):	Busy Idle						
B2	Green	B2 channel status ON: OFF: Flash (60 IPM):	Busy Idle						
D	Green	D channel status ON: OFF:	Busy Idle						
ALM	Red	Transmission line fault status ON: Line fault OFF: Normal operation							

### Switch Settings

SWITCH NAME	SWITCH NUMBER		SETTING POSITION			FUNCTION								CHECK
SENSE	4-F						atch	the A	AP N	Num	ber (	(04-1	15) to	
(Rotary SW)		be	be set by CM05.											
	AP No.	04	05	06	07	08	09	10	11	12	13	14	15	
	SW No.	4	5	6	7	8	9	Α	В	С	D	Е	F	
NOTE 1		1	ı	l	l	ı		I.			1	I.		
	0-3	No	ot us	ed										
MB (Toggle SW)			UF	<b>o</b>	F	or m	ake-	·busv	/					
ON T					_									
NOTE 2			DOWN			For normal operation								
SW0 (DIP SW)		ON				For normal operation								
ON 1 2 3 4	1	OFF			N	Not used								
	2 NOTE 3		ON			Source clock signal from network is sent to the PLO of MP according to the switch setting of SW0-3.								
	NOTE 4		OFF			Source clock signal from network is not sent to the PLO of MP card.								
	3 NOTE 3		01	N		Clock signal is sent to the PLO 0 of MP.								
	NOTE 4		OF	F		Clock signal is sent to the PLO 1 of MP.								
	4		ON			For normal operation								
	4		OFF			Not used								

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW1 (DIP SW)  ON  1 2  ON  1 2	1	ON	For terminating the transmitting side of channels B1 and B2 with 100 ohms.	
		OFF	To remove the terminating resistor on the transmitting side of channels B1 and B2.	
		ON	For terminating the receiving side of channels B1 and B2 with 100 ohms.	
	2	OFF	To remove the terminating resistor on the receiving side of channels B1 and B2.	



- **NOTE 1:** Set the groove on the switch to the desired position.
- **NOTE 2:** When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.

NOTE 3: Set the SW0-2 and SW0-3 as follows:

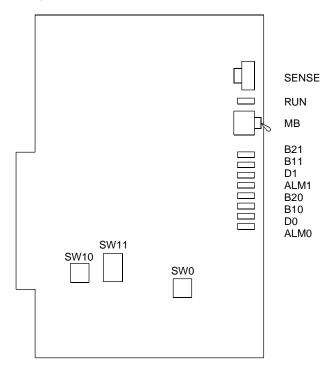
	BR	T0	BR	RT1	BR	T2	 BRT11		
CONDITIONS	SW 0-2	SW 0-3	SW 0-2	SW 0-3	SW 0-2	SW 0-3	 SW 0-2	SW 0-3	REMARKS
When one BRT is provided.	ON	ON							MP card will receive the clock signal from BRT0 at its PLO0 input.
When more than one BRT is provided.	ON	ON	ON	OFF	OFF	ON	 OFF	ON	MP card will receive the clock signal from BRT0 at its PLO0 input, under normal conditions.  Should a clock failure occur with BRT0, MP card will switch to the PLO1 input which gets clock from BRT1.

**NOTE 4:** When the system is a clock source office, set the SW0-2 and SW0-3 on all the BRT cards mounted in PIM0 to "OFF".

**NOTE 5:** Mount the BRT card which receives a source clock signals into PIM0.

# PN-2BRTC (BRT)

Locations of Lamps, Switches, and Connectors



### Lamp Indications

LAMP NAME	COLOR	FUNCTION							
RUN	Green	Flashes at 12	20 IPM while this ca	ard is operating normally.					
B21	Red	No.1 Circuit	B2 channel status ON: OFF: Flash (60 IPM):	Busy Idle					
B11	Red		B1 channel status ON: OFF: Flash (60 IPM):	Busy Idle					
D1	Green		D channel status ON: OFF:	Busy Idle					
ALM1	Red		Transmission line to ON: OFF:	fault status Line fault Normal operation					
B20	Red	No.0 Circuit	B2 channel status ON: OFF: Flash (60 IPM):	Busy Idle					
B10	Red		B1 channel status ON: OFF: Flash (60 IPM):	Busy Idle					
D0	Green		D channel status ON: OFF:	Busy Idle					
ALM0	Red		Transmission line to ON: OFF:	fault status Line fault Normal operation					

## Switch Settings

SWITCH NAME		SWITCH NUMBER		NG ION		FUNCTION								CHECK		
SENSE	4-F		Set the switch to match the AP Number (04-31) to													
(Rotary SW)			be set by CM05.													
F	AP No.		11-4: ON	04		1	07	80	09	10	11	12	13	14		
4		SW N	SW11-4: OFF		21 5	22 6	23 7	24 8	25 9	26 A	27 B	28 C	29 D	30 E	31 F	
NOTE 1	<u> </u>	344 14		4	3	0	1	0	Э	А	Ь	C	D			
	0-3		Not use	Not used												
MB (Toggle SW)				UP			For make-busy									
ON T			<u> </u>		,											
NOTE 2				DOWN			For normal operation									
SW0, SW10					For terminating the transmitting side											
(DIP SW)	1		ON			of channels B1 and B2 with 100 ohms.										
	I		_			To remove the terminating resistor										
			OFF	=		on the transmitting side of channels B1 and B2.										
			ON		1 I	For terminating the receiving side of channels B1 and B2 with 100 ohms.										
	2		OFF			To remove the terminating resistor on the receiving side of channels B1 and B2.										

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW11 (DIP SW)	1	ON	For normal operation	
ON 1 2 3 4	I	OFF	Not used	
	2 <b>NOTE 3</b>	ON	Output clock signals according to the switch setting of SW11-3.	
	NOTE 4	OFF	Do not output clock signals.	
	3	ON	Output clock signals to PLO 0 of MP.	
	NOTE 3 NOTE 4	OFF	Output clock signals to PLO 1 of MP.	
4		ON	AP No. 04-15	
	+	OFF	AP No. 20-31	

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 to the desired position.

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

NOTE 3: The system can supply clock signals from two clock supply routes.

In normal condition, the system synchronizes to the clock signals supplied on the PLO 0 of MP card via the Back Wiring Board, and if the clock signals are failed, the clock supply route takes over to PLO1 automatically. Set SW11-2 and SW11-3 as follows.

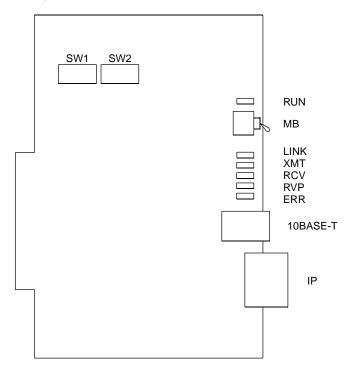
	BR	T0	BR	RT1	BR	T2	 BR	T11	
CONDITIONS	SW SW SW SW SW SW SW 11-2 11-3 11-2 11-3 11-2 11		SW 11-3	REMARKS					
When one BRT is provided.	ON	ON							MP card will receive the clock signal from No.0 circuit of BRT0 at its PLO0 input. Should a clock failure occure with No.0 circuit, MP card will switch to No. 1 circuit of BRT0.
When more than one BRT is provided.	ON	ON	ON	OFF	OFF	ON	 OFF	ON	MP card will receive the clock signal from BRT0 at its PLO0 input, under normal conditions.  Should a clock failure occure with both No.0 and No.1 circuits of BRT0, MP card will switch to the PLO1 input which gets clock from BRT1.

**NOTE 4:** When the system is a clock source office, set the SW11-2 and SW11-3 on all the BRT cards mounted in PIM0 to "OFF".

**NOTE 5:** Mount the BRT card which receives a source clock signals into PIM0.

# PN-CC01 (ETHER)

Location of Lamps, Switches, and Connectors



## Lamp Indications

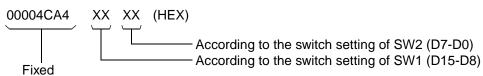
LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 60 IPM while this card is operating normally.
LINK	Green	Remains lit when link is established.
XMT	Green	Remains lit when it is transmitting the data.
RCV	Green	Remains lit when it is receiving the data.
RVP	Green	Remains lit only when it is receiving the data with its own IP address.
ERR	_	Not used

#### **Switch Settings**

SWITCH NAME	SETTING POSITION	FUNCTION	CHECK
MB (Toggle SW)	UP	For make-busy	
NOTE 1	DOWN	For normal operation	

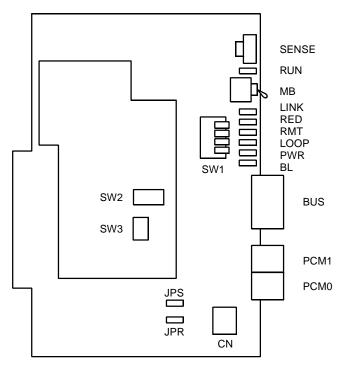
SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUN		CHECK	
SW1 (DIP SW)	1 (D15)	ON				
ON 1 2 3 4 5 6 7 8	2 (D14)	ON		FF:1		
	3 (D13)	ON	MAC ADDRESS	SWITCH SE	TTING	
NOTE 2	4 (D12)	OFF	(HEX)	∠ SW2-5 (D3)	ON/OFF	
SW1-5 (D11)	E (D11)	ON	Fixed	SW2-6 (D2) SW2-7 (D1)	ON/OFF ON/OFF	
SW1-6 (D10) SW1-7 (D9) SW1-8 (D8)	5 (D11)	OFF		SW2-8 (D0)	ON/OFF	
3W1-6 (D6)	6 (D10)	ON		⟨ SW2-1 (D7)	ON/OFF	
	6 (D10)	OFF		SW2-2 (D6) SW2-3 (D5)	ON/OFF ON/OFF	
	7 (D0)	ON		SW2-4 (D4)	ON/OFF	
	7 (D9)	OFF		0)//4 5 (D44)	ONIOFE	
	0 (D0)	ON		SW1-5 (D11) SW1-6 (D10)	ON/OFF ON/OFF	
	8 (D8)	OFF		SW1-7 (D9) SW1-8 (D8)	ON/OFF ON/OFF	
SW2 (DIP SW)	1 (DZ)	ON		2000 (7.17)	21//255	
ON 1 2 3 4 5 6 7 8	1 (D7)	OFF		SW1-1 (D15) SW1-2 (D14)	ON/OFF	
	0 (D0)	ON		SW1-3 (D13) SW1-4 (D12)	ON/OFF ON/OFF	
NOTE 2	2 (D6)	OFF	L			
NOTEZ	2 (DE)	ON				
	3 (D5)	OFF				
	4 (D4)	ON				
	4 (D4)	OFF				
	5 (D2)	ON				
	5 (D3)	OFF				
	e (D2)	ON				
	6 (D2)	OFF				
	7 (D1)	ON				
	7 (D1)	OFF				
	o (D0)	ON				
	8 (D0)	OFF				

- **NOTE 1:** When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.
- **NOTE 2:** Each equipment must have a unique MAC address to distinguish between systems. Therefore, when more than one PBX is installed in the same network, assign the lower 4 digits of the following MAC address by SW1 and SW2 to prevent duplicate addresses.



## **PN-DAIA (DAI)**

Location of Lamps, Switches, and Connectors



#### Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
LINK	Green	Remains lit when a link between this card and a distant office is normally connected.  Goes out after 15 seconds of link disconnection.
RED	Red	Remains lit when detecting PCM signal loss or Frame Alignment signal loss.
RMT	Red	Remains lit when receiving the alarm signal from a distant office.
LOOP	_	Not used
PWR	_	Not used
BL	Red	Remains lit while data transmission on control channel (D ch). Flashes while FP data downloading.

## Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION			
SENSE (Rotary SW)		FP (Firmwar DAIA card. By this setting and the opposessor.				
NOTE 1	0-F	0	Not used			
		1	FP No. 1			
		2	FP No. 2			
		3	FP No. 3			
		4 – F	Not used			
MB (Toggle SW)		UP	For make-busy			
NOTE 2		DOWN	For normal operation			
SW1 (Piano Key SW)	1	ON	For supplying 1.5MHz clock to PLO 0			
OFF ←	NOTE 3	OFF	No clock supply to PLO 0			
4 3 2 1 1 ON	2	ON	For supplying 1.5MHz clock to PLO 1			
	NOTE 3	OFF	No clock supply to PLO 1			
	3	OFF	Always set to OFF			
	4	OFF	Always set to OFF			

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW2 (DIP SW)	4	ON	Control channel signaling data transmission speed: 48kbps	
ON 1 2 3 4 5 6 7 8	1	OFF	Control channel signaling data transmission speed: 64kbps	
	2	ON	DTI frame configuration: 12-Multi Frame	
	2	OFF	DTI frame configuration: 24-Multi Frame	
	0	ON	Line code: AMI with ZCS	
	3	OFF	Line code: B8ZS	
	4	ON	Setting of control signal time slot	
			SWITCH NUMBER         TIME SLOT           4         5         6         7         8         NUMBER	
		OFF	OFF         ON         ON         ON         ON         TS1           ON         OFF         ON         ON         ON         TS2	
	5	ON	OFF OFF ON ON ON TS3 ON ON OFF ON ON TS4	
		OFF	OFF         ON         OFF         ON         ON         TS5         1           ON         OFF         OFF         ON         ON         TS6         TS7           ON         ON         ON         OFF         ON         TS8         TS8	
	6	ON	ON ON ON OFF ON TS9	
		OFF	OFF	ON         ON         OFF         OFF         ON         TS12           OFF         ON         OFF         OFF         ON         TS13           ON         OFF         OFF         OFF         ON         TS14
	7	ON	OFF         OFF         OFF         ON         TS15           ON         ON         ON         OFF         TS16           OFF         ON         ON         OFF         TS17	
	,	OFF	ON         OFF         ON         ON         OFF         TS18           OFF         OFF         ON         ON         OFF         TS19           OFF         OFF         OFF         ON         OFF         TS23	
	Q	ON	NOTE 4, NOTE 5	
	8	OFF		

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION				CHECK	
SW3 (DIP SW)  ON 1 2 3 4	1	ON	Set the equalizer according to the cable length between the system and the CSU.					
		OFF	SW -1	SW -2	SW -3	CABLE LENGTH		
	2	OFF	ON	ON	ON	0 - 40m (0-131.2ft.)		
	3	ON	ON	ON	OFF	40 - 80m (131.2-262.5ft.)		
		ON	ON	OFF	ON	80 - 120m (262.5-394ft.)		
		OFF	ON	OFF	OFF	120 - 160m (394-525ft.)		
			OFF	OFF	OFF	ON	ON	160 - 200m (525-656ft.)
			OFF	OFF	OFF	Signal is not sent		
	4	OFF	Alway	's set	to OF	F		
JPS (Jumper pin)		Right	For m	nount	ing th	is card on PIM1 -		
		Left	For m	ounti	ng thi	s card on PIM0		
JPR (Jumper pin)		Right	Neutr line is	_		ng on the receiving		
		Left	Neutr line is	_		ng on the receiving ed.		

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 to the desired position.

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

**NOTE 3:** When clock source office signal is supplied via the line between the main site and the remote site, set the SW1-1 and SW1-2 as the following table. In this case, DAIA cards (DAIA0, DAIA1) must be mounted in PIM0.

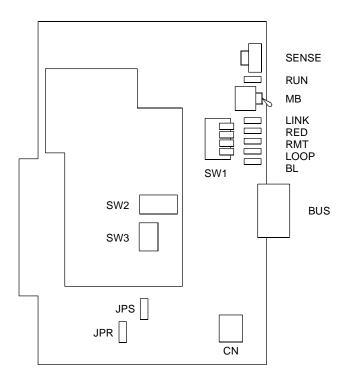
	DAIA0		DAIA1		DAIA2			
CONDITIONS	SW 1-1	SW 1-2	SW 1-1	SW 1-2	SW 1-1	SW 1-2	REMARKS	
One DAIA card is provided.	ON	OFF	-	_	_	_	The clock signal is sent to PLO0 of MP card via supply route 0 (DAIA0).	
Two or three DAIA cards are provided.	ON	OFF	OFF	ON	OFF	OFF	The clock signal supply route is automatically changed to the route 1 (DAIA1), if a transmission line failure occurs on the supply route 0.	

**NOTE 4:** The time slot number 0, 20, 21, and 22 (TS0/20/21/22) cannot be used for control signal.

**NOTE 5:** This setting must be identical with the opposite DAIB card.

# **PN-DAIB (DAI)**

Location of Lamps, Switches, and Connectors



### Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
LINK	Green	Remains lit when a link between this card and a distant office is normally connected.  Goes out after 15 seconds of link disconnection.
RED	Red	Remains lit when detecting PCM signal loss or Frame Alignment signal loss.
RMT	Red	Remains lit when receiving the alarm signal from a distant office.
LOOP	_	Not used
BL	Red	Remains lit while data transmission on control channel (D ch). Flashes while FP data downloading.

### Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SENSE (Rotary SW)	0-F	0	Always set to 0	
	0-6	1-F	Not used	
MB (Toggle SW)		UP	For make-busy	
NOTE 1		DOWN	For normal operation	
SW1 (Piano Key SW)	1	OFF	Always set to OFF	
OFF ←	2	OFF	Always set to OFF	
3 2 1 1 ON	3	OFF	Always set to OFF	
	4	OFF	Always set to OFF	

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	СНЕСК
SW2 (DIP SW)	4	ON	Control channel signaling data transmission speed: 48kbps	
ON 1 2 3 4 5 6 7 8	1	OFF	Control channel signaling data transmission speed: 64kbps	
	2	ON	DTI frame configuration: 12-Multi Frame	
	2	OFF	DTI frame configuration: 24-Multi Frame	
	3	ON	Line code: AMI with ZCS	
	3	OFF	Line code: B8ZS	
	4	ON	Setting of control signal time slot	
			SWITCH NUMBER         TIME SLOT           4         5         6         7         8         NUMBER	
		OFF	OFF         ON         ON         ON         ON         TS1           ON         OFF         ON         ON         ON         TS2	
	5	ON	OFF	
		OFF	ON OFF OFF ON ON TS6	
	6	ON	OFF	
		OFF	ON         ON         OFF         OFF         ON         TS12           OFF         ON         OFF         OFF         ON         TS13           ON         OFF         OFF         OFF         ON         TS14	
	7	ON	OFF	
	7	OFF	ON         OFF         ON         ON         OFF         TS18           OFF         OFF         ON         ON         OFF         TS19           OFF         OFF         OFF         ON         OFF         TS23	
	0	ON	NOTE 2, NOTE 3	
	8	OFF		

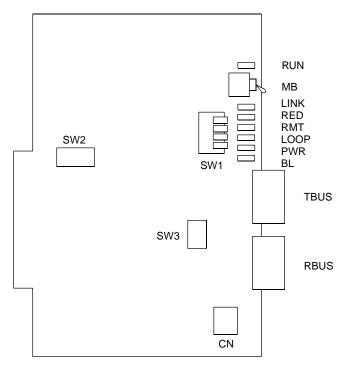
SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION				CHECK
SW3 (DIP SW)  ON 1 2 3 4	1	ON	cable	Set the equalizer according to the cable length between the system			
		OFF	and th	1		<del> </del>	
		ON	SW -1	SW -2	SW -3	CABLE LENGTH	
	2	OFF	ON	ON	ON	0 - 40m (0-131.2ft.)	
	3		ON	ON	OFF	40 - 80m (131.2-262.5ft.)	
		ON	ON	OFF	ON	80 - 120m (262.5-394ft.)	
		OFF	ON	OFF	OFF	120 - 160m (394-525ft.)	
			OFF	ON	ON	160 - 200m (525-656ft.)	
			OFF	OFF	OFF	Signal is not sent	
	4	OFF	Alway	s set	to OF	F	
JPS (Jumper pin)		Neutral grounding on the transmitting line is provided.					
		DOWN	Neutral grounding on the transmitting line is not provided.				
JPR (Jumper pin)		UP	Neutr line is	_		ng on the receiving	
		DOWN	Neutr line is	•		ng on the receiving ed.	

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:** When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.
- NOTE 2: Time slot number 0, 20, 21, and 22 (TS0/20/21/22) can not be used for control signal.
- **NOTE 3:** This setting must be identical with the opposite DAIA card.

# **PN-DAIC (DAI)**

Location of Lamps, Switches, and Connectors



#### Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
LINK	Green	Remains lit when the following connection are normal.  • Control channel link between the DAIA card and DAIB card.  • Connection between the opposite DAIC card.  Goes out after 15 seconds of link disconnection.
RED	Red	Remains lit when detecting PCM signal loss or Frame Alignment signal loss.
RMT	Red	Remains lit when receiving the alarm signal from a distant office.
LOOP	_	Not used
PWR	_	Not used
BL	_	Not used

### Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
MB (Toggle SW)		UP	For make-busy	
NOTE		DOWN	For normal operation	
SW1 (Piano Key SW)	1	OFF	Always set to OFF	
OFF ←	2	OFF	Always set to OFF	
3 2 1	3	OFF	Always set to OFF	
→ ON	4	OFF	Always set to OFF	
SW2 (DIP SW)	1	OFF	Not used	
ON 1 2 3 4 5 6 7 8	2	ON	DTI frame configuration: 12-Multi Frame	
		OFF	DTI frame configuration: 24-Multi Frame	
	3	ON	Line code: AMI with ZCS	
	3	OFF	Line code: B8ZS	
	4	OFF	Not used	
	5	OFF	Not used	
	6	OFF	Not used	
	7	OFF	Not used	
	8	OFF	Not used	

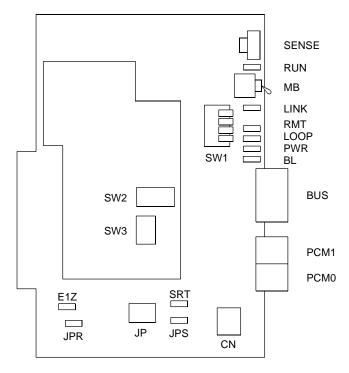
SWITCH NAME	SWITCH NUMBER	SETTING POSITION		CTION	CHECK		
SW3 (DIP SW)	1	ON	cable	lengt	h betv	r according to the ween the system	
ON 1 2 3 4	l	OFF	and th	ne CS	U.		
		ON )	SW -1	SW -2	SW -3	CABLE LENGTH	
	2	ON	ON	ON	ON	0 - 40m (0-131.2ft.)	
		OFF	ON	ON	OFF	40 - 80m (131.2-262.5ft.)	
	3	ON	ON	OFF	ON	80 - 120m (262.5-394ft.)	
		OFF	ON	OFF	OFF	120 - 160m (394-525ft.)	
			OFF	ON	ON	160 - 200m (525-656ft.)	
			OFF	OFF	OFF	Signal is not sent	
	4	ON	When site.	mou	nting	this card on remote	
	4	OFF	When site.				

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 MB switch to ON (UP position) before plugging/unplugging the circuit card.

# **PN-DAID (DAI)**

Location of Lamps, Switches, and Connectors



#### Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
LINK	Green	Remains lit when a link between this card and a distant office is normally connected. Goes out after 15 seconds of link disconnection.
RMT	Red	Remains lit when receiving the alarm signal from a distant office.
LOOP	_	Not used
PWR	Red	Remains lit when detecting PCM signal loss.
BL	Red	Remains lit while data transmission on control channel (D ch). Remains lit while FP data downloading.

## Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SENSE (Rotary SW)		FP (Firmwar DAID card. By this setting and the opposessor.		
NOTE 1	0-F	0	Not used	
		1	FP No. 1	
		2	FP No. 2	
		3	FP No. 3	
		4-F	Not used	
MB (Toggle SW)		UP	For make-busy	
NOTE 2		DOWN	For normal operation	
SW1 (Piano Key SW)	1 NOTE 3	ON	For supplying 2.0 MHz clock to PLO 0	
1.1	NOTE 3	OFF	No clock supply to PLO 0	
OFF ← 4 ■ 3 ■	2	ON	For supplying 2.0 MHz clock to PLO 1	
2	NOTE 3	OFF	No clock supply to PLO 1	
→ ON	→ ON 3 OFF Always set to OFF			
	4	OFF	Always set to OFF	

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK		
SW2 (DIP SW)	W2 (DIP SW)		Control channel signaling data transmission speed: 48kbps			
ON 1 2 3 4 5 6 7 8	l l	OFF	Control channel signaling data transmission speed: 64kbps			
	2	ON	CRC Synchronization Detection Timer is provided.			
	2	OFF	CRC Synchronization Detection Timer is not provided.			
	2	ON	ON CRC4 Check is provided.			
	3	OFF	CRC4 Check is not provided.			

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION				CHECK			
SW2 (DIP SW)		ON	Se	ettin	g of	conti	rol si	gnal t	time slot	
	4				SWIT	CH NUI	MBER		TIME SLOT	
ON 1 2 3 4 5 6 7 8		OFF		4	5	6	7	8	NUMBER	
			4 1 -	OFF	ON	ON	ON	ON	TS 4	
		ON	0	ON DFF	OFF OFF	ON ON	ON ON	ON ON	TS 5 TS 6	
	5		1 1 1	ON DFF	ON ON	OFF OFF	ON ON	ON ON	TS 7 TS 8	
		OFF		ON	OFF	OFF	ON	ON	TS 9	
			1 1 -	OFF ON	OFF ON	OFF ON	ON OFF	ON ON	TS 10 TS 11	
		ON	O	OFF ON	ON OFF	ON ON	OFF OFF	ON ON	TS 12 TS 13	
	6	OFF	0	OFF	OFF	ON	OFF	ON	TS 14	
		011		ON DFF	ON ON	OFF OFF	OFF OFF	ON ON	TS 15 TS 16	
		ON	1 1 -	ON OFF	OFF OFF	OFF OFF	OFF OFF	ON ON	TS 17 TS 18	
	7		1 1 -	ON	ON	ON	ON	OFF	TS 19	
			1 1 -	OFF	ON OFF	ON	ON	OFF OFF	TS 20 TS 21	
			1 1 -	ON OFF	OFF	ON ON	ON ON	OFF	TS 21	
		ON	1 1 -	ON	ON	OFF	ON	OFF	TS 23	
		<b></b>	1 1 -	OFF ON	ON OFF	OFF OFF	ON ON	OFF OFF	TS 24 TS 25	
				OFF	OFF	OFF	ON	OFF	TS 26	
		OFF	1 1 -	ON OFF	ON ON	ON ON	OFF OFF	OFF OFF	TS 27 TS 28	
				ON	OFF	ON	OFF	OFF	TS 29	
	8		1 1 -	OFF OFF	OFF ON	ON OFF	OFF OFF	OFF OFF	TS 30 TS 29	
				ON	OFF	OFF	OFF	OFF	TS 29	
				OFF	OFF	OFF	OFF	OFF	TS 31	
			NO	OTE	4, 1	NOT	<b>5</b>			

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW3 (DIP SW)	1	ON	Always set to ON	
ON 1 2 3 4	2	ON	Always set to ON	
	3	ON	Always set to ON	
	4	ON	Always set to OFF	
JPS (Jumper pin)		Right	Balanced transmission: 120 ohms (For twisted-pair cable)	
		Left	TA is grounded on the transmission line: 75 ohms (For coaxial cable)	
JPR (Jumper pin)		Right	Balanced transmission: 120 ohms (For twisted-pair cable)	
		Left	RA is grounded on the transmission line: 75 ohms (For coaxial cable)	
E1Z (Jumper pin)		Right	Line impedance: 120 ohms (For twisted-pair cable)	
		Left	Line impedance: 75 ohms (For coaxial cable)	
SRT (Jumper pin)		Right	For mounting this card on PIM0	
• • •		Left	For mounting this card on PIM1- PIM7	
JP (Jumper pin)		UP	Line impedance: 120 ohms (For twisted-pair cable)	
• • • •		DOWN	Line impedance: 75 ohms (For coaxial cable)	

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 to the desired position.

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

**NOTE 3:** When clock source office signal is supplied via the line between the main site and the remote site, set the SW1-1 and SW1-2 as the following table. In this case, DAID cards (DAID0, DAID1) must be mounted in PIM0.

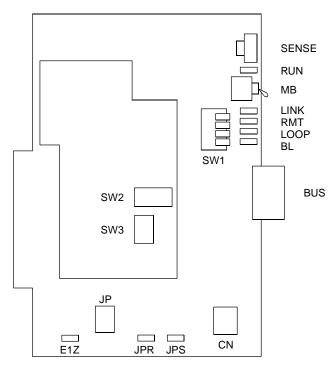
	DA	DAID0		DAID1		ID2		
CONDITIONS	SW 1-1	SW 1-2	SW 1-1	SW 1-2	SW 1-1	SW 1-2	REMARKS	
One DAID card is provided.	ON	OFF	-	-	_	-	The clock signal is sent to PLO0 of MP card via supply route 0 (DAID0).	
Two or three DAID cards are provided.	ON	OFF	OFF	ON	OFF	OFF	The clock signal supply route is automatically changed to the route 1 (DAID1), if a transmission line failure occurs on the supply route 0.	

NOTE 4: The time slot number 0 and 28 (TS0/28) cannot be used for control signal.

**NOTE 5:** This setting must be identical with the opposite DAIE card.

# **PN-DAIE (DAI)**

Location of Lamps, Switches, and Connectors



#### Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
LINK	Green	Remains lit when a link between this card and a distant office is normally connected.  Goes out after 15 seconds of link disconnection.
RMT	Red	Remains lit when receiving the alarm signal from a distant office.
LOOP	_	Not used
BL	Red	Remains lit while data transmission on control channel (D ch). Remains lit while FP data downloading.

## Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	СНЕСК
SENSE (Rotary SW)		0	Always set to 0	
0	0-F	1-F	Not used	
MB (Toggle SW)		UP	For make-busy	
NOTE 1		DOWN	For normal operation	
SW1 (Piano Key SW)	1	OFF	Always set to OFF	
OFF ←	2	OFF	Always set to OFF	
3 2	3	OFF	Always set to OFF	
1 ■ ON	4	OFF	Always set to OFF	
SW2 (DIP SW)	1	ON	Control channel signaling data transmission speed: 48kbps	
ON 1 2 3 4 5 6 7 8	! 	OFF	Control channel signaling data transmission speed: 64kbps	
	2	ON	CRC Synchronization Detection Timer is provided.	
		OFF	CRC Synchronization Detection Timer is not provided.	
	2	ON	CRC4 Check is provided.	
	3	OFF	CRC4 Check is not provided.	

SWITCH NAME	SWITCH NUMBER	SETTING POSITION		FUNCTION					CHECK	
SW2 (DIP SW)		(ON)	S	ettin	ng of	conti	rol si	gnal t	time slot	
	4		l F		SWIT	CH NUI	MBER		TIME SLOT	
ON 1 2 3 4 5 6 7 8		OFF		4	5	6	7	8	NUMBER	
		011		OFF	ON	ON	ON	ON	TS 1	
				ON	OFF	ON	ON	ON	TS 2	
		( ON )		OFF	OFF	ON	ON	ON	TS 3	
	5			ON	ON	OFF	ON	ON	TS 4	
		055		OFF	ON	OFF	ON	ON	TS 5	
		OFF		ON	OFF	OFF	ON	ON	TS 6	
			1 1	OFF	OFF	OFF	ON	ON	TS 7	
		ON		ON	ON	ON	OFF	ON	TS 8	
		(ON)		OFF	ON	ON	OFF	ON	TS 9	
	6			ON	OFF	ON	OFF	ON	TS 10	
		OFF		OFF	OFF	ON	OFF	ON	TS 11	
		011		ON	ON	OFF	OFF	ON	TS 12	
		ON		OFF	ON	OFF	OFF	ON	TS 13	
				ON	OFF	OFF	OFF	ON	TS 14	
	7			OFF ON	OFF ON	OFF ON	OFF ON	ON OFF	TS 15 TS 16	
	/			OFF	ON	ON	ON	OFF	TS 17	
		OFF		ON	OFF	ON	ON	OFF	TS 18	
				OFF	OFF	ON	ON	OFF	TS 19	
		011		ON	ON	OFF	ON	OFF	TS 20	
		ON		OFF	ON	OFF	ON	OFF	TS 21	
				ON	OFF	OFF	ON	OFF	TS 22	
				OFF	OFF	OFF	ON	OFF	TS 23	
		( OFF )		ON	ON	ON	OFF	OFF	TS 24	
				OFF	ON	ON	OFF	OFF	TS 25	
				ON	OFF	ON	OFF	OFF	TS 26	
	8			OFF	OFF	ON	OFF	OFF	TS 27	
			(	OFF	ON	OFF	OFF	OFF	TS 29	
				ON	OFF	OFF	OFF	OFF	TS 30	
			(	OFF	OFF	OFF	OFF	OFF	TS 31	
			N	ОТЕ	<b>2</b> , I	TON	≣ 3			

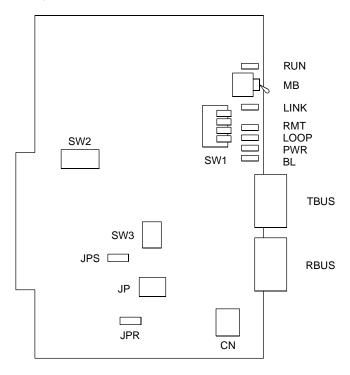
SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK		
SW3 (DIP SW)	1	ON	Always set to ON			
ON 1 2 3 4	2	ON	Always set to ON			
	3	ON	Always set to ON			
	4	OFF	Always set to OFF			
JPS (Jumper pin)		Right	Balanced transmission: 120 ohms (For twisted-pair cable)			
		Left	TA is grounded on the transmission line: 75 ohms (For coaxial cable)			
JPR (Jumper pin)		Right	Right RA is grounded on the transmission line: 75 ohms (For coaxial cable)			
		Left	Balanced transmission: 120 ohms (For twisted-pair cable)			
E1Z (Jumper pin)		Right	Line impedance: 75 ohms (For coaxial cable)			
		Left	Line impedance: 120 ohms (For twisted-pair cable)			
SRT (Jumper pin)		Right	Line impedance: 75 ohms (For coaxial cable)			
		Left	Line impedance: 120 ohms (For twisted-pair cable)			

The figure in the SWITCH NAME column and the position in $\begin{tabular}{c} \end{tabular}$ 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:** When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.
- **NOTE 2:** The time slot number 0 and 28 (TS0/28) cannot be used for control signal.
- **NOTE 3:** This setting must be identical with the opposite DAID card.

## **PN-DAIF (DAI)**

Location of Lamps, Switches, and Connectors



#### Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
LINK	Green	Remains lit when the following connection are normal.  • Control channel link between the DAID card and DAIE card.  • Connection between the opposite DAIF card.  Goes out after 15 seconds of link disconnection.
RMT	Red	Remains lit when receiving the alarm signal from a distant office.
LOOP	_	Not used
PWR	Red	Remains lit when detecting PCM signal loss. (Only on the DAIF card mounted on the Main Site.)
BL	_	Not used

## Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
MB (Toggle SW)		UP	For make-busy	
NOTE		DOWN	For normal operation	
SW1 (Piano Key SW)	1	OFF	Always set to OFF	
OFF ←	2	ON	Line impedance: 75 ohms (For coaxial cable)	
4	2	OFF	Line impedance: 120 ohms (For twisted-pair cable)	
1 ■ ON	3	OFF	Always set to OFF	
	4	OFF	Always set to OFF	

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW2 (DIP SW) ON 1 2 3 4 5 6 7 8	1	ON	Control channel signaling data transmission speed: 48kbps	
	'	OFF	Control channel signaling data transmission speed: 64kbps	
	2	ON	CRC Synchronization Detection Timer is provided.	
	2	OFF	CRC Synchronization Detection Timer is not provided.	
	3	ON	CRC4 Check is provided.	
		OFF	CRC4 Check is not provided.	
	4	OFF	Not used	
	5	OFF	Not used	
	6	OFF	Not used	
	7	OFF	Not used	
	8	OFF	Not used	

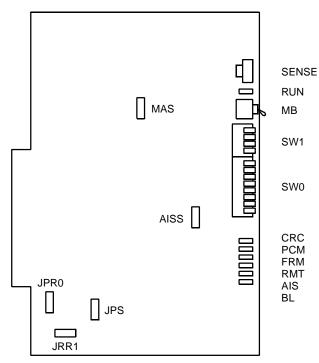
SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK			
SW3 (DIP SW)	1	ON	Always set to ON				
ON 1 2 3 4	2	ON	Always set to ON				
	3	ON	Always set to ON				
	4	ON	When mounting this card on remote site.				
	7	OFF	When mounting this card on main site.				
JPS (Jumper pin)		Right	TA is grounded on the transmission line: 75 ohms (For coaxial cable)				
		Left	Left Balanced transmission: 120 ohms (For twisted-pair cable)				
JPR (Jumper pin)		Right	RA is grounded on the transmission line: 75 ohms (For coaxial cable)				
		Left	Balanced transmission: 120 ohms (For twisted-pair cable)				
JP (Jumper pin)		UP	Line impedance: 75 ohms (For coaxial cable)				
		DOWN	Line impedance: 120 ohms (For twisted-pair cable)				

The figure in the SWITCH NAME column and the position in $\begin{tabular}{c} \end{tabular}$ 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.

# PN-24DTA-C (DTI)

Locations of Lamps, Switches, and Connectors



## Lamp Indications

LAMP NAME	COLOR	FUNCTION							
RUN	Green	Flashes at 120 IPM while this card is operating normally.							
CRC	Red	Remains lit when detecting Cyclic Redundancy Checking (CRC) errors.							
PCM	Red	Remains lit when detecting PCM signal loss.							
FRM	Red	Remains lit when detecting Frame Alignment signal loss.							
RMT	Red	Remains lit when receiving Frame Alignment signal loss alarm from a distant office.							
AIS	Red	Remains lit when a pattern of consecutive "1" is received. The distant office transmits this signal for a loop-back test.							
BL	Red	B channel status ON: More than 10 channels are busy OFF: All channels are idle Flash (60 IPM): Only one channel is busy Flash (120 IPM): 2 through 10 channels are busy							

### **Switch Settings**

SWITCH NAME	SWITCH NUMBER		SETTI POSIT		FUNCTION									CHECK		
SENSE	0-3		Not use	d	•											
(Rotary SW)	4-F	et the switch to match the AP Number (04-31) to e set by CM05.														
4	AP No.	SW	1-4: ON	04	05	06	07	08	09	10	11	12	13	14	15	
NOTE 1	AF NO.	SW	1-4: OFF	20	21	22	23	24	25	26	27	28	29	30	31	
NOTE !	SW No.			4	5	6	7	8	9	Α	В	С	D	Е	F	
MB (Toggle SW)			UP For make-busy													
NOTE 2			DOW	DOWN For normal operation												

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW0 (Piano Key SW)	1	ON	Source clock signal from network is sent to the PLO 0 input on MP card.	
OFF • 8	NOTE 3 NOTE 4	OFF	Source clock signal from network is not sent to the PLO 0 input on MP card.	
7 6 5	2	ON	Source clock signal from network is sent to the PLO 1 input on MP card.	
4 3 2 1	NOTE 3 NOTE 4	OFF	Source clock signal from network is not sent to the PLO 1 input on MP card.	
→ ON []	3	ON	Remote loop-back	
	3	OFF	For normal operation	
	4	ON	Local loop-back (AIS send)	
	4	OFF	For normal operation	
	5	ON	Set equalizer according to the cable	
	5	OFF	length between the PBX and the MDF.	
	6	ON	SW0-5 SW0-6 SW0-7 CABLE LENGTH	
	O	OFF	ON         ON         O-40m (0-131.2ft.)           ON         ON         OFF         40-80m (131.2-262.5ft.)           ON         OFF         ON         80-120m (262.5-394ft.)	
	7	ON	ON OFF ON 60-120ff (262.3-394ft.) ON OFF OFF 120-160m (394-525ft.) OFF ON ON 160-200m (525-656ft.)	
	,	OFF	OFF OFF OFF Signal is not sent	
	8	OFF	Not used	

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK			
SW1 (Piano Key SW)	ev SW)		Not used				
OFF ←	2	OFF	Not used				
3 2	3	OFF	Not used				
1 ■ ON	4	ON	AP No. 04-15				
NOTE 4		OFF	AP No. 20-31				
JPR0 (Jumper pin)	mper pin)		Neutral grounding on the receiving line is provided.				
		DOWN	Neutral grounding on the receiving line is not provided.				
JPR1 (Jumper pin)		Right	Line impedance: 100 ohms				
•••		Left	Line impedance: 110 ohms				
JPS (Jumper pin)		UP	Neutral grounding on the transmitting line is provided.				
		DOWN	Neutral grounding on the transmitting line is not provided.				
MAS (Jumper pin)		UP	Clock Source				
		DOWN	Clock Receiver				
AISS (Jumper pin)		UP	AIS signal is sent out when make- busy or power on.				
•		DOWN	AIS signal is not sent out when make-busy or 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.

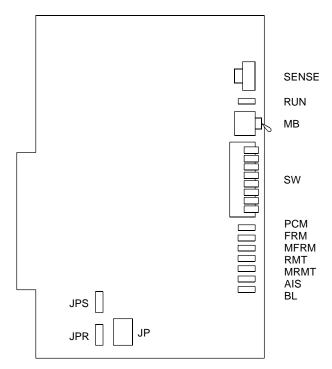
- **NOTE 1:** Set the groove on the switch to the desired position.
- **NOTE 2:** When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.
- NOTE 3: Set SW0-1 and SW0-2 as follows:

	D	ΓΙΟ	Dī	ΓΙ1	Dī	ΓΙ2	Dī	ГІЗ	DTI4		
CONDITIONS	SW 0-1	SW 0-2	REMARKS								
When one DTI is provided.	ON	OFF	_	1	_	ı	_	_	_	_	MP card will receive the clock signal from DTI0 at its PLO0 input.
When more than one DTI is provided.	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	MP card will receive the clock signal from DTI0 at its PLO0 input, under normal conditions. Should a clock failure occur with DTI0, MP card will automatically switch to the PLO1 input which gets clock from DTI1.

- **NOTE 4:** When the PBX is a clock source office, set the SW0-1 and SW0-2 on all the DTI cards mounted in PIM0 to "OFF".
- NOTE 5: Mount the DTI card which receives a source clock signal into PIM0.

# PN-30DTC-A (DTI)

Locations of Lamps, Switches, and Connectors



## Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM when this card is normally operating.
PCM	Red	Remains lit when detecting PCM signal loss.
FRM	Red	Remains lit when detecting Frame Alignment signal loss.
MFRM	Red	Remains lit when detecting Multi-Frame Alignment signal loss on time Slot 16.
RMT	Red	Remains lit when receiving the alarm from a distant office because Frame Alignment signal loss has been detected at the distant office.
MRMT	Red	Remains lit when receiving the alarm from a distant office because Multi-Frame Alignment signal loss has been detected at the distant office.
AIS	Red	Remains lit when indicating that the pattern of consecutive "1" is being received. The distant office transmits this signal for a loopback test distant.
BL	Red	B channel status ON: More than10 channels are busy OFF: All channels are idle Flash (60 IPM): Only one channel is busy Flash (120 IPM): 2 to 10 channels are busy

### Switch Settings

SWITCH NAME	SWITCH NUMBER							Fl	JNO	СТІ	ON				CHECK
SENS (Rotary SW)	4-F Set the switch be set by CM0					ch to match the AP Number (04-31) to 1005.									
F	I AP No. ⊢	W-8: ON W-8: OFF	04 20	05 21	06 22		08 24	09 25		11 27	12 28		14 30	15 31	
NOTE 1	SW	5	5   6   7   8   9   A   B   C   D   E   F												
	0-3	Not use	ed												
MB (Toggle SW)		UF	UP			For make-busy									
NOTE 2		DOV	VN)	)	For normal operation										

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW (Piano Key SW)	1	ON	Source clock signal from network is sent to the PLO 0 input on MP card.	
OFF + 8	NOTE 3 NOTE 4	OFF	Source clock signal from network is not sent to the PLO 0 input on MP card	
7 6 5	2	ON	Source clock signal from network is sent to the PLO 1 input on MP card.	
3 2 1 ON	NOTE 3 NOTE 4	OFF	Source clock signal from network is not sent to the PLO 1 input on MP card.	
- ON 11	3	ON	Remote loop-back	
		OFF	For normal operation	
	4	ON	Local loop-back (AIS send)	
		OFF	For normal operation	
	5	ON	Transmission line cable: Coaxial cable (75 ohms)	
	0	OFF	Transmission line cable: Twisted-pair cable (120 ohms)	
	6	OFF	Always set to OFF	
	7	OFF	Always set to OT 1	
	8	ON	AP No. 04-15	
		OFF	AP No. 20-31	

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
JPS (Jumper pin)		UP	Balanced transmission (For twisted-pair cable)	
•		DOWN	TA is grounded on the transmission line (For coaxial cable)	
JPR (Jumper pin)		UP	Balanced transmission (For twisted-pair cable)	
•		DOWN	RA is grounded on the transmission line (For coaxial cable)	
JP (Jumper pin)		RIGHT	Line impedance: 75 ohms (For coaxial cable)	
		LEFT	Line impedance: 120 ohms (For twisted-pair cable)	

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 to the desired position.

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

NOTE 3: Set the SW-1 and SW-2 as follows:

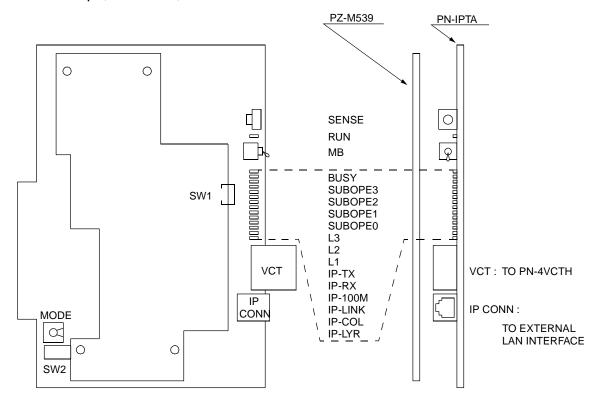
	Dī	ΓΙΟ	Dī	ΓΙ1	D٦	ΓΙ2	D	ГІЗ	
CONDITIONS	SW -1	SW -2	SW -1	SW -2	SW -1	SW -2	SW -1	SW -2	REMARKS
When one DTI is provided.	ON	OFF	_	_	_	_	-	_	MP card will receive the clock signal from DTI0 at its PLO0 input.
When more than one DTI is provided.	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	MP card will receive the clock signal from DTI0 at its PLO0 input, under normal conditions.  Should a clock failure occur with DTI0, MP card will automatically switch to the PLO1 input which gets from DTI1.

**NOTE 4:** When the PBX is a clock source office, set the SW-1 and SW-2 on all the DTI cards mounted in PIM0 to "OFF".

NOTE 5: Mount the DTI card which receives a source clock signal into PIM0.

### PN-IPTA (IPT)

Locations of Lamps, Switches, and Connectors



## Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
BUSY	Red	When even 1-line ON: Even one line is busy When even 1-line OFF: All lines are idle
SUBOPE3	Green	Remains lit when Card No.3 of PN-4VCTH is operating.
SUBOPE2	Green	Remains lit when Card No.2 of PN-4VCTH is operating.
SUBOPE1	Green	Remains lit when Card No.1 of PN-4VCTH is operating.
SUBOPE0	Green	Remains lit when Card No.0 of PN-4VCTH is operating.
L3	_	Not used
L2	_	Not used
L1	Green	Remains lit when a loop-back test is in progress.
IP-TX	Green	Remains lit when sending IP data.
IP-RX	Green	Remains lit when receiving IP data.
IP-100M	Green	ON: Ethernet is operating with 100 Mbps. OFF: Ethernet is operating with 10 Mbps.
IP-LINK	Green	ON: Being connected to IP network (Link established). OFF: Disconnected to IP network (No link established).
IP-COL	Green	Remains lit when detecting IP data collision.
IP-LYR	Green	Remains lit when IP network is ready to use.

### Switch Settings

SWITCH NAME	SWITCH SETTING NUMBER POSITION								FU	JNC	TIC	ON				CHECK
SENSE	0-3		Not use	Not used												
(Rotary SW)	4-F					et the switch to match the AP Number (04-31) to set by CM05.										
4	AP No.	sw	1-4: ON	04	05	06	07	08	09	10	11	12	13	14	15	
NOTE 1		SW	1-4: OFF	20	21	22	23	24	25	26	27	28	29	30	31	
NOTE	SW N		lo.	4	5	6	7	8	9	Α	В	С	D	Е	F	
MB (Toggle SW)		UP For make-busy														
NOTE 2			DOW	DOWN For normal operation												
MODE (Rotary SW)	0	For sett	For setting of the operating mode													
	J		DOW	/N	F	or	norı	mal	оре	erat	ion					
	1-F				1	Not	use	d								

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW1 (DIP SW)	1	ON	For normal operation	
ON 1 2 3 4	<b>I</b>	OFF	Not used	
	2	ON	For normal operation	
	2	OFF	Not used	
	3	ON	For normal operation	
	3	OFF	Not used	
	4	ON	AP Number: 04-15	
	4	OFF	AP Number: 20-31	
SW2 (DIP SW)				
ON 1 2 3 4 5 6 7 8	1-8	OFF	Not used	

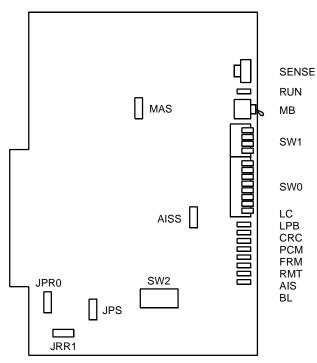
The figure in the SWITCH NAME column and the position in \_\_\_\_\_ the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and \_\_\_\_\_, the setting of the switch varies with the system concerned.

**NOTE 1:** Set the groove on the switch to the desired position.

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

## PN-24PRTA (PRT)

Locations of Lamps, Switches, and Connectors



## Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
LC	Green	Remains lit when communications are normally ongoing with the D channel data links connected.
LPB	_	Not used
CRC	Red	Remains lit when detecting Cyclic Redundancy Checking (CRC) errors.
PCM	Red	Remains lit when detecting PCM signal loss.
FRM	Red	Remains lit when detecting Frame Alignment signal loss.
RMT	Red	Remains lit when receiving Frame Alignment signal loss alarm from a distant office.
AIS	Red	Remains lit when a pattern of consecutive "1" is received. The distant office transmits this signal for a loop-back test.
BL	Red	B channel status ON: More than 10 channels are busy OFF: All channels are idle Flash (60 IPM): Only one channel is busy Flash (120 IPM): 2 through 10 channels are busy

### Switch Settings

SWITCH NAME	SWITCH SETTING NUMBER POSITION					FUNCTION										CHECK
SENSE	0-3		Not use	Not used												
(Rotary SW)	4-F		Set the be set b				nato	ch tl	he A	\P I	Nun	nbe	r (0	4-3 <sup>-</sup>	1) to	
4	AP No.	sw	1-4: ON	04	05	06	07	80	09	10	11	12	13	14	15	
NOTE 1	AP NO.	SW	1-4: OFF	20	21	22	23	24	25	26	27	28	29	30	31	
10121	S	W N	lo.	4	5	6	7	8	9	Α	В	O	D	Е	F	

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK						
MB (Toggle SW)		UP	For make-busy							
NOTE 2		DOWN	DOWN For normal operation							
SW0 (Piano Key SW)	1	ON	Source clock signal from network is sent to the PLO 0 input on MP card.							
OFF +	NOTE 3 NOTE 4	OFF	Source clock signal from network is not sent to the PLO 0 input on MP card.							
7 6 5	2	ON	Source clock signal from network is sent to the PLO 1 input on MP card.							
3 2 1	NOTE 3 NOTE 4	OFF	Source clock signal from network is not sent to the PLO 1 input on MP card.							
→ ON []	3	ON								
	3	OFF	For normal operation							
	4	ON	Local loop-back (AIS send)							
	4	OFF	For normal operation							
	5	ON	Set equalizer according to the cable							
	5	OFF	length between the PBX and the MDF.							
	6	ON	SW0-5   SW0-6   SW0-7   CABLE LENGTH   ON   ON   O-40m (0-131,2ft.)							
	0	OFF	ON ON ON 0-40m (0-131.2ft.) ON ON OFF 40-80m (131.2-262.5ft.) ON OFF ON 80-120m (262.5-394ft.)							
	7	ON	ON OFF OFF 120-160m (394-525ft.)  OFF ON ON 160-200m (525-656ft.)							
	,	OFF	OFF OFF OFF Signal is not sent							
	8	OFF	Not used							

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW1 (Piano Key SW)	1	OFF	Not used	
OFF ←	2	OFF	Not used	
3 2	3	OFF	Not used	
1 ON	4	ON	AP No. 04-15	
NOTE 4	4	OFF	AP No. 20-31	
SW2 (DIP SW)	1	OFF	Always set to OFF	
OFF 1 2 3 4 5 6 7 8		[North Ame	rica only for AT&T]	
		ON	Deletion of Area Code on International Outgoing call	
	2	OFF	No deletion of Area Code on International Outgoing call	
		[Australia/O	ther countries]	
		OFF	Always set to OFF	
	3	OFF	Always set to OFF	
	4	OFF	Always set to OFF	
	5	OFF	Always set to OFF	
	6	OFF	Always set to OFF	
	7	OFF	Always set to OFF	
	8	OFF	Always set to OFF	

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
JPR0 (Jumper pin)		UP	Neutral grounding on the receiving line is provided.	
		DOWN	Neutral grounding on the receiving line is not provided.	
JPR1 (Jumper pin)		Right	Line impedance: 100 ohms	
•••		Left	Line impedance: 110 ohms	
JPS (Jumper pin)		UP	Neutral grounding on the transmitting line is provided.	
		DOWN	Neutral grounding on the transmitting line is not provided.	
MAS (Jumper pin)		UP	Clock Source	
		DOWN	Clock Receiver	
AISS (Jumper pin)		UP	AIS signal is sent out when make- busy or power on.	
		DOWN	AIS signal is not sent out when make-busy or 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 1:** Set the groove on the switch to the desired position.

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

NOTE 3: Set SW0-1 and SW0-2 as follows:

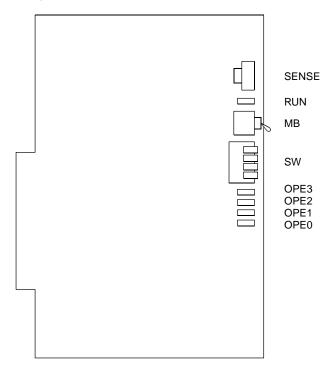
	PR	TO	PR	T1	PR	T2	PR	T3	PR	T4	
CONDITIONS	SW 0-1	SW 0-2	REMARKS								
When one PRT is provided.	ON	OFF	_	_	_	_	_	_	-	ı	MP card will receive the clock signal from PRT0 at its PLO0 input.
When more than one PRT is provided.	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	MP card will receive the clock signal from PRT0 at its PLO0 input, under normal conditions.  Should a clock failure occur with PRT0, MP card will automatically switch to the PLO1 input which gets clock from PRT1.

**NOTE 4:** When the PBX is a clock source office, set the SW0-1 and SW0-2 on all the PRT cards mounted in PIM0 to "OFF".

**NOTE 5:** Mount the PRT card which receives a source clock signal into PIM 0.

## PN-4RSTB (MFR)

Locations of Lamps, Switches, and Connectors



### Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
OPE0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

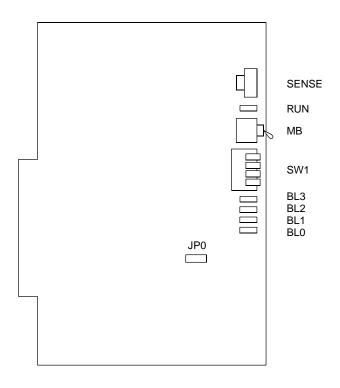
SWITCH NAME	SWITC NUMBI		SETTI POSIT						FU	INC	TIC	NC				CHECK
SENSE	4-F Set the swit					ch to match the AP Number (04-31) to										
(Rotary SW)			be set by CM05													
₩ F		SW	-8: ON	: <b>ON</b>								15				
	AP No.	SW	-8: OFF	20	21	22	23	24	25	26	27	28	29	30	31	
4	8	N W	lo.	4	5	6	7	8	9	Α	В	С	D	Е	F	
NOTE 1																
	0-3		Not use	ed												
MB (Toggle SW)			UP	)		For	mak	re-h	nic.	,						
ON A		/	01			1 01	mar		,us,							
			DOW	/NI )		For	norr	mal	one	erat	ion					
NOTE 2			DOW	/IN )			1011	mai	Opt	Jiai	1011					
SW	1		ON			For	mak	e-b	usy	/ No	0. 0	circ	uit			
(Piano Key SW)	'		OFF			For normal operation										
OFF ←	0		ON			For	mak	e-b	usy	/ Nc	). 1	circ	uit			
8	2		OFF	= )		For	norr	mal	ope	erat	ion					
7	0		ON			For	mak	e-b	usy	/ No	). 2	circ	uit			
5	3		OFF	= )		For	norr	mal	ope	erat	ion					
3	4		ON			For	mak	e-b	usy	/ Nc	. 3	circ	uit			
2	4		OFF	= )		For	norr	mal	ope	erat	ion					
→ ON	5															
	6		OFF Not used													
	7		OFF	= )												
			ON		1	AP No. 04-15										
	8		OF	=		I AA	No.	20-	31							

**NOTE 1:** Set the groove on the switch to the desired position.

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

# PN-4RSTC (CIR)

Locations of Lamps, Switches, and Connectors



### Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
BL0-3	Red	Remains lit when receiving a CALLER ID (CLASS SM) signal.

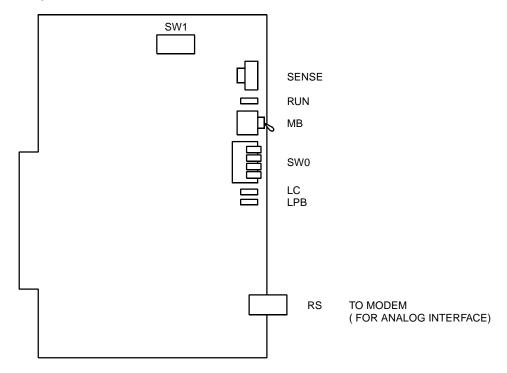
SWITCH NAME	SWITCH NUMBER	_	SETTING FUNCTION										CHECK		
SENSE	4-F	Se	t the	e swi	tch t	o ma	atch	the A	AP N	luml	ber (	(04-1	5) to		
(Rotary SW)		be	set	by C	M05	5.									
F	AP No.	04	05	06	07	08	09	10	11	12	13	14	15		
4	SW No.	4	5	6	7	8	9	Α	В	С	D	Е	F		
NOTE 1															
	0-3	No	t us	ed											
MB (Toggle SW)		1	UF	<b>5</b>	F	or m	ako.	busy	,						
ON A			<u> </u>			01 111									
			DOV	<u> </u>	F	or no	orms	al ope	arati	on					
NOTE 2			DOV	VIV	<u>'</u>	01 110	J1111C	и ор	Ciati	011					
SW1	1		10	V	F	or m	ake-	busy	/ No	. 0 с	ircui	t			
(Piano Key SW)	1		OF	F	F	or no	orma	al op	erati	on					
OFF ← 🗸	0		10	٧	F	or m	ake-	busy	/ No	. 1 c	ircui	t			
4	2		OF	F	F	or no	orma	al op	erati	on					
3 2	3		10	٧	F	or m	ake-	busy	/ No	. 2 c	ircui	t			
1	3		OF	F	F	For normal operation									
→ ON 🖺	4		ON				For make-busy No. 3 circuit								
	4		OF	F	F	or no	orma	al op	erati	on					
JP0 (Jumper pin)			RIG	HT)	F	or no	orma	al op	erati	on					

**NOTE 1:** Set the groove on the switch to the desired position.

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

# PN-SC00 (CCH)

Locations of Lamps, Switches, and Connectors



### Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
LC	Green	Remains lit when communications are normally ongoing with the common signalling channel data links connected.
LPB	Green	Remains lit when a loop-back test is in progress.

SWITCH NAME	SWITC NUMBE		SETTI POSIT			FUNCTION									CHECK	
SENSE	4-F		Set the switch to match the AP Number (04-31) to													
(Rotary SW)			be set b	be set by CM05.												
	AP No.	SW	0-4: ON	04	05	06	07	08	09	10	11	12	13	14	15	
4	AP No.	SW	0-4: OFF	20	21	22	23	24	25	26	27	28	29	30	31	
	S	N W	lo.	4	5	6	7	8	9	Α	В	С	D	Е	F	
NOTE 1																
	0-3		Not use	d												
MB (Toggle SW)			UP		ı	For make-busy										
NOTE 2			(DOWN)			For normal operation										
SW0	1		ON		I	_00	o-ba	ack	test	:						
(Piano Key SW)	'		OFF	OFF			norr	mal	ope	erat	ion					
OFF ←	2		ON	/	Analog interface											
3 1			OFF	=	I	Digital interface										
1 ON	3		ON			RS-232C RTS signal (to MODEM) ON NOTE 3										
	J	3		=		RS-232C RTS signal (to MODEM) OFF										
	4	4			/	AP No. 04-15										
	4		OFF	=	1	AP No. 20-31										

(Continued)

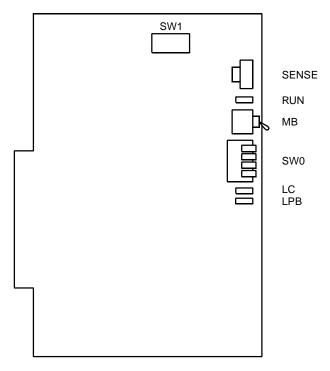
	ITCH AME	SWITCH NUMBER	SETTING POSITION	FUNCTION							
SW1(DIF	P SW)	1	ON	• Common c							
ON 1 2 3	3 4 5 6 7 8	l I	OFF transmission speed (For Digital Interface)								
		2	ON	TRANSMISSION SPEED	SW 1-1	SW 1-2	SW 1-3	SW 1-4	SW 1-5		
		2	OFF	48kbps NOTE 4	ON	ON	OFF	OFF	ON		
			ON	48kbps NOTE4	ON	ON	ON	OFF	ON		
		3	ON	56kbps	ON	ON	OFF	ON	ON		
			OFF	64kbps	ON	ON	ON	ON	ON		
		4	ON	<ul> <li>Common ch transmission</li> </ul>							
		7	OFF	Interface)	•	· · · · · ·			-9		
		5	ON	Set switche	s (S\	<i>N</i> 1-1	- SV	W1-5	) to		
		5	OFF	OFF.	`				,		
		6	ON	A-law							
		U	OFF	μ-law		_					
		7	7 OFF Always set to OFF								
		8	OFF	Always set to	OFF	=					

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 to the desired position.
- **NOTE 2:** When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.
- NOTE 3: This setting is available when SW0-2 is set to ON (Analog Interface).
- **NOTE 4:** The following two kinds of rate adaptation methods are available in 48 Kbps data transmission. The rate adaptation method must be set to match the rate adaptation of master office.
  - SW1-3: OFF SW1-3: ON 48kbps 48kbps 1 1 1 1 Data

# PN-SC01 (DCH)

Locations of Lamps, Switches, and Connectors



### Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
LC	Green	Remains lit when communications are normally ongoing with the D channel data links connected.
LPB	Green	Not used

SWITCH NAME	SWITC NUMBE	SETTI POSIT						FU	INC	TIC	ON				CHECK	
SENSE	4-F		Set the switch to match the AP Number (04-31) to													
(Rotary SW)			be set b	у С	CMC	)5.										
	AP No.	SW	0-4: ON	04	05	06	07	80	09	10	11	12	13	14	15	
			0-4: OFF	20		22	23	24	25	26	27	28		30		
NOTE 1		W N	10.	4	5	6	7	8	9	Α	В	С	D	Е	F	
	0-3		Not use	Not used												
MB (Toggle SW)	,			UP For make-busy												
ON ↑																
NOTE 2			DOWN			For	norr	mal	ope	erat	ion					
SW0 (Piano Key SW)	1		OFF	=	4	Always set to OFF										
OFF ←	2		OFF		,	Always set to OFF										
4 3	3		OFF	=	,	Always set to OFF										
2	4		ON		4	AP No. 04-15										
→ ON	4		OFF			AP No. 20-31										

(Continued)

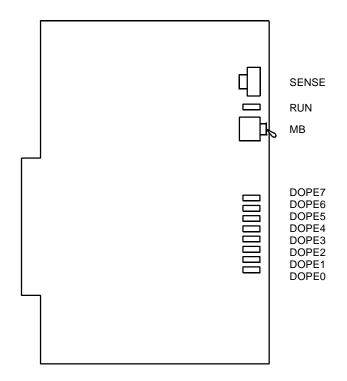
	SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SV	V1 (DIP SW)	1	OFF	Always set to OFF	
ON		2	OFF	Always set to OFF	
		3	OFF	Always set to OFF	
		4	OFF	Always set to OFF	
		5	OFF	Always set to OFF	
		6	OFF	Always set to OFF	
		7	OFF	Always set to OFF	
		8	OFF	Always set to OFF	

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

## PN-SC03 (ICH)

Locations of Lamps, Switches, and Connectors



### Lamp Indications

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

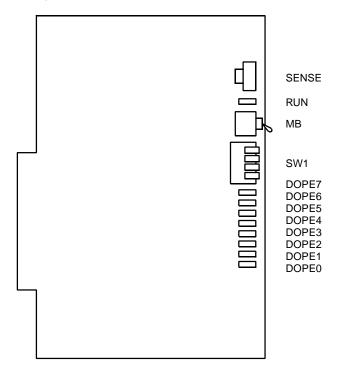
SWITCH NAME	SWITCH NUMBER	_	SETTING FUNCTION				CHECK							
SENSE (Rotary SW)	4-F	4-F Set the switch to match the AP Number (04-15) to be set by CM05.												
	AP No.	04	05	06	07	80	09	10	11	12	13	14	15	
	SW No.	4	5	6	7	8	9	Α	В	С	D	Е	F	
NOTE 1		1												
	0-3	No	ot us	ed										
MB (Toggle SW)			UP		F	For make-busy								
NOTE 2	DOWN For n				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 to the desired position.
- **NOTE 2:** When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.

# PN-SC03-A (CSH)

Locations of Lamps, Switches, and Connectors



### Lamp Indications

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

SWITCH NAME		SWITCH SETTING UMBER POSITION			FUNCTION					CHECK						
SENSE (Rotary SW)	4-F	4-F Set the switch to match the AP Number (04-31) to be set by CM05.														
F 4	AP No.	SW	1-1: ON 1-1: OFF		21	22		08 24	09 25	10 26		12 28	13 29	14 30	15 31	
NOTE 1	0-3	WN	Not use	4 ed	5	6	7	8	9	Α	В	С	D	Е	F	
MB (Toggle SW)			UP For make-busy													
NOTE 2			DOWN		F	For normal operation										
SW1 (Piano SW)	1		OFF			Not used										
OFF ←	2		OFF		1	Not used										
4 3 2 1	3		OFF		1	Not used										
	4		ON		A	AP No. 04-15										
→ ON	4		OFF		A	AP No. 20-31										

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.

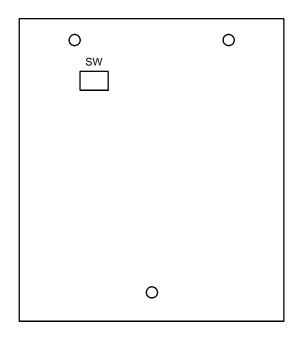
**NOTE 1:** Set the groove on the switch to the desired position.

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

## PZ-M537 (EXPMEM)

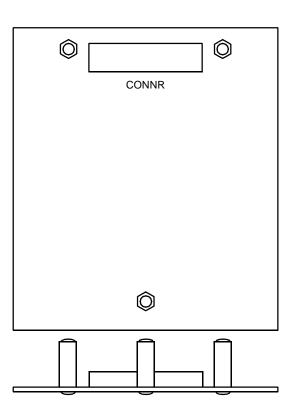
Locations of Lamps, Switches, and Connectors

**FACE** 



**REAR** 

CONNR: To CONN connector on PN-CP14 (MP) or PN-AP00-B (AP00)



**Lamps Indications** 

This card has no lamps.

### **Switch Settings**

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW (DIP SW) ON 1 2 3 4	1	ON	For normal operation (Memory backup ON)	
	'	OFF	Not used (Memory backup OFF)	
	2	OFF	Not used	
	3	OFF	Not used	
	4	OFF	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.

#### Mounting PZ-M537 Card

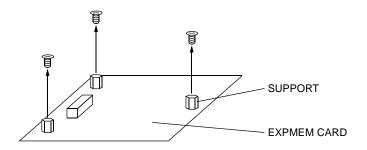
When mounting the EXPMEM card on the AP00/MP card, do the following procedure.

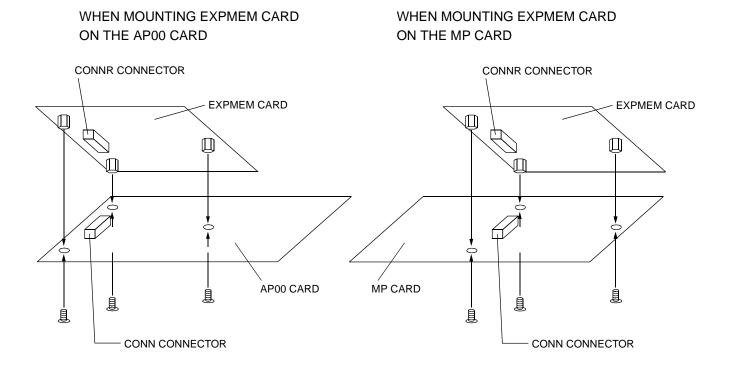
STEP 1: Take off three screws from the rear side of EXPMEM support.

**NOTE:** Supports and screws are attached to the EXPMEM card.

STEP 2: Connect the CONNR connector on the EXPMEM card and the CONN connector on the AP00/MP card.

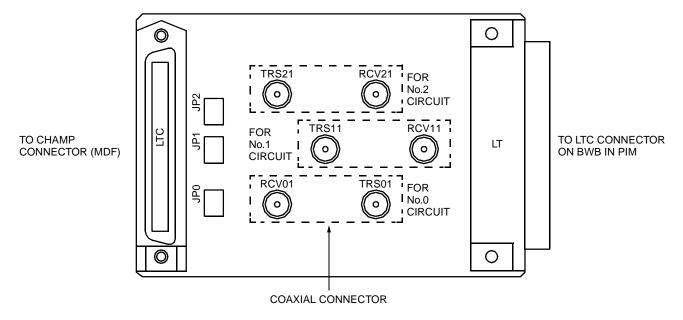
STEP 3: Secure the EXPMEM card to the AP00/MP card with three screws which taken by STEP 1.





### **PZ-M542 (CONN)**

Locations of Lamps, Switches, and Connectors



Lamp Indications

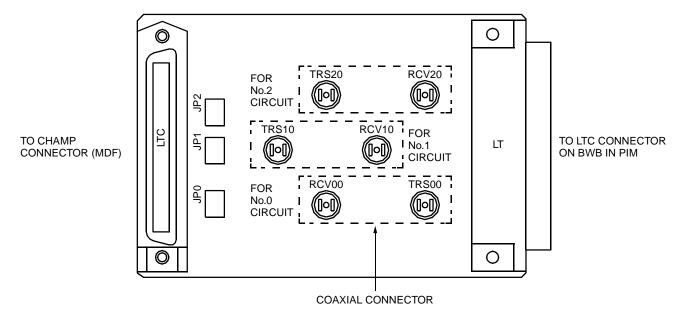
This card has no lamps.

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
JP0		RIGHT	For coaxial connectors (No. 0 circuit)	
		LEFT	For champ connector (LT connector) (No. 0 circuit)	
JP1		RIGHT	For coaxial connectors (No.1 circuit)	
		LEFT	For champ connector (LT connector) (No.1 circuit)	
JP2		RIGHT	For coaxial connectors (No. 2 circuit)	
		LEFT	For champ connector (LT connector) (No. 2 circuit)	

The figure in the SWITCH NAME column and the position in $\longrightarrow$ 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.

## **PZ-M557 (CONN)**

Locations of Lamps, Switches, and Connectors



Lamp Indications

This card has no lamps.

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
JP0		RIGHT	For coaxial connectors (No. 0 circuit)	
		LEFT	For champ connector (LT connector) (No. 0 circuit)	
JP1		RIGHT	For coaxial connectors (No. 1 circuit)	
		LEFT	For champ connector (LT connector) (No. 1 circuit)	
JP2		RIGHT	For coaxial connectors (No. 2 circuit)	
		LEFT	For champ connector (LT connector) (No. 2 circuit)	

The figure in the SWITCH NAME column and the position in $\longrightarrow$ 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.

# LINE/TRUNK CARD

The table below shows the line/trunk cards to be explained in this section.

Table 3-3 List of Line/Trunk Cards

NAME (FUNCTIONAL NAME)	LAMP X: PROVIDED -: NOT PROVIDED	SWITCH X: PROVIDED -: NOT PROVIDED	EXTRACTION/ INSERTION WITH POWER ON X: ALLOWED Δ: ALLOWED AFTER MB* -: NOT ALLOWED	REFERENCE PAGE
PN-2AMPA (AMP)	X	_	X	Page 324
PN-AUCA (AUC)	Х	_	X	Page 325
PN-CFTA (CFT)	Х	_	X	Page 326
PN-CFTB (CFT)	Х	_	Х	Page 327
PN-2COTD (COT)	Х	_	X	Page 328
PN-4COTA-A (COT)	Х	_	Х	Page 329
PN-4COTB (COT)	Х	_	X	Page 330
PN-4COTE (COT)	Х	_	Х	Page 331
PN-4COTF (COT)	Х	_	X	Page 332
PN-4COTG (COT)	Х	_	Х	Page 333
PN-6COTJ (COT)	Х	_	Х	Page 334
PN-8COTQ (COT)	Х	_	Х	Page 335
PN-8COTR (COT)	Х	_	Х	Page 336
PN-8COTS (COT)	X	_	X	Page 337
PN-8COTT (COT)	X	_	X	Page 338
PN-2CSIA (CSI)	Х	_	Х	Page 339
PN-2CSIA-A (CSI)	X	X	X	Page 342
PN-4DATC (DAT)	Х	Х	Х	Page 345

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

Table 3-3 List of Line/Trunk Cards (Continued)

NAME (FUNCTIONAL NAME)	LAMP X: PROVIDED -: NOT PROVIDED	SWITCH X: PROVIDED -: NOT PROVIDED	EXTRACTION/ INSERTION WITH POWER ON X: ALLOWED  A: ALLOWED  AFTER MB*  -: NOT ALLOWED	REFERENCE PAGE
PN-2DITA (DIT)	Х	_	Х	Page 346
PN-4DITB (DIT)	Х	_	X	Page 347
PN-DK00 (DK)	_	_	X	Page 348
PN-2DLCB/2DLCN (DLC)	Х	-	Х	Page 349
PN-2DLCC (DLC)	Х	_	Х	Page 350
PN-4DLCF (DLC)	Х	_	Х	Page 351
PN-4DLCM (DLC)	Х	_	Х	Page 352
PN-4DLCQ (DLC)	Х	_	Х	Page 353
PN-8DLCL (DLC)	Х	_	Х	Page 354
PN-8DLCP (DLC)	Х	_	Х	Page 355
PN-2DPCB (DPC)	Х	Х	Х	Page 356
PN-2ILCA (ILC)	Х	Х	Х	Page 360
PN-4LCC (LC)	Х	_	Х	Page 363
PN-4LCD-A (LC)	Х	_	X	Page 364
PN-4LCE (LC)	Х	-	X	Page 365
PN-4LCF (LC)	Х	-	X	Page 366
PN-4LCK (LC)	Х	-	X	Page 367
PN-4LCL (LC)	Х	-	X	Page 368
PN-4LCV (LC)	Х	-	X	Page 369
PN-4LCW (LC)	Х	_	X	Page 370
PN-8LCAA (LC)	Х	-	X	Page 371

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

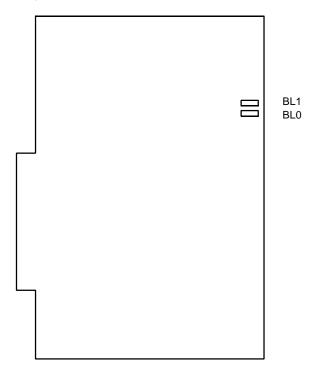
Table 3-3 List of Line/Trunk Cards (Continued)

NAME (FUNCTIONAL NAME)	LAMP X: PROVIDED -: NOT PROVIDED	SWITCH X: PROVIDED -: NOT PROVIDED	EXTRACTION/ INSERTION WITH POWER ON X: ALLOWED  A: ALLOWED  AFTER MB*  -: NOT ALLOWED	REFERENCE PAGE
PN-2LDTA (LDT)	X	_	X	Page 372
PN-M03 (M03)	Х	Х	X	Page 373
PN-M10 (M10)	Х	Х	Δ	Page 376
PN-2ODTA (ODT)	X	_	Х	Page 378
PN-2ODTB (ODT)	Х	_	Х	Page 379
PN-8RSTA (PBR)	_	_	Х	Page 380
PN-TNTA (TNT)	_	X	X	Page 381
PN-4VCTH (VCT)	Х	X	X	Page 383
PZ-8PFTB (PFT)	_	_	X	Page 385
PZ-VM00-M (VM)	Х	Х	Δ	Page 386
PN-VM01 (VM)	X	Х	_	Page 389

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

## PN-2AMPA (AMP)

Locations of Lamps, Switches, and Connectors



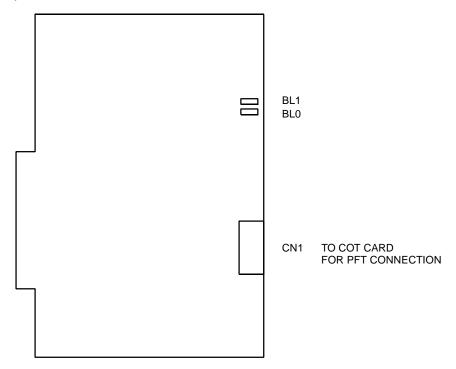
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0, 1	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

### **Switch Settings**

## PN-AUCA (AUC)

Locations of Lamps, Switches, and Connectors



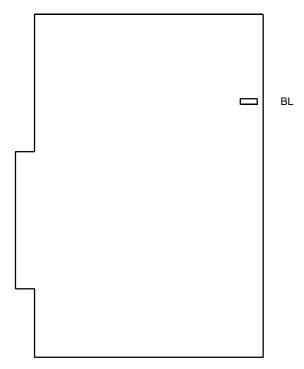
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0, 1	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

**Switch Settings** 

## PN-CFTA (CFT)

Locations of Lamps, Switches, and Connectors



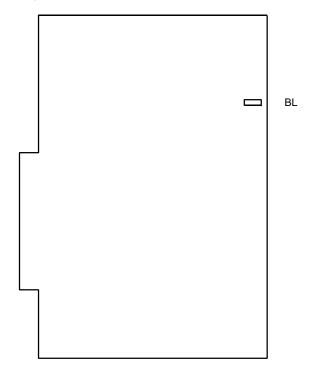
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL	Red	<ul> <li>Remains lit when this card is in use.</li> <li>Flashes (60 IPM) when the circuit on the card is in make-busy state on the system data for this card is not assigned.</li> </ul>

**Switch Settings** 

## PN-CFTB (CFT)

Locations of Lamps, Switches, and Connectors



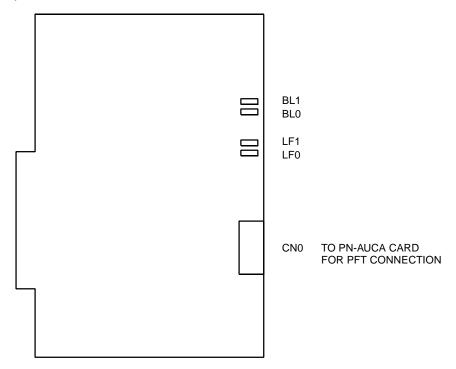
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL	Red	<ul> <li>Remains lit when this card is in use.</li> <li>Flashes (60 IPM) when the circuit on the card is in make-busy state on the system data for this card is not assigned.</li> </ul>

**Switch Settings** 

## PN-2COTD (COT)

Locations of Lamps, Switches, and Connectors



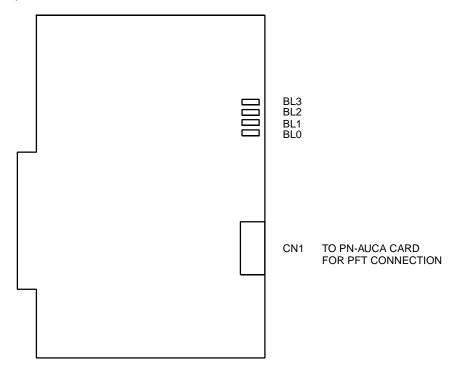
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0, 1	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>
LF0, 1	Red	Remains lit when the corresponding circuit detects a meter signal or a line fault condition.

**Switch Settings** 

## PN-4COTA-A (COT)

Locations of Lamps, Switches, and Connectors



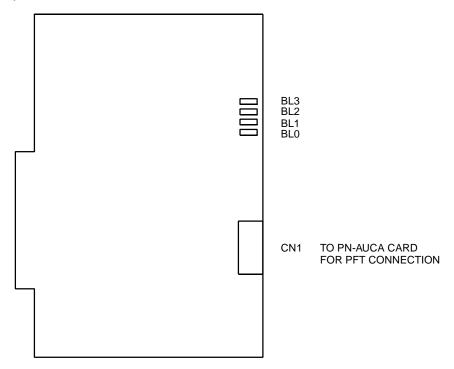
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

Switch Settings

## PN-4COTB (COT)

Locations of Lamps, Switches, and Connectors



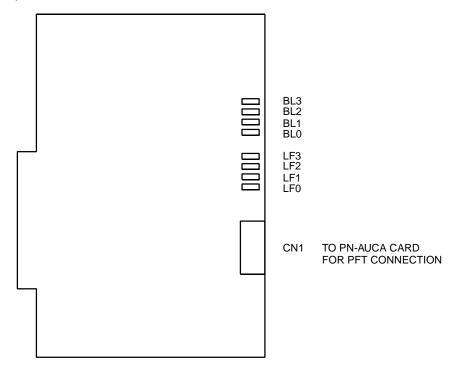
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

**Switch Settings** 

# PN-4COTE (COT)

Locations of Lamps, Switches, and Connectors



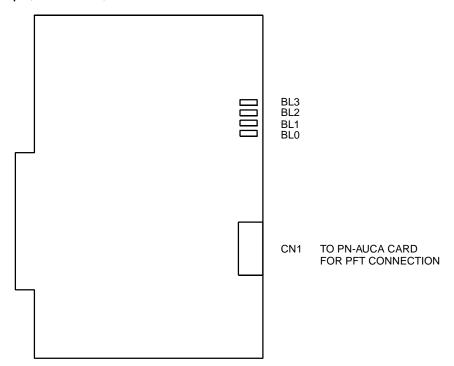
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>
LF0-3	Red	Remains lit when the corresponding circuit detects a line fault condition.

**Switch Settings** 

## PN-4COTF (COT)

Locations of Lamps, Switches, and Connectors



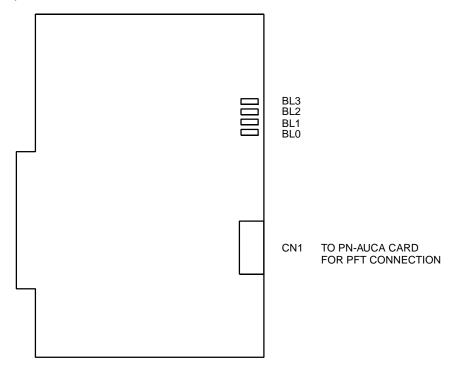
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

**Switch Settings** 

# PN-4COTG (COT)

Locations of Lamps, Switches, and Connectors



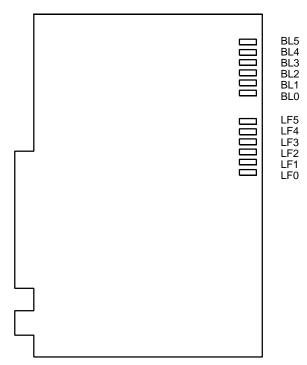
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

**Switch Settings** 

# PN-6COTJ (COT)

Locations of Lamps, Switches, and Connectors



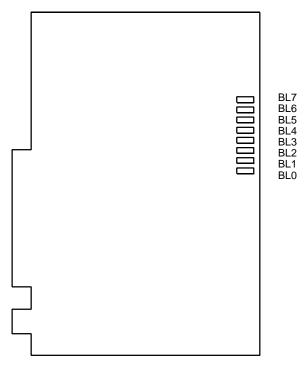
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-5	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>
LF0-5	Red	Remains lit when the corresponding circuit detects a line fault condition.

Switch Settings

# PN-8COTQ (COT)

Locations of Lamps, Switches, and Connectors



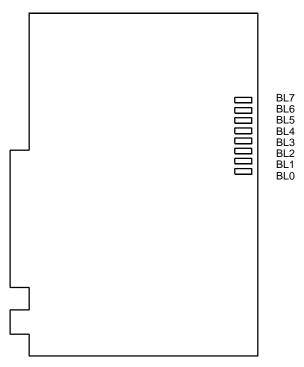
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-7	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

Switch Settings

## PN-8COTR (COT)

Locations of Lamps, Switches, and Connectors



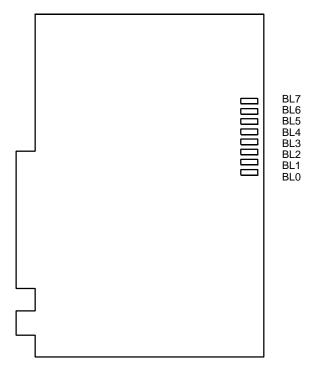
#### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-7	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

### Switch Settings

# PN-8COTS (COT)

Locations of Lamps, Switches, and Connectors



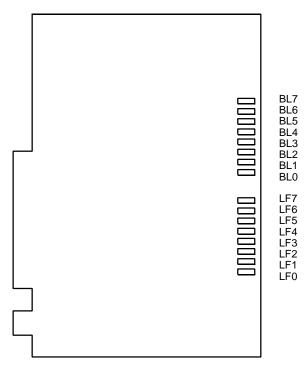
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-7	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

Switch Settings

## PN-8COTT (COT)

Locations of Lamps, Switches, and Connectors



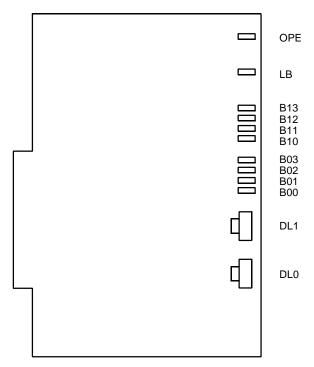
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-7	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>
LF0-7	Red	Remains lit when the corresponding circuit detects a line fault condition.

Switch Settings

# PN-2CSIA (CSI)

Locations of Lamps, Swtiches, and Connectors



### Lamp Indications

LAMP NAME	COLOR	FUNCTION
OPE	Green	Remains lit when the corresponding circuit is in use.
LB	Red	Remains lit when a loop-back is in progress.
B13	Red	Not used (Flash [60 IPM])
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 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 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 idle.  Flash (60 IPM) : ZT is not connected to the No. 1 circuit.  ZT is in make-busy status.
B03	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 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 idle. Flash (60 IPM) : ZT is not connected to the No. 0 circuit. ZT is in make-busy status.

(Continued)

LAMP NAME	COLOR	FUNCTION
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 idle.  Flash (60 IPM) : ZT is not connected to the No. 0 circuit.  ZT is in make-busy status.

## Switch Settings

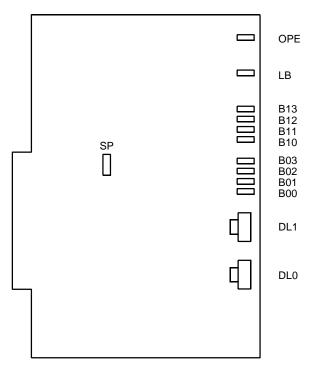
SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
DL0 (Rotary SW)	0.5	0	For normal operation	
NOTE	0-F	1-F	Not used	
DL1 (Rotary SW)	0-F	0	For normal operation	
NOTE	U-F	1-F	Not used	

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 to the desired position.

# PN-2CSIA-A (CSI)

Locations of Lamps, Swtiches, and Connectors



## Lamp Indications

LAMP NAME	COLOR	FUNCTION
OPE	Green	Remains lit when the corresponding circuit is in use.
LB	Red	Remains lit when a loop-back is in progress.
B13	Red	Not used (Flash [60 IPM])
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 idle. Flash (60 IPM) : CS is not connected to the No. 1 circuit. CS 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 idle. Flash (60 IPM) : CS is not connected to the No. 1 circuit. CS 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 idle. Flash (60 IPM) : CS is not connected to the No. 1 circuit. CS is in make-busy status.
B03	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 idle. Flash (60 IPM) : CS is not connected to the No. 0 circuit. CS 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 idle. Flash (60 IPM) : CS is not connected to the No. 0 circuit. CS is in make-busy status.

(Continued)

LAMP NAME	COLOR	FUNCTION
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 idle. Flash (60 IPM) : CS is not connected to the No. 0 circuit. CS is in make-busy status.

## Switch Settings

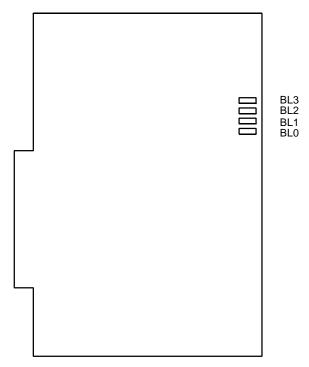
SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
DL0 (Rotary SW)	0-F	0	For normal operation	
NOTE	U-F	1-F	Not used	
DL1 (Rotary SW)	0.5	0	For normal operation	
NOTE	0-F	1-F	Not used	
SP (jumper SW)		UP	For normal operation	
● 3 → Front		DOWN	Not used	

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 to the desired position.

# PN-4DATC (DAT)

Locations of Lamps, Switches, and Connectors



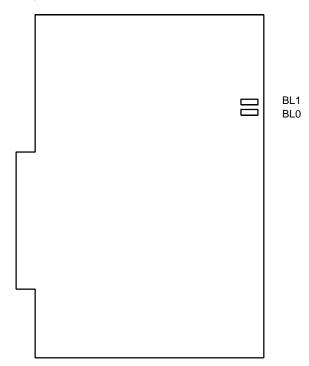
#### Lamp Indications

LAMP NAME	COLOR	FUNCTION	
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>	

**Switch Settings** 

## PN-2DITA (DIT)

Locations of Lamps, Switches, and Connectors



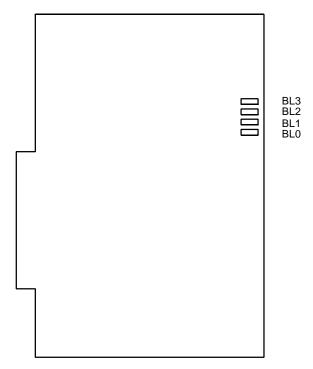
#### Lamp Indications

LAMP NAME	COLOR	FUNCTION	
BL0, 1	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>	

### Switch Settings

# PN-4DITB (DIT)

Locations of Lamps, Switches, and Connectors



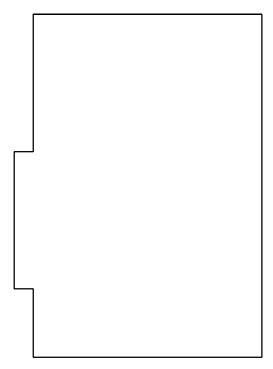
#### Lamp Indications

LAMP NAME	COLOR	FUNCTION	
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>	

**Switch Settings** 

## PN-DK00 (DK)

Locations of Lamps, Switches, and Connectors



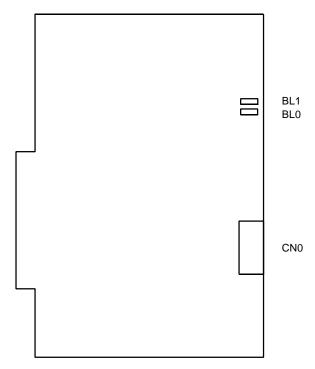
Lamp Indications

This card has no lamps.

**Switch Settings** 

## PN-2DLCB/PN-2DLCN (DLC)

Locations of Lamps, Switches, and Connectors



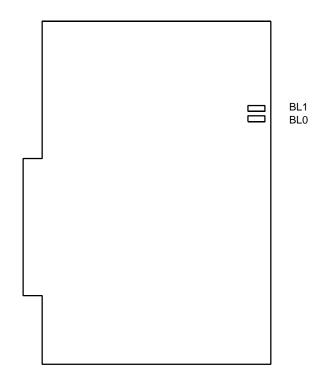
#### Lamp Indications

LAMP NAME	COLOR	FUNCTION	
BL0, 1	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>	

**Switch Settings** 

# PN-2DLCC (DLC)

Locations of Lamps, Switches, and Connectors



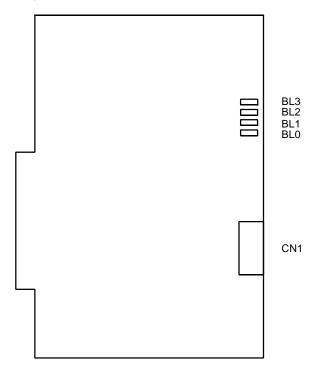
#### Lamp Indications

LAMP NAME	COLOR	FUNCTION	
BL0, 1	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in make-busy state or the system data for this card is not assigned.</li> </ul>	

Switch Settings

# PN-4DLCF (DLC)

Locations of Lamps, Switches, and Connectors



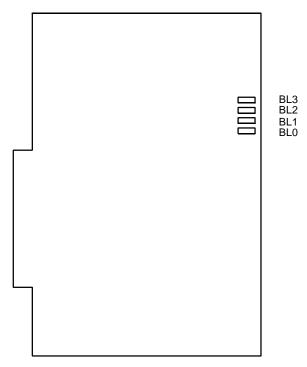
#### Lamp Indications

LAMP NAME	COLOR	FUNCTION	
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>	

Switch Settings

## PN-4DLCM (DLC)

Locations of Lamps, Switches, and Connectors



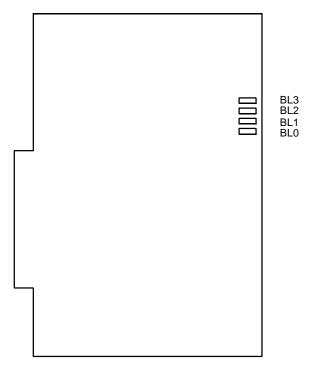
### Lamp Indications

LAMP NAME	COLOR	FUNCTION	
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>	

Switch Settings

# PN-4DLCQ (DLC)

Locations of Lamps, Switches, and Connectors



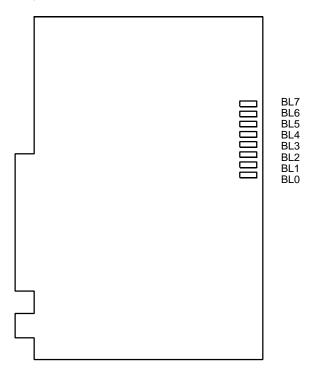
#### Lamp Indications

LAMP NAME	COLOR	FUNCTION	
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>	

**Switch Settings** 

# PN-8DLCL (DLC)

Locations of Lamps, Switches, and Connectors



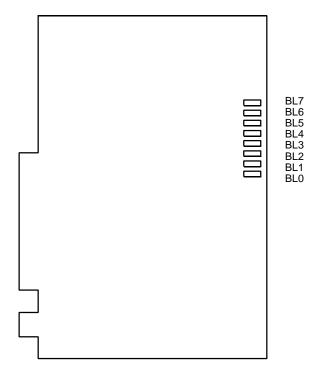
#### Lamp Indications

LAMP NAME	COLOR	FUNCTION	
BL0-7	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in make-busy state or the system data for this card is not assigned.</li> </ul>	

Switch Settings

# PN-8DLCP (DLC)

Locations of Lamps, Switches, and Connectors



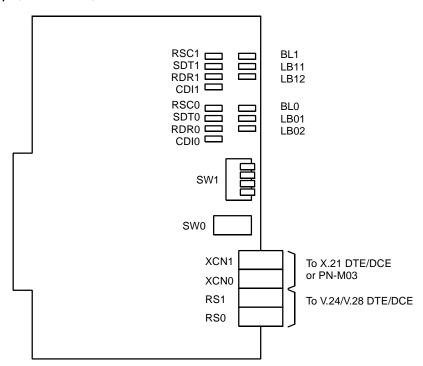
#### Lamp Indications

LAMP NAME	COLOR	FUNCTION	
BL0-7	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>	

Switch Settings

### PN-2DPCB (DPC)

Location of Lamps, Switches, and Connectors



## Lamp Indications

LAMP NAME	COLOR		FUNCTION
BL0	Red	No. 0 Circuit	ON: Ready for digital data transmission or the circuit is busy.  OFF: Fixed path is not connected.  Flash (60 IPM): Make-busy state or the system data for this card is not assigned.  Flash (120 IPM): Fixed path is connected.
LB01	Red		ON: Loop Back 1 is set. OFF: Normally operating.
LB02	Red		ON: Loop Back 2 is set. OFF: Normally operating.
RSC0	Green		ON: RTS/C signal ON OFF: RTS/C signal OFF
SDT0	Green		ON: TXD/T signal is "0". OFF: TXD/T signal is "1".
RDR0	Green		ON: RXD/R signal is "0". OFF: RXD/R signal is "1".
CDI0	Green		ON: DCD/I signal ON OFF: DCD/I signal OFF

(Continued)

LAMP NAME	COLOR	FUNCTION	
BL1	Red	No. 1 Circuit	ON: Ready for digital data transmission or the circuit is busy.  OFF: Fixed path is not connected.  Flash (60 IPM): Make-busy state or the system data for this card is not assigned.  Flash (120 IPM): Fixed path is connected.
LB11	Red		ON: Loop Back 1 is set. OFF: Normally operating.
LB12	Red		ON: Loop Back 2 is set. OFF: Normally operating.
RSC1	Green		ON: RTS/C signal ON OFF: RTS/C signal OFF
SDT1	Green		ON: TXD/T signal is "0". OFF: TXD/T signal is "1".
RDR1	Green		ON: RXD/R signal is "0". OFF: RXD/R signal is "1".
CDI1	Green		ON: DCD/I signal ON OFF: DCD/I signal OFF

## Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION		FUNCTION	CHECK
SW1	1	ON	No. 0	Loop Back 1 ON	
(Piano Key SW)	ı	OFF	Circuit	Loop Back 1 OFF	
OFF ← ↓	2	ON		Loop Back 2 ON	
	2	OFF		Loop Back 2 OFF	
3 2	3	ON	No. 1	Loop Back 1 ON	
1 ON		OFF	Circuit	Loop Back 1 OFF	
	4	ON		Loop Back 2 ON	
	4	OFF		Loop Back 2 OFF	

(Continued)

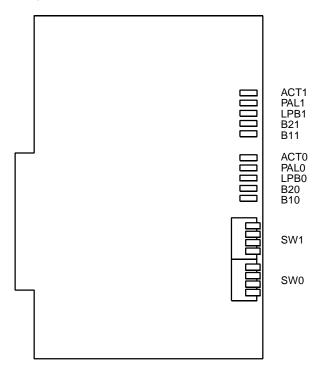
SWITCH NAME	SWITCH NUMBER	SETTING POSITION		FUNCTION	CHECK
SW0 (DIP SW)	1	ON	No. 0 Circuit	Forcibly turning the DTR signal to ON	
ON 1 2 3 4 5 6 7 8	•	OFF		The DTR signal from DTE goes through the card	
		ON		Forcibly turning the RTS/C signal to ON	
	2	OFF		The RTS/C signal from DTE goes through the card	
	3	OFF		Not used	
		ON		V.11 (X.21) interface	
	4	OFF		V.24/V.28 (RS-232C) interface	
	5	ON	No. 1 Circuit	Forcibly turning the DTR signal to ON	
		OFF		The DTR signal from DTE goes through the card	
		ON		Forcibly turning the RTS/C signal to ON	
	6	OFF		The RTS/C signal from DTE goes through the card	
	7	OFF		Not used	
		ON		V.11 (X.21) interface	
	8	OFF		V.24/V.28 (RS-232C) interface	

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, disconnect the cables before unplugging the circuit card and connect the cables after plugging the circuit card.

# PN-2ILCA (ILC)

Locations of Lamps, Switches, and Connectors



## Lamp Indications

LAMP NAME	COLOR		FUNCTION
ACT1	Green	No.1 Circuit	ON: Normally operating. OFF: Not operating.
PAL1	Red		ON: Line is short-circuiting. OFF: Normally operating.
LPB1	Red		OFF: Not used.
B21	Green		ON: B2 channel is in use. OFF: B2 channel is idle.
B11	Green		ON: B1 channel is in use. OFF: B1 channel is idle.
ACT0	Green	No. 0 Circuit	ON: Normally operating. OFF: Not operating.
PAL0	Red		ON: Line is short-circuiting. OFF: Normally operating.
LPB0	Red	-	OFF: Not used
B20	Green		ON: B2 channel is in use. OFF: B2 channel is idle.
B10	Green		ON: B1 channel is in use. OFF: B1 channel is idle.

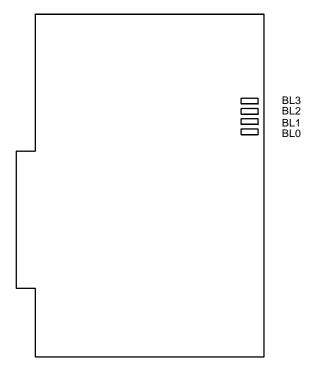
#### **Switch Settings**

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	i	UNCTION	CHECK
SW1 (Piano Key SW)	1	OFF	Always set to	OFF	
OFF ←	2	OFF	Always set to	OFF	
3 2	3	OFF	Always set to	OFF	
→ ON	4	OFF	Always set to	OFF	
SW0 (Piano Key SW)	1	ON	No.0 Circuit	Terminating register is provided.	
OFF ←	1	OFF	(Receiving)	Terminating register is not provided.	
3 2	3	ON	No.0 Circuit (Sending)	Terminating register is provided.	
→ ON		OFF		Terminating register is not provided.	
		ON	No.1 Circuit	Terminating register is provided.	
		OFF	(Receiving)	Terminating register is not provided.	
		ON	No.1 Circuit	Terminating register is provided.	
	4	OFF	(Sending)	Terminating register is not provided.	

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.

# PN-4LCC (LC)

Locations of Lamps, Switches, and Connectors



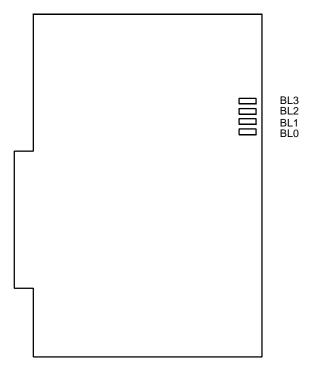
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

Switch Settings

## PN-4LCD-A (LC)

Locations of Lamps, Switches, and Connectors



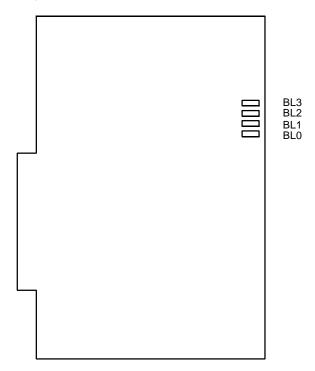
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

**Switch Settings** 

# PN-4LCE (LC)

Locations of Lamps, Switches, and Connectors



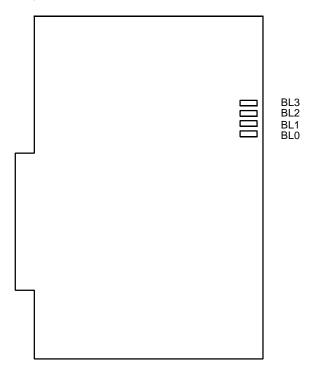
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

**Switch Settings** 

# PN-4LCF (LC)

Locations of Lamps, Switches, and Connectors



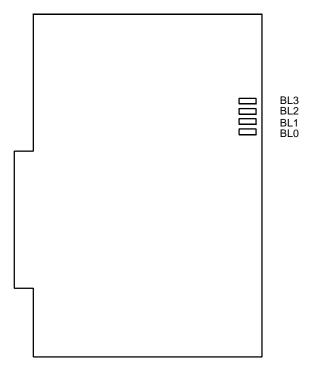
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

**Switch Settings** 

# PN-4LCK (LC)

Locations of Lamps, Switches, and Connectors



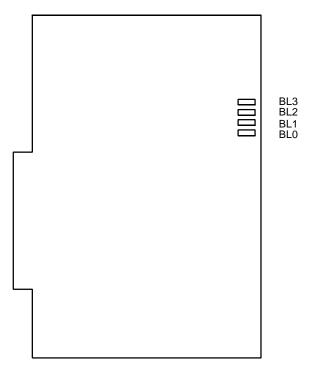
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

**Switch Settings** 

# PN-4LCL (LC)

Locations of Lamps, Switches, and Connectors



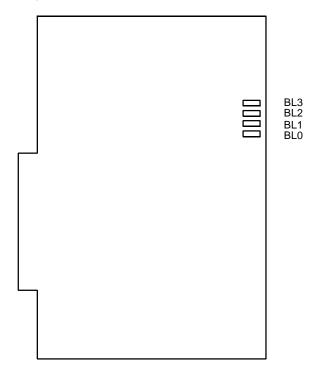
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

**Switch Settings** 

# PN-4LCV (LC)

Locations of Lamps, Switches, and Connectors



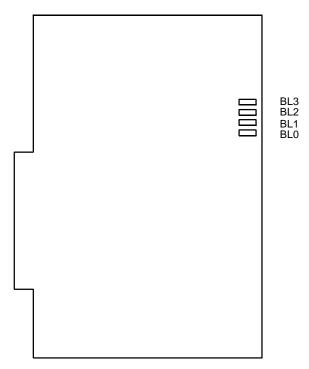
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

**Switch Settings** 

# PN-4LCW (LC)

Locations of Lamps, Switches, and Connectors



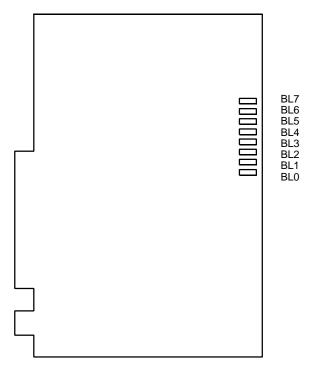
### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

**Switch Settings** 

# PN-8LCAA (LC)

Locations of Lamps, Switches, and Connectors



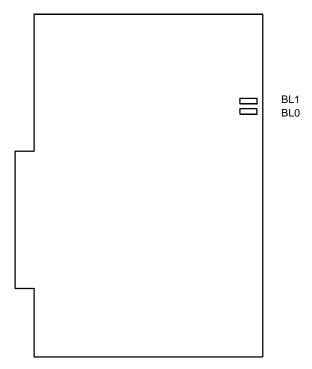
#### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0-7	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

Switch Settings

## PN-2LDTA (LDT)

Locations of Lamps, Switches, and Connectors



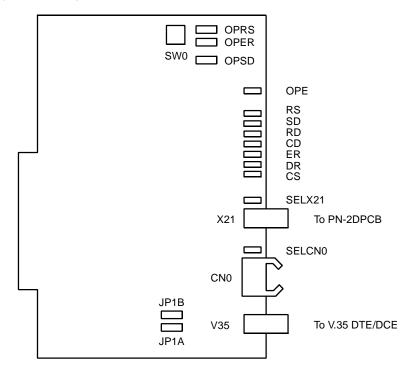
#### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0, 1	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

### Switch Settings

# PN-M03 (M03)

Location of Lamps, Switches, and Connectors



LAMP NAME	COLOR	FUNCTION
OPE	Green	ON: This card is normally connected to the PN-2DPCB.  OFF: This card is abnormally connected to the PN-2DPCB.
RS	Green	ON: RTS signal is ON. OFF: RTS signal is OFF.
SD	Green	ON: TXD signal is "0" (Space condition). OFF: TXD signal is "1" (Mark condition).
RD	Green	ON: RXD signal is "0" (Space condition). OFF: RXD signal is "1" (Mark condition).
CD	Green	ON: DCD signal is ON. OFF: DCD signal is OFF.
ER	Green	ON: DTR signal is ON. OFF: DTR signal is OFF.
DR	Green	ON: DSR signal is ON. OFF: DSR signal is OFF.
CS	Green	ON: CTS signal is ON. OFF: CTS signal is OFF.
SELX21	Green	ON: Connecting to the PN-2DPCB is available.  OFF: Connecting to the PN-2DPCB is not available.
SELCN0	Green	Not used

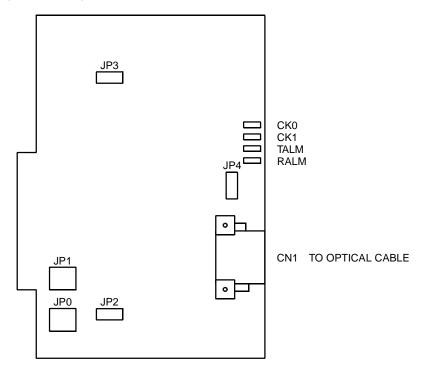
SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW0 (DIP SW)	1	OFF	Always set to OFF	
2 1 ON	2	OFF	Not used	
JP1A (Jumper pin)		Right	TXC(2) signal is sent out.	
NOTE		Left	TXC(2) signal is inputted.	
JP1B (Jumper pin)		Right	TXC(2) signal is sent out.	
NOTE		Left		
OPSD (Jumper pin)		Right	Set the function of extending distance for TXD signal.	
•••		Left	Cancel the function of extending distance for TXD signal.	
OPRS (Jumper pin)		Right	Set the function of extending distance for RTS signal.	
•••		Left	Cancel the function of extending distance for RTS signal.	
OPER (Jumper pin)		Right	Set the function of extending distance for DTR signal.	
•••		Left	Cancel the function of extending distance for DTR signal.	

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:** The JP1A and JP1B must be set to the same position each other.

## PN-M10 (M10)

Location of Lamps, Switches, and Connectors



LAMP NAME	COLOR	FUNCTION
CK0	Green	Remains lit when a Digital Trunk Interface is connected to No. 0 circuit on this card.
CK1	Green	Remains lit when a Digital Trunk Interface is connected to No. 1 circuit on this card.
TALM	Red	Remains lit when optical output is stopped.
RALM	Red	Remains lit when optical input is lost or stopped.

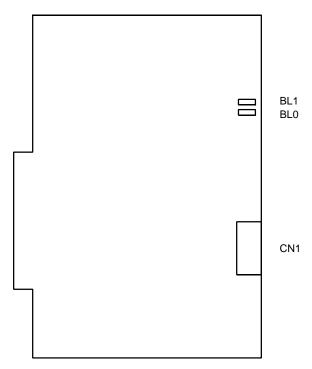
SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
JP0, 1 (Jumper pin)		UP	When connected to E1 (2M) Digital Trunk Interface.	
• • • •		DOWN	When connected to T1 (1.5M) Digital Trunk Interface.	
JP2 (Jumper pin)		Right	Line code: B8ZS* is provided (For T1 interface) *B8ZS: Bipolar Eight zero Substitution	
		Left	Line code: B8ZS* is not provide (For T1 interface) *B8ZS: Bipolar Eight zero Substitution	
JP3 (Jumper pin)		Right	When connected to E1 (2M) Digital Trunk Interface.	
		Left	When connected to T1 (1.5M) Digital Trunk Interface.	
JP4 (Jumper pin)		UP	When connected to E1 (2M) Digital Trunk Interface.	
		DOWN	When connected to T1 (1.5M) Digital Trunk Interface.	

**NOTE 1:** Set the groove on the switch to the desired position

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

## PN-2ODTA (ODT)

Locations of Lamps, Switches, and Connectors



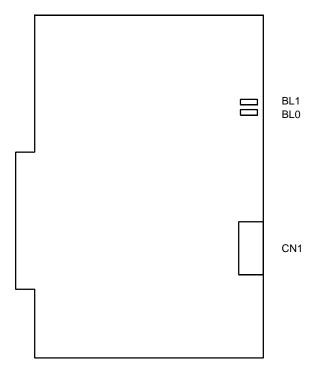
#### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0, 1	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

**Switch Settings** 

# PN-2ODTB (ODT)

Locations of Lamps, Switches, and Connectors



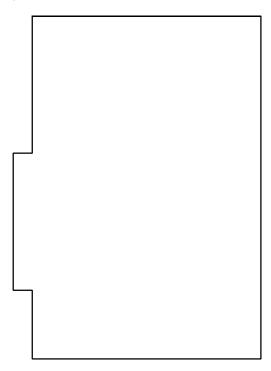
#### Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0, 1	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

**Switch Settings** 

### PN-8RSTA (PBR)

Locations of Lamps, Switches, and Connectors



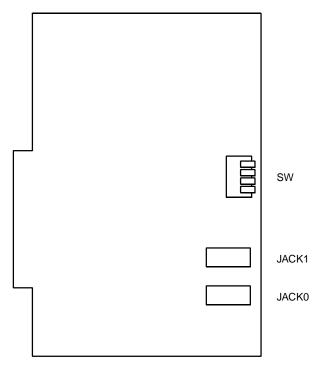
Lamp Indications

This card has no lamps.

**Switch Settings** 

# PN-TNTA (TNT)

Locations of Lamps, Switches, and Connectors



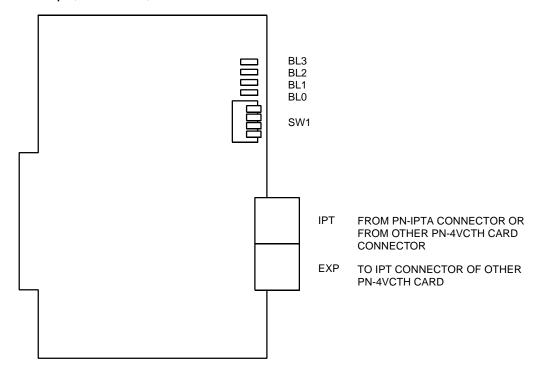
Lamp Indications

This card has no lamps.

SWITCH NAME	SWITCH NUMBER	SETTING POSITION		FUNCTION				IECK					
SW (Piano Key SW)		Vol	Volume adjustment for No.0 circuit										
1`			SWITC	H	NUMBER	VOLUME							
OFF ←			1		2	VOLUME							
4	1, 2		OFF		OFF	-10dB							
			ON		OFF	-7dB							
			OFF		ON	–4dB							
→ ON 🖺									ON		ON	-1dB	
		Vol	ume adjus	stme	ent for No.1 o	circuit							
			SWITCH NUMBER			VOLUME							
			3		4	VOLUME							
	3, 4		OFF		OFF	-10dB							
			ON		OFF	-7dB							
			OFF		ON	–4dB							
			ON		ON	–1dB							

## PN-4VCTH (VCT)

Locations of Lamps, Switches, and Connectors



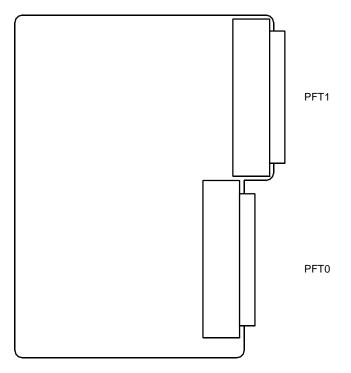
LAMP NAME	COLOR	FUNCTION
BL0-3	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>

SWITCH NAME	SWITCH NUMBER	SETTING POSITION		FUNCTION				CHECK		
SW1 (Piano Key SW)					per VCT car (Max. four V	d if two or more VC CT cards)	Т			
OFF ←			5	SW	No.	Card No.				
	1, 2		1		2	Oara No.				
	1, 2		OFF		OFF	0				
			ON		OFF	1				
→ ON					OFF		ON	2		
				ON		ON	3			
	3		ON		Not used					
			OFF		- Not used					
			ON		ot used					
			OFF		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.

## PZ-8PFTB (PFT)

Locations of Lamps, Switches, and Connectors



Lamp Indications

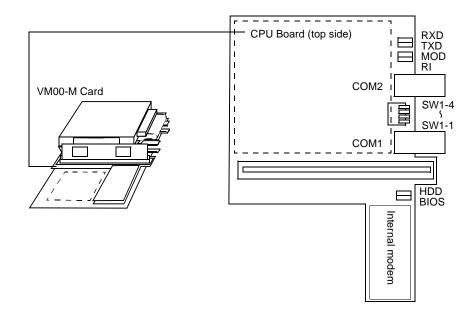
This card has no lamps.

**Switch Settings** 

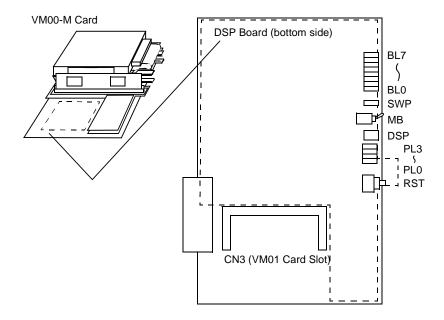
#### PZ-VM00-M (VM)

Location of Lamps, Switches, and Connectors

• CPU Board (Top Side)



• DSP Board (Bottom Side)



LAMP NAME		COLOR	FUNCTION
CPU Board	RXD	Green	Not used
	TXD	Red	Not used
	MOD	Green	Not used
	RI	Red	Incoming call
	HDD	Red	Accessing to the HDD
		_	Built-in hard disk is faulty
	BIOS	Red	BIOS programming is in operation
		_	DOS mode has been activated
DSP Board	BL0-7	Red	<ul> <li>Remains lit when the corresponding circuit is in use.</li> <li>Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned.</li> </ul>
	SWP	Red	30 seconds after the MB switch is turned ON (upward) (The circuit card can be plugged/unplugged while this pilot lamp is on.)
	DSP	Green/ Flashing	According to voice mail application program in use.
		Red/ Flashing	
	PL0-3	Red	DSP circuit operating

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
MB (Toggle SW)		UP	For make-busy	
NOTE 1		DOWN	For normal operation	
RST (Toggle SW)  NOTE 2		Push when s set to DOWN		
SW1 (Piano Key SW)	1	ON	BIOS Redirect Utility (Key board) NOTE 3	
OFF <u></u> ←		OFF	Normal Operation	1
4 3 1 2	2	ON	BIOS Redirect Utility (Floppy Drive) NOTE 3	
1		OFF	Normal Operation	
→ ON 🕅 NOTE 2	3	ON	COM2: Use internal modem for remote maintenance	
	3	OFF	COM2: RS-232C (For local direct connection to maintenance console)	
	4	OFF	Not used	

The figure in the SWITCH NAME column and the position 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.

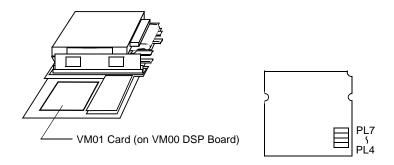
**NOTE 1:** When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.

NOTE 2: When SW1 settings have changed, RST switch must be pushed.

**NOTE 3:** Use BIOS Redirect only when assisted by NEC.

# PZ-VM01 (VM)

Location of Lamps, Switches, and Connectors



#### Lamp Indications

LAMP NAME	COLOR	FUNCTION
PL4-7	Red	DSP circuit operating

**Switch Settings** 

This page is for your notes.