# NEAX 2000 IVS $^{2}$ INTEGRATED VOICE SERVER Installation Procedure Manual 

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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 ${ }^{2}$ 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 ${ }^{2}$
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 | $02 L S 2$ | 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 | $0 L 13 A, 0 L 13 B, 0 L 13 C ~$ | RJ21X | $9.0 F$ |
| PN-20DTA | TL11M | RJ2EX | $9.0 F$ |
| PN-20DTA | TL31M | RJ2GX | $9.0 F$ |


| 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 | 02155 | RJ49C | 6.0Y |
| PN-DAIA | 04DU9-BN | N/A | 6.0 N |
| PN-DAIA | 04DU9-DN | N/A | 6.0 N |
| PN-DAIA | 04DU9-1KN | N/A | 6.0 N |
| PN-DAIA | 04DU9-1SN | N/A | 6.0 N |
| PN-DAIA | 04DU9-1ZN | N/A | 6.0 N |
| PN-DAIA | 04DU9-BN | N/A | 6.0 N |
| PN-DAIB | 04DU9-BN | N/A | 6.0 N |
| PN-DAIB | 04DU9-DN | N/A | 6.0 N |
| PN-DAIB | 04DU9-1KN | N/A | 6.0 N |
| PN-DAIB | 04DU9-1SN | N/A | 6.0 N |
| PN-DAIB | 04DU9-1ZN | N/A | 6.0 N |
| PN-24PRT-A | 05DU9-BN | N/A | 6.0P |
| PN-24PRT-A | 04DU9-DN | N/A | 6.0 P |
| 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 | 6.0 P |
| 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 | 02155 | N/A | 6.0 Y |

## 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 $\mathrm{D}^{\text {term }}$ terminals provided for the NEAX2000 IVS ${ }^{2}$ 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 ${ }^{2}$ 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: 1405976 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 IVS². 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- <br> tion, command function and setting data reguired for pro- <br> gramming the system, and Resident System Program. |
| :--- | :--- |
| Office Data Programming Manual | Contains the Customer Specification Sheets and Office <br> Data Entry Sheets. |
| Feature Programming Manual | Describes procedure of each feature programming. |
| Maintenance Manual | Describes maintenance service features and the recom- <br> 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 $D^{\text {term }}$ Back Ground Music Service |
| BRT | Basic Rate Interface Trunk Card |
| CCH | 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 $D^{\text {term }}$, 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

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


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


Figure 1-4 Maximum Configuration for Floor Standing Installation


## Wall Mounting Installation

Figure 1-5 1-PIM Configuration for 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 <br> NAME | FUNCTIONAL <br> NAME | FUNCTION |
| :--- | :--- | :--- |
| SN1480 <br> PIMAF | PIM | Port Interface Module (PIM) <br> Max. 64 physical ports per PIM. <br> Houses two batteries for protection from short power <br> interruption (for 30 minutes). <br> At maximum configuration, the system consists of eight PIMs <br> and provides a total of 512 physical ports (64 ports x 8). |
| SN1545 <br> BASERE | BASE/TOP <br> ASSEM | Base/Top Cover Assembly <br> One base and top cover assembly is required for each stack. |
| TOP COVER <br> ASSEM | BATTM | Battery Module for housing PIM or CS (ZT) backup batteries <br> Houses two pairs of batteries for protection from long power <br> interruption (for 3 hours). |
| SN1526 <br> BATTMF |  |  |

This table shows the names and functions of installation hardware.

Table 1-2 Installation Hardware Name and Function

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

## Control Card

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

Table 1-3 Control Card Name and Function

| EQUIPMENT <br> NAME | FUNCTIONAL <br> NAME | FUNCTION |
| :--- | :--- | :--- |
| PN-CP14 | MP | Main Processor Card <br> Provides Memory, TDSW (1024CH x 1024CH), 16-line CFT, <br> PB sender, Clock, PLO 2 ports (receiver mode/source <br> mode), two RS-232C ports, 2-line DAT (Recording duration: <br> Max. 128sec.), DK, 4-line PB receiver, Modem for remote <br> maintenance (19.2 kbps), internal Music-on-Hold tone <br> source and BUS interface. BUS interface functions as a <br> driver/receiver of various signals, adjusts gate delay timing <br> and cable delay timing, monitors I/O Bus and PCM BUS. <br> One card is required per system. |
| PN-CP15 | FP | Firmware Processor Card <br> Provides Line/Trunk interface, Memory (RAM 768KB), and <br> inter-module BUS interface. BUS interface functions as a <br> driver/receiver of various signals, adjusts gate delay timing <br> and cable delay timing, monitors I/O Bus and PCM BUS. <br> When the system consists of three PIMs or more, one each <br> of this card is mounted respectively in PIM0, PIM2, PIM4, <br> and PIM6. |
| PN-PW00 | EXTPWR | Power Supply Card for DESKCON <br> Provides -48V DC power. <br> Max. four cards per frame (four PIMs). Max. three cards per <br> PIM. Occupies two physical slots width per card. |
| PZ-PW121 | AC/DC PWR | Main Power Supply Card <br> Input: AC120V/240V (50Hz/60Hz) <br> Output: -27V (4.4A), +5V (7.2A), CR (38mA), +90V (80mA) <br> One card is pre-installed per PIM. |
| PZ-PW122 | DC/DC PWR | Power Supply Card for Cell Station (Zone Transceiver) <br> Input: -24V DC <br> Output: -48V DC (1.7A) <br> One card per PIM. <br> 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 <br> NAME | FUNCTIONAL <br> NAME | FUNCTION |
| :--- | :--- | :--- |
| PN-AP00-A <br> IFor North <br> America/ <br> Latin America <br> OnIy] | DBM | Data Base Module Card for WCS Roaming function <br> One card per WCS system. |
| PN-AP00-B | AP00 | Application Processor Card <br> Provides four RS-232C ports and is used for SMDR, Hotel <br> Printer, CIS, PMS, MCI, CS report functions. <br> One card per system. |
| PN-AP01 | AP01 | Application Processor Card <br> Provides one RS-232C port and one Ethernet interface port. <br> Used for OAl function, ID code expansion. <br> One card per system. |
| PN-BRTA | BRT | 1-line Basic Rate (2B+D) Interface Trunk Card <br> Accomodates one 2-channel PCM digital lines. |
| PN-2BRTC | BRT | 2-line Basic Rate (2B+D) Interface Trunk Card <br> Accomodates two 2-channel PCM digital lines. |
| PN-CC01 | ETHER | Ethernet Control Card <br> Used with the PN-AP01 card to accommodate the Ethernet <br> and transmit/receive a signal of TCP/IP protocol. <br> 10 BASE-T twisted pair cable is connected directly to this <br> card. |

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

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

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

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

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

| EQUIPMENT NAME | FUNCTIONAL NAME | FUNCTION |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 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 |
|  |  | $\mathrm{D}^{\text {term }}$ | 256 | 512 |
|  |  | Analog Station+ $\mathrm{D}^{\text {term }}$ | 256 | 512 |
|  |  | Analog Station $+\mathrm{D}^{\text {term }}+\mathrm{PS}$ | 256 | 512 |
|  |  | $\mathrm{D}^{\text {term }}$ (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-B (AP00) card: |  |  |
|  |  | System Capacity | w/o EXPMEM | with EXPMEM |
|  |  | SMDR call record | 1600 | 27000 |
| PZ-M542 <br> [For Other Countries] | CONN | Coaxial Cable Connection Card Used to connect a coaxial cable for Digital Trunk Interface. Max. two cards can be connected to LTC connector of each PIM. |  |  |
| PZ-M557 <br> [For Australia] | CONN | Coaxial Cable Connection Card <br> Used to connect a coaxial cable for Digital Trunk Interface. Max. two cards can be connected to LTC connector of each PIM. |  |  |

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

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

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

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

| EQUIPMENT <br> NAME | FUNCTIONAL <br> NAME | FUNCTION |
| :--- | :--- | :--- |
| PN-2DITA <br> [For Hong <br> Kong] | DIT | 2-line Direct Inward Dialing Trunk Card <br> Provides loop detection, sending reverse signal and PB to <br> DP signal conversion. <br> Equipped with -48V DC-DC on-board power supply. |
| PN-4DITB | DIT | 4-line Direct Inward Dialing Trunk Card <br> Provides loop detection, sending reverse signal and PB to <br> DP signal conversion. <br> Equipped with -48V DC-DC on-board power supply. |
| PN-DK00 | DK | 8-circuit External Relay Control/External Key Scan Card <br> Provides the above-mentioned control functions on a per cir- <br> cuit basis. |
| PN-2DLCB/ <br> PN-2DLCN | DLC | 2-line Digital Long Line Circuit Card for Dterm75/65 (Series E/ <br> III), Dterm70/60 (Elite/Electra Pro), DSS Console, ATTCON <br> [-48V version, 2-wire type] <br> Equipped with -48V DC-DC on-board power supply. |
| PN-2DLCC | DLC | 2-line Digital Long Line Circuit Card for SN610 ATTCON <br> [-48V version, 4-wire type] <br> Equipped with -48V DC-DC on-board power supply. |
| PN-4DLCF | DLC | 4-line Digital Line Circuit Card for SN610 ATTCON <br> [-27V version, 4-wire type] |
| PN-4DLCM | DLC | 4-line Digital Line Circuit Card for D Derm75/65 (Series E/III), <br> D'erm70/60 (Elite/Electra Pro), DSS Console, ATTCON, <br> DESKCON <br> [-27V version, 2-wire type] |
| PN-4DLCQ | DLC | 4-line Digital Line Circuit Card for D Derm75/65(Series E/III), <br> DSS Console, ATTCON, DESKCON <br> [-27V version, 2-wire type] |
| PN-8DLCL | DLC | 8-line Digital Line Circuit Card for Dterm75/65 (Series E/III), <br> Dterm70/60 (Elite/Electra Pro), DSS Console, ATTCON, <br> DESKCON <br> [-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 Derm75/65 (Series E/III), DSS Console, ATTCON, DESKCON [-27V version, 2-wire type]``` |
| PN-2DPCB | DPC | 2-line Data Port Controller Card <br> Used for intra-office or inter-office digital data transmission on nailed down connection. <br> 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 <br> Provides a physical interface to ISDN Terminals. Occupies eight time slots per one card. |
| PN-4LCC <br> [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. <br> Equipped with +80 V DC-DC on-board power supply. |
| PN-4LCE <br> [For <br> Australia] | LC | 4-line Analog Line Circuit Card for Single Line Telephones Loop resistance: Max. 600 ohms (including telephone set) |
| PN-4LCF <br> [For <br> 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. <br> Equipped with +80 V DC-DC on-board power supply. |
| PN-4LCK <br> [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 <br> NAME | FUNCTIONAL <br> NAME | FUNCTION |
| :--- | :--- | :--- |
| PN-4LCL <br> [For China] | LC | 4-line Analog Line Circuit Card for Single Line Telephones <br> Loop resistance : Max. 600 ohms (including telephone set) <br> Provides Message Waiting Lamp control function for each <br> circuit, and reverse function for only No. 3 circuit. <br> Equipped with +80V DC-DC on-board power supply. |
| PN-4LCV <br> [For Brazil] | LC | 4-Line Analog Line Circuit Card for Single Line Telephones <br> Loop resistance : Max. 600 ohms (including telephone set) |
| PN-4LCW <br> [For Brazil] | LC | 4-line Analog Line Circuit Card for Single Line Telephones <br> Loop resistance : Max. 600 ohms (including telephone set) <br> Provides Message Waiting Lamp control function for each <br> circuit, and reverse function for only No. 3 circuit. <br> Equipped with +80V DC-DC on-board power supply. |
| PN-8LCAA | LC | 8-line Analog Line Circuit Card for Single Line Telephones <br> Loop resistance : Max. 600 ohms (including telephone set) <br> Provides Message Waiting Lamp control, momentary open <br> functions for each circuit. |
| PN-2LDTA <br> [For <br> Australia/Oth- <br> ers] | LDT | 2-line Loop Dial Trunk Card <br> Line resistance: Max. 2500 ohms (including internal resis- <br> tance of the distant office equipment) <br> Equipped with -48V DC-DC on-board power supply. |
| PN-M03 | M03 | V.35 Data Terminal Equipment Interface Card <br> Used together with the PN-2DPCB card to provide the V.35 <br> interface. |
| PN-M10 | M10 |  |

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 trunk. Equipped with -48 V 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-8RSTA | PBR | 8-line PB Receiver Card <br> Used for a PB station line, DID or tie line. |
| PN-TNTA | TNT | 2-line Tone/Music Source Interface Card <br> Used for BGM or Music on Hold. <br> Provides two jacks for an external tone/music source. |
| PN-4VCTH | VCT | 4-channel CODEC Card for IP Trunk <br> Voice compression protocols: $\begin{aligned} & \text { G723.1, G729/G729A, G711, } \\ & \text { FAX (14.4 kbps), DTMF signals } \end{aligned}$ <br> 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) <br> One card per system. <br> Number of ports : four ports (Up to eight ports when PZ-VM01 is mounted) <br> Occupies three physical slots width per card. <br> To be mounted in LTOO 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 $\mathrm{D}^{\text {term }}$, DSS/BLF Console, and Attendant Console.

Table 1-6 Line Conditions of Each Terminal

| TERMINAL TYPE | CARD TYPE | CABLE LENGTH* <br> (Cable 0.5 $\$ / 24$ AWG) | REMARKS |
| :---: | :---: | :---: | :---: |
| $\mathrm{D}^{\text {term }} 75$ (Series E) (8 button) | PN-8DLCL/8DLCP (STANDARD) | 984 ft . (300 m) | NOTE 1 |
|  | PN-4DLCM/4DLCQ (STANDARD) | $\left.\begin{array}{c}984 \mathrm{ft} . \\ {[3937 \mathrm{ft} .} \\ (1200 \mathrm{~m})\end{array}\right]$ |  |
|  | PN-2DLCB/2DLCN (LONG) | $\begin{gathered} 2788 \mathrm{ft.} \\ {[3937 \mathrm{ft.}} \\ \hline(1200 \mathrm{~m})] \end{gathered}$ |  |
| $\mathrm{D}^{\text {term7 }} 75$ (Series E) (16 button) | PN-8DLCL/8DLCP (STANDARD) | 656 ft . $(200 \mathrm{~m})$ | NOTE 1 |
|  | PN-4DLCM/4DLCQ (STANDARD) | 656 ft. $[3937 \mathrm{ft}$. $(1200 \mathrm{~m})$ $(1200)]$ |  |
|  | PN-2DLCB/2DLCN (LONG) | $\begin{array}{cc} 2788 \mathrm{ft.} & (850 \mathrm{~m}) \\ {[3937 \mathrm{ft.}} & (1200 \mathrm{~m})] \end{array}$ |  |
| $\mathrm{D}^{\text {term }} 75$ (Series E) (32 button) | PN-8DLCL/8DLCP (STANDARD) | 656 ft . $(200 \mathrm{~m})$ | NOTE 1 |
|  | PN-4DLCM/4DLCQ (STANDARD) | 656 ft. $[3937 \mathrm{ft}$. $(1200 \mathrm{~m})$ ( 200 m$)$ |  |
|  | PN-2DLCB/2DLCN (LONG) | $\begin{array}{cc} 2788 \mathrm{ft.} & (850 \mathrm{~m}) \\ {[3937 \mathrm{ft.}} & (1200 \mathrm{~m})] \end{array}$ |  |

*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 0.5 $\phi / 24$ AWG) | REMARKS |
| :---: | :---: | :---: | :---: |
| $\mathrm{D}^{\text {term } 65 ~(S e r i e s ~ I I I) ~}$ (8 button) | PN-8DLCL/8DLCP (STANDARD) | 984 ft . (300 m) | NOTE 1 |
|  | PN-4DLCM/4DLCQ (STANDARD) | $\begin{array}{cc} 984 \mathrm{ft.} & (300 \mathrm{~m}) \\ {[3937 \mathrm{ft.}} & (1200 \mathrm{~m})] \end{array}$ |  |
|  | PN-2DLCB/2DLCN (LONG) | $2788 \mathrm{ft} . \quad(850 \mathrm{~m})$ [ $3937 \mathrm{ft} .(1200 \mathrm{~m}$ )] |  |
| $D^{\text {term }} 65$ (Series III) (24 button) | PN-8DLCL/8DLCP (STANDARD) | 492 ft . 150 m ) | NOTE 1 |
|  | PN-4DLCM/4DLCQ (STANDARD) | $\left.\begin{array}{c}492 \mathrm{ft} . \\ {[3937 \mathrm{ft} .} \\ (1200 \mathrm{~m})\end{array}\right]$ |  |
|  | PN-2DLCB/2DLCN (LONG) | $2788 \mathrm{ft} . \quad(850 \mathrm{~m})$ <br> [3937 ft. ( 1200 m )] |  |
| DSS/BLF Console NOTE 2 | PN-8DLCL/8DLCP (STANDARD) | 984 ft . $(300 \mathrm{~m})$ | NOTE 1 |
|  | PN-4DLCM/4DLCQ (STANDARD) | $984 \mathrm{ft} . \quad(300 \mathrm{~m})$ |  |
|  | PN-2DLCB/2DLCN (LONG) | $2788 \mathrm{ft} . \quad(850 \mathrm{~m})$ |  |
| SN610 ATTCON <br> (4-wire type ATTCON) | PN-4DLCF (STANDARD) | $984 \mathrm{ft} . \quad(300 \mathrm{~m})$ |  |
|  | PN-2DLCC (LONG) | 3937 ft. (1200 m) |  |

*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* <br> (Cable 0.5申/24 AWG) | REMARKS |
| :---: | :---: | :---: | :---: |
| $\begin{array}{\|l\|} \hline \text { SN708/709/712 } \\ \text { ATTCON } \\ \text { (2-wire type ATTCON) } \end{array}$ | PN-8DLCL/8DLCP (STANDARD) | 984 ft . (300 m) | NOTE 1 |
|  | PN-4DLCM/4DLCQ (STANDARD) | $\left.\begin{array}{c}984 \mathrm{ft.} \\ {[3937 \mathrm{ft} .} \\ (1200 \mathrm{~m})\end{array}\right]$ |  |
|  | PN-2DLCB/2DLCN (LONG) | $\begin{gathered} 2788 \mathrm{ft} . \\ {[3937 \mathrm{ft} .} \\ (1200 \mathrm{~m})] \end{gathered}$ |  |
| SN716 DESKCON | PN-8DLCL/8DLCP and PN-PW00 or AC Adapter | 1000 ft . ( 304 m ) |  |
|  | PN-4DLCM/4DLCQ and PN-PW00 or AC Adapter | $1500 \mathrm{ft} . \quad(457 \mathrm{~m})$ |  |

*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 $D^{\text {term }}$ 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


| LT00-LT11 | : Line/Trunk card mounting slots | VM | $:$ PZ-VM00-M mounting slot |
| :--- | :--- | :--- | :--- |
| AP00-AP11 | Application Processor card | PFT | : PZ-8PFTB mounting slot |
|  | mounting slots | AC/DC PWR | : PZ-PW121 mounting slot |
| MP | $:$ | PN-CP14 mounting slot | DC/DC PWR $: ~ P Z-P W 122 ~ m o u n t i n g ~ s l o t ~$ |

*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/AP00LT10/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 |$\quad$ MOUNTABLE CIRCUIT CARDS IN SLOT 08-11

## Control Card Mounting Conditions

(1) PN-CP14 (MP)

Mount the PN-CP14 card in the MP slot (Slot 12) of PIMO.
(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.

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 PIMO

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.

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.

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


FRONT
*1 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 <br> because one card occupies two physical slots width. |
| PN-CC01 | Mount the PN-CC01 card in the slot that adjoins the PN-AP01 <br> card. Connect both cards using cable (48-TW-0.3 CONN CA). |
| PN-BRTA <br> PN-2BRTC <br> PN-24DTA-C <br> PN-30DTC-A <br> 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 <br>  <br>  <br>  <br>  <br> PIM BWB. <br> Max. two cards can be mounted per PIM as follows: <br> 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 (PIMO)


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 $0.5 \mathrm{Vp}-\mathrm{p}$.


#### Abstract

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 branchsupply conductors is to be installed as part of the circuit that supplies the NEAX2000 IVS². 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 ${ }^{2}$ 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


WHEN CARRYING A CIRCUIT CARD AROUND, KEEP THE CARD IN A CONDUCTIVE POLYETHYLENE BAG.

## 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 |
| :---: | :---: | :---: | :---: |
|  | PLUG | UNPLUG |  |
| - PN-CP14 (MP) <br> - PZ-PW121 (AC/DC PWR) <br> - PZ-PW122 (DC/DC PWR) <br> - PZ-M537 (EXTMEM) | (1) Power off <br> (2) Plug in <br> (3) Power on | (1) Power off <br> (2) Unplug <br> (3) Power on | These circuit cards must be plugged in or unplugged only with power off to prevent damage to the card or other system circuitry. |
| - PN-AP00-A (DBM) <br> - PN-AP00-B (AP00) <br> - PN-AP01 (AP01) <br> - PN-BRTA (BRT) <br> - PN-2BRTC (BRT) <br> - PN-CP15 (FP) <br> - PN-DAIA (DAI) <br> - PN-DAIB (DAI) <br> - PN-DAIC (DAI) <br> - PN-DAID (DAI) <br> - PN-DAIE (DAI) <br> - PN-DAIF (DAI) <br> - PN-24DTA-C (DTI) <br> - PN-30DTC-A (DTI) <br> - PN-IPTA (IPT) <br> - PN-24PRTA (PRT) <br> - PN-PW00 (EXTPWR) <br> - PN-4RSTB (MFR) <br> - PN-4RSTC (CIR) <br> - PN-SC00 (CCH) <br> - PN-SC01 (DCH) <br> - PN-SC03 (ICH) <br> - PN-SC03-A (CSH) <br> - PZ-M542 (CONN) <br> - PZ-M557 (CONN) <br> - PZ-VM00-M (VM) <br> - PZ-VM01 (VM) | (1) Power off or MB switch on <br> (2) Plug in <br> (3) Power on or MB switch off | (1) Power off or MB switch on <br> (2) Unplug <br> (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 $\mathrm{AC} 120 \mathrm{~V} / 240 \mathrm{~V}$ 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 PIMO 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)
"Stationary Equipment (For North America/ Australia)"
"Fixed Equipment (For North America/ Australia)"
"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 $120 \mathrm{~V} /$ 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 $\left[\begin{array}{l}\text { Scratches and cracks on the keyboard } \\ \square \quad \\ \text { Overall distortion } \\ \text { Damage to Keys and lamps. }\end{array}\right.$


## 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
(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 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 (1.3 $\phi$ ) 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.

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


## INSTALLATION OF MAIN EQUIPMENT

## Floor Standing 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 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 214.
- 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.

Figure 2-7 Floor Space


Figure 2-8 Cable Hole Location


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 : 10 mm (0.39 inch) DIA for Fixed Equipment
6 mm ( 0.24 inch$) \quad$ 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.

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



- 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.

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 $4 \mathrm{~mm}(0.16 \mathrm{inch})$ by <br> $25 \mathrm{~mm}(0.98 \mathrm{inch})$ |
| WOOD | WOOD TYPE SCREWS | Min. $3.5 \mathrm{~mm}(0.14 \mathrm{inch})$ DIA <br> Max. $4.5 \mathrm{~mm}(0.17 \mathrm{inch})$ DIA |
| PLASTER BOARD <br> [THICKNESS Min. $9.6 \mathrm{~mm} \mathrm{(0.38} \mathrm{inch})]$ | MOLLY ANCHOR TYPE | Min. $3.5 \mathrm{~mm}(0.14 \mathrm{inch})$ DIA <br> Max. $4.5 \mathrm{~mm}(0.17 \mathrm{inch})$ 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.

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 preinstalled).
(2) For PIMO, 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


Figure 2-30 Cable Connection between PZ-PW121 and BWB

(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 ( $-48 \mathrm{~V}, \mathrm{E}$ ) as shown below.

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.

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


## Checking for Supply Voltage



- Before connecting AC Cord, verify:
- that the SW1 switch of the PZ-PW121 card is positioned to OFF;
- that the AC Cord is unplugged from the wall outlet.
- Use a tester to verify that the input power is $\mathrm{AC} 120 \pm 10 \mathrm{~V}$ or $\mathrm{AC} 240 \pm 10 \mathrm{~V}$.
- Plug the AC cord into a wall outlet.
- Turn the SW1 switches of all the PZ-PW121 cards on PIM1 to PIM7 to ON. Then, turn the SW1 switch of the PZ-PW121 card on PIM0 to ON last of all.
- Verify that the ON lamp on the PZ-PW121 card lights up.
- Measure the output voltage: -20V should be observed at GND and -27V terminals of the PZ-PW121 card. See Figure 2-36.


## 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 <br> TURN OFF AC POWER BEFORE CONNECTING BATTERIES.

## CAUTION

1. 24 V 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 <br> TEMPERATURE | $5 \sim 35^{\circ} \mathrm{C}$ <br> (AVERAGE $\left.25^{\circ} \mathrm{C}\right)$ | $0 \sim 50^{\circ} \mathrm{C}$ <br> (AVERAGE $\left.25^{\circ} \mathrm{C}\right)$ | $0 \sim 50^{\circ} \mathrm{C}$ <br> (AVERAGE $\left.40^{\circ} \mathrm{C}\right)$ |
| :--- | :---: | :---: | :---: |
| REPLACEMENT <br> 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 INTERVALS.

CAUTION PAY PREVENT INJURY AND SKIN BURN,

- DO NOT STRIKE A MATCH OR CAUSE A SPARK IN VICINITY OF BATTERY.
- PLACE THE EQUIPMENT WELL VENTILATED AREA.
- 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.

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


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, 24 AH 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
DIMENSION OF BATTERY


Recommended Batteries
Yuasa NP-24-12B
Matsushita LCL-12V-24


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, 24 AH ) 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.

Figure 2-43 MDF Cable


Table 2-2 MDF Cables for each PIM

| FROM |  | CABLE NUMBER | TO | CABLE DESIGNATION |
| :---: | :---: | :---: | :---: | :---: |
| MODULE | CONNECTION |  |  |  |
| PIM 0 | LTC0 | 1 | MDF | 0 LTCO |
|  | 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 LTCO |
|  | LTC1 | 10 |  | 2 LTC1 |
|  | LTC2 | 11 |  | 2 LTC2 |
|  | LTC3 | 12 |  | 2 LTC3 |
| PIM 3 | LTC0 | 13 | MDF | 3 LTCO |
|  | LTC1 | 14 |  | 3 LTC1 |
|  | LTC2 | 15 |  | 3 LTC2 |
|  | LTC3 | 16 |  | 3 LTC3 |
| PIM 4 | LTC0 | 17 | MDF | 4 LTCO |
|  | 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)

| FROM |  | CABLE NUMBER | TO | CABLE DESIGNATION |
| :---: | :---: | :---: | :---: | :---: |
| MODULE | CONNECTION |  |  |  |
| PIM 6 | LTC0 | 25 | MDF | 6 LTCO |
|  | LTC1 | 26 |  | 6 LTC1 |
|  | LTC2 | 27 |  | 6 LTC2 |
|  | LTC3 | 28 |  | 6 LTC3 |
| PIM 7 | LTC0 | 29 | MDF | 7 LTCO |
|  | 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.

Figure 2-46 Card Slots and the LTC Connectors


FRONT

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 (PIMO-3) Page 111
-LEN 400-763 (PIM4-7) Page 112
- LEN 000-363 (PIM 0-3)


## Location of each LEN



PIM 3

| 307 | 315 | 323 | 331 | 339 | 347 | 355 | 363 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 306 | 314 | 322 | 330 | 338 | 346 | 354 | 362 |  |  |  |  |
| 305 | 313 | 321 | 329 | 337 | 345 | 353 | 361 |  |  |  |  |
| 304 | 312 | 320 | 328 | 336 | 344 | 352 | 360 |  |  |  |  |
| 303 | 311 | 319 | 327 | 335 | 343 | 351 | 359 | 339 | 347 | 355 | 363 |
| 302 | 310 | 318 | 326 | 334 | 342 | 350 | 358 | 338 | 346 | 354 | 362 |
| 301 | 309 | 317 | 325 | 333 | 341 | 349 | 357 | 337 | 345 | 353 | 361 |
| 300 | 308 | 316 | 324 | 332 | 340 | 348 | 356 | 336 | 344 | 352 | 360 |
| (LT00) | (LT01) | (LT02) | (LT03) | (LT04) | (LT05) | (LT06) | (LT07) | (LT08) | (LT09) | (LT10) | (LT11) |

PIM 2

| 207 | 215 | 223 | 231 | 239 | 247 | 255 | 263 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 206 | 214 | 222 | 230 | 238 | 246 | 254 | 262 |  |  |  |  |
| 205 | 213 | 221 | 229 | 237 | 245 | 253 | 261 |  |  |  |  |
| 204 | 212 | 220 | 228 | 236 | 244 | 252 | 260 |  |  |  |  |
| 203 | 211 | 219 | 227 | 235 | 243 | 251 | 259 | 239 | 247 | 255 | 263 |
| 202 | 210 | 218 | 226 | 234 | 242 | 250 | 258 | 238 | 246 | 254 | 262 |
| 201 | 209 | 217 | 225 | 233 | 241 | 249 | 257 | 237 | 245 | 253 | 261 |
| 200 | 208 | 216 | 224 | 232 | 240 | 248 | 256 | 236 | 244 | 252 | 260 |
| (LT00) | (LT01) | (LT02) | (LT03) | (LT04) | (LT05) | (LT06) | (LT07) | (LT08) | (LT09) | (LT10) | (LT11) |

PIM 1

| 107 | 115 | 123 | 131 | 139 | 147 | 155 | 163 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 106 | 114 | 122 | 130 | 138 | 146 | 154 | 162 |  |  |  |  |
| 105 | 113 | 121 | 129 | 137 | 145 | 153 | 161 |  |  |  |  |
| 104 | 112 | 120 | 128 | 136 | 144 | 152 | 160 |  |  |  |  |
| 103 | 111 | 119 | 127 | 135 | 143 | 151 | 159 | 139 | 147 | 155 | 163 |
| 102 | 110 | 118 | 126 | 134 | 142 | 150 | 158 | 138 | 146 | 154 | 162 |
| 101 | 109 | 117 | 125 | 133 | 141 | 149 | 157 | 137 | 145 | 153 | 161 |
| 100 | 108 | 116 | 124 | 132 | 140 | 148 | 156 | 136 | 144 | 152 | 160 |
| (LT00) | (LT01) | (LT02) | (LT03) | (LT04) | (LT05) | (LT06) | (LT07) | (LT08) | (LT09) | (LT10) | (LT11) |

PIM 0

| 007 | 015 | 023 | 031 | 039 | 047 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 006 | 014 | 022 | 030 | 038 | 046 |
| 005 | 013 | 021 | 029 | 037 | 045 |
| 004 | 012 | 020 | 028 | 036 | 044 |
| 003 | 011 | 019 | 027 | 035 | 043 |
| 002 | 010 | 018 | 026 | 034 | 042 |
| 001 | 009 | 017 | 025 | 033 | 041 |
| 000 | 008 | 016 | 024 | 032 | 040 |
| (LT00) | (LT01) | (LT02) | (LT03) | (LT04) | (LT05) |


| 055 | 063 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 054 | 062 |  |  |  |  |
| 053 | 061 |  |  |  |  |
| 052 | 060 |  |  |  |  |
| 051 | 059 | 039 | 047 | 055 | 063 |
| 050 | 058 | 038 | 046 | 054 | 062 |
| 049 | 057 | 037 | 045 | 053 | 061 |
| 048 | 056 | 036 | 044 | 052 | 060 |
| (LT06) | (LT07) | (LT08) | (LT09) | (LT10) | (LT11) |

* 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 | 715 | 723 | 731 | 739 | 747 | 755 | 763 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 706 | 714 | 722 | 730 | 738 | 746 | 754 | 762 |  |  |  |  |
| 705 | 713 | 721 | 729 | 737 | 745 | 753 | 761 |  |  |  |  |
| 704 | 712 | 720 | 728 | 736 | 744 | 752 | 760 |  |  |  |  |
| 703 | 711 | 719 | 727 | 735 | 743 | 751 | 759 | 739 | 747 | 755 | 763 |
| 702 | 710 | 718 | 726 | 734 | 742 | 750 | 758 | 738 | 746 | 754 | 762 |
| 701 | 709 | 717 | 725 | 733 | 741 | 749 | 757 | 737 | 745 | 753 | 761 |
| 700 | 708 | 716 | 724 | 732 | 740 | 748 | 756 | 736 | 744 | 752 | 760 |
| (LT00) | (LT01) | (LT02) | (LT03) | (LT04) | (LT05) | (LT06) | (LT07) | (LT08) | (LT09) | (LT10) | (LT11) |


| PIM 6 | 607 | 615 | 623 | 631 | 639 | 647 | 655 | 663 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 606 | 614 | 622 | 630 | 638 | 646 | 654 | 662 |  |  |  |  |
|  | 605 | 613 | 621 | 629 | 637 | 645 | 653 | 661 |  |  |  |  |
|  | 604 | 612 | 620 | 628 | 636 | 644 | 652 | 660 |  |  |  |  |
|  | 603 | 611 | 619 | 627 | 635 | 643 | 651 | 659 | 639 | 647 | 655 | 663 |
|  | 602 | 610 | 618 | 626 | 634 | 642 | 650 | 658 | 638 | 646 | 654 | 662 |
|  | 601 | 609 | 617 | 625 | 633 | 641 | 649 | 657 | 637 | 645 | 653 | 661 |
|  | 600 | 608 | 616 | 624 | 632 | 640 | 648 | 656 | 636 | 644 | 652 | 660 |
|  | (LT00) | (LT01) | (LT02) | (LT03) | (LT04) | (LT05) | (LT06) | (LT07) | (LT08) | (LT09) | (LT10) | (LT11) |


| PIM 5 | 507 | 515 | 523 | 531 | 539 | 547 | 555 | 563 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 506 | 514 | 522 | 530 | 538 | 546 | 554 | 562 |  |  |  |  |
|  | 505 | 513 | 521 | 529 | 537 | 545 | 553 | 561 |  |  |  |  |
|  | 504 | 512 | 520 | 528 | 536 | 544 | 552 | 560 |  |  |  |  |
|  | 503 | 511 | 519 | 527 | 535 | 543 | 551 | 559 | 539 | 547 | 555 | 563 |
|  | 502 | 510 | 518 | 526 | 534 | 542 | 550 | 558 | 538 | 546 | 554 | 562 |
|  | 501 | 509 | 517 | 525 | 533 | 541 | 549 | 557 | 537 | 545 | 553 | 561 |
|  | 500 | 508 | 516 | 524 | 532 | 540 | 548 | 556 | 536 | 544 | 552 | 560 |
|  | (LT00) | (LT01) | (LT02) | (LT03) | (LT04) | (LT05) | (LT06) | (LT07) | (LT08) | (LT09) | (LT10) | (LT11) |


| PIM 4 | 407 | 415 | 423 | 431 | 439 | 447 | 455 | 463 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 406 | 414 | 422 | 430 | 438 | 446 | 454 | 462 |  |  |  |  |
|  | 405 | 413 | 421 | 429 | 437 | 445 | 453 | 461 |  |  |  |  |
|  | 404 | 412 | 420 | 428 | 436 | 444 | 452 | 460 |  |  |  |  |
|  | 403 | 411 | 419 | 427 | 435 | 443 | 451 | 459 | 439 | 447 | 455 | 463 |
|  | 402 | 410 | 418 | 426 | 434 | 442 | 450 | 458 | 438 | 446 | 454 | 462 |
|  | 401 | 409 | 417 | 425 | 433 | 441 | 449 | 457 | 437 | 445 | 453 | 461 |
|  | 400 | 408 | 416 | 424 | 432 | 440 | 448 | 456 | 436 | 444 | 452 | 460 |
|  | (LT00) | (LT01) | (LT02) | (LT03) | (LT04) | (LT05) | (LT06) | (LT07) | (LT08) | (LT09) | (LT10) | (LT11) |

* 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.

- PIM0 (LTC0 - LTC3) Page 114
- 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)


## LTC Connector Pin Arrangement

| LTCO |  |  |  |
| ---: | ---: | ---: | ---: |
| 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 |  |
| 24 |  | 49 |  |
| 25 | MJ | 50 | MN |

LEN000
001
002
003
004 LTOO/AP00

| LTC1 |  |  |  |
| ---: | ---: | ---: | ---: |
| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |

LEN024
025
026 LT03/AP03

| LTC2 |  |  |
| :--- | :--- | :---: |
| 1 | 26 |  |



| LTC3 |  |  |  |
| ---: | ---: | ---: | ---: |
| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |



* 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)


## LTC Connector Pin Arrangement

| LTC0 |  |  |  |
| ---: | ---: | ---: | :--- |
| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |

$\left.\begin{array}{rl}\text { LEN100 } \\ 101 \\ 102 \\ 103 \\ 104 \\ 105 \\ 106 \\ 107 \\ 108 \\ 109 \\ 110 \\ 111 \\ 112\end{array}\right)$ LTOO/AP00

LTC2

| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |

$\begin{aligned} & \text { LEN148 } \\ & 149 \\ & 150 \\ & 151 \\ & 152 \\ & 153 \\ & 154 \\ & 155 \\ & 156 \\ & 157 \\ & 158 \\ & 159 \\ & 160 \\ & 161 \\ & 162 \\ & 163 \\ & 136 \\ & 137 \\ & 138 \\ & \text { LEN139 }\end{aligned}$ LT07/AP07

| LTC1 |  |  |  |
| ---: | ---: | ---: | ---: |
| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |

LTC3

| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |

LEN124
$\left.\begin{array}{r}\text { LEN124 } \\ 125 \\ 126\end{array}\right)$ LT03/AP03

LT03/AP03

LT04/AP04

LT05/AP05
$\left.\begin{array}{r}\text { LEN144 } \\ 145 \\ 146 \\ 147\end{array}\right)$ LT09/AP09*

$\left.\begin{array}{l}160 \\ 161 \\ 162\end{array}\right)$ LT11/AP11* LEN163

* 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)


## LTC Connector Pin Arrangement

| LTCO |  |  |  |
| ---: | ---: | ---: | ---: |
| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |

$\left.\begin{array}{r}\text { LEN200 } \\ 201 \\ 202 \\ 203 \\ 204 \\ 205 \\ 206 \\ 207 \\ 208 \\ 209 \\ 210 \\ 211 \\ 212\end{array}\right)$ LTOO/AP00

| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |

LEN224

|  | LTC2 |
| :--- | :--- |


| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |



|  | C3 |  |  |
| :---: | :---: | :---: | :---: |
| 1 | 26 | LEN244 |  |
| 2 | 27 | 245 | T09/AP09* |
| 3 | 28 | 246 | LT09/AP09 |
| 4 | 29 | 247 |  |
| 5 | 30 |  |  |
| 6 | 31 |  |  |
| 7 | 32 |  |  |
| 8 | 33 |  |  |
| 9 | 34 | 252 |  |
| 10 | 35 | 253 | T10/AP10* |
| 11 | 36 | 254 | (10/AP10* |
| 12 | 37 | 255 |  |
| 13 | 38 |  |  |
| 14 | 39 |  |  |
| 15 | 40 |  |  |
| 16 | 41 |  |  |
| 17 | 42 | 260 |  |
| 18 | 43 | 261 | LT11/AP11* |
| 19 | 44 | 262 | LT11/AP11* |
| 20 | 45 | LEN263 |  |
| 21 | 46 |  |  |
| 22 | 47 |  |  |
| 23 | 48 |  |  |
| 24 | 49 |  |  |
| 25 | 50 |  |  |

* 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)


## LTC Connector Pin Arrangement

| LTC0 |  |  |  |
| ---: | ---: | ---: | ---: |
| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |

$\left.\begin{array}{r}\text { LEN300 } \\ 301 \\ 302 \\ 303 \\ 304 \\ 305 \\ 306 \\ 307\end{array}\right)$ LT00/AP00

| LTC1 |  |  |  |
| ---: | ---: | ---: | ---: |
| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |

LEN324
325
326 LT03/AP03

|  | C2 |  |  |
| :---: | :---: | :---: | :---: |
| 1 | 26 | $\begin{array}{r} \text { LEN348 } \\ 349 \end{array}$ | LT06/AP06 |
| 2 | 27 |  |  |
| 3 | 28 | 350 |  |
| 4 | 29 | 351 |  |
| 5 | 30 | 352 |  |
| 6 | 31 | 353 |  |
| 7 | 32 | 354 |  |
| 8 | 33 | 355 |  |
| 9 | 34 | 356 |  |
| 10 | 35 | 357 |  |
| 11 | 36 | 358 |  |
| 12 | 37 | 359 | 1T07/AP07 |
| 13 | 38 | 360 | LT07/AP07 |
| 14 | 39 | 361 |  |
| 15 | 40 | 362 |  |
| 16 | 41 | 363. |  |
| 17 | 42 | 336 |  |
| 18 | 43 | 337 | LT08/AP08* |
| 19 | 44 | 338 | LT08/AP08 |
| 20 | 45 | LEN339 |  |
| 21 | 46 |  |  |
| 22 | 47 |  |  |
| 23 | 48 |  |  |
| 24 | 49 |  |  |
| 25 | 50 |  |  |


|  | C3 |  |  |
| :---: | :---: | :---: | :---: |
| 1 | 26 | LEN344 |  |
| 2 | 27 | 345 | T09/AP09* |
| 3 | 28 | 346 | L09/AP09 |
| 4 | 29 | 347 |  |
| 5 | 30 |  |  |
| 6 | 31 |  |  |
| 7 | 32 |  |  |
| 8 | 33 |  |  |
| 9 | 34 | 352 |  |
| 10 | 35 | 353 | T10/AP10* |
| 11 | 36 | 354 | LT10/AP10* |
| 12 | 37 | 355. |  |
| 13 | 38 |  |  |
| 14 | 39 |  |  |
| 15 | 40 |  |  |
| 16 | 41 |  |  |
| 17 | 42 | 360 |  |
| 18 | 43 | 361 | T11/AP11* |
| 19 | 44 | 362 | LT11/AP11* |
| 20 | 45 | LEN363 |  |
| 21 | 46 |  |  |
| 22 | 47 |  |  |
| 23 | 48 |  |  |
| 24 | 49 |  |  |
| 25 | 50 |  |  |

* 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)


## LTC Connector Pin Arrangement

| LTC0 |  |  |  |
| ---: | ---: | ---: | ---: |
| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |

$\left.\begin{array}{rl}\text { LEN400 } \\ 401 \\ 402 \\ 403 \\ 404 & \text { LTOO/AP00 } \\ 405 \\ 406 \\ 407 & \\ 408 \\ 409 \\ 410 \\ 411 \\ 412 & \\ 413 & \\ 414 \\ 415\end{array}\right)$ LT01/AP01

| LTC2 |  |  |  |
| ---: | ---: | ---: | :--- |
| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |



| LTC3 |  |  |  |
| ---: | ---: | ---: | ---: |
| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |


452
LT10/AP10*
455
LT04/AP04
LT05/AP05
447
5
LT03/AP03

- PIM5 (LTC0 - LTC3)


## LTC Connector Pin Arrangement

| LTC0 |  |  |  |
| ---: | ---: | ---: | ---: |
| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |



| LTC1 |  |  |  |
| ---: | ---: | ---: | ---: |
| $\|r\| r\|r\|$ <br> 2 |  | 26 |  |
| 3 |  | 27 |  |
| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |

LEN524
525
526 LT03/AP03

| LTC2 |  |  |  |
| :---: | :---: | :---: | :---: |
| 1 | 26 | $\begin{array}{r} \text { LEN548 } \\ 549 \end{array}$ | LT06/AP06 |
| 2 | 27 |  |  |
| 3 | 28 | 550 |  |
| 4 | 29 | 551 |  |
| 5 | 30 | 552 |  |
| 6 | 31 | 553 |  |
| 7 | 32 | 554 |  |
| 8 | 33 | 555. |  |
| 9 | 34 | 556 |  |
| 10 | 35 | 557 |  |
| 11 | 36 | 558 |  |
| 12 | 37 | 559 | 1T07/AP07 |
| 13 | 38 | 560 | LT07/AP07 |
| 14 | 39 | 561 |  |
| 15 | 40 | 562 |  |
| 16 | 41 | 563. |  |
| 17 | 42 | 536 |  |
| 18 | 43 | 537 | LT08/AP08* |
| 19 | 44 | 538 | LT08/AP08 |
| 20 | 45 | LEN539 |  |
| 21 | 46 |  |  |
| 22 | 47 |  |  |
| 23 | 48 |  |  |
| 24 | 49 |  |  |
| 25 | 50 |  |  |



* 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

| LTCO |  |  |  |
| ---: | ---: | ---: | :--- |
| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |

LTC2

| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |




| LTC1 |  |  |  |
| ---: | ---: | ---: | ---: |
| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |

LTC3

| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |

LEN624
625
626 LT03/AP03
627
628
629
630
632
633
LT04/AP04
635
636
637
638
639
$640)$
644 645 646
LEN647


647


660
661
LT11/AP11*

* 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

| LTCO |  |  |  |
| ---: | ---: | ---: | ---: |
| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |



| LTC1 |  |  |
| :---: | :---: | :---: |
| 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 |  |
| 24 | 49 |  |
| 25 | 50 |  |

LEN724
725
726 LT03/AP03
LTC2

| 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 |  |
| 24 |  | 49 |  |
| 25 |  | 50 |  |



| LTC3 |  |  | LT09/AP09* |
| :---: | :---: | :---: | :---: |
| 1 | 26 | LEN744 |  |
| 2 | 27 | 745 |  |
| 3 | 28 | 746 |  |
| 4 | 29 | 747 |  |
| 5 | 30 |  |  |
| 6 | 31 |  |  |
| 7 | 32 |  |  |
| 8 | 33 |  |  |
| 9 | 34 | 752) |  |
| 10 | 35 | 753 | LT10/AP10* |
| 11 | 36 | 754 | LT10/AP10 |
| 12 | 37 | 755 |  |
| 13 | 38 |  |  |
| 14 | 39 |  |  |
| 15 | 40 |  |  |
| 16 | 41 |  |  |
| 17 | 42 | 760 |  |
| 18 | 43 | 761 | LT11/AP11* |
| 19 | 44 | 762 |  |
| 20 | 45 | LEN763 |  |
| 21 | 46 |  |  |
| 22 | 47 |  |  |
| 23 | 48 |  |  |
| 24 | 49 |  |  |
| 25 | 50 |  |  |

* 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 LTCO - LTC3 MDF Cross Connection

| PIN | RUNNING CABLE | STATION CABLE | SLOTS | TYPE OF INTERFACE |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | CO |  | $\begin{array}{\|l\|l\|} \hline \text { LDT } \\ \hline \text { 2LDT } \end{array}$ | $\begin{array}{\|c\|} \hline \text { 2-W } \\ \text { E\&M } \\ \hline \text { 2ODT } \\ \hline \end{array}$ | $\begin{gathered} \text { 4-W } \\ \text { E\&M } \\ \hline \text { 2ODT } \end{gathered}$ | DID |  | SLT |  |  |
|  |  |  |  | 8COT | 4COT |  |  |  | AUC | 4DIT | 8LC | 4LC | AUC |
| 26 | WH-BL | GN | 1 | 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 |  | T3 | T3 | T3 |  |
| 4 | BR-WH | YL |  | 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 |  | R5 |  |  |  |  |  |  | R5 |  |  |
| 32 | RD-OR | GN |  | T6 |  |  |  |  |  |  | T6 |  |  |
| 7 | OR-RD | RD |  | R6 |  |  |  |  |  |  | R6 |  |  |
| 33 | RD-GN | BK |  | T7 |  |  |  |  |  |  | T7 |  |  |
| 8 | GN-RD | YL |  | R7 |  |  |  |  |  |  | R7 |  |  |

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

| PIN | RUNNING CABLE | STATION CABLE | SLOTS | TYPE OF INTERFACE |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | CO |  | $\begin{aligned} & \text { LDT } \\ & \hline \text { 2LDT } \end{aligned}$ | $\begin{array}{\|l\|} \hline \text { 2-W } \\ \text { E\&M } \\ \hline \text { 2ODT } \\ \hline \end{array}$ | $\begin{array}{\|l\|} \hline \text { 4-W } \\ \text { E\&M } \\ \hline \text { 2ODT } \end{array}$ | DID |  | SLT |  |  |
|  |  |  |  | 8СОT | COT |  |  |  | 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 | RevT0 | 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 |  |  | RevT1 |  | T3 | T3 | T3 |  |
| 12 | OR-BK | YL |  | 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 |  | 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 LTCO - LTC3 MDF Cross Connection (Continued)


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 LTCO - LTC3 MDF Cross Connection Information

| PIN | RUNNING CABLE | STATION CABLE | SLOTS | TYPE OF INTERFACE |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 2 wire $\mathrm{D}^{\text {term/ }}$ SMARTCON/ DSSCON/ DESKCON |  |  | 4 wire SMARTCON (SN610 ATTCON) | $\begin{aligned} & \text { EXT. } \\ & \text { KEY// } \\ & \text { EXT. } \end{aligned}$ RELAY | EXT. <br> PAGE/ <br> MOH/ <br> BGM | Digital TRK NOTE 3 |
|  |  |  |  | 8DLC | 4DLC | 2DLC | 2DLCC | DK00 | 4COT | DTI |
| 26 | WH-BL | GN | NOTE 1 | T0 | T0 | T0 | RA0 | K1 | T | RA |
| 1 | BL-WH | RD |  | R0 | R0 | R0 | TAO | K0 | R | RB |
| 27 | WH-OR | BK |  | T1 | T1 | T1 | RB0 | K3 | T | TA |
| 2 | OR-WH | YL |  | R1 | R1 | R1 | TB0 | K2 | R | TB |
| 28 | WH-GN | GN |  | T2 | T2 |  | RA1 | K5 | T |  |
| 3 | GN-WH | RD |  | R2 | R2 |  | TA1 | K4 | R |  |
| 29 | WH-BR | BK |  | T3 | T3 |  | RB1 | K7 | T |  |
| 4 | BR-WH | YL |  | R3 | R3 |  | TB1 | K6 | R |  |
| 30 | WH-SL | GN |  | T4 |  |  |  |  |  |  |
| 5 | SL-WH | RD |  | R4 |  |  |  |  |  |  |
| 31 | RD-BL | BK |  | T5 |  |  |  |  |  |  |
| 6 | BL-RD | YL |  | 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)

| PIN | RUNNING CABLE | STATION CABLE | SLOTS | TYPE OF INTERFACE |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 2 wire $\mathrm{D}^{\text {term/ }}$ SMARTCON/ DSSCON DESKCON |  |  | 4 wire SMARTCON (SN610 ATTCON) | EXT. <br> KEY/ <br> EXT. <br> RELAY | EXT. PAGE/ MOH/ BGM | $\begin{gathered} \text { Digital } \\ \text { TRK } \\ \text { NOTE } 3 \end{gathered}$ |
|  |  |  |  | 8DLC | 4DLC | 2DLC | 2DLCC | DK00 | 4COT | DTI |
| 34 | RD-BR | GN | NOTE 1 | T0 | T0 | T0 | RAO | K1 | T | RA |
| 9 | BR-RD | RD |  | R0 | R0 | R0 | TAO | K0 | R | RB |
| 35 | RD-SL | BK |  | T1 | T1 | T1 | RB0 | K3 | T | TA |
| 10 | SL-RD | YL |  | R1 | R1 | R1 | TB0 | K2 | R | TB |
| 36 | BK-BL | GN |  | T2 | T2 |  | RA1 | K5 | T |  |
| 11 | BL-BK | RD |  | R2 | R2 |  | TA1 | K4 | R |  |
| 37 | BK-OR | BK |  | T3 | T3 |  | RB1 | K7 | T |  |
| 12 | OR-BK | YL |  | R3 | R3 |  | TB1 | K6 | R |  |
| 38 | BK-GN | GN |  | T4 |  |  |  |  |  |  |
| 13 | GN-BK | RD |  | R4 |  |  |  |  |  |  |
| 39 | BK-BR | BK |  | T5 |  |  |  |  |  |  |
| 14 | BR-BK | YL |  | 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)

| PIN | RUNNING CABLE | STATION CABLE | SLOTS | TYPE OF INTERFACE |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 2 wire $\mathrm{D}^{\text {term/ }}$ SMARTCON/ DSSCON/ DESKCON |  |  | 4 wire SMARTCON (SN610 ATTCON) | EXT. <br> KEY/ <br> EXT. <br> RELAY | EXT. PAGE/ MOH/ BGM | $\begin{gathered} \text { Digital } \\ \text { TRK } \\ \text { NOTE 3 } \end{gathered}$ |
|  |  |  |  | 8DLC | 4DLC | 2DLC | 2DLCC | DK00 | 4COT | DTI |
| 42 | YL-OR | GN | NOTE 2 | T0 | T0 | T0 | RAO | K1 | T | RA |
| 17 | OR-YL | RD |  | R0 | R0 | R0 | TA0 | K0 | R | RB |
| 43 | YL-GN | BK |  | T1 | T1 | T1 | RB0 | K3 | T | TA |
| 18 | GN-YL | YL |  | R1 | R1 | R1 | TB0 | K2 | R | TB |
| 44 | YL-BR | GN |  | T2 | T2 |  | RA1 | K5 | T |  |
| 19 | BR-YL | RD |  | R2 | R2 |  | TA1 | K4 | R |  |
| 45 | YL-SL | BK |  | T3 | T3 |  | RB1 | K7 | T |  |
| 20 | SL-YL | YL |  | R3 | R3 |  | TB1 | K6 | R |  |
| 46 | VI-BL | GN |  | T4 |  |  |  |  |  |  |
| 21 | BL-VI | RD |  |  |  |  |  |  |  |  |
| 47 | VI-OR | BK |  | T5 |  |  |  |  |  |  |
| 22 | OR-VI | YL |  |  |  |  |  |  |  |  |
| 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 <br> Page |
| :--- | :--- | :---: |
| Analog C.O. Trunk | PN-2COT/PN-4COT/PN-6COT/PN-8COT | Page 129 |
| Tie Line Trunk | PN-2LDT <br> PN-2ODT | Page 130 |
| DID Trunk | PN-AUC <br> PN-4DIT | Page 135 |
| Digital Trunk Interface | PN-24DTA/PN-30DTC <br> PZ-M542/PZ-M557 [For Others/Australia] | Page 137 |
| Single Line Telephone | PN-4LC/PN-8LC <br> PN-AUC | Page 144 |
| Dterm/DSS Console | PN-2DLC <br> 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 <br> 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 <br> PN-DK00/PN-CP14 | Page 172 |
| External Tone <br> Source/Announcement <br> Machine | PN-2COT/PN-4COT/PN-6COT/PN-8COT <br> PN-TNTA <br> PN-DK00/PN-CP14 | Page 175 |
| External BGM Source | PN-2COT/PN-4COT/PN-6COT/PN-8COT <br> PN-TNTA <br> PN-DK00/PN-CP14 | Page 180 |
| Power Failure Transfer | PN-2COT/PN-4COT/PN-6COT/PN-8COT <br> PN-AUC | Page 182 |
| Power Failure Transfer | PN-8PFTB <br> PN-8LC <br> PN-8COT | Page 185 |
| Alarm Display Panel | PN-CP14 | Page 190 |
| Built-in SMDR | PN-CP14 | Page 191 |
| SMDR/PMS/MCI/CIS Printer/ | PN-AP00-B | Page 194 |
| Hotel Printer |  |  |

## Analog C.O. Trunk (COT)

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



LTC0 (P)

| 26 | T 0 | 1 | R 0 |
| :---: | :---: | :---: | :---: |
| 27 | T 1 | 2 | R 1 |
| 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 PN2ODT card.

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

| LTC0 (J) |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
| LEN0001 TxR0 26 TxT0 <br> 2 RcvR0 27 RcvT0 <br> LEN001    <br> 3 TxR1 28 TxT1 <br> 4 RcvR1 29 RcvT1 <br>     <br>     |  |  |  |  |

(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 PN2ODT card.

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


| LTC0 (J) |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
| LEN000 | R | R0 | 26 | T0 |
| LEN001 | 2 | R1 | 27 | T1 |
|  | 3 |  | 28 |  |
|  | 4 |  | 29 |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |


| LTC0 (P) |  |  |  |
| :---: | :---: | :---: | :---: |
| 26 | $\mathrm{T0}$ | 1 | R 0 |
| 27 | T 1 | 2 | R 1 |
| 28 |  | 3 |  |
| 29 |  | 4 |  |
|  |  |  |  |
|  |  |  |  |

- 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


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/PZM557) card as shown below.

Figure 2-55 DTI Cable Connection via CONN Card


Figure 2-56 Coaxial Cable Connection for DTI Card

(1) LTC1 CONNECTOR

(2) COAXIAL CONNECTOR

\[

\]

- 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.

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.

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) |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 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 | R 1 |
| $\vdots$ | $\vdots$ | $\vdots$ | $\vdots$ |
| 32 | T 6 | 7 | R 6 |
| 33 | T 7 | 8 | R 7 |
|  |  |  |  |

- Long Line (PN-AUC)

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


| LTC0 (J) |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
| LEN000 | 1 | R0 | 26 | T0 |
| LEN001 | 2 | R1 | 27 | T1 |
|  | 3 |  | 28 |  |
|  | 4 |  | 29 |  |
|  |  |  |  |  |
|  |  |  |  |  |


| 26 | T0 | 1 | R0 |
| :---: | :---: | :---: | :---: |
| 27 | T 1 | 2 | R 1 |
| 28 |  | 3 |  |
| 29 |  | 4 |  |
|  |  |  |  |
|  |  |  |  |

## $D^{\text {term }} /$ DSS Console (DLC)

- Standard Line (PN-8DLC/PN-4DLC)

Figure 2-61 MDF Cross Connection for D $^{\text {term }} / D S S$ Console (Standard Line)


|  | 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 T 0 1 R 0 <br> 27 T 1 2 R 1 <br> $\vdots$ $\vdots$ $\vdots$ $\vdots$ <br> 32 T 6 7 R 6 <br> 33 T 7 8 R 7 <br>     |  |  |  |

- Long Line (PN-2DLCB/PN-2DLCN)

Figure 2-62 MDF Cross Connection for $\mathrm{D}^{\text {term }} / \mathrm{DSS}$ 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.

Figure 2-65 Mounting of Handset Support to SN716 DESKCON (3 of 4)



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 $\mathrm{H} / \mathrm{S} 1$ ) 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)
(1) LTC CONNECTOR

| LTC0 (J) |  |  |  |
| :--- | :---: | :---: | :---: |
| LEN0001 TAO 26 RA0 <br> 2 TB0 27 RB0 <br> 3 TA1 28 RA1 <br> 4 TB1 29 RB1 <br>     <br>     |  |  |  |

(2) CN1 CONNECTOR

(2) SN708/709/712 ATTCON

- Standard Line (PN-8DLC/PN-4DLC)

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


- Long Line (PN-2DLCB/PN-2DLCN)

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

(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: $D^{\text {term }}$ 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


|  | LTC0 (J) |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| LEN000 | 1 | K0 | 26 | K1 |
|  | 2 | K2 | 27 | K3 |
| LEN002 | 3 | K4 | 28 | K5 |
|  | 4 | K6 | 29 | K7 |

LTC0 (P)

| 26 | K 1 | 1 | K 0 |
| :---: | :---: | :---: | :---: |
| 27 | K 3 | 2 | K 2 |
| 28 | K 5 | 3 | K 4 |
| 29 | K 7 | 4 | K 6 |
|  |  |  |  |

- 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

LEN000
LEN002
LTC0 (J)

| 1 | K0 | 26 | K1 |
| :---: | :---: | :---: | :---: |
|  | 2 | K2 | 27 |
|  | K3 |  |  |
|  | 3 | K4 | 28 |
|  | K5 |  |  |
|  | 4 | K6 | 29 |
|  |  |  | K7 |
|  |  |  |  |

LTC0 (P)

| 26 | K1 | 1 | K0 |
| :---: | :---: | :---: | :---: |
| 27 | K3 | 2 | K2 |
| 28 | K5 | 3 | K4 |
| 29 | K7 | 4 | K6 |
|  |  |  |  |

- 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 0.125 A .
(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

Figure 2-83 MDF Cross Connection for Paging Equipment


|  | LTC0 (J) |  |  |  | LTC0 (P) |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| LEN000 | 1 | K0 | 26 |  | 26 |  | 1 | K0 |
|  | 2 |  | 27 |  | 27 |  | 2 |  |
| LEN002 | 3 |  | 28 |  | 28 |  | 3 |  |
|  | 4 |  | 29 |  | 29 |  | 4 |  |
| $\approx$ |  |  |  |  |  |  |  |  |
| LEN008 | 9 | R0 | 34 | T0 | 34 | T0 | 9 | R0 |
| LEN009 | 10 | R1 | 35 | T1 | 35 | T1 | 10 | R1 |
| : | : | : | : | : | : | : | : | : |
| LEN015 | 14 | R6 | 40 | T6 | 40 | T6 | 14 | R6 |
| LEN016 | 15 | R7 | 41 | T7 | 41 | T7 | 15 | R7 |
|  |  |  |  |  |  |  |  |  |

## 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 0.125 A .
NOTE 2: When connecting the external tone source/announcement machine using the PN4COT/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)

|  | LTC0 (J) |  |  |  | LTC0 (P) |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| LEN000 | 1 | K0 | 26 |  | 26 |  | 1 | K0 |
|  | 2 |  | 27 |  | 27 |  | 2 |  |
| LEN002 | 3 |  | 28 |  | 28 |  | 3 |  |
|  | 4 |  | 29 |  | 29 |  | 4 |  |
| $\underset{\sim}{2}$ |  |  |  |  |  |  |  |  |
| LEN008 | 9 | R0 | 34 | T0 | 34 | T0 | 9 | R0 |
| LEN009 | 10 | R1 | 35 | T1 | 35 | T1 | 10 | R1 |
| : | : | : | : | : | : | : | : | : |
| LEN015 | 14 | R6 | 40 | T6 | 40 | T6 | 14 | R6 |
| LEN016 | 15 | R7 | 41 | T7 | 41 | T7 | 15 | R7 |
|  |  |  |  |  |  |  |  | , |

- 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) |  |  |  | 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 |

## 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

| PFTO |  |  |  |
| :---: | :---: | :---: | :---: |
| 1 | Sta. R0 | 26 | Sta. T0 |
| 2 | 8LC. R0 | 27 | 8LC. T0 |
| 3 | C.O. R0 | 28 | C.O. T0 |
| 4 | 8COT. R0 | 29 | 8COT. T0 |
| 5 | Sta. R1 | 30 | Sta. T1 |
| 6 | 8LC. R1 | 31 | 8LC. T1 |
| 7 | C.O. R1 | 32 | C.O. T1 |
| 8 | 8COT. R1 | 33 | 8COT. T1 |
| 9 | Sta. R2 | 34 | Sta. T2 |
| 10 | 8LC. R2 | 35 | 8LC. T2 |
| 11 | C.O. R2 | 36 | C.O. T2 |
| 12 | 8COT. R2 | 37 | 8COT. T2 |
| 13 | Sta. R3 | 38 | Sta. T3 |
| 14 | 8LC. R3 | 39 | 8LC. T3 |
| 15 | C.O. R3 | 40 | C.O. T3 |
| 16 | 8COT. R3 | 41 | 8COT. T3 |
| 17 | Sta. R4 | 42 | Sta. T4 |
| 18 | 8LC. R4 | 43 | 8LC. T4 |
| 19 | C.O. R4 | 44 | C.O. T4 |
| 20 | 8COT. R4 | 45 | 8COT. T4 |
| 21 | Sta. R5 | 46 | Sta. T5 |
| 22 | 8LC. R5 | 47 | 8LC. T5 |
| 23 | C.O. R5 | 48 | C.O. T5 |
| 24 | 8COT. R5 | 49 | 8COT. T5 |
| 25 | - | 50 | - |


| PFT1 |  |  |  |
| :---: | :---: | :---: | :---: |
| 1 | Sta. R6 | 26 | Sta. T6 |
| 2 | 8LC. R6 | 27 | 8LC. T6 |
| 3 | C.O. R6 | 28 | C.O. T6 |
| 4 | 8COT. R6 | 29 | 8COT. T6 |
| 5 | Sta. R7 | 30 | Sta. T7 |
| 6 | 8LC. R7 | 31 | 8LC. T7 |
| 7 | C.O. R7 | 32 | C.O. T7 |
| 8 | 8COT. R7 | 33 | 8COT. T7 |
| 9 |  | 34 |  |
| 10 |  | 35 |  |
| 11 | - | 36 | - |
| 12 | - | 37 |  |
| 13 | , | 38 |  |
| 14 | , | 39 | - |
| 15 | , | 40 | - |
| 16 |  | 41 | F |
| 17 | , | 42 | - |
| 18 | , | 43 | , |
| 19 |  | 44 | - |
| 20 | , | 45 | - |
| 21 |  | 46 | - |
| 22 | F | 47 | - |
| 23 | , | 48 |  |
| 24 | - | 49 | E |
| 25 |  | 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) PFTO CONNECTOR

| PFT0 (J) |  |  |  |
| :--- | :--- | :--- | :--- |
| 1 | Sta. R0 | 26 | Sta. T0 |
| 2 | 8LC. R0 | 27 | 8LC. T0 |
| 3 | C.O. R0 | 28 | C.O. T0 |
| 4 | 8COT. R0 | 29 | 8COT. T0 |
|  |  |  |  |

PFTO (P)

| 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. T0 | 4 | 8COT. R0 | TO PN-8COT |

(2) PFT1 CONNECTOR

(3) LTCO CONNECTOR


| LTC0 (P) |  |  |  | TO PZ-8PFTB |
| :---: | :---: | :---: | :---: | :---: |
| 26 | T0 | 1 | R0 |  |
| 27 |  | 2 |  |  |
| 28 |  | 3 |  |  |
| 29 |  | 4 |  |  |
|  | $\underset{\sim}{\sim}$ |  |  |  |
| 34 | T0 | 9 | R0 | TO PZ-8PFTB |
| 35 |  | 10 |  |  |
| 36 |  | 11 |  |  |
| 37 |  | 12 |  |  |
| - |  |  |  |  |

## 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.


|  | D | C | B | A |
| :---: | :---: | :---: | :---: | :---: |
| 06 | TXC (1) | X | RXC | TXC (2) |
| 05 | X | DTR | GND | TXD |
| 04 | (RT) | X | RXD | RTS |
| 03 | X | $(S T)$ | CTS | DSR |
| 02 | ---- | X | GND | DCD |
| 01 | X | LALB | X | $G$ |

G: GROUND

| 13 | ---- | 25 | ---- |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| 12 | ---- |  |  |
| 11 |  | 24 | TXC (1) |
|  | ---- | 23 | ---- |
| 10 | ---- |  |  |
| 09 | ---- | 22 | --- |
|  |  | 21 | ---- |
| 08 | DCD | 20 | DTR |
| 07 | GND | 19 | ---- |
| 06 | DSR |  |  |
| 05 | CTS | 18 | LALB |
|  |  | 17 | RXC |
| 04 | RTS | 16 | ---- |
| 03 | RXD |  |  |
| 02 | TXD | 15 | TXC (2) |
|  |  | 14 | ---- |
| 01 | GND |  |  |

## 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) $\mathrm{SMDR} / \mathrm{PMS} / \mathrm{MCI}(\mathrm{VMS})$

- Direct Connection

Connect the terminal to the RSO-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 $15 \mathrm{~m}(49.2 \mathrm{ft}), \mathrm{MO}-$ DEMs 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
 1200 bps (LEASED TYPE)

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

See Table 2-7.


|  | D | C | B | A |
| :---: | :---: | :---: | :---: | :---: |
| 06 | TXC <br> $(1)$ | X | RXC | TXC <br> $(2)$ |
| 05 | X | DTR | GND | TXD |
| 04 | $(\mathrm{RT})$ | X | RXD | RTS |
| 03 | X | $(\mathrm{ST})$ | CTS | DSR |
| 02 | --- | X | GND | DCD |
| 01 | X | LALB | X | $G$ |

G: GROUND

| 13 | ---- | 25 | ---- |
| :---: | :---: | :---: | :---: |
| 12 | ---- |  |  |
|  |  | 24 | ---- |
| 11 | ---- | 23 | ---- |
| 10 | ---- |  |  |
| 09 | ---- | 22 | ---- |
| 08 | ---- | 21 | --- |
|  |  | 20 | DTR |
| 06 | GND | 19 | ---- |
| 06 | ---- | 18 | ---- |
| 05 | ---- | 17 | ---- |
| 04 | ---- | 16 | ---- |
| 03 | RXD |  |  |
| 02 | ---- | 15 | ---- |
| 01 | GND | 14 | ---- |

Table 2-7 RS-232C Connector Layout

| PIN NO. | SIGNAL-NAME |  |  |  | SIGNAL DIRECTION | MEANING |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | RS-232C | JIS C6361 | $\begin{gathered} \text { ITU-T } \\ \text { V. } 24 \end{gathered}$ | ANOTHER |  |  |
| 1 | AA | (FG) | 101 | GND |  | Frame Ground |
| 2 | BA | SD | 103 | TXD | DTE $\rightarrow$ | Send Data |
| 3 | BB | RD | 104 | RXD | $\leftarrow$ DCE | Receive Data |
| 4 | CA | RS | 105 | RTS | DTE $\rightarrow$ | Request to Send |
| 5 | CB | CS | 106 | CTS | $\leftarrow$ DCE | Clear to Send |
| 6 | CC | DR | 107 | DSR | $\leftarrow$ DCE | Data Set Ready |
| 7 | AB | SG | 102 | GND |  | Signal Ground |
| 8 | CF | $C D$ | 109 | DCD | $\leftarrow$ DCE | Data Channel Receive Carrier Detect |
| 9 |  |  |  |  |  | Not Used |
| 10 |  |  |  |  |  | Not Used |
| 11 |  | PB |  |  |  | Peripheral Busy |
| 12 | SCF | BCD | 122 |  | $\leftarrow$ DCE | Backward Channel Receive Carrier Detect |
| 13 | SCB | BCS | 121 |  | $\leftarrow$ DCE | Backward Channel Send (OK) |
| 14 | SBA | BSD | 118 |  | DTE $\rightarrow$ | Backward Channel Send Data |
| 15 | DB | ST2 | 114 | TXC (2) | $\leftarrow$ DCE | Send Signal Element Timing |
| 16 | SBB | BRD | 119 |  | $\leftarrow$ DCE | Backward Channel Receive Data |
| 17 | DD | RT | 115 | RXC | $\leftarrow$ DCE | Receive Signal Element Timing |
| 18 |  |  |  |  |  | Not Used |
| 19 | SCA | BRS | 120 |  | DTE $\rightarrow$ | Backward Channel Send Detect |
| 20 | CD | ER | 108/2 | DTR | DTE $\rightarrow$ | Data Terminal Ready |
| 21 | CG | SQD | 110 |  | $\leftarrow$ DCE | Data Signal Quality Detect |
| 22 | CE | Cl | 125 | RI | $\leftarrow$ DCE | Call Indication |
| 23 | $\mathrm{Cl}, \mathrm{CH}$ | SRS | 112, 111 |  | $\leftarrow-\rightarrow$ | Data Signal Speed Choice |
| 24 | DA | ST1 | 113 | TXC (1) | $\leftarrow$ 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.
- 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 LENOOO 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 $D^{\text {term }}$ can be assigned as a CAT through programming. The $D^{\text {term }}$ 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 $D^{\text {term }}$ 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 $\mathrm{D}^{\text {term }}$ 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.

2. Restore the handset (on hook)

- CNF/Conf, FNC/Feature lamps turn off.
- LCD returns to clock.


## MAT

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 <br> (FUNCTIONAL <br> NAME) | LAMP <br> X: PROVIDED <br> -: NOT <br> PROVIDED | SWITCH <br> X: PROVIDED <br> -: NOT <br> PROVIDED | EXTRACTION/ <br> INSERTION WITH <br> POWER ON <br> X: ALLOWED <br> $\Delta:$ ALLOWED <br> AFTER MB* <br> -: NOT ALLOWED | REFERENCE <br> PAGE |
| :--- | :---: | :---: | :---: | :---: |
| PN-CP14 (MP) | X | X | - | Page 210 |
| PN-CP15 (FP) | X | X | $\Delta$ | Page 215 |
| PN-PW00 <br> (EXTPWR) | X | X | $\Delta$ | Page 217 |
| PZ-PW121 <br> (AC/DC PWR) | X | X | - | Page 219 |
| PZ-PW122 <br> (DC/DC PWR) | X | X | - | Page 222 |

[^0]
## PN-CP14 (MP)

Locations of Lamps, Switches, and Connectors


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

Lamp Indications

| LAMP <br> 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, do not plug/unplug this circuit card into/from its mounting slot.

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SW3 (Rotary SW) | 0-F | 0 | On Line (Call processing is in progress) |  |
|  |  | 2 | Off Line (Call processing is stopped) <br> - I/O port: As per CM40 YY=08 |  |
|  |  | 3 | Off Line (Call processing is stopped) <br> - I/O port: 9600 bps (Fixed) |  |
|  |  | 5 <br> NOTE 2 | Off Line (Call processing is stopped) <br> - I/O port: 9600 bps |  |
| NOTE 1 |  | 6 <br> NOTE 2 | Off Line (Call processing is stopped) <br> - I/O port: 19200 bps |  |
|  |  | 7 NOTE 2 | Off Line (Call processing is stopped) <br> - I/O port: 38400 bps |  |
|  |  | 8 NOTE 2 | Off Line (Call processing is stopped) <br> - I/O port: 57600 bps |  |
|  |  | B | For clearing the office data |  |
|  |  | C | For setting the resident system program |  |
|  |  | $\begin{aligned} & 1,4,9 \\ & \text { A, D-F } \end{aligned}$ | 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 | SETTING POSITION |  |  | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SW1 (Push SW) |  |  |  | For initializing CPU |  |  |
| SW2 <br> (Piano Key SW) | 1 | ON |  | A-law (Australia) |  |  |
|  |  | OFF |  | $\mu$-law (North America) |  |  |
|  | 2, 3 | Selection of PLOO input (Phase Locked Oscillator) <br> - For clock receiver office: |  |  |  |  |
|  |  | SW2-2 SW2-3 |  |  | FUNCTION |  |
|  |  | OFF | OFF |  | 1.5 MHz clock <br> [For PN-24DTA-C/PN-24PRTA] |  |
|  |  | ON | OFF |  | 192 kHz clock <br> [For PN-BRTA] |  |
|  |  | OFF | ON |  | 2MHz clock <br> [For PN-30DTC-A/PN-2BRTC] |  |
|  |  | ON | ON |  | Not used |  |
|  |  | - For clock source office:$\frac{\text { SW2-2 }}{\text { OFF }} \frac{\text { SW2-3 }}{\text { OFF }}$ |  |  |  |  |
|  | 4 | ON |  | When using RS1 port for built-in MODEM |  |  |
|  |  | OFF |  | When using RS1 port for RS-232C |  |  |

(Continued)

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION |  | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | OFF N |  | Not used |  |
|  | 2 | OFF N |  | Not used |  |
|  |  | Selection of PLO1 input (Phase Locked Oscillator) <br> - For clock receiver office: |  |  |  |
|  |  | SW4-3 | SW4-4 | FUNCTION |  |
|  |  | OFF | OFF | 1.5 MHz clock [For PN-24DTA-C/PN-24PRTA] |  |
|  | 3, 4 | ON | OFF | 192 kHz clock [For PN-BRTA] |  |
|  |  | OFF | ON | 2 MHz clock <br> [For PN-30DTC-A/PN-2BRTC] |  |
|  |  | ON | ON Not used |  |  |
|  |  | - For clock source office: $\frac{\text { SW4-3 }}{\text { OFF }} \frac{\text { SW4-4 }}{\text { OFF }}$ |  |  |  |
| VR (Rotary SW) |  |  |  | riable Resistor for External Hold e Source 20 Kohms : Clockwise) |  |
| DK (Connector) | 02 | Ground d | detection |  |  |
| 02 02 $\square$ | 01 | Ground s | sending |  |  |

(Continued)

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| JP0 (Jumper pin) |  | UP | Not used (Memory backup OFF) |  |
|  |  | DOWN | For normal operation (Memory backup ON) |  |
| JP1 (Jumper pin) |  | UP | For using internal tone source |  |
|  |  | DOWN | For using external tone source |  |

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 $\qquad$ , the setting of the switch varies with the system concerned.

## PN-CP15 (FP)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| RUN | Green | Flashes at 120 IPM while the circuit card is operating normally. |

## Switch Settings

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SENSE <br> (Rotary SW) | 0-3 | For setting FP | No. |  |
|  |  | 0 | For mounting this card in PIM0 |  |
| $\overbrace{3}^{(4)})^{2}$ |  | 1 | For mounting this card in PIM2 |  |
|  |  | 2 | For mounting this card in PIM4 |  |
| NOTE1 |  | 3 | For mounting this card in PIM6 |  |
|  | 4-F |  | Not used |  |
| MB (Toggle SW) <br> NOTE 2 |  | UP | For make-busy |  |
|  |  | DOWN | For normal operation |  |
| SW1 <br> (Piano Key SW) | 1-3 | OFF | Not used |  |
|  | 4 | ON | For normal operation |  |
|  |  | OFF | Not used |  |

The figure in the SWITCH NAME column and the position in $\square$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\square$ , 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 <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| RUN | Green | Remains lit while -48 V power is being supplied |

Switch Settings

| SWITCH NAME | SWITCH <br> NUMBER | SETTING <br> POSITION | FUNCTION | CHECK |
| :--- | :---: | :---: | :--- | :--- |
| MB (Toggle SW) <br> NOTE | UN | For make-busy <br> (-48V power off) |  |  |

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 $\square$ , 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 <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| MJ | Red | Remains lit when a major trouble occurres or resident system <br> program is not properly loaded |
| MN | Yellow | Remains lit when a minor trouble occurres or resident system <br> 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, do not plug/unplug this circuit card into/from its mounting slot.

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

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SW301 (DIP SW)$\overbrace{\text { OFF }}^{\overbrace{25 \mathrm{~Hz}}^{1 \square} \overbrace{20 \mathrm{~Hz}}^{90 \mathrm{~V}} \mathrm{ON}} \mathrm{ON}$ | 1 | ON | CR Voltage: 75Vrms |  |
|  |  | OFF | CR Voltage: 90Vrms |  |
|  | 2 | ON | Frequency: 20 Hz |  |
|  |  | OFF | Frequency: 25 Hz |  |
| SW102 $\square$ <br> $\square$ |  | PRESS MOMENTARILY | To start each PIM on battery power when AC power is not provided |  |

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

## PZ-PW122 (DC/DC PWR)

Locations of Lamps, Switches, and Connectors


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

Lamp Indications

| LAMP <br> 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, do not plug/unplug this circuit card into/from its mounting slot.

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SW |  | ON | For turning AC power on |  |
|  |  | 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 <br> (FUNCTIONAL NAME) | LAMP <br> X: PROVIDED <br> -: NOT PROVIDED | SWITCH <br> X: PROVIDED <br> -: NOT <br> PROVIDED | EXTRACTION/ <br> INSERTION WITH <br> POWER ON <br> X: ALLOWED <br> $\Delta$ : ALLOWED AFTER MB* <br> -: NOT ALLOWED | REFERENCE PAGE |
| :---: | :---: | :---: | :---: | :---: |
| PN-AP00-A (DBM) | X | X | $\Delta$ | Page 226 |
| PN-AP00-B (AP00) | X | X | $\Delta$ | Page 229 |
| PN-AP01 (AP01) | X | X | $\Delta$ | Page 235 |
| PN-BRTA (BRT) | X | X | $\Delta$ | Page 238 |
| PN-2BRTC (BRT) | X | X | $\Delta$ | Page 243 |
| PN-CC01 (ETHER) | X | X | X | Page 248 |
| PN-DAIA (DAI) | X | X | $\Delta$ | Page 252 |
| PN-DAIB (DAI) | X | X | $\Delta$ | Page 257 |
| PN-DAIC (DAI) | X | X | $\Delta$ | Page 261 |
| PN-DAID (DAI) | X | X | $\Delta$ | Page 264 |
| PN-DAIE (DAI) | X | X | $\Delta$ | Page 270 |
| PN-DAIF (DAI) | X | X | $\Delta$ | Page 274 |
| PN-24DTA-C (DTI) | X | X | $\Delta$ | Page 278 |
| PN-30DTC-A (DTI) | X | X | $\Delta$ | Page 284 |
| PN-IPTA (IPT) | X | X | $\Delta$ | Page 290 |
| PN-24PRTA (PRT) | X | X | $\Delta$ | Page 294 |

*MB = Make Busy

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

| NAME <br> (FUNCTIONAL NAME) | LAMP <br> X: PROVIDED <br> -: NOT <br> PROVIDED | $\begin{aligned} & \text { SWITCH } \\ & \text { X: PROVIDED } \\ & \text {-: NOT } \\ & \quad \text { PROVIDED } \end{aligned}$ | EXTRACTION/ <br> INSERTION WITH <br> POWER ON <br> X: ALLOWED <br> $\Delta$ : ALLOWED <br> AFTER MB* <br> -: NOT ALLOWED | REFERENCE PAGE |
| :---: | :---: | :---: | :---: | :---: |
| PN-4RSTB (MFR) | X | X | X | Page 300 |
| PN-4RSTC (CIR) | X | X | $\Delta$ | Page 302 |
| PN-SCOO (CCH) | X | X | $\Delta$ | Page 304 |
| PN-SC01 (DCH) | X | X | $\Delta$ | Page 307 |
| PN-SC03 (ICH) | X | X | $\Delta$ | Page 310 |
| PN-SC03-A (CSH) | X | X | $\Delta$ | Page 312 |
| PZ-M537 <br> (EXPMEM) | - | X | - | Page 314 |
| PZ-M542 (CONN) | - | X | X | Page 317 |
| PZ-M557 (CONN) | - | X | X | Page 319 |

*MB = Make Busy

CHAPTER 3 LAMP INDICATIONS AND SWITCH SETTINGS

## PN-AP00-A (DBM)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP NAME |  | 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

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SW1 <br> (Piano Key SW) | 1 | ON | For normal operation |  |
|  |  | OFF | Not used |  |
|  | 2 | ON | For normal operation |  |
|  |  | OFF | Not used |  |
|  | 3 | ON | For normal operation |  |
|  |  | OFF | Not used |  |
|  | 4 | OFF | Not used |  |
| SW0 (DIP SW) | 1-8 | OFF | Not used |  |
|  |  |  |  |  |
| J16 |  | RIGHT | For normal operation (Memory backup ON) |  |
|  |  | LEFT | Not used (Memory backup OFF) |  |

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 $\square$ , 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

| LAMP NAME |  | COLOR | FUNCTION |  |
| :---: | :---: | :---: | :---: | :---: |
| RUN |  | Green | Flashes at 120 IPM while this card is operating normally. |  |
| 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

(Continued)

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

(Continued)

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
|  | 1 <br> NOTE 3 | ON | Sets No. 3 Port forcibly in a state which DSR signal is always provided. |  |
|  |  | 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) |  |
|  |  | OFF | - Uses internal clock as the receive clock when No. 1 Port is synchronous. <br> - When No. 1 Port is asynchronous. |  |
|  | 3 | ON | Enables transmit clock from the DCE (Modem) when No. 1 Port is synchronous. (Clock is received at the TXC (2) terminal.) |  |
|  |  | OFF | - Uses internal clock as the send clock when No. 1 Port is synchronous. <br> - When No. 1 Port is asynchronous. |  |
|  | 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) |  |
|  |  | OFF | - Not transmit the send clock from the DTE (this card) when No. 1 Port is synchronous. <br> - When No. 1 Port is asynchronous. |  |
|  | 5 | ON | When No. 1 Port is asynchronous. |  |
|  |  | OFF | When No. 1 Port is synchronous. |  |

(Continued)
$\left.\begin{array}{|l|c|c|l|l|}\hline \text { SWITCH NAME } & \begin{array}{c}\text { SWITCH } \\ \text { NUMBER }\end{array} & \begin{array}{c}\text { SETTING } \\ \text { POSITION }\end{array} & \text { FHECK } \\ \hline \begin{array}{l}\text { SW2 (DIP SW) }\end{array} & & \begin{array}{l}\text { • Uses internal clock as the receive } \\ \text { clock when No. 1 Port is synchro- } \\ \text { nous. }\end{array} & \\ \hline \text { • When No. 1 Port is asynchronous. }\end{array}\right]$

The figure in the SWITCH NAME column and the position in $\square$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\qquad$ , 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 APOO 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 |  |
| :---: | :---: | :---: |
|  | $\mathbf{2}$ | $\mathbf{6}$ |
| 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 | 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

(Continued)

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

The figure in the SWITCH NAME column and the position in $\square$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\square$ , 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.

CHAPTER 3 LAMP INDICATIONS AND SWITCH SETTINGS
PN-BRTA (BRT)

## PN-BRTA (BRT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

Switch Settings

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SW1 (DIP SW) | 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 B 1 and B 2 . |  |
|  | 2 | $\mathrm{ON}$ | For terminating the receiving side of channels B1 and B2 with 100 ohms |  |
|  |  | OFF | To remove the terminating resistor on the receiving side of channels B1 and B2. |  |

(Continued)

The figure in the SWITCH NAME column and the position in $\square$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\qquad$ , 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 SW0-2 and SW0-3 as follows:

| CONDITIONS | BRTO |  | BRT1 |  | BRT2 |  | ---- | BRT11 |  | REMARKS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { SW } \\ & 0-2 \end{aligned}$ | $\begin{aligned} & \text { SW } \\ & \text { 0-3 } \end{aligned}$ | $\begin{array}{\|l\|} \hline \text { SW } \\ 0-2 \end{array}$ | $\begin{aligned} & \text { SW } \\ & 0-3 \end{aligned}$ | $\begin{aligned} & \text { SW } \\ & 0-2 \end{aligned}$ | $\begin{array}{\|l} \text { SW } \\ 0-3 \end{array}$ | - | $\begin{aligned} & \hline \text { SW } \\ & 0-2 \end{aligned}$ | $\begin{aligned} & \text { SW } \\ & 0-3 \end{aligned}$ |  |
| When one BRT is provided. | ON | ON |  |  |  |  |  |  |  | MP card will receive the clock signal from BRTO at its PLOO 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 PLOO input, under normal conditions. <br> 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 120 IPM while this card is operating normally. |  |
| B21 | Red | No. 1 Circuit | B2 channel status <br> ON: <br> Busy <br> OFF: Idle <br> Flash (60 IPM): Make Busy |
| B11 | Red |  | B1 channel status <br> ON: <br> Busy <br> OFF: Idle <br> Flash (60 IPM): Make Busy |
| D1 | Green |  | D channel status <br> ON: <br> Busy <br> OFF: <br> Idle |
| ALM1 | Red |  | Transmission line fault status <br> ON: <br> Line fault <br> OFF: <br> Normal operation |
| B20 | Red | No. 0 Circuit | B2 channel status  <br> ON: Busy <br> OFF: Idle <br> Flash (60 IPM): Make Busy |
| B10 | Red |  | B1 channel status  <br> ON: Busy <br> OFF: Idle <br> Flash (60 IPM): Make Busy |
| D0 | Green |  | D channel status <br> ON: <br> Busy <br> OFF: <br> Idle |
| ALM0 | Red |  | Transmission line fault status <br> ON: <br> Line fault <br> OFF: <br> Normal operation |

Switch Settings

(Continued)

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SW11 (DIP SW) | 1 | ON | For normal operation |  |
|  |  | OFF | Not used |  |
|  | 2 NOTE 3 | 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 4 | OFF | Output clock signals to PLO 1 of MP. |  |
|  | 4 | ON | AP No. 04-15 |  |
|  | 4 | OFF | AP No. 20-31 |  |

(Continued)
The figure in the SWITCH NAME column and the position in $\square$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\square$ , 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.

| CONDITIONS | BRTO |  | BRT1 |  | BRT2 |  | ---- | BRT11 |  | REMARKS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{array}{\|c\|} \hline \text { SW } \\ 11-2 \end{array}$ | $\begin{gathered} \mathrm{SW} \\ 11-3 \end{gathered}$ | $\begin{gathered} \text { SW } \\ 11-2 \end{gathered}$ | $\begin{gathered} \mathrm{SW} \\ 11-3 \end{gathered}$ | $\begin{gathered} \text { SW } \\ 11-2 \end{gathered}$ | $\begin{gathered} \hline \text { SW } \\ 11-3 \end{gathered}$ | ---- | $\begin{array}{\|c\|} \hline \text { SW } \\ 11-2 \end{array}$ | $\begin{array}{\|c\|} \hline \text { SW } \\ 11-3 \end{array}$ |  |
| When one BRT is provided. | ON | ON |  |  |  |  |  |  |  | MP card will receive the clock signal from No. 0 circuit of BRTO at its PLOO input. Should a clock failure occure with No. 0 circuit, MP card will switch to No. 1 circuit of BRTO. |
| 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 PLOO input, under normal conditions. <br> Should a clock failure occure with both No. 0 and No. 1 circuits of BRTO, 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 PIMO to "OFF".
NOTE 5: Mount the BRT card which receives a source clock signals into PIMO.

CHAPTER 3 LAMP INDICATIONS AND SWITCH SETTINGS
PN-CC01 (ETHER)

## PN-CC01 (ETHER)

Location of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> 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 <br> address. |
| ERR | - | Not used |

Switch Settings

| SWITCH <br> NAME | SWITCH <br> NUMBER | SETTING <br> POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :--- | :--- |
| MB (Toggle SW) |  | UP | For make-busy |  |
|  |  |  | For normal operation |  |
| NOTE 1 |  |  | DOWN | F |
|  |  |  |  |  |

(Continued)

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION | FUNCTION |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SW1 (DIP SW) | 1 (D15) | ON | MAC ADDRESS <br> 00004CA4 $\times \times \mathrm{XX}$ <br> (HEX) | ON:O OFF:1 |  |  |
| $\stackrel{\text { ON }}{\uparrow} \square^{1} \square^{1} \square^{2} \square^{4} \square^{5} \square^{6} \square^{7}$ | 2 (D14) | ON |  |  |  |  |
|  | 3 (D13) | ON |  | SWITCH S  <br>   <br>   <br>  SW2-5 (D3) <br>  SW2-6 (D2) <br>  SW2-7 (D1) <br>  SW2-8 (D0) | TTING |  |
| NOTE 2 <br> SW1-5 (D11) <br> SW1-6 (D10) <br> SW1-7 (D9) <br> SW1-8 (D8) | 4 (D12) | OFF |  |  |  |  |
|  | 5 (D11) | ON | Fixed |  |  |  |
|  |  | OFF |  |  |  |  |
|  | 6 (D10) | ON |  | $\left(\begin{array}{l} \text { SW2-1 (D7) } \\ \text { SW2-2 (D6) } \\ \text { SW2-3 (D5) } \\ \text { SW2-4 (D4) } \end{array}\right.$ | ON/OFFON/OFFON/OFFON/OFF |  |
|  |  | OFF |  |  |  |  |
|  | 7 (D9) | ON |  |  |  |  |
|  |  | OFF |  | $\left(\begin{array}{l} \mathrm{SW} 1-5(\mathrm{D} 11) \\ \mathrm{SW}-6 \text { (D10) } \\ \mathrm{SW1-7}(\mathrm{D9}) \\ \mathrm{SW} 1-8 \text { (D8) } \end{array}\right.$ | $\begin{aligned} & \text { ON/OFF } \\ & \text { ON/OFF } \\ & \text { ONOFF } \\ & \text { ON/OFF } \end{aligned}$ |  |
|  | 8 (D8) | ON |  |  |  |  |
|  |  | OFF |  |  |  |  |
|  | 1 (D7) | ON |  | $\left(\begin{array}{l} \text { SW1-1 (D15) } \\ \text { SW1-2 (D14) } \\ \text { SW1-3(DD3) } \\ \text { SW1-4(D12) } \end{array}\right.$ | ON/OFF ON/OFF ON/OFFON/OFF - |  |
|  |  | OFF |  |  |  |  |
|  | 2 (D6) | ON |  |  |  |  |
| NOTE 2 |  | OFF |  |  |  |  |
|  | 3 (D5) | ON |  |  |  |  |
|  |  | OFF |  |  |  |  |
|  | 4 (D4) | ON |  |  |  |  |
|  |  | OFF |  |  |  |  |
|  | 5 (D3) | ON |  |  |  |  |
|  |  | OFF |  |  |  |  |
|  | 6 (D2) | ON |  |  |  |  |
|  |  | OFF |  |  |  |  |
|  | 7 (D1) | ON |  |  |  |  |
|  |  | OFF |  |  |  |  |
|  | 8 (D0) | ON |  |  |  |  |
|  |  | 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 <br> NAME | COLOR | $\quad$ 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 <br> normally connected. <br> Goes out after 15 seconds of link disconnection. |
| RED | Red | Remains lit when detecting PCM signal loss or Frame Alignment <br> 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). <br> Flashes while FP data downloading. |

Switch Settings

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SENSE <br> (Rotary SW) <br> NOTE 1 | O-F | FP (Firmware Processor) Number setting for the DAIA card. <br> By this setting, the system regards the DAIA card and the opposite DAIB card as one Firmware Processor. |  |  |
|  |  | 0 | Not used |  |
|  |  | 1 | FP No. 1 |  |
|  |  | 2 | FP No. 2 |  |
|  |  | 3 | FP No. 3 |  |
|  |  | $4-F$ | Not used |  |
| MB (Toggle SW) <br> NOTE 2 |  | UP | For make-busy |  |
|  |  | DOWN | For normal operation |  |
| SW1 <br> (Piano Key SW) | $1$ <br> NOTE 3 | ON | For supplying 1.5 MHz clock to PLO 0 |  |
|  |  | OFF | No clock supply to PLO 0 |  |
|  | $2$ <br> NOTE 3 | ON | For supplying 1.5 MHz clock to PLO 1 |  |
|  |  | OFF | No clock supply to PLO 1 |  |
|  | 3 | OFF | Always set to OFF |  |
|  | 4 | OFF | Always set to OFF |  |

(Continued)

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION | FUNCTION |  |  |  |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | ON | Control channel signaling data transmission speed: 48kbps |  |  |  |  |  |  |
|  |  | OFF | Control channel signaling data transmission speed: 64kbps |  |  |  |  |  |  |
|  | 2 | ON | DTI frame configuration: 12-Multi Frame |  |  |  |  |  |  |
|  |  | OFF | DTI frame configuration: 24-Multi Frame |  |  |  |  |  |  |
|  | 3 | ON | Line code: AMI with ZCS |  |  |  |  |  |  |
|  |  | OFF | Line code: B8ZS |  |  |  |  |  |  |
|  | 4 | ON | Setting of control signal time slot |  |  |  |  |  |  |
|  |  |  | SWITCH NUMBER |  |  |  |  | ME SLOT |  |
|  |  | OFF | 4 | 5 | 6 | 7 | 8 | UM |  |
|  |  |  | OFF | ON | $\begin{array}{\|l\|} \hline O N \\ O N \end{array}$ | ON | ON | TS1 |  |
|  | 5 | ON | OFF | OFF | ON | ON | ON | TS3 |  |
|  |  |  | OFF | ON | OFF | ON | ON | TS4 |  |
|  |  | OFF | ON | OFF | OFF | ON | ON | TS6 |  |
|  |  |  | OFF | OFF | OFF | ON | ON | TS7 |  |
|  | 6 | ON | OFF | ON | ON | OFF | ON | TS9 |  |
|  |  |  | OFF | OFF | ON | OFF | ON | TS10 |  |
|  |  | OFF | ON | ON | OFF | OFF | ON | TS12 |  |
|  |  |  | ON | OFF | OFF | OFF | ON | TS14 |  |
|  | 7 | ON | OFF | OFF | OFF | OFF | ON | TS15 |  |
|  |  |  | OFF | ON | ON | ON | OFF | TS17 |  |
|  |  | OFF | ON | OFF | ON | ON | OFF | TS18 TS19 |  |
|  |  |  | OFF | OFF | OFF | ON | OFF | TS23 |  |
|  | 8 | ON | NOTE 4, NOTE 5 |  |  |  |  |  |  |
|  |  | OFF |  |  |  |  |  |  |  |

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION |  |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SW3 (DIP SW) | 1 | ON | Set the equalizer according to the cable length between the system and the CSU. |  |  |  |  |
|  | 2 | ON | $\begin{aligned} & \text { Sw } \\ & -1 \end{aligned}$ | $\begin{gathered} \text { SW } \\ -2 \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { SW } \\ -3 \end{array}$ | CABLE <br> LENGTH |  |
|  |  | OFF | ON | ON | ON | $\begin{aligned} & \hline 0-40 \mathrm{~m} \\ & (0-131.2 \mathrm{ft} .) \end{aligned}$ |  |
|  |  |  | ON | ON | OFF | $\begin{aligned} & \hline 40-80 \mathrm{~m} \\ & (131.2-262.5 \mathrm{ft} .) \end{aligned}$ |  |
|  | 3 |  | ON | OFF | ON | $\begin{array}{\|l\|} \hline 80-120 \mathrm{~m} \\ \text { (262.5-394ft.) } \\ \hline \end{array}$ |  |
|  |  | OFF | ON | OFF | OFF | $\begin{array}{\|l\|} \hline 120-160 \mathrm{~m} \\ (394-525 \mathrm{ft} .) \\ \hline \end{array}$ |  |
|  |  |  | OFF | ON | ON | $\begin{array}{\|l\|} \hline 160-200 \mathrm{~m} \\ (525-656 \mathrm{ft} .) \\ \hline \end{array}$ |  |
|  |  |  | OFF | OFF | OFF | Signal is not sent |  |
|  | 4 | OFF | Always set to OFF |  |  |  |  |
| JPS (Jumper pin) |  | Right | For mounting this card on PIM1 PIM7 |  |  |  |  |
|  |  | Left | For mounting this card on PIM0 |  |  |  |  |
| JPR (Jumper pin)$\square$ | $7$ | Right | Neutral grounding on the receiving line is provided. |  |  |  |  |
|  |  | Left | Neutral grounding on the receiving line is not provided. |  |  |  |  |

(Continued)

The figure in the SWITCH NAME column and the position in $\square$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\qquad$ , 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 PIMO.

| CONDITIONS | DAIAO |  | DAIA1 |  | DAIA2 |  | REMARKS |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :--- |
|  | SW | SW | SW | SW | SW | SW |  |
|  | $\mathbf{1 - 1}$ | $\mathbf{1 - 2}$ | $\mathbf{1 - 1}$ | $\mathbf{1 - 2}$ | $\mathbf{1 - 1}$ | $\mathbf{1 - 2}$ |  |
| One DAIA card <br> is provided. | ON | OFF | - | - | - | - | The clock signal is <br> sent to PLOO of MP <br> card via supply route <br> 0 (DAIAO). |
| Two or three <br> DAIA cards are <br> provided. | ON | OFF | OFF | ON | OFF | OFF | The clock signal sup- <br> ply route is automati- <br> cally changed to the <br> route 1 (DAIA1), if a <br> transmission line fail- <br> ure occurs on the <br> 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 <br> NAME | COLOR | $\quad$ 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 <br> normally connected. <br> Goes out after 15 seconds of link disconnection. |
| RED | Red | Remains lit when detecting PCM signal loss or Frame Alignment <br> signal loss. |
| RMT | - | Remains lit when receiving the alarm signal from a distant office. |
| LOOP | Red | Rot used <br> Remains lit while data transmission on control channel (D ch). <br> Blashes while FP data downloading. |

Switch Settings

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

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION |  |  |  |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SW2 (DIP SW) | 1 | ON | Control channel signaling data transmission speed: 48kbps |  |  |  |  |  |  |
|  |  | OFF | Control channel signaling data transmission speed: 64kbps |  |  |  |  |  |  |
|  | 2 | ON | DTI frame configuration: 12-Multi Frame |  |  |  |  |  |  |
|  |  | OFF | DTI frame configuration: 24-Multi Frame |  |  |  |  |  |  |
|  | 3 | ON | Line code: AMI with ZCS |  |  |  |  |  |  |
|  |  | OFF | Line code: B8ZS |  |  |  |  |  |  |
|  | 4 | ON | Setting of control signal time slot |  |  |  |  |  |  |
|  |  |  | switch number |  |  |  |  | time Slot |  |
|  |  | OFF | 4 | 5 | 6 | 7 | 8 |  |  |
|  |  |  |  | ON | $\begin{aligned} & \hline \text { ON } \\ & \hline \text { O } \end{aligned}$ | ON | ON | $\begin{aligned} & \text { TS1 } \\ & \text { TST } \end{aligned}$ |  |
|  | 5 | ON |  | OFF | ON | ON | ON | TS4 |  |
|  |  |  |  | ON | OFF | ON | ON | TS5 |  |
|  |  | OFF |  | OFF | OFF | ON | ON <br> ON <br>  | TS56 |  |
|  |  |  |  | ON | ON | OFF | ON | TS8 |  |
|  | 6 | ON |  | $\begin{array}{lll}\text { ON } & \text { ONF } \\ \text { OFF } \\ \text { OFF } \\ \text { OFF }\end{array}$ | ON | OFF | ON | TS10 |  |
|  |  |  | $\begin{aligned} & \text { OFF } \\ & \text { ON } \\ & \text { OFF } \end{aligned}$ | OFF | ON | OFF | ON | TS11 |  |
|  |  | OFF | ON | ON | OFF | OFF | ON | TS13 |  |
|  | 7 |  | OFF |  | OFF | OFF | ON | TS15 |  |
|  |  | ON | ONONOFFONOFFOFFOF | $\begin{aligned} & \text { OF } \\ & \text { ON } \\ & \text { ON } \\ & \text { OFF } \\ & \text { OFF } \end{aligned}$ | ON | ON | OFF | TS16 |  |
|  |  |  |  |  | ON | ON | OFF | TS18 |  |
|  |  | OFF |  |  |  | ON |  | TS19 |  |
|  | 8 |  | NOTE 2, NOTE 3 |  |  |  |  |  |  |
|  |  | ON |  |  |  |  |  |  |  |
|  |  | OFF |  |  |  |  |  |  |  |

(Continued)

| SWITCH NAME | SWITCH NUMBER | $\begin{aligned} & \text { SETTING } \\ & \text { POSITION } \end{aligned}$ | FUNCTION |  |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SW3 (DIP SW) | 1 | ON | Set the equalizer according to the cable length between the system and the CSU. |  |  |  |  |
|  |  | ON | $\begin{array}{\|c\|} \hline \text { SW } \\ -1 \\ \hline \text { ON } \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline \text { SW } \\ \text {-2 } \end{array}$ | $\begin{array}{\|c} \hline \text { SW } \\ -3 \end{array}$ | CABLE <br> LENGTH |  |
|  | 2 | OFF |  |  | ON | $\begin{array}{\|l\|} \hline 0-40 \mathrm{~m} \\ (0-131.2 \mathrm{ft} .) \\ \hline \end{array}$ |  |
|  |  |  | ON | ON | OFF | $\begin{aligned} & 40-80 \mathrm{~m} \\ & (131.2-262.5 \mathrm{ft} .) \end{aligned}$ |  |
|  | 3 | OFF | ON | OFF | ON | $\begin{aligned} & 80-120 \mathrm{~m} \\ & (262.5-394 \mathrm{ft} .) \end{aligned}$ |  |
|  |  |  | ON | OFF | OFF | $\begin{aligned} & 120-160 \mathrm{~m} \\ & (394-525 \mathrm{ft} .) \end{aligned}$ |  |
|  |  |  | OFF | ON | ON | $\begin{aligned} & 160-200 \mathrm{~m} \\ & (525-656 \mathrm{ft} .) \end{aligned}$ |  |
|  |  |  | OFF | OFF | OFF | Signal is not sent |  |
|  | 4 | OFF | Always set to OFF |  |  |  |  |
| JPS (Jumper pin) |  | UP | Neutral grounding on the transmitting line is provided. |  |  |  |  |
|  |  | DOWN | Neutral grounding on the transmitting line is not provided. |  |  |  |  |
| JPR (Jumper pin) |  | UP | Neutral grounding on the receiving line is provided. |  |  |  |  |
|  |  | DOWN | Neutral grounding on the receiving line is not provided. |  |  |  |  |

The figure in the SWITCH NAME column and the position in $\square$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\square$ , 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 <br> NAME | COLOR | $\quad$ FUNCTION |
| :--- | :--- | :--- |
| RUN | Green | Flashes at 120 IPM while this card is operating normally. |
| LINK | Green | Remains lit when the following connection are normal. <br> $\bullet$ <br> - Control channel link between the DAIA card and DAIB card. <br> Goes out after 15 seconds of link disconnection. |
| RED | Red | Remains lit when detecting PCM signal loss or Frame Alignment <br> 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 <br> NAME | SWITCH <br> NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| MB (Toggle SW) <br> NOTE |  | UP | For make-busy |  |
|  |  | DOWN | For normal operation |  |
| SW1 <br> (Piano Key SW) | 1 | OFF | Always set to OFF |  |
|  | 2 | OFF | Always set to OFF |  |
|  | 3 | OFF | Always set to OFF |  |
|  | 4 | OFF | Always set to OFF |  |
| SW2 (DIP SW) | 1 | OFF | Not used |  |
|  | 2 | ON | DTI frame configuration: 12-Multi Frame |  |
|  |  | OFF | DTI frame configuration: 24-Multi Frame |  |
|  | 3 | ON | Line code: AMI with ZCS |  |
|  |  | OFF | Line code: B8ZS |  |
|  | 4 | OFF | Not used |  |
|  | 5 | OFF | Not used |  |
|  | 6 | OFF | Not used |  |
|  | 7 | OFF | Not used |  |
|  | 8 | OFF | Not used |  |

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION |  |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SW3 (DIP SW) | 1 | ON | Set the equalizer according to the cable length between the system and the CSU. |  |  |  |  |
|  |  |  | $\begin{gathered} \mathrm{SW} \\ -1 \end{gathered}$ | $\begin{gathered} \hline \mathrm{SW} \\ -2 \end{gathered}$ | $\begin{gathered} \hline \text { SW } \\ -3 \end{gathered}$ | CABLE LENGTH |  |
|  | 2 |  | ON | ON | ON | $\begin{aligned} & \hline 0-40 \mathrm{~m} \\ & (0-131.2 \mathrm{ft} .) \end{aligned}$ |  |
|  |  | OFF | ON | ON | OFF | $\begin{aligned} & \hline 40-80 \mathrm{~m} \\ & (131.2-262.5 \mathrm{ft} \text {. } \end{aligned}$ |  |
|  | 3 | ON | ON | OFF | ON | $\begin{aligned} & 80-120 \mathrm{~m} \\ & (262.5-394 \mathrm{ft} .) \end{aligned}$ |  |
|  |  | 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 mounting this card on remote site. |  |  |  |  |
|  |  | OFF | When mounting this card on main site. |  |  |  |  |

The figure in the SWITCH NAME column and the position in $\square$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\qquad$ , 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 <br> NAME | COLOR | $\quad$ 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 <br> normally connected. <br> 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). <br> Remains lit while FP data downloading. |

Switch Settings

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SENSE <br> (Rotary SW) <br> NOTE 1 | O-F | FP (Firmware Processor) Number setting for the DAID card. <br> By this setting, the system regards the DAID card and the opposite DAIE card as one Firmware Processor. |  |  |
|  |  | 0 | Not used |  |
|  |  | 1 | FP No. 1 |  |
|  |  | 2 | FP No. 2 |  |
|  |  | 3 | FP No. 3 |  |
|  |  | 4-F | Not used |  |
| MB (Toggle SW) <br> NOTE 2 |  | UP | For make-busy |  |
|  |  | DOWN | For normal operation |  |
| SW1 <br> (Piano Key SW) | $1$ <br> NOTE 3 | ON | For supplying 2.0 MHz clock to PLO 0 |  |
|  |  | OFF | No clock supply to PLO 0 |  |
|  | $2$ <br> NOTE 3 | ON | For supplying 2.0 MHz clock to PLO 1 |  |
|  |  | OFF | No clock supply to PLO 1 |  |
|  | 3 | OFF | Always set to OFF |  |
|  | 4 | OFF | Always set to OFF |  |

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SW2 (DIP SW) | 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. |  |
|  |  | OFF | CRC Synchronization Detection Timer is not provided. |  |
|  | 3 | ON | CRC4 Check is provided. |  |
|  |  | OFF | CRC4 Check is not provided. |  |

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION |  |  |  |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SW2 (DIP SW) <br>  | 4 | ON | Setting of control signal time slot |  |  |  |  |  |  |
|  |  |  | SWITCH NUMBER |  |  |  |  | time slot |  |
|  |  | OFF | 4 | 5 | 6 | 7 | 8 | number |  |
|  |  |  | OFF | $\begin{aligned} & \text { ON } \\ & \text { OF } \end{aligned}$ | ${ }^{\text {ON }}$ | ON | ON | TS 4 TS5 |  |
|  | 5 | ON | OFF | OFF | ON | ON | ON | TS 6 |  |
|  |  |  | ON | ON | OFF | ON | ON ON | TS 7 TS8 |  |
|  |  | OFF | OFF | ON | OFF | ON | ON ON | TS8 |  |
|  | 6 |  | OFF | $\begin{aligned} & \text { OFF } \\ & \text { ON } \end{aligned}$ | OFF | $\begin{array}{\|l\|l\|l\|l\|} \hline \text { OF } \end{array}$ | ON ON | TS 10 TS 11 |  |
|  |  | ON | OFF | ON | ON | OFF | ON | TS 12 |  |
|  |  |  | ON | OFF | ON | OFF | ON | TS 13 |  |
|  |  | OFF | OFF | Of | OFF | OFF | ON | TS 14 TS 15 |  |
|  | 7 |  | OFF | ON | OFF | OFF | ON | TS 16 |  |
|  |  | ON | ON | OFF | OFF | OFF | ON | TS 17 TS 18 |  |
|  |  |  | ON | ON | ON | ON | OFF | TS 19 |  |
|  |  | OFF | OFF | ON | ON | ON | OFF | TS 20 TS 21 |  |
|  |  |  | OFF | OFF | ON | ON | OFF | TS 22 |  |
|  | 8 | ON | OFF | ON | OFF | ON | OFF | TS 24 |  |
|  |  |  | ON | OFF | OFF | ON | OFF | TS 25 |  |
|  |  | OFF | OFF | OFF | OFF | $\begin{array}{\|l\|l\|l\|l\|l\|} \text { OF } \end{array}$ | OFF | TS 26 TS 27 |  |
|  |  |  | OFF | ON | ON | OFF | OFF | TS 28 |  |
|  |  |  | ON |  | ON | OFF | OFF | TS 29 |  |
|  |  |  | OFF |  | ON | OFF | OFF | TS 30 TS 29 |  |
|  |  |  | ON |  | OFF | OFF | OFF | TS 30 |  |
|  |  |  | OFF | OFF | OFF | OFF | OFF | TS 31 |  |
|  |  |  | NOTE 4, NOTE 5 |  |  |  |  |  |  |

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SW3 (DIP SW) | 1 | ON | Always set to ON |  |
|  | 2 | ON | Always set to ON |  |
|  | 3 | ON | Always set to ON |  |
|  | 4 | ON | Always set to OFF |  |
| JPS (Jumper pin)$\square$ |  | 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)$\square$ | l | 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)$\square$ |  | Right | Line impedance: <br> 120 ohms (For twisted-pair cable) |  |
|  |  | Left | Line impedance: <br> 75 ohms (For coaxial cable) |  |
| SRT (Jumper pin)$\square$ |  | Right | For mounting this card on PIM0 |  |
|  |  | Left | For mounting this card on PIM1PIM7 |  |
| JP (Jumper pin) |  | UP | Line impedance: <br> 120 ohms (For twisted-pair cable) |  |
|  |  | DOWN | Line impedance: <br> 75 ohms (For coaxial cable) |  |

(Continued)

The figure in the SWITCH NAME column and the position in $\square$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\qquad$ , 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 (DAIDO, DAID1) must be mounted in PIM0.

| CONDITIONS | DAIDO |  | DAID1 |  | DAID2 |  | REMARKS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { SW } \\ & 1-1 \end{aligned}$ | $\begin{aligned} & \text { SW } \\ & 1-2 \end{aligned}$ | $\begin{aligned} & \text { SW } \\ & 1-1 \end{aligned}$ | $\begin{aligned} & \text { SW } \\ & 1-2 \end{aligned}$ | $\begin{gathered} \text { SW } \\ 1-1 \end{gathered}$ | $\begin{aligned} & \text { SW } \\ & 1-2 \end{aligned}$ |  |
| One DAID card is provided. | ON | OFF | - | - | - | - | The clock signal is sent to PLOO of MP card via supply route 0 (DAIDO). |
| 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 <br> NAME | COLOR | $\quad$ 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 <br> normally connected. <br> Goes out after 15 seconds of link disconnection. |
| RMT | Red | Remains lit when receiving the alarm signal from a distant office. |
| LOOP | - | Rot used |
| BL | Red | Remains lit while data transmission on control channel (D ch). <br> Remains lit while FP data downloading. |

Switch Settings

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SENSE <br> (Rotary SW) | 0-F | 0 | Always set to 0 |  |
|  |  | 1-F | Not used |  |
| MB (Toggle SW) <br> NOTE 1 |  | UP | For make-busy |  |
|  |  | DOWN | For normal operation |  |
| SW1 <br> (Piano Key SW) | 1 | OFF | Always set to OFF |  |
|  | 2 | OFF | Always set to OFF |  |
|  | 3 | OFF | Always set to OFF |  |
|  | 4 | OFF | Always set to OFF |  |
| SW2 (DIP SW) | 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. |  |
|  |  | OFF | CRC Synchronization Detection Timer is not provided. |  |
|  | 3 | ON | CRC4 Check is provided. |  |
|  |  | OFF | CRC4 Check is not provided. |  |

(Continued)

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION | FUNCTION |  |  |  |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SW2 (DIP SW) | 4 | ON | Setting of control signal time slot |  |  |  |  |  |  |
|  |  |  | SWITCH NUMBER |  |  |  |  | time SLot |  |
|  |  | OFF | 4 | 5 | 6 | 7 | 8 | NUMBER |  |
|  |  |  | OFF | ON | ON | ON | ON | TS 1 |  |
|  | 5 |  | ON | OFF | ON | ON | ON | TS 2 |  |
|  |  | ON | OFF | OFF | ON | ON | ON | TS 3 |  |
|  |  |  | OFF | ON | OFF | ON | ON | TS 5 |  |
|  |  | OFF | ON | OfF | OfF | ON | ON | TS 6 |  |
|  |  |  | OFF | OFF | OFF | ON | ON | TS 7 TS 8 |  |
|  | 6 | ON | ON | ON | ON | OFF | ON | TS 8 |  |
|  |  |  | ON | OfF | ON | OFF | ON | TS 10 |  |
|  |  | OFF | OFF | OFF | ON | OFF | ON | TS 11 |  |
|  |  |  | ON | ON | OFF | OFF | ON | TS 12 TS 13 |  |
|  | 7 |  | ON | OfF | OfF | OFF | ON | TS 14 |  |
|  |  | ON | OFF | OfF | OFF | OFF | ON | TS 15 |  |
|  |  |  | ON | ON | ON | ON | OFF | TS 16 |  |
|  |  | OFF | OFF | ON | ON | ON | OFF | TS 17 |  |
|  |  |  | ON | OFF | ON | ON | OFF | TS 18 TS 19 |  |
|  | 8 | ON | 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 | OFF | ON | OFF | TS 23 TS 24 |  |
|  |  |  | OFF | ON | ON | OFF | OFF | TS 25 |  |
|  |  |  | ON | OFF | ON | OFF | OFF | TS 26 |  |
|  |  |  | OFF | OFF | ON | OFF | OFF | TS 27 |  |
|  |  |  | OFF | ON | OFF | OFF | OFF | TS 29 |  |
|  |  |  | ON OFF | OFF | OFF | OFF | OFF | TS 30 TS 31 |  |
|  |  |  | NOTE 2, NOTE 3 |  |  |  |  |  |  |

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SW3 (DIP SW) | 1 | ON | Always set to ON |  |
|  | 2 | ON | Always set to ON |  |
|  | 3 | ON | Always set to ON |  |
|  | 4 | OFF | Always set to OFF |  |
| JPS (Jumper pin) $\bullet \bullet$ |  | 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)$\square$ |  | 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)$\square$ |  | Right | Line impedance: 75 ohms (For coaxial cable) |  |
|  |  | Left | Line impedance: <br> 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 $\longrightarrow$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\qquad$ , 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 (TSO/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 <br> 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. <br> - Control channel link between the DAID card and DAIE card. <br> - <br> Connection between the opposite DAIF card. <br> 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. <br> (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 <br> (Piano Key SW) | 1 | OFF | Always set to OFF |  |
|  | 2 | ON | Line impedance: 75 ohms (For coaxial cable) |  |
|  |  | OFF | Line impedance: 120 ohms (For twisted-pair cable) |  |
|  | 3 | OFF | Always set to OFF |  |
|  | 4 | OFF | Always set to OFF |  |

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SW2 (DIP SW) | 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. |  |
|  |  | 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 |  |

(Continued)

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

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 $\qquad$ , 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.

CHAPTER 3 LAMP INDICATIONS AND SWITCH SETTINGS
PN-24DTA-C (DTI)

## 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  <br> ON : More than 10 channels are busy <br> OFF $:$ All channels are idle <br> Flash (60 IPM) $:$ Only one channel is busy <br> Flash (120 IPM) $: 2$ through 10 channels are busy |

Switch Settings

(Continued)

| SWITCH NAME | SWITCH <br> NUMBER | SETTING <br> POSITION |  | FUNCTION |
| :--- | :---: | :---: | :--- | :--- | :--- |

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SW1 <br> (Piano Key SW) <br> NOTE 4 | 1 | OFF | Not used |  |
|  | 2 | OFF | Not used |  |
|  | 3 | OFF | Not used |  |
|  | 4 | ON | AP No. 04-15 |  |
|  |  | OFF | AP No. 20-31 |  |
| JPRO (Jumper pin) |  | UP | Neutral grounding on the receiving line is provided. |  |
|  |  | DOWN | Neutral grounding on the receiving line is not provided. |  |
| JPR1 (Jumper pin)$\square$ $\bullet \cdot \bullet$ |  | 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 makebusy or power on. |  |
|  |  | DOWN | AIS signal is not sent out when make-busy or power on. |  |

(Continued)
The figure in the SWITCH NAME column and the position in $\square$ in the SETTING POSITIONcolumn indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\longrightarrow$, 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 SWO-1 and SWO-2 as follows:

| CONDITIONS | DTIO |  | DTI1 |  | DTI2 |  | DTI3 |  | DTI4 |  | REMARKS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { SW } \\ & 0-1 \end{aligned}$ | $\begin{aligned} & \text { SW } \\ & 0-2 \end{aligned}$ | $\begin{array}{\|l} \text { SW } \\ 0-1 \end{array}$ | $\begin{aligned} & \text { SW } \\ & 0-2 \end{aligned}$ | $\begin{aligned} & \text { SW } \\ & 0-1 \end{aligned}$ | $\begin{aligned} & \hline \text { SW } \\ & 0-2 \end{aligned}$ | $\begin{aligned} & \text { SW } \\ & 0-1 \end{aligned}$ | $\begin{array}{\|l\|} \hline \text { SW } \\ 0-2 \\ \hline \end{array}$ | $\begin{aligned} & \text { SW } \\ & 0-1 \end{aligned}$ | $\begin{array}{\|l\|} \hline \text { SW } \\ 0-2 \end{array}$ |  |
| When one DTI is provided. | ON | OFF | - | - | - | - | - | - | - | - | MP card will receive the clock signal from DTIO at its PLOO 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 DTIO at its PLOO input, under normal conditions. <br> Should a clock failure occur with DTIO, 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 SWO-1 and SWO-2 on all the DTI cards mounted in PIMO to "OFF".
NOTE 5: Mount the DTI card which receives a source clock signal into PIMO.

CHAPTER 3 LAMP INDICATIONS AND SWITCH SETTINGS
PN-30DTC-A (DTI)

## PN-30DTC-A (DTI)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | $\quad$ 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 <br> time Slot 16. |
| RMT | Red | Remains lit when receiving the alarm from a distant office <br> because Frame Alignment signal loss has been detected at the <br> distant office. |
| MRMT | Remains lit when receiving the alarm from a distant office <br> because Multi-Frame Alignment signal loss has been detected at <br> the distant office. |  |
| AIS | Remains lit when indicating that the pattern of consecutive "1" is <br> being received. The distant office transmits this signal for a loop- <br> back test distant. |  |
| Red | B channel status <br> ON <br> OFF More than10 channels are busy <br> Flash (60 IPM) $\quad:$ Only one channel is busy <br> Flash (120 IPM) : to 10 channels are busy |  |

Switch Settings

| SWITCH <br> NAME | SWITCH <br> NUMBER | SETTING POSITION |  |  | FUNCTION |  |  |  |  |  |  |  |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SENS <br> (Rotary SW) | 4-F | Set the switch to match the AP Number (04-31) to be set by CM05. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\overbrace{}^{5}$ | AP No. | -8: ON | 04 | 05 |  | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 |  |
| 4 |  | W-8: OFF | 20 | 21 |  | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |  |
|  | SW No. |  | 4 | 5 |  | 7 | 8 | 9 | A | B | C | D | E | F |  |
| NOTE 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-3 | Not used |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MB (Toggle SW) $\qquad$ ON |  | UP |  |  | For make-busy |  |  |  |  |  |  |  |  |  |  |
|  |  | DOWN |  |  | For normal operation |  |  |  |  |  |  |  |  |  |  |

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SW <br> (Piano Key SW) | NOTE 3 NOTE 4 | ON | Source clock signal from network is sent to the PLO 0 input on MP card. |  |
|  |  | OFF | Source clock signal from network is not sent to the PLO 0 input on MP card |  |
|  |  | ON | Source clock signal from network is sent to the PLO 1 input on MP card. |  |
|  |  | OFF | Source clock signal from network is not sent to the PLO 1 input on MP card. |  |
|  | 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) |  |
|  |  | OFF | Transmission line cable: Twisted-pair cable (120 ohms) |  |
|  | 6 | OFF | Always set to OFF |  |
|  | 7 | OFF |  |  |
|  | 8 | ON | AP No. 04-15 |  |
|  |  | OFF | AP No. 20-31 |  |

(Continued)

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

(Continued)

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 $\qquad$ , 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:

| CONDITIONS | DTIO |  | DTI1 |  | DTI2 |  | DTI3 |  | REMARKS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \hline \text { SW } \\ -1 \end{gathered}$ | $\begin{gathered} \text { SW } \\ -2 \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { SW } \\ -1 \end{array}$ | $\begin{gathered} \text { SW } \\ -2 \end{gathered}$ | $\begin{gathered} \text { SW } \\ -1 \end{gathered}$ | $\begin{gathered} \hline \text { SW } \\ -2 \end{gathered}$ | $\begin{gathered} \hline \text { SW } \\ -1 \end{gathered}$ | $\begin{gathered} \text { SW } \\ -2 \end{gathered}$ |  |
| When one DTI is provided. | ON | OFF | - | - | - | - | - | - | MP card will receive the clock signal from DTIO at its PLOO input. |
| When more than one DTI is provided. | ON | OFF | OFF | ON | OFF | OFF | OFF | OFF | MP card will receive the clock signal from DTIO at its PLOO input, under normal conditions. <br> Should a clock failure occur with DTIO, 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.

CHAPTER 3 LAMP INDICATIONS AND SWITCH SETTINGS
PN-IPTA (IPT)

## PN-IPTA (IPT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> 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 <br> 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 | ON: Ethernet is operating with 100 Mbps. <br> OFF: Ethernet is operating with 10 Mbps. |
| IP-100M | Green | ON: Being connected to IP network (Link established). <br> OFF: Disconnected to IP network (No link established). |
| IP-LINK | Green | Remains lit when detecting IP data collision. |
| IP-COL | Green | Remains lit when IP network is ready to use. |
| IP-LYR |  |  |

Switch Settings

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
|  | 1 | ON | For normal operation |  |
|  |  | OFF | Not used |  |
|  | 2 | ON | For normal operation |  |
|  |  | OFF | Not used |  |
|  | 3 | ON | For normal operation |  |
|  |  | OFF | Not used |  |
|  | 4 | ON | AP Number: 04-15 |  |
|  |  | OFF | AP Number: 20-31 |  |
| SW2 (DIP SW) | 1-8 | OFF | Not used |  |
|  |  |  |  |  |

The figure in the SWITCH NAME column and the position in $\square$ the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\qquad$ , 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.

CHAPTER 3 LAMP INDICATIONS AND SWITCH SETTINGS PN-24PRTA (PRT)

## 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 <br> ON : More than 10 channels are busy <br> OFF : All channels are idle <br> Flash (60 IPM) : Only one channel is busy <br> Flash (120 IPM) : 2 through 10 channels are busy |

Switch Settings

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION |  | FUNCTION |  |  |  |  |  |  |  |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SENSE <br> (Rotary SW) | 0-3 | Not used |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 4-F | Set the switch to match the AP Number (04-31) to be set by CM05. |  |  |  |  |  |  |  |  |  |  |  |  |
| NOTE 1 | AP No. ${ }^{\text {S }}$ | 1-4: ON 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 |  |
|  |  | 1-4: OFF 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |  |
|  | SW No. |  | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |  |

(Continued)

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING <br> POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SW1 <br> (Piano Key SW) <br> NOTE 4 | 1 | OFF | Not used |  |
|  | 2 | OFF | Not used |  |
|  | 3 | OFF | Not used |  |
|  | 4 | ON | AP No. 04-15 |  |
|  |  | OFF | AP No. 20-31 |  |
|  | 1 | OFF | Always set to OFF |  |
|  | 2 | [North America only for AT\&T] |  |  |
|  |  | ON | Deletion of Area Code on International Outgoing call |  |
|  |  | OFF | No deletion of Area Code on International Outgoing call |  |
|  |  | [Australia/Other 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 |  |

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| JPRO (Jumper pin) |  | UP | Neutral grounding on the receiving line is provided. |  |
|  |  | DOWN | Neutral grounding on the receiving line is not provided. |  |
| JPR1 (Jumper pin)$\square$ $\bullet \cdot \cdot$ |  | 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 makebusy or power on. |  |
|  |  | DOWN | AIS signal is not sent out when make-busy or power on. |  |

(Continued)

The figure in the SWITCH NAME column and the position in $\square$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\square$ , 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:

| CONDITIONS | PRTO |  | PRT1 |  | PRT2 |  | PRT3 |  | PRT4 |  | REMARKS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { SW } \\ & 0-1 \end{aligned}$ | $\begin{array}{\|l\|} \hline S W \\ 0-2 \end{array}$ | $\begin{aligned} & \text { SW } \\ & 0-1 \end{aligned}$ | $\begin{gathered} \text { SW } \\ 0-2 \end{gathered}$ | $\begin{aligned} & \text { SW } \\ & 0-1 \end{aligned}$ | $\begin{gathered} \text { SW } \\ 0-2 \end{gathered}$ | $\begin{aligned} & \text { SW } \\ & 0-1 \end{aligned}$ | $\begin{gathered} \text { SW } \\ 0-2 \end{gathered}$ | $\begin{aligned} & \text { SW } \\ & 0-1 \end{aligned}$ | $\begin{gathered} S W \\ 0-2 \end{gathered}$ |  |
| When one PRT is provided. | ON | OFF | - | - | - | - | - | - | - | - | MP card will receive the clock signal from PRT0 at its PLOO 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 PLOO 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 <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| RUN | Green | Flashes at 120 IPM while this card is operating normally. |
| OPE0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

## Switch Settings

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION |  | FUNCTION |  |  |  |  |  |  |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SENSE <br> (Rotary SW) <br> NOTE 1 | 4-F | Set the switch to match the AP Number (04-31) to be set by CM05 |  |  |  |  |  |  |  |  |  |  |  |
|  | AP No. ${ }^{\text {S }}$ | SW-8: ON | 05 | 0607 |  | 09 | 10 | 11 | 12 | 13 | 14 | 15 |  |
|  |  | SW-8: OFF | 21 | 22 | 232 |  |  |  | 28 | 29 | 30 | 31 |  |
|  | SW No. |  | 5 | 6 | 7 | 9 | A | B | C | D | E | F |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-3 $\quad$ Not used |  |  |  |  |  |  |  |  |  |  |  |  |
| MB (Toggle SW) <br> NOTE 2 |  | UP | For make-busy |  |  |  |  |  |  |  |  |  |  |
|  |  | DOWN | For normal operation |  |  |  |  |  |  |  |  |  |  |
| SW <br> (Piano Key SW) | 1 | ON | For make-busy No. 0 circuit |  |  |  |  |  |  |  |  |  |  |
|  |  | OFF | For normal operation |  |  |  |  |  |  |  |  |  |  |
|  | 2 | ON | For make-busy No. 1 circuit |  |  |  |  |  |  |  |  |  |  |
|  |  | OFF | For normal operation |  |  |  |  |  |  |  |  |  |  |
|  | 3 | ON | For make-busy No. 2 circuit |  |  |  |  |  |  |  |  |  |  |
|  |  | OFF | For normal operation |  |  |  |  |  |  |  |  |  |  |
|  | 4 | ON | For make-busy No. 3 circuit |  |  |  |  |  |  |  |  |  |  |
|  |  | OFF | For normal operation |  |  |  |  |  |  |  |  |  |  |
|  | 5 | OFF | Not used |  |  |  |  |  |  |  |  |  |  |
|  | 6 | OFF |  |  |  |  |  |  |  |  |  |  |  |
|  | 7 | OFF |  |  |  |  |  |  |  |  |  |  |  |
|  | 8 | ON | AP No. 04-15 |  |  |  |  |  |  |  |  |  |  |
|  |  | OFF | AP 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 <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| RUN |  | Flashes at 120 IPM while this card is operating normally. |
| BL0-3 | Red | Remains lit when receiving a CALLER ID (CLASS SM) signal. |

## Switch Settings

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION |  |  | FUNCTION |  |  |  |  |  |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SENSE <br> (Rotary SW) <br> NOTE 1 | 4-F | Set the switch to match the AP Number (04-15) to be set by CM05. |  |  |  |  |  |  |  |  |  |  |  |
|  | AP No. | 0405 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 |  |
|  | SW No. | 45 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-3 | Not used |  |  |  |  |  |  |  |  |  |  |  |
| MB (Toggle SW) <br> NOTE 2 |  | UP |  | For make-busy |  |  |  |  |  |  |  |  |  |
|  |  | DOWN |  | For normal operation |  |  |  |  |  |  |  |  |  |
| SW1 <br> (Piano Key SW) | 1 | ON |  | For make-busy No. 0 circuit |  |  |  |  |  |  |  |  |  |
|  |  | OFF | $F$ | For normal operation |  |  |  |  |  |  |  |  |  |
| $F F \leftarrow H$ | 2 | ON |  | For make-busy No. 1 circuit |  |  |  |  |  |  |  |  |  |
|  |  | OFF | $F$ | For normal operation |  |  |  |  |  |  |  |  |  |
|  | 3 | ON |  | For make-busy No. 2 circuit |  |  |  |  |  |  |  |  |  |
|  |  | OFF | $F$ | For normal operation |  |  |  |  |  |  |  |  |  |
|  | 4 | ON |  | For make-busy No. 3 circuit |  |  |  |  |  |  |  |  |  |
|  |  | OFF | $F$ | For normal operation |  |  |  |  |  |  |  |  |  |
| JPO <br> (Jumper pin) $\square$ |  | RIGHT |  | For normal operation |  |  |  |  |  |  |  |  |  |

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-SCOO (CCH)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> 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 <br> common signalling channel data links connected. |
| LPB | Green | Remains lit when a loop-back test is in progress. |

Switch Settings

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION |  | FUNCTION |  |  |  |  |  |  |  |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SENSE <br> (Rotary SW) | 4-F | Set the switch to match the AP Number (04-31) to be set by CM05. |  |  |  |  |  |  |  |  |  |  |  |  |
|  | AP No. ${ }^{\text {S }}$ | SW0-4: ON | 05 |  |  |  |  |  | 11 | 12 | 13 |  | 15 |  |
|  |  | SW0-4: OFF | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |  | 31 |  |
|  | SW No. |  | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |  |
| NOTE 1 | $\mid$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-3 | Not used |  |  |  |  |  |  |  |  |  |  |  |  |
| MB (Toggle SW) |  | UP | For make-busy |  |  |  |  |  |  |  |  |  |  |  |
| NOTE 2 |  | DOWN | For normal operation |  |  |  |  |  |  |  |  |  |  |  |
| SW0 <br> (Piano Key SW) | 1 | ON |  | Loop-back test |  |  |  |  |  |  |  |  |  |  |
|  |  | OFF |  | For normal operation |  |  |  |  |  |  |  |  |  |  |
|  | 2 | ON |  | Analog interface |  |  |  |  |  |  |  |  |  |  |
|  |  | OFF | Digital interface |  |  |  |  |  |  |  |  |  |  |  |
|  | 3 | ON | RS-232C RTS signal (to MODEM) ON NOTE 3 |  |  |  |  |  |  |  |  |  |  |  |
|  | 3 | OFF | RS-232C RTS signal (to MODEM) OFF |  |  |  |  |  |  |  |  |  |  |  |
|  | 4 | ON |  | AP No. 04-15 |  |  |  |  |  |  |  |  |  |  |
|  |  | OFF |  | AP No. 20-31 |  |  |  |  |  |  |  |  |  |  |

(Continued)

| SWITCH <br> NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION |  |  |  |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | ON OFF | - Common channel signalling data transmission speed (For Digital Interface) |  |  |  |  |  |  |
|  | 2 | ON | TRANSMISSION SPEED | $\begin{aligned} & \hline \text { SW } \\ & 1-1 \end{aligned}$ | $\begin{gathered} \hline \text { SW } \\ 1-2 \end{gathered}$ | $\begin{array}{\|l\|} \hline \text { SW } \\ 1-3 \end{array}$ | $\begin{array}{\|l\|l\|} \hline \text { SW } \\ \hline \end{array}$ | $\begin{aligned} & \text { SW } \\ & 1-5 \end{aligned}$ |  |
|  |  | OFF | 48kbps NOTE 4 | ON | ON | OFF | OFF | ON |  |
|  | 3 | ON | 48kbps NOTE4 | ON | ON | ON | OFF | ON |  |
|  |  | ON | 56kbps | ON | ON | OFF | ON | ON |  |
|  |  | OFF | 64kbps | ON | ON | ON | ON | ON |  |
|  | 4 | ON | - Common channel signalling data transmission speed (For Analog Interface) <br> Set switches (SW1-1 - SW1-5) to OFF. |  |  |  |  |  |  |
|  |  | OFF |  |  |  |  |  |  |  |
|  | 5 | ON |  |  |  |  |  |  |  |
|  |  | OFF |  |  |  |  |  |  |  |
|  | 6 | ON | A-law |  |  |  |  |  |  |
|  |  | OFF | $\mu$-law |  |  |  |  |  |  |
|  | 7 | OFF | Always set to OFF |  |  |  |  |  |  |
|  | 8 | OFF | Always set to OFF |  |  |  |  |  |  |

The figure in the SWITCH NAME column and the position in $\square$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\qquad$ , 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



## PN-SCO1 (DCH)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> 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 <br> D channel data links connected. |
| LPB | Green | Not used |

Switch Settings

| SWITCH <br> NAME | SWITCH <br> NUMBER | SETTING POSITION |  | FUNCTION |  |  |  |  |  |  |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SENSE <br> (Rotary SW) | 4-F | Set the switch to match the AP Number (04-31) to be set by CM05. |  |  |  |  |  |  |  |  |  |  |  |
| NOTE 1 | AP No. ${ }^{\text {S }}$ | SW0-4: ON |  |  |  | 09 |  | 11 | 12 | 13 | 14 | 15 |  |
|  |  | SW0-4: OFF | 21 | 22 | 232 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |  |
|  | SW No. |  | 5 | 6 | 78 | 9 | A | B | C | D | E | F |  |
|  | 0-3 | Not used |  |  |  |  |  |  |  |  |  |  |  |
| MB (Toggle SW) <br> NOTE 2 |  | UP | For make-busy |  |  |  |  |  |  |  |  |  |  |
|  |  | DOWN | For normal operation |  |  |  |  |  |  |  |  |  |  |
| SW0 <br> (Piano Key SW) | 1 | OFF | Always set to OFF |  |  |  |  |  |  |  |  |  |  |
|  | 2 | OFF | Always set to OFF |  |  |  |  |  |  |  |  |  |  |
|  | 3 | OFF | Always set to OFF |  |  |  |  |  |  |  |  |  |  |
|  | 4 | ON | AP No. 04-15 |  |  |  |  |  |  |  |  |  |  |
|  |  | OFF | AP No. 20-31 |  |  |  |  |  |  |  |  |  |  |

(Continued)

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SW1 (DIP SW) <br> $\stackrel{N}{\wedge}$ | 1 | OFF | Always set to OFF |  |
|  | 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 $\square$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\square$ , 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-SCO3 (ICH)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> 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 Settings

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION |  |  | FUNCTION |  |  |  |  |  |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SENSE <br> (Rotary SW) | 4-F | Set the switch to match the AP Number (04-15) to be set by CM05. |  |  |  |  |  |  |  |  |  |  |  |
| (S) | AP No. | 0405 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 |  |
| 4 | SW No. | 45 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |  |
| NOTE 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-3 | Not used |  |  |  |  |  |  |  |  |  |  |  |
| MB (Toggle SW) <br> NOTE 2 |  | UP |  | For make-busy |  |  |  |  |  |  |  |  |  |
|  |  | DOWN |  | For normal operation |  |  |  |  |  |  |  |  |  |

The figure in the SWITCH NAME column and the position in $\square$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\square$ , 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 <br> 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 Settings

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION |  | FUNCTION |  |  |  |  |  |  |  |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SENSE <br> (Rotary SW) | 4-F | Set the switch to match the AP Number (04-31) to be set by CM05. |  |  |  |  |  |  |  |  |  |  |  |
| NOTE 1 | AP No. ${ }^{\text {S }}$ | SW1-1: ON | 05 |  |  |  |  |  | 12 | 13 | 14 | 15 |  |
|  |  | SW1-1: OFF | 21 | 22 |  | 24 | 2526 | 27 | 28 | 29 | 30 | 31 |  |
|  | SW No. |  | 5 | 6 | 7 | 8 | 9 A | B | C | D | E | $F$ |  |
|  | 0-3 | Not used |  |  |  |  |  |  |  |  |  |  |  |
| MB (Toggle SW) <br> NOTE 2 |  | UP | For make-busy |  |  |  |  |  |  |  |  |  |  |
|  |  | DOWN | For normal operation |  |  |  |  |  |  |  |  |  |  |
| SW1 <br> (Piano SW) | 1 | OFF | Not used |  |  |  |  |  |  |  |  |  |  |
|  | 2 | OFF |  | Not used |  |  |  |  |  |  |  |  |  |
|  | 3 | OFF | Not used |  |  |  |  |  |  |  |  |  |  |
|  | 4 | ON | AP No. 04-15 |  |  |  |  |  |  |  |  |  |  |
|  |  | OFF | AP No. 20-31 |  |  |  |  |  |  |  |  |  |  |

The figure in the SWITCH NAME column and the position in $\square$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\qquad$ , 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.

CHAPTER 3 LAMP INDICATIONS AND SWITCH SETTINGS
PZ-M537 (EXPMEM)

## PZ-M537 (EXPMEM)

Locations of Lamps, Switches, and Connectors


REAR


Lamps Indications
This card has no lamps.

Switch Settings

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SW (DIP SW) | 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 $\longrightarrow$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\qquad$ , 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.


WHEN MOUNTING EXPMEM CARD
ON THE APOO CARD


WHEN MOUNTING EXPMEM CARD ON THE MP CARD


## PZ-M542 (CONN)

Locations of Lamps, Switches, and Connectors


## Lamp Indications

This card has no lamps.

Switch Settings

| 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 $\qquad$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\longrightarrow$, 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 Settings

| 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 $\qquad$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\longrightarrow$, 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 <br> X: PROVIDED <br> -: NOT <br> PROVIDED | $\begin{aligned} & \text { SWITCH } \\ & \text { X: PROVIDED } \\ & \text {-: NOT } \\ & \quad \text { PROVIDED } \end{aligned}$ | EXTRACTION/ INSERTION WITH POWER ON <br> X: ALLOWED <br> $\Delta$ : ALLOWED <br> AFTER MB* <br> -: NOT ALLOWED | REFERENCE PAGE |
| :---: | :---: | :---: | :---: | :---: |
| PN-2AMPA (AMP) | X | - | X | Page 324 |
| PN-AUCA (AUC) | X | - | X | Page 325 |
| PN-CFTA (CFT) | X | - | X | Page 326 |
| PN-CFTB (CFT) | X | - | X | Page 327 |
| PN-2COTD (COT) | X | - | X | Page 328 |
| PN-4COTA-A (COT) | X | - | X | Page 329 |
| PN-4COTB (COT) | X | - | X | Page 330 |
| PN-4COTE (COT) | X | - | X | Page 331 |
| PN-4COTF (COT) | X | - | X | Page 332 |
| PN-4COTG (COT) | X | - | X | Page 333 |
| PN-6COTJ (COT) | X | - | X | Page 334 |
| PN-8COTQ (COT) | X | - | X | Page 335 |
| PN-8COTR (COT) | X | - | X | Page 336 |
| PN-8COTS (COT) | X | - | X | Page 337 |
| PN-8COTT (COT) | X | - | X | Page 338 |
| PN-2CSIA (CSI) | X | - | X | Page 339 |
| PN-2CSIA-A (CSI) | X | X | X | Page 342 |
| PN-4DATC (DAT) | X | X | X | Page 345 |
| *MB = Make Busy |  |  |  |  |

CHAPTER 3 LAMP INDICATIONS AND SWITCH SETTINGS

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

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

*MB = Make Busy

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

| NAME <br> (FUNCTIONAL NAME) | $\begin{aligned} & \text { LAMP } \\ & \text { X: PROVIDED } \\ & \text {-: NOT } \\ & \text { PROVIDED } \end{aligned}$ | $\begin{aligned} & \text { SWITCH } \\ & \text { X: PROVIDED } \\ & \text {-: NOT } \\ & \quad \text { PROVIDED } \end{aligned}$ | EXTRACTION/ <br> INSERTION WITH <br> POWER ON <br> X: ALLOWED <br> $\Delta$ : ALLOWED <br> AFTER MB* <br> -: NOT ALLOWED | REFERENCE PAGE |
| :---: | :---: | :---: | :---: | :---: |
| PN-2LDTA (LDT) | X | - | X | Page 372 |
| PN-M03 (M03) | X | X | X | Page 373 |
| PN-M10 (M10) | X | X | $\Delta$ | Page 376 |
| PN-2ODTA (ODT) | X | - | X | Page 378 |
| PN-2ODTB (ODT) | X | - | X | Page 379 |
| PN-8RSTA (PBR) | - | - | X | Page 380 |
| PN-TNTA (TNT) | - | X | X | Page 381 |
| PN-4VCTH (VCT) | X | X | X | Page 383 |
| PZ-8PFTB (PFT) | - | - | X | Page 385 |
| PZ-VM00-M (VM) | X | X | $\Delta$ | Page 386 |
| PN-VM01 (VM) | X | X | - | Page 389 |

*MB = Make Busy

## PN-2AMPA (AMP)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

Switch Settings
This card has no switches.

## PN-AUCA (AUC)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

Switch Settings

This card has no switches.

## PN-CFTA (CFT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

Switch Settings
This card has no switches.

## PN-CFTB (CFT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

Switch Settings

This card has no switches.

## PN-2COTD (COT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0, 1 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |
| LF0,1 | Red | - Remains lit when the corresponding circuit detects a meter sig- <br> nal or a line fault condition. |

## Switch Settings

This card has no switches.

## PN-4COTA-A (COT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

## Switch Settings

This card has no switches.

## PN-4COTB (COT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

Switch Settings

This card has no switches.

## PN-4COTE (COT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

Switch Settings
This card has no switches.

## PN-4COTF (COT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

Switch Settings
This card has no switches.

## PN-4COTG (COT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

Switch Settings

This card has no switches.

## PN-6COTJ (COT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

## Switch Settings

This card has no switches.

## PN-8COTQ (COT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

## Switch Settings

This card has no switches.

## PN-8COTR (COT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

Switch Settings

This card has no switches.

## PN-8COTS (COT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

Switch Settings
This card has no switches.

## PN-8COTT (COT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

## Switch Settings

This card has no switches.

## 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 |
| B11 | Red | B channel status |
| B10 | Red | B channel status |
| B03 | Red | Not used (Flash [60 IPM]) |
| B02 | Red | B channel status |
| B01 | Red | B channel status |

(Continued)

| LAMP NAME | COLOR | FUNCTION |
| :---: | :---: | :---: |
| B00 | Red | B channel status  <br> ON $:$ B0 channel of the No. 0 circuit is in use. <br> OFF $:$ B0 channel of the No. 0 circuit is idle. <br> Flash (60 IPM) ZT is not connected to the No. 0 circuit. <br> ZT is in make-busy status. |

## Switch Settings

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \hline \text { DL0 } \\ & \text { (Rotary SW) } \end{aligned}$ |  | 0 | For normal operation |  |
| NOTE | 0-F | $1-F$ | Not used |  |
| DL1 <br> (Rotary SW) |  | 0 | For normal operation |  |
| NOTE | 0-F | 1-F | Not used |  |

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

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

CHAPTER 3 LAMP INDICATIONS AND SWITCH SETTINGS

## 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 |
| B11 | Red | B channel status |
| B10 | Red | B channel status |
| B03 | Red | Not used (Flash [60 IPM]) |
| B02 | Red | B channel status |
| B01 | Red | B channel status |

(Continued)

| LAMP <br> NAME | COLOR |  | FUNCTION |
| :--- | :--- | :--- | :--- |
| B00 | Red | B channel status <br> ON <br> OFF | : BO channel of the No. 0 circuit is in use. <br> Flash (60 IPM) <br> BO channel of the No. 0 circuit is idll. <br> OS is not connected to the No. 0 circuit. <br> CS is in make-busy status. |

## Switch Settings

| SWITCH NAME | SWITCH <br> NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| $\overline{\mathrm{DLO}}$ <br> (Rotary SW) | 0-F | 0 | For normal operation |  |
|  |  | 1-F | Not used |  |
| DL1 <br> (Rotary SW) | 0-F | 0 | For normal operation |  |
|  |  | 1-F | Not used |  |
| SP (jumper SW) <br> 1 2 $\rightarrow$ Front |  | UP | For normal operation |  |
|  |  | DOWN | Not used |  |

The figure in the SWITCH NAME column and the position in $\square$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\longrightarrow$, 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 <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

Switch Settings

This card has no switches.

## PN-2DITA (DIT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

## Switch Settings

This card has no switches.

## PN-4DITB (DIT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

Switch Settings

This card has no switches.

CHAPTER 3 LAMP INDICATIONS AND SWITCH SETTINGS

## PN-DK00 (DK)

Locations of Lamps, Switches, and Connectors


Lamp Indications
This card has no lamps.

Switch Settings
This card has no switches.

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

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

Switch Settings

This card has no switches.

## PN-2DLCC (DLC)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

## Switch Settings

This card has no switches.

## PN-4DLCF (DLC)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

Switch Settings

This card has no switches.

## PN-4DLCM (DLC)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

## Switch Settings

This card has no switches.

## PN-4DLCQ (DLC)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

Switch Settings

This card has no switches.

## PN-8DLCL (DLC)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

## Switch Settings

This card has no switches.

## PN-8DLCP (DLC)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

Switch Settings

This card has no switches.

CHAPTER 3 LAMP INDICATIONS AND SWITCH SETTINGS

## PN-2DPCB (DPC)

Location of Lamps, Switches, and Connectors


Lamp Indications

| LAMP NAME | COLOR |  | FUNCTION |
| :---: | :---: | :---: | :---: |
| BLO | Red | No. 0 Circuit | ON: Ready for digital data transmission or the circuit is busy. <br> OFF: Fixed path is not connected. <br> Flash (60 IPM): Make-busy state or the system data for this card is not assigned. <br> 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 ". |
| CDIO | Green |  | ON: DCD/l 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. <br> OFF: Fixed path is not connected. <br> Flash (60 IPM): Make-busy state or the system data for this card is not assigned. <br> 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 <br> NUMBER | SETTING POSITION |  | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: |
| SW1 <br> (Piano Key SW) | 1 | ON | No. 0 Circuit | Loop Back 1 ON |  |
|  |  | OFF |  | Loop Back 1 OFF |  |
|  | 2 | ON |  | Loop Back 2 ON |  |
|  |  | OFF |  | Loop Back 2 OFF |  |
|  | 3 | ON | No. 1 Circuit | Loop Back 1 ON |  |
|  |  | OFF |  | Loop Back 1 OFF |  |
|  | 4 | ON |  | Loop Back 2 ON |  |
|  |  | 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 |  |
|  |  | OFF |  | The DTR signal from DTE goes through the card |  |
|  | 2 | ON |  | Forcibly turning the RTS/C signal to ON |  |
|  |  | 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 |  |
|  | 6 | ON |  | Forcibly turning the RTS/C signal to ON |  |
|  |  | OFF |  | The RTS/C signal from DTE goes through the card |  |
|  | 7 | OFF |  | Not used |  |
|  | 8 | ON |  | V. 11 (X.21) interface |  |
|  |  | OFF |  | V.24/V. 28 (RS-232C) interface |  |

The figure in the SWITCH NAME column and the position in $\qquad$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\qquad$ , 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.

CHAPTER 3 LAMP INDICATIONS AND SWITCH SETTINGS

## 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 |  | $\mathrm{ON}: \mathrm{B} 1$ channel is in use. OFF: B1 channel is idle. |
| ACT0 | Green | No. 0 Circuit | ON: Normally operating. OFF: Not operating. |
| PALO | 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 | FUNCTION |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: |
| SW1 <br> (Piano Key SW) | 1 | OFF | Always set to OFF |  |  |
|  | 2 | OFF | Always set to OFF |  |  |
|  | 3 | OFF | Always set to OFF |  |  |
|  | 4 | OFF | Always set to OFF |  |  |
| SW0 <br> (Piano Key SW) | 1 | ON | No. 0 Circuit (Receiving) | Terminating register is provided. |  |
|  |  | OFF |  | Terminating register is not provided. |  |
|  |  | ON | No. 0 Circuit (Sending) | Terminating register is provided. |  |
|  |  | OFF |  | Terminating register is not provided. |  |
|  | 3 | ON | No. 1 Circuit (Receiving) | Terminating register is provided. |  |
|  |  | OFF |  | Terminating register is not provided. |  |
|  | 4 | ON | No. 1 Circuit (Sending) | Terminating register is provided. |  |
|  |  | OFF |  | Terminating register is not provided. |  |

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 $\qquad$ , the setting of the switch varies with the system concerned.

## PN-4LCC (LC)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | • Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

Switch Settings
This card has no switches.

## PN-4LCD-A (LC)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

Switch Settings
This card has no switches.

## PN-4LCE (LC)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

Switch Settings
This card has no switches.

## PN-4LCF (LC)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

Switch Settings
This card has no switches.

## PN-4LCK (LC)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

Switch Settings
This card has no switches.

## PN-4LCL (LC)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

Switch Settings
This card has no switches.

## PN-4LCV (LC)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

Switch Settings
This card has no switches.

## PN-4LCW (LC)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

Switch Settings
This card has no switches.

## PN-8LCAA (LC)

Locations of Lamps, Switches, and Connectors


BL7
BL6
BL5
BL4
BL3
BL2
BL1
BL0

Lamp Indications

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

Switch Settings
This card has no switches.

## PN-2LDTA (LDT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

Switch Settings
This card has no switches.

## PN-M03 (M03)

Location of Lamps, Switches, and Connectors


Lamp Indications

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

## Switch Settings

| SWITCH <br> NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| SW0 (DIP SW) | 1 | OFF | Always set to OFF |  |
| $\begin{array}{l\|l} 21 \\ \hline \end{array}$ | 2 | OFF | Not used |  |
| JP1A (Jumper pin) $\square$ <br> NOTE |  | Right | TXC(2) signal is sent out. |  |
|  |  | Left | TXC(2) signal is inputted. |  |
| JP1B (Jumper pin) <br> NOTE |  | Right | TXC(2) signal is sent out. |  |
|  |  | Left | TXC(2) signal is inputted. |  |
| 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 <br> (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 $\square$ in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\longrightarrow$, 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 Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| CK0 | Green | Remains lit when a Digital Trunk Interface is connected to No. 0 <br> circuit on this card. |
| CK1 | Green | Remains lit when a Digital Trunk Interface is connected to No. 1 <br> 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 Settings

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION | CHECK |
| :---: | :---: | :---: | :---: | :---: |
| JPO, 1 <br> (Jumper pin) |  | UP | When connected to E1 (2M) Digital Trunk Interface. |  |
|  |  | DOWN | When connected to T1 (1.5M) Digital Trunk Interface. |  |
| JP2 (Jumper pin)$\square$ |  | Right | Line code: B8ZS* is provided (For T1 interface) <br> *B8ZS: Bipolar Eight zero Substitution |  |
|  |  | Left | Line code: B8ZS* is not provide (For T1 interface) <br> *B8ZS: Bipolar Eight zero Substitution |  |
| JP3 (Jumper pin)$\square$ |  | 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 <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0, 1 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

Switch Settings

This card has no switches.

## PN-2ODTB (ODT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

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

Switch Settings
This card has no switches.

CHAPTER 3 LAMP INDICATIONS AND SWITCH SETTINGS
PN-8RSTA (PBR)

## PN-8RSTA (PBR)

Locations of Lamps, Switches, and Connectors


Lamp Indications
This card has no lamps.

Switch Settings
This card has no switches.

## PN-TNTA (TNT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

This card has no lamps.

Switch Settings

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION |  | TION | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: |
| SW <br> (Piano Key SW) | 1, 2 | Volume adjus | for No. 0 <br> MBER <br> 2 <br> OFF <br> ON <br> ON | VOLUME <br> -10 dB <br> -7 dB <br> -4 dB <br> -1 dB |  |
|  | 3, 4 | Volume adjus | for No. 1 <br> MBER <br> $\mathbf{4}$ <br> OFF <br> OFF <br> ON <br> ON | VOLUME <br> -10 dB <br> -7 dB <br> -4 dB <br> -1 dB |  |

## PN-4VCTH (VCT)

Locations of Lamps, Switches, and Connectors


Lamp Indications

| LAMP <br> NAME | COLOR | FUNCTION |
| :--- | :--- | :--- |
| BL0-3 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in make- <br> busy state or the system data for this card is not assigned. |

## Switch Settings

| SWITCH NAME | SWITCH NUMBER | SETTING POSITION | FUNCTION |  | CHECK |
| :---: | :---: | :---: | :---: | :---: | :---: |
| SW1 <br> (Piano Key SW) | 1, 2 | Set the numb cards are us | er per VCT d. (Max. fou <br> SW No. | two or more VCT cards) |  |
|  | 3 | ON | Not used |  |  |
|  | 4 | ON | Not used |  |  |

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 $\qquad$ , 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

This card has no switches.

## PZ-VM00-M (VM)

Location of Lamps, Switches, and Connectors

- CPU Board (Top Side)

- DSP Board (Bottom Side)


Lamp Indications

| LAMP NAME |  | COLOR | FUNCTION |
| :---: | :---: | :---: | :---: |
| CPU <br> 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 <br> Board | BL0-7 | Red | - Remains lit when the corresponding circuit is in use. <br> - Flashes at 60 IPM when the corresponding circuit is in makebusy state or the system data for this card is not assigned. |
|  | 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 Settings

| SWITCH NAME |
| :--- | :---: | :---: | :--- | :--- | | SWITCH |
| :---: |
| NUMBER | | SETTING |
| :---: |
| POSITION |$\quad$ FHECK

The figure in the SWITCH NAME column and the position inthe SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and $\qquad$ , 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 <br> NAME | COLOR |  | FUNCTION |
| :--- | :--- | :--- | :--- |
| PL4-7 | Red | DSP circuit operating |  |

## Switch Settings

This card has no switches.

This page is for your notes.


[^0]:    *MB = Make Busy

