

iPECS

iPECS-MG

Quick Start Guide

Please read this manual carefully before operating System. Retain it for future reference

iPECS is an Ericsson-LG Brand



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SYSTEM OVERVIEW

1.1 iPECS-MG System Connection Diagram

The following figure shows the components that make up the iPECS-MG System:

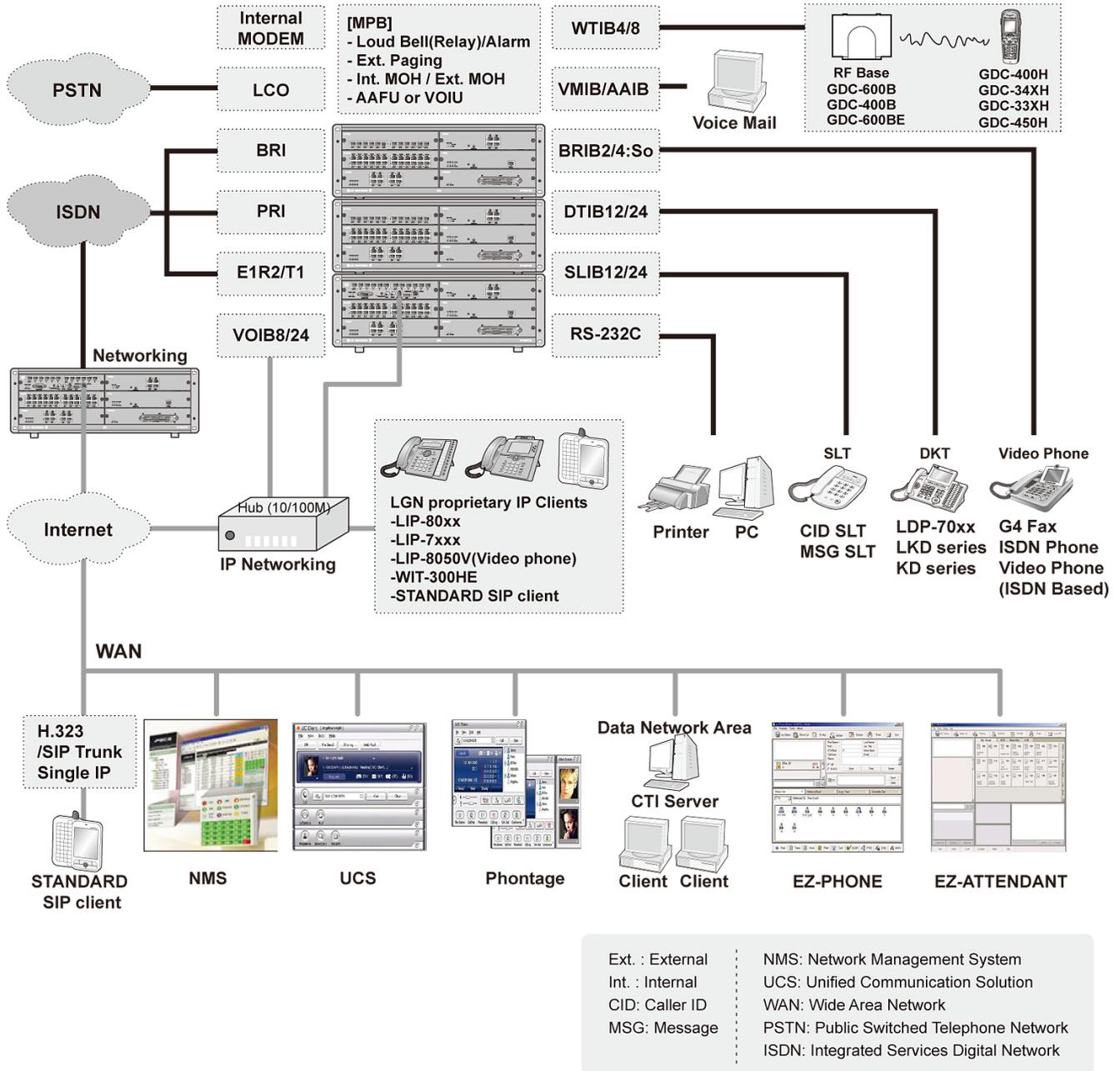


Figure 1.1 System Connection Diagram

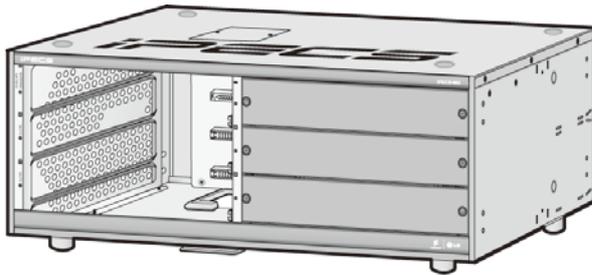
1.2 System Components

ITEM		OPTION BOARD	DESCRIPTION
BKSU			Basic KSU
EKSU			Expansion KSU
PSU			Power Supply Unit (350W)
Main Board	MPB100		Main Processor Board 100
		DSIU	Digital and Single Line Interface Unit (Default; 6 DKT, 6 SLT)
		MODU	Modem Unit (Optional; 33Kbps)
	MPB300		Main Processor Board 300
		DSIU	Digital and Single Line Interface Unit (Default; 6 DKT, 6 SLT)
		MODU	Modem Unit (Optional; 33Kbps)
Trunk Boards	LCOB4		4 LCO Interface Board
		CMU4	4 Call Metering Unit (50Hz/12KHz/16KHz)
	LCOB8		8 LCO Interface Board
		CMU4	4 Call Metering Unit (50Hz/12KHz/16KHz)
	LCOB12		12 LCO Interface Board
		CMU4	4 Call Metering Unit (50Hz/12KHz/16KHz)
	BRIB2		2 So/To Interface Board (4 channels)
	BRIB4		4 So/To Interface Board (8 channels)
PRIB		DCO Interface Board (1 PRI or 1 E1R2, 30chs / 1 T1, 24chs)	
Extension Boards	SLIB12		12 SLT Interface Board
	SLIB12C		12 SLT Interface Board (RJ21)
	SLIB24		24 SLT Interface Board
	SLIB24C		24 SLT Interface Board (RJ21)
	DTIB12		12 DKT Interface Board
	DTIB12C		12 DKT Interface Board (RJ21)
	DTIB24		24 DKT Interface Board
	DTIB24C		24 DKT Interface Board (RJ21)
Function Boards	WTIB4		4 Base Wireless Terminal Interface Board
	WTIB8		8 Base Wireless Terminal Interface Board
	VMIB		Voice Mail Interface Board (8 channels, 100hrs)
	AAIB		Auto Attendant Interface Board (8 channels)
	VOIB8		8 VoIP Interface Board
	VOIB24		24 VoIP Interface Board
ETC	GDC-400B		DECT Base Station (6 channels per Base)
	GDC-600B		
	GDC-600BE		
	WMK		Wall Mount Bracket

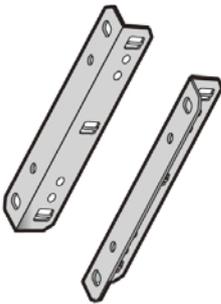
KSU INSTALLATION

2.1 BKSU/EKSU Unpacking

Open the box and verify the items shown in Figure 2.1A and 2.1B are included:



Key Service Unit



Rack Mounting Bracket



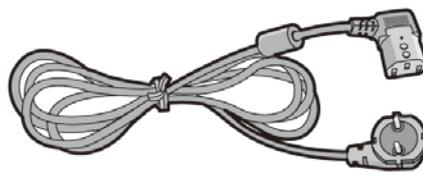
Screw



Tie Cable



CD manual



Power Cord

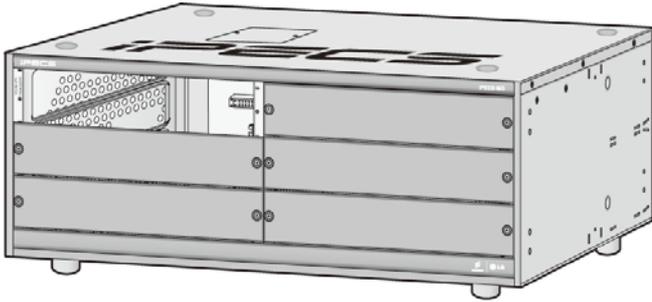


Backup Battery Cable



Quick Start Guide

Figure 2.1A BKSU Carton Contents



Key Service Unit



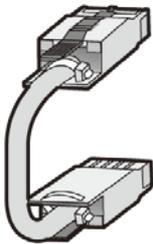
Rack Mounting Bracket



Screw



Tie Cable



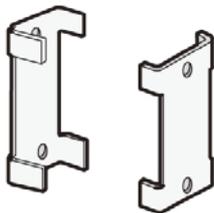
Expansion Cable



Power Cord



Backup Battery Cable



Fastener



Screw

Figure 2.1B EKSU Carton Contents

2.2 Power Supply Unit Installation

The Power Supply Unit (PSU) can be installed in the BKSU and the EKSU by the installer. Make sure that the KSU is not plugged into an outlet. The PSU is located at the rear side of the KSU and is capable of providing three kinds of power sources to the MB and MBE through the 20-pin connector, CN6/CN7 (refer to the following Table).

AC Input Voltage and Fuse Rating

Range of Input Voltage	Connect To	Fuse Ratings
100V AC – 240V AC	CN6/CN7 on the MB/MBE	6.3A @ 250V

PSU Capacity

PSU Type	+5V DC	+27V DC	+30V DC
PSU (SMPS)	10.0A	1A(Battery charge)	10A

1. Insert PSU along the guide rails on the rear side of iPECS-MG.
2. Slide and Press PSU to the CN6 on MB and the CN7 on MBE.
3. To fix it securely, turn 4 screws clockwise.

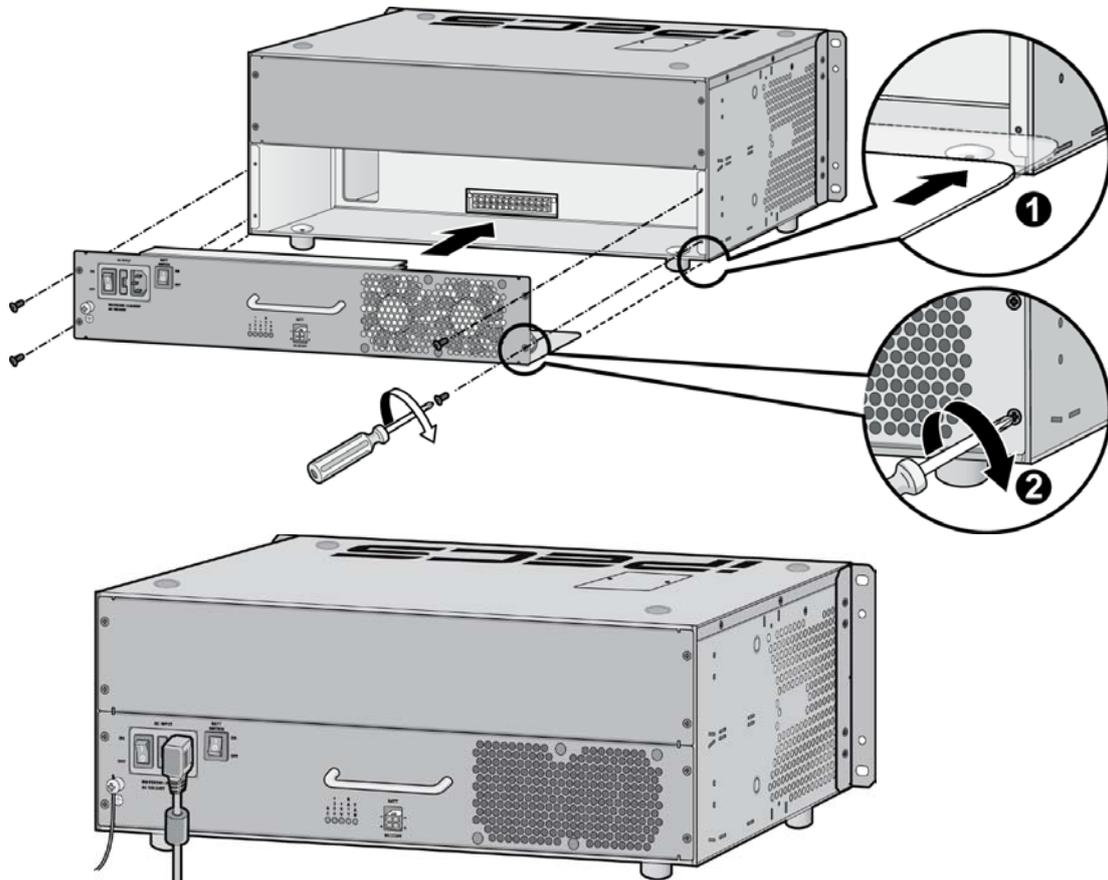


Figure 2.2 PSU Installation

NOTE

- When turning-Off the PSU of 1st KSU, the 2nd and 3rd PSUs first should be turned-Off, or the iPECS-MG will automatically shut them off.
- The 1st and 2nd KSUs will work independent of the 3rd KSU (power shut-Off).
- The 1st KSU will work independent of the 2nd KSU (powered-Off), however, the 3rd KSU cannot work without the 2nd KSU powered-On.
- The MPB100/MPB300 should be reset if the 2nd and 3rd KSUs are turned-On/Off.

2.3 Frame Ground Connection

It is very important that the frame of the iPECS-MG System should be grounded:

1. Turn the grounding screw counter clockwise to loosen, as shown in Figure 2.3.
2. Insert the grounding wire and tighten the screw.
3. Then connect the grounding wire to an appropriate ground source (refer to Caution).

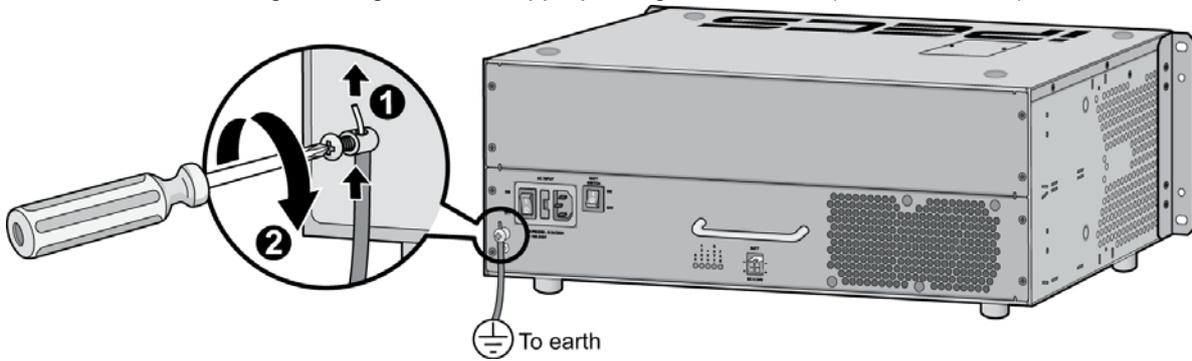


Figure 2.3 Grounding the KSU

CAUTION : For ground wire, green-and-yellow insulation is required and the cross-sectional area of the conductor must be more than UL 1015 AWG#18 (1.0mm). It is recommended that the ground wire is shorter than 1m (3.28ft).

2.4 External Backup Battery Installation

In case of power failure, the external backup batteries automatically maintain uninterrupted power for the iPECS-MG System. The external batteries must provide 24V DC; this is generally accomplished by connecting two 12V batteries in a series arrangement as shown:

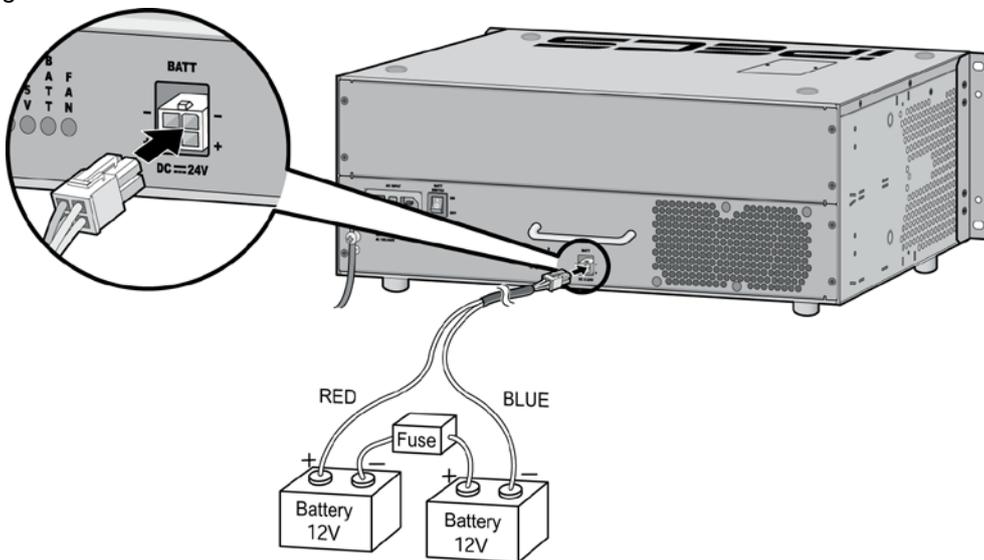


Figure 2.4 External Backup Battery Installation

1. Connect the backup battery cable with 2 identical batteries (12V DC X 2).
2. Connect the external back up battery cable to the battery connector of the PSU.
3. After connecting the external backup battery cable, turn on the battery switch.

NOTE: The cable used to connect the battery is supplied with the KSU from the manufacturer.

Battery Capacities

BATTERY CAPACITY	DKT 24 PORTS	DKT 72 PORTS	DKT 120 PORTS
20AH	6 hours	3 hours	1.5 Hours
40AH	12 hours	6 hours	3 hours

2.5 KSU Mounting

2.5.1 Wall Mounting / Rack Mounting

1. Attach the mounting template included for accurate placement to the wall and drill the hole.
2. Install 12 anchor plugs into the wall using the mounting template (Figure 2.5.1A).
3. Insert 12 included screws into the 12 anchor plugs.
4. Hook Wall Bracket onto installed screws.
5. Attach Wall Shelf to the bottom of KSU and affix two shelves to the KSU using the 8 screws provided.
6. Hook the Wall Shelf onto the Wall Bracket, making sure that the System slides down securely.
7. Affix the Wall Shelf to the Wall Bracket using the 8 screws provided.

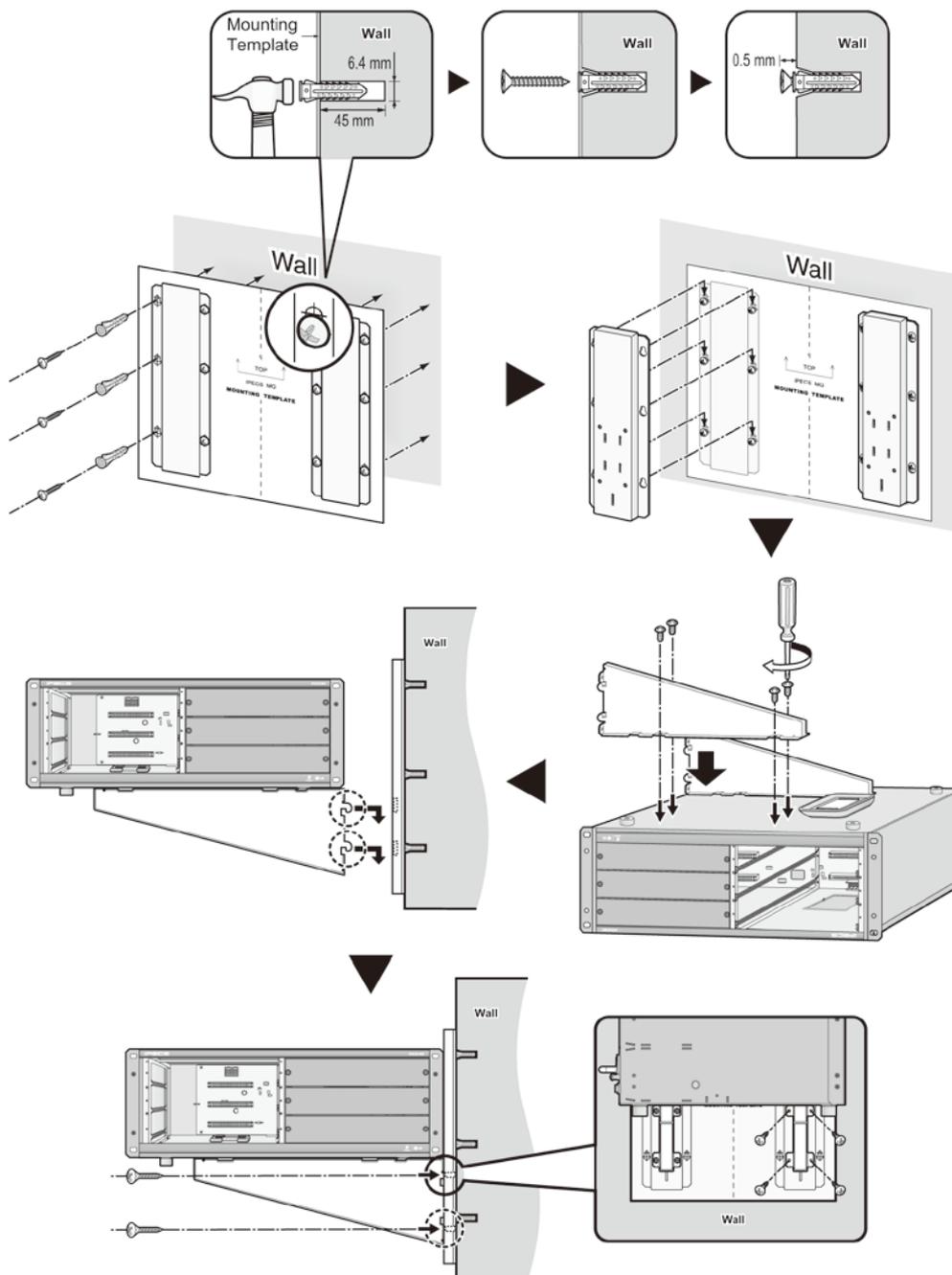


Figure 2.5.1A Wall Mounting

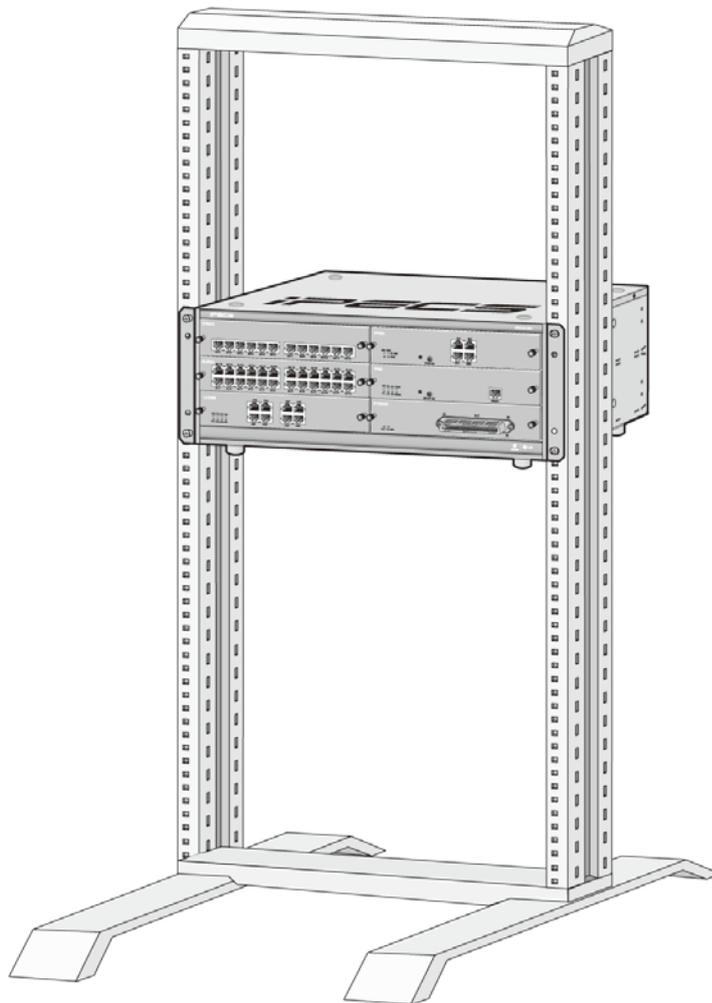
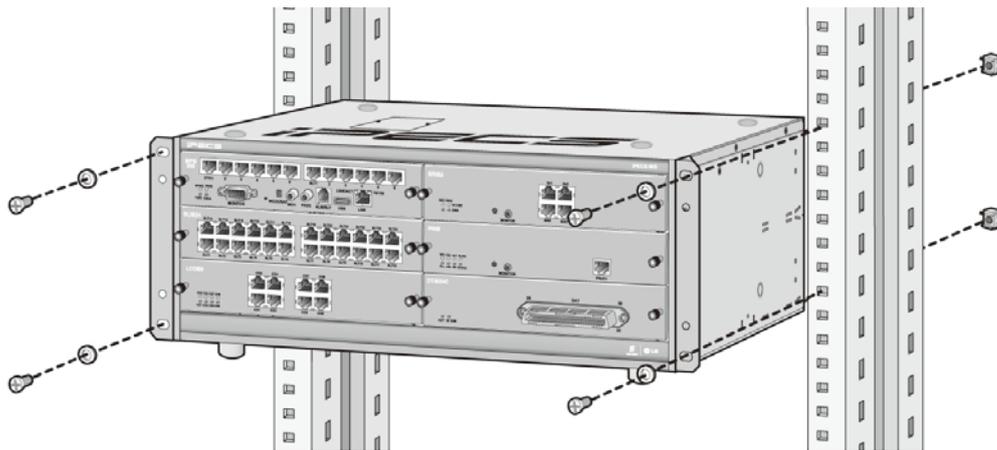


Figure 2.5.1B Rack Mounting

2.6 Expansion KSU Installation

1. Turn the screw counter-clockwise to loosen and then remove the Dummy Cap. Also, the Dummy Cap of the second KSU should be be opened in the same manner.
2. To operate the System, each KSU should be connected using the Expansion cable as shown below. Please make sure that the Expansion cable is connected correctly, and not facing the wrong direction.
3. Connect Fasteners with screws to affix the iPECS-MG system.

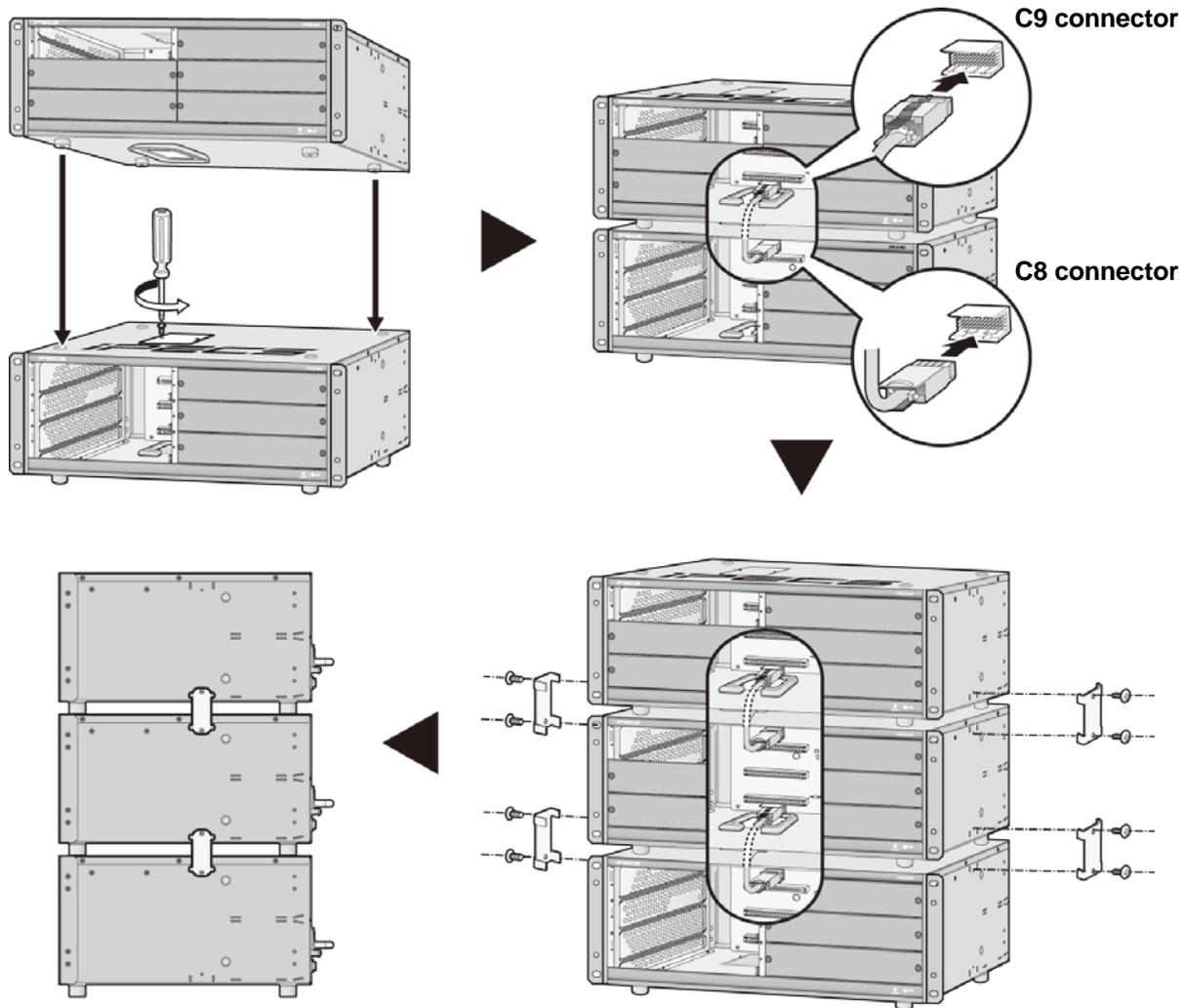


Figure 2.6 Expansion KSU installation

NOTE

- **Be careful not to bend the pins of connectors.**
- **When the Expansion Cable is inserted in an uneven manner, the connector pins (male pins) on MB/MBE may be bent over, so care should be taken.**
- **Before Installation of Expansion Cable, remove dummy plates.**

BOARD INSTALLATION

3.1 Installation of the Boards

Prior to installing the Boards, the following should be considered:

CAUTION

- *Verify that electrical Power is turned OFF.*
- *To protect the System from static electricity, do not directly touch the boards; to discharge static, touch a grounded object, or wear a grounding strap.*

To install the Board, perform following Steps:

1. Slide the board along the guide rails and hold the board as shown in second figure, carefully insert the Board in the direction of the arrow so that the Board securely insert with the connector on the Mother Board.
2. Press the screw to turn it clockwise and affix it securely.

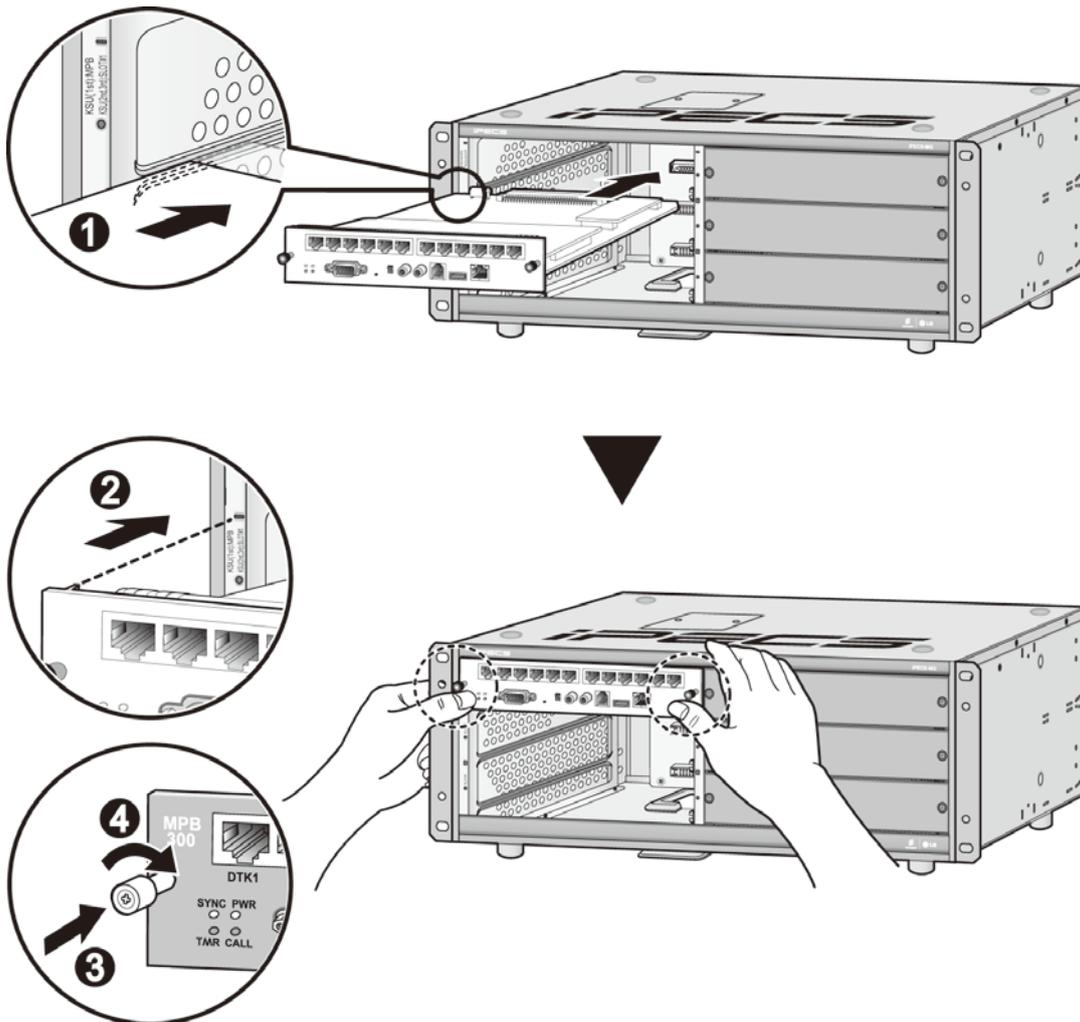


Figure 3.1 Board Installation

3.2 Main Processing Board 100/300 (MPB100/MPB300)

The Main Processor Board controls communication between the peripheral Board, supervises all resources in the system, controls the gain adjustment of the PCM signal, generates the System tones, and manages System call processing (MPB300 is shown as an example in Figure 3.2.1).

MPB100/MPB300 must be installed on the MPB slot of the 1st KSU.

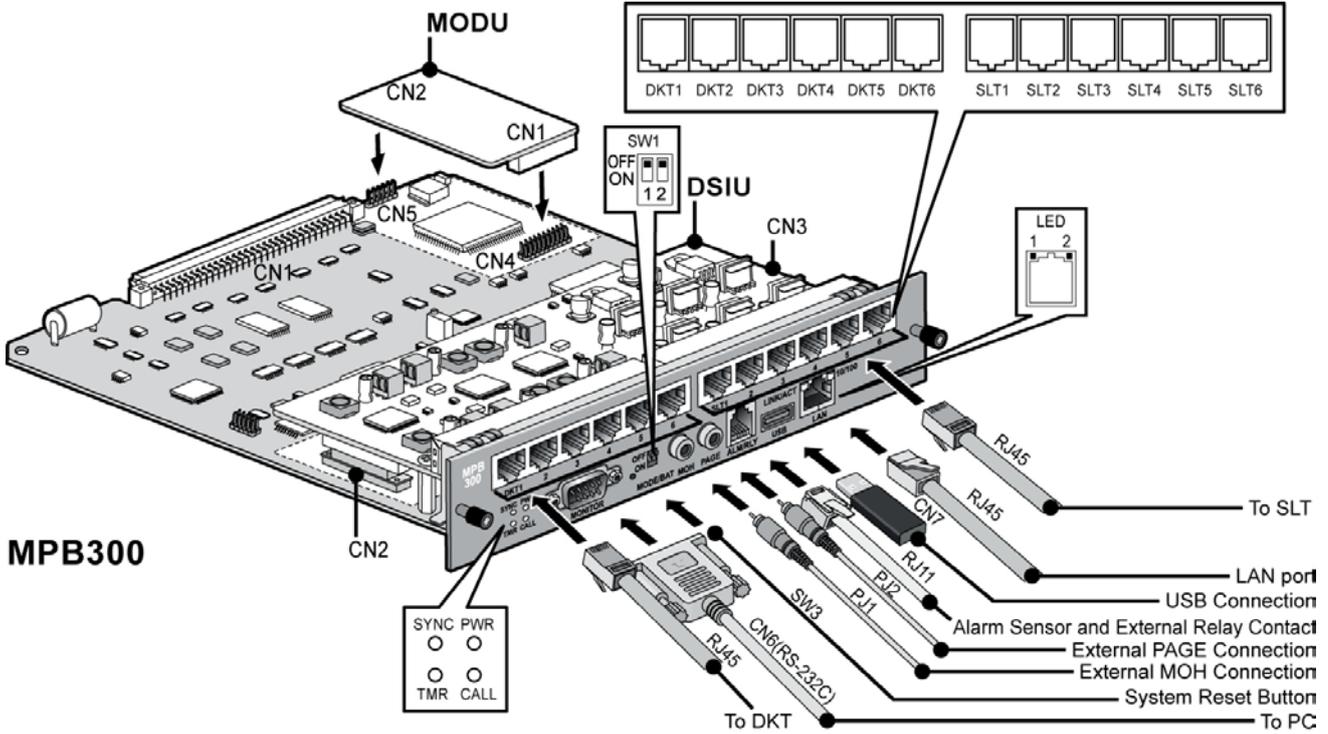
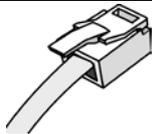


Figure 3.2.1 MPB300

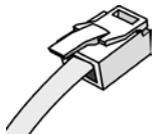
3.2.1 Modular Jack (MJ1, MJ3)

3.2.1.1 MJ1 Pin Assignment

LAN port

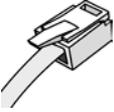
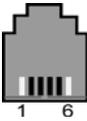
CONNECTOR	PIN NUMBER	NO.	SIGNAL NAME	FUNCTION
		4,5,7,8	Reserved	
		1	TX+	Transmit Data
		2	TX-	Transmit Data
		3	RX-	Receive Data
		6	RX+	Receive Data

PC

CONNECTOR	PIN NUMBER	NO.	SIGNAL NAME	FUNCTION
		4,5,7,8	Reserved	
		1	RX-	Receive Data
		2	RX+	Receive Data
		3	TX+	Transmit Data
		6	TX-	Transmit Data

3.2.1.2 MJ3 (Alarm Detection and Relay Contact) Pin Assignment

MJ3

CONNECTOR	PIN NUMBER	NO.	SIGNAL NAME
		1	N/A
		2	ALARM-T
		3	ALARM-R
		4	Relay-T
		5	Relay-R
		6	N/A

MJ4 Pin Assignment (USB)

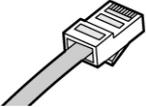
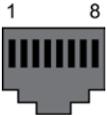
CONNECTOR	PIN NUMBER	NO.	SIGNAL NAME
		1	GND
		2	D+
		3	D-
		4	VBUS (+5V)

3.2.2 DSIU (Digital and Single line Interface Unit)

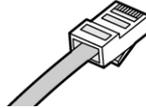
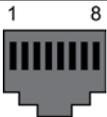
The DSIU is included by default on the MPB100/300, and provides 6 Digital Terminal (DKT) ports and 6 Single Line analog (SLT) ports with FSK (ITU-T V.23 or Bell 202) or DTMF (ITU-T Q.23) Caller ID function.

3.2.2.1 Pin Assignment

DSIU MJ1 (DKT Only)

CONNECTOR	PIN NUMBER	NO.	SIGNAL NAME
		1,2,3	Reserved
		4	DKT-T
		5	DKT-R
		6,7,8	Reserved

DSIU MJ2 (SLT Only)

CONNECTOR	PIN NUMBER	NO.	SIGNAL NAME
		1,2,3	Reserved
		4	SLT-T
		5	SLT-R
		6,7,8	Reserved

3.2.3 MODU (MODEM Interface Unit)

The optional MODU should be installed on the MODU connectors (CN4, CN5) of the MPB100/MPB300, and provides an analog modem connection. It supports Bell, ITU-T, V.34, V.32BIS, V.90 Protocol at a speed rate of 300bps up to 33Kbps, and automatic rate negotiation.

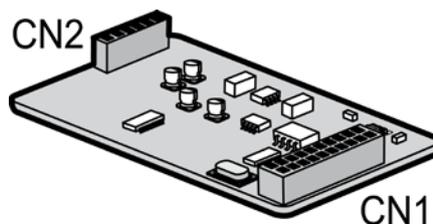


Figure 3.2.2 MODU

3.3 CO Line Boards

3.3.1 LCOB4/LCOB8/LCOB12 (Loop Start CO Line Interface Board)

The LCOB (Loop Start CO Interface Board) is a board for PSTN interface on iPECS-MG system. LCOB supports Caller Identification (CID) detection, Polarity Reversal (PR) detection, Call Progress Tone (CPT) detection. But the optional CMU4 board is needed in case of call metering service (50Hz, 12kHz, and 16kHz). And, the LCOB has one Power Failure Transfer (PFT) circuit for 1st port.

The LCOB4/LCOB8/LCOB12 board can be installed on any universal slot.

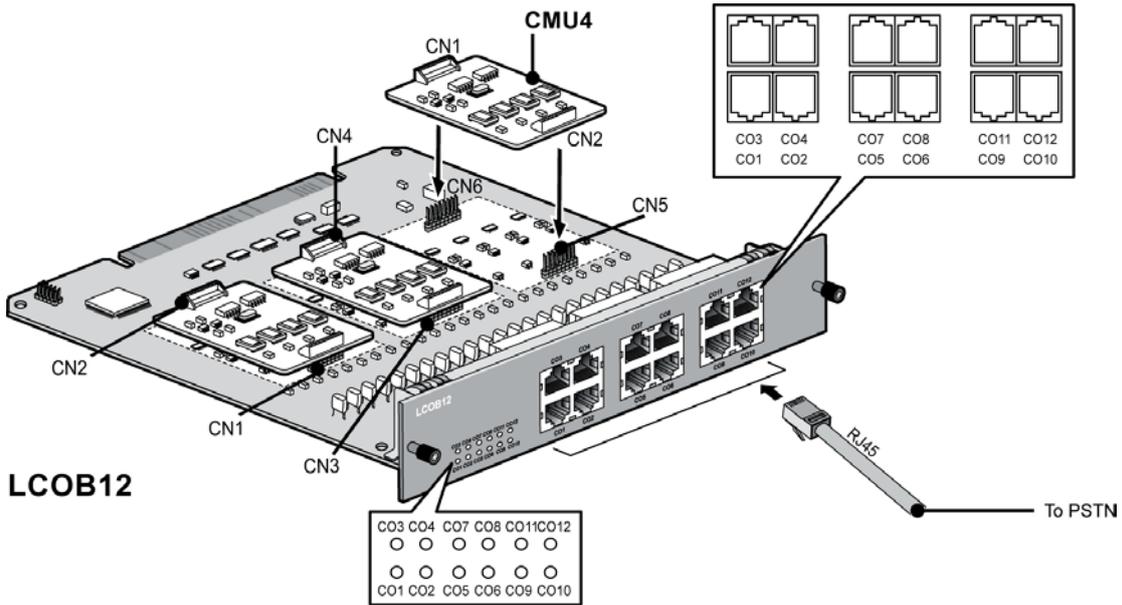
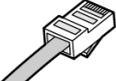


Figure 3.3.1 LCOB12

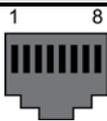
3.3.1.1 Pin Assignment

LCOB 1st Port (supports PFT function)

CONNECTOR	PIN NUMBER	NO.	SIGNAL NAME
		1,2	PFT-T, PFT-R
		3	Reserved
		4,5	CO-T, CO-R
		6,7,8	Reserved

NOTE: If User wants to use the [PFT](#) function, Pin# 1, 2 should be connected to a SLIB interface port.

LCOB Ports (except 1st port)

CONNECTOR	PIN NUMBER	NO.	SIGNAL NAME
		1,2,3	Reserved
		4,5	CO-T, CO-R
		6,7,8	Reserved

3.3.1.2 CMU4 (Call Metering detection Unit)

The CMU4 can be optionally mounted on LCOB4/LCOB8/LCOB12, and provides 50Hz, 12kHz and 16kHz Call Metering detection function for 4 channels. So, Three CMU4s can be installed on LCOB12.

3.3.2 BRIB2/BRIB4 (Switchable S/T Interface Board)

There are two kinds of BRIB2/BRIB4 according to CPU, but they have the same functions. The BRIB2 supports S-interface (Line card function) or T-interface (Trunk function). iPECS-MG can be positioned at reference point Ia (T) or Ib (S) on ETS that is TE-slave without power feeding or NT-master with power feeding.

BRIB2/BRIB4 can be installed on the universal slot in any KSU except the MPB slot of 1st KSU.

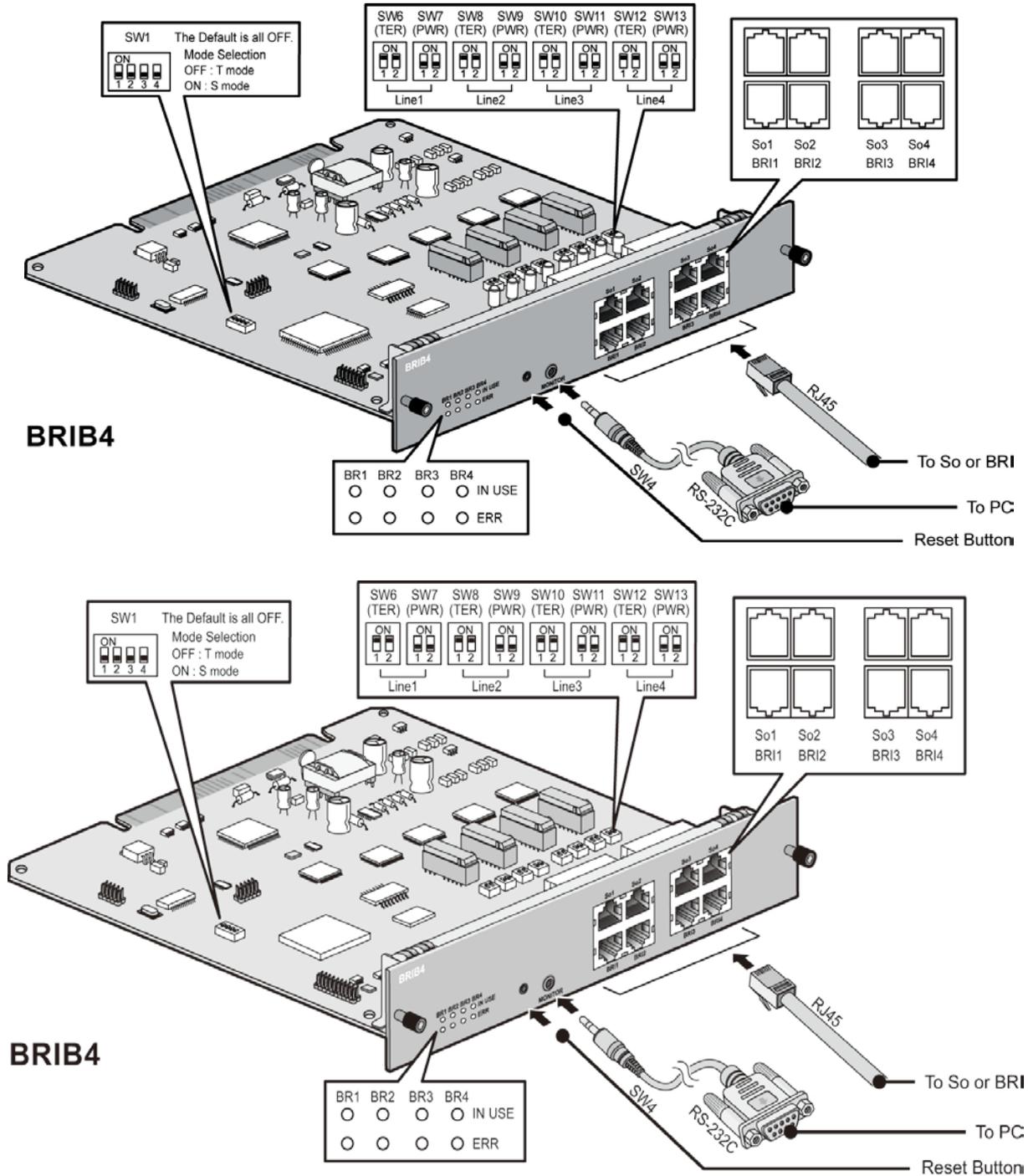
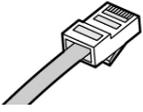
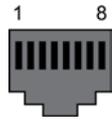


Figure 3.3.2 BRIB4

CAUTION

- Each interface should be set to the correct type, T or S with S/T selection switches, according to the needs of user. And the RX and TX pairs of line should be correctly connected to the TX and RX pairs of NT1 or TE according to the interface type of each line.

3.3.2.1 Pin Assignment

CONECTOR	PIN NUMBER	NO	SIGNAL NAME (T-mode)	FUNCTION
		1,2,7,8	Reserved	
		3	TX+	Transmit Data
		4	RX+	Receive Data
		5	RX-	Receive Data
		6	TX-	Transmit Data

NOTE • Upper side of RJ-45 – S-mode connection, Lower side of RJ-45 – T-mode connection

3.3.2.2 Connectors and Switch Functions

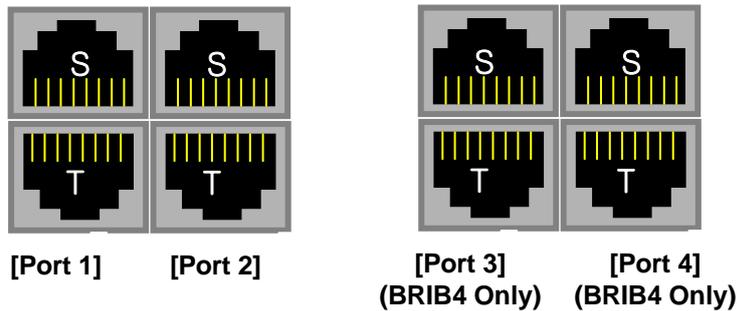
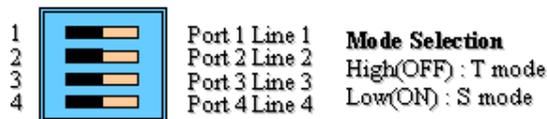


Figure 3.3.3 S or T Connector for RJ-45

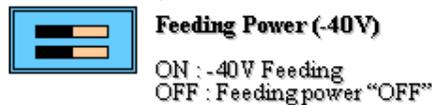
NOTE

- T-mode (3: TX+, 4: RX+, 5: RX-, 6: TX-)
- S-mode (3: RX+, 4: TX+, 5: TX-, 6: RX-)
- Can not support S/T interface simultaneously

4 Pole Dip Switch (SW1) – Default “OFF”



2 Pole Dip Switch (SW7, 9, 11, 13) – Default “OFF”



2 Pole Dip Switch (SW6, 8, 10, 12) – Default “ON”



	Termination	Feeding
Port 1	SW6	SW7
Port 2	SW8	SW9
Port 3	SW10	SW11
Port 4	SW12	SW13

Figure 3.3.4 S/T mode Selection Switches

3.3.3 PRIB (Primary Rate Interface Board)

There are two kinds of PRIB according to CPU, but they have the same functions. The Primary Rate Interface Board (PRIB) provides one (1) PRI interface, or one (1) E1R2 interface; this interface supports 30 PCM bearer and 2 signaling channels for PRI or E1R2. The PRIB is based on the existing interface described in ITU-T Recommendations G.704, G.703 and G.823.

PRIB can be installed on the universal slot No. 1-6 of any KSU except the slot No. 1 of 1st KSU.

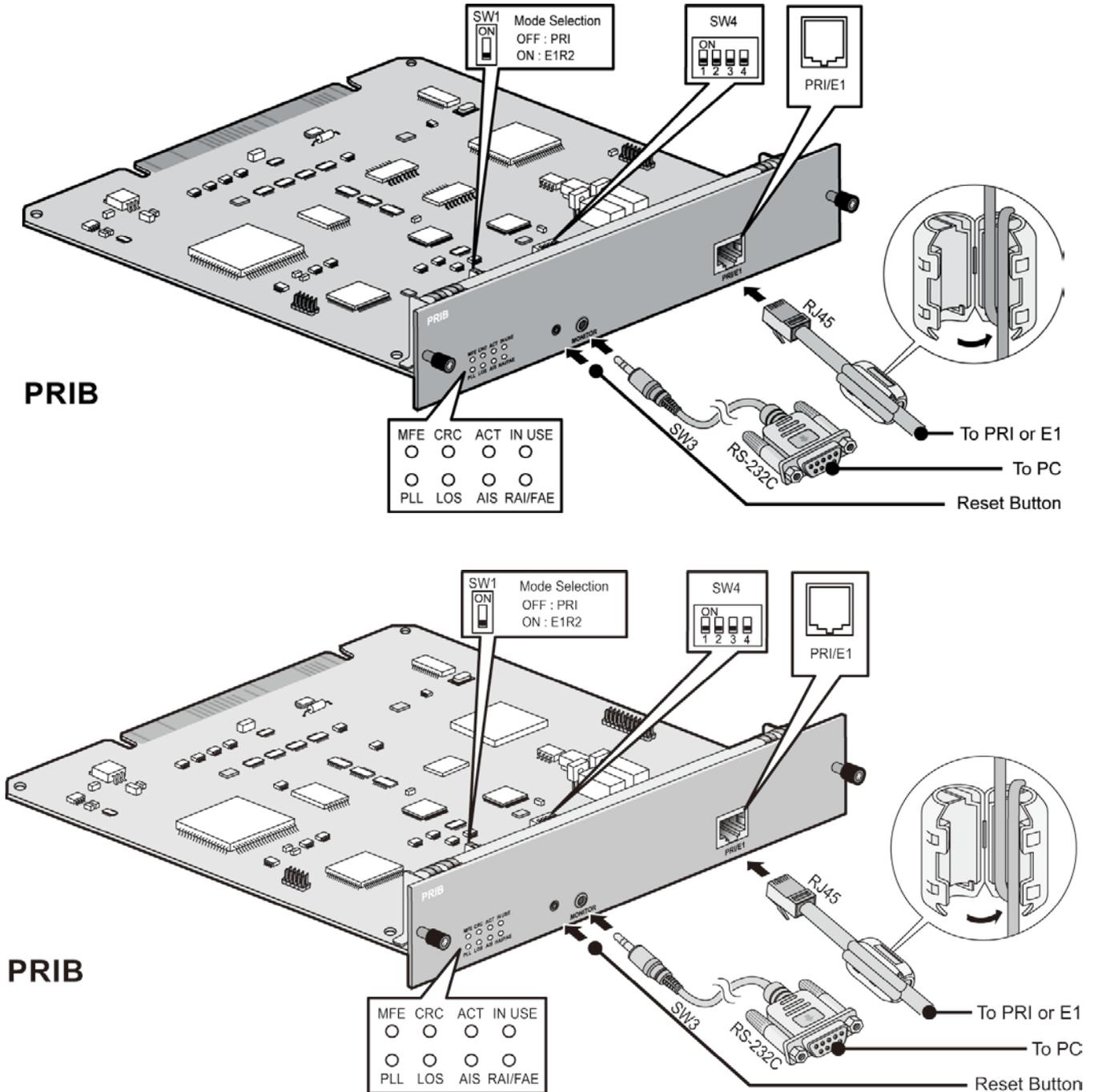
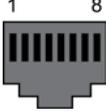


Figure 3.3.5 PRIB

CAUTION

- For QSIG operation, check the mode setting method and the contact assignments of RJ45 type connector according to the mode of line, TE or NT.

3.3.3.1 Pin Assignment

CONNECTOR	PIN NUMBER	PRI Port	
		NO.	SIGNAL NAME
RJ45 		1	RX-T
		2	RX-R
		4	TX-T
		5	TX-R
		3	N/A
		6	N/A
		7, 8	N/A

For North America,
 The PRIB provides one (1) PRI interface or one (1) T1 interface for digital trunk function.
 The frame format has a duration of 125usec and contains 24 time slots (TSs) of 8 bits.
 The PRI mode provides one Primary Rate Interface and 24 time slots (23B for voice and 1D for signaling).
 And, the T1 mode provides one T1 interface and 24 time slots (24B channel for voice).

The LED meaning is different with EURO ISDN.
 For more detailed information, refer to the Installation Manual.

3.4 Extension Boards

3.4.1 SLIB12/24 (Single Line Interface Board)

There are two kinds of SLIB12/24 according to CPU, but they have the same functions. The SLIB12/24 provides 12(24) single line analog ports with FSK (ITU-T V.23 or Bell 202) or DTMF (ITU-T Q.23) Caller ID function. The connection between the SLIB12/24 and SLT is provided through RJ45 Modular Jacks.

SLIB12/24 can be installed on the universal slot in any KSU except the MPB slot of 1st KSU.

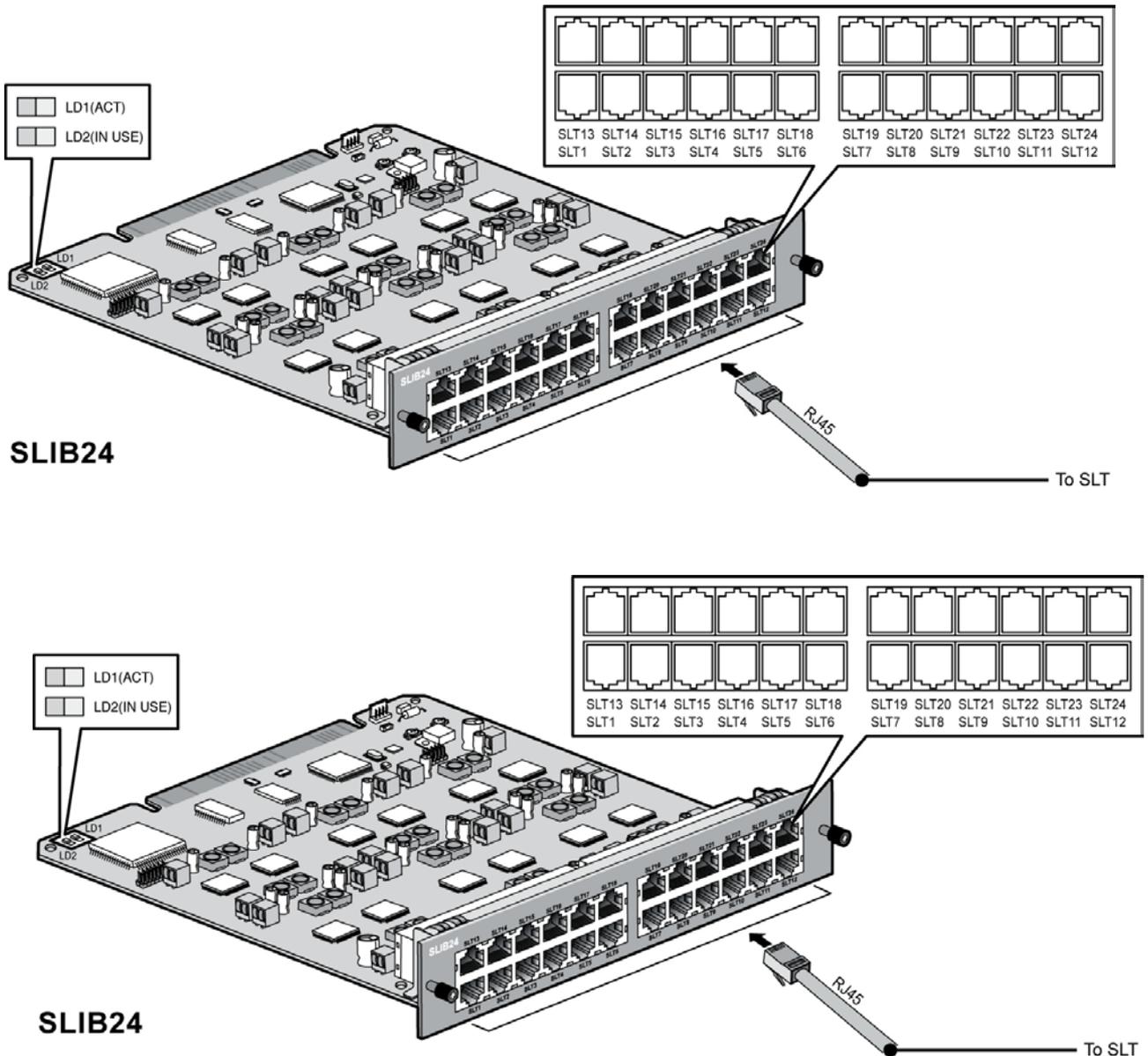
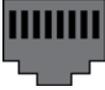


Figure 3.4.1 SLIB24

NOTE

- *Caller ID signal can be either DTMF or FSK based on the country code entered in the system database.*
- *Dialing Type (DTMF or DP) and MWI function is determined by the selected admin value.*
- *Max. 4SLIB24s can be installed in each KSU.*

3.4.1.1 Pin Assignment

SLIB12/24				
CONNECTOR	PIN NUMBER	NO	SIGNAL NAME	FUNCTION
		1,2,3	Reserved	
		4	SLT_RX	Receive Data
		5	SLT_TX	Transmit Data
		6,7,8	Reserved	

3.4.2 SLIB12C/24C (with RJ21 connector)

There are two kinds of SLIB12C/24C according to CPU, but they have the same functions.

The SLIB12C/24C is the same SLIB12/24 except the connection between the board and Single Line Telephone. The connection between the SLIB12C/24C and Single Line Telephone is connected through the Champ/Amphenol cable.

SLIB12C/24C can be installed on the universal slot in any KSU except the MPB slot of 1st KSU.

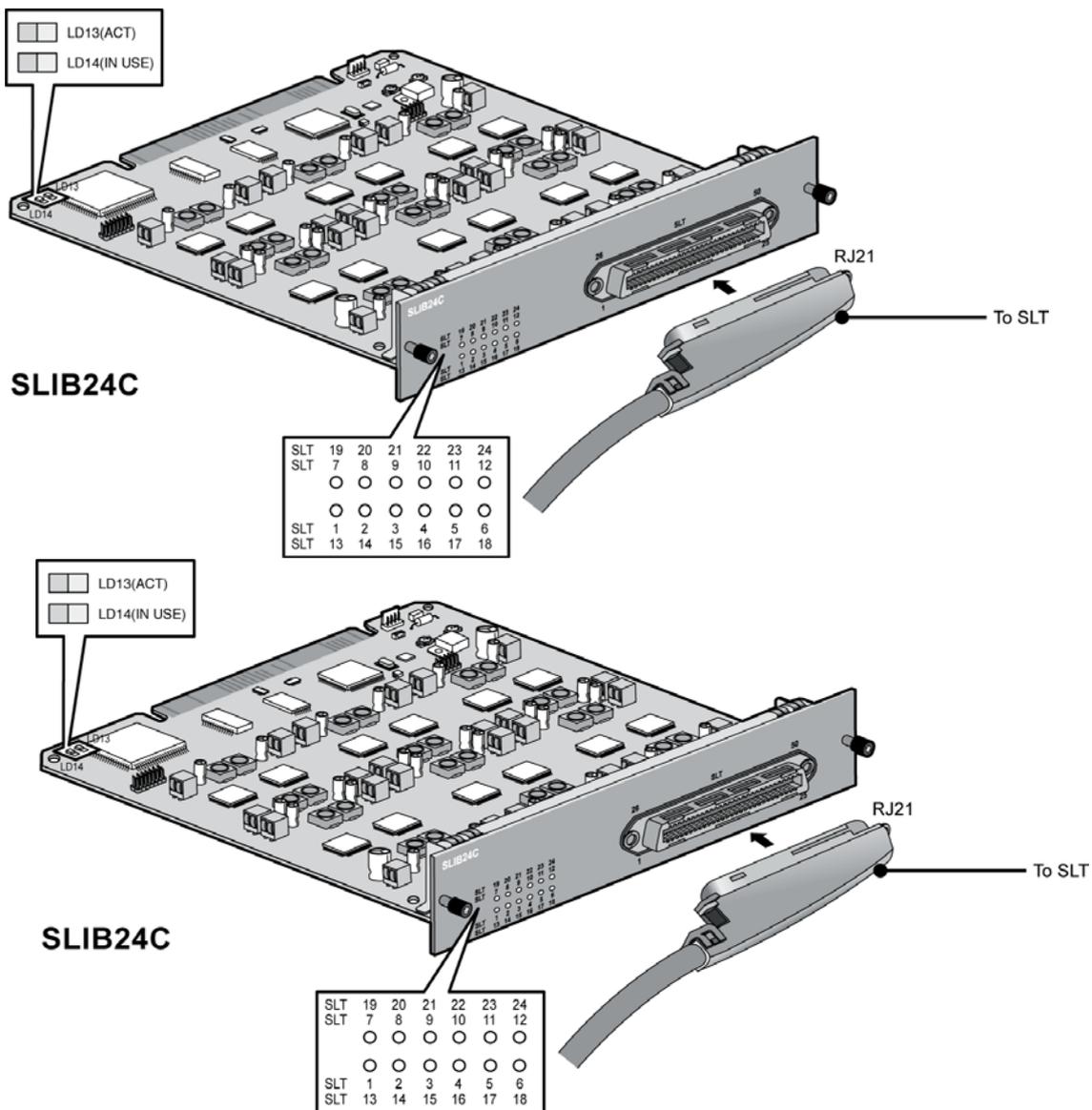


Figure 3.4.2 SLIB24C

NOTE : For Pin Assignment of SLIB12C/24C, refer to the 3.4.4.1 Section ‘Pin Assignment’.

3.4.3 DTIB12/24 (Digital Terminal Interface Board)

The connection between the DTIB12/24 and DKT is provided through RJ45 Modular Jacks.

- DTIB 12: provide 12 ports
- DTIB 24: provide 24 ports

DTIB12/24 can be installed on the universal slot in any KSU except the MPB slot of 1st KSU.

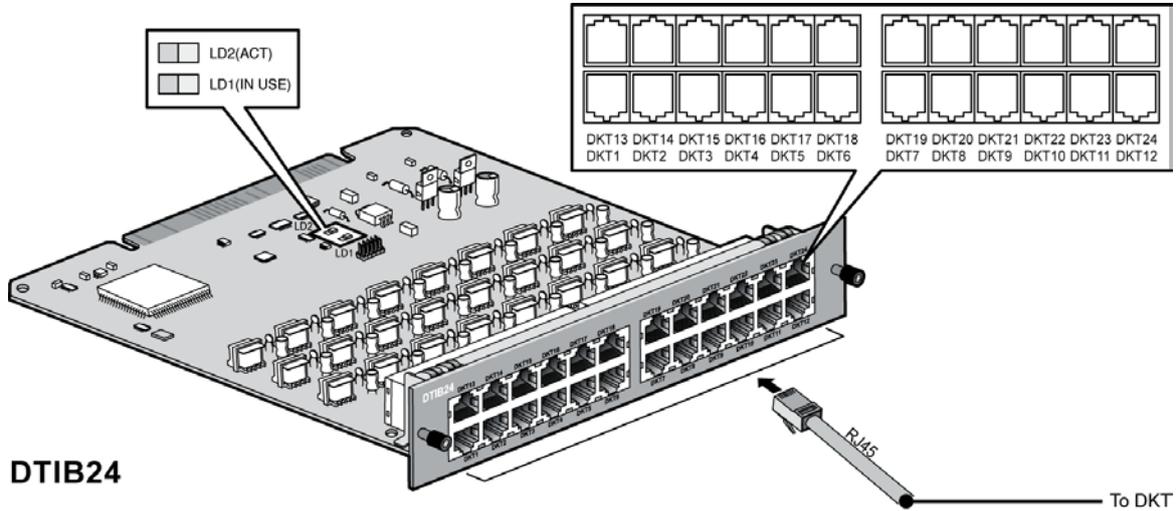
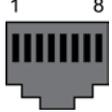


Figure 3.4.3 DTIB24

3.4.3.1 Pin Assignment

DTIB12/24

CONNECTOR	PIN NUMBER	NO.	SIGNAL NAME	FUNCTION
		1,2,3	Reserved	
		4	DKT_RX	Receive Data
		5	DKT_TX	Transmit Data
		6,7,8	Reserved	

3.4.4 DTIB12C/24C (with RJ21 connector)

The connection between the DTIB12C/24C's modular block and DKT is provided using RJ21 cable. The DTIB24C is shown as an example.

DTIB12C/24C can be installed on the universal slot in any KSU except the MPB slot of 1st KSU.

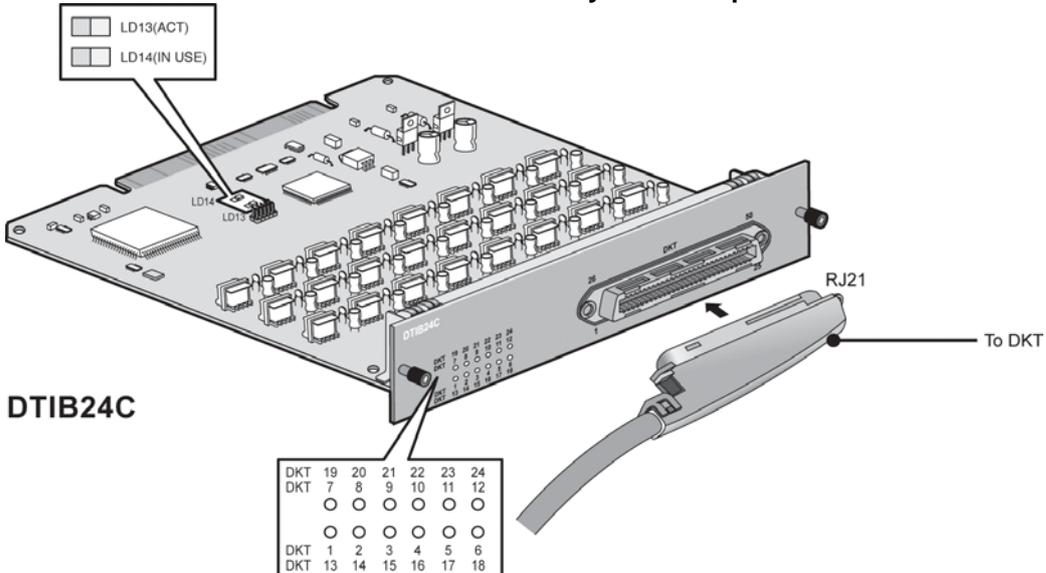
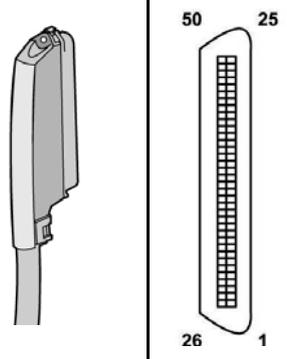


Figure 3.4.4 DTIB24C

3.4.4.1 Pin Assignment

SLIB12C/24C/DTIB12C/24C

CONNECTOR TYPE	PIN NUMBER	RJ21 PIN	PAIR	PIN	COLOR CODE	SLIB/DTIB(12/24C) DESIGNATION	PORT NO	REMARKS
 <p>The diagram shows an RJ21 connector on the left and a pin layout on the right. The pin layout is a 2x24 grid. The top row is numbered 1 to 24 from left to right. The bottom row is numbered 25 to 48 from left to right. The total width is labeled as 50 and the total height as 26. The connector is labeled 'RJ21'.</p>	1	1	1		VT-1	1	BL:BLUE BK:BLACK BN:BROWN OR:ORANGE WH:WHITE GN:GREEN SL: SILVER VI:VIOLET RD:RED YL:YELLOW	
	26		26		VR-1			
	2		2		VT-2	2		
	27		27		VR-2			
	3		3		VT-3	3		
	28		28		VR-3			
	4		4		VT-4	4		
	29		29		VR-4			
	5		5		VT-5	5		
	30		30		VR-5			
	6		6		VT-6	6		
	31		31		VR-6			
	7		7		VT-7	7		
	32		32		VR-7			
	8		8		VT-8	8		
	33		33		VR-8			
	9		9		VT-9	9		
	34		34		VR-9			
	10		10		VT-10	10		
	35		35		VR-10			
	11		11		VT-11	11		
	36		36		VR-11			
	12		12		VT-12	12		
	37		37		VR-12			
13		13		VT-13	13			
38		38		VR-13				
14		14		VT-14	14			
39		39		VR-14				
15		15		VT-15	15			
40		40		VR-15				
16		16		VT-16	16			
41		41		VR-16				
17		17		VT-17	17			
42		42		VR-17				
18		18		VT-18	18			
43		43		VR-18				
19		19		VT-19	19			
44		44		VR-19				
20		20		VT-20	20			
45		45		VR-20				
21		21		VT-21	21			
46		46		VR-21				
22		22		VT-22	22			
47		47		VR-22				
23		23		VT-23	23			
48		48		VR-23				
24		24		VT-24	24			
49		49		VR-24				

3.5 Function Boards

3.5.1 VMIB/ AAIB (Voice Mail/Auto Attendant Interface Board)

The VMIB/AAIB provides system announcement, ACD/UCD announcement, and User Greeting, along with a processor and DSP circuitry to support 8 simultaneous channels.

ITEM	CHANNEL	SYSTEM GREETING/USER GREETING
VMIB	8	System Greeting (0.5hrs.), User Message (100 Hours)
AAIB	8	System Greeting (0.5hrs.), User Message (None)

VMIB/AAIB can be installed on the universal slot No. 1-6 of any KSU except the MPB slot of 1st KSU. The maximum 3 VMIB/AAIBs can be installed with MPB300 (MPB100: Max. 2 AAIB/VMIB)

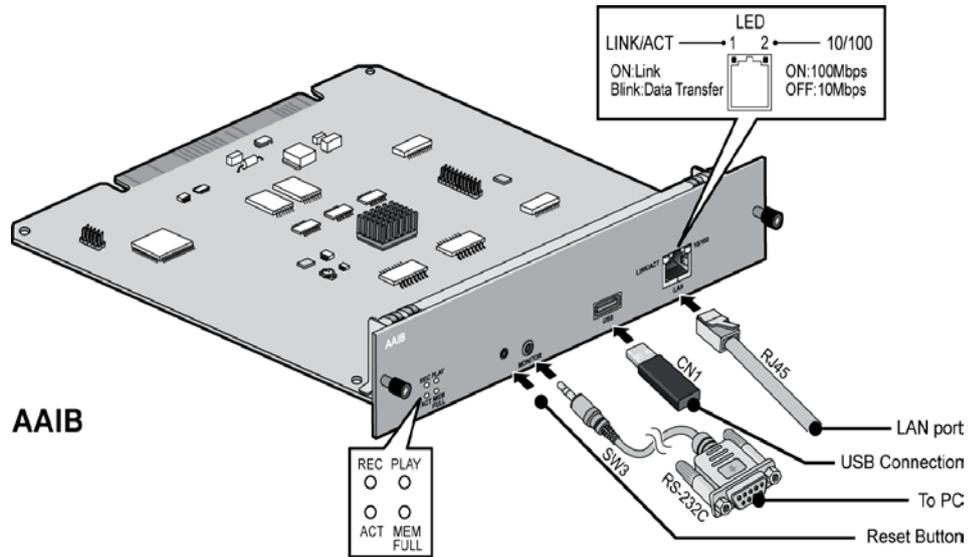


Figure 3.5.1 AAIB

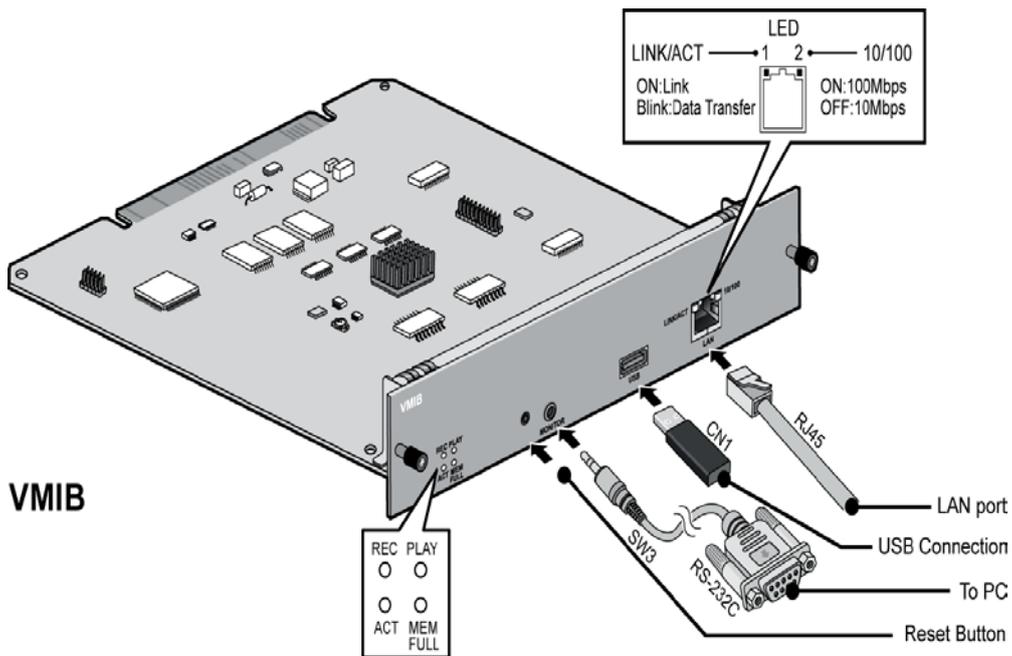
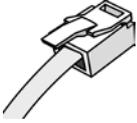
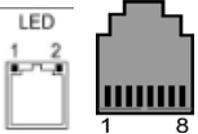


Figure 3.5.2 VMIB

3.5.1.1 Pin Assignment

LAN Port				
CONNECTOR	PIN NUMBER	NO.	SIGNAL NAME	FUNCTION
		4,5,7,8	RESERVED	
		1	TX+	Transmit Data
		2	TX-	Transmit Data
		3	RX-	Receive Data
		6	RX+	Receive Data

USB Port			
CONNECTOR	PIN NUMBER	NO.	SIGNAL NAME
		1	GND
		2	D+
		3	D-
		4	VBUS (+5V)

3.5.2 VOIB8/24 (Voice over Internet protocol Board 8ch./ 24ch.)

The VOIB8/VOIB24 provides the Ethernet interface for S/W applications and VoIP features. The VOIB8/24 is used to provide packet relay for remote devices to communicate with the host and translate between the iPECS proprietary protocols and other standard protocols (H323, SIP).

ITEM	CHANNEL	REMARK
VOIB8	8	
VOIB24	24	

VOIB8/VOIB24 can be installed on the universal slot No. 1-6 of any KSU except slot No. 1 of 1st KSU.

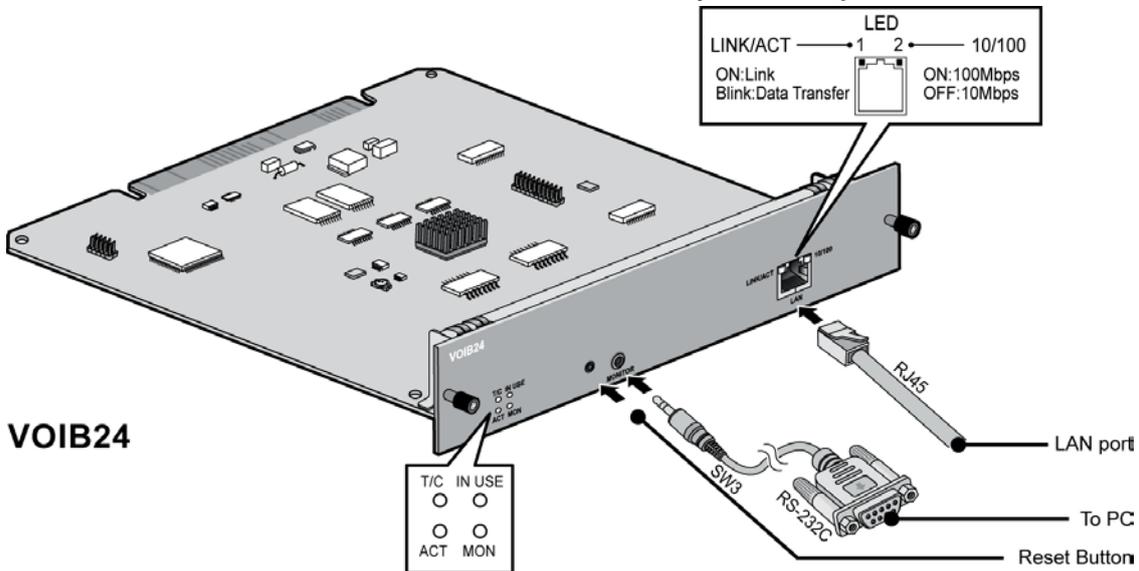
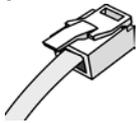
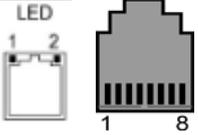


Figure 3.5.3 VOIB24

3.5.2.1 Pin Assignment

LAN Port				
CONNECTOR	PIN NUMBER	NO.	SIGNAL NAME	FUNCTION
		4,5,7,8	RESERVED	
		1	TX+	Transmit Data
		2	TX-	Transmit Data
		3	RX-	Receive Data
		6	RX+	Receive Data

3.6 Terminal and Door Phone Models

Various types of digital terminals and IP Terminals can be used with the iPECS-MG DSU/DTIB12/DTIB12C/DTIB24/DTIB24C and with VOIB8/VOIB24 as listed in the following Table:

Model	Description	Model	Description
LKD-2NS	2 Flexible Button Normal	LIP-8008D	8 Flexible Button Display
LKD-8DS	8 Flexible Button Display	LIP-8012D	12 Flexible Button Display
LKD-30DS	30 Flexible Button Display	LIP-8024D	24 Flexible Button Display
LKD-48DSS	48 Button DSS/DLS Console	LIP-8040L	10 Flexible Button Large Display
LDP-7004N	4 Flexible Button Normal	LIP-8002E/2AE	4 Feature Button w/Display
LDP-7004D	4 Flexible Button Display	LIP-8008E	8 Flexible Button w/Display
LDP-7008D	8 Flexible Button Display	LIP-8012E	12 Flexible Button w/Display
LDP-7016D	16 Flexible Button Display	LIP-8024E	24 Flexible Button w/Display
LDP-7024D	24 Flexible Button Display	LIP-8040E	10 Flexible Button w/Large Display
LDP-7024LD	24 Flexible Button Large Display	LIP-8012DSS	12 Button DSS Console
LDP-7048DSS	48 Button DSS/DLS Console	LIP-8012LSS	12 Button LSS Console
LDP-DPB	Door Phone Box	LIP-8048DSS	48 Button DSS Console
LIP-7008D	8 Flexible Button Display	LIP-8050V	10 Flexible Button, Video Camera
LIP-7016D	16 Flexible Button Display	LDP-9008D	8 Flexible Button w/Display
LIP-7024D	24 Flexible Button Display	LDP-9030D	30 Flexible Button w/Display
LIP-7024LD	24 Flexible Button Large Display	LDP-9048DSS	48 Button DSS Console
LIP-8004D	4 Flexible Button Display		
LIP-8008D	8 Flexible Button Display		

3.6.1 Terminal Cabling Distance

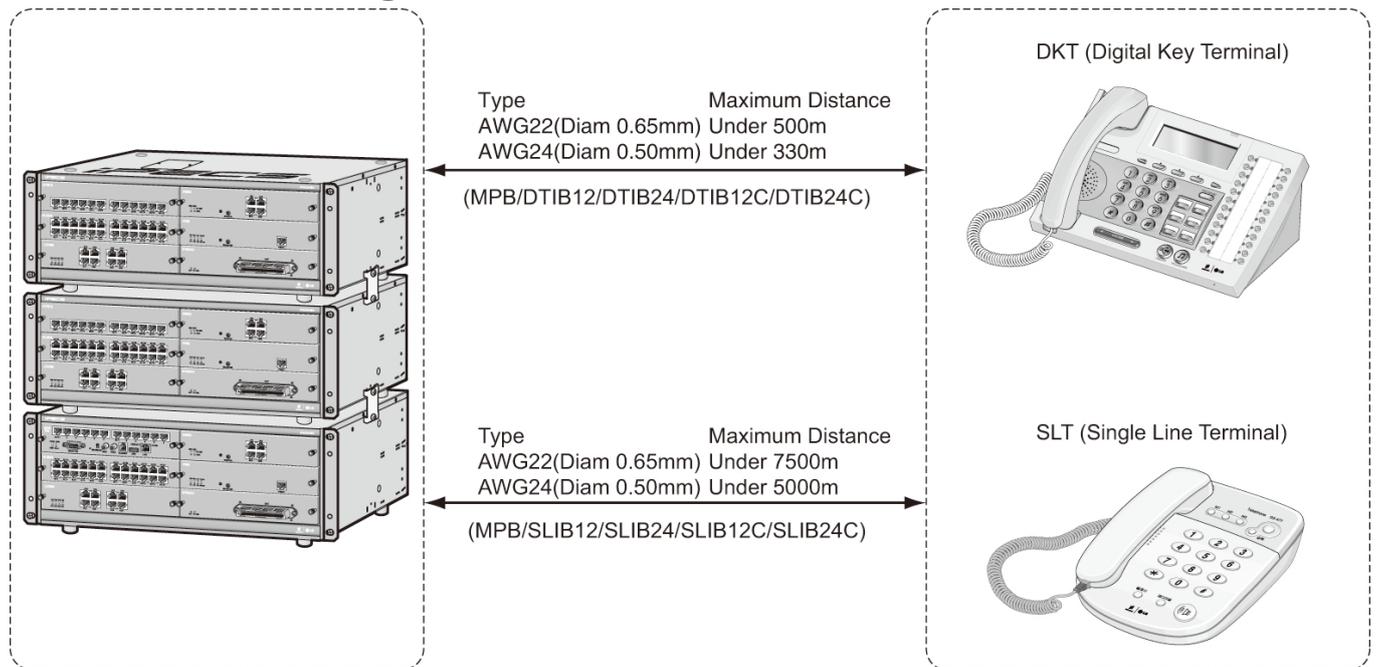


Figure 3.6.1 Terminal Cabling Distance

3.6.2 Basic Terminal Connection

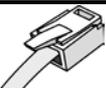
3.6.2.1 DKT

The following illustrates how to connect the DKT to your System:



Figure 3.6.2 DKT Connection

DKT Pin Assignment

Connector	PIN Number	NO	Signal Name
		1,6	N/A
		2,5	Reserved
		3,4	TIP, RING

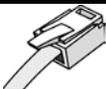
3.6.2.2 SLT

The following illustrates how to connect the SLT to your System:



Figure 3.6.3 SLT Connection

SLT Pin Assignment

CONNECTOR	PIN NUMBER	NO.	SIGNAL NAME
		1,2,5,6	N/A
		3	RING
		4	TIP

3.6.2.3 LIP-7000& LIP-8000 Series Keypad

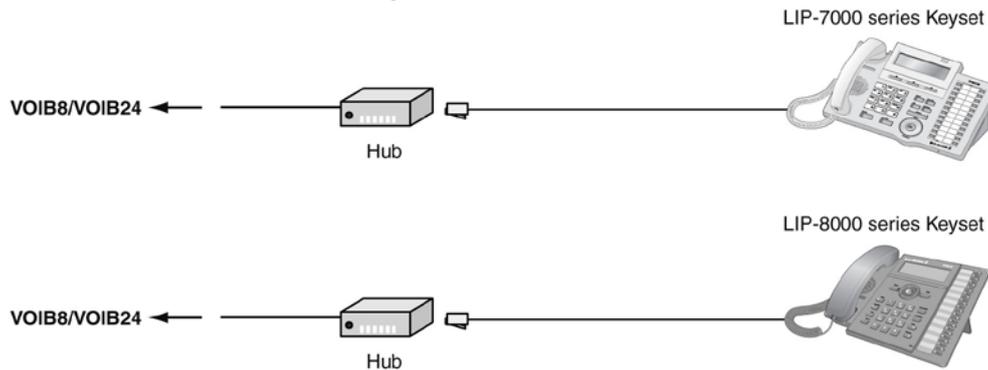
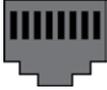


Figure 3.6.4 LIP Phone connection

IP Phone Pin Assignment

CONNECTOR	PIN NUMBER	NO.	SIGNAL NAME	FUNCTION
		4,5,7,8	RESERVED	
		1	TX+	Transmit Data
		2	TX-	Transmit Data
		3	RX-	Receive Data
		6	RX+	Receive Data

3.6.3 Connecting Additional Terminals

The MPB100/MPB300 provides connections for one external music source, one external page port, one relay contact, and an alarm detection input monitor through the PJ1 (RED, External MOH) and PJ2 (BLUE, External Page) audio jack and a MJ3 (RJ11 Modular Jack).

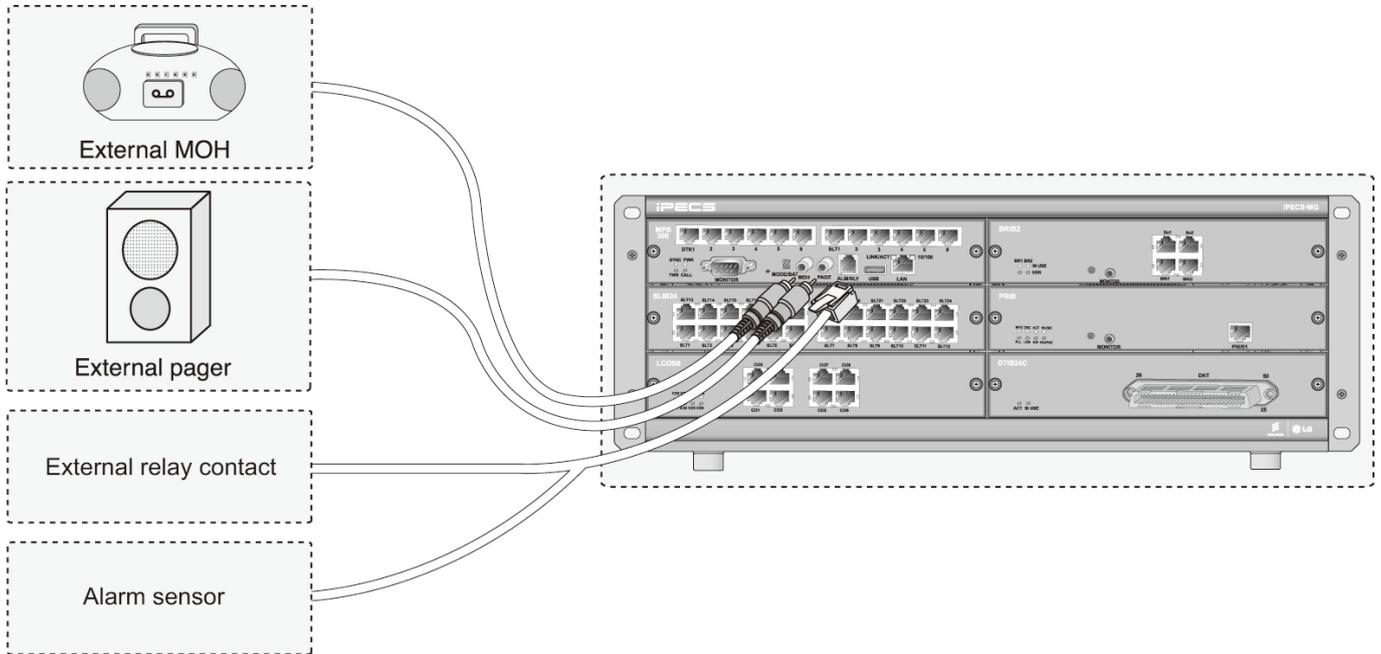


Figure 3.6.3 Additional Terminal Connection

3.6.3.1 External Music Source Wiring

The MPB100/MPB300 accommodates one external music port through a PJ1 (RED) audio jack.

3.6.3.2 External Paging Port wiring

The MPB100/MPB300 supports one external paging port through a PJ2 (BLUE) audio jack.

3.6.3.3 Alarm Detection Wiring

The MPB provides an external alarm detection input, which can be used to transmit notification to extensions when the external switch is closed or opened (programmable through Admin Programming). This alarm detection input is provided through Pin No. 2-3 of MJ3.

3.6.3.4 Relay Contacts

The MPB100/MPB300 provides 1 relay contact used for loud bell or general purpose through pin No. 4-5 of MJ3.

DECT INSTALLATION

4.1 Introduction

The iPECS-MG provides support for the System DECT solution which is composed WTIB4/8, Base Station (GDC-400B & GDC-600B & GDC-600BE), and DECT terminals (GDC-33xH, 34xH, 4x0H). For installation instructions, refer to the *iPECS DECT Installation Guide*.

4.2 Board Installation

4.2.1 WTIB4/WTIB8

The WTIB4/8 can be installed on the universal slot No. 1-6 of any KSU except the slot No. 1 of 1st KSU and should be installed on the same KSU when installing more than one WTIB4/8.

The layout and dip switch setting of the WTIB4/8 of iPECS-MG is shown:

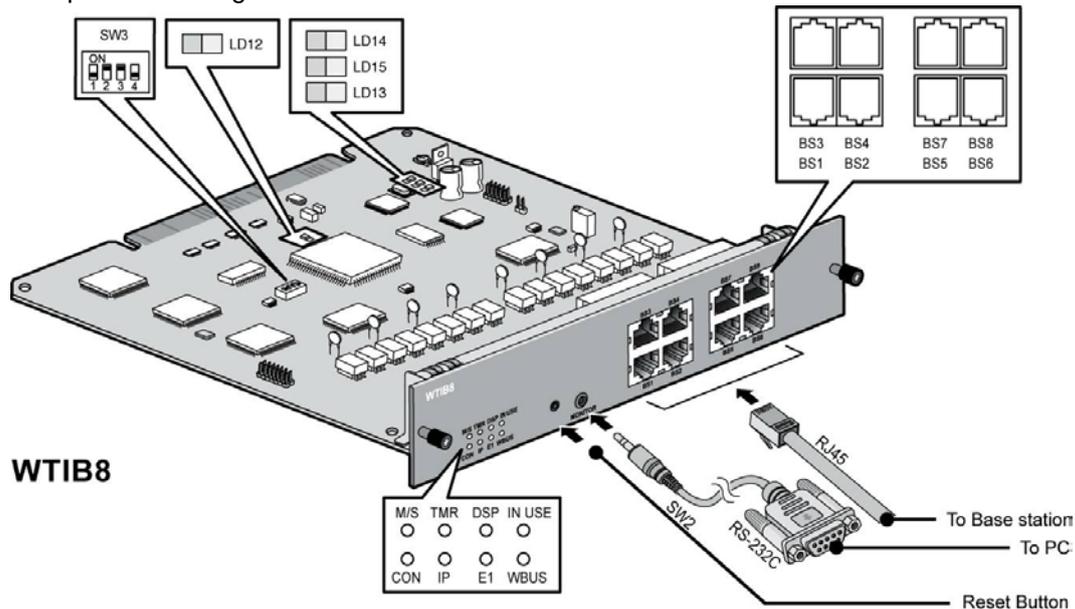
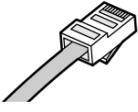
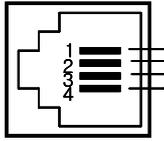


Figure 4.2.1 WTIB8

4.2.1.1 Pin Assignment

WTIB4/8			
CONNECTOR	PIN NUMBER	SIGNAL NAME	FUNCTION
	1, 2, 7, 8	Unused/reserved	
	3	RX+(GND)	Receive Data
	4	TX- (+30V)	Transmit Data
	5	TX+ (+30v)	Transmit Data
	6	RX- (GND)	Receive Data

Base Station				
CONNECTOR	PIN NUMBER	SIGNAL NUMBER	FUNCTION	
		1 & 4	TX (GND)	Transmit Data
		2 & 3	RX (+30V)	Receive Data

NOTE

- Using unshielded twisted-pair cable (more than CAT3), wire the Base Station RJ-11 to the termination point/MDF for connection to a WTIB4/8.
- Tag or number wiring for maintenance.

4.2.2 Ferrite Core Installation and Wiring

Ferrite core is provided in the packaging of the Base Station for EMI. The Ferrite core should be installed when the WTIB4/8 is installed in the iPECS-MG system. One Ferrite core is to be used with the line cord between the Base Station and each port of WTIB4/8 (as shown, refer to *iPECS-MG Hardware Description and Installation Manual* for more detail).

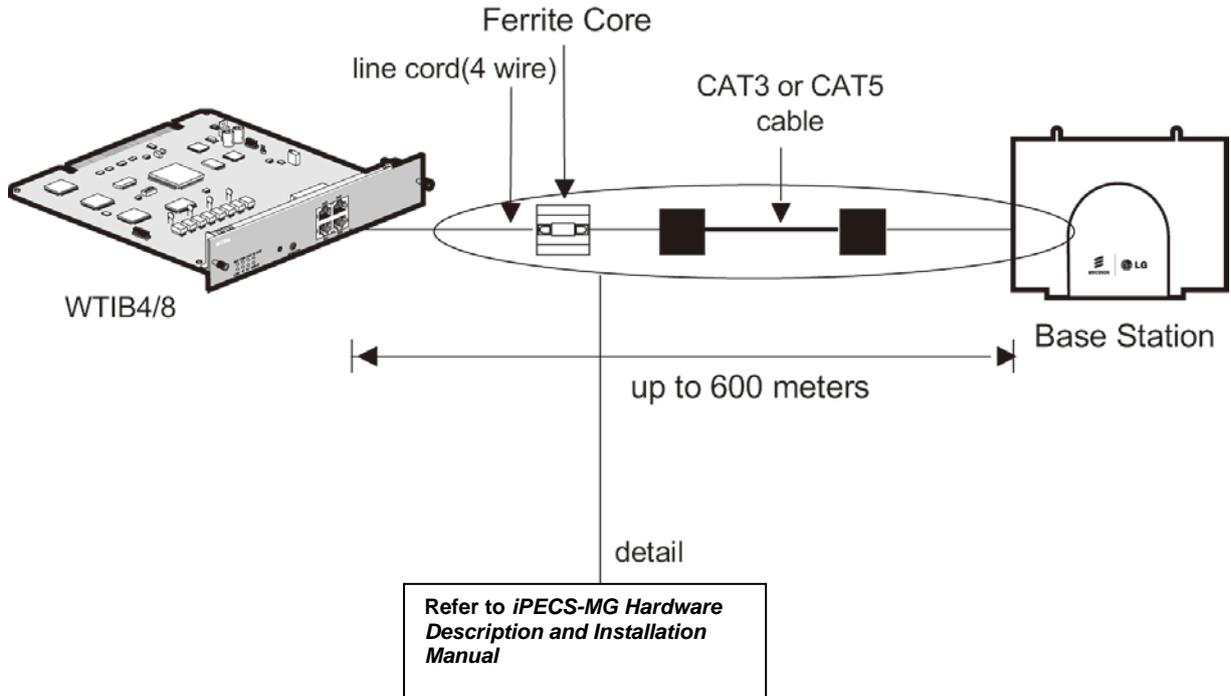


Figure 4.2.2 Cable Connection with Ferrite Core between WTIB4/8 and Base Station

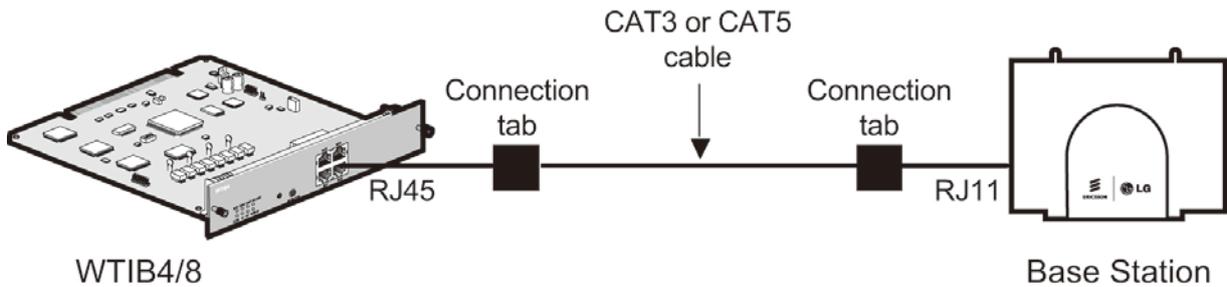


Figure 4.2.3 Wiring with Connection Tab between WTIB4/8 and Base Station

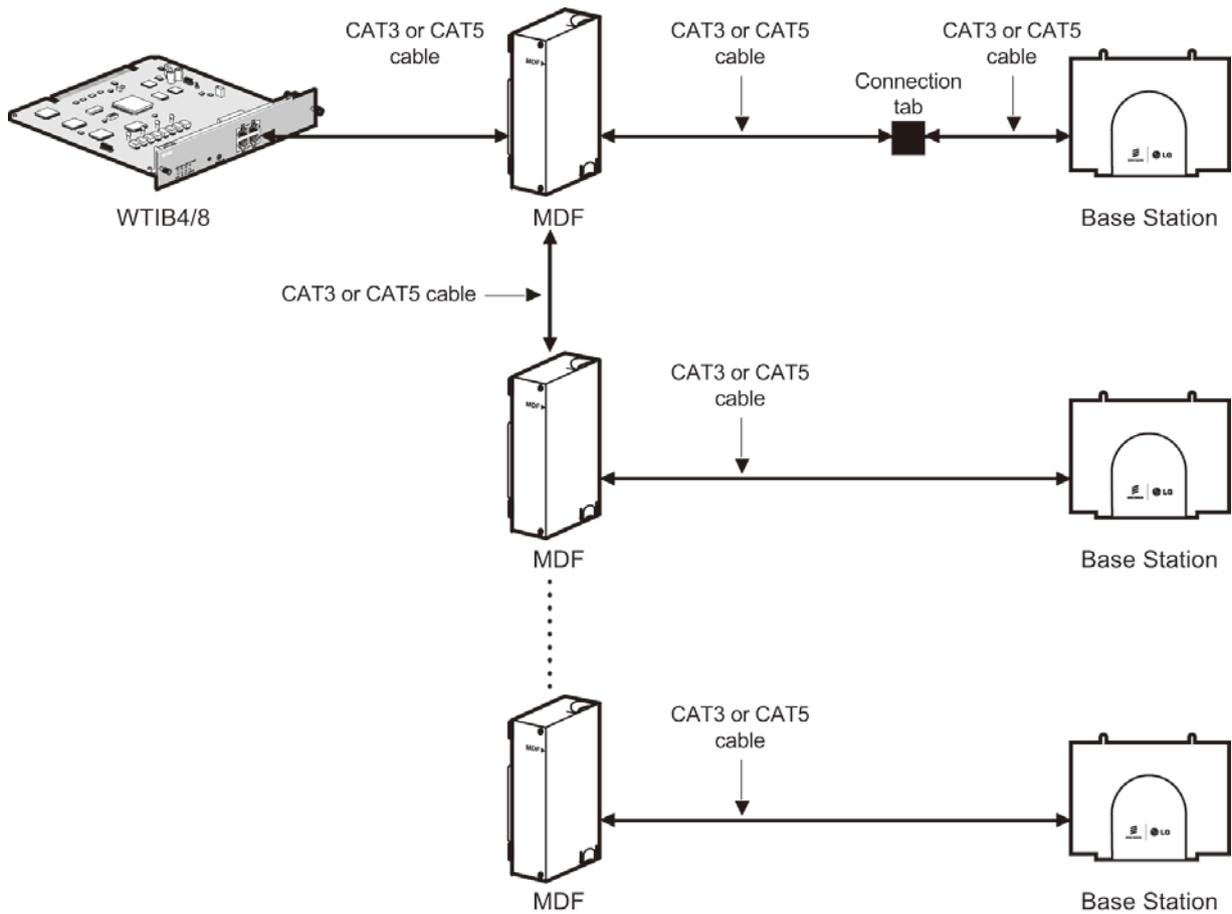


Figure 4.2.4 Wiring with MDF and connection tab between WTIB4/8 and Base Station

NOTE

- **Even though there are connection points such as MDF or connection tab between WTIB4/8 and Base Station, the connection points should be connected with twisted-pair cable (at least CAT3 class). For example, WTIB4/8 to MDF, MDF to MDF, MDF to connection tab, and connection tab to Base Station should be connected with twisted-pair cable.**

STARTING THE iPECS-MG

5.1 Before Starting the iPECS-MG System

The first step in starting the newly installed iPECS-MG system is initializing the databases. The following procedure describes the necessary Steps:

- 1) Verify MPB100/MPB300 has been inserted into the MPB slot of the first KSU.
 - Before programming the System, Switch 1-1 pole should be OFF and then power cycle OFF and ON to initialize the default System database.
- 2) Plug the AC power cord into the iPECS-MG System and AC outlet. Turn on the iPECS-MG System; after installing the 1st, 2nd and 3rd KSUs, Power-On as follows:
 - Order of Power-On Procedure: 3rd KSU → 2nd KSU → 1st KSU.
 - After KSU(s) have been turned-On, you have to reset the MPB100/MPB300 in the 1st KSU.
- 3) Once the database has been initialized, switch 1-1 should be placed in the ON position to protect the User database and to protect the features being programmed in Admin. programming.
- 4) Switch 1-2 should be placed in the ON position to feed the Lithium Battery Voltage to SRAM/RTC directly (protects the User Database and System Time/Date information, etc.).

5.2 Basic Programming

The iPECS-MG System can be programmed to meet an individual customer's needs. There are two ways to perform Admin Programming:

- **Web Admin Programming**
- **DKT Programming**

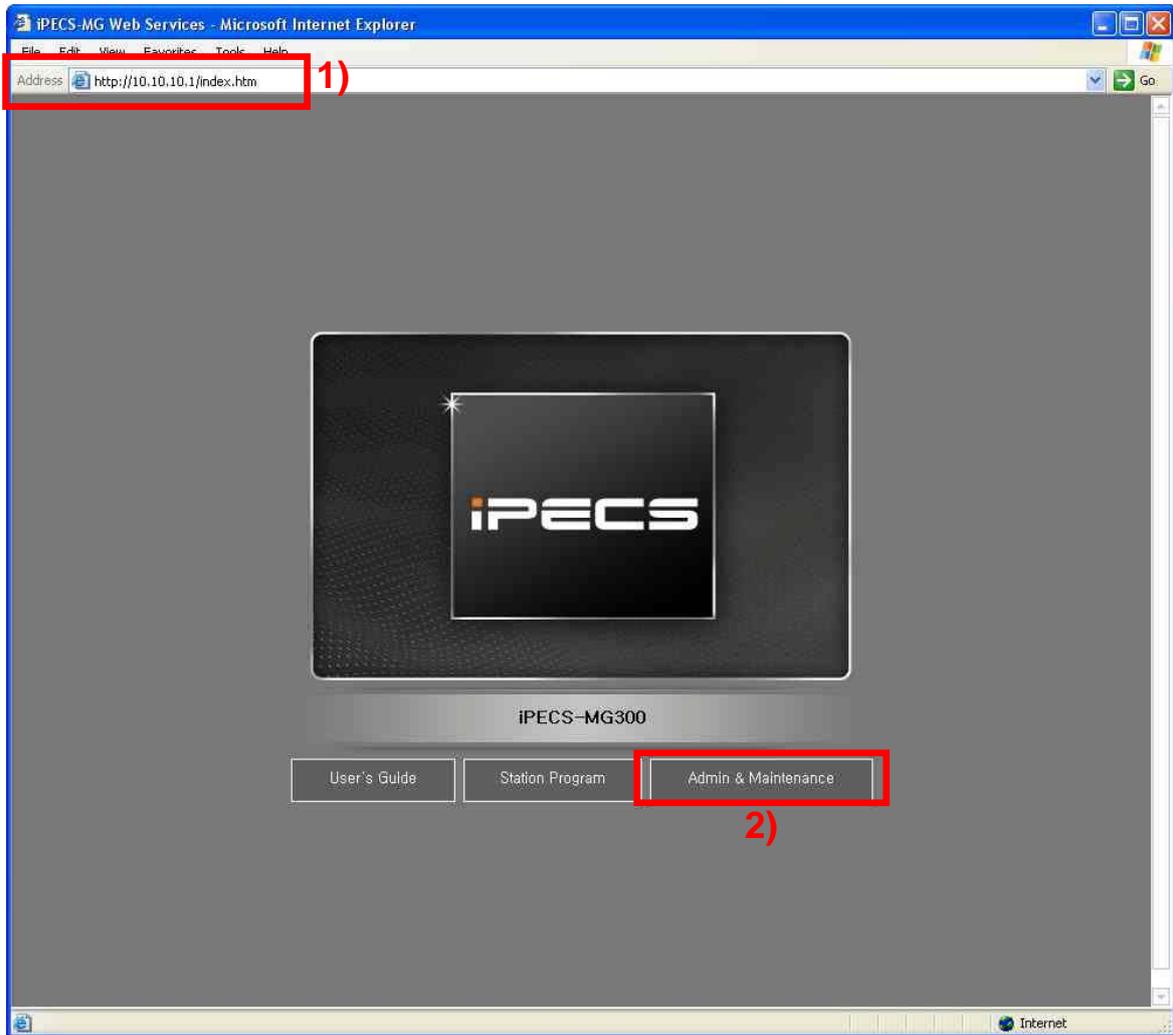
5.2.1 Web Admin Programming

NOTE

- ***For complete instructions on using the Web Admin, refer to the iPECS-MG Web Administration Manual.***

Upon entering WEB Admin Programming mode, the default System IP Address is the '10.10.10.1'. The IP Address can be changed using PGM108 in Keyset programming or with the IP configuration command in maintenance mode. Another way is to connect the PC to MPB with LAN cable and configure the PC IP address to '10.10.10.xx', and PC gateway address to '10.10.10.254'.

5.2.1.1 How to enter the Web Admin Programming

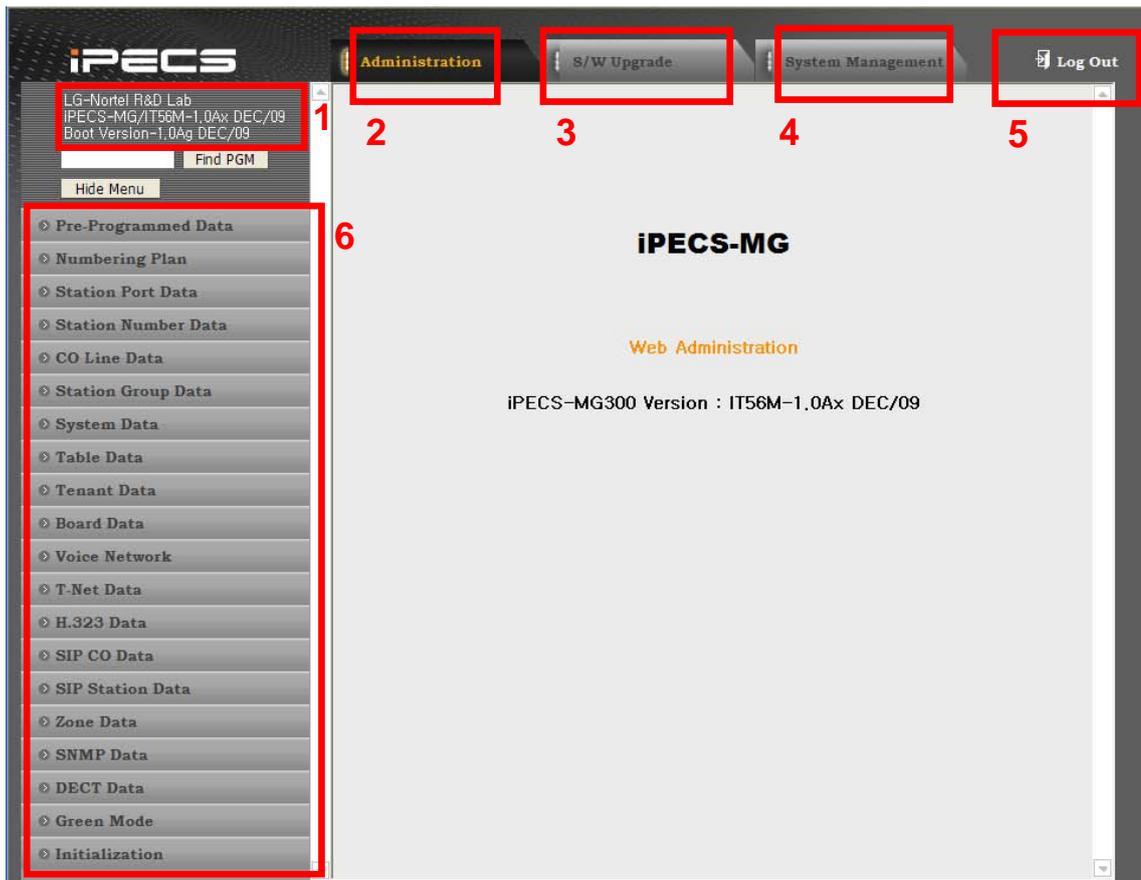


1) In the browser 'ADDRESS' field, enter the MPB IP address (default 10.10.10.1), and then the WEB server returns to the WEB Services Home page.

2) On the Home page, click [Admin & Maintenance] to login to the Web-admin.

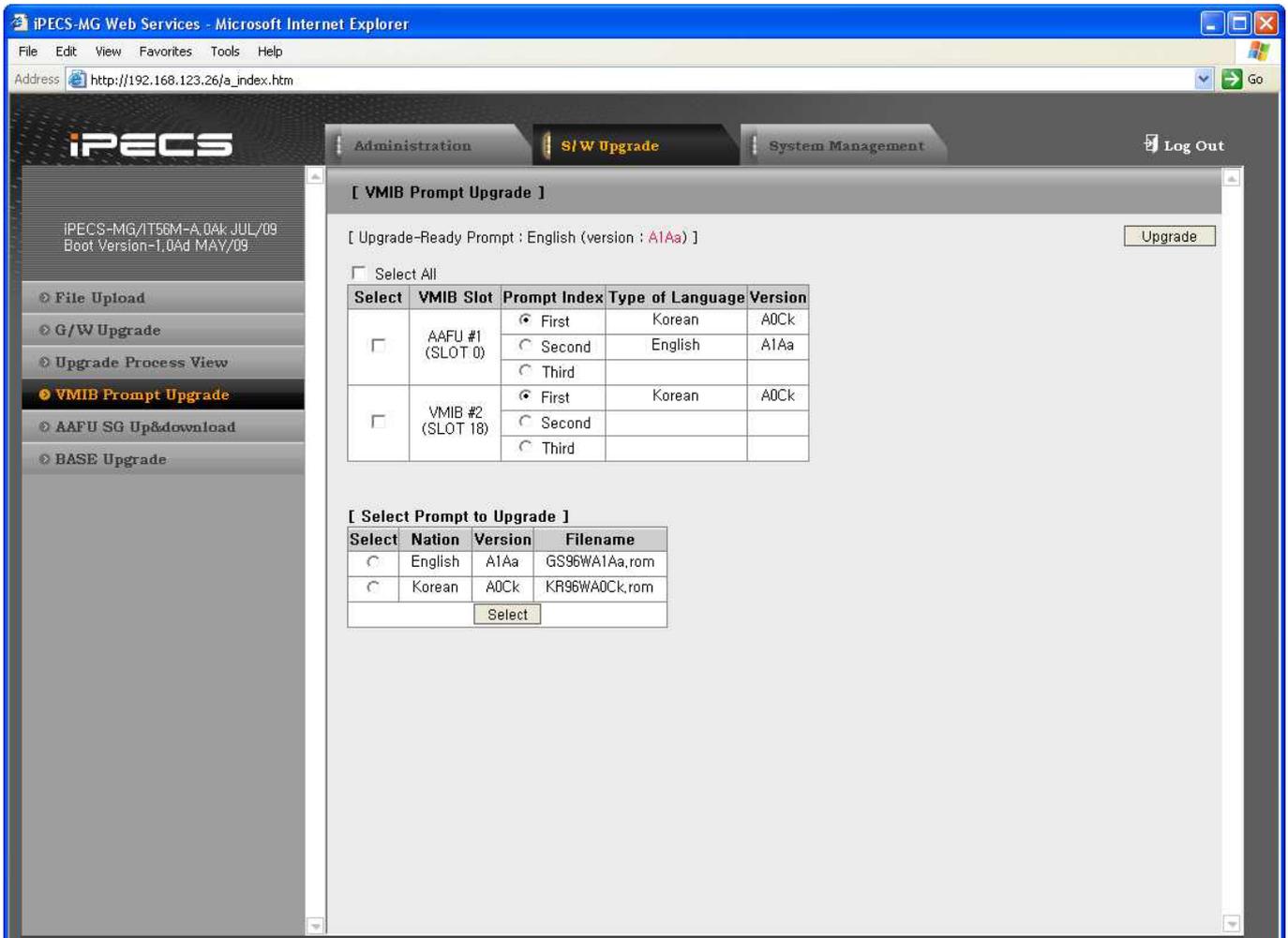
If user id, password is assigned, enter the appropriate user id, password.

5.2.1.2 Web Admin Description



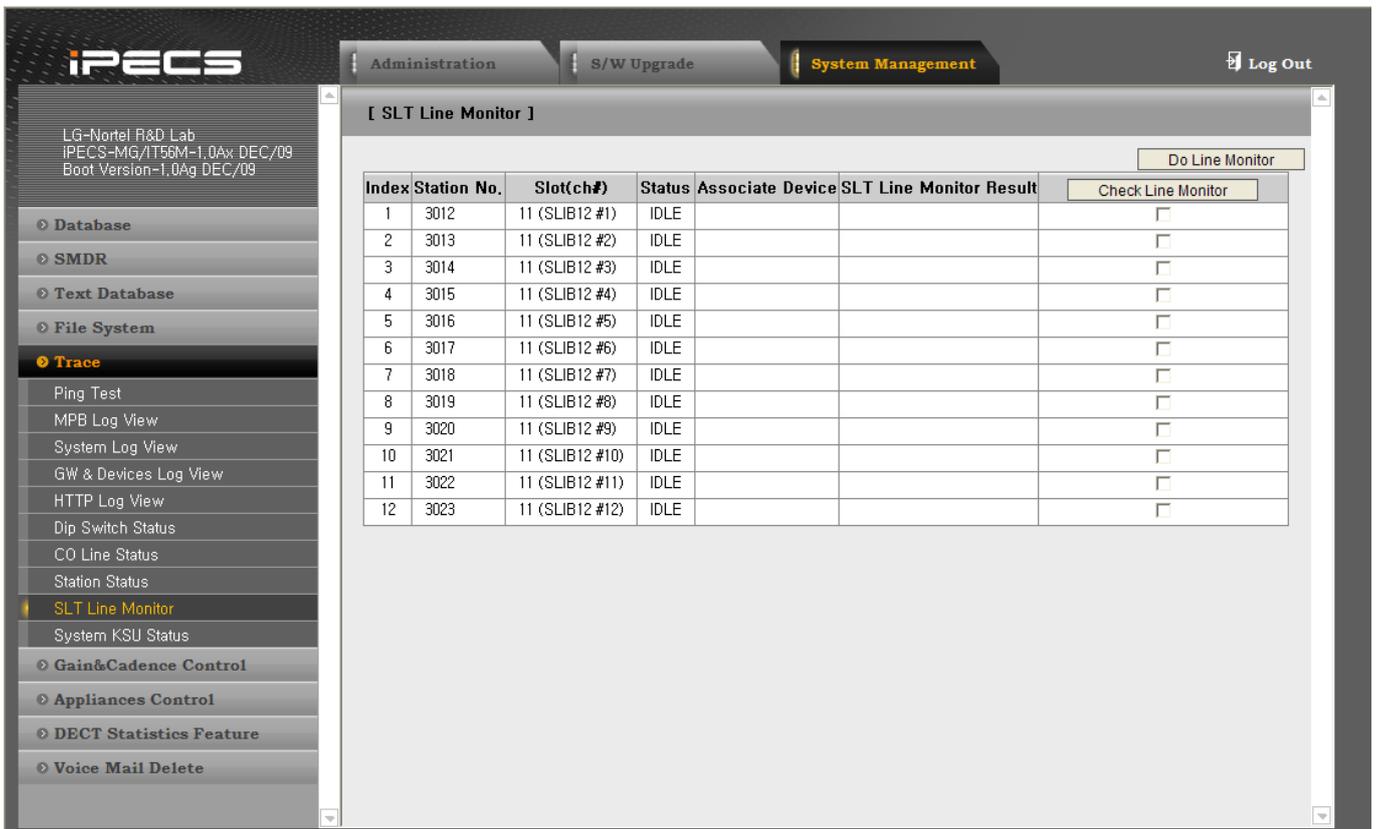
1. System Boot and Application Software Version with release time.
2. Administration – The Programming menu categories (6) are displayed. Each programming field in category can be accessed by clicking.
3. S/W Upgrade – MPB S/W, Boards S/W, IP-Phone S/W and VMIB Prompt Upgrade.
4. System Management – Database Upload/Download and SMDR.
5. Log out to quit Web Admin.

5.2.1.3 VMIB Prompt Upgrade



1. Click [S/W Upgrade] and [VMIB Prompt Upgrade].
2. Then, the installed VMIB or AAIB and Prompt List are displayed.
3. Check Prompt file to be upgrade and Click [SELECT] button.
4. Select VMIB Slot & Prompt index.
5. Click [Upgrade].

5.2.1.4 SLT Line Monitoring



1. Click [**System Management**], [**Trace**] and [**SLT Line Monitor**].
2. Then, installed SLTs are displayed.
3. Select 'Check Line Monitor' and Click [**Do Line Monitor**] button.
4. To check the result, click [**SLT Line Monitor**] again.
5. Then, the result of line monitor is displayed in the 'SLT Line Monitor Result'.

5.2.2 DKT Programming

5.2.2.1 How to Enter Programming Mode

To enter programming mode, perform the following Steps:

1. Lift handset or press the **[MON]** button on the ADMIN station; the ICM dial tone (optional) will be presented.
2. Press the **[TRANS/PGM]** button and dial *#; the confirmation tone will be heard.
3. Enter the ADMIN password (if applicable); the station will be in ADMIN programming mode (confirmation tone is heard).
4. Each program is accessed by pressing the **[TRANS/PGM]** button; the following will display:

ENTER PGM NUMBER

5. Enter the three-digit program number; if an error is made while entering data, the **[TRANS/PGM]** button will return to the previous status.

NOTE

- **To return the previous state while ADMIN programming, press the [CONF] button; pressing the [CONF] button will clear the temporary data fields.**

5.2.2.2 Permanent Update Procedure

To commit programmed data to permanent memory, perform the following Steps:

1. When data has been entered, press the **[HOLD/SAVE]** button to store the data permanently; if all data was entered correctly, a confirmation tone will be heard.
2. If there were any errors in the entry, an error tone will be presented and data is not stored in the permanent memory, and the terminal will return to the previous state.

5.2.2.3 How to Reset the System

To reset the system:

1. Press the **[Trans/PGM]** button.
2. Dial 499 (Reset System Code).
3. Press the **FLEX2** button.
4. Press **[HOLD/SAVE]**.

NOTE

- **The system also should be reset after entering PGM100 – FLEX 1 (Nation Code Assignment).**

5.2.2.4 Pre-programming (PGM100-108)

For more detailed information on Pre-programming, refer to the *iPECS-MG Description and installation manual*.

Location PGM-Nation Code (PGM100)

When programming, the 'MODE' switch on the MPB100/300 should be set to OFF.

Nation Code Listing

NATION	CODE	NATION	CODE	NATION	CODE
Argentina	54	Honduras	504	Paraguay	595
Australia	61	Hong Kong	852	Peru	51
Azerbaijan	994	India	91	Philippines	63
Bahrain	973	Indonesia	62	Poland	48
Bangladesh	880	Iran	98	Portugal	351
Belarus	375	Iraq	964	Qatar	974
Belgium	32	Ireland	353	Rumania	40
Bolivia	591	Israel	972	Russia	7
Brazil	55	Italy	39	Saudi Arabia	966
Brunei	673	Japan	81	Senegal	221
Cameroon	237	Jordan	962	Singapore	65
Chile	56	Kenya	254	South Africa	27
China(P.R.C)	86	Korea	82	Spain	34
Colombia	57	Kuwait	965	Sri Lanka	94
Costa Rica	506	Kyrgyzstan	996	Swaziland	268
Cyprus	357	Latvia	371	Sweden	46
Czech(Slovak)	42	Liberia	231	Switzerland	41
Denmark	45	Libya	218	Tajikistan	992
Ecuador	593	Lithuania	370	Telkom	*27
Egypt	20	Luxembourg	352	Telstra	*61
El Salvador	503	Malaysia	60	Thailand	66
Estonia	372	Moldova	373	Tunisia	216
Ethiopia	251	Malta	356	Turkey	90
Fiji	679	Mexico	52	Turkmenistan	993
Finland	358	Monaco	377	U.A.E.	971
France	33	Morocco	212	Ukraine	380
Gabon	241	Myanmar(Burma)	95	United Kingdom	44
Georgia	995	Netherlands	31	Uruguay	598
German	49	New Zealand	64	U.S.A	1
Ghana	233	Nigeria	234	Uzbekistan	998
Greece	30	Norway	47	Venezuela	58
Guam	671	Oman	968	Vietnam	84
Guatemala	502	Pakistan	92	Y.A.R.	967
Guyana	592	Panama	507		

Slot Assignment (PGM 101)

The following items are for programming the slot numbers in use.

Board Type Listing

STA	CODE	COL	CODE	ETC.	CODE
DSIU	11	VOIU	31	VMIB	51
DTIB12	12	VOIB8	32	AAIB	52
DTIB24	13	VOIB24	33	AAFU	53
SLIB12	14	LCOB4	34		
SLIB24	15	LCOB8	35		
WTIB	16	LCOB12	36		
DTIM8	17	PRIB(E1)	37		
SLTM4/8	18	BRIB	38		
SLTM32	19	DCOB(E1)	39		

		PRIB(T1)	40		
		DCOB(T1)	41		

Logical Slot Assignment (PGM 103)

The following items are for programming the logical slot numbers in use.

NOTE

- After PGM101 and PGM103 are completed by the user, the System should be reset.

No	Name	Code	Remark
1	CO Board	00-18	
2	Extension Board	01-18 19-56 for DTIM/SLTM 88 for SIP Extension 99 for IP Phone	
3	VMIB Board	00-18	

IP Address Plan (PGM 108)

The following items are used for performing pre-programming of the System information.

NOTE

- The # key can be used to skip to the next program item.

No	Name	Code	Remark
Flex 1	IP Address	12 digits	
Flex 2	Network Mask Address	12 digits	
Flex 3	Gateway IP Address	12 digits	
Flex 4	Firewall IP Address	12 digits	

5.2.2.5 Flexible Numbering Plan (PGM 110-115)

Numbering Plan (PGM 110-111)

No	Name	Code	Remark
1	Numbering Plan Type	1-7	PGM110
2	Prefix Numbering Plan	Prefix Numbering Plan	Prefix Numbering Plan

Basic Number (PGM 112/114/115)

No	Name	Code	Remark
1	Station Number	100 ~ 4XX	PGM 112
2	CO Group Access Code	9, 801 ~ 872	PGM 114
3	Station Group Number	620 ~ 669	PGM 115

Feature Code Setting (PGM 113)

INDEX	ITEM	DEFAULT VALUE (Numbering Plan Type 1)
1	Attendant Call	0
2	Conference Room 1	571
3	Conference Room 2	572
4	Conference Room 3	573

INDEX	ITEM	DEFAULT VALUE (Numbering Plan Type 1)
5	Conference Room 4	574
6	Conference Room 5	575
7	Conference Room 6	576
8	Conference Room 7	577
9	Conference Room 8	578
10	Conference Room 9	579
11	Internal Page	543
12	Personal VM Page	544
13	Announcement Page For Attendant	545
14	Page Auto Answer	546
15	Internal Page Answer (Meet-Me Page)	547
16	External Page	548
17	Internal-External Page All	549
18	Call Forward Register	554
19	Pilot Hunt Call Forward Register	514
20	Pilot Hunt Call Forward Cancel	515
21	DND Status Change	516
22	DND Delete	517
23	Account Code	550
24	CO Flash	551
25	Last Number Redial	552
26	Station Speed PGM	553
27	Speed Dial	555
28	MWI Register	556
29	MWI Answer	557
30	MWI Cancel	559
31	Call Back Register	518
32	Call Back Cancel	519
33	Group Call Pickup	566
34	Direct Call Pickup	7
35	Walking COS	520
36	Call Parking Location	541
37	PGM Mode Access	521
38	Two-Way Record	522
39	VMIB Access	523
40	AME Access	524
41	CO Line Access	88
42	VM MWI Enable	*8
43	VM MWI Cancel	*9
44	MCID Request	*0
45	Unsupervised Conf Extend	5##
46	PTT Group Access	538
47	Hot Desk Log In/Log out	525
48	Name Register	526
49	Create Conf Room	527
50	Delete Conf Room	528
51	Wake Up Register	529
52	Wake Up Cancel	530
53	Temporarily COS Down	531
54	Cancel Temp COS Down	532
55	Password Change	533
56	Inter-Phone Group Access	534
57	Call Wait Request	535
58	Preselected MSG PGM	536
59	Forced Handsfree Call	537

INDEX	ITEM	DEFAULT VALUE (Numbering Plan Type 1)
60	Call Based CLIR	582
61	CLIR Access	583
62	COLR Access	584
63	Pilot Hunt Call	585
64	Command Call Oneway	581
65	Command Call Conf	580
66	Intrude Register	589
67	Camp On Register	590
68	OHVO Register	591
69	Mobile Num Register	592
70	Mobile CLI Register	593
71	Mobile Access	594
72	CCR Access	670
73	CCR Access And Drop	671
74	System Hold	560
75	Return Held CO	8**
76	Sys Memo	675
77	DISA Tone Service	678
78	All Feature Cancel	679
79	Add Conf Member	680
80	System Alarm Reset	565
81	Fault Alarm Reset	564
82	Door Open	#*1
83	Keypad Facility	##*
84	T-Net Log-In/Out	586
85	Universal Answer	587
86	USB Call Record	588
87	Delete All VM Message	681
88	VM Page Message Record	682
89	Direct VM Transfer	683
90	Loop Key	684
91	Call Log	685
92	ACD Agent Log-In/Out	500
93	ACD Agent DND	501
94	ACD Agent Work Mode	502
95	ACD Agent Auto Work	503
96	ACD Agent Auto answer	504
97	ACD Call Indication	508
98	Non-ACD Call Indication	509
99	ACD Supervisor group Forward	890
100	ACD Supervisor Night	891
101	ACD Supervisor Holiday	892
102	ACD Supervisor Queued Call Answer	893
103	ACD Supervisor Agent State Check	894
104	ACD Supervisor Silent Monitor	895
105	ACD Supervisor Call Traffic Check	896
106	ACD Announcement Play & Check	899
107	Day/Night/Timed Ring Mode Change	513
108	DID/DISA Restriction	685

5.2.2.6 System Time and Date Setting (PGM233)

At Admin programming mode:

1. Press the **[TRANS/PGM]** button + 233.
2. Press the FLEX 1 Button (Time).
3. Enter 2 digits for hour and 2 digits for minutes (HHMM as 24 Hour format. For example, 1530 for 3:30 PM).
4. Press the **[HOLD/SAVE]** button.
OR
5. Press the FLEX 2 Button (Date).
6. Enter 2 digits for month, 2 digits for day and 2 digits for year (MMDDYY, 041809 for 2009 April, 18).
7. Press the **[HOLD/SAVE]** button.

TROUBLESHOOTING

Problem	Cause/Symptom	Solution
System power failure	AC Power Fail	Check the AC Power source. Check the Inlet fuse and PSU Fuse. Check LD21 and LD22 on MB/MBE. Replace the PSU with a good one.
	+5V, +30V Fail	Check MPB board was installed and Verify which board has a short circuit by extraction the board one by one.
	LD4 LED OFF on the MPB	Check DC Output status on MB.
System does not operate	Power short circuit in some board(s)	Check the connection of each board with the MPB. Check the PSU. Check a short circuit on the MPB or other boards.
	Bad board connection	Press the Reset button when the DIP switch (SW1 for database protection) is in the default position.
	System database not working	
	MPB Operation	Check MPB status.
DKT does not operate	Bad DTIB circuit	Exchange the malfunctioning board by one in good working condition.
	Bad connection between the DSIU /DTIB12/DTIB24/DTIB12C/DTIB24C and DKT Terminals	Check the connection between the SLT and DKT line on MDF, and fix any mismatching. Repair any broken connection between the Board and DKTs.
	Installation Distance of DKT and System	Check the Max. distance between the DSIU/DTIB12/DTIB24/DTIB12C/DTIB24C and the DKT.
	Bad DKT	Plug the DKT into another extension port that has been verified as working. If the DKT still does not work properly, replace the DKT.
SLT does not operate	Bad DSIU/SLIB12/SLIB24/SLIB12C /SLIB24C	Exchange the board by one in good working condition.
	Bad connection between the DSIU/SLIB12/SLIB24/SLIB12C/SLIB24C and SLT	Check that the board connection between the lines of the SLT and DKT on the MDF, and fix any mismatching.
CO line operation failure	CID/Tone Detection Fail	Check the U12/U63 (Voice processing and Tone detection device).
	Bad connection	Check all connections.
Expansion KSU does not operate	Power ON sequence	Turn on the Basic KSU after turning on the Expansion KSU. Then press the Reset button.
	Expansion cable connection	Check Expansion cable to verify the connection and its working condition.
	2 nd KSU, 3 rd KSU PSU OFF	Check 1 st KSU was Power OFF.
Noise on External MOH and Paging port	Induced noise on the wire between the System and the amplifier	Make sure a shielded cable is in use as the connection wire between the system and the amplifier.
	Excessive input level from the external music source	Decrease the output level of the external music source by using the volume control on the music source.