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PART 1. PRE-INSTALLATION INFORMATION

1.1 SITE REQUIREMENTS

Select a location that satisfies the following conditions for safety, temperature, humidity, power and grounding.

1.1.1 Safety Conditions

- The OfficeServ 7200 system should not be installed near materials that can cause a fire, such as explosive gas and inflammables. The OfficeServ 7200 system should not be near equipment that generate electromagnetic waves, such as monitors or copying machines.
- The installation location should be convenient for distributing trunk lines and extension lines, for connecting power and grounding wires, and for maintenance and repair.
- The OfficeServ 7200 system should not be installed in aisles or passageways that are populated or used for moving equipment.
- Always maintain cleanliness to prevent dust from damaging the board connectors of the cabinet.
- Before installing the OfficeServ 7200 system, check items such as the electrical wiring status, grounding status, voltage and frequency.
- Do not expose equipment to direct sun light, corrosive fumes, and constant vibrations.
- Do not install in close proximity to a fire sprinkler or other sources of water.
- A dedicated commercial AC power outlet is required. Do not use extension cords.
- Ensure that all wires and cables to and from the OfficeServ 7200 do not cross fluorescent lights or run in parallel with AC wires.
- This equipment is to be installed only in restricted access areas (dedicated, equipment closets, etc.) in accordance with articles 110-16, 110-17, 110-18 of the National Electric Code, ANSI/NFPA 70.

1.1.2 Temperature/Humidity Conditions

The conditions for temperature and humidity are as follows:

- Operation temperature: 32°F~113 °F
- Storage temperature: 14°F~122 °F
- Humidity: 10~90 %

1.2 GROUNDING CONDITIONS

An equipment grounding conductor that is not smaller in size than the ungrounded branch-circuit supply conductors is to be installed as part of the circuit that supplies the product or system. 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 conductor is to be connected to ground at the service equipment.

The attachment-plug receptacles in the vicinity of the product or system 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.

WARNING: HIGH LEAKAGE CURRENT! Earth connection is essential before connecting supply.

The OfficeServ 7200 system requires that a supplementary earth ground be connected to the system. This is the preferred method of grounding the OfficeServ 7200. It should be noted that when the third wire ground becomes inferior it may prevent the digital data bus from canceling out noise. This may result in erratic operation of the OfficeServ 7200. Another problem that has occurred is that some UPS battery systems do not pass the ground through to the power cord resulting in no ground to the system. The ground lug in the back of the cabinet must be connected to one of the following: bonded building steel, cold water pipe or a ground rod using at least #16 AWG copper wire. Additionally, the ground between cabinets in a multiple cabinet system must also be at least #16 AWG copper wire. The third wire AC ground or Field Ground is connected to the system frame via the ground strap from the ground connector on the AC socket.

A supplementary equipment grounding conductor shall be installed between the system and ground that is in addition to the equipment grounding conductor in the power supply cord.

The supplementary equipment grounding conductor shall not be smaller in size than the ungrounded branch-circuit supply conductors. The supplementary equipment grounding conductor shall be connected to the product at the terminal provided, and shall be connected to ground in a manner that will retain the ground connection when the product is unplugged from the receptacle. The connection to ground of the supplementary equipment grounding conductor shall be in compliance with the rules for terminating bonding jumpers in Part K of Article 250 of the National Electrical Code ANSI/NFPA 70. Termination of the supplementary equipment grounding conductor is permitted to be made to building steel, to a metal electrical raceway system, or to any

grounded item that is permanently and reliably connected to the electrical service equipment ground.

Bare, covered, or insulated grounding conductors are acceptable. A covered or insulated grounding conductor shall have a continuous outer finish that is either green or green with one or more yellow stripes.

Failure to provide an adequate ground may cause a safety hazard, confusing trouble symptoms or even circuit card failure.

WARNING: Unplug the power cord from the AC outlet before attempting to connect the ground. Hazardous voltage may cause death or injury. Observe extreme caution when working with AC power. Remove lines from trunk cards.

What the above paragraphs mean is that when conventional analog telephone circuits are connected to the OfficeServ 7200 system, under fault conditions (i.e., the tip and/or ring conductor is crossed with a power line, or the circuit is affected by lightning during a storm), it is possible for hazardous potentials to appear across the tip and ring wiring coming into the OfficeServ 7200 cabinet(s) from the outside plant (i.e., overhead cables, buried cables, cable head pedestal). These circuits are provided with both primary and secondary protection circuitry which will attempt to drain off these high voltages and currents to earth ground. Obviously, it is important to have a good source of ground connected to the OfficeServ 7200 system to drain this energy off. Again, a good earth ground source is required by the OfficeServ 7200 system.

The OfficeServ 7200 system has two ground reference points. One point is via the green wire in the power cord connected to the AC power outlet. This ground connection is provided to meet local electrical codes when the AC ground is required to be common with the earth ground. However, this can be disconnected either intentionally or unintentionally. Consequently, a more permanent ground connection is required by connecting a high current/voltage capacity ground wire which is bonded to ground at the electric service power entrance or via some other method approved by the National Electrical Code to the OfficeServ 7200 system ground lug. This is a more secure ground connection, which can only be disconnected intentionally. These precautions are taken for safety reasons to protect personnel working on the Office Serv 7200 system and also for operational reasons to accommodate ground return and/or ground-referenced analog telephone circuits, which require this solid earth ground connection for normal functioning.

1.3 POWER CONDITIONS

The power supply board of the OfficeServ 7200 system receives AC input power or battery power, and supplies -48 V, -5 V, +5 V, +3.3 V, +12 V, and -56 V to the system cabinet.

The rating is as follows:

- RATING: AC 110-120 V; 6 A; 50/60 Hz or DC 48 V 3 A

Table 1.1 Power Specifications

Power Supply Unit(PSU)		Specification
PSU	Input power	AC 110 V DC 48V (48VDC for battery backup ONLY)
	Output power	- DC 48 V, 2.2 A - DC +5 V, 8.0 A - DC -5 V, 1.0 A - DC +3.3 V, 10 A - DC +12 V, 0.4 A - DC -56 V, 0.4 A (for battery backup)

1.4 UNPACKING AND INSPECTION

The OfficeServ 7200 can be configured as a single cabinet or dual cabinet system.

All OfficeServ 7200 cabinets are identical when shipped from Samsung. After unpacking the cabinet(s), inspect for signs of physical damage. If any damage is detected, do not attempt to install the system. Contact Samsung Telecommunications America Technical Support Department.

Check to see that each cabinet carton includes the following:

- OfficeServ 7200 cabinet
- AC Power Cable
- Rack Mount Side Flange Brackets (2)
- Rack Mount Cross Bar (1)
- Screw Pack
- Battery Cable Assembly
- Blanking Plates (3)

PART 2. INSTALLING CABINETS

This section describes how to install an OfficeServ 7200 cabinet on a table/desktop in a data rack or on a wall, depending on the installation environment.

2.1 SYSTEM INSTALLATION PROCEDURE

The procedure of system installation is as follows.

- 1) Install the OfficeServ 7200 cabinet on a table, inside a data rack or on the wall depending on the installation environment.
- 2) Connect the ground to the ground lug behind the main cabinet.
- 3) Put the MCP board into slot 0 of the main cabinet. If there is an expansion cabinet, install the LCP board into slot 0 of the expansion cabinet.
- 4) Install interface boards into universal slots (slot 1 through slot 5) of the Main Cabinet and if required slots 1 through 5 of expansion cabinet.
- 5) Connect an external battery with proper capacity if required.
- 6) Connect AC 110 V input power.

2.2 SELECTING INSTALLATION METHOD

The OfficeServ 7200 cabinet can be installed on a table, inside a 19-inch rack or on a wall depending on the number of cabinets and environment of the installation area.

2.3 INSTALLING IN A RACK

2.3.1 Cautions for Installation

Take the following precautions when installing the OfficeServ 7200 cabinet inside a rack:

- The 19-inch rack should be a standard equipment rack.
- When using an enclosed-type rack, check if the rack is properly ventilated. Vents should be equipped on the side of the rack and fans should be attached to ventilate cool air into the rack.
- Take special caution when using an enclosed-type rack that has vents on top of the rack since hot air coming out of the vent may enter the intake vent of a system installed above the rack.
- When using an open rack, do not block the entrance of a port or fan of the OfficeServ 7200 system.

2.3.2 Required Tools

- A mid-sized Phillips screwdriver
- A bracket and three screws for attaching cabinet to rack mount
- Two brackets and six screws for rack mount
- Two screws for fastening

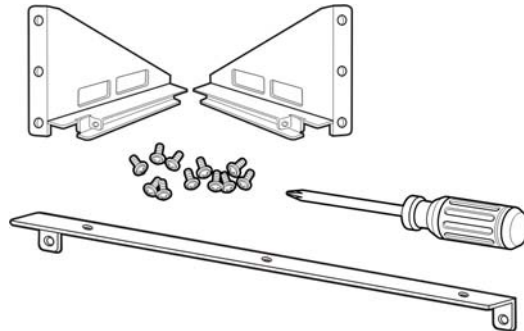


Figure 2.1 Tools Required for Rack Installation

2.3.3 Installing in a Rack

The procedure for installing the OfficeServ 7200 cabinet inside a 19-inch rack is as follows:

- 1) Attach the cabinet bracket to the bottom surface of the OfficeServ 7200 cabinet and fasten the bracket firmly with the three screws.

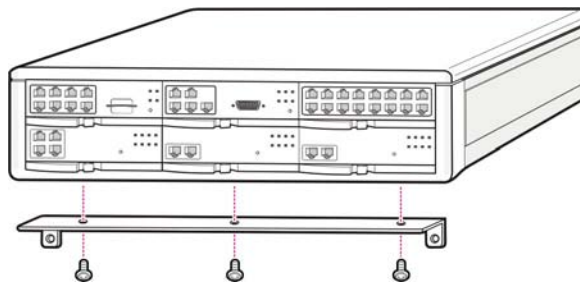


Figure 2.2 Rack Installation (1)

- 2) Attach the rack brackets to both sides of the rack and fasten the brackets firmly with the six screws.

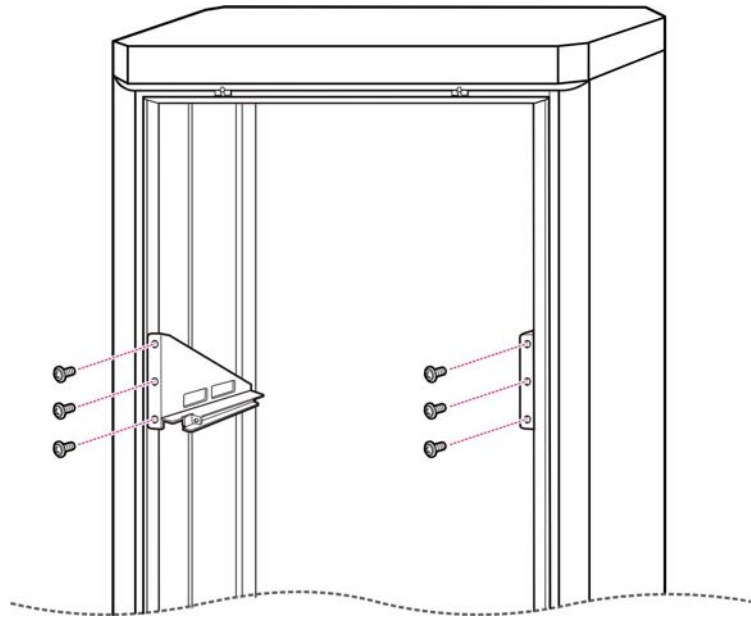


Figure 2.3 Rack Installation (2)

- 3) Align the cabinet to the guardrails of the rack and slide the cabinet into the rack.

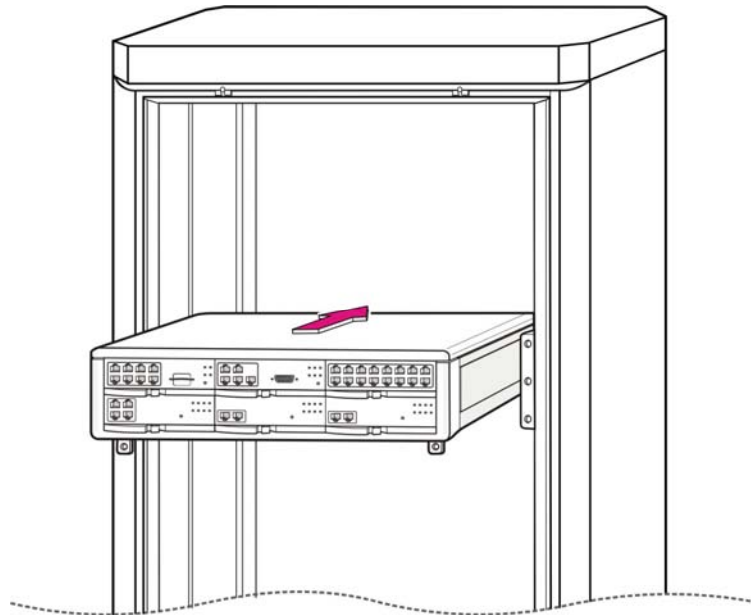


Figure 2.4 Rack Installation (3)

- 4) Align the two holes of the cabinet bracket and the holes of the rack brackets, and fasten the cabinet to the rack with the two screws.

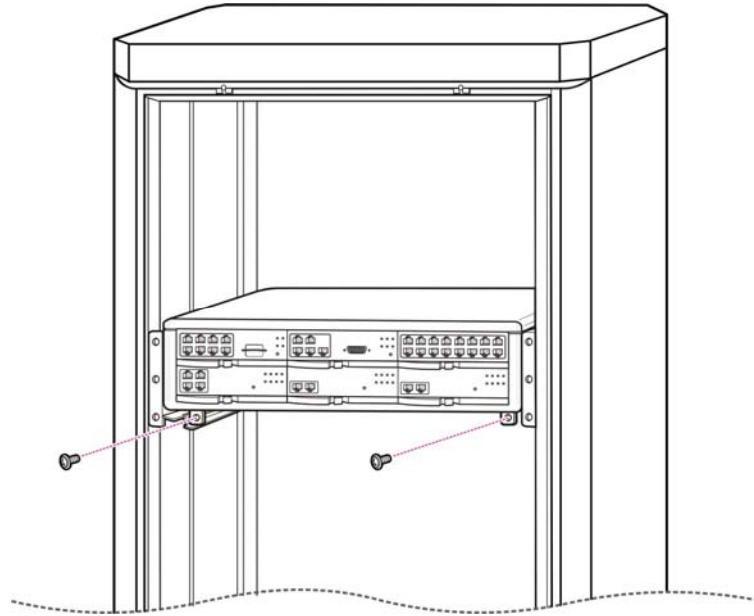


Figure 2.5 Rack Installation (4)

- 5) The above steps 1~4 also apply to expansion cabinets.

2.4 INSTALLING ON A WALL

This section describes how to install the OfficeServ 7200 cabinet on a wall. The optional OfficeServ 7200 wall mount bracket is required (must be ordered separately).

2.4.1 Required Tools

- A mid-sized Phillips screwdriver
- An electric drill
- A hammer
- A wall bracket
- Four plastic anchors
- Four Phillips screws
- Four install lock screws

- Two screws that are already screwed in the bottom of the OfficeServ 7200 cabinet.

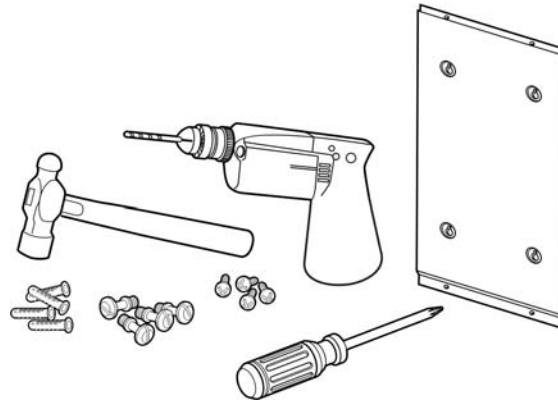


Figure 2.6 Tools Required for Wall Installation

2.4.2 Wall Installation

The procedure for installing the OfficeServ 7200 cabinet on a wall by using a wall bracket is as follows:

CAUTION: Only mount OfficeServ 7200 onto a wall capable of supporting the combined weight of 2 cabinets associated blocks, cables and peripheral equipment.

- 1) There are four screw holes (see [A] Figure 2.7) on the wall bracket as shown below. Mark the four screw holes where the wall bracket should be installed.

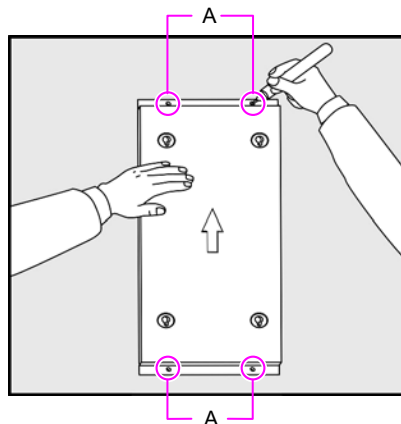


Figure 2.7 Wall Installation (1)

- 2) Use the electrical drill to make holes where the screw holes were marked.

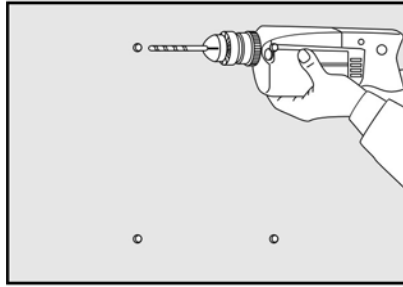


Figure 2.8 Wall Installation (2)

- 3) Select appropriate screws, toggle bolts, or plastic anchors to suit the selected mounting surface.
- 4) Secure the bracket to the wall using appropriate hardware.

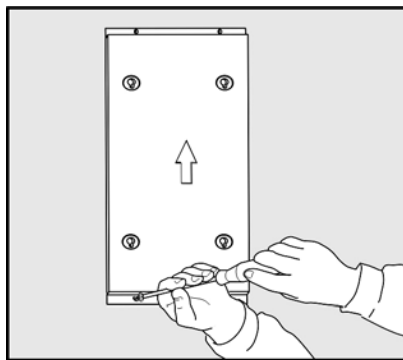


Figure 2.9 Wall Installation (3)

- 5) There are two screws in two of the four holes at the bottom of OfficeServ 7200 cabinet as shown below. To install on the wall, loosen the two screws to approximately 2mm as shown in figure 2.10.

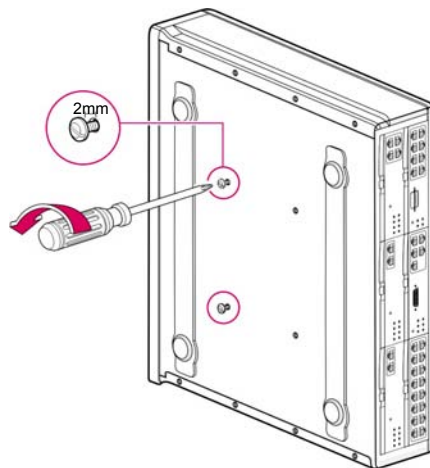


Figure 2.10 Wall Installation (4)

- 6) Tighten two more screws to the other two holes which do not have screws at the bottom of OfficeServ 7200 cabinet. Do not tighten the screws all the way in but leave about 2 mm space.

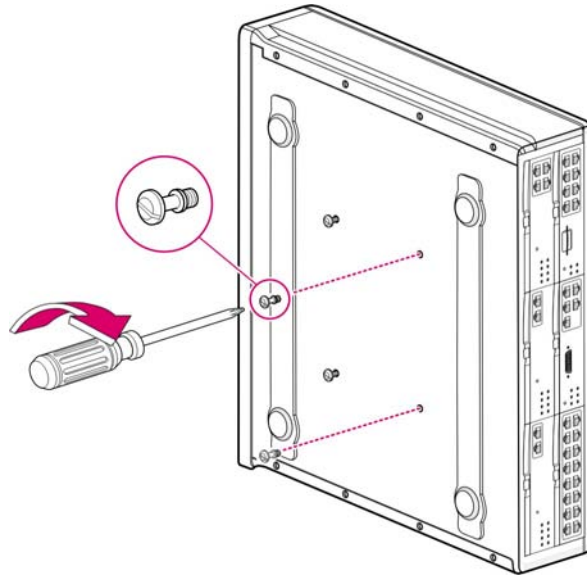


Figure 2.11 Wall Installation (5)

- 7) Hang the screws on the bottom surface of the OfficeServ 7200 cabinet to the holes of wall bracket and push the cabinet downward to fix the cabinet.

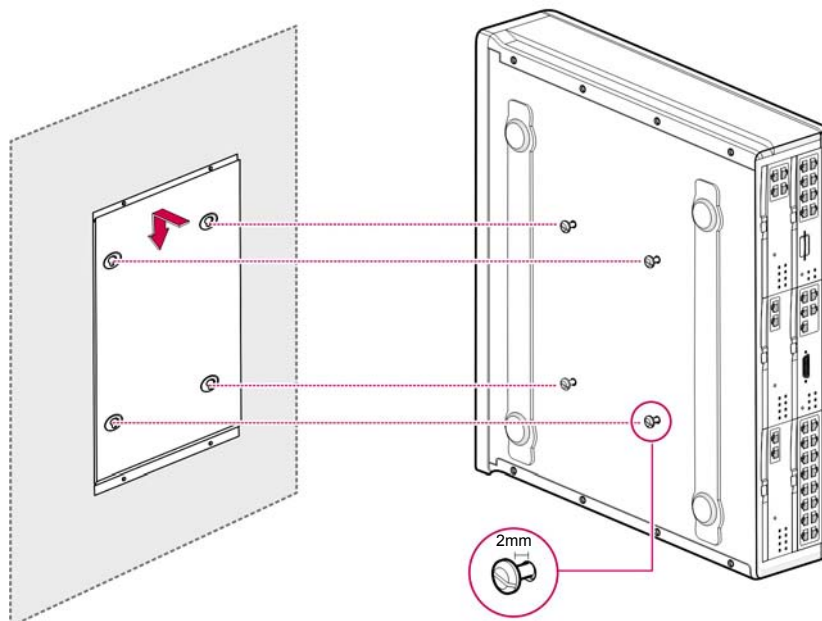


Figure 2.12 Wall Installation (6)

2.5 CONNECTING GROUND WIRES

This section describes how to connect an external grounding wire to the OfficeServ 7200 system.



External Grounding

External grounding is required to prevent human injuries and system damage caused by lightning, static electricity, or voltage surge.

As shown in the figure below, connect an earth ground to the ground lug behind the OfficeServ 7200. For an expansion cabinet, connect and ground the external ground wire between the expansion cabinet and the main cabinet.

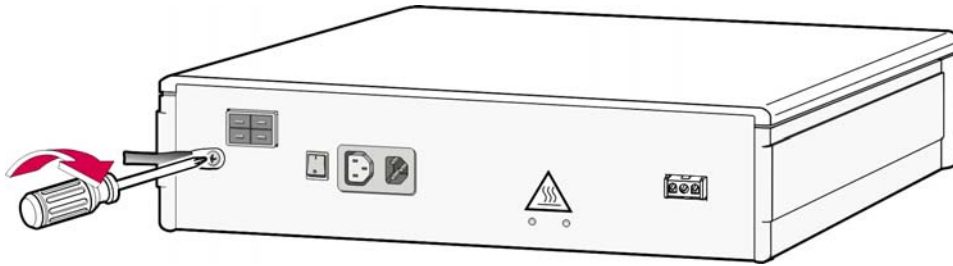


Figure 2.13 Grounding

IMPORTANT: Follow the grounding requirements described in section 1.2 (Grounding Conditions) when connecting a ground to the system.

PART 3. INSTALLING AND REPLACING BOARDS

This section describes how to install and replace various boards of the OfficeServ 7200 system.

3.1 CABINET CONFIGURATION

The main and expansion cabinets of the OfficeServ 7200 system have six slots each.



Figure 3.1 Front Panel Configuration

Following boards are installed in the slots according to the configuration of the OfficeServ 7200.

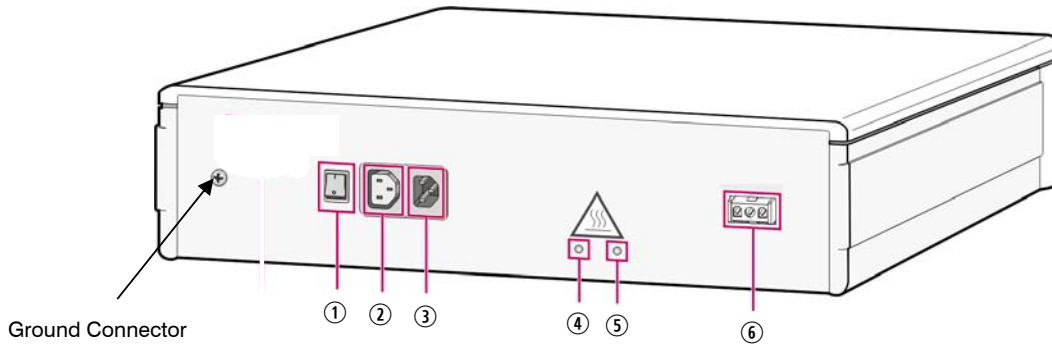
Table 3.1 Applicable Boards per Slot

Cabinet	Slot	Applicable Boards
Expansion Cabinet	Slot 0	For LCP ONLY
	Slot 1	All boards EXCEPT MCP, LCP, TEPRI and LIM
	Slot 2	All boards EXCEPT MCP, LCP, TEPRI and WIM
	Slot 3	All boards EXCEPT MCP, LCP and WIM
	Slot 4, 5	All boards EXCEPT MCP, LCP, TEPRI and WIM
Main Cabinet	Slot 0	For MCP ONLY
	Slot 1	All boards EXCEPT MCP, LCP, TEPRI and LIM
	Slot 2	All boards EXCEPT MCP, LCP, TEPRI and WIM
	Slot 3, 4, 5	All boards EXCEPT MCP, LCP and WIM



Checking Slots

The WIM board can only be installed in slot 1 of the main cabinet or slot 1 of the expansion cabinet, and the TEPRI board can only be installed on slots 3, 4 and 5 of the main cabinet and slot 3 of the expansion cabinet.



Back panel components:

Table 3.2 Back Panel Parts

Parts	Description
① Power switch	Switches the power of OfficeServ 7200 on/off.
② Power connector between a basic cabinet and an extension cabinet	Extends 110V AC power from base cabinet to expansion cabinet.
③ AC Power Cord "IN"	Connects to a grounded electrical outlet on a dedicated circuit.
④ AC LED	Is lit for the AC input power.
⑤ DC LED	Is lit for the DC output power (internal DC voltage)
⑥ Battery Backup connector	Connects an external battery source "48VDC only"

3.2 MCP AND LCP MODULES

This section describes the procedures for setting switches, installing optional daughter boards, installing the boards in a slot, and how to connect between the MCP and LCP boards.

The OfficeServ 7200 MCP (Main Control Processor) controls the system operation. The MCP is required for all configurations and goes in slot 0 of the main cabinet. The LCP goes in slot 0 of the expansion cabinet.

The LCP is a secondary processor that communicates with the MCP and manages the boards in the expansion cabinet.

3.2.1 Setting Switches

The MCP board includes switches used for optimizing the board to the user requirements and system configuration.

The procedure for setting switches is as follows.

On the MCP, set the switches for the required configuration. The description for the settings is described below.

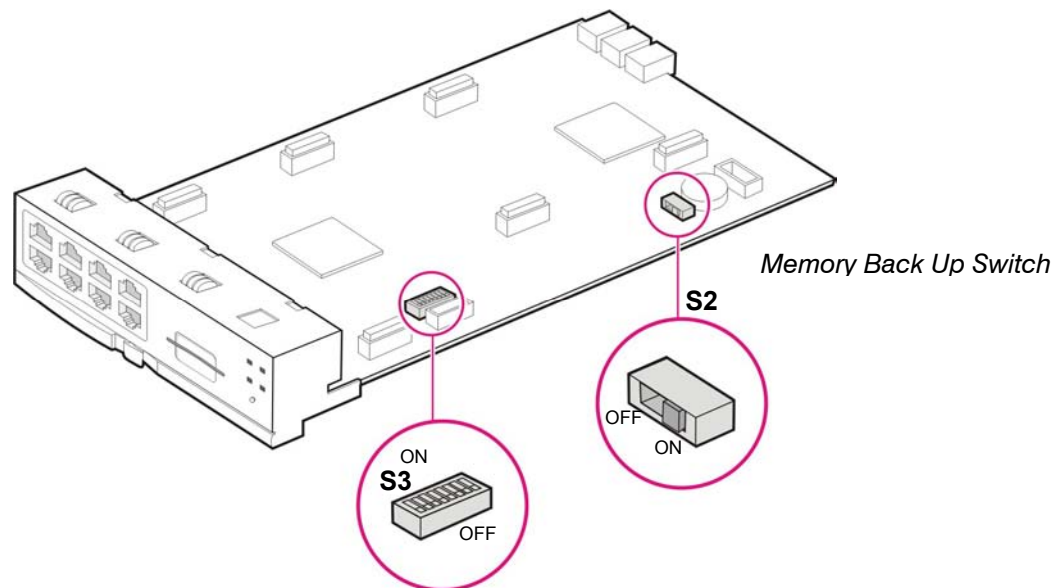


Figure 3.2 Switch Setting

- **Memory Backup Switch (S2):** When set to ON, all system programming is saved in SRAM even when system is rebooted or powered OFF. This will be saved in SRAM until the Super Capacitor has been drained of all charge (this charge will last only up to 2 days). At that point all programming will be lost. It is recommended all programming is saved using Smart Media or OfficeServ Manager application. Turning the switch OFF will set the system to DEFAULT. To default the system keep this switch in the OFF position for 30 seconds. Switch to ON position before powering up the system.

DIP SWITCH USE (S3)

ON (left)		OFF (right)
4 DIGIT STATION NUMBERS	SW8	3 DIGIT STATION NUMBERS
4 DIGIT STATION GROUPS	SW7	3 DIGIT STATION GROUPS
4 DIGIT TRUNK NUMBERS	SW6	3 DIGIT TRUNK NUMBERS
RESERVED	SW5	RESERVED
COUNTRY SELECT	SW4	COUNTRY SELECT
COUNTRY SELECT	SW3	COUNTRY SELECT
COUNTRY SELECT	SW2	COUNTRY SELECT
COUNTRY SELECT	SW 1	COUNTRY SELECT

- Switches 1 through 4 select the country the system is installed in.

4	3	2	1	Country
OFF	OFF	OFF	OFF	Korea
OFF	OFF	OFF	ON	USA
OFF	OFF	ON	OFF	UK
OFF	OFF	ON	ON	Italy
OFF	ON	OFF	OFF	Australia
OFF	ON	OFF	ON	New Zealand
OFF	ON	ON	OFF	Holland
OFF	ON	ON	ON	Denmark

- Switch 5 reserved.
- These DIP switches will not take effect unless the switches are set in the wanted position and the system memory is cleared manually by using the Memory Backup switch.

3.2.2 Installing MCP and LCP


Install processor boards in Slot 0 of the main cabinet and the expansion cabinet. The locations of Slot 0 through slot 5 are described in figure 3.1.

Table 3.3 Types of Control Boards

Control Board	Applicable Slot
MCP	Slot 0 of the Main Cabinet
LCP	Slot 0 of the Expansion Cabinet

The procedure for installing the MCP board and the LCP board to each slot is as follows:

- 1) Check the exterior of the MCP board and the LCP board for any damage. If damage is found, do not proceed with installation. Contact Samsung Technical Support.



Power the system OFF when installing or removing boards.
POWER TO THE CABINET MUST BE TURNED OFF. Failure to do so will damage the card, cabinet and/or corrupt the data moving along the data bus.

- 2) Align the MCP board to the guardrails of slot 0 of the Main Cabinet, and slide the MCP board into the slot.

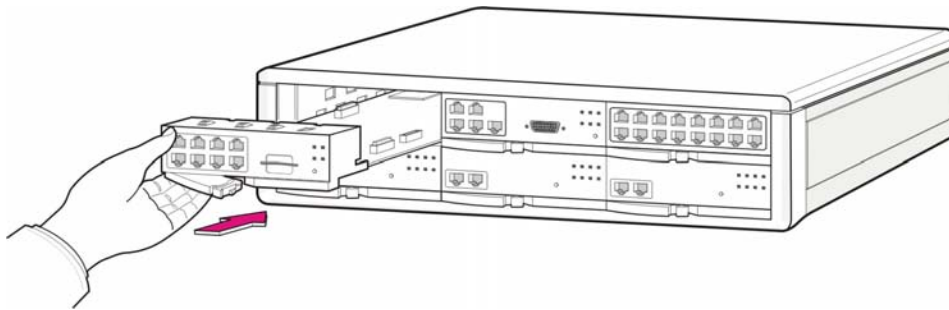


Figure 3.3 Installing the Processor Board (1)

- 3) Push the front panel lever until the board is completely inserted into the OfficeServ 7200 slot 0.

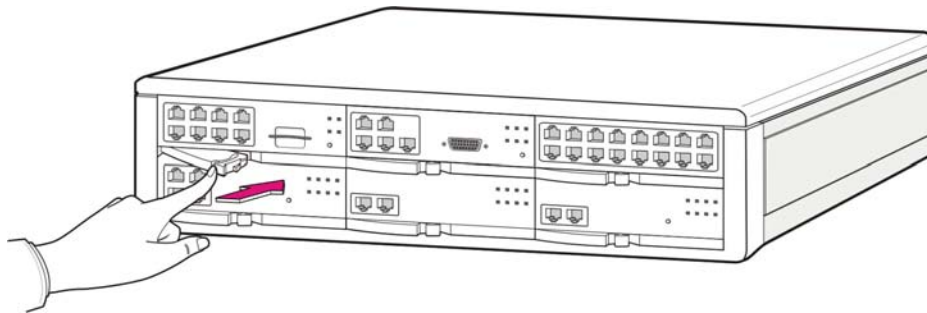


Figure 3.4 Installing the Processor Board (2)

- 4) The above steps 2~3 also apply to installing the LCP board to slot 0 of the expansion cabinet.

3.2.3 Connecting MCP Board to LCP Board

If the OfficeServ 7200 system consists of a Main Cabinet and an Extension Cabinet, connect the MCP board to the LCP board using link cables to transmit and receive signals between the control boards.

- 1) Three link cables are needed to connect the MCP board to the LCP board. They are included in the LCP carton.

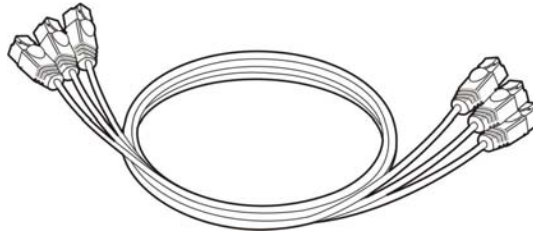


Figure 3.5 Link Cables

- 2) With a link cable, connect the 'Link1' port in MCP board installed in the main cabinet and the 'Link1' port in LCP port installed in the extension cabinet. With the seconds link cable, connect the 'Link2' port in the MCP board and 'Link2' port in the LCP board. With the third link cable, connect the 'Link3' port in the MCP board with the 'Link3' port in the LCP board.

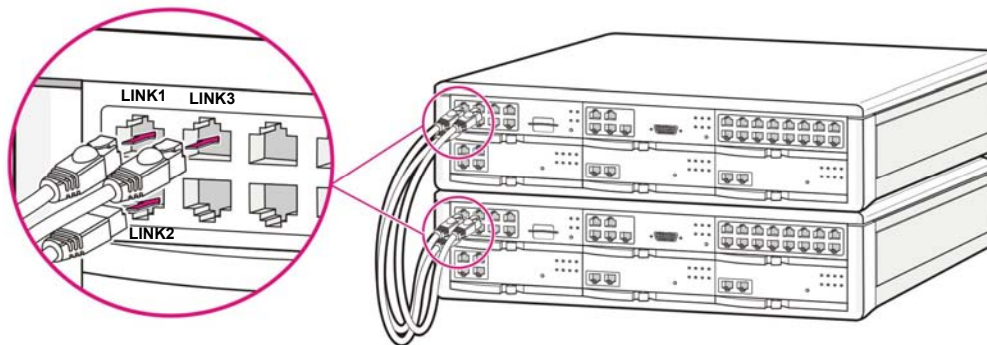


Figure 3.6 Connecting MCP Board to LCP Board

3.2.4 MCP LEDs

The front view of the MCP board is shown in the picture below.



Figure 3.7 Front View of the MCP

The MCP front panel components have the functions below:

Table 3.4 Ports and LEDs of the MCP Board

Ports & LEDs	Function Description
LINK1~LINK3	Ports that connect the MCP with the LCP.
MISC1~MISC2	Ports that connect external music sources, paging device, loud bell, common bell, door bell when the optional MIS daughter board is installed.
SmartMedia	Port for installing the 32MB Smart Media card. This card contains the main system software.
LAN	Port for establishing the 10 Base-T/100 Base-Tx Ethernet connection.
SIO	Serial port (Samsung Engineering Use ONLY).
RST	Button for resetting the MCP board.
RUN LED	This LED indicates the status of the MCP. - Off: Power is not connected. - On: Booting - Blink: The Program is operating properly
LAN LED	This LED indicates the status of the connection to LAN. - Off: MCP is not connected to LAN. - On: MCP is connected LAN. - Blink: MCP is transmitting or receiving Data through LAN port.

Ports & LEDs	Function Description
SM LED	This LED indicates the status of the SmartMedia access. - Off: The Smartmedia is not installed. - On: The SmartMedia is installed, however is not accessed. - Blink: The SmartMedia is installed and is being accessed.
LCP LED	This LED indicates the status of signaling message processing. - Off: There's no message exchange between MCP and LCP. - On: Messages are being sent/received to/from the LCP.

3.2.5 LCP LEDs

The front view of the LCP board is shown in the picture below.



Figure 3.8 Front View of the LCP

The components on the front panel of the LCP have the functions below:

Table 3.5 Ports and LEDs of the LCP

Ports & LEDs	Function
LINK1~LINK3	Ports that connect the MCP with the LCP.
SIO	Serial port (for Samsung Engineering Use ONLY)
RST	Button for resetting the LCP board.
RUN LED	This LED indicates the status of the LCP. - Off: Power is not connected. - On: Booting. - Blinking: Program in operation.
MCP LED	This LED indicates the status of signaling message processing. - Off: There's no message exchange between MCP and LCP. - On: Messages are being sent/received to/from the MCP.

3.2.6 Optional Daughter Boards

There are 4 types of optional daughter boards that can be installed **ONLY** on the MCP. Each optional daughterboard must be installed in specific positions of the MCP ([see Figure 3.9](#)). Each optional daughterboard is described below:

- **Multi-Frequency Module (MFM):** The MFM is installed in the 3rd position of the MCP. This board provides an additional 12 DSP circuits for DTMF tone detection.
- **Miscellaneous (MIS):** The MIS is installed in the first position of the MCP (towards front of the board). MIS provides 2 external Music On Hold ports, an external paging port, a loud bell port, a common bell port, and also provides 2 dry contact relay ports that connect or disconnects the signal transmission or power supply with external equipment.
- **RCM:** This board has a slide switch to switch between R2 and CID. This switch should always be in the CID position. R2 signaling is not used in the USA. The RCM board installs in the middle position on the MCP card. The RCM board is used to provide 14 Caller ID DSP circuits for Caller ID detection on loop start trunks.
- **RCM2:** This board performs the same function as the RCM, analog Caller ID (CID) decoding on incoming calls. In addition the RCM2 provides CID or FSK signaling on analog ports. Any CID compatible device connected to analog station ports can display CID name and number information as received from the telephone company. This board regenerates CID exactly as the central office sends it.

This RCM2 board can be used in place of the RCM. Use MMC 300 to set CID to SLT "ON" for each analog port that will have CID.

This board has a slide switch to switch between R2 and CID. This switch should always be in the CID position. R2 signaling is not used in the USA. The RCM2 board installs in the middle position of the MCP card. The RCM2 board is used to provide 14 Caller ID DSP circuits for Caller ID detection on loop start trunks

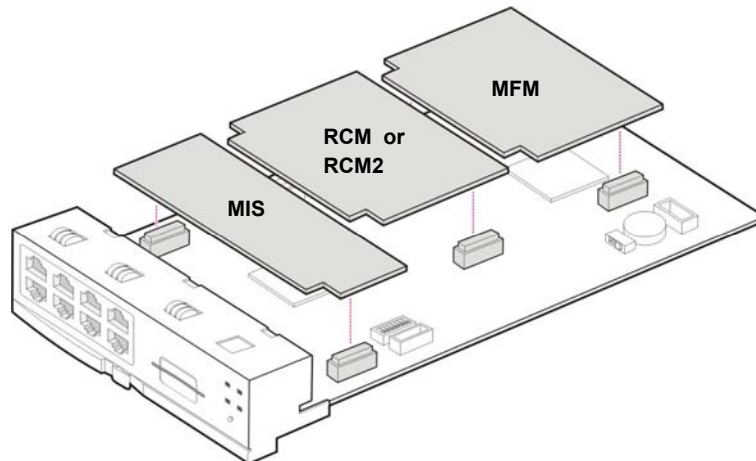


Figure 3.9 Installing Optional Boards

3.3 INTERFACE BOARDS

This section describes how to set jumpers and switches of an interface board, how to install optional daughter boards to an interface board, and how to install interface boards into slots.

3.3.1 Installing Interface Boards

Interface boards are installed on slot 1 through slot 5 of each cabinet. The following table describes the slot locations for interface boards. The locations of Slot 0 through slot 5 of the cabinet are described in section 3.1 [‘Cabinet Configuration’](#).

Table 3.6 Types of Interface Board and Applicable Slots

Category	Interface Board	Applicable Slot
Trunk Cards	TEPRI	Slot 3 through slot 5 of the main cabinet Slot 3 of the expansion cabinet
	8TRK	Slot 1 through slot 5 of the main cabinet Slot 1 through slot 5 of the expansion cabinet
Station Cards	8DLI, 8SLI, 16SLI2, 16DLI2, 8COMBO 16MWSLI	Slot 1 through slot 5 of the main cabinet Slot 1 through slot 5 of the expansion cabinet

Category	Interface Board	Applicable Slot
VoIP, Wireless and Data Modules	LIM	Slot 2 through slot 5 of the main cabinet* Slot 2 through slot 5 of the expansion cabinet*
	4DSL	Slot 1 through slot 5 of the main cabinet Slot 1 through slot 5 of the expansion cabinet
	WIM	Slot 1 of either main cabinet or slot 1 of expansion cabinet. Only one per system.
	4WLI, MGI	Slot 1 through slot 5 of the main cabinet Slot 1 through slot 5 of the expansion cabinet
Voice Mail	SVMi-20E	Slots 1 through 5 of main cabinet Slot 1 through 5 of expansion cabinet One per system.

The Procedure for installing the interface board to each slot is as follows:

- 1) Check the exterior of the interface board for any damage.
- 2) Align each Interface board to the guardrails of the universal slot of the OfficeServ 7200 main cabinet or expansion cabinet, and slide the Interface board into the slot.

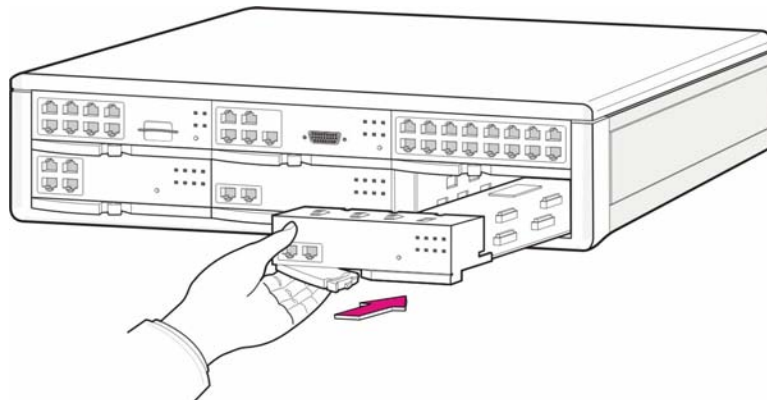


Figure 3.10 Installing Interface Board into Slot

* For LIM to operate as a managed switch, it must be installed in Slot 2 of either cabinet and a WIM must be installed in Slot 1 next to the LIM.

- 2) Push the front panel lever of the interface board until the board is completely inserted into the OfficeServ 7200 slot.

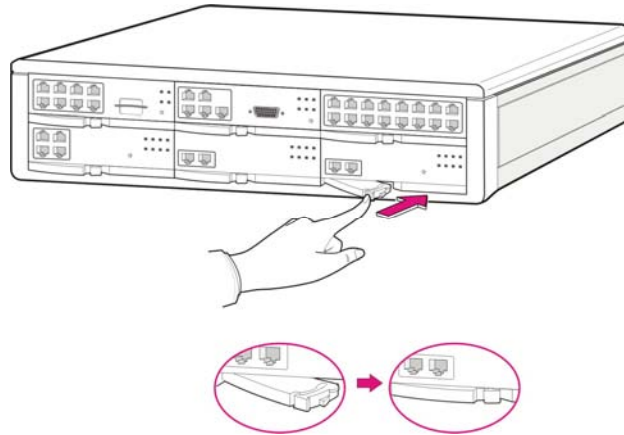




Figure 3.11 Front Panel Lever

3.3.2 Replacing Boards

If the OfficeServ 7200 system fails to operate normally due to an error on the power supply board, control board, or interface board, replace the board with a new one.

	Removing Cables
Replace a board after removing all cables connected to the board.	

The procedure for replacing a board installed in a slot of a cabinet is as follows:

	POWER TO THE CABINET MUST BE TURNED OFF. Failure to do so will damage the card, cabinet and/or corrupt the data moving along the data bus.
---	---

- 1) Turn off the power of the cabinet.

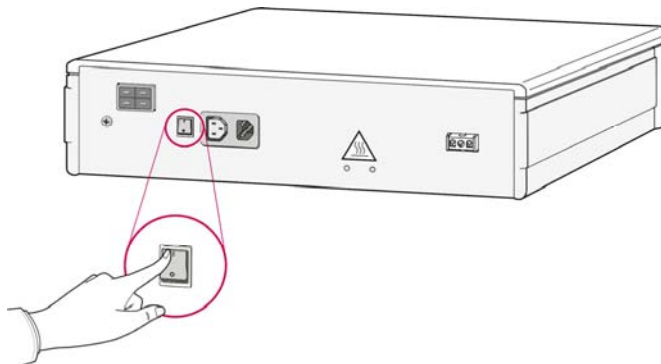


Figure 3.12 Turning the Cabinet Power Off

- 2) When replacing an MCP or LCP board, first, remove link cables connecting the MCP board to the LCP board. Also, remove all cables connected to the board to be replaced.

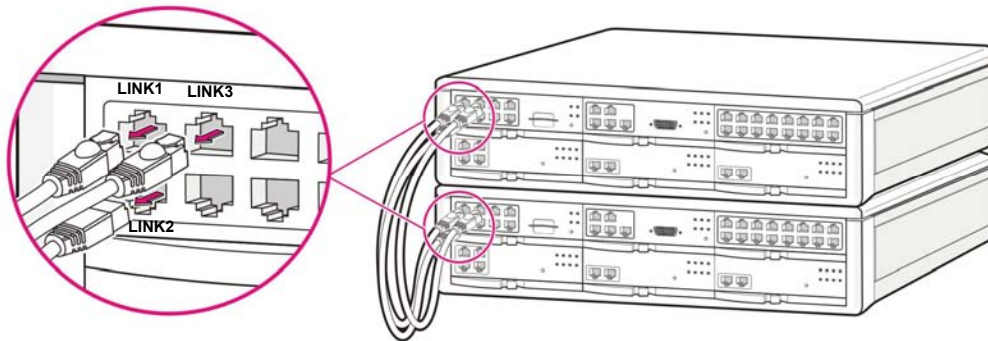


Figure 3.13 Removing Cable

- 3) Pull the lever of the board and pull out the target board slowly.

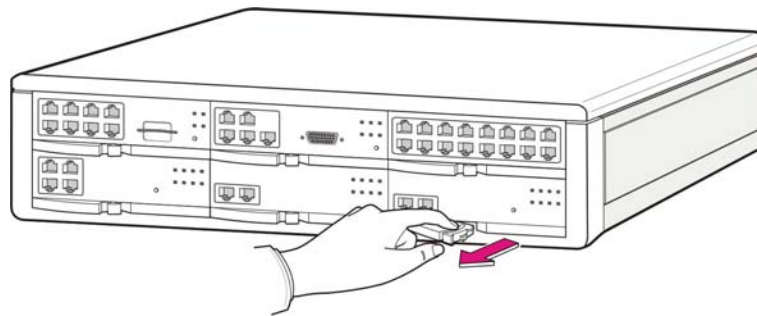


Figure 3.14 Removing Board

- 4) Align the new board to the guardrails of the slot, and slide the new board into the slot. Push the front panel lever of the MCP board until it is completely inserted into the OfficeServ 7200 main board port.

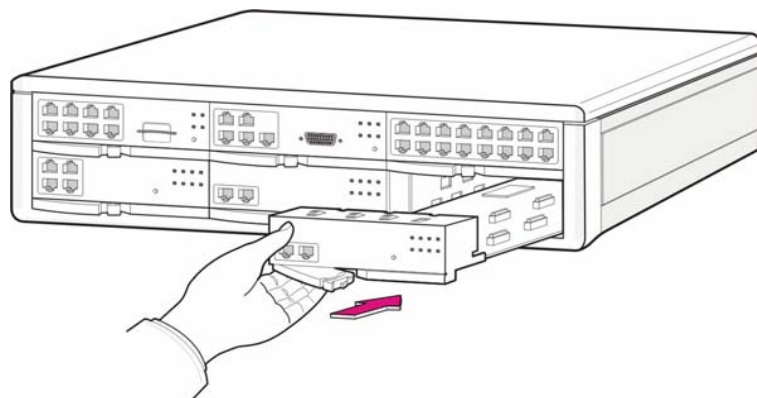


Figure 3.15 Replacing to New Board

3.3.3 TEPRI

The T1E1PRI(TEPRI) board is a digital trunk interface that supports either T1 or ISDN PRI service. It also supports Q-Sig/PRI signalling required for networking multiple systems.

The TEPRI board installs in slots 3, 4 or 5 of main cabinet and slot 3 of expansion cabinet. The first four LEDs on the front of the card provide the status of the service (Sync, AIS, Loss and Layer 2 Active states). The second four LED's on the front of the card display the type of service. The first TEPRI card installed in the OfficeServ 7200 is the primary source of external clocking. The second TEPRI installed is the secondary source of external clocking. Default clock selection is first cabinet, left to right then second cabinet. The clock priority can be changed by using MMC 826. The primary and secondary clock sources should be mounted in the main cabinet to ensure stable reception of clocking from the primary and secondary sources. Regardless of position a CO PRI circuit should always be given clocking priority over T1 circuits. There are two RJ45 modular jacks on the face of the card. The settings for T1 or PRI service are selected by a bank of dip switches as defined below. The PRI supports NI1, NI2, AT&T No. 5 ESS, and DMS 100 offices. A maximum of 4 TEPRI cards can be provided per system. **NOTE: Do not insert this card with system power ON.**

TEPRI Card Dip Switch

Switch No.	ON	OFF
1	T1	E1
2	PRI	T1
3	NFAS (24B)	NFAS (23B + D)
4	NETWORK*	USER
5	AFT	NORMAL
6	**	**
7	**	**
8	**	**

*If this TEPRI card is to be the master of a pair of TEPRI cards that are used to connect two systems together via PRI networking then this DIP switch, DIP switch 4 must be set to ON.

**Do not change the settings of DIP switches 3, 5, 6, 7, and 8. Switches 3, 5, 6, and 7 must remain OFF and 8 must be ON.

See the S1 switch and jumpers of the TERRI board as shown below.

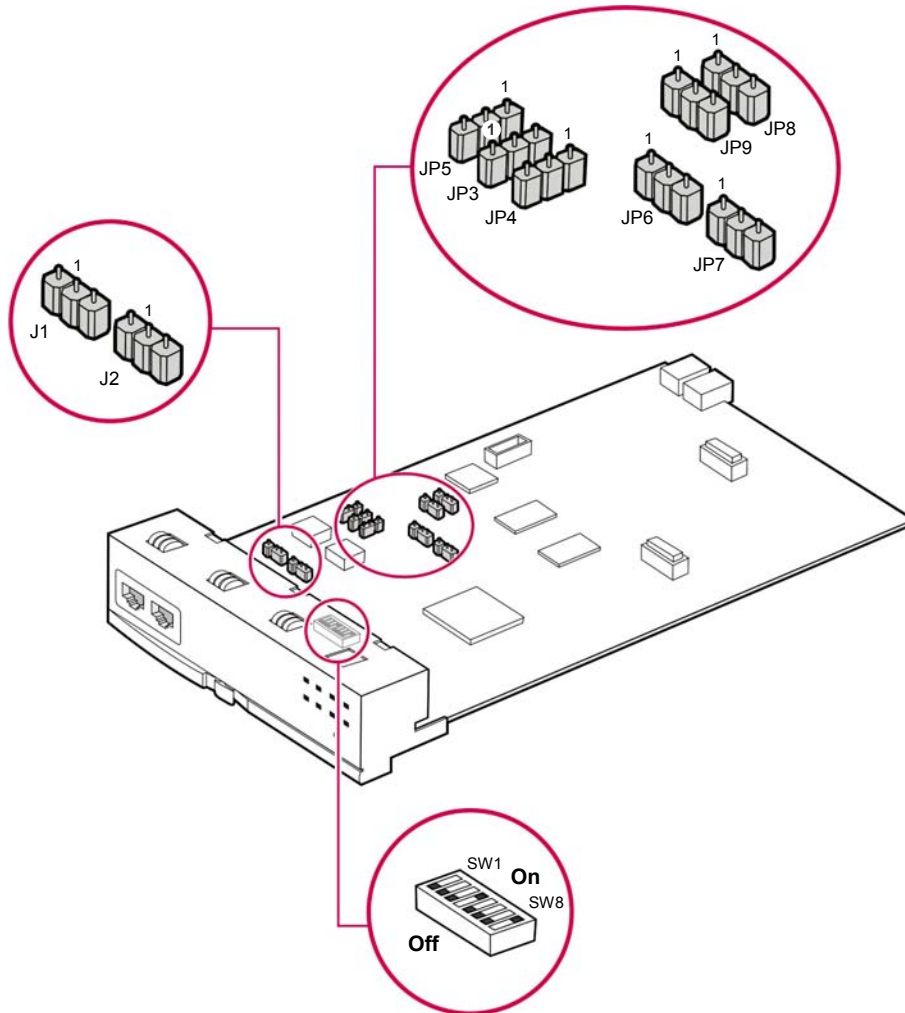


Figure 3.16 Setting switches on the TEPRI Board

JUMPER SETTING

The TEPRI board comes from the factory with the following jumper settings. **These settings should NOT be changed.**

- J1 & J2: Pins 2 & 3 connected
- J3: Pins 2 & 3 connected
- J4~J9: Pins 1 & 2 connected
- Pin 1 is labeled on the board for each jumper.

FRONT VIEW OF TEPRI BOARD

The front view of the TEPRI board is shown in the picture below.



Figure 3.17 Front View of the TEPRI

Front panel components of the TEPRI:

Table 3.7 Ports and LEDs of the TEPRI

Ports & LEDs	Function Description
T1/E1/PRI	Ports that connect the T1/E1/PRI cable.
SIO	Serial port (for Samsung Use ONLY)
RST	Button for resetting the TEPRI board.
SYNC LED	Clock synchronization. - On: Indicates loss of framing (Error Condition). - Off: Clocks are synchronized when they inter-work with the counterpart station (Normal).
LOS LED	This LED indicates loss of signal. - On: Signals have been lost, no PCM clocking is being received. - Off: Signals being received (Normal).
AIS LED	This LED indicates whether the T1/E1 remote alarm has been generated. - On: The remote alarm has been generated. All one's are being received (Error) - Off: The remote alarm has not been generated (Normal).
L2 LED	This LED indicates the operation status of Layer 2 - On: The PRI Layer2 is operating properly. PRI message is being received. - Off: The PRI Layer2 is operating abnormally.

Ports & LEDs	Function Description
IPC LED	This LED indicates that this board is inter-working with the higher-level module. - On: The board is inter-working with the MCP/LCP. - Off: The board is not inter-working with the MCP/LCP.
CLK LED	This LED indicates whether this board is a master or slave. - On: The board has received the synchronization clock from the counterpart station. - Off: Using synchronous clock for internal clock.
TP1 LED	This LED indicates whether the T1 is established. - This LED turns on once the T1 is established.
TP2 LED	This LED indicates whether the PRI is connected. - This LED turns on once the PRI is connected.

[Refer to section 6.2.2 for Port Pinout and Wiring.](#)

3.3.4 8TRK

The 8TRK board provides 8 ports for analog trunk lines with Caller ID capabilities. This board can go into any universal slot (1 ~ 5) in any cabinet. Add as many as needed.

FRONT VIEW OF 8TRK BOARD

The front view of the 8TRK board is shown in the picture below.

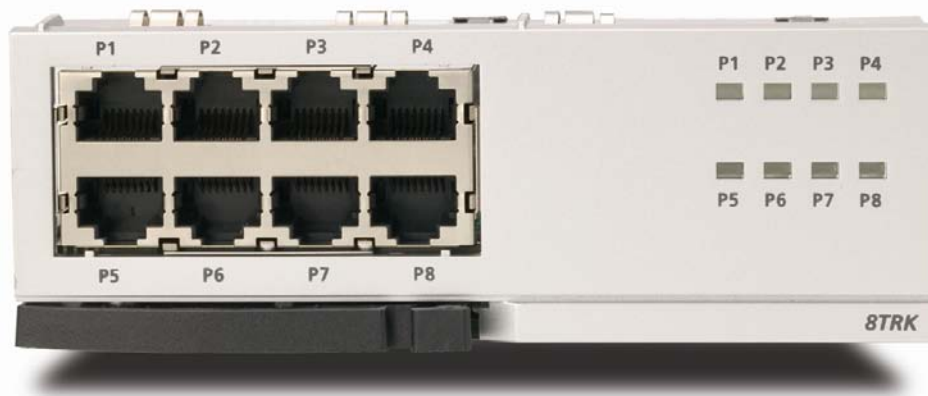


Figure 3.18 Front View of the 8TRK

The components on the front panel of the 8TRK have the functions below:

Table 3.8 Ports and LEDs of the 8TRK

Ports & LEDs	Function Description
P1~P8	Trunk ports.
P1~P8 LED	These LEDs indicate the status of the ports. - Off: The trunk line is not being used. - On: The trunk line is being used. - Blink: Incoming call ringing on trunk.

[Refer to section 6.2.1 for Port Pinout and Wiring.](#)

3.3.5 16DLI2

This board provides 16 ports for connecting Samung Digital Keysets. Each port provides 1B+D. This means only one station/one voice channel per port. This board can go into slots 1 through 5 of either cabinet. Add as many as needed.

FRONT VIEW OF 16DLI2 BOARD

The front view of the 16DLI2 board is shown in the picture below.

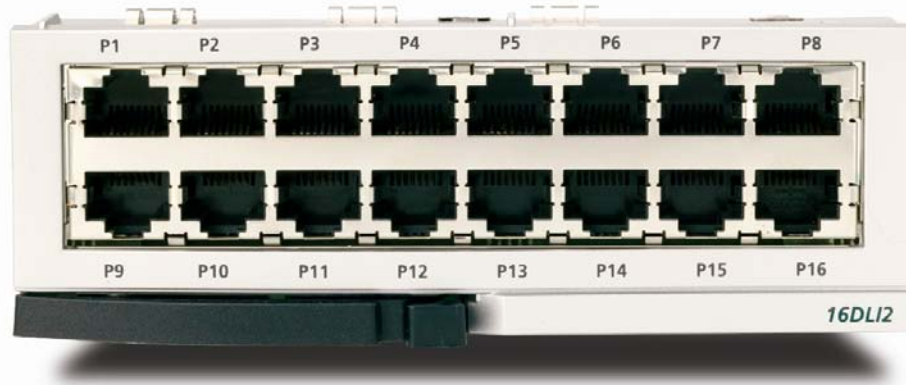


Figure 3.19 Front View of the 16DLI2

16DLI2 front panel components:

Table 3.9 Ports of the 16SLI2

Ports	Function Description
P1~P16	Samsung Digital Telephone Extension Port

NOTE: A station using KDB-D or KDB-S cannot connect to a port on this board.

[Refer to Section 7.1.3 \(Connecting a Digital Phone\) for port Pinout and Wiring.](#)

3.3.6 8DLI BOARD

This board provides 8 ports for connecting Samsung Digital Keysets. This board can go into slots 1~5 of either cabinet. Add as many as needed.

SPECIFICATIONS

The specifications of the 8DLI/16DLI board are as follows:

- 8 station ports 2B+D (two voice channels and one signal channel) per port.
- Stations using KDB-D or KDBS adapters can connect to this board.

FRONT VIEW OF 8DLI BOARD

The front view of the 8DLI board is shown in the picture below.

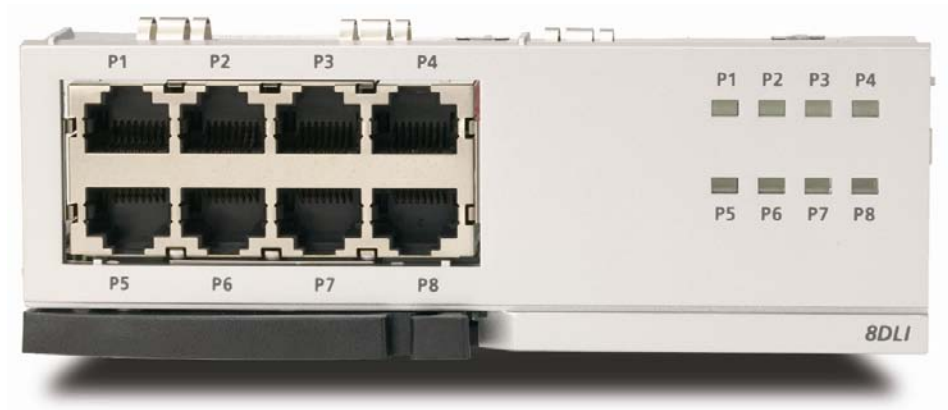


Figure 3.20 Front View of the 8DLI

Front panel components of the 8DLI board have the functions below:

Table 3.10 Ports and LEDs of the 8DLI Board

Ports	Function Description
P1~P8	Station ports of Samsung Digital Phones.
P1~P8 LED	These LEDs indicate the status of the ports. -Off: The station is not being used. -On: The station is being used.

[Refer to section 7.1.3 for Port Pinout and Wiring.](#)

3.3.7 8COMBO

This board provides 8 ports for connecting analog stations and 8 ports for connecting Samsung Digital Keysets. This board can go into slots 1 through 5 in either cabinet. Add as many as needed.

FRONT VIEW OF 8COMBO BOARD

The front view of the 8COMBO board is shown in the picture below.

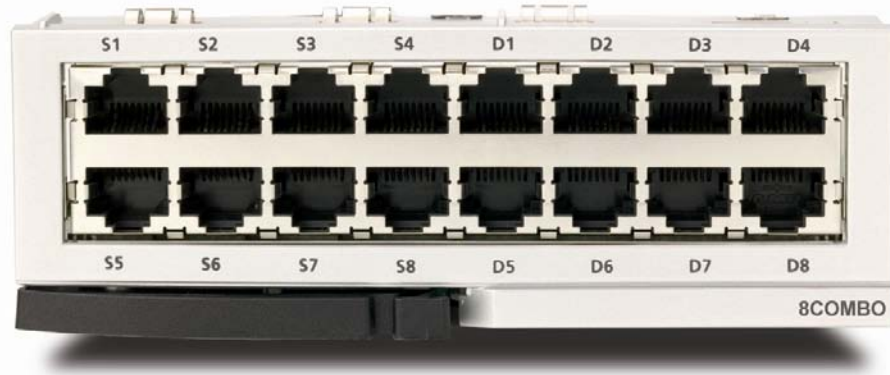


Figure 3.21 Front View of the 8COMBO

- Ports S1 ~ S8 are for analog stations only.
- Ports D1 ~ D8 are for Samsung Digital Stations only.

[See sections 7.1.2 and 7.1.3 for port Pinout/wiring.](#)

3.3.8 16SLI2/16MWSLI

This board provides 16 ports for connecting analog stations. It can go into slots 1 through 5 in either cabinet. Add as many as needed. This card automatically detects DTMF or dial pulse signals from the SLT. This card has no DTMF receiver. It will share the system resources. If there is a high concentration of SLI cards, and MFM daughter board must be added to relieve congestion. MFM can be added to the MCP.

FRONT VIEW OF 16SLI2/16MWSLI BOARD

The front view of the 16SLI2/16MWSLI board is shown in the picture below.

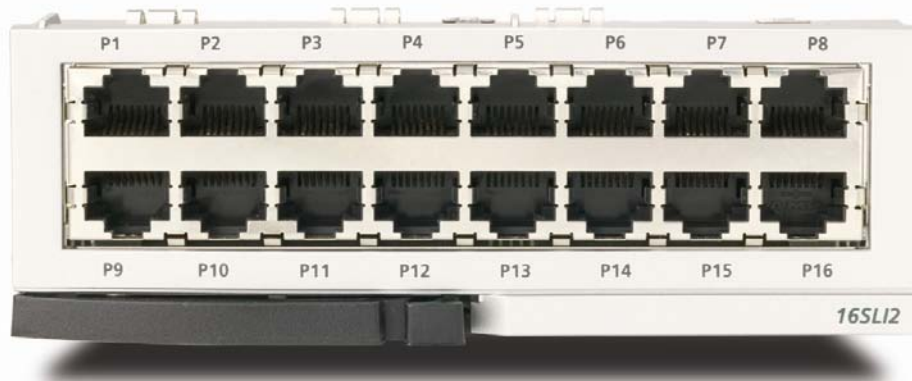


Figure 3.22 Front View of the 16SLI2

Front panel components of the 16SLI2:

Table 3.11 16SLI2 Board Ports

Ports & LEDs	Function Description
P1~P16	Analog Extension Ports

- The 16MWSLI supports Message Waiting Lamp functionality for analog stations that have this capability.
- Port 1 supports Power Failure Transfer function ([Refer to Section 3.4](#)).
- [See Section 7.1.2 for port Pinout/Wiring.](#)
- Do not connect devices with a total REN greater than 5.0 to this card.

3.3.9 8SLI

This board provides 8 ports for connecting analog stations. It can go into slots 1 through 5 of either the main or the expansion cabinet. Add as many as needed. This card automatically detects DTMF or dial pulse signals from SLT. This card does not have any DTMF receivers; it uses system resources. If there is a high concentration of SLI boards, an MFM daughter board must be added to the MCP to relieve congestion.

FRONT VIEW OF 8SLI BOARD

The front view of the 8SLI board is shown in the figure below:

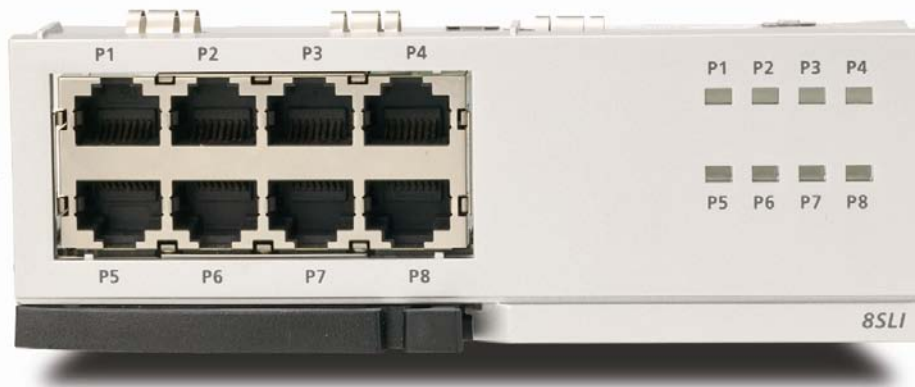


Figure 3.23 Front View of the 8SLI

Front panel components of the 8SLI:

Table 3.12 Ports and LEDs of the 8SLI

Ports & LEDs	Function Description
P1~P8	Station ports for analog phones.
P1~P8 LED	These LEDs indicate the operation status of the ports. - Off: The station is not active on a call. - On: The station is active on a call.

- Port 1 (P1) supports Power Failure Transfer function ([Refer to Section 3.4](#)).
- [See Section 7.1.2 for port Pinout/Wiring](#).
- Do not connect devices with a total REN greater than 5.0 to this card.

3.3.10 WIM (WAN INTERFACE MODULE)

This board provides data router functionality to the OfficeServ 7200. It offers a variety of interfaces for connecting to external and internal data networks.

A WIM board can be installed in either slot 1 of the main cabinet or slot 1 of the expansion cabinet. Only ONE WIM board can be installed per system.

If a LIM (LAN Interface Module) will be installed and the WIM is to be connected to the LIM, then the jumper settings (JP1 ~ JP4) will determine the connection method.

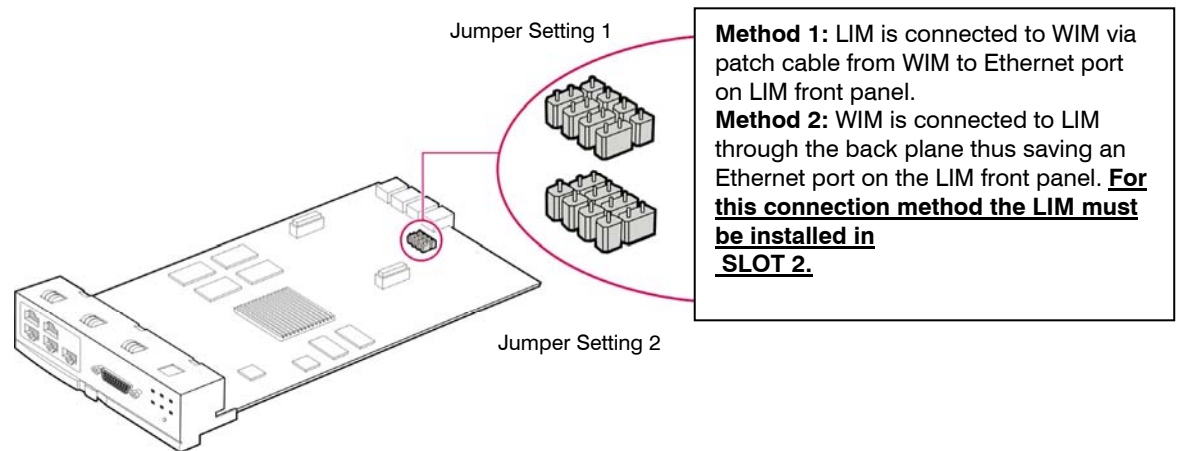


Figure 3.24 Jumper Setting of WIM Board

[Refer to the OfficeServ 7200 Data Server User Manual for WIM Configuration and Management Information.](#)

FRONT VIEW OF WIM BOARD

The front view of the WIM data module is shown in the picture below.



Figure 3.25 Front View of the WIM Board

The components on the front panel of the WIM have the functions below.

Table 3.13 Ports and LEDs of the WIM

Ports & LEDs	Function Description
DMZ	Internal port that bypasses firewall (de-militarized zone)
LAN	Ethernet port connected with the internal private network.
SERIAL	Port that connects the serial dedicated line that inter-works with the V.35 (WAN connection to external network). This cable can be ordered separately (See figure 3.26 for pin outs).
WAN1, WAN2	WAN interface ports (WAN Ethernet 1: 10/100 BASE-T, WAN Ethernet 2: 10 BASE-T) to connect to external network.
SIO	Serial Console Access
RST	Button for resetting the WIM module
RUN LED	This LED indicates the operation status of the WIM. - Off: The WIM board is in an abnormal status or the power is not being supplied. - On: The WIM board is operating properly.
DMZ LED	This LED indicates the operation status of the DMZ. - Off: The link is not connected to external network using this interface. - On: The link is connected to external network.
SERIAL LED	This LED indicates the operation status of the LAN. - Off: The link is not connected to external network using this interface. - On: The link is connected to external network.
WAN1, WAN2 LED	This LED indicates the operation status of the WAN. - Off: The link is not connected to external network using this interface. - On: The link is connected to external network.
LAN LED	This LED indicates the Operation Status of the LAN - Off: Link is not connected to LAN. - On: Link is in connected to LAN.

[Refer to Figure 3.26 for SIO cable pin outs.](#)

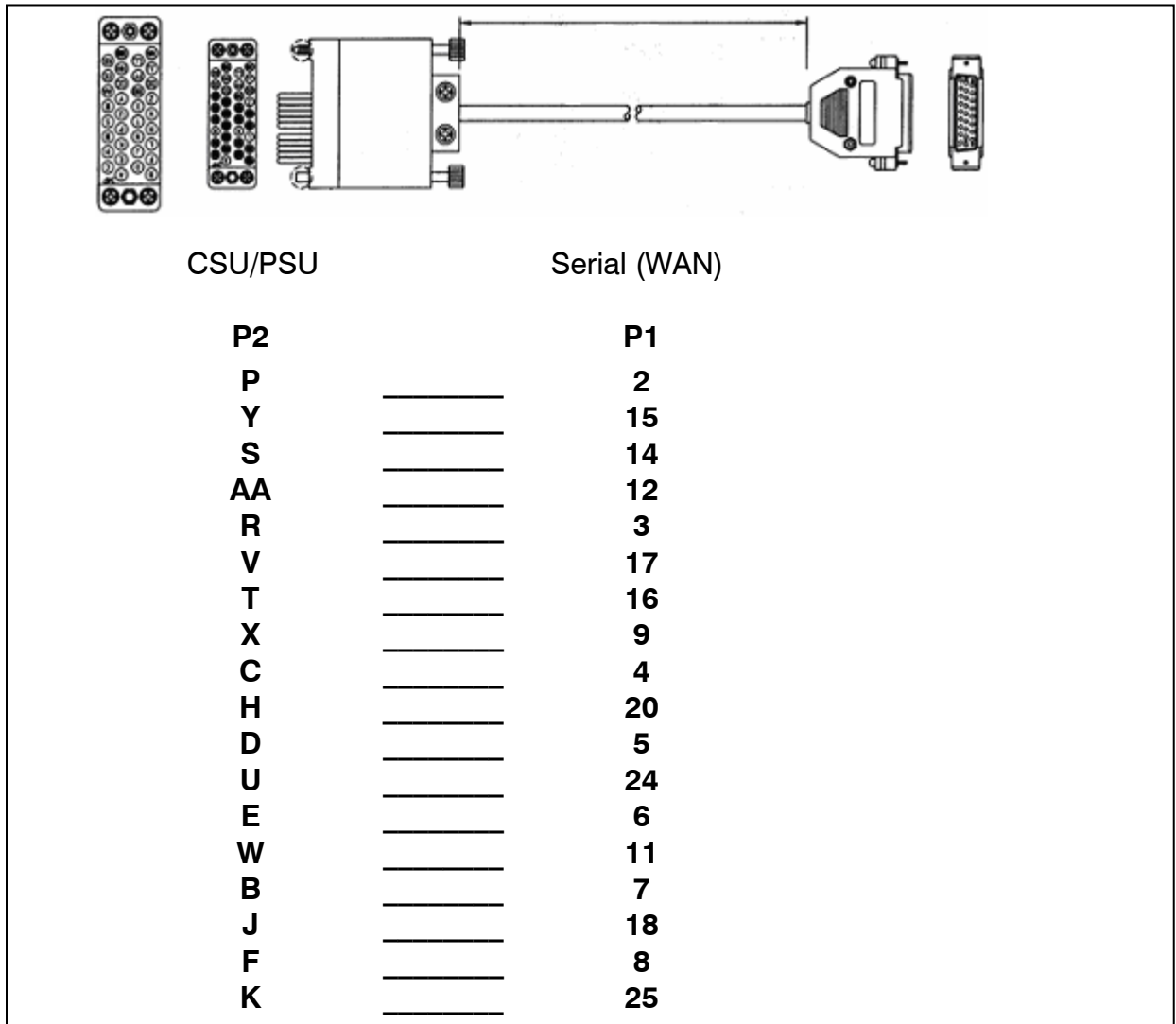


Figure 3.26 V.35 Cable Pin Outs. This cable connects from the “Serial” connector or the WAN card to the customer provided CSU/DSU. This cable can be ordered separately.

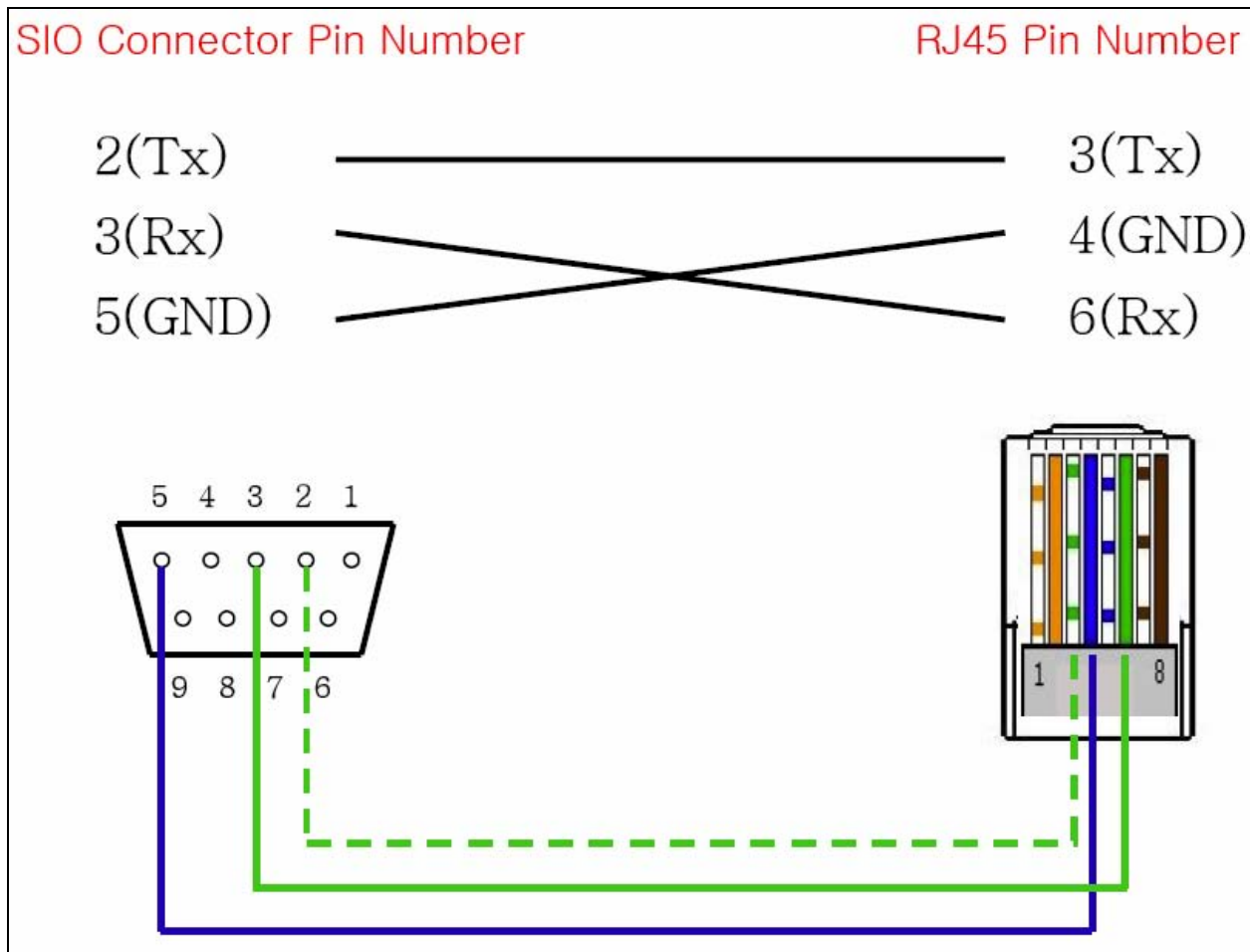


Figure 3.27 SIO Connector, RJ45 Pin Assignment

3.3.11 LIM (LAN INTERFACE MODULE)

The LIM board sends/receives data from the internal LAN, and provides an interface of 10/100 BASE-T. It functions as a layer 2 LAN switch. The LIM board can connect with the WIM through the internal back panel if it is in slot 2 and the WIM is in slot 1 with appropriate jumper settings.

The LIM can be installed in slots 2 through 5 of any cabinet. However, for the LIM to be a managed switch, it must be installed in slot 2 with a WIM in slot 1. A maximum of 8 LIMs can be added however only one LIM per system can be a “managed” switch.

When a LIM acts as an unmanaged switch, it simply performs as a simple data switch (10/100 BASE-T). When it is managed (by WIM), advanced features such as Layer 2 QoS, 802.1q (VLAN), IGMP snooping, and much more are available. For it to be managed by the WIM it must be connected to the WIM using one of the 2 methods described in the previous section [\(see section 3.3.10\)](#).

[Refer to the OfficeServ 7200 Data Server Manual for detailed LIM installation and configuration information.](#)

SPECIFICATIONS

The LIM data board provides 16 ports of 10/100 BASE-T.

FRONT VIEW OF LIM BOARD

The front view of the LIM data module is shown in the picture below.

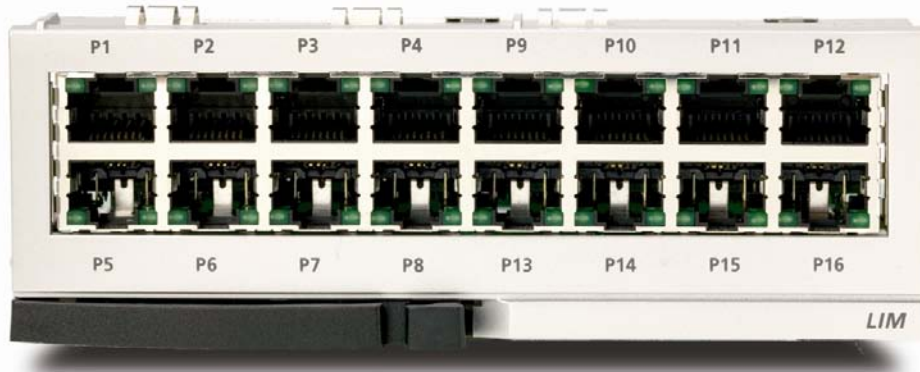


Figure 3.28 Front View of the LIM Board

The front panel components of the LIM have the functions below:

Table 3.14 Ports and LEDs of the LIM

Ports & LEDs	Function Description
P1~P16	RJ-45 (10/100 Base-T) LAN ports (Full Duplex).
Left LED of each port	The LED ON indicates if the link is operating. - Blink: The link is transmitting/receiving data packets.
Right LED of each port	The LED indicates if the port of 10 BASE-T/100 BASE-Tx is operating. - Off: The port is operating as 10 BASE-T port. - On: The port is operating as 100 BASE-T port.

3.3.12 MGI (MEDIA GATEWAY INTERFACE)

The MGI board provides a variety of Voice over IP (VoIP) services for the OfficeServ 7200. This card is required for ITP phones, IP networking, IP trunking or any application that require VoIP.

- **MGI has 0 voice channels.** The MGI-D daughter board must be added to the MGI for voice communications.
- Up to 4 MGI-D daughter boards can be added to an MGI board.
- Each daughter board provides 4 voice channels. One MGI with 4 MGI-D's installed can provide a maximum of 16 voice channels.
- The MGI can go into slots 1 through 5 of either cabinet. Add as many MGI's as needed.

Align the connector of the MGI board to the connector of the optional board (MGI-D) and press the optional board downward. Up to four optional boards can be mounted per MGI.

NOTE: Always install daughter boards starting from the back of the MGI (position 1). **DO NOT SKIP** a position when adding daughter cards (for example: the first MGI-D goes in position 1, second MGI-D goes in position 2 and so on... working towards the front of the card).

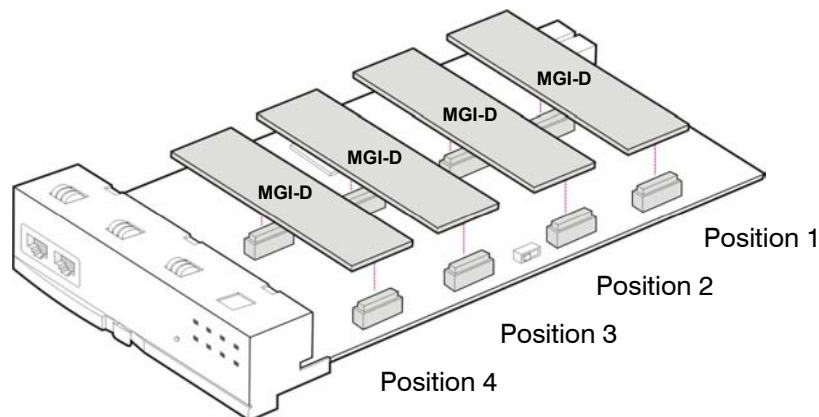


Figure 3.29 Mounting Optional Board on MGI Board

FRONT VIEW OF MGI BOARD

The front view of the MGI board is shown in the picture below.



Figure 3.30 Front View of the MGI Board

The components on the front panel of the MGI have the functions below:

Table 3.15 Ports and LEDs of the MGI

Ports & LEDs	Function Description
LAN	Port that connects the Ethernet.
SIO	Serial Port (for Samsung Use ONLY)
RST	Button for resetting the MGI.
PWR LED	This LED indicates the power supply status. - Off: Power is not being supplied. - On: Power is being supplied properly.
RUN LED	This LED indicates MCP status. - Off: Power is not being supplied. - On: Booting. - Blink: The RAM program is operating.
LAN Tx LED	This LED indicates the transmit status of the LAN port. - Off: Data is not being transmitted. - On or blink: Data is being transmitted.
LAN Rx LED	This LED indicates the receive status of the LAN port. - Off: Data is not being received. - On or blink: Data is being received.
SVC LED	This LED indicates if the service is being offered. - This LED blinks when program is being modified or configuration is being loaded.
DSP LED	This LED indicates if the VoIP DSP is operating. - This LED blinks when the VoIP channels are engaged.

Ports & LEDs	Function Description
RTPT LED	This LED indicates if the voice packets are being forwarded. - This LED turns on when the voice packets are forwarded.
RTPR LED	This LED indicates if the voice packets are being received. - This LED turns on when the voice packets are received.

3.3.13 4WLI

The 4WLI (Wireless LAN Interface) provides connectivity for wireless points to the OfficeServ 7200 system. A maximum of 3 4WLI boards can be installed per system. This board can go in slots 1 through 5 of either cabinet.

SPECIFICATIONS

The specifications of the 4WLI board are as follows:

- Up to four APs per 4WLI board.
- Simultaneous calling through up to four channels per AP.
- The maximum number of mobile station subscribers is 120.

[Refer to section 7.1.6 for Pinout and Wiring.](#)

FRONT VIEW OF 4WLI BOARD

The front view of the MGI board is shown in the picture below.

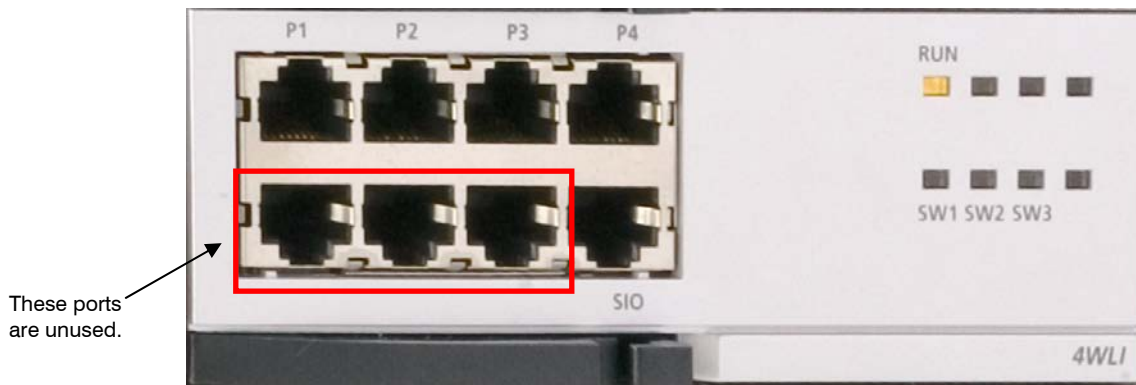


Figure 3.31 Front View of the 4WLI Board

Table 3.16 Ports and LEDs of the 4WLI

Ports & LEDs	Function Description
P1~P4	Port that connects with the WBS24.
SIO	Serial Port (for Samsung Use ONLY)

Ports & LEDs	Function Description
RUN LED	This LED turns on when the wireless LAN operates.
SW1~SW3 LED	This LED turns on when the software task operates.

3.3.14 4DSL

This board extends the Ethernet data connectivity to a remote location up to 1 km away over standard telephone wire pairs (P1~P4). The remote location must have Samsung VDSL modem (SVM-39A-LX) to terminate the line coming from the 4DSL board (P1~P4). This board can be installed in slots 1~5 of either cabinet. Add as many as required.

SPECIFICATIONS

- 4 x DSL ports.
- Transmission distance: 1 Km.
- Up/down link:
 - 0~300 m: Downstream 30 Mbps, Upstream 10 Mbps
 - 300 m ~ 1 Km: Downstream 20 Mbps, Upstream 3 Mbps

FRONT VIEW OF 4DSL BOARD

The front view of the 4DSL board is shown in the picture below.

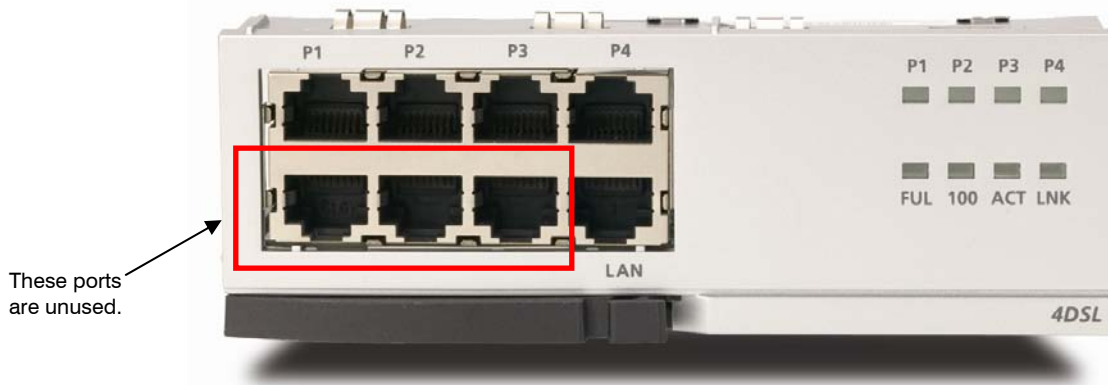


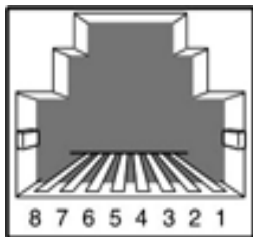
Figure 3.32 Front View of the 4DSL Board

The components on the front panel of the 4DSL have the functions below:

Table 3.17 Ports and LEDs of the 4DSL

Ports & LEDs	Function Description
P1~P4	Ports that connect the VDSL.
LAN	Ethernet port of 10 BASE-T/100 BASE-Tx for connecting with the higher-level Intranet.
P1~P4 LED	These LEDs indicate the status of the ports. - Off: The link is not connected. - On: The link is operating. - Blink: The data is being transmitted/sent.
FUL	Checking Full/Half duplex Operation(LED on at full)
100	Checking 10/100 M speed(LED on at the speed, 100 M)
ACT	LED Blinks on transmission/receipt of data
LNK	Checking if the link is connected.

Refer to figure 3.33 below for the wiring in P1~P4.



P1-P4 Port (RJ-45)

PinNo.	1	2	3	4	5	6	7	8
P1-4	-	-	-	TIP	RING	-	-	-
LAN	Tx+	Tx-	Rx+	-	-	Rx-	-	-

Figure 3.33 Ports (P1~P4) Wiring Pinout

3.3.15 SVMi-20E

The SVMi-20E card can be installed in the OfficeServ 7000 Series Systems.

This section provides the additional steps required to set up the SVMi-20E for operation in the OfficeServ 7000 Series Systems. Included is other basic information regarding components making up the SVMi-20E. *Refer to the SVMi-20E Documentation CD for General Description, Installation, Programming and other Guides for all details including optional modules and their installation.*

SVMi-20E FRONT PANEL



Figure 3.34 SVMi-20E LED Indications

The Serial Interface: This can be used to connect a modem or PC to provide local or remote PC based administration. The connector is called the SIO connector.

The LAN Interface: This is used for data transfer or database back up. The connector is called the LAN connector. The main purpose for this connector is for system file transfer (Back-up and Restore) as well as for use with E-Mail Gateway functionality. The SVMi-20E is designed to back up and restore data to the customer provided LAN, or directly to a PC or Laptop connected to this LAN connector. The E-Mail Gateway functionality is used to send voice messages to E-Mail.

Reset Button: The sunken button marked RST is the reset button. Pressing this will immediately restart the SVMi-20E system and will disconnect any calls in progress. Since pressing the RESET button during operation will disconnect all callers and immediately restart the SVMi-20E, it should only be used as directed. Pressing this button when the system is performing Disk I/O could result in data loss or file corruption. This button should not be pressed if the SVMi-20E is actively processing calls.

LED INDICATIONS

There are Eight (8) LEDs on the SVMi-20E, the one marked HD will flash whenever the hard disk drive is being accessed, others will give indications of various board functionality.

- **VM1 Status LED:** This indicates that one or more of the embedded ports (port 1 thru 4) are off hook.
- **VM2 Status LED:** This indicates that one or more of the ports on the 1st installed VPM are off hook.
- **VM3 Status LED:** This indicates that one or more of the ports on the 2nd VPM are off hook.
- **HDD Access LED:** The HDD access LED will flash whenever the Hard Drive or CF is being accessed.
- **LAT Status LED:** This indicates that the LAN port is active
- **LRT Status LED:** This indicates that the LAN port is Receiving and/or Transmitting Data
- **SDN Status LED:** This is the System Status LED showing the operating status of the card. A status of green indicates the SVMi-20E is down and it is safe to power off the switch. A status of red indicated the SVMi-20E is up and running and it is NOT safe to power down the switch without possible corruption to the SVM databases.
- **PGD Status LED:** Green indicates that good Power is being provided to the SVMi-20E through the Back Plane

INSTALLING THE SVMi-20E

When installing a SVMi-20E card, it is important to remember that it is a computer, much the same as any desktop PC and it is therefore very important not to exceed these environmental limits.

Note: Before installing this card it should be correctly configured with the appropriate drive, number of Voice Processing Modules (VPMs), and all other optional add on modules (Modem and/or 64MB DRAM).

GENERAL

- **POWER REQUIREMENTS:** Because the SVMi-20E does NOT draw from the -48DC supply it has a Zero (0) SEPU rating under all possible configurations
- **OfficeServ 7000 Series HARDWARE COMPATIBILITY:** No special requirements.
- **OfficeServ 7000 Series SOFTWARE COMPATIBILITY:** All versions of the OfficeServ 7000 Series software are compatible with the SVMi-20E.

INSPECTION

Unpack and inspect the unit for any obvious damage. This card should be labeled SVMi-20E. If it is not, you have the wrong card.

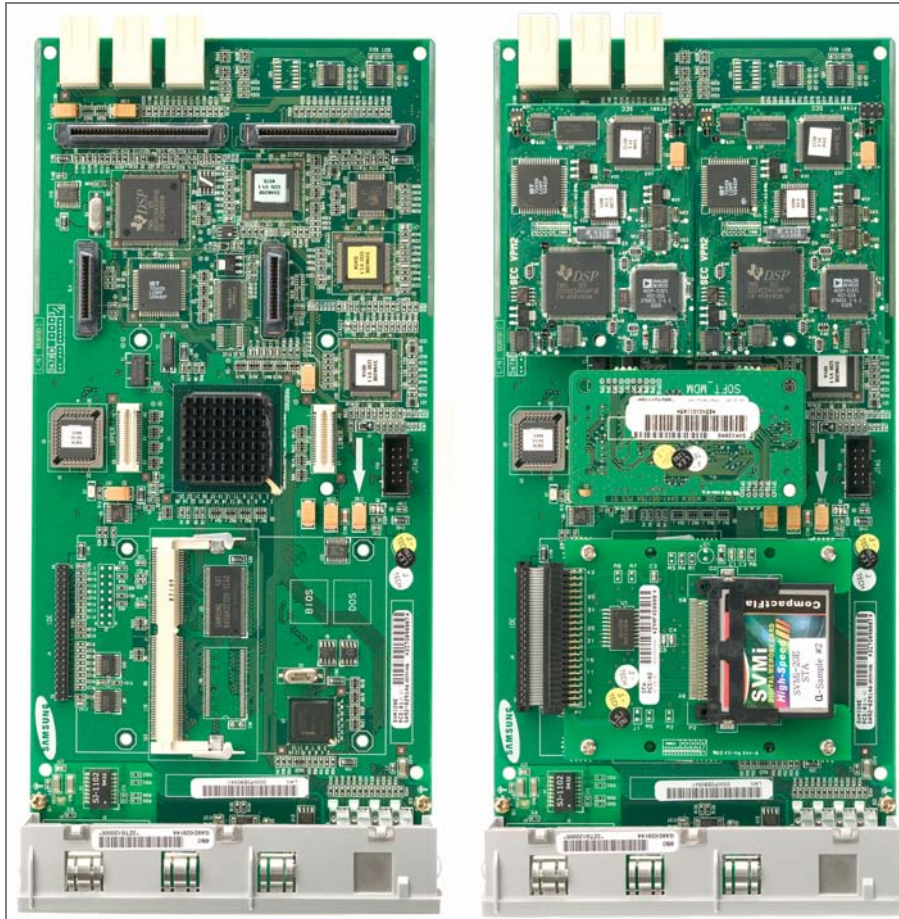


Figure 3.35 SVMi-20E/HD with no optional boards installed (LEFT)
and SVMi-20E/CF with all components installed (RIGHT)

INSERTING THE CARD

NOTE: Before powering off the KSU, it is recommended that you use MMC 740 and set MBX Download to 'No'.

The SVMi-20E card can be installed in any slot (1 ~ 5) of any cabinet. Check that the OfficeServ 7000 Series System's power switch is in the OFF position. Next position the SVMi-20E card in the grooves of the card guide and gently slide the card in until it makes contact with the connector. Press gently but firmly on the left and right of the front edge of the card until the card seats in its connector. Press firmly on the Black Front Panel Lever until it snaps securely in place. The cabinet can now be turned on.

If the SVMi-20E card is being installed in an existing (not new) system, you will have to use MMC 806 to pre install the card and MMC 724 to assign extension numbers to each SVMi-20E port. Use any available numbers.

After the SVMi-20E card is installed, either in a new or existing system, you will have to use MMC 601 and assign all the SVMi port numbers to the last available station group (Group Number 5039 by default).

POWER UP PROCEDURE FOR SVMi-20E

Follow the steps below to ensure that the SVMi-20E is properly setup.

POWER UP

1. Complete insertion of the SVMi-20E and all other required interface cards and turn the system power switch ON.
2. There are 8 LEDs on the front of SVMi-20E. We will watch three during power up., the PGD, HDD, and the SDN LEDs:

POWER UP LED CONFIRMATION

- The PGD LED- will show steady green when the SVMi-20E is receiving Power from the OfficeServ 7000 Series Back Plane connectors.
- The HDD LED- will show hard drive access and will flicker whenever the HDD (hard drive) is being accessed.
- The SDN LED – will start off Green as the SVMi-20E is booting up (it will also turn Green when the SVMi-20E is shut down properly). It will turn Orange after the Voice Drivers are loaded into memory and then turn RED when the application Software is fully loaded. RED is warning letting you know the application is running and it is NOT safe to power down the OfficeServ 7000 Series System.

SETTING UP THE SVMi-20E WITH THE OFFICESERV 7000 SERIES PHONE SYSTEMS

This section provides the additional steps required to set up the SVMi-20E card for operation in the OfficeServ 7000 Series telephone system products. Included here is information regarding the software set up for the phone system.

After inserting the SVMi-20E card and turning the power on there are some key system options that should be set, in order for the SVMi-20E to function correctly. These steps are performed in the phone system. It is necessary to perform these at this time so that the SVMi-20E will initialize properly and synchronize its mailbox database with that of the key system.

SYSTEM PROGRAMMING

Review and perform the following programming steps 1 through 7. It is necessary to perform these at this time so that the SVMi-20E will read these MMCs and initialize accordingly.

NOTE: Before moving forward if you want to change any of the SVMi-20E default Extension and Mailbox settings it is best to edit your Extension and Mailbox Templates now before initializing the SVMi-20E.

1. MMC 601: All SVMi-20E ports installed must be assigned to the last station group (by default the last group number is 5039). This should be identified as Bi-VMS group type by OSM.
2. MMC 601: Select either SEQUENTIAL or DISTRIBUTED ring mode (Sequential is recommended).
3. MMC 207: Confirm that all SVMi-20E ports are set for VMAA use. This will be done automatically. You are just confirming at this point.
4. MMC 406: If you are using the SVMi-20E for Auto Attendant use MMC 406 to set the desired trunk(s) to ring station group 5039.
5. MMC 102: If you are using the SVMi-20E for Voice Mail make sure that all desired stations are forwarded to station group 5039 for the appropriate call forward conditions: No-Answer, Busy, and/or ALL.
6. MMC 740: Set "MBX Download" is to YES.
7. MMC 741: Select "NO" for each station that you DO NOT want to create a mailbox for.

INITIALIZING THE SVMi-20E

Perform a proper SVMi-20E system shut down. (Steps for performing a proper shut down are described in the section Correct System Shutdown.)

Once the SVMi-20E is down and at a C:> DOS prompt, Press the RESET button this will reboot the SVMi-20E. During the Reboot process the SVMi-20E will communicate through a series of IPC messages to the MCP to read the MMC data and initialize the SVMi-20E accordingly.

NOTE: After the SVMi-20E restarts you should change the value of MMC 740 so that it indicates "MBX Download = No." This will prevent the system from overwriting any future changes you make to the SVMi-20E database in regards to EXT and MBX Blocks.

TESTING THE HARDWARE

1. Call each SVMi-20E port individually and confirm that SVMi-20E answers.
2. Call station group 5039 and confirm that SVMi-20E answers.

If steps 1 and 2 above proved to be successful you have completed the installation and setup of the SVMi-20E hardware.

You are now ready to begin programming the SVMi-20E Voice Mail/Auto Attendant system parameters. See the SAMSUNG SVMi-20E Programming Manual.

NOTE: See MMC references in the SVMi-20E Programming Overview documentation for other MMCs that interact with the SVMi-20E.

CORRECT SYSTEM SHUTDOWN

Whenever possible one of the following procedures should be followed when shutting down the SVMi-20E system and/or prior to shutting down the Telephone equipment.

PROCEDURE ONE

1. From any phone on the system Log into KMMC Programming
2. Using MMC 746 change the status of eth SVMi-20E from "processing" to "Halt"
3. The SDN LED on the front of the SVMi-20E will change from RED to Green. Green means it is safe to power down the switch.[†]

PROCEDURE TWO

From the Main Status Screen (showing activity and port status):

1. Press 'Escape' and enter System Administration password (Default = 0000)
2. Select 'Operating Utilities'
3. Select 'Exit the SVMi-20E'
4. Enter System Administrator's password (Default = 0000)
5. The SDN LED on the front of the SVMi-20E will change from RED to Green. Green means it is safe to power down the switch.[†]

PROCEDURE THREE

1. From any phone on the system call one of the SVMi-20E ports or call the station group 5039.
2. If the SVMi-20E answers with "please enter your password" press [*] to escape to the main menu.
3. From the main menu press [#][0000]
4. You will be again prompted to enter a password, enter the System Administrator's password (Default = 0000)
5. You will be prompted with "System Administration Menu" and a list of functions you can perform. It will not be spoken, but you can enter a hidden option [4] to shut down the system.
6. Again you will be asked to enter a password, enter the System Administrator's password (Default = 0000)
7. The system will now shutdown to a C:> DOS Prompt. The SDN LED will turn from RED to GREEN. Green means it is safe to power down the switch.[†]

[†] Also if you are logged in via an SIO Terminal, when the SVMi-20E terminal emulation screen shows a DOS command line this also means the SVMi-20E is no longer processing and it is safe to power off the system and unplug the SVMi-20E card.

3.4 CONNECTING POWER FAIL TRANSFER

The OfficeServ 7200 offers a Power Fail Transfer feature for analog single line telephones that are connected to port 1 on the 8SLI, 16SLI2, or 16MWSLI cards.

In case the OfficeServ 7200 loses power from its AC source, and no battery backup is available, this feature is automatically activated. The SLT connected to Port 1 of the SLI will get C.O. dial tone (direct C.O. line access) activated by an internal relay. For this feature to work, the SLI ports must be wired as shown in Figure 3.34 Pin 4 (TIP) and Pin 5 (Ring) from a port on the 8TRK card must be connected to Pin 1 (TIP) and Pin 2 (RING) on port 1 of an SLI card.

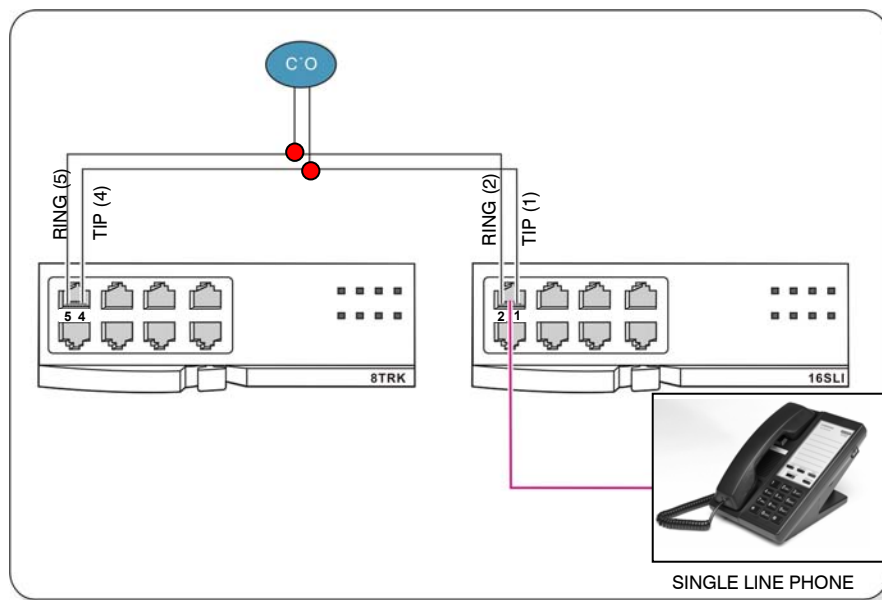


Figure 3.36 Power Fail Transfer Connection to 16MWSLI/16SLI2/8SLI

PART 4. CONNECTING EXTERNAL BATTERIES

This section describes how to connect external batteries to the OfficeServ 7200 system.

4.1 CONNECTING EXTERNAL BATTERIES

CAUTIONS FOR CONNECTING EXTERNAL BATTERIES

External batteries are required to maintain stable operation of the OfficeServ 7200 system in case a power failure occurs. Rated capacity of an external battery is DC 48 V and 45 AH per cabinet. Batteries should be connected to each cabinet to guarantee safety. A fuse (125 VAC, 5 Amp) should be positioned between the output terminal of the battery and the cabinet.



Cautions for connecting external batteries

Do not connect external AC power to the system before completing the connection between batteries and the system. If so, it may cause electric shock. Check the specified polarity (+ or -) to connect external batteries.



To reduce risk of fire and injury to persons, use only a sealed nickel cadmium or lead-acid battery supply capable of handling a charge current of 0.45A, a charge voltage of —56 VDC and a discharge rate of 45 Ah.

The power supply provides -56VDC at 0.4 amperes charging current (i.e. when AC power is present) which allows for float charging from OfficeServ 7200 to emergency backup batteries. The OfficeServ 7200 can also run without AC power on a -48VDC battery system or rectifier. There should be no more than a 0.5VDC drop in voltage from the OfficeServ 7200 and the batteries. Ensure polarity prior to connecting the external -48VDC power source to the system.

The OfficeServ 7200 power supplies contain a monitoring circuit to switch the system to customer provided 48VDC batteries when AC power is interrupted. Calls in progress are not disconnected. The power supply circuitry monitors and recharges batteries as needed.

Connect four 12V batteries or eight 6V batteries in series. Any NICAD or lead acid (car or motorcycle type) battery can be used if its rating is not less than 6AH (amp hours) but no more than 40AH per power supply. The batteries must be located within three feet of the KSU. Use the factory-supplied wire harness with 36" white and black leads to connect batteries. ([see Figure 4.1](#)).

Observe the following precautions when installing batteries:

- Make sure the batteries you install conform to local building, fire and safety codes. Some battery types emit hydrogen gas during the charging state and may require venting to fresh air.
- Do not place batteries directly on a concrete floor. This causes them to discharge very quickly.
- Follow the battery manufacturer's recommended installation and maintenance procedures.

PROCEDURE FOR CONNECTING EXTERNAL BATTERY

The procedure for using a battery cable to connect an external battery to the OfficeServ 7200 system is as follows:

- 1) Prepare the battery cable that was provided with the OfficeServ 7200 system. An end of this battery cable consists of a white wire and a black wire.
- 2) Connect the white wire of the battery cable to the (+) terminal, and the black wire to the (-) terminal of the battery. Then, connect the other end of the battery cable to the external battery socket on the rear panel of the OfficeServ 7200 cabinet. When using two or more OfficeServ cabinets. Connect a separate battery to each cabinet.

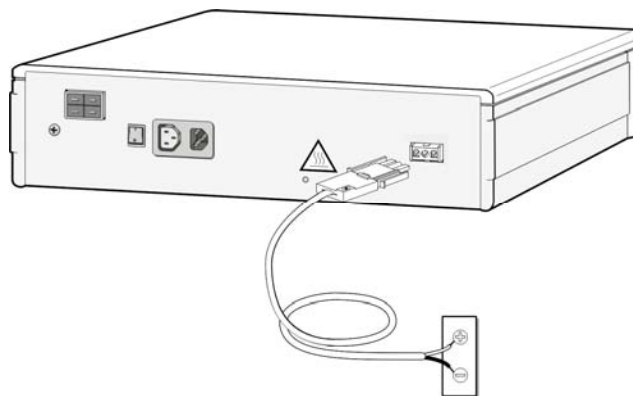


Figure 4.1 Connecting an External Battery (1)

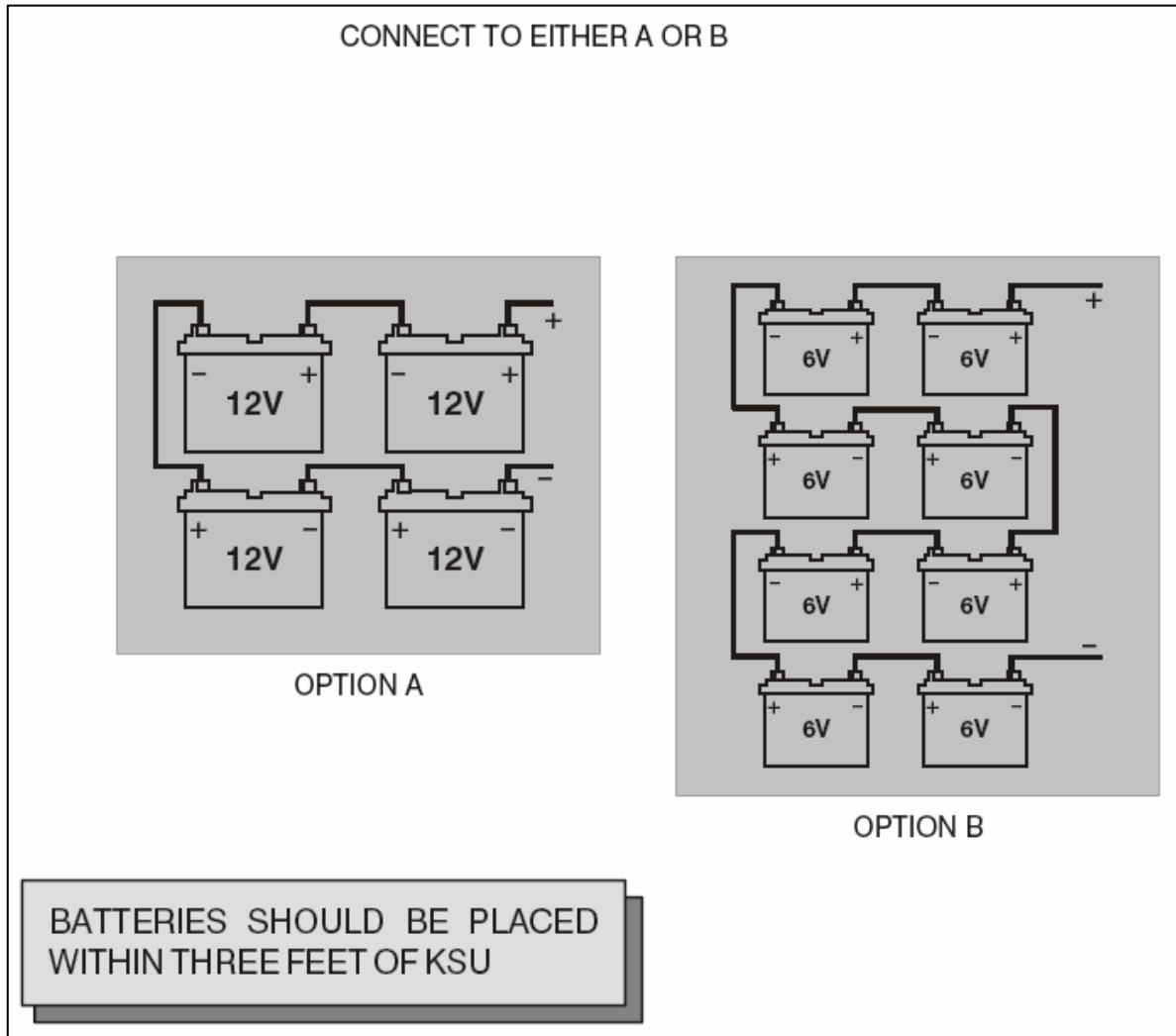


Figure 4.2 Connecting an External Battery (2)

PART 5. CONNECTING POWER

This section describes how to connect power to the OfficeServ 7200 system.

5.1 BEFORE CONNECTING POWER

When input power is normally supplied, the AC power is supplied to the Power Supply Unit (PSU), which charges the external battery. If the input power is interrupted, the system can be operated using the charged power of the external battery.

- Verify that the AC voltage at the dedicated electrical outlet is in the range of 88-132 VAC (USA ONLY).
- A single AC outlet should be used solely for the system's AC power. Sharing the AC power with other devices can cause noise or a voltage drop, resulting in a system malfunction or fire.
- Use a stable power source that can always supply AC power since instantaneous power failures can cause malfunctions or battery failures.
- [System should be grounded as described in Part 1.2 and Part 2.5.](#)

5.2 PROCEDURE FOR CONNECTING POWER

SINGLE CABINET CONFIGURATION

Use the power cable provided with the OfficeServ 7200 system to connect the input power terminal on the rear panel of the cabinet to a grounded outlet.

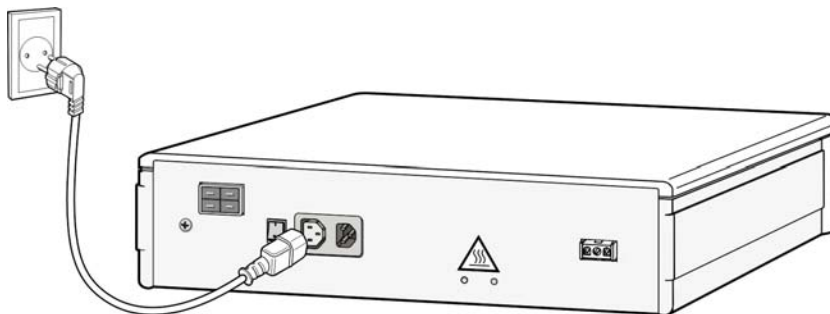


Figure 5.1 Connecting Power (for Single Cabinet)

MAIN AND EXPANSION CABINET CONFIGURATION

The connection procedure depends on the environment of the installation area as shown below. Select a procedure according to your environment.

- Connect each input power cable of the cabinets to a grounded outlet.

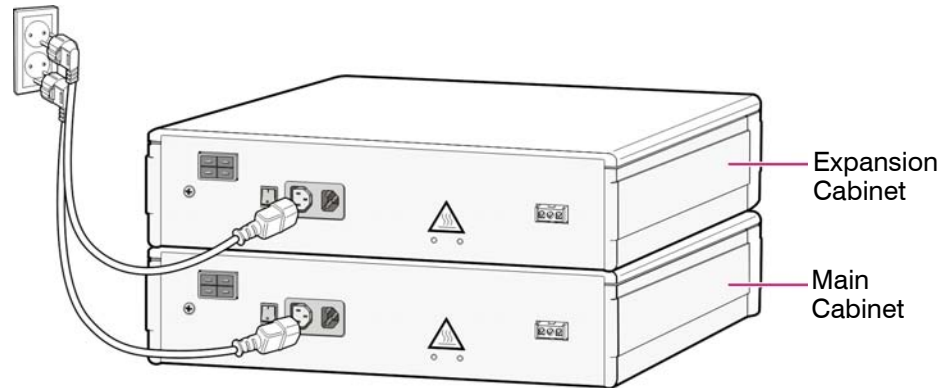


Figure 5.2 Connecting Power (using Power cable)

- Or connect the input power terminal of the main cabinet to the grounded outlet, and use a power extension cable (included in LCP carton) to connect the power connectors of the main and expansion cabinet.

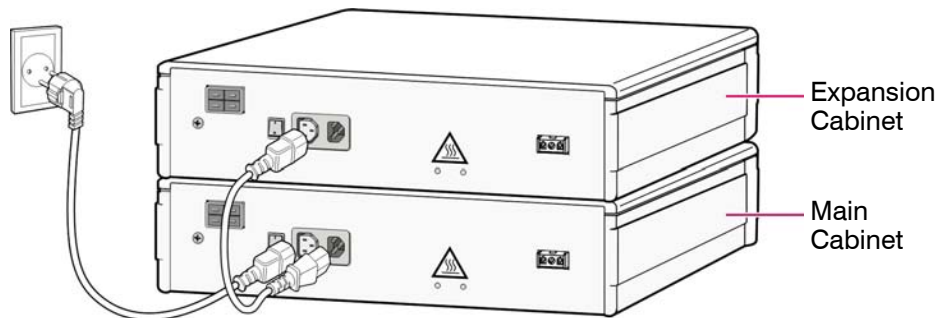


Figure 5.3 Connecting Power (using Power Extension Cable)

PART 6. CONNECTING C.O. LINES

This section describes how to connect C.O. lines to the OfficeServ 7200 system after installation.

6.1 SAFETY PRECAUTIONS

To reduce the risk of personal injury, follow these precautions before connecting TELCO circuits:

- Wires with AWG #24 or AWG #26 width should be used as subscriber lines.
- Never touch non-insulated telephone wires or terminals unless the telephone line has been disconnected at the Network Interface.
- When wiring cables in high-humidity areas, remove moisture before wiring.
- Never install telephone jackets in a wet location unless the jack is specifically designed for wet locations.
- Wires should be handled carefully to prevent any changes or damages.
- Subscriber lines should be kept indoors if possible.
- High voltage power lines should not be wired near a subscriber line.
- Never install telephone wiring during a lightning storm.

Leak resistance for C.O. lines connected to the OfficeServ 7200 system is as follows:

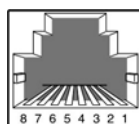
Table 6.1 OfficeServ 7200 Line Conditions

Line Condition	Leak Resistance
Leak Resistance Between Lines	20 k Ω or higher
Leak Resistance Between Grounds	20 k Ω or higher

6.2 CONNECTING C.O. LINES

6.2.1 Connecting Common C.O. Lines

Use a twisted pair of wires with AWG #24(or AWG #26) width to connect a common C.O. line to the terminal pin of a terminal box connected to the OfficeServ 7200 system equipped with an 8TRK board.



P1-P8 Port
(RJ-45)

Pin No.	1	2	3	4	5	6	7	8
Function	-	-	-	C.O. TIP	C.O. RING	-	-	-

Figure 6.1 8TRK Board

6.2.2 Connecting T1/E1/PRI

TEPRI boards can be connected to a T1/E1 C.O. line through a RJ-45 port. As shown below, connect a T1 C.O. line or an E1 type PRI C.O. line to the T1/E1/PRI port of the OfficeServ 7200 system.

Using a standard, straight through eight conductor data cable or straight through eight conductor line cord to connect the customer provided Channel Service Unit (CSU) to the TEPRI card as shown in [Figure 6.2](#).

NOTES:

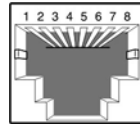
1. It may be necessary to cut off the CSU end of the cable and attach a different connector to match that of the CSU. If possible, this connection should be soldered because good connections are critical.
2. It is recommended that the CSU be connected to the network interface with a cable supplied by the CSU manufacturer. If this is not possible or practical, a custom cable has to be made up. This cable should be made from 22 gauge two pair cable with each pair individually shielded. It is recommended that the connections on this cable be soldered wherever possible to ensure good connections. The shielding of the cable should be connected to ground at the CSU end only to prevent a ground loop.

ORDERING A T1

The following information may be useful when ordering T1 service from the telephone company.

PARAMETER	OPTIONS IN OFFICESERV 7200
Framing type	Super Frame (SF) or D4 Extended Super Frame (ESF)
Coding type	AMI or B8ZS

The coding type must be set up in the system to match the T1 span and is contained in MMC 808.



T1/E1/PRI Port
 (RJ-45)

Pin No.	1	2	3	4	5	6	7	8
T1 Function	Rx+	Rx-	-	Tx+	Tx-	-	-	-
E1/PRI Function	-	-	-	Tx+	Tx-	-	Rx+	Rx-

Figure 6.2 RJ-45 Port of TEPRI Board

PART 7. CONNECTING STATIONS AND ADDITIONAL EQUIPMENT

This section describes how to connect various stations and additional equipment, such as analog/digital phones, door phones and door locks, to the OfficeServ 7200 system.

7.1 CONNECTING STATIONS

7.1.1 Safety Precautions

To reduce the risk of personal injury, follow these precautions before connecting telephone circuits:

- Never install telephone wiring during a lightening storm.
- Never install telephone jacks in a wet location unless the jack is specifically designed for wet locations.
- Do not connect stations in a humid area.
- Never touch non-insulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Connect stations using #24 AWG or #26 AWG cables.

The maximum distance between stations and the OfficeServ 7200 are as follows:

Table 7.1 Distance Between Stations and the System

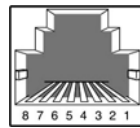
Station	Distance
Digital phone	Maximum 400 m/1312 ft (for AWG #24)
Analog phone	Maximum 1 km/3280 ft (for AWG #24)
Door phone	Maximum 400 m/1312 ft (for AWG #24)
AOM	Maximum 400 m/1312 ft (for AWG #24)
WBS24	Maximum 600 m/1968 ft (0.64 twisted cable) Maximum 400 m/1312 ft (0.40 twisted cable)

7.1.2 Connecting an Analog Phone

Connect an analog phone to the 8SLI, 16SLI2, 16MWSLI, 8COMBO board installed in the OfficeServ 7200 system.

CONNECTING TO THE 8SLI BOARD

Connect an analog phone to the 8SLI board by using a twisted pair of AWG #24 or AWG #26 wire.



P1~P8
(RJ-45)

P1 port

Pin No.	1	2	3	4	5	6	7	8
Function	PFT TIP	PFT RING	-	SLI TIP	SLI RING	-	-	-

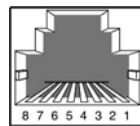
P2-P8 port

Pin No.	1	2	3	4	5	6	7	8
Function	-	-	-	SLI TIP	SLI RING	-	-	-

Figure 7.1 RJ-45 Port of the 8SLI Board

CONNECTING TO THE 16SLI2/16MWSLI BOARD

Connect an analog phone to the 16SLI2/16MWSLI board by using a twisted pair of AWG #24 or AWG #26 wires.



P1-P16
port
(RJ-45)

P1 Port

Pin No.	1	2	3	4	5	6	7	8
Function	PFT TIP	PFT RING	-	SLI 1 TIP	SLI 1 RING	-	-	-

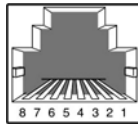
P2-P16 Port

Pin No.	1	2	3	4	5	6	7	8
Function	-	-	-	SLI 2 TIP	SLI 2 RING	-	-	-

Figure 7.2 RJ-45 port of the 16SLI2 Board

CONNECTING TO THE 8COMBO BOARD

Connect an analog phone to the 8COMBO board by using a twisted pair of AWG #24 or AWG #26 wires.



S1-S8 Port
(RJ-45)

S1-S8 Port

Pin No.	1	2	3	4	5	6	7	8
Function	-	-	-	SLI TIP	SLI RING	-	-	-

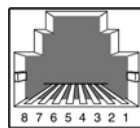
Figure 7.3 RJ-45 Port of the 8COMBO Board (For Analog Phone)

7.1.3 Connecting a Digital Phone

Connect a digital phone to 8DLI, 16DLI2 or 8COMBO board.

CONNECTING TO 8DLI BOARD

Connect a digital phone to the 8DLI board by using a twisted pair AWG #24 or AWG #26 wires.



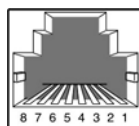
P1~P8
(RJ-45)

Pin No.	1	2	3	4	5	6	7	8
Function	-	-	-	DLI TIP	DLI RING	-	-	-

Figure 7.4 RJ-45 Port of the 8DLI Board (For Digital Phone)

CONNECTING TO 16DLI2 BOARD

Connect a digital phone to the 16DLI2 board by using a twisted pair of AWG #24 or AWG #26 wires.



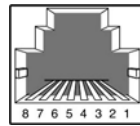
P1-P16
 Port
(RJ-45)

Pin No.	1	2	3	4	5	6	7	8
Function	-	-	-	DLI TIP	DLI RING	-	-	-

Figure 7.5 RJ-45 Port of the 16DLI2 Board (For Digital Phone)

CONNECTING TO 8COMBO BOARD

Connect a digital phone to the 8COMBO board by using a twisted pair of AWG #24 or AWG #26 wires.



D1~D8
 Port
 (RJ-45)

Pin No.	1	2	3	4	5	6	7	8
Function	-	-	-	DLI TIP	DLI RING	-	-	-

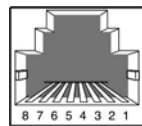
Figure 7.6 RJ-45 Port of the 8COMBO Board (For Digital Phone)

7.1.4 Connecting an IP Phone

[Refer to the ITP-5021D Keyset User Guide for information on connecting IP keysets.](#)

7.1.5 Connecting Boards to Ethernet

WIM/LIM/4DSL/MGI/MCP/SVMi-20E boards can be connected to Ethernet by using an Ethernet cable.



RJ-45 port

- WIM board-DMZ, LAN, WAN1 and WAN2 port
- LIM board-all ports(P1 through P16)
- 4DSL board-Up Link port(LAN)
- MCP, MGI and SVMi-20E boards-LAN port

Pin No.	1	2	3	4	5	6	7	8
WIM/MCP/MGI/ SVMi-20E/4DSL	Tx+	Tx-	Rx+	-	-	Rx-	-	-
LIM	Rx+	Rx-	Tx+	-	-	Tx-	-	-

Figure 7.7 RJ-45 Port of Boards for Ethernet

7.1.6 Connecting a Wireless LAN Access Point

Wireless LAN service offered by the OfficeServ 7200 system requires the following equipment:

- 4WLI board: A board installed in the OfficeServ 7200 system for WBS24 connection
- WBS24: Wireless LAN Access Point (AP)
- WIP-5000M: Wireless LAN IP phone

Table 7.2 Specification for Wireless LAN Connection

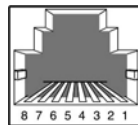
Item	OfficeServ 7200 System	
	Main Cabinet	Main and Expansion Cabinets
Number of the 4WLI boards	3	3
Maximum number of WBS24s	12	12
Maximum number of users	120	120
Number of simultaneous users	48	48



References

For information on how to install and use WBS24 and WIP-5000M, refer to OfficeServ Wireless Documentation.

Connect the 4WLI board and WBS24 by using two 0.64 mm twisted cables (RJ-45 Ethernet cable, 600 m/1968 ft maximum distance) or two 0.40 mm twisted cables (RJ-45 Ethernet cable, 400 m/1312 ft maximum distance).



P1~P4 ports
(RJ-45)

Figure 7.8 RJ-45 Port of 4WLI Board

Table 7.3 Wiring Between 4WLI and WBS24

Pin No. of WBS24 Port	WBS24 No.	Signal	Pin No. of 4WLI Port
4	1	D channel data	4
5			5

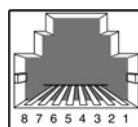
Pin No. of WBS24 Port	WBS24 No.	Signal	Pin No. of 4WLI Port
3		Sync line	3
6			6
4	2	D channel data	4
5			5
3		Sync line	3
6			6
4	3	D channel data	4
5			5
3		Sync line	3
6			6
4	4	D channel data	4
5			5
3		Sync line	3
6			6

7.1.7 Connecting to a Door Phone and a Door Lock

Connect a door phone and a door lock to the OfficeServ 7200 system by using a Door Phone Interface Module (DPIM).

- 1) Connect a twisted pair of #24 AWG or #26 AWG wires to the LINE port of DPIM and to P1 through P8 of 8DLI/16DLI2/8COMBO boards of the OfficeServ 7200 system.

CONNECTING TO THE 8DLI BOARD



P1~P8
(RJ-45)

Pin No.	1	2	3	4	5	6	7	8
Function	-	-	-	DLI TIP	DLI RING	-	-	-

Figure 7.9 RJ-45 Port of 8DLI Board (For Door Phone)

CONNECTING TO THE 16DLI2 BOARD



Pin No.	1	2	3	4	5	6	7	8
Function	-	-	-	DLI 1 TIP	DLI 1 RING	-	-	-

Figure 7.10 RJ-45 Port of 16DLI2 (For Door Phone)

CONNECTING TO THE 8COMBO BOARD



Pin No.	1	2	3	4	5	6	7	8
Function	-	-	-	DLI TIP	DLI RING	-	-	-

Figure 7.11 RJ-45 Port of the 8COMBO Board (For Door Phone)

- 1) Connect the Door Box port of the DPIM to the Line port of the door phone.
- 2) When using an automatic door lock, connect the Lock port of the DPIM and the door phone contact point to the door lock.
- 3) The door lock contact point is designed to control low-voltage relay and uses 24 VDC and 100 mA. Do not attempt to connect commercial AC power to these contact.



NOTE

MMC

[MMC 211](#) is used to assign call numbers to door phones. Use [MMC 501](#) to program duration of contact closure. [For detailed instruction on the MMC program, refer to OfficeServ 7200 Programming Section.](#)

7.1.8 Connecting KDB-D/KDB-S

KDB-D and KDB-S are modules installed on a digital phone connected to the OfficeServ 7200 system. The KDB module enhances the functions of the phone and increases the number of local ports according to module types.



Caution for connecting KDB module

KDB-D and KDB-S is only for a digital phone connected to the 8DLI board, not for a digital phone connected to a 16DLI2 board.

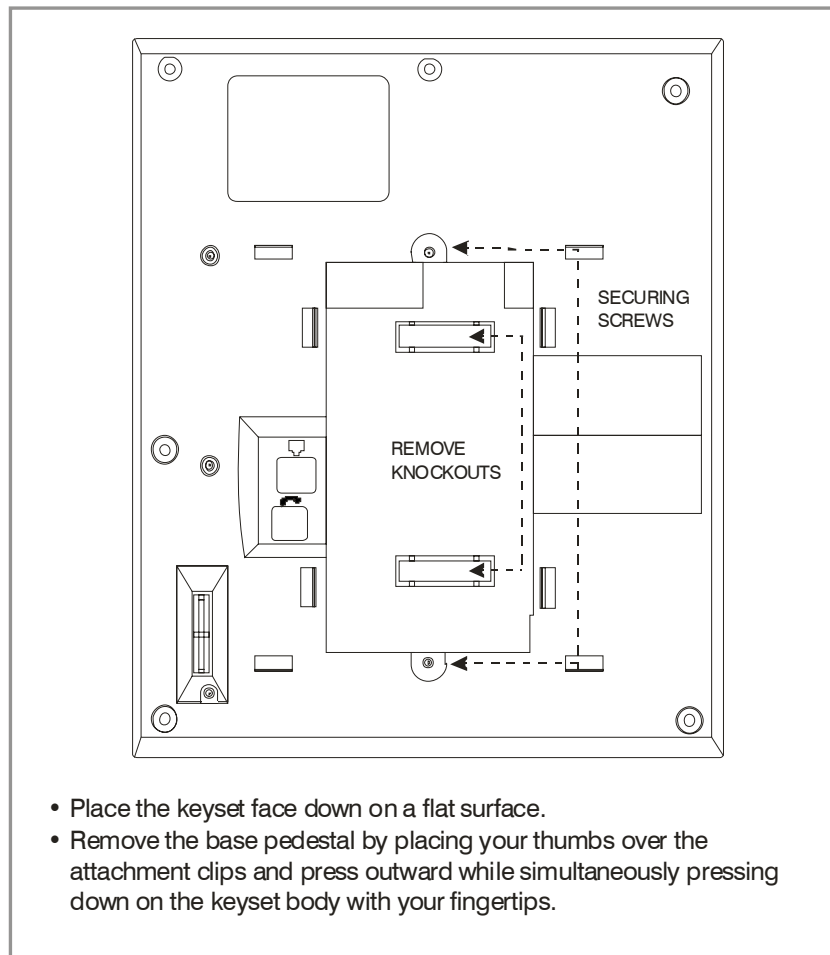


Figure 7.12 Adding an iDCS Keypad Daughterboard Module

iDCS KDB-DIGITAL LINE INTERFACE (FKDBD)

This is a daughterboard that can be installed only in the 18 or 28 button keypad. The FKDBD will provide one additional DLI circuit for the connection of any digital station device such as a keypad, add-on module or DPIM. This FKDBD will only operate when the keypad is connected to an 8 port DLI card so it can use the second B channel. Each port on this card is intended for connection to one telephone. Connecting multiple

telephones to a port may result in incorrect operation or damage to the card. [See Figure 7.13.](#)

iDCS KDB-SINGLE LINE INTERFACE (FKDBS)

This is a daughter board that can be installed only in the 18 or 28 button keyset. The FKDBS will provide one additional SLI circuit for the connection of any standard telephone device. This FKDBS will only operate when the keyset is connected to an 8 port DLI card it can use the second B channel. Each port on this card is intended for connection to one telephone. Connecting multiple telephones to a port may result in incorrect operation or damage to the card. [See Figure 7.12.](#)

NOTE: The circuitry on a FKDBS does not provide a loop open disconnect signal or have the over-voltage protection necessary for OPX operation.

iDCS KDB-FULL DUPLEX (FKDBF)

The standard speakerphone mode of operation for a iDCS keyset is “half duplex”. This means that you cannot transmit and receive speech at the same time. Adding a FKDBF to your keyset will convert the speakerphone into full duplex mode enhancing its operation. In addition the FKDBF may have up to 3 external microphones attached to it for conference room type applications. These microphones require an “EXTMIC” key programmed on the keyset to activate or deactivate them. [See Figure 7.12.](#)

KDB-DLI

This daughterboard can be installed only in the DCS 12 or DCS 24 button keyset. Before performing this procedure, unplug the line cord from the keyset and remove the base wedge. Place the keyset face down on a soft surface and remove the four base retaining screws [\(see Figure 7.13\)](#). Separate the base from the keyset and place the keyset aside. Attach the KDb-DLI to the keyset base with the four screws that are supplied [\(see Figure 7.14\)](#). Take care to ensure that the modular socket shows through the access hole in the base [\(see Figure 7.15\)](#). Invert the base assembly over the keyset and plug the ribbon cable into the socket on the keyset PCB [\(see Figure 7.16\)](#) while making sure that no damage occurs to the keyset PCB. Reattach the base to the keyset and test to ensure normal keyset operation.

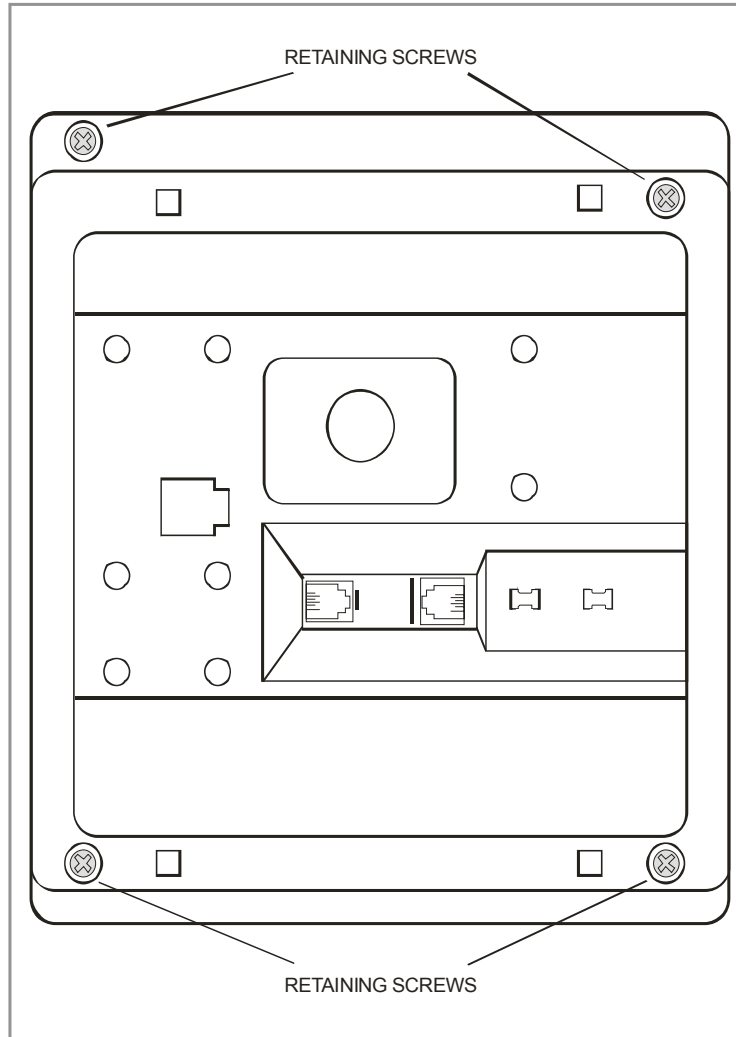


Figure 7.13 Keypad Base

KDB-SLI

This daughterboard can be installed only in the DCS 12 or DCS 24 button keyset. Before performing this procedure, unplug the line cord from the keyset and remove the base wedge. Place the keyset face down on a soft surface and remove the four base retaining screws (see [Figure 7.13](#)). Separate the base from the keyset and place the keyset aside. Attach the KDb-SLI to the keyset base with the six screws that are supplied (see [Figure 7.17](#)). Take care to ensure that the modular socket shows through the access hole in the base (see [Figure 7.15](#)). Invert the base assembly over the keyset and plug the ribbon cable into the socket on the keyset PCB (see [Figure 7.16](#)) while making sure no damage occurs to the keyset PCB. Reattach the base to the keyset and test to ensure normal keyset operation.

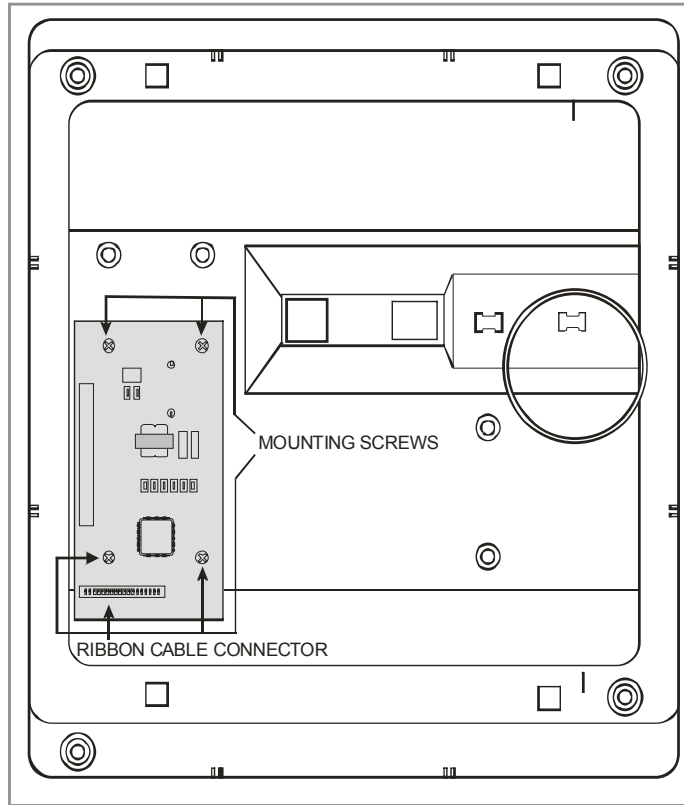


Figure 7.14 Installing KDB-DLI Daughter Board

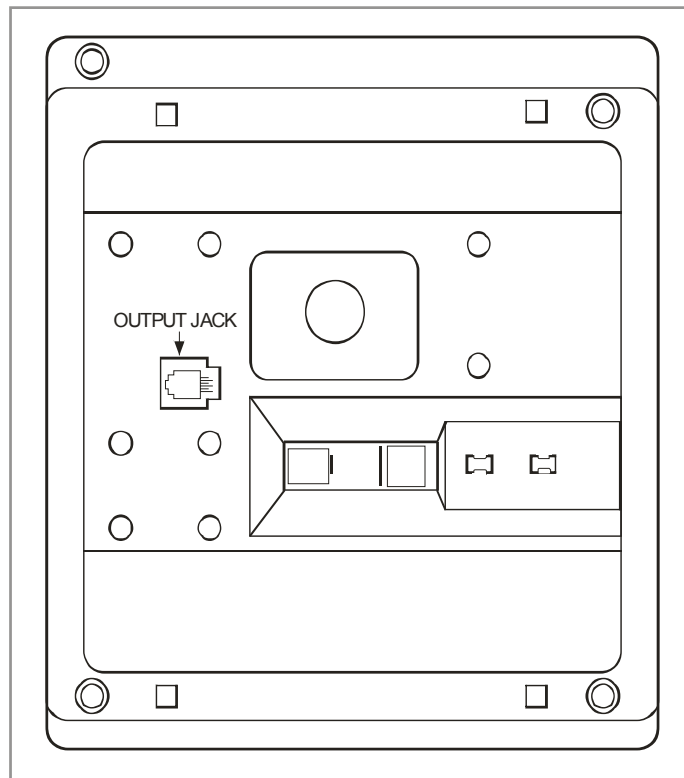


Figure 7.15 Keyset Daughterboard Output Jack

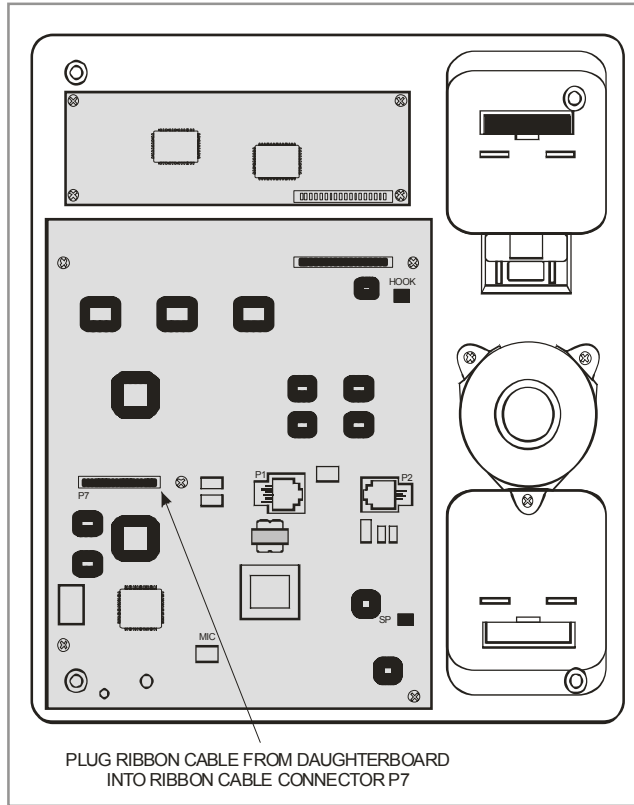


Figure 7.16 Connecting Keyset Daughterboard to Keyset PCB

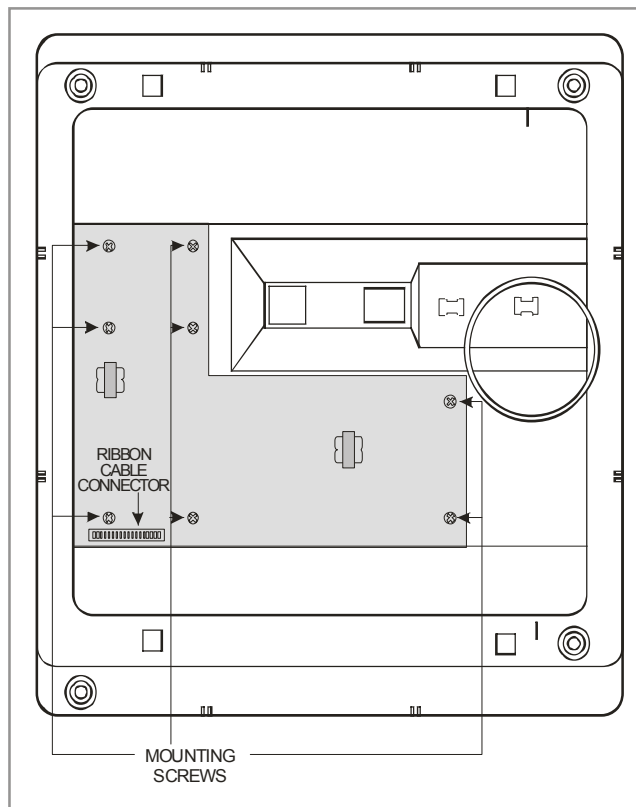


Figure 7.17 Installing KDB-SLI Daughterboard

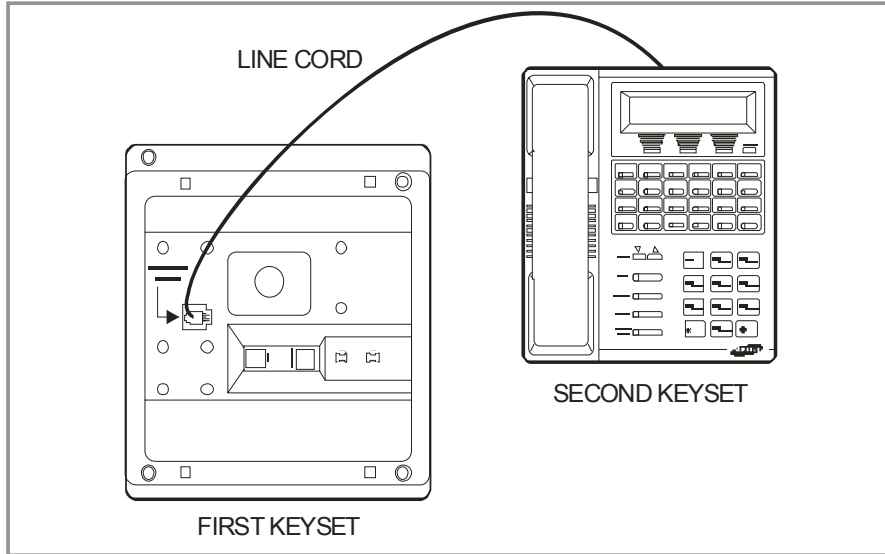


Figure 7.18 Connecting a Keyset to a KDB-DLI

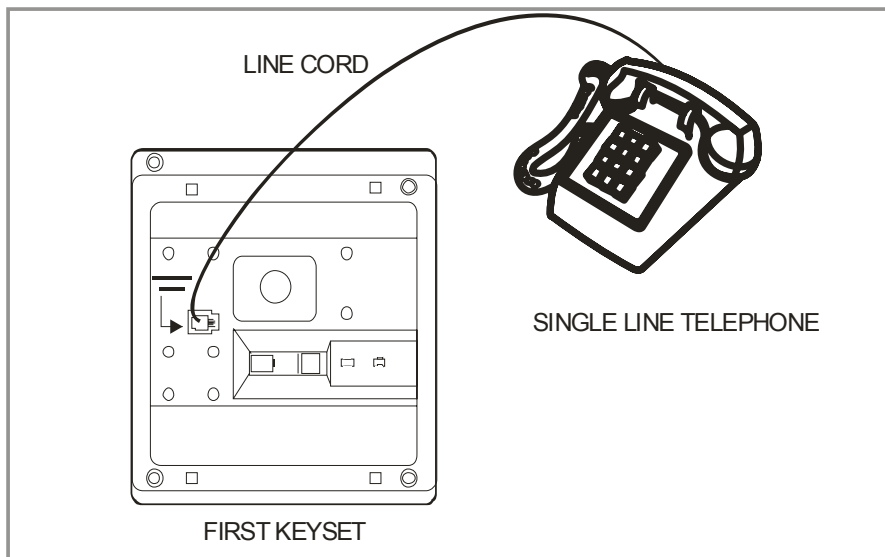


Figure 7.19 Connecting a Single Line Telephone to a KDB-SLI

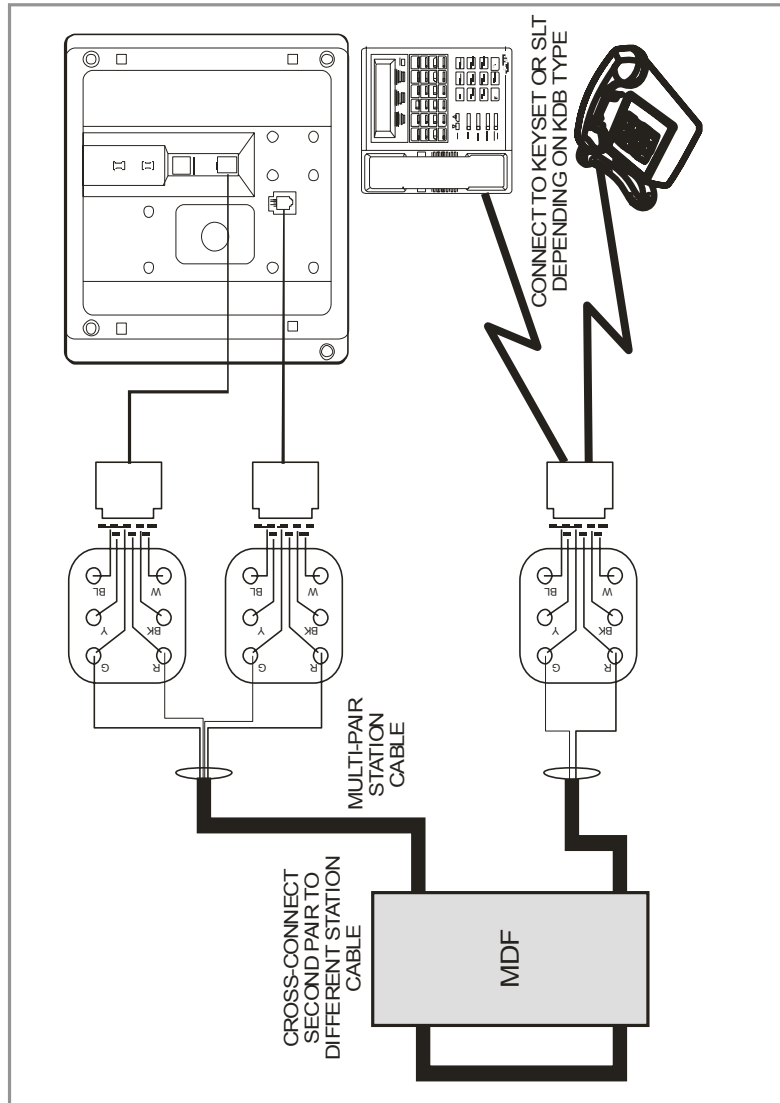


Figure 7.20 Connecting a Station Device to a KDB via MDF

CONNECTING TO THE KDBS

There are two methods for connecting devices to keyset daughterboards. The simplest method is to connect the second device directly by means of a line cord. [See Figures 7.18 and 7.19.](#)

The second method is to use a multi-pair station cable, connecting separate station jacks to the first two pairs. A line cord can now be connected between the daughterboard and the second jack. This returns the daughterboard port to the MDF for cross-connection to another cable run ([see Figure 7.20](#)).

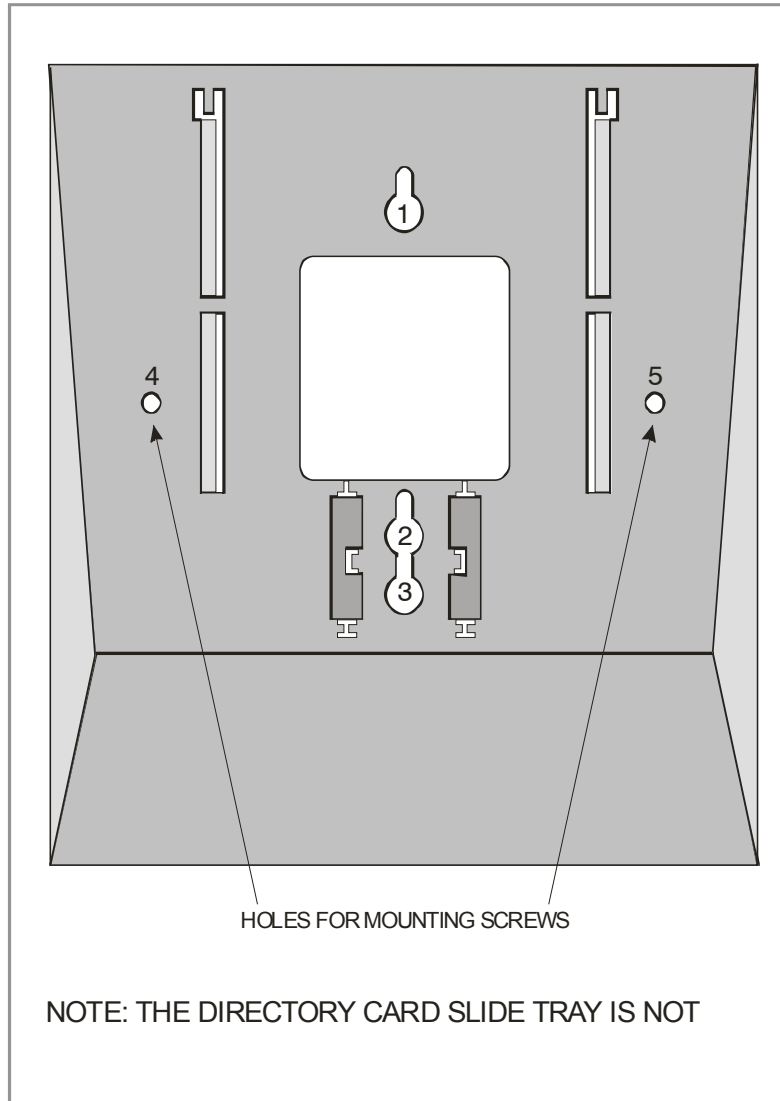


Figure 7.21 Wall-Mounting a Keyset

WALL-MOUNTING KEYSETS

iDCS keysets come equipped with a reversible base wedge. To wall-mount a keyset, remove the wedge from the keyset and remove the directory tray from the wedge. Mount the wedge to the wall using one of the methods below ([see Figure 7.21](#)).

Use screw holes 1 and 2 to attach the base wedge to a standard electrical outlet box.

OR

Use screw holes 1 and 3 to attach to a standard telephone wall-mount plate with locking pins. This method can cause the keyset to wobble as the keyset feet do not fit securely to the mounting surface.

OR

Use screw holes 4 and 5 if you are mounting on dry wall with a hole in the middle for cable access.

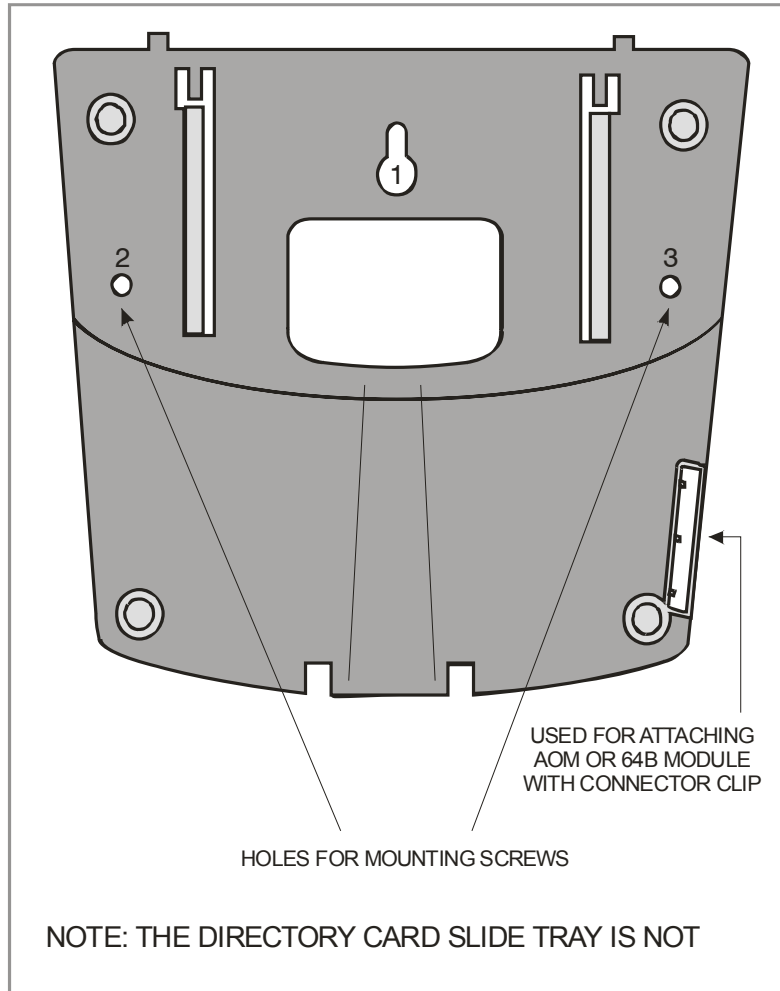


Figure 7.22 Ultra Base Wedge

WALL-MOUNTING KEYSSETS WITH ULTRA BASE WEDGE

The keysets now come equipped with a new Ultra Base wedge. These base wedges are reversible and can be used for wall-mounting however not every wall mounting scenario is appropriate. First and foremost there is only one keyhole in the center of the base attaching to the wall, and these base wedges can not be used with the standard wall mount bracket with the two buttons/pins. To wall-mount the keyset using Ultra Base wedges use screw holes 1, 2 and 3 to mount the base wedge on dry wall with the hole in the middle for cable access ([see Figure 7.22](#)).

WALL-MOUNTING iDCS KEYSSETS

iDCS keysets come equipped with a reversible base wedge. To wall-mount a keyset, remove the wedge from the keyset and mount the wedge to the wall using one of the methods below ([see Figure 7.23](#)).

Use screw holes 1 and 2 to attach the base wedge to a standard electrical outlet box.

OR

Use screw holes 1 and 3 to attach to a standard telephone wall-mount plate with locking pins. This method can cause the keyset to wobble as the keyset feet do not fit securely to the mounting surface.

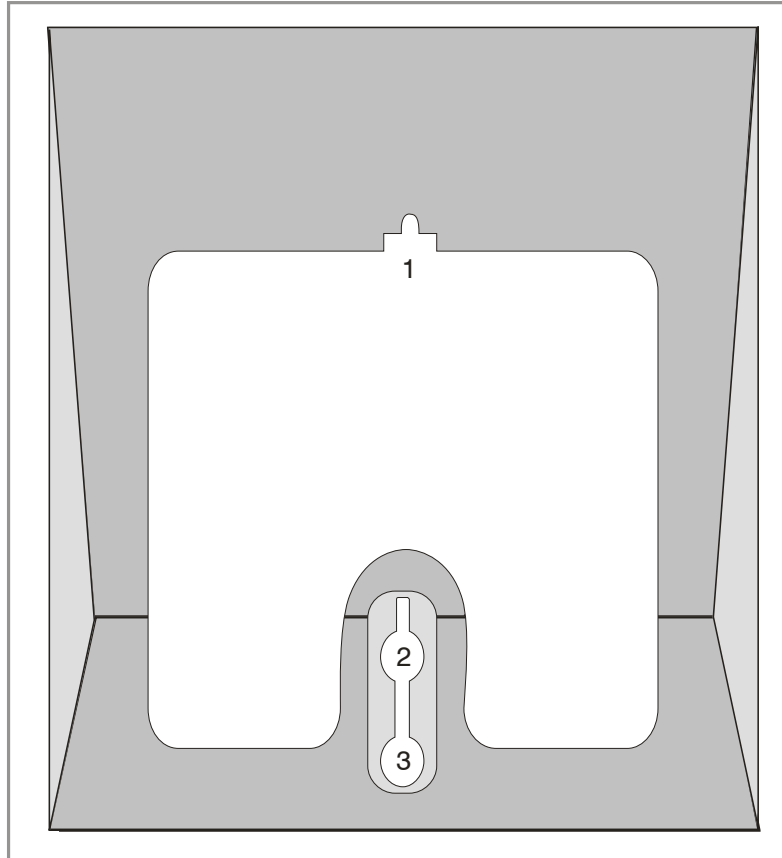


Figure 7.23 Wall-Mounting an iDCS Keyset

64 BUTTON MODULES

Using one pair twisted #24 AWG or #26 AWG jumper wire, cross-connect each 64 button module (64 BM) to the DLI port or plug into the KDb-DLI of your choice ([see part 7.1.8 of this installation section](#)). The 64 BM module can be assigned to any keyset telephone. It must be assigned to that station in MMC 209. A maximum of four (4) 64 button modules can be programmed on a system. OfficeServ 7200 system can have a maximum of two (2) 64 button modules per keyset.

CAUTION: To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cord.

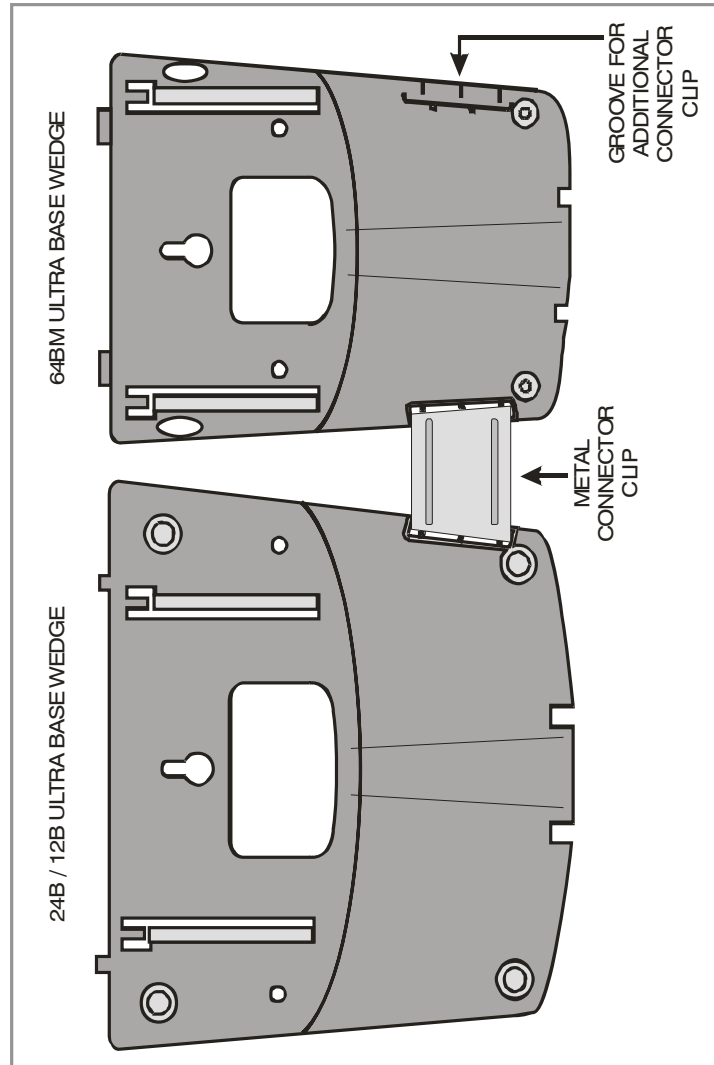


Figure 7.24 Attaching 24B/12B to 64BM

ATTACHING DCS 32 BUTTON AOM AND DCS 64B MODULES WITH MASTER STATION

These new Ultra Base Wedges allow a connector clip (packaged with 64B Modules and AOMs) to be connected to the underside of the new style wedge and attach AOM(s) or 64B module(s) together with the main or “master” station. This “clip” allows multiple 64B modules and or AOMs to be secured or “chained” together to the main or “master” station they are associated with. This will make instruments associated with each other seem as one unit [\(see Figure 7.24, Figure 7.25, and 7.26\)](#).

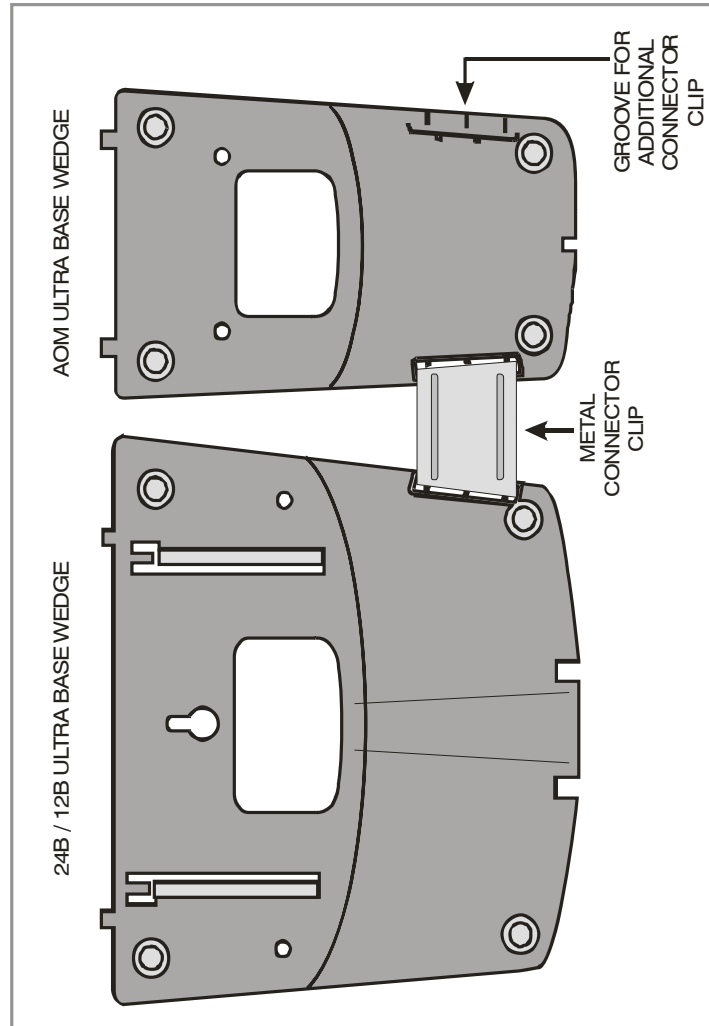


Figure 7.25 Attaching 24B/12B to AOM

ATTACHING iDCS 64 BUTTON MODULES TO AN iDCS KEYSSET

First remove the base wedge from the iDCS 64 Button Module and attach the bracket to it with two of the screws provided ([see Figure 7.27](#)).

Remove the base wedge of the keyset and place it to the right of the 64 Button Module and attach the bracket/64 BM to the keyset with the remaining two screws.

The base wedge can now be replaced.

NOTE: If you wish to attach two 64 button modules to a keyset, connect the 64 button modules together first and then attach them to the keyset.

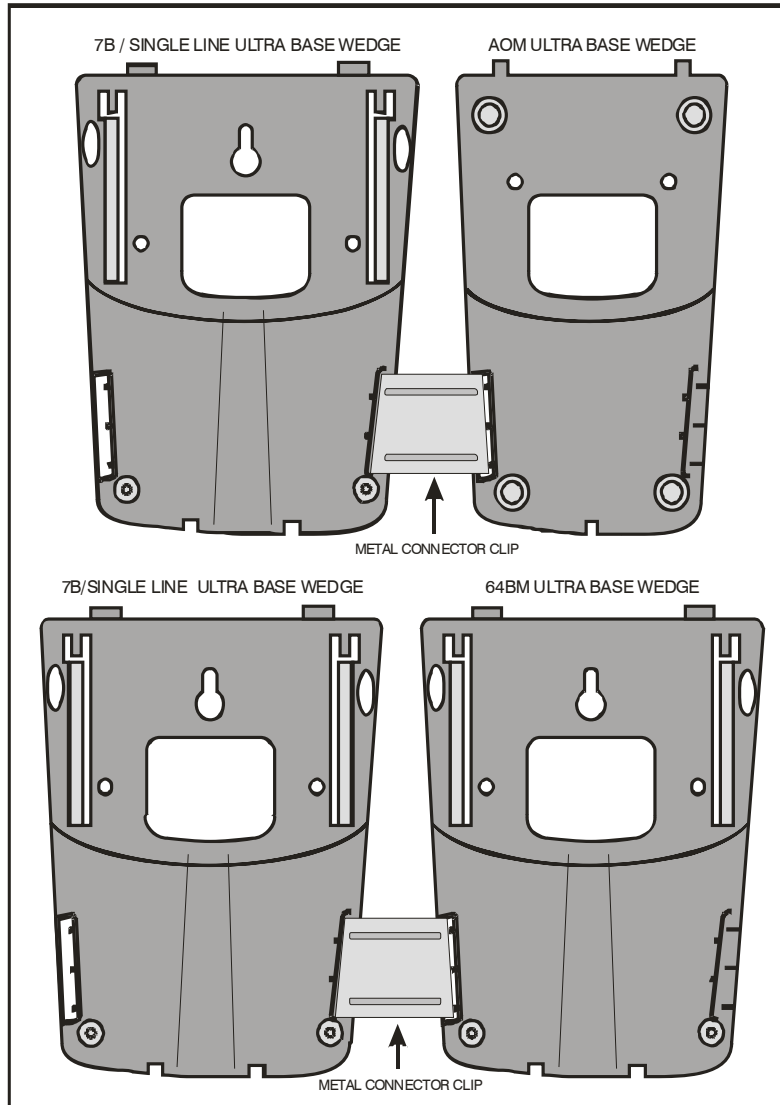


Figure 7.26 Attaching 7B/Single Line to AOM and 7B/Single Line to 64 BM

ATTACHING iDCS 14 BUTTON MODULES TO AN iDCS KEYSSET

To add an iDCS 14 Button Key Strip to your iDCS keyset follow these steps ([see Figure 7.28](#)).

- 1) Place the keyset face down on a flat surface.
- 2) Remove the base pedestal by placing your thumbs over the attachment clips and press outward while simultaneously pressing down on the keyset body with your fingertips.
- 3) Remove the ribbon cable knockout from the bottom of the keyset.
- 4) Clip the 14 button strip to the side of the keyset.
- 5) Plug one end of the ribbon cable into the keyset and the other end into the 14 button strip.

- 6) Place the support bracket over the ribbon cable and secure with the six screws provided.
- 7) Reattach the base pedestal.

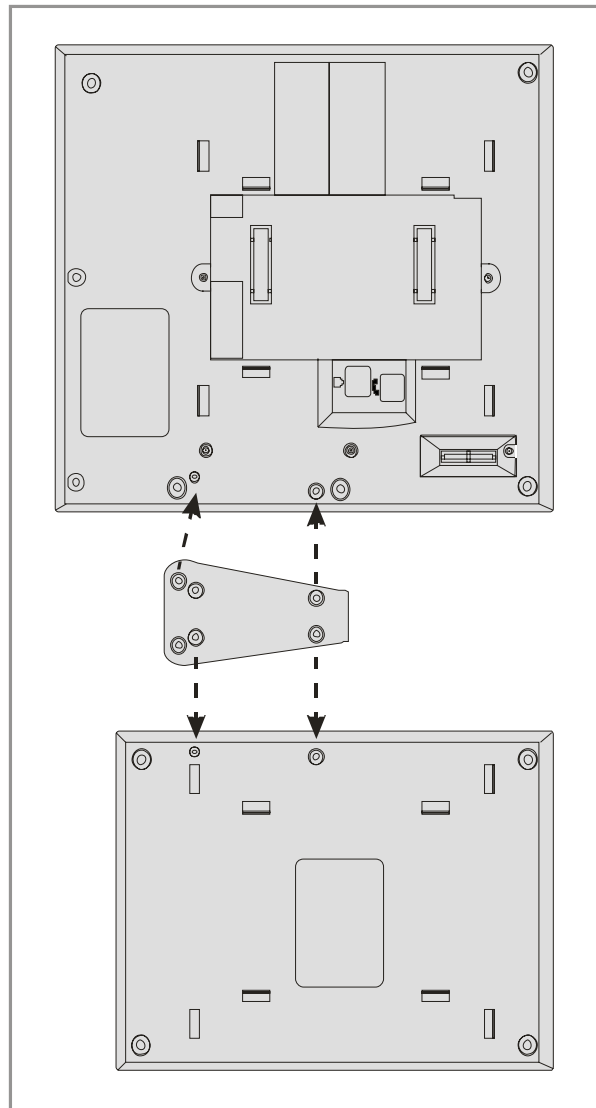


Figure 7.27 Attaching iDCS 64 Button Module to an iDCS Keyset

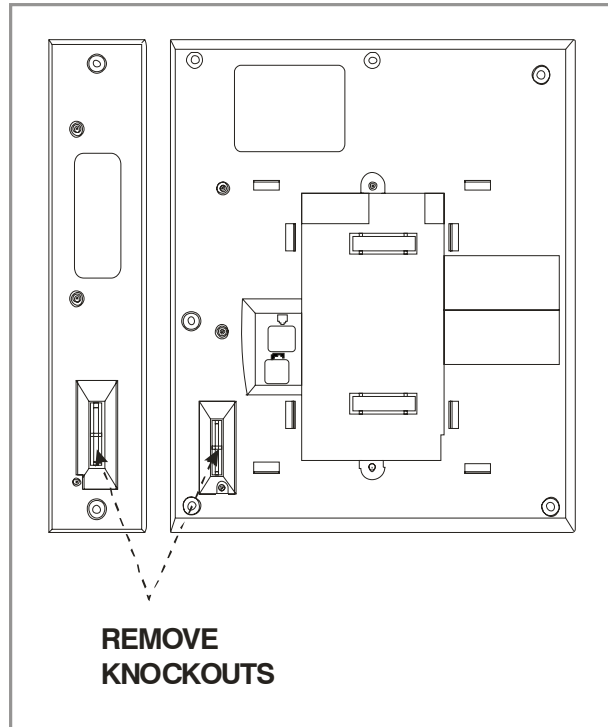


Figure 7.28 Attaching iDCS 14 Button Module to an iDCS Keypad

7.2 CONNECTING ADDITIONAL EQUIPMENT

This section describes how to connect optional equipment, such as Music on Hold (MOH)/Background Music (BGM) sources, external page devices, common bells, and PCs for PCMMC/SMDR/CTI, to the OfficeServ 7200 system.

The following table lists the default MISC Numbering Plan defined in MMC 724.

MISC FUNCTION # IN MMC 724	DEFAULT DN	HARDWARE ITEM
01	3762	External MOH Source Input
02	3763	External MOH Source Input
03	3751	Page Tip and Ring
04	3995	Loud Bell Output
05	3991	Common Bell Delay
06	3752	Dry Contact Relay
07	3753	Dry Contact Relay
08	3761	Internal Chimes

7.2.1 Connecting MOH/BGM Equipment

The OfficeServ 7200 system offers music on hold. The system provides internal tone/music and external music sources per C.O. or extension lines as the music source.

Two external music sources are offered. Connect the music sources to the MISCI port of the MCP board. The MIS optional daughter board should be installed on the MCP board.



NOTE

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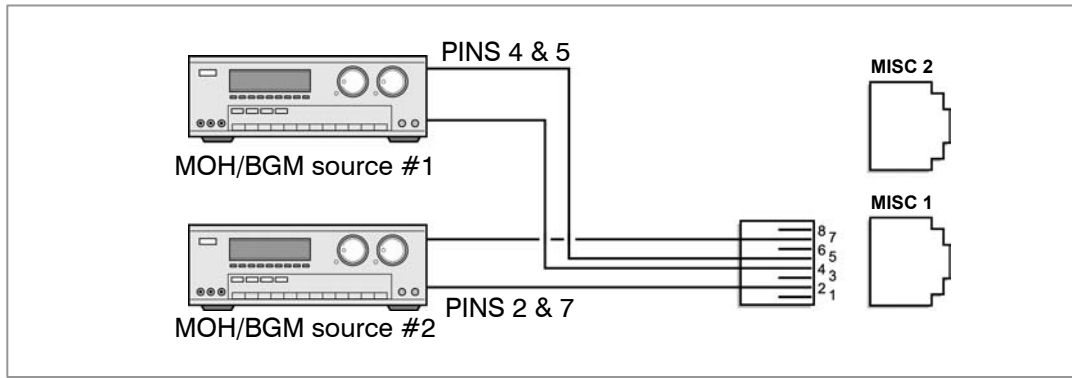


Figure 7.29 Connecting MOH/BGM Sources

- MISC 1 and MISC 2 ports are located on the front panel of the MCP.



NOTE

MMC

Select music sources for C.O. lines in MMC 408 and music sources for extensions in MMC 308. For detailed instructions on the MMC programs, refer to [OfficeServ 7200 Programming Manual](#).

The following ports are assigned to the external MOH inputs on the MIS daughter card:

HARDWARE ITEM	MISC FUNCTION # in MMC 724	DEFAULT DN (Ports)
MOH/BGM Ext. Source #1	01	3762
MOH/BGM Ext. Source #2	02	3763

7.2.2 Connecting External/Additional Page Equipment

Instead of an internal speaker, external broadcasting equipment, such as amps or speakers, and additional equipment that can broadcast page(ring) signals outside a building can be connected to the OfficeServ 7200 system.

Connect external/additional paging equipment to the MISC1 and MISC2 ports of the MCP board. The MIS optional daughter board should be installed on the MCP board. The power of the external/additional paging equipment should be connected separately.

The MIS daughter board provides a voice pair and a two dry contact pairs to be used with customer-provided paging equipment. Connect the customer-provided paging equipment to the page output pins of a MIS daughter board ([see Figure 7.31](#)).

The Page Zone Relay ports assigned to each dry contact pair are listed in the following table. Assign the DN number to the selected page zone using Default DN (Ports).

HARDWARE ITEM	MISC FUNCTION # in MMC 724	DEFAULT DN (Ports)
Page Tip & Ring	03	3751
Contact Pair #2	06	3752
Contact Pair #3	07	3753

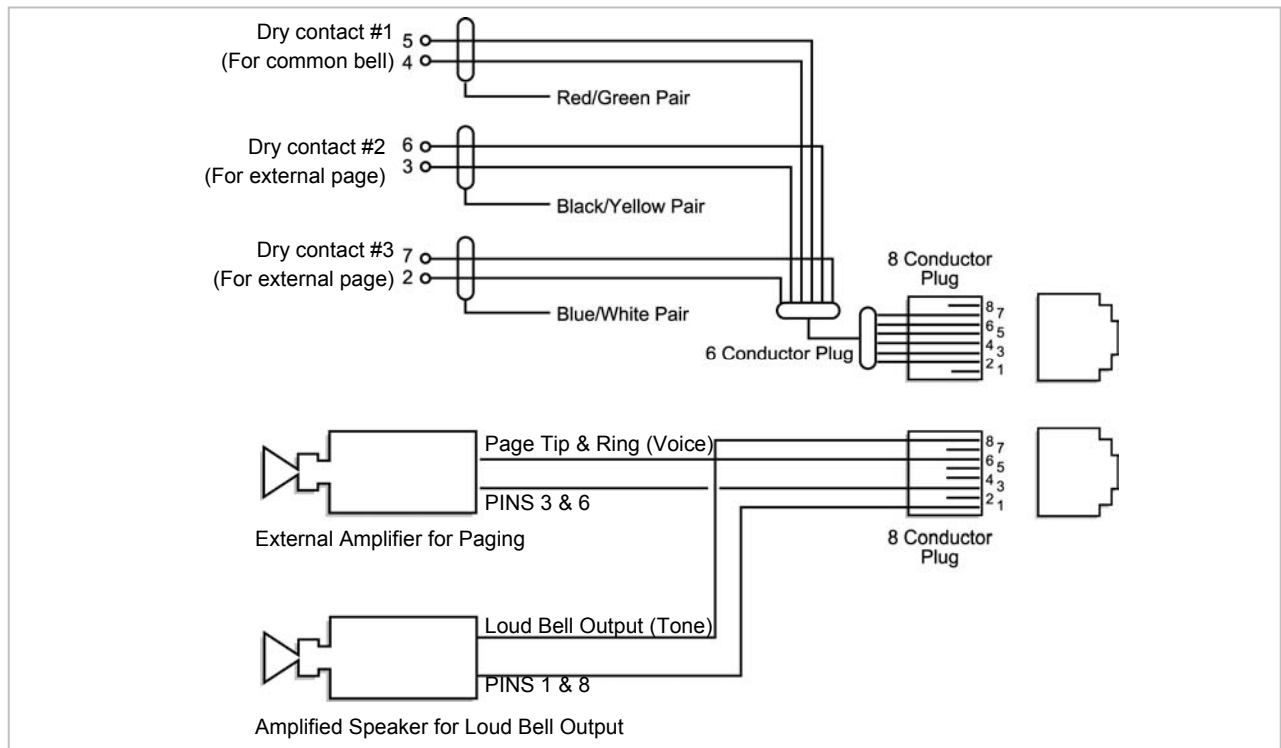



Figure 7.30 Connecting External/Additional Page Equipment

- MISC 1 and MISC 2 ports are located on the front panel of the MCP.



NOTE

Dry Contact

Dry Contact is a switch that can connect or cut the power or line to external equipment.

7.2.3 Loud Bell Interface

When a station requires loud ringing, assign or pair that station to an audible ring tone output on the MIS daughter board using MMC 205.

MISC FUNCTION # in MMC 724	DEFAULT DN
04	395

Next connect the output from the MIS daughter card to a customer provided paging system or other suitable customer provided speaker, [see Figure 7.31](#).

7.2.4 Connecting Common Bell

A customer-provided loud ringing device can be controlled using a dry contact pair on the MIS daughter board.

Common bell connections should be wired to the MISC1 and MISC2 ports of the MCP board. MIS optional daughter board should be installed on the MCP board.

By using MMC 204 programming allows for interrupted or continuous operation of the contacts. The interrupted selection follows the CO ring cadence, 1 sec ON/3 sec OFF.

MISC FUNCTION # in MMC 724	DEFAULT DN
05	3991

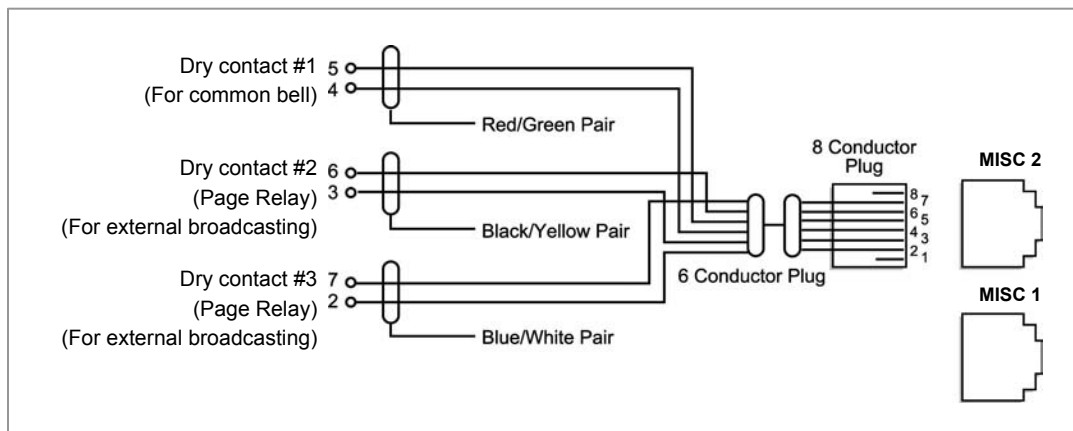


Figure 7.31 Connecting Common Bell

- MISC 1 and MISC 2 ports are located on the front panel of the MCP.

WARNING: Do not attempt to connect commercial AC power to these contacts.

- 1) After connecting a common bell, you must assign it in MMC 601 to a group as a ring destination by using the code for common bell.
- 2) After wiring to the contact pair, set contacts for continuous or steady operation.

- 3) Next, program hunt group to include the common bell.
- 4) Assign the trunk to ring the hunt group containing the common bell. Common bell control can be used with station hunt groups, individual stations and universal answer.

7.2.5 Ring Over Page

When a customer-provided paging system is installed, incoming calls can be assigned to ring over page. Program the C.O. line or C.O. lines to ring a hunt group. Using MMC 601 assign the DN number of the Page Output (voice) for the MIS board being used as a member of the group or as the NEXT PORT for the overflow destination. Other stations may be assigned to the same group to provide ringing to phones and the paging system at the same time.

MIS FUNCTION # in MMC 724	DEFAULT DN
03	3751

7.2.6 Connecting OfficeServ Manager

OfficeServ Manager is a computer application that provides various maintenance and management functions for the OfficeServ 7200.

The minimum requirements for a PC running OfficeServ Manager (OSM) are as follows:

Table 7.4 OfficeServ Manager Specification

Category	Specification
Platform	IBM PC
CPU	Pentium III or higher
OS	Windows 2000 or higher
Main memory	64 Mbytes or higher
Hard disk	1 Gbytes or higher

CONNECTING OFFICESERV MANAGER (OSM) TO LAN PORT

The OSM application can only communicate to the OfficeServ 7200 system via the LAN connection. The OSM PC can connect to the MCP via LAN connection using a customer provided LAN switch or using the LIM module as shown in Figure 7.32.

- Set up the MCP LAN parameters in MMC 830.

- If an MCP is behind a firewall and OSM is outside the firewall, ports 5000, 5003, and 5200 (TCP) must be open to the private IP address of the MCP.

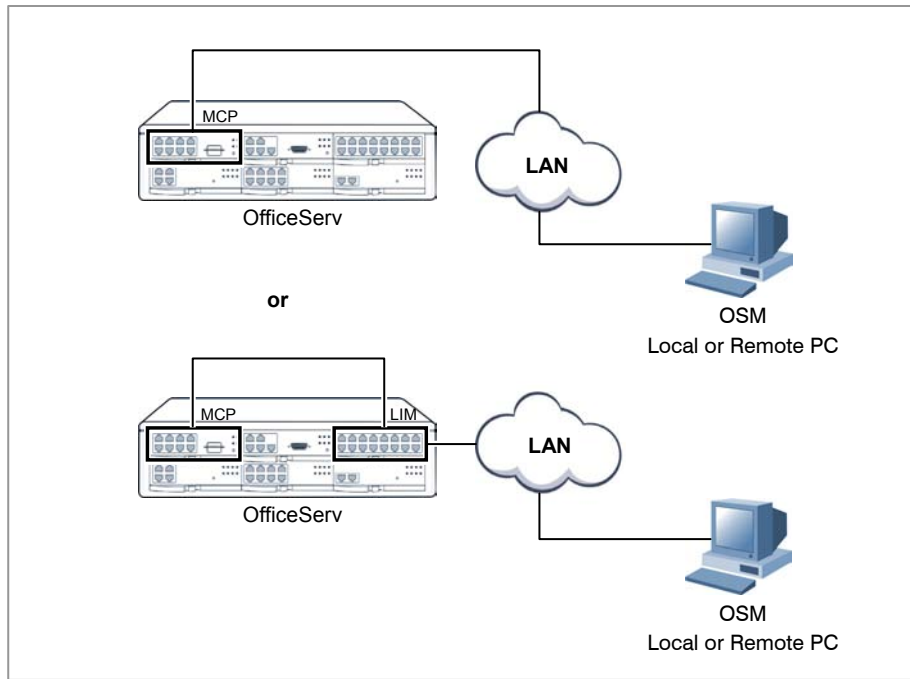


Figure 7.32 OSM Connection to LIM Board via LAN

Detail procedures for each of the steps above are as follows:

SETTING NETWORK PARAMETERS THROUGH MMC 830

Set the network parameters of the system. Contact the network manager when setting values for the network parameters.

- 1) Set the IP address of the system.
- 2) Set the subnet.
- 3) Set the gateway address.
- 4) Reset the board.



Board Reset

New settings are applied only after the board is reset. The system may malfunction if the board is not properly initialized.

SETTING REMOTE OSM PARAMETERS

- 1) Execute OSM.
- 2) Click [Link] → [CommSetup] menu on the OfficeServ Manager main screen.

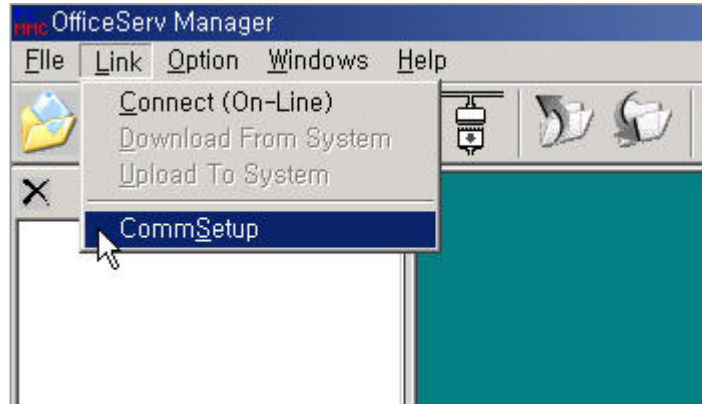


Figure 7.33 OSM Screen

- 3) Enter the system name into the [Address] field of the <Communications Setup> window.
- 4) Enter the IP address of the system into the [Number] field.

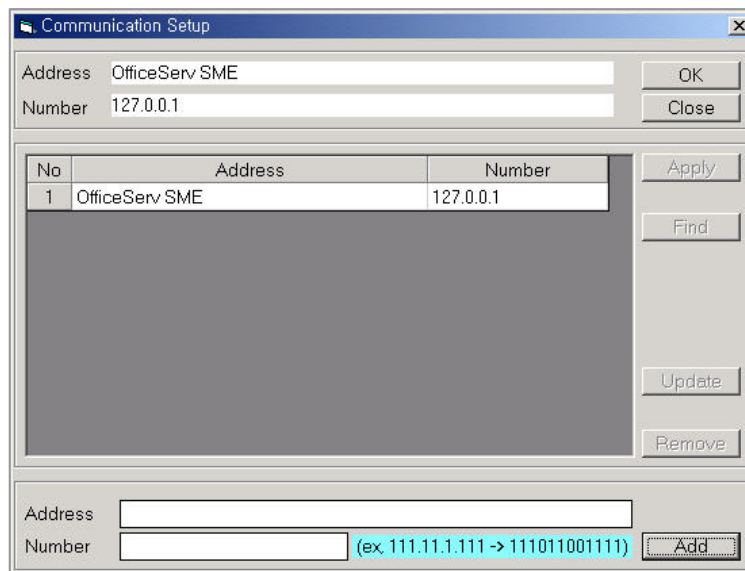


Figure 7.34 Setting OSMPParameters

7.2.7 SYSTEM DATA/ACTIVITY REPORTS

The following type of reports can be output to a PC or LAN printer that is connected to the same network as the MCP: SMDR (Station Message Detail Records), UCD Reports, Traffic Reports, Alarm Reports, Hotel Report and much more. [Refer to MMC 829](#) to configure the report type and data output network configuration ([See OfficeServ 7200 Programming Manual](#)). This MMC can also configure the reports to be sent to PCs running 3rd party applications (i.e. SMDR Reporting Packages, etc.).

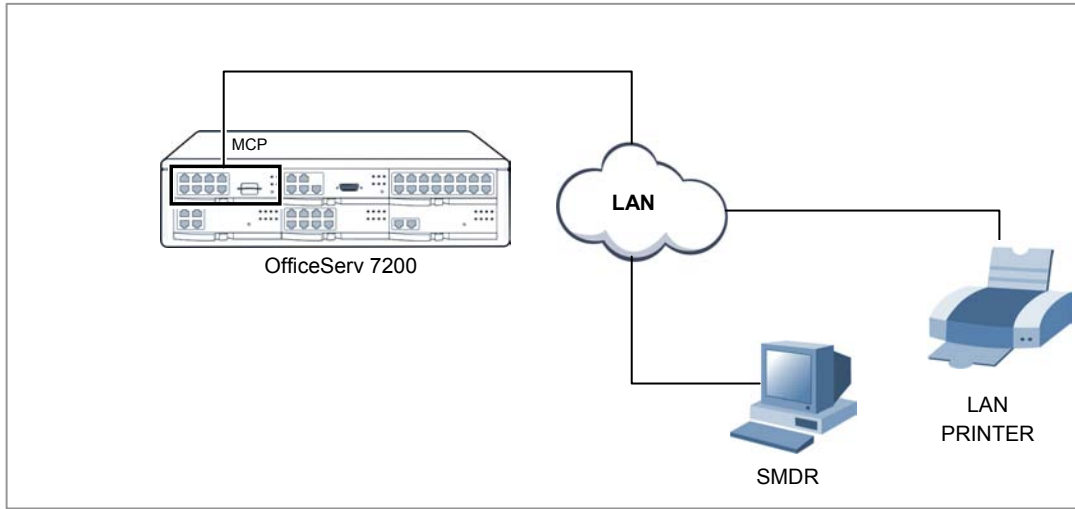


Figure 7.35 Connecting SMDR to the LAN Port of the LIM Board

PART 8. POWER UP PROCEDURES

This section describes items to check before starting the OfficeServ 7200 system and the procedure for starting the system.

8.1 PRE-CHECK

This section describes items to check before starting the OfficeServ 7200 system.

8.1.1 Safety Precautions

- **Temperature:** Check if the temperature of the room where the system is installed is between 32°F and 113°F. If the room temperature is higher or lower than the normal operation temperature, install a heating/cooling device to maintain normal temperature.
- **Humidity:** Check if the room humidity where the system is installed is between 10 % and 90 %. Take special caution since humidity affects the electrical components and connectors of the system.
- **Direct sunlight and dust:** The room where the OfficeServ 7200 system is installed should be protected from direct sunlight and should have ventilation systems to prevent the system from malfunctioning due to dust.

8.1.2 Safety Conditions

The building where the OfficeServ 7200 system is installed should have lightning rods and grounding to protect the system against lightning and electric leakage.

- Check if the OfficeServ 7200 system is not inclined and is maintained horizontally.
- Do not place devices that may cause electromagnetic interference near the system.
- Place a fire extinguisher near the system.
- Check if the AC voltage switch of the PSU is properly set to 110 VAC power.
- Check if the grounding terminal on the rear panel of the system is properly connected to the external grounding.

8.2 STARTING THE SYSTEM

The procedure for starting the OfficeServ 7200 system is as follows:

- 1) Check if the boards and cables are properly mounted and connected to the OfficeServ 7200 cabinet.
- 2) Make sure the SmartMedia Card with system software is in the SmartMedia slot.
- 3) Make sure the memory backup switch on MCP is in the ON position.
- 4) Turn on the power of the OfficeServ 7200 expansion cabinet first, then turn on the power of the main cabinet.

- 5) Check the LEDs of the MCP and LCP boards.
- 6) The RUN LED of the MCP board lights green and the SM LED flashes when the system normally starts the booting process.
- 7) Once the booting is complete, the RUN LED of the MCP board flashes green, and the SM LED stops flashing and remains lit.
- 8) The RUN LED of the LCP board flashes when the power supply and processor status of the expansion rack is normal.



NOTE

If the Smart Media is not detected

If the system cannot detect the smart media, the SM LED of the MCP board might not light or flash. In such cases, turn off the power of the main cabinet, replace the smart media and turn the power on again. If the smart media is still not detected, turn off the power of the main cabinet and eject the MCP board.

- 9) Check if the LED status of other interface boards are normal.
- 10) If the LED status of the MCP, LCP, or interface board is abnormal, turn off the power of the cabinet and turn the power on again.

8.3 CHECKING THE FAN

When the system fan is not operating, the 48 DC power and the system operation will be turned off to prevent system overheating.

This function is set in programming to send notification within 24 hours.

The function can be set using the following methods:

- 1) Designate SYSALM key in MMC 732 and the designated key will be set on the manager's digital phone.
- 2) When the alarm is generated in the phone, the cause of alarm can be checked in MMC 851.

The MJA08 message means abnormal fan operation, therefore the system will be turned off after 24 hours.

When the alarm occurs, the fan must be replaced within 24 hours.



NOTE

REMINDER

Install blocking plates in all empty card slots of the main and expansion cabinets.

8.4 NUMBERING EXTENSIONS AND C.O. LINES

Once the OfficeServ 7200 system is booted, the MCP/LCP board verifies the boards mounted on each slot and saves this information as the default configuration of the system.

According to the setting of the S3 switch (SW6, SW7, SW8) of the MCP/LCP board, the OfficeServ 7200 system assigns 3 or 4 digits to C.O. lines, extensions, and extension groups. [Refer to Section 3. Installing and Replacing Boards](#) of this manual for details on setting the S3 switch.

C.O. line numbers from 701 or 7001 are sequentially assigned to the C.O. line board installed on Slot 1 of the main cabinet, and following numbers are continuously assigned to the next C.O. line board of the next slot. However, only the numbers from 701 to 799 are assigned when using 3 digits. For example, if an 8TRK board is mounted on Slot 1 and an 8TRK board is mounted on Slot2, 701 is assigned to the C1/S1/P1 port and 712 is assigned to the C1/S2/P4 port.(Twelfth C.O. line is assigned to the fourth port of the second slot of the first cabinet.)

Extension numbers from 201 or 2001 are sequentially assigned to the extension board mounted on Slot 1 of the basic cabinet, and following numbers are continuously assigned to the next extension board of the next slot. This numbering process continues until the extension numbers are assigned to all extensions. However, only the numbers from 201 to 349 are assigned when using 3 digits.

The first port of the first 8DLI or 16DLI board is assigned to the attendant group as default. All C.O. lines ring this attendant extension unless the default value is changed. Thus, a phone with an LCD panel should be connected to the last port of the first 8DLI board.

500-539 or 5001-5039 is assigned to an extension group.

The numbers of C.O. lines, extensions, or extension groups can be changed using the MMC 724 program.

PART 9. SOFTWARE AND DATABASE MANAGEMENT

9.1 SOFTWARE MANAGEMENT

The OfficeServ 7200 operating software is stored on the SmartMedia card which is inserted into the front of the MCP card. The SmartMedia card has 32 Megabytes of NAND flash memory and is formatted, with a custom format to allow faster loading, in a similar manner to a hard disk. In addition to the operating system the SmartMedia card can carry operating software for the LCP card and the TEPRI card. The SmartMedia card also has the capability to store a backup copy of the system database in addition the operating software files.

Software can be downloaded from the SmartMedia card to the cards listed above using MMC 818 and will be stored in those cards on-board flash memory. The cards will automatically reboot, load and run the new software when the download process is complete. Files can be deleted using MMC 819, File Control. This is necessary to clean up the SmartMedia.

Using OfficeServ™ Manager over a LAN connection to the system the software files can be uploaded to the SmartMedia card. The files are first uploaded to the MCP card and then transferred to the SmartMedia card. Once the files are loaded onto the SmartMedia card they can be manipulated with MMC 818 as before.

9.2 DATABASE MANAGEMENT

The Customer database can be saved to the SmartMedia card using MMC 815 where it is stored as a single file. This save can be performed manually or the system can be programmed to save the database automatically at a designated time every day. Using OfficeServ™ Manager the database can be downloaded from the system and stored on the PC or it can be uploaded from the PC to the system. The database uploaded from OfficeServ™ Manager is not stored in the SmartMedia card but is loaded directly into active memory.

PART 10. ADDING BOARDS TO THE SYSTEM

10.1 ADDING STATIONS AND TRUNKS

- 1) Power the OfficeServ 7200 OFF before adding a new board. Locate a suitable empty card slot. Having located a suitable slot, insert the new card into the slot and push firmly in the middle of both card ejectors on the card to ensure that it is fully inserted into the back plane connector.
- 2) After the new cards are inserted, the system must be told to recognize the new cards. This is done through the use of MMC 806 Card Pre-Install. Use this MMC for each new card that is installed.
- 3) The new cards must be assigned directory numbers according to the system numbering plan in MMC 724. The technician must know the software port assignments of the new cards so the ports can be assigned correct numbers.