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# INSTALLATION WARNINGS

## 1. SAFETY PRECAUTIONS

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

- a. Never install telephone wiring during a lightning storm.
- b. Never install telephone jacks in a wet location unless the jack is specifically designed for wet locations.
- c. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- d. Use caution when installing or modifying telephone lines.
- e. Do not use this product near water, for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool.
- f. Do not use the telephone to report a gas leak in the vicinity of the leak.
- g. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.

2. **BATTERY BACKUP-CONNECTOR CAUTION:** 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 0.4A, a abnormal charge current of 2.0A, charge voltage of -54 V dc and d discharge rated of 40 Ah.

3. **CAUTION:** Danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacture's instructions.

**ATTENTION:** Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usages conformément aux instructions du fabricant.

4. **DISCONNECT DEVICE:** Disconnect Device is an Appliance Coupler.


5. **FUSE CAUTION:** Double pole / neutral fusing

+

**ATTENTION:** Double pole / fusible sur le neuter.

For continued protection against risk of fire, replace only with same type and rating of fuse.

Disconnect power before changing fuse.

6.  a. Provided with the current limitations and maximum overcurrent protection for telecommunication circuits.
- b. Reference to the specific power supply or current limiting device provided with the product
- c. Detailed instructions showing the proper method of installation and connections to the telecommunication wiring system.
7. A separate protective earthing terminal shall be provided in addition to the main protective earthing terminal is permanently connected to earth.

# PART 1. SITE REQUIREMENTS

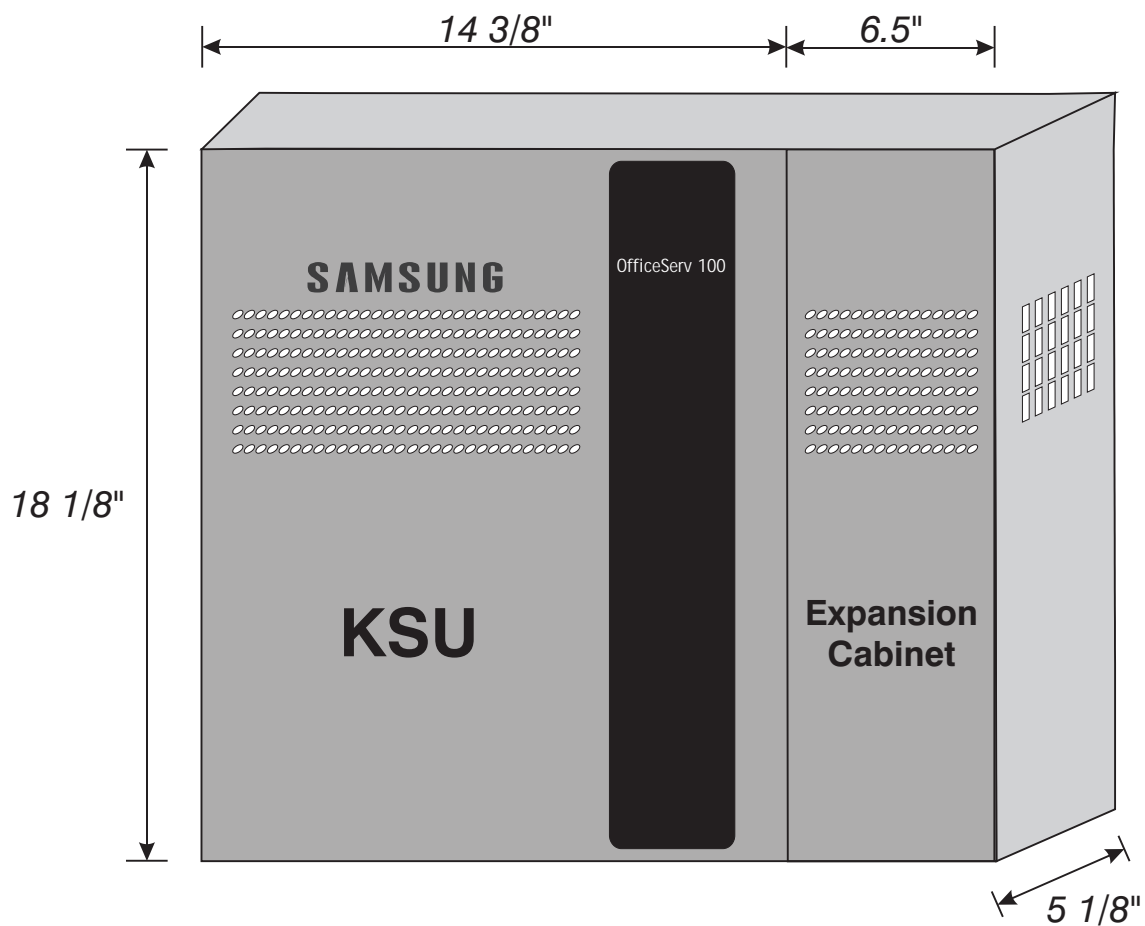
When planning the installation of the OfficeServ 100, choose a site that meets the following requirements:

- Select a location for the key service unit (KSU) that has enough space for easy installation and adequate lighting ([see Figure 1-1](#)).
- Select a location that will minimize cable lengths. [See the Cable Requirements table below.](#)
- The equipment should not be exposed to direct sunlight, corrosive fumes, dust, constant vibration or strong magnetic fields such as those generated by motors and copy machines.
- A direct commercial AC power outlet is required. Do not use extension cords. Preferably, a dedicated circuit should be used to minimize the risk of other electrical equipment being connected that could adversely affect system operation.
- Ensure that all wires and cables going to and coming from the KSU are properly routed. Do not cross fluorescent lights or run parallel with AC wires.
- The equipment must be located in an environment that will maintain a temperature range of 32°–104°F (0°–40°C) and a humidity range of 10%–90% non-condensing.
- Allow at least 6" clearance on both sides and 6" clearance on top of the KSU to ensure proper ventilation.
- Do not install in close proximity to a fire sprinkler head or other sources of water.

Meeting these requirements will help to ensure proper performance and greater life expectancy of the system.

CABLE REQUIREMENTS				
EQUIPMENT	CABLE	AWG	MAX FEET	MAX METERS
DIGITAL KEYSETS	1 PR. TWISTED	24	1300	400
ADD-ON MODULES	1 PR. TWISTED	24	1300	400
SINGLE LINE STATION	1 PR. TWISTED	24	3000	1 KM
DOOR PHONE	2 PR. TWISTED	24	330*	100

\*This is the maximum distance a door phone can be from the DPIM. The DPIM can be a maximum of 900 cable feet from the KSU.



MAIN CABINET AND  
EXPANSION CABINET  
UNIT DIMENSIONS

**FIGURE 1-1**



## PART 2. INSTALLATION OF BASIC KSU AND EXPANSION CABINET

### 2.1 UNPACKING AND INSPECTION

After unpacking the KSU, inspect for signs of physical damage. If any damage is detected, do not attempt to install. Contact SAMSUNG TELECOMMUNICATIONS AMERICA, Technical Support Department.

Check to see that the KSU carton includes the following items:

- Key service unit
- Wall-mount kit consisting of 4 screws
- Vinyl bag containing cable ties and a battery cable
- Power cord
- KSU mounting template

Check to see that the EXPANSION CABINET carton includes the following:

- Expansion cabinet
- Vinyl bag with screws and ferrite choke

### 2.2 KEY SERVICE UNIT INSTALLATION

The key service unit (KSU) must be wall-mounted. The KSU should be mounted on a plywood backboard at least  $\frac{5}{8}$ " thick. Using the installation template or the diagram in [figure 2-1](#) mark the location for four mounting screws. Attach two mounting screws 12  $\frac{7}{8}$ " apart horizontally to the blackboard. Next hang the KSU on the screws and secure it to the backboard with the remaining two screws ([see Figure 2-1](#)). Tighten all four screws to secure KSU in place.

### 2.3 EXPANSION CABINET INSTALLATION

1. There are two types of Expansion Cabinets, Type A and B. [See General Description, Part 1, Figure 1.1 and Figure 1.2](#). Determine the type of Expansion Cabinet that needs to be used before continuing with installation.
2. Hang the expansion cabinet on the KSU bracket and attach it securely to the backboard with the two screws supplied ([see Figure 2-2A](#)).

NOTE: When you are adding an expansion cabinet to a system, please remember to remove the cable access breakout panels **BEFORE** attaching the expansion cabinet to the KSU. **DO NOT** cut the tabs on the bottom of the breakout-panels as this will leave a sharp edge that can cut into the cable. Instead bend the panel down out of the way.

3. Secure the expansion cabinet to the KSU by inserting the two short screws into the holes on the left of the expansion cabinet ([see Figure 2-2B](#)).

**WARNING:** The KSU must be turned off before proceeding. Plugging the cables into the KSU while it is turned on can result in electric shock and/or equipment damage. If the expansion cabinet is being added to an existing system make sure the switch on the MEM card is turned ON before powering down the KSU to keep the customer data intact.

**NOTE:** Place jumper pin SW1 and SW2 (bottom left hand corner of expansion cabinet) in the right hand position indicating OfficeServ 100.

4. Connect the expansion cabinet to the basic KSU by plugging free end of the ribbon cable into the socket on the KSU motherboard ([see Figure 2-3](#)).
5. Connect the ground wire from the expansion cabinet to the screw in the top right hand corner of the KSU motherboard ([see Figure 2-4](#)).
6. Connect the two red and green cable pairs from the expansion cabinet to the connectors of the KSU motherboard ([see Figure 2-3](#)).
7. Install any new cards in the expansion cabinet and restore power to the system.

## 2.4 GROUNDING

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.

<p><b>WARNING: HIGH LEAKAGE CURRENT!</b> Earth connection is essential before connecting supply.</p>
--

The OfficeServ 100 system requires that a supplementary (see below) earth ground be connected to the system. This is the preferred method of grounding the OfficeServ 100. It has been observed that the third wire ground may be inferior or can contain noise that may prevent the digital data bus from canceling out noise. This may result in erratic operation of the OfficeServ 100. 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 grounding lug on the bottom of the left side 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 ([see Figure 2-5](#)). 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 FG 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.

<p><b>WARNING:</b> 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 champ connectors from trunk cards.</p>
---

What the above paragraphs mean is when conventional analog telephone circuits are connected to the OfficeServ 100 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 100 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 100 system to drain this energy off. Also, certain metallic analog circuits (e.g., E & M trunks) require a current flow to earth ground to

accommodate normal operating conditions and/or to resolve fault conditions. Again, a good earth ground source is required by the OfficeServ 100 system.

The OfficeServ 100 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 100 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 OfficeServ 100 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.

## 2.5 MDF CABLING

All connections to the OfficeServ 100 system are made by way of a customer-provided main distribution frame (MDF). The KSU is connected to the MDF using two 25 pair male amphenol-type cables and the expansion cabinet is connected to the MDF using a 25 pair male amphenol-type cable. These cables can be routed into the KSU cabinet from below.

NOTE 1: The OfficeServ 100 requires the use of amphenol cables with MALE connectors.

NOTE 2: Before plugging the MDF cables into the KSU you must remove the cover plate on the bottom of the KSU to allow the KSU cover to close correctly. You may replace the cover plate to secure the cables when you have finished.

Label each cable to correspond with the connector numbers ([see Figure 2-6](#)). Label each 66 type-terminating block with the same connector number with which the cable is labeled.

Use one pair twisted jumper wire to cross-connect stations or lines to their associated port.

## 2.6 POWER CONNECTIONS

### • AC POWER CORD ASSEMBLY

The AC Power Cord Assembly plugs into the AC power socket which is located on the left side of the cabinet. The AC connection is a standard 16 AWG computer type power cord.

**WARNING:** DO NOT CONNECT AC POWER TO THE SYSTEM ([see Section 4, Power Up Procedures](#))

### • FUSE

**CAUTION:**

Double pole / neutral fusing

+

**ATTENTION:**

Double pole / fusible sur le neuter.

**CAUTION:**

1. For continued protection against risk of fire, replace only with same type and rating of fuse.
2. DISCONNECT POWER BEFORE CHANGING FUSE.



The current limitations and maximum overcurrent protection for telecommunication circuits reference to the specific power supply or current limiting device provided with the product detailed instructions showing the proper method of installation and connections to the telecommunication wiring system.

### • POWER SUPPLY UNIT (iDCS PWR)

The iDCS PWR is the power supply for the OfficeServ 100 KSU. The iDCS PWR can accommodate a maximum of 56 keysets without an SVMi-8 and 48 keysets with an SVMi-8. The power supply is permanently installed in the KSU, and is protected by a metal cover. The power supply should only be removed by a qualified service personnel.

**WARNING:** DO NOT CONNECT AC POWER TO THE SYSTEM ([see Section 4, Power Up Procedures](#))

- **EXTERNAL –48VDC BATTERY SOURCE**

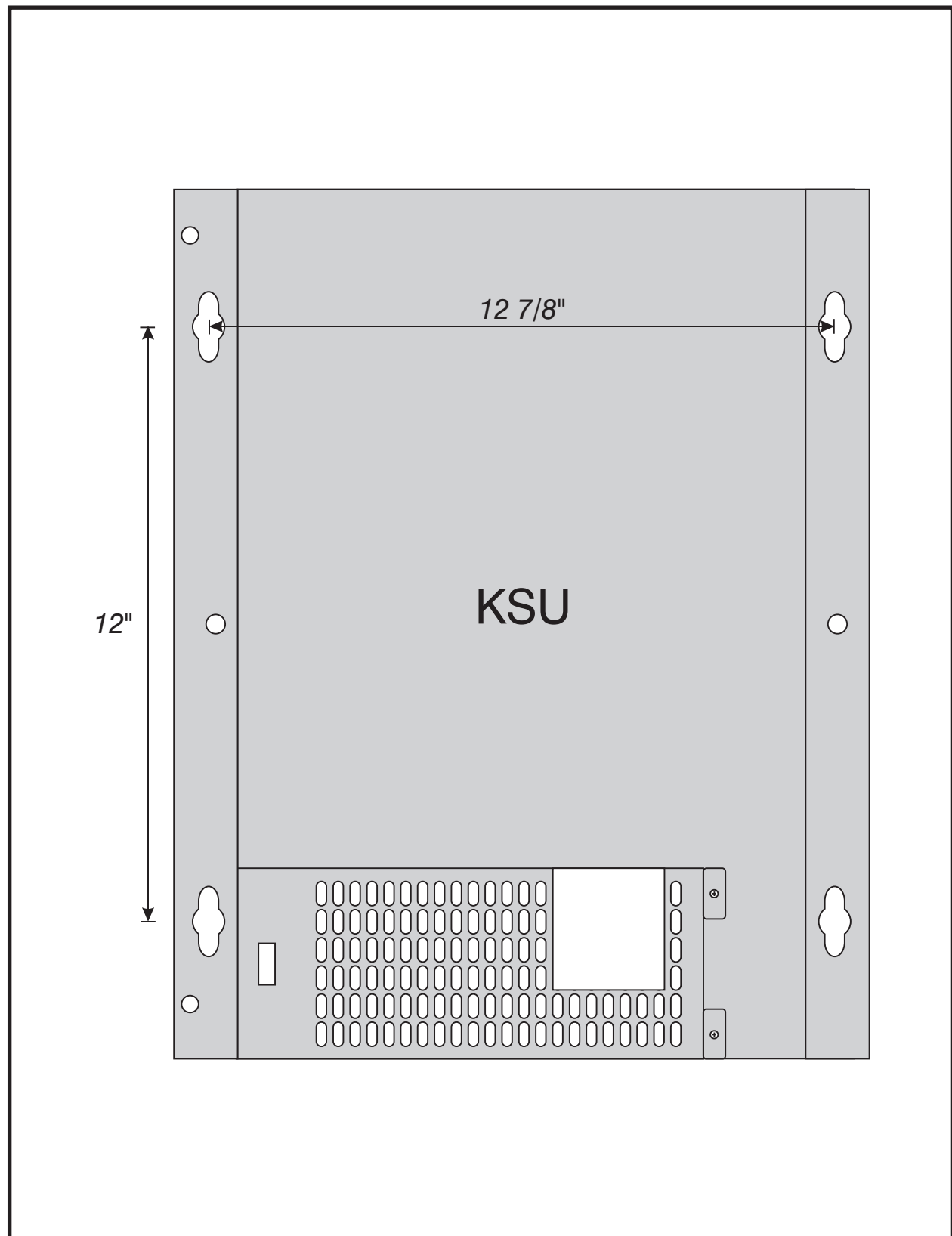
**CAUTION:** To reduce risk of fire and injury to persons, use only a sealed nickel cadmium or lead-acid battery supply capable of handling a charge current of 0.45 A, a charge voltage of –56 VDC and a discharge rate of 45 Ah.”

The OfficeServ 100 provides for connection of an external battery plant (i.e. to provide –48VDC to power the system). The iDCS PWR provides -56VDC at 0.4 amperes charging current (i.e. when AC power is present) which allows for float charging from the OfficeServ 100 to emergency backup batteries. The OfficeServ 100 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 100 and the batteries. Ensure polarity prior to connecting the external –48VDC power source to the system.

The -48VDC cable assembly has a male 2 pin connector on the iDCS PWR. Insert this end of the DC cable into the battery (BATT) connector found on the iDCS PWR ([see Figure 2-7](#)). Attach the other end of the DC power cable to the –48VDC power source.

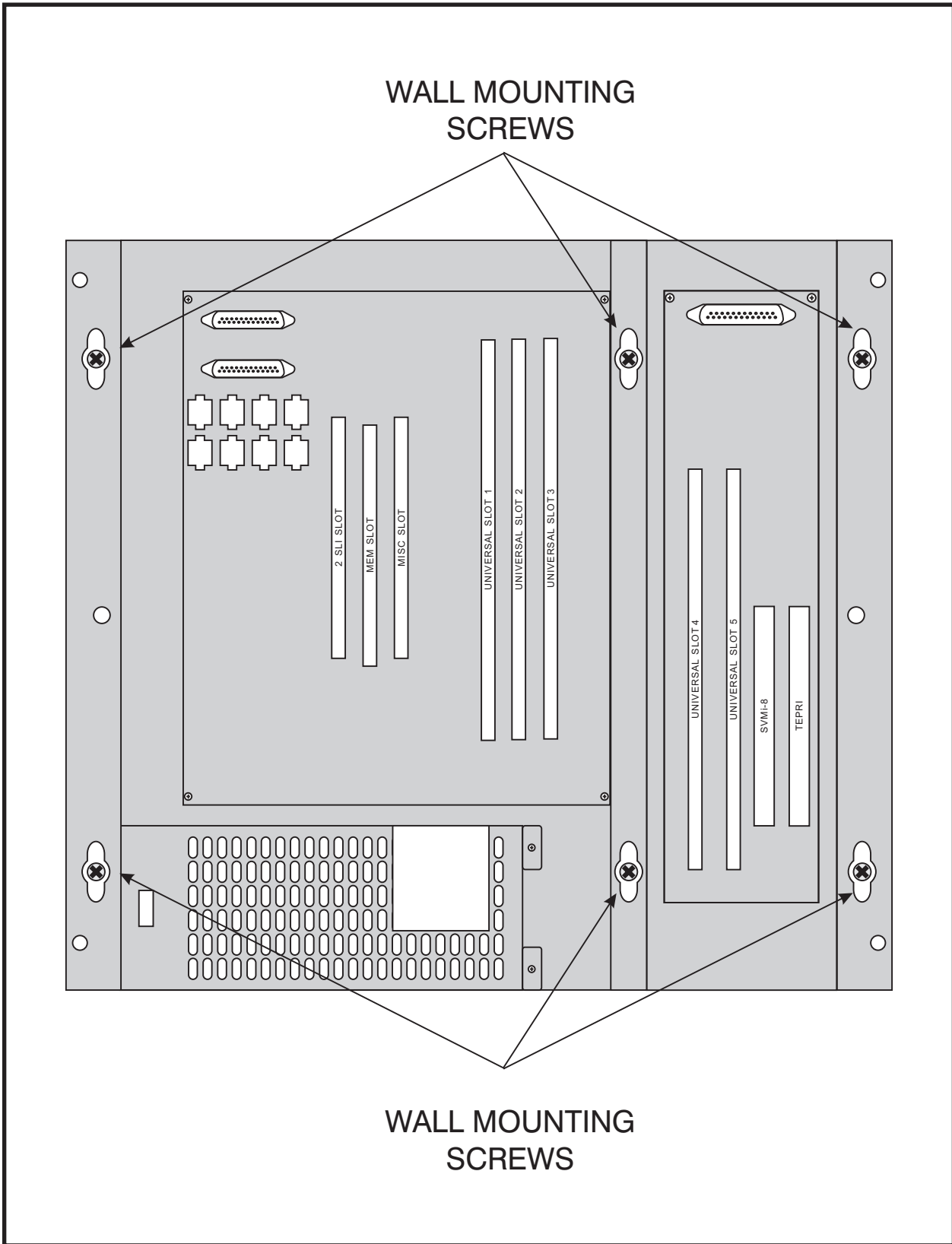
**WARNING:** Be sure the proper polarity is observed. Equipment damage will result if polarity is reversed. Do not connect external AC or DC power to the System ([see Section 4 Power Up Procedures](#)).

**CAUTION:** Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer’s instructions.



MDF SCREWS LOCATION

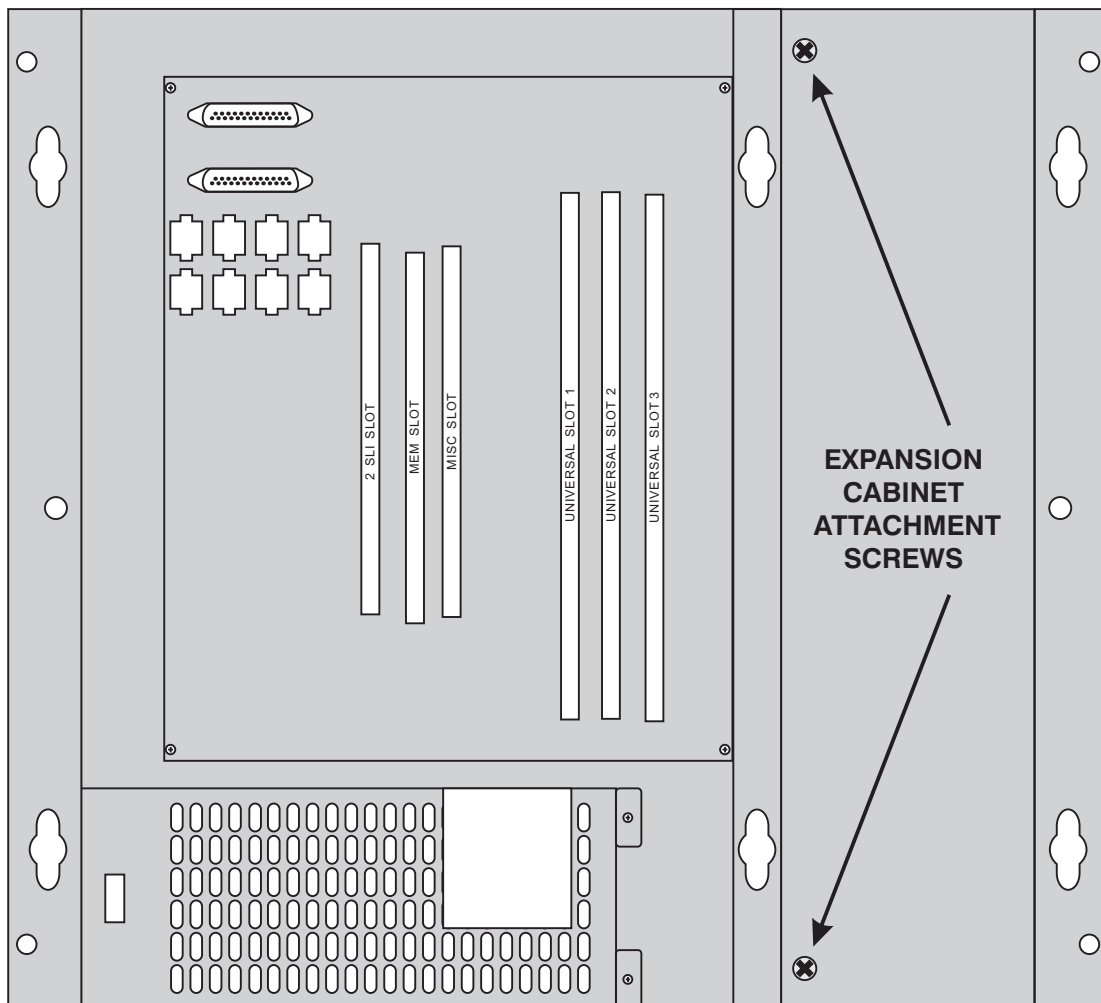
**FIGURE 2-1**



KSU AND EXPANSION CABINET  
WALL MOUNTING

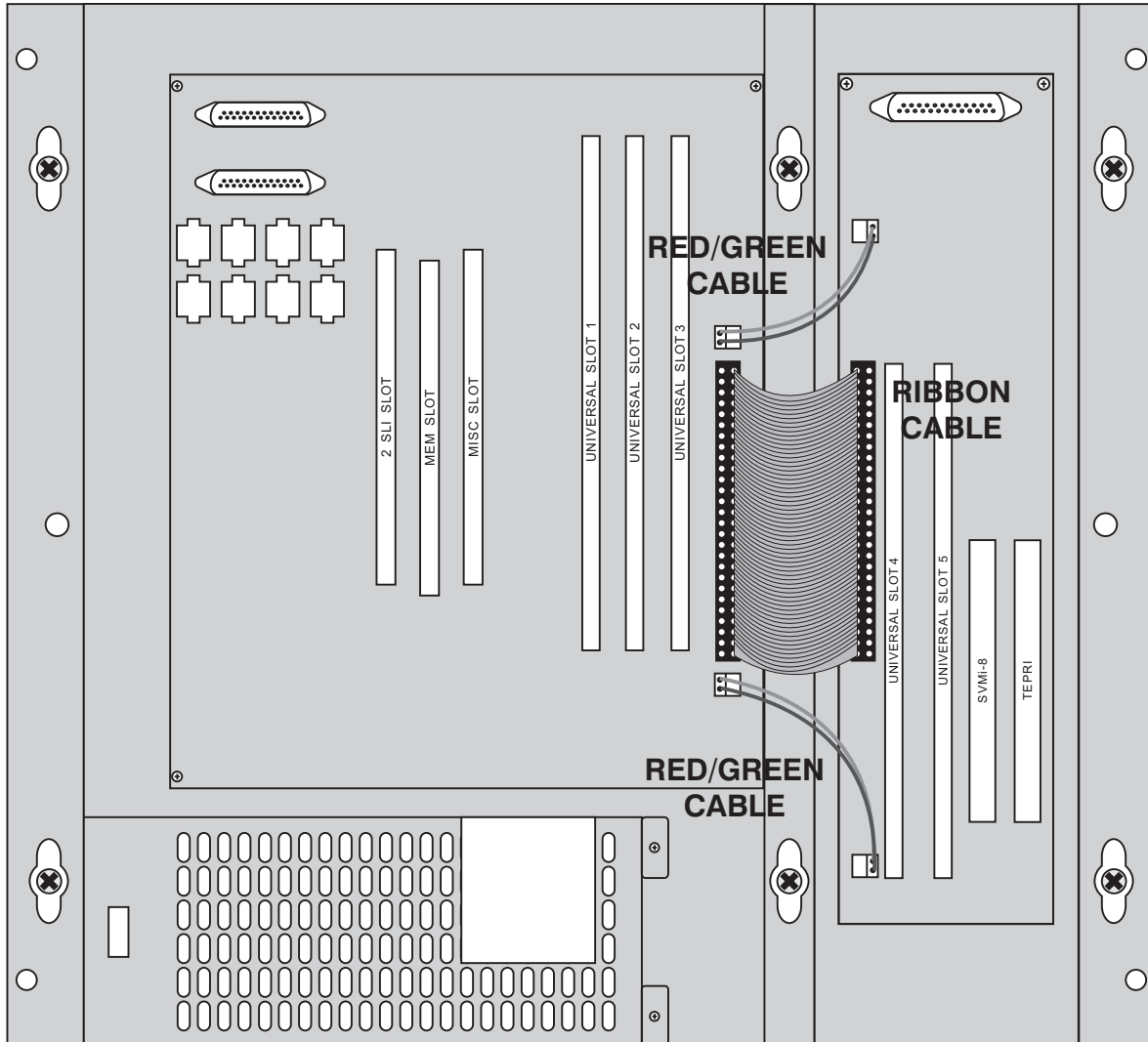
**FIGURE 2-2A**





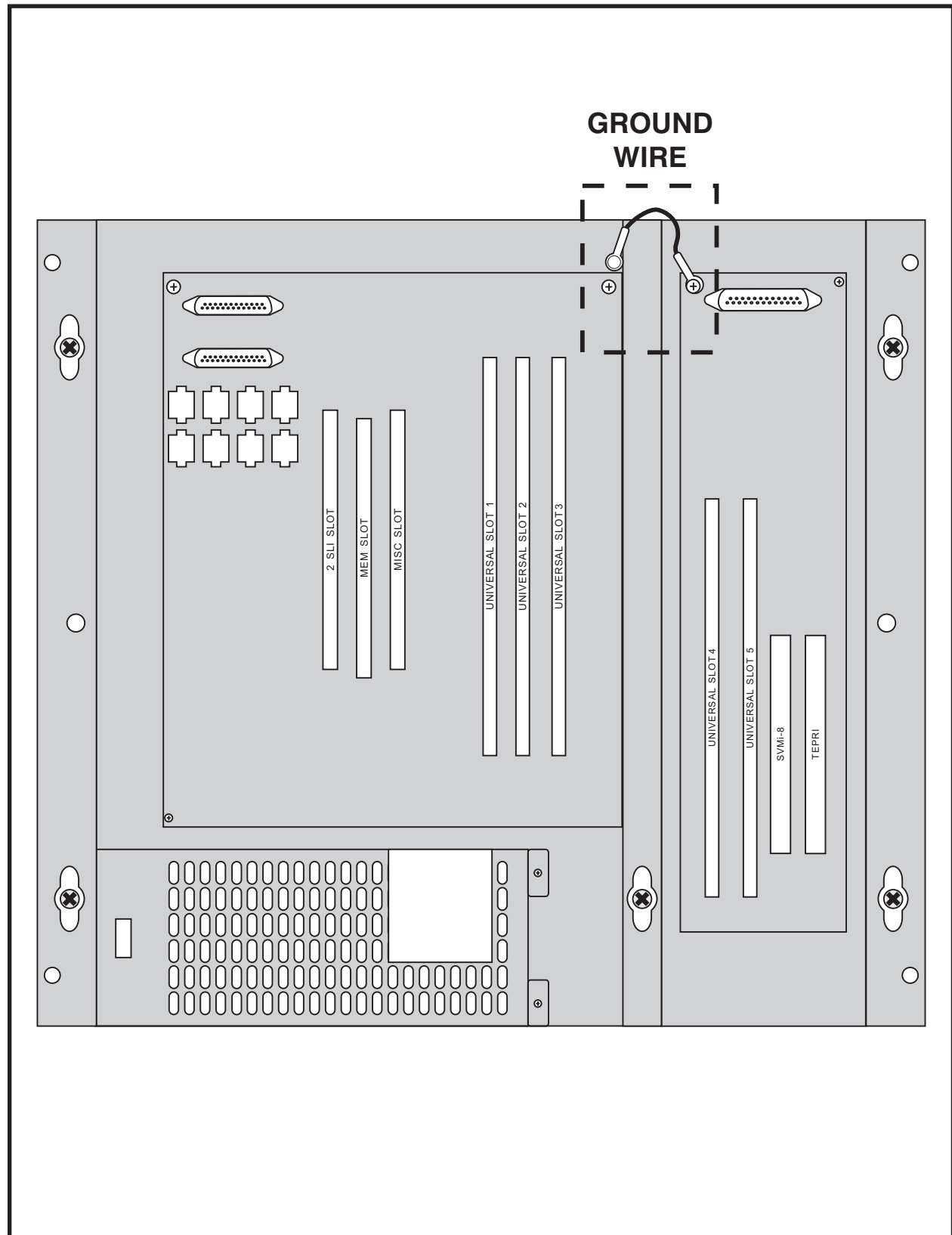
EXPANSION CABINET  
MOUNTING

**FIGURE 2-2B**



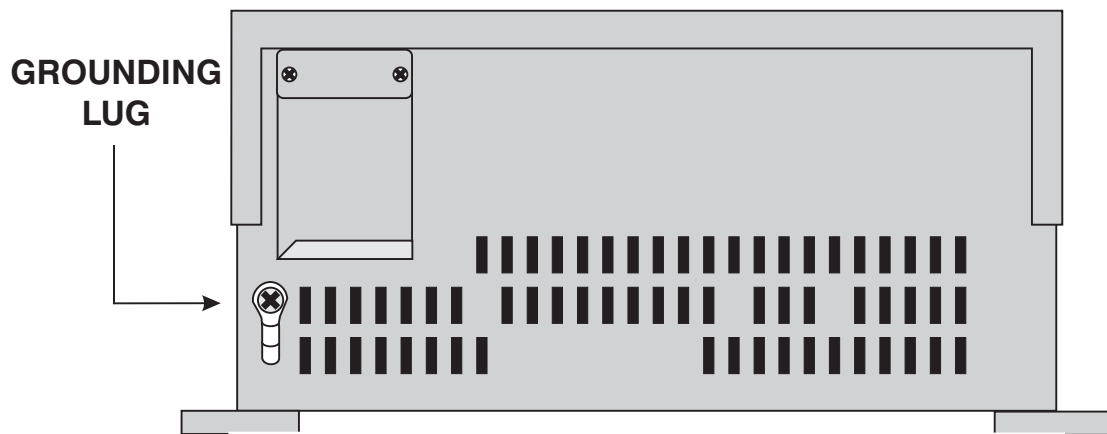
RIBBON CABLE AND RED/GREEN  
CABLE PAIR CONNECTION  
EXPANSION CABINET TO KSU

**FIGURE 2-3**



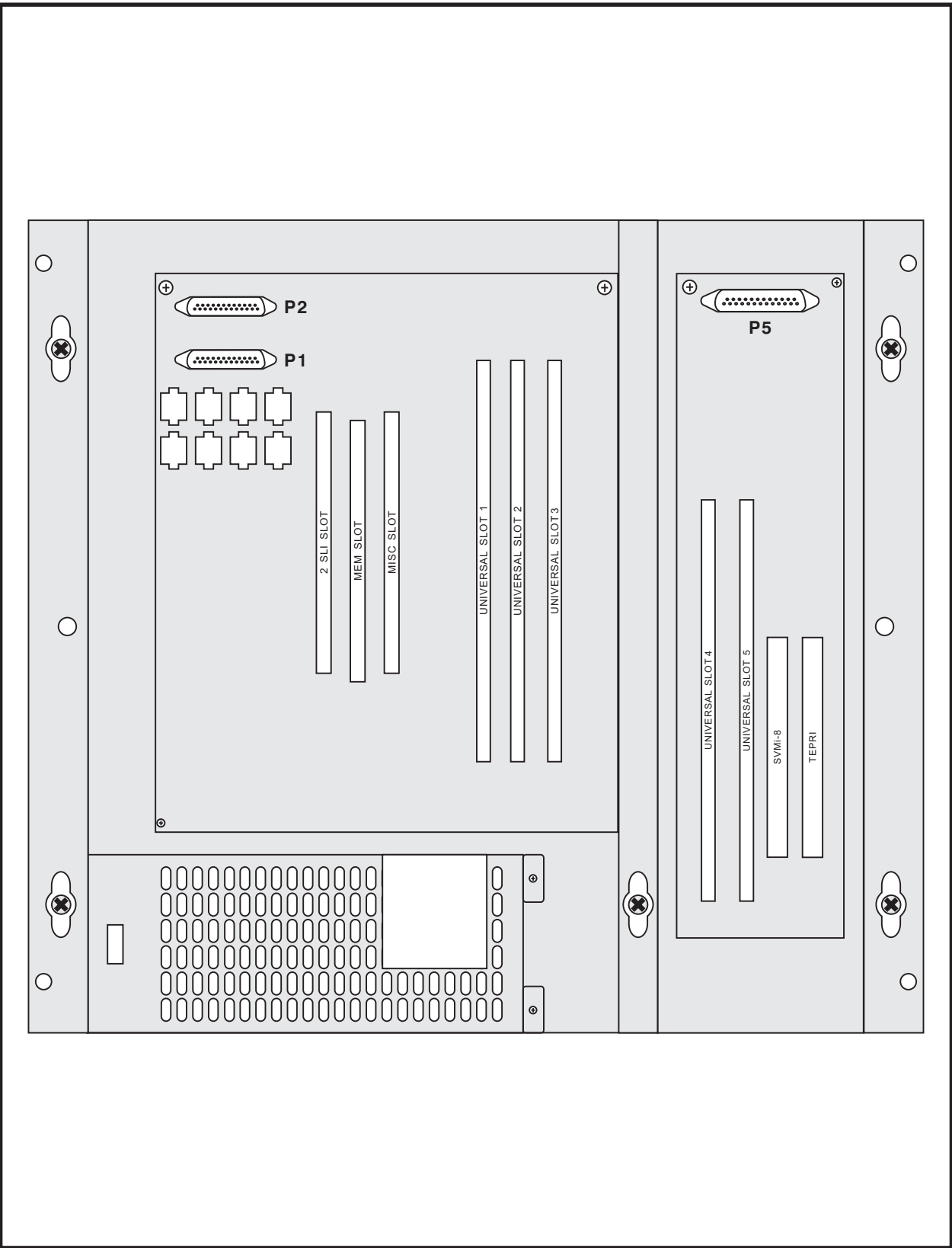
EXPANSION CABINET  
GROUND WIRE TO KSU

**FIGURE 2-4**



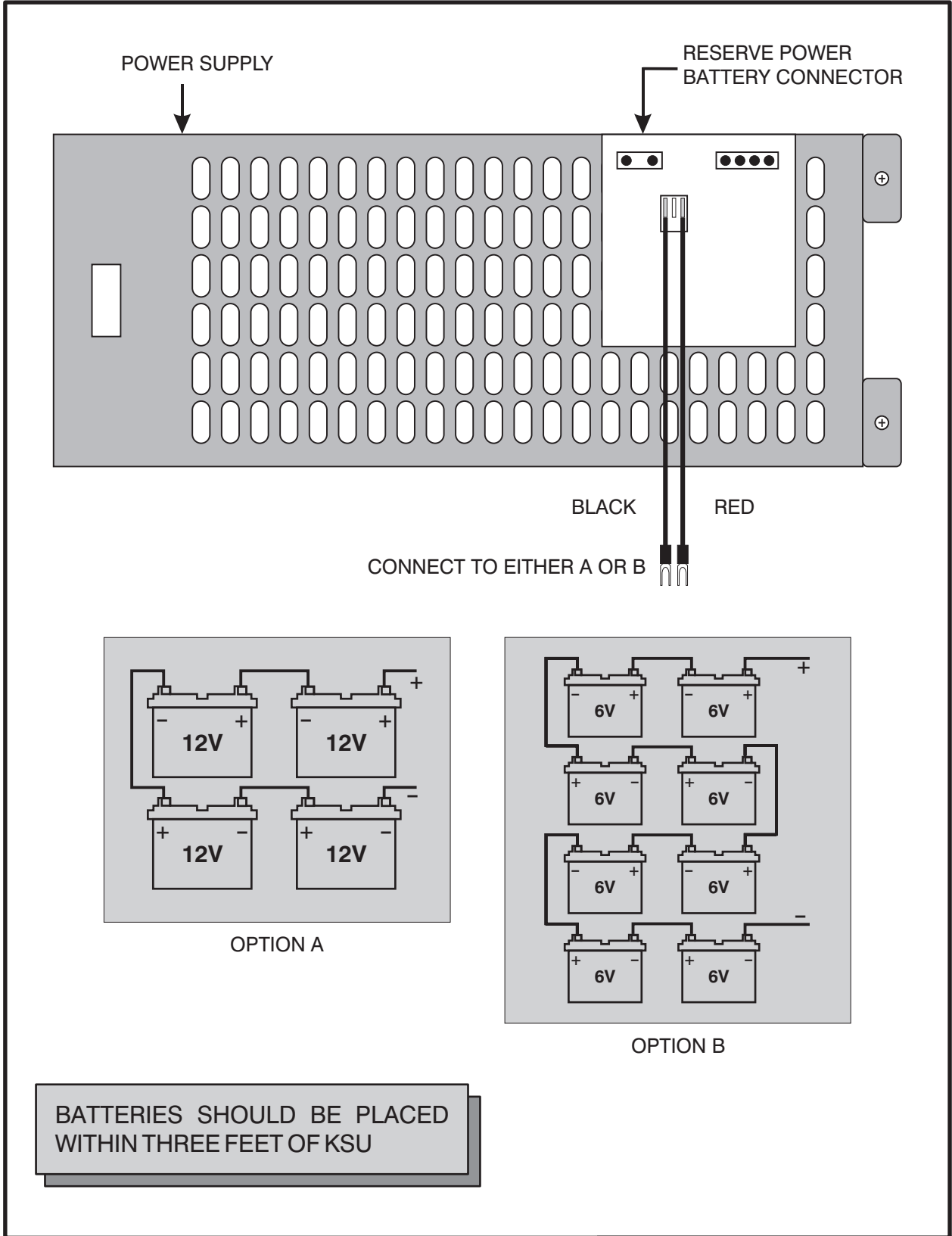
BOTTOM VIEW  
KSU GND LUG

**FIGURE 2-5**



CONNECTOR DESIGNATOR

**FIGURE 2-6**



RESERVE POWER BATTERY  
CONNECTIONS

**FIGURE 2-7**

## PART 3. INSTALLING PRINTED CIRCUIT CARDS

Unpack and inspect each card before installing. Check for signs of physical damage. If any damage is detected, do not attempt to install. Contact Samsung Technical Support immediately.

The table below indicates the available data channels for the associated card slot.

OfficeServ 100 TIME SLOT ASSIGNMENT							
KSU with Expansion A Cabinet							
				Expansion A Slot 1—4			
Slot	Universal Slot 1	Universal Slot 2	Universal Slot 3	Exp-A Slot 1	Exp-A Slot 2	Exp-A Slot 3	Exp-A Slot 4
Channel	16	16	16	8	8	16	32
T1/PRI	NO	NO	NO	NO	NO	NO	YES
SVMi-8E SVMi-16E	NO	NO	NO	NO	NO	NO	YES
SVMi-4E	YES	YES	YES	YES	YES	YES	NO
KSU with Expansion B Cabinet							
				Expansion B Slot 1—4			
Slot	Universal Slot 1	Universal Slot 2	Universal Slot 3	Exp-B Slot 1	Exp-B Slot 2	Exp-B Slot 3	Exp-B Slot 4
Channel	16	16	16	8	8	16	32
T1/PRI	NO	NO	NO	NO	NO	NO	YES
SVMi-8E SVMi-16E	NO	NO	NO	NO	NO	YES	YES
SVMi-4E	YES	YES	YES	YES	YES	NO	NO

### 3.1 iDCS SMCP1 ([Figure 3–2](#))

Make sure that the BACK UP switch is in the OFF position. Insert the SMCP1 card into the KSU dedicated slot labeled MEM ([see Figure 3–1](#)). Push firmly in the middle of both card ejectors on the SMCP1 card to ensure that it is fully inserted into the connector on the motherboard.

The KSU motherboard is the same board for iDCS 100 Release 1 and the OfficeServ 100 systems. There is no change to the KSU. The SMCP1 card replaces the MEM3/MEM4 card and uses the same physical MEM slot.

To prevent accidental damage to the SMCP1 card, the MEM connector on the motherboard is positioned to mate only with the SMCP1 card. Other interface cards will not mate with this connector and the SMCP1 card will not mate with any other connector.

## 3.2 MEDIA GATEWAY INTERFACE 3 (SMGI3)

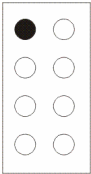
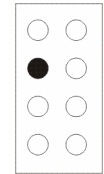
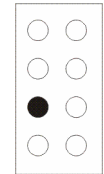
### (Figure 3–3a and Figure 3–3b)

This card is used for VoIP applications. It has 8 channels on the base card, it can be expanded to 16 by installing the 8 channel MGI3D daughterboard onto this card. There are (8) LEDs on the front edge to indicate the status of the card. [See Figure 3–3b.](#)

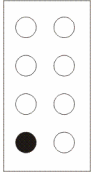
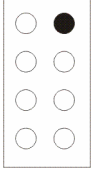
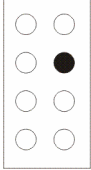
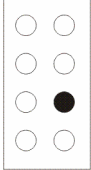
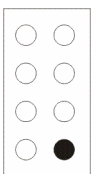
A maximum of 3 SMGI3 cards can be installed in an OfficeServ 100 system. They must be installed in universal slots 1, 2, or 3 of the KSU. The SMGI3 card **WILL NOT** work if installed in an expansion cabinet.

When additional MGI channels are required the MGI3D daughterboard can be mounted onto the SMGI3 card.

### SMGI3 LED DEFINITIONS

LED Name		Function	Status
1 PWR		Displays the power status.	<ul style="list-style-type: none"><li>• Blinking: The MGI card is operating and receiving 5.5V.</li><li>• Off: The MGI card is not normally operating or getting power.</li></ul>
2 SRV		Displays if card is in service.	<ul style="list-style-type: none"><li>• Blinking: Service is available.</li><li>• Off: Service is not available.</li></ul>
3 TX		Displays transmission of data through an Ethernet connection.	<ul style="list-style-type: none"><li>• Blinking: Data is being transmitted.</li><li>• Off: Data is not being transmitted.</li></ul>



LED Name		Function	Status
4 RX		Displays reception of data through an Ethernet connection.	<ul style="list-style-type: none"> <li>• Blinking: Data is being received.</li> <li>• Off: Data is not being received. After initialization is complete.</li> </ul>
5 RUN		Displays the operations status of the MGI card.	<ul style="list-style-type: none"> <li>• On: CPU is activated.</li> <li>• Off: MGI is not operating normally.</li> </ul>
6 IPC		Displays the IPC status between the MGI card and the system.	<ul style="list-style-type: none"> <li>• Blinking: When system is reading or writing data.</li> </ul>
7 DSP		Displays the DSP channel usage information.	<ul style="list-style-type: none"> <li>• Blinking: When DSP channels are used.</li> </ul>
8 MOD		Displays the operation status of the MGI card.	<ul style="list-style-type: none"> <li>• Off: The card has booted and is operating normally.</li> <li>• On: When MGI received RTP data.</li> </ul>

## MGI3 LED INDICATION AFTER BOOTING:

Normal operation: TX and RX will light green only if MGI is connected to a working TCP/IP network.

PWR	1	ON	ON DIM	5	RUN
SRV	2	BLINKING	OFF	6	IPC
TX	3	ON	OFF	7	DSP
RX	4	ON	OFF	8	MOD

### **3.3 2 SLI CARD [\(Figure 3–4\)](#)**

This card has no selectable options. Insert the 2 SLI card into the appropriate slot ([see Figure 3–1](#)). Push firmly in the middle of both card ejectors to ensure that it is fully inserted into the back plane connector.

### **3.4 SMISC3 CARD [\(Figure 3–5\)](#)**

There are no options to select on this card. Insert the SMISC3 card into the appropriate slot ([see Figure 3–1](#)). Push firmly in the middle of both card ejectors to ensure that it is fully inserted into the back plane connector.

NOTE: Only one SMISC3/4 card can be installed in a system.

Install the MODEM card (same one used on OfficeServ 500 system), if required, onto the SMISC card before installing the SMISC card.

### **3.5 SMISC4 CARD [\(Figure 3–5\)](#)**

This card has all the functionality of the SMISC3 plus Auto Attendant capabilities. The Auto Attendant Message Memory backup switch should be turned ON to protect the customer-recorded messages in the event of a power failure. This can be done before or after the card is installed, as the switch is easily accessible. Insert the SMISC4 card into the appropriate slot ([see Figure 3–1](#)). Push firmly in the middle of both card ejectors to ensure that it is fully inserted into the back plane connector.

NOTE: Only one SMISC3/4 card can be installed in a system.

Install the MODEM card, if required, onto the SMISC card before installing the SMISC card.

### **3.6 2 X 4 DLI CARD [\(Figure 3–6\)](#)**

This is the same card as used on the DCS Compact. There are no options to select on this card. Insert the 2 X 4 DLI card into any universal slot in the KSU or expansion cabinet ([see Figure 3–1](#)). Push firmly in the middle of both card ejectors on each card to ensure that it is fully inserted into the back plane connector.

### **3.7 S8DLI CARD [\(Figure 3–6\)](#)**

There are no options to select on this card. Insert the S8DLI card into any universal slot in the KSU or expansion cabinet ([see Figure 3–1](#)). Push firmly in the middle of both card ejectors on each card to ensure that it is fully inserted into the back plane connector.

### 3.8 2 X 4 SLI CARD [\(Figure 3-7\)](#)

This is the same card as used on the DCS Compact. There are no options to select on this card. Insert the 2 X 4 SLI card into any universal slot in the KSU or expansion cabinet [\(see Figure 3-1\)](#). Push firmly in the middle of both card ejectors on each card to ensure that it is fully inserted into the back plane connector.

### 3.9 S8SLI CARD [\(Figure 3-7\)](#)

There are no options to select on this card. Insert the S8SLI card into any universal slot in the KSU or expansion cabinet [\(see Figure 3-1\)](#). Push firmly in the middle of both card ejectors on each card to ensure that it is fully inserted into the back plane connector.

### 3.10 S3TRK CARD [\(Figure 3-8\)](#)

There are no options to select on this card. Insert the S3TRK card into any universal slot in the KSU or expansion cabinet [\(see Figure 3-1\)](#). Push firmly in the middle of both card ejectors on each card to ensure that it is fully inserted into the back plane connector.

### 3.11 S6TRK CARD [\(Figure 3-8\)](#)

There are no options to select on this card. Insert the S6TRK card into any universal slot in the KSU or expansion cabinet [\(see Figure 3-1\)](#). Push firmly in the middle of both card ejectors on each card to ensure that it is fully inserted into the back plane connector.

### 3.12 2 E&M 4 DLI CARD [\(Figure 3-9\)](#)

This is the same card as used on the DCS Compact. The E&M trunk circuits on this card can be set to provide either Type 1 or type 5 operation. Type 1 operation is used when connecting to Telco circuits and type 5 is used when connecting “back to back” across a private cable. Set the jumpers located between the two relays [\(see Figure 3-9\)](#) according to the table below. Both of the jumpers for each circuit must be set to the same type for correct operation.

CIRCUIT	JUMPER	POSITION	TYPE
1	J1	T1	TYPE 1
1	J1	T5	TYPE 5
1	J2	T1	TYPE 1
1	J2	T5	TYPE 5

CIRCUIT	JUMPER	POSITION	TYPE
2	J3	T1	TYPE 1
2	J3	T5	TYPE 5
2	J4	T1	TYPE 1
2	J4	T5	TYPE 5

**WARNING:** Turn the system off and remove the card from the system before attempting to change jumper settings. 48 volts is present on the jumpers at all times the system is turned on.

NOTE: When set to TYPE 1 the E&M Tie line circuits on this card are USOC TYPE TL11M.

Insert the 2 E&M X 4 DLI card into any universal slot in the KSU or expansion cabinet ([see Figure 3-1](#)). Push firmly in the middle of both card ejectors on each card to ensure that it is fully inserted into the back plane connector

### 3.13 S4BRI CARD ([Figure 3-10](#))

The S4BRI card is equipped with dip switch controlled line termination resistors. If a BRI circuit is to be used as a Trunk circuit these switches must be in the OFF position. If a circuit is to be used as a station then the dip switches for that circuit must be in the ON position.

CIRCUIT	DIP SWITCH
1	SW 1
2	SW 2
3	SW 3
4	SW 4

NOTE: In order for BRI circuits to operate the system must have an SPLL board installed in the KSU.

## 3.14 iDCS TEPRI/TEPRIa CARD [\(Figure 3-11\)](#)

### Removing the Cover

Before the iDCS TEPRI/TEPRIa card can be installed in the OfficeServ 100 the card module must first be disassembled to allow the card to fit the slot. To disassemble the iDCS TEPRI/TEPRIa card, first remove the ejector tabs by pulling them outward until they snap off. Next, to separate the two halves of the casing, remove the four screws and pull the two halves apart. This releases the iDCS TEPRI/TEPRIa card PCB.

### Installing the Card

The OfficeServ 100 system must be equipped with an expansion cabinet (Type-A or Type-B), and only one iDCS TEPRI/TEPRIa card may be installed in the system. The iDCS TEPRI/TEPRIa supports either T1 or ISDN PRI service. 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. 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. Push firmly in the middle of the card to ensure that it is fully inserted into the back plane connector.

Notes:        A Rev. 04 or later TEPRI/TEPRIa card must be used.  
                 Do not insert card with system power ON.  
                 In order for the TEPRI/TEPRIa circuits to operate the system must have a  
                 SPLL board installed in the KSU.

### iDCS TEPRI/TEPRIa 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	Switch 6 must be <b>OFF</b>	
7	Switch 7 must be <b>OFF</b>	
8	Switch 8 must be <b>ON</b>	

## iDCS TEPRI/TEPRIa LED DEFINITIONS

LED Name	Function	Status	
		Normal Status	Error Status
SYN	Synchronization Loss. Indicates wander or loss of framing.	OFF	ON
LOS	Loss of Signal. No PCM Clocking is being received.	OFF	ON
AIS	Alarm Indicating Signal. Indicating that all one's are being received.	OFF	ON
L2	Layer 2 is active. PRI messaging is being received.	OFF	ON
IPC	IPC link set up.	OFF / IPC link set up	
CLK	Card clock status.	OFF=Not Primary Source ON=Card is Primary Source.	
MODE	LED's TP1 & TP2 show the span type	TP1	TP2
	E1 mode	OFF	OFF
	E1 PRI mode	OFF	ON
	T1 mode	ON	OFF
	T1 PRI mode	ON	ON

### 3.15 SPLL DAUGHTER BOARD [\(Figure 3-12\)](#)

There are no options to select on this card. Insert the SPLL daughter board onto its connectors in the bottom left hand corner of the KSU motherboard ([see Figure 3-13](#)). Push firmly in the middle of both the connectors to ensure that it is fully inserted into the back plane connector.

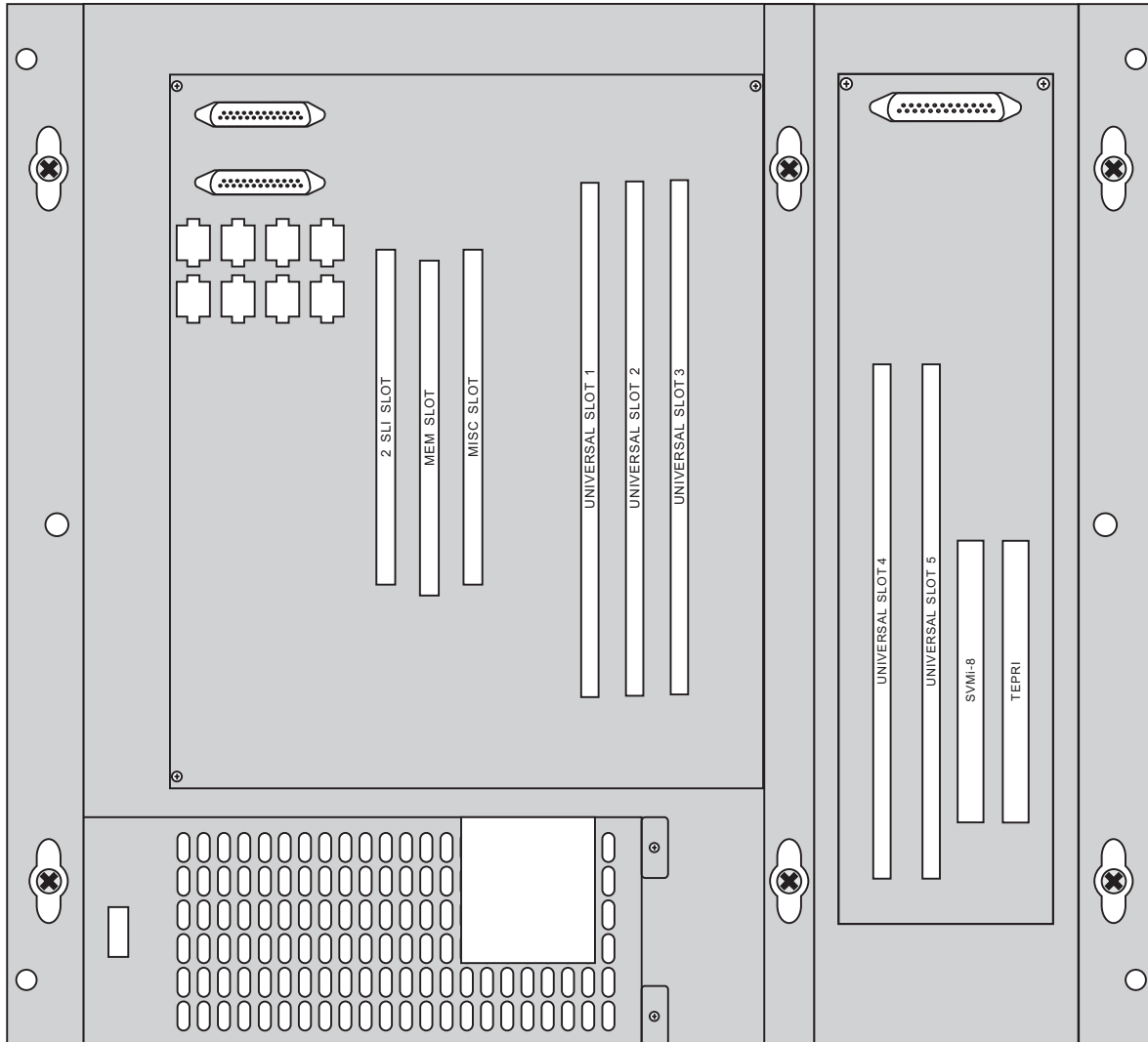
### 3.16 MODEM CARD [\(Figure 3-14\)](#)

This is the same Modem Card used in the OfficeServ 500 system. There are no options to select on this card. Install the modem card onto its connectors on the SMISC3/4 card ([see Figure 3-15](#)). Press firmly on both corners above the connectors to ensure that it is fully inserted on to the SMISC3/4 connectors. Now connect the three conductor jumper cable between the SMISC3/4 card and the SMCP1 card as show in [Figure 3-14](#). The default extension number assigned to this internal modem is **359**.

### **3.17 s4WLI [\(Figure 3–16\)](#)**

The s4WLI card is installed in slot 1, 2 or 3 of the main cabinet. Only one s4WLI can be installed in an OfficeServ 100 system and it counts as 16 stations of the power supply rating. Check that the cabinet power supply switch is in the OFF position. Next, position the s4WLI 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 top and bottom of the front edge of the card until the card sits in its connector. Ensure you have installed the correct power supply.

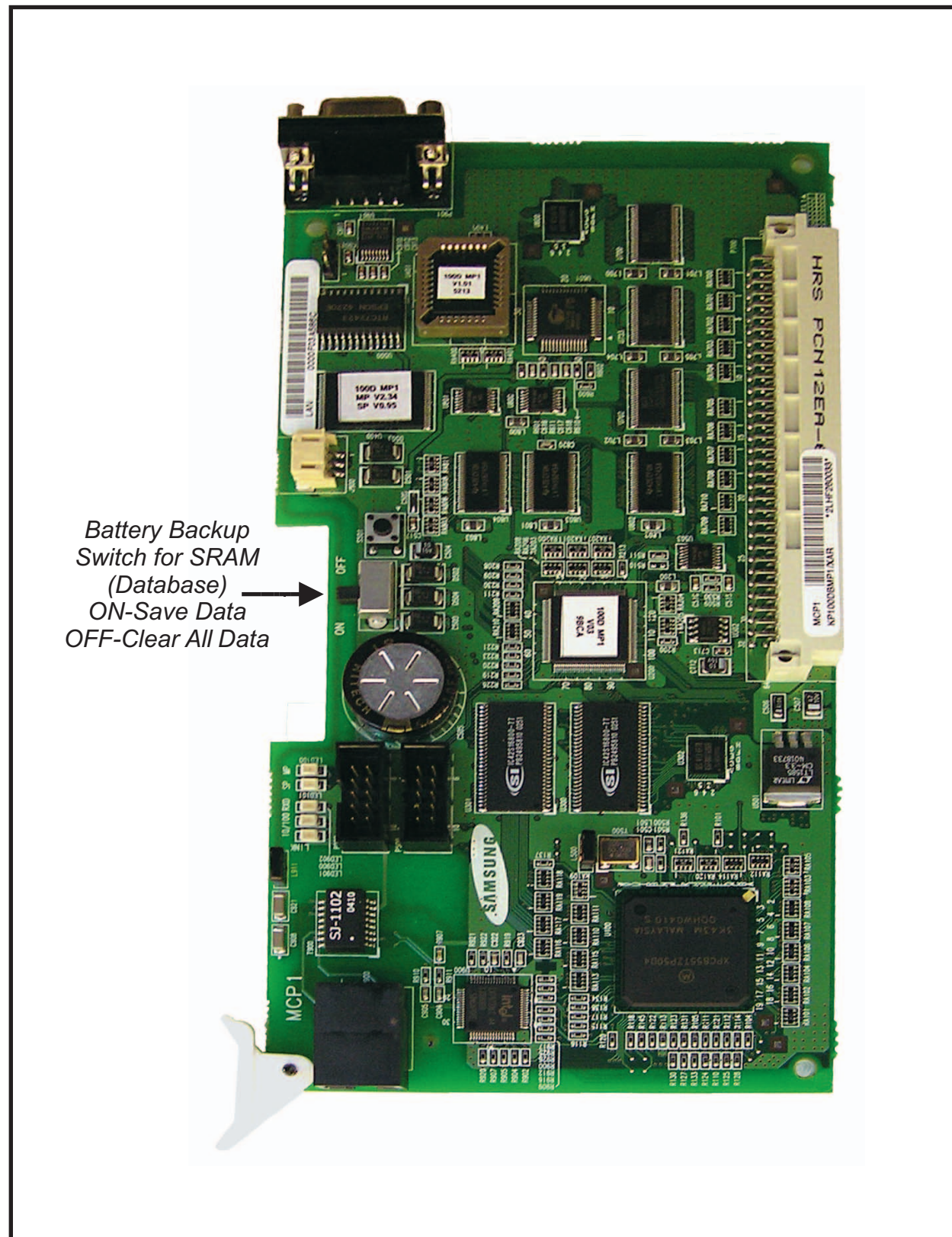
NOTE: Do not install more than one s4WLI card in the OfficeServ 100 system.



KSU AND EXPANSION  
CABINET SLOT POSITIONS

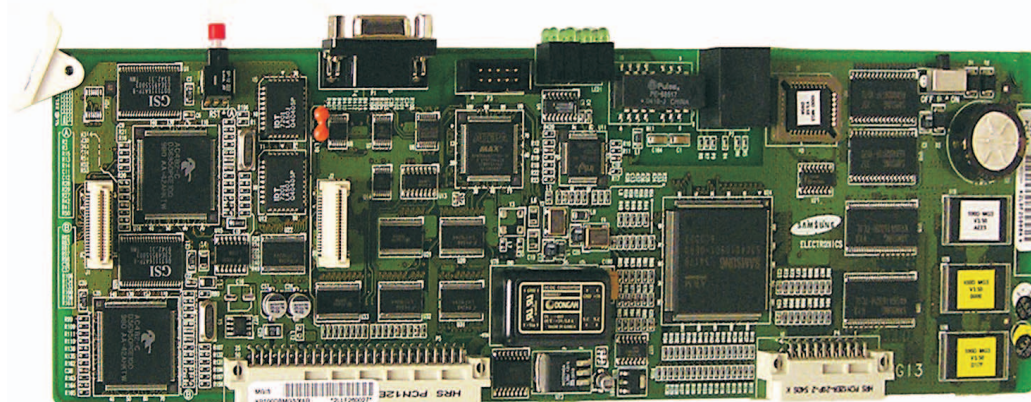
**FIGURE 3-1**



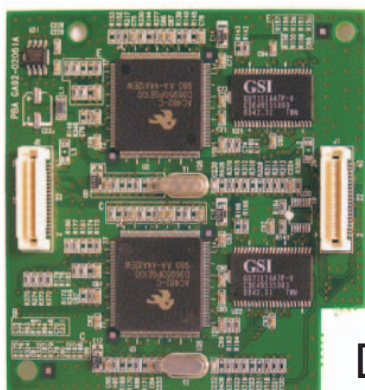


iDCS SMCP1 CARD

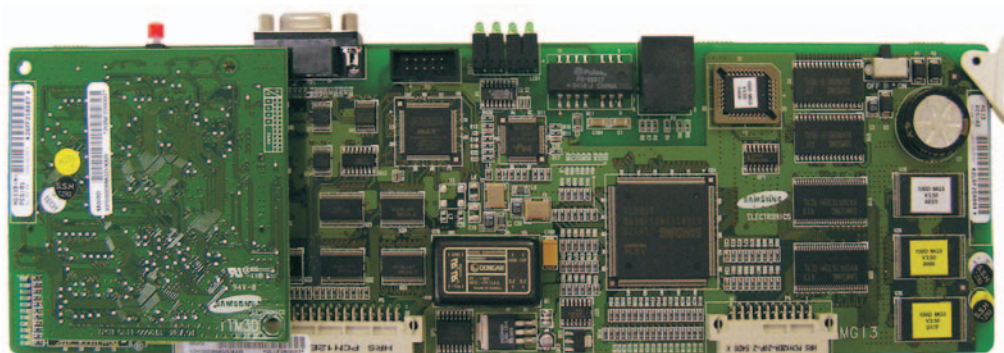
**FIGURE 3-2**



SMGI3 CARD



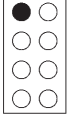
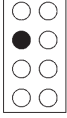
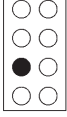
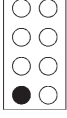
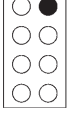
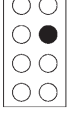
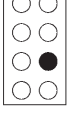
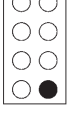
SMGI3  
DAUGHTERBOARD



SMGI3 CARD with DAUGHTERBOARD

SMGI3 and MGI3D

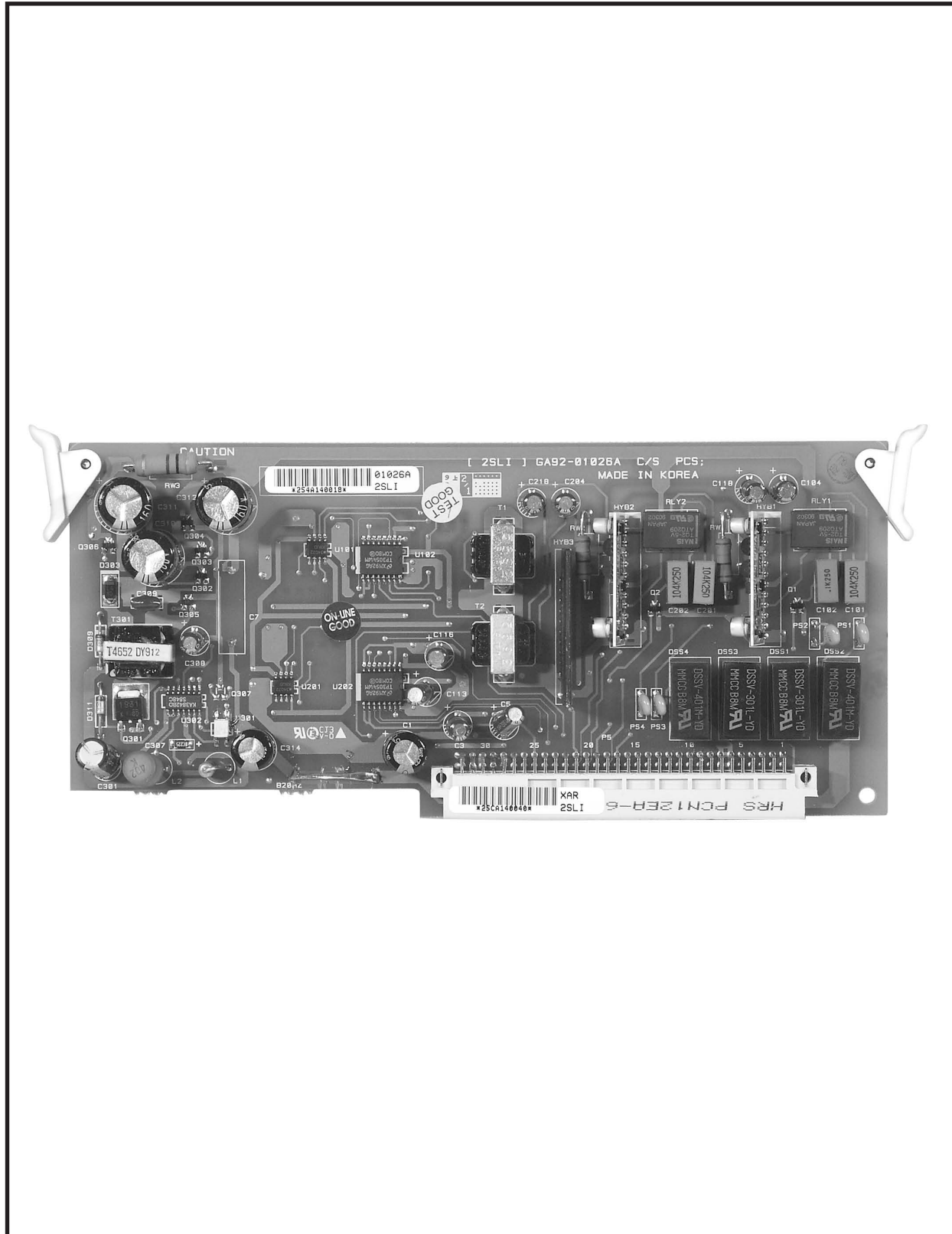
**FIGURE 3–3a**

LED Name		Function	Status
1 PWR		Displays the power status.	<b>Blinking:</b> The MGI card is operating and receiving 5.5V. <b>Off:</b> The MGI card is not normally operating or getting power.
2 SRV		Displays if card is in service.	<b>Blinking:</b> Service is available. <b>Off:</b> Service is not available.
3 TX		Displays transmission of data through an Ethernet connection.	<b>Blinking:</b> Data is being transmitted. <b>Off:</b> Data is not being transmitted.
4 RX		Displays reception of data through an Ethernet connection.	<b>Blinking:</b> Data is being received. <b>Off:</b> Data is not being received. After initialization is complete.
5 RUN		Displays the operation status of the MGI card.	<b>On:</b> CPU is activated. <b>Off:</b> MGI is not operating normally.
6 IPC		Displays the IPC status between the MGI card and the system.	<b>Blinking:</b> When system is reading or writing data.
7 DSP		Displays the DSP channel usage information.	<b>Blinking:</b> When DSP channels are used.
8 MOD		Displays the operation status of the MGI card.	<b>Off:</b> The card has booted and is operating normally. <b>On:</b> When MGI received RTP data.

SMGI3 LEDs

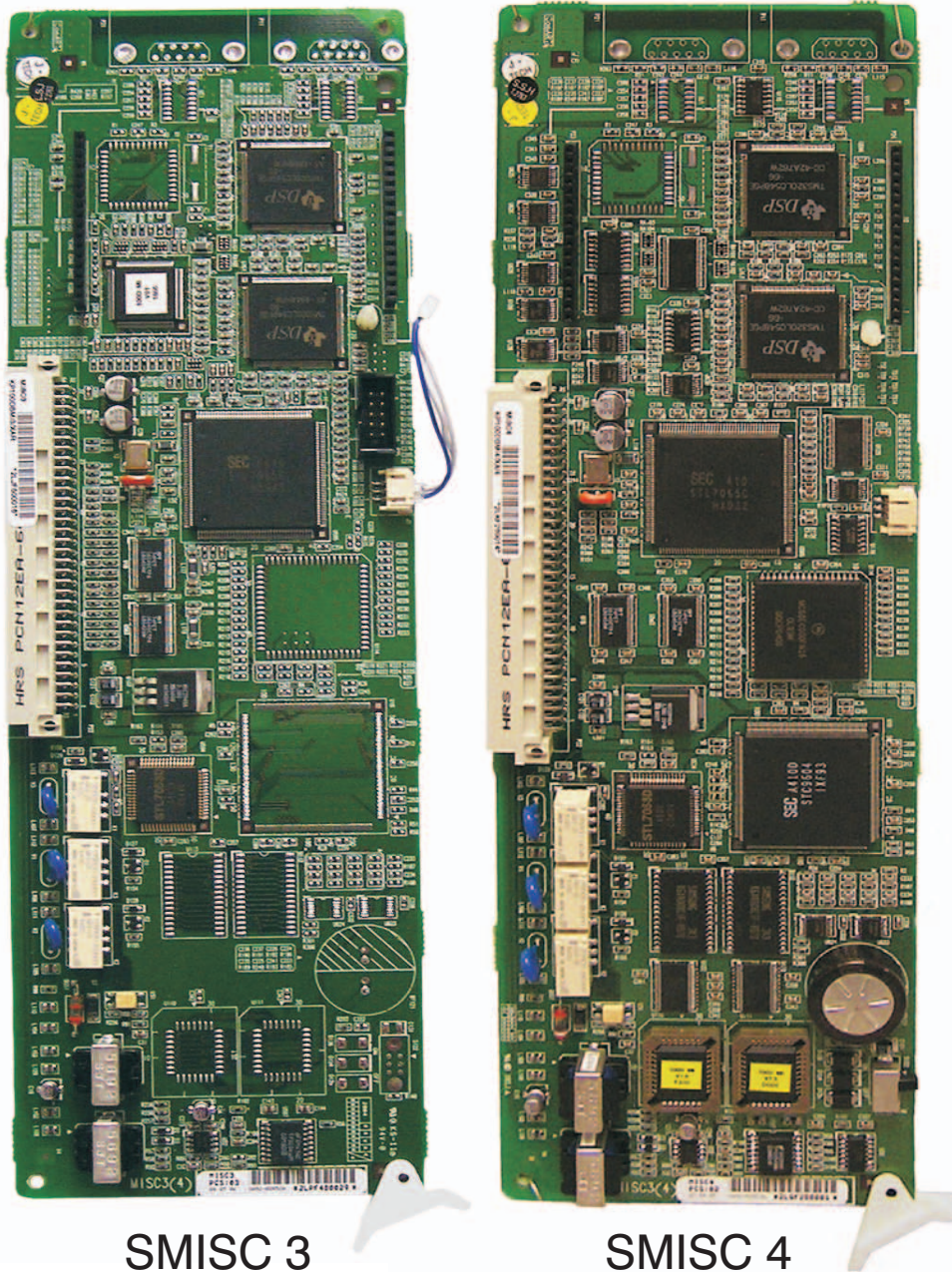
**FIGURE 3–3b**





2 SLI CARD

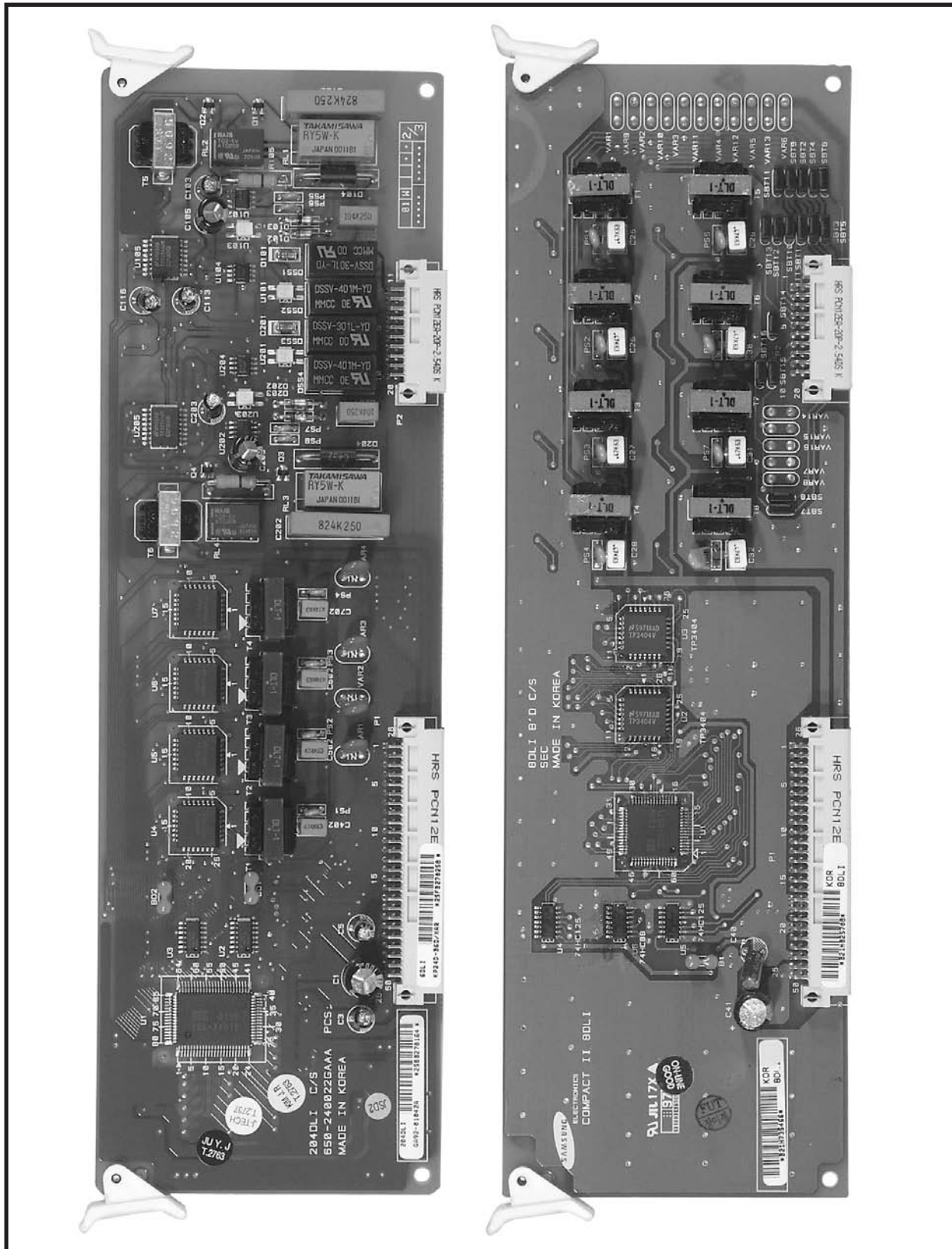
**FIGURE 3-4**



SMISC 3 AND 4 CARDS

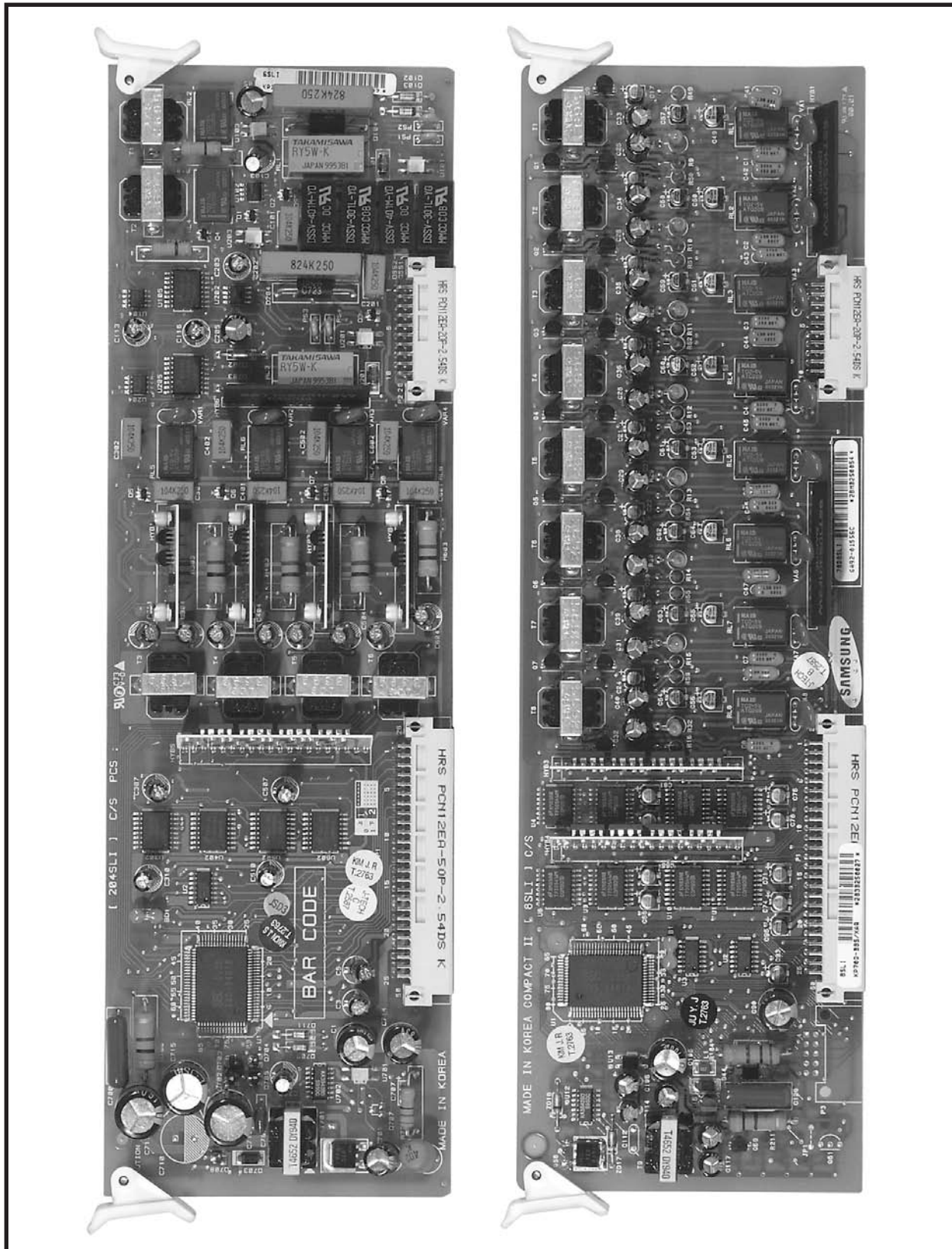
**FIGURE 3-5**





2 X 4 DLI CARD AND S8DLI CARD

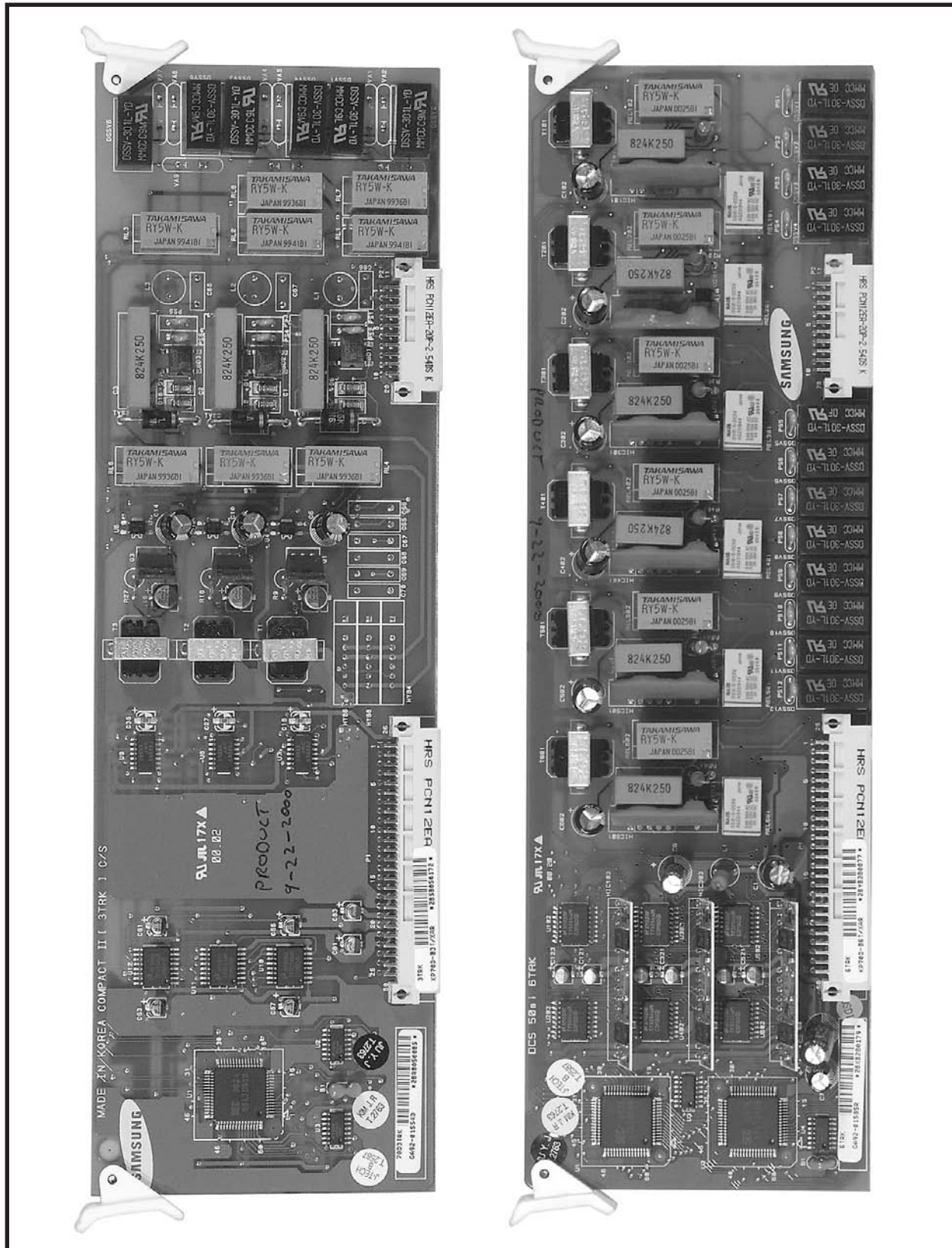
**FIGURE 3-6**



2 X 4 SLI CARD AND S8SLI CARD

**FIGURE 3-7**

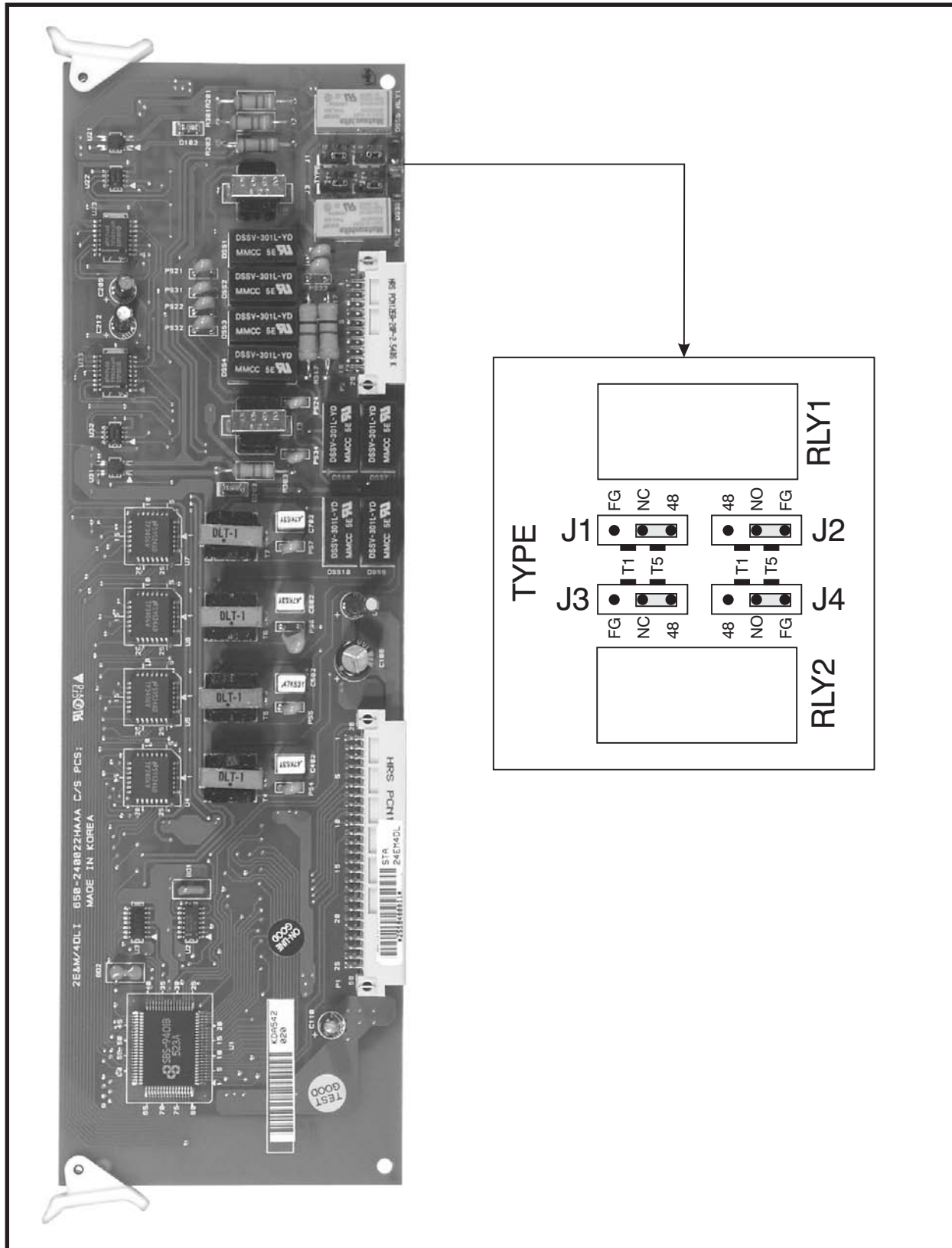




S3TRK CARD AND S6TRK CARD

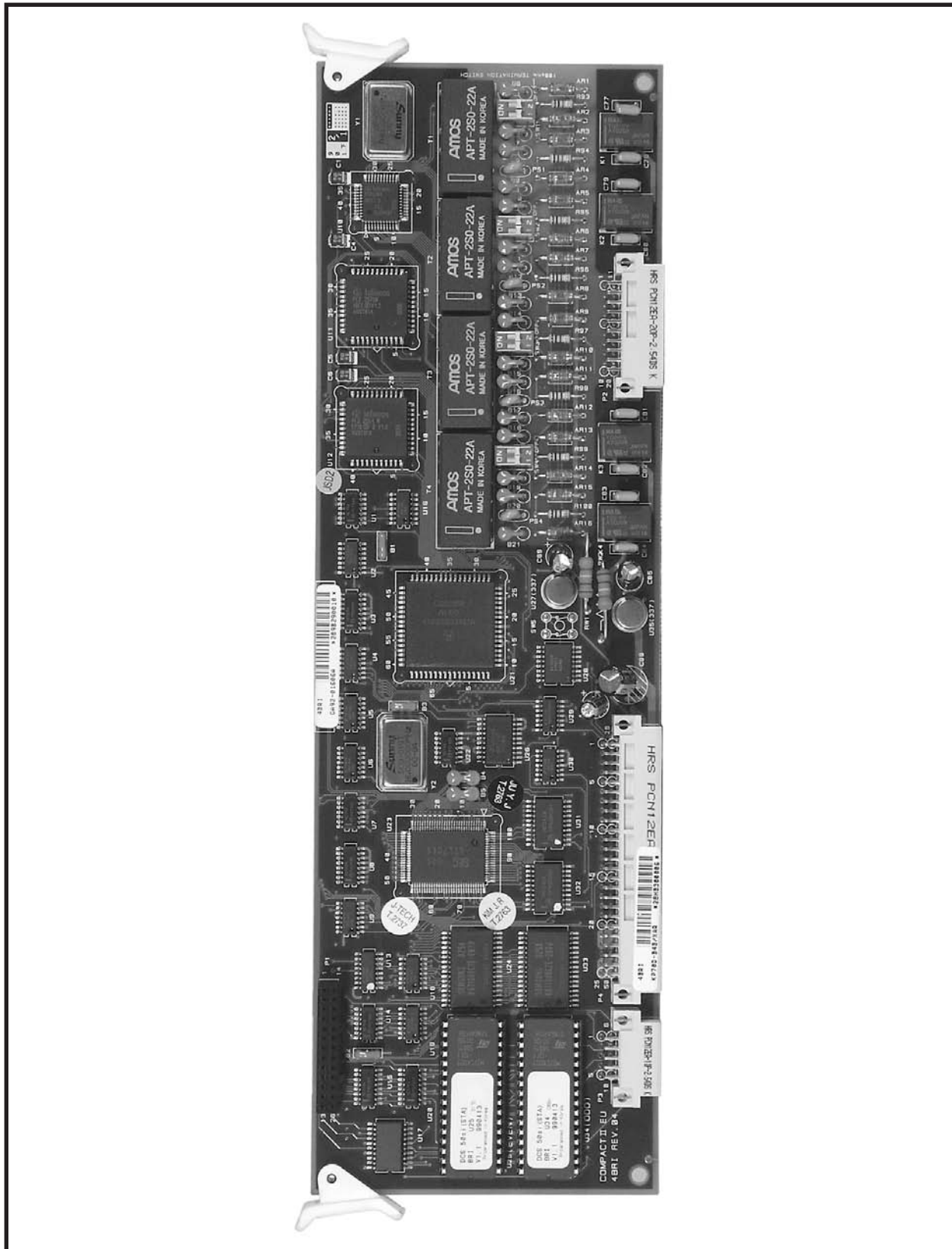
**FIGURE 3-8**





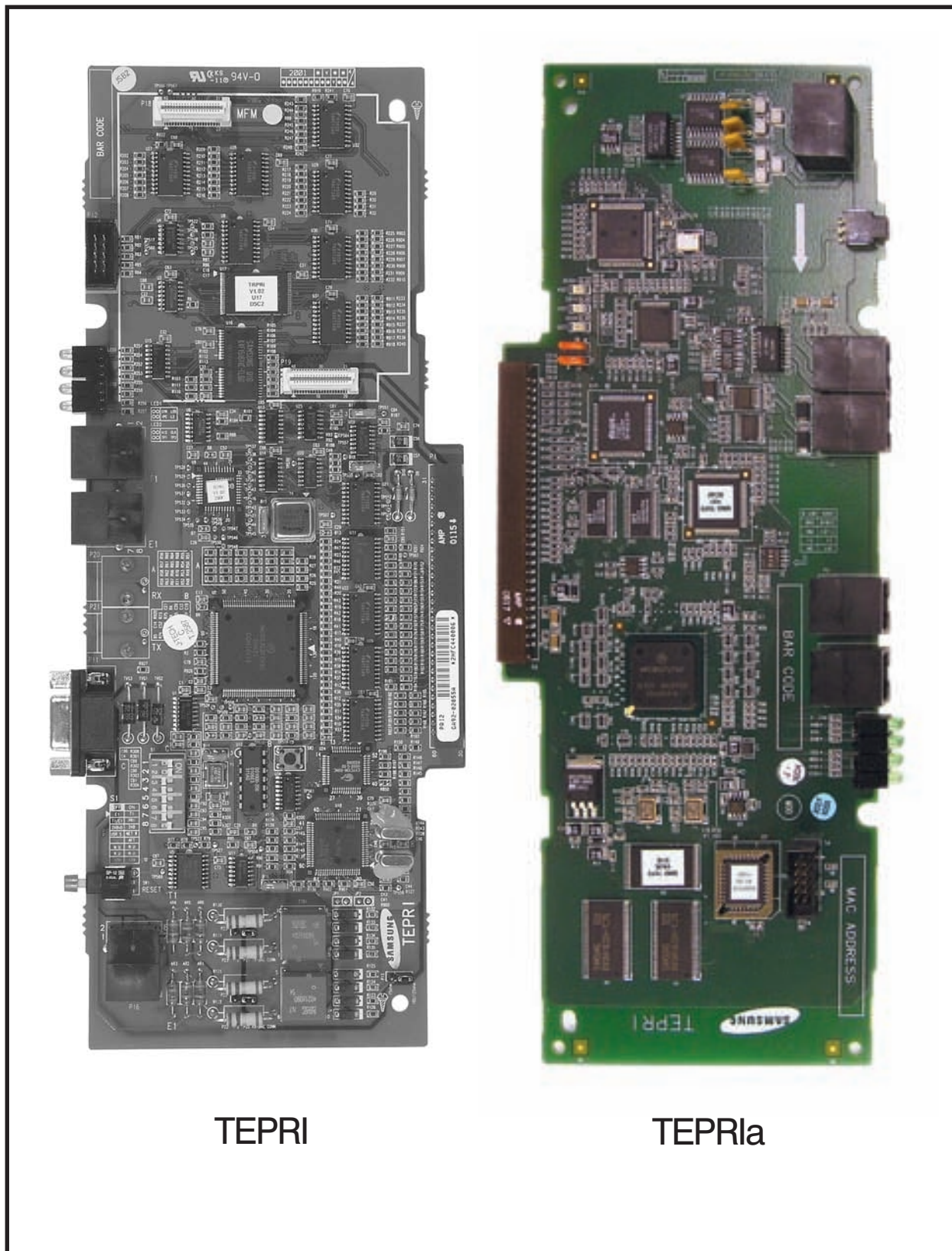
2 E&M / 4 DLI CARD

**FIGURE 3-9**



S4BRI CARD

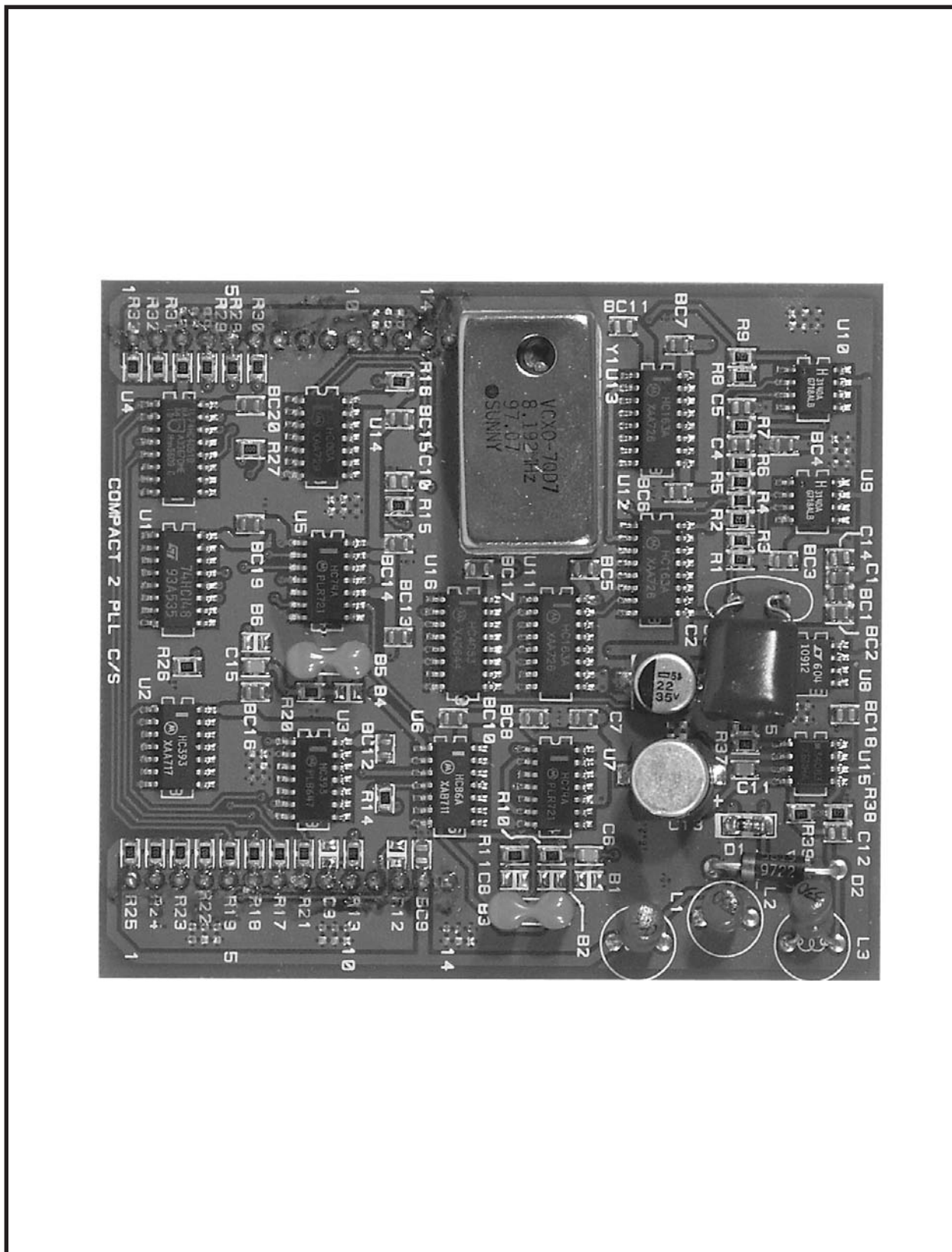
**FIGURE 3-10**



iDCS TEPRI/TEPRIa CARD

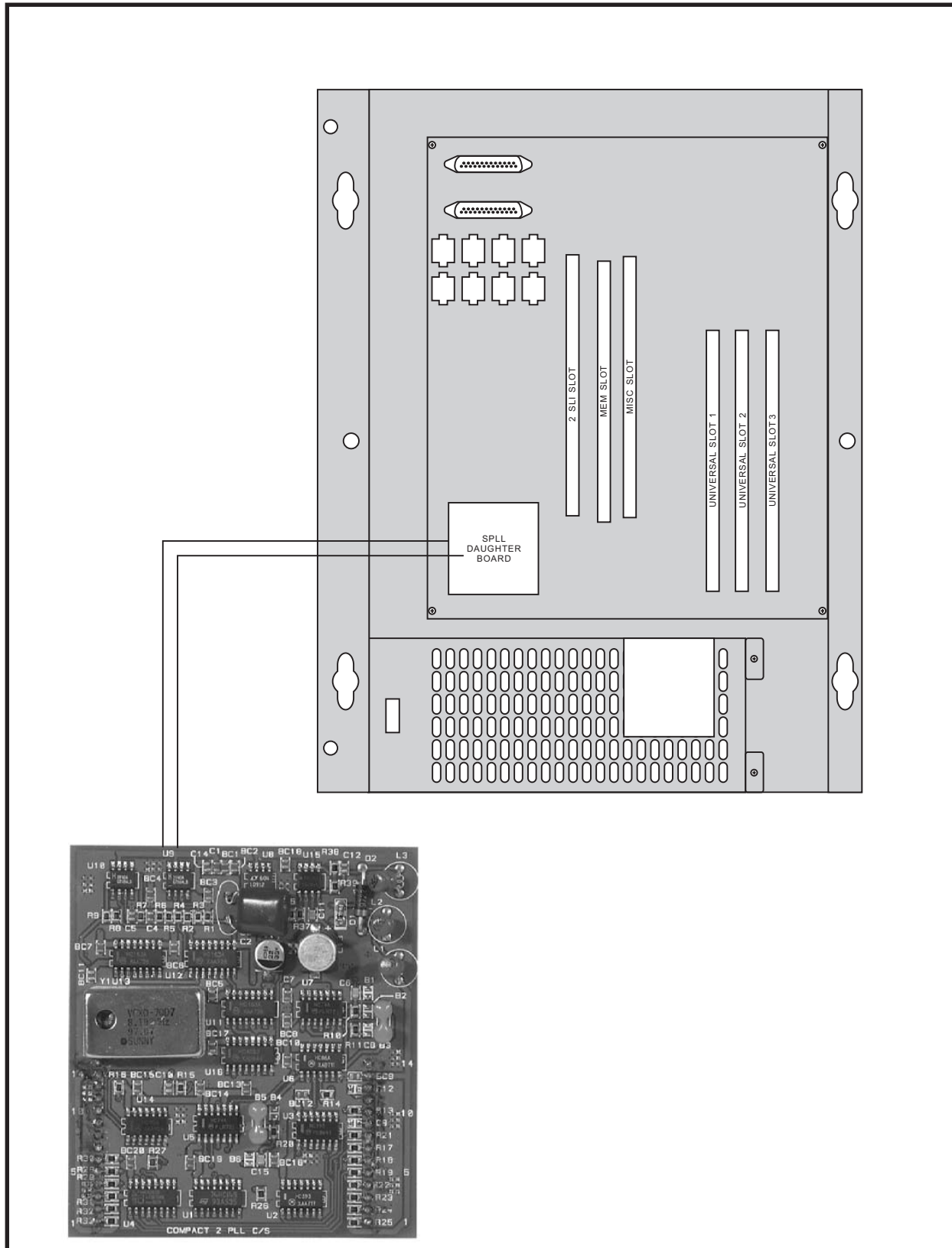
**FIGURE 3-11**





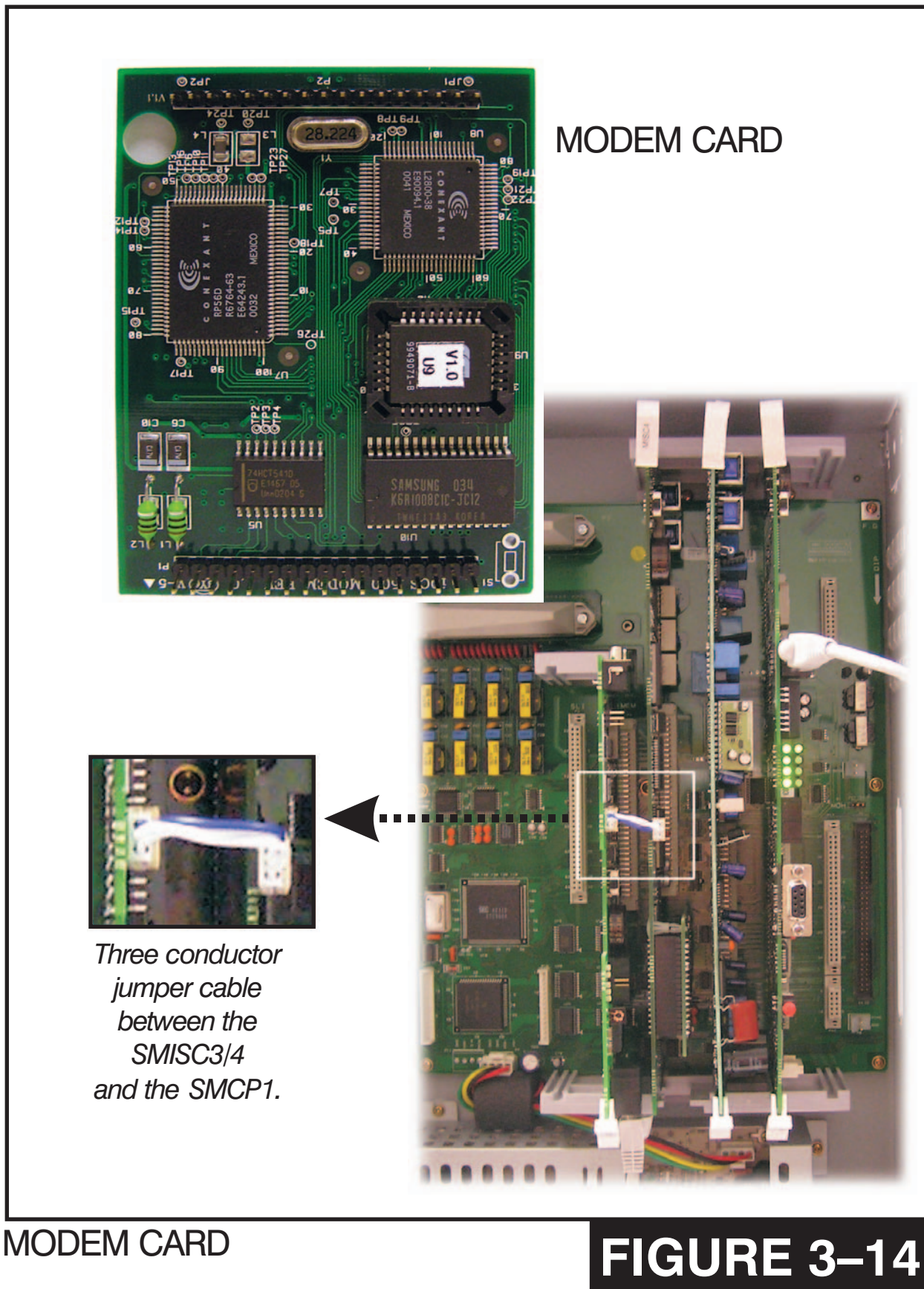
SPLL DAUGHTER BOARD

**FIGURE 3-12**

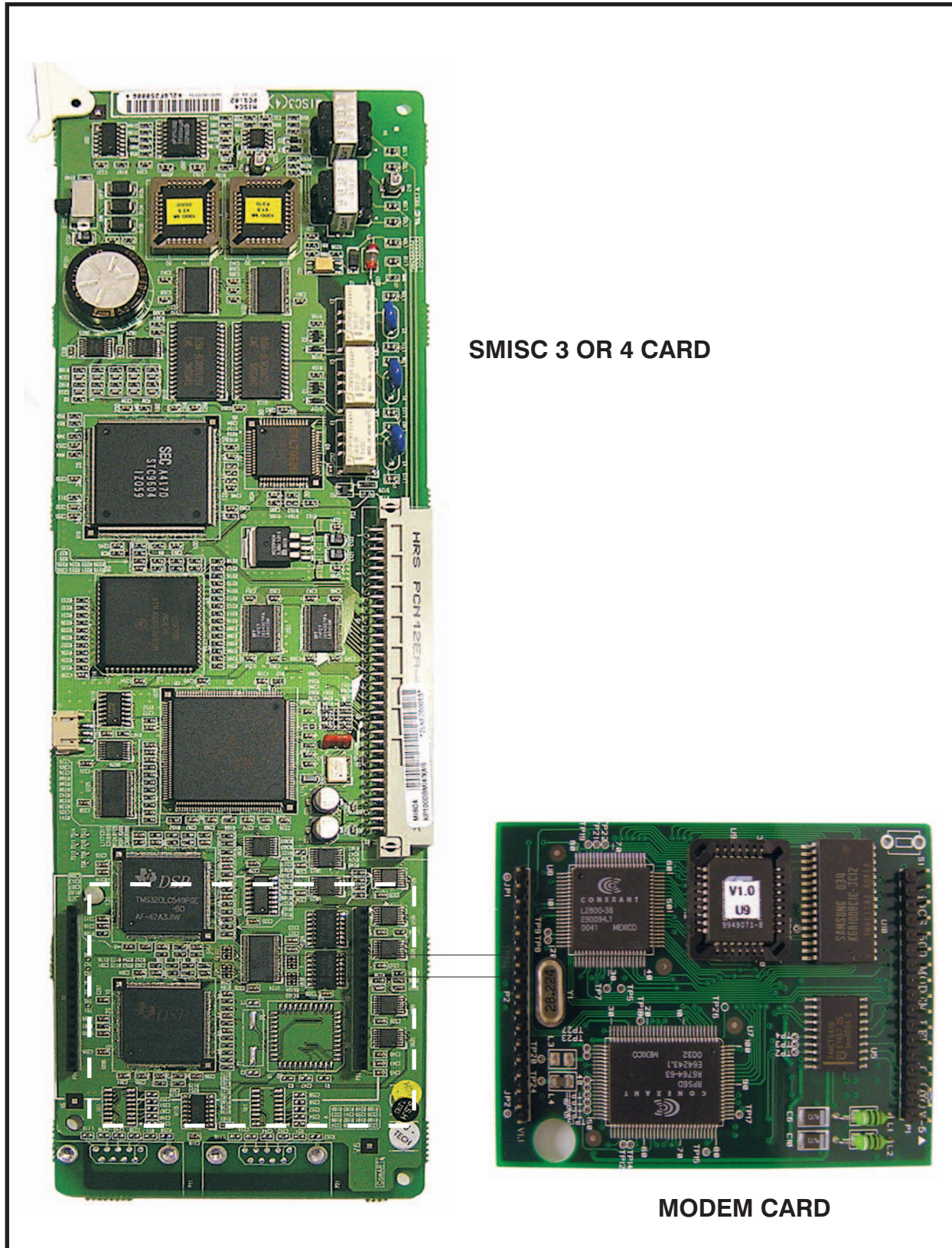


SPLL INSTALLATION ON  
KSU MOTHERBOARD

**FIGURE 3-13**







MODEM CARD INSTALLATION ON  
SMISC CARD

**FIGURE 3-15**



S4WLI CARD

**FIGURE 3–16**



## PART 4. POWER UP PROCEDURES

### 4.1 CONNECT POWER TO THE SYSTEM

Verify that the AC voltage at the dedicated electrical outlet is in the range of 82–132 Volts AC. Make sure the AC power switch on the system power supply is in the OFF position and that the SMCP1 card battery switch is also in the OFF position.

**To ensure that all data is cleared from the Battery Backup SRAM, set switch to OFF position for at least 60 seconds. Then set it to the ON position to save database.**

Plug the KSU power cord into the dedicated polarized AC outlet. Turn the AC power switch to the ON position. The LED's on the power supply will light steady to confirm the presence of power. If both PSU LEDs fail to illuminate, unplug the system, remove the power supply cover and check the AC fuses located on the left-hand side of the face of the PSU.

If the AC fuses are good but the AC LED does not illuminate, unplug the KSU and change power supplies. This in all probability will solve the problem. If it does not, contact Samsung Technical Support.

If the AC LED is illuminated but the DC LED is out you must correct the problem before continuing. Turn off the power switch and check the DC fuses located in the opening of the face of the PSU. If the DC fuses are good but the DC LED does not illuminate, unplug the PSU from the motherboard. Turn the system on. Check the LEDs again. If the problem is corrected, you have a defective KSU motherboard or card. Test and remove the faulty card before continuing. If this does not correct the problem, unplug the KSU and change power supplies. This in all probability will solve the problem. If it does not, contact Samsung Technical Support.

### 4.2 iDCS SMCP1 CARD INDICATIONS

Having verified proper operation of the power supply, visually check the iDCS SMCP1 card indications. The LED should flicker rapidly indicating the main processor is functioning. The battery switch should now be turned ON.

There are 5 LEDs on the front of the SMCP1 card. The top 2 LEDs, MP and SP should be flashing rapidly, the third one down will occasionally flash, and the bottom two will be ON solid to indicate normal operation and that the system has fully booted up.

Once the MCP1 has finished successfully booting up from default, go to KMMC programming on a keyset. After entering the technician password select country (USA). Now select "YES" when asked "ARE YOU SURE?" then the system will reboot for operation in the US.

The system is equipped with a halt program. When this program is running, the LED is ON steady. The system must be reset to release the halt program and restore the system to normal operation ([see MMC 810 for operation of the halt program](#)).

## SMCP1 LED DEFINITIONS

LINK	LAN Link Status	
	OFF	Indicates that there is no LAN connection.
	ON	Indicates that there is a LAN connection.
10/100	LAN 10 or 100 Mbps Transmit/Receive data speed Status	
	OFF	Indicates that LAN Transmit/Receive data speed is 10 Mbps.
	ON	Indicates that LAN Transmit/Receive data speed is 100 Mbps.
RXD	LAN Data Rx (Receive) Status	
	OFF	Indicates that there is no received data from the LAN connection.
	ON	Indicates that the link from the LAN interface is being setup Flicker indicates a message has been received.
MP	MP (XRC855T in the MCP1 Board) Processor Status: MP Run LED	
	OFF	Indicates that Power is OFF.
	ON	Indicates that the MP is booting. Flicker indicates normal operation.
SP	SP (68EC000 in the 008 Base Board) C#2) Processor Status: SP Run LED	
	OFF	Indicates that Power is OFF.
	ON	Indicates that the SP is booting. Flicker indicates normal operation.

## 4.3 SMGI3 and MGI3D CARD INDICATIONS

Having verified proper operation of the power supply, visually check the SMGI3 card indications [as described in Section 3.2](#).

## 4.4 PCB VERIFICATION

Before connecting all MDF cabling, plug in a test cable to the first S8DLI port. Connect a display set and verify that it is working. Use maintenance programs [MMC 727](#) and [MMC 806](#) to verify the system version, software version and that all cards are recognized by the CPU. Remove the test cable and plug in all amphenol-type cables to the MDF. Proceed with the rest of the installation.

## 4.5 DEFAULT TRUNK AND STATION NUMBERING

Upon initial power up, the CPU reads each slot for the existence of a card and identifies the type of card. It stores this as the default configuration.

The system assigns trunk numbers beginning with 701 and continues to 703 if one S3TRK card has been installed or 706 if two S3TRK cards and so on.

Station numbers are assigned in the same manner. The lowest station is assigned station number 201 and continues to 208 for a basic KSU or to 216 for system with one S8DLI. Keypad daughter boards are assigned numbers beginning with 301 and continue to 308. Default data assigns the keypad in the lowest port to the operator group and all trunks ring that station until the default is changed.

Station and trunk numbers can be changed, rearranged and reassigned, as needed using [MMC 724](#).

## PART 5. CONNECTING TELCO CIRCUITS

### 5.1 SAFETY PRECAUTIONS

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

- a. Never install telephone wiring during a lightning storm.
- b. Never install telephone jacks in a wet location unless the jack is specifically designed for wet locations.
- c. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- d. Use caution when installing or modifying telephone lines.
- h. Do not use this product near water, for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool.
- i. Do not use the telephone to report a gas leak in the vicinity of the leak.
- j. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.

### 5.2 LOOP START LINES

Using one pair twisted #24 AWG or #26 AWG jumper wire, cross-connect each loop start C.O. line to the trunk port of your choice ([see Figures 5-1, 5-2, 5-3](#)).

### 5.3 OFF PREMISE EXTENSIONS (OPX)

Using one pair twisted #24 AWG or #26 AWG jumper wire, cross-connect any 2 SLI port to telephone company OPX circuits ([see Figure 5-4](#)).

Circuits on the 2 SLI card are specifically designed to meet TELCO requirements for OPX use. These circuits are provided with the same over voltage and over current protection as C.O. line circuits. Using single line stations on a 2 X 4 SLI, S8SLI or KDb SLI may cause damage to your equipment.

There is no special programming required for OPX use; however, it is suggested that the OPX ports be set programmed as “data ring” in [MMC 208](#) to provide a disconnect signal to the OPX equipment. The telephone company service facility interface code for this type of OPX circuit is OL13C.

### 5.4 E&M TIE LINES

Using two pair twisted #24 AWG or #26 AWG jumper wire, cross-connect any E&M port to a telephone company E&M circuit ([see Figure 5-5](#)). The telephone company

service facility interface code for the E&M tie line is TL11M. This is a 2 wire Type 1 tie line.

NOTE: When connecting an E&M tie line in “back to back” fashion you must remember to reverse the E&M leads at one end ONLY i.e. connect the E lead on one system to the M lead of the other system and vice versa.

## 5.5 ISDN BRI LINES

The OfficeServ 100 requires that an NT1 be connected between the OfficeServ 100 and the BRI circuit provided by the Telephone Company. This is necessary to convert the circuit from the U type 2 wire interface provided by the Telephone Company to an S/T type 4 wire interface used by the OfficeServ 100.

Using two pair twisted #24 AWG or #26 AWG jumper wires cross-connect any S4BRI port to the output or CPE side of the NT1 ([see Figure 5-6](#)).

For information regarding the ordering and programming of a BRI circuit please see the Special Applications part of the Programming section of this manual.

## 5.6 T1 or PRI CIRCUIT

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/TEPRIa card as shown in [Figure 5-7](#).

### NOTES:

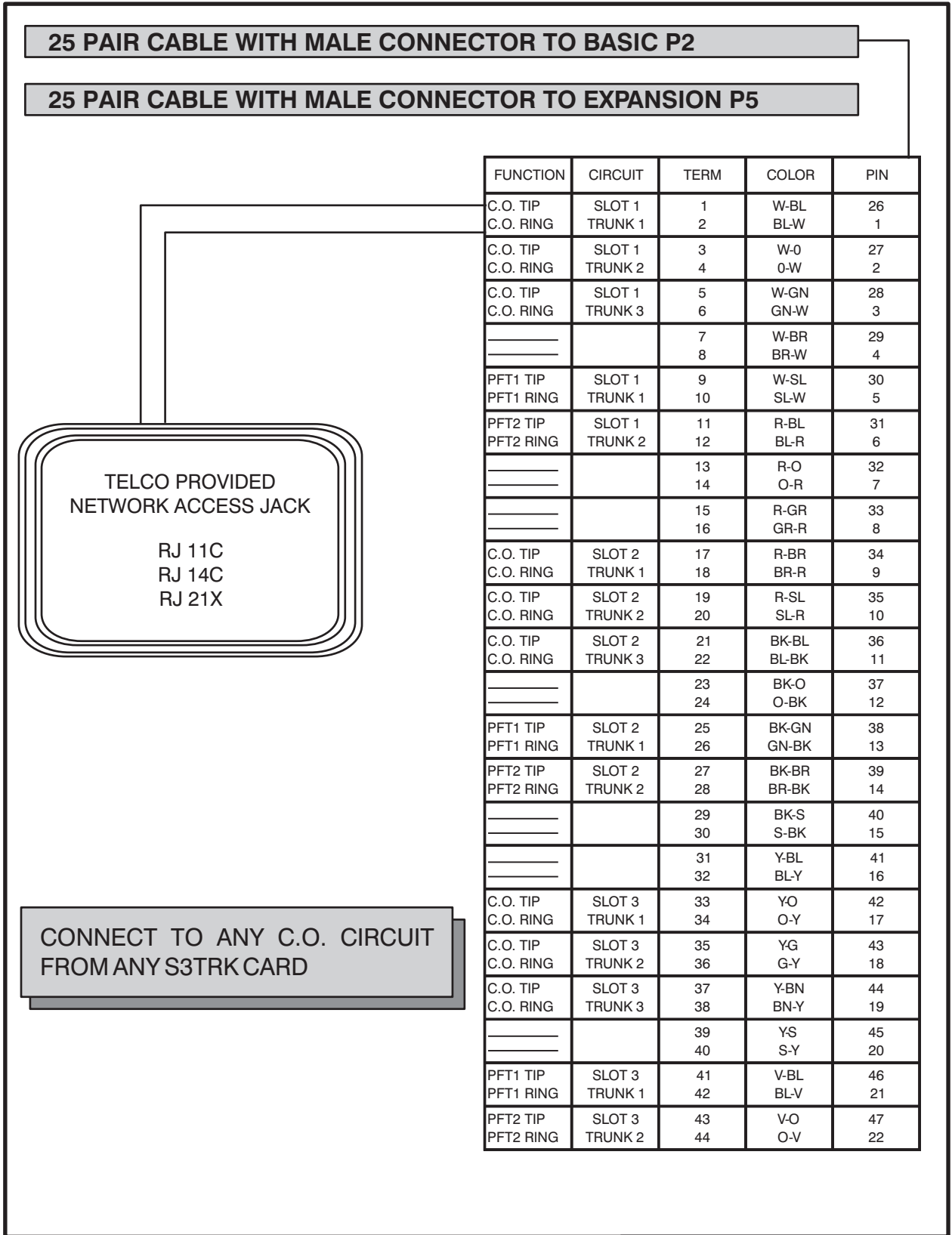
1. It may be necessary to cut off the CSU end of the cable and attach a different connector to match that of the CSU. If possible, this connection should be soldered because good connections are critical.
2. It is recommended that the CSU be connected to the network interface with a cable supplied by 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.
3. [See section 3.14 to ensure dip switch settings on the card are correct.](#)

## ORDERING A T1

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

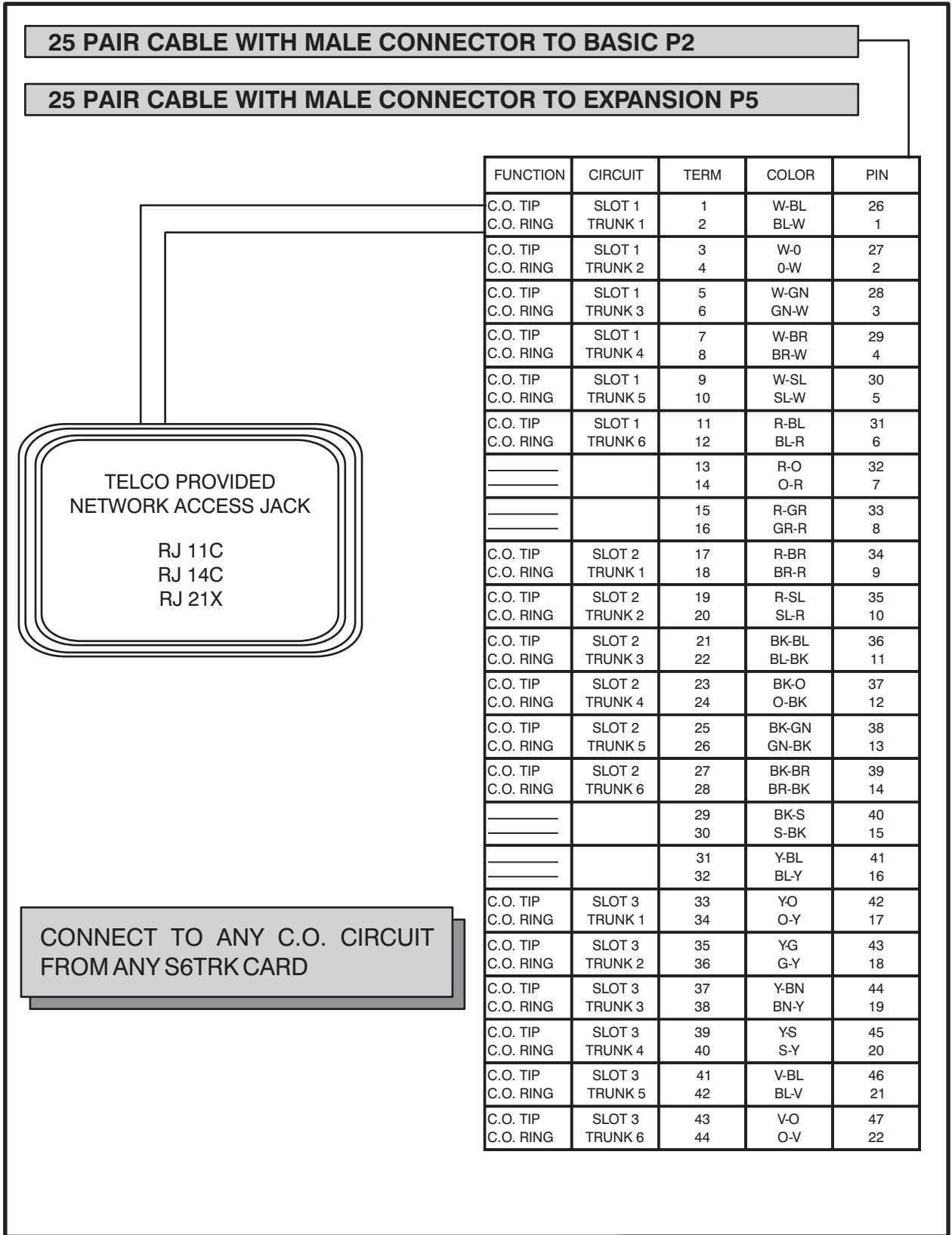
PARAMETER	OPTIONS IN OfficeServ 100
Framing type	Super Frame (SF) or D4 Extended Super Frame (ESF)
Coding type	AMI or B8ZS

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



MDF CONNECTIONS  
LOOP START LINE TO S3TRK CARD

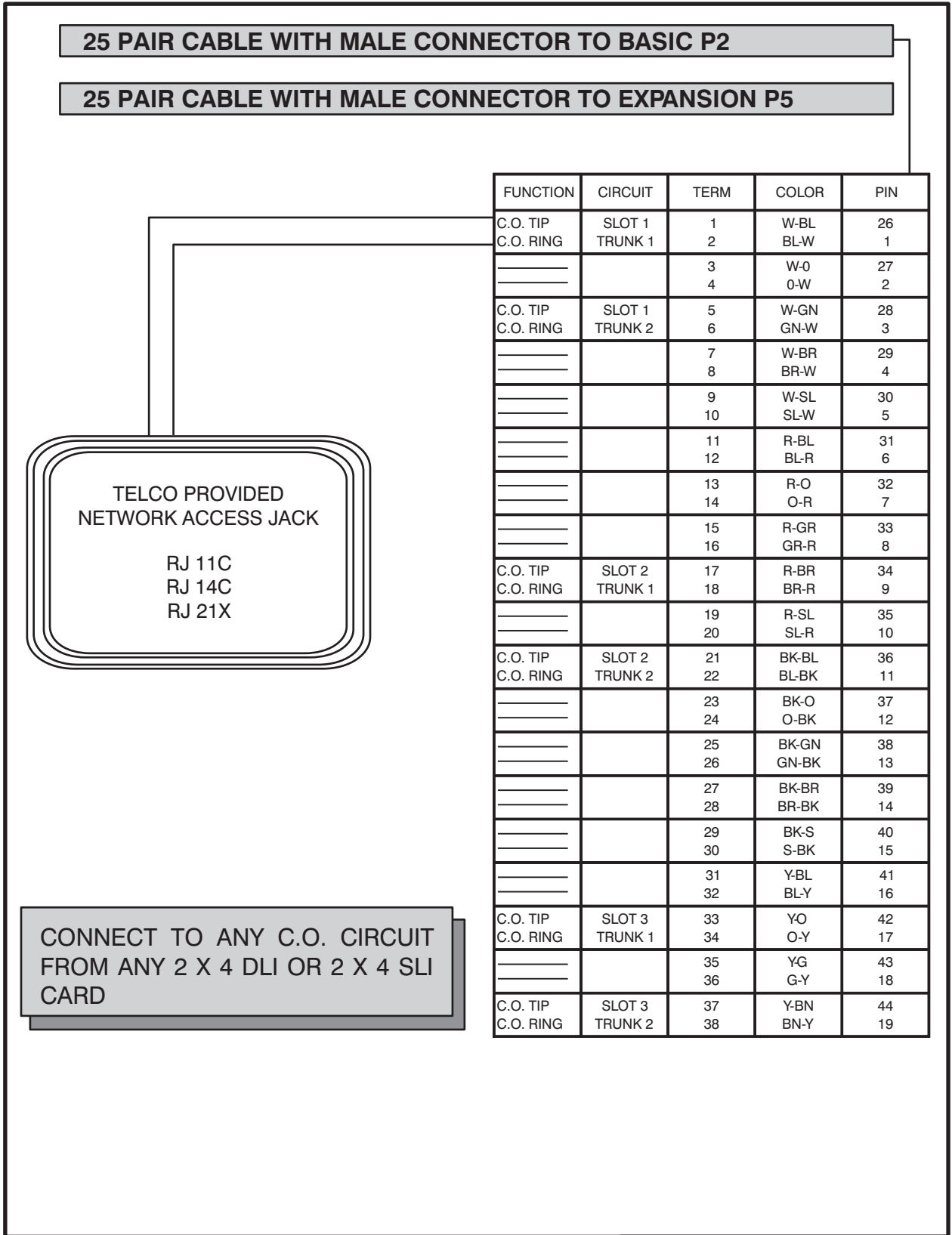
**FIGURE 5-1**



MDF CONNECTIONS  
LOOP START LINE TO S6TRK CARD

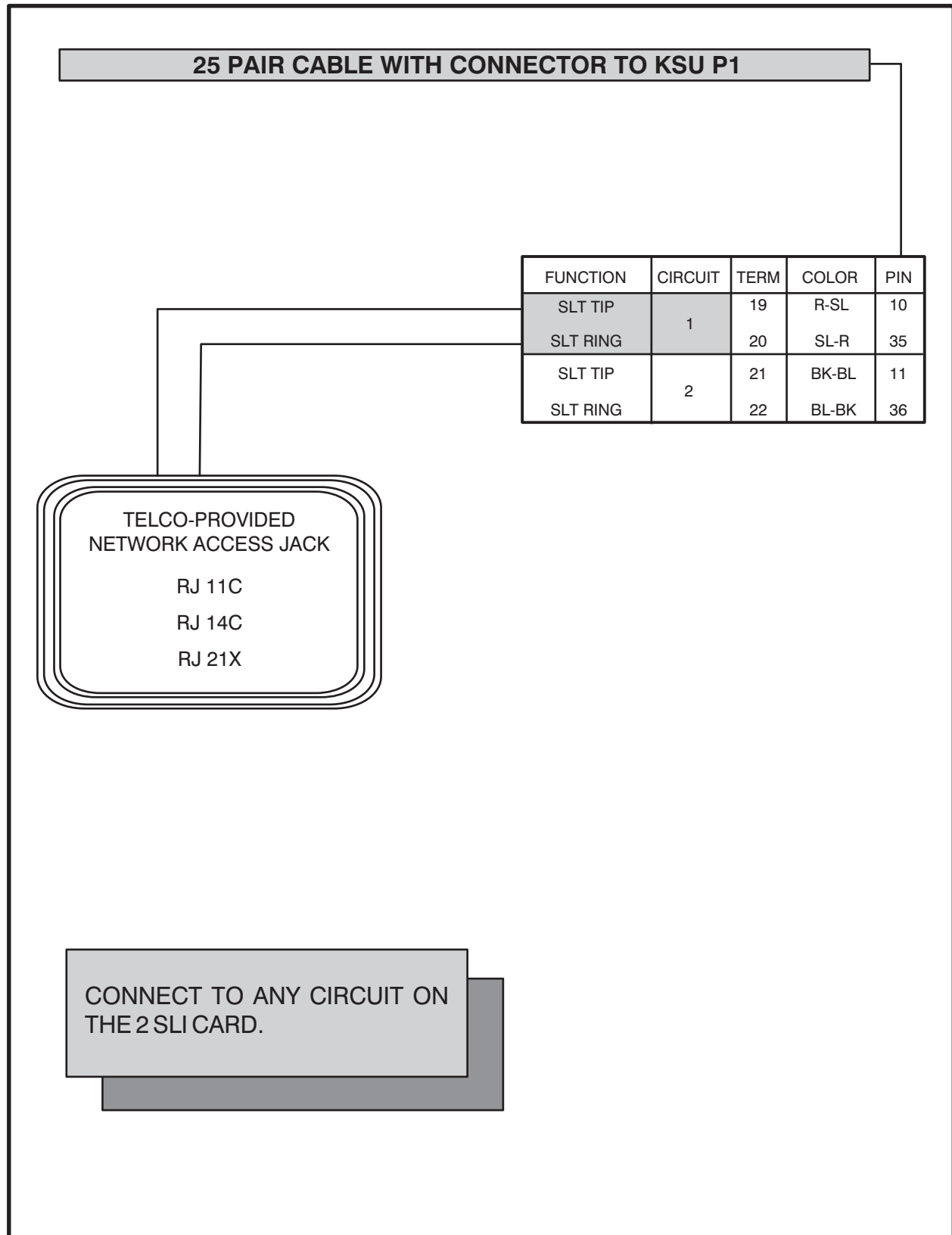
**FIGURE 5-2**





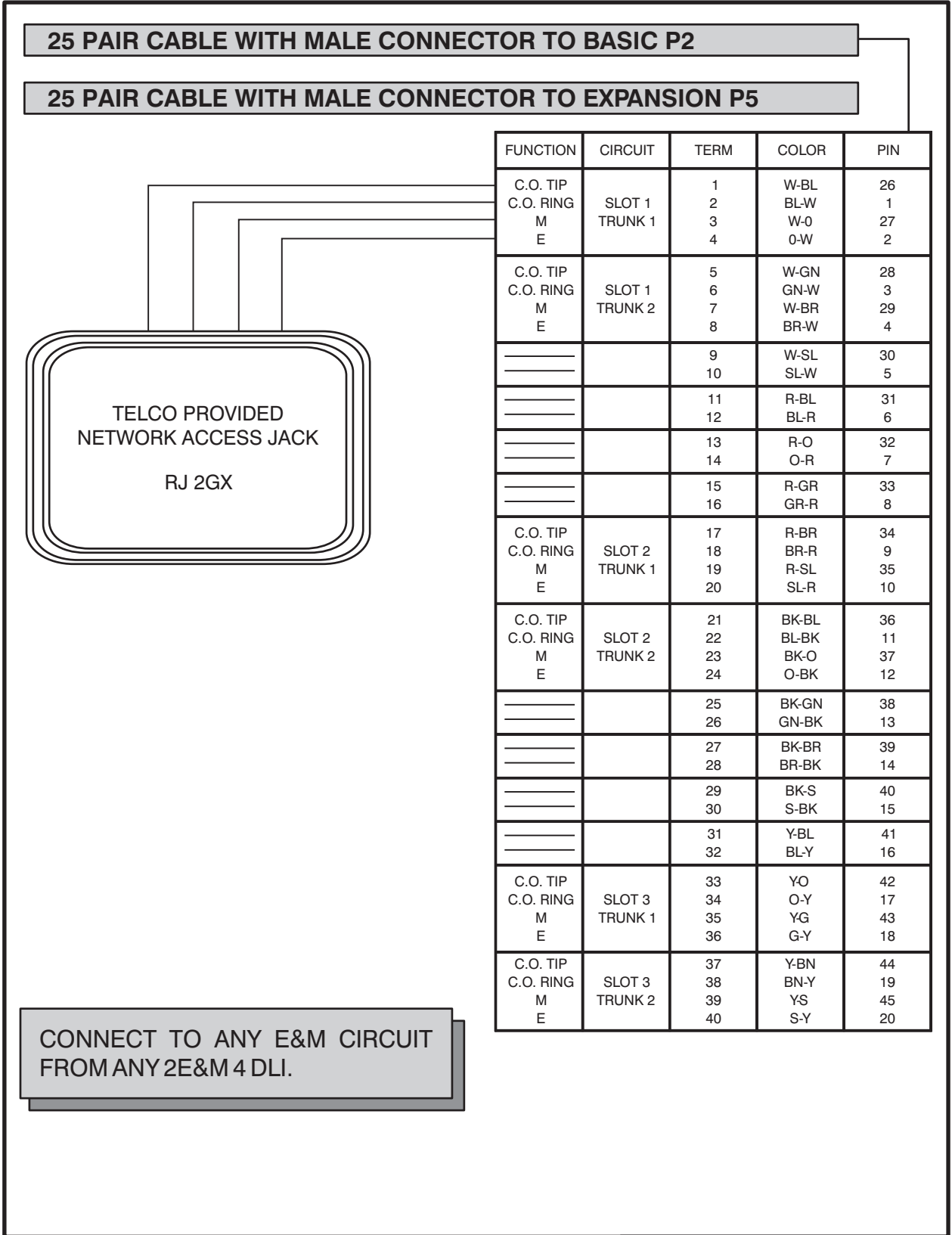
MDF CONNECTIONS  
LOOP START LINE TO 2 x 4 CARD

**FIGURE 5-3**



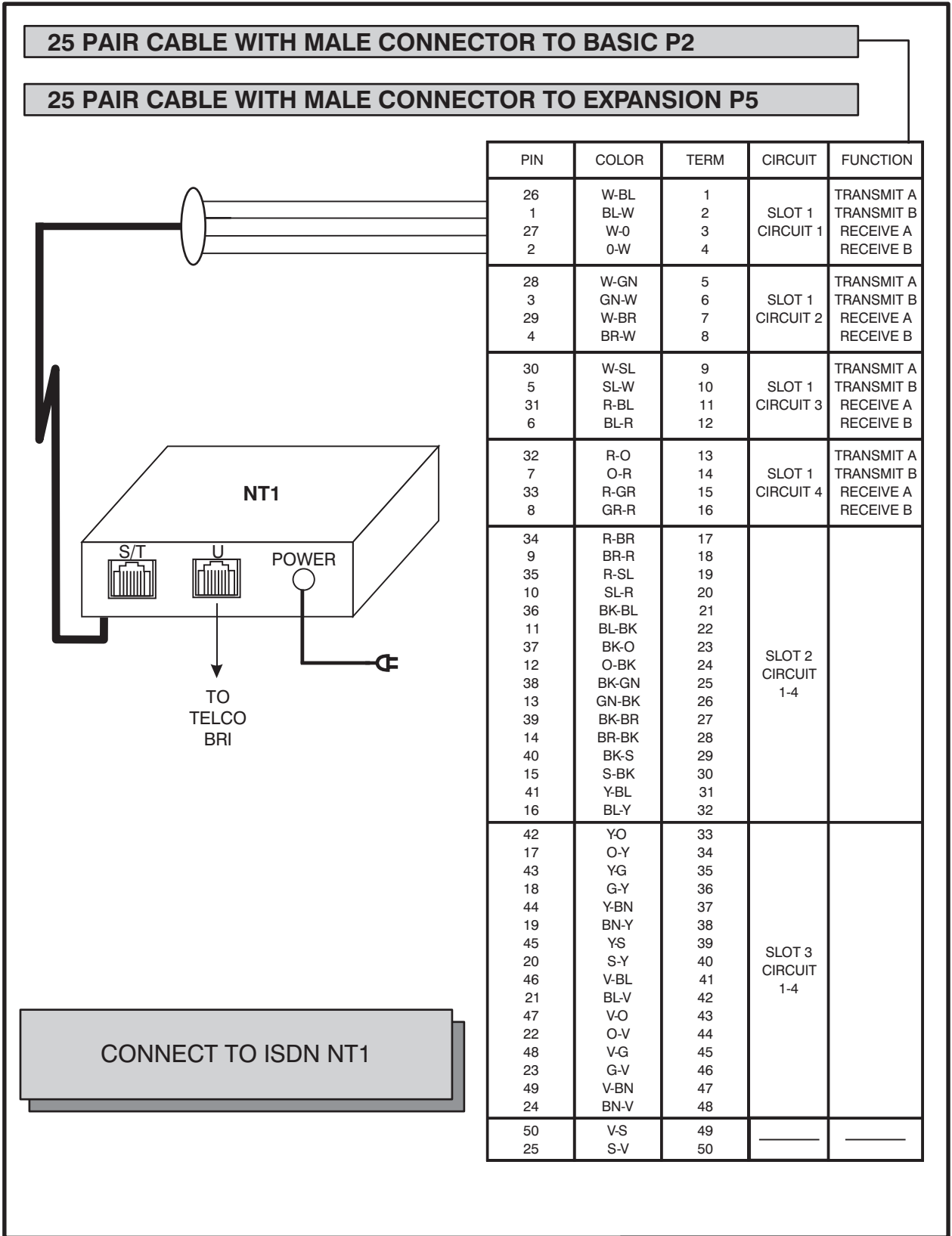
MDF CONNECTIONS  
OFF PREMISE EXTENSION FROM  
2 SLI CARD

**FIGURE 5-4**



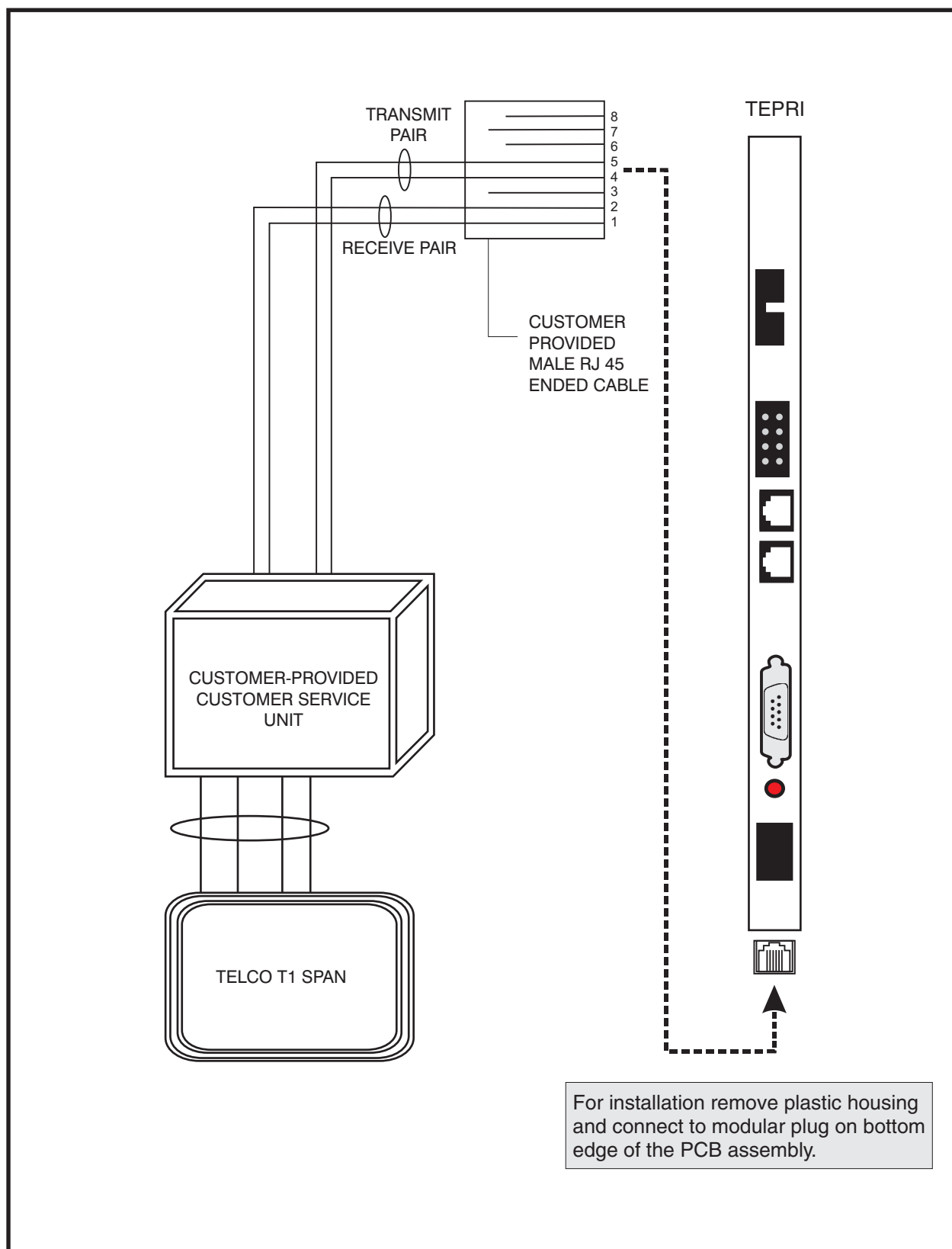
MDF CONNECTIONS  
E&M LINE TO 2EXM 4 DLI CARD

**FIGURE 5-5**



MDF CONNECTIONS  
FOR ISDN NT1 TO S4BRI CARD

FIGURE 5-6



MDF CONNECTIONS  
T1/PRI CIRCUIT TO TEPRI CARD

**FIGURE 5-7**

## PART 6. CONNECTING STATION EQUIPMENT

### 6.1 SAFETY PRECAUTIONS

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

- a. Never install telephone wiring during a lightning storm.
- b. Never install telephone jacks in a wet location unless the jack is specifically designed for wet locations.
- c. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- d. Use caution when installing or modifying telephone lines.

### 6.2 KEYSETS

Using one pair twisted #24 AWG or #26 AWG jumper wire, cross-connect each keyset to the DLI port of your choice ([see Figures 6-1, 6-2, and 6-3](#)).

NOTE: Because the OfficeServ 100 is a self-configuring system, if you connect a 12 button keyset to a DLI port that previously had a 24 button keyset installed, the existing data will be rewritten with 12 button keyset default data ([see MMC 723](#)).

### 6.3 DCS 32 BUTTON ADD-ON MODULE

Using one pair twisted #24 AWG or #26 AWG jumper wire, cross-connect each add-on module (AOM) to the DLI port of your choice ([see Figures 6-4, 6-5, and 6-6](#)).

If an AOM is to operate as a stand-alone unit, there is nothing else required other than assigning keys. When an AOM is to be used with a station, it must be assigned in [MMC 209](#). Add-on modules can be assigned to any keyset.

### 6.4 SINGLE LINE TELEPHONE

Using one pair twisted #24 AWG or #26 AWG jumper wire, cross-connect each single line telephone to the SLI port of your choice ([see Figures 6-7, 6-8, and 6-9](#)).

### 6.5 DOOR PHONE AND DOOR LOCK RELEASE

Using one pair twisted #24 AWG or #26 AWG jumper wire, cross-connect each DPIM to the DLI port of your choice ([see Figures 6-10, 6-11, and 6-12](#)). Next, connect the DPIM to the door phone using #24 AWG or #26 AWG twisted pair wire.

When a customer-provided electric door release is installed, cross-connect the corresponding door release contacts on the DPIM to the door lock mechanism ([see Figures 6-10, 6-11 and 6-12](#)). Use [MMC 501](#) to program the duration of the contact closure as required. [See the user guides for door lock release operation](#). The door release contacts on the DPIM are to be used for low voltage relay control only. The contacts are rated at 24 VDC-1 amp.

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

## 6.6 ISDN BRI STATIONS

The OfficeServ 100 uses an S/T type interface so if the BRI station equipment requires a U type circuit then an NT1 must be connected between the OfficeServ 100 and the station equipment. This will convert the circuit from the S/T type 4 wire interface provided by the OfficeServ 100 to the U type 2 wire interface required by the station equipment. In this case the maximum distance of the BRI station equipment from the OfficeServ 100 is determined by the specifications of the NT1.

Using two pair twisted #24 AWG or #26 AWG jumper wire cross-connect any BRI port to the BRI station equipment (or NT1), ([see Figure 6-13](#)).

[For information regarding the programming of a BRI circuit please see the Special Applications part of the Programming section of this manual.](#)

## 6.7A WALL-MOUNTING KEYSETS

DCS 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 6-14](#)).

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.

## 6.7B WALL-MOUNTING KEYSETS WITH ULTRA BASE WEDGE

DCS 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 button/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 6-15](#)).

## 6.7C WALL-MOUNTING DS, ITP 5121D and ITP-5107S KEYSETS

DS, ITP-5121D and ITP-5107S keysets come equipped with a reversible base stand. To wall-mount a keyset, remove the base stand, reverse it, and attach stand in the bottom slots of the keyset. Use screw holes 1 and 2 to attach the keysets to the wall. ([see Figure 6-16](#)).

To secure the handset once you wall-mounted your keyset you must remove the handset retaining clip reverse it such that the extended lip is facing the top of the phone. ([see Figure 6-16](#)).

## 6.7D WALL-MOUNTING iDCS KEYSETS

The 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 6-17](#)).

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.

## 6.8 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 DLI daughter board or your choice ([see part 8 of the installation section](#)). The 64 BM module can be assigned to any keyset telephone. It must be assigned to that station in [MMC 309](#). A maximum of four (4) 64 button modules can be programmed in the OfficeServ 100 system. A maximum of two (2) 64 button modules per keyset.



## **6.9 ATTACHING DCS 32 BUTTON AOM AND DCS 64 BUTTON MODULES TO 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 6-18, 6-19 and 6-20](#)).

## **6.10 ATTACHING DS 64 BUTTON MODULES TO A DS 5021D OR A DS 5014D KEYSSET**

First attach the bracket to the keyset with two of the screws provided. Then attach the 64 button add-on module to the bracket with the remaining two screws. ([see Figure 6-21](#)).

## **6.11 ATTACHING iDCS 64B MODULES TO AN iDCS KEYSSET**

First remove the base wedge from the iDCS 64B Module and attach the bracket to it with two of the screws provided ([see Figure 6-22](#)).

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

## **6.12 ATTACHING iDCS 14 BUTTON MODULES TO AN iDCS KEYSSET**

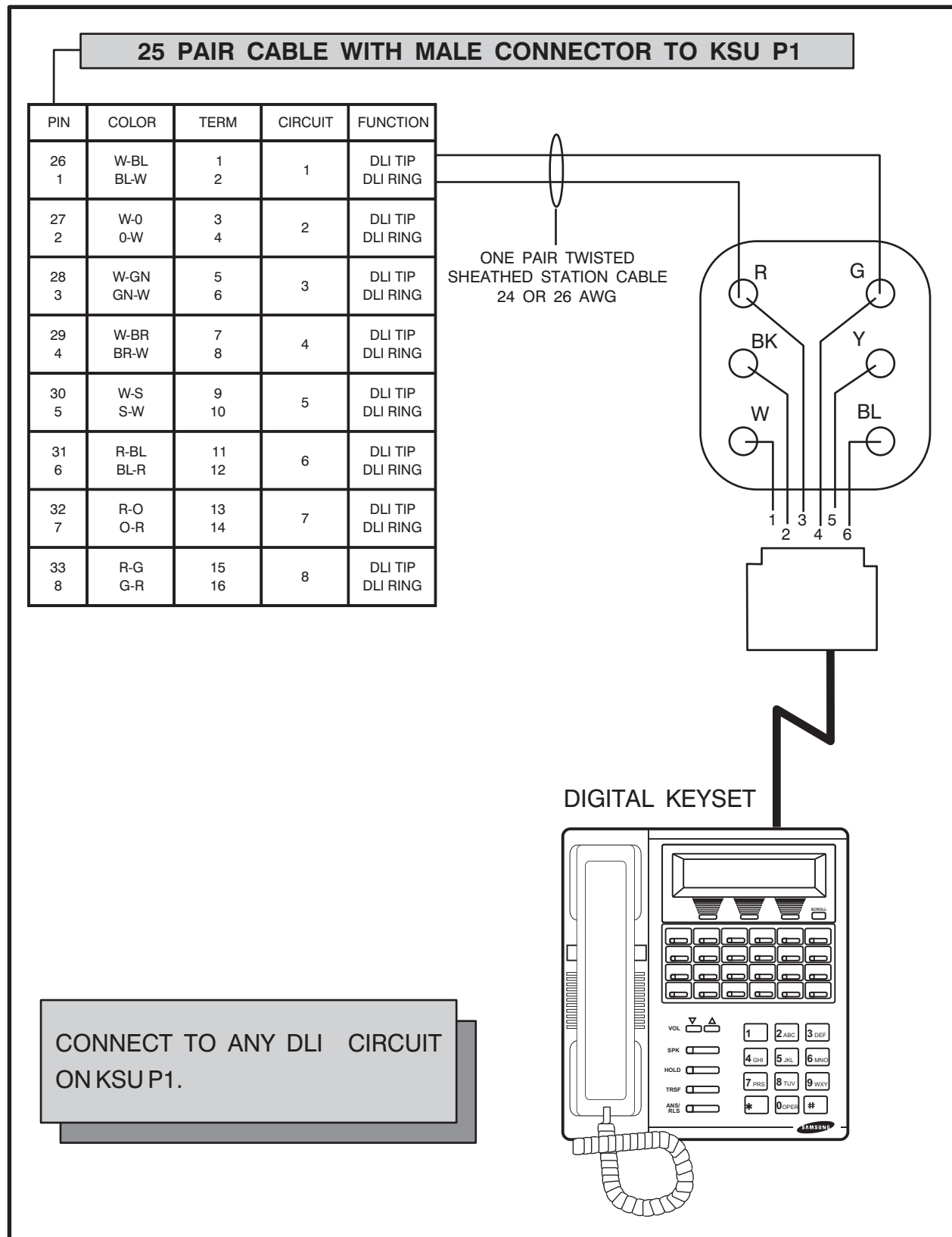
To add an iDCS 14 Button Key Strip to your iDCS keyset follow these steps ([see Figure 6-23](#)).

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.

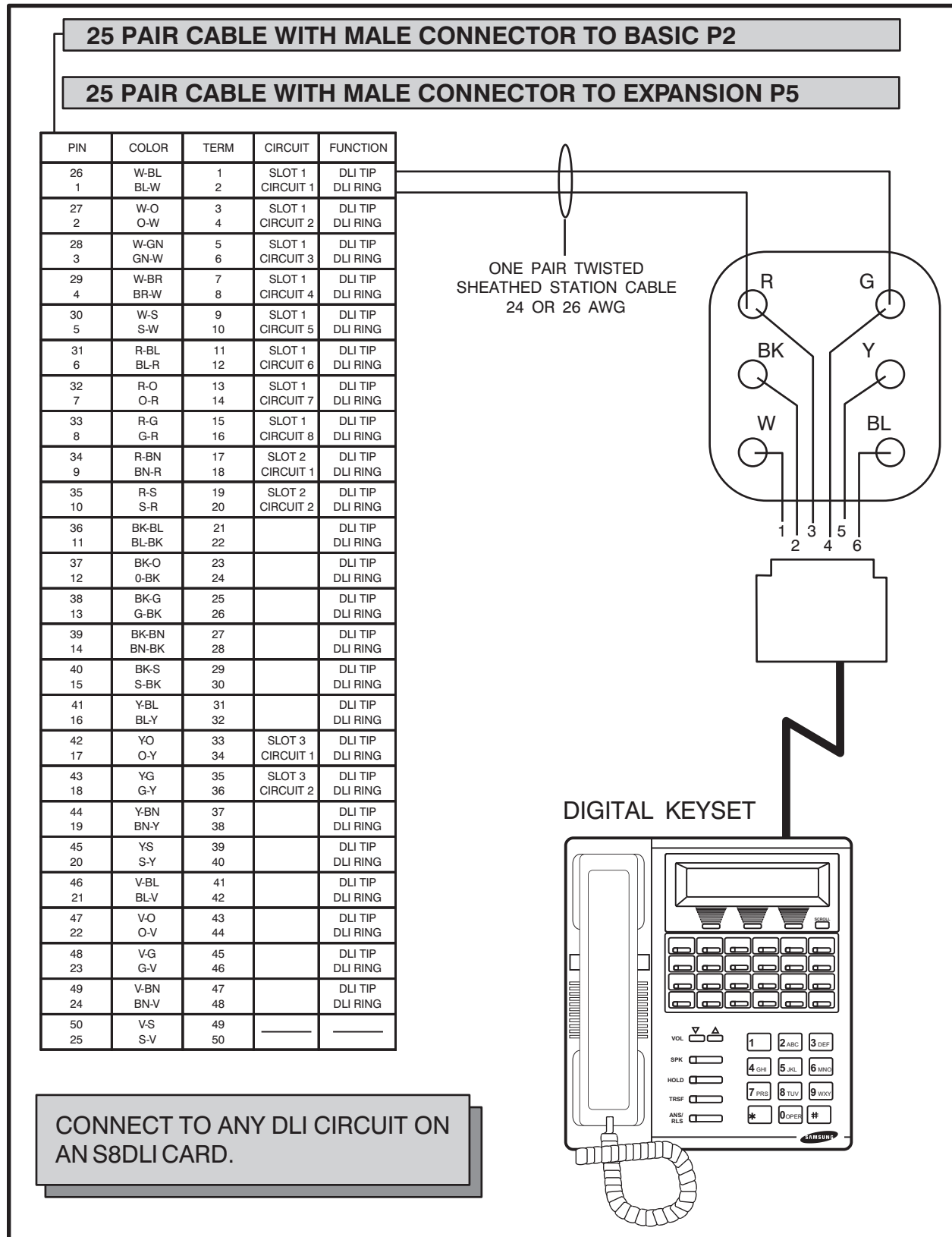
## 6.13 ITP KEYSETS

Refer to the [ITP-5121D](#), [ITP-5112L](#) and the [ITP-5107S](#) User Guides for setup and installation of these ITP keysets.



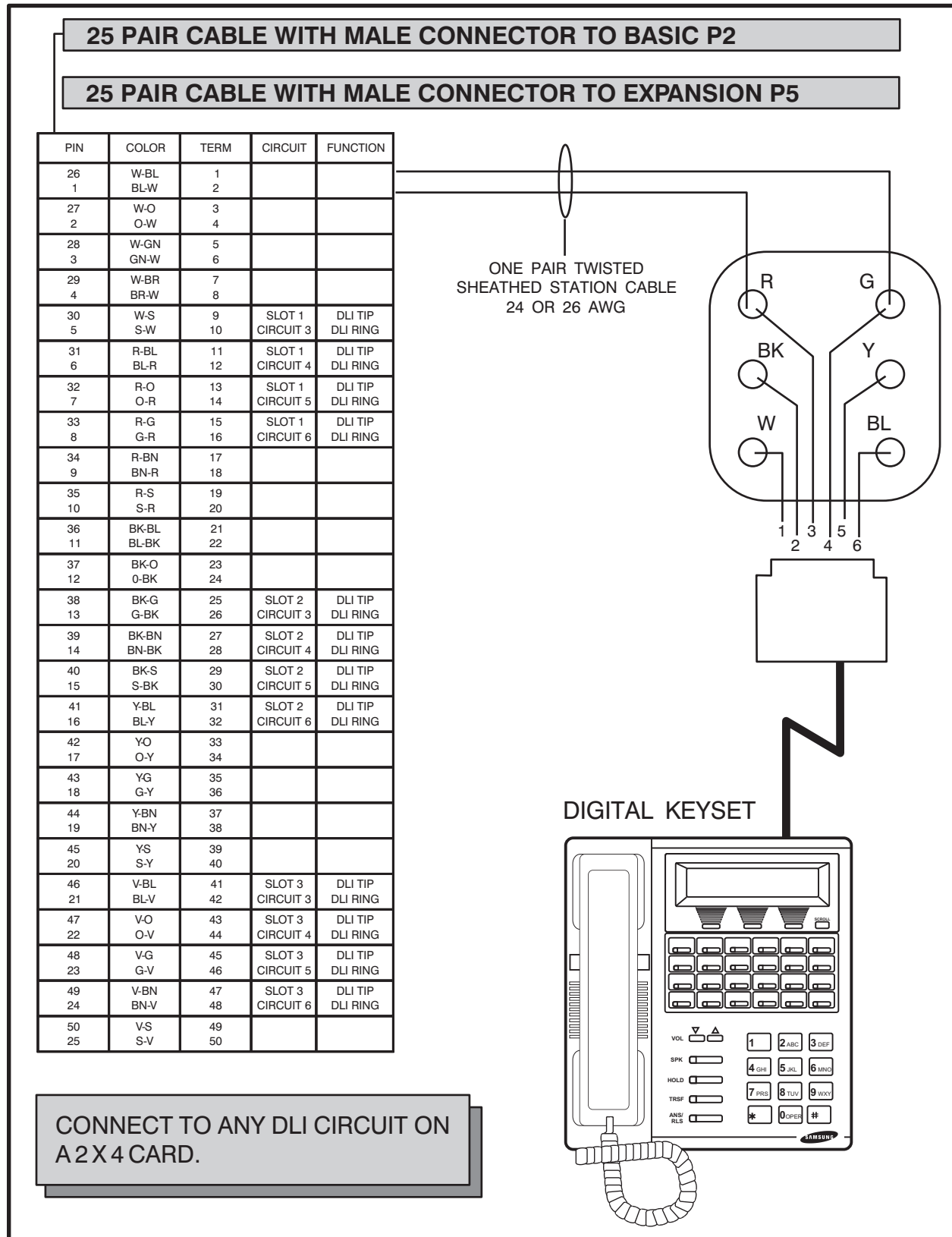
MDF CONNECTIONS  
DIGITAL KEYSET TO KSU P1

**FIGURE 6-1**



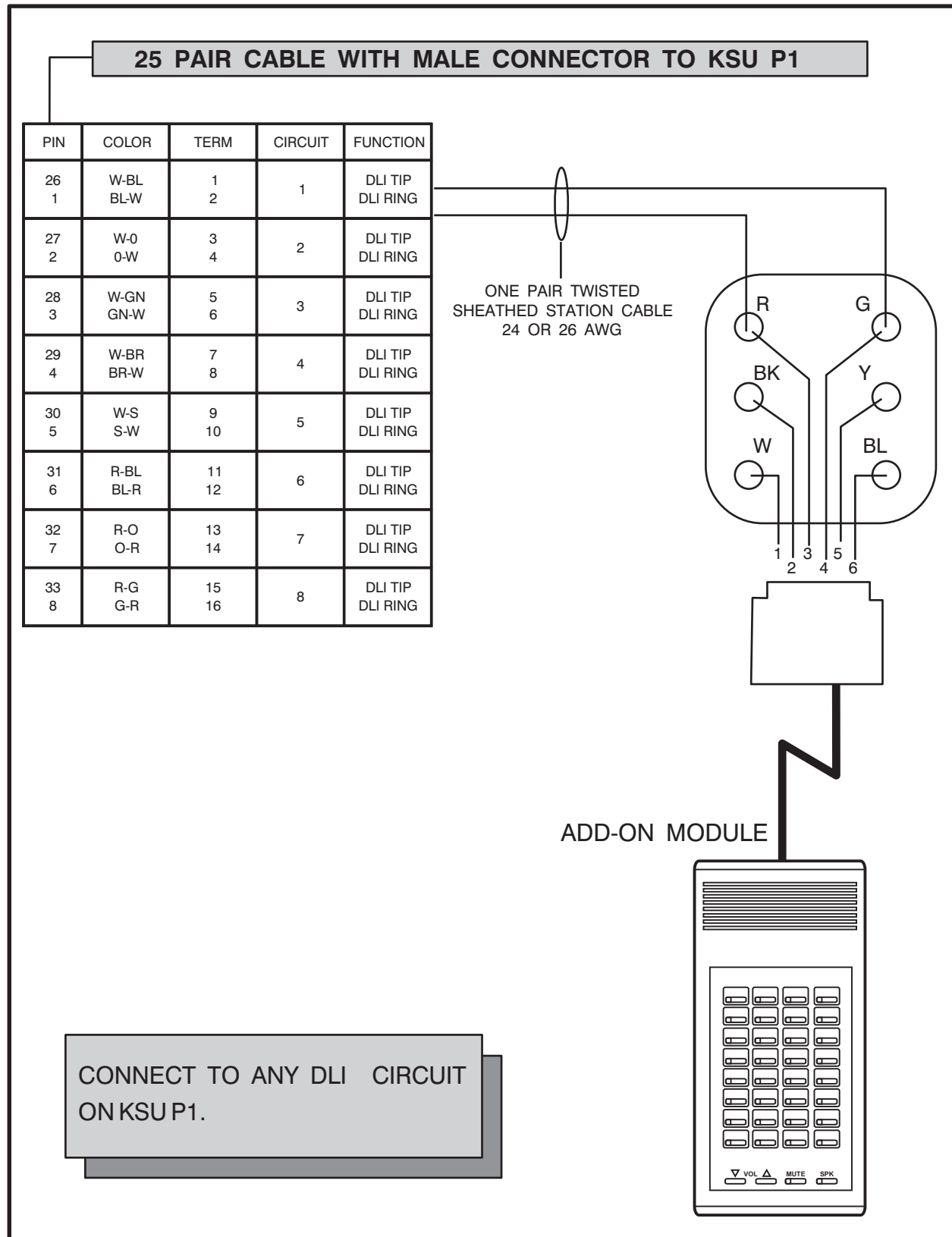
MDF CONNECTIONS  
DIGITAL KEYSET TO S8DLI CARD

**FIGURE 6-2**



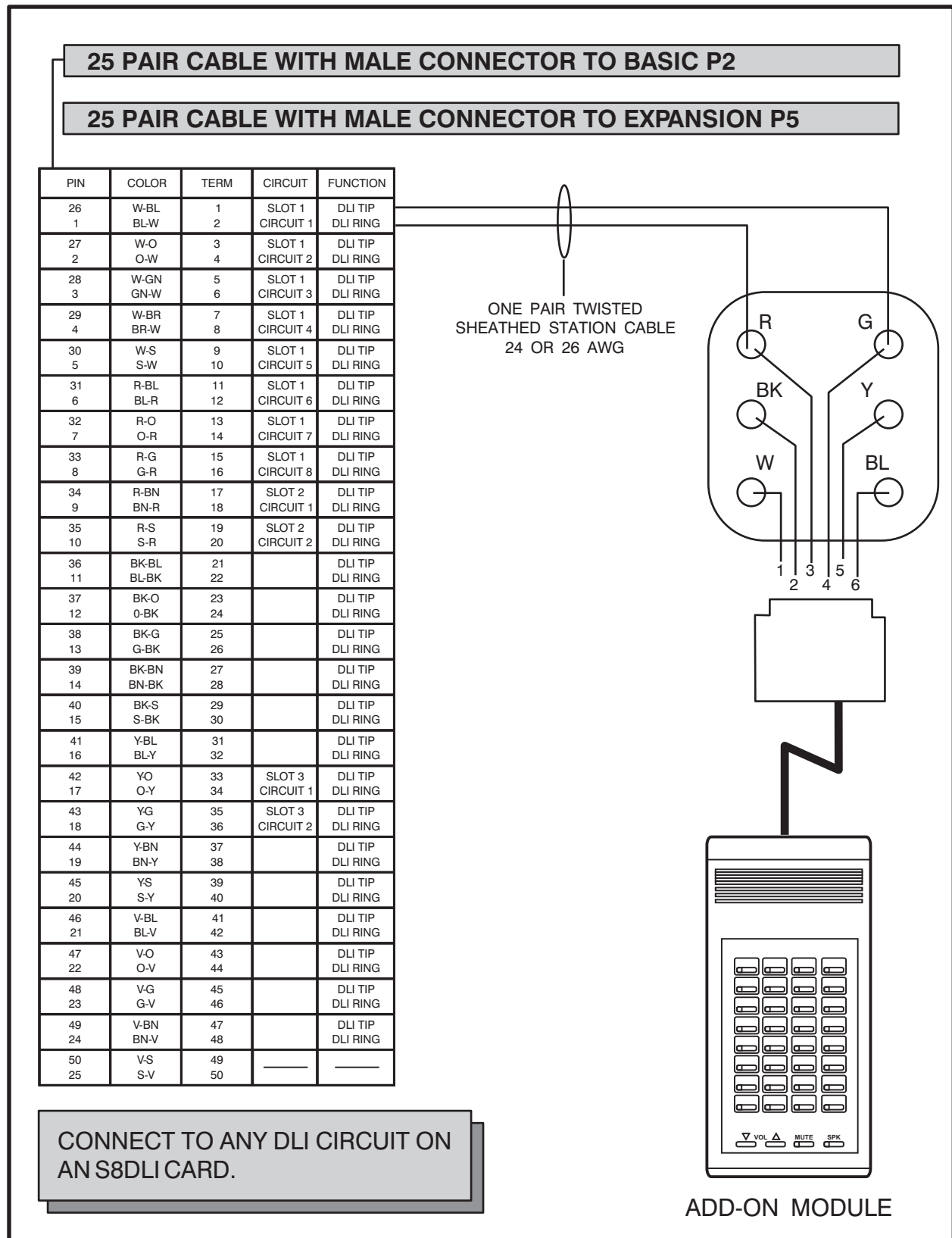
MDF CONNECTIONS  
DIGITAL KEYSET TO 2 X 4 CARD

**FIGURE 6-3**



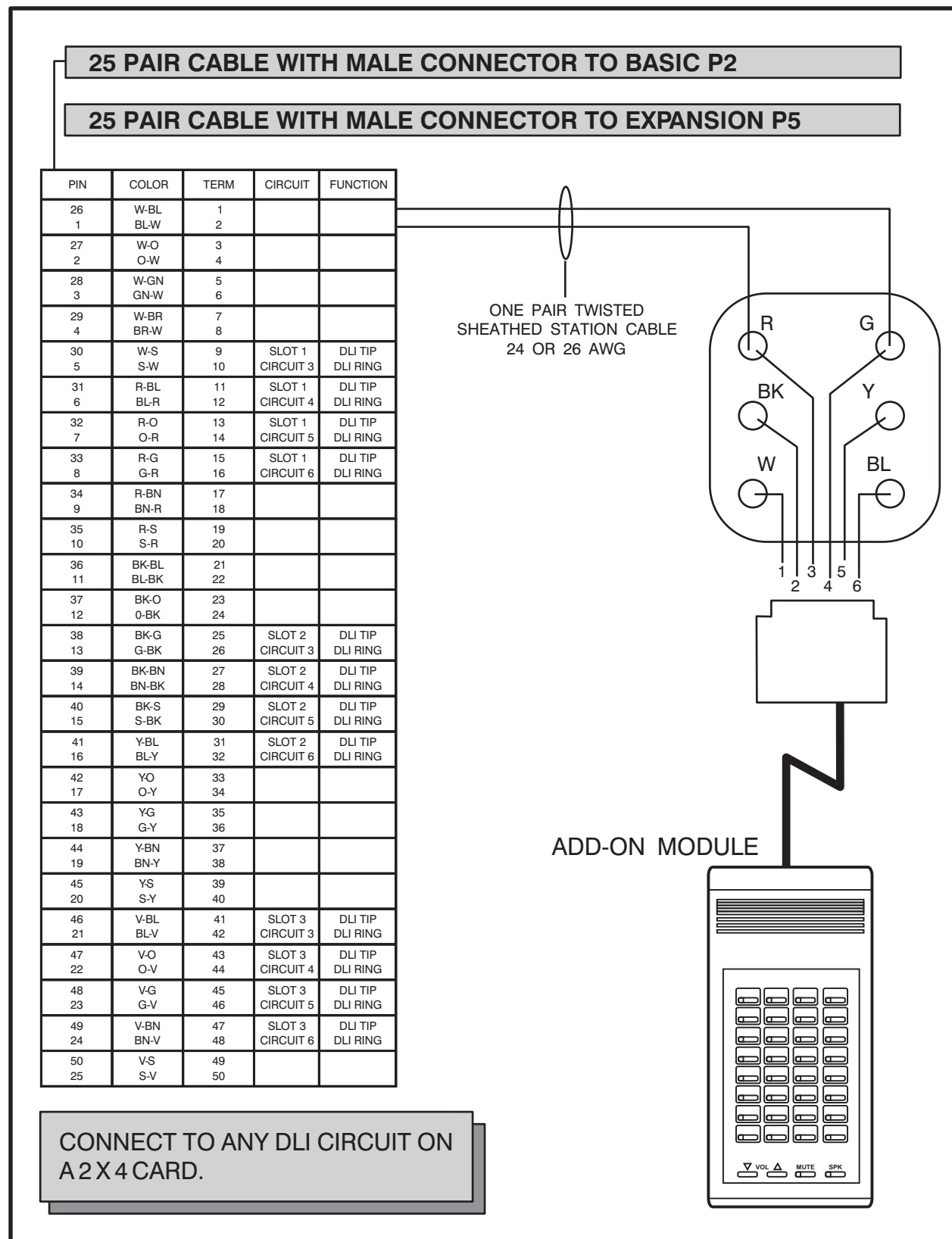
MDF CONNECTIONS  
AOM TO KSU P1

**FIGURE 6-4**



MDF CONNECTIONS  
AOM TO S8DLI CARD

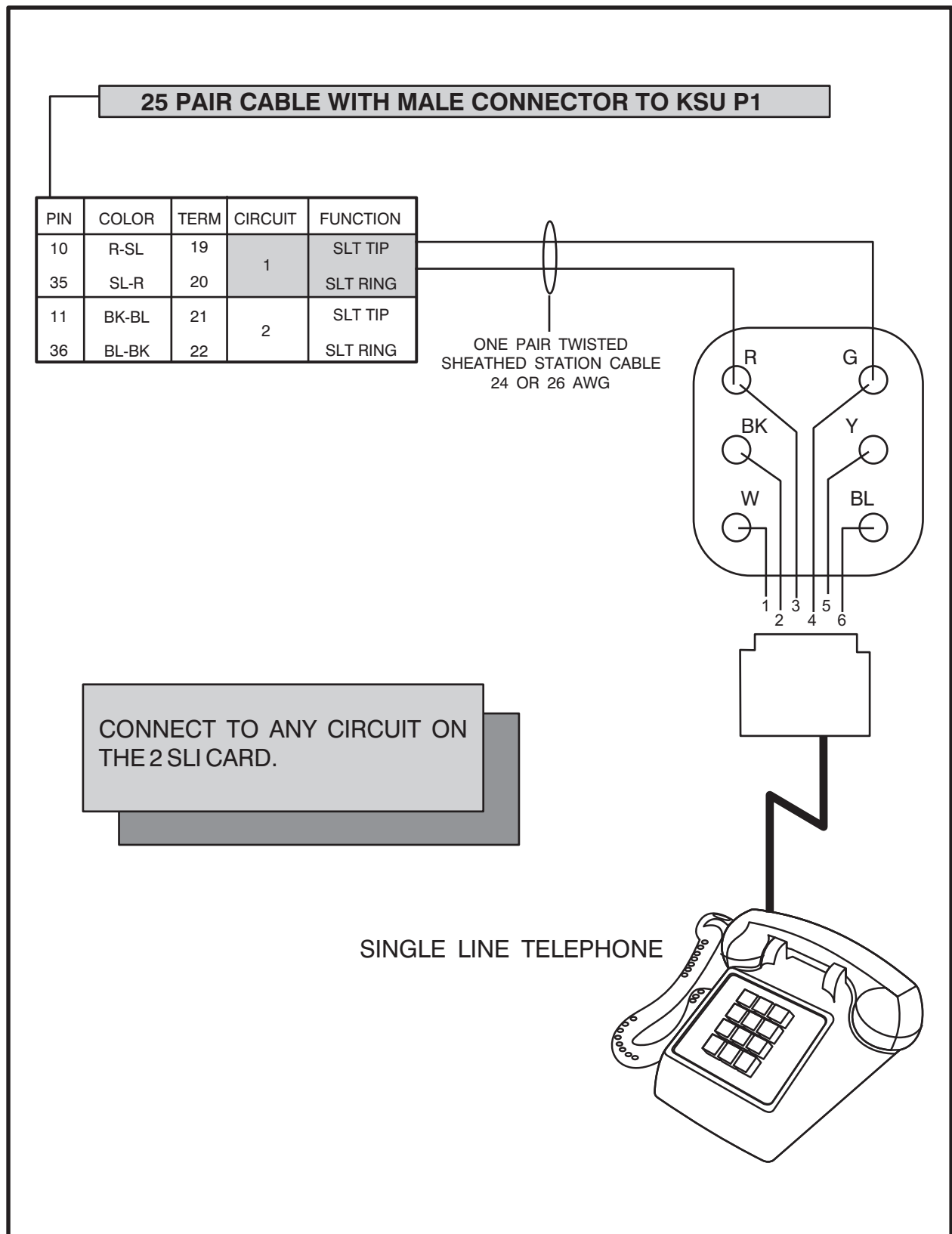
**FIGURE 6-5**



MDF CONNECTIONS  
AOM TO 2 X 4 CARD

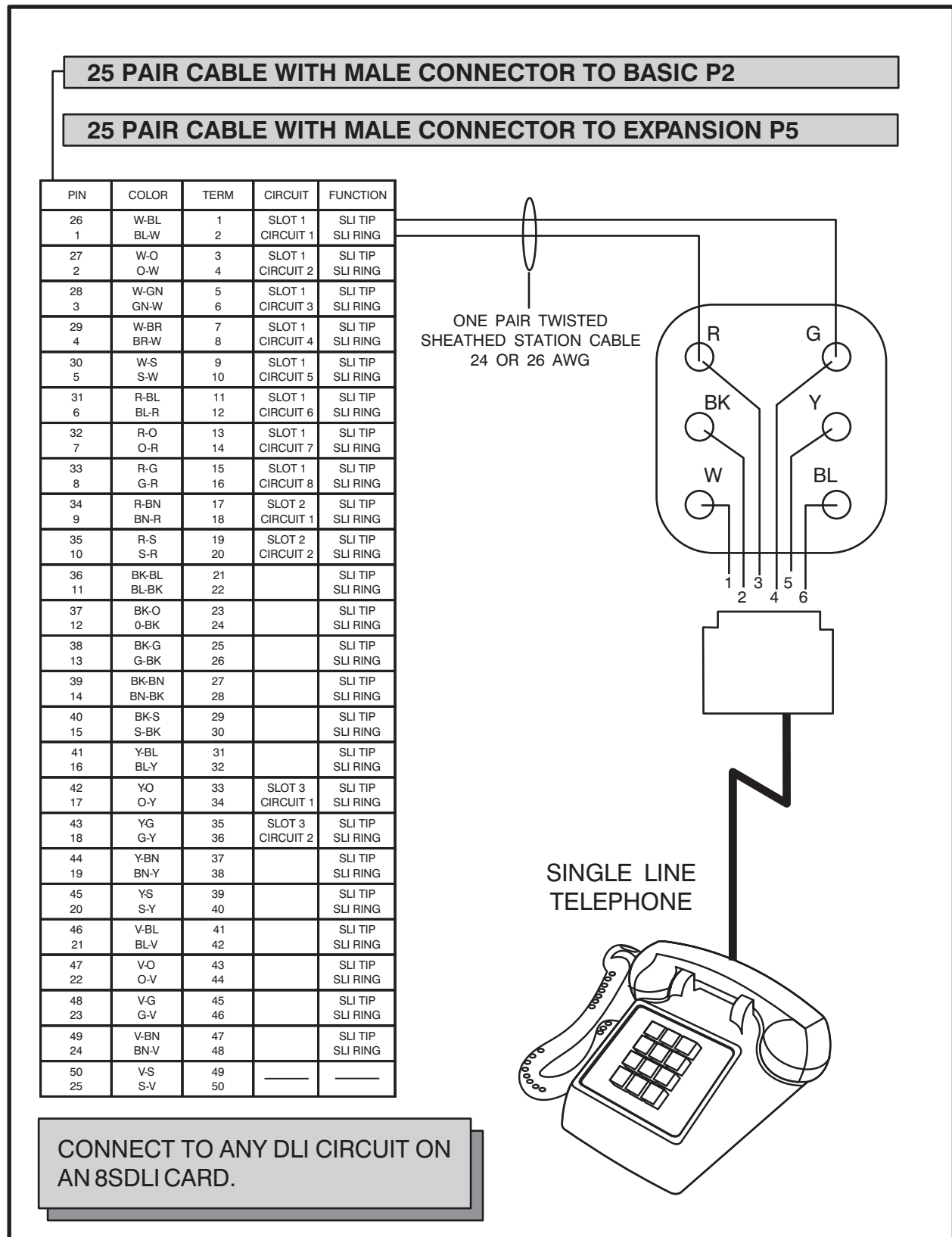
**FIGURE 6-6**





MDF CONNECTIONS  
SINGLE LINE TELEPHONE  
TO 2 SLI CARD

**FIGURE 6-7**



MDF CONNECTIONS  
SLT TO S8SLI CARD

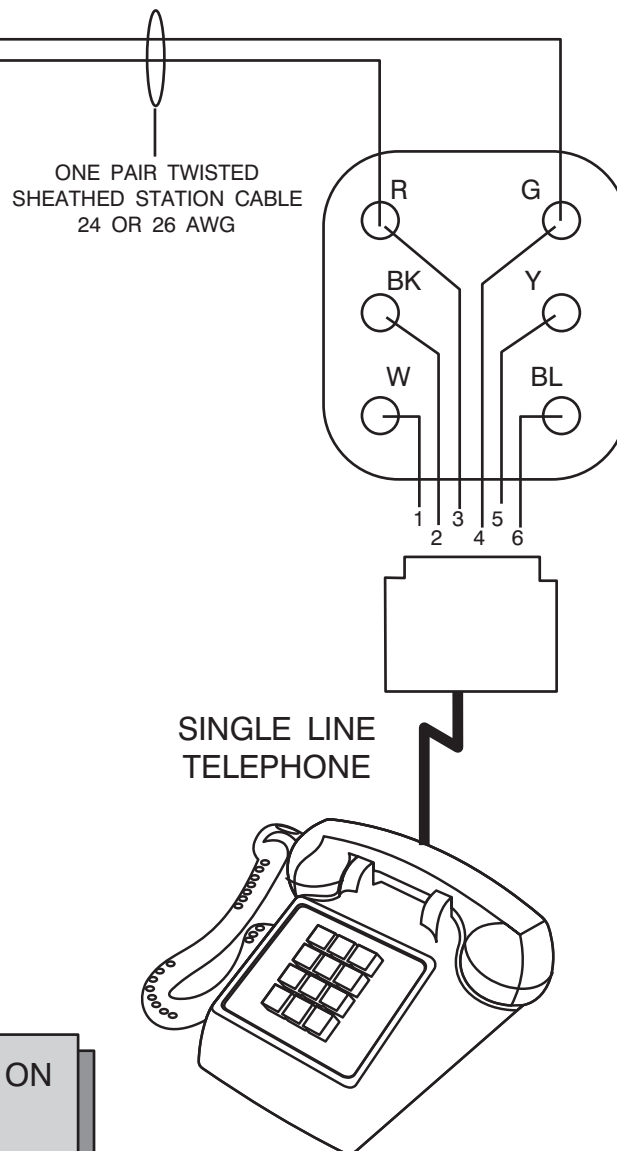
**FIGURE 6-8**

**25 PAIR CABLE WITH MALE CONNECTOR TO BASIC P2**

**25 PAIR CABLE WITH MALE CONNECTOR TO EXPANSION P5**

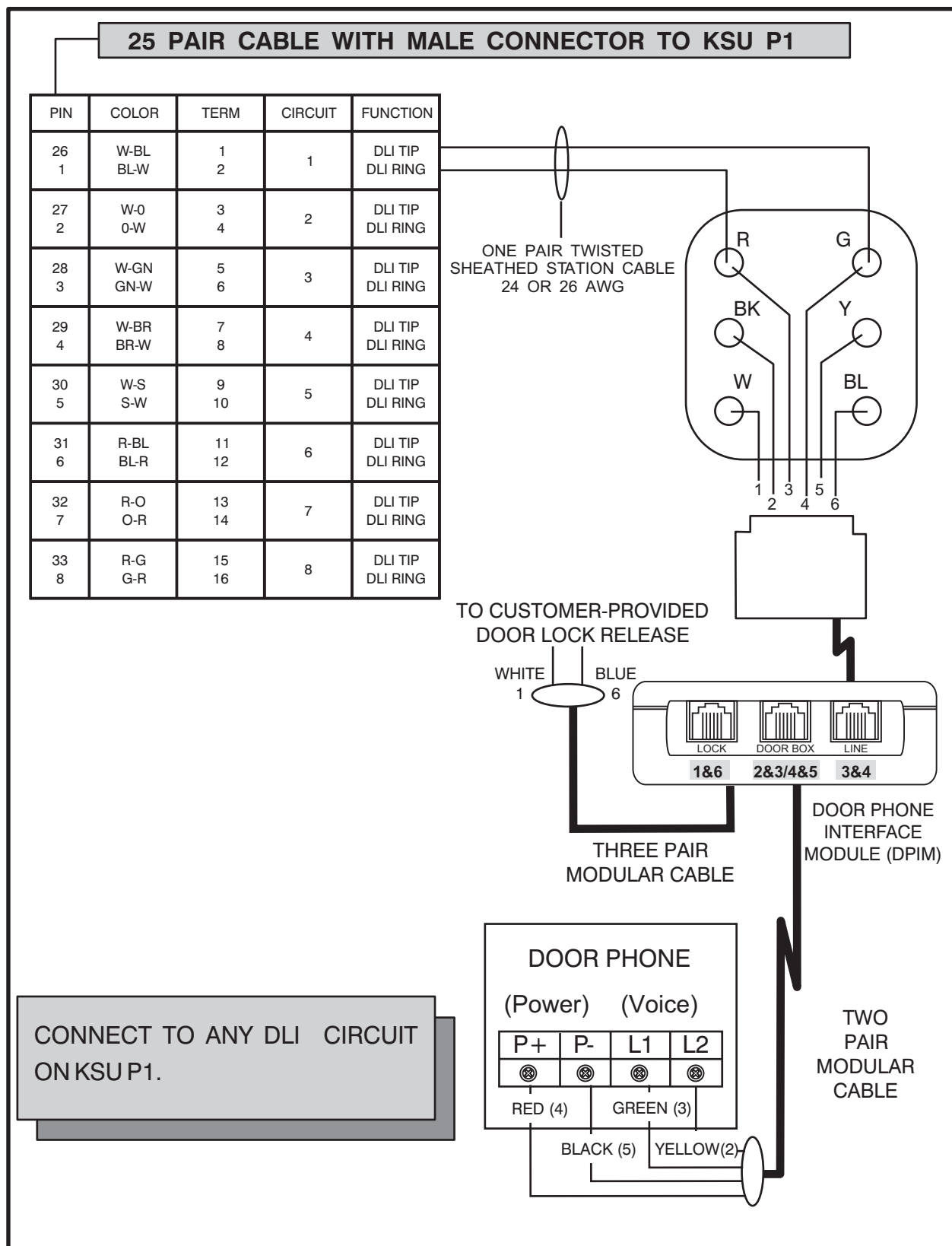
PIN	COLOR	TERM	CIRCUIT	FUNCTION
26	W-BL	1		
1	BL-W	2		
27	W-O	3		
2	O-W	4		
28	W-GN	5		
3	GN-W	6		
29	W-BR	7		
4	BR-W	8		
30	W-S	9	SLOT 1	SLI TIP
5	S-W	10	CIRCUIT 3	SLI RING
31	R-BL	11	SLOT 1	SLI TIP
6	BL-R	12	CIRCUIT 4	SLI RING
32	R-O	13	SLOT 1	SLI TIP
7	O-R	14	CIRCUIT 5	SLI RING
33	R-G	15	SLOT 1	SLI TIP
8	G-R	16	CIRCUIT 6	SLI RING
34	R-BN	17		
9	BN-R	18		
35	R-S	19		
10	S-R	20		
36	BK-BL	21		
11	BL-BK	22		
37	BK-O	23		
12	O-BK	24		
38	BK-G	25	SLOT 2	SLI TIP
13	G-BK	26	CIRCUIT 3	SLI RING
39	BK-BN	27	SLOT 2	SLI TIP
14	BN-BK	28	CIRCUIT 4	SLI RING
40	BK-S	29	SLOT 2	SLI TIP
15	S-BK	30	CIRCUIT 5	SLI RING
41	Y-BL	31	SLOT 2	SLI TIP
16	BL-Y	32	CIRCUIT 6	SLI RING
42	YO	33		
17	O-Y	34		
43	YG	35		
18	G-Y	36		
44	Y-BN	37		
19	BN-Y	38		
45	YS	39		
20	S-Y	40		
46	V-BL	41	SLOT 3	SLI TIP
21	BL-V	42	CIRCUIT 3	SLI RING
47	V-O	43	SLOT 3	SLI TIP
22	O-V	44	CIRCUIT 4	SLI RING
48	V-G	45	SLOT 3	SLI TIP
23	G-V	46	CIRCUIT 5	SLI RING
49	V-BN	47	SLOT 3	SLI TIP
24	BN-V	48	CIRCUIT 6	SLI RING
50	V-S	49		
25	S-V	50		

CONNECT TO ANY SLI CIRCUIT ON  
A 2 X 4 CARD.



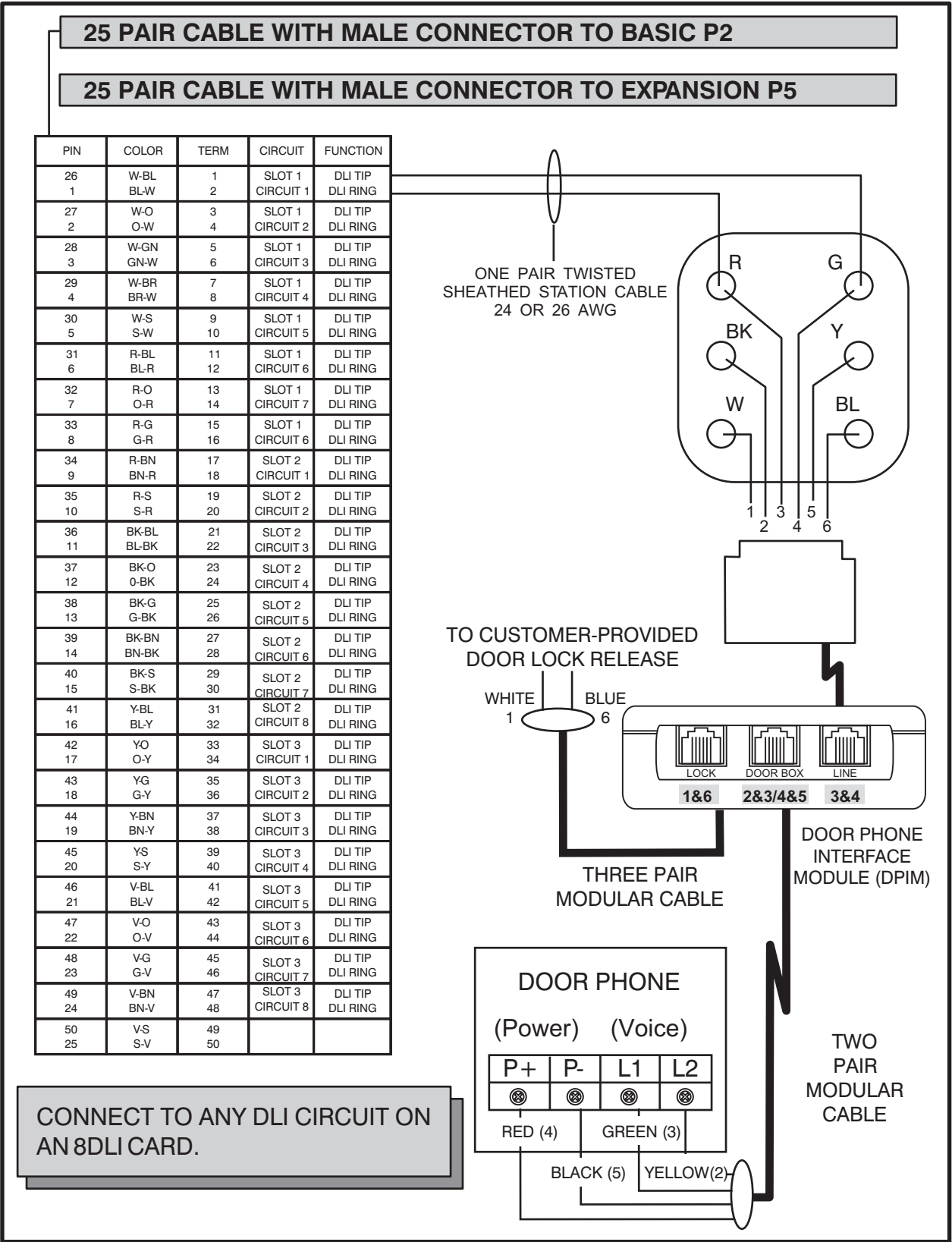
MDF CONNECTIONS  
SLT TO 2 X 4 SLI CARD

**FIGURE 6-9**



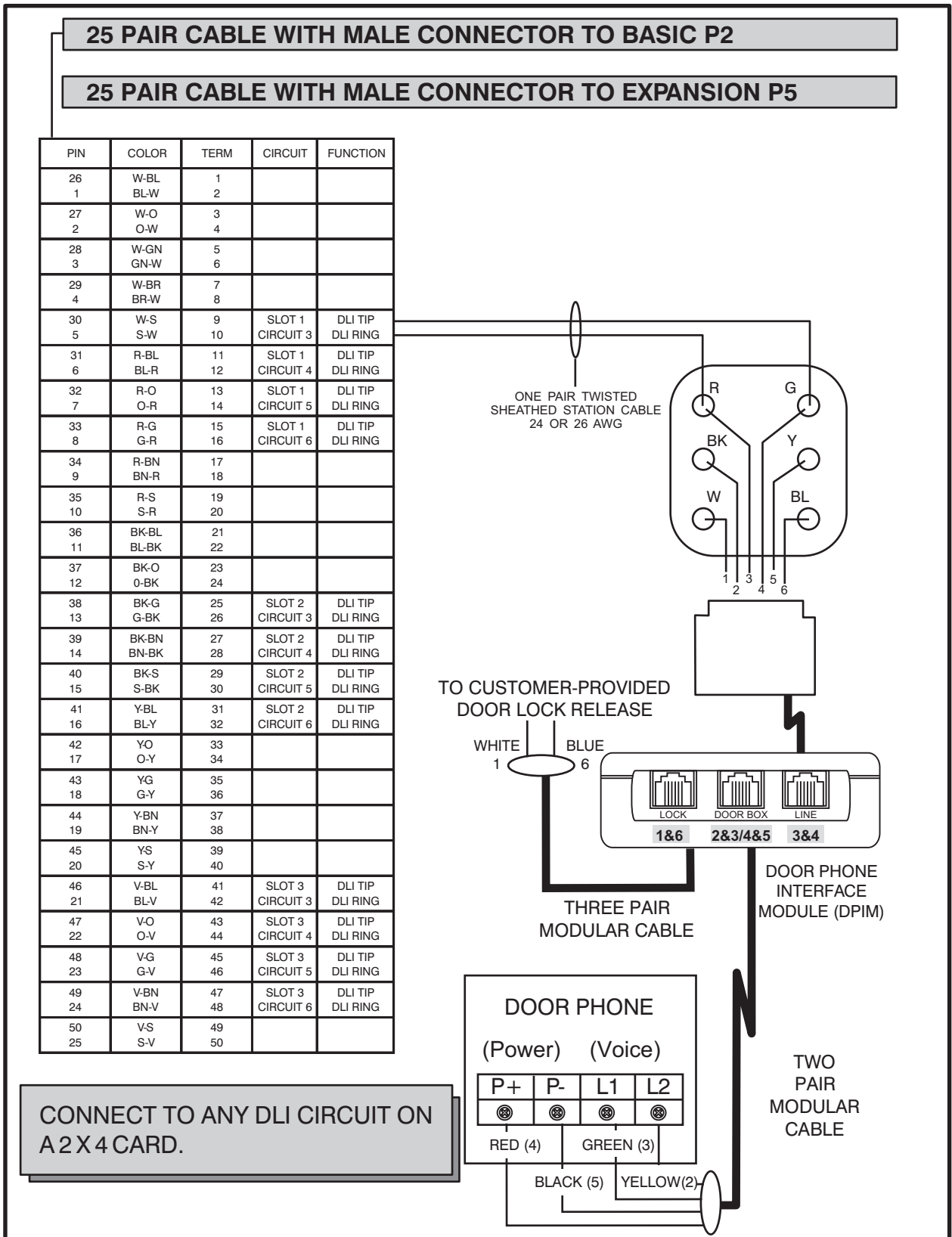
MDF CONNECTIONS  
DOOR PHONE TO KSU P1

**FIGURE 6-10**



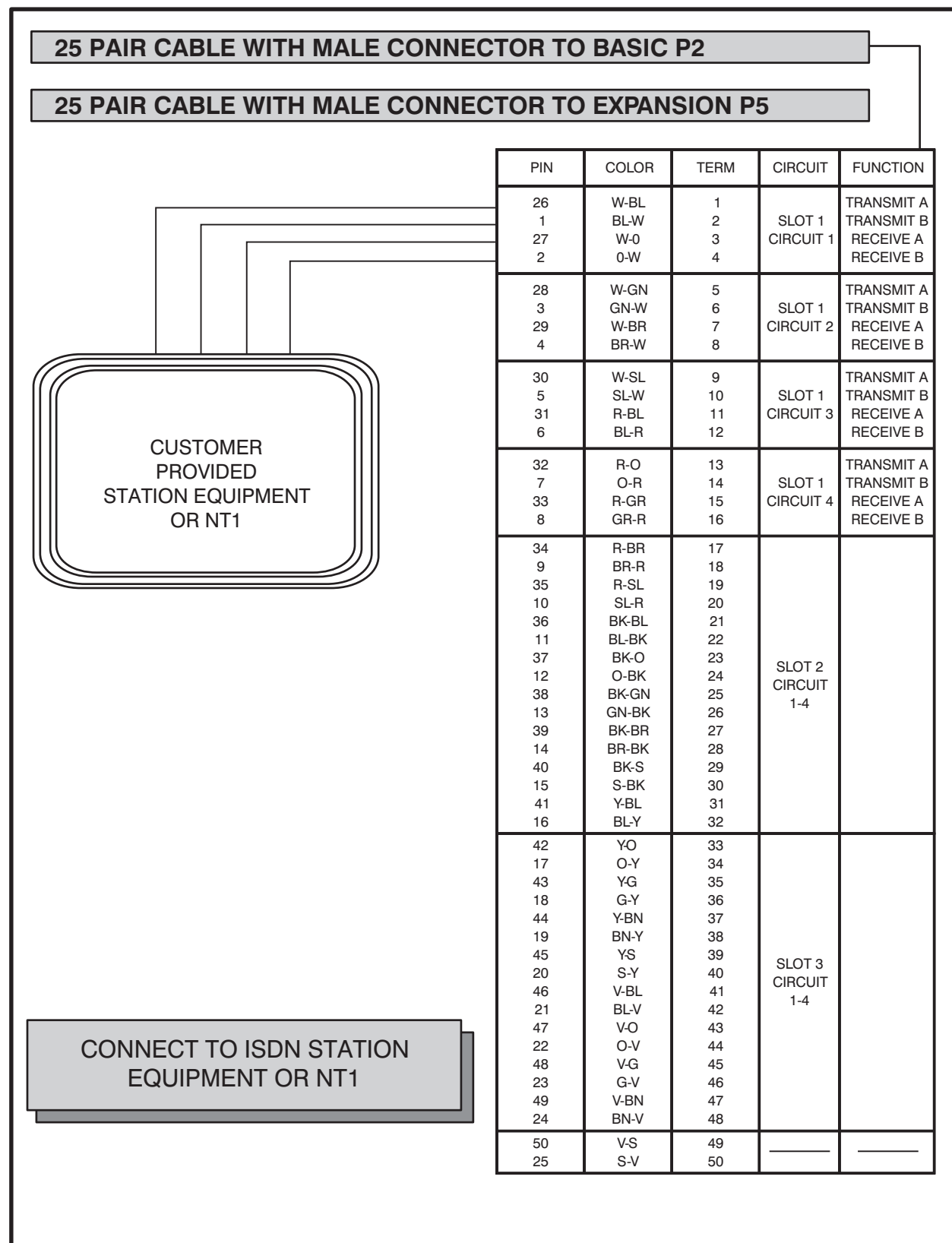
MDF CONNECTIONS  
DOOR PHONE TO 8DLI CARD

FIGURE 6-11



MDF CONNECTIONS  
DOOR PHONE TO 2 X 4 CARD

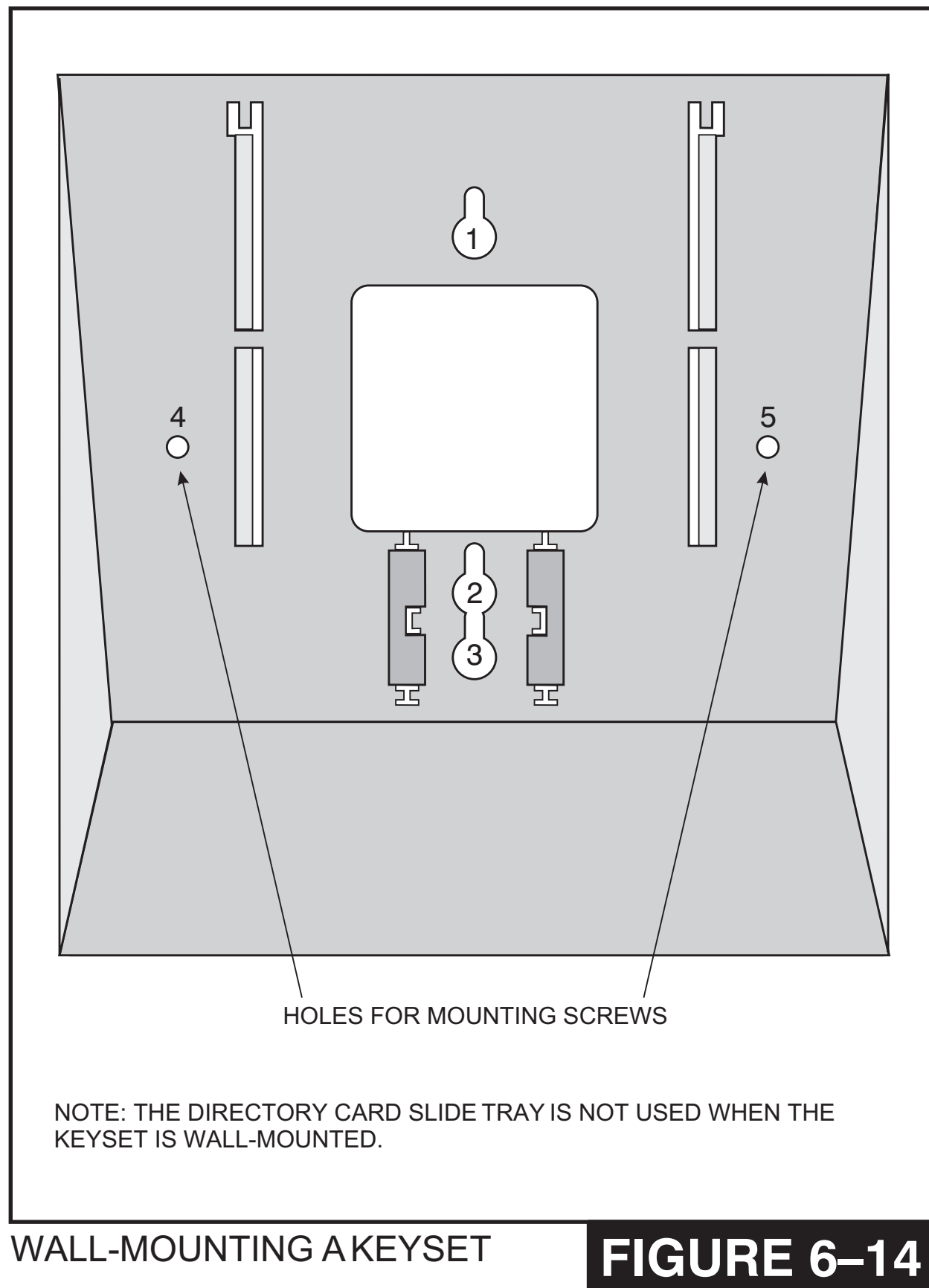
**FIGURE 6-12**

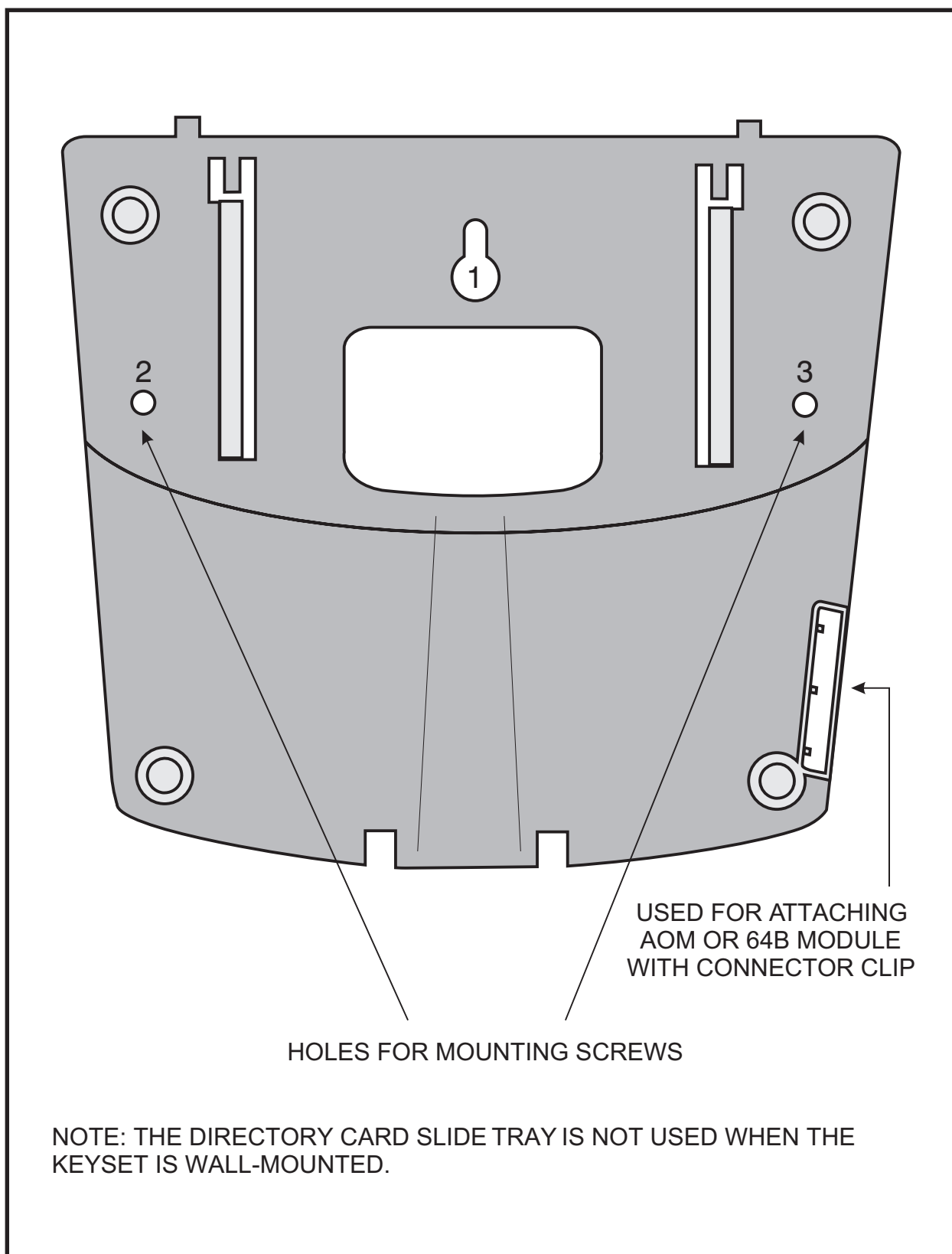


MDF CONNECTIONS FOR ISDN  
STATION TO S4BRI CARD

**FIGURE 6-13**

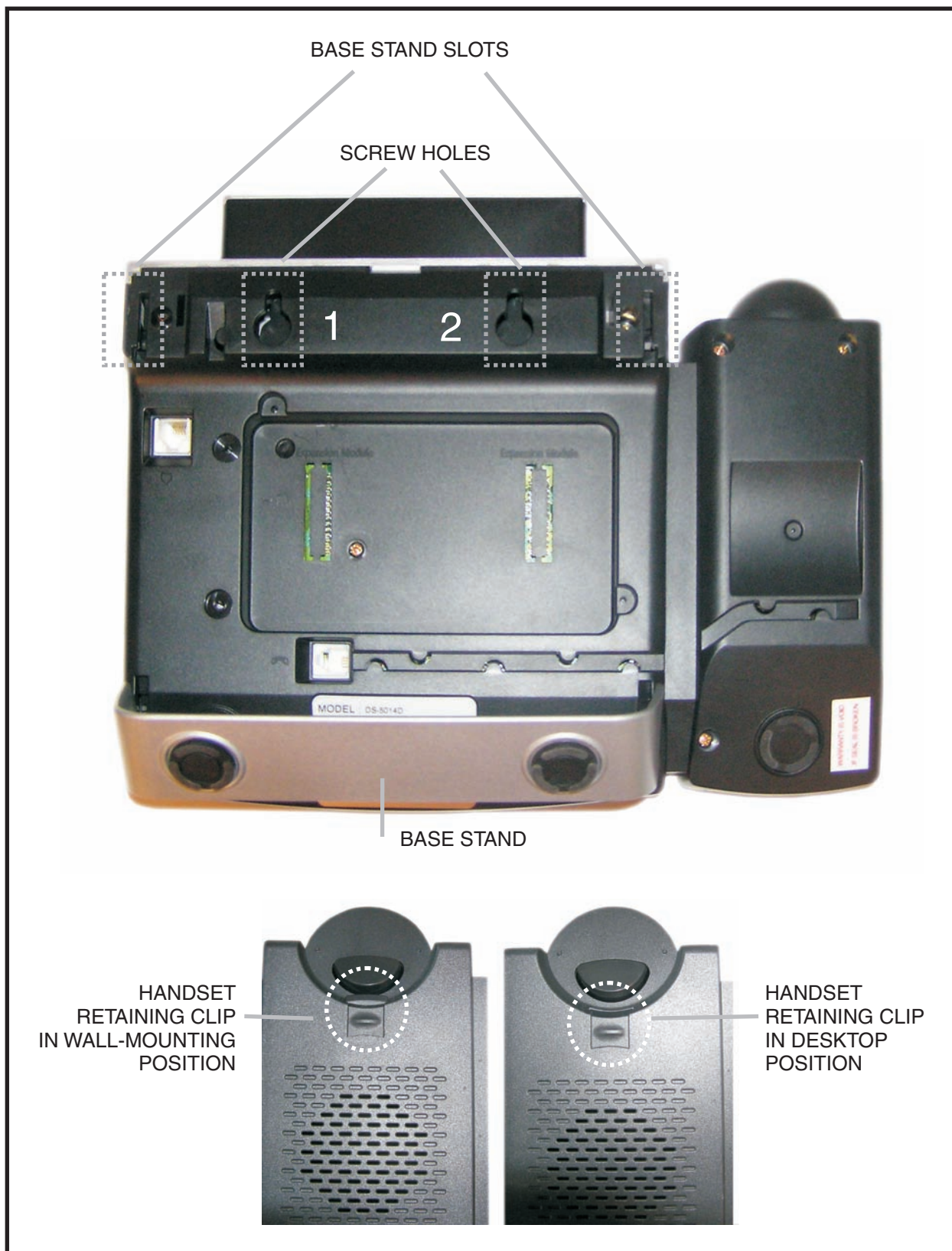






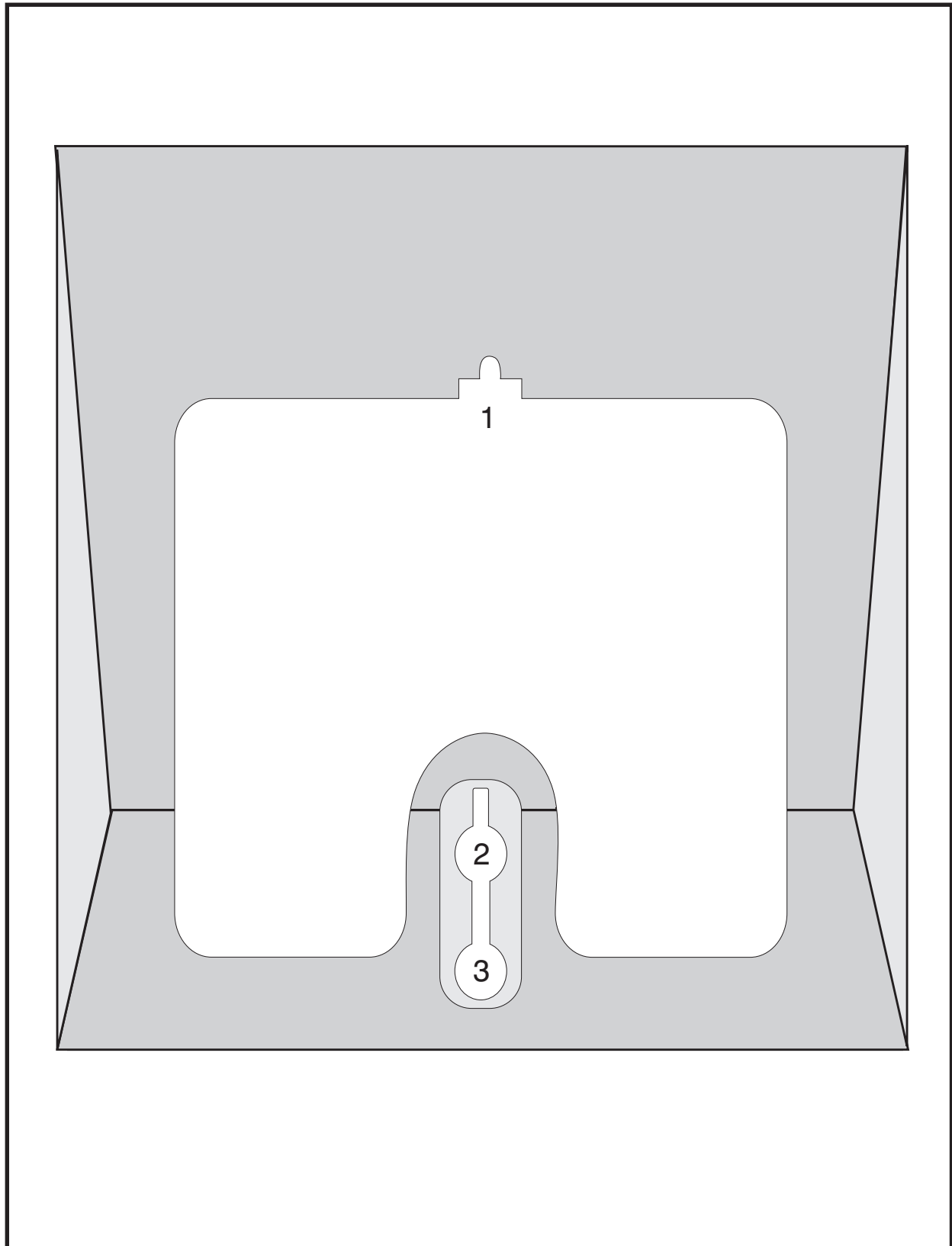
ULTRA BASE WEDGE

**FIGURE 6-15**



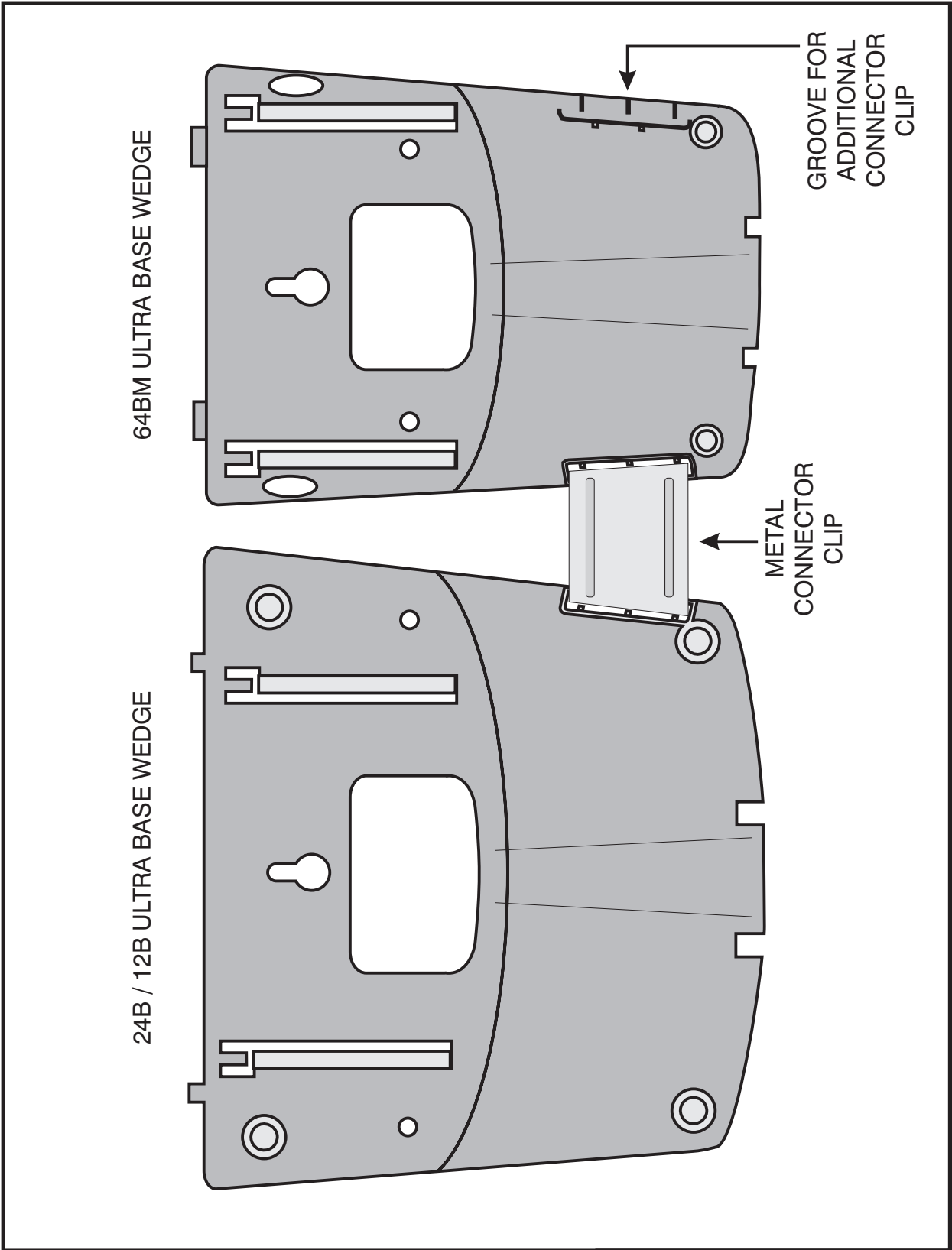
WALL-MOUNTING  
DS, ITP 5121D, and ITP 5107S  
KEYSETS

**FIGURE 6-16**



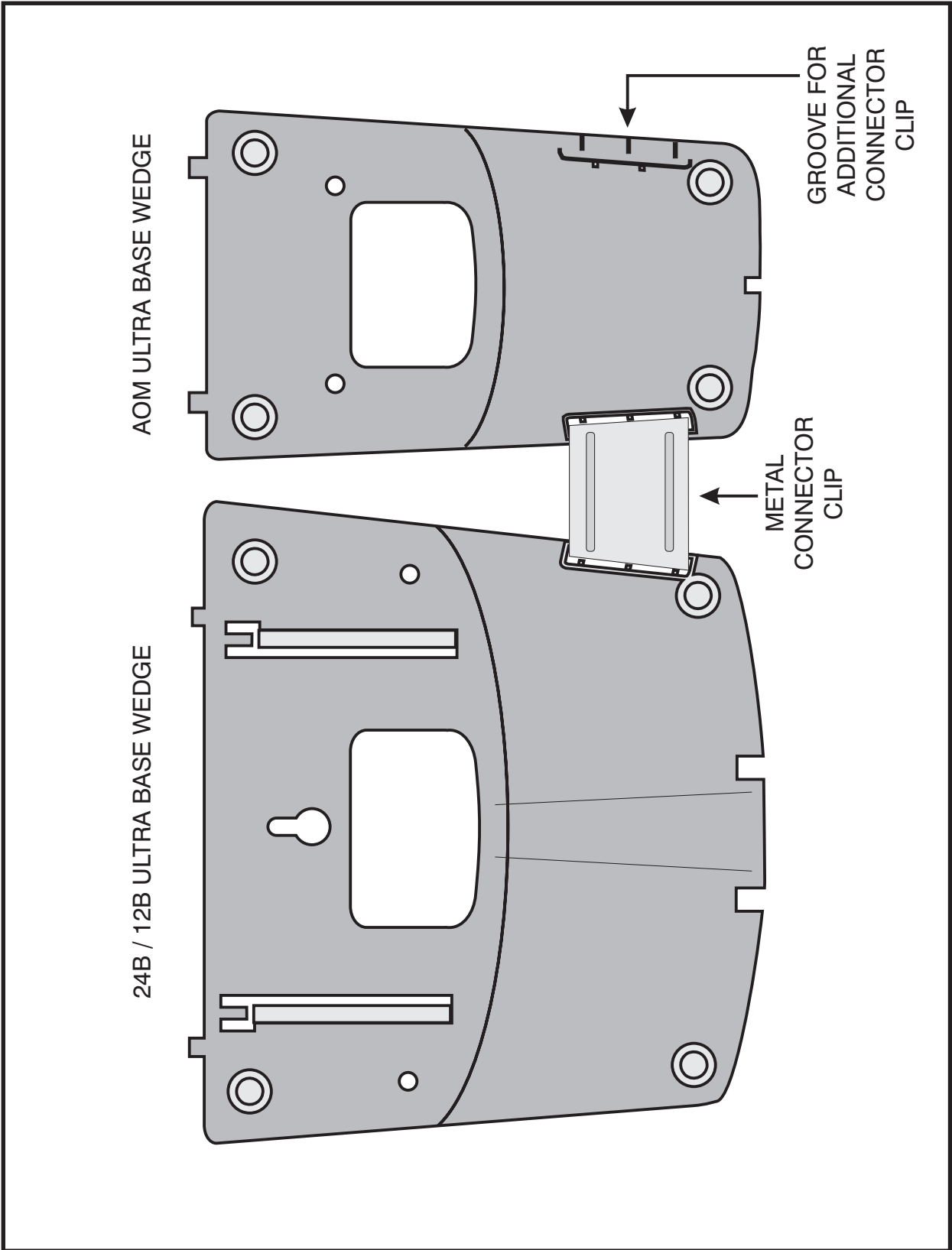
WALL-MOUNTING  
AN iDCS KEYSET

**FIGURE 6-17**



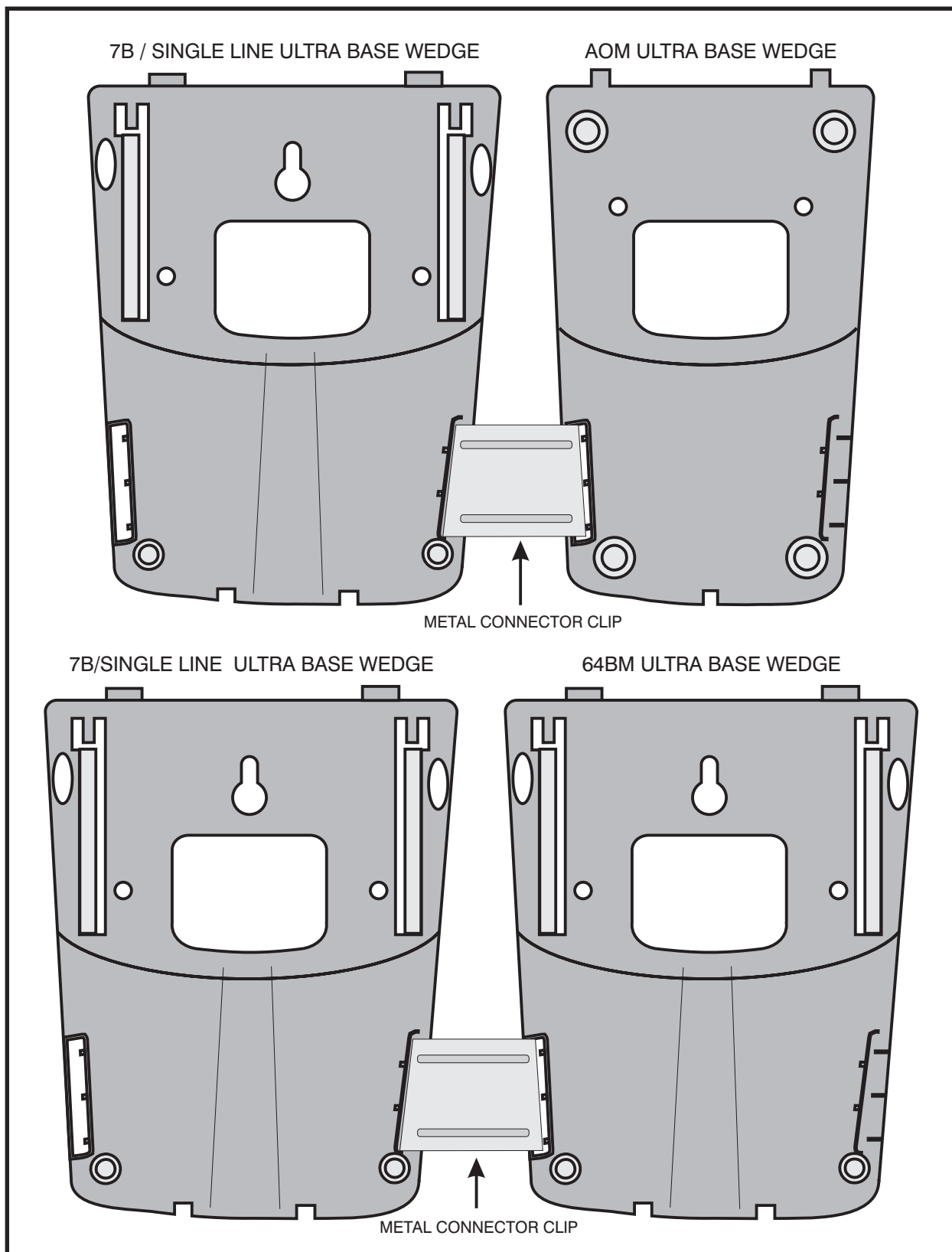
ATTACHING 24B/12B TO 64BM

**FIGURE 6–18**



ATTACHING 24B/12B TO AOM

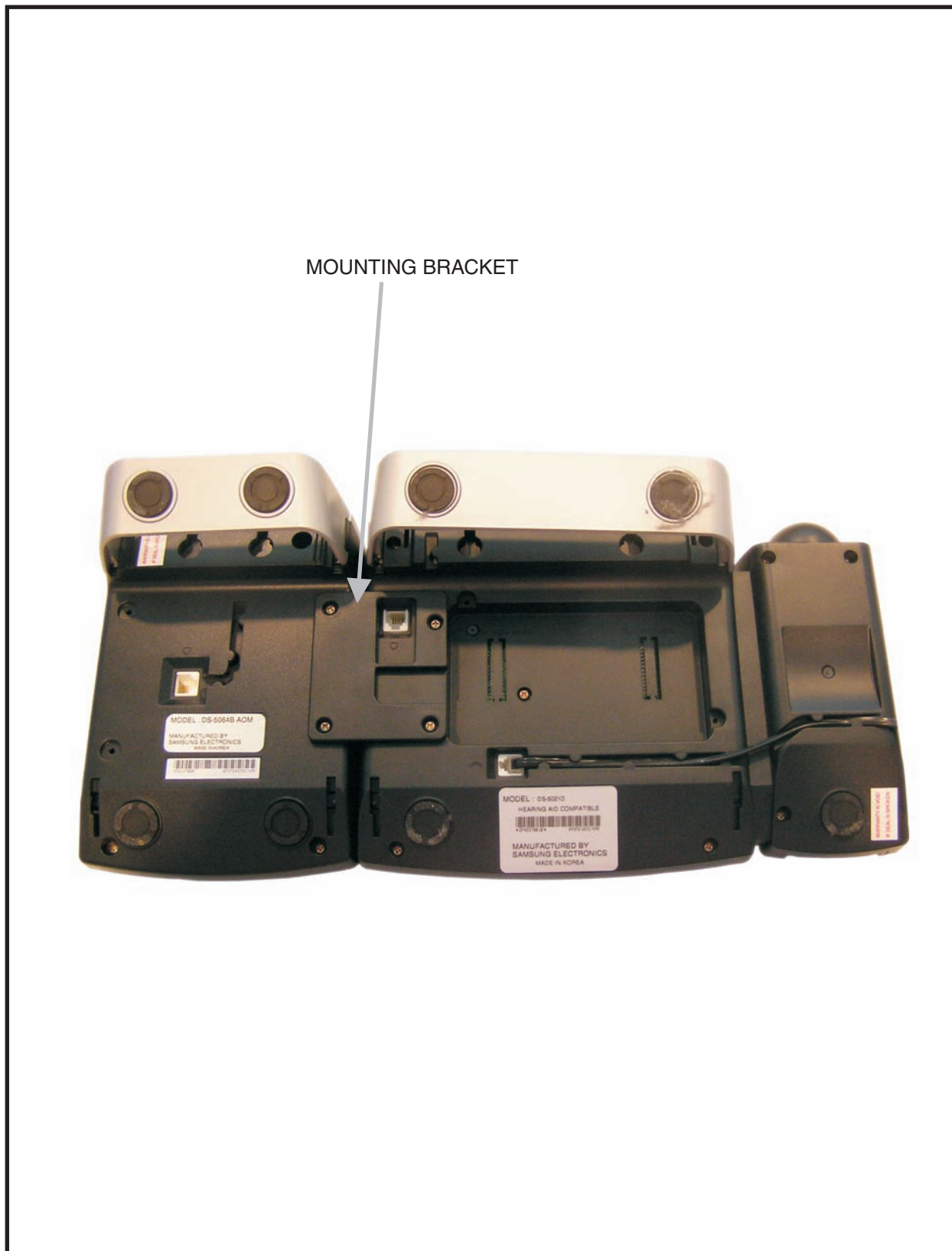
**FIGURE 6-19**



ATTACHING  
7B/SINGLE LINE TO AOM AND  
7B/SINGLE LINE TO 64BM

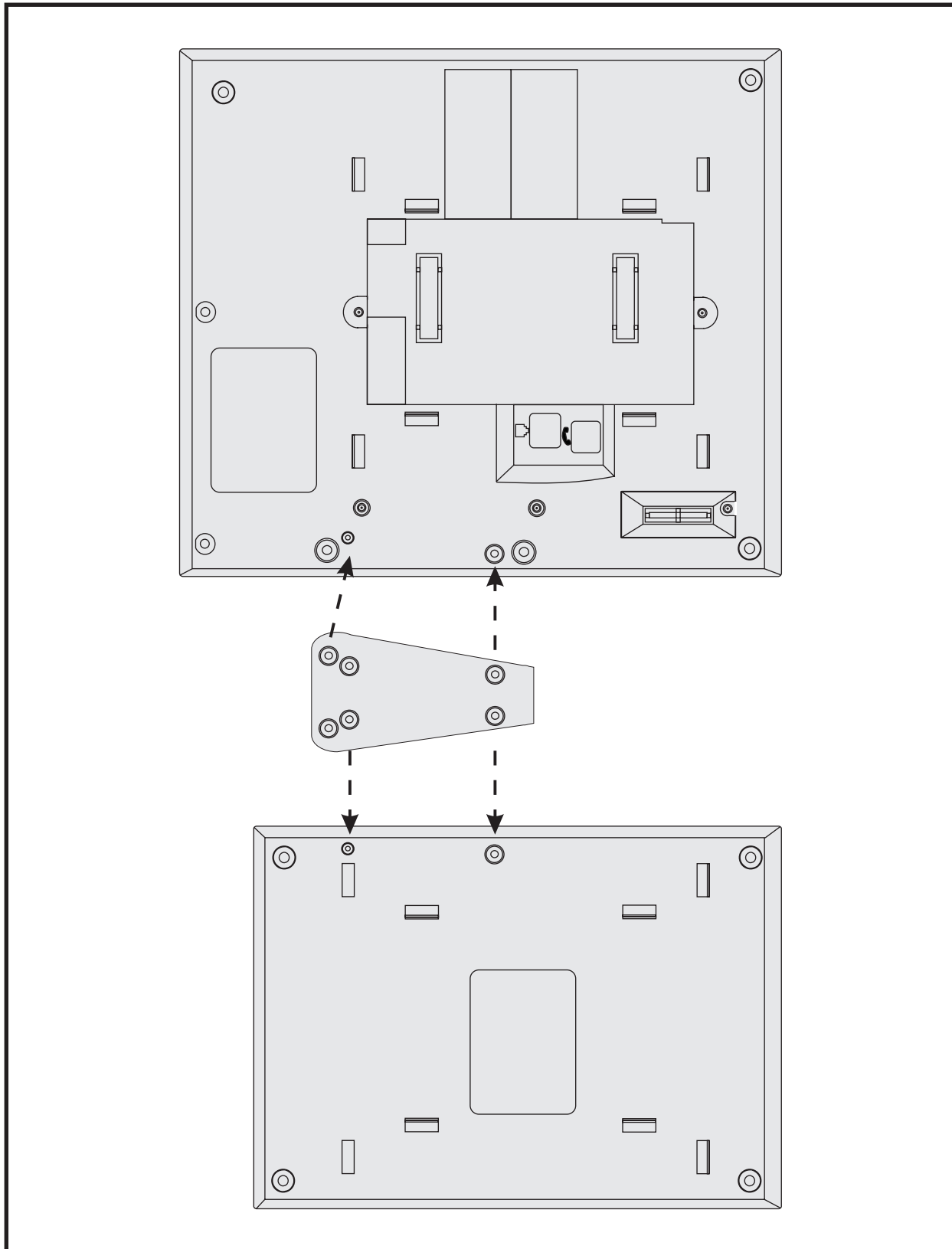
**FIGURE 6-20**





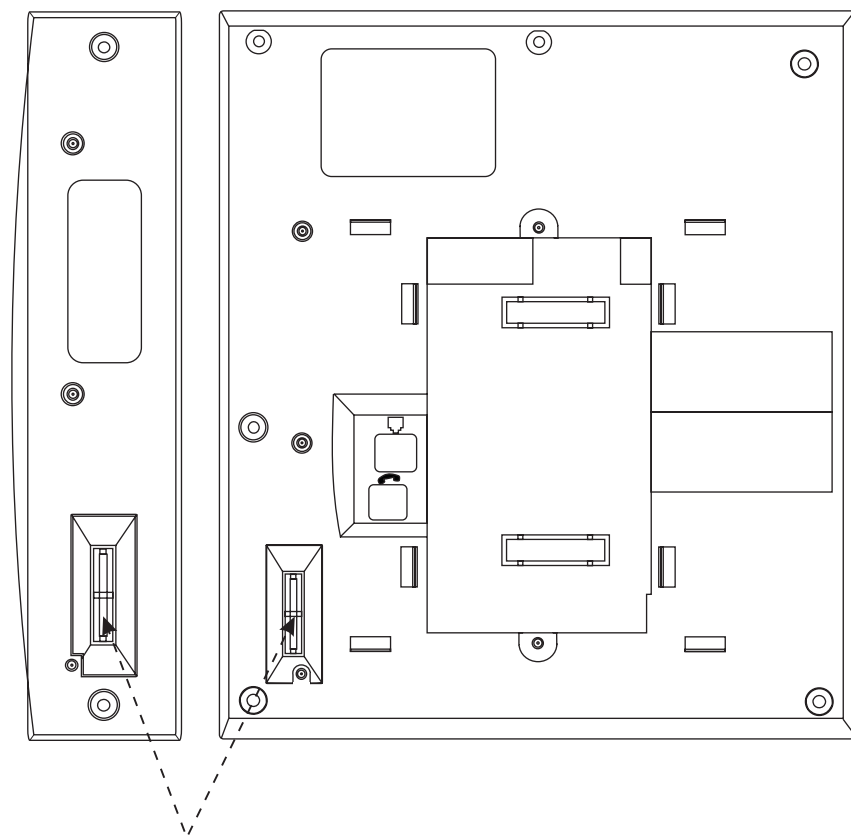
ATTACHING  
DS 64 BUTTON MODULES  
TO A DS 5021D OR DS 5014D

**FIGURE 6-21**



ATTACHING  
iDCS 64B MODULE  
TO AN iDCS KEYSET

**FIGURE 6-22**



**REMOVE KNOCKOUTS  
CONNECT RIBBON CABLE**

**ATTACHING iDCS 14 BUTTON  
MODULES TO AN iDCS KEYSET**

**FIGURE 6-23**

## PART 7. CONNECTING OPTIONAL EQUIPMENT

### 7.1 MUSIC ON HOLD/BACKGROUND MUSIC

Connect each customer-provided music source to the music input on the KSU connecting block ([see Figure 7-1](#)). The music input has internal automatic gain compensation features.

**NOTE:** The MOH input on the KSU can be switched between internal chime and an outside source. The jumper S1 on the KSU motherboard must be set to EXT for an external source to be available ([see Figure 7-2 for the location of S1](#)).

When in the INT position and MOH source is set to 371 the caller will hear internal CHIME. When in the EXT position and MOH source is set to 371 the caller will hear the customer provided music source.

**IMPORTANT NOTICE:** In accordance with US Copyright Law, a license may be required from the American Society of Composers, Authors and Publishers (ASCAP) or another similar organization if copyrighted music is transmitted through the Music on Hold feature. Samsung Telecommunications America, Inc. hereby disclaims any liability arising out of failure to obtain such a license.

Each C.O. line (trunk) can be programmed to receive a music source, system generated TONE or NO MUSIC when it is put on hold ([see MMC 408](#)). Each keyset can receive a music source or NO MUSIC for background music. [See programming manual for instructions \(MMC 308\)](#).

When assigning music sources in MMC 308, enter the default directory numbers shown below:

MISC FUNCTION	DESCRIPTION	HARDWARE	DEFAULT DIRECTORY No.
BASE 17	MOH 1	BASEBOARD	371
MISC 05	MOH 2	SMISC 3/4 BOARD	372

### 7.2 EXTERNAL PAGING

The KSU provides a voice pair to be used with customer-provided paging equipment. Connect the customer provided paging equipment to the page 1 output pins of the P1 connecting block ([see Figure 7-3](#)). The page voice pair is 600 Ohms impedance. When the amplifier page input is not 600 ohm, a suitable impedance matching transformer must be used.

The KSU motherboard has a relay associated with the page output. This relay may be used for amplifier muting ([see Figure 7-3](#)) or zone control ([see Figure 7-4](#)). It is normally open. When Page 1 (361) is activated this fixed page relay operates. This relay contact pair is for control of low voltage circuits or amplifier output. The contacts are rated at 24 VDC-1 amp.

If installed, the SMISC 3/4 card provides a second voice pair for connection to a second amplifier and 3 relays that may be defined as page zone control in [MMC 218](#) and assigned in [MMC 605](#) ([see Figure 7-4](#)). These relay contact pairs are for control of low voltage circuits or amplifier output. The contacts are rated at 24 VDC-1 amp.

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

The SMISC 3/4 card also provides a second independently controlled page output voice pair to be used with customer-provided paging equipment. Connect the customer provided paging equipment to the page 2 output pins of the P1 connecting block ([see Figure 7-3](#)). The page voice pair is 600 Ohms impedance. When the amplifier page input is not 600 ohm, a suitable impedance matching transformer must be used.

The Page Tip and Ring and Zone Relay default directory numbers are listed in the following table. Both of these directory numbers must be assigned in MMC 605, Assign External Page Zone for external paging to work.

MISC FUNCTION	DESCRIPTION	HARDWARE	DEFAULT DIRECTORY No.
BASE 18	Page 1 T&R	BASEBOARD	361
	CONTACT PAIR 1	BASEBOARD	NONE
MISC 06	Page 2 T&R	SMISC 3/4	362
MISC 07	CONTACT PAIR 2	SMISC 3/4	363
MISC 08	CONTACT PAIR 3	SMISC 3/4	364
MISC 09	CONTACT PAIR 4	SMISC 3/4	365

## 7.3 COMMON BELL

A customer-provided loud ringing device can be controlled using one of the relay contact pairs on the SMISC 3/4 card ([see Figure 7-5](#)). Each of these 3 relays can be individually defined as a common bell in [MMC 218](#) and assigned in [MMC 204](#). These relay contact pairs are for control of low voltage circuits or amplifier output. The contacts are rated at 24 VDC-1 amp.

Programming allows for INTERRUPTED or CONTINUOUS operation of the contacts using [MMC 204](#). The interrupted selection follows the C.O. ring cadence—one second ON/three seconds OFF.

After connecting a common bell, you must assign it to a group in [MMC 601](#) as a ring destination by using the code for Common Bell.

The basic steps for common bell operation are the following:

- a. Wire the loud ringing device to the common bell control contact pair.
- b. Program the relay as a common bell in [MMC 218](#).
- c. Program the contacts for continuous or steady operation.
- d. Program the station hunt group to include the common bell.
- e. 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. Contacts are rated at 24 VDC-1 amp.

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

## 7.4 RING OVER PAGE

When a customer-provided paging system is installed, incoming calls can be assigned to ring over page. Program the line or lines to ring a hunt group. Using [MMC 601](#), assign ROP as a destination in this hunt group. Ring over page can be used for day or night operation or both.

## 7.5 STATION MESSAGE DETAIL RECORDING (SMDR)

To receive an SMDR printout, connect a customer-provided serial printer to the serial interface connector on the SMCP1 card.

Use a pin to pin RS232C cable. Only pins 2, 3, 5 and 7 are required ([see Figure 7-7](#)). When the printer or optional call accounting device needs to be more than 15 feet away from the KSU, use shielded computer cable. Attach a male DB9 connector to the SIO end and then attach one that matches the requirements of the call accounting device or printer to the other end. This cable must not exceed 300 feet.

Use [MMC 725](#) to set SMDR print options and [MMC 804](#) to set the transmission parameters and the SIO port set-up SIO 1.

## 7.6 PC PROGRAMMING

The system can be programmed using a Personal Computer (PC) running the OfficeServ Manager (OSM) OfficeServ 100 application module.

The OfficeServ Manager can connect to the system using any of the four methods described below:

1. **SIO Port on SMCP-1 card (local connection):** Use an RS232C cable to connect the serial port of the PC to the serial connector on the SMCP-1 card ([see Figure 9-1](#)). Use an RS232C cable with connections as shown in [Figure 7-8](#). When the PC needs to be more than 15 feet away from the system, use a shielded computer cable. Attach a male DB-9 connector to the SMCP-1 serial port end and attach one that matches the PC's serial port on the other end. The cable must not exceed 300 feet. Use MMC 804, to set up the SIO port parameters for **SIO 1**. *In this MMC, SIO 1 refers to the physical serial port on the SMCP-1. SIO2 refers **only** to the modem daughter card (if installed) on the SMISC board.*
2. **Modem card (remote connection):** If the Modem Daughter card (same one used for the OfficeServ 500) is installed on the SMISC3/4 the a PC equipped with a modem, and running OfficeServ Manager (OSM) can communicate with the system by dialing into the Modem Daughter card ([see programming manual for setting up the modem card](#)). [Refer to section 3.16 for Modem Daughter card installation information.](#) Use MMC 804 and set up **SIO 2** parameters to use modem card.
3. **External Modem (remote connection):** Instead of the Modem daughter card, a customer provided modem can also be used. (Contact Samsung Technical Support for a listing of the latest approved modems). Use an RS232C cable with connections as shown in [Figure 7-9](#). When the PC needs to be more than 15 feet away from the system, use a shielded computer cable. Attach a male DB-9 connector to the SMCP1 serial port end and attach one that matches the external modem's serial port on the other end. The cable must not exceed 300 feet. Use MMC 804, to set up the SIO parameters for **SIO 1**. *In this MMC, SIO 1 refers to the physical serial port on the SMCP1.* Now a remote PC equipped with a modem can dial into this external modem connected to the system.
4. **LAN Connection (remote or local connection):** The SMCP1's RJ-45 LAN (Local Area Network) connector can be used to connect the system to a data network. Any computer that can access this data network can use OfficeServ Manager (OSM) to program the system via LAN connection. The computer can reside either on the local LAN or be located on a remote network. [Refer to the programming manual for instructions on setting up the SMCP1 with an IP address and configuring it to communicate on a LAN.](#) Connect an Ethernet cable (CAT-5) from your local LAN to the RJ-45 LAN connector of the SMCP-1. If the OfficeServ Manager (OSM) PC can route to the IP address of the SMCP1, then it can communicate with and program the system. See your data administrator for details needed for setting this up.



## 7.7 REMOTE PC PROGRAMMING

To remotely program a system, connect a customer-provided modem to a serial interface connector on the SMISC card ([see Figure 7-6](#)).

Use an RS232C cable as shown in [Figure 7-9](#). When the modem needs to be more than 15 feet away from the KSU, use shielded computer cable. Attach a male DB9 connector to the SMISC end and then attach one that matches the requirements of the modem to the other end. This cable must not exceed 300 feet.

Use [MMC 804](#) to set the transmission parameters and the SMISC port to be used.

## 7.8 POWER FAILURE TRANSFER (PFT)

When the system loses AC power, the first two loop start lines of each S3TRK card are automatically switched to the PFT pairs on the connecting block ([see Figure 7-10](#)). Cross-connect these outputs as shown in [Figure 7-10](#) to the TIP and RING pairs of the single line phones that are to have power failure operation.

## 7.9 VOICE MAIL/AUTO ATTENDANT

System operation provides special programming and hardware for use with a customer-provided (Third Party) voice mail/auto attendant system. The single line stations on the 2 SLI card, S8SLI card and the 2 X 4 SLI card can provide a disconnect signal required for VM/AA operation. Use one pair twisted #24 AWG or #26 AWG jumper wire to cross-connect these SLI circuits to the VM/AA system ([see Figure 7-11](#)).

Program these ports for VM/AA use in [MMC 207](#) and set VM/AA options in [MMC 726](#). As default [MMC 726](#) comes programmed to interface with SVMi. [See the Standard Telephone User Guide for feature codes and instructions \(how to light message lights etc.\)](#).

## 7.10 CONNECTING SYSTEM BACKUP BATTERIES TO THE OfficeServ 100 POWER SUPPLY

The OfficeServ 100 power supply contains 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 not more than 40 AH. The batteries must be located within three feet of the KSU. Use the factory-supplied wire harness with 36" red and black leads to connect batteries ([see Figure 7-12](#)).

Observe the following precautions when installing batteries:

- a. 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.
- b. Do not place batteries directly on a concrete floor. This causes them to discharge very quickly.
- c. Follow the battery manufacturer's recommended installation and maintenance procedures.

## 7.11 CONTACT ALARM SENSOR

The SMISC3/4 cards provide an alarm sensor contact pair. This is MISC 10 function with a default directory number of 3998.

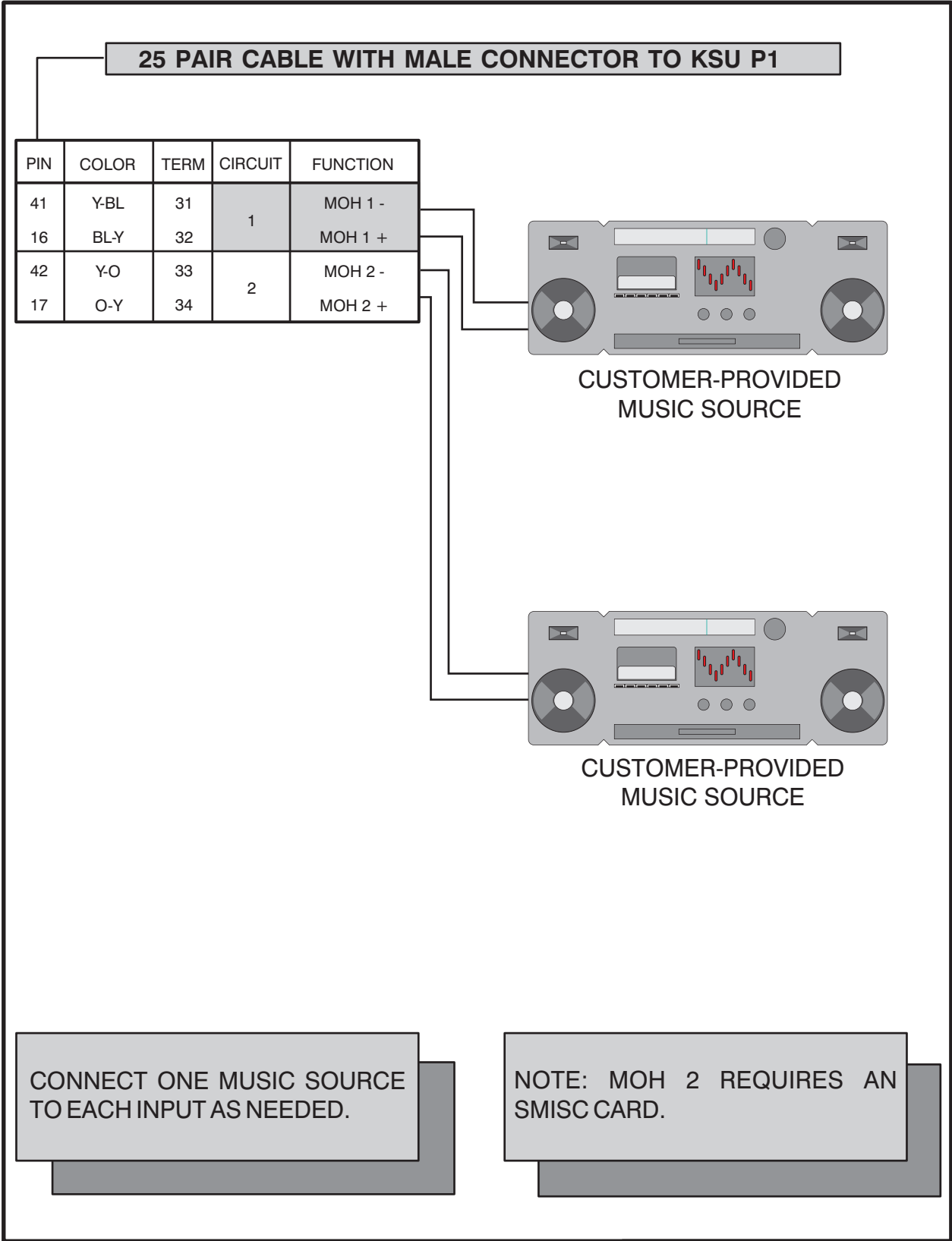
Connect a customer provided device like a Temperature Alarm Gauge, a Fire Alarm Control or other appropriate device that will momentarily close, then open a contact based on the purpose of the device. Connect the V/BN and BN/V pair of connector P1 to the device. When it shorts this pair, an alarm will ring the destination programmed in MMC 212 ALARM RING and display a 16 character alarm message name as programmed in MMC 213 ALARM NAME. [See Figure 7-13.](#)

To clear the [CONTACT ALARM!] press the ALARM CLEAR button if assigned or dial the default feature code 57 plus the default passcode of "8765".

## 7.12 STATION LOUD BELL

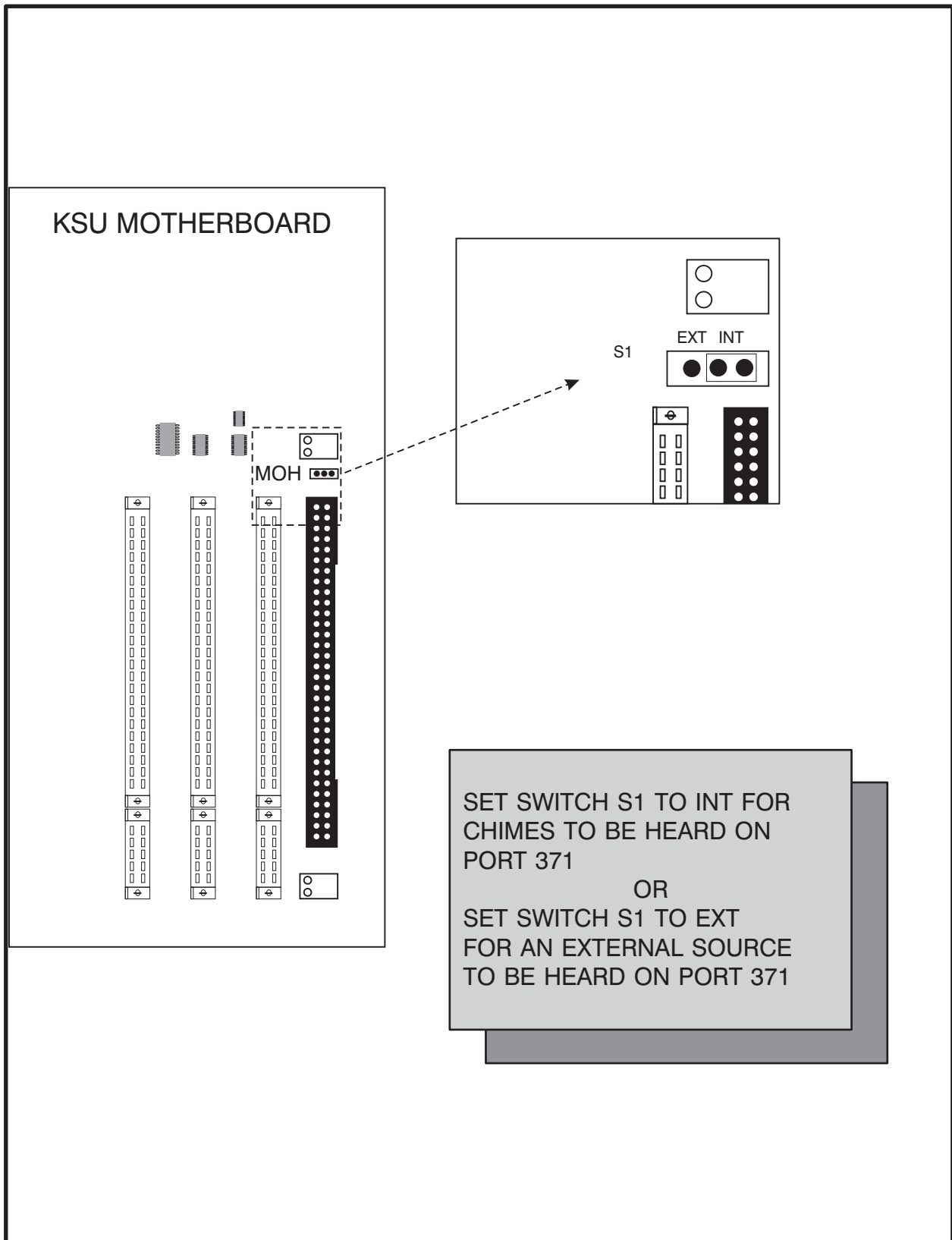
The OfficeServ 100 system provides for customer provided loud ring devices to be assigned or paired with any station in the system.

Any of the three relay contact pairs can be assigned in MMC 218 for loud bell operation. Then go to MMC 205, Loud Bell and assign the contact pair to a station by entering a valid station directory number. When this station is called the associated relay will operate to control a customer provided loud ringing device. [See figure 7-5.](#) Connecting a common bell and a loud bell is the same. A loud bell can only be used for a station.



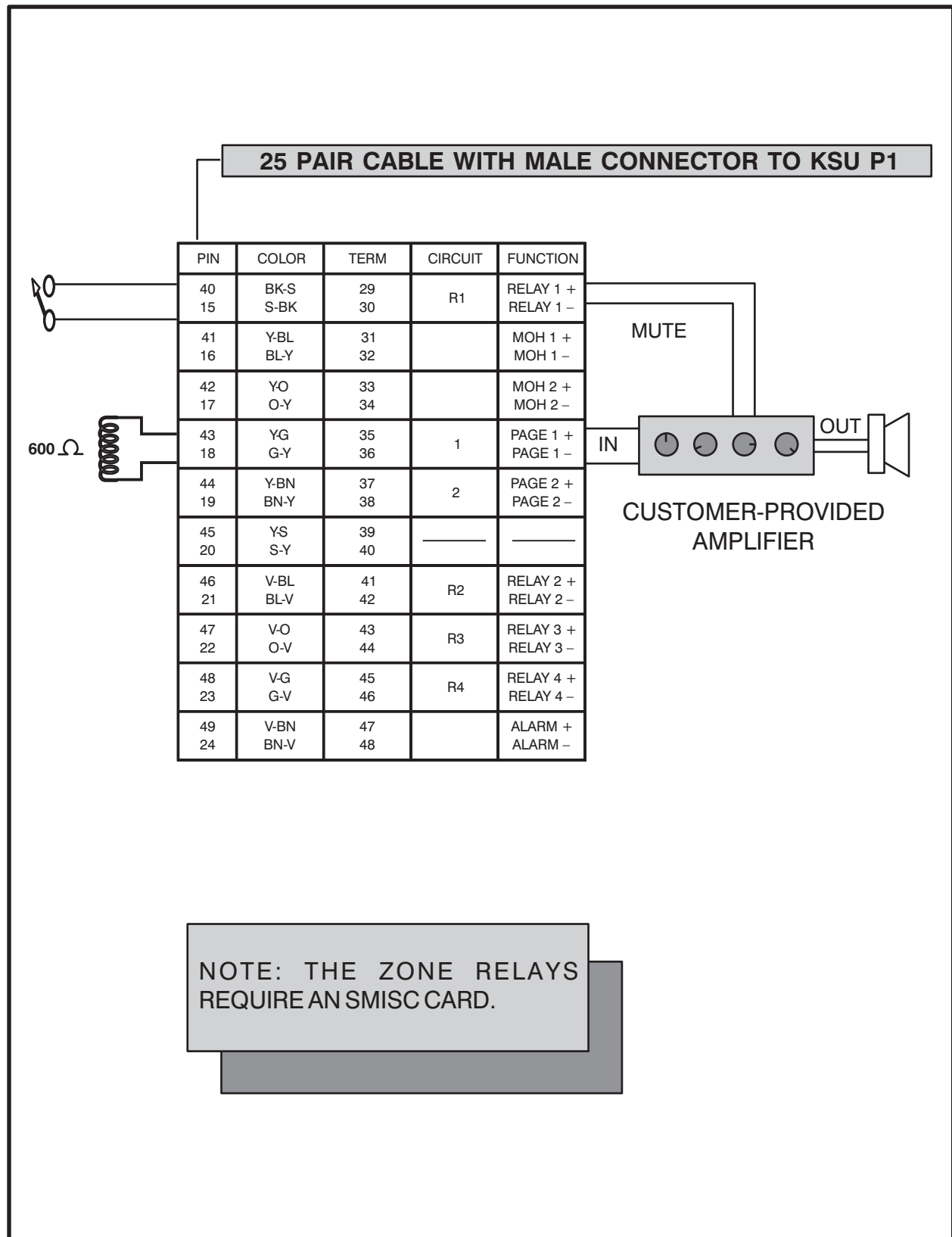
MDF CONNECTIONS CONNECTING  
MOH SOURCES TO KSU

**FIGURE 7-1**



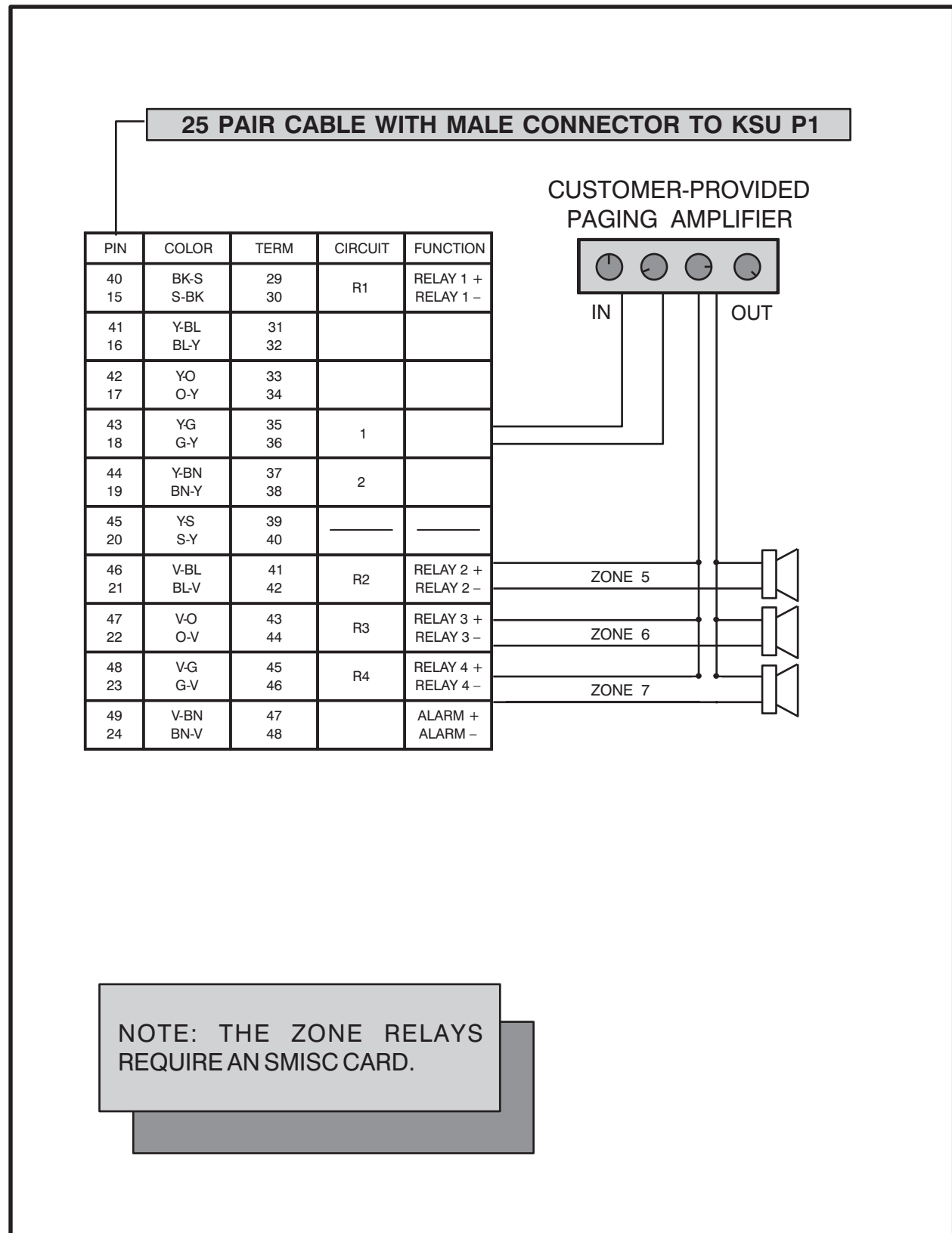
SETTING JUMPER SWITCH S1

**FIGURE 7-2**



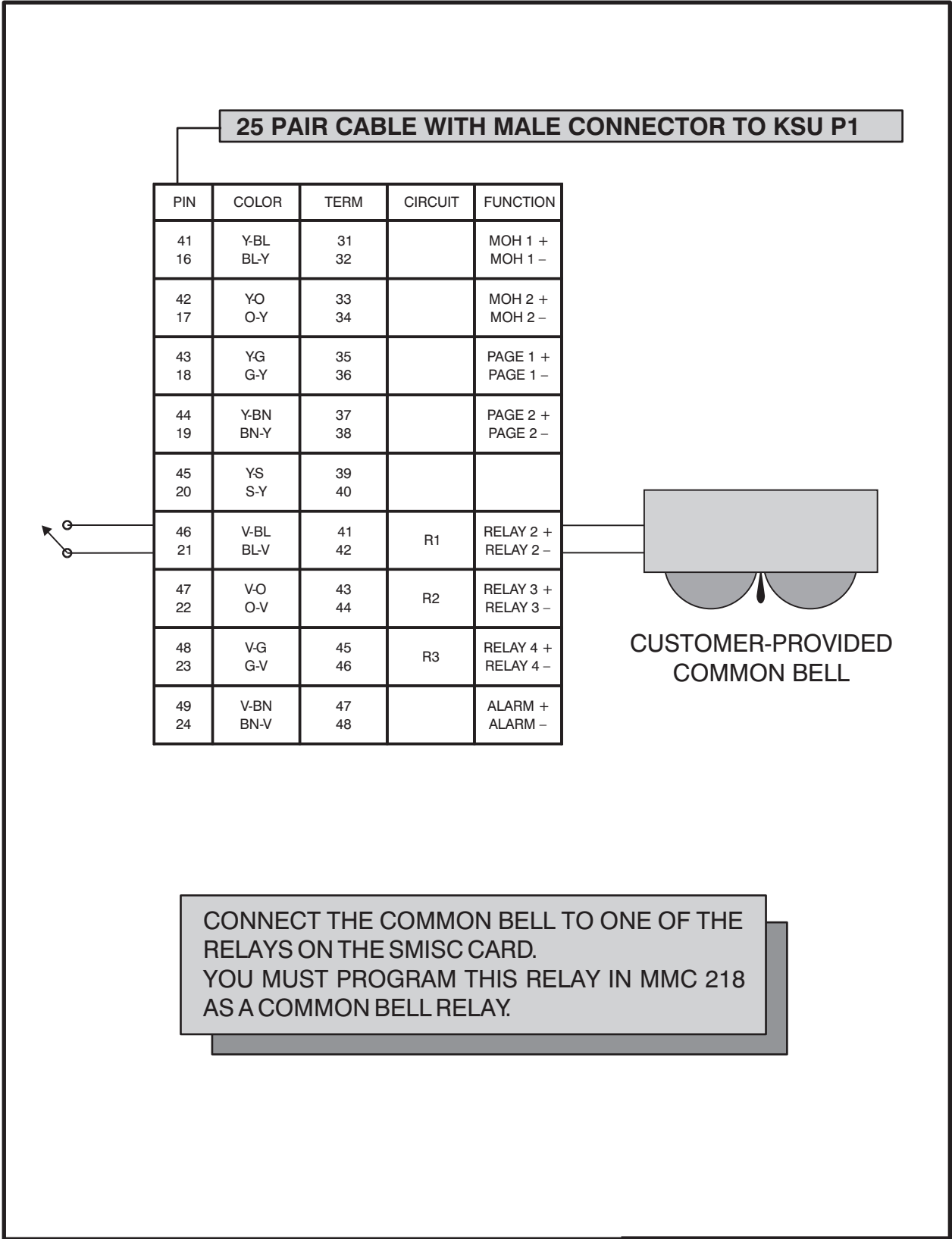
MDF CONNECTIONS CONNECTING  
PAGE AMPLIFIER TO KSU

**FIGURE 7-3**



MDF CONNECTIONS CONNECTING  
PAGE AMPLIFIER TO KSU

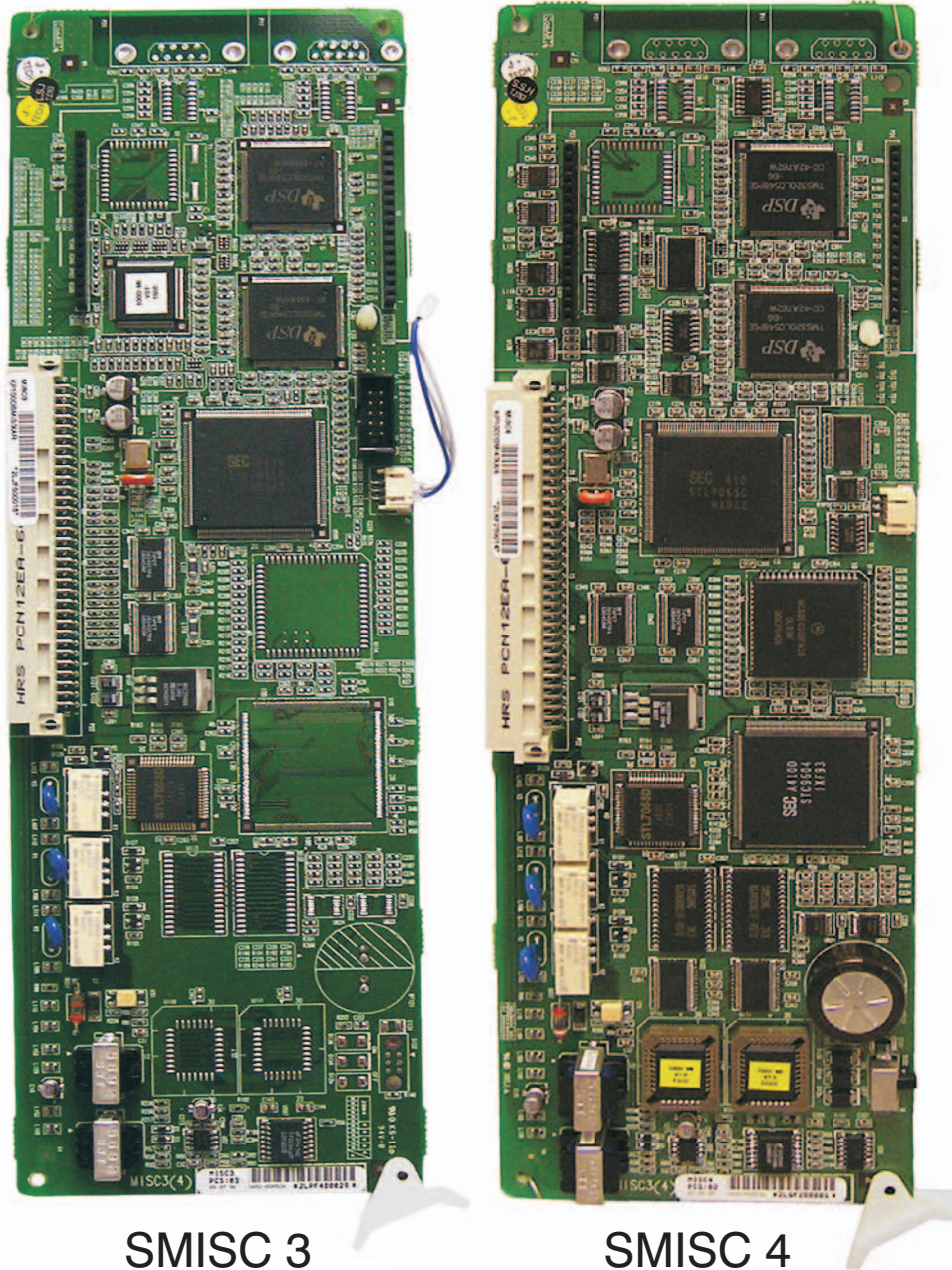
**FIGURE 7-4**



MDF CONNECTIONS  
COMMON BELL CONTACTS

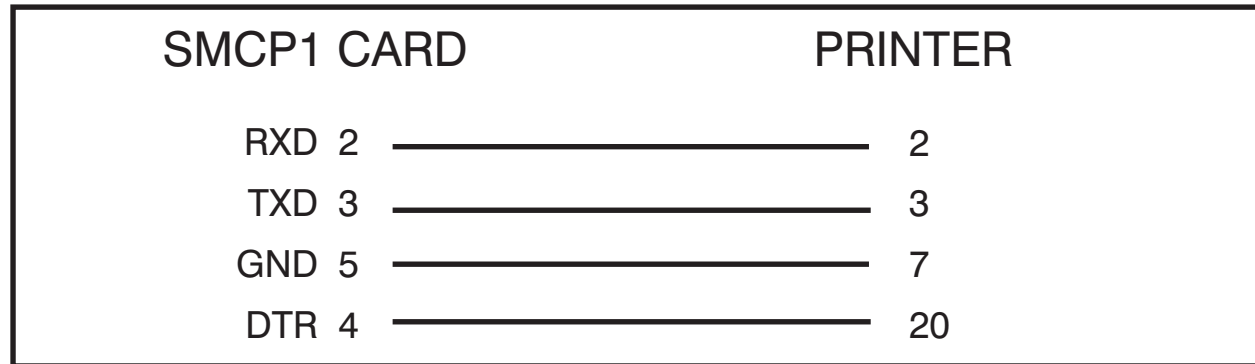
FIGURE 7-5





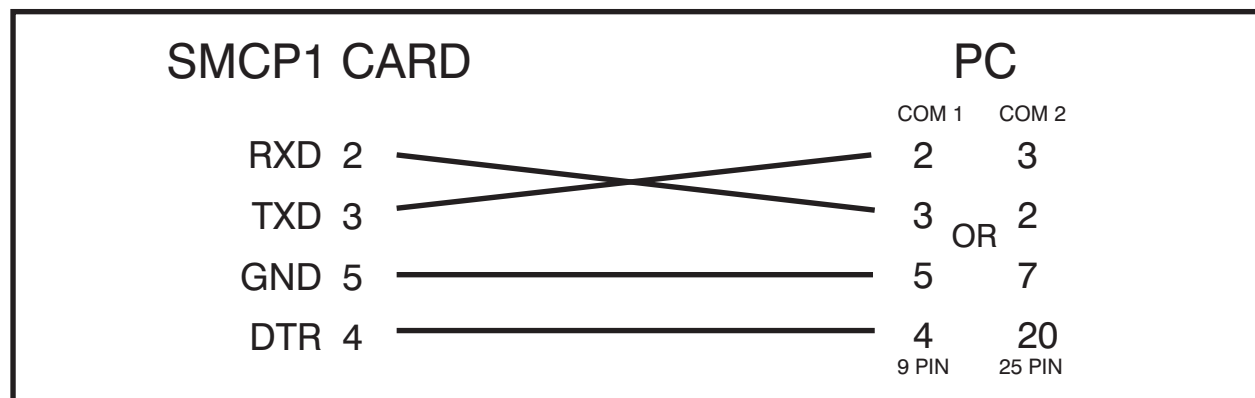
SMISC 3 AND 4 CARDS

**FIGURE 7-6**



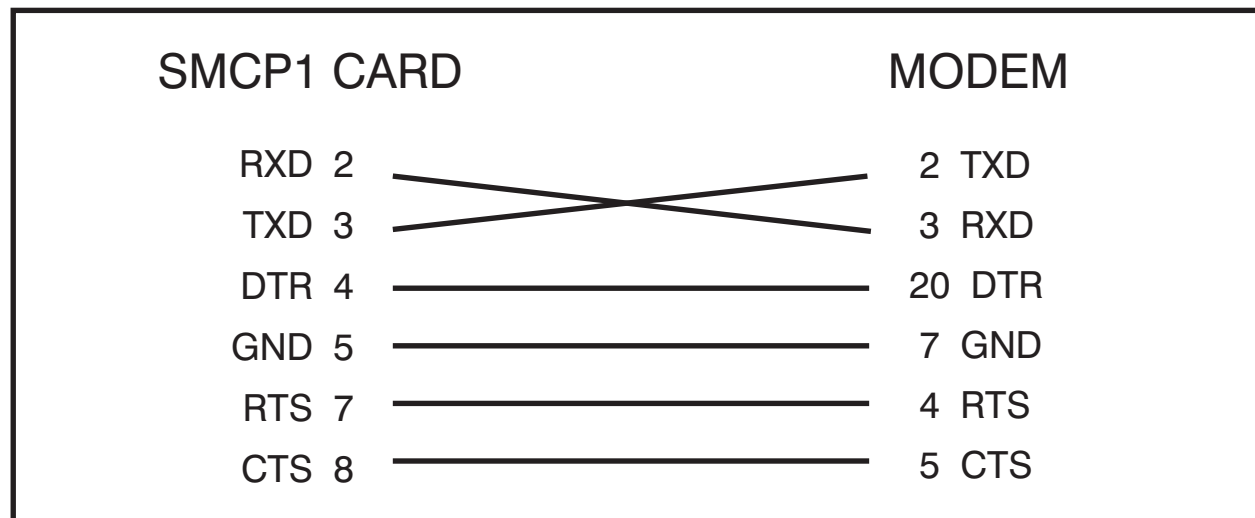
PIN CONNECTIONS FOR SMCP1  
CARD TO PRINTER

**FIGURE 7-7**



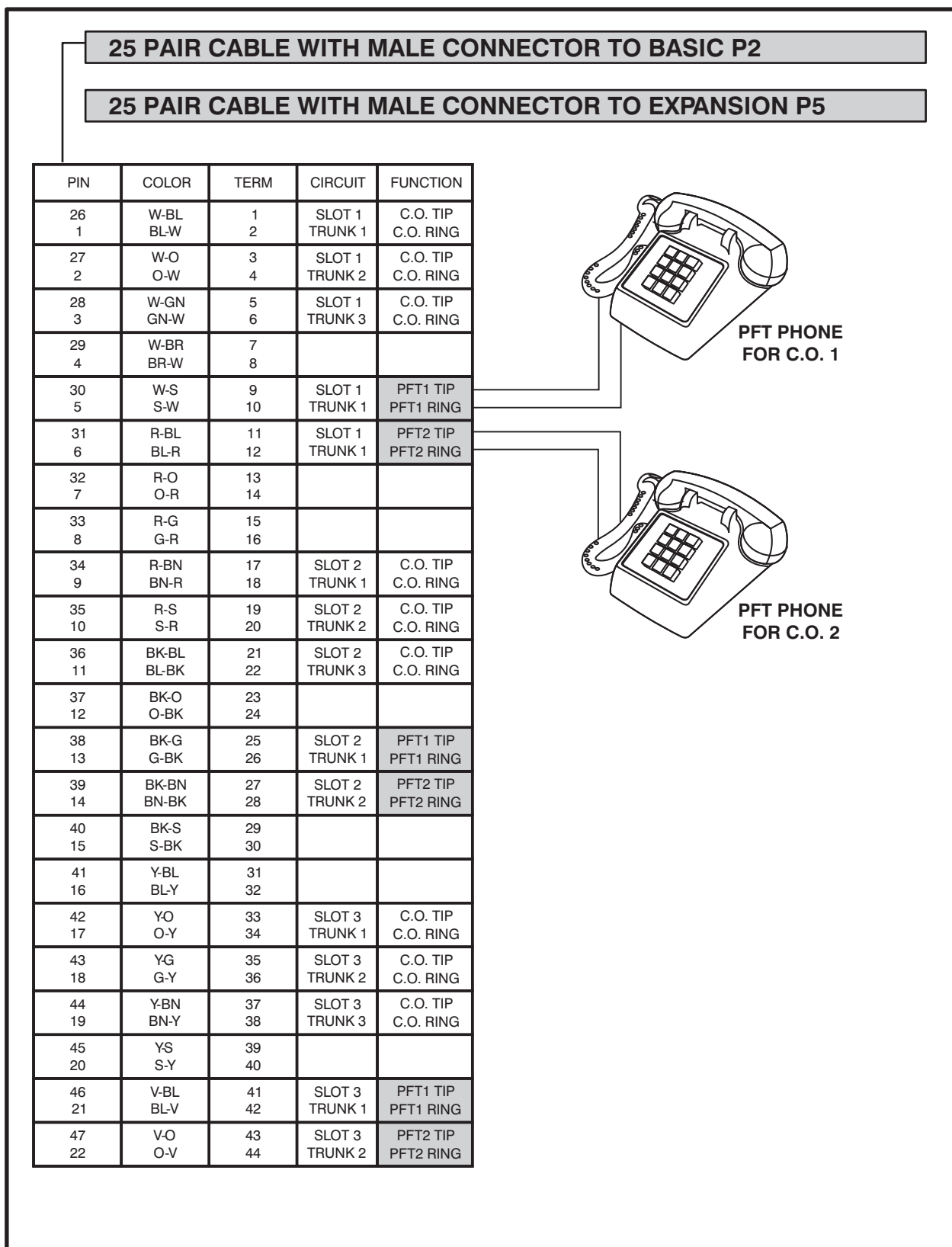
PIN CONNECTIONS FOR SMCP1  
CARD TO PERSONAL COMPUTER

**FIGURE 7-8**



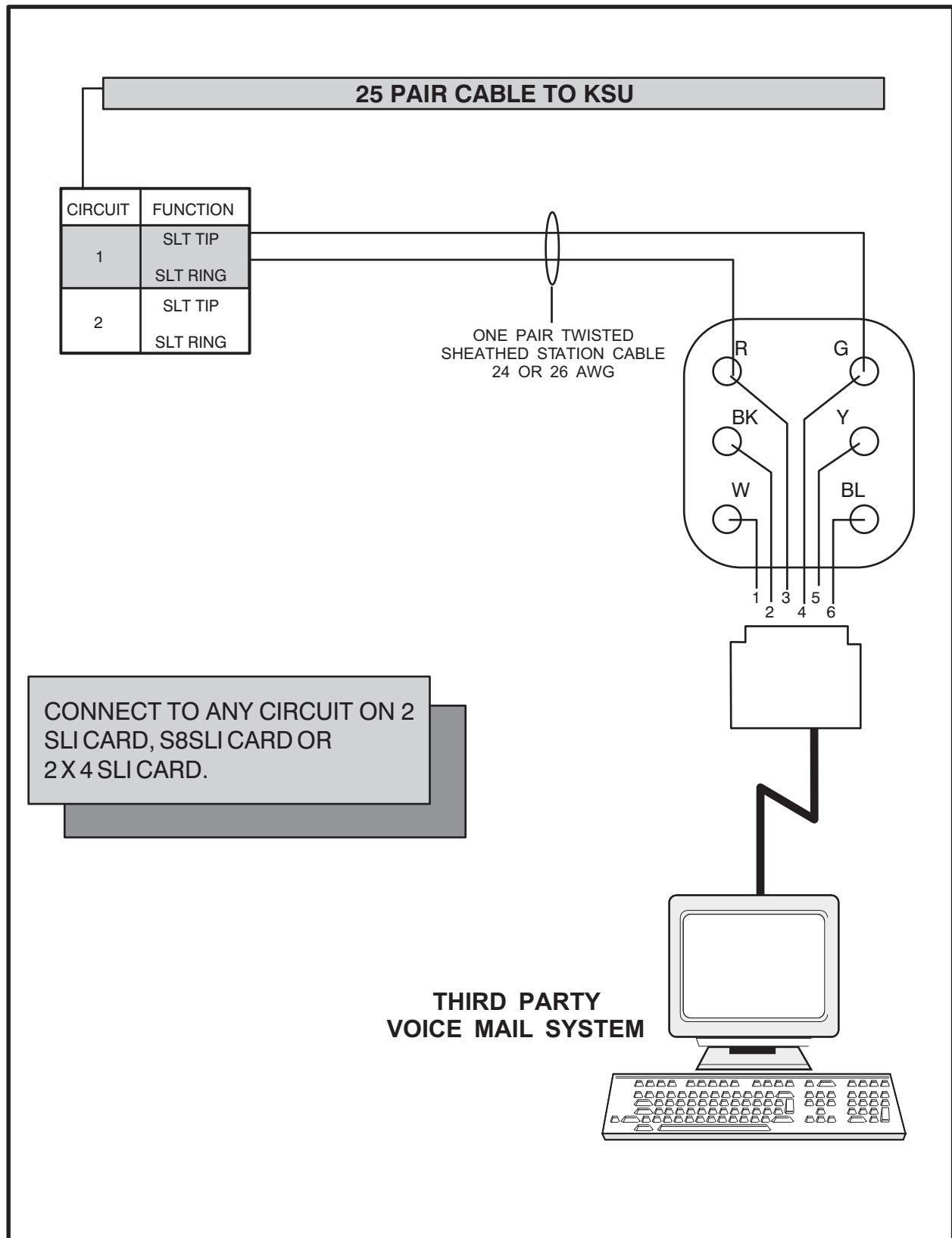
PIN CONNECTIONS FOR SMCP1  
CARD TO MODEM

**FIGURE 7-9**



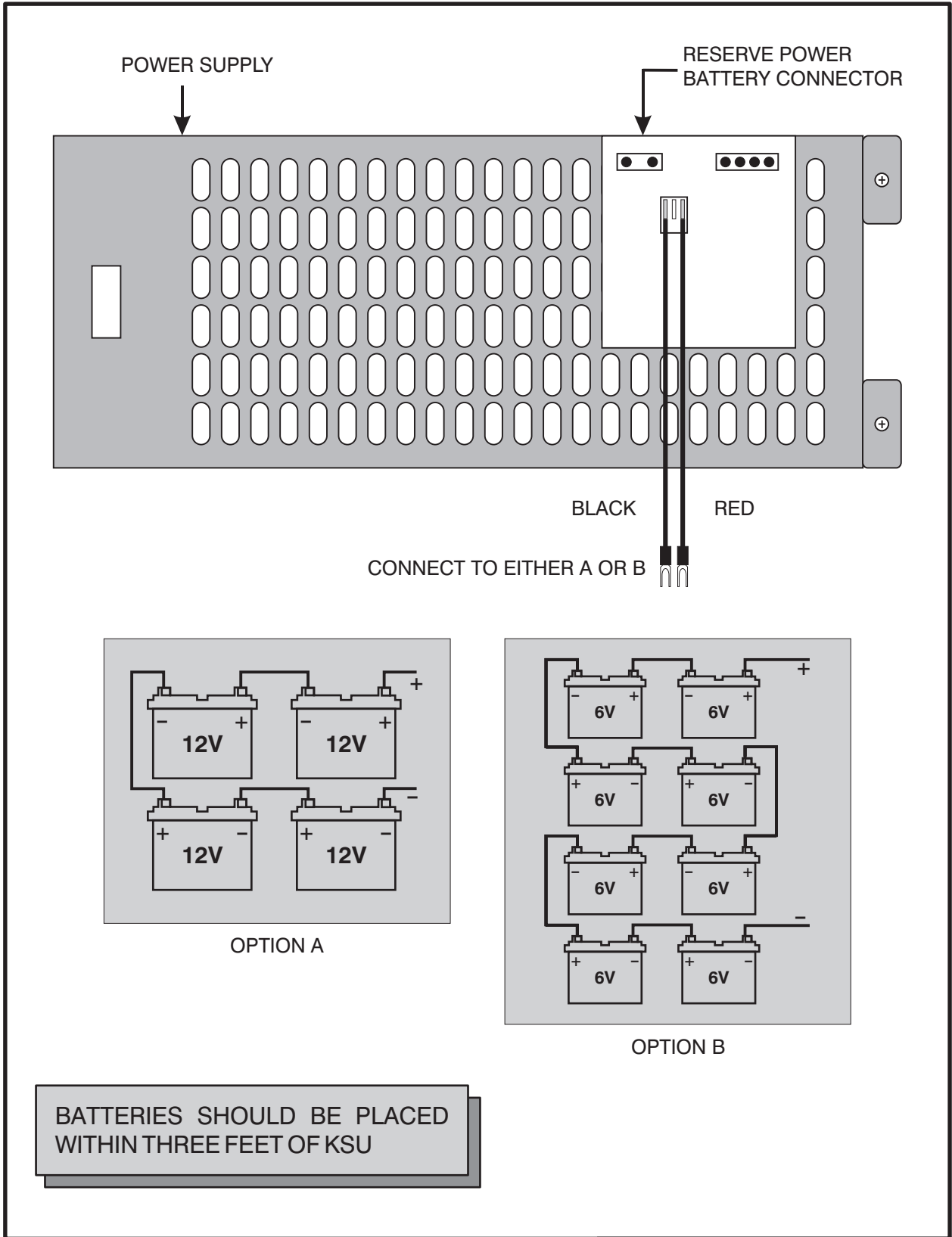
CONNECTING SLTS TO PFT  
CIRCUITS ON S3TRK CARD

**FIGURE 7-10**



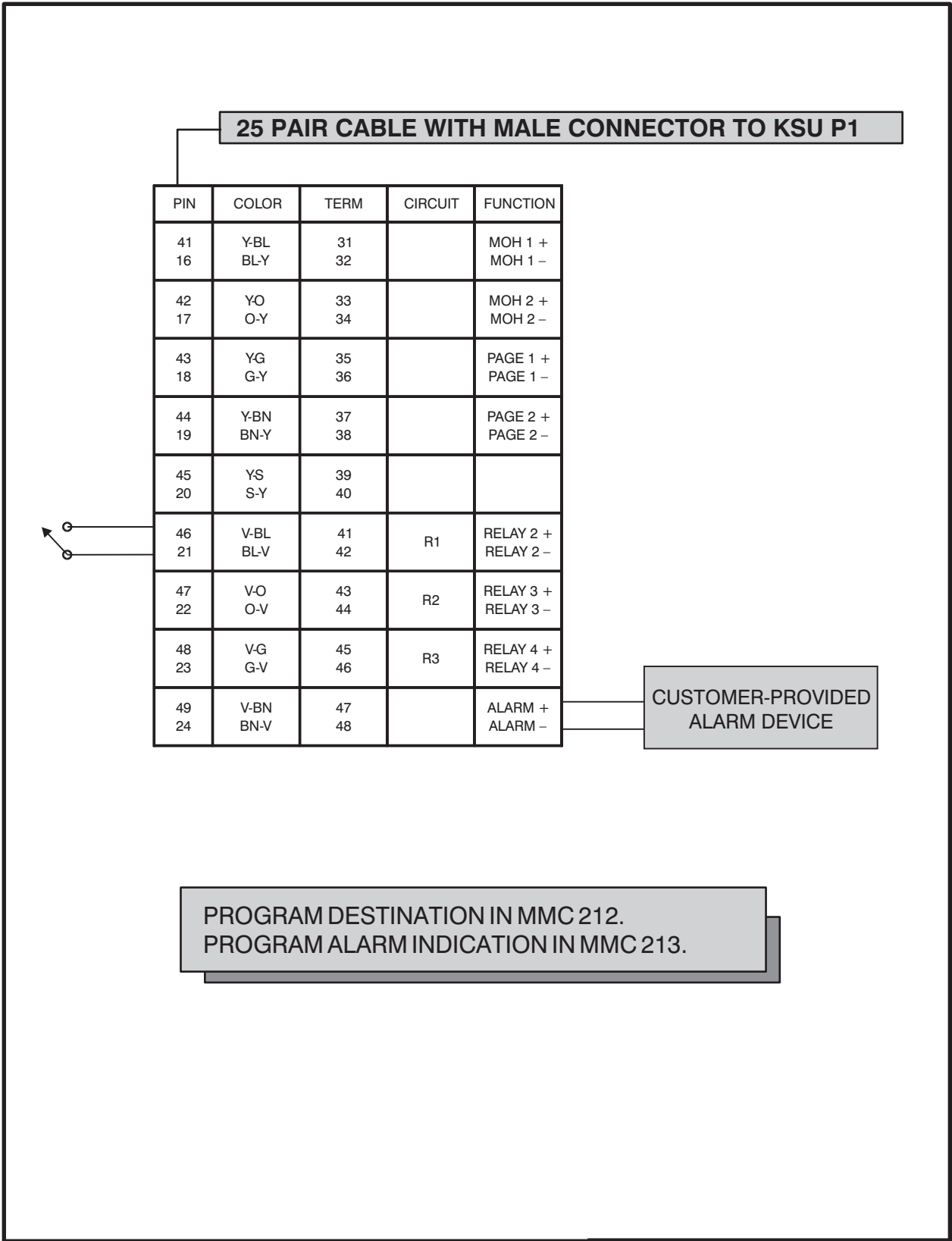
MDF CONNECTIONS  
VOICE MAIL TO SLI CARD

**FIGURE 7-11**



RESERVE POWER BATTERY  
CONNECTIONS

**FIGURE 7-12**



MDF CONNECTIONS  
CONTACT ALARM SENSOR

FIGURE 7-13

## PART 8. INSTALLING KEYSSET DAUGHTERBOARDS

### 8.1 iDCS KDB-DIGITAL LINE INTERFACE (FKDBD)

This is a daughterboard that can be installed only in the 18 or 28 button keyset. The FKDBD will provide one additional DLI circuit for the connection of any digital station device such as a keyset, add-on module or DPIM. This FKDBD will only operate when the keyset 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 8-1.](#)

### 8.2 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 8-1.](#)

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

### 8.3 DS KDB-FULL DUPLEX (KDBF)

This is a daughterboard that can only be installed in the 21D or 14D button keysets. The standard speakerphone mode of operation for a DS keyset is “half duplex”. This means that you cannot transmit and receive speech at the same time. Adding a KDBF to your keyset will convert the speakerphone into full duplex mode enhancing its operation. In addition the KDBF 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 8-2.](#)

### 8.4 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 8-1.](#)



## 8.5 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 8-2](#)). 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 8-3](#)). Take care to ensure that the modular socket shows through the access hole in the base ([see Figure 8-4](#)). Invert the base assembly over the keyset and plug the ribbon cable into the socket on the keyset PCB ([see Figure 8-5](#)) while making sure that no damage occurs to the keyset PCB. Reattach the base to the keyset and test to ensure normal keyset operation.

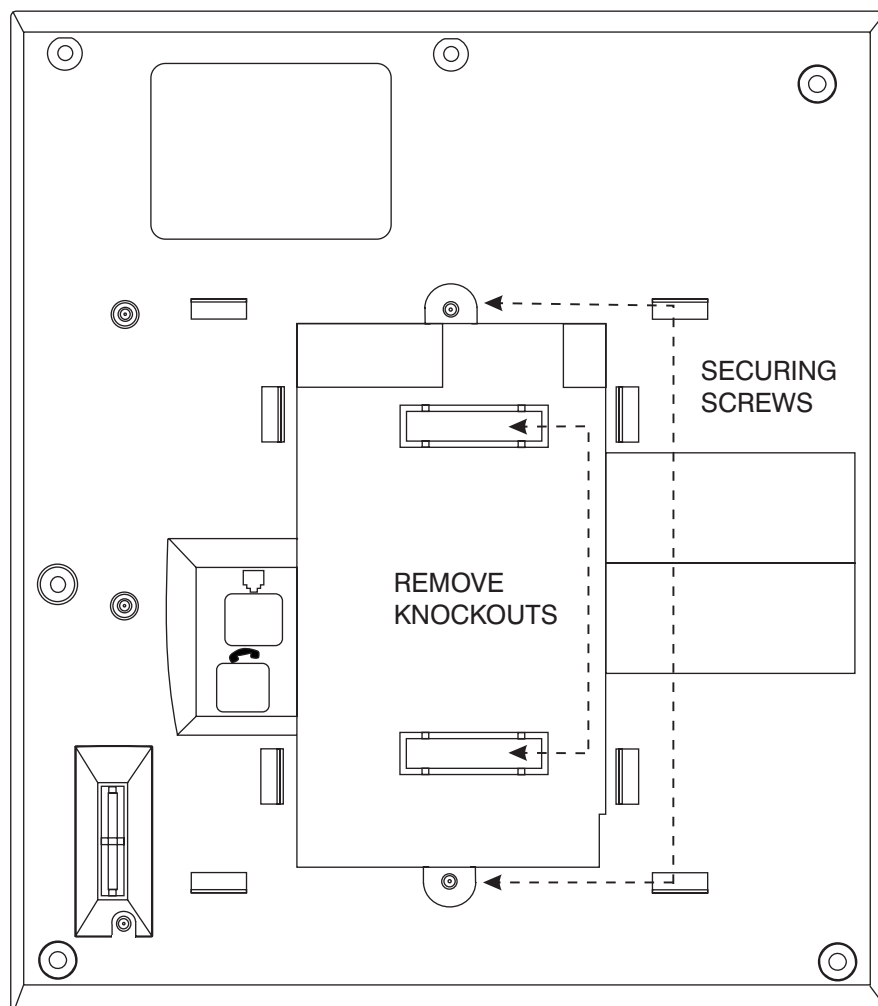
## 8.6 KDB-SLI

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 8-2](#)). 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 8-6](#)). Take care to ensure that the modular socket shows through the access hole in the base ([see Figure 8-4](#)). Invert the base assembly over the keyset and plug the ribbon cable into the socket on the keyset PCB ([see Figure 8-5](#)) while making sure no damage occurs to the keyset PCB. Reattach the base to the keyset and test to ensure normal keyset operation.

## 8.7 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 8-7 and 8-8.](#)

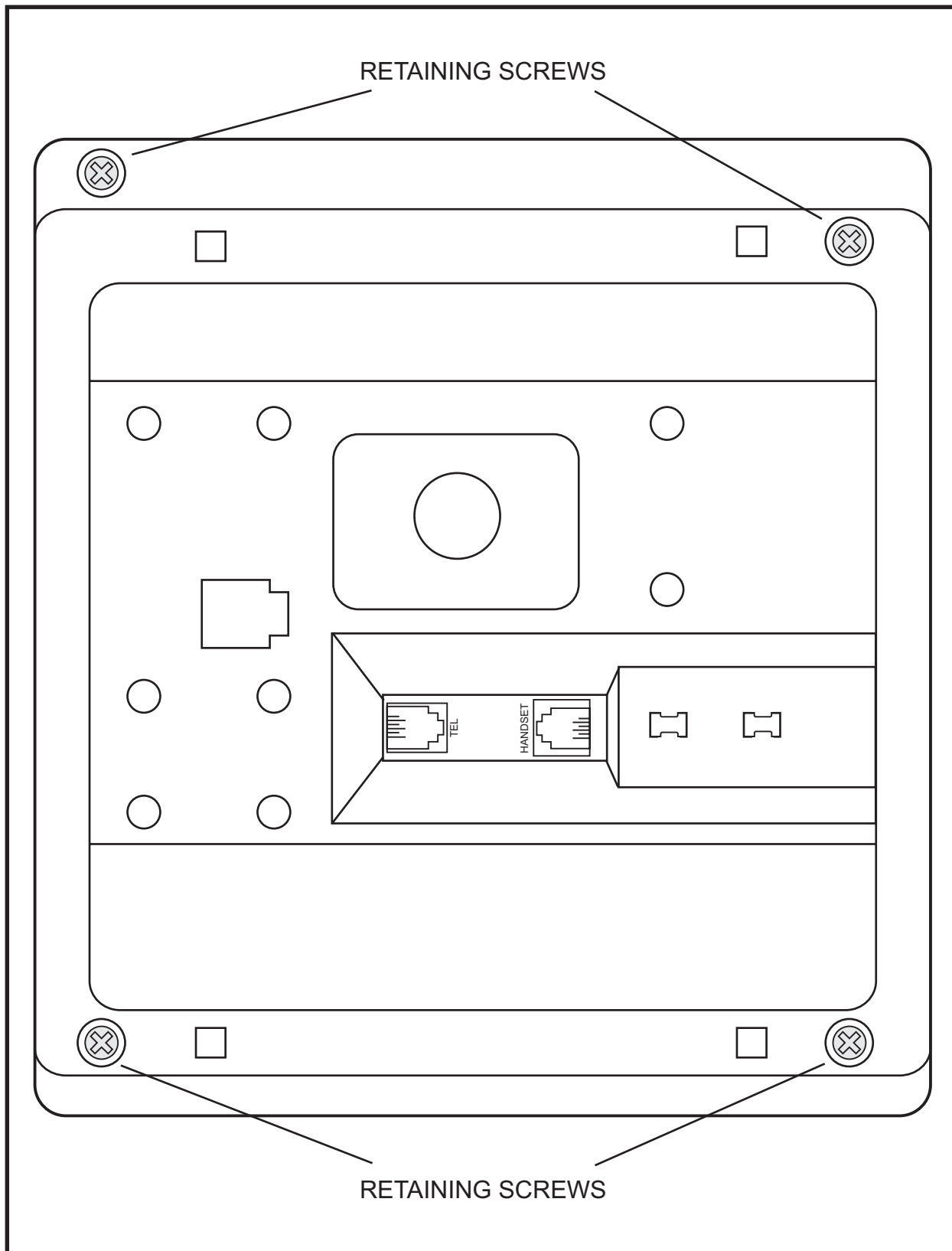
The second method is to use a multi-pair station cable, connecting separate station jacks to the first two pairs. A line cord can now be connected between the daughterboard and the second jack. This returns the daughterboard port to the MDF for cross-connection to another cable run ([see Figure 8-9](#)).



- Place the keyset face down on a flat surface.
- 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.
- Remove the two knockouts from the bottom of the keyset.
- Plug in the daughter module and secure with the two screws provided.

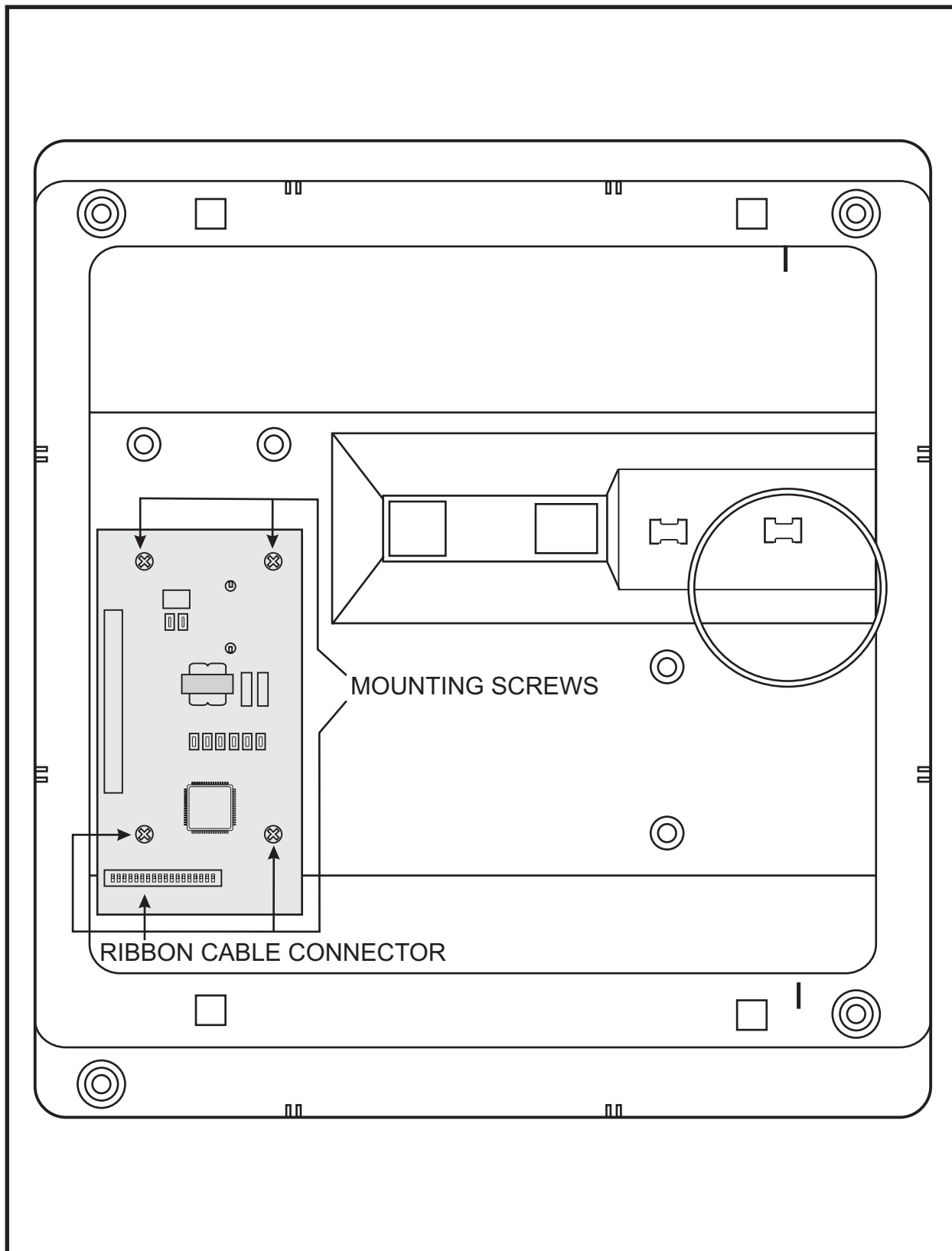
ADDING AN iDCS KEYSET or DS  
KEYSET DAUGHTERBOARD  
MODULE

**FIGURE 8–1**



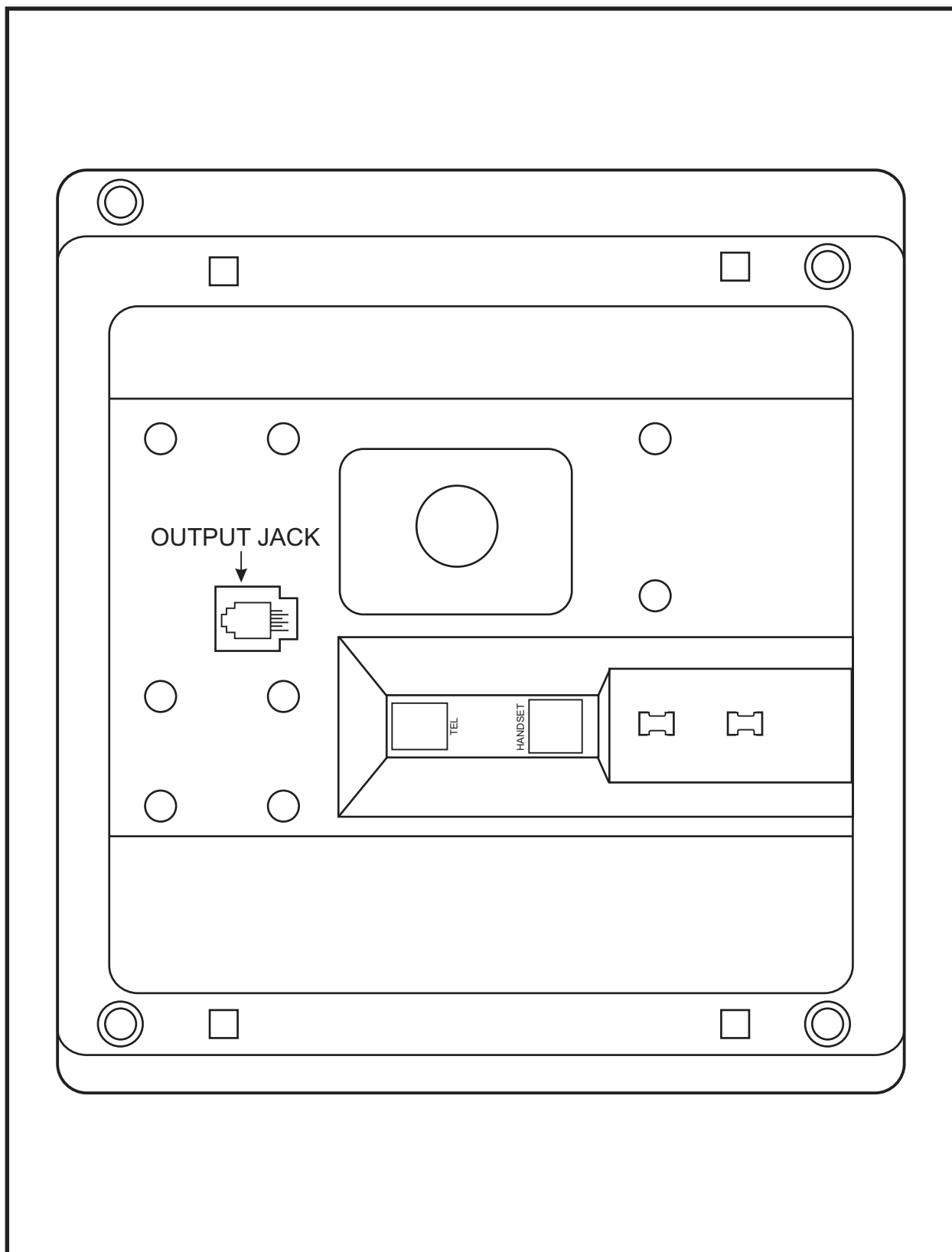
KEYSET BASE

**FIGURE 8-2**



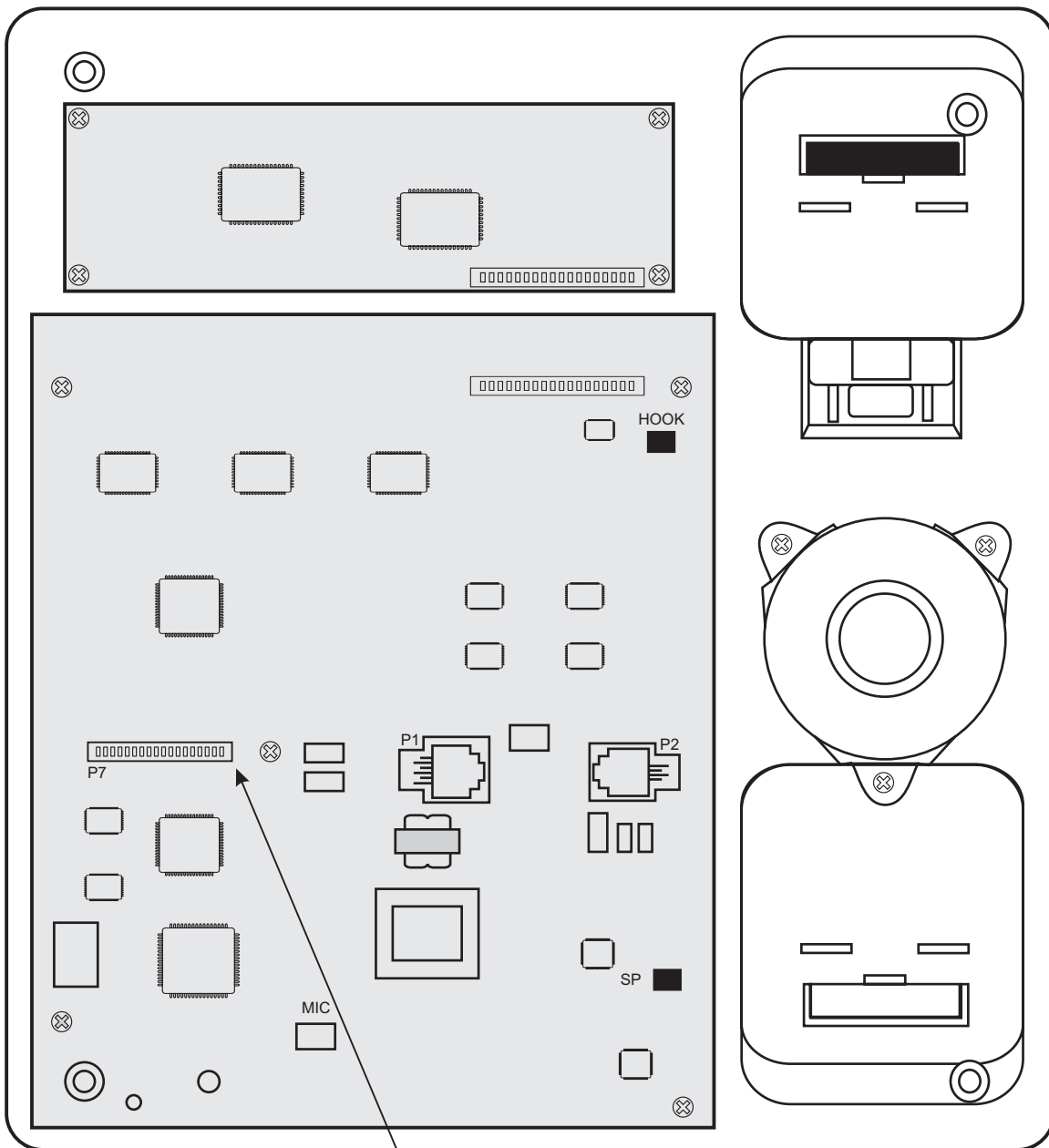
INSTALLING KBD-DLI  
DAUGHTERBOARD

**FIGURE 8-3**



KEYSET DAUGHTERBOARD  
OUTPUT JACK

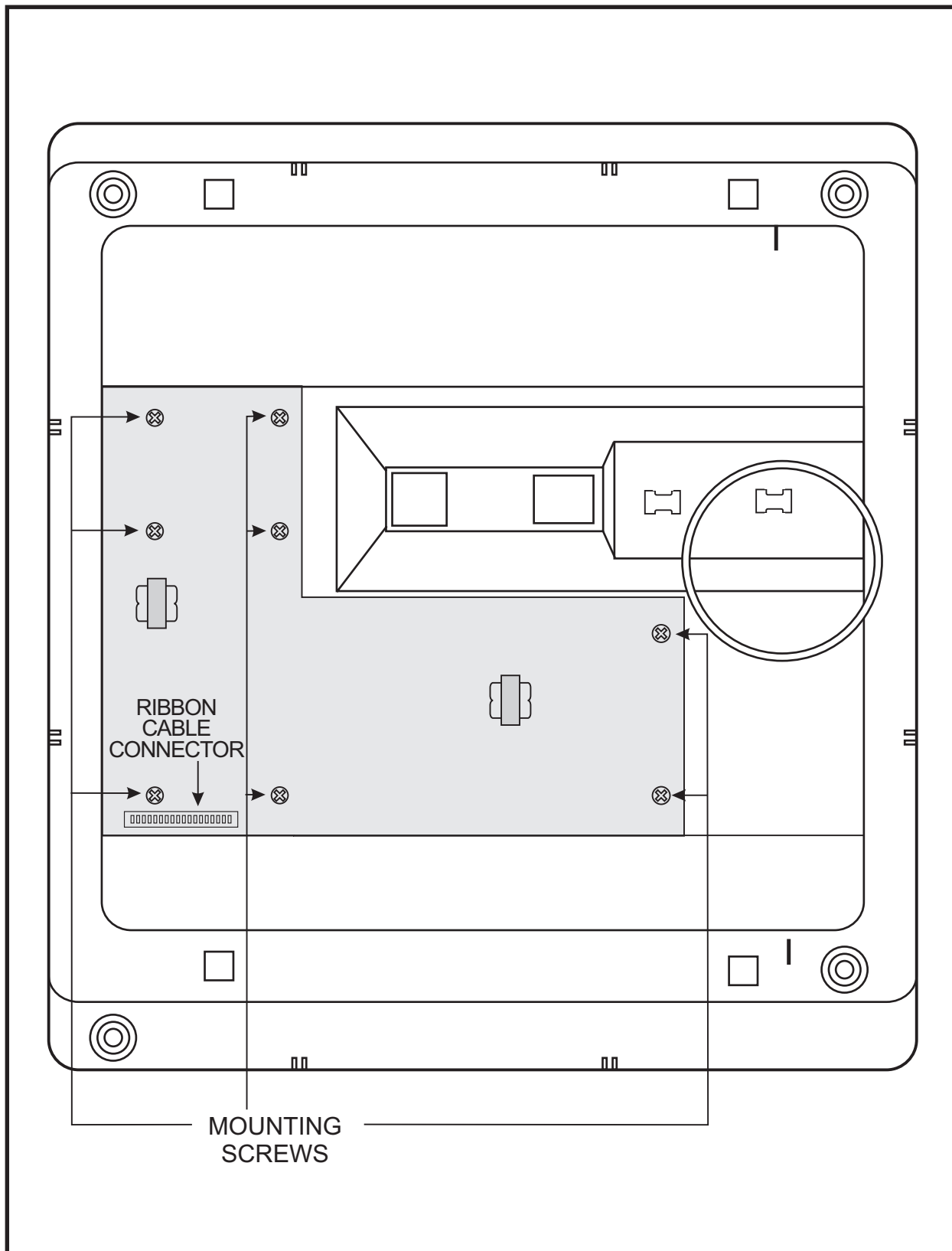
**FIGURE 8-4**



PLUG RIBBON CABLE FROM DAUGHTERBOARD  
INTO RIBBON CABLE CONNECTOR P7

CONNECTING KEYSET  
DAUGHTERBOARD TO KEYSET PCB

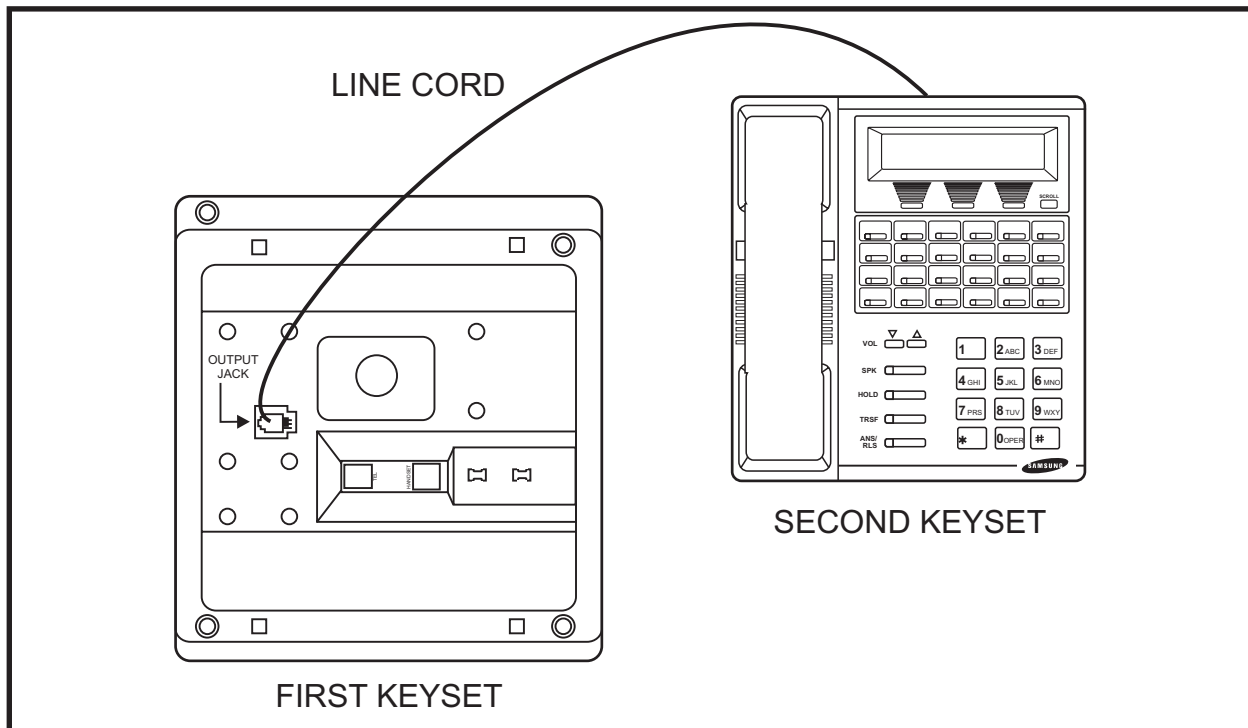
**FIGURE 8-5**



INSTALLING KDB-SLI  
DAUGHTERBOARD

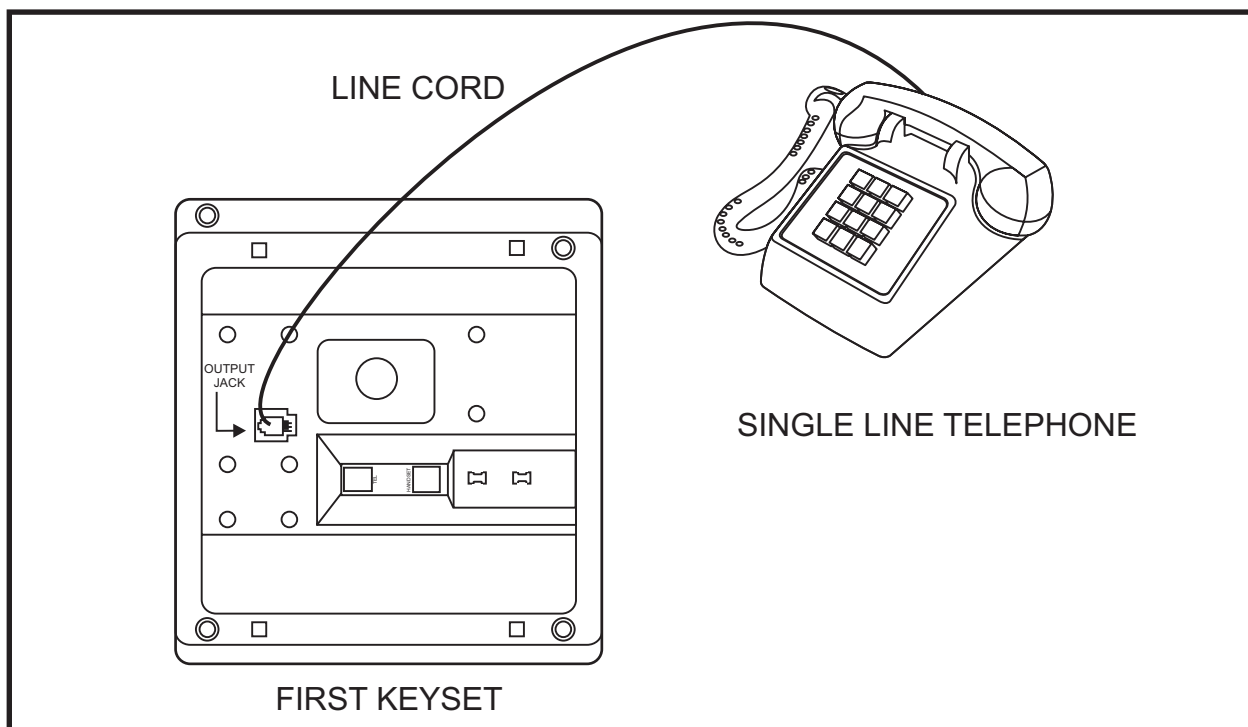
**FIGURE 8-6**





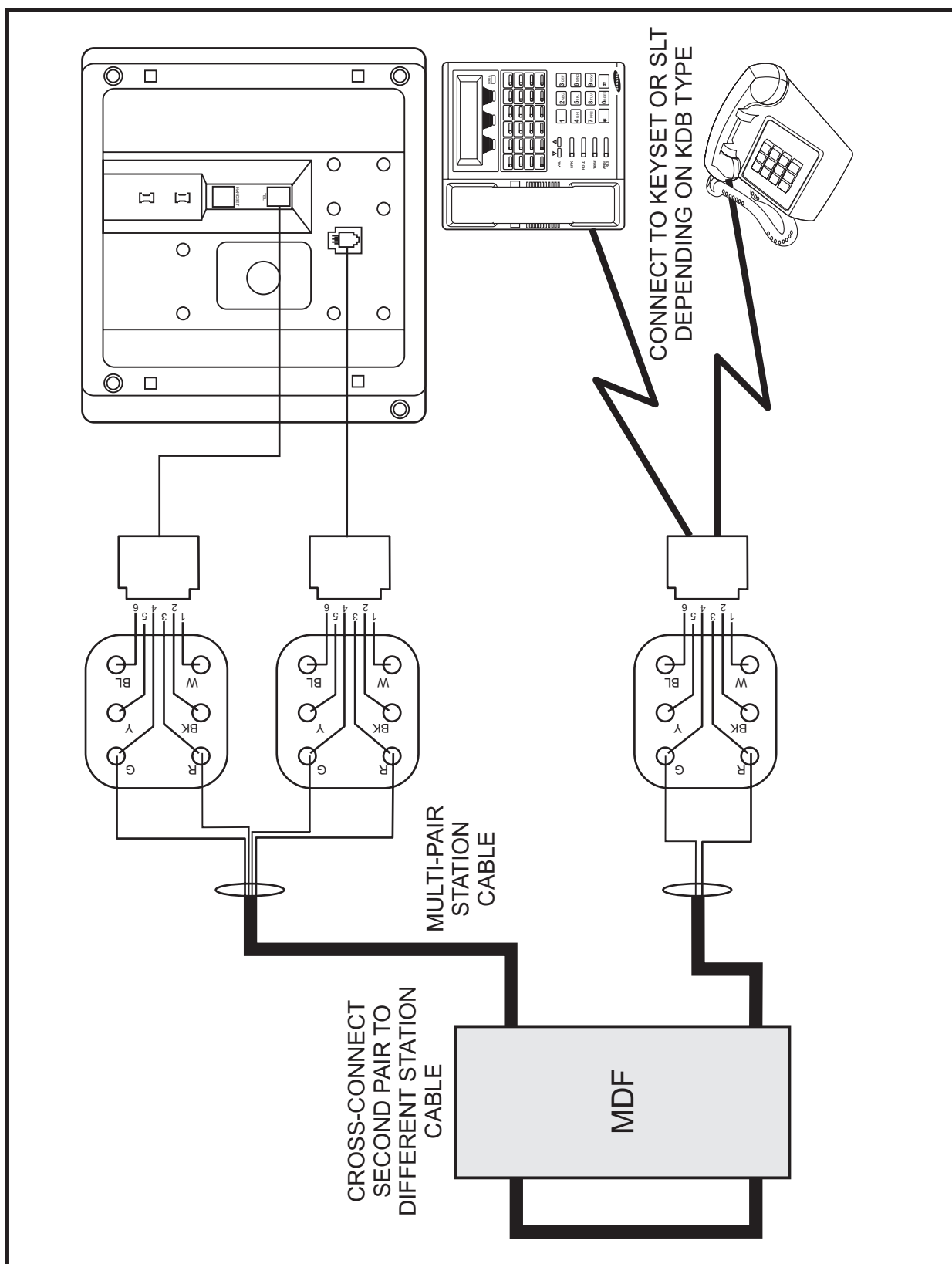
CONNECTING A KEYSET  
TO A KDB-DLI

**FIGURE 8-7**



CONNECTING A SINGLE LINE  
TELEPHONE TO A KDB-SLI

**FIGURE 8-8**



CONNECTING A STATION  
DEVICE TO A KDB VIA MDF

**FIGURE 8-9**

## **PART 9. CHANGING SOFTWARE**

### **9.1 SOFTWARE UPGRADE VIA OfficeServ MANAGER (SMCP1 ONLY)**

The following software can be upgraded by two methods:

- a. Main Program                      OS100xxx.PGM
- b. Signaling Program              SP100xxx.PGM
- c. TE/PRI

Note: SMGI3 software can not be upgraded using OSM. Contact Samsung Technical Support.

1. Replace the SMCP1 card with another SMCP1 that already has the latest software.
2. Use OfficeServ Manager (OSM) to connect to the system and upload program files.

Samsung Technical Support can assist customers with software upgrade when required.



# PART 10. INSTALLING CALLER ID

## 10.1 GENERAL INFORMATION

In order to install Caller ID on a OfficeServ 100, you must have the following pieces of OfficeServ 100 equipment available:

A personal computer with the latest version of PCMMC for the OfficeServ 100 is recommended. This will allow the original system database to be saved in the case of an upgrade to an existing system.

The OfficeServ 100 is compatible with both types of Caller ID as defined by BELLCORE. These are the single message format or "Number Only" sometimes referred to as standard Caller ID and the multiple message format or "Name and Number" sometimes referred to as Deluxe Caller ID. In the case of Number Only delivery, there is a translation table available to add names to the delivered number.

The MMCs related to Caller ID are listed below with a short description of their use. They are listed in the recommended order in which they should be programmed. This sequence is suggested so that the installer gets a better understanding of how the feature works. There is no technical reason to follow this sequence.

- [MMC 414 CID TRUNKS](#) This MMC is used by the technician to determine which trunks will receive Caller ID data.
- [MMC 312 ALLOW CID](#) This MMC is used by the technician to determine which keysets are allowed to receive Caller ID displays.
- [MMCs 722 and 723](#) These MMCs have had new keys related to Caller ID features added to them. It is strongly recommended that all keysets allowed Caller ID in MMC 312 are programmed with a CID key.
- [MMC 729 CID TRANSLATION](#) This MMC allows the technician to create a list of names that correspond to numbers received from the central office. These names will be displayed when a call rings in that has Number Only data provided by the CO.
- [MMC 725 SMDR OPTIONS](#) The ability to print Caller ID data and abandoned calls has been added to this MMC.

- [MMC 119 CID DISPLAY](#) This MMC is used by the end user to determine which piece of Caller ID data is displayed when a call rings at the user's station.
- [MMC 501 SYSTEM TIMERS](#) This MMC has two new timers related to Caller ID. The only timer that may need adjustment is the CID DISPLAY TIME. This is the length of time that CID data will be displayed after the CID key is pressed.
- [MMC 415 TRK ABANDON](#) This MMC is used by the technician to determine which trunks will record data in the Call Abandon list and print with an Abandon "A" flag on SMDR.
- [MMC 608 CID BLOCK](#) This MMC is used by the technician to assign CID Review blocks to keysets to allow the user to review CID data for previous calls.
- [MMC 701 CLASS OF SERVICE](#) All of the Caller ID features have been added to this MMC to enable the technician to allow or deny them.
- [MMC 724 NUMBER PLAN](#) The Caller ID features have been added to this MMC to allow a technician to assign an access code where necessary.

# PART 11. ADDING CARDS TO AN EXISTING SYSTEM

## 11.1 ADDING AN SMISC 3/4 CARD

1. Check the battery switch on the SMCP1 card and make sure it is ON.
2. Turn off power to the system and unplug the power cord.
3. Insert the SMISC3 or SMISC4 card into the slot labeled MISC.
4. Restore power to the system.
5. Open system programming and use [MMC 806](#) to initialize the card.
6. Use [MMC 724](#) to assign directory numbers to the ports on the card. The port numbers and recommended directory numbers are listed in the table below. These directory numbers are the same as the numbers that would have been assigned when the system was first installed.

ITEM	PORT NUMBER	DIRECTORY NUMBER
AA PORT 1	023	381
AA PORT 2	024	382
AA PORT 3	025	383
AA PORT 4	026	384
MOH/BGM 2	027	372
PAGE OUTPUT 2	028	362
RELAY 1	029	363
RELAY 2	030	364
RELAY 3	031	365
ALARM SENSOR	032	352

## 11.2 ADDING A 2 SLI CARD

1. Check the battery switch on the SMCP1 card and make sure it is ON.
2. Turn off power to the system and unplug the power cord.
3. Insert the 2 SLI card into the slot labeled SLI.
4. Restore power to the system.
5. Open system programming and use [MMC 806](#) to initialize the card.
6. Use [MMC 724](#) to assign directory numbers to the ports on the card. The port numbers for the 2 SLI are listed in the following table.



ITEM	PORT NUMBER
SLI PORT 1	019
SLI PORT 2	020

## 11.3 ADDING AN S3TRK CARD

1. Check the battery switch on the SMCP1 card and make sure it is ON.
2. Turn off power to the system and unplug the power cord.
3. Insert the S3 TRK card into an empty universal slot.
4. Restore power to the system.
5. Open system programming and use [MMC 806](#) to initialize the card.
6. Use [MMC 724](#) to assign directory numbers to the ports on the card. The S3 TRK card uses the first three ports of each slot ([see figure 11-1](#)).

## 11.4 ADDING AN S6TRK CARD

1. Check the battery switch on the SMCP1 card and make sure it is ON.
2. Turn off power to the system and unplug the power cord.
3. Insert the S6 TRK card into an empty universal slot.
4. Restore power to the system.
5. Open system programming and use [MMC 806](#) to initialize the card.
6. Use [MMC 724](#) to assign directory numbers to the ports on the card. The S6 TRK card uses the first six ports of each slot ([see figure 11-1](#)).

## 11.5 ADDING AN S8DLI CARD

1. Check the battery switch on the SMCP1 card and make sure it is ON.
2. Turn off power to the system and unplug the power cord.
3. Insert the S8 DLI card into an empty universal slot.
4. Restore power to the system.
5. Open system programming and use [MMC 806](#) to initialize the card.
6. Use [MMC 724](#) to assign directory numbers to the ports on the card. The S8 DLI card uses all 8 ports of each slot ([see figure 11-1](#)).

## 11.6 ADDING AN S8SLI CARD

1. Check the battery switch on the SMCP1 card and make sure it is ON.
2. Turn off power to the system and unplug the power cord.
3. Insert the S8 SLI card into an empty universal slot.
4. Restore power to the system.
5. Open system programming and use [MMC 806](#) to initialize the card.
6. Use [MMC 724](#) to assign directory numbers to the ports on the card. The 8 card SLI uses all 8 ports of each slot ([see figure 11-1](#)).

## 11.7 ADDING A 2 X 4 CARD

1. Check the battery switch on the SMCP1 card and make sure it is ON.
2. Turn off power to the system and unplug the power cord.
3. Insert the 2 X 4 card into an empty universal slot.
4. Restore power to the system.
5. Open system programming and use [MMC 806](#) to initialize the card.
6. Use [MMC 724](#) to assign directory numbers to the ports on the card. The 2 X 4 card uses the first six ports of each slot ([see figure 11-1](#)). The first two ports are the CO lines and the third through sixth are the station ports.

## 11.8 ADDING AN S4BRI CARD

1. Check the battery switch on the SMCP1 card and make sure it is ON.
2. Turn off power to the system and unplug the power cord.
3. Insert the card into an empty universal slot.
4. Restore power to the system.
5. Open system programming and use [MMC 806](#) to initialize the card.
6. Use [MMC 724](#) to assign directory numbers to the ports on the card. The BRI card uses all 8 ports of each slot ([see figure 11-1](#)).

NOTE: SPLL required in system to support S4BRI operation.

KSU PORT NUMBERS			EKSU PORT NUMBERS			
SLOT 1	SLOT 2	SLOT 3	SLOT 1	SLOT 2	SLOT 3	SLOT 4
033	041	049	057	065	073	081
034	042	050	058	066	074	082
035	043	051	059	067	075	083
036	044	052	060	068	076	084
037	045	053	061	069	077	085
038	046	054	062	070	078	086
039	047	055	063	071	079	087
040	048	056	064	072	080	088

**FIGURE 11-1**

## 11.9 ADDING AN SPLL DAUGHTER BOARD

1. Check the battery switch on the SMCP1 card and make sure it is on.
2. Turn off power to the system and unplug the power cord.
3. Install the SPLL card onto its connectors in the bottom left hand corner of the KSU motherboard ([see Figure 11-2](#)).
4. Restore power to the system. NOTE: The SPLL DAUGHTER BOARD is required in system to support BRI operation.

## 11.10 ADDING A MODEM CARD

1. Check the battery switch on the SMCP1 card and make sure it is on.
2. Turn off the power to the system and unplug the power cord.
3. Remove the SMISC 3/4 card from its slot, and lay card on a soft surface, component side up.
4. Install the 500 internal MODEM card onto its connectors on the SMISC card ([see Figure 11-3](#)).  
NOTE: The white arrow on the MODEM card should point away from the KSU Motherboard when SMISC3 or SMISC4 card is re-inserted.
5. Re-insert SMISC card into the appropriate slot.
6. Connect the 3 pin jumper cable between the SMISC 3/4 card and the SMCP1 card (see Figure 3-14).
7. Restore power to the system.
8. Open system programming and use [MMC 806](#) to initialize the card.
9. Use [MMC 724](#) to assign a directory number to the card, the default extension number is 359.
10. Use [MMC 804](#) system I/O options to configure the internal modem.

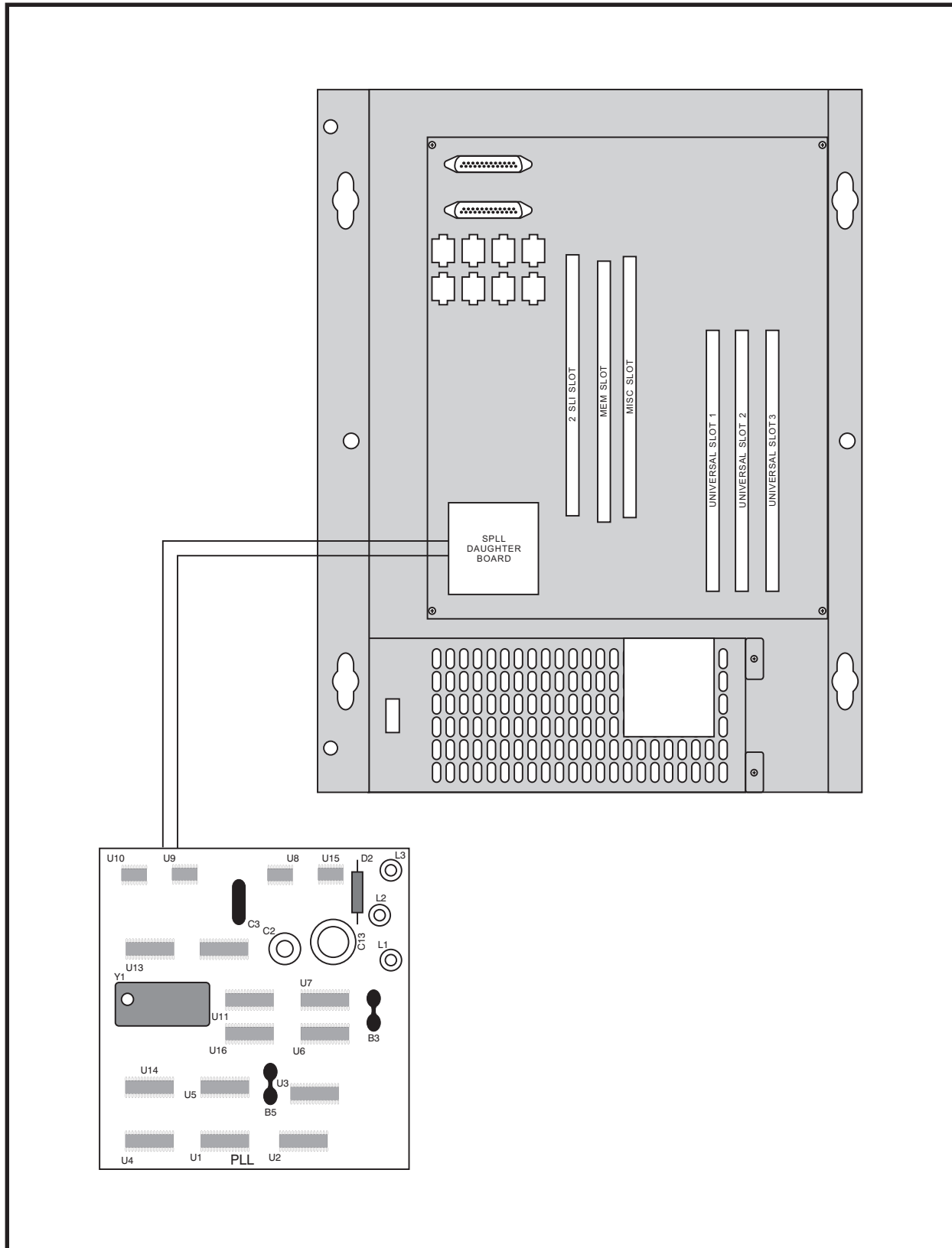
## 11.11 ADDING AN SMGI3 CARD

1. Check the battery switch on the SMCP1 card and make sure it is on.
2. Turn off the power to the system and unplug the power cord.
3. Insert the SMGI3 card into any universal slot in the BASE cabinet (maximum 3 SMGI per system)
4. Restore power to the system. Connect Ethernet cable to RJ-45 LAN connector on SMGI-3 and connect it to the LAN.
5. Open system programming and use [MMC 806](#) to initialize the card.
6. Set up the IP configurations for the SMGI3 in [MMC 831](#).
7. Set up MGI numbering plan and all VoIP related numbering plans in [MMC 724](#).

## 11.12 ADDING AN MGI3D DAUGHTER BOARD TO AN SMGI3 CARD

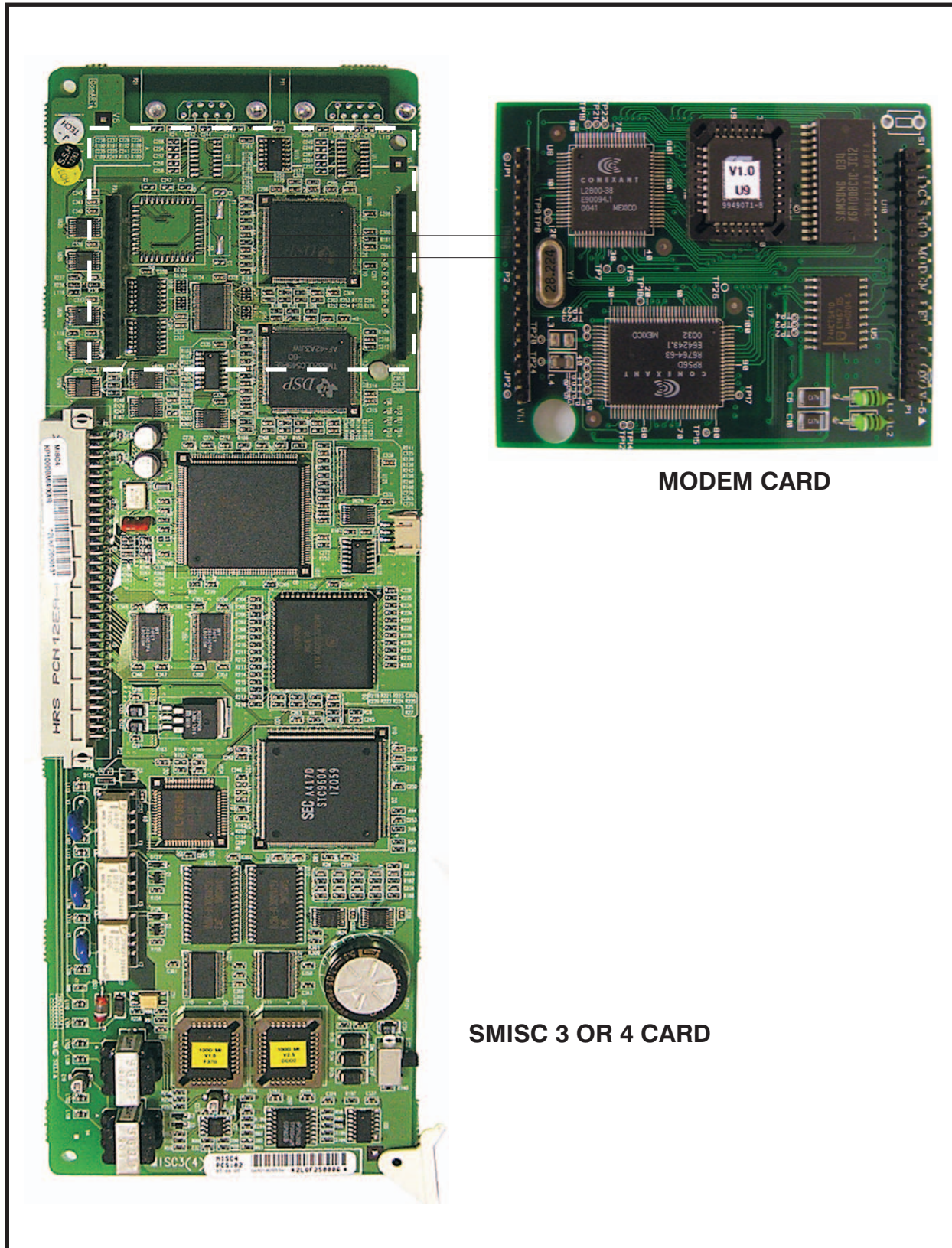
1. Check the battery switch on the SMCP1 card and make sure it is on.
2. Turn off the power to the system and unplug the power cord.

3. Remove the SMGI-3 from its slot and lay card on a soft surface, components side up.
4. Install the MGI3-D daughter card onto its connectors on the SMGI-3 card ([see Figure 3-3a](#)).
5. Reinsert the SMGI3 card into its original slot.
6. Restore power to the system.
7. Open system programming and use MMC 806 to initialize card.



SPLL INSTALLATION ON  
KSU MOTHERBOARD

**FIGURE 11-2**



MODEM CARD

SMISC 3 OR 4 CARD

MODEM CARD INSTALLATION ON  
SMISC CARD

**FIGURE 11-3**



## **PART 12. INSTALLING A SVMi-8/SVMi-8E CARD**

### **12.1 SYSTEM SIZE WITH SVMi-8/SVMi-8E**

For the purpose of assigning system resources the SVMi-8/SVMi-8E card ([Figure 12-1](#)) consumes the equivalent system capacity of 8 keysets. This means that when a SVMi-8/SVMi-8E card is installed in the OfficeServ 100 the system can now support a maximum of 32 (or 48 with SPSU2) station devices. This capacity includes keysets, any device connected to a keyset port, SLTs and keyset daughter boards.

### **12.2 REMOVING THE COVER**

Before the SVMi-8/SVMi-8E card can be installed in the OfficeServ 100 the card module must first be disassembled to allow the card to fit the slot. To disassemble the SVMi-8/SVMi-8E card, first remove the ejector tabs by pulling them outward until they snap off. Next, to separate the two halves of the casing, remove the four screws and pull the two halves apart. This releases the SVMi-8/SVMi-8E card PCB.

### **12.3 ADDING A SECOND VOICE PROCESSING MODULE (VPM) or VPMF**

The first thing you should do before proceeding is to discharge any static electricity you may have gathered by touching a ground point such as the cover of the KSU Power Supply. When you have done this then lay the SVMi-8/SVMi-8E card face up on a non-conductive surface.

Position the second VPM over the card connector on the SVMi-8/SVMi-8E base board and gently apply pressure until the card seats. The SVMi-8/SVMi-8E card can now be installed in the KSU.

### **12.4 INSERTING THE CARD**

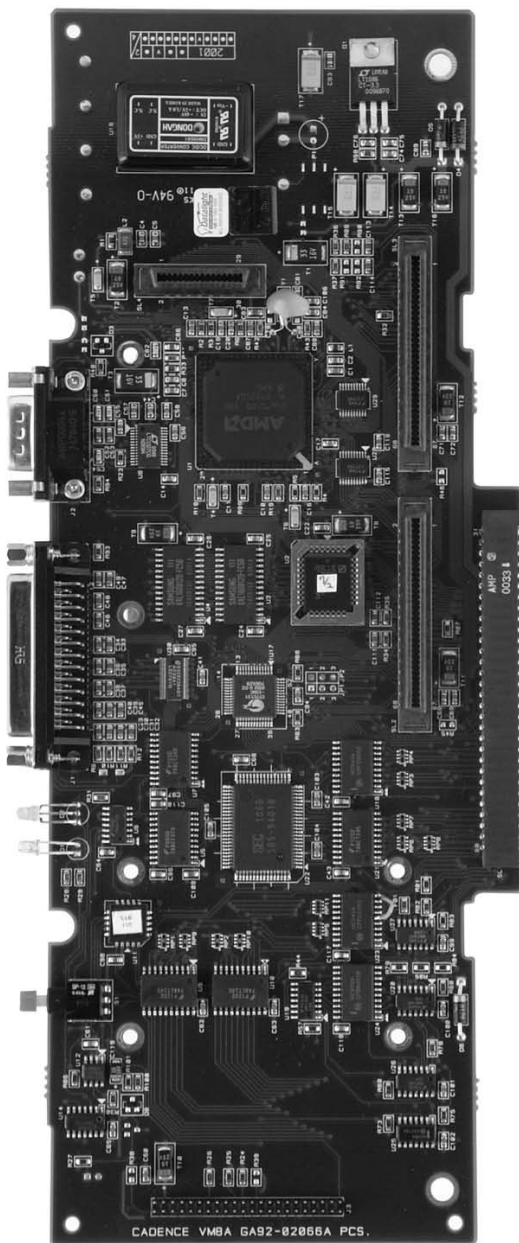
The SVMi-8/SVMi-8E card is installed in the far right slot of the expansion cabinet. This is the slot with the black DCS style connector. The first thing you should do before proceeding is to discharge any static electricity you may have gathered by touching a ground point such as the cover of the KSU Power Supply. When you have done this then check the power switch on the left-hand side of the KSU and ensure that the switch is in the OFF position. Next position the SVMi-8/SVMi-8E 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 top and bottom of the front edge of the card until the card seats in its connector.

## **12.5 UPGRADING AN EXISTING CARD TO 8 PORTS**

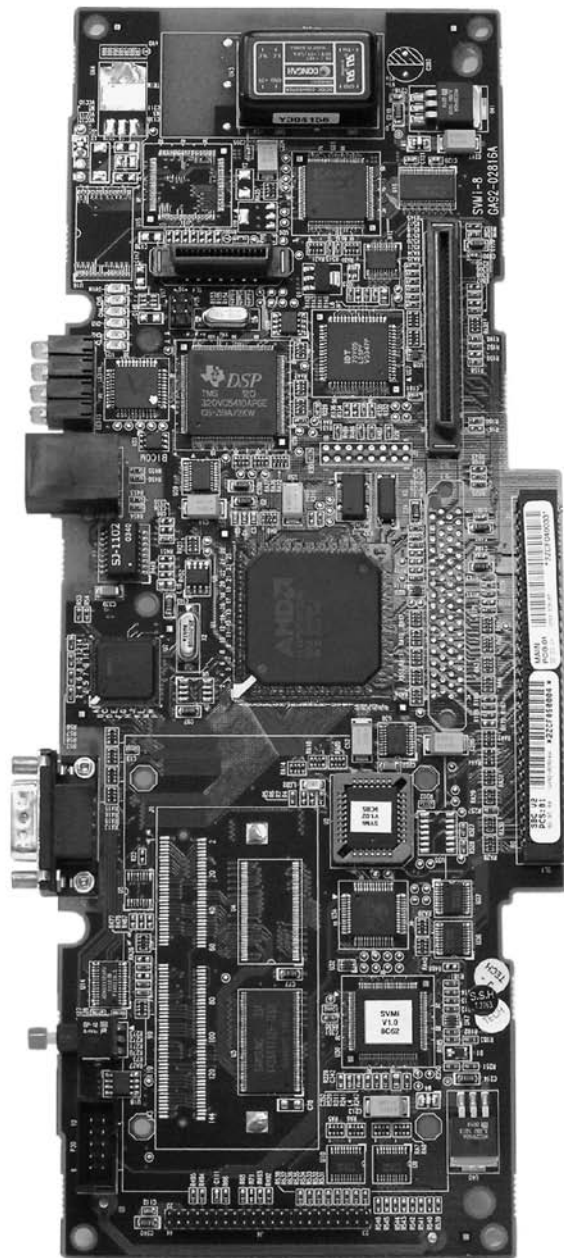
The first thing you should do before proceeding is to discharge any static electricity you may have gathered by touching a ground point such as the cover of the KSU Power Supply. When you have done this then check the SMCP1 card and ensure that the memory switch is in the ON position. Next turn the KSU off and remove the SVMi-8 card by gently pulling on the card. Lay the SVMi-8/SVMi-8E card face up on a non-conductive surface.

Position the second VPM over the card connector on the SVMi-8/SVMi-8E base board and gently apply pressure until the card seats. The SVMi-8/SVMi-8E card can now be reinstalled in the KSU.





SVMi-8



SVMi-8E

SVMi-8 CARD and SVMi-8E CARD

**FIGURE 12-1**

## **PART 13. INSTALLING A SVMi-4/SVMi-4E CARD**

### **13.1 SYSTEM SIZE WITH A SVMi-4/SVMi-4E CARD INSTALLED**

For the purposes of assigning system resources the SVMi-4/SVMi-4E card consumes the equivalent system capacity of 4 keysets. This means that when a SVMi-4/SVMi-4E card is installed in the OfficeServ 100 the system can now support a maximum of 52 station devices. This capacity includes keysets, any device connected to a keyset port, SLTs and keyset daughter boards.

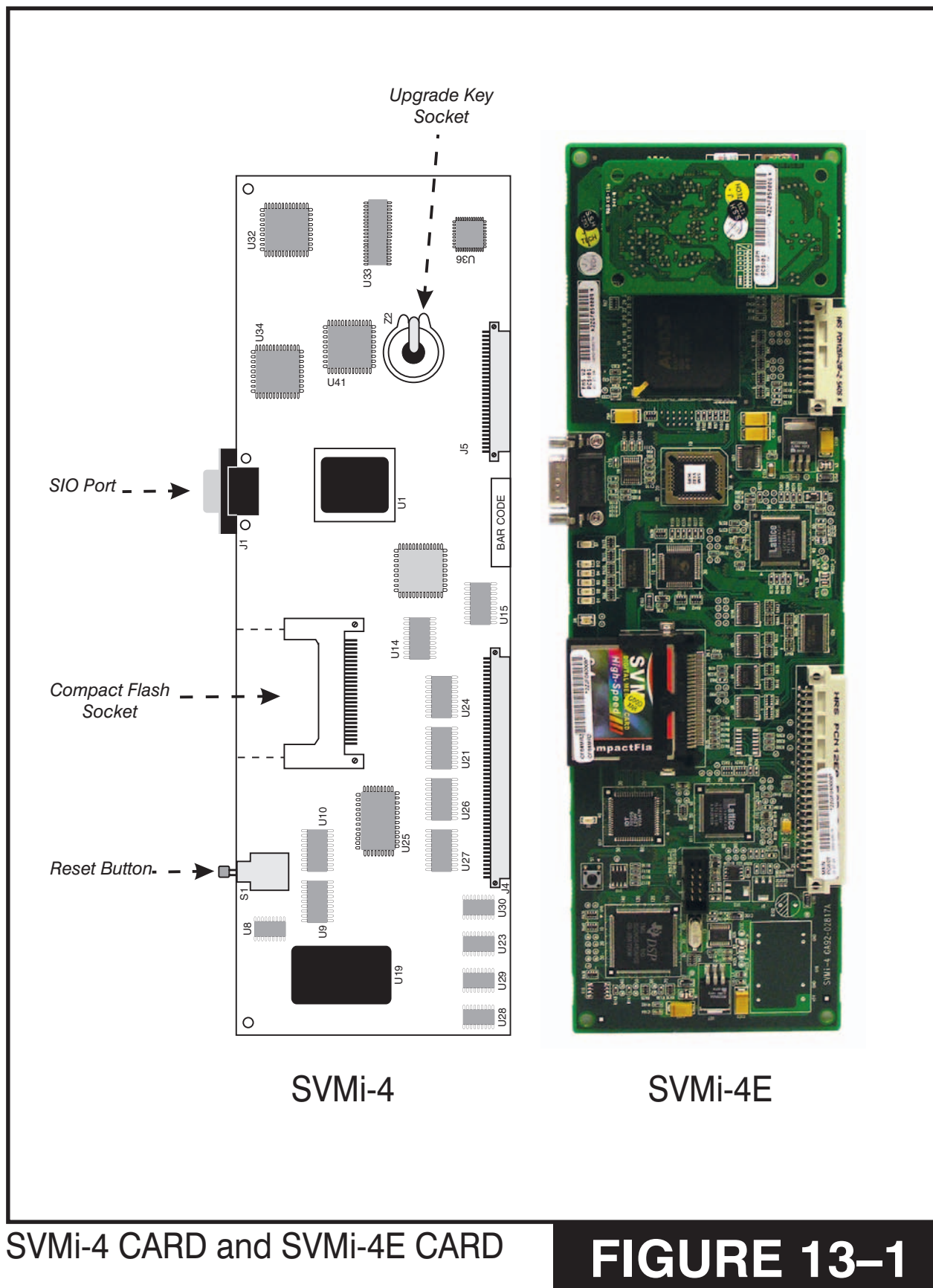
### **13.2 UPGRADING THE SVMi-4/SVMi-4E TO FOUR PORTS**

Before it will operate in the OfficeServ 100, the SVMi-4/SVMi-4E must be upgraded to four ports as follows. Upgrading the SVMi-4/SVMi-4E card basically means installing an upgrade key into its dedicated socket.

The first thing you should do before proceeding is to discharge any static electricity you may have gathered by touching a ground point such as the cover of the KSU Power Supply. When you have done this then lay the SVMi-4/SVMi-4E card face up on a non-conductive surface.

Position the upgrade key over the socket ([see Figure 13-1](#)) on SVMi-4/SVMi-4E base board with one edge of the upgrade key under the spring clip and gently apply pressure until the upgrade key seats. The SVMi-4/SVMi-4E card can now be installed in the KSU.

Note: The upgrade key will only fit in the socket with the flat side uppermost.



SVMi-4 CARD and SVMi-4E CARD

**FIGURE 13-1**