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OfficeServ 100

Installation Manual

10. 2004.

SAMSUNG ELECTRONICS

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TRADEMARKS

This manual should be read before the installation and operation, and the operator should correctly install and operate the product by using this manual.

This manual may be changed for the system improvement, standardization and other technical reasons without prior notice.

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INTRODUCTION

Purpose

OfficeServ 100, Enterprise IP Solutions System, is a digital telephone system designed for small to medium-sized businesses.
This manual provides the information about installation of the Samsung OfficeServ 100, including information about connecting the equipments. When there are questions about OfficeServ 100 system or damage to the phone, please call your Authorized Samsung Reseller.

Document Content and Organization

This manual is composed of 10 Chapters and 1 Annex. Each chapter is introduced as follows:

CHAPTER 1. Site Requirement

This chapter describes site requirements for OfficeServ 100 system installation.

CHAPTER 2. Installing Basic KSU and Expansion Cabinet

This chapter describes how to install the OfficeServ 100 Key System Unit and expansion cabinet.

CHAPTER 3. Installing Printed Circuit Cards

This chapter describes how to install each card of OfficeServ 100 system.

CHAPTER 4. Power Up Procedures

This chapter describes power up procedures of OfficeServ 100 system.

CHAPTER 5. Connecting Trunk Line Circuit

This chapter describes how to connect CO(Trunk Line) circuit.

CHAPTER 6. Connecting Station Equipment

This chapter describes how to connect station equipments to the OfficeServ 100 system.

CHAPTER 7. Connecting Optional Equipment

This chapter describes how to connect optional equipments to the OfficeServ 100 system.

CHAPTER 8. Installing KDB (Keyset Daughter Board)

This chapter describes how to install the KDB(Keyset Daughter Board) to the phone.

CHAPTER 9. Changing Software

This chapter describes how to change software of OfficeServ 100 system.

CHAPTER 10 Networking Description and Programming Procedure

This chapter describes networking description and programming procedure of OfficeServ 100 system.

ANNEX A. Abbreviation

Acronyms frequently used in this manual are described.

Conventions

The following special paragraphs are used in this document to point out information that must be read. This information may be set-off from the surrounding text, but is always preceded by a bold title in capital letters.

WARNING

Provides information or instructions that the reader should follow in order to avoid personal injury or fatality.

CAUTION

Provides information or instructions that the reader should follow in order to avoid a service failure or damage to the system.

NOTE

Indicates additional information as a reference.

OPERATION PROCEDURES

Indicates the operational procedures that should be executed in sequence.

Reference

OfficeServ 100 Programming Manual

Introduces programming method for the OfficeServ 100 system users. Users can configure the system using the MMC(Man Machine Communication) program at the digital telephone. This manual describes how to use the MMC program.

OfficeServ 100 General Description Guide

Introduces the hardware configuration, specifications, and functions of the OfficeServ 100 system.

OfficeServ 100 Service Manual

Introduces circuit configuration of each section in OfficeServ 100 system, main functions, parts list, troubleshooting, and disassembly diagram of main device.

Revision History

EDITION	DATE OF ISSUE	REMARKS
00	10. 2004.	First Edition

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SAFETY CONCERNS

For product safety and correct operation, the following information must be given to the operator/user and shall be read before the installation and operation.

Symbols

Caution

Indication of a general caution

Restriction

Indication for prohibiting an action for a product

Instruction

Indication for commanding a specifically required action

WARNING

When installing or modifying telephone lines.

To limit the risk of personal injury, always follow these precautions before connecting CO circuit.

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in a wet location unless the jack is specially designed for wet location.
- Never touch non-insulated telephone wires or terminals unless the telephone line has been disconnected at the network interface

Before connecting the ground

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.

CAUTION

When installing appropriate batteries

Be sure the polarity is observed. Equipment damage will result if polarity is reversed. Do not connect external AC/ DC power to the OfficeServ 100 system if the system is damaged by electrical power.

Before installing OfficeServ 100

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.

When using extension cords(A direct commercial AC power outlet)

A direct commercial AC power outlet is required. Do not use extension cords. Preferably, a dedicated circuit must be used to minimize the risk of other electrical equipment being connected that could adversely affect system operation.

When installing OfficeServ 100

Ensure that all wires and cable going to and coming from the OfficeServ 100 are properly routed. Do not cross fluorescent lights or connect lines parallel to the AC power line.

Connecting equipment

Do not attempt to connect commercial AC power to the contacts on the DPIM, External Paging, and Common Bell. It may cause damage to your equipment.

Before installing OfficeServ 100

Do not install the OfficeServ 100 system in close proximity to a fire sprinkler head or other sources of water.

When installing OfficeServ 100

OfficeServ 100 system must not be exposed to direct sunlight, corrosive fumes, dust, constant vibration or strong magnetic fields such as those generated by motors and copy machines.

When using long line Extension

Using long line Extensions(over 1 Km) on a 8SLI or KDB SLI may cause damage to your equipment.

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CHAPTER 1. Site Requirements

This chapter describes site requirements for OfficeServ 100 system installation.

1.1 Site Requirements

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

- Select a location for the KSU(Key Service Unit) that has enough space for easy installation and has adequate lighting(See Figure 2.1).
- Select a location that will minimize cable lengths. See the 'Table 1.1 Cable Requirements'.
- The equipment must 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 must be used to minimize the risk of other electrical equipment being connected that could adversely affect system operation.
- Ensure that all wires and cable going to and coming from the KSU are properly routed. Do not cross fluorescent lights or connect lines parallel to AC power line.
- 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 15 cm clearance on both sides and 15 cm 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.

1.2 Specification

Cable Requirements

Table 1.1 Cable Requirements

EQUIPMENT	CABLE	AWG	MAX FEET	MAX METERS
Digital Phone	1PR. TWISTED	24	1300	400
Add-On Module	1PR. TWISTED	24	1300	400
Single Line Station	1PR. TWISTED	24	3000	1000
Door Phone	2PR. TWISTED	24	330*	100

* This is the maximum distance a door phone can be from the DPIM. The DPIM can be a maximum of 270 meters cable from the KSU.

Electrical Specifications

Table 1.2 Electrical Specifications

Item	Specification
AC INPUT	220 ~ 240 VAC, 50 Hz, 3.0 A
POWER CONSUMPTION(MAX)	140 WATTS(MAX)
DC OUTPUT	FUSE RATING 2AMP +5 VOLTS 4.0 AMPS MAX -55 VOLTS 1.7 AMPS MAX (for SLT/KTS Feeding voltage) -54 VOLTS 0.4 AMPS MAX (for Battery charge)

Dimension and Weights

Table 1.3 Dimension and Weights

Item	Height(mm)	Width(mm)	Depth(mm)	Weight(kg)
Basic(Single) Cabinet	464	365	148	7.5
Expansion(Two) Cabinet	464	467	148	12.5
Door Phone	127	99	32	0.2

Environmental Limit

Table 1.4 Environmental Limit

Item	Specification
Operating Temperature	32-104 °F/0-40 °C
Storage Temperature	13.1-158 °F/-10.5-70 °C

CHAPTER 2. Installing Basic KSU and Expansion Cabinet

This chapter describes how to install the OfficeServ 100 KSU and expansion cabinet.

2.1 System Capacity

OfficeServ 100 system can have up to 48 stations if SVMi-8 is not used, and can have up to 40 stations if SVMi-8 is used. There is no limit in the analog C.O. line, and ISDN C.O line if any slot is available and PRI(TEPRI) or SVMi-8 can be adopted in the DCS slot on the EXP cabinet of OfficeServ 100. Some configuration examples are below.

- In this table, 4BRI(4S0T0) is used as digital trunk.
- 4BRI(4S0T0) card can be used as ISDN NT. Each port can have up to 8 ISDN TEs, but power consumption of each port is limited to 4 WATT.
- Only one ITM3 card can be equipped into the basic cabinet slots per system.

Table 2.1 System Capacity

Combination of Boards	Loop Start Trunk/BRI I/F	Key sets	KDB-D /KDB-S	Max Capacity (Including KDB line)
Basic	0	8	8	0 * 8(16)
Basic + 3TRK	3	8	8	3 * 8(16)
Basic + 4BRI(4S0T0)	4(8CH)	8	8	8 * 8(16)
Basic + 4BRI(4S0T0) + 8DLI * 2	4(8CH)	24	8	8 * 24(32)
Basic + 3TRK * 2 + 8DLI	6	16	8	6 * 16(24)
Basic(4BRI(4S0T0) + 8DLI * 2) + EXP(4BRI(4S0T0) + 8DLI * 2)	8(16CH)	40	8	16 * 40(48)
Basic(6TRK + 8DLI* 2) + EXP (3TRK *2 + 8DLI)	12	32	8	12 * 32(40)

Basic KSU

Basic KSU Plus Expansion KSU


NOTE

Power Allocation

The 55 volt power generated by the Main AC Power Supply can be distributed to various interfaces and option cards installed on based Basic KSU. Ports on cards will be manually allocated power up to the capacity of the power available from the Power Supply Unit installed.

- 55V Power capacity in consideration of power dissipation OfficeServ 100 new cards.
- Support a MAX 48 stations(normal Phones or SLT's) basically but SVMi-8 or MGI3 card power consume 8 stations
- 4WLI MAX power consume 16 stations(an WBS-24 AP power consume 4 stations)
- Large LCD Phone(DS-5012L) power consume be three times as much stations.

2.2 Unpacking and Inspection

Check to see that Basic KSU carton includes the following items.

- Basic KSU
- Spare Parts Assembly

Check to see that Expansion KSU carton includes the following items.

- Expansion KSU
- Spare Parts Assembly

Before installing OfficeServ 100

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 Department immediately.

2.3 Basic KSU Installation

Basic KSU is accommodated in a metal cabinet which is wall mounted. In case of wall mounted, the KSU should be mounted on a poly-wood back at least 5/8" thick. Attach a mounting screw to the back board. Next hang the KSU on the screws and screw it to the back board with the remaining two screws. Tighten all four screws to secure KSU in place.(See Figure 2.1)

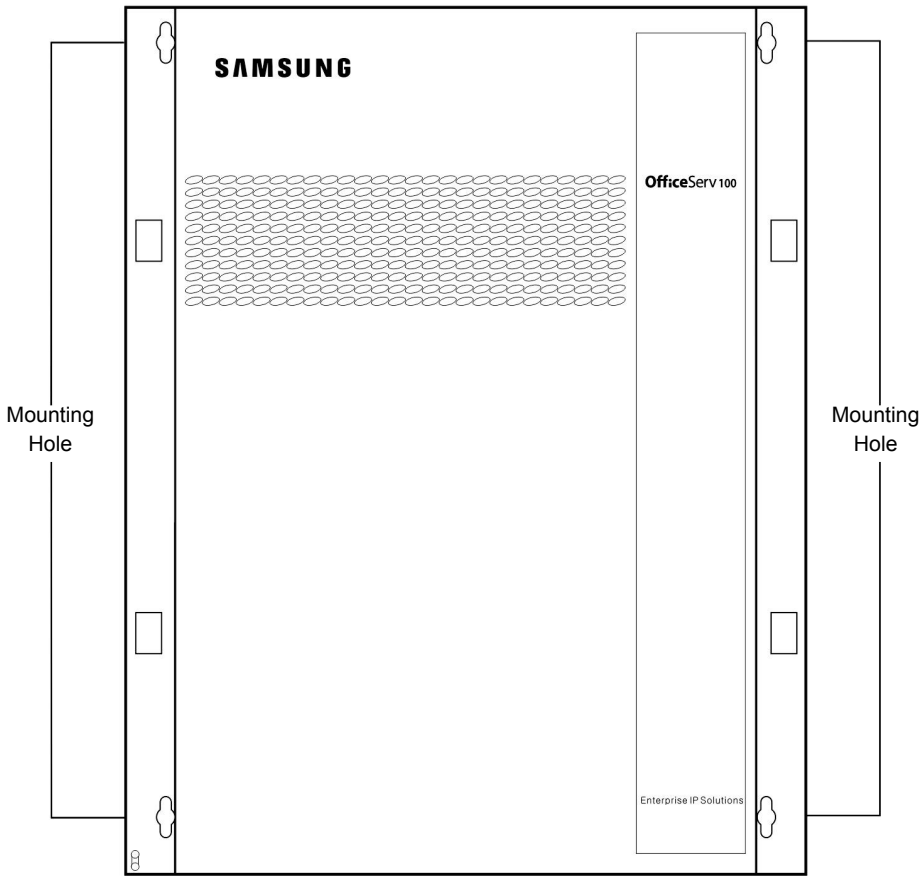

Figure 2.1 Basic KSU (Key Service Unit)

2.4 Expansion KSU Installation

Expansion KSU is simply attached to basic KSU with the following procedure.
This manual instanced the Expansion cabinet A as the installation figures. The installation procedure of Expansion Cabinet A is same with Expansion Cabinet B.

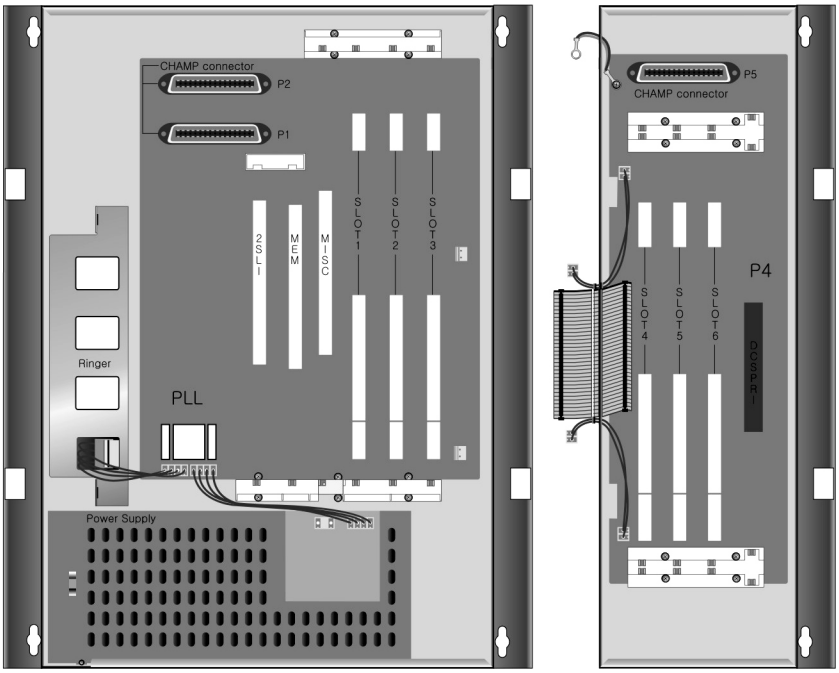

Figure 2.2 Basic KSU + Expansion A

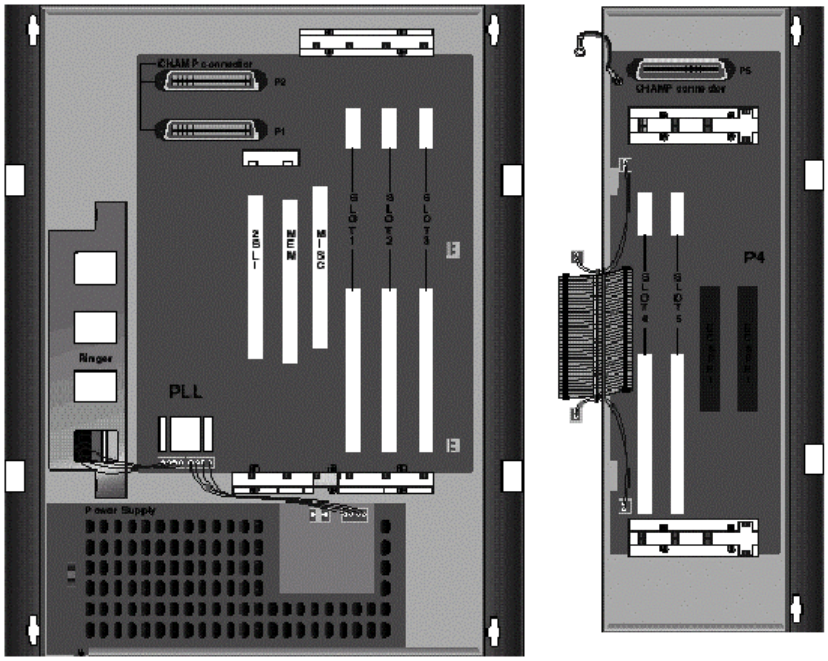

Figure 2.3 Basic KSU + Expansion B

1) Switch OFF the power and remove the covers of both basic KSU and Expansion Cabinet A or B.

2) Remove dummy tabs on the right side of the basic with appropriate tools for connection route.
A is for MDF cable and B is for signal and power cable.(See Figure 2.4)

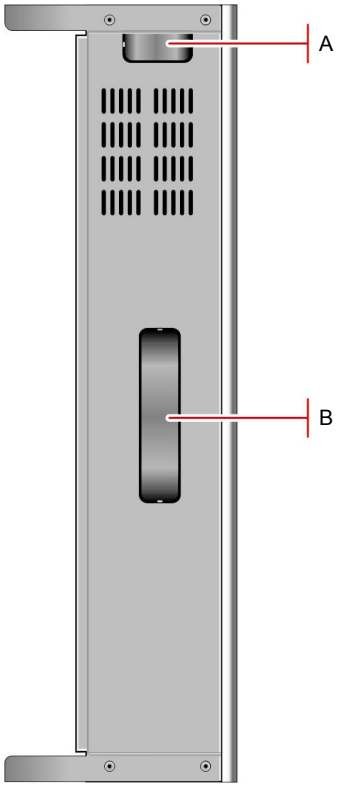

Figure 2.4 Right Side View of Basic KSU

3) Move Expansion cabinet to basic cabinet and attach it via groove.(See Figure 2.5)

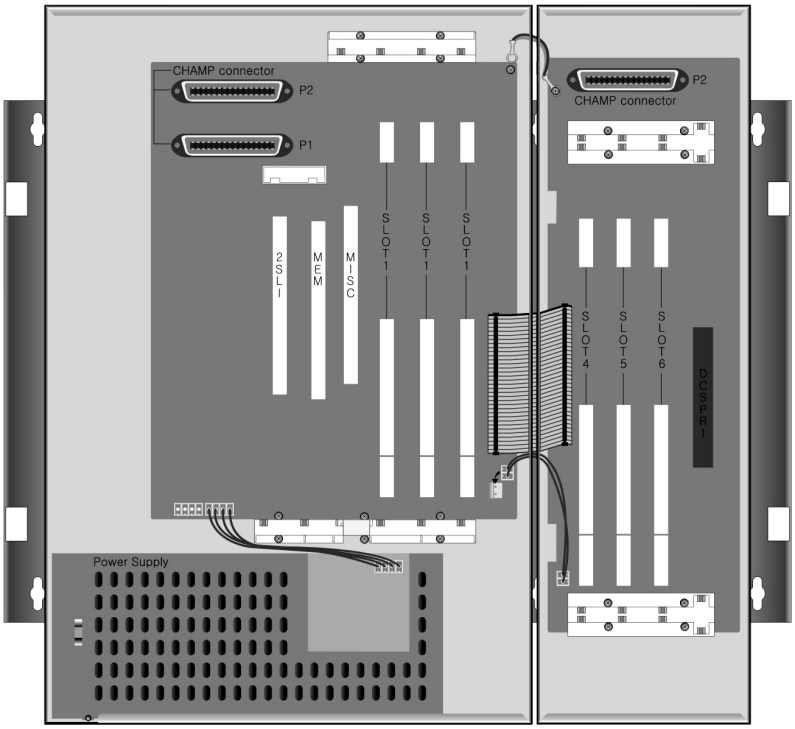

Figure 2.5 Assemble between Basic KSU & EXP.Cabinet (1)

4) Fix Expansion cabinet with offered screw to back plane.(See Figure 2.6)

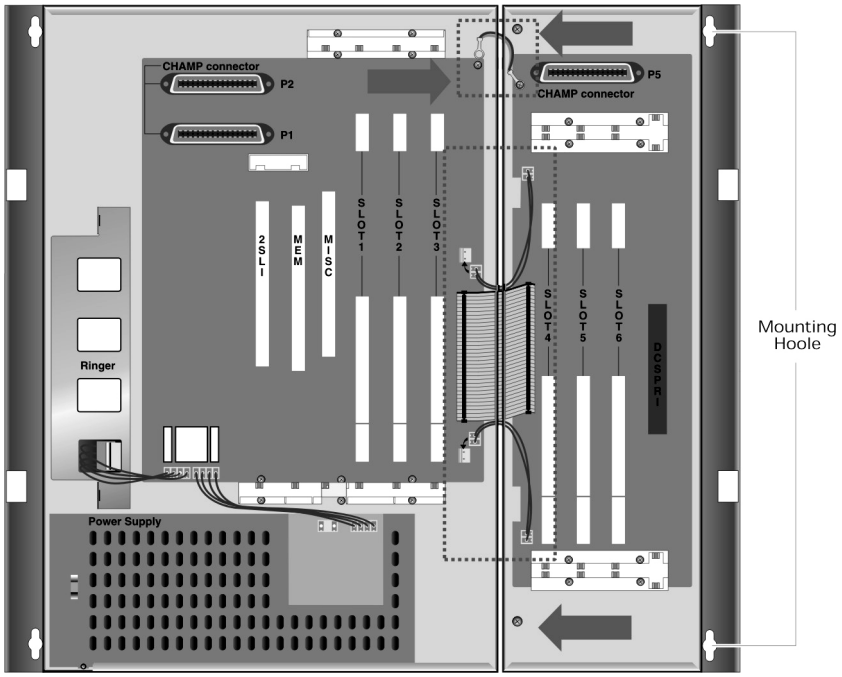

Figure 2.6 Assemble Between Basic KSU & EXP.Cabinet (2)

5) Connect Exp KSU to basic with flat cable and 2 wires.(See Figure 2.6)

6) Insert new optional card.

7) Connect MDF cable through appropriate path.(See Figure 2.7 & 2.8)

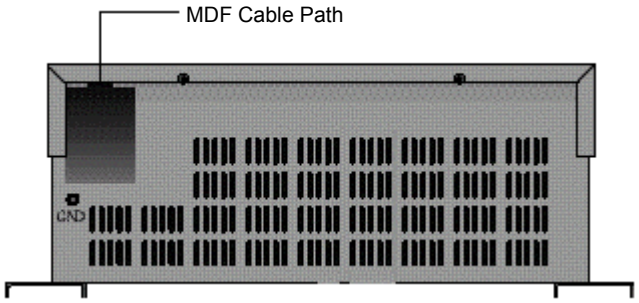

Figure 2.7 Bottom Side of Basic KSU

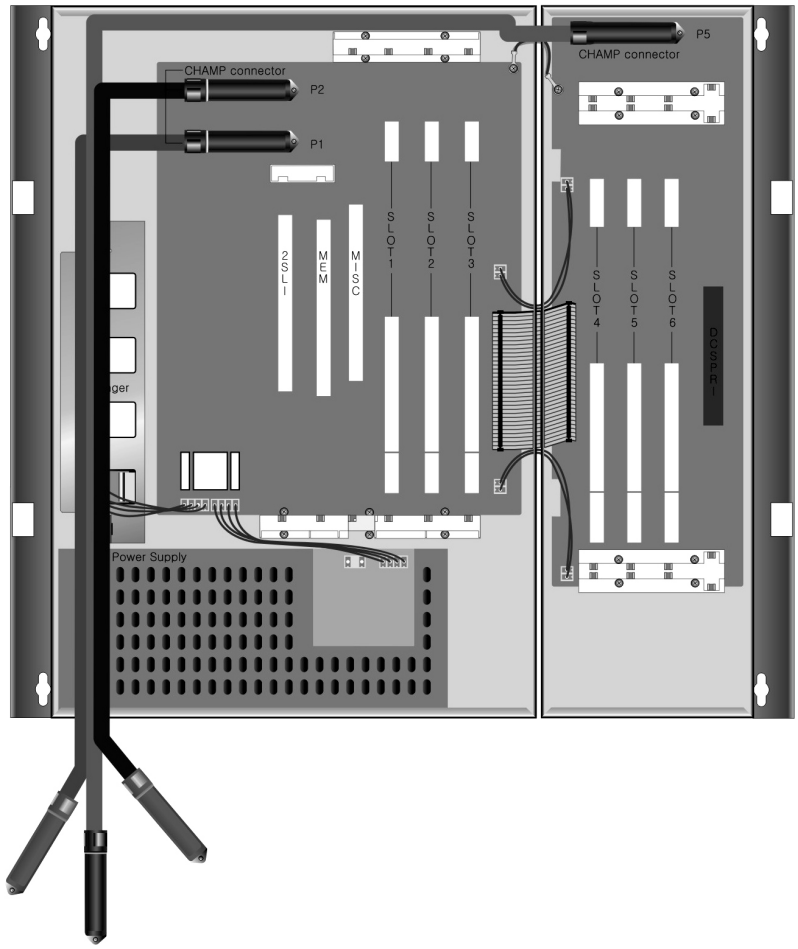

Figure 2.8 Cabling for MDF

8) Now close the cabinets and switch ON the power.

2.5 RGU Installation

The RGU(Ring Generator Unit) is designed to provide sine-wave ring for Single Line Telephones connected to the various SLT(Single Line Telephone) interface cards(2/8SLI, 6MWSLI) installed in each universal slots in the system.
The RGU can be mounted in the Basic KSU by offered screw.
The Cable Assembly (4Pin) of RGU should be connected to connector P11 of 008 Base board. (See Figure 2.9)

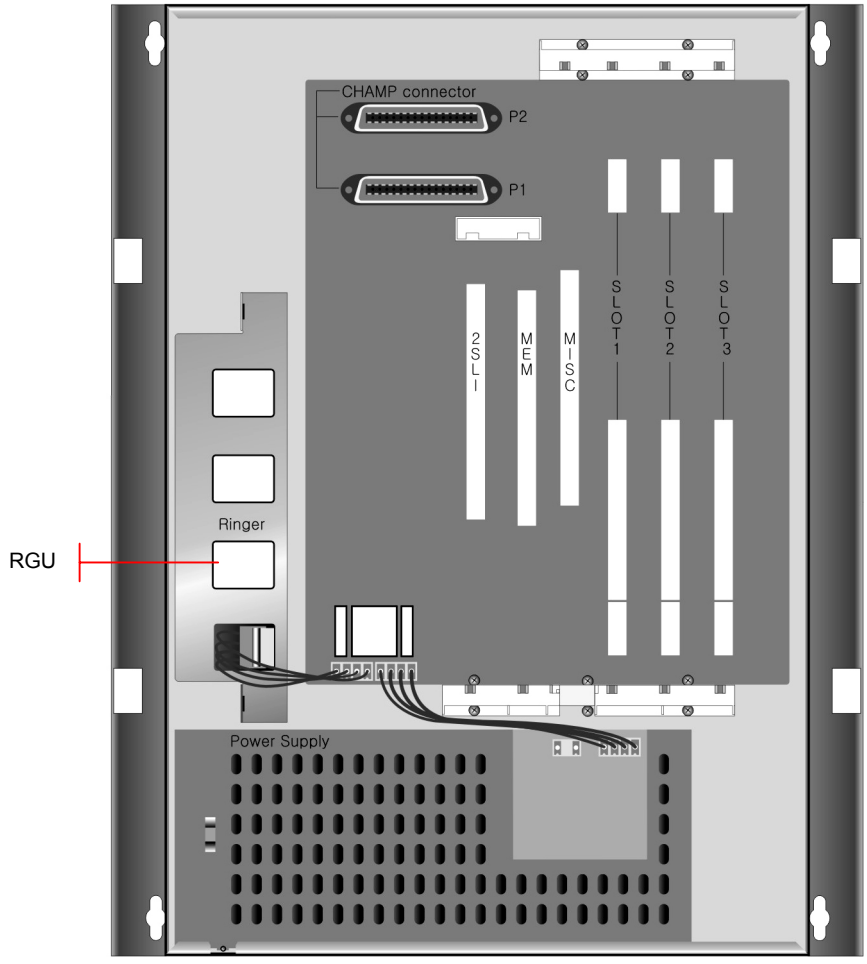

Figure 2.9 Installation of RGU

2.6 Grounding

A three wire for AC grounding via AC power cord should be used for the OfficeServ 100 system However, if it is suspected that there is a problem with the ground provided at AC outlet or local codes require a solid earth ground to be connected to the KSU, the existing third wire ground must be disconnected before power is applied. The existing three wire ground is disconnected by removing the holding screw and tapping and storing the wire. After this wire has been disconnected, the grounding lug on the PSU(Power Supply Unit) must be connected to a ground rod or metal cold water pipe using #A10 AWG solid copper wire.

Failure to provide an adequate ground may cause intermittent problems or even circuit card failure.

Before connecting the ground

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.

2.7 MDF Cabling

All connection to the OfficeServ 100 system are made by way of a customer-provided MDF(Main Distribution Frame). The KSU and expansion kit are each connected to the MDF using a 25 pair female amphenol-type cable(with the exception of the TEPRI, ITM3, MGI3 cards). These cables can be routed into the KSU cabinet from below.(See Figure 2.7 & 2.8)

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

2.8 Battery for Power Failure

2.8.1 Battery Selection

If you want to use OfficeServ 100 system during power failure, install appropriate batteries. If you adopt battery whose capacity is too large, OfficeServ 100 system may be shut down, and if too small, OfficeServ 100 system may not operate during power failure. In any case, use battery connection cable offered with OfficeServ 100.

2.8.2 Installation Procedure

Feed battery cable through MDF cable path; connect cable to battery, RED to positive(+), BLACK to negative(-), then insert housing connector to head pin in power supply.
(See Figure 2.10)

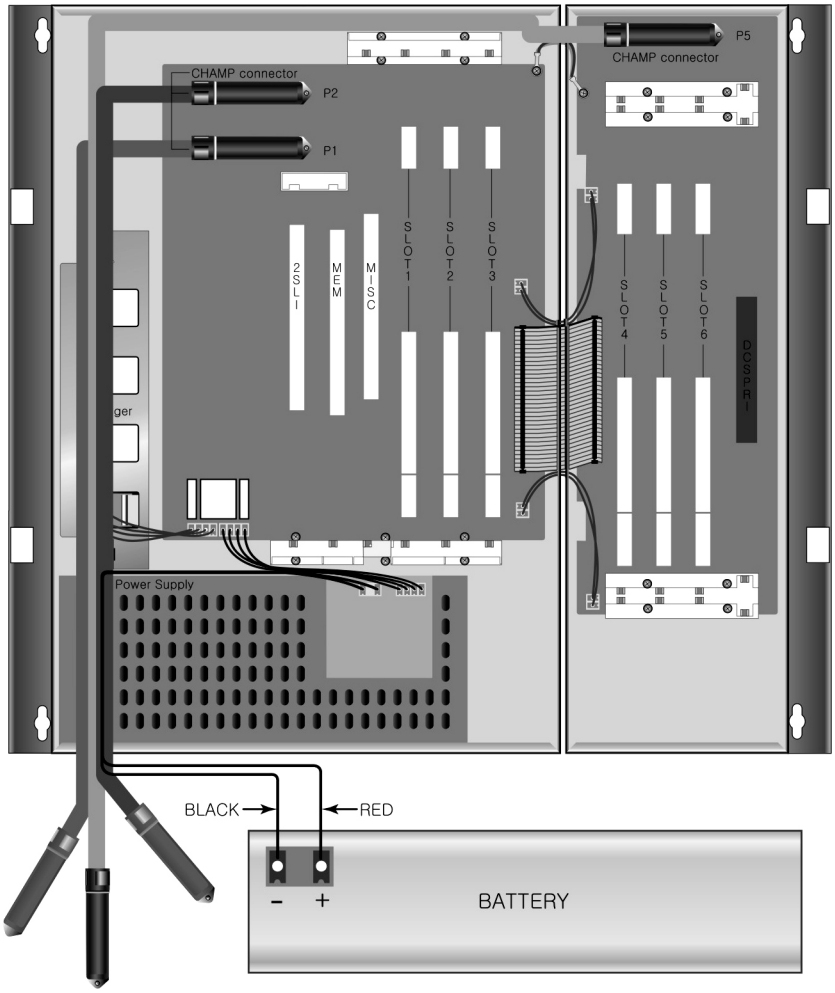

Figure 2.10 Cabling for Battery Connection

2.8.3 Recommended Battery Specification

Table 2.2 Recommended Battery Specification

Current	Charge	Discharge
Minimum Load Current(A)	0	0.05
Maximum Load Current(A)	0.4	0.7
Normal Load Current(A)	0.1	0.5
Normal Output Voltage(V)	54	49

- Max KTS current consumption: 30 mA

When installing appropriate batteries

Be sure the polarity is observed. Equipment damage will result if polarity is reversed. Do not connect external AC/DC power to the OfficeServ 100 system if the system is damaged by electrical power.

CHAPTER 3. Installing Printed Circuit Cards

This chapter describes how to install each card of OfficeServ 100 system.

3.1 3TRK Card

3 loop start trunk ports and 2 PFT(Power Failure Transfer) ports for PFT.(See Figure 3.1) This card has no selectable option. Insert the 3 TRK card into the appropriate slot. Push firmly in the middle of both card ejectors to ensure that it is fully inserted into the back plane connector.

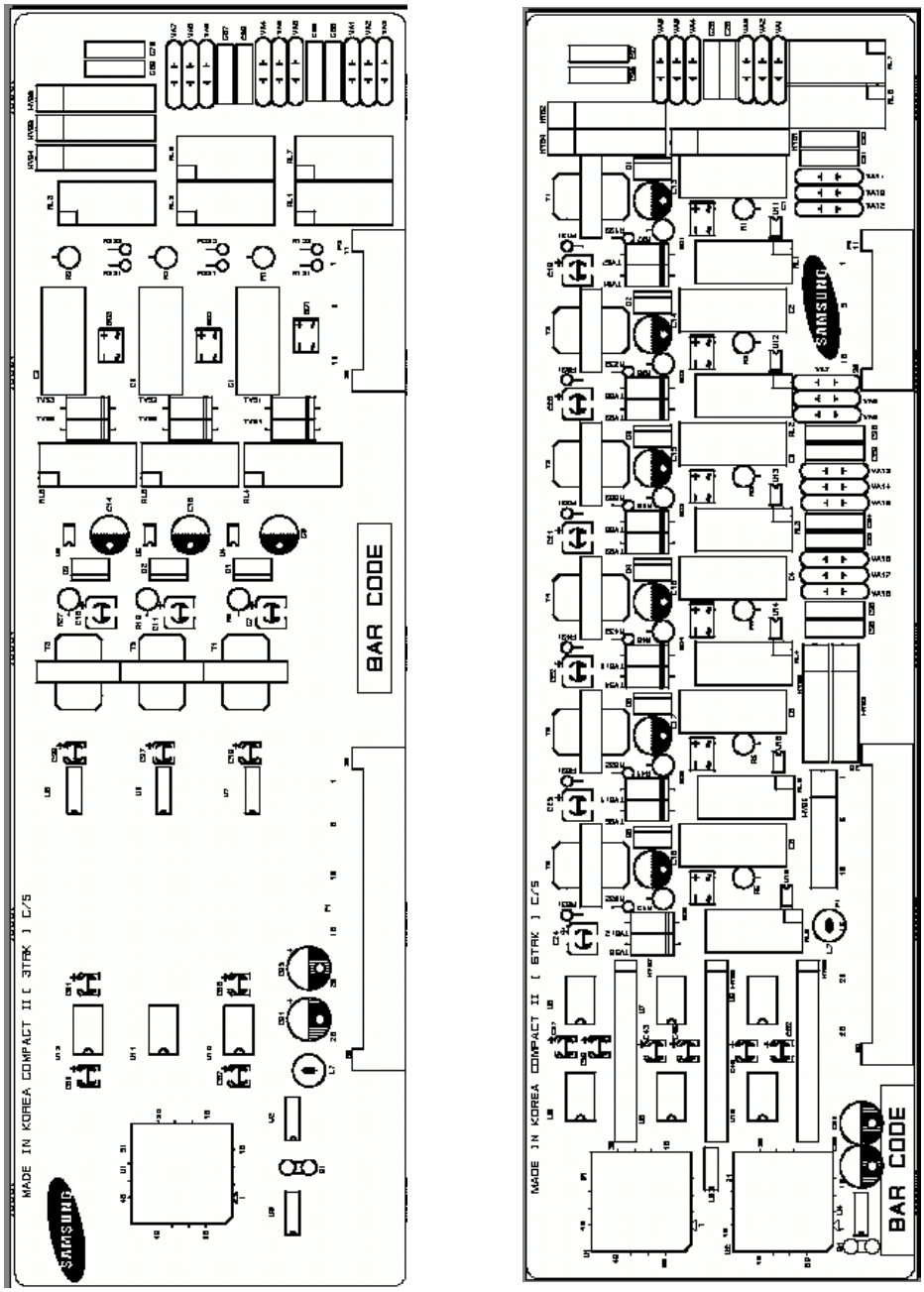

Figure 3.1 3TRK Card and 6TRK Card

3.2 6 TRK Card

6 loop start trunk ports and 2 PFT ports for PFT.(See Figure 3.1)
This card has no selectable option. Insert the 6 TRK card into the appropriate slot. Push firmly in the middle of both card ejectors to ensure that it is fully inserted into the back plane connector.

3.3 6 MWSLI Card

Which has 6 Message Waiting Ring Telephone subscriber line ports.(See Figure 3.2)
This card has no selectable option. Insert the 6 MWSLI(Message Waiting ring telephone Subscriber Line) card into the appropriate slot. Push firmly in the middle of both card ejectors to ensure that it is fully inserted into the back plane connector.
The 6MWSLI supports standard single lineF phones equipped with waiting lamps.
The message waiting power supplied to the single line station in the system is 90 to 100 VDC.

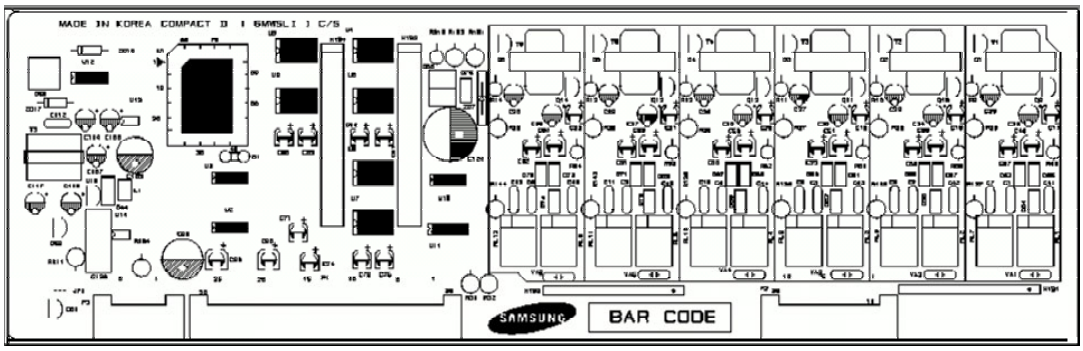

Figure 3.2 6MWSLI Card

3.4 8 SLI Card

Which has 8 subscriber line ports(See Figure 3.3)
This card has no selectable option. Insert the 8 SLI card into the appropriate slot.
Push firmly in the middle of both card ejectors to ensure that it is fully inserted into the back plane connector.

3.5 2 SLI Card

Which has 2 subscriber line ports(See Figure 3.3). This card has no selectable option. Insert the card into the 2 SLI slot.

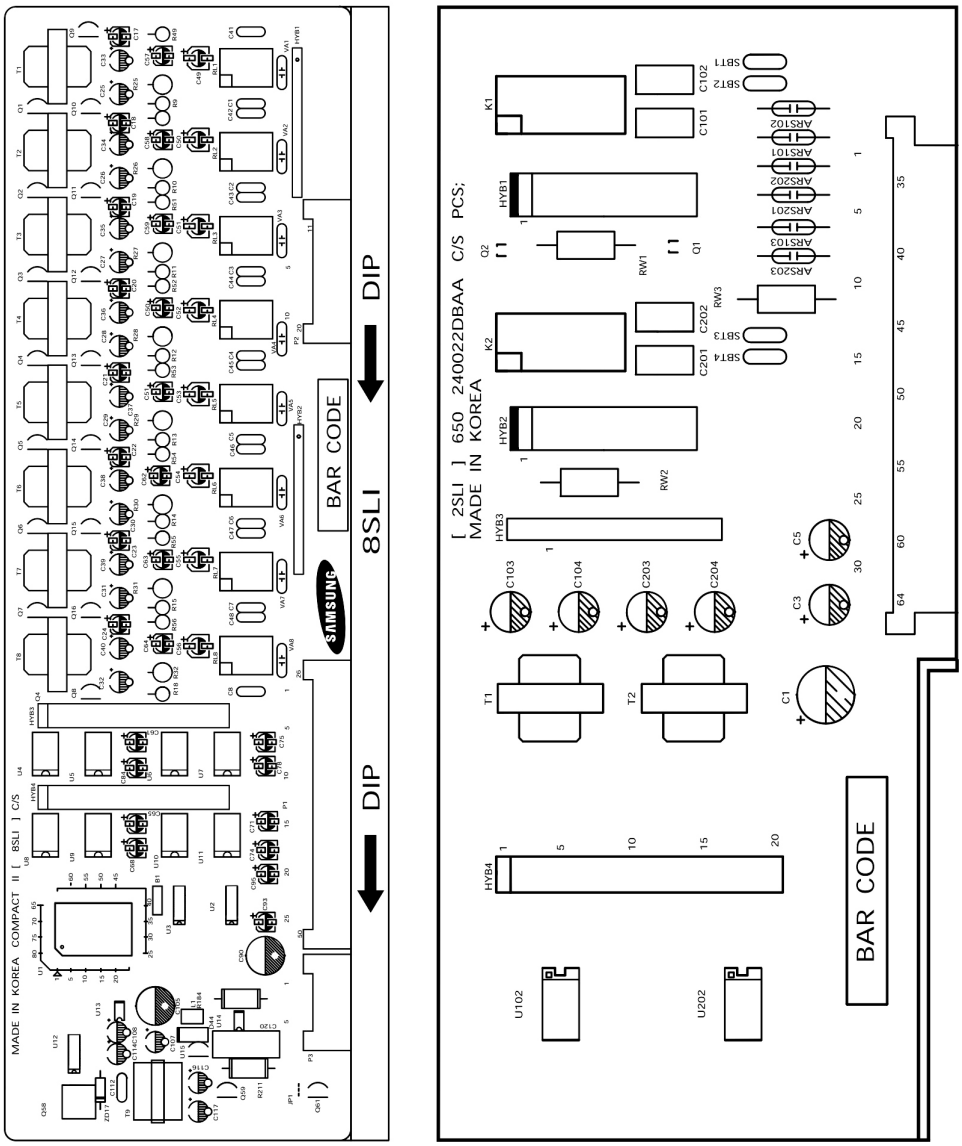

Figure 3.3 8SLI Card and 2SLI Card

3.6 8 DLI Card

Which has 8 digital phone ports.(See Figure 3.4)
This card has no selectable option. Insert the 8 DLI card into the appropriate slot.
Push firmly in the middle of both card ejectors to ensure that it is fully inserted into the back plane connector.

3.7 MISC 1 Card (only use in the iDCS 100 or DCS Compact-II system)

Which has many miscellaneous function DTMF receiver(4ch), RS232C, BGM, PAGE, COMMON PURPOSE RELAY(3port)(See Figure 3.4).
Select appropriate type of MISC card for your system. If you choose MISC 1 card then insert the MISC 1 card into the MISC slot and push firmly in the middle of both card ejectors to ensure that it is fully inserted into the back plane connector.

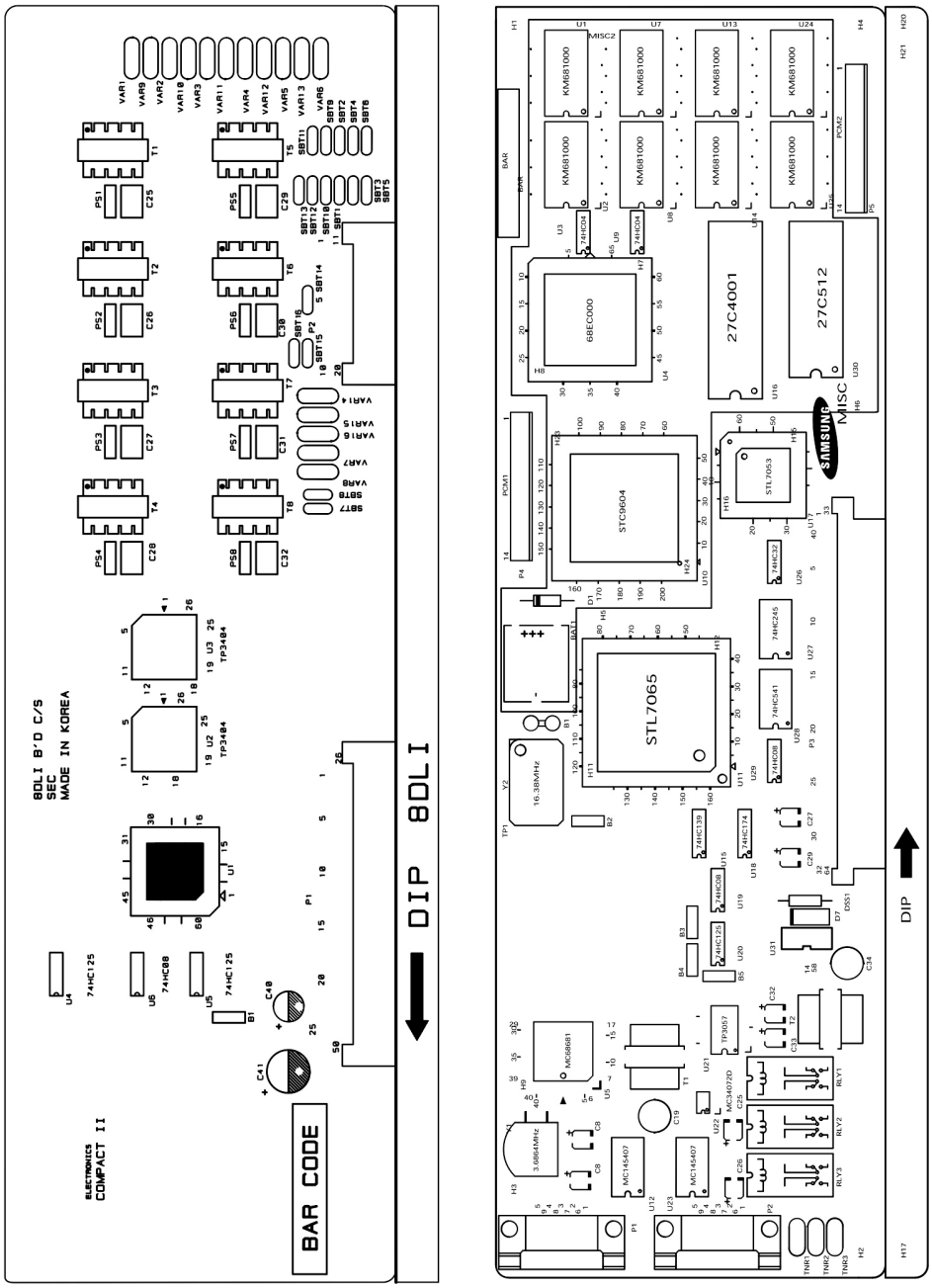

Figure 3.4 8DLI Card and MISC 1/MISC 2 Card

3.8 MISC 2 Card (only use in the iDCS 100 or DCS Compact-II system)

Which has many miscellaneous function DTMF receiver(4ch), RS232C, BGM, PAGE, COMMON PURPOSE RELAY(3port) and AA Select appropriate type of MISC card for the system.


NOTE

When using MISC 1/2 Card

- MISC 1(2) cards only used together with the MEM4(or MEM3 or MEM2: iDCS 100 or DCS Compact II SYSTEM) cards
- New MISC 1A(2A) Card installed with 500 MODEM is not operation SIO 1 RS232C.

3.9 TEPRI or PRI Card

The PRI card supports 30 channel ISDN PRI interface ports.
This card has no selectable options. Insert PRI into the last slot in the Expansion cabinet(type A or B). Firmly push in the middle of the card to ensure that it is fully inserted into the back plane connector. PRI card needs PLL board installing first. Before installing PRI card, PLL board must be installed.
The TEPRI card is installed in the DCS slot on expansion cabinet. The iDCS(OfficeServ) 100 supports either E1 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 E1 or PRI service are selected by a bank of DIP switch as defined below(See Figure 3.5). The TEPRI card has a recessed RESET button that will initialize the card manually if required. The RS232 DB 9 connector on the face of the TEPRI card allows trace monitoring of the TEPRI functions.

Table 3.1 TEPRI Card DIP Switch

Switch No.	OFF	ON
1	E1	T1
2	T1/E1	PRI
3	24B + D	24B
4	USER	NETWORK
5	-	AFT
6	Not Used	Not Used
7	Not Used	Not Used
8	Reserved	Default

Table 3.2 TEPRI 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.	ON	OFF
IPC	IPC link set up.	OFF/IPC link set up	
CLK	Card clock status.	OFF/CARD is secondary source ON card is primary source.	

LED Name	Function	Status	
		Normal Status	Error Status
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

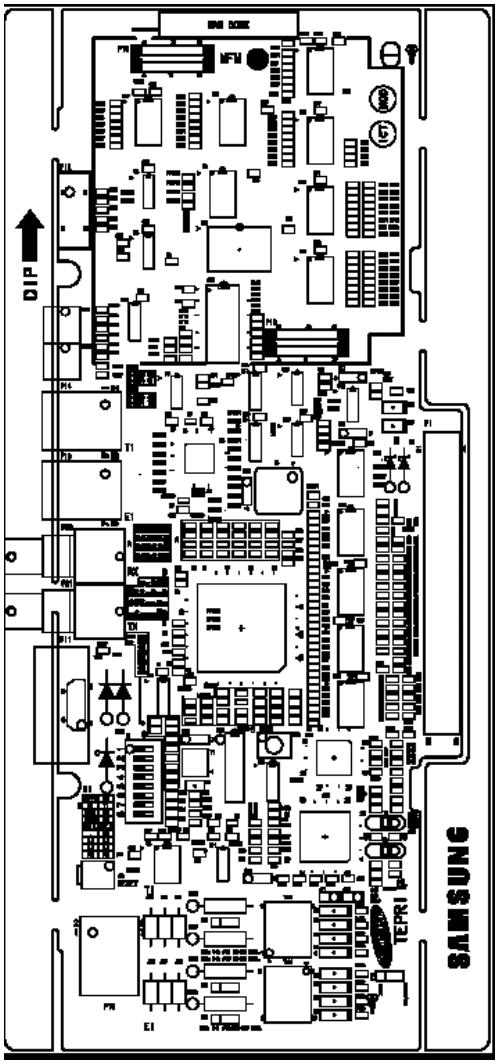

Figure 3.5 TEPRI Card

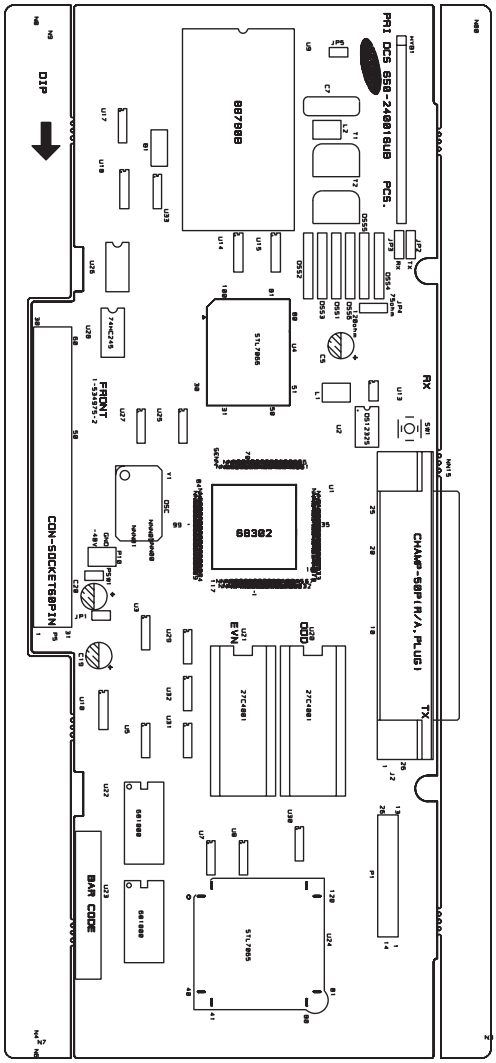

Figure 3.6 PRI Card

3.10 4BRI (4S0T0)/2BRI (2S0T0) Card

This card supports both of S and T reference points defined by ITU-T. You can select the S/T mode of each port respectively by MMC. Insert the 4BRI(4S0T0) card or 2BRI(2S0T0) into the universal slot and push firmly in the middle of both card ejectors to ensure that it is fully inserted into the back plane connector.
BRI card needs PLL board. Before installing 4 BRI, 2BRI, PLL board must be installed.
The BRI card is equipped with DIP switch controlled line termination registers.
There are options for termination as follows.

- ON: with termination.
- OFF: without termination

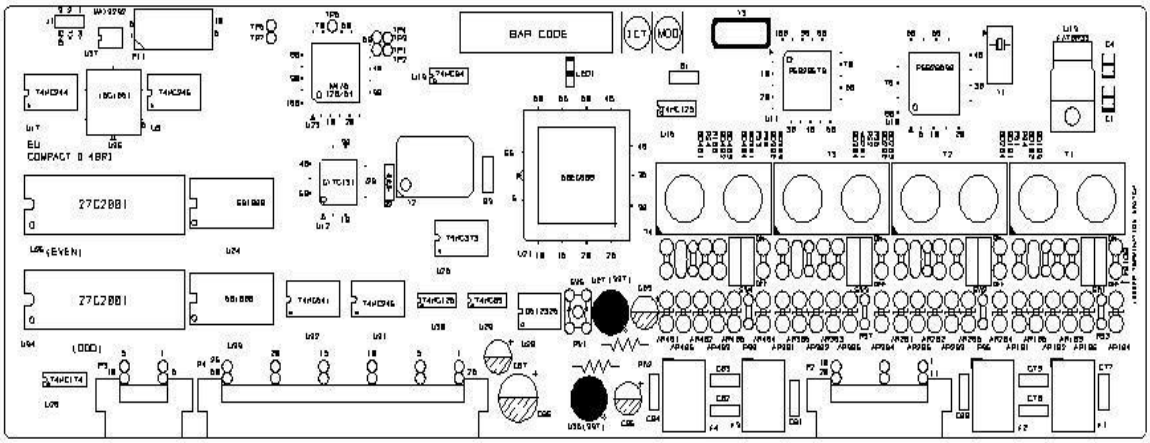

Figure 3.7 4BRI/2BRI Card

3.11 PLL Card

This card has no selectable option and this card is only used when TEPRI, PRI or BRI card is adopted. Push firmly in the middle of 14 pin female connector.

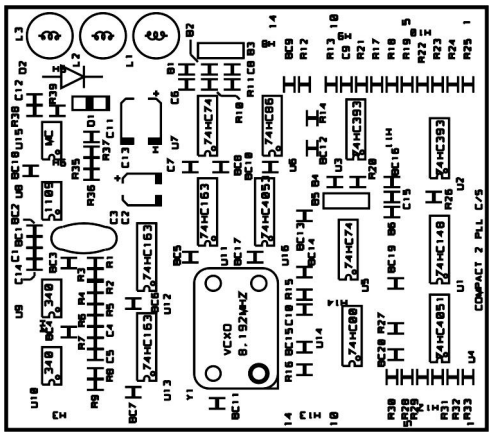

Figure 3.8 PLL Card

3.12 MEM Card (MEM3 or MEM4): only use in the iDCS 100 system

Select the appropriate of MEM for the system. Make sure that back up switch is OFF position. Insert the MEM card in the KSU slot labeled MEM. Push in middle of the MEM card(MEM3 or MEM4) to ensure that it is fully inserted into the back plane connector.

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

MEM3 card has EPROM memory to support new features Window PC-MMC, ITM3 & TEPRI cards. MEM4 card with LAN interface module, no selectable options. The LAN module is required to expand the system memory, to provide SIO ports 1EA, and a 10/100 BASE-T LAN interface processor. MEM4 card has Flash memory to support new features Window PC-MMC, ITM3, TEPRI cards and Networking solution by TEPRI, Program/Database up/down-load by LAN interface.

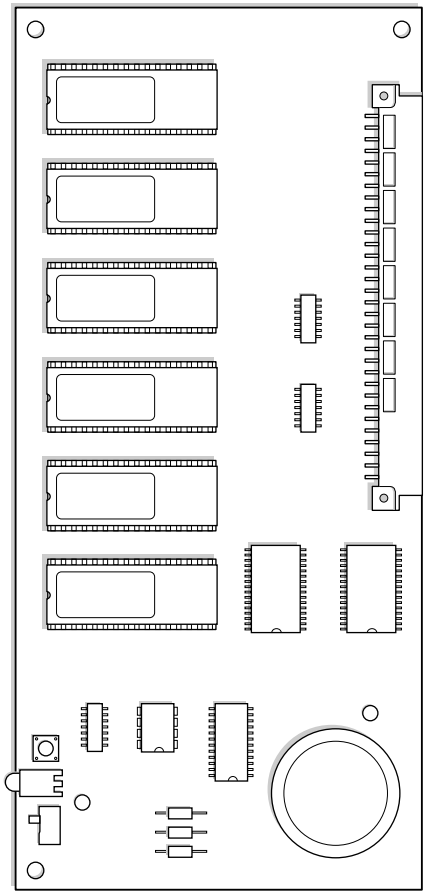

Figure 3.9 MEM3 Card

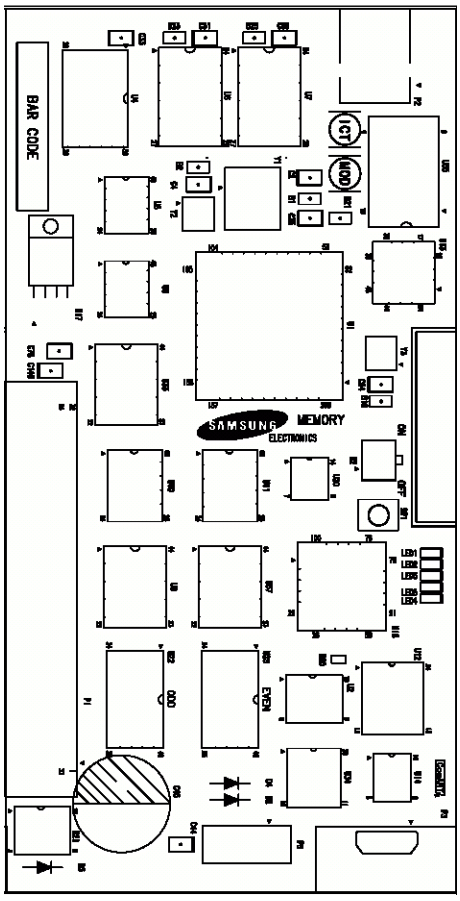

Figure 3.10 MEM4 Card

3.13 SVMi-4 Card

The SVMi-4 is a self contained plug in card supporting voice mail and auto attendant for the OfficeServ 100. It is designed to meet the demands of the sophisticated voice mail user without sacrificing simplicity.

The SVMi-4 may act as an Auto Attendant system only, a Voice mail system only or both. Out of the box the SVMi-4 can handle 2 calls simultaneously. It can be easily upgraded to handle up to 4 calls simultaneously.

No external line or power connections are necessary, these are accomplished directly through the phone system.

At this time of this writing the memory capacity is about 5 hours, although changes in technology will allow for additional storage as time goes on.

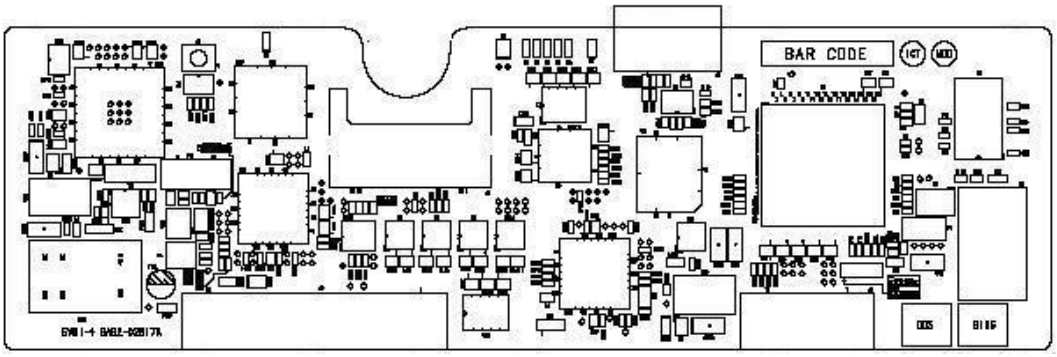

Figure 3.11 SVMi-4 Card

3.14 SVMi-8 Card

NOTE

When installing SVMi-8 Card

Before installing this card it should be correctly configured with a hard disk drive and the appropriate number of voice processing modules. One additional Voice Processing Module can be added.

The SVMi-8 card is installed in DCS slot on the expansion cabinet. Only one SVMi-8 can be installed in an OfficeServ 100 system and it counts as eight stations of the power supply rating. Check that the cabinet power switch is in the OFF position. Next, position the SVMi-8 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 that you have installed the correct power supply.

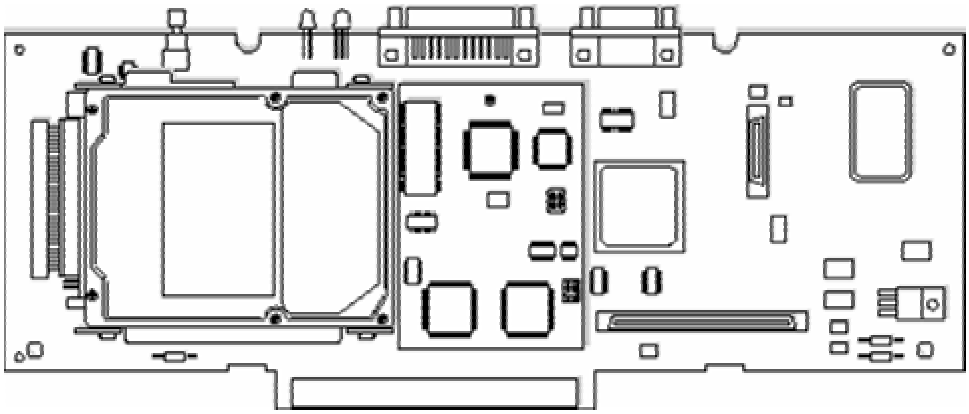

Figure 3.12 SVMi-8 Card

3.15 ITM3 Card (only use in the iDCS 100 system)

The number of the installed ITM3 card is limited to one in the iDCS 100 system (MEM3 or MEM4).

The ITM3 card can be installed in the universal slots on the Basic KSU.

There are no options to select on the ITM3 card. The card has eight LEDs on its faceplate to indicate the status of the card. These indications are described below. Push firmly in the middle of both card ejectors to ensure the card is firmly seated into the back plane connector.

Table 3.3 LED Display of the ITM3 Card

LED Name	Function
PWR	This LED is ON when +3.3 volts power is applied to ITM3 Card.
SW1	This LED is ON when S/W task for H323 stack is operates.
Tx	This LED is ON when Tx data is valid on only 100M Ethernet port. So it is OFF to be connected to 10M Ethernet port.
Rx	This LED is ON when Rx data is valid on both 10M and 100M Ethernet port.
RUN	This LED is connected the address Bus(8) pin of CPU. So it is ON when CPU is running. The faster CPU operates, the brighter LED is.
SW2	This LED indicates a processing state for voice packeting in Call.
SW3	This LED is ON when call service is ready.
SW4	This LED is flicker at a low rate to indicate O.S task in Software running.

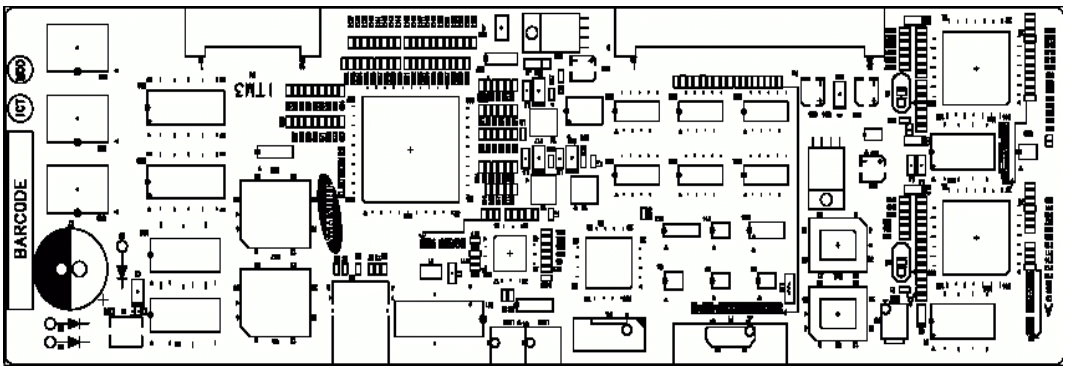

Figure 3.13 ITM3 Card

3.16 MCP1 Card (only use in the OfficeServ 100 system)

MCP1(The Main Control Processor 1) card is the main processor card with a 32 bit processor, and controls the overall operation of the OfficeServ1500 system. MCP1 card is mounted on the MEM slot of the OfficeServ 100 basic cabinet. Push in middle of the MCP1 card to ensure that it is fully inserted into the back plane connector.

To prevent accidental damage to MCP1 card, the connector on the back plane is positioned to mate only with the MEM(MCP1) card. Other interface cards will not mate with this connector and MEM cards will not mate with any other connector.

Supported with RJ45 LAN Interface, DB9 SIO Connecter and IPC(Inter Processor Communication) with SP(68EC000 in the 008Base Board).

Support with most of current iDCS 100(DCS Compact II) cards.
Include new MISC 3(4), MGI3 and 4WLI cards & other cards, except MISC 1/2, ITM3 Cards.

The procedures for mounting and connecting connectors, LED indicator, memory back-up ON/OFF switch, and only used 500 MDOEM optional d-board and 3 pin cable connected the MCP1 board for MP serial data(TXD, RXD, GND) signaling to the 500 MODEM.

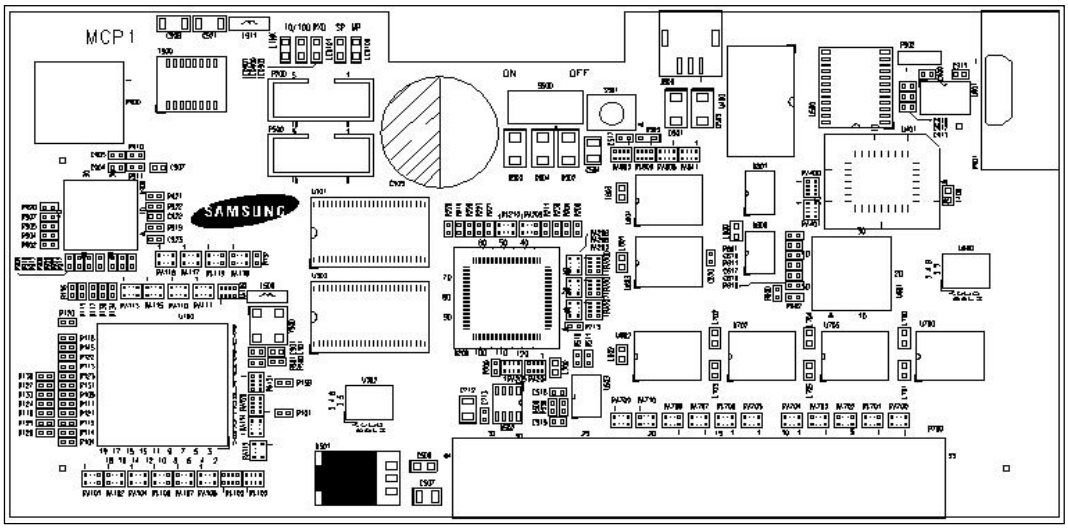

Figure 3.14 MCP1 Card

3.17 MISC 3 (4) Card (only use in the OfficeServ 100)

Many miscellaneous function DTMF receiver(4ch), BGM, PAGE, Common Purpose Relay(3port), CID Rx, 500 MODEM(option) are MISC 1.
MISC 4 support MISC 3 feature and 4 Channel AA.
MISC 3(4) SIO Port no serviced, MCP1 SIO Port serviced consequently

New feature support the FSK Caller ID sender to SLT: With total 16 Channel for CID Tx & Rx ports.

Only used 500 MDOEM Optional D-board and 3 pin cable connected the MCP1 board for MP serial data(TXD, RXD ,GND) signaling to the MODEM.

Select appropriate type of MISC card for your system. If you choose MISC 3(4) card then insert the MISC card into the MISC slot and PUSH firmly in the middle of both card ejectors to ensure that it is fully inserted into the back plane connector.

NOTE

When using MISC 1(2) Card

- MISC 1(2) cards only used together with the MEM4(or MEM3 or MEM: iDCS 100 or DCS Compact II system) cards
- Not used together with the MCP1(Main Control Processor 1) card of the OfficeServ 100.

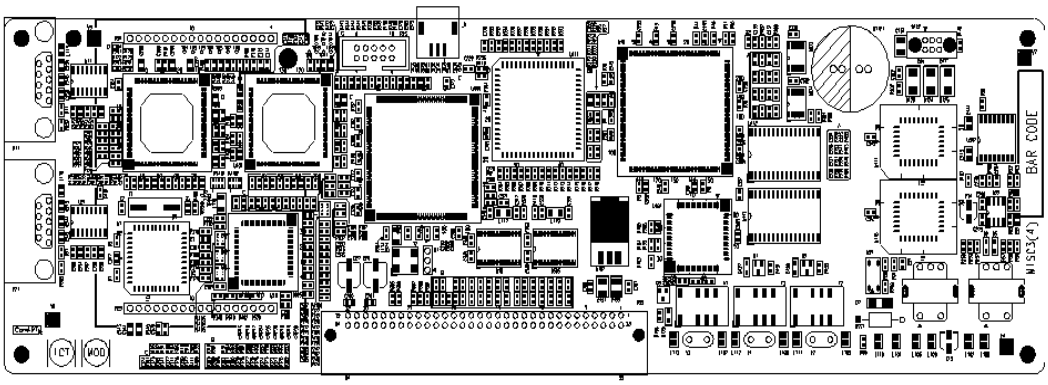

Figure 3.15 MISC 4 Card

3.18 500 MODEM D-Board (common use the OfficeServ 500)

This board has no selectable options and installs on the MISC3(4) board for OfficeServ 100 or MISC 1A(2A) for iDCS 100 or DCS Compact-II system.
The MODEM board provides a 56Kbps/V90 modem for communicating with the system remotely. Place the modem board face down over the two connectors, taking care to properly line them up, and lining up the holes in the MODEM board and MISC 3(4) board, and press gently on the back of the board to seat it.

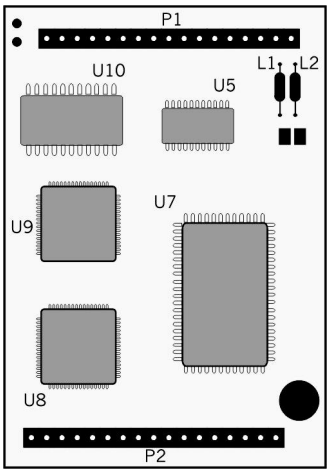

Figure 3.16 500 Modem D-Board

3.19 MGI3 Card (only use in the OfficeServ 100)

The MGI3 card supports the VoIP Gateway, which enables telephone calls through the Internet. Since the MGI3 card cannot support the H.323 protocol by itself, the MGI3 card shall always be used together with the MCP1 card.
When mounted with the 500 MGI3 D-board, the MGI3 card can support up to 16 Internet telephone(VoIP) ports by adding 8 channels of Internet telephone ports. Up to 3 cards MGI3 shall be installed in the Basic cabinet 3 universal slot.

Push firmly in the middle of both card ejectors to ensure the card is firmly seated into the back plane connector

The features of the MGI3 card(such as LAN port connection, RS232C connection, Reset button, and jumper setting) are identical to that of the ITM3 card, except for the front panel LED feature.

Table 3.4 LED Display of the MGI3 Card

LED	Color	Description
PWR	Light Green	Displays the power supply status of the MGI3 board. - On: Power is supplied normally. - Off: No power supply.
SRV	Light Green	Displays if the voice service is available. - Blink: Service is available. - Off: Service is unavailable.
Tx	Light Green	Displays the status of data transmission through Ethernet. - Blink: Data is being transmitted. - Off: No data transmission.
Rx	Light Green	Displays the status of data reception through Ethernet. - Blink: Data is being received. - Off: No data reception.
RUN	Light Green	Displays the operation status of the MGI3 card. - On: MGI3 card is operating normally. - Off: MGI3 card is not operating normally.
IPC	Light Green	Displays if messages are transferred between MGI3 card and the main control part. - Blink: Messages are transferred normally. - Off: No message transfer.
DSP	Light Green	Displays the usage rate of the DSP channel. - Blink: DSP channel is being used. Blinks every 1 second for 1 to 4 channels, 0.5 second for 5 to 8 channels, 0.25 second for 9 to 12 channels, and 0.125 second for 13 to 15 channels. - On: All 16 channels are being used. - Off: No DSP channel in use.

LED	Color	Description
MOD	Light Green	Displays if RTP data is incoming through LAN. - Blink: RTP data is received normally. - Off: No RTP data is being received.

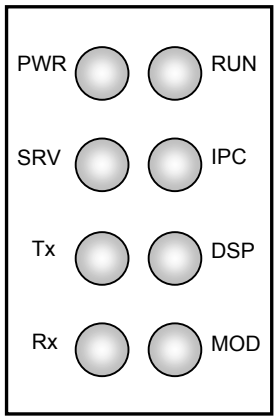

Figure 3.17 LED Display of the MGI3 Card

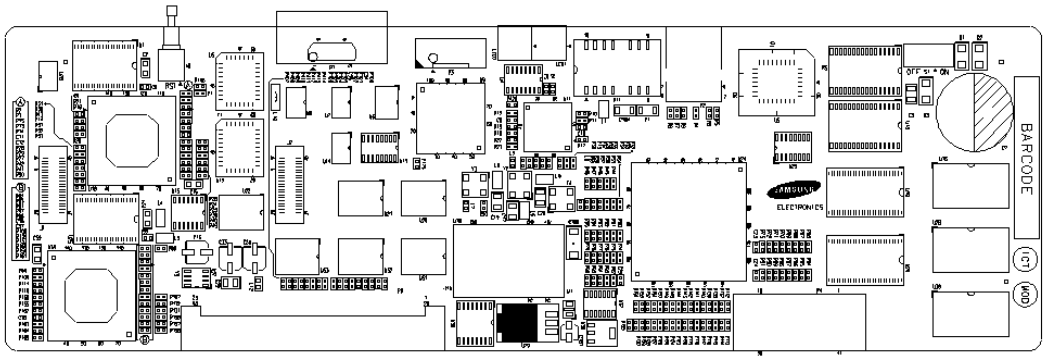

Figure 3.18 MGI3 Card

3.20 4WLI Card (only use in the OfficeServ 100)

The 4WLI card provides wireless solution to the OfficeServ 100 system, and provides cable interface between the system and COMBO type WLAN Base Station(WBS24), which is the access point for WLAN.
The cable interface system is a digital system, which uses the 2B + 1D QDASL(Quad Digital Adaptor Subscriber Loops) interface. One 4WLI shall be installed in the Basic cabinet 3 universal slot and 4WLI can interlock up to 4 WBS24s. And since two DASL line is connected to one WBS24, 2x(2B + 1D) 4 voice channel simultaneous call is supported. Power Feeding is supplied from the system through cable, and serves as the path for transmitting and receiving voice and signaling data between 4WLI and WBS24. Therefore, one 4WLI board supports up to 16 voice channels.

Push firmly in the middle of both card ejectors to ensure the card is firmly seated into the back plane connector.

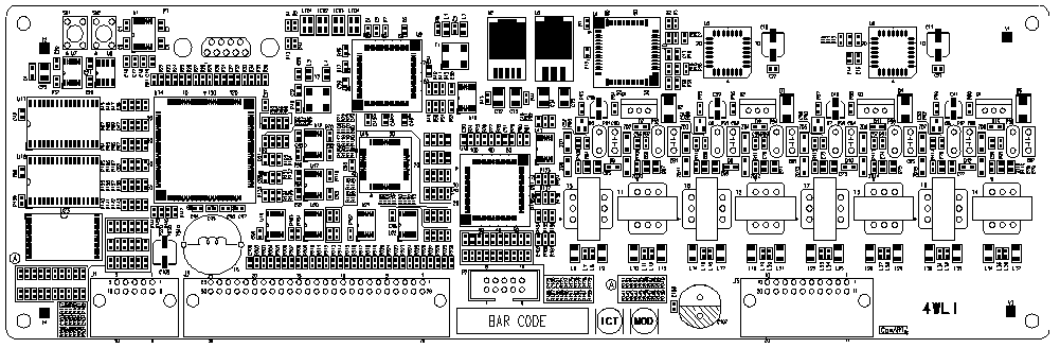

Figure 3.19 4WLI Card

CHAPTER 4. Power Up Procedures

This chapter describes power up procedures of OfficeServ 100 system.

4.1 Connect Power to The System

During the initial installation, it is best to verify proper system operation before plugging in any Amphenol-type cable to the MDF. If you have already plugged the cables in, unplug them.

Verify that the AC voltage at the dedicated electric outlet is in the range of 220-240 VAC. Make sure the AC power switch is in the OFF position and that MEM battery switch is OFF. Plug the KSU power cord into the dedicated polarized AC outlet. Turn the AC power switch to the ON position. The AC and DC LED on the power supply will light steady to confirm the presence of power. If the PSU is operated by external battery, AC LED is OFF and DC LED is ON. If the PSU AC LED fails to illuminate, unplug the system, remove the power supply and check the AC fuse located on the bottom.

If the fuse is good but the AC LED does not illuminate, check your AC outlet. Turn off the power switch; unplug all cards using card ejectors. Turn the system on. Check the AC LED again. If the problem is corrected, you have a defective card. Test and remove the faulty card before continuing. If the AC LED still does not light, unplugging the KSU and change power supplies. This in all probability will solve the problem. If it does not, contact Samsung Technical Support.

4.2 MCP1 (MEM) Card Indications

Having verified proper operation of the power supply, visually check the MEM card indications. The LED of MEM3 or the LED4 of MEM4 or MP & SP run LED of MCP1 should flicker rapidly indicating the main processor is functioning.
The battery switch should now be turn ON. 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 manual operation. See MMC 810 for operation of the halt program.

Table 4.1 MEM4 LED Indication

LED	Status	Indication
1	OFF	The status of LAN transmit chip(LST972) is in abnormal
	ON	The status of LAN transmit chip(LST972) is in normal
2	OFF	LAN is linked
	ON	LAN is not linked
3	OFF	There is no LAN Rx data
	ON	There is LAN Rx data
4	Flicker Slowly(500 ms)	RUN LED for main program. The main program is in normal operation status.
	Flicker Quickly(200 ms)	RUN LED for main program. The main program is in booting operation status.
5	Flicker Slowly(500 ms)	RUN LED for main program. The LAN program is in normal operation status.
	Flicker Quickly(200 ms)	RUN LED for main program. The LAN program is in booting operation status.

Table 4.2 MCP1 LED Indication

LINK	LAN Link Status	
	OFF	indicates that there is no link from the LAN link connection
	ON	indicates that the link from the LAN connection is being set up On indicates a link connection.
10/100	LAN 10 or 100Mbps 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 set up 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 Card Verification

Before connecting all MDF cable, plug in a test cable to the first DLI port. Connect a digital Telephone set and verify that it is working. Use maintenance program MMC 727 to verify the system version, and that all cards are recognized by the CPU. Remove the test cable and plug in all Amphenol-type cables to the MDF. At this time, it is recommended that the system be defaulted using MMC 811.
See the Programming manual for more details. Proceed with the rest of the installation.

4.4 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. Station numbers are assigned in the same manner. The lowest station is assigned station number 201 and continued Keyset daughter boards are assigned numbers beginning with 301 and continued. Default data assigns the 24 button phone in the lowest port to the operator group and all trunks ring that station until default is changed. It is recommended that the operator station will default to a 24 button key set as extension 201.
Station and trunk numbers can be changed, rearranged and reassigned as needed using MMC 724.

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CHAPTER 5. Connecting Trunk Line Circuit

This chapter describes how to connect CO circuit.

When installing or modifying telephone lines.

To limit the risk of personal injury, always follow these precautions before connecting CO circuit.

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in a wet location unless the jack is specially designed for wet location.
- Never touch non-insulated telephone wires or terminals unless the telephone line has been disconnected at the network interface

5.1 Loop Start Lines

The OfficeServ 100 system requires MDF connection. All CO Line and Station is connected to the system with MDF.(See Figure 5.1)

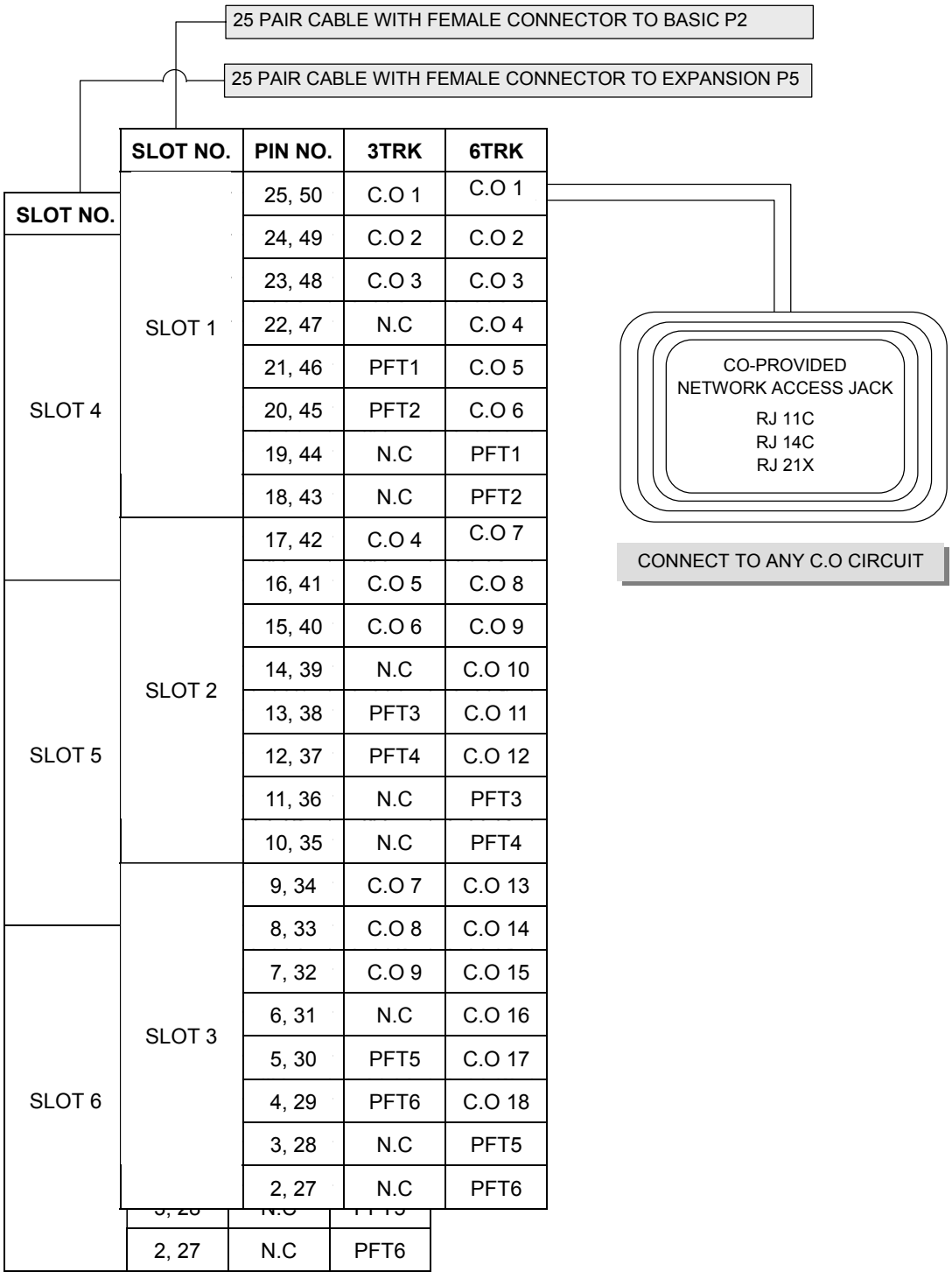


Figure 5.1 MDF Connections Loop Start Line to Option Card

5.2 OPS (Off Premised Station)

Using one pair twisted #24 AWG or #26 AWG wire, cross-connect each any 2SLI port to telephone company OPS circuits.(See Figure 5.2)

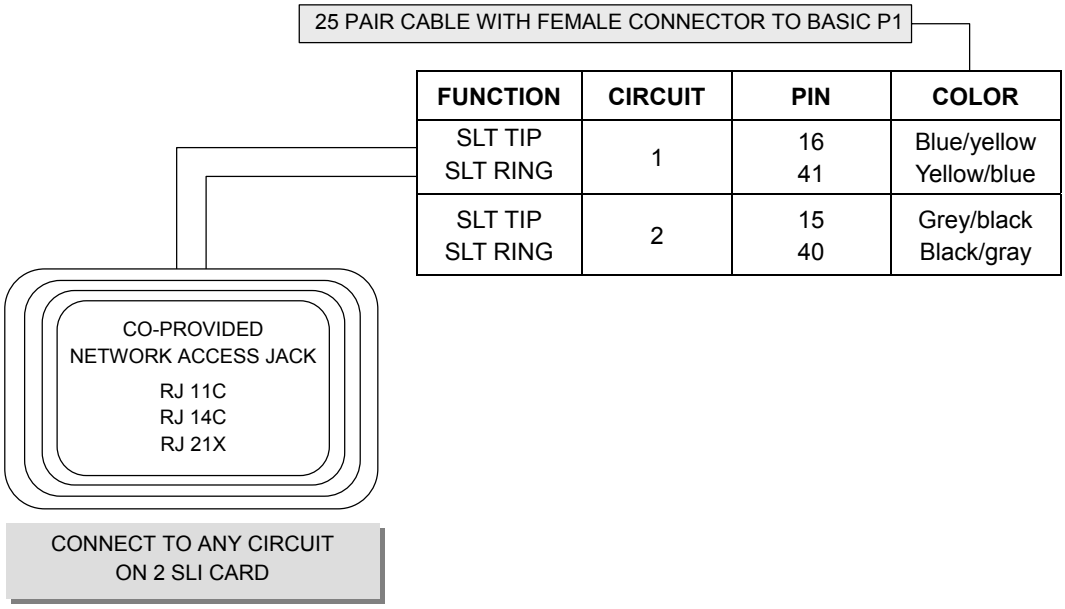


Figure 5.2 MDF Connections Off Premise Extension from 2 SLI Card

Circuit on 2SLI card is specially designed to meet CO requirements for OPS use.
These circuits are provided with the same over voltage and over current protection as CO Line circuit.

CAUTION

When using long line Extension

Using long line(over 1 Km) Extensions on a 8SLI or KDB SLI may cause damage to your equipment.

5.3 ISDN CO Lines

OfficeServ 100 system is fully ISDN compatible. For Basic Rate Interface BRI card can be used as ISDN TE(Terminal Equipment) or NT2(Network Termination 2/Multiway ISDN Interface). When programmed to T-mode(default setting) this port provides T point and can be access NT(NT1 or NT2) derived from CO Line Connect each point of BRI card to NT to use as ISDN TRK.

NOTE

When connecting BRI Card

When you are to connect a T port to a NT, please be careful if there is a termination present in any other place than this BRI card on the bus. Since typical 100 ohm line termination resistance exists on each port of this card.

PRI or TEPRI cards supports a RJ45 connector to access ISDN PRI lines from CO Connect.

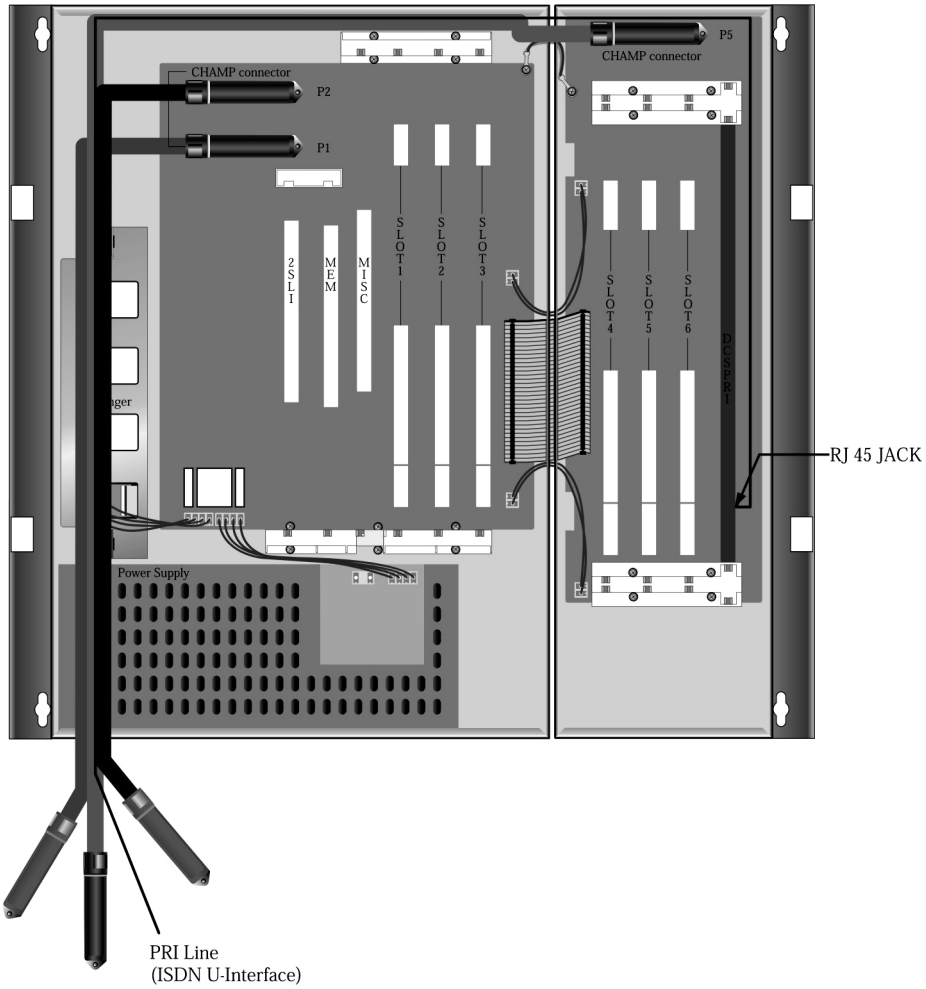


Figure 5.3 ISDN Interface Connection for PRI

If S-interface is needed, ISDN C.O line from C.O must be connected to MDF.

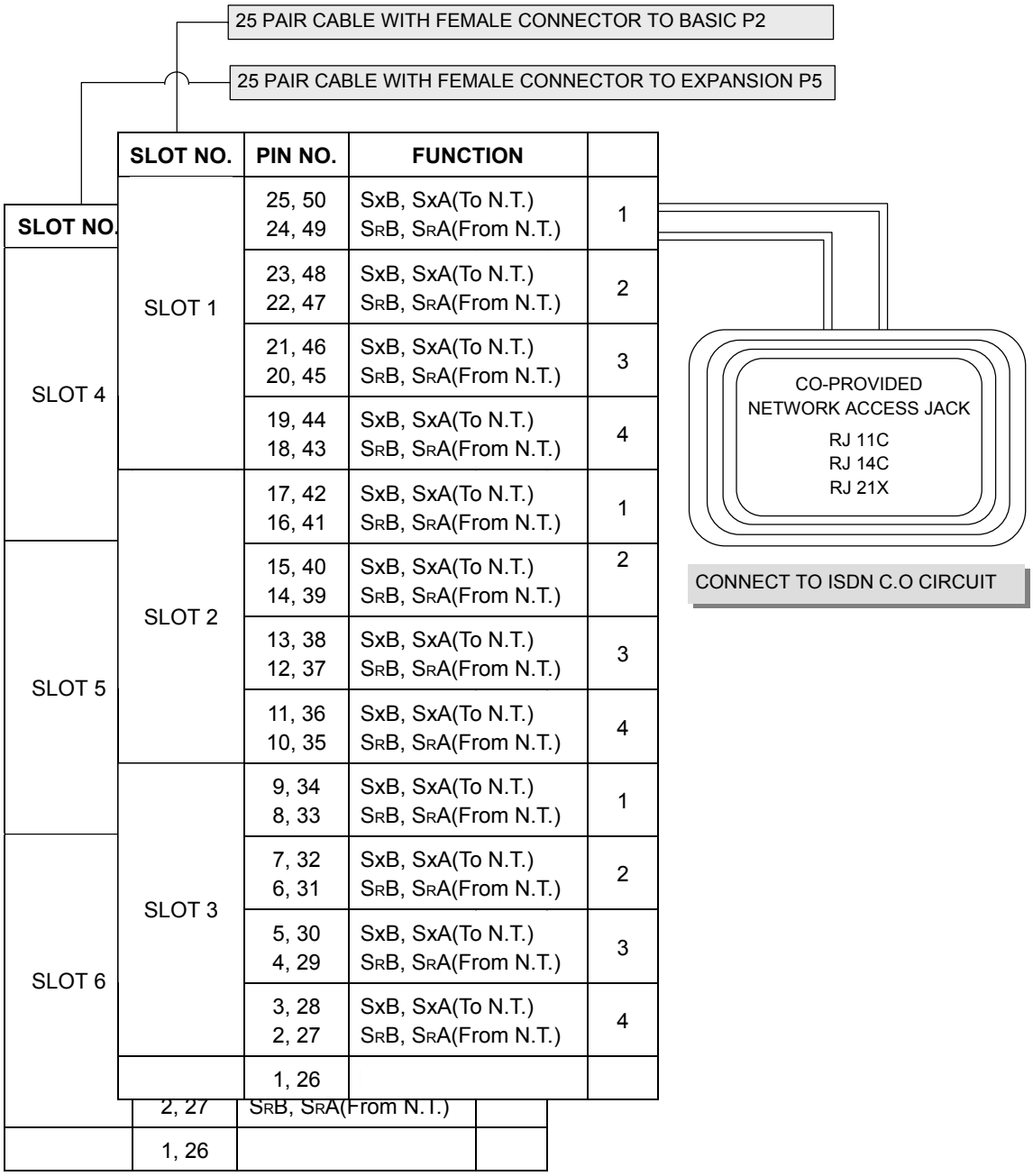


Figure 5.4 MDF Connections for ISDN CO Line to Card (4BRI)

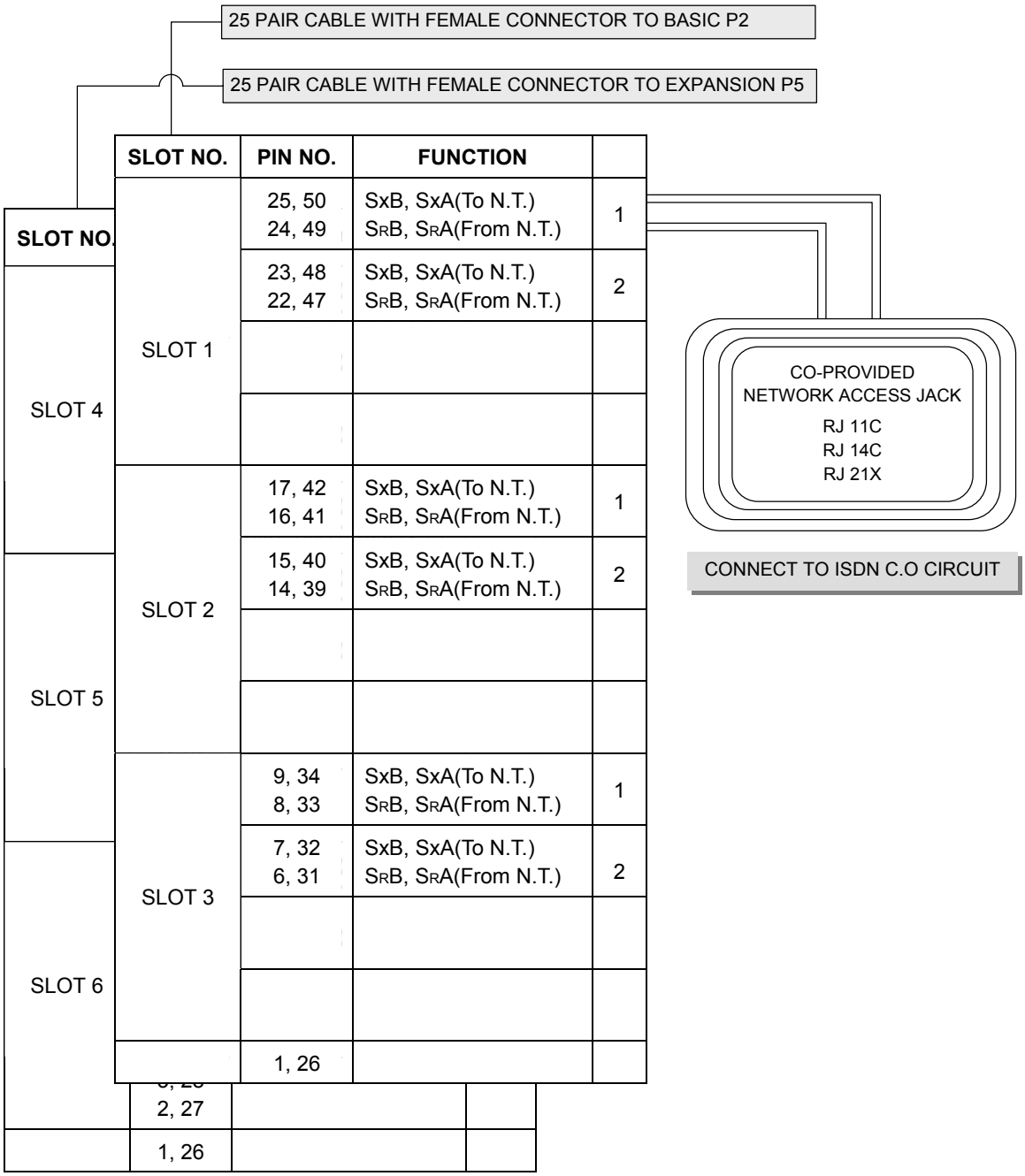
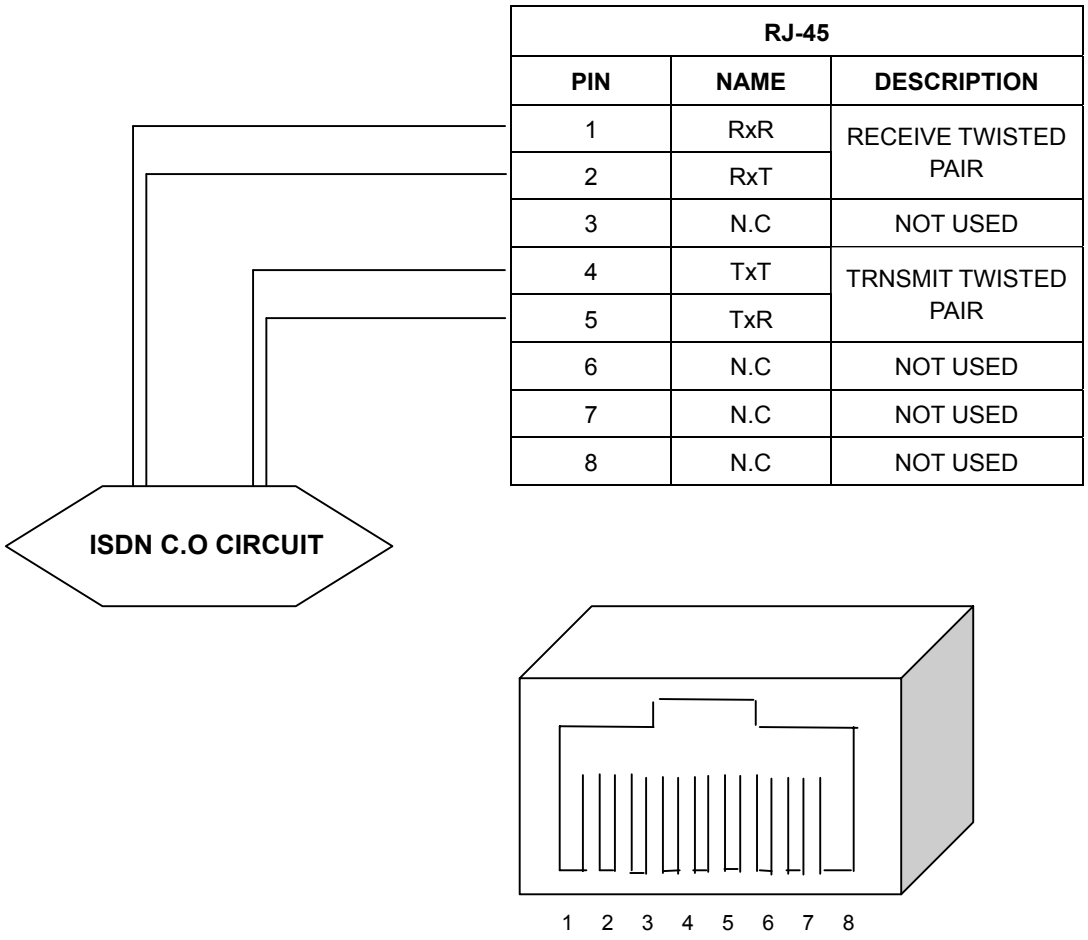


Figure 5.5 MDF Connections for ISDN CO Line to Card (2BRI)

4BRI(including 2BRI) card can support both of S and T reference points defined by ITU-T. Detailed description & MMC is referred in Programming Manual.

RJ-45 connector to TEPRI(PRI) card



RJ-45		
PIN	**NAME**	**DESCRIPTION**
1	RxR	RECEIVE TWISTED PAIR
2	RxT	
3	N.C	NOT USED
4	TxT	TRNSMIT TWISTED PAIR
5	TxR	
6	N.C	NOT USED
7	N.C	NOT USED
8	N.C	NOT USED

Figure 5.6 TEPRI (PRI) Connection for Reference Only

NOTE

When installing TEPRI(PRI) Card

TEPRI(PRI) card must be installed to DCS slot in Expansion Cabinet only.
TEPRI(PRI) connection is provided via the RJ-45 socket. Connect the system and network termination point(NT1) using an 8 conductor UTP CAT 5 cable

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CHAPTER 6. Connecting Station Equipment

This chapter describes how to connect station equipments to the OfficeServ 100 system.

When installing or modifying telephone lines.

To limit the risk of personal injury, always follow these precautions before connecting CO circuit.

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in a wet location unless the jack is specially designed for wet location.
- Never touch non-insulated telephone wires or terminals unless the telephone line has been disconnected at the network interface

6.1 Phone

Using one pair twisted #24 AWG or #26 AWG wire, cross-connect each phone to the DLI port of your choice(See Figures 6.1 and 6.2). 8DLI port in the base board can support the KDB-D/KDB-S function.

25 PAIR CABLE WITH FEMALE CONNECTOR TO BASIC P1

PIN	COLOR	CIRCUIT	FUNCTION
25 50	Grey/purple Purple/grey	1	DLI TIP DLI RING
24 49	Brown/purple Purple/brown	2	DLI TIP DLI RING
23 48	Green/purple Purple/green	3	DLI TIP DLI RING
22 47	Orange/purple Purple/orange	4	DLI TIP DLI RING
21 46	Blue/purple Purple/blue	5	DLI TIP DLI RING
20 45	Grey/yellow Yellow/grey	6	DLI TIP DLI RING
19 44	Brown/yellow Yellow/brown	7	DLI TIP DLI RING
18 43	Green/yellow Yellow/green	8	DLI TIP DLI RING

CONNECT TO ANY DLI CIRCUIT ON KSU P1.

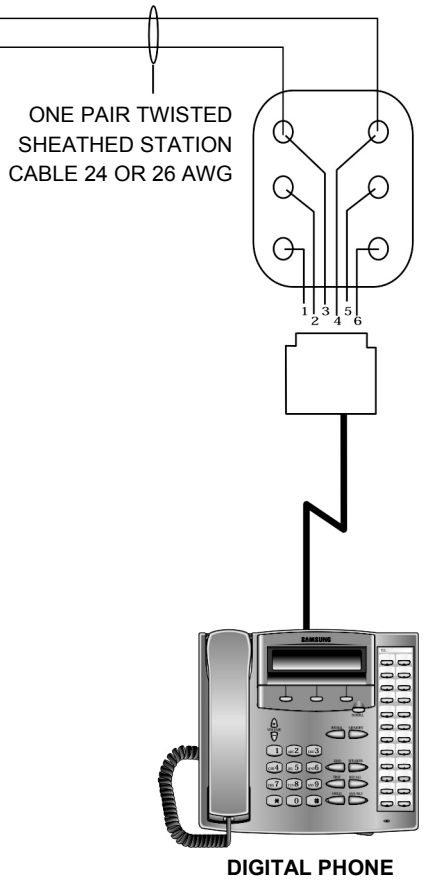


Figure 6.1 MDF Connections Digital Phone to Basic KSU P1

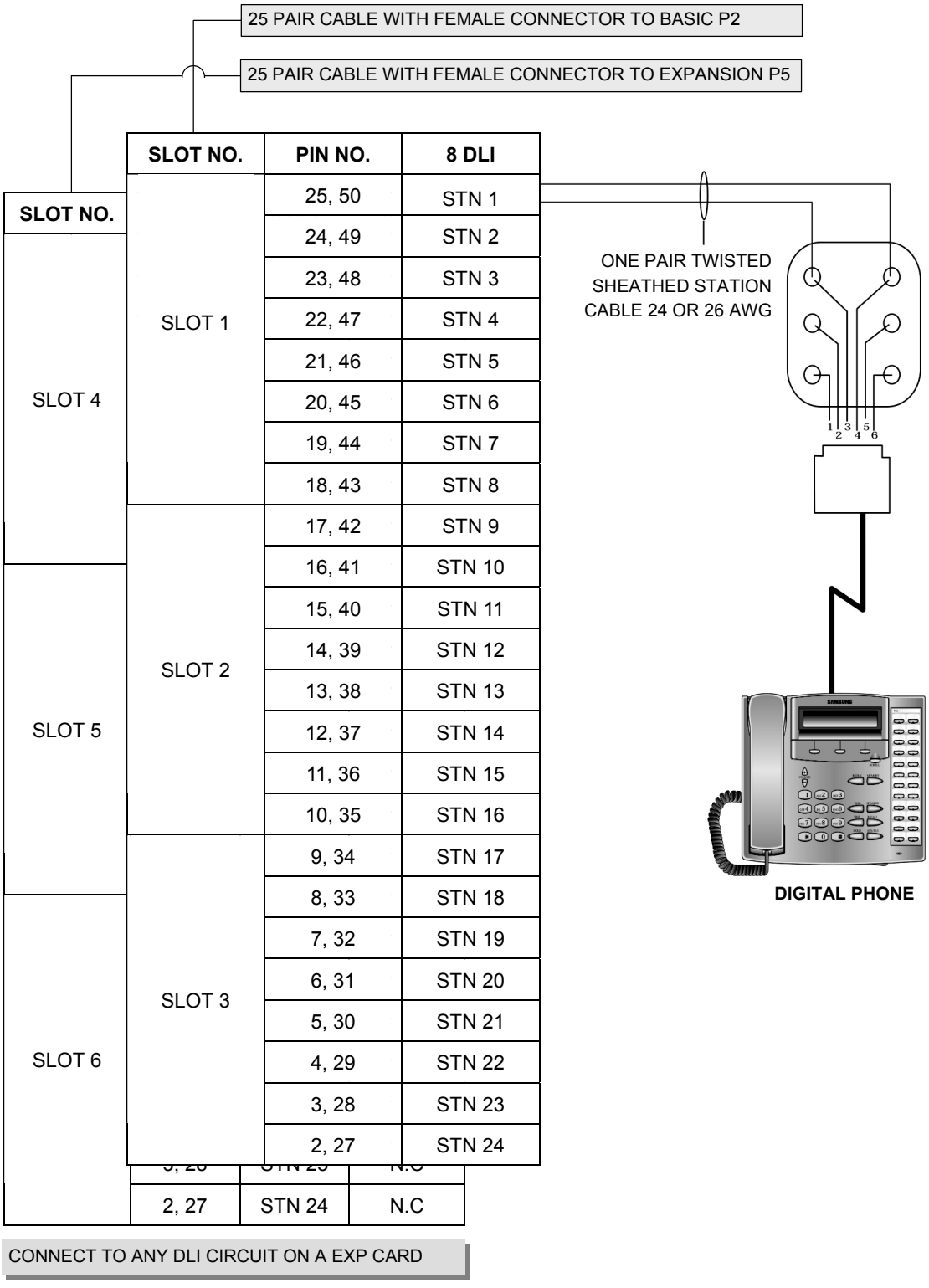


Figure 6.2 MDF Connections Digital Phone to Option Card

NOTE

When connecting a 12 button phone to a DLI port

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

6.2 Add-On Module

Using one pair twisted #24 AWG or #26 AWG wire, cross-connect each AOM (Add-On Module) to the DLI port of your choice(See Figures 6.3 and 6.4).

25 PAIR CABLE WITH FEMALE CONNECTOR TO BASIC P1

PIN	COLOR	CIRCUIT	FUNCTION
25 50	Grey/purple Purple/grey	1	DLI TIP DLI RING
24 49	Brown/purple Purple/brown	2	DLI TIP DLI RING
23 48	Green/purple Purple/green	3	DLI TIP DLI RING
22 47	Orange/purple Purple/orange	4	DLI TIP DLI RING
21 46	Blue/purple Purple/blue	5	DLI TIP DLI RING
20 45	Grey/yellow Yellow/grey	6	DLI TIP DLI RING
19 44	Brown/yellow Yellow/brown	7	DLI TIP DLI RING
18 43	Green/yellow Yellow/green	8	DLI TIP DLI RING

CONNECT TO ANY DLI CIRCUIT ON KSU P1.

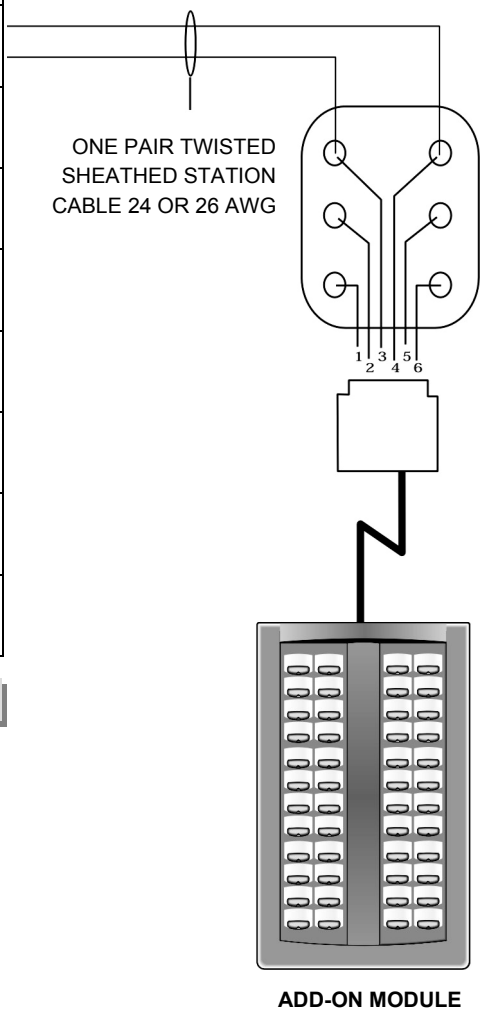


Figure 6.3 MDF Connections AOM to Basic KSU P1

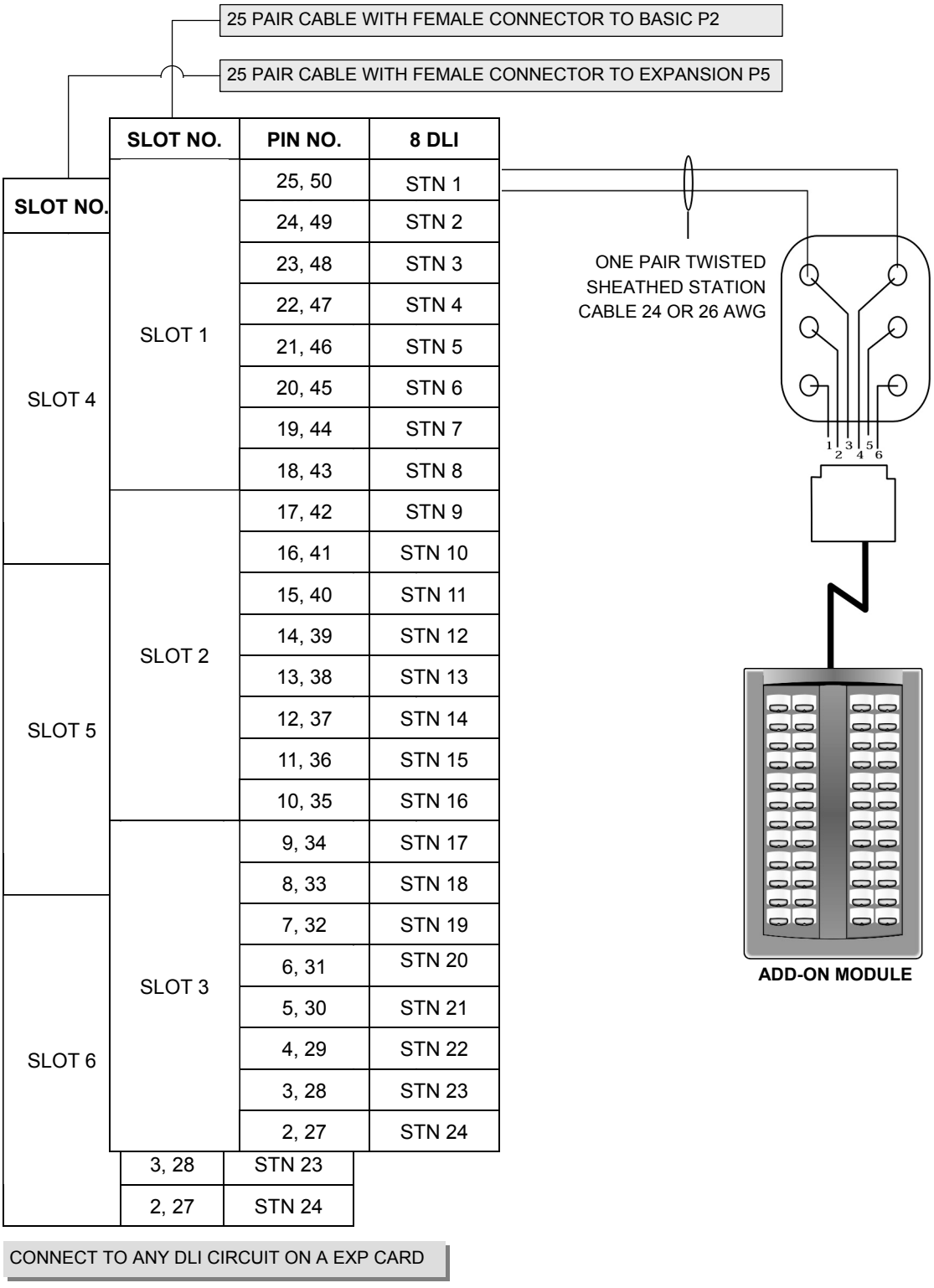


Figure 6.4 MDF Connections AOM to Option Card

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 phone.

6.3 Single Line Telephone

Using one pair twisted #24 AWG or #26 AWG wire, cross-connect each single line telephone to the SLI port of your choice(See Figures 6.5 and 6.6). Circuit on 2SLI card is specially designed to meet CO requirements for OPX use(See Figure 5.3).

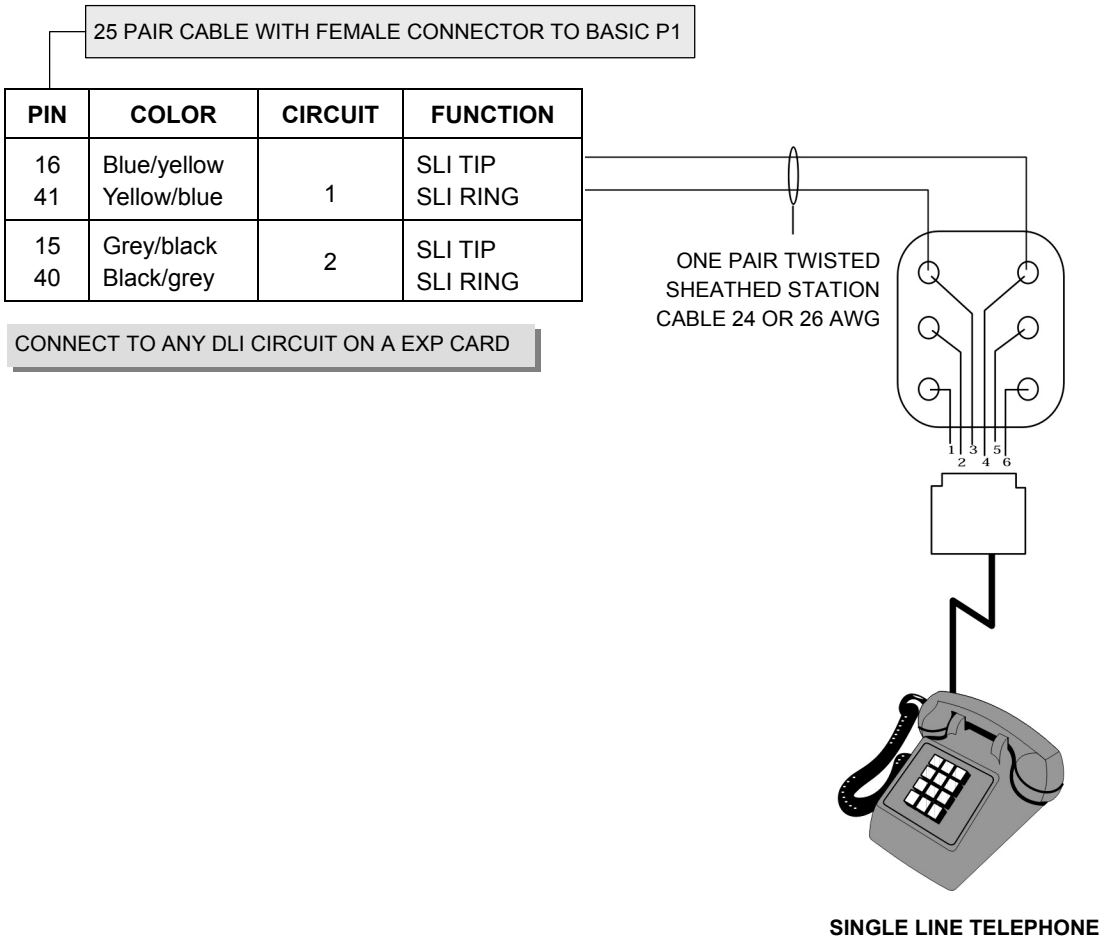


Figure 6.5 MDF Connections Single Line Telephone to 2 SLI Card

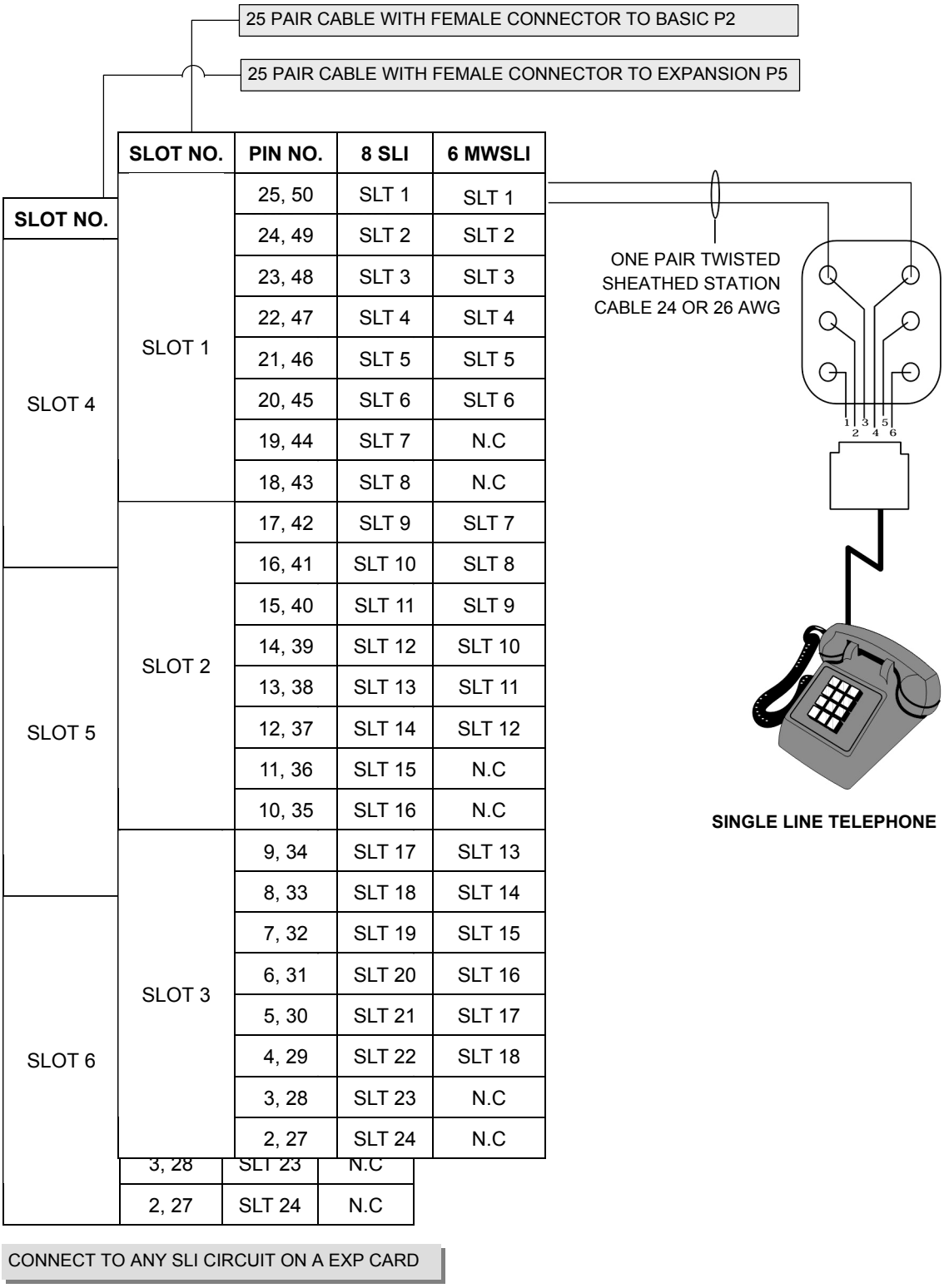


Figure 6.6 MDF Connections SLT to Option Card

6.4 Door Phone and Door Lock Release

Using one pair twisted #24 AWG or #26 AWG wire, cross-connect each DPIM to the DLI port of your choice(See Figures 6.7 and 6.8). Next, connect the DPIM(Door Phone Interface Module) to the door phone using #24 AWG or #26 AWG twisted pair wire.

25 PAIR CABLE WITH FEMALE CONNECTOR TO BASIC P1

PIN	COLOR	CIRCUIT	FUNCTION
25 50	Grey/purple Purple/grey	1	DLI TIP DLI RING
24 49	Brown/purple Purple/brown	2	DLI TIP DLI RING
23 48	Green/purple Purple/green	3	DLI TIP DLI RING
22 47	Orange/purple Purple/orange	4	DLI TIP DLI RING
21 46	Blue/purple Purple/blue	5	DLI TIP DLI RING
20 45	Grey/yellow Yellow/grey	6	DLI TIP DLI RING
19 44	Brown/yellow Yellow/brown	7	DLI TIP DLI RING
18 43	Green/yellow Yellow/green	8	DLI TIP DLI RING

CONNECT TO ANY DLI CIRCUIT

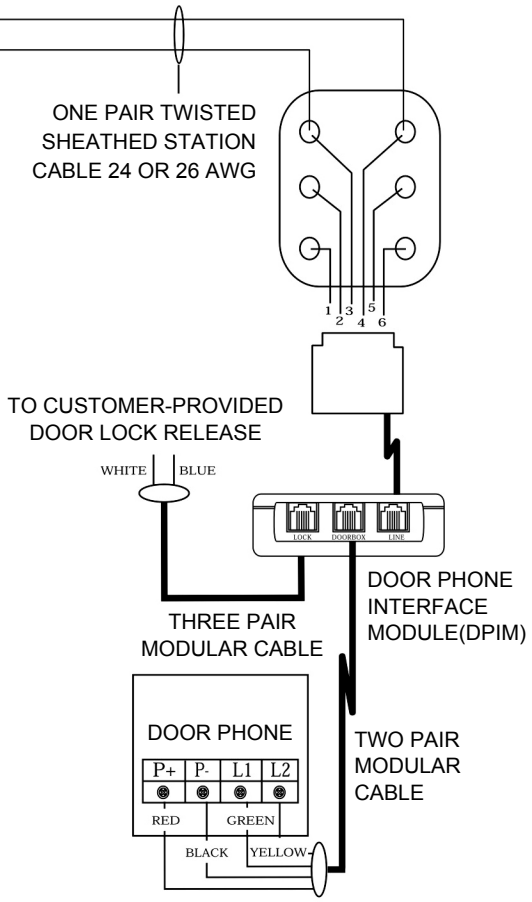


Figure 6.7 MDF Connections Door Phone to Basic KSU P1

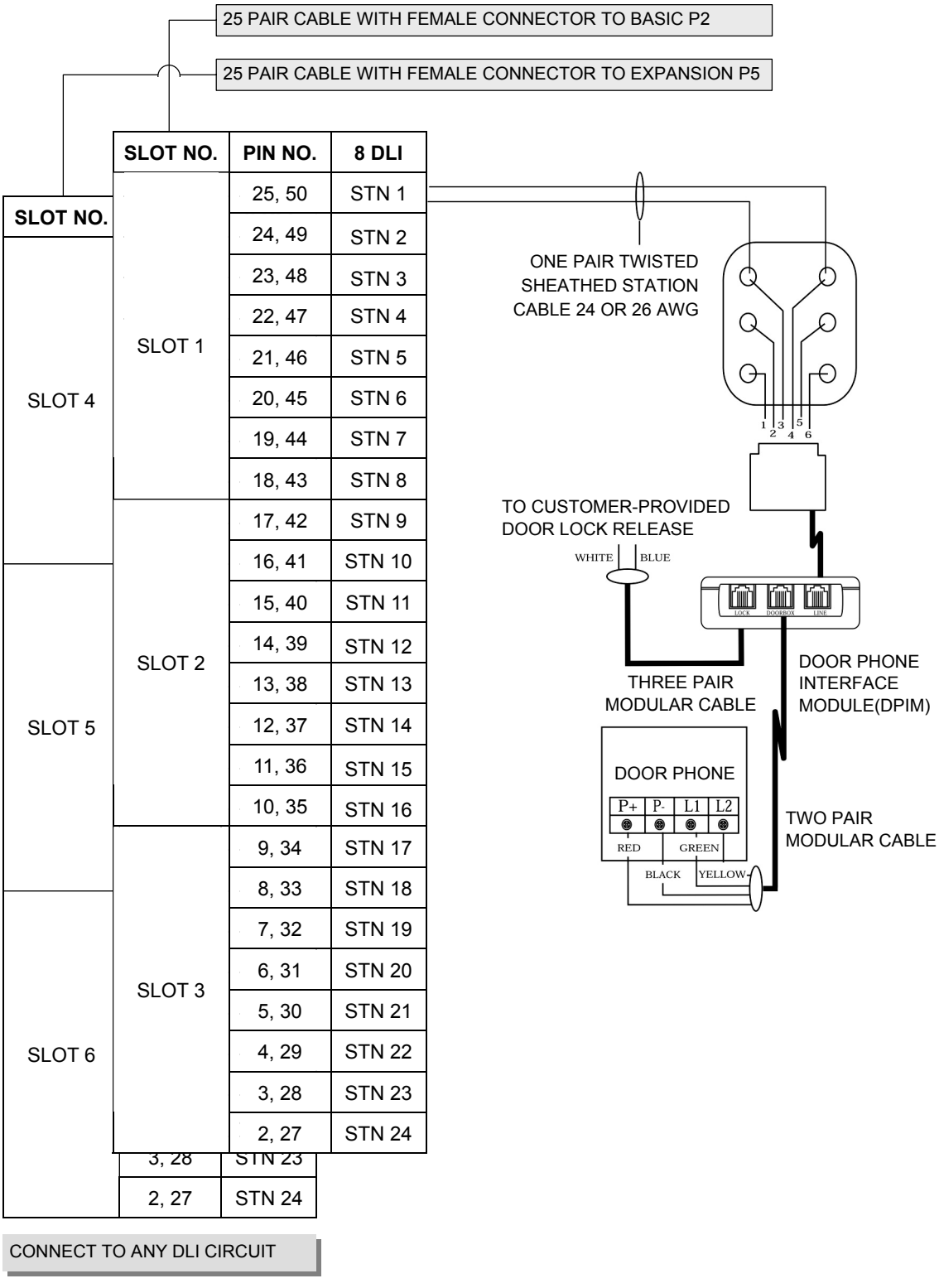


Figure 6.8 MDF Connections Door Phone to Door Card

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 6.7 and 6.8). 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.

Commercial AC Power

Do not attempt to connect commercial AC power to the contacts on the DPIM.

6.5 ISDN TE (ISDN Phone, G4 FAX, etc)

Using two pair twisted #24 AWG or #26 AWG wire, cross connect each ISDN TEs to 4BRI's S mode slot.(See Figure 6.9)

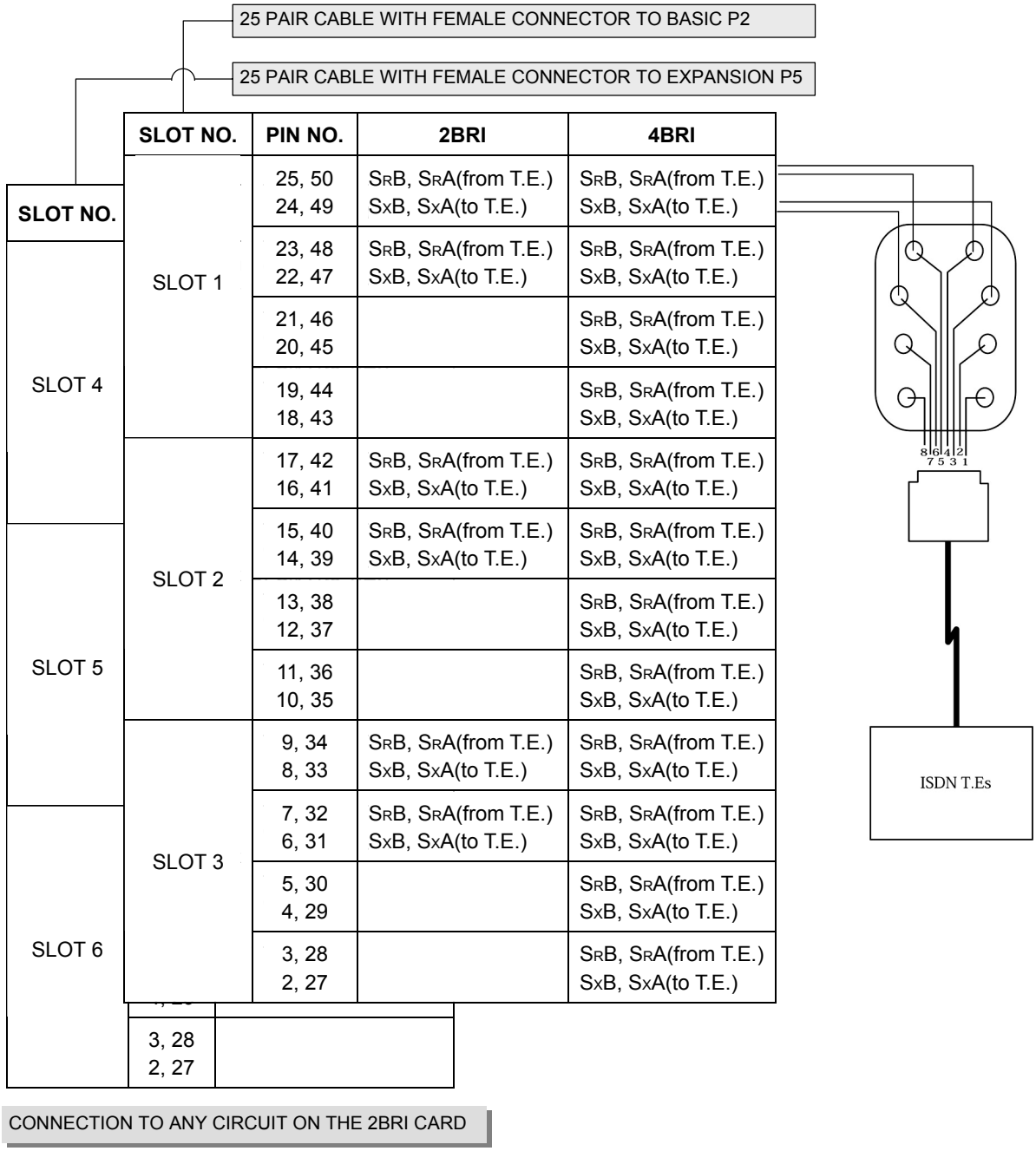


Figure 6.9 MDF Connections ISDN TEs to 2BRI/4BRI Card

NOTE

4BRI(including BRI)mode must be programmed by MMC

OfficeServ 100 is a self-configuring system, but you must program 4BRI (including 2BRI) mode by MMC #423, #419, #421, #418, #424.

6.6 IP Telephone

The IP Telephone is a terminal that allows calls through the Ethernet LAN network.
The link between the extension subscriber terminal digital phone connected to the system and the IP phone connected to LAN is established as described below.

The connection between the digital phone and the IP phone is established using the IP address through the LAN connected to MCP1. When connected, the digital phone converts the analog voice data to the PCM voice data, and sends it to the MGI3 card through the DLI card. The PCM voice data is converted to packet data at the MGI3 card, and transferred to the IP phone. The IP phone converts the packet voice data to the analog voice data and sends out the analog voice data through the handset or speaker. The analog voice data entered into the IP phone is likewise converted to packet data, transferred to the MGI3 card, converted to PCM voice data, transferred to the digital phone trough the DLI card, and finally converted to analog voice data at the digital phone.
Therefore, to use an IP phone, prepare the IP Telephone, MGI3 card, and connect MCP1 card to the Ethernet port. Refer to the programming manual for appropriate settings before use.

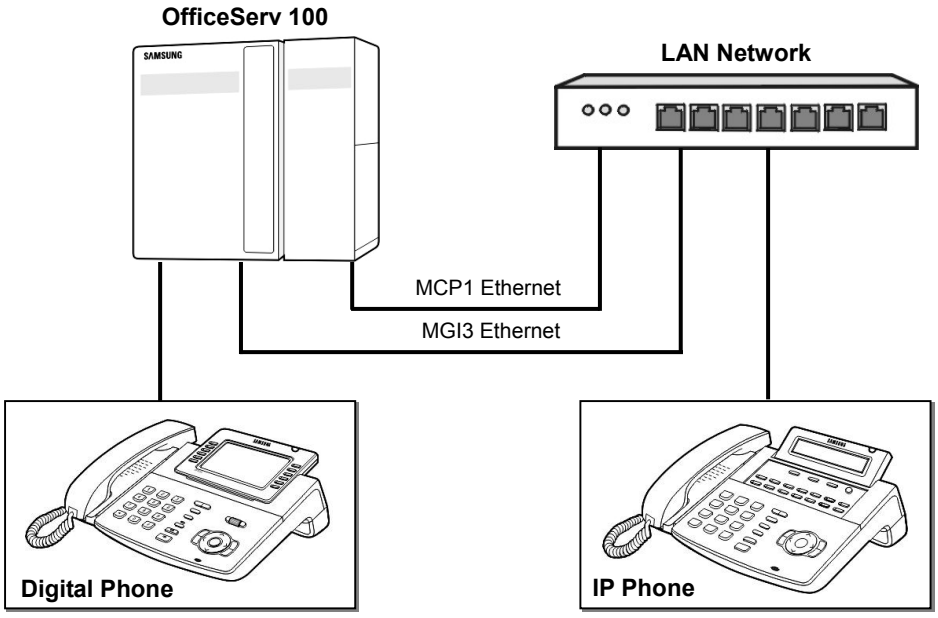


Figure 6.10 IP Telephone Connection Diagram

6.7 Connecting WBS24 with 4WLI

Wireless LAN telephones can be connected and used in the Premium configuration.
The modules below shall be prepared to use the wireless LAN telephone.
Refer to the WBS24 user guide for the wireless LAN service.

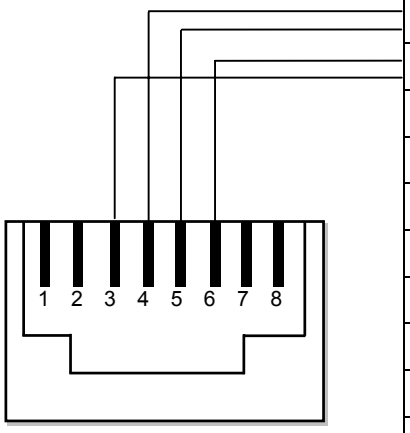
- 4WLI card: System connection card
- WBS24: COMBO type WLAN Base Station
- WIP5000M: WIP Wireless terminal

Before mounting the 4WLI card to the system, note that the OfficeServ 100 system shall be configured in the Premium configuration and that only one card shall be installed per system.
One 4WLI shall be installed in the Basic cabinet 3 universal slot.
Two 0.64mm Twisted pair cables(Max. length 600 M) or two 0.40mm Twisted pair cables(Max. length 400 M) shall be used when connecting the 4WLI card and WBS24.
4WLI uses the 50 pin champ connector, and WBS24 uses the 8 pin RJ-45 connector.

Table 6.1 WLAN Specification

Item	OfficeServ 100 Configuration with MCP1 card
Number of 4WLI card	1
Maximum number of WBS24	4
Maximum number of users	64
Number of simultaneous calls	16

Wiring Diagram between 4WLI and WBS24



RJ-45 CONNECTOR

WBS24 Side	Base Cabinet Station #	Signal	4WLI Side
RJ-45 Pin			50P Champ Pin
4, 5	SLOT1 # 1	D Channel data	25, 50
3, 6		Sync line	24, 49
4, 5	SLOT1 # 2	D Channel data	23, 48
3, 6		Sync line	22, 47
4, 5	SLOT1 # 3	D Channel data	21, 46
3, 6		Sync line	20, 45
4 5	SLOT1 # 4	D Channel data	19, 44
3, 6		Sync line	18, 43
4, 5	SLOT2 # 1	D Channel data	17, 42
3, 6		Sync line	16, 41
4, 5	SLOT2 # 2	D Channel data	15, 40
3, 6		Sync line	14, 39
4, 5	SLOT2 # 3	D Channel data	13, 38
3, 6		Sync line	12, 37
4, 5	SLOT2 # 4	D Channel data	11, 36
3, 6		Sync line	10, 35
4,5	SLOT3 # 1	D Channel data	9, 34
3, 6		Sync line	8, 33
4, 5	SLOT3 # 2	D Channel data	7, 32
3,6		Sync line	6, 31
4, 5	SLOT3 # 3	D Channel data	5, 30
3, 6		Sync line	4, 29
4, 5	SLOT3 # 4	D Channel data	3, 28
3, 6		Sync line	2, 27

Figure 6.11 WBS24-4WLI Wiring Diagram

CHAPTER 7. Connecting Optional Equipment

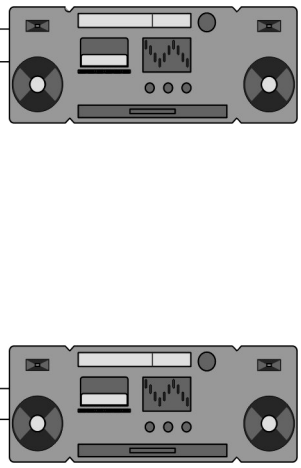
This chapter describes how to connect optional equipments to the OfficeServ 100 system.

7.1 Music On Hold/Back Ground Music

Connect each customer-provided music source to the music input on the KSU connecting block(See Figure 7.1).

25 PAIR CABLE WITH FEMALE CONNECTOR TO KSU P1

PIN	COLOR	TERM	CIRCUIT	FUNCTION
11 36	Blue/black Black/blue			OPEN A OPEN B
10 35	Grey/red Red/Grey		1	BGM 1A BGM 1B
9 34	Brown/red Red/brown		2	BGM 2A BGM 2B
8 33	Green/red Red/green			PAGE 1A PAGE 1B
7 32	Orange/red Red/orange			PAGE 2A PAGE 2B
5 30	Grey/white White/grey			TACT 1A TACT 1B
4 29	Brown/white White/brown			TACT 2A TACT 2B
3 28	Green/white White/green			TACT 3A TACT 3B
2 27	Orange/white White/orange			ALARM 1 ALARM 2



CONNECT ONE MUSIC SOURCE TO EACH INPUT AS NEEDED

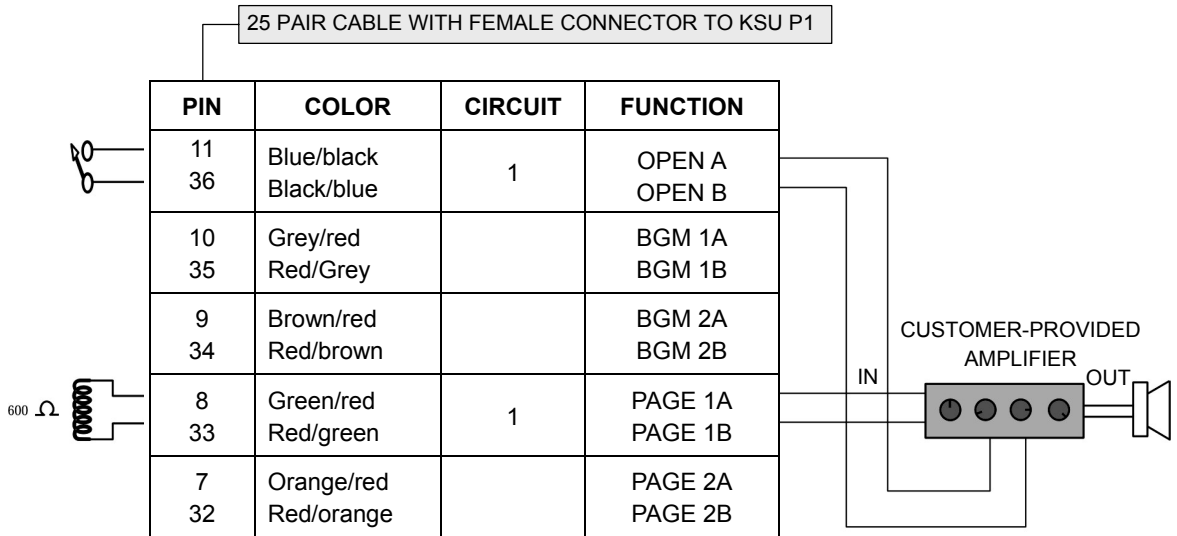
NOTE: MOH 2 REQUIRES A MISC CARD

Figure 7.1 MDF Connections Connecting MOH Source to KSU

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 phone can receive a music source or NO MUSIC for background music. See programming manual for instructions(See MMC 308).

7.2 External Paging

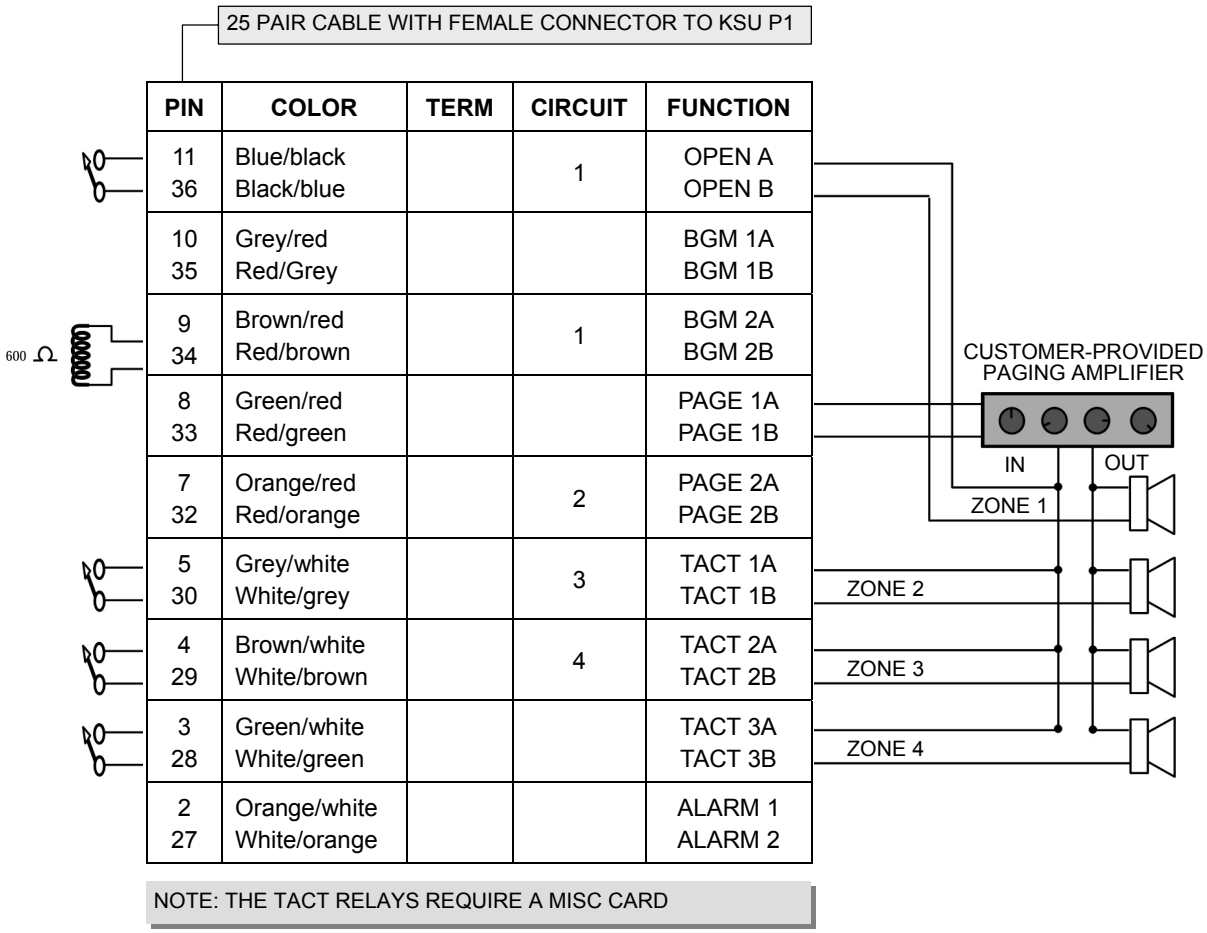
The KSU provides a voice pair to be used with customer-provided paging equipment. Connect the customer provided paging equipment to the page output pins of the KSU connecting block(See Figure 7.2). The page voice pair is 600 ohm impedance. When the amplifier page input is not 600 ohm, an impedance matching transformer must be used.



PIN	COLOR	CIRCUIT	FUNCTION
11 36	Blue/black Black/blue	1	OPEN A OPEN B
10 35	Grey/red Red/Grey		BGM 1A BGM 1B
9 34	Brown/red Red/brown		BGM 2A BGM 2B
8 33	Green/red Red/green	1	PAGE 1A PAGE 1B
7 32	Orange/red Red/orange		PAGE 2A PAGE 2B
5 30	Grey/white White/grey		TACT 1A TACT 1B
4 29	Brown/white White/brown		TACT 2A TACT 2B
3 28	Green/white White/green		TACT 3A TACT 3B
2 27	Orange/white White/orange		ALARM 1 ALARM 2

Figure 7.2 MDF Connections Connecting Page Amplifier to KSU

Basic provide 1 zone control relays and If installed, the MISC card provides three zone control relays(See Figure 7.3). These paging contact pairs are for control of low voltage circuits or amplifier output. The contacts are rated at 24 VDC-1 amp.



PIN	COLOR	TERM	CIRCUIT	FUNCTION
11 36	Blue/black Black/blue		1	OPEN A OPEN B
10 35	Grey/red Red/Grey			BGM 1A BGM 1B
9 34	Brown/red Red/brown		1	BGM 2A BGM 2B
8 33	Green/red Red/green			PAGE 1A PAGE 1B
7 32	Orange/red Red/orange		2	PAGE 2A PAGE 2B
5 30	Grey/white White/grey		3	TACT 1A TACT 1B
4 29	Brown/white White/brown		4	TACT 2A TACT 2B
3 28	Green/white White/green			TACT 3A TACT 3B
2 27	Orange/white White/orange			ALARM 1 ALARM 2

Figure 7.3 MDF Connections Connecting Page Amplifier to KSU

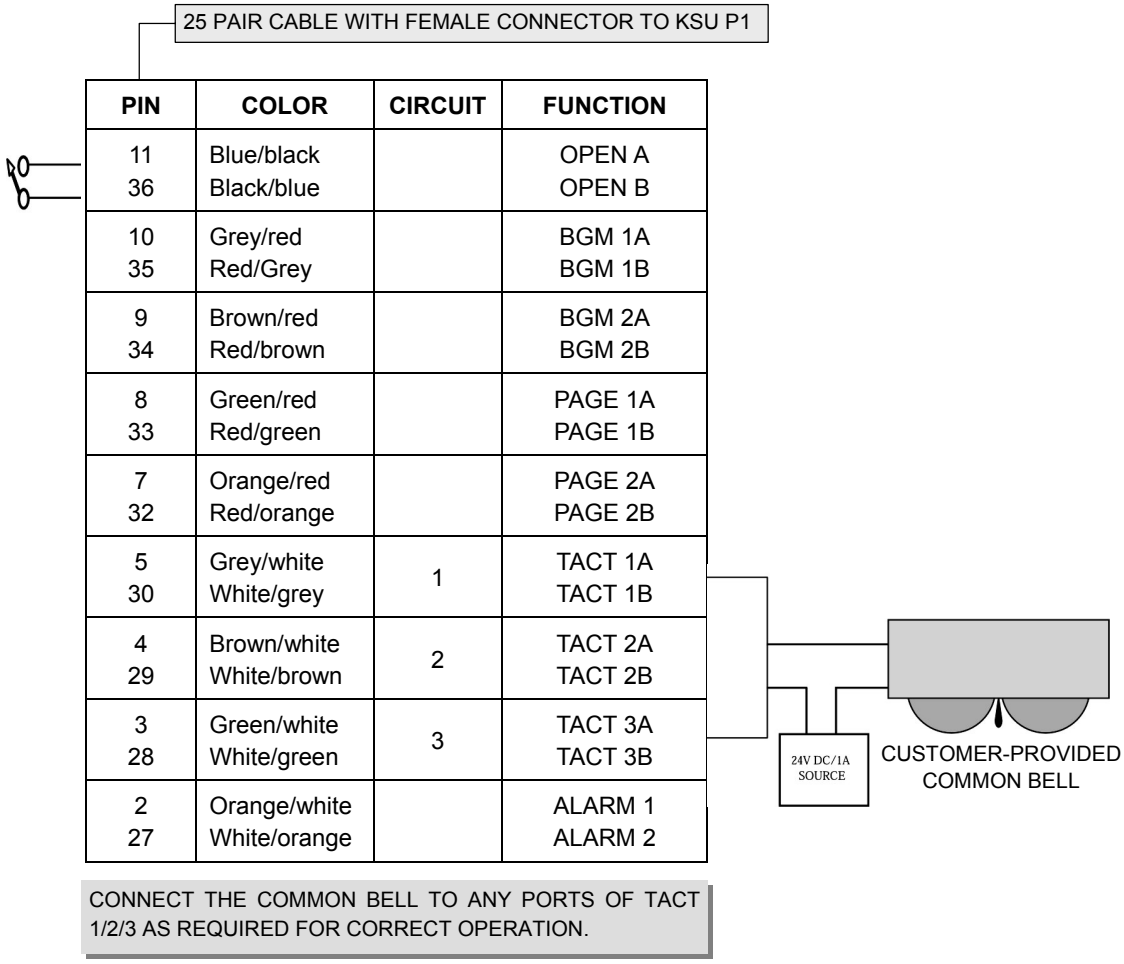
CAUTION

Commercial AC Power

Do not attempt to connect commercial AC power to the contacts on the External Paging.

7.3 Common Bell

A customer-provided loud ringing device can be controlled using the dry contact pair on the KSU.(See Figure 7.4).



PIN	COLOR	CIRCUIT	FUNCTION
11 36	Blue/black Black/blue		OPEN A OPEN B
10 35	Grey/red Red/Grey		BGM 1A BGM 1B
9 34	Brown/red Red/brown		BGM 2A BGM 2B
8 33	Green/red Red/green		PAGE 1A PAGE 1B
7 32	Orange/red Red/orange		PAGE 2A PAGE 2B
5 30	Grey/white White/grey	1	TACT 1A TACT 1B
4 29	Brown/white White/brown	2	TACT 2A TACT 2B
3 28	Green/white White/green	3	TACT 3A TACT 3B
2 27	Orange/white White/orange		ALARM 1 ALARM 2

CONNECT THE COMMON BELL TO ANY PORTS OF TACT 1/2/3 AS REQUIRED FOR CORRECT OPERATION.

Figure 7.4 MDF Connections COMMON BELL Contacts

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/two 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:

- Wire the loud ringing device to the common bell control contact pair.
- Program the contacts for continuous or steady operation.
- Program the hunt group to include the common bell.
- 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.

Commercial AC Power

Do not attempt to connect commercial AC power to the contacts on the common bell.

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 SMDR (Station Message Detail Recording)

Use MISC 1 (2): DCS Compact-II or iDCS 100 System

To receive an SMDR printout, connect a customer-provided printer to one of the serial interface connectors on a MISC 1(2) card(See Figure 7.5). SIO2 defaults as SMDR.

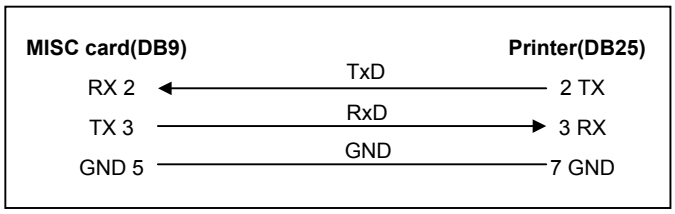


Figure 7.5 PIN Connections for MISC Card to Printer

Use a pin to pin RS232C cable. Only pins 2, 3 and 5 are required(See Figure 7.5).
When the printer or optional call accounting device needs to be more then 15 feet away from the KSU, use shielded computer cable. Attach a male DB9 connector to the MISC 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 MISC port.

Use MCP1: OfficeServ 100 System

To receive SMDR printout, traffic or alarm reports connect a customer-provided printer or PC to one of the RS232C DB9 connectors or by LAN interface on the MCP1 card.
Use a pin to pin RS232C cable. Only pins 2, 3 and 5 are required(See Figure 7.5).

7.6 PC Programming

Use MISC 1 (2): DCS Compact-II or iDCS 100 System

To program the system via a personal computer(PC), connect a PC equipped with PCMMC to a serial interface connector on a MISC 1(2) card(See Figure 7.6). SIO1 defaults as PCMMC.

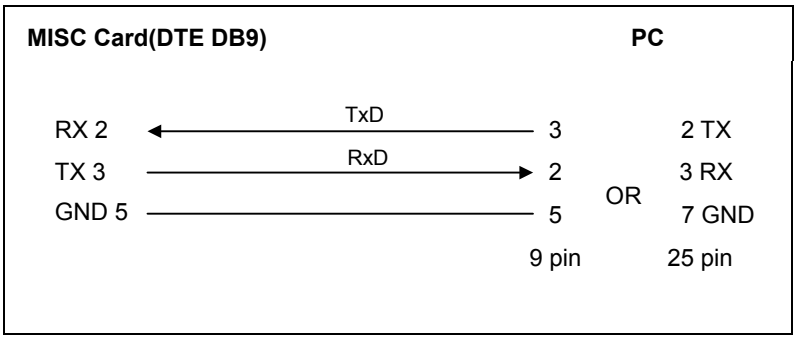


Figure 7.6 PIN Connections for MISC Card to Personal Computer

Use an RS232C cable with connections as shown in Figure 7.6. When the PC needs to be more than 15 feet away from the KSU, use shielded computer cable. Attach a male DB9 connector to the MISC end and then attach one that matches the requirements of the PC to the other end. This cable must not exceed 300 feet.

Use MMC 804 to set the transmission parameters and the MISC port.

Use MCP1: OfficeServ 100 System

The OfficeServ 100 can be programmed with a PC equipped with DPAP-PCMMC connected to the MCP1 LAN port or via serial interface of the MCP1. PC programming using the LAN port requires a data cross over cable if connecting directly to the LAN port or a standard data cable if connecting via a LAN. In both cases the OfficeServ 100 IP address and PC IP address(PCMMC ADDRESS) must be programmed in MMC 830.

The connection of hardware through the LAN port between the OfficeServ 100 system and the programming PC for the MCP1 card is configured as shown below.

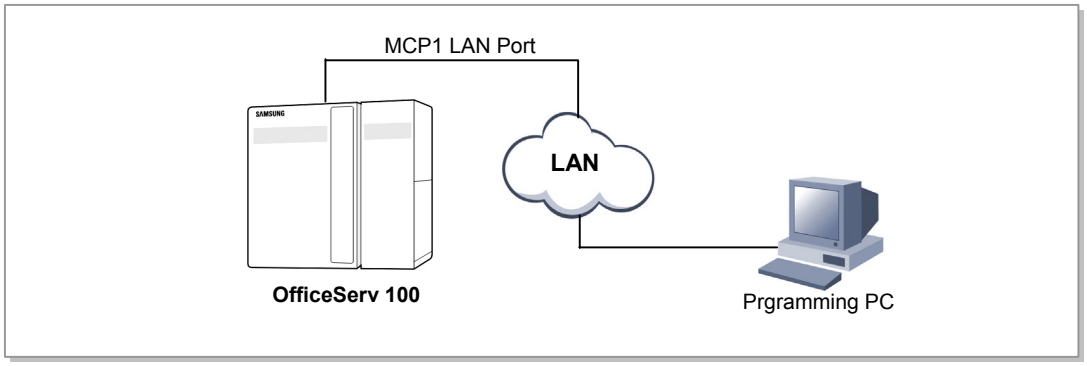


Figure 7.7 Programming PC Connection Through LAN Port for MCP Card

To program the OfficeServ 100 via a MCP1 serial port use an RS232C cable with connections shown in Figure 7.5 or 7.6.

7.7 Remote Programming

Use MISC 1 (2): DCS Compact-II or iDCS 100 System

To remotely program a system, connect a customer-provided Local external modem to a serial interface connector on a MISC 1(2) card(See Figure 7.8).

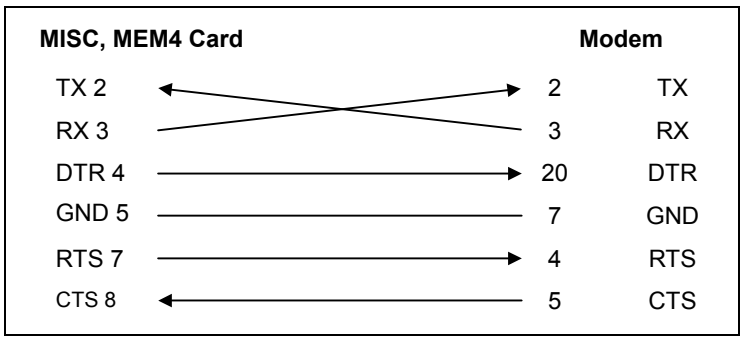


Figure 7.8 PIN Connections for MISC Card to MODEM

Use an RS232C cable as shown in Figure 7.8. 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 MISC 1(2) 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 MISC port to be used.

Use MCP1 or OfficeServ 100 System

The OfficeServ 100 can be remote programmed with a PC equipped connected to the MCP1 LAN port or via serial interface of the MCP1.

7.8 PFT (Power Failure Transfer)

When the system loses AC power and have no external battery, the first two loop start lines in 3/6 TRK card are automatically switched to the PFT ports. Directly connect these outputs to any SLI valid ports.

7.9 Voice Mail/Auto Attendant

System operation provides special programming and hardware for use with a customer-provided voice mail/auto attendant system. Both single line stations on the 2 SLI card provide a disconnect signal required for VM/AA operation. Use one pair twisted #24 AWG or #26 AWG wire to cross-connect these SLI circuits to the VM/AA system

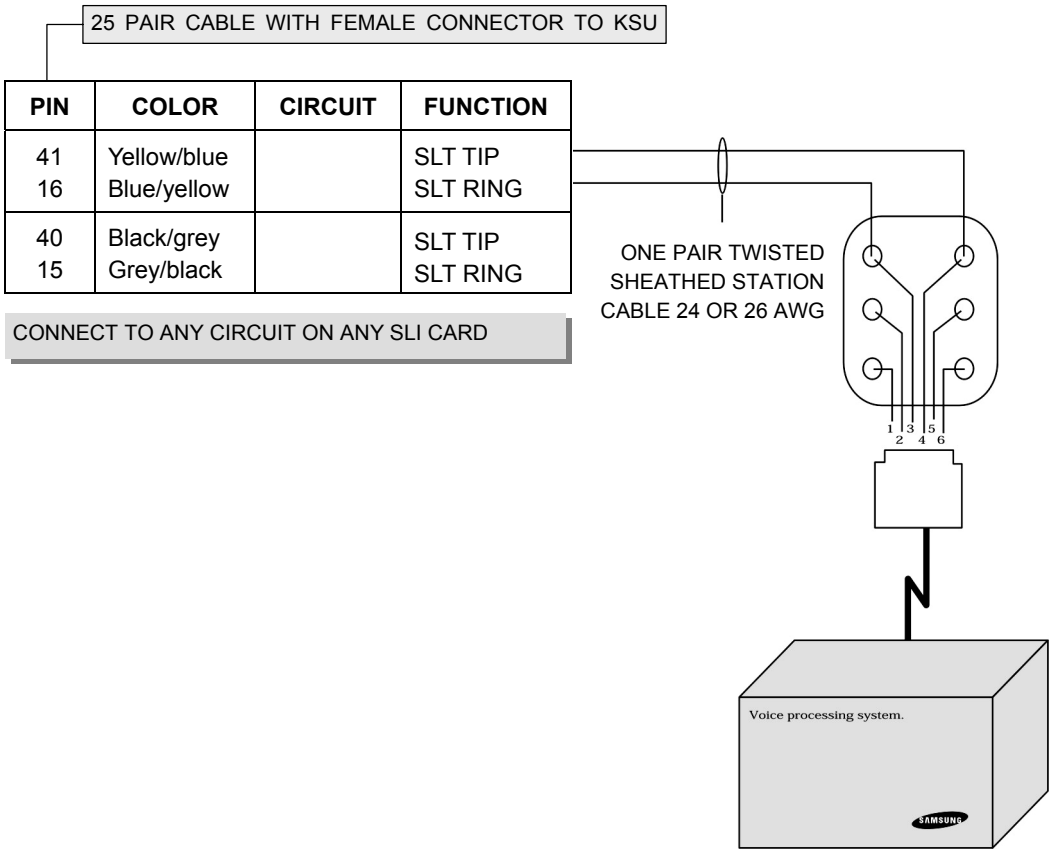


Figure 7.9 MDF Connections VOICE MAIL to SLI Card

Program these ports for VM/AA use in MMC 207 and set VM/AA options in MMC 726. See the Standard Telephone User Guide for feature codes and instructions. Some voice mail manufacturers may require you to set these stations for data security(See MMC 208) to stop call waiting and intrusion tone.

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CHAPTER 8. Installing KDB (Keyset Daughter Board)

This chapter describes how to install the KDB(Keyset daughter Board) to the phone.

8.1 iDCS FKDBD (KDB-Digital Line Interface)

This is a daughter board that can be installed only in the 18 or 28 button phone.
The FKDBD will provide one additional DLI circuit for the connection of any digital station device such as a phone, add-on module or DPIM. This FKDBD will only operate when the phone is connected to an 8 port DLI in the 008 base board so it can use the second B channel.


NOTE

FKDBD
The 'F' in 'FKDBD' stands for Fashion implying that FKDBD is a Fashion keyset model among various types of KDBD keysets

8.2 iDCS FKDBS (KDB-Single Line Interface)

This is a daughter board that can be installed only in the 18 or 28 button phone.
The FKDBS will provide one additional SLI circuit for the connection of any standard telephone device.
This FKDBS will only operate when the phone is connected to an 8 port DLI in the 008 base board 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


NOTE

When using FKDBS
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 iDCS FKDBF (KDB-Full Duplex)

The standard speakerphone mode of operation for an iDCS phone is ‘half duplex’.
This means that you cannot transmit and receive speech at the same time. Adding a FKDBF to your phone 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 phone to activate or deactivate them.

8.4 KDB-DLI

This daughter board can be installed only in the DCS 12 or DCS 24 button phone.
Before performing this procedure, unplug the line cord from the phone and remove the base wedge.
Place the phone face down on a soft surface and remove the four base retaining screws. Separate the base from the phone and place the phone aside. Attach the KDB-DLI to the phone base with the four screws that are supplied. Take care to ensure that the modular socket shows through the access hole in the base invert the base assembly over the phone and plug the ribbon cable into the socket on the phone PCB while making sure that no damage occurs to the phone PCB. Reattach the base to the phone and test to ensure normal phone operation.

8.5 KDB-SLI

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

8.6 Connecting to the KDBS

There are two methods for connecting devices to keyset daughter boards.
The simplest method is to connect the second device directly by means of a line cord.
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 daughter board and the second jack.
This returns the daughter board port to the MDF for cross-connection to another cable run.

CHAPTER 9. Changing Software

This chapter describes how to change software of OfficeServ 100 system.

In order to easily replace the system software, it may be necessary to partially disassemble the KSU. This procedure should be performed in the following sequence.

9.1 MEM3

1) Check the battery switch on the MEM card and make sure it is ON.

> **When changing software**
>
> If the documentation with the new software indicates that reprogramming will be necessary. You may wish to switch the battery OFF at this stage to ensure the system is properly defaulted.

2) Switch OFF the KSU. Do not unplug the KSU.

3) Remove the EPROMs from MEM card using a chip extraction tool or by gently prying with small flat bladed screw driver. Set the removed EPROMs aside carefully in case the need to be reinstalled.

4) Remove the new EPROM from their protective packaging and confirm that the legs on the EPROMs are straight. If the legs are not straight, contact Samsung Technical Support. Carefully insert the new EPROM in their designated sockets.

5) Install the MEM card carefully.

6) Switch ON the KSU and verify that it is operating. If the KSU does not operate, remove the new EPROMs and reinstall the EPROMs and test again. If the system still fails to operate, contact Samsung Technical Support.

7) When the system is operating satisfactorily, switch ON the battery switch on the MEM card and cover the system.

9.2 MEM4

When software change is required, it must be done via PCMMC through the LAN interface. Please refer to the PCMMC Technical Manual to perform a software upgrade for a MEM4 card.

9.3 MCP1

When software change is required, it must be done via PCMMC through the LAN interface. Please refer to the PCMMC Technical Manual to perform a software upgrade for a MCP1 card.

CHAPTER 10. Networking Description and Programming Procedure

This chapter provides networking description and programming procedure of OfficeServ 100 system.

10.1 Networking

This function allows you to operate multiple systems as if operating a single system.

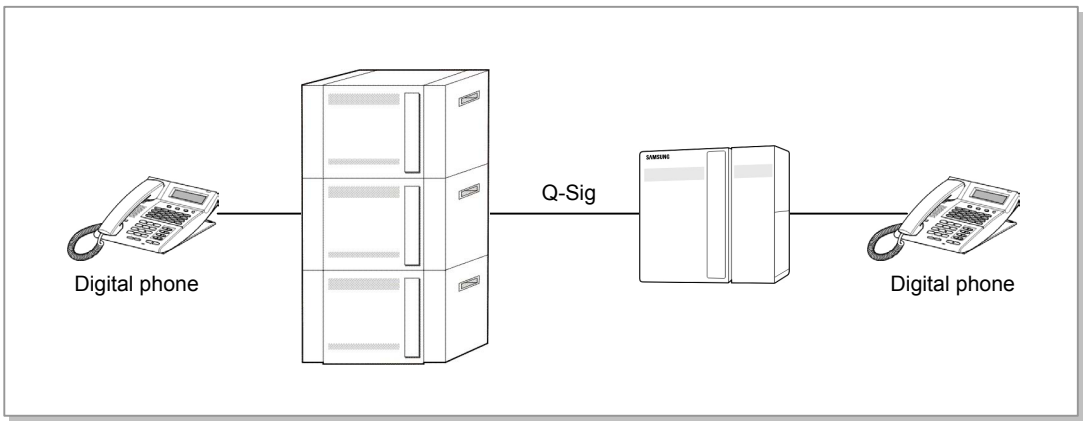


Figure 10.1 OfficeServ 100 Networking Conceptual Diagram

The networking function of OfficeServ 100 system uses Q-SIG(Q Signaling), and is classified into(TE)PRI Networking and VoIP Networking depending on the connection method between each system.
OfficeServ 100 system using Q-SIG provides the functions below.

10.1.1 Provide Q-SIG Basic Function

Networking of the OfficeServ 100 system provides basic Q-SIG functions as follows:

10.1.1.1 Intercom Call

This function allows you to call a station of another system as if calling the station in the same system.

10.1.1.2 Incoming Call

This function allows you to forward incoming trunk line calls to a station of another system without any additional operation.

10.1.1.3 Outgoing Call

This function allows you to make calls through the trunk line of another system as if making an outgoing call through that of the same system.

10.1.2 Provide Inherent Additional Function through Q-SIG

The OfficeServ 100 system networking provides the inherent additional functions below by using Q-SIG.

10.1.2.1 Unique Numbering Plan

This function allows you to assign phone numbers with minimum programming to stations of all the systems connected through the network as to those within the same system

10.1.2.2 Called Number/Name Display

When calling the station of another system, the phone number and name of the other party are displayed as when calling that of the same system.

10.1.2.3 Connected Number/Name Display

When the station of another system is connected, the phone number and name of the other party are displayed as if connected to that of the same system.

10.1.2.4 Call Progress Display

The phone number and name of the other party is displayed in the same format as within a single system when calls to another system is transferred, forwarded, or reconnected after call forward.

10.1.2.5 Route Optimization

When a call is made to another system but is connected to the station within the same system due to transfer or forward call, the trunk line call is automatically converted to a station call at a certain time.
Aspects such as efficiency, functionality, and call sensitivity of the trunk line connecting systems were considered.

10.1.2.6 Centralized Operator

This function enables you to conveniently call the attendant of another system as if calling that of the same system, enabling you to operate only one attendant in the network. However, the attendant using CTI is not applicable.

10.1.2.7 Caller ID Transfer

This function enables you to send the received Caller ID(CID) when transferring or forwarding the received trunk line call to the station of another system.

10.1.3 Provide Q-SIG Additional Function

Networking of the OfficeServ 100 system provides Q-SIG additional functions as follows:

10.1.3.1 Call Transfer and Transfer Recall by Join

This function enables you to transfer the busy call to a station of another system as if transferring calls within a same system. When the transferred call is not answered within the defined time, the call is transferred back to the original caller.

10.1.3.2 Name Identification

When calls to stations of another system are dialed or connected, the name and phone number of each party can be transferred according to the options.

10.1.3.3 CFU (Call Forwarding Unconditional)

This function enables you to forward all incoming calls to the station of another system.

10.1.3.4 CFB (Call Forwarding Busy)

This function enables you to forward calls incoming when busy to the station of another system.

10.1.3.5 CFNR (Call Forwarding No Reply)

This function enables you to forward calls that are not answered within a certain time to the station of another system.

10.1.3.6 Call Offer

This function enables you to use Camp-On function when the recipient of another system is busy or when there is no answer.

10.1.3.7 Call Intrusion

This function enables you to use the Barge-In function when the recipient of another system is busy.

10.1.3.8 CCBS (Call Completion Busy)

This function enables you to use the Call Back function when the recipient of another system is busy.

10.1.3.9 CCNR (Call Completion No Replay)

This function enables you to use the Call Back function when the recipient of another system does not answer.

10.1.3.10 DND and DND Override

When a call from another system is connected to the station set as DND, the receiving station sends a Signal, enabling the caller to recognize that the target station is set as DND but is not busy.
When you call the station set as DND, the caller can override the DND setting.

10.1.3.11 Path Replacement

This function enables you to reroute the current call path when the networking call is connected.

10.1.3.12 Centralized Voice Mail

This function enables you to install only one voice mail in the network.
You shall use the dedicated voice mail(SVMi-4/8) of the subscriber card type to use this function.

10.2 Programming Methods

Programming shall be performed in the following steps to use the networking functions of the OfficeServ 100 system: Especially, the system of phone numbers shall be unified and incoming/outgoing paths shall be programmed in the given method so as to use the networking functions properly.

10.2.1 Secure and Define System Components

The required system components for networking are defined as follows:

Program 821. Set Networking trunk line

For PRI networking, TEPRI card shall be specified for networking.
If the OfficeServ 100 systems are connected by using TEPRI not trunk line, the one switch within the card is set to the 'NT' mode and the other switch is set to 'TE' mode. System-based clock shall be defined in Program 828. PRI of the 'NT' mode operate in the 'ENBLOCK' mode only.

Program 830. Set System IP Address

The IP address of the system shall be set to use VoIP networking.
Set the IP address, default gateway, subnet mask of the system and restart the system. Then, changed IP address will be applied.

Program 831. Set MGI Parameter Address

The IP address of the MGI card to be used as voice channel shall be set to use VoIP networking.
Set the IP address, default gateway, subnet mask to each MGI card and restart the card. Then, changed IP address will be applied.

Program 615. Set MGI Group

The MGI card to be used as voice channel shall be set to use VoIP networking.
Select 'Networking' from USER options. Set the phone number of the MGI channel to be used as voice channel when VoIP networking calls are set as group members.

10.2.2 Unify Phone Number System

The phone number system of the networking shall be unified as described below:

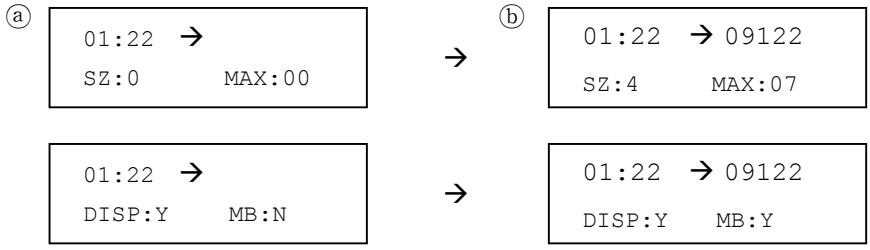
- Link ID: System node ID that can identify each system connected by networking. It shall not be duplicated.
- Signal G/W: For VoIP networking, the IP addresses of all connected system as well as the system for the networking shall be specified
- For PRI networking, if node number for the networking is specified, normal calling can be made.
  However, to use the functions supported by the system, the node number of the other systems shall be specified.
- For VoIP networking, the node numbers of IP addresses of all connected systems as well as the system for the networking shall be specified to make a call.
- When a call is connected to networking trunk line, the OfficeServ 100 system identifies the incoming number as a node number & a phone number and processes it. If the node number is the same as the node number of the system, the system removes the node number and connects the call by Program 714. If not, the system passes the call to another node(Tandem Call).
  If there is no matching number in Program 710, the system treats all incoming numbers as phone numbers without node numbers and connects the call by Program 714.

Program 724. Change Dial Numbers

- STN DIAL NO: Shall be set lest all the station numbers of the system connected to networking should be duplicated.
- STNG DIAL NUMBER: Shall be set lest all the station group numbers of the system connected to networking should be duplicated to use station groups for calls from the same system.
- NTWK LCR DIAL NO: Sets a number used to make a call through the station of another system connected to the networking. The number is converted to node number & station number by Program 824 and arrives at the destination system.
- VOIP NET DIAL NO: This is a virtual station used for signaling in VoIP networking. It does not need to be specified for networking. However, its phone number shall be specified to set a trunk line group in Program 603.
- MGI DIAL NO: This is a number for each channel of the MGI card used as voice channel in VoIP networking. It does not need to be specified for networking. However, its phone number shall be specified to set MGI group in Program 615.

Program 824. Convert Auto Route Selection Expansion Dial

The networking dial number is entered in Program 724 for this program. If index 01 from the networking dial number of Program 724 is set to '22,' ⓐ will be displayed.
Enter the following ⓑ to convert the number to node number & station number.



Each field from ⓑ is described below:

- 01: Index differentiated from the networking dial number of Program 724.
- 22: Number specified from the networking dial number of Program 724.
- 09122: Specifies node number(091) + station number(22). This means that a station number 2200 to 2299 is dialed in the system with a node number, '091.' The added node number shall be specified to 'DIGIT' from Program 710.
- SZ:4: This means that you press a 4-digit number when you dial a station starting with '22' in the system with a node number, '091.'
- MAX:07: Total number of digits, which have been converted to node number & station number.
  This is very important to the 'ENBLOCK' dial, which shall information on counterpart when a call is set. When 7-digit numbers are entered, the system assigns a trunk line and transmits a call by using the auto route selection function without waiting for your pressing.
- DISP: When this option is set to ON, other node extension is displayed like as a internal extension number format.
- MB:N: When centralized voice mail is used with the SVMi-4/8/16 card, a mail box used by the stations of another system shall be created manually one by one. If the option for this is set to 'Y' up to 100 phone numbers starting with the number specified in Program 724 and consisting of numbers corresponding to 'SZ' will be created to make a voice mail automatically. That is, 100 voice mails with the numbers, 2200~2299 are created automatically. Use this option carefully because the maximum number of voice mails for the SVMi card is limited.

10.2.3 Route Incoming and Outgoing

10.2.3.1 Route Incoming

Program 427. Set PRI Option

If the TEPRI card is used for PRI networking, options shall be set for each card.
Each field of the program is described below:

- Channel Any: Selects free channels to make a call to the PRI card when 'Y' is selected. If you want to use networking functions(especially, call back), it is recommended that 'N' is selected.
- PRI Mode: If 'DDI' is specified, the call is connected according to Program 714. The networking functions of the OfficeServ 100 system are based on 'DDI' mode. Therefore, the functions shall be always used in 'DDI' mode.
- DLSEND: If 'ENBLOCK' is specified, the system will assign trunk line and make a call unless you dial and presses '#' or you dial again until 'ISDN Inter Digit Time' from Program 501 passes.
  The networking functions of the OfficeServ 100 system are based on 'ENBLOCK' mode. Therefore, the functions shall be always used in 'ENBLOCK' mode.
- CLI Table: When a call is dialed to PRI, the specified number of Program 323 is used as a caller ID. When a call is dialed to networking PRI, node number & station number are always used irrespective of this option.
- NB Type: When a call is dialed to PRI, the type of dialed number is specified. When a call is dialed to networking PRI, the connected number is identified and processed as node number & station number irrespective of this option.

Program 714. Set the Connection of Direct Station Dialing

Set connection for the received number. The numbers of station, station group, trunk line, trunk line group, auto route selection, and networking dial are specified to connection destination.
Each field of the program is described below:

- 001~999: Index number of up to 999 digits
- DGT: Specifies a number to be received. '*' refers to numbers, '0' to '9.'
- MOH SOURCE: Specifies MOH to be used for hold depending on the received numbers. In case of none, it operates according to Program 409.
- 1~6: Assigns the recipient according to the ring answer mode 1~6. B represents the station, trunk line, station group, trunk line group, auto route selection use code, or the networking dial number that has the same number as the received number.
- CW: Sets whether to park the call when the receiving station is busy. Not used in networking feature.

- DELETE: The number of digits deleted from the forepart of the received number that is sent through the trunk line when the recipient is trunk line, trunk line group, auto route selection use code, or the networking dial number.
- NAME: Name of the station direct dial conversion table used for identifying received numbers.

10.2.3.2 Set all Path

Program 210. System On/Off

LCR ENABLE: Shall be set as ON to use the auto route selection feature.

Program 310. Set Auto Route Selection Class

- Sets the class applied when using the auto route selection route.
- Uses the default value 1 when there is only one route connected to another system.

Program 603. Trunk line Group

- Groups shall be assigned based on systems connected to the TEPRI card for PRI networking.
- All VoIP signaling trunk lines shall be assigned to one group for VoIP networking. VoIP signaling trunk line represents the virtual trunk line assigned in Program 724 'VOIP NET DIAL NO'.

Program 710. Auto Route Selection Digit

Routes are assigned according to the digit when using auto route selection.
Fields of the program are described below.

- (0001~2000): Index number representing up to 2000 digits.
- DIGIT: The forepart of the digit sent through the trunk line using auto route selection. The route can be easily defined by using the node number since the node number is required for calling systems connected by network. Note that the digits including the additional node numbers set in Program 824 shall be assigned to dial other systems conveniently.
- LENGTH: The system selects and sends the entered digit through the trunk line when digits of this length are entered.
- RT: The route table of Program 712, which is set according to the entered digit.

Program 711. Auto Route Selection Time

Four time zones are assigned for each weekday when using auto route selection.
Fields of the program are described below.

- SUN~SAT: Displays weekdays from Sunday to Saturday.
- A~D: Displays the four time zones. Enter all 24 hours into time zone A since cost differences between service providers are seldom inversed in Korea.(e.g., A: 0000, B: 2359)
- HHMM: Enters the hours and minutes in the 24 hour mode.
- LCRT: Sets the number of the time table used in Program 712. Set all numbers as 1 for Korea.

Program 712. Auto Route Selection Route

This program allows you to set the routing table for trunk line selection when using the Auto Route Selection feature.
Fields of the program are described below.

- (01~32): Index number representing up to 32 routes.
- (1~4): The number of the time table set in Program 711. Set all numbers as 1 for Korea.
- C: The Auto Route Selection class number set in Program 310.
- G: Assigns the trunk line group number.
- M: Enters the Dial Conversion Table number in Program 713 when digit conversion is required for outgoing calls.
- VoIP networking is generally used. However, if you wish to use PRI networking only when VoIP signaling trunk line is all busy or when the Internet network cannot support VoIP calls, the class of Program 310 shall be set as 2 or higher, and ‘C:1 G:801’ and ‘C:2 G:802’ shall be set. In this case, 801 represents the VoIP signaling trunk line group, and 802 represents the networking PRI trunk line group.

Program 713. Convert Auto Route Selection Digit

This program is used when digit conversion is required for final outgoing trunk line calls when using the Auto Route Selection feature. Fields of the program are described below.

- (001~200): Index numbers of the digit conversion table.
- NOF DEL DGT: Sets the number of digits to be deleted starting from the first digit when deleting a portion of the dialed number. Only the forepart, not the middle or rear part of the digit may be deleted.
- I: Inserts digit used to add digits in front of the dialed number.
- A: Appends digit used to add digits in the rear part of the dialed number.

10.2.4 Items Required for Additional Feature

The items below shall be set before using additional features.

Display Name and Number of Counter Station (Name Identification)

- The options below shall be set to identify the name and number of the other party when calling stations on different systems.
- Sets the CONP level of Program 823. The name and number is sent to the other station according to the CONP level.
  0: Name and number is not sent.
  1: Sends name and number when call from another system is being connected(dial tone) or is connected.
  2: Sends name and number when the receiving station is busy.
  3: Sends name and number when the call is being connected, is connected, or when the receiving station is busy.

This option is recommended since the information is always sent unless the dialed number is a wrong number

- In Q-SIG, the name and number is sent to the recipient according to the below options of Program 823. The default value is recommended since there are cases when the name and number is always sent to the recipient according to the CONP level, not according to these options because the OfficeServ 100 networking was supposed for connections between iDCS
  systems.(Default value is set to always send the name and number)
  CLIP (Calling Line Identification Presentation): Y
  CLIR (Calling Line Identification Restriction): N
  CNIP (Calling Name Identification Presentation): Y
  CNIR (Calling Name Identification Restriction): N
  CNIRO (Calling Name Identification Restriction Override): Y
  COLP (Connected Line Identification Presentation): Y
  COLR (Connected Line Identification Restriction): N
  CONP (Connected Name Identification Presentation): Y
  CONR (Connected Name Identification Restriction): N
  CONRO (Connected Name Identification Restriction Override): Y
- In Q-SIG, there are cases when only the name, not the number is sent to the system. Since the OfficeServ 100 networking function is supposed for connections between iDCS systems, if the ‘Add Number To Name’ option in Program 825 is set as ‘Yes’, the name is sent with the number suffixed and the recipient also checks of the number is suffixed to the name.

Automatically Convert trunk line Calls to Station Calls (Route Optimization)

- When a call is made to another system but is connected to the station within the same system due to transfer or forward call, the trunk line call is automatically converted to a station call at the 'Route Optimize Time' of Program 501.
- This program operates normally only when the 'PATH REPL.' option of Program 823 is set as 'Y', when station numbers of all systems do not overlap, and when the auto route selection feature is being used.
- The system timer of the finally connected call operates at the 'Route Optimize Time' of Program 501.

Single Attendant (Centralized Operator)

To easily call the attendant of another system as if calling an attendant within the same system, set the networking dial code as attendant call in Program 724, and set node number + attendant group number in Program 824.

Call Transfer Reconnect (Call Transfer Recall by Join)

- When the call transferred to another system is not answered within the 'Transfer Recall Time' of Program 501, the call is reconnected to the original caller.
- The 'CT Re-Route' option of Program 823 shall be set as 'N'.
- The System timer of the original caller operates at the 'Transfer Recall Time' of Program 501.

Call Forwarding

- The station user can set call forwarding by two methods;(1) setting call forwarding to another station in the same system, see Program 102, or(2) pressing the call forwarding([Transfer]) function code.
- To set call forwarding, the 'Forward' option in Program 701 shall be set to 'Yes'.
- To set call forwarding to a station in another system, the 'EXT FWD' option in Program 701 shall be set to 'Yes'.
- In case a call is received from an intercom station when call forwarding is already set to a station of another system, the 'ICM EXT FWD' option in Program 201 shall be set to 'On' in order to carry out call forwarding function. If a call is received from the trunk, the 'Trunk Forward' option in Program 400 shall be set to 'On'.
- To forward every incoming call to a station of another system, the 'CFU' option in Program 823 shall be set to 'Y'.
- To forward an incoming call of a busy station to a station of another system, the 'CFB' option in Program 823 shall be set to 'Y'.
- To forward a call to a station of another system when the call is not answered during the set time, the 'CFNR' option in Program 823 shall be set to 'Y'.

Call Offer

- In case the counter party is busy or not answering when the station of another system is called, the Camp-On function is required just like a calling in the same system. The 'Call Offer' option in Program 823 shall be set to 'Y'.
- If the 'Path Retention' option in Program 823 is set to 'Y', the station will be automatically camped-on.

Call Intrusion

When the call receiving party in another system is busy, the barge-in or override function is required just like a call in the same system. The following options shall be set:

- The same program needed for barging-in or overriding is also required. The 'Barge In Type' option in Program 206 shall be set to 'With Tone' or 'Without Tone', and the 'Override' option in Program 701 to 'Yes', the 'Secure' option to 'No'.
- To barge-in or override the station call of another system, the 'CI' option of Program 823 shall be set to 'Y'. And, the 'CI CAPABIL' option number of barging in station shall be bigger than the 'CI PROTECT' option number of barged-in station. If the numbers are same, the call cannot be intruded.

Call Completion

When the call receiving party in another system is busy or not answering, the Call Back function can be used just like a call in the same system. The following options shall be set:

- To do CCBS(Call Completion Busy Station) when the call receiving party is busy, the 'CCBS' option in Program 823 shall be set to 'Y'.
- To do CCNR(Call Completion No Reply) when the call receiving party of another system is not replying, the 'CCNR' option in Program 823 shall be set to 'Y'.
  - The call completion functions operate only when the auto route selection is in use.
  - The call completion in networking uses a separate signaling channel, which is different from a call path, to set a call. If the call completion is set, the call is terminated. Set the 'CC PATH RSV' option to 'Y'in order to maintain the already formed call path to be used when the reserved call is reset later. To keep the signaling channel connected, the 'CC SIG CONN' option shall be set to 'Y'. When the reserved station becomes free and called back, but the calling station is busy, the call completion reservation can be maintained by setting the 'CC SVC RETN' option to 'Y'.

DND & DND Override

- When a networking call is received, but the destination station is DND, first the disconnection message will be sent back to the origination station. At this time, the message will be 'busy'.
  Then, the origination system receives this message and sends the agreement message to disconnect the call. And, the origination station sends a 'busy tone' so that the other party can know that the station is busy. To terminate the call after giving DND tone for the set time, the 'DND tone' option in Program 823 shall be set to 'Y'.
- When the station of another system is called, the DND tone is heard and DND status is indicated, the DND can be overridden. The 'DNDO' option of Program 823 is set to 'Y', and the 'DNDO CAPABL' option number of the origination station shall be bigger than the 'DNDO PROTECT' option number of the DND set station. If the option numbers are same, this function will not operate.
- This function operates only when the 'TRK INC.DND' option of Program 400 is 'On'.

Path Replacement

When the networking call is connected, you can press the PTHR button to replace a new path. The 'PATH REPL. ' option of Program 823 shall be set to 'Y'.

Centralized Voice Mail

To have only one SVMi card installed in network and share with other systems, the following items shall be set:

- The SVMi card shall create voice mail for each station. The voice mail uses the commands exclusively used for the SVMi card or can be automatically created by setting the 'MB' option of Program 824 to 'Y'. It is recommended to change the unused voice mail with the commands of SVMi card even after the voice mail is automatically created.
- The station number assignments shall not be duplicated because the voice mail system is based on the station or station group numbers.
- If there is no SVMi card in the system, the VMMSG button is pressed to connect the voice mail directly. The 'Use Remote VM' option of Program 825 shall be set to 'Yes', and the station number to connect the voice mail shall be set in the 'Remote VM Number' option.
  When the trunk line call is received and the caller ID is to be sent to another system, the node number shall be added in the front. In order to remove this added node number when sending the caller ID to the voice mail, the 'Remote CID Number' option of Program 825 shall be set to 'Yes'.

10.3 Programming Example

Figure 10.2 below shows the example of the networking programming that uses both of the PRI networking and the VoIP networking, and is configured only with OfficeServ 100 systems.

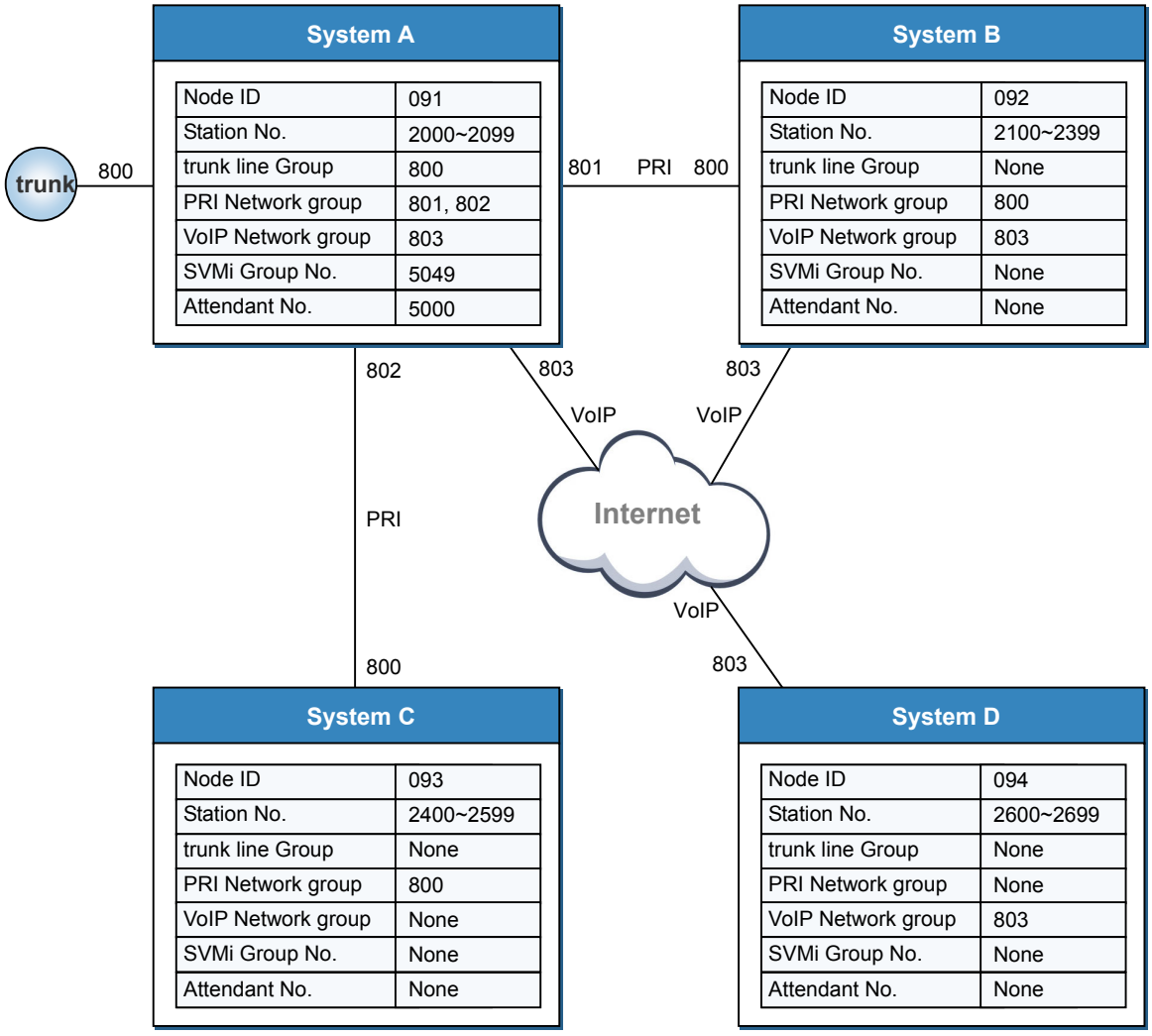


Figure 10.2 Networking Programming Example for Each Point

10.3.1 System A Programming

Program 820 Set System Link Number (MCP1)

Index	Link ID	Signal G/W	
SELF	091	168.219.100.100	
SYS01	092	168.219.110.110	
SYS02	093	-	→ Unnecessary because it is connected only to PRI.
SYS03	094	168.219.120.120	

Program 821 Set Networking trunk line

Set TEPRI card connected with System B, or C as Q-Signaling.

Program 724 Change Dial Numbers (MCP1)

STN Dial Number	Set the extension number as 2000~2099.
STNG Dial Number	Set the extension group number as 5000~5079.
TRKG Dial Number	Set 800, 801, 802, and 803.
FEAT Dial Number	Set LCR as 9 To make trunk line call, dial 9 and the target telephone number.
NTWK LCR Dial No	IDX-01: 21 Is converted to 2100~2199 call number in 824. IDX-02: 22 IDX-03: 23 IDX-04: 24 IDX-05: 25 IDX-06: 26 IDX-07: 51 IDX-08: 52 IDX-09: 53

Program 824 Convert Auto Route Selection Expansion Dial

Index	Phone No.	Converted No.	SZ	Max	DISP	MB	
01	21	09221	4	7	Y	Y	→ The station call of the system B
02	22	09222	4	7	Y	Y	
03	23	09223	4	7	Y	Y	
04	24	09324	4	7	Y	Y	→ The station call of the system C
05	25	09325	4	7	Y	Y	
06	26	09426	4	7	Y	Y	→ The station call of the system D
07	51	09251	4	7	Y	N	→ The station group call of the system B
08	52	09352	4	7	Y	N	→ The station group call of the system C

Index	Phone No.	Converted No.	SZ	Max	DISP	MB	
09	53	09453	4	7	Y	N	→ The station group call of the system D

Program 714 Enter the Conversion Table of Dialing a Station Directly (MCP1)

Entry	Digit	MOH	→1~6	CW	Delete	Name	
001	2***	-	B	-	0	-	→ 2100~2699 are applicable.
002	5***	-	B	-	0	-	→Calls Attendant and Voice mail.
003	9	-	9	-	1	-	

Program 310 Set Auto Route Selection Class

Set LCR class of all stations as 2

Program 603 trunk line Group (MCP1)

800 Set trunk line connected to trunk line along with the PRI not set as the networking
801 Set PRI of TEPRI connected to System B through Networking
802 Set PRI of TEPRI connected to System C through Networking
803 Set VoIP Networking Signaling trunk line

Program 710 Enter a Digit for Auto Route Selection (MCP1)

Index	Digit	Length	LCRT	
0001	00	12	4	→ Enter 12 digits at the minimum for the international call.
0002	01	10	4	→ Enter 10 digits at the minimum for the mobile call.
0003	02	9	4	→ Enter 9 digits at the minimum for the long distance call(Seoul).
0004	03	10	4	→ The long distance call(Except Seoul).
0005	04	10	4	
0006	05	10	4	
0007	06	10	4	
0008	07	10	4	→ 070 call
0009	08	10	4	→ 080 call
0010	092	7	1	→ The station(group) call of the system B
0011	093	7	2	→ The station(group) call of the system C
0012	094	7	3	→ The station(group) call of the system D
0013	1	3	4	→ Special call
0014	2	7	4	→ Enter 7 digits at the minimum for the local call.
0015	3	7	4	
0016	4	7	4	
0017	5	7	4	

Index	Digit	Length	LCRT
0018	6	7	4
0019	7	7	4
0020	8	7	4
0021	9	7	4

Program 712 Enter the Route Table for Auto Route Selection (MC1)

Table	Time	Class	Route	Modify	
01	1	1	803	-	→ Sends the call through the 803 group at first.
-	-	2	801	-	→ Sends the call through the 801 group when the 803 group is all used.
02	1	1	802	-	
03	1	1	803	-	
04	1	1	800	-	

Program 601 Station Group (MCP1)

5000 Set Attendant Group
5049 Set SVMi Group

Program 825

ADD Number To Name Yes
Use Remote Voice Mail No
Remote CID Number Yes

10.3.2 System B Programming

Program 820 Set System Link Number (MCP1)

Index	Link ID	Signal G/W
SELF	092	168.219.110.110
SYS01	091	168.219.100.100
SYS02	093	-
SYS03	094	168.219.120.120

Program 821 Set Networking trunk line

Set TEPRI card connected with System A as Q-Signaling.

Program 724 Change Dial Numbers (MCP1)

STN Dial Number	Set the extension number as 2100~2399.
STNG Dial Number	Set the extension group number as 5100~5179.
TRKG Dial Number	Set 800 and 803.
FEAT Dial Number	Set LCR as 9 → To make trunk line call, dial 9 and the target telephone number.
NTWK LCR Dial No	IDX-01: 20 IDX-02: 24 IDX-03: 25 IDX-04: 26 IDX-05: 50 IDX-06: 52 IDX-07: 53

Program 824 Convert Auto Route Selection Expansion Dial

Index	Phone No.	Converted No.	SZ	Max	DISP	MB
01	20	09120	4	7	Y	N
02	24	09324	4	7	Y	N
03	25	09325	4	7	Y	N
04	26	09426	4	7	Y	N
05	50	09150	4	7	Y	N
06	52	09352	4	7	Y	N
07	53	09453	4	7	Y	N

Program 714 Enter the Conversion Table of Dialing a Station Directly (MCP1)

Entry	Digit	MOH	→1~6	CW	Delete	Name
001	2***	-	B	-	0	-
002	5***	-	B	-	0	-

Program 310 Set Auto Route Selection Class

Set LCR class of all stations as 2.

Program 603 trun5k line Group (MCP1)

800 Set PRI of TEPRI connected with System A through Networking

803 Set VoIP Networking Signaling trunk line

Program 710 Enter a Digit for Auto Route Selection (MCP1)

Index	Digit	Length	LCRT	
0001	00	12	3	→ International call: Sends to the system A.
0002	01	10	3	→ Mobile call: Sends to the system A.
0003	02	9	3	→ Long distance call: Sends to the system A.
0004	03	10	3	→ Local call: Sends to the system A.
0005	04	10	3	
0006	05	10	3	
0007	06	10	3	
0008	07	10	3	→ 070 call: Sends to the system A.
0009	08	10	3	→ 080 call: Sends to the system A.
0010	091	7	1	→ The station call of the system A
0011	093	7	1	→ The station call of the system C: Sends to the system A
0012	094	7	2	→ The station call of the system D
0013	1	3	3	→ Special call: Sends to the system A.
0014	2	7	3	→ Local call: Sends to the system A.
0015	3	7	3	
0016	4	7	3	
0017	5	7	3	
0018	6	7	3	
0019	7	7	3	
0020	8	7	3	
0021	9	7	3	

Program 712 Enter the Route Table for Auto Route Selection (MCP1)

Table	Time	Class	Route	Modify	
01	1	1	803	-	
-	-	2	800	-	
02	1	1	803	-	
03	1	1	803	001	→ Sends to the system A for outgoing through trunk line
-	-	2	800	001	

Program 713 Enter a Dial Conversion Table for Auto Route Selection (MCP1)

Table	Delete	Insert	Append
001	0	0919	-

→ The first digit(9)-added number is sent to the system A for outgoing through trunk line

Program 825

ADD Number To Name	Yes
Use Remote Voice Mail	Yes
Remote VM Number	5049

10.3.3 System C Programming

Program 820 Set System Link Number (MCP1)

Index	Link ID	Signal G/W
SELF	093	-
SYS01	091	168.219.100.100
SYS02	092	168.219.110.110
SYS03	094	168.219.120.120

Program 821 Set Networking trunk line

Set TEPRI card connected with System A as Q-Signaling

Program 724 Change Dial Numbers (MCP1)

STN Dial Number	Set the extension number as 2400~2599
STNG Dial Number	Set the extension group number as 5200~5279
TRKG Dial Number	Set 800
FEAT Dial Number	Set LCR as 9 → To make trunk line call, dial 9 and the target telephone number
NTWK LCR Dial No	IDX-01: 20 IDX-02: 21 IDX-03: 22 IDX-04: 23 IDX-05: 26 IDX-06: 50 IDX-07: 51 IDX-08: 53

Program 824 Convert Auto Route Selection Expansion Dial

Index	Phone No.	Converted No.	SZ	Max	DISP	MB
01	20	09120	4	7	Y	N
02	21	09221	4	7	Y	N
03	22	09222	4	7	Y	N
04	23	09223	4	7	Y	N
05	26	09426	4	7	Y	N
06	50	09150	4	7	Y	N
07	51	09251	4	7	Y	N
08	53	09453	4	7	Y	N

Program 714 Enter the Conversion Table of Dialing a Station Directly (MCP1)

Entry	Digit	MOH	→1~6	CW	Delete	Name
001	2***	-	B	-	0	-
002	5***	-	B	-	0	-

Program 603 trunk line Group (MCP1)

800 Set PRI of TEPRI connected with System A through Networking

Program 710 Enter a Digit for Auto Route Selection (MCP1)

Index	Digit	Length	LCRT	
0001	00	12	2	→ International call: Sends to the system A
0002	01	10	2	→ Mobile call: Sends to the system A
0003	02	9	2	→ Long distance call: Sends to the system A
0004	03	10	2	→ Local call: Sends to the system A
0005	04	10	2	
0006	05	10	2	
0007	06	10	2	
0008	07	10	2	→ 070 call: Sends to the system A
0009	08	10	2	→ 080 call: Sends to the system A
0010	091	7	1	→ The station call of the system A: Sends to the system A
0011	092	7	1	→ The station call of the system B: Sends to the system A
0012	094	7	1	→ The station call of the system D: Sends to the system A
0013	1	3	2	→ Special call: Sends to the system A
0014	2	7	2	→ Local call: Sends to the system A

Index	Digit	Length	LCRT
0015	3	7	2
0016	4	7	2
0017	5	7	2
0018	6	7	2
0019	7	7	2
0020	8	7	2
0021	9	7	2

Program 712 Enter the Route Table for Auto Route Selection (MCP1)

Table	Time	Class	Route	Modify	
01	1	1	800	-	
02	1	1	800	001	→ Sends to the system A for outgoing through trunk line

Program 713 Enter a Dial Conversion Table for Auto Route Selection (MCP1)

Table	Delete	Insert	Append	
001	0	0919	-	→ The first digit(9)-added number is sent to the system A for outgoing through trunk line

Program 825

ADD Number To Name	Yes
Use Remote Voice Mail	Yes
Remote VM Number	5049

10.3.4 System D Programming

Program 820 Set System Link Number (MCP1)

Index	Link ID	Signal G/W
SELF	094	168.219.120.120
SYS01	091	168.219.100.100
SYS02	092	168.219.110.110
SYS03	093	-

Program 724 Change Dial Numbers (MCP1)

STN Dial Number — Set the extension number as 2600~2699

STNG Dial Number — Set the extension group number as 5300~5379

TRKG Dial Number — Set 803

FEAT Dial Number — Set LCR as 9 → To make trunk line call, dial 9 and the target telephone number

NTWK LCR Dial No — IDX-01: 20
IDX-02: 21
IDX-03: 22
IDX-04: 23
IDX-05: 24
IDX-06: 25
IDX-07: 50
IDX-08: 51
IDX-09: 52

Program 824 Convert Auto Route Selection Expansion Dial

Index	Phone No.	Converted No.	SZ	Max	DISP	MB
01	20	09120	4	7	Y	N
02	21	09221	4	7	Y	N
03	22	09222	4	7	Y	N
04	23	09223	4	7	Y	N
05	24	09324	4	7	Y	N
06	25	09325	4	7	Y	N
07	50	09150	4	7	Y	N
08	51	09251	4	7	Y	N
09	52	09352	4	7	Y	N

Program 714 Enter the Conversion Table of Dialing a Station Directly (MCP1)

Entry	Digit	MOH	→1~6	CW	Delete	Name
001	2***	-	B	-	0	-
002	5***	-	B	-	0	-

Program 603 trunk line Group (MCP1)

803 Set VoIP Networking Signaling trunk line

Program 710 Enter a Digit for Auto Route Selection (MCP1)

Index	Digit	Length	LCRT	
0001	00	12	2	→ International call: Sends to the system A
0002	01	10	2	→ Mobile call: Sends to the system A
0003	02	9	2	→ Long distance call: Sends to the system A
0004	03	10	2	→ Local call: Sends to the system A
0005	04	10	2	
0006	05	10	2	
0007	06	10	2	
0008	07	10	2	→ 070 call: sends to the system A
0009	08	10	2	→ 080 call: Sends to the system A
0010	091	7	1	→ The station call of the system A
0011	092	7	1	→ The station call of the system B
0012	093	7	1	→ The station call of the system C: Sends to the system A
0013	1	3	2	→ Special call: Sends to the system A
0014	2	7	2	→ Local call: Sends to the system A
0015	3	7	2	
0016	4	7	2	
0017	5	7	2	
0018	6	7	2	
0019	7	7	2	
0020	8	7	2	
0021	9	7	2	

Program 712 Enter the Route Table for Auto Route Selection (MCP1)

Table	Time	Class	Route	Modify	
01	1	1	803	-	
02	1	1	803	001	→ Sends to the system A for outgoing through trunk line

Program 713 Enter a Dial Conversion Table for Auto Route Selection (MCP1)

Table	Delete	Insert	Append
001	0	0919	-

→ The first digit(9)-added number is sent to the system A for outgoing through trunk line

Program 825

ADD Number To Name	Yes
Use Remote Voice Mail	Yes
Remote VM Number	5049

ANNEX A. Abbreviation

A

AC	Alternating Current
AOM	Add On Module
AP	Access Point

B

BRI	Basic Rate Interface

C

CCBS	Call Completion to Busy Subscriber
CCNR	Cell Completion on No Reply
CFB	Call Forwarding Busy
CFNR	Call Forwarding No Reply
CFU	Call Forwarding Unconditional
CID	Caller Identification
CLI	Call Line Identification
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
CNIP	Calling Name Identification Presentation
CNIR	Calling Name Identification Restriction
CNIRO	Calling Name Identification Restriction Override
COLP	Connected Line Identification Presentation
COLR	Connected Line Identification Restriction
CONP	Connected Line Identification Presentation
CONR	Connected Line Identification Restriction
CONRO	Connected Line Identification Restriction Override
CTI	Computer Telephony Integration

D

DASL	Digital Adapter Subscriber Loops
DB	Daughter Board
DC	Direct Current
DLI	Digital Line Interface
DND	Do Not Disturb
DPIM	Door Phone Interface Module
DSP	Digital Signal Processor
DTMF	Dual Tone Multi Frequency

E

EPROM	Erasable and Programmable Read Only Memory

I

ID	Identification
IP	Internet Protocol
IPC	Inter Processor Communication
ISDN	Integrated Services Digital Network

K

KDB	Keyset Daughter Board
KSU	Key Service Unit

L

LAN	Local Area Network
LCD	Liquid Crystal Display
LED	Light Emitting Diode

M

MCP	Main Control Processor
MDF	Main Distribution Frame
MGI	Media Gateway Interface
MISC	Miscellaneous
MMC	Man Machine Communication
MWSLI	Message Waiting Single Line Interface

N

NT	Network Termination

O

OPS	Off Premised Station
OPX	Off Premises extension

P

PCB	Printed Circuit Board
PCM	Pulse Code Modulation
PCMMC	PC based Man Machine Communication
PFT	Power Failure Transfer
PLL	Phase Locking Loop
PRI	Primary Rate Interface
PSU	Power Supply Unit

Q

QDASL	Quad Digital Adaptor Subscriber Loops
Q-SIG	Q-Signaling

R

RGU	Ring Generator Unit
RTP	Real-time Transmission Protocol

S

SIO	Serial Input/Output
SIP	Session Initiation Protocol
SLI	Single Line Interface
SLT	Single Line Telephone
SMDR	Station Message Detail Recording
SVMi	Samsung Voice Mail integrated

T

TE	Terminal Equipment
TEPRI	T1E1PRI
TRK	Trunk

V

VLAN	Virtual LAN
VoIP	Voice over Internet Protocol

W

WAN	Wide Area Network
WBS	Wireless Base Station
WIP	Wireless IP Phone

OfficeServ 100

Installation Manual

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