



Enterprise IP Solutions

OfficeServ 12 Installation Guide

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TRADEMARKS

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Please read this guide before using the OfficeServ 12 system, and follow the instructions to use the OfficeServ 12 system safely and correctly.

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

For further information on the updated manual or have a question the content of manual, contact your Authorised Samsung Reseller.

INTRODUCTION

Purpose

This guide is an installer's guide containing information on system specification, how to install and set up the OfficeServ 12 system and how to connect the additional equipment.

Document Content and Organization

This installation guide is composed of a total of 2 chapters and 2 annexes and abbreviation. Each chapter is introduced as follows :

CHAPTER 1. Introduction to the OfficeServ 12 System

This chapter describes the features of the OfficeServ 12 system, appearance and each view and part name of the system.

CHAPTER 2. Installing the OfficeServ 12 System

This chapter describes general information on the OfficeServ 12 system installation.

CHAPTER 3. Connecting Additional Equipments

This chapter describes various equipment that can be additionally installed on the OfficeServ 12 system.

ANNEX A. Troubleshooting

This annex describes the problems which may occur during using OfficeServ 12 system and the solutions to handle them.

ANNEX B. Peg Paper

This annex provides the peg paper necessary to hang up the OfficeServ 12 system on the wall.

ABBREVIATION

The frequently used acronyms and their meanings in this guide are all collected.

Conventions

The following special paragraphs are used in this document to point out information that must be read.



WARNING

Indicates a potentially hazardous situation which if not avoided, could result in death or serious injury.



CAUTION

Indicates a potentially hazardous situation which if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



CHECKPOINT

Provides the operator with checkpoints for stable system operation.

**NOTE**

Indicates additional information as a reference.

**OPERATION PROCEDURES**

Indicates the operation procedures that should be executed in order.

Reference

OfficeServ 12 Programming Guide

This guide describes the programming description for OfficeServ 12 system users.

WIP-5000M User Guide

This is a user's guide for WIP-5000M that is designed to use wireless LAN provided from the OfficeServ 12 system.

Revision History

EDITION	DATE OF ISSUE	REMARKS
00	09. 2003.	First Draft



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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****Check whether the power is on before connecting a cable for battery connection.**

When the battery is connected with power off, sparks may occur, and this is very dangerous.

**Plug out the AC power cable before installing the grounding connection.**

When the grounding operation is done with the AC power cord plugged in, high voltage causing mortal damage may be generated.

**Precaution on connecting Door phone**

- Do not directly connect the LOCK port of DPIM to a commercial AC power supply. It may cause immediate breakdown of the OfficeServ 12 system or a fire.
- Connect a DPIM to any DLI port only after connecting a door phone to the DPIM.
- The LOCK port of DPIM is standardized so that it is used only for controlling a low voltage relay. Standard values are 5Vdc and 40mA.

**Precaution on Cleaning**

Do not spray directly on the unit, and do not clean the unit with benzene, thinner or alcohol. It may cause a fire or an electric shock.

**Never install the system wiring during a lightning storm.**

There may be a remote risk of electric shock from lightning.

**Do not install the system in a location near a heat source such as a heater.**

It may cause a fire.

**Do not install the system in a place subject to moisture or wetness.**

Near water, for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool. It may cause a malfunction or shorten the life span of parts.

**Do not directly connect an external paging equipment, and common bell to a commercial AC power supply.**

It can cause immediate breakdown of the OfficeServ 12 system or a fire.

**Use only the power cable and batteries indicated in this guide.**

Use of an alternative power cable and batteries may result in serious damage and voids the product warranty.



CAUTION

**Connect the OfficeServ 12 system to an AC receptacle independently.**

When the OfficeServ 12 system shares AC power with other machines, it can cause noise, malfunction of the system due to voltage drop.

**Precaution on wall mounting**

- If the wall is build of plaster or brick, or if the building is a prefabricated one, you should place a wood plate having a thickness of about 2 cm on the wall. Otherwise, you may greatly damage the wall.
- It is difficult to drive the screw directly into the concrete wall. Therefore, you should make a hole using an electric drill and insert the bushing into the hole first, and then insert the screw into the bushings. Driving the screw directly into the concrete wall without using an electric drill or not using the bushing may cause the fall down of the OfficeServ 12 system and breakdown of the system.

**Do not disassemble, repair or modify on your own.**

Contact a service center when repair is required.

**Compliance with the National Version Standard**

For the national version, OfficeServ 12 is designed to comply with the standard of the corresponding country.

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ANNEX A. Troubleshooting

ANNEX B. Peg Paper

ABBREVIATION

A ~ D	Abbreviation-1
G ~ O	Abbreviation-2
P ~ V	Abbreviation-3
W ~ W	Abbreviation-4

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CHAPTER 1

Introduction to the OfficeServ 12 System

This chapter describes the overview and features of the OfficeServ 12 system, specifications, appearance, each view and part name of the system.

1 System Overview

The OfficeServ 12 digital key telephone system is designed to be suitable for a small office. OfficeServ 12 system is composed of a baseboard to which 8 station lines(1 line for digital phone only, 2 hybrid lines for digital phone or analog phone selectable, and 5 lines for analog phone only).

The OfficeServ 12 system provides 3TRK, 2BRI option board and MGI daughter board.

- 3TRK supports three analog trunk lines and Caller ID features.
- 2BRI board supports 2BRI line(4 channel).
- MGI daughter board supports 4 channel VoIP feature.

1.1 System Features

- OfficeServ 12 system is WLAN based SOHO type wireless converged IP-PBX.
- OfficeServ 12 system is digital key telephone system having a simple and slim design.
- OfficeServ 12 system supports the Plug & Play feature and is easy to install.

- OfficeServ 12 system supports 2 port LAN connection(10/100BASE-TX).
- OfficeServ 12 system displays Caller ID on the phone.
- OfficeServ 12 system provides 4 channel VoIP feature.
- OfficeServ 12 system supports DPIM connection allowing connection of a door phone.
- OfficeServ 12 system accommodates 8 station lines.
- OfficeServ 12 system accommodates 3 analog trunk lines and 2BRI (4 channel).



NOTE

Using the KDB

The OfficeServ 12 system supports KDB-DLI and KDB-SLI by connecting to the DLI1 port.

2 System Specifications

The specifications of the OfficeServ 12 system are as follows :

2.1 CPU, Memory, Switch

Table 1.1 System Specifications (CPU, Memory, Switch)

Item	Specification	
CPU	MPC855T	
Memory	Boot ROM	512 KB
	Flash ROM	8 MB
	SRAM	2 MB
	SDRAM	64 MB
Switch Structure	256 x 256 Time Slot	

2.2 System Capacity

Table 1.2 System Specifications (Capacity)

Item	Specification	
Trunk	3TRK	3 Analog trunk lines(with Caller ID)
	2BRI	2 Digital trunk lines(4 channels)(CO3/BRI2 line(2 Channels) can be substituted for ISDN station lines)
Station	8 lines(1 line for digital phone, 2 hybrid, and 5 lines for analog phones)	
Music-on-hold/ Background music channel	1(internal or external)	
General-purpose dry contact	1	
External Page	1	

Item	Specification
AP(for WLAN)	1(LAN Port2 is connected to the AP. LAN Port1 is connected to the hub or RJ-45 cable.)
IP phone	8(this is available only when the hub is connected)



NOTE

The OfficeServ 12 system provides 8 station lines(1 DLI port, 2 hybrid ports, and 5 SLI ports).

DLI port supports 2B(KDB-D, KDB-S) and hybrid port supports analog phone and digital phone(DLI max configuration : 3 ports, SLI max configuration : 7 ports).

2.3 Power Specifications

Table 1.3 System Specifications (Power)

Item	Specification
AC Input	220~240 VAC, 50 Hz, 1.6 A
Maximum Power Consumption	55 Watts

2.4 Environment Specifications

Table 1.4 System Specifications (Environment)

Item	Specification
Operating Temperature	0~40 °C(32~104 °F)
Relative Humidity	10~90 %
Temperature(Storage)	-10~+50 °C(14~122 °F)

2.5 Cable Specifications

Table 1.5 System Specifications (Cable)

Item	Specification
Digital Phone	2-line cable, maximum 400m(1300 Ft)(AWG #24)
Analog Phone	2-line cable, maximum 1km(3000 Ft)(AWG #24)
DPiM	2-line cable, maximum 300m(1000 Ft)(AWG #24)
Door Phone	2-line cable, maximum 100m(330 Ft)(AWG #24)
LAN	RJ-45 cable

2.6 Dimensions

Table 1.6 System Specifications (Dimensions)

Item	Height(mm)	Width(mm)	Depth(mm)	Mass(kg)
OfficeServ 12	190	350	60	2.0
DPiM	29	90	120	0.2

2.7 Others

Table 1.7 System Specifications (Others)

Item	Specification
External music source input characteristics	Impedance : 600 ohm Voltage : Maximum 350 mV
External Page	Impedance : 600 ohm

3 Each View of the System

3.1 Front View of the System

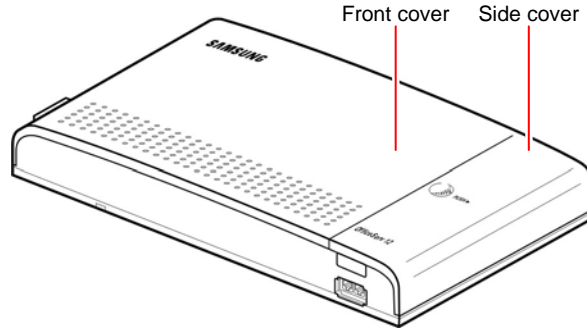


Figure 1.1 Front View of the OfficeServ 12 System

3.2 Ports and Switch (After Removing Side Cover)

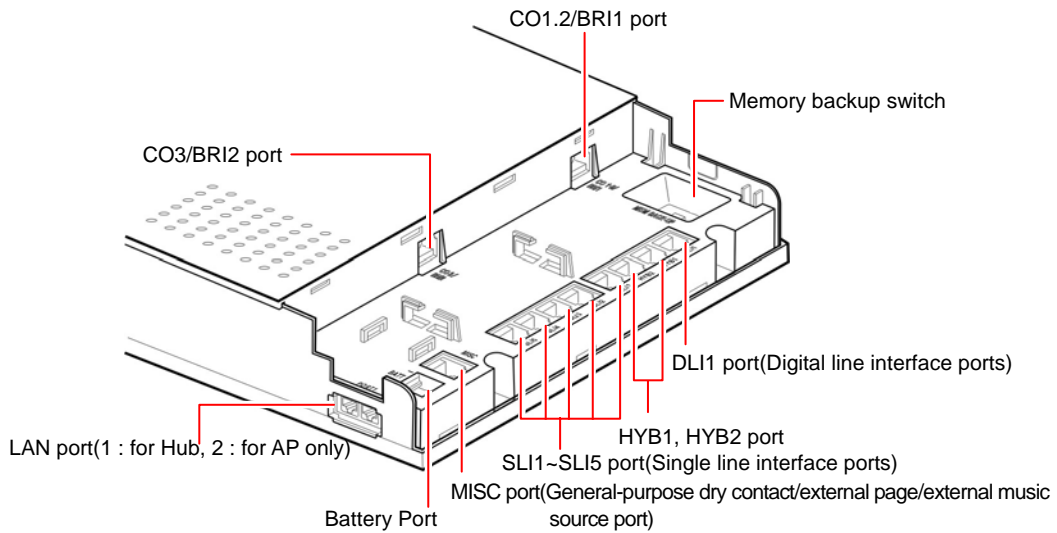


Figure 1.2 Ports and Switch

Table 1.8 Ports and Switch Descriptions

Port	Description
CO3/BRI2 port	When the 2BRI board is installed in the system, this port is for BRI2 port. When the 3TRK board is installed in the system, this port is for CO3 port.
CO1.2/BRI1 port	When the 2BRI board is installed in the system, this port is for BRI1 port. When the 3TRK board is installed in the system, this port is for CO1 or CO2 port.
Memory Backup switch	This switch for using the battery and supplying the power to the OfficeServ 12 system when power is interrupted to keep data for a predetermined time. The switch must be turned 'ON' after the data is input.
DLI1 port	A port for connecting a digital phone exclusively used for the OfficeServ 12 system to which the phone is interlocked.
HYB1, HYB2 port	A port for connecting a digital phone or analog phone.
SLI1~SLI5 port	A port for connecting an analog phone generally used at home or office.
MISC port	A port for connecting an external paging device. MOH, general purpose dry contact.
Battery port	A port for connecting a backup battery.
LAN port	A port for connecting a hub or AP.

3.3 Bottom View of the System

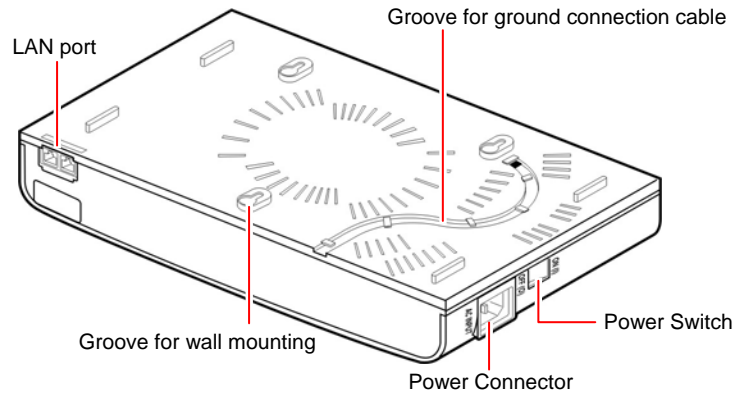


Figure 1.3 Bottom View of the OfficeServ 12 System

Table 1.9 Bottom View Descriptions

Port	Description
Groove for ground connection cable	A groove for wall mounting.
Power switch	A switch for turning On/Off the AC power.
Power connector	A port for connecting the power adaptor plug.
LAN port	A port for connecting a hub or AP.

CHAPTER 2

Installing the OfficeServ 12 System

This chapter describes general information on the OfficeServ 12 system installation.

1 Installation Environment

When you are planning the installation of the OfficeServ 12 system, choose a site that meets the following requirements :

- Temperature : 0~40 °C(32~104 °F)
- Humidity : Maximum 90 %
- Power Specifications : Power supply of 60 or more watts
220~240 VAC, 1.6 A
- AC Regular Frequency : 50 Hz

Keep this unit far away from static electricity and electrical noise

If there is a possibility of static electricity occurring in a place where the OfficeServ 12 system is installed(due to a carpet, electronic machines, etc), a system for preventing occurrence of static electricity should be prepared.

Install the unit in a place which is not exposed to influential factors

Be careful not to expose the OfficeServ 12 system to direct sunlight, corrosive vapor, dust, regular vibration or high levels of magnetic field generated by a motor or a copy machine.

2 Installation Precautions

2.1 Selecting Place

Select a place having sufficient space and proper levels of brightness to facilitate installation of the OfficeServ 12 system.

2.2 Preventing Static Electricity

This OfficeServ 12 system should not be installed in a carpeted place. An installer or a repairman should discharge the static electricity from the body (by contacting part of the body with the metal portion of a grounded object or with the ground connection of the system) before installing or repairing the system, to ensure safety.

In addition, for protection and stable operation of the OfficeServ 12 system, standard grounding construction should be used.

2.3 Cable Requirements

Select a place minimizing the length of the system cable, and properly wire so that all the lines or cables output from/input into the OfficeServ 12 system is not damaged. In addition, be careful not to neglect electromagnetic waves or not to arrange the electromagnetic waves to be parallel to an AC power cable. Refer to the cable requirements shown in the following table.

Table 2.1 Cable Requirements

Equipment	Cables	AWG	Max Feet(ft)	Max Meter(m)
Digital phone	1 Twisted pair	24	1300	400
Analog phone	1 Twisted pair	24	3000	1000
Door phone	2 Twisted pair	24	330	100
DPIM	1 Twisted pair	24	1000	300

2.4 Checking the Condition of the Line

When using AWG 24 cable, the maximum length of a line for an analog phone is 1000m (3000 ft), and the maximum length of a line for a digital phone is 400m(1300 ft).

Be careful not to fold cables or make contact with other utensils during installation of lines and not to transform or damage cables. Do not expose the lines to the outside of the building.

2.5 Checking Power

When the system shares AC power with other machines, noise, malfunction of the OfficeServ 12 system due to voltage drop and a fire may be caused. Moreover, interruption of power at night may cause malfunction in the OfficeServ 12 system and breakdown of the battery. Therefore, use a stable AC power continuously supplied.



Connect the OfficeServ 12 system to an AC receptacle independently.

When the OfficeServ 12 system shares AC power with other machines, it can cause noise, malfunction of the system due to voltage drop.

3 Installing the System

3.1 Checking the Parts in the Package

On purchasing the OfficeServ 12 system, check the following items contained in the package of the product.

- OfficeServ 12 system
- 3 screws and 3 bushings for hanging up the system on the wall
- A cable for battery connection
- 2 AC power fuses(F1 Fuses) : 250 V, 2 A
- 2 Battery fuses(F21 Fuses) : 125 V, 3 A
- An AC power cable
- 4 cable ties
- This user guide

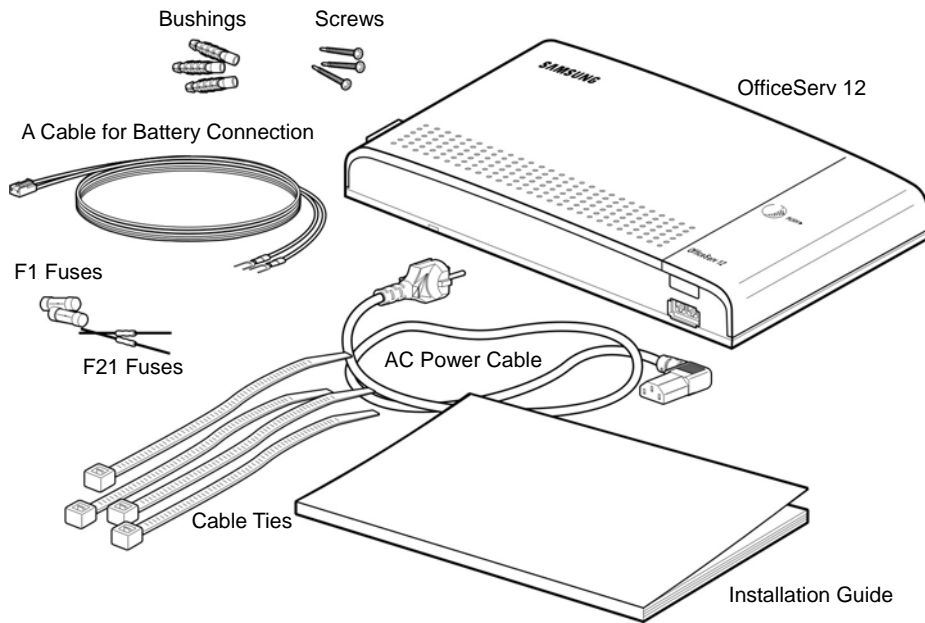


Figure 2.1 Checking the Parts in the Package

3.2.3 Card installation

Insert the 3TRK board or 2BRI on the baseboard.

If you are using the wireless terminal, insert the MGI board in the correct direction.



Plug out the AC power cable before installing 3TRK, 2BRI, MGI board.

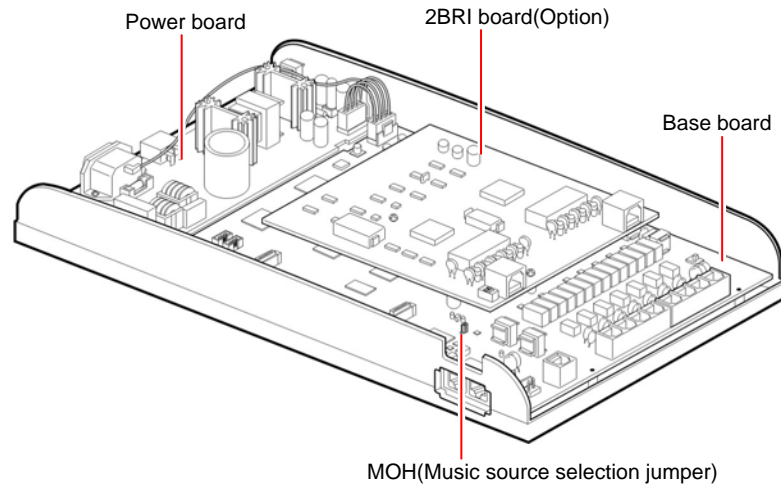


Figure 2.3 Inside View of the System (2BRI board is installed)

3.3 Grounding



Plug out the AC power cable before installing the grounding connection.

When the grounding operation is done with the AC power cord plugged in, high voltage causing mortal damage may be generated.

- Grounding must be done to protect users and the OfficeServ 12 system from strikes of lightning, static electricity and other instant high voltage.
- When the AC power receptacle does not include ground connection, separate grounding(external grounding) should be done. Separate grounding should be done when the AC power receptacle has a grounding problem even if the AC power receptacle includes a ground connection.
- Improper grounding may cause malfunction in the OfficeServ 12 system.

External grounding is performed according to the following steps :



- 1) There is a green cable soldered to the grounding end(AC inlet) within the OfficeServ 12 system. The other end of the green cable is attached to the FRG lug within the power supply unit. Refer to the figure below.

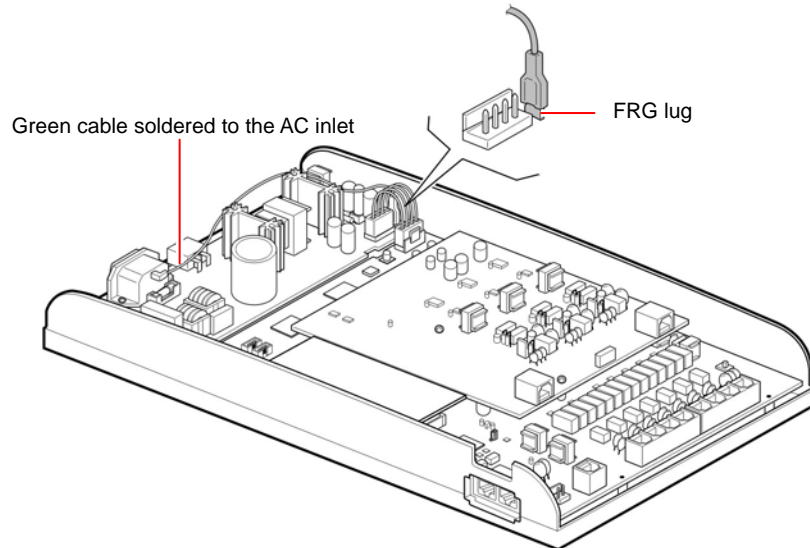


Figure 2.4 Grounding (1)

- 2) Cut the end of the green cable soldered to the grounding end of the AC power cable connection end(AC inlet). The right position is 2~3 cm(1 inch) apart from the grounding end of the AC inlet.

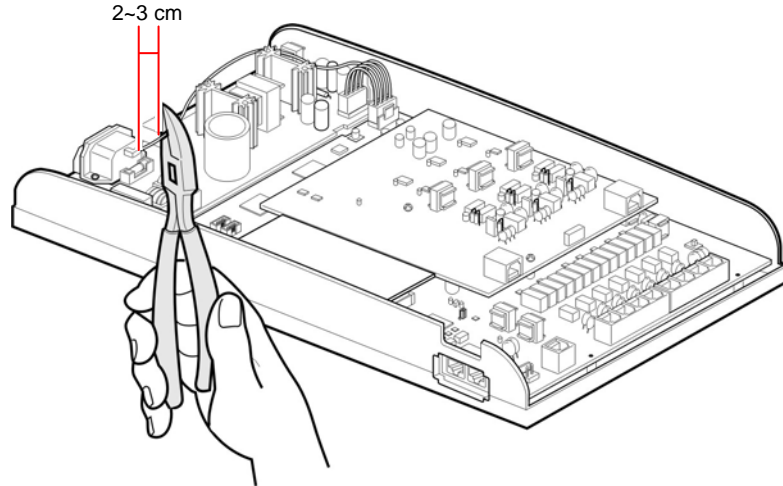


Figure 2.5 Grounding (2)

- 3) Pull out the cut end of the green cable through the F/G hole. F/G hole is located near to the FRG lug within the power supply unit, to which the other end of the green cable is attached. Pull out the cut end of the green cable along the groove on the bottom of the OfficeServ 12 system.

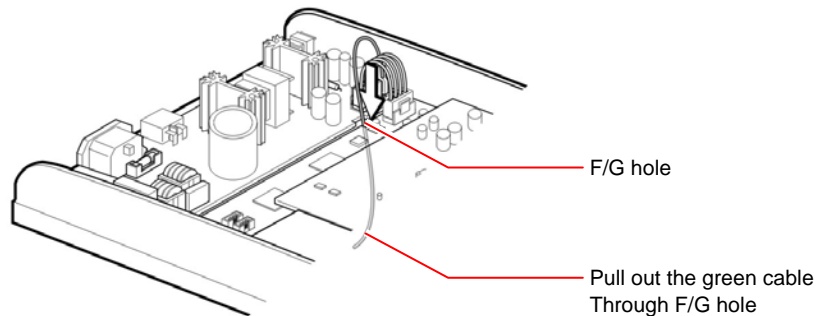


Figure 2.6 Grounding (3)

- 4) Prepare an AWG 10 cable for external grounding and ground it to the outside. Lead the cable along the groove on the bottom of the OfficeServ 12 system and fix the cable to the green cable, which was pulled out by the step 3. There are 2 ways of fixing the 2 cables :
- Solder the end of the two cables to each other
 - Remove some covering of the two cables at the end and fasten the wire tightly

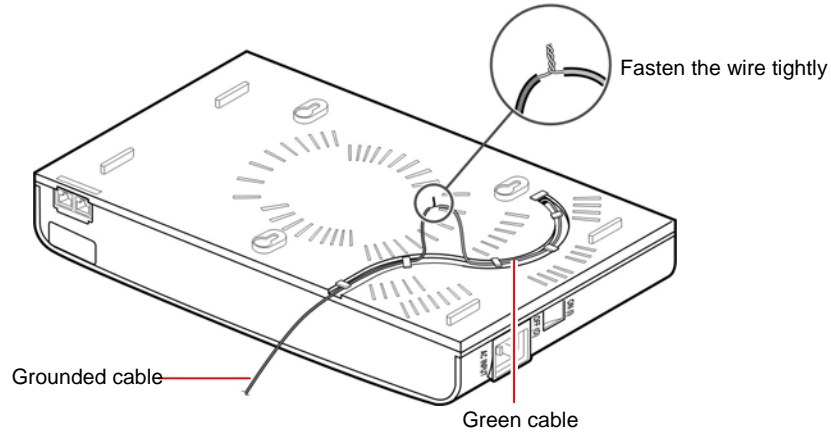


Figure 2.7 Grounding (4)



NOTE

External grounding cable

The cable for external grounding is not provided by default so that the installer has to prepare it for himself/herself.

3.4 Installing Battery

3.4.1 Selecting Battery

You need a battery to operate the OfficeServ 12 system during power shortage. The capacity of an available battery for OfficeServ 12 system is DC 48 V(6~40 AH). When an excessively large capacity of battery is used, this may cause a breakdown of the OfficeServ 12 system. On the other hand, if the capacity of a battery is too small, the OfficeServ 12 system may not operate well during power shortage.

3.4.2 Battery Specification

Consider the following specifications of the battery when you select a battery.


Table 2.2 Battery Specifications

Items	Charge	Discharge
Minimum load current(A)	0	0.04
Maximum load current(A)	0.3	0.4
Rated output current(A)	0.1	0.2
Rated output voltage(V)	54	48

* Current consumption of general phone : 30 mA

3.4.3 How to Install the Battery

Connect the battery to the system as follows :



Check whether the power is on before connecting a cable for battery connection.

When the battery is connected with power off, sparks may occur, and this is very dangerous.



- 1) Connect the red line of the battery connection cable to the positive(+) terminal of the battery and then connect the black line to the negative(-) terminal. If polarity is not correctly set, the battery fuse(F21 fuse) in the power supply unit will be blown.

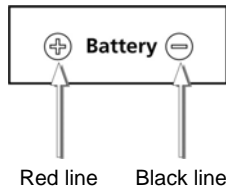


Figure 2.8 Battery Fuse

The locations of battery fuse(F21 fuse) and AC power fuse(F1 fuse) of OfficeServ 12 system are as follows. Be cautions not to confuse their locations.

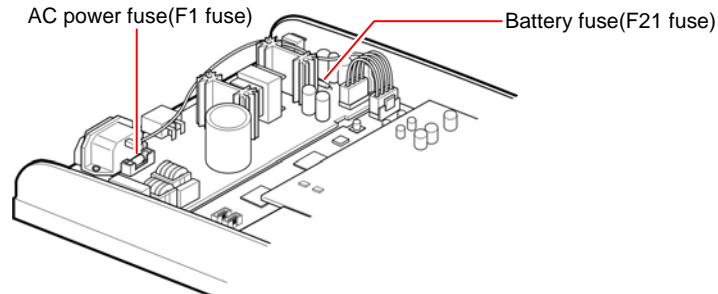


Figure 2.9 Battery Fuse and AC Power Fuse

- 2) Turn on the AC power switch of the OfficeServ 12 system.
- 3) When you remove the side cover of the OfficeServ 12 system, the port for battery connection is seen at the lower right side of the front cover. Connect the other end of the battery connection cable to this port.

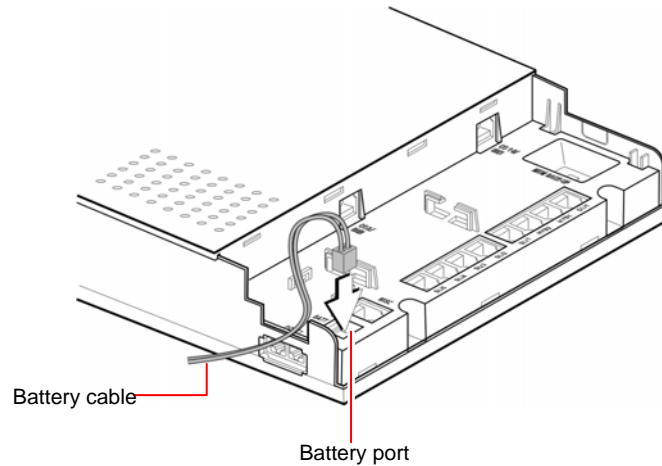


Figure 2.10 Battery Connection

- 4) Turn off the AC power switch of the OfficeServ 12 system and check whether the system operates normally.
- 5) Turn on the AC power switch of the OfficeServ 12 system.



Battery Usage

When a battery is used to operate the OfficeServ 12 system during power shortage, which is maximum configured, it lasts for a minimum of 4 hours if its capacity is DC 48V/6AH, and lasts for a minimum of 8 hours if its capacity is DC 48V/12AH.

The expected duration may vary with the operating time of the phone and the charged state of the battery.

3.5 Cabling

All the lines are connected through the ports of the OfficeServ 12 system after removing the side cover. The locations of each port are shown below :

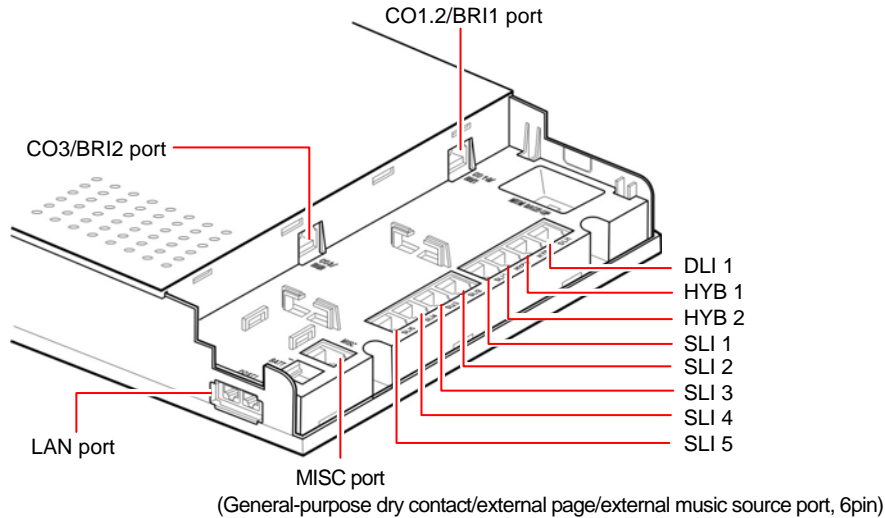


Figure 2.11 Location of Each Port

The necessary cables are different according to the type of port as follows :

Table 2.3 Port and Cable Type

Port	Cable Type
CO3/BRI2 port	RJ-45 cable, 8pin(When the 2BRI board is installed in the system, this port is for BRI2 port.) RJ-11 cable, 6pin(When the 3TRK board is installed in the system, this port is for CO3 port.)
CO1.2/BRI1 port	RJ-45 cable, 8pin(When the 2BRI board is installed in the system, this port is for BRI1 port.) RJ-11 cable, 6pin(When the 3TRK board is installed in the system, this port is for CO1 or CO2 port.)

Port	Cable Type
DLI1 port	RJ-11 cable(for digital phone connection, 4 pin)
HYB1, HYB2 port	RJ-11 cable(for digital/analog phone connection, 4 pin)
SLI1~SLI5 port	RJ-11 cable(for analog phone connection, 4 pin)
MISC port	RJ-11 cable(for external paging device. MOH, general purpose dry contact, 6 pin)
LAN port	RJ-45 cable(for hub or AP connection, 8pin)



NOTE

The cables are not the item provided with the system when the user purchase OfficeServ 12 system.

The user should prepare it by himself/herself.

3.5.1 Tie the Cables

You must tie the all the cables using the cable ties contained in the package of the OfficeServ 12 system unit after completing the cabling of ports.

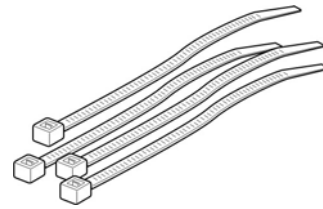


Figure 2.12 Tie Cable

3.5.2 Pin Arrangement of Modular Jack

Connect lines according to the following modular jack pin arrangement layout.

Table 2.4 Pin Arrangement of Modular Jack

Port	Pin number	Description	Port	Pin number	Description
BRI1	1, 2, 7, 8	Reserved	BRI2	1, 2, 7, 8	Reserved
	3, 6	Tx1		3, 6	Tx2
	4, 5	Rx1		4, 5	Rx2
CO1.2	1, 6	Tx for Trunk 2 power failure	CO3	1, 6	Reserved
	2, 5	Trunk 2		2, 5	Reserved
	3, 4	Trunk 1		3, 4	Trunk 3
SLI1~ SLI5	1, 4	Not Use	DLI1	1, 4	Not Use
	2, 3	Analog phone port		2, 3	Digital phone port 1
HYB1	1, 4	Analog phone port	HYB2	1, 4	Analog phone port
	2, 3	Digital phone port		2, 3	Digital phone port
LAN Port1	1, 2	Tx	LAN Port2	1, 2	Rx
	3, 6	Rx		3, 6	Tx
	4, 5	Reserved		4, 5	Reserved
	7, 8	Reserved		7, 8	Reserved
MISC	1, 6	External Page			
	2, 5	General-Purpose Dry contact			
	3, 4	External music			

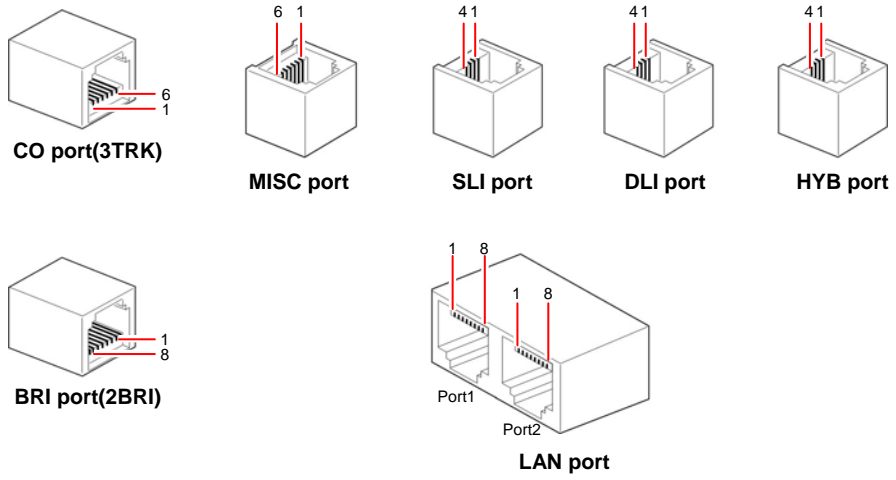


Figure 2.13 Pin Arrangement of Modular Jack

3.6 Connecting Trunks

Observe the installation procedure described in the following to install trunks or phone lines. Failure to install the lines in the manner described in this guide can cause fatal injury to a worker.

- Never carry out installation of trunks or phone lines when there is a storm or when lightning flashes.
- Do not install a phone jack in a damp place if the jack is not specially manufactured for use in a wet place.
- Do not touch phone lines or interface terminals when they are connected with the phone lines.
- Pay attention to the OfficeServ 12 system power when you install or check the phone lines.

3.6.1 Analog trunk for 3TRK/Digital trunks for 2BRI

3 Analog trunks(Loop start lines) are connected to the of OfficeServ 12 system through the modular jack(RJ-11(6pin)). On the contrary, 2 BRI lines are connected to the OfficeServ 12 system through the modular jack(RJ-45(8pin)). See the 'Cabling' section of this guide.

When the 2 BRI board is installed, CO3/BRI2 trunk line can be used as station lines for ISDN telephones.

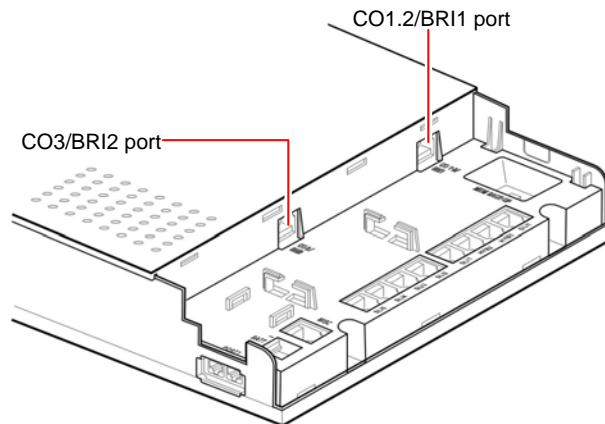



Figure 2.14 3TRK and 2BRI connection ports

3.6.2 MPD/PRS Selection and Installation

The OfficeServ 12 system has 3 analog trunk interface lines. Each trunk interface line has either a Metering Pulse Detection(MPD) function or a Polarity Reverse Detection(PRS) function as an option.

	<p>MPD/PRS feature</p> <p>This feature is available only when 3TRK board is installed.</p>
---	---

When using the MPD function, insert a 12 kHz or 16 kHz MPD Hybrid IC into the socket of each trunk interface line and add a capacitor of 4.7nF/400V to each of both tip and ring.

Table 2.5 MPD Selection

Trunk Port No.	12 kHz /16 kHz MPD Hybrid IC	4.7nF/400V Capacitor
Port #1	P101	C102, C103
Port #2	P201	C202, C203
Port #3	P301	C302, C303

When using the PRS function, insert a PRS Hybrid IC to the socket of each trunk interface lines and short the capacitors of both tip and ring.

Table 2.6 PRS Selection

Trunk Port No.	PRS Hybrid IC	Short
Port #1	P101	C102, C103
Port #2	P201	C202, C203
Port #3	P301	C302, C303

3.7 Connecting Station Terminals

Observe the installation procedure described in the following to install station or phone lines. Failure to install the lines in the manner described in this guide can cause fatal injury to a worker.

- Never carry out installation of trunks or phone lines when there is a storm or when lightening flashes.
- Do not install a phone jack in a damp place if the jack is not specially manufactured for use in a wet place.
- Do not touch phone lines or interface terminals when they are connected with the phone lines.
- Pay attention to the OfficeServ 12 system power when you install or check the phone lines.

3.7.1 Connecting Digital Phone

Connect the digital phone to a DLI1 port using a pair of cables such as #24 AWG or #26 AWG. The DLI1 port supports 2B(KDB-D, KDB-S). You can connect the digital phone to a desired HYB1 or HYB2 port.

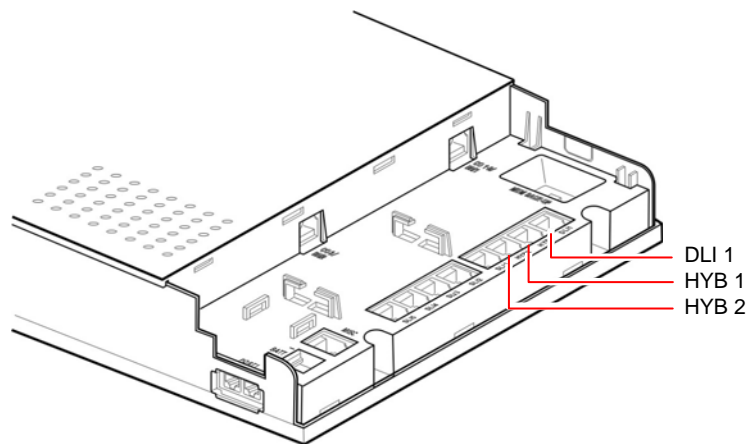


Figure 2.15 Digital Phone Connection Ports



Using the HYB port

The pin2, 3 of the HYB1/HYB2 port is used for DLI port, and the pin 1,4 is used for SLI port. At this time, do not connect DLI and SLI together in a HYB port.

3.7.2 Connecting Analog Phone

Connect an analog phone to a desired SLI port using a pair of cables such as #24 AWG or #26 AWG. The OfficeServ 12 system provides 5 ports, SLI1 through SLI5, for analog phones.

You can connect the analog phone to a desired HYB1 or HYB2 port.

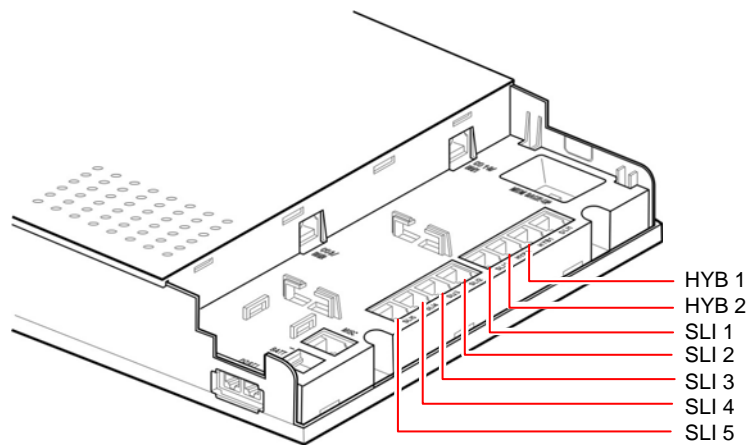


Figure 2.16 Analog Phone Connection Ports



Using the HYB port

The pin2, 3 of the HYB1/HYB2 port is used for DLI port, and the pin 1,4 is used for SLI port. At this time, do not connect DLI and SLI together in a HYB port.

3.8 Wall Mounting

The OfficeServ 12 system is housed in a plastic cabinet so that the unit can be installed on a wall or a floor. The following description shows how to install the system on the wall.



- 1) Cut out the peg paper found in the 'ANNEX B' of this guide. Carefully cut along the dotted line and do not to tear the paper.
- 2) Adhere the peg paper to the wall and make holes on the wall for the screws using an electric drill.



Precaution on wall mounting

If the wall is build of plaster or brick, or if the building is a prefabricated one, you should place a wood plate having a thickness of about 2 cm on the wall. Otherwise, you may greatly damage the wall.

- 3) If the wall is built of concrete, it is hard to drive the screw. In this case, insert the bushing into the hole first and then insert the screw into the bushing. Fasten the screw securely.



Precaution on wall mounting

It is difficult to drive the screw directly into the concrete wall. Therefore, you should make a hole using an electric drill and insert the bushing into the hole first, and then insert the screw into the bushings. Driving the screw directly into the concrete wall without using an electric drill or not using the bushing may cause the fall down of the OfficeServ 12 system and breakdown of the system.

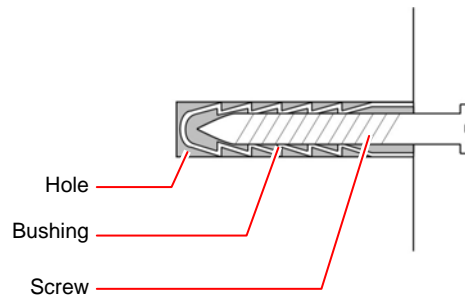


Figure 2.17 Wall Mounting (1)

- 4) Hang up the OfficeServ 12 system on the screws and check whether the system is steadily fixed. If the system is unstably fixed, re-fix it to be stable.
The diagram of installation is as below :

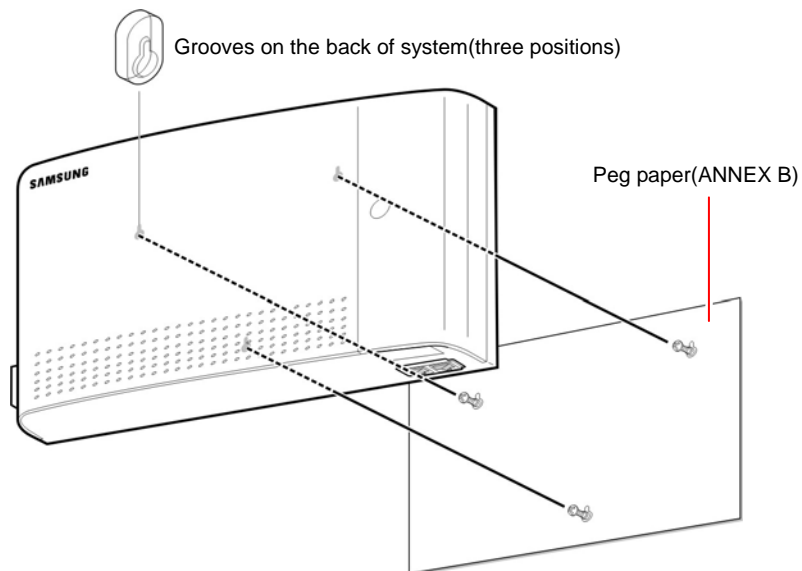


Figure 2.18 Wall Mounting (2)

4 Checking Options of System

The OfficeServ 12 system includes several kinds of optional hardware for memory backup selection, music source selection, etc.

4.1 Memory Backup Selection

The OfficeServ 12 system is provided with a memory backup circuit(Memory Backup Switch) employing 256 KB memory and a super capacitor for preparation of power failure such as a shutdown. A Memory Backup Switch locates on the upper right part of the front cover of the OfficeServ 12 system. The Memory Backup Switch is set to [OFF] by default. Turn the switch to ON after system programming(MMC). If the switch is not turned ON, programmed data is deleted in the case of power shortage.

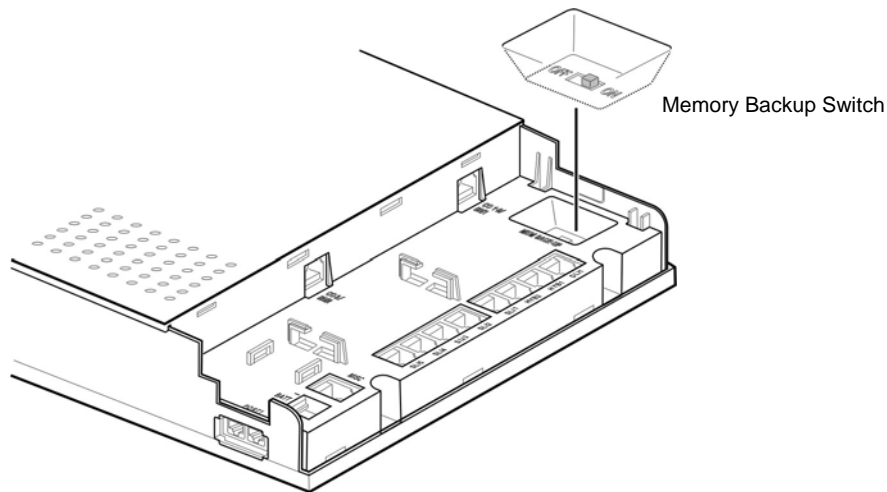


Figure 2.19 Location of Memory Backup Switch

4.2 Music Source Selection

You can connect an external music source such as a CD player or a radio to the MISC port of OfficeServ 12 system and use this music source for melody used in the OfficeServ 12 system.

A music source selection jumper is on the baseboard of the OfficeServ 12 system. You can select an internal or an external music source using this jumper. Refer to 'Chapter 3 Connecting Additional Equipments' in this guide for the detailed function of the music source selection jumper.

5 Software and Database Management

5.1 Software Management

The OfficeServ 12 operating software is stored on the 16 Mbytes of NAND flash memory which is mounted on the base board. The flash memory has the capability to store a backup system database in addition the operating software files.



NOTE

Downloading or uploading the customer database

When downloading or uploading the customer database to the NAND flash memory, name will not be displayed in the MMC 815. This is for reference only.

Using PCMMC over a LAN connection to the system the software files can be uploaded to the flash memory.

5.2 Database Management

The customer database of the OfficeServ 12 is stored in super capacitor backed RAM.

The Customer database can be saved to the flash memory using MMC 815 where it is stored as a single file. This save can be performed manually or the system can be programmed to save the database automatically at a designated time every day.

Using PCMMC the database can be downloaded from the system and stored on the PC or it can be uploaded from the PC to the system. The database uploaded from PCMMC is not stored in the OfficeServ 12 system but is loaded directly into active memory.

6 Testing Initial System Operation

6.1 Connecting Power Supply to the System

Check whether the OfficeServ 12 system operates normally before connecting cables to the ports when the system is initially installed.



- 1) Check whether the AC power switch is off.
- 2) When the switch is off, connect the power cord for the OfficeServ 12 system to an AC power supply unit.
- 3) Turn on the AC power switch. Check to see if a red LED blinks through the hole of front cover of OfficeServ 12 system.
- 4) Take the following steps when the red LED does not blink.
 - ① A red LED is on but does not blink.
 - Turn off the power and remove the trunk board. With removing the trunk board, turn on the power again and check to see if the red LED blinks.
 - If the red LED blinks without trunk board, the board is defective. Contact your retailer from whom the OfficeServ 12 system was purchased.
 - If the red LED still does not blink, the baseboard is defective. Contact your retailer from whom the OfficeServ 12 system was purchased.
 - ② A red LED is not on at all.
 - Remove the power plug and inspect the AC fuse(F1 fuse) after removing the cover of the OfficeServ 12 system.
 - If the fuse is normal, check the power supply and output voltage.
 - If the red LED is still off and there are no other problems, contact your retailer from whom the OfficeServ 12 system was purchased.

6.2 Trunk Line and Station Line Basically Assigned



- 1) After checking all the ports, the CPU stores the result values as basic installation environment values.
- 2) The trunk number is assigned starting from 71 to 74, and a station number is assigned from 21 to 28.
CO3/BRI2 line(2 channels) can be substituted for two station lines for ISDN phones.

The numbers assigned to the ports of OfficeServ 12 system are following :

Table 2.7 Port and assigned number

Port	Number
Trunk port	CO1.2/BRI1 : 701~702
	CO3/BRI2 : 703
DLI port(1)	201
HYB1 port(1)	202
HYB2 port(1)	203
SLI port(1~5)	204~208



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CHAPTER 3

Connecting Additional Equipments

This chapter describes various equipment that can be additionally installed on the OfficeServ 12 system.

1 Connecting MOH/Background Music

You can select an internal music source or an external music source by moving a jumper within the OfficeServ 12 system. Various media such as a CD player and a radio can be used as the external music source.

You can program the OfficeServ 12 system such that music can be received by the system during conversation over a trunk or a station. In this case, when the MOH(Music-On-Hold) button of the digital key telephone is pressed, the system sends tone or internal music to a trunk or a station(trunk : MMC 408, station : MMC309). In addition, a digital phone can be served with an external music source or an internal music source as a background music(MMC 308). An external music source can be used after sequentially following the steps below.



- 1) Remove the side cover and the front cover from the OfficeServ 12 system.
A small jumper(MOH) is provided at the lower right side of the baseboard.
You can select an internal(INT) music source or an external(EXT) music source by moving this jumper.

- 2) The jumper is set [INT] by default. To use an external music, set the jumper to [EXT].

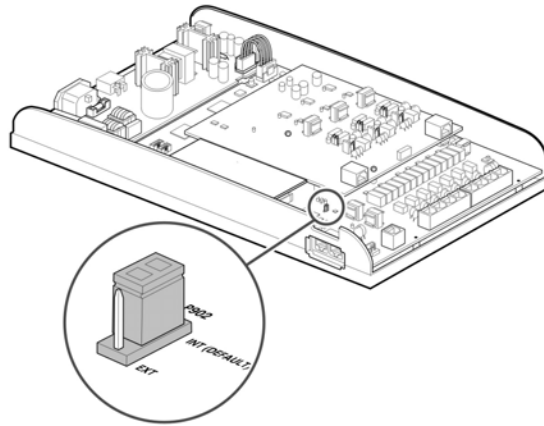
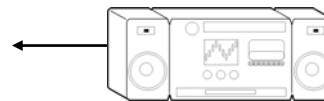


Figure 3.1 MOH Jumper Setting

- 3) Connect an external music source(such as CD-ROM, radio) to the music source pins of the MISC port.
- 4) Refer to the following table showing the arrangement of modular jack pins of the MISC port when you use the music-on-hold/background music feature.

MISC(RJ-11(6pin) Modular Jack)	
Pin number	Features
1	External Page
6	
2	General-Purpose Dry contact
5	
3	Music source
4	

Figure 3.2 MOH Device Connection



2 Connecting External Paging

The OfficeServ 12 system is equipped with an interface for external paging. It can be connected to customer-provided paging equipment. The interface is designed to match 600 ohm and an impedance matching transformer may be required if the impedance of the paging equipment is not 600 ohm.

Using one pair of twisted wires, connect customer-provided paging equipment to the external page pins of the MISC port.



- 1) Connect an external paging equipment to the external page pins of the MISC port.
- 2) Assign page zone number and select the number of member(MMC 605).
- 3) The following table shows the arrangement of pins of the modular jack in the case of connection of an external paging.

MISC(RJ-11(6pin) Modular Jack)	
Pin number	Features
1	External Page
6	
2	General-purpose dry contact
5	
3	Music source
4	

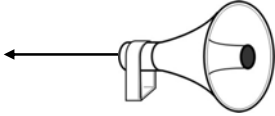


Figure 3.3 External Paging Device Connection



Do not directly connect an external paging equipment to a commercial AC power supply.

It can cause immediate breakdown of the system and a fire.

3 Connecting Common Bell

Common Bell is a function of making a group of phones simultaneously ring when there is an incoming call, by assigning a bell to the group when designating the group.

If you connect a common bell to the general-purpose dry contact pins of the MISC port of the OfficeServ 12 system, the common bell can receive a call signal as if it is one of the stations. You can select a continuous bell or an interrupted bell using the system program(MMC 204). When an interrupted bell is selected, a trunk call signal(1-second ON/2-second OFF) should be designated.

After connecting a common bell, you can designate a station group through system programming(MMC 601) using a common bell code.



NOTE

You can use a common bell as an object receiving a call from a particular direct trunk.

A relay controlling a common bell is used with low voltage and low current so that the common bell can be used under the conditions of 5Vdc and 40mA only.



- 1) Connect a common bell to the general-purpose dry contact pins of the MISC port.
- 2) Set a common bell controlling method to a continuous type or an interrupted type (MMC 204).
- 3) Assign the common bell to a particular station group(MMC 601).
- 4) Designate the station group where common bell is included as an object which receives a call from a particular direct trunk.

- 5) The following table shows the arrangement of pins of the modular jack in the case of connection of a common bell.

MISC(RJ-11(6pin) Modular Jack)	
Pin number	Features
1	External Page
6	
2	General-purpose dry contact
5	
3	Music source
4	

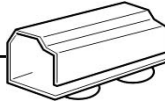


Figure 3.4 Common Bell Connection



Do not directly connect a common bell to a commercial AC power supply.

It can cause immediate breakdown of the system and a fire.

4 Connecting Wireless LAN AP (WBS24)

When the cable with two twisted-pairs connecting the OfficeServ 12 and the WBS24 has the common characteristics, the OfficeServ12 System's wireless LAN offers good performance.

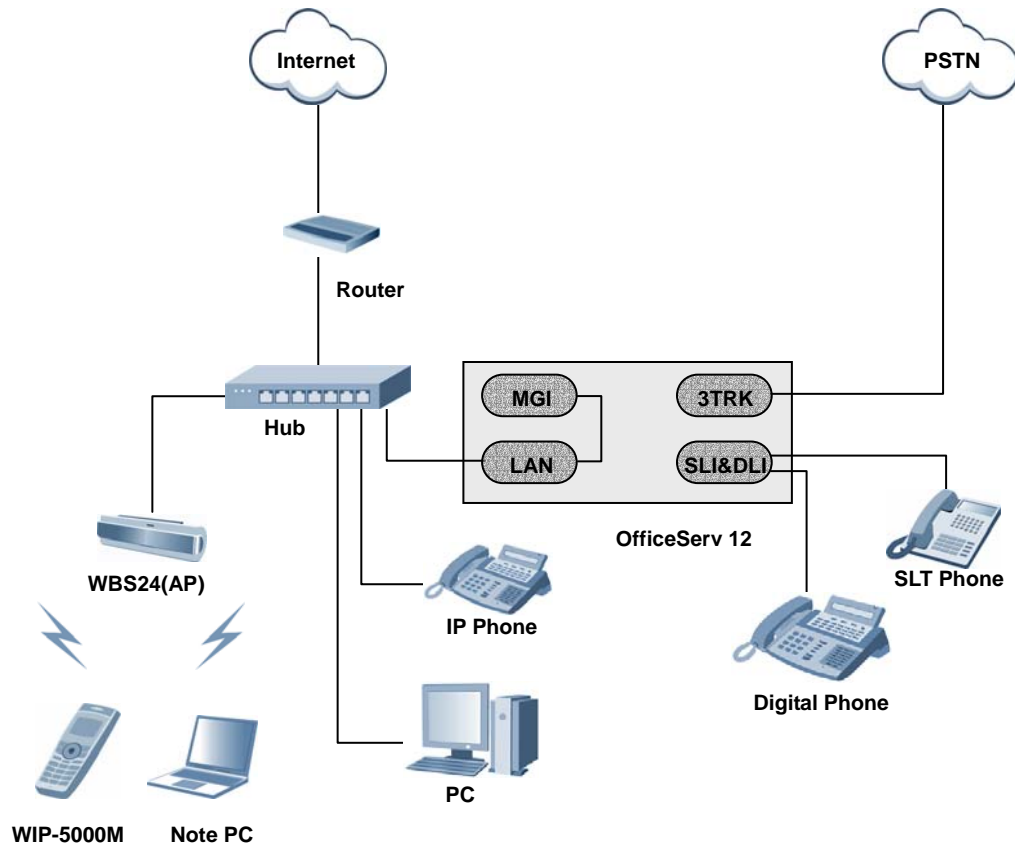


Figure 3.5 LAN and WLAN AP connection (Using Hub)

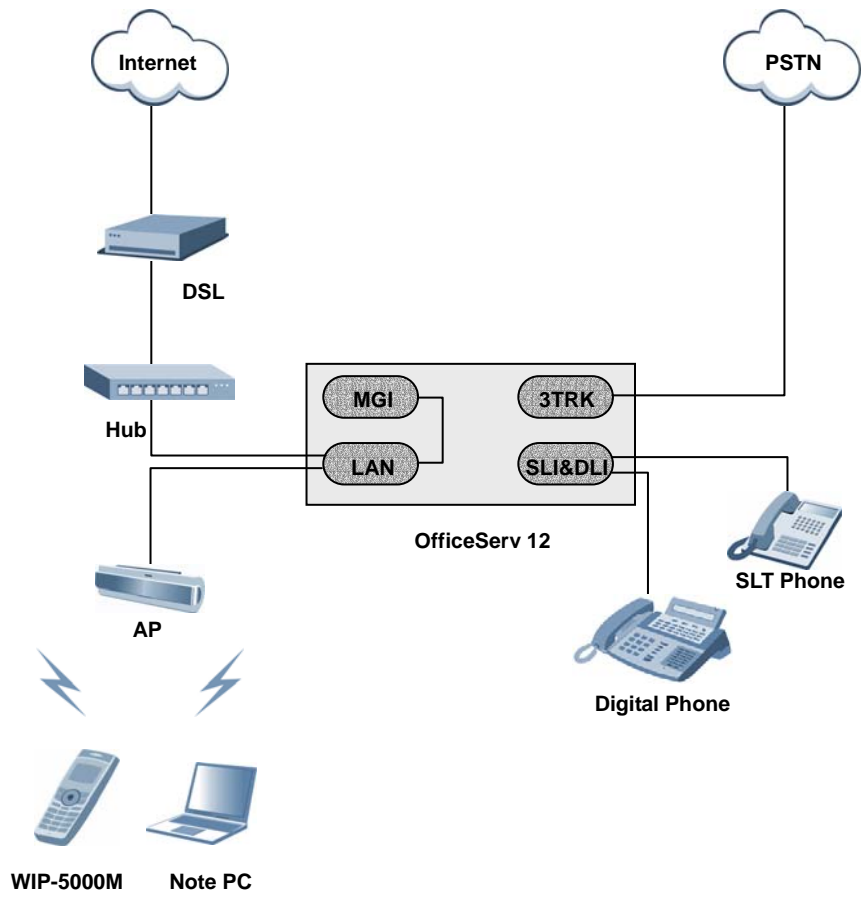


Figure 3.6 LAN and WLAN AP connection (Using DSL)

4.1 Setting the System DB

Before using the WIP-5000M terminal on the OfficeServ 12 System, appropriate values for the following items must be set in accordance with the operating environment, using the MMC program.

4.1.1 Setting the System ID

System ID is used internally in the system. System ID is an authentication parameter used in the user identification procedure when registering a WIP-5000M mobile phone to the wireless LAN system. The default value '00000' must be modified to another value(at most 5 characters long) using the MMC 845 program, to activate the wireless LAN.

4.1.2 Setting the Network ID

All terminals used in the wireless LAN shall have the Network ID set for access. Scanning of this value is always possible at a general terminal, and this value can be modified to random characters for system identification when managing the system. The default value 'WBS24' can be modified to another value(at most 6 characters long) using the MMC 845 program.

4.1.2 Setting the WBS24

The wireless LAN Access Point, or the WBS24, must be activated to employ the wireless LAN. For voice service only, enter the SECOND WBS IP of the MMC845, and use the default values of the WBS24.

However, to offer a wireless data service, the IP Address, Netmask, Gateway, and DNS, which are effective in the Intranet or Internet network, must be set at the Network Configuration DB for the WBS24

The default value may be modified to an environment with less interference by verifying the interference between cells for each WBS24.

**Caution when setting the WBS24 SECOND IP**

To use the Internet network, the first three digits of the IP assigned to the WBS24 and the first three digits of the SECOND WBS IP of the WBS24 must be identical. If the IP assigned to the WBS24 and the Station is 168.219.149.xxx, then the SECOND WBS IP of the WBS24 shall be 168.xxx.xxx.xxx.

4.1.3 Assigning a terminal IP

Before registering a WIP-5000M phone, an effective IP address shall be assigned to the WIP-50000M phone using the MMC 848 program. This IP address shall be assigned for each phone or terminal.

Although this IP address may not be relevant when not using the data service, assign an effective IP address for later use of both voice and data services.

4.1.4 Terminal Register Authorization

A wireless LAN terminal shall be registered at the system DB in order to be used for the OfficeServ 12 system. After authorizing the terminal register through the MMC 849 program, register the terminal following the registration procedure. The password used for entering the register authorization menu can be changed through the MMC 849 program, along with the previous password used for the OfficeServ 12 system. In addition, the WEP(Wired Equivalent Privacy), an encryption method for the wireless LAN, is used to maintain data confidentiality in the wireless environment.

Execute the MMC 849 program for authorizing a terminal register in order to register a terminal to the system. Once the terminal registration is complete, cancel the register authorization to restrict the registration of other terminals.

4.2 Registering / Clearing the WIP-5000M

The WIP-5000M phone must be registered to the system to be used in the OfficeServ 12 system Wireless LAN. This section introduces the procedures for registering and clearing the register of a phone.

4.2.1 Registering a WIP-5000M

Register a WIP-5000M phone following the instructions below.

- 1) Confirm if the system DB items are set according to the 'Setting the System DB' section of this chapter.
- 2) Register the WIP-5000M phone at the register menu.
Refer to the 'WIP-5000M User Guide' for the register procedure.
- 3) The Network ID shall be entered correctly during the WIP-5000M register procedure. Especially, the User ID and Password shall be identical to that of the system. If an error occurs during execution of register procedure, check the system DB settings and repeat the procedure above.
- 4) An extension number will be assigned to the WIP-5000M upon completion of the terminal register.

4.2.2 Clearing a WIP-5000M

Where theft or breakage of a WIP-5000M station causes a new terminal to be registered, registration of the previous terminal shall be deleted. The clearing procedure for the WIP-5000M is described below.

4.2.3 Clearing from the System

To clear the WIP-5000M in use, which is within the wireless LAN service area, set the normal mode through the system MMC.

If the terminal is not within the service area or is not in use, delete the terminal's registration DB in the system using the forced mode through the MMC system.

4.2.4 Clearing from the WIP-5000M

The terminal's registration DB may be deleted from the WIP-5000M within the wireless LAN service area. Refer to the 'WIP-5000M User Guide' for termination procedure in detail.

5 Connecting Programming PC

The OfficeServ 12 can be programmed with a PC equipped with DPAP-PCMMC connected to the LAN port1. 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 12 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 12 system and the programming PC is configured as shown below.

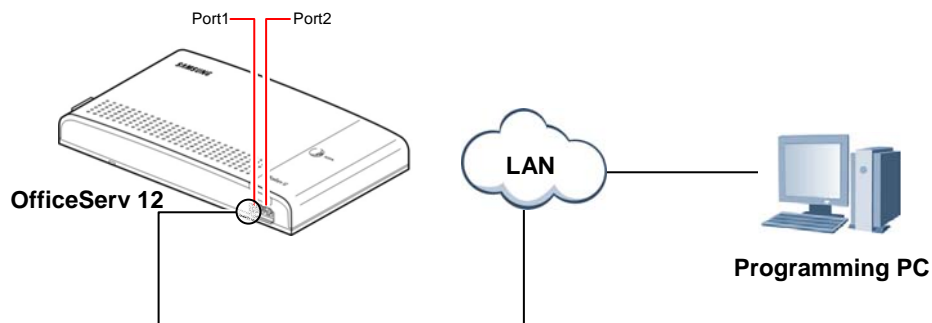


Figure 3.7 Programming PC Connection



Connecting the Programming PC to the LAN port1.

PCMMC PC should be connected to the LAN port1 of the OfficeServ 12 system.

6 Connecting Voice Mail/Auto Attendant

If you connect voice mail or automatic attendant to a corresponding circuit of a OfficeServ 12 system, the common bell can receive a call signal as if it is one of the stations.

Set a port in [System Programming 207(MMC 207) Voice Mail/Auto Attendant Port Setting] and set necessary parameters in [System Programming 726(MMC 726) Voice Mail/Auto Attendant Option Setting].

The following table shows the arrangement of pins of a modular jack in the case of connection of a voice mail/auto attendant.

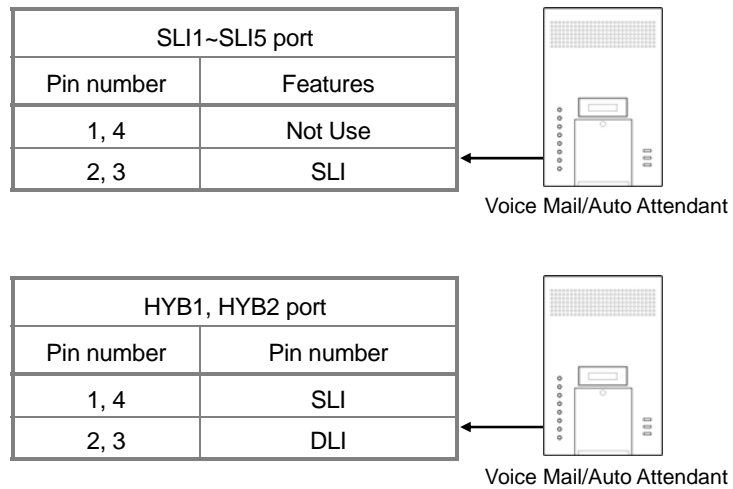


Figure 3.8 Voice Mail/Auto Attendant Connection

7 Connecting Door phone

Connect a Door-Phone Interface Module(DPIM) to a DLI port of your choice using a pair of #24 AWG cables or a pair of #26 AWG cables. Next, Connect to the DPIM to a door phone using another pair of #24 AWG cable or #26 AWG cables.

Refer to '3.5 Cabling' section of the 'Chapter 2 Installing the OfficeServ 12 System' of this guide for connection between DPIM and a port.

If you want to use automatic door lock release, connect the LOCK port of the DPIM to the door lock release.



Door phone Usage

Use only a Samsung 4-line phone door phone for this feature, which you can purchase separately.



Precaution on connecting Door phone

- Do not directly connect the LOCK port of DPIM to a commercial AC power supply. It may cause immediate breakdown of the OfficeServ 12 system and a fire.
- Connect a DPIM to any DLI port only after connecting a door phone to the DPIM.
- The LOCK port of DPIM is standardized so that it is used only for controlling a low voltage relay. Standard values are 5Vdc and 40mA.

The following table shows the arrangement of pins of a modular jack in the case of connection of door phone and door lock release.

Using one pair of modular cables, connect each DPIM module to the DLI port of your choice and connect a door phone or a door lock release to the DPIM.

The following diagram shows an example of connecting DLI1 port and DPIM.

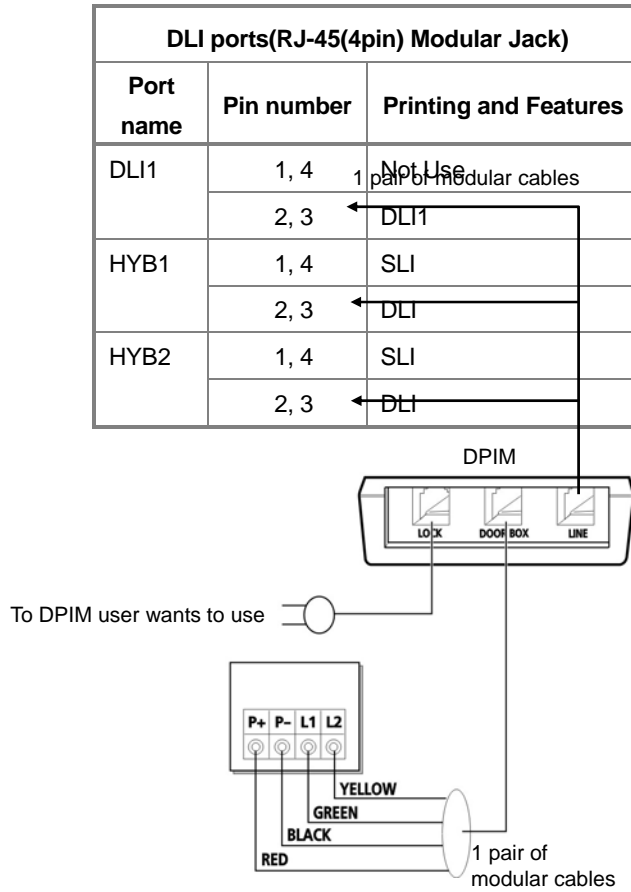
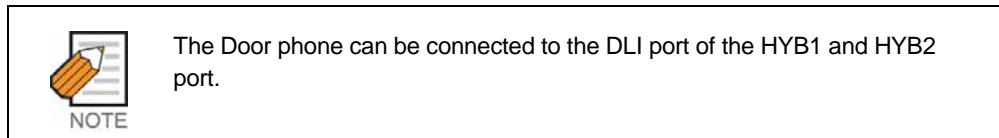


Figure 3.9 Door phone Connection





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ANNEX A

Troubleshooting

This annex describes the problems which may occur during using the OfficeServ 12 system and the solutions to handle them.

During use of the OfficeServ 12 system, unexpected accidents can occur, and the system may not properly function. This situation may result from actual serious fault in the system, but there are many cases where such a situation can be solved by taking simple steps.

If the problem persists even after you take the steps described in this manual, contact your retailer from whom OfficeServ 12 system was purchased and refer servicing to qualified service personnel.



Samsung recommends to contact your retailer from whom the OfficeServ 12 system was purchased and refer servicing to qualified service personnel if you are not familiar with using the system even when the problem is described in this guide.

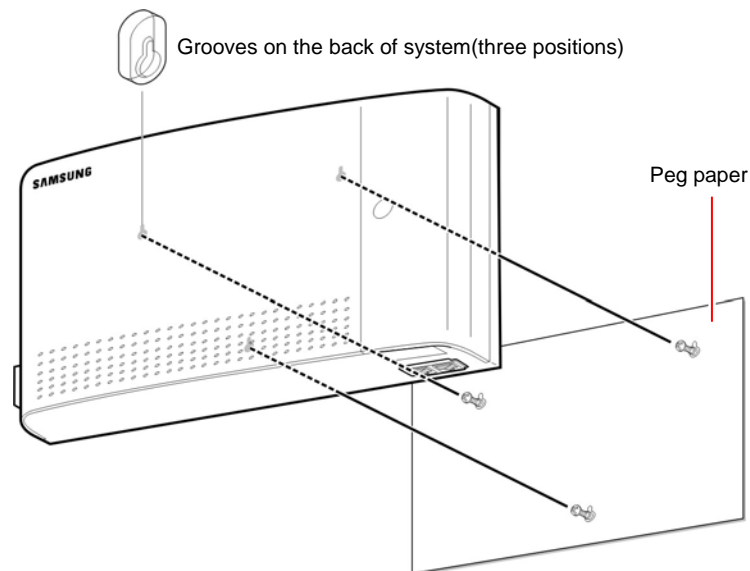
Table A.1 Troubleshooting

Problem	Cause	Action
OfficeServ 12 system is not powered ON.	<ul style="list-style-type: none"> - Fault in power code connection - Fault in the power supply unit 	<ul style="list-style-type: none"> - Check connection state of the power cable. - Check the fuses(check the AC input and the DC output) - Check whether the red LED under the front cover blinks.
Nothing is displayed on LCD of phone.	<ul style="list-style-type: none"> - Fault in OfficeServ 12 system connection 	<ul style="list-style-type: none"> - Check whether the modular jack is removed. - Check whether the connection cables short-circuit
Phone does not operate.	<ul style="list-style-type: none"> - Fault in the phone - Fault in data communication 	<ul style="list-style-type: none"> - Replace the phone with another one and check whether the new one operates. - Check the ports to find out whether voltage output is normal.
Volume control does operate.	<ul style="list-style-type: none"> - Fault in the phone 	<ul style="list-style-type: none"> - Replace the phone with another one and check whether the new one operates.
Ringer does not operate.	<ul style="list-style-type: none"> - Fault in the phone - Fault in the SLI ports when using the analog phone 	<ul style="list-style-type: none"> - Replace the phone with another one and check whether the new one operates. - Check ring output if the problem still exists with respect to another analog phone.
Tone is not heard.	<ul style="list-style-type: none"> - Fault in the phone - Fault in talking line connection 	<ul style="list-style-type: none"> - Replace the phone with another one and check whether the new one operates.

ANNEX B

Peg Paper

The next page provides the peg paper necessary to hang up the OfficeServ 12 system on the wall. You may use a general A4 size paper for the peg paper. Refer to the '3.8 Wall Mounting' section of the 'Chapter 2 Installing the OfficeServ 12 System' of this guide.



Peg Paper

ABBREVIATION

A

AA	Auto Attendant
AC	Analog Current
AOM	Add On Module
AP	Access Point

B

BRI	Basic Rate Interface
-----	----------------------

C

CA	Call Agent
CID	Caller ID
CO	Central Office

D

DCS	Digital Communication System
DGP	Digital Phone
DID	Direct Inward Dialing
DISA	Direct Inward System Access
DLI	Digital Line Interface
DND	Do Not Disturb
DPIM	Door Phone Interface Module
DTMF	Dual Tone Multi-Frequency

G

GK GateKeeper

H

HYB Hybrid

I

ID Identification

IP Internet Protocol

ISDN Integrated Services Digital Network

ITP IP Telephone

K

KDB Keypad Daughter Board

L

LAN Local Area Network

LCD Liquid Crystal Display

LCP Local Control Processor

LCR Least Cost Routing

LED Light Emitting Diode

M

MCP Main Control Processor

MGI Media Gateway Interface

MMC Man Machine Command

MP Metering Pulse

MPD Metering Pulse Detection

MOH Music On Hold

O

OHVA Off-hook Voice Announcement

P

PBX	Private Branch eXchange
PCMMC	PC based Man Machine Communication
PRI	Primary Rate Interface
PRS	Polarity Reverse Detection
PSTN	Public Switched Telephone Network

Q

Q-SIG	Q-Signaling
QoS	Quality Of Service

R

RAS	Registration, Admissions and Status signaling
-----	---

S

SIO	Serial Input and Output
SLI	Single Line Interface
SMDR	Station Message Detail Recording
SOHO	Small Office Home Office

T

TRK	Trunk
-----	-------

U

UA	User Agent, or Universal Answer
UCD	Uniform Call Distribution

V

VoIP	Voice over Internet Protocol
VMS	Voice Mail System

W

WEP	Wired Equivalent Privacy
WLAN	Wireless Local Area Network
WLI	Wireless LAN Interface

OfficeServ 12

Installation Guide

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