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# Installation

This section describes how to install device for using wireless LAN services by inter-working with the OfficeServ system. This chapter also describes how to install the WLI board to each system, install WBS24, set the system data base for wireless LAN services, register WIP-5000M, and to position WBS24.

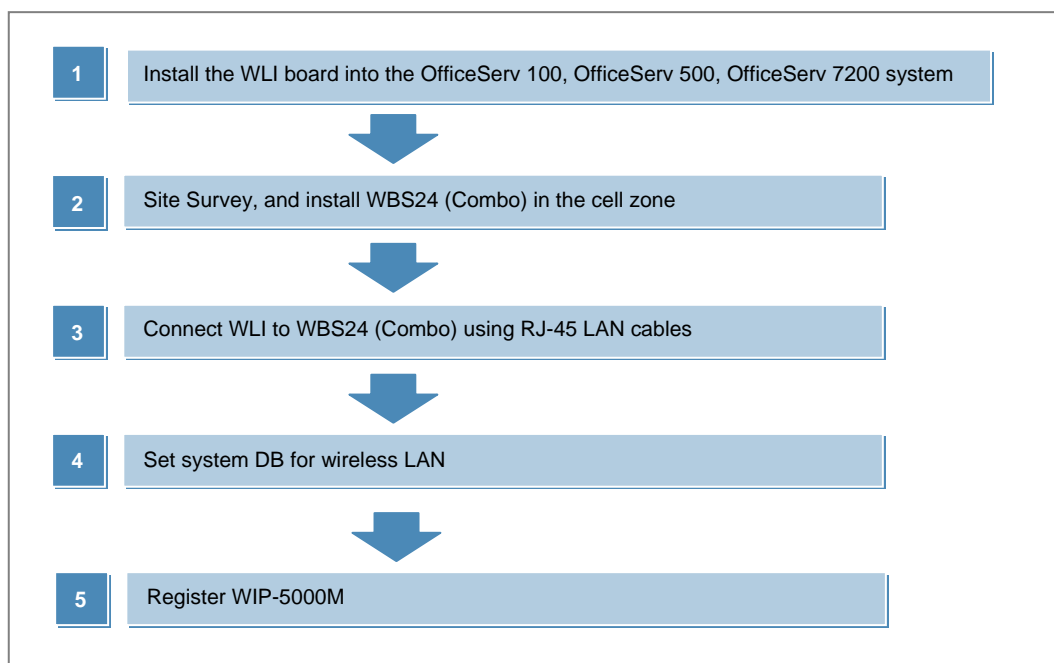


## Installation

Install this product when the product turns off. This is to prevent electrocution and fire.

## 1 Installation Procedure

Follow the steps below to install WBS24 Combo by inter-working with the OfficeServ system:



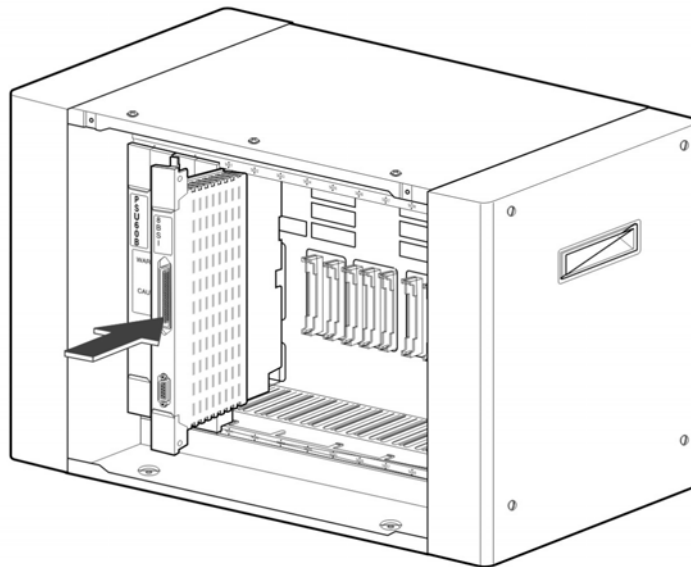
## 2 Mounting WLI

This section describes how to mount the 8WLI, 4WLI, and S4WLI boards on the system.

### 2.1 Mounting 8WLI

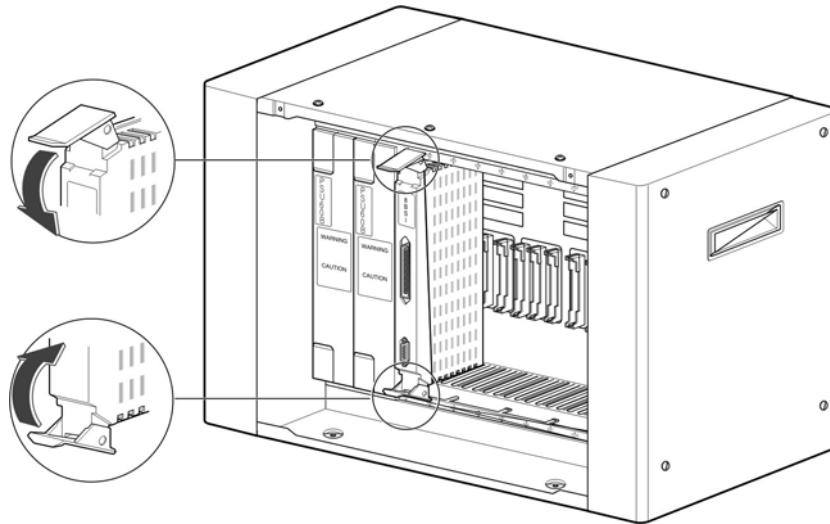
Follow the steps below to mount the 8WLI board on the OfficeServ 500 system:

- 1) Turn off the power of the OfficeServ 500 system, and detach the front cover of the OfficeServ 500 system using a screwdriver.
- 2) Mount the 8WLI board on one of Slots 1 to 3 in the OfficeServ 500 cabinet. There are guard rails attached at the top and bottom of the slot to fasten the board. Using these guard rails, carefully push the board into the system.



**Figure 2.1 Mounting the 8WLI Board (1)**

- 3) Firmly press the center on the front panel of the board with both hands to fully insert the 8WLI board into the main board connector.
- 4) Pull down the lever at the top of the board and pull up the lever at the bottom of the board to fasten the board into the slot.



**Figure 2.2 Mounting the 8WLI Board (2)**



NOTE

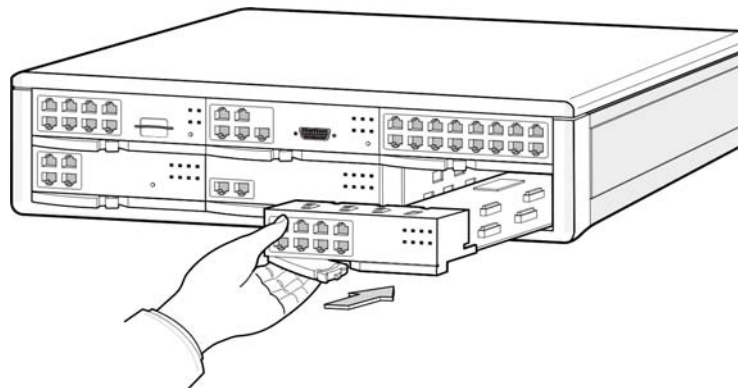
#### **Mounting 8WLI**

The 8WLI board can be mounted only in the slot 1 to slot 3 of the OfficeServ 500 system.

## **2.2 Mounting 4WLI**

Follow the steps to mount the 4WLI board on the OfficeServ 7200 system:

- 1) Turn off the power of the OfficeServ 7200 system.
- 2) Mount the 4WLI board on one of Slots 1 to 5 in the basic or extension cabinet of OfficeServ 7200. Insert the 4WLI board into the guide rail of the slot, and carefully push the board into the system.



**Figure 2.3 Mounting 4WLI (1)**

- 3) Firmly press the lever on the front panel of the board to fully insert the board into the main board connector.

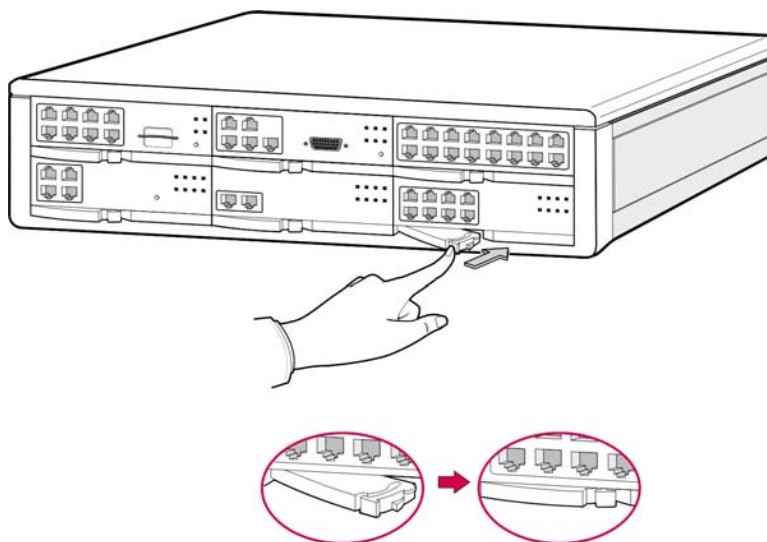


Figure 2.4 Mounting 4WLI (2)



NOTE

#### Mounting 4WLI Board

The 4WLI board can be mounted only on the OfficeServ 7200 system. For information on the system such as slots, refer to the 'OfficeServ 7200 Installation Guide' or 'OfficeServ 7200 General Description Guide'.

## 2.3 Mounting s4WLI

Follow the steps to mount the S4WLI board on the OfficeServ 100 system:

- 1) Turn off the power of the OfficeServ 100 system.
- 2) Mount the S4WLI board into one of the Universal Slots 1 to 3 in the main cabinet. There are guard rails attached at the top and bottom of the slot to fasten the board.
- 3) Firmly press the center of the board to fully insert the card.



NOTE

#### Mounting S4WLI Board

The S4WLI board can be mounted only in the slot 1 to 3 of the main universal slots.

## 3 Selecting Installation Location for WBS24

This section introduces the cell where WBS24 will be installed, and describes the data rate affected by the terminal location in an office.

### 3.1 Cell Overview

The figure below illustrates the wireless transmission range of WBS24. Theoretically, the range of a cell is represented as a circle, but in reality, the shape may be altered depending on the surrounding environment such as the location of WBS24 or the surrounding structures. Typically, the boundary of a cell indicates the frequency range of WBS24, however actually it should be perceived as a wireless service range and a boundary where hand-off to another cell can occur. WIP-5000M is always connected to one WBS24 within the cell zone. Even if the WIP-5000M is in an overlapped range between cells, the WIP-5000M maintains communications with one WBS24.

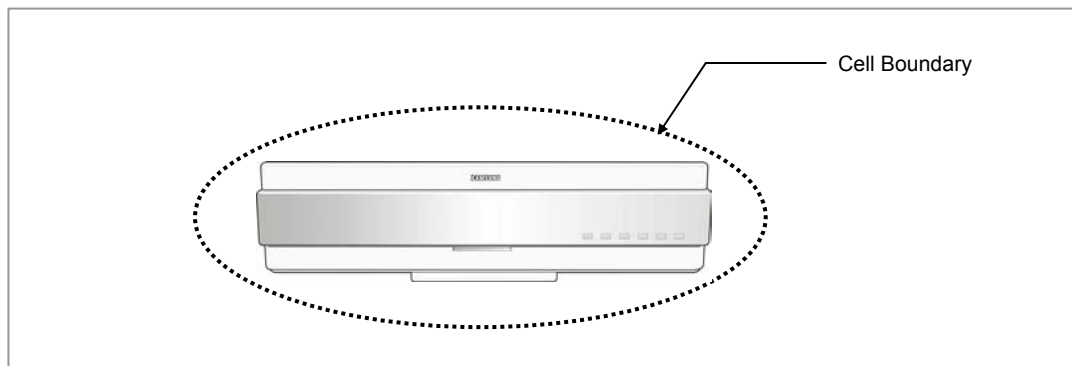


Figure 3.1 Cell Zone of WBS24

#### Single Cell

Typically, only one cell configures environments such as wireless terminals for use in homes. Single cells are independent service areas; thus, the cells do not affect one another. Configuration of single cells is illustrated in the figure below:

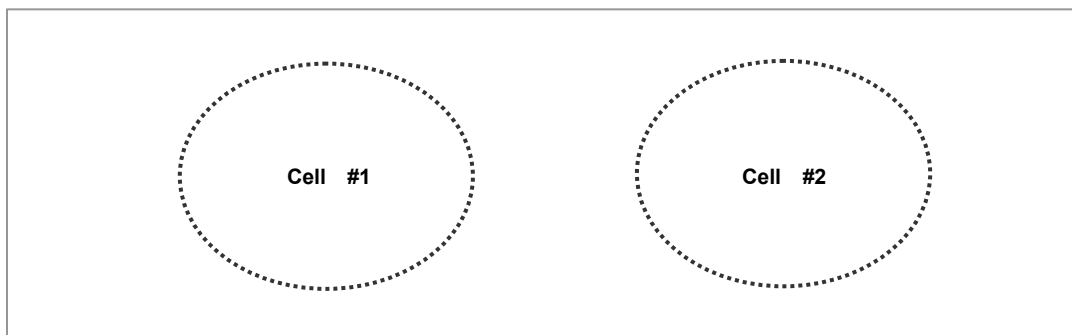
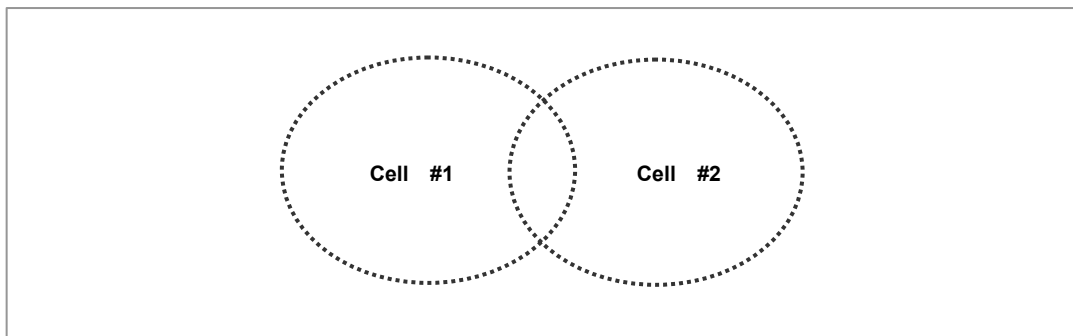


Figure 3.2 Single Cell Configuration

## Multiple Cell

The multiple cell type is an environment where more than one cell is overlapped, and where the service for the terminal in use can be maintained even while the terminal is moving among single cells.

The service areas of cells vary depending on the installation location of WBS24.



**Figure 3.3 Multiple Cell Configuration**

## Handover

In the multiple cell configuration, if the terminal moves to another cell, the terminal should receive services from the AP in the cell before moving to the cell. In such a case, the OfficeServ system enables the moving WIP-5000M to receive services from the WBS24 of the cell, and connects the WIP-5000M to the WBS24 that may be changed to a voice path connected to the system in order to enable voice calls continuously regardless of whether WIP-5000M moves to another cell or not.

## Location Register

By registering the current location of the terminal in a multiple cell environment, the system can easily transmit information to the terminal. Thus, the terminal registers its location in the system when it moves among different cells.



## 3.2 Data Rate Depending on Terminal Location

Data rate and speech quality vary depending on the terminal location in an office. Refer to Figure 3.4 and Table 3.1.

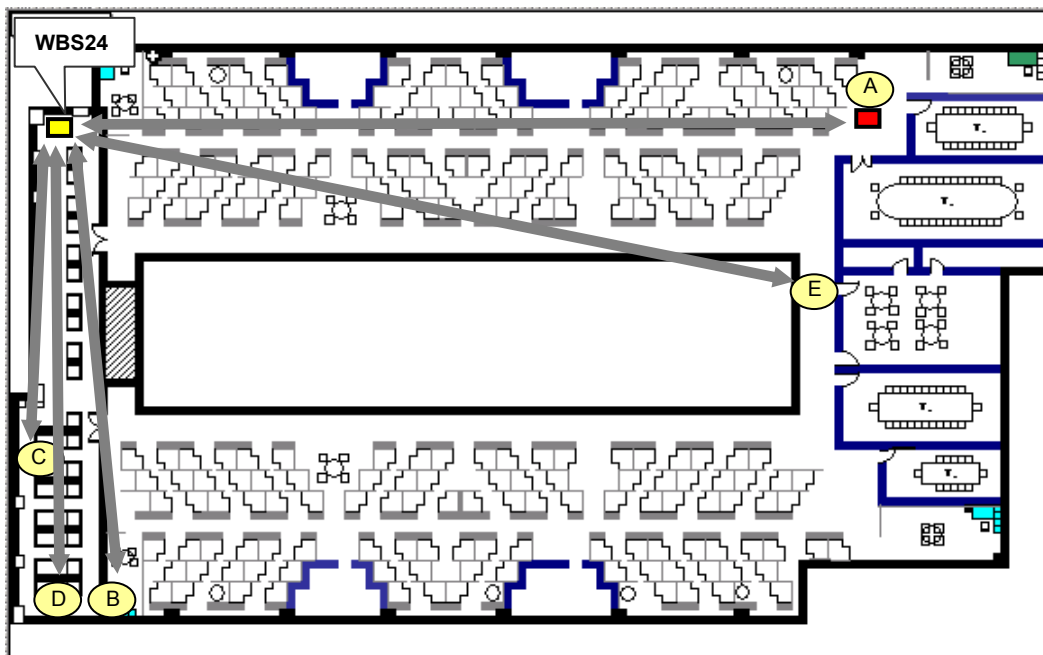


Figure 3.4 Data Rate Depending on Terminal Location

Table 3.1 Data Rate Depending on Terminal Location

No.	Terminal Location	Tx(Mbps)	Rx(Mbps)	Note
1	WBS24 ↔ Terminal (Closer distance: 20 cm)	3.97	3.04	-
2	Test location 'A'	3.52	3.05	-
3	Test location 'B'	3.97	3.04	-
4	Test locations 'C', 'D', and 'E'	Link Failure	Link Failure	Locations 'C' and 'D' have shields blocking signals



### NOTE

### Data Rate

Tx is the rate of data transferred from WBS24 to the terminal.

Rx may have different test results depending on the performance of the network board mounted on the terminal.

## 4 Deployment Process

This section describes how to deploy cells.

### 4.1 Cell Coverage

This is the first step of cell deployment. Required cell coverage should be set.

The cell designer must understand the service area set in the map and users' requirements, and should deploy cells taking account of the following:

- Building materials
- Business type
- Building size
- Number of building floors
- Height of the building
- Division of building floors

### 4.2 Cell Capacity

Determine the number of APs taking account of frequency bandwidth and voice traffic density in the selected area.

Density of user voice traffic in the service area where WBS24 is used is the most important factor of cell capacity design since WBS24 is focused on Voice Over WLAN(VoWLAN).

The number of required WBS24s is calculated based on data throughput. The formula is as follows. In this case, the user refers to a data user.

$$\frac{\text{Bandwidth} * \text{Number of user} * \text{Activity rate per user}(\%)}{\text{Efficiency}(\%) * \text{Association rate per WBS24}}$$

For instance, if the required data throughput is bidirectional data of 500 kbps for 100 users in 802.11b, the number of required WBS24s will be calculated as shown below:

$$\frac{(2 * 500\text{kbps}) * 100 * 25\%}{40\% * 11\text{Mbps}} = \frac{(1\text{Mbps}) * 100 * 25\%}{4.4\text{Mbps}} = \frac{25\text{Mbps}}{4.4\text{Mbps}} = 5.7 \cong \text{Six WBS24s are required}$$

Determine the number of APs taking account of the number of simultaneous calls.

If 27 simultaneous calls are required, the number of required WBS24s will be calculated as shown below. One WBS24 processes four simultaneous calls.

$$\frac{\text{Number of simultaneous voice calls}}{\text{simultaneous voice calls per one AP}} = \frac{27}{4} = 6.8 \cong \text{Seven WBS24s are required}$$

### 4.3 Cell Zone

Determine the number of WBS24s, and select the installation location.

The number of WBS24s can be calculated based on the cell coverage.

$$\frac{\text{The total service areas}}{\text{The coverage of AP}} = \frac{50\text{m} * 10\text{m}}{\pi * r * r} = \frac{500\text{m}^2}{3.14 * 30\text{m} * 30\text{m}} = \frac{500\text{m}^2}{300\text{m}^2} = 1.76 \cong \text{Two WBS24s are required}$$

\*  $\pi = 3.14$ ,  $r$  = Radius

### 4.4 Selecting the Installation Location of WBS24 and Setting RF Power

The designer can estimate the number of WBS24s by designing cell capacity and cell zone. After designing the cell capacity and cell zone, RF power should be set. To select the installation location of WBS24, measure network performance in several locations, and take into account of cell zone and performance. Plans for cell deployment must be made in advance to be aware of required cell capacity and cell coverage.

Follow the steps below to set RF power:

- 1) Select the installation location of WBS24, and set the RF power by referring to the known factors. In such a case, channel interference may occur if the distance between the WBS24s is too short. Consider the following:
  - Changes in the actual cell coverage by the RF power of WBS24
  - Signal attenuation caused by in-door obstructions
- 2) Select the installation location of WBS24, and set the RF power by using a desktop phone.

**Table 4.1 Signaling Level in WIP-5000M**

Quality	Call Quality(CQ)	Signaling Level(SL)
Good	92-40	72 - 43 (48-2b)
Poor	40-20	43 – 27 (2b – 1b)
Bad	20-0	27 – 0 (1b – 0)

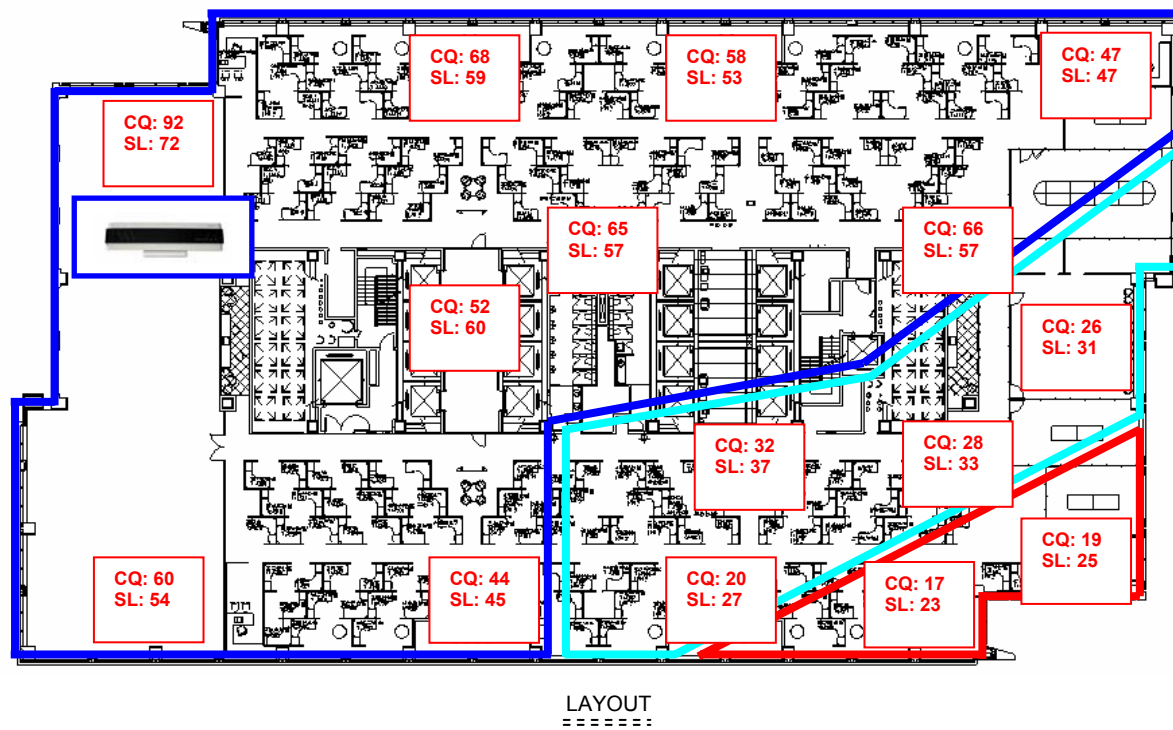


Figure 4.1 Size of Internal Cell

Table 4.2 Signal Attenuation by Internal Obstructions

Obstruction	Signal Attenuation [dB]
Floor or ceiling	30
Brick wall with a window	2
Office wall	6
Iron door in the office	6
Concrete wall	4
Iron door on a brick wall	12.4
Brick wall behind an iron door	3

### 4.4.1 Site Survey Tool

The OfficeServ 100 can be used as the WLAN site survey deployment tool:

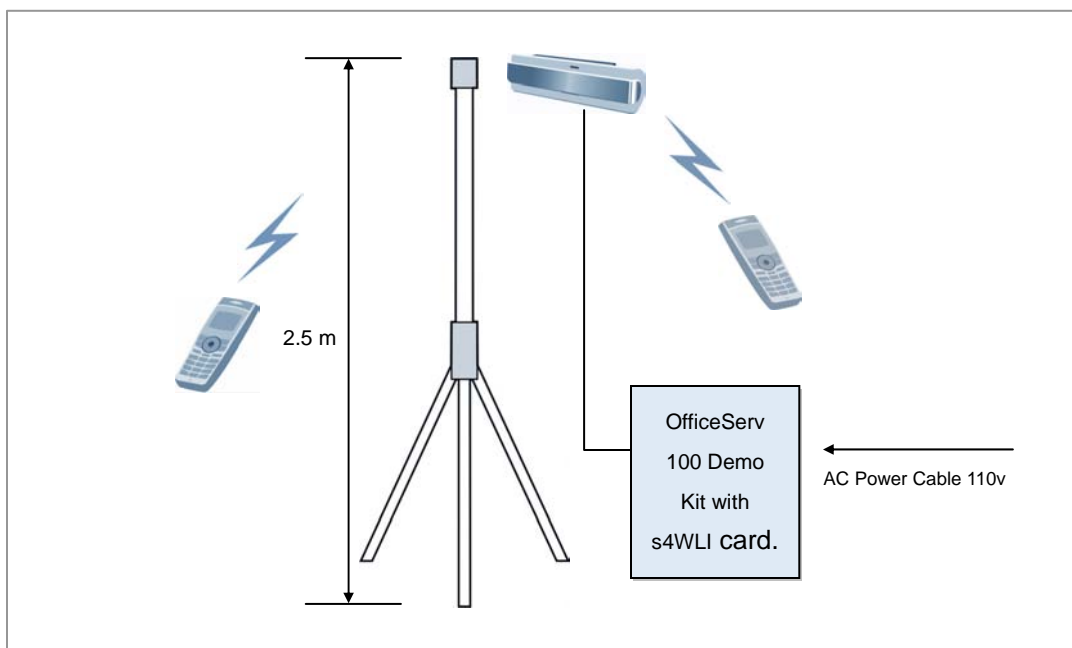


Figure 4.2 Cell Deployment

### Entering into the WIP-5000M Test Mode

For the test mode, press the [Menu] button of WIP-5000M while WIP-5000M is in the idle state, and press the [Hold], [\*], [#], [5] button in sequence. If WIP-5000M is busy, press the [♪], [#] button in sequence. Then, the following message will appear in the WIP-5000M LCD screen and you can continue making a call.

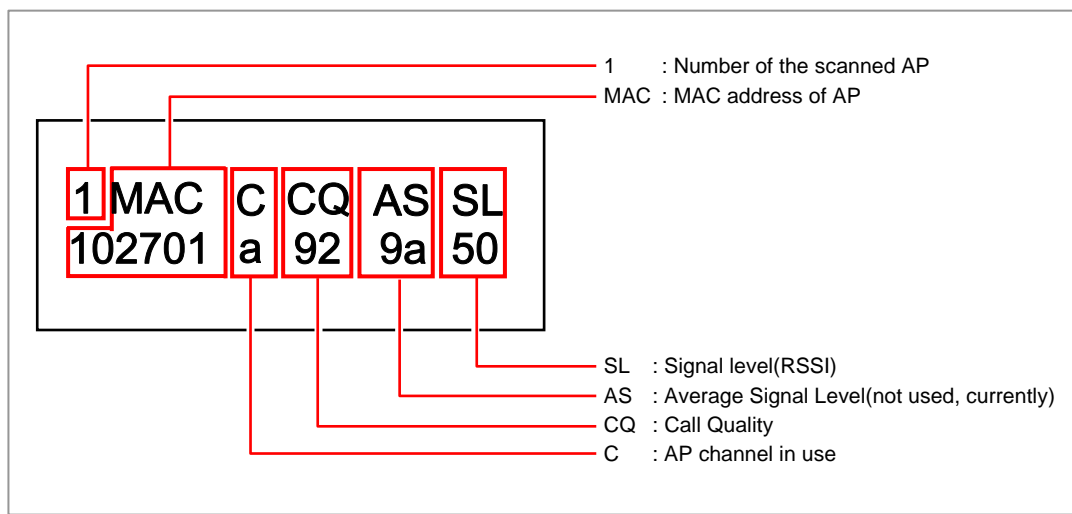


Figure 4.3 WIP-5000M Test Mode Screen



#### **After WIP-5000M Test**

After testing the SL(Signal Level) value, change WIP-5000M from the Test mode to the General mode.(If you enter ENDKEY once in the Test mode, it is converted to the General mode.) The data is updated every second.

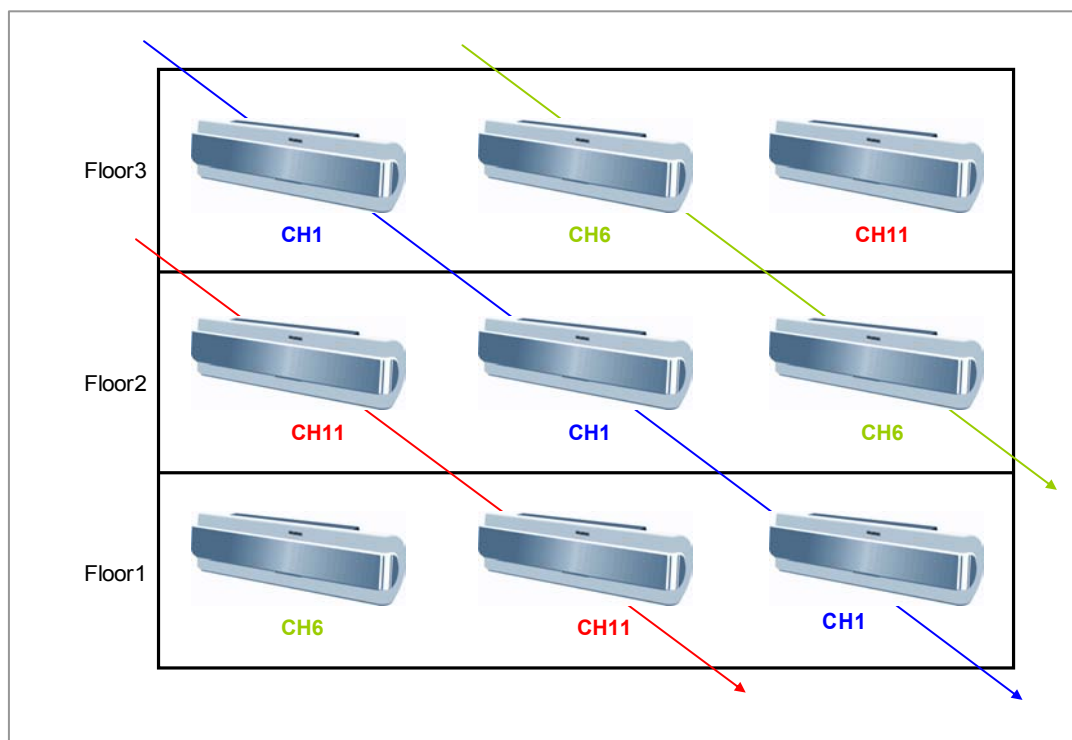
### **4.4.2 Cell Design Execution**

Perform the cell deployment as follows:

- 1) Mark the location of WBS24 on the site map.
- 2) Install WBS24. Set the test configuration.
- 3) Fasten the tripod around the wall and put WBS24 on it.
- 4) Enter into the Test mode of WIP-5000M.
- 5) Mark the CQ and SL value on the map, keeping apart from WBS24.
- 6) Mark a boundary line with the CQ and SL value marked on the map through WIP-5000M to make a cell.
  - When the distance between WBS24 and WIP-5000M is moved, read the CQ and SL value at each place.
  - When a designer measures the CQ and SL value, separate WIP-5000M from the body of the tester, and read the CQ and SL value for 2~3 seconds while stopped. To gain a correct SL value, at this time, the tester should always take the same pose.
  - Draw a boundary line in different types(e.g., solid line, dotted line) to avoid confusion. Since the line cannot be identified if copied, it is recommended not to use a highlighter.
  - In case of multi-floor building, recognize on which floor the WBS24 has been installed because signals of the cell on another floor can be interfered.
- 7) If the map is completed, check the CQ and SL value of an area overlapped with other adjacent cells. If the overlapped part of each cell is not appropriate, adjust the location of WBS24 or the WBS24 RF Power.
- 8) Determine the cell overlapping and coverage, considering the user's requirements as well as traffic density and use of the mobile phone at a special place(e.g., elevator, rest room).
- 9) The distance between APs should be at least 15 ft.

## 4.5 Channel Allocation

Channels should be assigned to minimize interference between cells. In the wireless specification 802.11b, there are only 3 non-overlapped channels available. The figure below shows the general channel allocation:



**Figure 4.4 Example of Sequential Channel Allocation 1**

- To design cells on the same floor, assign CH 1, 6, 11 to AP in sequence in order to minimize the interference between channels.
- At the same place of each floor, assign CH1, 6, 11 to AP in sequence in order to minimize the channel interference between adjacent floors.
- To design broader cells than the example above, make sure the sequence of channel allocation is on the extended line of the arrow as shown in the figure above in order to minimize the interference between channels.

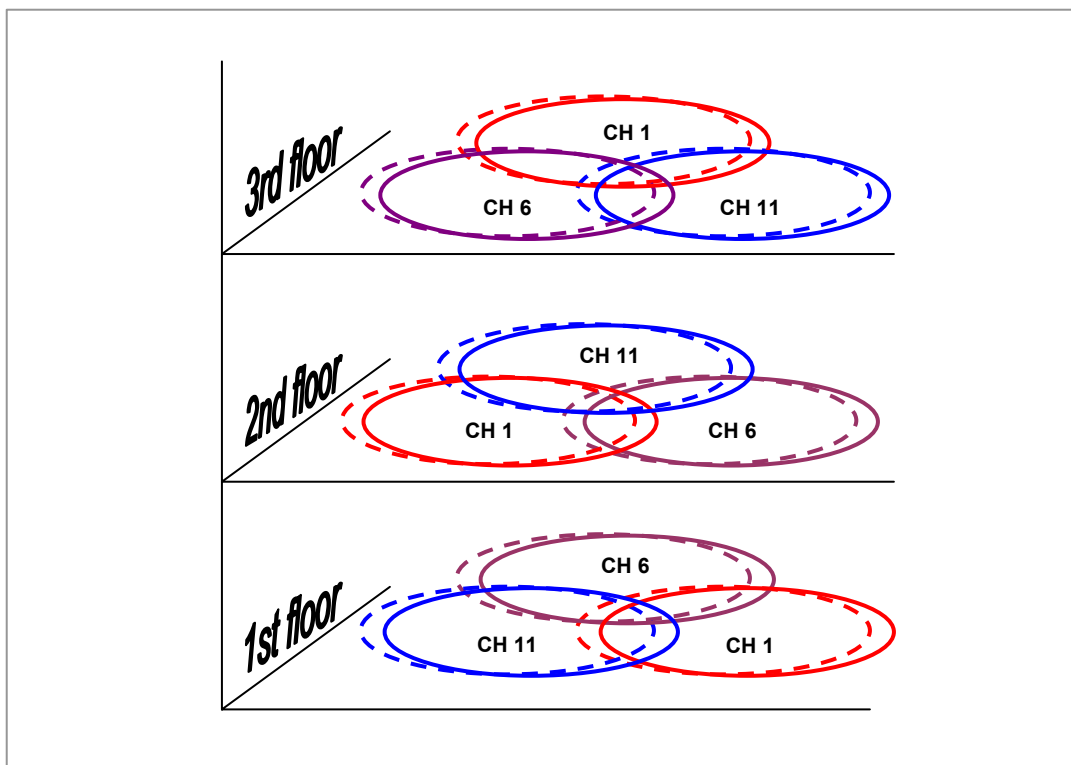


Figure 4.5 Example of Sequential Channel Allocation 2

The figure above illustrates the example of channel allocation for minimizing the interference between channels.

## 4.6 Restriction of Cell Design

This section describes the restriction of cell design.

- The OfficeServ system does not support a general commercial AP.
- Hand-off is enabled if WIP-5000M and WBS24 use the same IP subnet.
- The distance between WBS24s should be at least 5 m.
- The number of simultaneous call channel per WBS24 is as follows:
  - WBS24(Combo): 4 channels
- WBS24 uses an internal 2dBi Omni-directional antenna only.
- WIP-5000M does not support CTI (Computer Telephony Interface) packet related to calls.
- If the signal level is less than 46, WIP-5000M can perform hand-off.



## 5 Mounting WBS24

WBS24 Combo can be mounted on a wall surface or on a table at your option. The WBS24 must be mounted at upright position.

### 5.1 Mounting on a Concrete Wall

Prepare the following tools in advance when mounting WBS24 on a concrete wall:

- Electric drill, hammer
- Wall bracket
- Cross-tip screwdriver(6.5 mm)
- Two plastic anchors
- Two cross-tip screws
- WBS24

Follow the steps below to mount WBS24 on a wall surface:

- 1) Attach the <screw position diagram>, which ships with WBS24, on the wall where the WBS24 will be mounted.



NOTE

#### Marking Screw Position

If the <screw position diagram> is not available, press a sheet of paper against the bottom surface of WBS24, and mark the two positions of the screw hole.

- 2) Drill a hole at the 'screw position' illustrated in the <screw position diagram>. The hole is at least 35mm deep and 5.5mm wide, which will enable the plastic anchor to enter the hole easily.

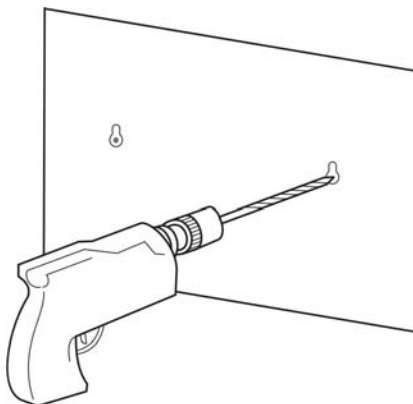
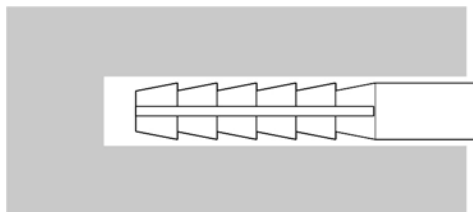


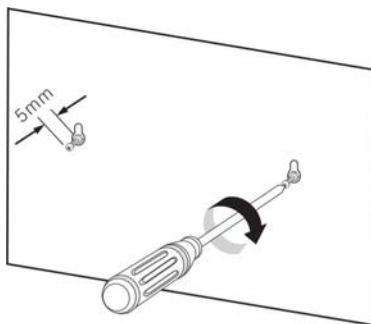
Figure 5.1 Mounting WBS24 on a Concrete Wall (1)

- 3) Detach the <screw position diagram> after drilling the hole.
- 4) Insert the plastic anchor into the hole using a hammer.



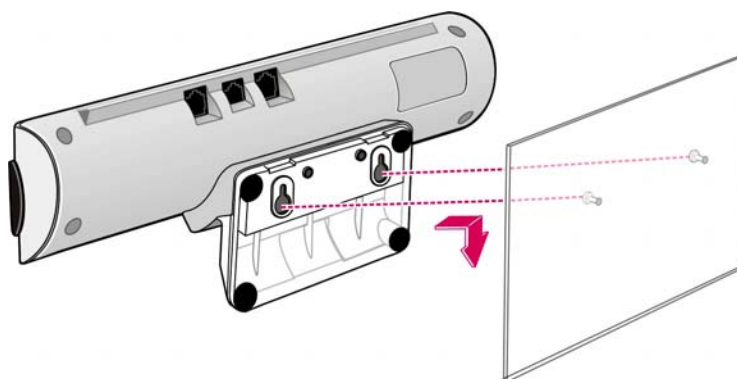
**Figure 5.2 Mounting WBS24 on a Concrete Wall (2)**

- 5) Insert a screw into the plastic anchor and tighten the screw with a cross-tip screwdriver. Do not fully tighten the screw, and leave a gap of 5 mm.



**Figure 5.3 Mounting WBS24 on a Concrete Wall (3)**

- 6) Two screw holes are located at the bottom surface of WBS24. With two hands, match the two holes of the WBS24 with the screws on the concrete wall, and pull the WBS24 downwards. For information on how to install a wall bracket into WBS24, [refer to Figure 5.5](#). Stand the support shown in [Figure 5.5](#) and install the support into WBS24 as shown in the figure below to mount WBS24 on a wall:



**Figure 5.4 Mounting WBS24 on a Concrete Wall (4)**

## 5.2 Mounting on a Table

Prepare the following tools in advance when mounting WBS24 on a table:

- Plastic support
- WBS24

Two holes that can be attached to the support exist on the bottom of WBS24. As shown in the figure below, firmly attach WBS24 to the support, and place the WBS24 on the table:

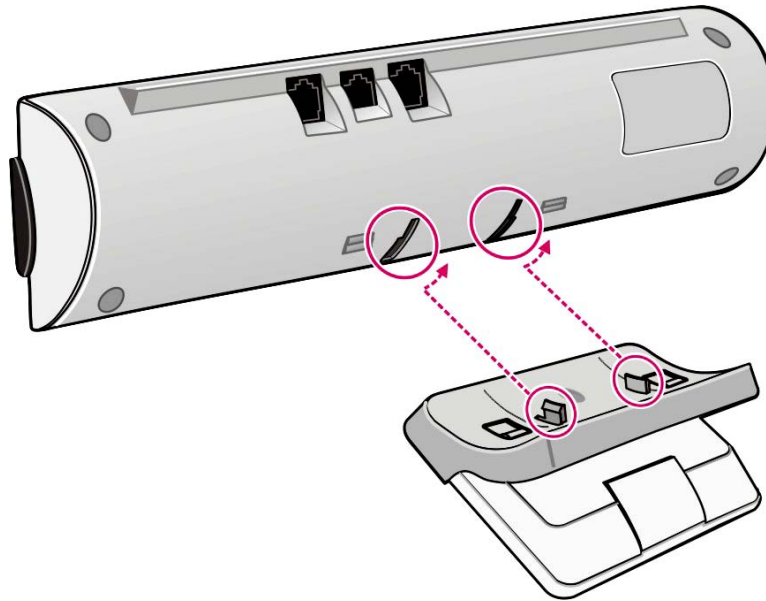


Figure 5.5 Mounting WBS24 on a Table



CAUTION

### Mounting WBS24 on a Table

- Do not mount WBS24 on an unstable table or on a table smaller than WBS24. This is to prevent the WBS24 from being damaged.
- Mount WBS24 in a place where any obstructions do not exist in front of WBS24. This is to prevent wireless services from being affected.

## 6 Connecting WBS24 Combo

This section describes how to connect WBS24 Combo to the 8WLI, 4WLI or S4WLI board.

### 6.1 Connecting 8WLI

- 1) Prepare two twisted-pair cables of the specification below:

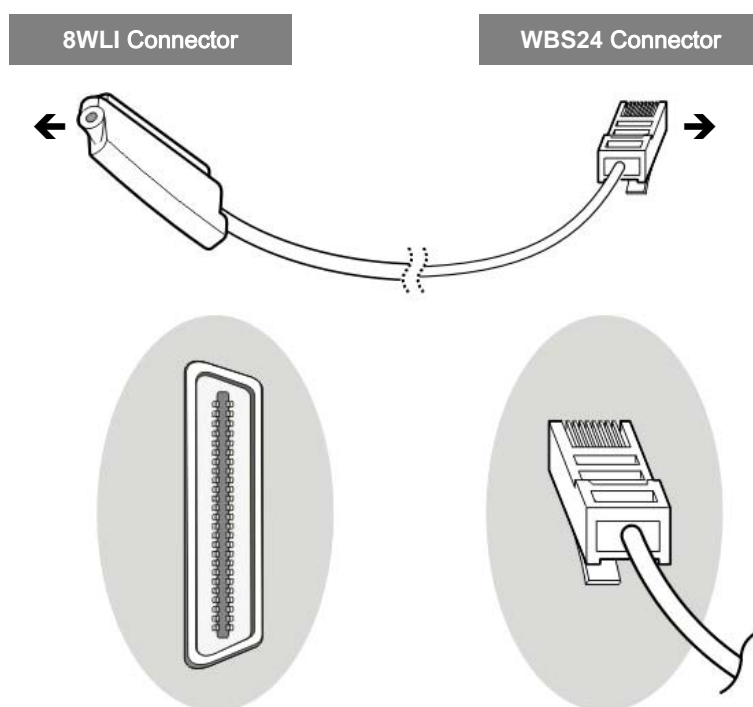
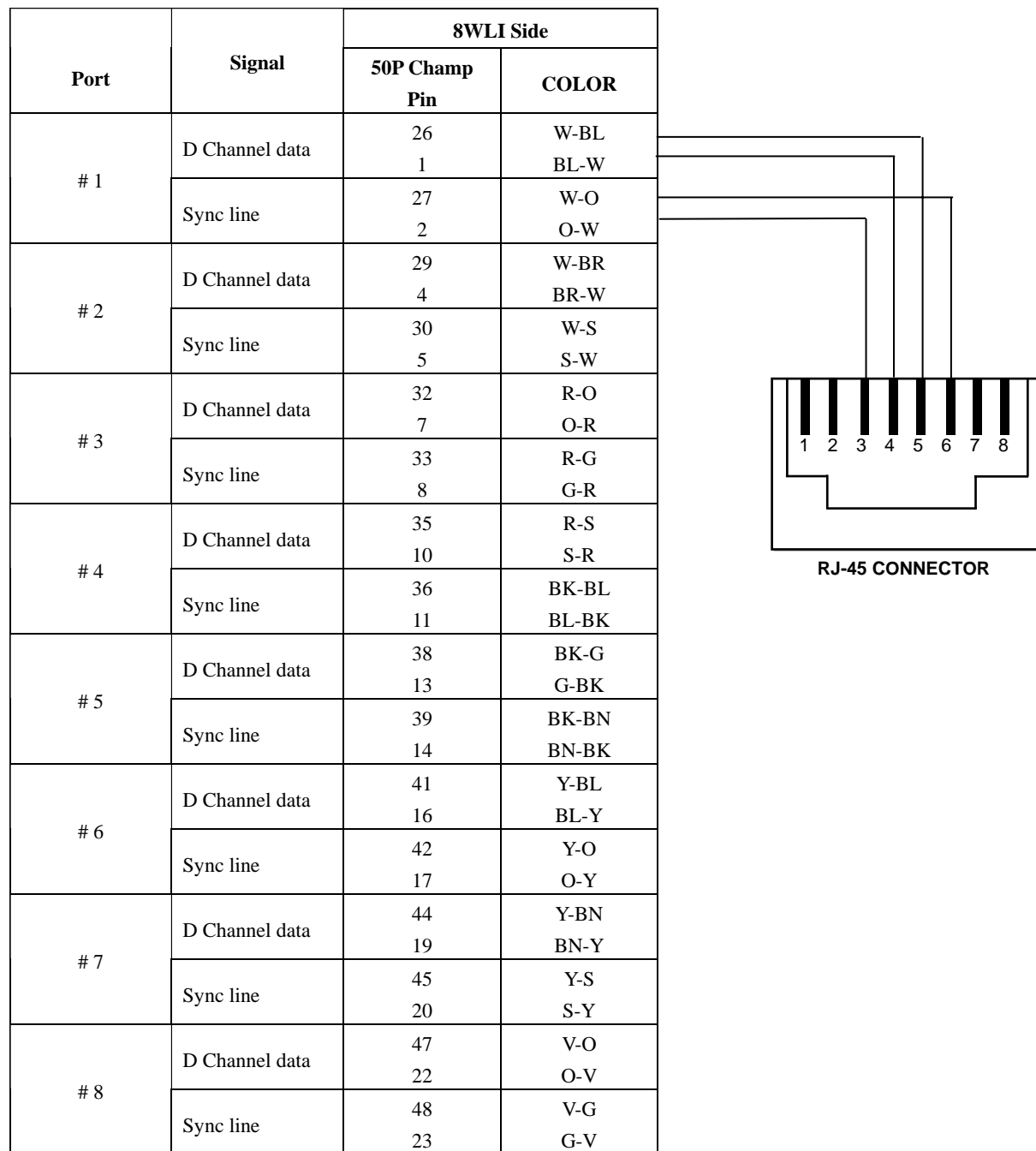


Figure 6.1 Champ-RJ45 Cable

Table 6.1 Specification of Champ-RJ45 Cable

Item	Specification
Cable	1 pair twisted Awg 24
Length	Maximum 1300 ft. or 400m
Interface	2×U interface & four interfaces of 64 Kbps via four B-channels

WBS24 Combo can be connected to up to one of three 8WLI boards in the OfficeServ 500-L system, while can be connected to the only one 8WLI board in the OfficeServ 500-M system. (Eight WBS24 Combos can be connected to each 8WLI board.)

**Figure 6.2 Pinout for WBS24 to 8WLI**

- 2) As shown in the figure below, connect the champ connector of the cable to that of the 8WLI board in the OfficeServ 500 system, and the RJ-45 connector to the WLI port of WBS24 Combo.

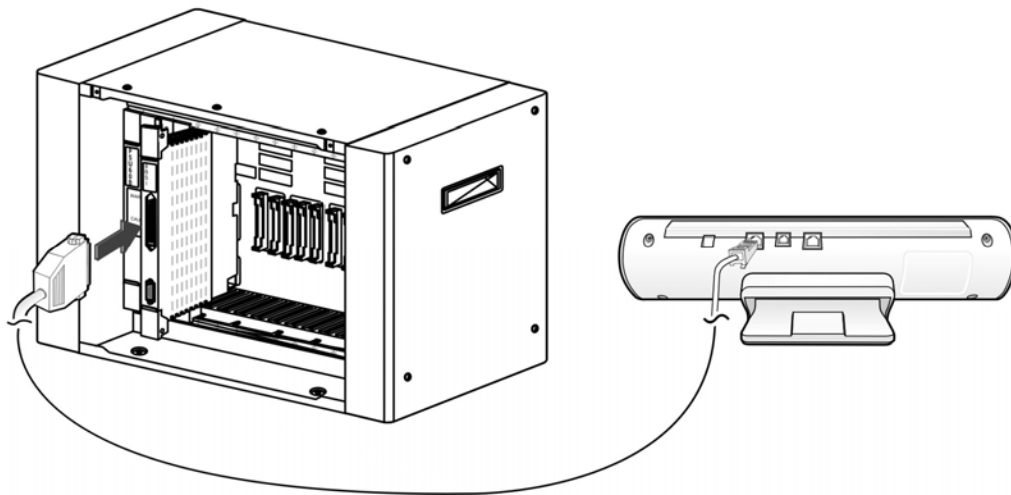


Figure 6.3 Connecting WBS24 Combo to 8WLI

## 6.2 Connecting 4WLI

- 1) Prepare a twisted-pair RJ-45 Ethernet cable of the specification below:

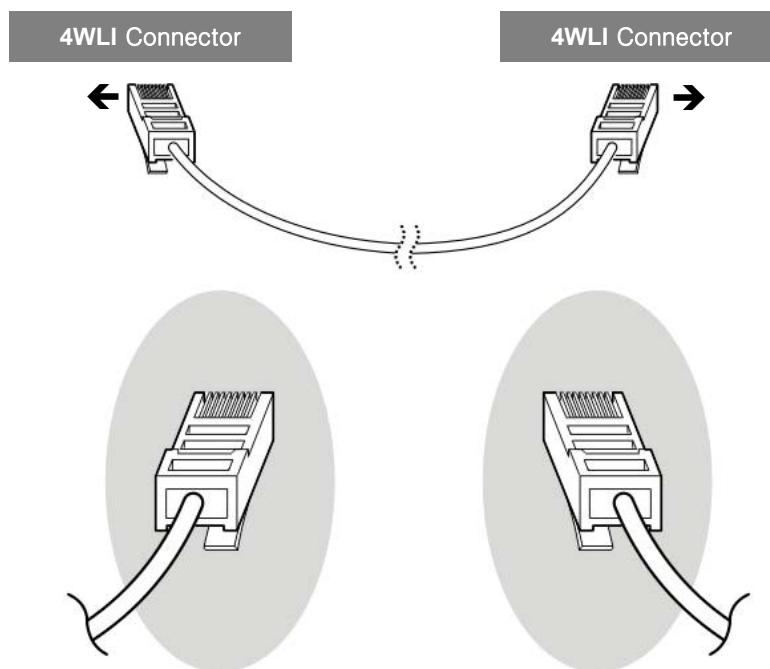
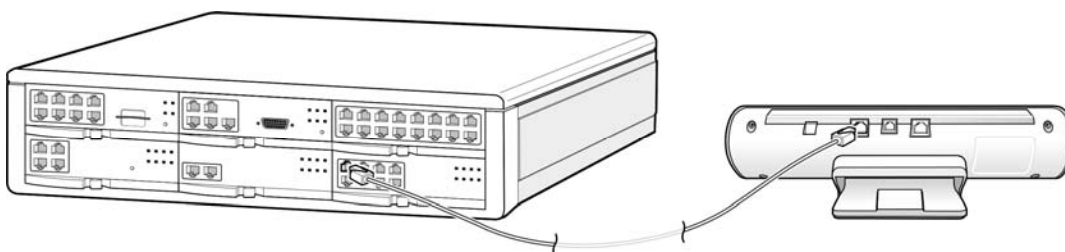


Figure 6.4 RJ-45 Ethernet Cable

**Table 6.2 Specification of RJ-45 Ethernet Cable**

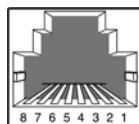
Item	Specification
Cable	1 Pair Awg 24
Length	Maximum 1300 ft or 400 m

- 2) As shown in the figure below, connect one end of the cable to one of Ports P1 to P4 of the 4WLI board in the OfficeServ 7200 system, and the other end of the cable to the WLI port of WBS24(Combo).

**Figure 6.5 Connecting WBS24 Combo to 4WLI**

### Wiring Between 4WLI and WBS24

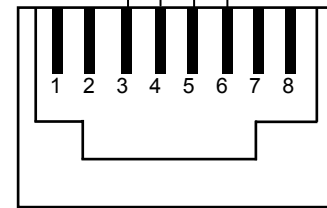
When up to four WBS24 Combos are connected to the 4WLI board, wiring is performed between the 4WLI board and WBS24 Combo as follows:



P1-P4 Port  
(RJ-45)

Pin No. of WBS24 Port	Signal	Pin No. of 4WLI Port
4	D-Channel Data	4
5		5
3	Sync Line	3
6		6

Base Cabinet Station #	Signal	4WLI Side	
		50P Champ Pin	COLOR
SLOT1 # 1	D Channel data	26 1	W-BL BL-W
	Sync line	27 2	W-O O-W
SLOT1 # 2	D Channel data	28 3	W-GN GN-W
	Sync line	29 4	W-BR BR-W
SLOT1 # 3	D Channel data	30 5	W-S S-W
	Sync line	31 6	R-BL BL-R
SLOT1 # 4	D Channel data	32 7	R-O O-R
	Sync line	33 8	R-G G-R
SLOT2 # 1	D Channel data	36 9	R-BN BN-R
	Sync line	35 10	R-S S-R
SLOT2 # 2	D Channel data	36 11	BK-BL BL-BK
	Sync line	37 12	BK-O O-BK
SLOT2 # 3	D Channel data	38 13	BK-G G-BK
	Sync line	39 14	BK-BN BN-BK
SLOT2 # 4	D Channel data	40 15	BK-S S-BK
	Sync line	41 16	Y-BL BL-Y
SLOT3 # 1	D Channel data	42 17	Y-O O-Y
	Sync line	43 18	Y-G G-Y
SLOT3 # 2	D Channel data	44 19	Y-BN BN-Y
	Sync line	45 20	Y-S S-Y
SLOT3 # 3	D Channel data	46 21	V-BL BL-V

**RJ-45 CONNECTOR**



Base Cabinet Station #	Signal	4WLI Side	
		50P Champ Pin	COLOR
SLOT3 # 4	Sync line	47	V-O
		22	O-V
	D Channel data	48	V-G
		23	G-V
	Sync line	49	V-BN
		24	BN-V

Figure 6.6 Pinout for WBS24 to 4WLI

### 6.3 Connecting S4WLI

- 1) Prepare two twisted-pair cables of the specification below:

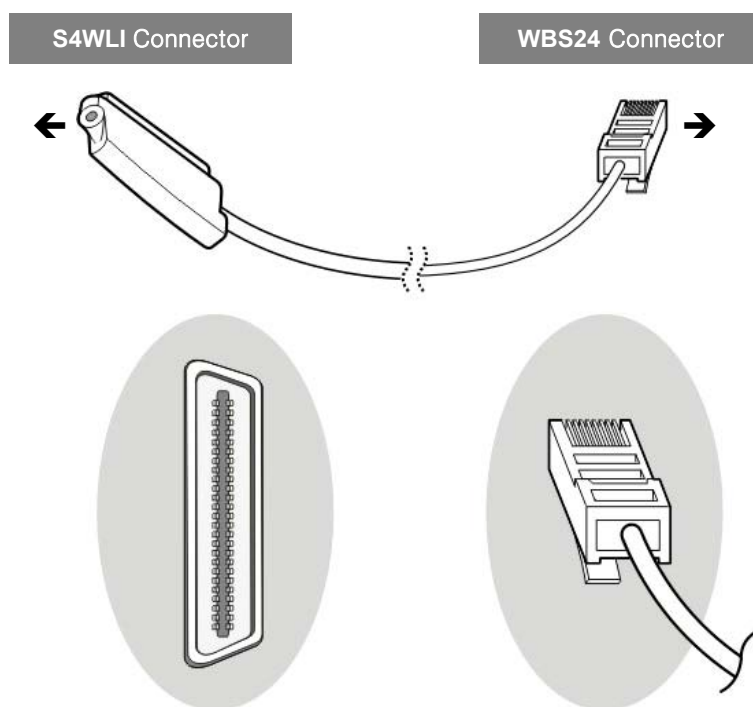


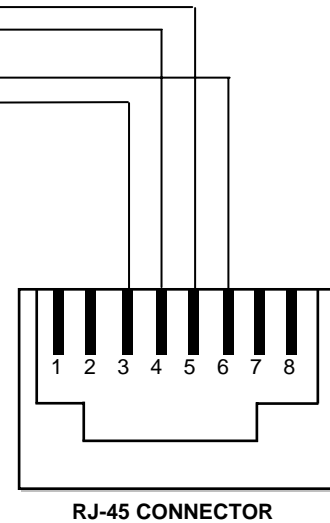
Figure 6.7 Champ-RJ45 Cable

Table 6.3 Specification of Champ-RJ45 Cable

Item	Specification
Cable	1 pair twisted Awg 24
Length	Maximum 1300 ft. or 400m
Interface	2×U interface & four interfaces of 64 Kbps via four B-channels

WBS24 Combo can be connected to up to the only one S4WLI board in the OfficeServ 100 system. (Four WBS24 Combos can be connected to each S4WLI board.)

Base Cabinet Station #	Signal	S4WLI Side	
		50P Champ Pin	COLOR
SLOT1 # 1	D Channel data	26 1	W-BL BL-W
	Sync line	27 2	W-O O-W
SLOT1 # 2	D Channel data	28 3	W-GN GN-W
	Sync line	29 4	W-BR BR-W
SLOT1 # 3	D Channel data	30 5	W-S S-W
	Sync line	31 6	R-BL BL-R
SLOT1 # 4	D Channel data	32 7	R-O O-R
	Sync line	33 8	R-G G-R
SLOT2 # 1	D Channel data	36 9	R-BN BN-R
	Sync line	35 10	R-S S-R
SLOT2 # 2	D Channel data	36 11	BK-BL BL-BK
	Sync line	37 12	BK-O O-BK
SLOT2 # 3	D Channel data	38 13	BK-G G-BK
	Sync line	39 14	BK-BN BN-BK
SLOT2 # 4	D Channel data	40 15	BK-S S-BK
	Sync line	41 16	Y-BL BL-Y
SLOT3 # 1	D Channel data	42 17	Y-O O-Y
	Sync line	43 18	Y-G G-Y
SLOT3 # 2	D Channel data	44 19	Y-BN BN-Y



Base Cabinet Station #	Signal	S4WLI Side	
		50P Champ Pin	COLOR
	Sync line	45	Y-S
		20	S-Y
SLOT3 # 3	D Channel data	46	V-BL
		21	BL-V
	Sync line	47	V-O
		22	O-V
SLOT3 # 4	D Channel data	48	V-G
		23	G-V
	Sync line	49	V-BN
		24	BN-V

**Figure 6.8 Pinout for WBS24 to S4WLI**

## 7 Setting System Database

To enable WIP-5000M in the OfficeServ System, you should set values of the following items, using using the MMC program.

- AP type setting in WBS24 (Combo)
- System ID setting
- System key setting
- WBS24 information setting
- WIP-5000M IP assignment
- WIP-5000M registration

### 7.1 AP Type Setting

Set the type of WBS24 required for the wireless LAN system. The default is 'Combo', however you can change the type of WBS24 in [AP TYPE] of [MMC 849]. Change the value of [AP TYPE] to initialize the database on WBS24.

### 7.2 System ID Setting

System ID is used to enable wireless LAN networks. This value should be set for terminals in a wireless LAN to access the wireless LAN. The system ID can be searched from a regular terminal at any time, and can be changed to a string in order to separate the system for easy management.

**The default is not set or is 'WBS24'. To operate a wireless LAN, change the default of [SYSTEM ID] in [MMC 845] to another value (up to six characters, only numbers).**

### 7.3 System Key Setting

The system key is an ID used as an authentication parameter to separate users for the registration of WIP-5000M in wireless LAN. **The default is '00000'. To operate wireless LAN, change the default of [SYSTEM KEY] in [MMC 845] to another value (up to five characters, only numbers).**

### 7.4 WBS24 Information Setting

To use voice and data services using wireless LAN, WBS24, which is a wireless LAN AP, should operate and information on WBS24 should be set as follows.

Set available network setting DB (e.g., IP address, netmask, and gateway) for WBS24 to operate on Intranet or Internet. Check RF channel interference between cells in each WBS24, and change the RF channel value to lower interference. For information on checking interference between the RF channels, refer to '[WIP-5000M Test Mode](#)'.

## Information Setting Depending on AP Type

Select between Combo and Basic depending on the type of WBS24. Basic type is not supported in North America market.



CHECK

### Functions of WBS24 Second IP and Its Setting

Second IP is the IP address used for WBS24(Combo) to exchange messages with the terminal. Any and all WBS24s installed into the same system share the second IP, which is used as a system IP used to set a static IP of WIP-5000M. Do not use 0.0.0.0, 255.255.255.255, or xxx.xxx.xxx.255 as a system IP. The second IP can be set in [MMC 845].

## 7.5 WIP-5000M IP Assignment

Enter an available IP address in [MMC 848] in each WIP-5000M before registering WIP-5000M. An IP address is assigned to WIP-5000M in DHCP or static mode. The assigned IP address can be changed in [MMC 849]. Depending on the mode in the system, the WIP-5000M registration procedure may vary.

## 7.6 WIP-5000M Registration Authorization

WIP-5000M should be registered in the system DB in order to be enabled in the OfficeServ System. After authorizing the registration in [REGISTER VoWLAN] of [MMC 849], register the terminal following the registration procedure. Once the WIP-5000M registration is completed, restrict WIP-5000M registration to be authorized again in [REGISTER VoWLAN] of [MMC 849]. In addition, WEP(Wired Equivalent Privacy), which is an encryption method for wireless LAN, is used to maintain data confidentiality in a wireless environment.



NOTE

### Wireless LAN MMC Programming

For detailed information on how to program MMCs for the OfficeServ Wireless LAN, [refer to the Programming Section.](#)

## 8 Registering/Clearing WIP-5000M

WIP-5000M must be registered in the OfficeServ 500/OfficeServ 7200 system to be enabled in the wireless LAN. This section introduces the procedures for registering and clearing WIP-5000M.

### 8.1 Registering WIP-5000M

Follow the steps below to register WIP-5000M in the system:

- 1) Check if the system DB items are set correctly according to the '3.8 Setting System Database' section of this chapter.
- 2) Register the WIP-5000M using the 'Register Terminal' menu.  
Refer to the '[WIP-5000M User Guide](#)' for the registration procedure.
  - You should enter the system ID correctly from the WIP-5000M registration procedure.
  - Set the system ID to the same value as the DB in the system since the registration procedure may vary depending on the IP setting mode(DHCP/Static) and WBS24 type(AP type). Particularly, the user ID and password must be the same as the values in the system. If registration is not performed properly, check if the system DB is set properly, and perform the above steps.
- 3) Once the registration is completed, an extension number is assigned to WIP-5000M.

### 8.2 Clearing WIP-5000M

If theft or damage of a WIP-5000M or system key/encryption is changed, the registration of the WIP-5000M should be cleared. Clearing procedures for the WIP-5000M are described below:

#### Clearing From the System

To clear a WIP-5000M in use, which is within the wireless LAN service area, set [WIP REGIST CLEAR] of [MMC 849] to normal mode.

If the terminal is not within the service area or is not available, delete only the WIP-5000M DB in forced mode.

#### Clearing from WIP-5000M

The registration DB may be deleted from a WIP-5000M within the wireless LAN service area. Refer to the '[WIP-5000M User Guide](#)' for the termination procedure in detail.