



Z990002-D08-12

# Instruction Manual

**RGW2400/OD**

**U.S.A.**

**FCC Notice**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reselect or relocate the antenna.
- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio technician for help.

Changes or modifications not expressly approved in writing by ROOT Inc. may void the user's authority to operate this equipment. ROOT Inc. can not accept any financial or other responsibilities that may be the result of your use of this information, including direct, indirect, special, or consequential damages.

## Handling precautions

Strictly observe the following important handling precautions when using the product:

**WARNING** Indicates that user's mishandling of the product may lead to a danger resulting in a serious injury or death.

**CAUTION** Indicates that user's mishandling of the product may lead to a danger resulting in an injury or a physical damage alone.

- **WARNING**  
Working at high place to install the main unit and antenna may result in an injury or death due to a fall. Do not work in an unstable position or shaky footing and be sure to ensure the safety before starting work.
- **WARNING**  
Do not put up the antennal in a thunderstorm, on a windy day or in a cold season, otherwise you may be struck by lightning or may be subject to other danger.
- **WARNING**  
When installing the main unit and antenna, firmly fix them in accordance with the installation manual. If they are insufficiently fixed, they may drop, causing an injury or death.
- **WARNING**  
The main unit and AC adaptor get hot extremely, causing a burn or injury. Carefully handle them, when it is necessary to touch them, as they generate heat, place them in a well-ventilated location.
- **WARNING**  
Do not use them in abnormal conditions where smoke or offensive smell is coming out, otherwise causing a fire, electric shock or trouble.
- **CAUTION**  
When installing or removing each unit, be sure to turn off power supply beforehand. If it is installed or removed with power turned on, a trouble may occur.
- **CAUTION**  
Never disassemble the equipment, otherwise causing a trouble.
- **CAUTION**  
Do not drop the product and do not give a strong shock to it, otherwise causing a trouble.
- **CAUTION**  
Never open the main unit.
- **CAUTION**

Do not use it near a television or radio. Do not install it near a television antenna etc., otherwise causing an electromagnetic interference, equipment trouble and communication error.

- **CAUTION**

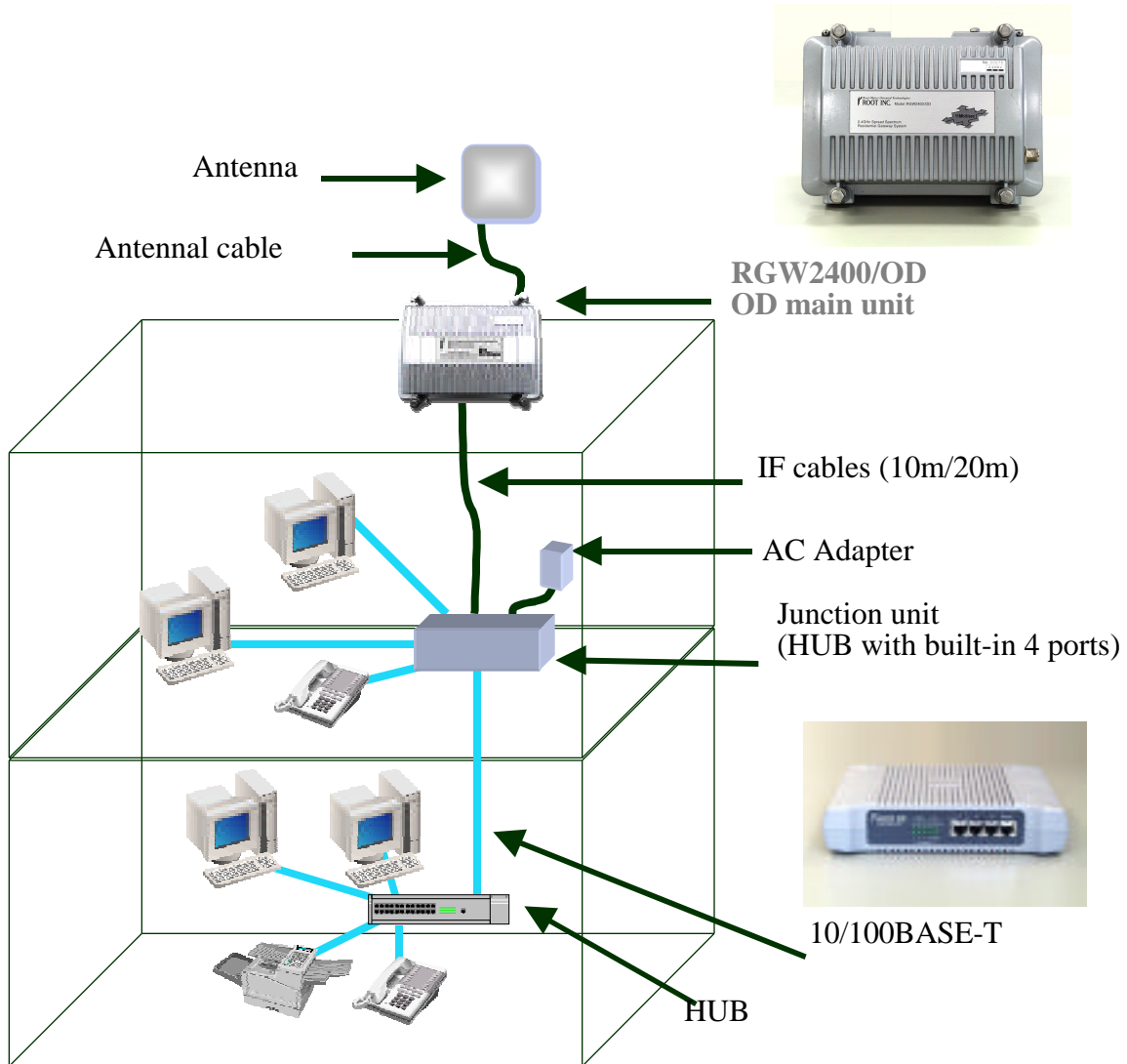
Do not use it near anything that consumes large electric power and generates noise or strong radio waves (microwave oven etc.), otherwise resulting in equipment trouble or communication error.

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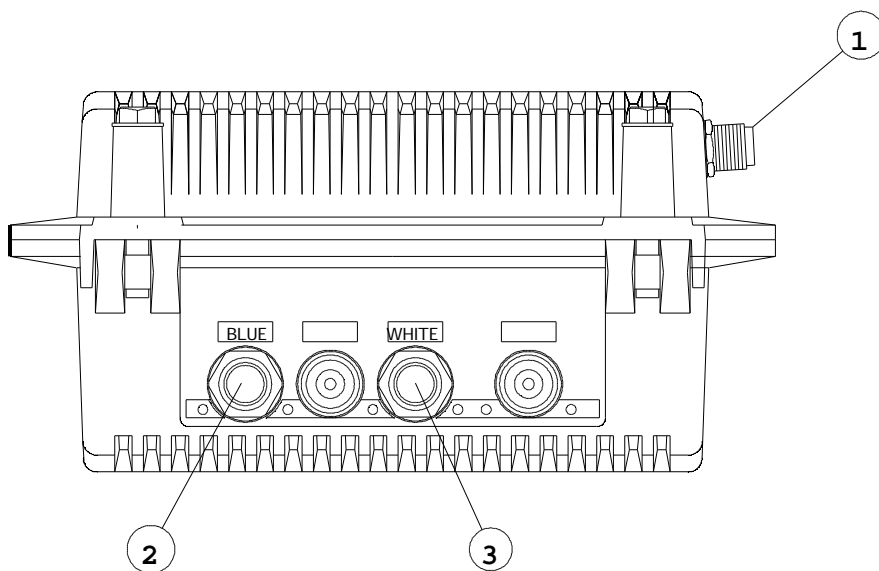
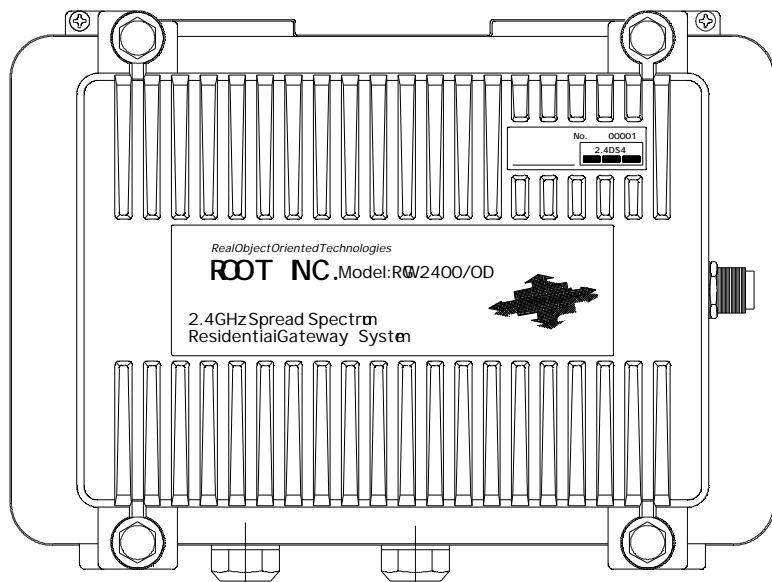
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### 1 System Configurations

RGW2400/OD is a separate type radio router that can be installed outdoor. It consists of the following components:



## 2 Name of Each Part



RGW2400/OD\_ Main Unit

### **(1)Antenna**

Connect the antenna. After completion of connection, finish with self-melting adhesive tape for waterproofing.

### **Terminal**

### **(2)Interface-Cable**

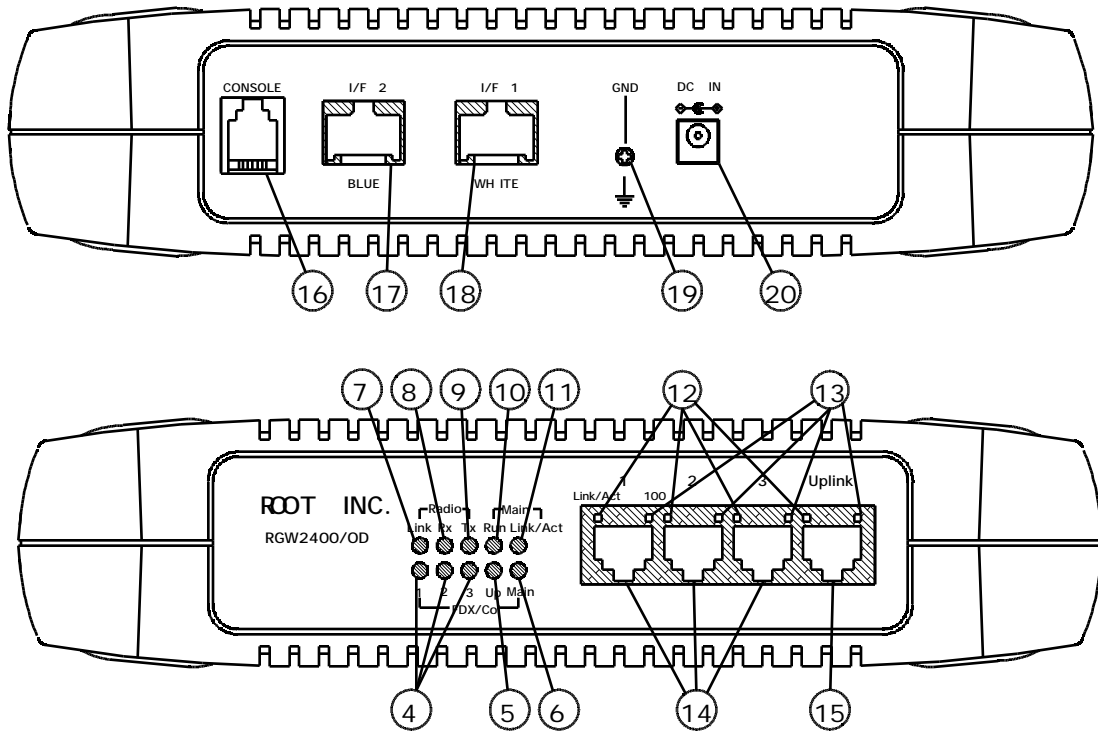
Connect the interface cable with a blue cap.

### **Connector**

### **2**

**(3)Interface-Cable Connector** **1**

Connect the interface cable with a white cap.  
 Pass the interface cable. Connect the cable to the inside connector and then fit the cable clamp. After completion of setting, finish with self-melting adhesive tape for waterproofing.



RGW2400/OD Junction Unit

**(4)FDX/Col** **Lamp**

Indicates the state of each port of the hub. It is on, while the main unit is connected by full duplex. It blinks when a collision occurs.

**(5)Uplink** **Port** **FDX/Col** **Lamp**

It is the FDX/Col lamp of Uplink port of the hub and has the same contents of display as other ports.

**(6)Main** **Unit** **FDX/Col** **Lamp**

It is the FDW/Col lamp between the main unit and hub and has the same contents of other ports.

**(7)Radio** **LINK** **Lamp**

When a radio packet is received, this lamp turns on. When radio-related setting is changed, it turns off.

**(8)Radio** **RX** **Lamp**

While receiving a radio packet, this lamp is on.

**(9)Radio** **TX** **Lamp**

While transmitting a radio packet, this lamp is on.

**(10)RUN** **Lamp**

When this unit is turned on and initializing is completed, this lamp is on.

**(11)Main** **Unit** **Link/Act** **Lamp**

When a link is established between the main unit and hub, this lamp is on. This lamp also functions as Active indicator.

**(12)Link/Active** **Lamp** **of** **Each** **Port**



It is Link/Act lamp of each port of the hub.

**(13)10/100** **Lamp**

When each port of the hub is connected with 10BASE-T, this lamp is off.

When it is connected with 100BASE-T, this lamp is on.

**(14)10/100BASE-T** **Port**

They are ports of the hub. Connect to PC(s) with straight cable(s).

**(15)Uplink** **Port**

It is a port provided only for Uplink. Connect it to other hub with a straight cable

**(16)Console Connector for Maintenance**

It is a serial port for maintenance such as settings etc. Connect it to a PC with an exclusive cable.

**(17)Interface Cable Connector 2**

Connect the interface cable with a blue cap.

**(18)Interface Cable Connector 1**

Connect the interface cable with a white cap.

**(19)GND** **Terminal**

It is the GND terminal. Earth this terminal.

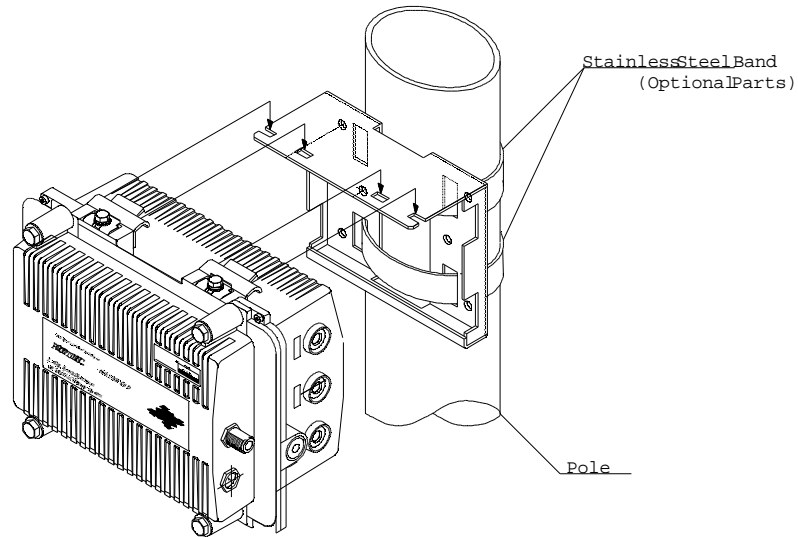
**(20)DC** **Jack**

Connect the attached DC adapter.

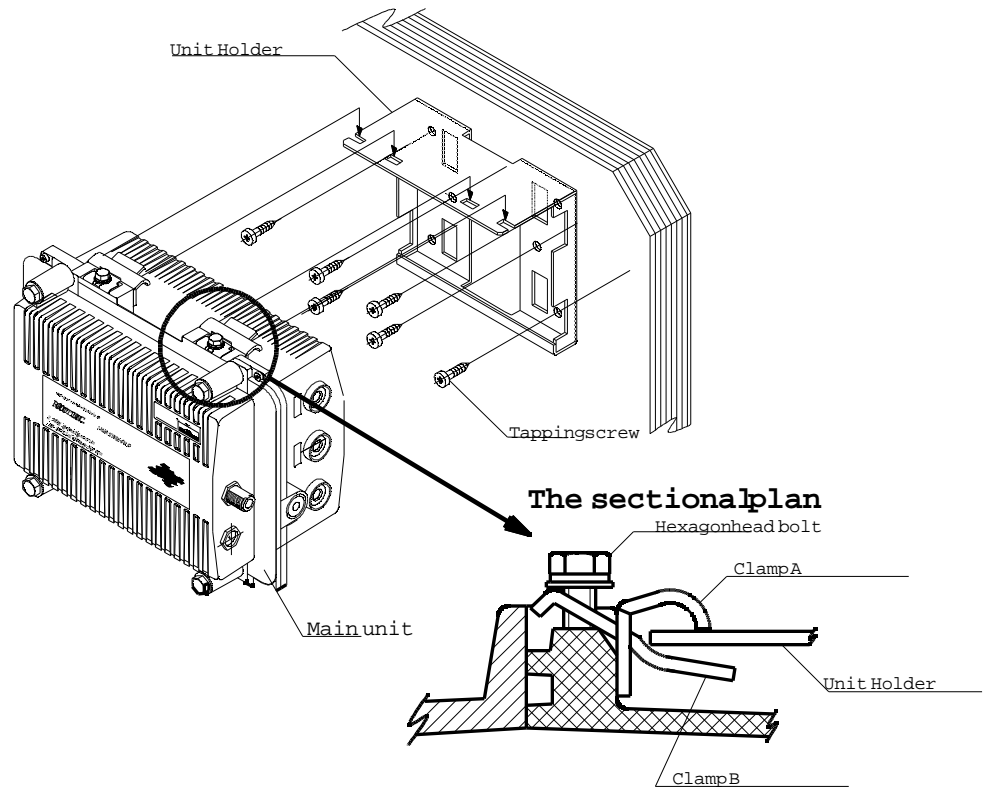
### **3 Installing Main Unit**

#### **3.1 Mount the Main Unit**

## Pole Mounting



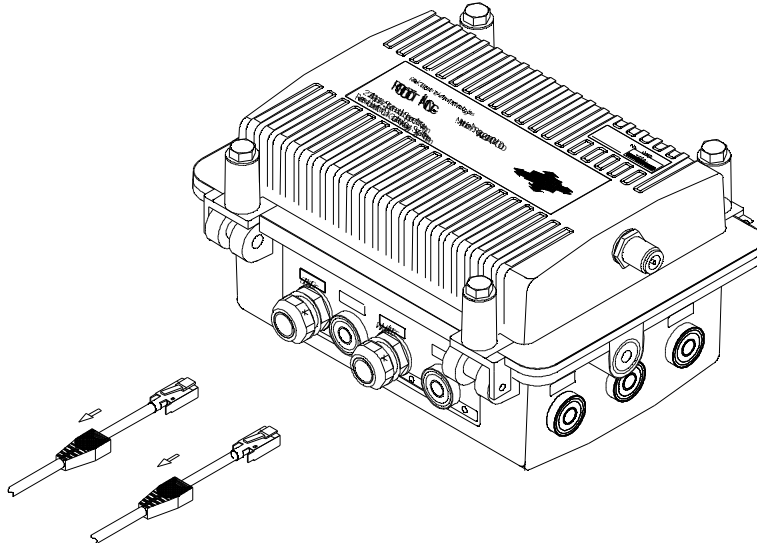
## Wall Mounting



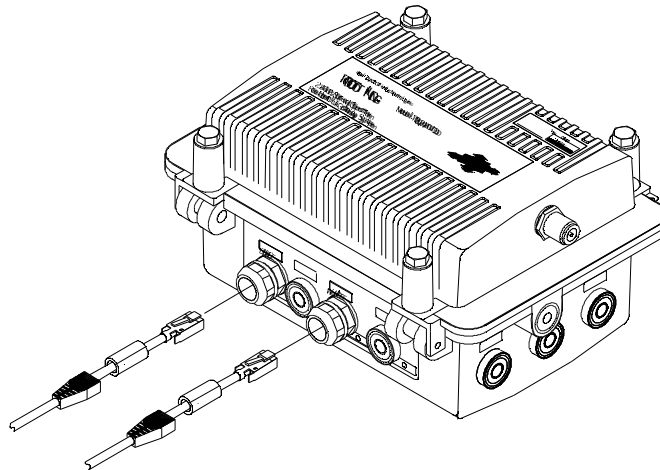
### 3.2 Installing the Interface Cable

1. Slide the plug cover of each interface cable for few inches.  
\*1: Only Main Unit side can slide the cover.

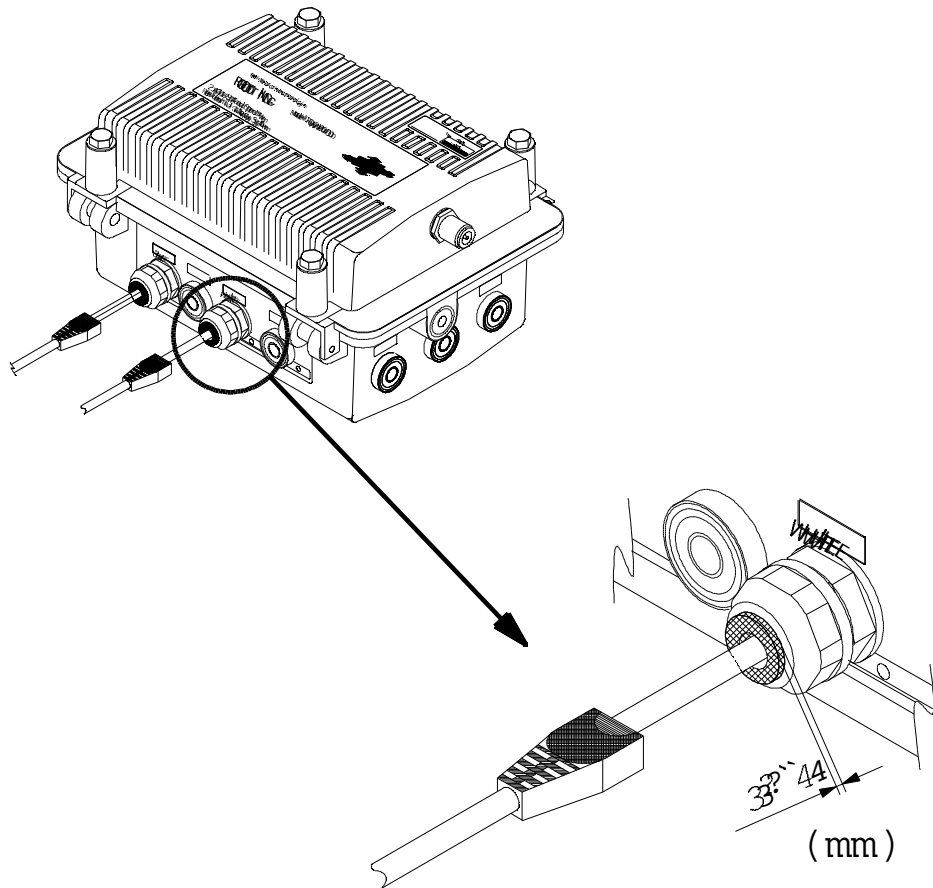
2. Loosen the plastic shells of bushings for interface cables.  
\*2: To ease insertion of the cables.



3. Prepare rubber gaskets and put them on each cable.  
\*3: Just behind of the plug.
4. Insert the cables and gaskets into the bushings one by one.  
\*4: Be sure, Blue (blue plug cover) cable to “BLUE” labeled bushing, and White (transparent plug cover) cable to “WHITE” bushing .



5. Confirm if the plugs are engaged to the sockets in the box.  
\*5: When the plug is locked, a click sound occurs.  
Pay attention on the rotation of the cable: to set the lock lever upward.
6. Tighten the plastic shells of the bushings.  
\*6: Up to end of the traverse.



## 4 Antenna Selection

### **NOTICE**

The antennas for the **RGW2400/OD** must be professionally installed on permanent structures for outdoor operations. The installer is responsible for ensuring that the limits imposed by the Federal Communications Commission (FCC) Regulations with regard to Maximum Effective Isotropic Radiated Power (EIRP) and Maximum Permissible Exposure (MPE) are not violated. **As such, installer must insure that a separation of at least 2m is maintained at all times between the transmit antenna and all persons.**

### 4.3 Antenna List

Antenna type	Gain (dBi)	Model ID	Operating Channels, US
Omni	6	MFB24006	5,6,7 (with 45 ft cable min.)
Patch	8	MP24008XFPT	5,6,7 (with 45 ft cable min.)
Omni	10	MFB24010	5,6,7 (with 45 ft cable min.)
Sector	13	MSP24013MB	5,6,7,8,9 (with 45 ft cable min.)
Directional	15	HG2415G	5, 6 (with 45 ft. cable min.)

### 4.4 Cable List

NO.	Length(ft.)	Loss(dB)
1	15	1.02
2	40	2.72

### **NOTICE**

It is possible only to connect it with Point to Point when the value by which the cable loss is pulled from the antenna gain is 14dBi or more. Do not use it in Point to multipoint.

## 5 Specifications

### General

Characteristics	Specifications
Power supply	Single phase AC120V 60Hz
Power consumption	8W 12VA
Power feed	AC adaptor
Dimensions	Main unit: 270_198_134mm Junction unit: 220_209_50mm
Weight	Main unit: 4.4kg Junction unit: 0.7kg
LED Indicators	Run, Link/Act

### Switching Hub

Characteristics	Specifications
Standard	Conforming to IEEE802.3 10BASE-T and IEEE802.3u_100BASE-TX
Number of ports	4 (One port for Uplink only)
Flow control	At full duplex: 802.3x flow control method At half duplex: Back pressure method
MAC address table	1024
Aging time	5 minutes
Frame buffer	128Kbytes
Switching system	Store-and-forward
LED Indicators	Link/Act, 10/100, FDX/Col (for Port 1 to 3, Uplink and Main)

### Radio Interface

Characteristics	Specifications
Standard	FCC
Frequency in use	2400 to 2483.5MHz
Antenna connector	N-J type
Modulation system	DSSS
Transmission power	10mW/MHz (Max.)
Frequency channel	2412 to 2472MHz (13 ch)
Transmission rate	1,2,5.5,11Mbps
MAC protocol	IEEE802.11b
LED Indicators	TX, RX, Link

## **6 For More Help**

**Contact:**

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