

HA3515-DG Access Point

Hardware Installation and Reference Guide

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Preface

Intended Audience

This document is intended for:

- Network engineers
- Technical support and servicing engineers
- Network administrators

Technical Support

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Conventions

1. Signs

The symbols used in this document are described as follows:

 **Caution**

An alert that calls attention to essential information that if not understood or followed can result in function failure or performance degradation.

 **Note**

An alert that contains additional or supplementary information that if not understood or followed will not lead to serious consequences.

2. Note

This manual provides the device installation steps, hardware troubleshooting, module technical specifications, and specifications and usage guidelines for cables and connectors. It is intended for the users who have some experience in installing and maintaining network hardware. At the same time, it is assumed that the users are already familiar with the related terms and concepts.

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1 Product Overview

HA3515-DG access point adopts the latest standard 802.11ax standard and is backward compatible. It can work in both 802.11ax and 802.11a/b/g/n/ac and supports Cat5e cables, 2 radio modules, dual bands of 2.4GHz and 5GHz. It provides up to 1.775 Gbps wireless throughput, meeting need of high-performance access. To ensure data forwarding, security and access control, network security, radio frequency control, mobile access, QoS and other important factors are fully taken into consideration for the design of this AP.

1.1 Technical Specifications

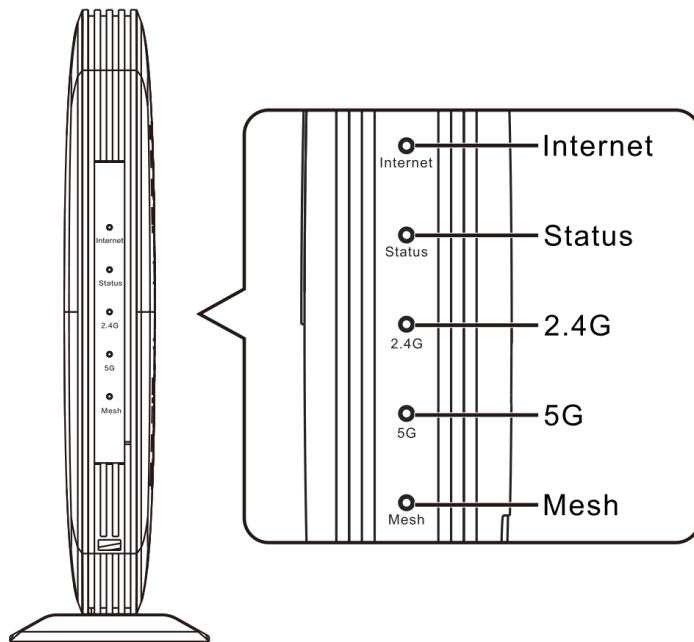
Dimensions		131 mm *200 mm *30 mm (5.16 in. x 7.87 in. x 1.18 in.)
Weight		≤ 0.5 kg
Wired LAN	Port Type	LAN: RJ-45 x2
	Cables	10BASE-T: UTP Category 3 100BASE-T: UTP Category 5 1000BASE-T: UTP Category 5e
	Protocol	10BASE-T: IEEE 802.3 100BASE-T: IEEE 802.3u 1000BASE-T: IEEE 802.3ab
	Transmission Speed	10/100/1000Mbps (Auto-MDI/MDI-X)
Wire G.hn/LINE	Port Type	RJ-11 Port * 1
	Cables	2-core Telephone Lines
	Transmission Speed	Up to 1.7 Gbps
TEL Port	Port Type	RJ-11 x1
Buttons	WPS	Support (Press and hold for 2 seconds)
	Reset	Support (Press and hold for 10 seconds)
Indicators	LEDs	5 LEDs: Internet, Status, 2.4G, 5G, Mesh
Power Supply		DC 12V/2A

Power Consumption	<15W
Operating Temperature	0°C to 40°C
Storage Temperature	-40°C to 70°C
Operating Humidity	5% to 95% RH (Non-condensing)
Storage Humidity	5% to 95%RH (Non-condensing)
Installation	Desktop/Wall-mounted
Certification	VCCI-B, TELEC, JATE

 The weight refers to the total weight of the host and the rack.

1.2 LEDs and Buttons

1.2.1 LEDs

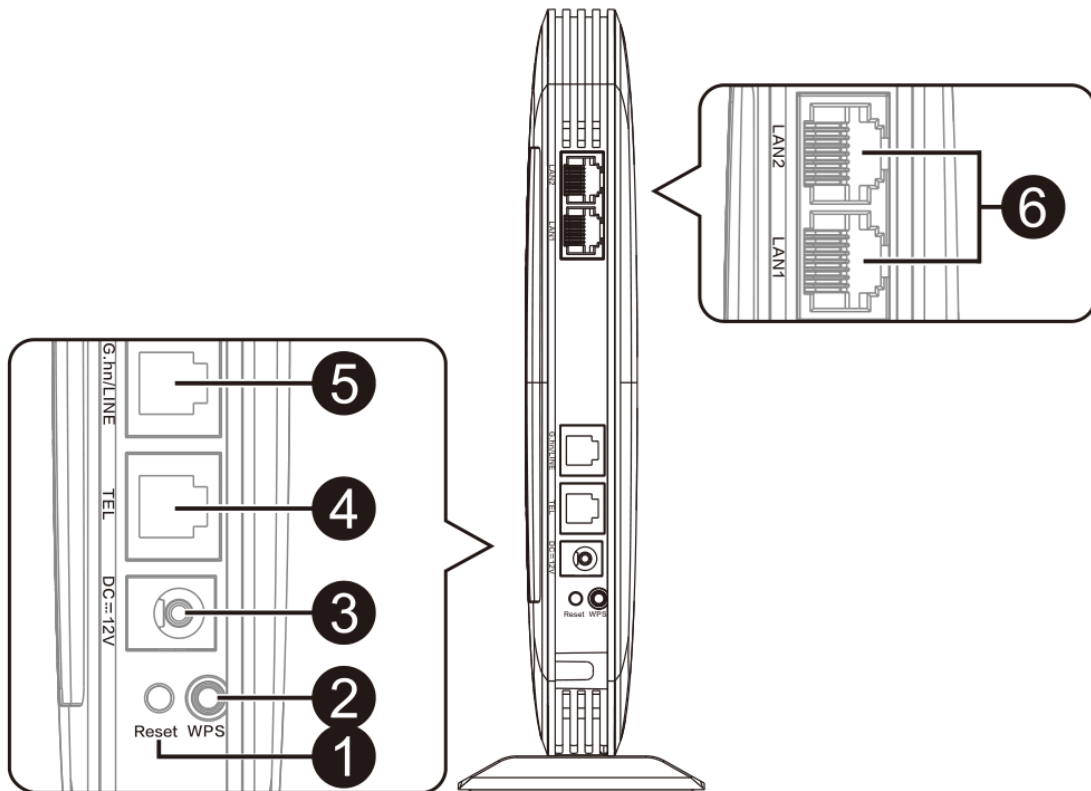


LED	State	Meaning
Internet LED	Off	No internet connection is available.
	Blinking yellow green	Internet connection is being formed.
	Solid yellow green	Internet connection is normal.
	Blinking yellow	Internet access rate is lower than 10M.

Status LED	Off	Power supply is abnormal.
	Solid Purple (Bi-color)	System is operating abnormally.
	Blinking Purple (Bi-color)	System is being initialized or booted.
	Solid Orange	The device works in router mode.
	Blinking Orange	WPS is enabled in router mode.
	Solid Blue	The device works in AP mode.
	Blinking Blue	WPS is enabled in AP mode.
2.4G LED	Off	The device doesn't work in 2.4 GHz.
	Blinking Orange	Communication is in progress.
	Solid Orange	The device works in 2.4 GHz.
5G LED	Off	The device doesn't work in 5 GHz.
	Blinking Blue	Communication is in progress.
	Solid Blue	The device works in 5 GHz.
Mesh LED	Off	Mesh is not formed.
	Blinking yellow green	Mesh is being formed.
	Solid yellow green	Mesh is formed.

i The Internet LED of HA3515-DG keeps off when it is set to a child node in mesh networking. If the Internet LED of the HS2310-16GH2GT1XS and the Mesh LED of HA3515-DG keep on, it means that the internet connection of the HA3515-DG is normal.

1.2.2 Buttons



No.	Buttons/Ports	Description
1	Reset Button	Press and hold the button for more than 10s to restore the device to factory settings.
2	WPS Button	After pressing WPS button, Mesh networking can be formed within 2 minutes.
3	Power Port	Adapter: DC/12V 2A
4	TEL Port	Used to connect to a telephone.
5	G.hn/LINE Port	Wired uplink port with up to 1.7Gbps.
6	LAN1 and LAN2 Ports	Wired downlink port Support 10BASE-T/100BASE-TX/1000BASE-T adaptation


1.3 Power Supply

HA3515-DG supports 12V DC power supply (including PSE approved adapter).

i The supplied adapter is recommended.



1.4 Heat Dissipation

HA3515-DG adopts fanless design.

 Maintain an enough space around the device to allow air circulation.


2 Preparing for Installation

2.1 Safety Precautions

-
-  To avoid personal injury and device damage, carefully read the safety precautions before you install the device.
 -  The following safety precautions may not cover all possible dangers.
-

2.2 General Safety Precautions

- Do not expose the AP to high temperature, dusts, or harmful gases.
- Do not install the AP in an inflammable or explosive environment.
- Keep the AP away from EMI sources such as large radar stations, radio stations, and substations.
- Do not subject the AP to unstable voltage, vibration, and noises.
- The installation site should be dry. Keep the AP at least 500 meters away from the ocean and do not face it towards the sea breeze.
- The installation site should be free from water flooding, seepage, dripping, or condensation. The installation site should be selected according to network planning and communications equipment features, and considerations such as climate, hydrology, geology, earthquake, electrical power, and transportation.

 Please install and remove the device according to instructions described in this *Hardware Installation and Reference Guide*.


2.3 Handling Safety


- Prevent the device from being frequently handled.
- Cut off all the power supplies and unplug all power cords before moving or handling the device.

2.4 Electric Safety

- Observe local regulations and specifications during electric operations. Only personnel with relevant qualifications can perform such operations.
- Check whether there are potential risks in the work area. For example, check whether the power supply is grounded, whether the grounding is reliable, and whether the ground is wet.

- Learn about the position of the indoor emergency power switch before installation. Cut off the power switch in case of accidents.
- Check the device carefully before shutting down the power supply.
- Do not place the device in a damp/wet location. Do not let any liquid enter the chassis.
- Keep the device far away from grounding or lightning protection devices for power equipment.
- Keep the device away from radio stations, radar stations, high-frequency high-current devices, and microwave ovens.

 Improper or incorrect electric operations may cause a fire, electric shock, and other accidents, and lead to severe and fatal personal injury and device damage.

 Direct or indirect contact with high voltage or mains power supply via wet objects may cause fatal dangers.

2.5 Installation Site Requirements

Install the device indoors to ensure its normal operation and prolonged service life.

The installation site must meet the following requirements.

2.5.1 Installation Requirements

Install the AP in an open environment. If the AP installed in a closed environment, ensure good ventilation.

The installation site is sturdy enough to support the weight of the device and its accessories.

Confirm that the size of the installation position is suitable for HA3515-DG installation. Reserve sufficient space around the device for heat dissipation. Keep the device at least 2m away from the base station antenna, to ensure that no interference is generated.

2.5.2 Ventilation Requirements

HA3515-DG adopts a fanless design. Reserve sufficient space around the device to ensure normal heat dissipation.

2.5.3 Temperature/Humidity Requirements

To ensure the normal operation and prolonged service life of the device, maintain an appropriate temperature and humidity in the equipment room.

- In an environment with high relative humidity, the insulating material may have bad insulation or even leak electricity. Sometimes the materials may suffer from mechanical performance change and metallic parts may get rusted.
- In an environment with low relative humidity, however, the insulating strip may dry and shrink. Static

electricity may occur easily and endanger the circuit on the equipment.

- In an environment with high temperature, the equipment is subject to even greater harm, as its performance may degrade significantly and various hardware faults may occur.

Therefore, the ambient temperature and humidity of the HA3515-DG must meet the requirements listed in Table 2-1:

Table 2-1 Requirements for Temperature and Humidity

Temperature	Relative Humidity
0°C-40°C (32°F-104°F)	5%-95%

2.5.4 Cleanliness Requirements

Dust poses a major threat to the device. The indoor dust takes on a positive or negative static electric charge when falling on the device, causing poor contact of the metallic joint. Such electrostatic adhesion may occur more easily when the relative humidity is low, not only affecting the service life of the device, but also causing communication faults. Table 2-2 describes the requirements for the dust content and granularity in the equipment room.

Table 2-2 Requirements for Dust

Maximum Diameter (µm)	0.5	1	3	5
Maximum Density (Particles/m ³)	1.4×10 ⁷	7×10 ⁵	2.4×10 ⁵	1.3×10 ⁵

Apart from dust, the salt, acid, and sulfide in the air in the equipment room must meet strict requirements. These harmful substances will accelerate metal corrosion and component aging. Therefore, the equipment room should be properly protected against the intrusion of harmful gases, such as sulfur dioxide, hydrogen sulfide, nitrogen dioxide, and chlorine gas. Table 2-3 lists limit values for harmful gases.

Table 2-3 Requirements for Gases

Gas	Average (mg/m ³)	Maximum (mg/m ³)
Sulfur dioxide (SO ₂)	0.2	1.5
Hydrogen sulfide (HS)	0.006	0.03
Nitrogen dioxide (NO ₂)	0.04	0.15
Ammonia gas (NH ₃)	0.05	0.15
Chlorine gas (Cl ₂)	0.01	0.3


2.5.5 EMI

- The grounding device of the switch must not be used as the grounding device of the electrical equipment or anti-lightning grounding device. In addition, the grounding device of the switch must be deployed far away from the grounding device of the electrical equipment and anti-lightning grounding device.
- Keep the equipment away from high-power radio transmitter, radar transmitting station, and high-frequency large-current device.

2.6 Tools


Table 2-4 Tools

Common Tools	Torx screwdrivers
Special Tools	wire stripper, crimping pliers, crystal connector crimping pliers, and wire cutter
Meter	Multimeter

 The device is delivered without a tool kit. The tool kit and cables are customer-supplied.

2.7 Package Inspection

Packaging Box	<p>Check whether the various accessories of the equipment have been installed and debugged.</p> <p>Check whether the <i>Quick Installation Guide</i> and packing list are available.</p>
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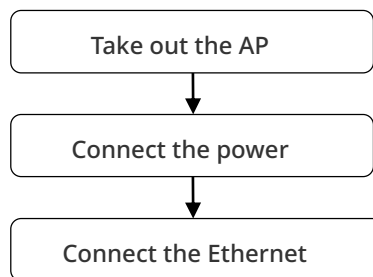
 The packaging items listed above are for reference only. For the actual delivery situation, please subject to your order contract. Please check your goods carefully according to the actual packing list or order contract. If there is any doubt or error, please contact the seller.

3 Installing the Access Point

The HA3515-DG must be fixed and installed indoors.

i Before installing the device, make sure you have carefully read the requirements described in Chapter 2.

3.1 Installation Flowchart



3.2 Before You Begin

Before you install the device, check the installation location, the networking method, the power supply and the wiring, and make sure that:

- The installation position provides sufficient space for heat dissipation.
- The installation position meets the temperature and humidity requirements of the device.
- The power supply and required current are available in the installation position.
- The selected power supply modules meet the system power requirements.
- The Ethernet cable have been deployed in the installation position.
- For specialized equipment, confirm that the equipment meets the specialized requirements.

3.3 Precautions

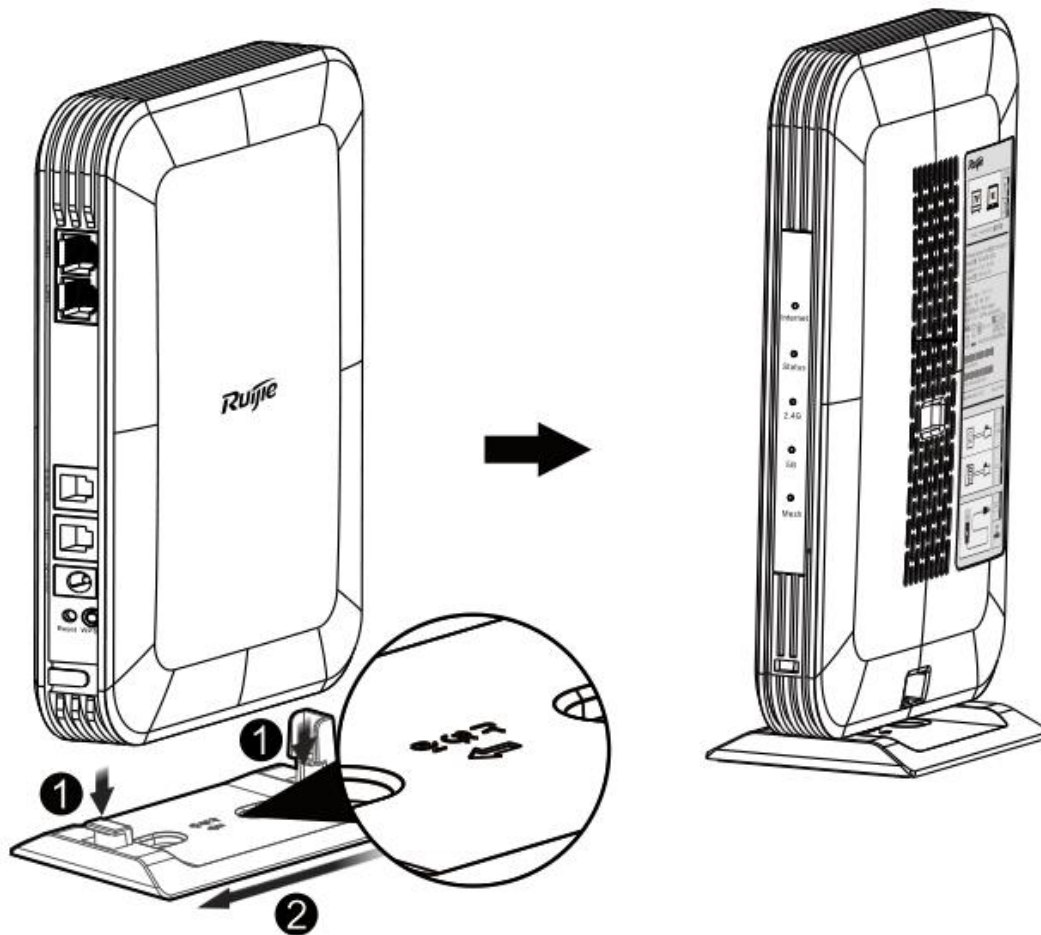
To ensure the normal operation and prolong the service life of the AP, please follow the following precautions:

- Do not power on the device during installation.
- Install the device in a well-ventilated location.

- Do not subject the device to high temperatures.
- Keep away from high voltage cables.
- Install the device indoors.
- Do not expose the device in a thunderstorm or strong electric field.
- Keep the device clean and dust-free.
- Disconnect the device before cleaning it.
- Do not wipe the device with a damp cloth.
- Do not wash the device with liquid.
- Do not open the enclosure when the device is working.
- Fasten the device tightly.

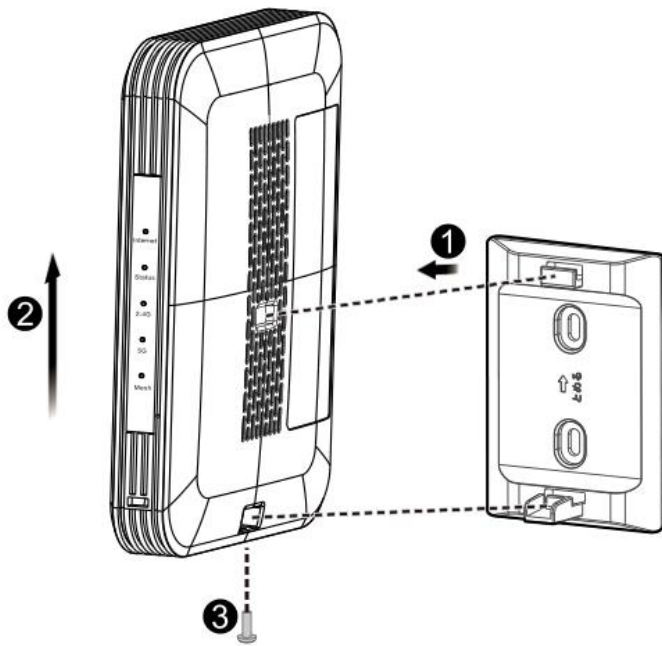
3.4 Installing the Access Point

3.4.1 Desktop



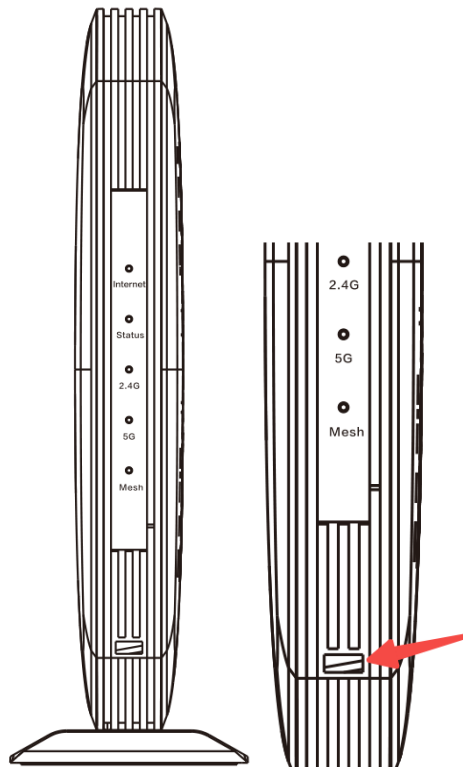
- 1 Align the hole at the bottom of the AP with the hooks on the stand base.
- 2 Follow the direction shown above to install the AP, and ensure that it clicks into place.

3.4.2 Wall Mounting

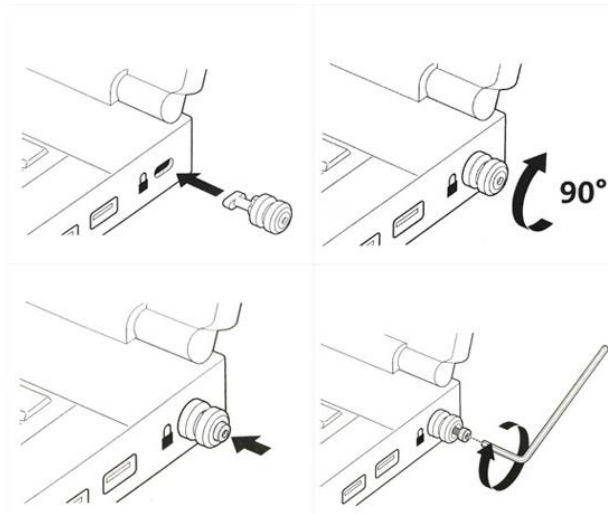


- 1 Align the holes on the rear of the AP with the hooks of the wall mounting bracket.
- 2 Follow the direction shown above to install the AP, and ensure that it clicks into place.

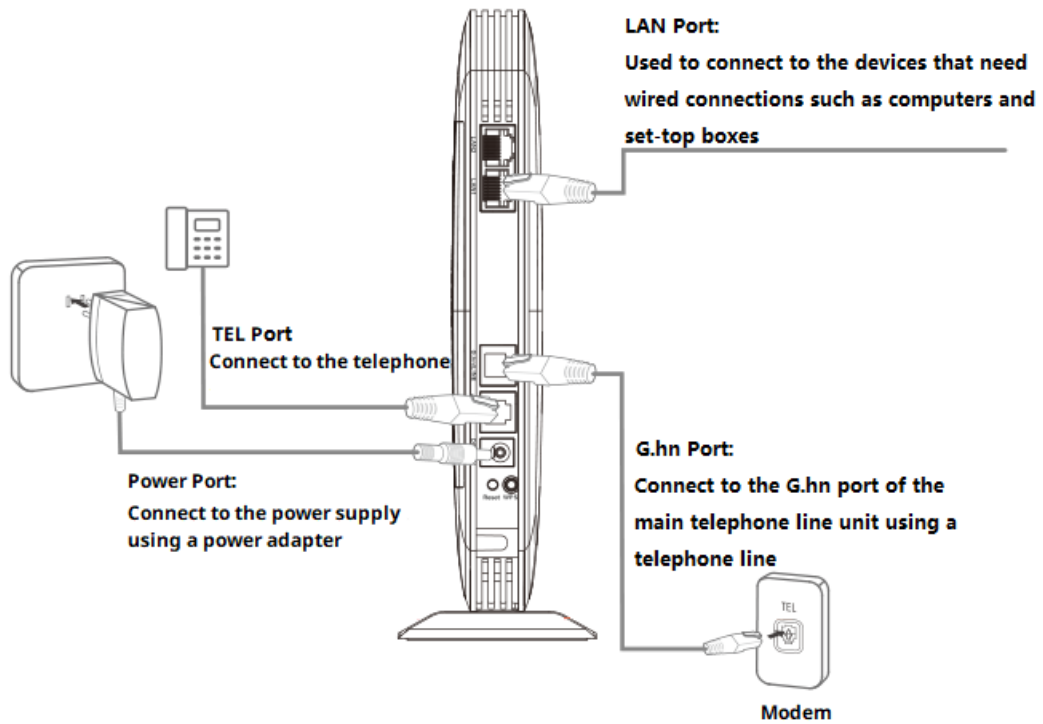
3.5 Anti-theft Instructions



The device is equipped with anti-theft holes, and the anti-theft method is the same as that of a laptop. The following figure is provided for reference.



3.6 Connection Instructions



Connect to the main telephone line unit HS2310-16GH2GT1XS

- Connect the G.hn/LINE port on the AP to the G.hn port on the switch with a telephone line and power up the device. The status LED flashes, indicating that the device is booting up.
- It takes about 1 minute for the device to start and the Internet status light keeps on.

Login

- Local login: The AP can be managed via the Web-GUI.
- Management IP: 192.168.110.1; Domain name: <https://rjap.jp>

Connect to Wi-Fi

- Enter the 192.168.110.1 or <https://rjap.jp> in the address bar of a browser of a wireless terminals, such as a mobile phone. Then, use the account (admin) and password (admin) to log into the AP to complete the configuration.

3.7 Checking after Installation

3.7.1 Checking the AP

- Make sure the external power supply meets the requirements of the AP.
- Make sure the device is placed in a stable position and will not move or tip over.

3.7.2 Cable Connection

- Make sure the adapter cable matches the interface type.
- Make sure cables are properly connected.

3.7.3 Checking Power Supply

- Make sure all power ports are properly connected and compliant with safety requirement.
- Make sure the AP is operational after power-on.

4 Verifying Operating Status

4.1 Setting up the Environment

Power the AP up by using a power adapter.

- Verify that the AP is properly connected to the power source and compliant with safety requirement.
- Connect the gigabit G.hn/LINE port of the AP to the LINE port of the switch through a telephone line.

4.2 Powering up the AP

4.2.1 Checking Environment before Power-on

- Verify that the power supply is properly connected.
- Verify that the input voltage matches the specification of the AP.

4.2.2 Checking Environment after Power-on

After power-on, you are advised to check the following to ensure normal operation of the AP.

- Check if any message is printed on the Web-based configuration interface of the device.
- Check if the LED works normally.

5 Monitoring and Maintenance

5.1 Monitoring

- LED

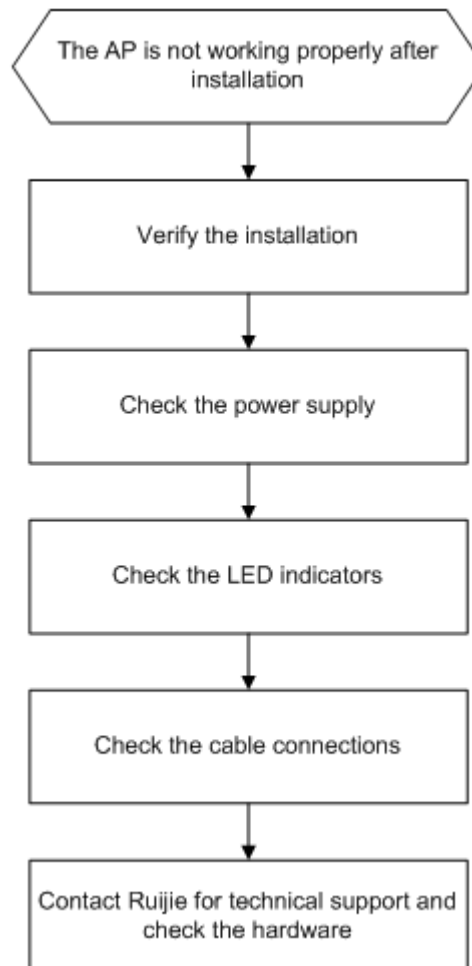
You can observe the LED to monitor the status of AP.

5.2 Hardware Maintenance

If the hardware is faulty, please contact our Technical Assistance Center (TAC) for help.

6 Troubleshooting

6.1 Troubleshooting Flowchart



6.2 Troubleshooting

- **LED does not light up after the AP is powered on**

When a power adapter is used, verify that the power adapter is connected to an active power outlet, and then verify that the power adapter works properly.

- **Ethernet port is not working after the Ethernet cable is plugged in**

Verify that the device at the other end of the Ethernet cable is working properly. And then verify that the Ethernet cable is capable of providing the required data rate and is properly connected.

- **Wireless client cannot find the AP**

- (1) Verify that the device is properly powered.
- (2) Verify that the Ethernet port is correctly connected.
- (3) Verify that the AP is correctly configured.
- (4) Move the client device to adjust the distance between the client and the AP.

- **Internet LED keeps off**

The Internet LED stays off for a long time, indicating there is no internet connection. Verify the telephone line connection.

- **Status LED keeps off**

When the status LED keeps off for a long time, verify whether the power adapter is connected.

7 Appendix

7.1 Connectors and Media

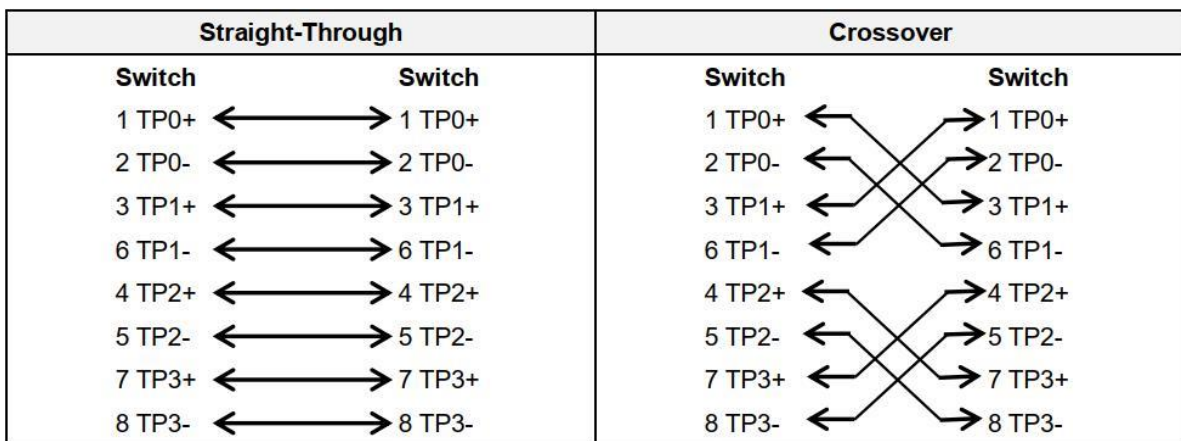
1000BASE-T/100BASE-TX/10BASE-T

The 1000BASE-T/100BASE-TX/10BASE-T is a 10/100/1000 Mbps auto-negotiation port that supports auto MDI/MDIX.

Compliant with IEEE 802.3ab, 1000BASE-T requires Category 5e 100-ohm UTP or STP (STP is recommended) with a maximum distance of 100 meters (328 feet).

1000BASE-T requires all four pairs of wires be connected for data transmission, as shown in Figure 7-1.

Figure 7-1 1000BASE-T Connection



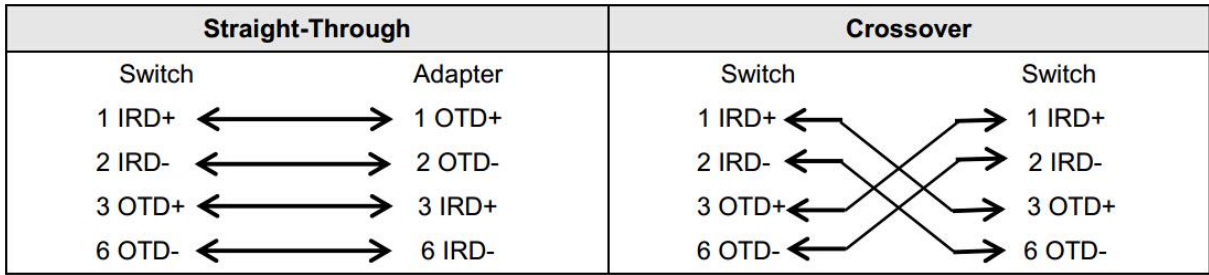
10BASE-T uses Category 3, 4, 5 100-ohm UTP/STP and 1000BASE-T uses Category 5 100-ohm UTP/STP for connections. Both support a maximum length of 100 meters. Figure 7-2 shows 100BASE-TX/10BASE-T pin assignments.

Figure 7-2 100BASE-TX/10BASE-T Pin Assignments

Pin	Socket	Plug
1	Input Receive Data+	Output Transmit Data+
2	Input Receive Data-	Output Transmit Data-
3	Output Transmit Data+	Input Receive Data+
6	Output Transmit Data-	Input Receive Data-
4,5,7,8	Not used	Not used

Figure 7-3 shows wiring of straight-through and crossover cables for 100BASE-TX/10BASE-T.

Figure 7-3 100BASE-TX/10BASE-T Connection



7.2 Packing List

No.	Items	Quantity
1	AP	1
2	Power Cable	1
3	Power Adapter	1
4	1m Telephone Line	1
5	Product Manual	1
6	Expansion Screws	3
7	Mounting Bracket (for desktop and wall mounting)	1

7.3 Power Adapter

- Input voltage: 90~264VAC; Rated current: 0.7 A
- Output voltage: 12V; Rated current: 2A

Technical Specifications of the DC Adapter

Inner Diameter	Outer Diameter	Depth	Polarity
2.1 mm (0.08 in.)	5.5 mm (0.22 in.)	9.5 mm (0.37 in.)	Inner pole: positive Outer pole: negative

