Ruijie Reyee RG-RAP1260 Access Point

Installation Guide

Copyright

Disclaimer

Preface

Intended Audience

This document is intended for:

- Network engineers

- Technical support and servicing engineers

- Network administrators

Technical Support

- Official website of Ruijie Reyee: https://reyee.ruijie.com

- Technical Support Website: https://reyee.ruijie.com/en-global/support

- Case Portal: https://www.ruijienetworks.com/support/caseportal

- Community: https://community.ruijienetworks.com

- Technical Support Email: service_rj@ruijienetworks.com

- Online Robot/Live Chat: https://reyee.ruijie.com/en-global/rita

Conventions

1. GUI Symbols

Interface symbol	Description	Example
Boldface	1. Button names 2. Window names, tab name, field name and menu items 3. Link	1. Click **OK**. 2. Select **Config Wizard**. 3. Click the **Download File** link.
>	Multi-level menus items	Select **System** > **Time**.

2. Signs

The signs used in this document are described as follows:

⚠ **Warning**

An alert that calls attention to important rules and information that if not understood or followed can result in data loss or equipment damage.

⚠ **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.

Specification

An alert that contains a description of product or version support.

3. 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.

Contents

1 Product Overview

1.1 About the RG-RAP1260 Access Point

The RG-RAP1260 is a dual-radio Wi-Fi 6 wall plate access point designed for small or medium indoor scenarios covering hotels, apartments, villas, residential buildings, and small business offices.

Compliant with the IEEE 802.11a/b/g/n/ac/ax standard, the access point can work at the 2.4 GHz and 5 GHz bands at the same time and supports dual-stream MU-MIMO. The access point delivers a combined data rate of about 3000 Mbps, with up to 574 Mbps in the 2.4 GHz band and 2402 Mbps in the 5 GHz band. The access point provides four 1GE LAN ports that can be connected to clients through Ethernet cables, catering for the demands of wired and wireless connection at the same time.

The RG-RAP1260 provides white, black, gold, grey, silver, and rose gold covers. Users can choose covers based on scenarios and furnishing styles. The access point can be installed on various junction boxes, including Chinese-standard and European-standard 86 mm × 86 mm junction boxes, South African-standard 114 mm × 114 mm junction box, and American-standard 108 mm × 59 mm junction box.

1.2 Package Contents

Table 1-1   Package Contents

Item	Quantity
RG-RAP1260 Access Point (Including a white cover by default)	1
User Manual	1
Warranty Card	1
Mounting Bracket	1
T-Key to Security Lock	1
M4 x 25 mm Screws	4

> 🛈 **Note**

The package contents generally contain the above items. The actual delivery is subject to the order contract. And please check your goods carefully against the order contract. If you have any questions, please contact the distributor.

1.3 Hardware Features

1.3.1 Access Point

Figure 1-1   Front View of Access Point (Including a Cover)

Figure 1-2   Front View of Access Point (Excluding a Cover)
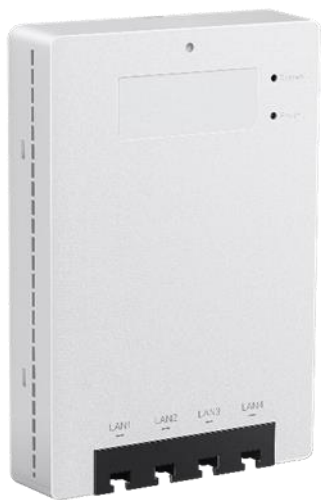
Figure 1-3   Rear View of Access Point

1.3.2 Ports and LED

Figure 1-4   Ports
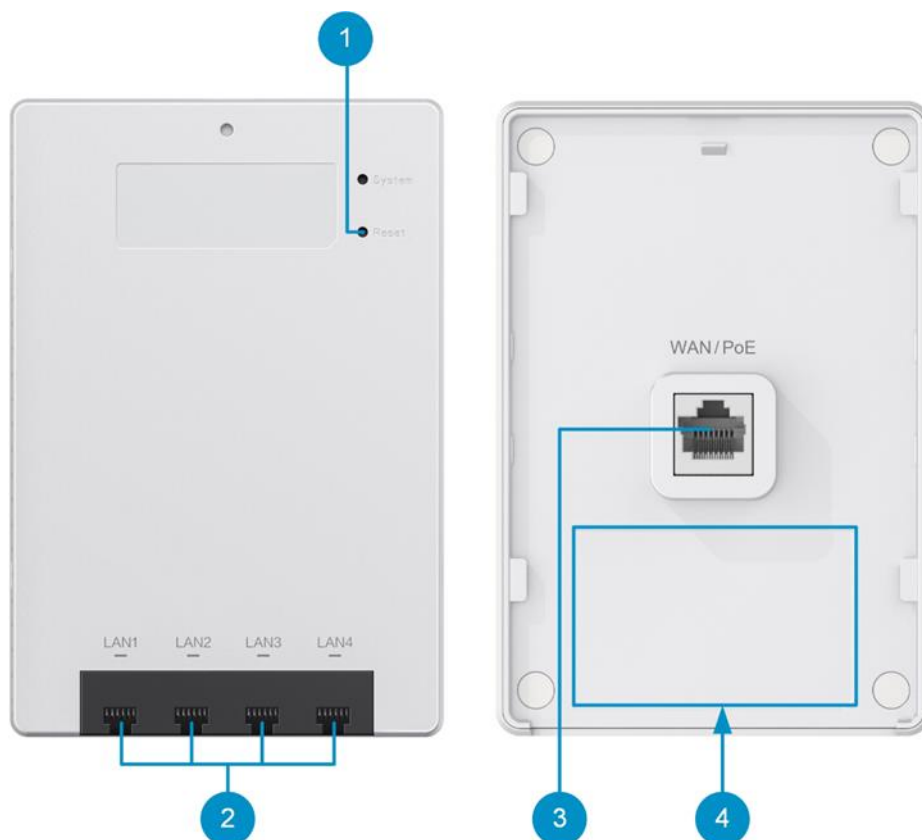
Table 1-1   Ports

No.	Ports	Description
1	Reset Hole	● Stick the pin to the Reset hole: Restart the access point. ● Press and hold the pin to the Reset hole for more than 5 seconds: Restore the access point to factory settings.
2	LAN Port	Four 10/100/1000Base-T Ethernet ports for wired connection
3	WAN/PoE Port	One 10/100/1000Base-T Ethernet port, providing data and power transmission through an Ethernet cable
4	Label	The label is located on the back of the device.

Figure 1-5   LED

Table 1-2   LED

Color	Status
Off	The access point is not receiving power.
Slow Blinking (at 0.5 Hz)	The access point is operating normally but there is an alarm generated.
Fast Blinking (at 2 Hz)	Possible cases: 1. Restoring the access point to factory settings. 2. Upgrading the firmware. 3. Handling alarms automatically. 4. Starting up the access point.

Solid White	The access point is operating normally without alarms.

1.4 Technical Specifications

Table 1-3   Technical Specifications

Radio Design	Dual-radio, two spatial streams
Standard & Protocol	802.11ax, 802.11ac wave2/wave1 and 802.11a/b/g/n
Operating Radio	802.11b/g/n/ax: 2.4 GHz to 2.4835 GHz 802.11a/n/ac/ax: 5.150 GHz to 5.350 GHz, 5.470 GHz to 5.725 GHz, 5.725 GHz to 5.850 GHz
Antenna	Built-in omnidirectional antennas (2.4 GHz: 3 dBi; 5 GHz: 5 dBi) ⓘ **Note** The peak gain mentioned above refers to the gain of a single antenna.
Spatial Streams	2.4 GHz: 2 x 2 MIMO 5 GHz: 2 x 2 MIMO
Max. Data Rate	2.4 GHz: 574 Mbps 5 GHz: 2402 Mbps Combined: 2976 Mbps
Modulation	OFDM: BPSK@6/9 Mbps, QPSK@12/18 Mbps, 16QAM@24 Mbps, 64QAM@48/54 Mbps DSSS: DBPSK@1 Mbps, DQPSK@2 Mbps, and CCK@5.5/11 Mbps MIMO-OFDM: BPSK, QPSK, 16QAM, 64QAM, 256QAM and 1024QAM OFDMA
Receiver Sensitivity	11b: –91 dBm (1 Mbps), –88 dBm (5.5 Mbps), –85 dBm (11 Mbps) 11a/g: –89 dBm (6 Mbps), –80 dBm (24 Mbps), –76 dBm (36 Mbps), –71 dBm (54 Mbps) 11n: –85 dBm (MCS0), –65 dBm (MCS7), –85 dBm (MCS8), –65 dBm (MCS15) 11ac: 20 MHz: –85 dBm (MCS0), –60 dBm (MCS9) 11ac: 40 MHz: –82 dBm (MCS0), –57 dBm (MCS9) 11ac: 80 MHz: –79 dBm (MCS0), –54 dBm (MCS9) 11ac: 160 MHz: –76 dBm (MCS0), –51 dBm (MCS9) 11ax: 80 MHz: –79 dBm (MCS0), –52 dBm (MCS11) 11ax: 160 MHz: –76 dBm (MCS0), –49 dBm (MCS11)

Max. Transmit Power	63 mw (18 dBm)
	ℹ Note
	The transmitted power may vary based on local laws and regulations.
Power Adjustment	Configurable in increments of 1 dBm
Dimensions (W x D x H)	124 mm × 86 mm × 24 mm (4.88 in. × 3.39 in. × 0.94 in., the height refers to the distance from the wall to the access point because the mounting bracket is installed on the junction box.)
Weight	≤ 0.5 kg (1.10 lbs., without the mounting bracket)
Service Ports	One 10/100/1000Base-T Ethernet uplink port, supporting PoE input Four 10/100/1000Base-T Ethernet downlink ports
Management Port	N/A
Status LED	One LED (white)
Power Supply	Compliant with IEEE 802.3at standard (PoE+), backward compatible with the IEEE 802.3af standard (PoE) Note: If IEEE 802.3at-compliant PoE power supply is adopted, the access point functions properly. If IEEE 802.3af-compliant PoE power supply is adopted, the 5 GHz radio is disabled by default.
Max. Power Consumption	12 W
Bluetooth	Not supported
Environment	Operating temperature: 0°C to 40°C (32°F to 104°F)
	Storage temperature: –40°C to +70°C (–40°F to +158°F)
	Operating humidity: 5% to 95% RH (non-condensing)
	Storage humidity: 5% to 95% RH (non-condensing)
Installation Method	In-wall mounting
Color	White, black, gold, gray, silver, and rose gold
Certification	CE
MTBF	> 400,000 hours

1.5 Power Specifications

The access point can be powered by 802.3af/802.3at-compliant PoE power supply. If IEEE 802.3af-compliant PoE is adopted, the 5 GHz radio is disabled by default. In the case of PoE power supply, the power sourcing equipment (PSE) must be at least 802.3af-capable. You are advised to use an 802.3at-capable PSE. If you want to use a PoE adapter, a Rujie-certificated PoE adapter is recommended.

1.6 Heat Dissipation

Maintain a sufficient clearance around the access point for proper ventilation.

2 Preparing for Installation

2.1 Safety Precautions

> **Note**
> ● To avoid personal injury and device damage, carefully read the safety precautions before you install the access point.
> ● The following safety precautions may not cover all possible hazardous situations.

2.1.1 General Safety Precautions

● Do not expose the access point 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 noise.

● Keep the access point at least 500 (0.31 miles) 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 make sure that the access point and power distribution system are properly grounded.

> **Caution**
> ● Please follow the procedures in the user manual to install and remove the access point.

2.1.2 Handling Safety

● Do not move the access point frequently.

● Cut off all the power supplies and unplug all power cords before moving or handling the access point.

2.1.3 Electric Safety

> **Warning**
> ● 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.

● 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 access point carefully before shutting down the power supply.

- Keep the access point far away from grounding or lightning protection devices for power device.

- Keep the access point far away from radio stations, radar stations, high-frequency high-current devices, and microwave ovens.

2.2 Installation Environment Requirements

The wall plate access point must be installed and used indoors. For normal operation and prolonged service life of the access point, the installation site must meet the following requirements:

2.2.1 Bearing Requirements

Evaluate the weight of the access point and its accessories, and ensure that the installation site (wall) can bear the weight.

2.2.2 Ventilation Requirements

The access point adopts natural cooling. Reserve a sufficient clearance around the access point to ensure proper ventilation.

2.2.3 Temperature/Humidity Requirements

To ensure the normal operation and prolonged service life of the access point, maintain an appropriate temperature and humidity. Working in an environment with too high or too low temperature and humidity for a long period may damage the access point.

- In an environment with high relative humidity, the insulating material may have poor insulation or even leak electricity. Sometimes it is also prone to changes in the mechanical properties and causes rusting of metal parts.

- In an environment with low relative humidity, static electricity is prone to occur and damage the internal circuits of the access point.

- A high temperature can accelerate the aging process of insulation materials, greatly reducing the reliability of the access point and severely affecting its service life.

Table 2-1   Working Environment Requirements

Operating Temperature	Operating Humidity
0°C to 40°C (32°F to 104°F)	5% to 95% RH (non-condensing)

2.2.4 Grounding Requirement

A proper grounding system is the basis for stable and reliable running and is indispensable for preventing lightning strikes and interference. Carefully check the grounding conditions at the installation site according to the grounding specifications, and complete grounding properly based on the actual situation.

2.2.5 Anti-interference Requirements

- Keep the access point as far away from the lightning prevention equipment and grounding equipment of the power device as possible.

- Keep the access point far away from radio stations, radar stations, high-frequency high-current devices, and microwave ovens.

2.3 Tools

Table 2-2   Tools

Common Tools	Phillips screwdriver, power cords, Ethernet cables, diagonal plier, and binding straps
Special Tools	Anti-static wrist strip, wire stripper, crimping plier, wire cutter, waterproof tape
Meters	Multimeter
Other Tools	PC, display, and keyboard

Note

The tool kit is not included in the package contents. The tool kit is customer-supplied.

3 Installing the Access Point

⚠ **Caution**

Before installing the access point, make sure you have carefully read the requirements in Chapter 2.

3.1 Before You Begin

Carefully plan and arrange the installation position, networking mode, power supply, and cabling before installation. Confirm the following requirements before installation:

- The installation site provides sufficient space for proper ventilation.
- The installation site meets the temperature and humidity requirements of the access point.
- The power supply and required current are available in the installation site.
- The selected power supply modules meet the system power requirements.
- The installation site meets the cabling requirements of the access point.
- The installation site meets the site requirements of the access point.
- The customized access point meets the client-specific requirements.

3.2 Precautions

To ensure normal operation and prolonged service life of the access point, observe the following precautions:

- Do not power on the access point during installation.
- Install the access point in a well-ventilated location.
- Do not subject the access point to high temperature.
- Keep the access point away from high voltage cables.
- Do not expose the access point in a thunderstorm or strong electric field.
- Cut off the power switch before cleaning the access point.
- Do not open the enclosure when the access point is working.
- Secure the access point tightly.

3.3 Installing the Access Point

⚠ **Caution**

- You are advised to install the access point where you can get the optimal Wi-Fi coverage.
- Images are for indicative purpose only and may not represent exact equipment.

The dimensions of the mounting bracket are shown in the following figure.

Figure 3-1   Dimensions of Mounting Bracket
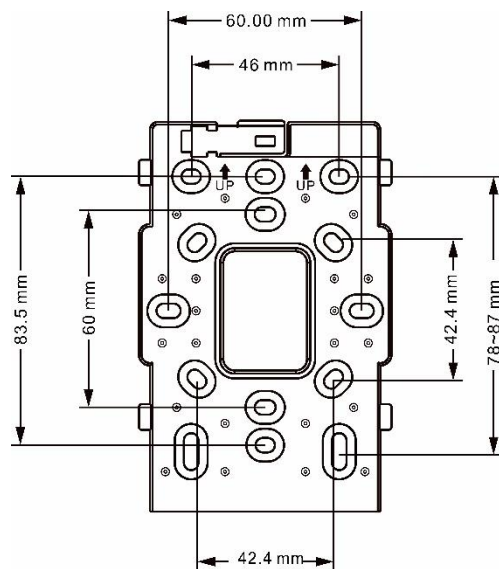
The access point can be installed on various junction boxes, including Chinese-standard and European-standard 86-mm junction boxes, American-standard 118-mm junction box, and South African-standard 120-mm junction box. To mount the access point on a Chinese-standard 86-mm junction box, follow these steps:

⚠️ **Caution**

By default, the access point is installed with a white cover upon delivery. You are advised to remove the default cover from the access point after installing the access point on the wall.

(1) Secure the mounting bracket to the junction box using screws.

Figure 3-2   Chinese-standard 86 mm × 86 mm Junction Box
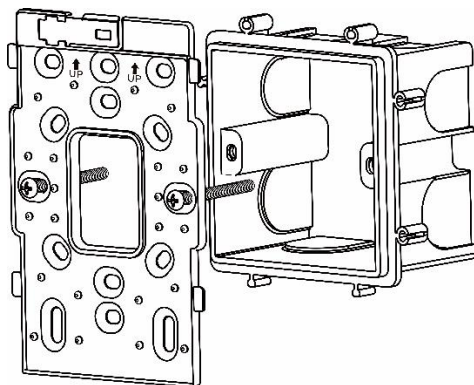
The following are brackets on European-standard 86 mm × 86 mm junction box, South African-standard 114 mm × 114 mm junction box, and American-standard 108 mm × 59 mm junction box. The access point can be mounted horizontally or vertically on a South African-standard junction box.

Figure 3-3   Bracket on European-standard 86 mm × 86 mm Junction Box
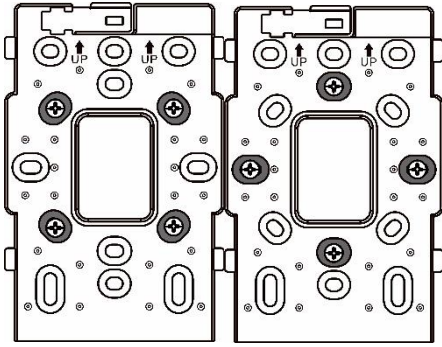
Figure 3-4   Bracket on South African-standard 114 mm × 114 mm Junction Box
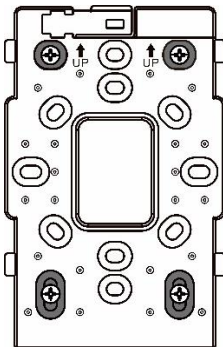
Figure 3-5   Bracket on American-standard 108 mm × 59 mm Junction Box
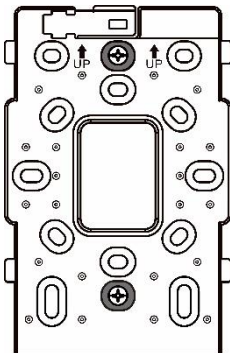
(2) Connect the twisted pairs to the WAN/PoE port of the access point. For cable pair connection, see <u>Connectors and Media</u>.
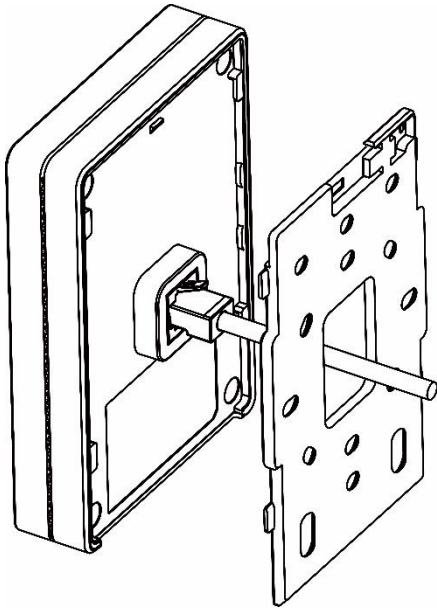
> ⚠ **Caution**
> - Make sure that the cables at the connectors have natural bends or bends of large radius instead of small radius.
> - When the access point is powered by PoE power supply, make sure that the PSE connected to the WAN/PoE port of the access point is 802.3af/802.3at-capable. If the 802.3af-compliant PoE power supply is adopted, the 5 GHz radio is disabled.

(3) (Optional) Remove the default cover from the access point. Install a new cover on the access point.
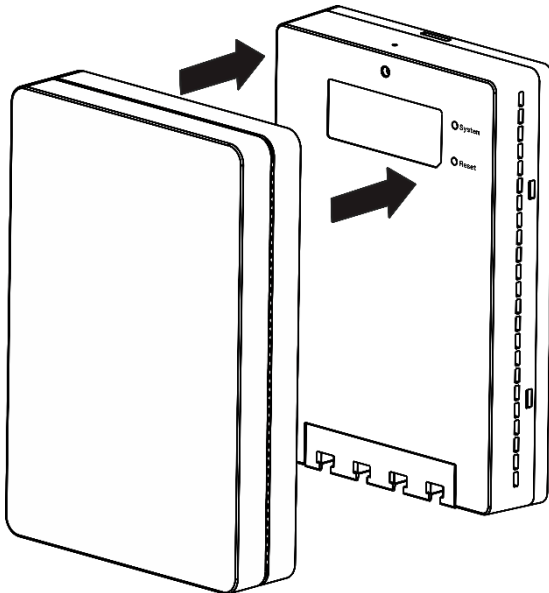
(4) Align the upper edge of the WAN/PoE port on the access point with the upper edge of the hole on the mounting bracket. Slide the device downward to secure it on the mounting bracket.
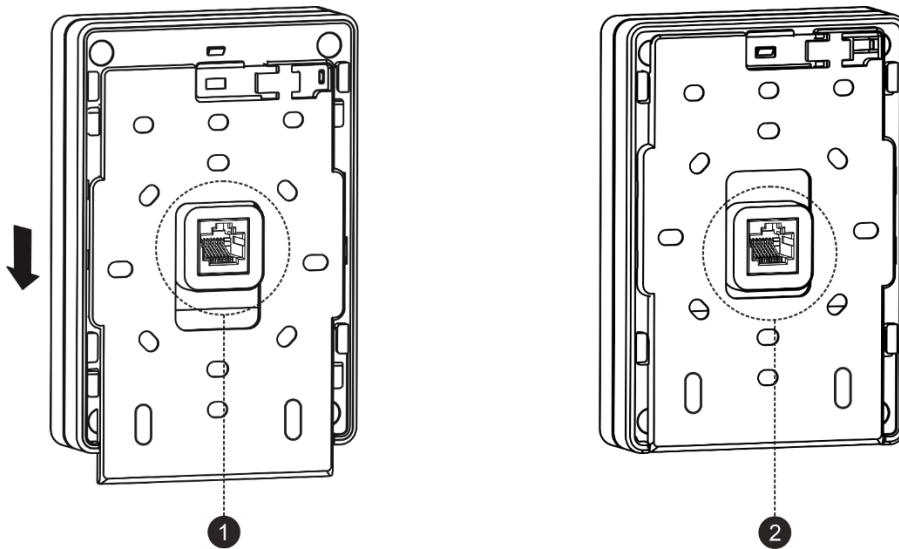
⚠ **Caution**

Keep the key to the security lock (T-key) handy after installation. This product is designed with anti-theft function. You need to use the T-key to remove the access point.

3.4 Bundling Cables

3.4.1 Precautions

- The cables should be bound in a visually pleasing way.
- When you bundle twisted pairs, make sure that the cables at the connectors have natural bends or bends of large radius.
- Do not over-tighten cable bundle as it may reduce the cable life and performance.

3.4.2 Steps

(1) Bind the drooping part of the cables and place the bundle as near the ports as possible.

(2) Route the cables under the access point and run in straight line.

3.5 Checklist After Installation

(1) Checking Access Point

- Verify that the external power supply matches with the requirement of the access point.
- Verify that the access point is securely fastened.

(2) Checking Cable Connection

- Verify that the UTP/STP cable matches with the port type.
- Verify that cables are properly bundled.

(3) Checking Power Supply

- Verify that the power cord is properly connected and compliant with safety requirements.

● Verify that the access point is operational after power-on.

3.6 Removing the Access Point

(1) Remove the cover horizontally from the access point.

(2) Insert the T-key into the square hole on the top of the access point. Push the device upward to remove it from the mounting bracket.
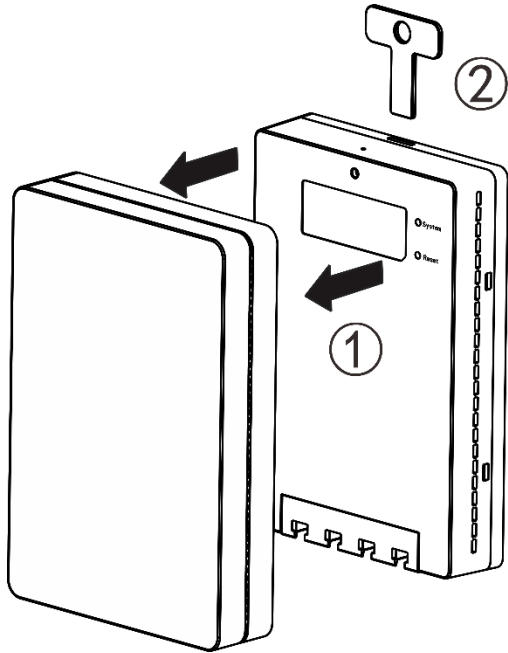
4 Verifying Operating Status

4.1 Setting up Configuration Environment

The access point can be powered by PoE power supply.

- Verify that the power cord is properly connected and compliant with safety requirements.
- Connect the access point with the debugging device through the Ethernet cable.

4.2 Powering on the Access Point

4.2.1 Checklist Before Power-on

- Verify that the Ethernet cable is properly connected.
- Verify that the PSE connected to the WAN/PoE port of the access point is 802.3af/802.3at-capable. If 802.3af-compliant PoE power supply is adopted, the 5 GHz radio is disabled.

4.2.2 Checklist After Power-on

- Verify the LED status.
- Verify that mobile phones or other clients can discover the SSID after the access point is powered on. If multiple devices exist on the network, use SSID @Ruijie-mXXXX. If only one device exists on the network, use SSID @Ruijie-sXXXX.

5 Monitoring and Maintenance

5.1 Monitoring

You can observe the LED color to monitor the access point status.

5.2 Hardware Maintenance

If the hardware is faulty, please contact technical support.

6 Common Troubleshooting

6.1 General Troubleshooting Flowchart

```
                    ┌─────────────────────────┐
                    │         Start           │
                    └─────────────────────────┘
                                │
                                ▼
                    ┌─────────────────────────┐
                    │ Check whether the AP is  │
                    │     installed properly.  │
                    └─────────────────────────┘
                                │
                                ▼
                    ┌─────────────────────────┐
                    │ Check whether the power  │
                    │ supply is properly       │
                    │ connected.               │
                    └─────────────────────────┘
                                │
                                ▼
                    ┌─────────────────────────┐
                    │ Check whether the LED is │
                    │ normal.                  │
                    └─────────────────────────┘
                                │
                                ▼
                    ┌─────────────────────────┐
                    │ Check whether cables are │
                    │ properly connected with  │
                    │ ports.                   │
                    └─────────────────────────┘
                                │
                                ▼
                    ┌─────────────────────────┐
                    │ Contact Ruijie technical │
                    │ support to check whether │
                    │ hardware faults exist.   │
                    └─────────────────────────┘
                                │
                                ▼
                    ┌─────────────────────────┐
                    │         Finish          │
                    └─────────────────────────┘
```
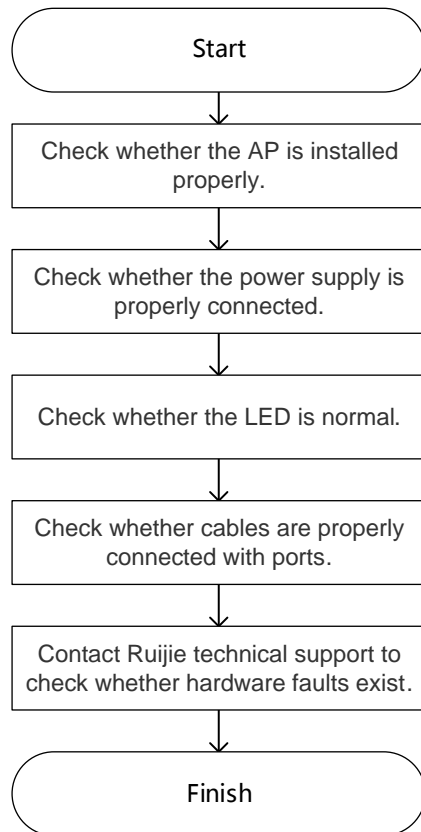
6.2 Common Faults

- Why is the LED off after the access point is powered on?

  Verify that the PSE connected to the WAN/PoE port of the access point is 802.3af/802.3at-capable. Check whether the Ethernet cable is connected properly and works normally.

- Why does Ethernet port not work after the Ethernet cable is plugged in?

  Check whether the peer device is working properly. Then verify that the Ethernet cable is capable of providing the required data rate and is properly connected.

- Why can't clients find the access point?

  ○ Verify that the access point is properly powered.

  ○ Verify that the Ethernet port is correctly connected.

  ○ Verify that the access point is correctly configured.

  ○ Move the client endpoint to adjust the distance between the client and the access point.

- Why can't clients discover the 5 GHz SSID?

  ○ Verify that the PSE supplying power to the access point is 802.3at-capable.

  ○ Verify that the access point is configured with the 5 GHz SSID.

  ○ Log in to Eweb and choose **Advanced** > **PoE Settings** in the **Local Device** mode to verify that the **Power Mode** is set to **IEEE 802.3at**.

- Why can't clients discover the 5 GHz SSID?
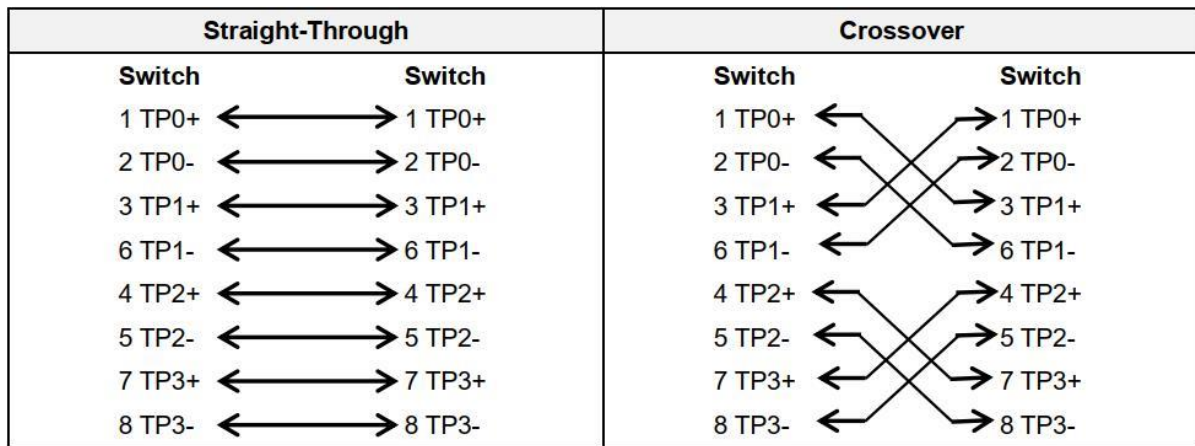
7 Appendix

7.1 Connectors and Media

7.1.1 1000BASE-T/100BASE-TX/10BASE-T Port

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

Compliant with IEEE 802.3ab, 1000BASE-T requires Category 6 or Category 5e 100-ohm UTP or STP (STP is recommended) with a maximum distance of 100 meters (328.08 feet). Category 6 STP is recommended for PoE power supply. Take shielding measures for both ports and cables.

1000BASE-T port uses four twisted pairs for data transmission. Twisted pairs for the 1000BASE-T port are connected as shown in the following figure.

Figure 7-1   Four Twisted Pairs Connection

Straight-Through		Crossover	
Switch	Switch	Switch	Switch
1 TP0+ ⟷ 1 TP0+		1 TP0+ ⟶ 1 TP0+	
2 TP0- ⟷ 2 TP0-		2 TP0- ⟶ 2 TP0-	
3 TP1+ ⟷ 3 TP1+		3 TP1+ ⟶ 3 TP1+	
6 TP1- ⟷ 6 TP1-		6 TP1- ⟶ 6 TP1-	
4 TP2+ ⟷ 4 TP2+		4 TP2+ ⟶ 4 TP2+	
5 TP2- ⟷ 5 TP2-		5 TP2- ⟶ 5 TP2-	
7 TP3+ ⟷ 7 TP3+		7 TP3+ ⟶ 7 TP3+	
8 TP3- ⟷ 8 TP3-		8 TP3- ⟶ 8 TP3-	

100BASE-TX/10BASE-T port can also be connected by cables of the preceding specifications. Besides, the 10BASE-T port can be connected by 100-ohm Category 3, Category 4, and Category 5 cables with a maximum distance of 100 meters (328.08 feet). 100BASE-TX port can be connected by 100-ohm Category 5 cables with a maximum distance of 100 meters (328.08 feet). The following table lists definitions of pin signals for the 100BASE-TX/10BASE-T port.
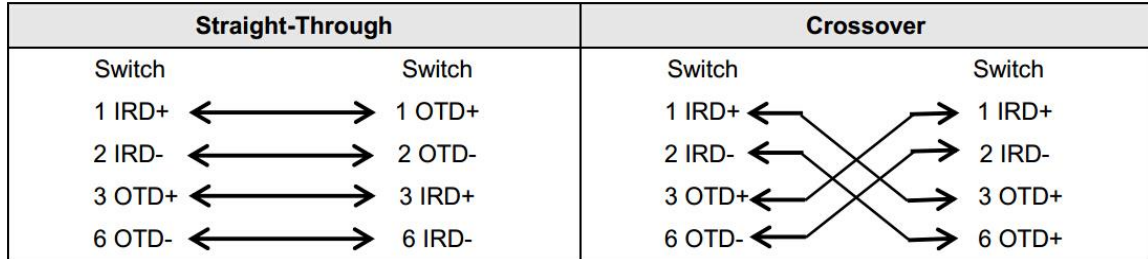
Table 7-1   100BASE-TX/10BASE-T Pin Assignments

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-

Pin	Socket	Plug
4, 5, 7, 8	Not Used	Not Used

The following figure shows feasible connections of the straight-through and crossover twisted pairs for a 100BASE-TX/10BASE-T port.

Figure 7-2   100BASE-TX/10BASE-T Connection

Straight-Through		Crossover	
Switch	Switch	Switch	Switch
1 IRD+ ⟷ 1 OTD+		1 IRD+	1 IRD+
2 IRD- ⟷ 2 OTD-		2 IRD-	2 IRD-
3 OTD+ ⟷ 3 IRD+		3 OTD+	3 OTD+
6 OTD- ⟷ 6 IRD-		6 OTD-	6 OTD+

7.2 Cabling

During installation, route cable bundles upward or downward along the sides of the rack depending on the actual situation in the equipment room. All cable connectors used for transit should be placed at the bottom of the cabinet rather than be exposed outside of the cabinet. Power cords are routed beside the cabinet, and top cabling or bottom cabling is adopted according to the actual situation in the equipment room, such as the positions of the DC power distribution box, AC socket, or lightning protection box.

(1) Requirements for Cable Bend Radius

● The bend radius of a fixed power cord, network cable, or flat cable should be over five times greater than their respective diameters. The bend radius of these cables that are often bent or plugged should be over seven times greater than their respective diameters.

● The bend radius of a fixed common coaxial cable should be over seven times greater than its diameter. The bend radius of the common coaxial cable that is often bent or plugged should be over 10 times greater than its diameter.

● The bend radius of a fixed high-speed cable (such as SFP+ cable) should be over five times greater than its diameter. The bend radius of the fixed high-speed cable that is often bent or plugged should be over 10 times greater than its diameter.

(2) Precautions for Bundling up Cables

● Before cables are bundled, mark labels and stick the labels to cables wherever appropriate.

● Cables should be neatly and properly bundled in the rack without twisting or bending.

Figure 7-3   Binding Cables
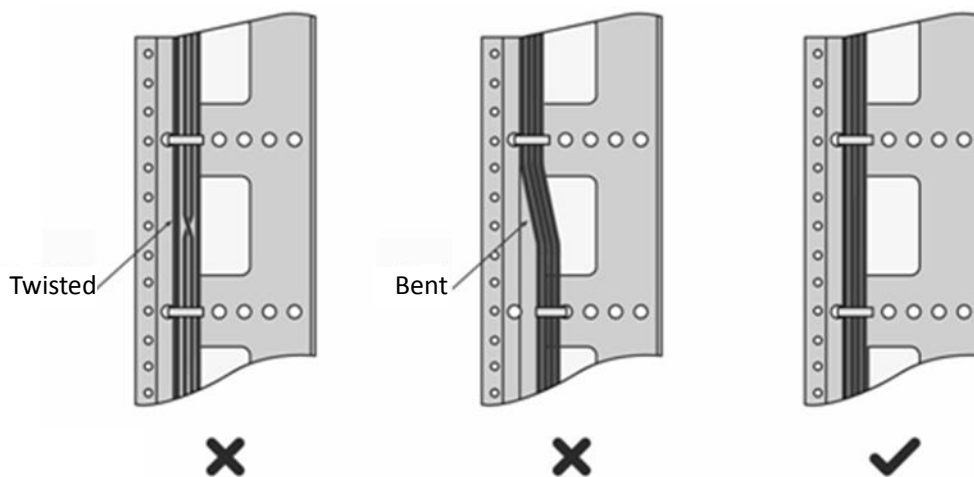
● Cables of different types (such as power cords, signal cables, and ground cables) should be separated in cabling and bundling. Mixed bundling is disallowed. When they are close to each other, you are advised to adopt crossover cabling. In the case of parallel cabling, maintain a minimum distance of 30 mm (1.18 in.) between power cords and signal cables.

● The cable management brackets and cabling troughs inside and outside the cabinet should be smooth without sharp corners.

● The metal hole traversed by cables should have a smooth and fully rounding surface or an insulated lining.

- Use cable ties to bundle up cables properly. Please do not connect two or more cable ties to bundle up cables.

- After bundling up cables with cable ties, cut off the remaining part. The cut should be smooth and trim, without sharp corners.

Figure 7-4   Binding Cables
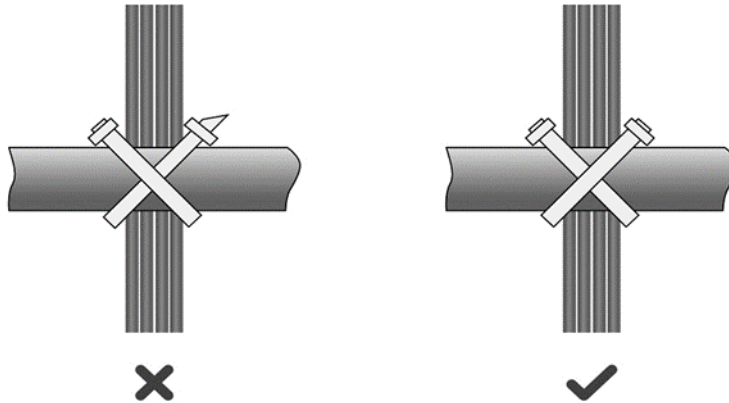
- When cables need to be bent, please bundle them up but do not tie them where the cables will be bent. When cables need to be bent, please bundle them up but do not tie them where the cables will be bent.

Figure 7-5   Binding Cables
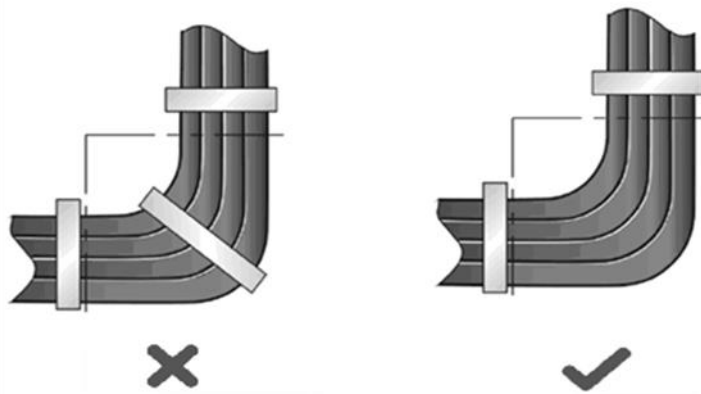
- Cables not to be assembled or remaining parts of cables should be folded and placed in a proper position of the rack or cable trough. The proper position refers to a position that does not affect device running or damage the device or cable.

- 220 V and –48 V power cords must not be bundled on the guide rails of moving parts.

- The power cords connecting moving parts such as grounding cables should be reserved with some access after being assembled to avoid suffering tension or stress. After the moving part is installed, the remaining cable part should not touch heat sources, sharp corners, or sharp edges. If heat sources cannot be avoided, high-temperature cables should be used. If heat sources cannot be avoided, high-temperature cables should be used.

- When screw threads are used to fasten cable terminals, the anchor or screw must be tightly fastened.

Figure 7-6   Cable Fastening
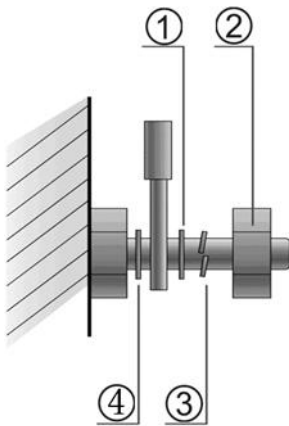
	1. Flat Washer		3. Spring Washer
	2. Nut		4. Flat Washer

- Hard power cords should be fastened in the terminal connection area to prevent stress on terminal connection and cable.

- Do not use self-tapping screws to fasten terminals.

- Power cords of the same type and in the same cabling direction should be bundled up into cable bunches, with cables in cable bunches clean and straight.

- Bundle up cables by using cable ties.

Cable Bunch Diameter	Distance between Every Binding Point
10 mm (0.39 in.)	80 mm to 150 mm (3.15 in. to 5.91 in.)
10 mm to 30 mm (0.39 in. to 1.18 in.)	150 mm to 200 mm (5.91 in. to 7.87 in.)
30 mm (1.18 in.)	200 mm to 300 mm (7.87 in. to 11.81 in.)

- No knot is allowed in cabling or bundling.

For wiring terminal blocks (such as circuit breakers) with cord end terminals, the metal part of the cord end terminal should not be exposed outside the terminal block when assembled.