Ruijie Cybrey RG-ANT90-T6 Antenna

Installation Guide

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Preface

Intended Audience

This document is intended for:

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

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Conventions

1. Signs

The signs used in this document are described as follows:

Danger

An alert that calls attention to safety operation instructions that if not understood or followed when operating the device can result in physical injury.

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.

2. Note

This document provides the installation steps, troubleshooting, technical specifications, as well as the specifications and use guidelines of cables and connectors. It is intended for users who want to understand the above contents, and are familiar with the installation and maintenance of networking hardware. Users are assumed to have reasonable knowledge of relevant terms and concepts.

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1 Overview

1.1 About the RG-ANT90-T6

The RG-ANT90-T6 is a tri-band, six-element, dual-polarized, high-gain antenna. In 6 GHz, the antenna features a 65° azimuth beamwidth, a 18° elevation beamwidth, and a peak gain of 11 dBi; in 5 GHz, the antenna features a 65° azimuth beamwidth, a 18° elevation beamwidth, and a peak gain of 11 dBi; in 2.4 GHz, the antenna features a 60° azimuth beamwidth, a 20° elevation beamwidth, and a peak gain of 9 dBi. The antenna is ideal for indoor and outdoor sector coverage and supports Wi-Fi access in the 2.4 GHz, 5 GHz, or 6 GHz bands. The RG-ANT90-T6 is equipped with brackets that support both horizontal and vertical adjustment, enabling flexible deployment. It can be directly connected to an AP with an RP-SMA port.

1.2 Equipment Appearance

Figure 1-1 Appearance



Note

Figure 1-1 is for reference only. The actual equipment may vary.

1.3 Technical Specifications

Note

The weight in the table refers to the weight of a single antenna.

Table 1-1 Technical Specifications

Dimensions (W x D x H)	360 mm x 240 mm x 45 mm (14.17 in. x 9.45 in. x 1.77 in.)
Weight	0.97 kg (2.14 lbs)
Frequency Range	● 2400–2500 MHz ● 5150–6425 MHz ● 6425–7125 MHz
Gain	● 2400–2500 MHz: 9 dBi ● 5150–6425 MHz: 11 dBi ● 6425–7125 MHz: 11 dBi
HPOL Beamwidth (3dB)	● 2400–2500 MHz: 65° ± 10° ● 5150–6425 MHz: 65° ± 10° ● 6425–7125 MHz: 60° ± 10°
VPOL Beamwidth (3dB)	● 2400–2500 MHz: 27° ± 5° ● 5150–6425 MHz: 15° ± 5° ● 6425–7125 MHz: 15° ± 5°
HPOL Beamwidth (6dB)	● 2400–2500 MHz: 95° ± 5° ● 5150–6425 MHz: 95° ± 10° ● 6425–7125 MHz: 90° ± 15°
VPOL Beamwidth (6dB)	● 2400–2500 MHz: 37° ± 5° ● 5150–6425 MHz: 20° ± 5° ● 6425–7125 MHz: 17° ± 5°
Min. Antenna Efficiency	● 2400–2500 MHz: 60% ● 5150–6425 MHz: 50% ● 6425–7125 MHz: 50%
Port Isolation	● 2400–2500 MHz: ○ Co-channel: 20 dB ○ Adjacent-channel: 25 dB ● 5150–6425 MHz: ○ Co-channel: 15 dB ○ Adjacent-channel: 25 dB ● 6425–7125 MHz: ○ Co-channel: 15 dB ○ Adjacent-channel: 25 dB
Max. Input Power	1 W

Max. VSWR	• 2400–2500 MHz: < 2 • 5150–6425 MHz: < 2 • 6425–7125 MHz: < 2.5
Environment	Operating temperature: –40°C to 65°C (–40°F to 149°F)
	Operating humidity: 0% RH to 100% RH (non-condensing)
	Storage temperature: –40°C to 85°C (–40°F to 185°F)
	Storage humidity: 0% RH to 100% RH (non-condensing)
Mounting Options	Wall, pole
Input Port	6 x RP-SMA-Female
IP Rating	IP55
Certification	CE
MTBF	Greater than 400,000 hours

2 Preparing for Installation

2.1 Package Contents

Table 2-1 Package Contents

Item	Quantity
RG-ANT90-T6 antenna (with mounting bracket assembly)	1
Pivot bracket	1
Base bracket	1
Antenna mounting bracket	1
Hose clamp	2
Wing knob	2
Positioning nut	1
M5 x 66 mm Phillips hexhead machine screw	2
M6 x 70 mm expansion anchor	2
M5 x 12 mm Phillips pan head screw	3
User Manual	1
Warranty Card	1

Note

The package contents are subject to the purchase contract, and actual delivery may vary. Please check the items carefully against the package contents or purchase contract. If you have any questions, please contact the distributor.

2.2 Safety Guidelines

Note

- To avoid personal injury or equipment damage, review the safety guidelines in this chapter before you begin the installation.

- The following safety guidelines may not include all the potentially hazardous situations.

2.2.1 General Precautions

- Do not expose the equipment to high temperatures, dust, or harmful gases. Do not install the equipment in flammable or explosive environments. Keep the equipment away from sources of electromagnetic interference (EMI), such as large radar stations, radio stations, and substations. Do not subject the equipment to unstable voltage, vibration, or excessive noise.
- The installation site should be dry. Do not install the equipment in a place near the sea. Keep the equipment at least 500 m (1,640.42 ft.) 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.
- The antenna equipment must be installed by professional operators.

Caution

Please follow the correct procedures described in this guide to install and remove the equipment.

2.2.2 Chassis-Lifting Guideline

- Avoid moving the equipment frequently.
- Turn off all power supplies and disconnect all cables before lifting or moving the equipment.

2.2.3 Electrical Safety

Warning

- Any deviation from standard or improper electrical operations can result in accidents such as fires or electric shocks, potentially causing severe or even fatal harm to both individuals and equipment.
- Direct or indirect touch through a wet object on high-voltage and mains supply can bring a fatal danger.

- Always observe the local regulations and standards. Only qualified personnel should be allowed to operate the equipment.
- Carefully check the work area for potential hazards, including ungrounded power system, absent safety grounds, and damp floors.

2.3 Site Requirements

To ensure the normal operation and prolonged service life of the equipment, it is essential to install it on a site that is sturdy enough to support the equipment and its accessories.

2.4 Tools

Table 2-2 Tools

Common Tools	Marker, Phillips screwdriver, hammer drill

Note

The equipment is delivered without a toolkit. Prepare the preceding tools by yourself.

2.5 Checking Before Installation

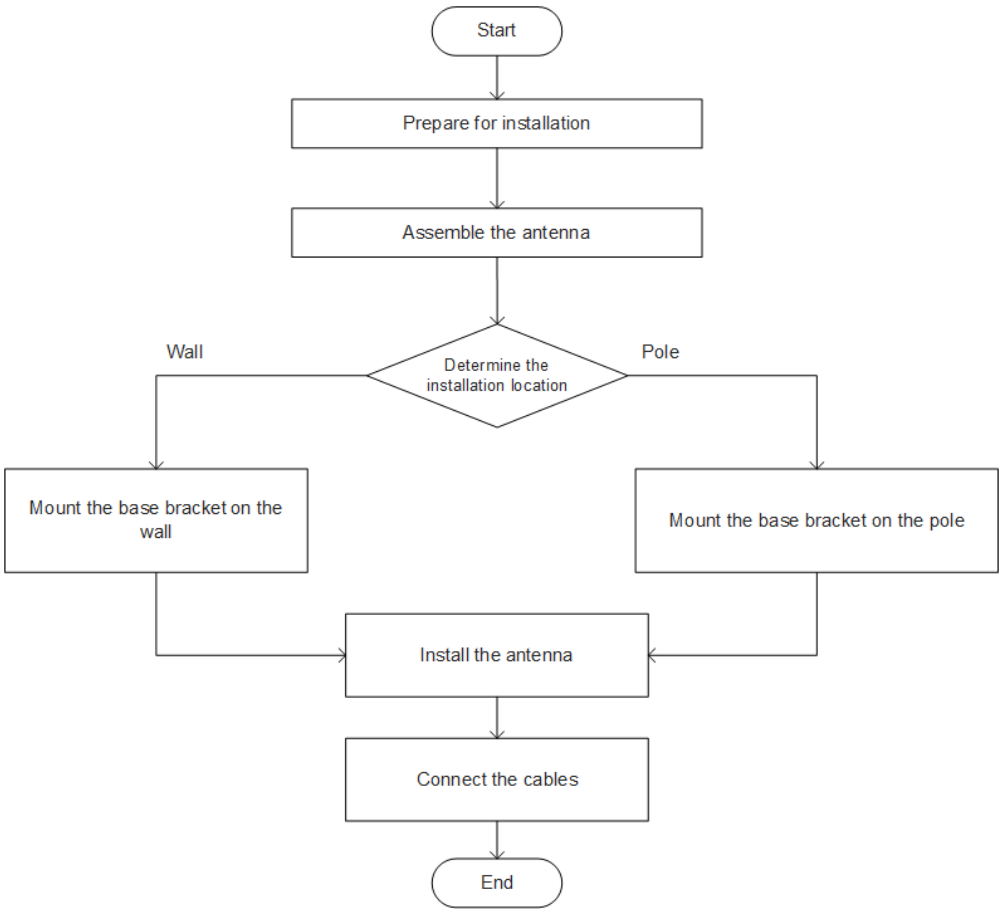
After unpacking the equipment, carefully inspect each item in accordance with the provided package contents. If any inconsistencies are found, please contact your local distributor.

3 Installing the Equipment

Caution

Before installing the equipment, ensure that guidelines and requirements in Chapter 2 have been met.

3.1 Installation Procedure



3.2 Before You Begin

Carefully plan and arrange the installation location, networking mode, power supply, and cabling of the equipment before installation. Confirm the following points before installation:

- The installation site provides sufficient space for heat dissipation.
- The installation site meets the temperature and humidity requirements.
- The power supply is available at the installation site, and its current meets the requirements.
- The power supply meets the system power requirements.
- The network cables have been deployed at the installation site.

- The installation site meets all requirements described in this guide.
- The equipment meets the customers' requirements.

3.3 Installing the Antenna

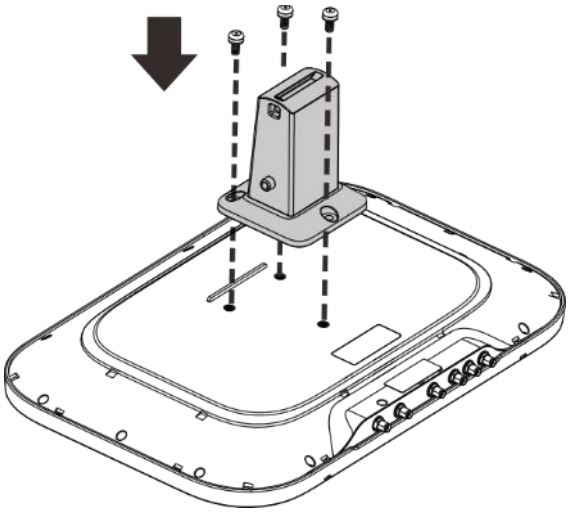
Caution

- Install and orient the equipment to maximize coverage.
- The schematic diagrams provided are for reference only. The actual equipment should be installed according to its physical specifications and design.

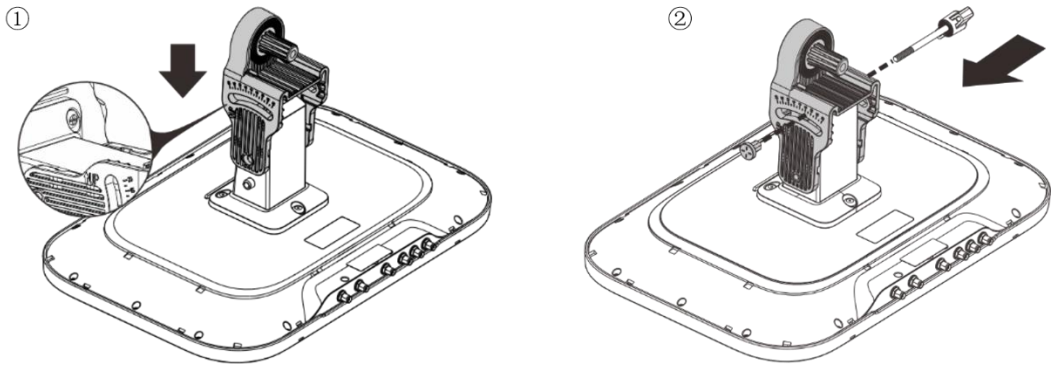
3.3.1 Wall Mount

(1) Assemble the antenna.

a. Secure the antenna mounting bracket to the antenna using three screws.

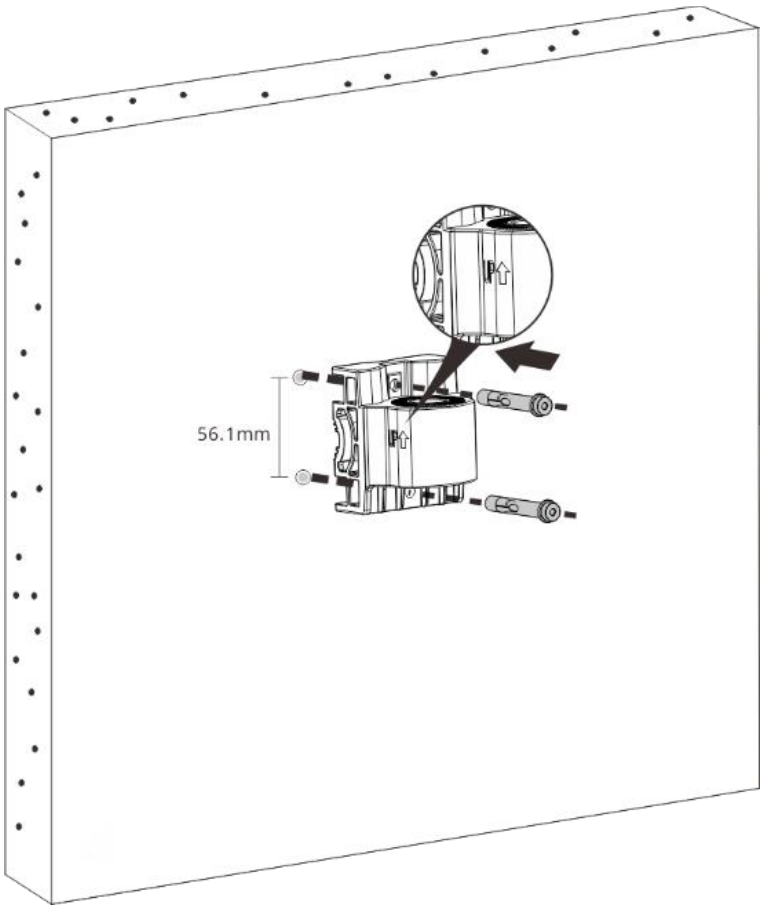


b. Secure the pivot bracket to the antenna mounting bracket using a long screw and a nut, and then install the wing knob.

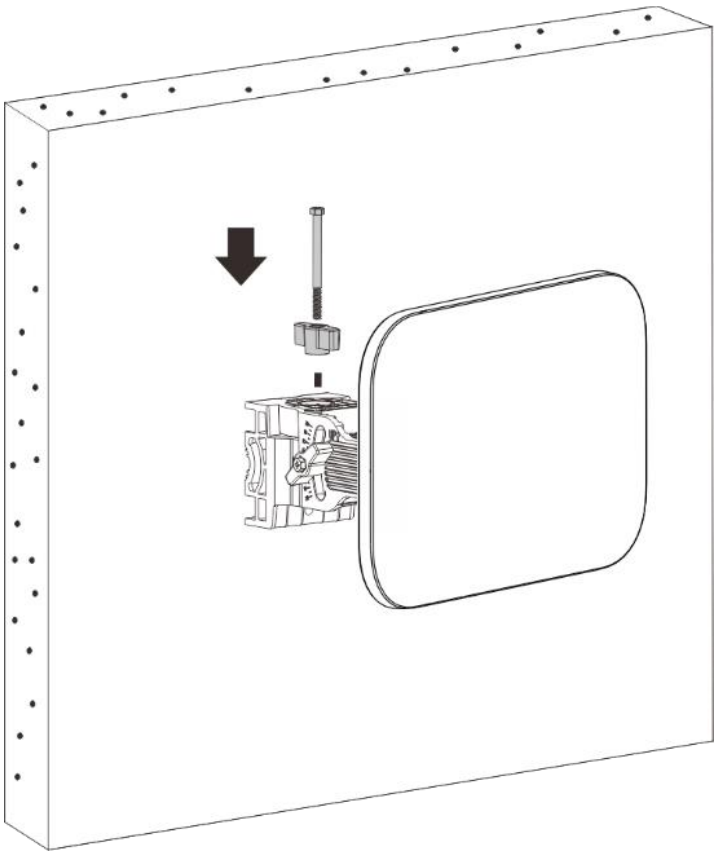


(2) Install the base bracket.

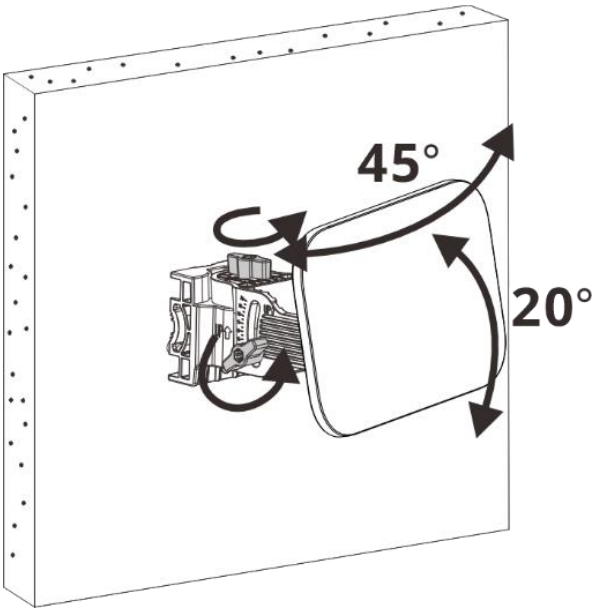
Secure the base bracket to the wall using two expansion anchors.



(3) Install the antenna assembly prepared in Step 1 onto the base bracket and tighten the long screw.



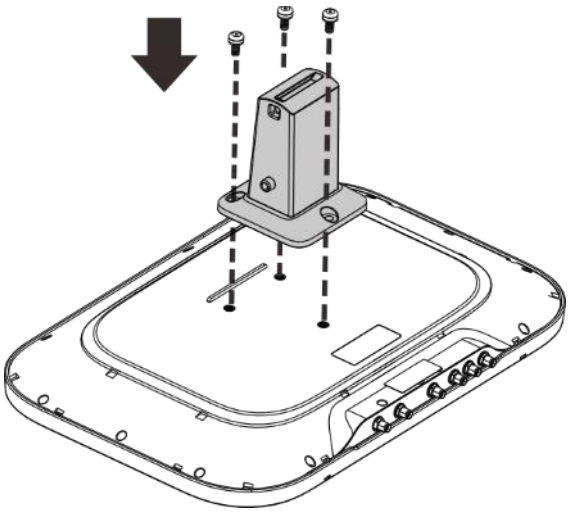
After installation, the antenna angle can be adjusted by rotating the wing knobs on the top and side.



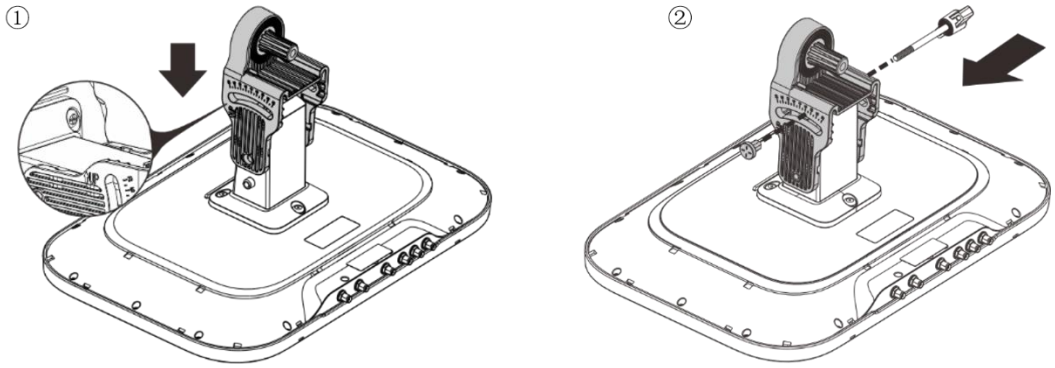
3.3.2 Pole Mount

(1) Assemble the antenna.

a. Secure the antenna mounting bracket to the antenna using three screws.

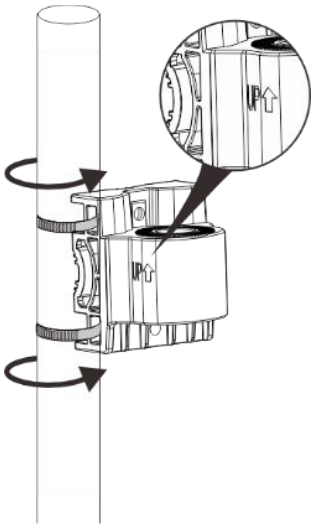


b. Secure the pivot bracket to the antenna mounting bracket using a long screw and a nut, and then install the wing knob.

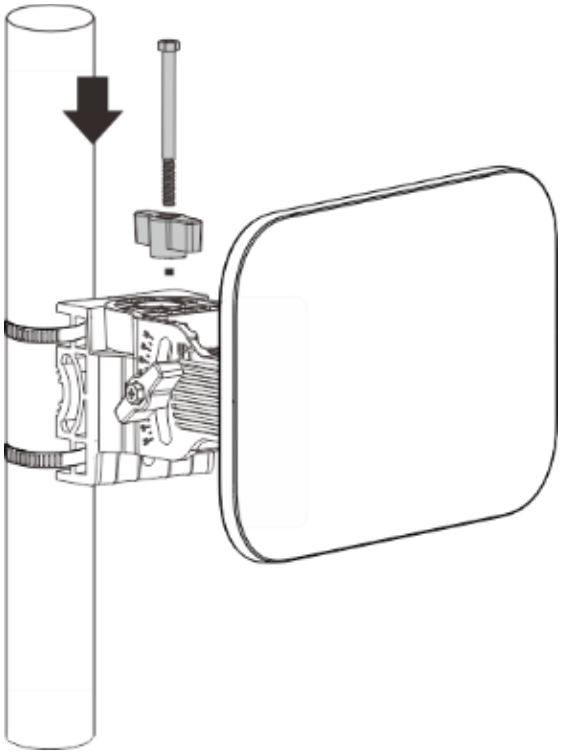


(2) Install the base bracket.

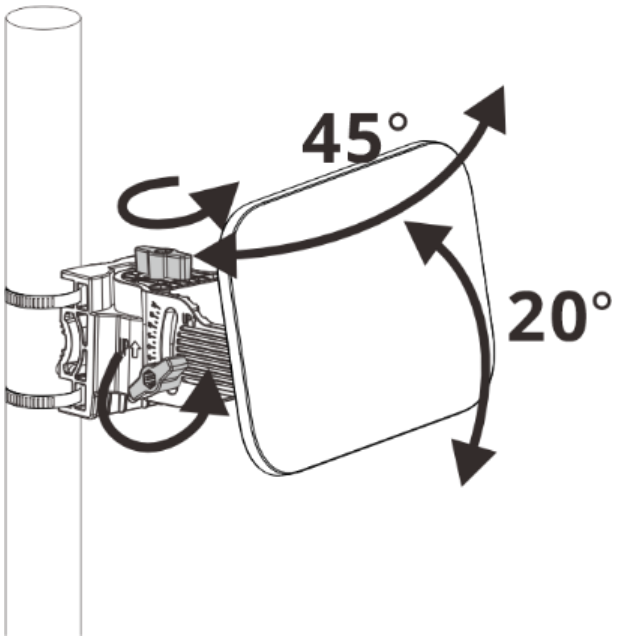
Secure the base bracket to the pole with two hose clamps and tighten them.



(3) Install the antenna assembly prepared in Step 1 onto the base bracket and tighten the long screw.



After installation, the antenna angle can be adjusted by rotating the wing knobs on the top and side.

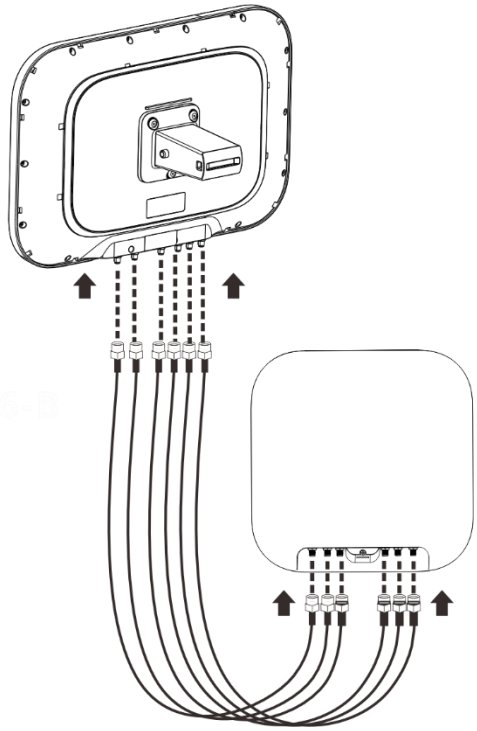


3.4 Connecting Cables

(1) Connect one end of the feeder cable to the RPSMA-K port on the antenna.

(2) Connect the other end of the feeder cable to the RPSMA-K port on the AP.

Figure 3-1 Cable Connection



(3) (Optional) To enhance the waterproof performance of the RP-SMA-J port, wrap waterproof tape around the port.