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27014279 Mining 2.4 GHz & 5 GHz Dual-Polarized Directional Antenna (H30 V30 G11&H15 V15 G15)

About This Chapter

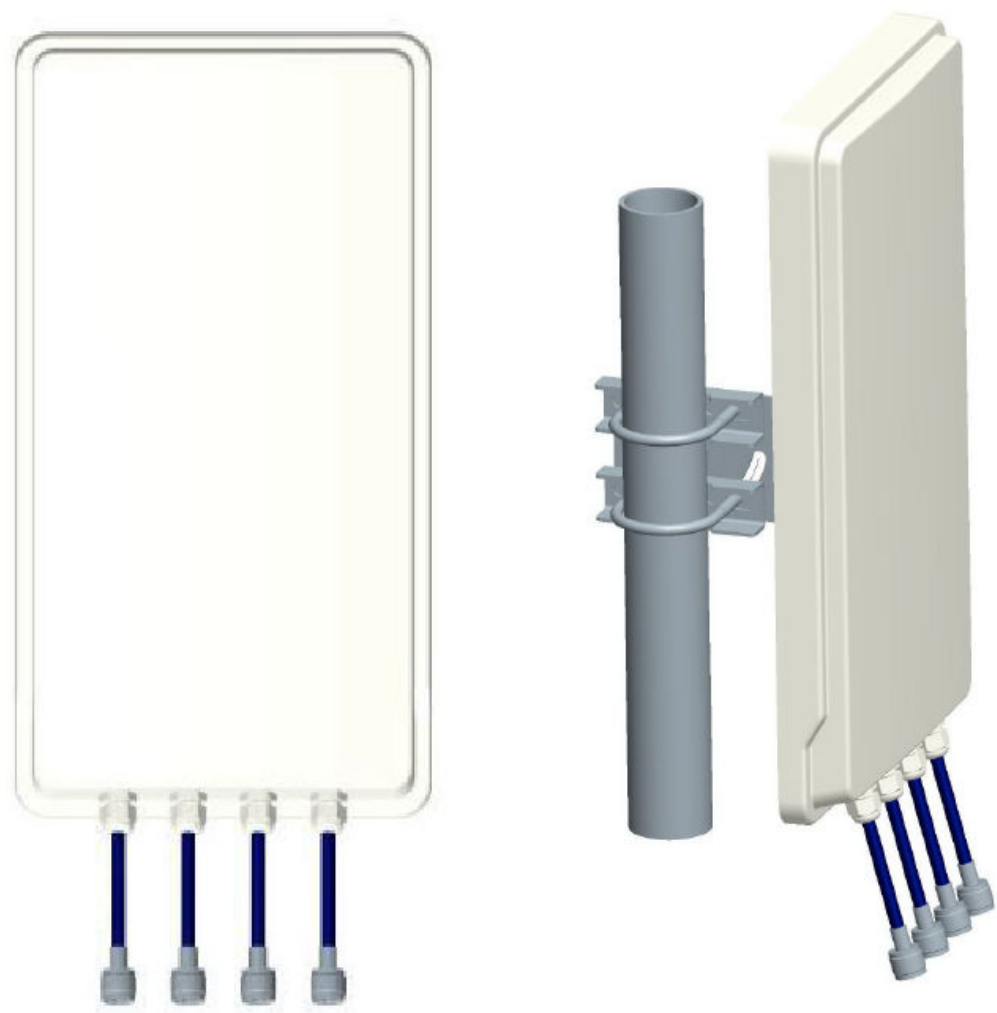
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49.1 27014279 Technical Specifications

Appearance and Structure

Figure 49-1 Appearance of the 27014279 Mining 2.4 GHz & 5 GHz Dual-Polarized Directional Antenna (H30 V30 G11&H15 V15 G15)



Technical Specifications

Table 49-1 Technical specifications of the 27014279 Mining 2.4 GHz & 5 GHz Dual-Polarized Directional Antenna (H30 V30 G11&H15 V15 G15)

Item	Details
Part Number	27014279
Model	ANTDG1115D4NM
Description	Directional Antenna,N -male,with bracket, 2400~2500MHz&5150~5850MHz, 4port, mining use

Item	Details
Frequency [MHz]	2.4G: 2400-2500 5G: 5150-5850
Antenna gain [dBi]	2.4G: 11 5G: 15
Horizontal beamwidth [degrees]	2.4G: 30 5G: 15
Vertical beamwidth [degrees]	2.4G: 30 5G: 15
Standing wave ratio (SWR)	≤ 2.0
Polarization	Horizontal and vertical polarization
Antenna connector	N-male x 4 (two 2.4 GHz RF ports + two 5 GHz RF ports)
Antenna dimensions [mm(in.)]	45 mm x 450 mm x 240 mm (1.77 in. x 17.72 in. x 9.45 in.)
Weight without packaging [kg(lb)]	Antenna body (excluding cables): 2.7 kg (5.95 lb) Mounting bracket: 0.65 kg (1.43 lb)
Installation type	Pole
Grounding requirements	Same as the AP
Pole diameter [mm(in.)]	φ34 to φ50

Item	Details
Antenna note	The gains and lobe widths are typical values, and the actual values are within a range. For specifications, see the corresponding data sheet. The coverage distance is a reference value in certain conditions. Plan an appropriate distance value according to Huawei planning experience, local standards, and onsite environments. There may be differences in the standards of different countries, so the mapping between antennas and APs shall comply with local standards. For details, refer to device access authentication information. The coverage distance is subject to the following constraints: - The default STA type is mobile phone, and no obstacle exists. - 2.4 GHz: The uplink and downlink RSSIs are greater than or equal to -75 dBm. - 5 GHz: The uplink and downlink RSSIs are greater than or equal to -75 dBm. For any questions about the parameters above, contact Huawei technical support.
Wind resistance	36 m/s

Antenna's Radiation Pattern

Figure 49-2 Antenna Pattern1 of the 27014279 Mining 2.4 GHz & 5 GHz Dual-Polarized Directional Antenna (H30 V30 G11&H15 V15 G15)

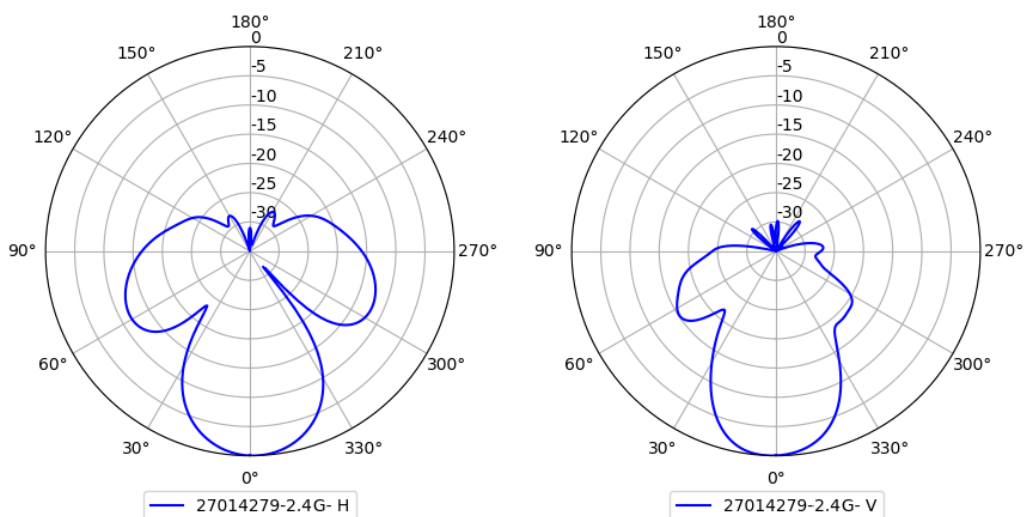
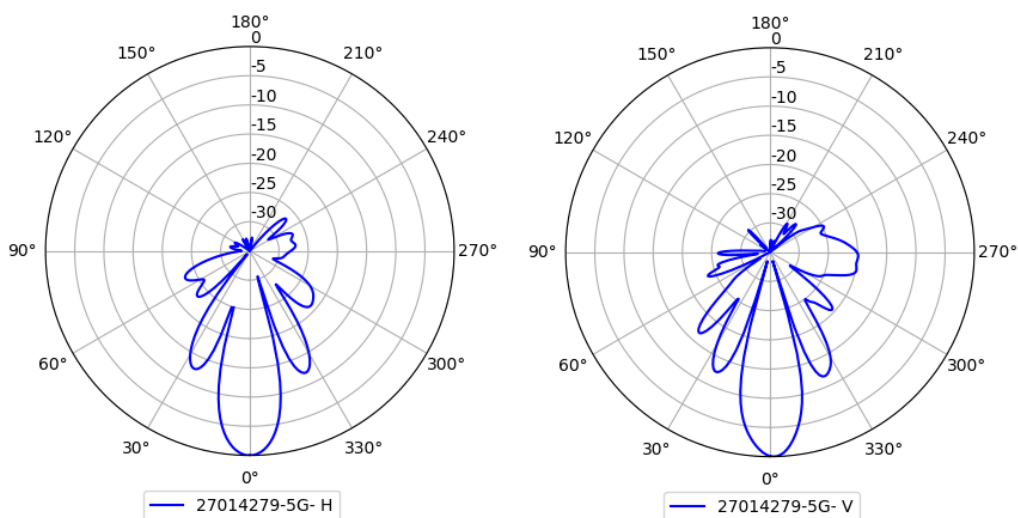


Figure 49-3 Antenna Pattern2 of the 27014279 Mining 2.4 GHz & 5 GHz Dual-Polarized Directional Antenna (H30 V30 G11&H15 V15 G15)



49.2 27014279 Antenna Installation

The 27014279 antenna is a mining-dedicated directional antenna and applies only to mining scenarios.

49.2.1 Accessories and Tools

Tools:

- Open-end wrench

- 8 mm socket wrench or torque screwdriver
- Inclinator



Pole:

- Pole with a diameter of $\phi 34$ mm to $\phi 50$ mm

Other accessories:

- L-shaped bracket x 1
- U-bracket x 2
- U-bolt x 2
- M8 spring washer x 4
- M8 flat washer x 4
- M8 hexagon nut x 4

49.2.2 Pole Mounting

The 27014279 antenna can be mounted on a pole. The wall thickness of the pole should be no less than 2.5 mm. A 50 mm diameter pole made of round steel is usually used.

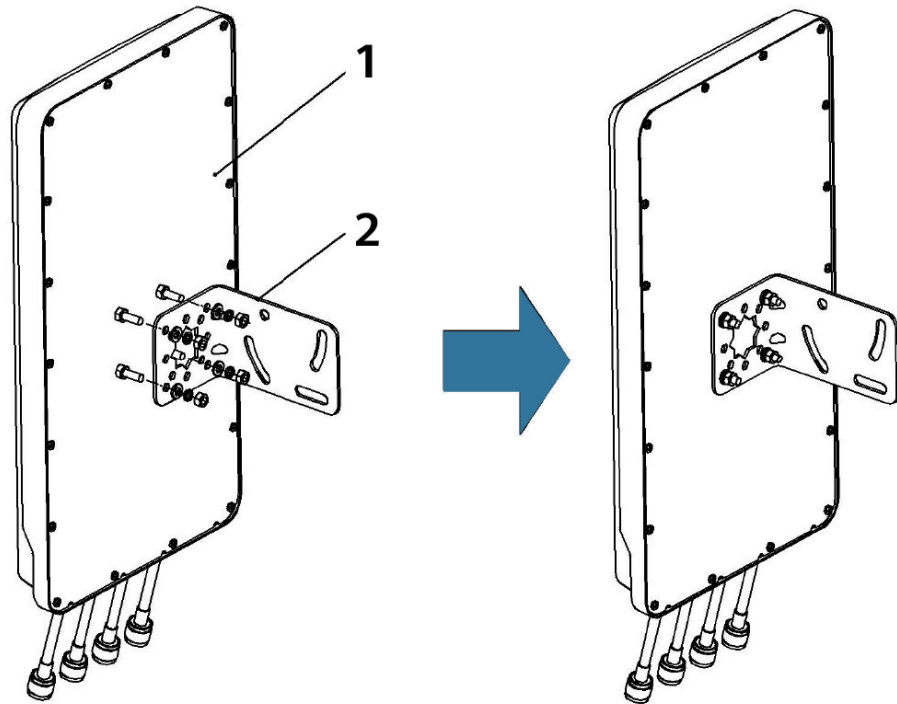
CAUTION

- The antenna must be installed in a place far away from high-voltage power supplies or radio signal interference sources (such as other APs or antennas).
- Do not install antennas in bad weather conditions, for example, during rain, snow, or strong winds.

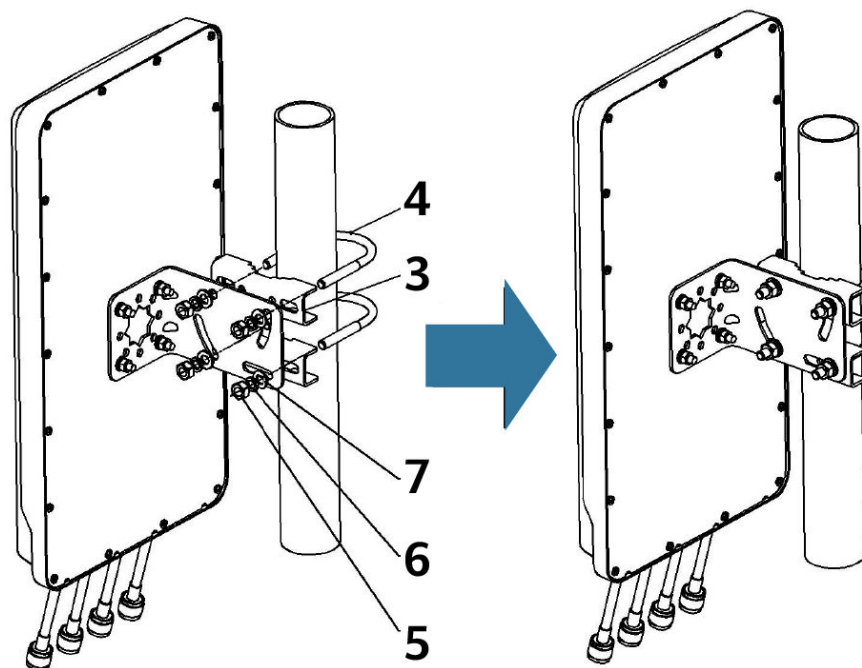
1. Install the L-shaped bracket on the antenna.

No.	Name
1	Antenna
2	L-shaped bracket
3	U-bracket
4	U-bolt
5	M8 hexagon nut

6	M8 spring washer
7	M8 flat washer



2. Secure the antenna on the pole with an antenna support. Keep the pole vertical to the ground during the installation.



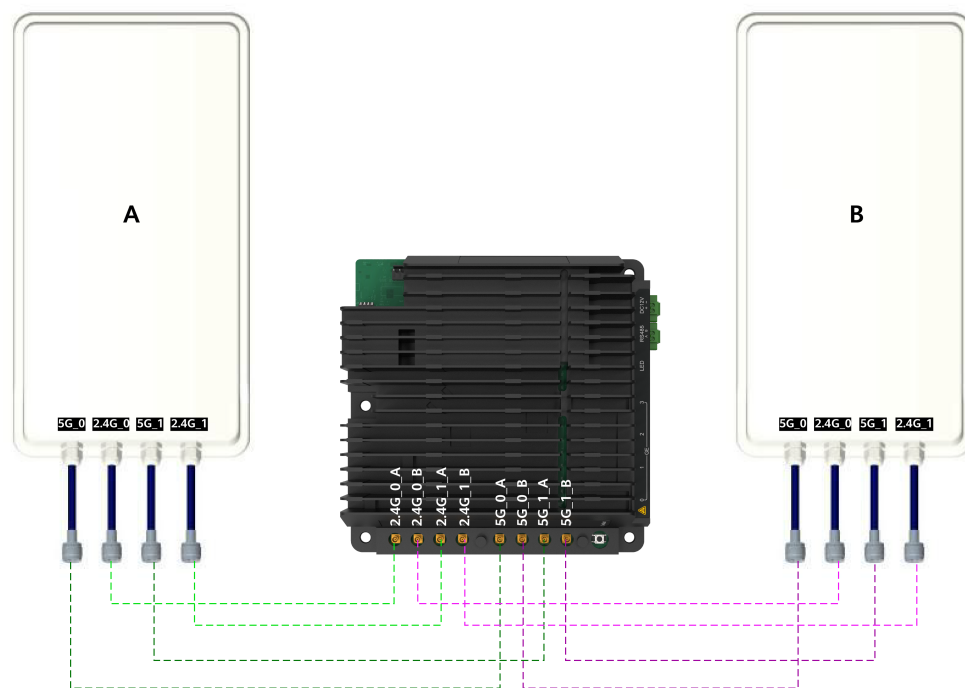
 NOTE

The mine wall may have protrusions that may block signals, and antennas need to be installed along drifts. The pole mounting mode is recommended so that APs are installed at a certain distance away from the wall. Keep antennas away from metal obstacles, and ensure that the transmit ends are not blocked by obstacles.

49.2.3 Connecting RF Cables

RF Cable Connections

One AirEngine 5761-11EI is configured with two mining 2.4 GHz and 5 GHz dual-polarized directional antennas (part number: 27014279), as shown in the following figure.



RF cables are directly connected to RF ports with a tightening torque of 0.8 N·m.

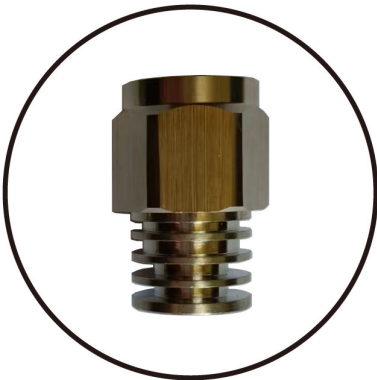
RF Cable Deployment Requirements

- Generally, all the RF ports must be equipped with antennas. For idle RF ports, install 50-ohm RF loads and wrap the RF loads with insulation tapes and waterproof tapes. Huawei offers 50-ohm RF loads (part number: 27110001 or 27110231) for you to purchase.

Figure 49-4 27110001



Figure 49-5 27110231



- When connecting to RF cables, the requirements of the bend radius are (1 inch = 25.4 mm):
 - RG-8U RF cable: > 150 mm
 - 1/2" RF cable: > 50 mm
 - 7/8" RF cable: > 250 mm

NOTICE

- Tighten the nut of the AP's RF connector with a torque of no more than 1.2 N·m.
- The grounding requirements of antennas are the same as those of APs.

Instructions on Making RF Cables

When making RF cables onsite, ensure that the coaxial cables and connectors in use comply with the mappings described in [Table 49-2](#).

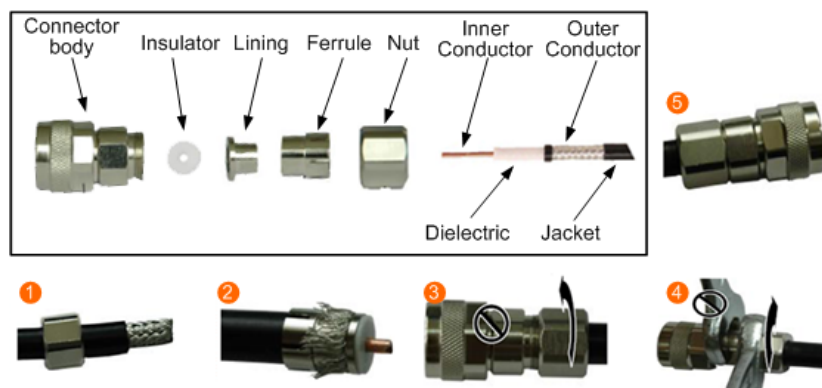
Table 49-2 Coaxial cables and connectors

Coaxial Cable	Coaxial Connector	Cable Loss	Appearance
RG-8U (250700 09)	Type N male connector (1404 0184)	• 2400–2483.5 MHz: 26.8 dB/100 m • 4920–5825 MHz: 41.8 dB/100 m	

Coaxial Cable	Coaxial Connector	Cable Loss	Appearance
1/2" (inch) super-flexible cable (250700 76)	Type N male connector (1404 0150)	2400–2483.5 MHz: 18.1 dB/100 m 4920–5825 MHz: 30 dB/100 m	

Connecting a Type N male coaxial connector to the RG-8U feeder cable

1. Peel the cable.
2. Install accessories, such as the nut.
3. Install the connector body.
4. Tighten the connector on the cable.
5. After assembly is complete, verify that cable attenuation is within the proper range. Take waterproof measures during the operation.



Connecting a Type N male coaxial connector to the 1/2" feeder cable

1. Peel the cable.
2. Install the back nut.
3. Install the front nut.
4. Put the cable through the heat-shrink tubing.
5. After assembly is complete, verify that cable attenuation is within the proper range. Take waterproof measures during the operation.

