



CW-ANT-T-O3-N Antenna Installation Guide

Cisco Aironet Antennas and Accessories

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1 CW-ANT-T-O3-N Antenna

Topics:

- [Antenna information](#)

About CW-ANT-T-O3-N antenna.

Antenna information

Introduces the CW-ANT-T-O3-N antenna, detailing its technical specifications, azimuth and elevation radiation patterns, safety precautions for handling and installation, and physical dimensions including mounting brackets.

The CW-ANT-T-O3-N is an 8-port, triband, omnidirectional outdoor antenna designed for Wi-Fi 7 access points. It supports 2.4 GHz, 5 GHz, and 6 GHz frequency bands.

The antenna includes integrated self-identifying circuitry (SIA) and an accelerometer for orientation detection. It is IP67-rated and features an surface mount bracket for flexible deployment.

Figure 1: CW-ANT-T-O3-N antenna



Features

These are the features:

- Versatile Deployment: Suitable for both indoor and outdoor use (IP67 rated).
- Self-Identifying Antenna (SIA): Integrated with support for the SIA feature, allowing the access point to automatically recognize and configure the antenna.
- Orientation Detection: Contains an integrated accelerometer to determine antenna orientation.
- Flexible Mounting: Includes an articulating mount (pivots $\pm 60^\circ$ azimuth and $+15^\circ$ to -35° elevation) for wall or mast mounting, and an alternate flush-mount kit for suspended ceilings.
- Connectorized Design: Includes eight N-Type male connectors with 3 ft (915 mm) LMR-200 (LSZH) cables.
- Frequency Bands: Supports 2400–2500 MHz, 5150–5850 MHz, and 5925–7125 MHz.

- Operating Temperature: Supports a wide operating temperature range from -40°C to 65°C (-40°F to 149°F).

Technical specifications

Technical Specifications for CW-ANT-T-O3-N Antenna

This antenna is designed for indoor and outdoor use with Wi-Fi 7 APs.

Table 1: Mechanical specifications

Parameters	Descriptions
Antenna type	8-port, omnidirectional
SIA Functionality	Yes
Nominal input impedance	50 Ohms
Polarization	Vertical and horizontal
Antenna Height	10.45 in (265.5 mm)
Antenna Diameter	8.21 in (208.5 mm)
Weight (without mount)	3.47 lb (1.57 kg)
Connector type	N-Male
Operating temperature range	-40°C to 65°C (-40°F to 149°F)
Environment rating	IP67
Environmental sensors	Integrated pressure vent

Table 2: Parameters and values

Parameters	Values
Operating frequency range	2400-2500 MHz, 5150-5850 MHz, 5925-7125 MHz
Peak Gain (Avg)	3.2 - 4.8 dBi (varies by band/port)
VSWR	< 2:1
Azimuth Plane	Omnidirectional
Front-to-back ratio	> 20 dB

Azimuth and elevation radiation patterns

These illustrations show the CW-ANT-T-O3-N antenna radiation patterns:

Table 3: Radiation patterns for 2.4 GHz

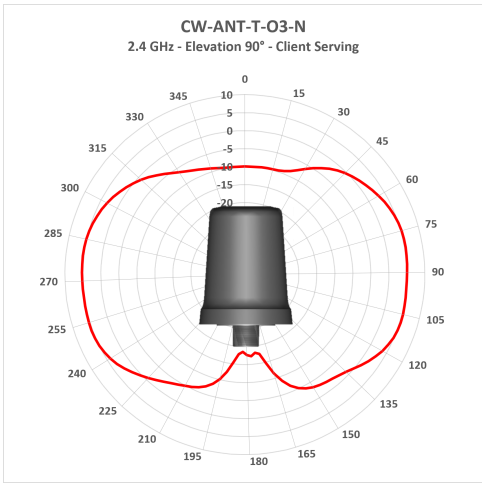
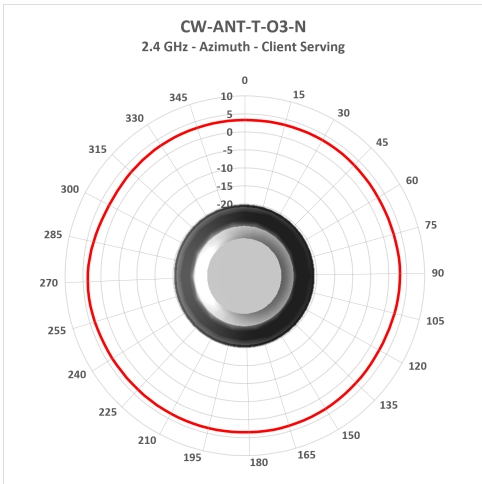
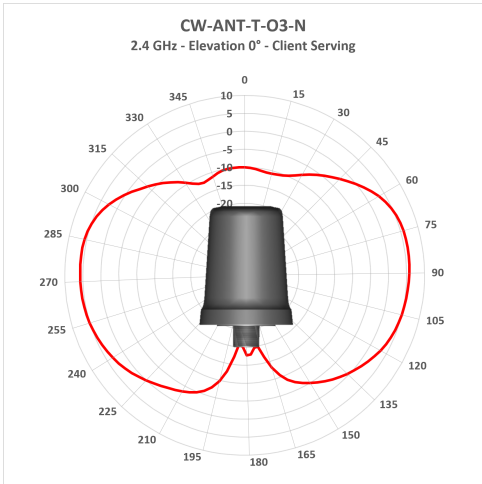


Table 4: Radiation patterns for 5 GHz - elevation 0-degree

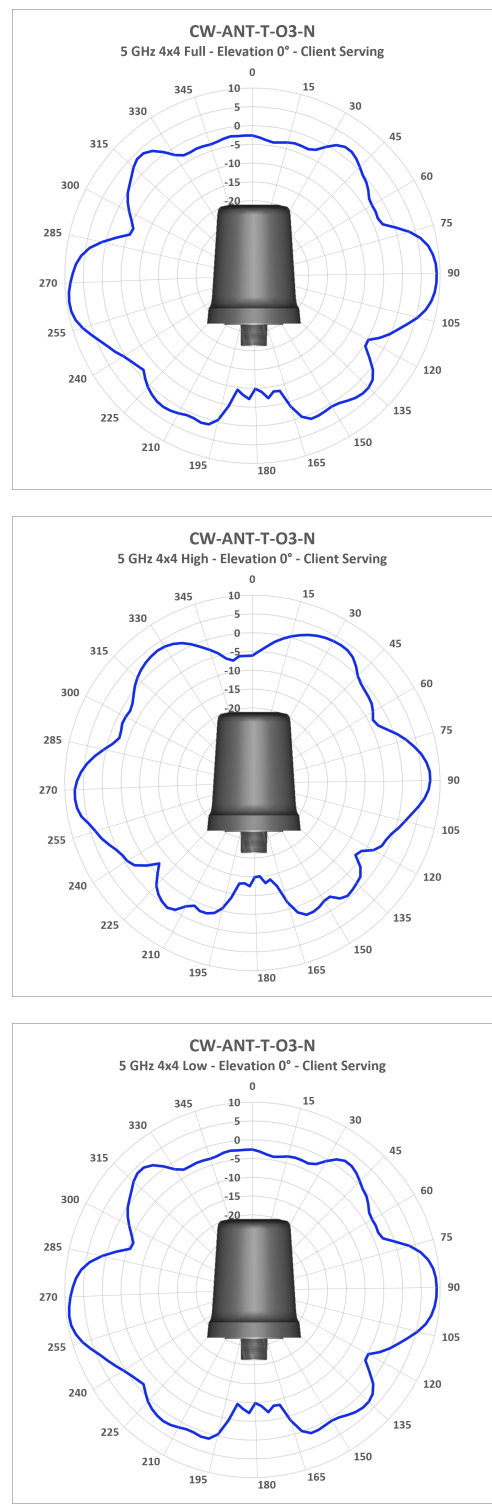


Table 5: Radiation patterns for 5 GHz - azimuth

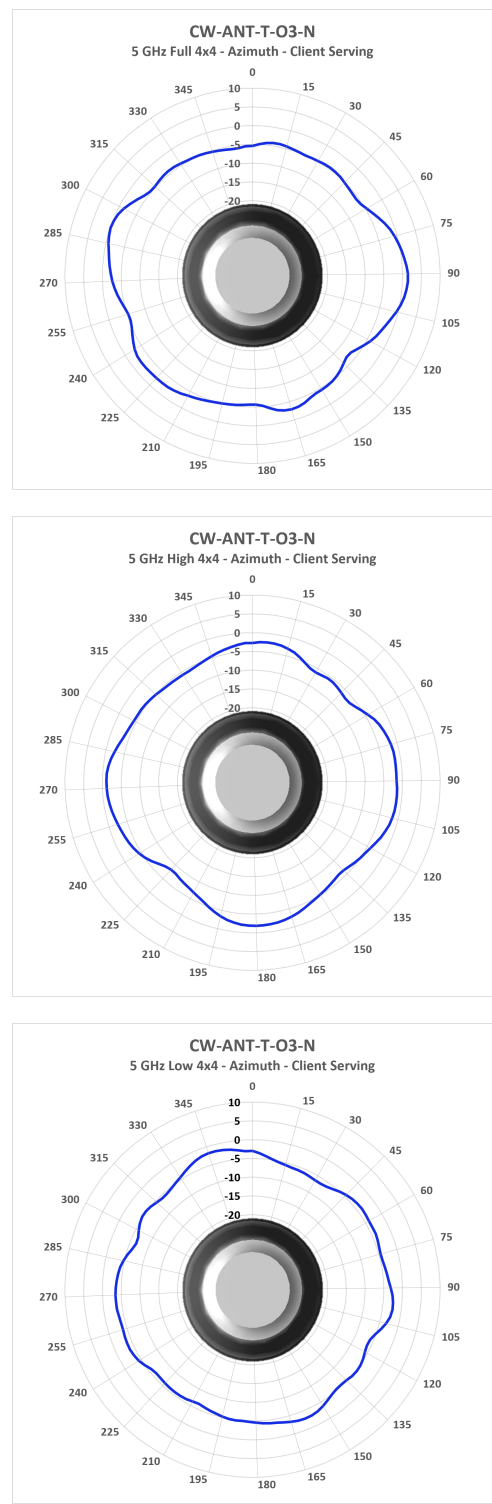


Table 6: Radiation patterns for 5 GHz - elevation 90-degree

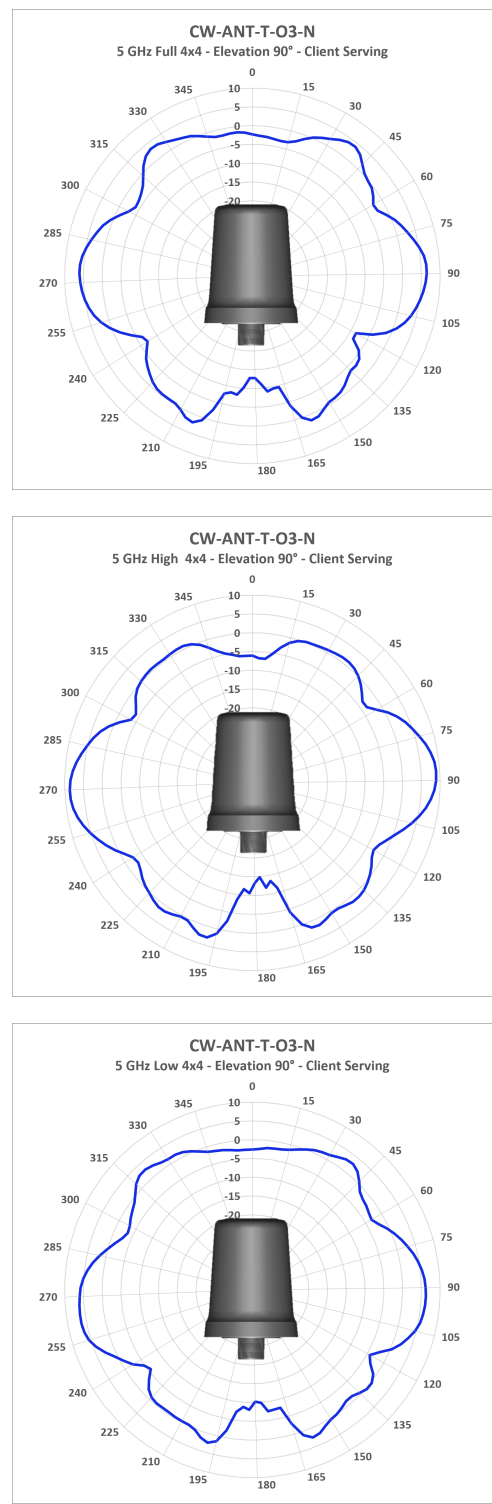
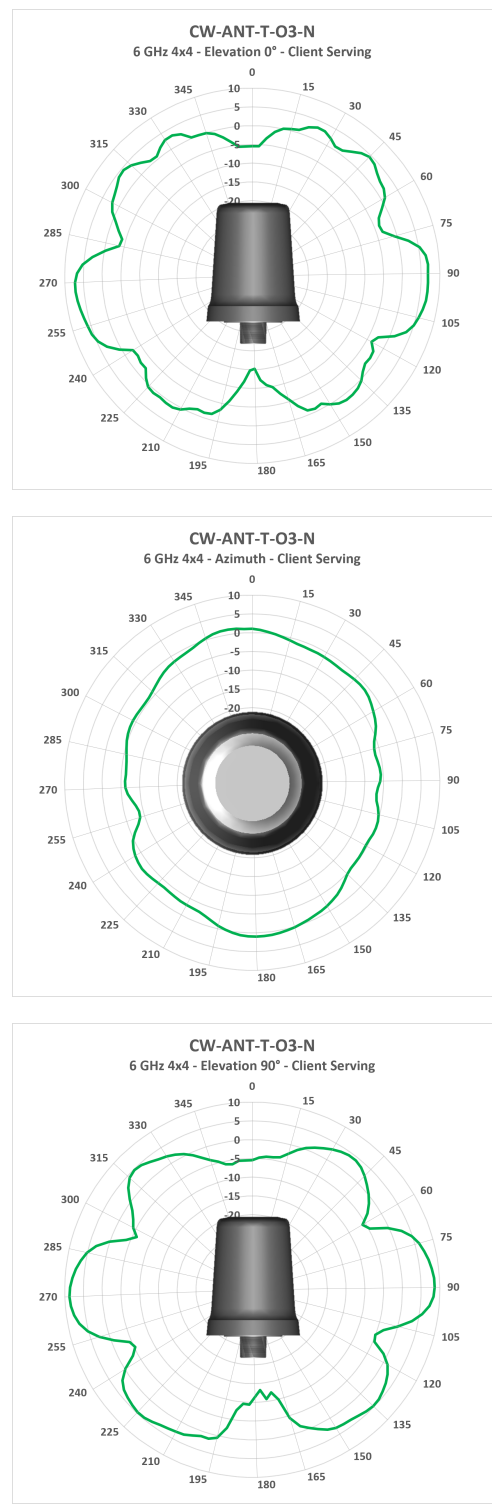


Table 7: Radiation patterns for 6 GHz



Safety precautions

Safety notes

Each year, hundreds of people are killed or injured when attempting to install an antenna. In many of these cases, the victim was aware of the danger of electrocution but did not take adequate steps to avoid the hazard.

For your safety and to help you achieve a sound installation, read and follow these safety precautions.

Before you install:

- If you are installing an antenna for the first time, for your safety and that of others, seek professional assistance. Your Cisco sales representative can explain which mounting method to use for the size and type of antenna you are about to install.
- Select your installation site with safety and performance in mind. Remember that electric power lines and phone lines look alike. For your safety, assume that any overhead line can kill you.
- Call your electric power company. Tell them your plans and ask them to look at your proposed installation. While it may seem like a minor inconvenience, it could save your life.
- Plan your installation carefully and thoroughly before you begin. Successful raising of a mast or tower is essentially a matter of coordination. Assign each person a specific task and know what to do and when to do it. One person should be in charge of the operation to issue instructions and watch for signs of trouble.
- When installing your antenna, remember:
 - *Do not* use a metal ladder.
 - *Do not* work on a wet or windy day.
 - *Do* dress properly: shoes with rubber soles and heels, rubber gloves, long-sleeved shirt, or jacket.
- If the assembly starts to drop, get away from it and let it fall. The antenna, mast, cable, and metal guy wires are all conductors of electrical current. The slightest touch of these parts to a power line completes an electrical path through the antenna and the installer.
- If any part of the antenna system should contact a power line, do not touch it or remove it yourself. Instead, call your local power company. They would remove it safely.
- If an accident occurs with the power lines, call for qualified emergency help immediately.

Safety warnings

Translated versions of the following safety warnings are provided in the Safety Warnings for Cisco Aironet Antennas, which is available at <http://www.cisco.com>.

Warning

- Installation of the antenna near power lines is dangerous. For your safety, follow the installation directions.
- In order to comply with international radio frequency (RF) exposure limits, dish antennas should be located at a minimum of 8.7 inches (22 cm) or more from the bodies of all persons. Other antennas should be located a minimum of 7.9 inches (20 cm) or more from the bodies of all persons.
- Do not work on the system or connect or disconnect cables during periods of lightning activity.
- This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.
- Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can come into contact with such circuits. When installing the antenna, take extreme care not to come into contact with such circuits, as they may cause serious injury or death. For proper installation and grounding of the antenna, refer to national and local codes (for example, U.S.: NFPA 70, National Electrical Code, Article 810; in Canada: Canadian Electrical Code, Section 54).

Antenna dimensions

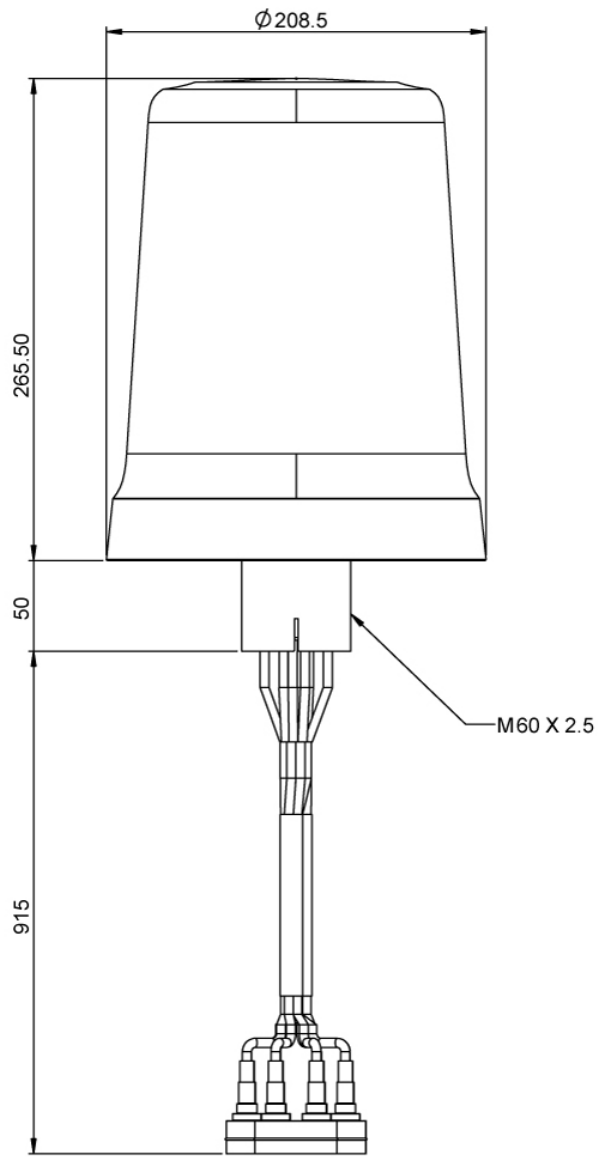
CW-ANT-T-O3-N is

- Tri-Band
- Articulate N-Male
- Omnidirectional antenna.

The dimensions noted in these illustrations are all in millimeters, unless noted otherwise.

- Height: 10.45 in (265.5 mm)
- Diameter: 8.21 in (208.5 mm)
- Weight (without mount): 3.47 lb (1.57 kg)

Figure 2: Antenna dimensions



2 Install the Antenna

Topics:

- [Installation procedure](#)

CW-ANT-T-O3-N installation

This chapter describes the installation instructions of CW-ANT-T-O3-N antenna.

Package contents

Each antenna package contains these items:

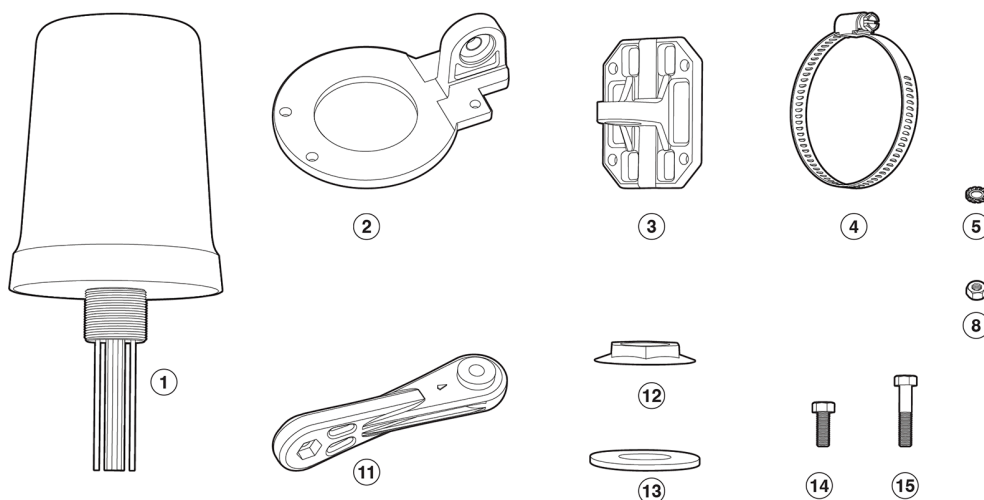


Table 8: Antenna package contents

Item #	Antenna package contents	Quantity
1	8-port triband omnidirectional antenna	1
2	Articulating bracket on antenna	1
3	Articulating bracket on wall/mast	1
4	Hose clamps	2
5	External tooth lock washer large	2
6	Flat washer large	2
7	Lock washer large	2
8	Hex nut	2
9	Flat washer small to mount the bracket to the antenna	4
10	Lock washer small to mount the bracket to the antenna	4
11	Ceiling nut	1
12	Ceiling gasket	1

Item #	Antenna package contents	Quantity
13	Articulating bracket arm	1
14	Short hex head bolt for articulating bracket on antenna	4
15	Long hex head bolt for articulating bracket on wall or mast	2

Installation procedure

Details antenna installation steps, covering guidelines for proper setup and instructions for mounting the antenna on ceilings, poles, and walls to ensure optimal deployment.

The procedures provide information about installing the CW-ANT-T-O3-N antenna. The CW-ANT-T-O3-N antenna can be mounted in these places:

- Ceiling
- Wall



Note

Wall mount anchors and screws are not provided in the kit.

- Pole

Because the antennas transmit and receive radio signals, they are susceptible to RF obstructions and common sources of interference that can reduce throughput and range of the device to which they are connected.

Installation guidelines

Optimal performance factors

Antennas transmit and receive radio signals that are susceptible to RF obstructions and common sources of interference, which can reduce the throughput and range of the connected devices.

These guidelines ensure optimal performance:

- Keep the antenna away from metal obstructions such as
 - heating,
 - air-conditioning ducts,
 - large ceiling trusses,
 - building superstructures, and
 - major power cabling runs.
- In an outdoor environment, connect the antenna to a lightning arrestor and ensure proper grounding.
- Due to the tight side lobe configuration, the antenna does not support RRM. Configure the channel and power for it statically.
- Australian regulatory restrictions are applied when the device is configured for the -Z domain with the country set as Australia. This results in a band lock on radios that are enabled.

Location considerations

The density of the materials used in a building's construction determines the number of walls the signal can pass through and maintains adequate signal strength.

Consider these before choosing the location for your antenna:

- The density of the materials used in a building's construction determines the number of walls the signal can pass through and maintains adequate signal strength. Consider the following before choosing the location for your antenna:
 - Signals penetrate paper and vinyl walls with little change to signal strength.
 - Signals penetrate only one or two solid and precast concrete walls without degrading signal strength.
 - Signals penetrate three or four concrete and woodblock walls without degrading signal strength.
 - Signals penetrate five or six walls constructed of drywall or wood without degrading signal strength.
 - Signals are likely to reflect off a thick metal wall and may not penetrate it at all.
 - Signals are likely to reflect off a chain-link fence or wire mesh spaced between 1 and 1 1/2 inches. (2.5 cm and 3.8 cm) The fence acts as a harmonic reflector that blocks the signal.
- Install the antenna away from microwave ovens and 2-GHz cordless phones. These products can cause signal interference because they operate in the same frequency range as the device.

Important safety instructions **DANGER**

IMPORTANT SAFETY INSTRUCTIONS: Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Read the installation instructions before using, installing, or connecting the system to the power source.

Use the statement number provided at the end of each warning statement to locate its translation in the translated safety warnings for this device. **SAVE THESE INSTRUCTIONS** Statement 1071

 DANGER

Only skilled person should be allowed to install, replace, or service this equipment. Refer to Statement 1089 for description of skilled person. Statement 1090

 DANGER

To reduce the risk of electric shock, refer to national and local codes for proper installation and grounding of antennas. Statement 1052

 Note

To reduce the risk of electric shock, the chassis of this equipment needs to be connected to permanent earth ground during normal use. Statement 0445

Mount the antenna on a ceiling or horizontal surface

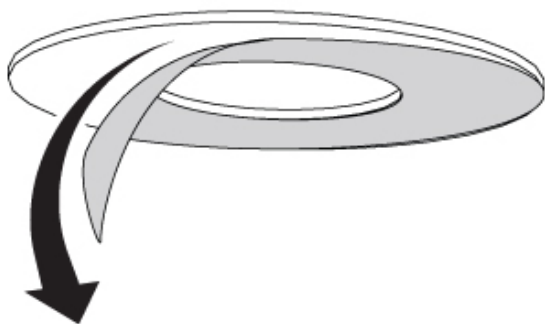
You can install the CW-ANT-T-O3-N antenna on a suspended ceiling or horizontal surface when the mounting surface can support the weight of the antenna.

Use these steps to install the antenna through a ceiling tile or horizontal mounting surface. Ensure that the mounting nut, gasket, and antenna cable bundle are available before beginning the installation.

Procedure

1. Cut a 60-mm (2.50-inch) diameter hole into the surface where the antenna is being mounted.
2. Prepare the ceiling tile opening for the antenna mounting pipe and cable bundle.

Figure 3: Prepare the mounting surface

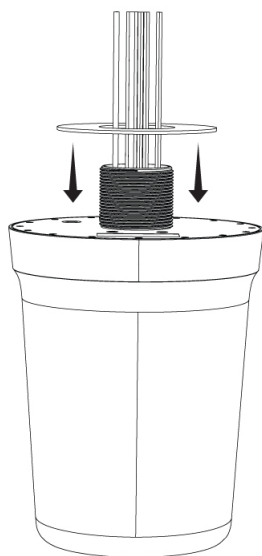


3. Pass the antenna cable bundle through the rubber gasket, remove the adhesive liner.

**Note**

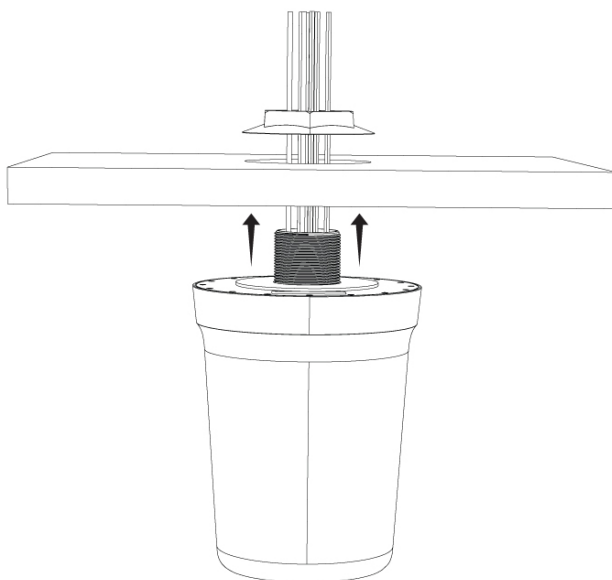
Apply the gasket to the antenna surface with the adhesive side facing the antenna.

Figure 4: Install the rubber gasket



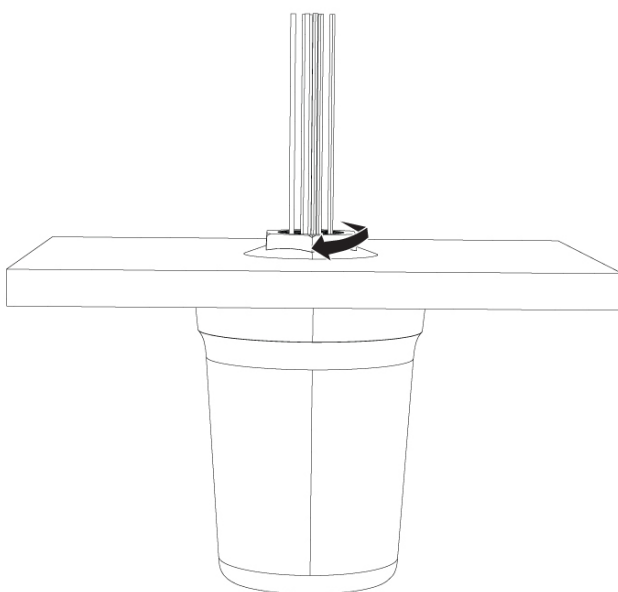
4. Pass the antenna cable bundle and threaded post through the hole in the mounting surface.

Figure 5: Route the cable bundle through the mounting surface



5. From the top side of the mounting surface, pass the antenna cable bundle through the mounting nut and install the nut onto the threaded post of the antenna.

Figure 6: Install the mounting nut



6. Position the antenna as required and tighten the mounting nut until it is snug against the mounting surface.



Note

Do not overtighten the mounting nut.

7. Connect the antenna cables to the access point.

The CW-ANT-T-O3-N antenna is secured to the ceiling or horizontal mounting surface, with the antenna cable bundle routed for connection to the access point.

Install the antenna on a pole or mast

Install the CW-ANT-T-O3-N antenna on a pole or mast and position the antenna for the required azimuth and elevation coverage.

Use these steps to install the antenna on a pole or mast near the access point.



Note

- The mount kit supports mast diameters from 50 mm to 127 mm (2 inches to 5 inches) using the hose clamps supplied in the kit.
- For best results, install the antenna above the access point and no more than 46 cm (18 inches) from the center of the access point enclosure.
- If the antenna cannot be installed near the access point, use additional N-connector jumper cable assemblies.

Procedure

1. Locate the mast bracket on the pole or mast, position the hose clamps, and tighten the clamps so that the bracket does not slide or rotate.

Figure 7: Attach the mast bracket

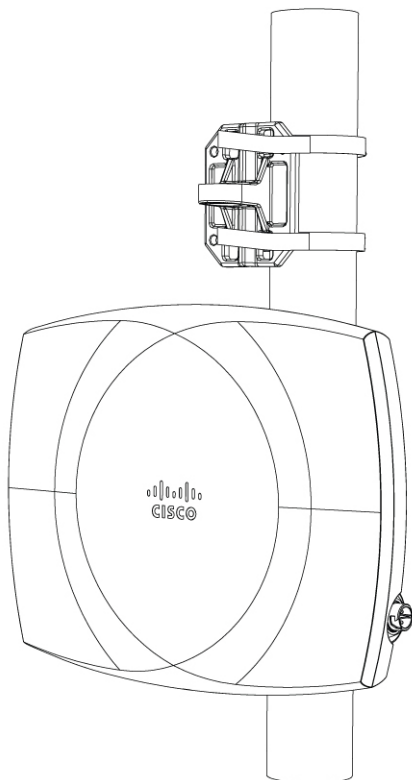
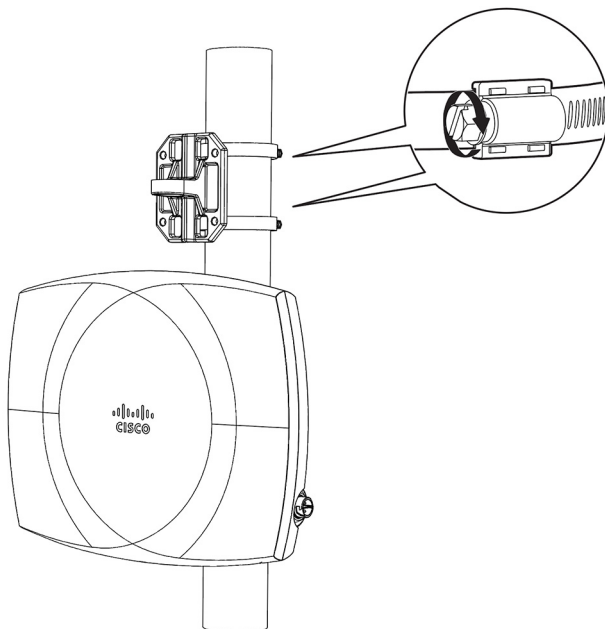
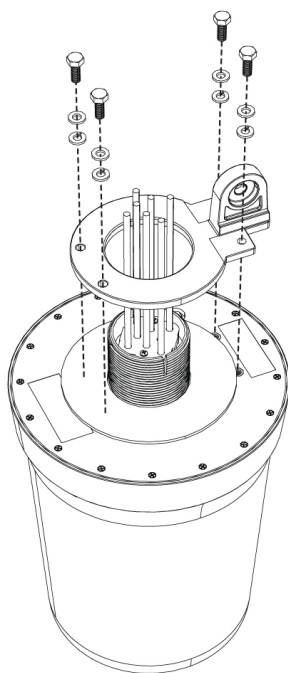


Figure 8: Secure the mast bracket



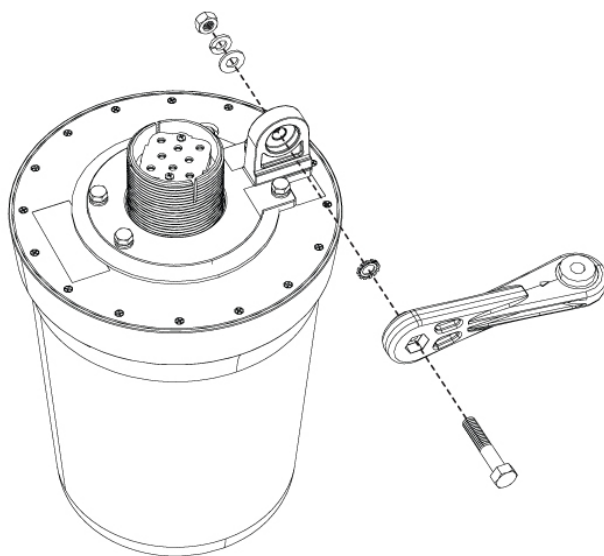
2. Pass the antenna cable assemblies through the antenna bracket.

Figure 9: Route the antenna cable assemblies



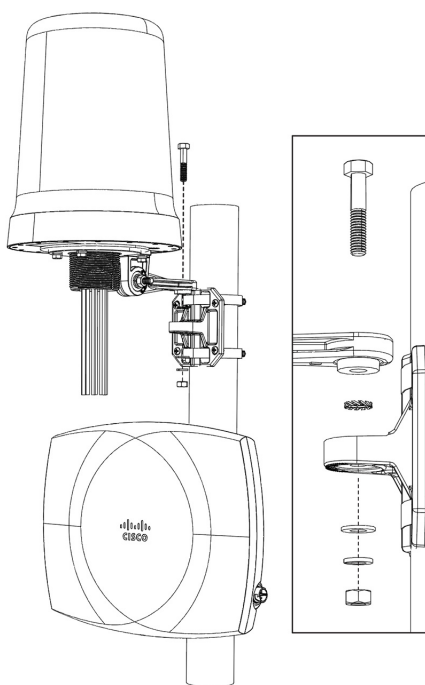
3. Attach the antenna bracket to the antenna using the supplied hardware, and tighten the bolts with a 10-mm wrench.
4. Attach the arm to the antenna bracket using the supplied bolt, washers, and nut. Leave the hardware loose enough for final positioning.

Figure 10: Attach the arm to the antenna bracket



5. Mount the antenna and arm assembly to the mast bracket using the supplied hardware.

Figure 11: Attach the antenna assembly to the mast bracket



Note

Ensure that the external tooth star lock washer is positioned between the bracket and the arm so that the bracket position does not move.

6. Position the antenna as required in the azimuth and elevation positions, and tighten all mounting hardware with a 1/2-in. wrench or socket.
7. Connect the antenna cables to the access point.

The CW-ANT-T-O3-N antenna is securely mounted on the pole or mast and positioned for the required coverage area.

Install the antenna on a wall

Install the CW-ANT-T-O3-N antenna on a vertical flat surface and position the antenna for the required coverage area. Use these steps to install the antenna on a wall near the access point.

Note

Ensure that the mounting surface, mounting holes, anchors, and hardware can support the weight of the antenna and additional wind loads.

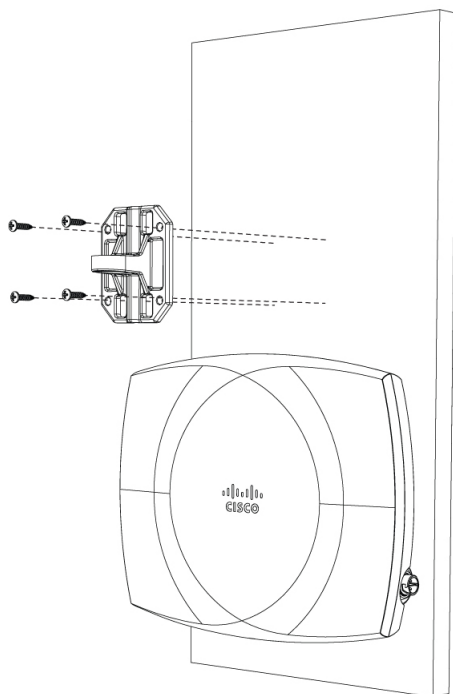
Procedure

1. Use the wall-mount bracket as a template to mark the anchor hole locations on the wall.

 Note

The wall-mount bracket uses 6.5 mm (0.26 inches.) diameter mounting holes with 63.5 mm (2.5 inches) spacing.

Figure 12: Mark the wall-mount bracket holes



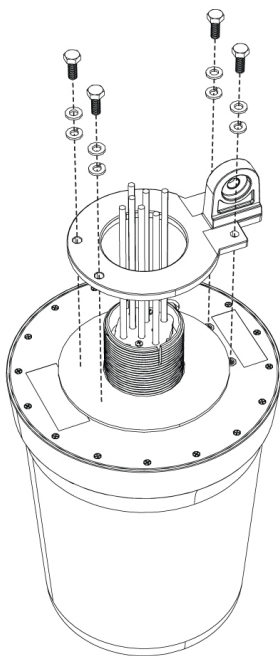
2. Install the anchors and secure the wall-mount bracket to the wall with fasteners appropriate for the wall material.

 Note

Wall mount anchors and screws are not provided in the kit.

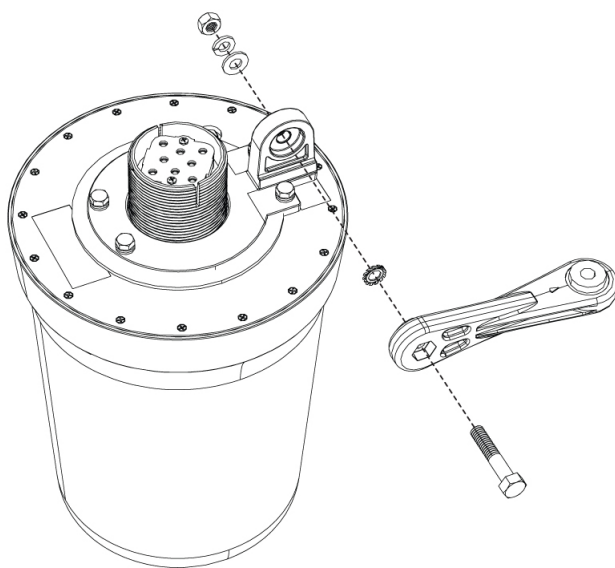
3. Pass the antenna cable assemblies through the antenna bracket.

Figure 13: Route the antenna cable assemblies



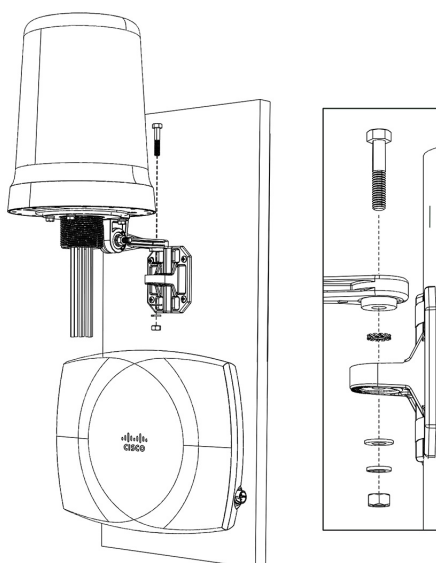
4. Attach the antenna bracket to the antenna using the supplied hardware, and tighten the bolts with a 10 mm wrench.
5. Attach the arm to the antenna bracket using the supplied bolt, washers, and nut. Leave the hardware loose enough for final positioning.

Figure 14: Attach the arm to the antenna bracket



6. Mount the antenna and arm assembly to the wall-mount bracket using the supplied hardware.

Figure 15: Attach the antenna assembly to the wall-mount bracket



Note

Ensure that the external tooth star lock washer is positioned between the bracket and the arm so that the bracket position does not move.

7. Position the antenna as required in the azimuth and elevation positions, and tighten all mounting hardware with a 1/2 inch wrench or socket.
8. Connect the antenna cables to the access point.

The CW-ANT-T-O3-N antenna is securely mounted on the wall and positioned for the required coverage area.

Connect the antenna cables to the access point

Connect the antenna cable bundle to the access point and secure the routed cables without bending or kinking the connectors.

Connect the antenna cables to the access point after the antenna is mounted and positioned, so that each cable is secured to the correct access point port.

Perform this procedure after the antenna is positioned and secured. When the antenna is installed near the access point, place the antenna above the access point and no more than 46 cm (18 inches) from the access point.

Procedure

1. Attach the N-connectors from the antenna cable bundle to the access point.
2. Route and secure the cable bundle to the pole so that the cable exiting each connector is not bent.
3. Match each connector to the corresponding access point port using the color ring and port letter on the connector.
4. Secure each connector to the corresponding port on the access point.

**Note**

Hand-tighten the connector. Do not use a wrench to tighten the connector.

5. Slide the rubber boot over each connector assembly.

The antenna cables are connected to the corresponding access point ports, and the cable bundle is secured without bends or kinks at the connectors.

