Cisco Catalyst GNSS External Antenna (CW-ANT-GPS1-M-00)

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Cisco Catalyst Global Navigation Satellite System (GNSS) External Antenna (CW-ANT-GPS1-M-00)

This document outlines the specifications for the Cisco Catalyst GNSS External Antenna (CW-ANT-GPS1-M-00) and provides instructions for mounting them. The antenna is designed for indoor or outdoor use depending on the country. CW-ANT-GPS1-M-00 is used on the CW-ACC-GPS1 accessory module. The primary use case for CW-ANT-GPS1-M-00 is as an indoor window mount. This antenna will provide geolocation information for the AP to be used by the AFC systems as required for standard power operation in 6-GHz band.

Figure 1: CW-ANT-GPS1-M-00-NS Antenna: Different Views

Technical Specifications

Table 1: Cisco Catalyst GNSS External Antenna (CW-ANT-GPS1-M-00) Specifications

Operating frequency range	1164.45–1188.45 MHz (L5)
	1559.05–1610.5 MHz (L1)

Nominal input impedance	50 ohm
VSWR	2.0 dB
Peak gain	5 dBic
Polarization	Right Hand Circularly Polarized (RHCP)
Azimuth plane(3 dB beamwidth)	120
	85
Elevation plane(3 dB beamwidth)	102
	97
Dimensions	50.0 mm (L) x 50 mm (W) x 19 mm (H)
Weight	0.61 lb. (277 g);
Cable	32.80-ft. (10 m) plenum
Connector	MMCX M-type
Environment	Outdoor
Temperature range	-40° F to 185° F(-40°C to 85°C)

System Requirements

This antenna is designed for use with CW-ACC-GPS1 accessory module.

Note The model CW-ANT-GPS1-M-00 is supported only on Cisco Catalyst 9800 Series Wireless Controllers running an IOS-XE 17.4.1 release or a later release. This antenna model is not supported on Cisco AireOS Wireless Controllers.

Safety Precautions

Warning 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, please refer to national and local codes (e.g. U.S.: NFPA 70, National Electrical Code, Article 810, Canada: Canadian Electrical Code, Section 54). Statement 280

For your safety, read and follow these safety precautions.

1. Before you install an antenna, contact your Cisco account representative to explain which mounting method to use for the size and type of antenna that you are about to install.

2. Find someone to help you—installing an antenna is often a two-person job.

3. Select your installation site with safety, as well as performance, in mind. Remember that electric power lines and phone lines look alike. For your safety, assume that any overhead line can kill you.

4. Contact your electric power company. Tell them your plans and ask them to come look at your proposed installation.

5. Plan your installation carefully and completely before you begin. Each person involved in an installation should be assigned to a specific task, and should 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.

6. When installing your antenna, follow these guidelines:

   a. Do not use a metal ladder.

   b. Do not work on a wet or windy day.

   c. Do dress properly—wear shoes with rubber soles and heels, rubber gloves, and a long-sleeved shirt or jacket.

7. If the assembly starts to drop, move away from it and let it fall. Because the antenna, mast, cable, and metal guy wires are all excellent conductors of electrical current, even the slightest touch of any of these parts to a power line completes an electrical path through the antenna and the installer.

8. If any part of the antenna system should come in contact with a power line, do not touch it or try to remove it yourself. Call your local power company to have it removed safely.

9. If an accident should occur with the power lines, call for qualified emergency help immediately.

Installation Notes

Antennas transmit and receive radio signals which are susceptible to RF obstructions and common sources of interference that can reduce throughput and range of the device to which they are connected. Follow these guidelines to ensure the best possible performance:

- Install the antenna vertically and mount it with the cables pointing towards the ground.

- Keep the antenna away from metal obstructions such as heating and air-conditioning ducts, large ceiling trusses, building superstructures, and major power cabling runs. If necessary, use a rigid conduit to lower the antenna away from these obstructions.

- The density of the materials used in a building's construction determines the number of walls the signal can pass through and still maintain 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 pre-cast concrete walls without degrading signal strength.

  - Signals penetrate three or four concrete and wood block walls without degrading signal strength.

  - Signals penetrate five or six walls constructed of drywall or wood without degrading signal strength.

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Installing the Antenna

- Signals will likely reflect off a thick metal wall and may not penetrate it at all.

- Signals will likely reflect off a chain link fence or wire mesh spaced between 1 and 1 1/2 in. (2.5 and 3.8 cm). The fence acts as a harmonic reflector that blocks the signal.

- Signals may be blocked by Low-E (Low-Emissivity or Low-Emittance) glass windows or solar control films applied to windows.

- 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 to which your antenna is connected.

Choosing a Mounting Location

The antenna should be mounted clear of any obstructions to the sides of the radiating elements. Generally, the higher an antenna is above the floor, the better it performs. If possible, find a mounting place directly above your wireless device to ensure the lead-in cable can be as short as possible.

Installing the Antenna

You can install the antenna outdoors or indoors depending on the country, on any flat vertical surface. All hardware for mounting the antenna indoors or outdoors is provided. If you intend to install your antenna on another surface, you must provide the appropriate hardware.

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Important   To ensure regulatory compliance, the surge protection attachment is required for use of the antenna outside of the USA or Canada.

You must use the provided surge protection attachment when:

- Installing the antenna outdoors (in the US or Canada)

- Installing the antenna indoors or outdoors outside of the USA or Canada.

Tools and Equipment Included

A mounting installation kit is included with the antenna and consists of the following hardware:

- Mounting bracket

- Tape

- Surge protection attachment

Mounting the Antenna

The antenna can be mounted indoors or outdoors using adhesive pads. It can be alternatively mounted using the magnetic mount that is built into the bottom of the antenna enclosure.

To mount the antenna indoors or outdoors with the provided bracket, follow these steps:

Cisco Catalyst GNSS External Antenna (CW-ANT-GPS1-M-00)

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Note   For outdoor installations, position the antenna bracket assembly facing upwards.

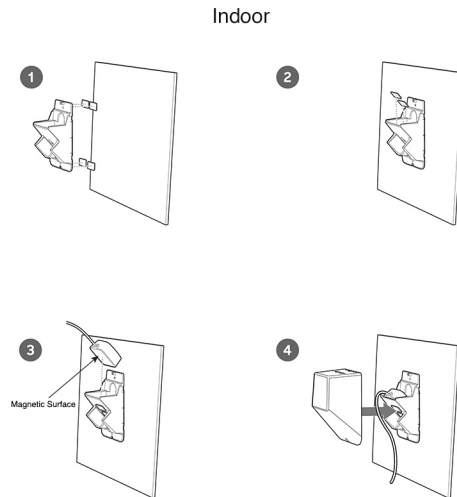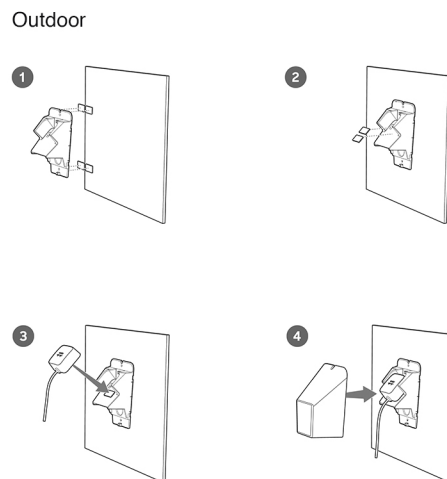**Figure 2: Indoor Installation**

Indoor

Figure 3: Outdoor Installation

Outdoor

Procedure

Step 1   Clean the mounting surface.

Step 2   Attach the four adhesive pads to the bottom surface of the bracket and attach it to the surface. Press firmy to ensure the antenna bracket assembly is securely attached to the surface.

Step 3   Attach the two adhesive pads to the inner surface of the bracket and and remove the liners.

Step 4   Stick the antenna on the adhesive tape. Press firmy to ensure the antenna bracket assembly is securely attached to the inner surface of the bracket.

Step 5   Route the antenna cable and put the randome cover on the antenna bracket assembly.

Connecting the Antenna to the Access Point

Use the MMCX connector and the provided 32.80-ft. (10 m) plenum cable to connct the antenna to the AP.

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