



Cisco GPS Antenna (ANT-GPS-OUT-TNC)

This chapter contains the following:

- [Overview, on page 1](#)
- [Technical Specifications, on page 1](#)
- [General Safety Precautions, on page 4](#)
- [Antenna Installation, on page 5](#)
- [Mechanical Drawing, on page 6](#)
- [Communications, Services, and Additional Information, on page 7](#)

Overview

The Cisco GPS Antenna is designed to cover a domestic frequency of 1575 MHz.

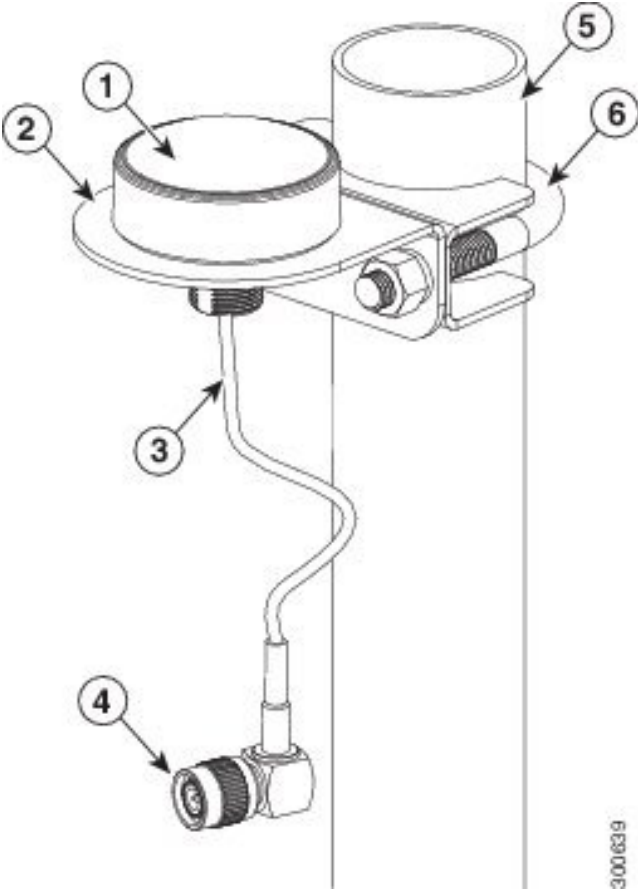
This antenna is compatible with any Cisco device that uses GPS, and is compatible with active GPS antennas with DC specifications given below. Connector adapters may be required from TNC(m) to the required interface. The antenna is a rugged outdoor antenna, and is IP67 rated.

Technical Specifications

The GPS antenna features the following:

- Outdoor
- Low-profile housing
- Integrated LMR-100 cable with right-angle TNC(m) male connector

Figure 1: GPS Antenna



1	GPS antenna
2	Mounting bracket
3	LMR-100 cable(15')
4	Right-angle TNC male connector
5	Pipe (mast)
6	U-bolt connected to U-bracket

RF Specifications

The following is a summary of the antenna radio frequency (RF) specifications:

Specification	Cisco GPS Antenna (ANT-GPS-OUT-TNC)
Type	Patch, active
Operating frequency range	1575.42 MHz +/- 5 MHz

Specification	Cisco GPS Antenna (ANT-GPS-OUT-TNC)
Impedance	50 ohm, nominal
VSWR	2.0 max. in band
Gain	4.0 dBi min. @ Zenith
Minimum gain	1 dBi @ 10-degrees elevation
Pattern type	Hemispherical
Polarization	Circular RHCP
LNA gain	25 dB +/- 2 dB
Front end GPS filter	This antenna features a GPS RF filter in front of the LNA to enable co-location with other radios.
Out-of-band attenuation	20 dB min. at 1575 +/- 50 MHz
DC voltage	3 to 5 VDC
Current draw	20 mA max. @ 3.3 VDC +/- .3 VDC

Mechanical and Environmental Specifications

The following is a summary of the mechanical and environmental antenna specifications:

Specification	Cisco GPS Antenna (ANT-GPS-OUT-TNC)
Environment	Outdoor (IP67)
Height	0.87 in. (2.21 cm)
Diameter (maximum, at base)	2.0 in. (5.0 cm)
Connector	Right-angle TNC(m)
Cable	LMR-100A, 15ft (4.57m)
Operating temperature	-40 to 185 degrees Fahrenheit (-40 to 85 degrees Centigrade)
Wind speed rating	165 MPH
Compliance	ROHS

General Safety Precautions



Warning This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. **Statement 1071**



Warning Do not work on the system or connect or disconnect cables during periods of lightning activity. **Statement 1001**



Warning Do not locate the outdoor 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 (for example, U.S.:NFPA 70, National Electrical Code, Article 810, Canada:Canadian Electrical Code, Section 54). **Statement 1052**



Warning In order to comply with FCC radio frequency (RF) exposure limits, antennas should be located at a minimum of 7.9 inches (20 cm) or more from the body of all persons. **Statement 332**

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.



Warning For your safety, and to help you achieve a good installation, please read and follow these safety precautions. **They may save your life!**

For your safety, read and follow these safety precautions.

- If you are installing an antenna for the first time, for your own safety as well as others, seek professional assistance. Your Cisco sales representative can explain which mounting method to use for the size and type antenna you are about to install.
- 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.
- Find someone to help you—installing an antenna is often a two-person job.
- 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.
- Contact your electric power company. Tell them your plans and ask them to come look at your proposed installation.
- 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.

- When installing your antenna, follow these guidelines:
 - Do not use a metal ladder.
 - Do not work on a wet or windy day.
 - Do dress properly—wear shoes with rubber soles and heels, rubber gloves, and a long-sleeved shirt or jacket.
- 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.
- 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.
- If an accident should occur with the power lines, call for qualified emergency help immediately.

Antenna Installation

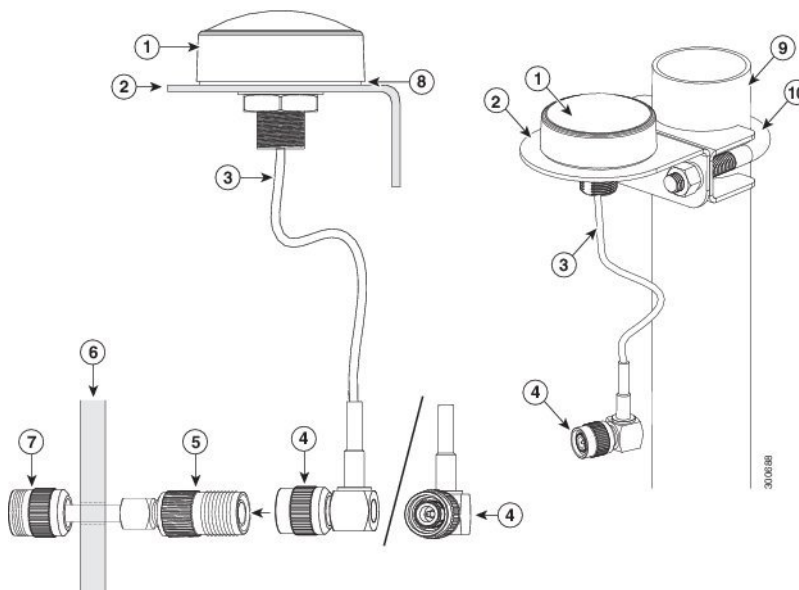
Follow these steps to install the GPS antenna onto the router:



Note These installation steps are for the CGR1120 router.

Step 1 Mount the antenna in its proper location by using the provided antenna bracket.

Figure 2: Antenna Detail



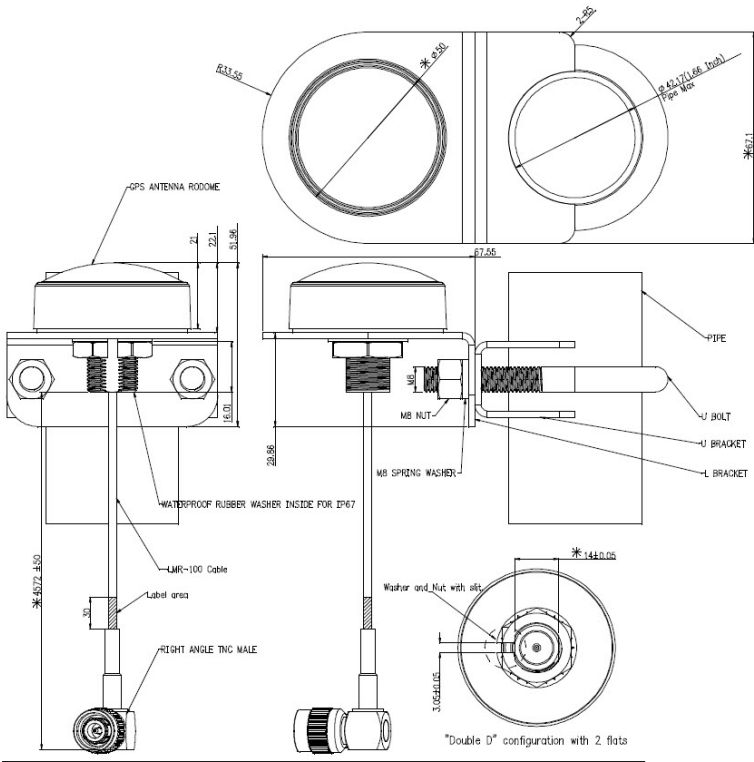
1	GPS antenna
2	Mounting L-bracket
3	LMR-100 cable

4	Right-angle TNC (m) connector
5	Adapter, TNC connector (f)
6	Building entry panel
7	Adapter, N-connector (f) to router
8	VHT adhesive tape
9	2" (outside dimension) pipe/mast
D	U-bolt

- Step 2** Route and connect the LMR-100 cable to the TNC-to-N-connector adapter installed at the building entry panel.
- Step 3** At the inside of the entry panel, install the LMR-100 cable to the N-connector on the adapter.
- Step 4** Route the cable to the router and attach to the antenna connector.

Mechanical Drawing

Figure 3: Mechanical Drawing for the ANT-GPS-OUT-TNC Antenna





Note All Dimensions are in millimeters (mm).

TOLERANCE OF LINEAR DIMENSIONS FINE ISO 2768-f	
Dimension(mm)	Tolerance
0.5 - 6	±0.05
6 - 30	±0.10
30 - 120	±0.15
120 - 400	±0.2
TOLERANCE OF ANGULAR DIMENSIONS FINE ISO 2768-f	
Dimension of shorter side (millimeter)	Tolerance
up to 10	±1°
10 - 50	±0.30°
TOLERANCE OF RADII AND CHAMFERS FINE ISO 2768-f	
Radii, chamfer height	Tolerance
0.5 - 3	±0.2
3 - 6	±0.5
over 6	±1

Communications, Services, and Additional Information

- To receive timely, relevant information from Cisco, sign up at [Cisco Profile Manager](#) .
- To get the business impact you're looking for with the technologies that matter, visit [Cisco Services](#) .
- To submit a service request, visit [Cisco Support](#) .
- To discover and browse secure, validated enterprise-class apps, products, solutions and services, visit [Cisco Marketplace](#) .
- To obtain general networking, training, and certification titles, visit [Cisco Press](#) .
- To find warranty information for a specific product or product family, access [Cisco Warranty Finder](#) .

Modifications to this product not authorized by Cisco could void the FCC approval and negate your authority to operate the product.

The Cisco implementation of TCP header compression is an adaptation of a program developed by the University of California, Berkeley (UCB) as part of UCB's public domain version of the UNIX operating system. All rights reserved. Copyright © 1981, Regents of the University of California.

NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE OF THESE SUPPLIERS ARE PROVIDED "AS IS" WITH ALL FAULTS. CISCO AND THE ABOVE-NAMED SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Any Internet Protocol (IP) addresses and phone numbers used in this document are not intended to be actual addresses and phone numbers. Any examples, command display output, network topology diagrams, and other figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses or phone numbers in illustrative content is unintentional and coincidental.

All printed copies and duplicate soft copies of this document are considered uncontrolled. See the current online version for the latest version.

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco website at www.cisco.com/go/offices.

© 2015-2021 Cisco Systems, Inc. All rights reserved.