Cisco CGR 1000 and 2000 Series Connected Grid Antennas Overview

This document provides the descriptions and installation instructions for wireless antennas supported on Cisco 1000 and 2000 Series Connected Grid (CGR) routers.

Antennas might be installed into the host router prior to delivery or ordered separately as a field-replaceable unit.

This chapter covers the following topics:

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Note: More information about Cisco Connected Grid modules—For detailed information about the Connected Grid modules, see the corresponding installation and configuration guide for each module.

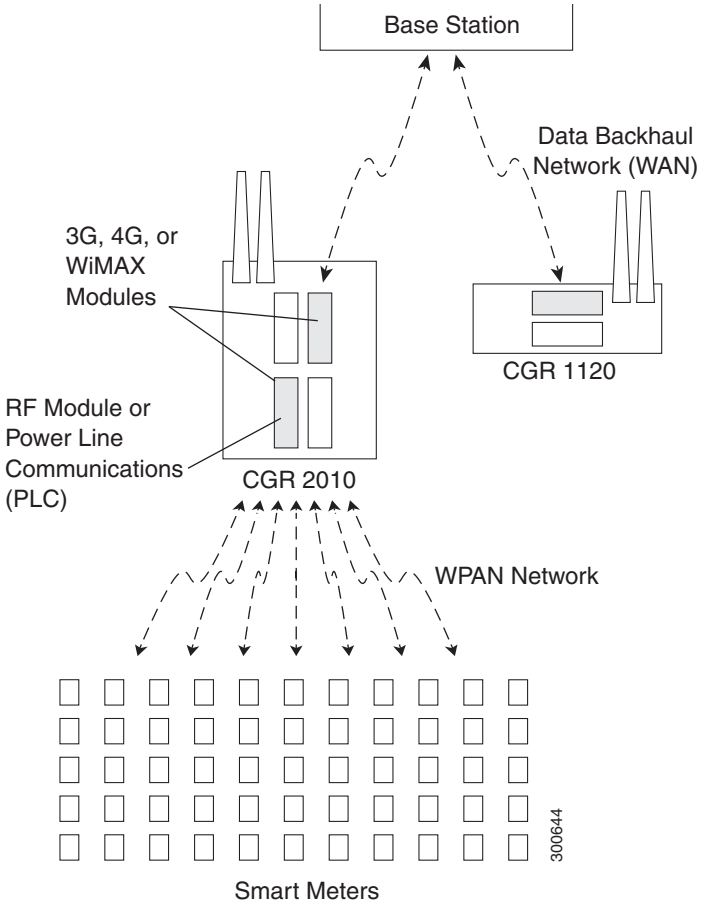
Overview

Deciding which antenna to use involves many factors such as coverage area, maximum distance, indoor location, outdoor location, and antenna height.

When antennas are used indoors, the building construction, ceiling height, and internal obstructions must be considered. In outdoor environments, obstructions such as trees, vehicles, buildings, and hills must be considered. Distance is the primary factor when using outdoor-wireless communications; however, coverage area also becomes important when you are using wireless client devices to communicate with the wireless device.

Cisco Connected Grid 1000 Series and 2000 Series routers support various types of antennas for wireless communication in Smart Grid backhaul and WPAN networks.

Figure 1 Smart Grid Wireless Communication



Supported Antennas

The following table lists the supported CGR antennas, cables, and accessories:

Part Number	Description	Supported Router
ANT-MP-INT-OUT-M	(Configured) Multi-purpose integrated monopole antenna, chassis-mounted, omnidirectional, includes non-integrated coaxial cable. No cable (option class).	CGR 1240
ANT-MP-INT-OUT-M=	(Spare) Multi-purpose integrated monopole antenna, chassis-mounted, omnidirectional, includes internal coaxial cable: LMR-100, 17.5 internal cable, QMA (M)-MCX (M) (PID: CAB-L10-9-Q-M).	CGR 1240
ANT-WPAN-OM-OUT-N	Outdoor omnidirectional stick antenna for 900 MHz WPAN	CGR 1240, 1120
ANT-4G-OMNI-OUT-N	Outdoor omnidirectional stick antenna for 2G/3G/4G Cellular	CGR 1240, 1120, 2010
ANT-3G-PNL-OUT-N	Multiband flat-panel outdoor 3G antenna	CGR 1240, 1120
ANT-4G-PNL-OUT-N	Multiband flat-panel outdoor 4G antenna	CGR 1240, 1120, 2010
ANT-1.8-PNL-OUT-N	Outdoor flat-panel antenna for WiMAX 1.8 GHz	CGR 1240, 1120
ANT-2.X-PNL-OUT-N	Outdoor flat-panel antenna for WiMAX 2.5 GHz	CGR 1240, 1120
ANT-3.X-PNL-OUT-N	Outdoor flat-panel antenna for WiMAX 3.8 GHz	CGR 1240, 1120

Part Number	Description	Supported Router
ANT-4G-DP-IN-TNC	Indoor articulating (swivel-mount) dipole	CGR 1120
ANT-4G-CM-IN-TNC	Indoor volcano ceiling mount	CGR 1120
ANT-4G-SR-OUT-TNC	Integrated 4G, low-profile outdoor saucer antenna	CGR 1000 Series (CG 2G/3G/4G GRWIC)
ANT-GPS-OUT-TNC	GPS antenna, integrated 15' LMR-100 cable with RA-TNC(m)[1], quantity 1	CGR 1120, 2010
ANT-MP2-INT-OUT-M and ANT-MP2-I-O-SS-M	Multi-purpose Integrated antennas designed for direct mounting	CGR 1240
ANT-4G-SR-OUT-TNC	Multiband low-profile saucer outdoor 4G Antenna	CGR 1120

1. (m) = male

Supported Antenna Accessories

The following table lists the supported CGR antennas, cables, and accessories.

Part Number	Description	Supported Router
ANT-MP-I-OUT-SS-M	3G or 4G integrated antenna kit (used with external antennas and 3G or 4G module): RA-QMA(m)[2] to RA-MCX(m), LMR-100, 10.5" (quantity 2) N(f)-to-MCX(f) coaxial adapter weather-proof cap coaxial seal electrical-joint compound	CGR 1240
ANT-MP-IN-OUT-LS-M	3G or 4G integrated antenna kit (used with external antennas and 3G or 4G module): RA-QMA(m) to RA-MCX(m), LMR-100, 17.5" (quantity 1) RA-QMA(m) to RA-MCX(m), LMR-100, 10.5" (quantity 1) weather-proof cap coaxial seal electrical-joint compound	CGR 1240
ANT-MP-INT-OUT-M	900 MHz integrated antenna kit (used with external antenna and 900 MHz module): RA-QMA(m) to RA-MCX(m), LMR-100, 10.5" (quantity 1) weather-proof cap coaxial seal electrical-joint compound	CGR 1240
CGR-LA-NM-NF	Lightning arrestor kit	CGR 1240
CGR-LA-NF-NF	Lightning arrestor kit	CGR 1120
CGR-PMK1000	Pole-mount kit (brackets, plate, washers, carriage bolts)	CGR 1240, 1120
CGR-N-CONN	N-connector kit: LMR-400 cable, weather-proof cap, coaxial seal, electrical-joint compound (used with external antennas and 3G module)	CGR 1240, 1120
CGR-N-CONN-WIMAX	N-connector kit: LMR-400 cable, weather-proof cap, coaxial seal, electrical-joint compound (used with external antennas and WiMAX module)	CGR 1240, 1120

For detailed information about Cisco Antennas, please refer to the following guides:

Cisco Industrial Routers Antenna Guide:
https://www.cisco.com/c/en/us/td/docs/routers/connectedgrid/antennas/install-guide/b-cisco-industrial-routers-and-industrial-wireless-access-points-antenna-guide.html

Cisco Aironet Antennas and Accessories Reference Guide

http://www.cisco.com/c/en/us/products/collateral/wireless/aironet-antennas-accessories/product_data_sheet09186a008008883b.html