Antenna Selection Table

This chapter contains the following:

Antenna Selection Overview

This section is designed to provide detailed information for each antenna that can be used for Cisco Industrial Routers and Industrial Wireless Access Points. This document also contains selection tables for the Cisco antennas and accessories, as well as basic compatibility information with Cisco Industrial Routers and Access Points Cisco antennas and accessories, as well as installation scenarios, and technical specifications and diagrams of the available antennas. Read all of the safety precautions before you begin installation.

Note In all cases throughout this guide, Indoor Enterprise products are not listed.

The following tables list the currently supported antennas, planned EOS, and EOS antennas for Cisco Industrial Routers and Industrial Wireless Access Points.

Currently Supported Antennas

These are the antennas that are currently fully supported for deployments.

All of the currently supported antennas are broken down by functional groups.

Cellular 2G/3G/4G/5G Antennas

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco 5-in-1 Vehicle Mount and Fixed Infrastructure Antenna (ANT-5-4G2WL2G1-O) Transportation omnidirectional 5-element antenna for 2G, 3G, 4G cellular, GPS, and dual-band Wi-Fi 2.4 GHz and 5 GHz. Antenna has 2 ports for 2G, 3G, 4G, 2 ports for dual band 2.4 / 5.8 GHz Wi-Fi, and 1 port for GPS.	2 x 4G LTE, TNC(m) 2 x 2.4/5 GHz Wi-Fi, RPTNC(plug) 1 x GPS SMA(m)	4G LTE 698-960, 1448-1511, 1710-2400, 2500-2700 MHz. 2.4 dBi typical, 2.9 dBi max 698-960 MHz 4.2 dBi typical, 4.8 dBi max 1448-1511 MHz 4.9 dBi typical, 6.5 dBi max 1710-2700 MHz	Good fit for IR829. Can be used with other products such as IR809 or IR807, but has extra Wi-Fi elements not required for those products. Instead consider ANT-3-4G2G1-O for products without Wi-Fi.
Cisco Cellular and GPS 3-in-1 Vehicle Mount and Fixed Infrastructure Antenna (ANT-3-4G2G1-O) Cellular 3-in-1 Two port 2G, 3G, 4G and 1 port GPS Vehicle Mount and Fixed Infrastructure Antenna, with three ports.	2 x 4G LTE, TNC(m) 1 x GPS SMA(m)	4G LTE 698-960, 1448-1511, 1710-2400, 2500-2700 MHz 2.6 dBi typical, 3.8 dBi max 698-960 MHz 3.8 dBi typical, 4.3 dBi max 1448-1551 MHz 4.6 dBi typical, 5.5 dBi max 1710-2700 MHz	IR807, IR809, and IR829 IR1101 with P-LTE cellular module C819HG-LTE and C819HG-4G CGM-3G and CGM-4G modules with CGR1120 router CGR1120 use case requires adapters
Cisco Dual LTE-Single GPS Multi-band Antenna Installation Guide (4G-LTE-ANTM-O-3-B) Cellular 3-in-1 Two port for 2G, 3G, 4G LTE and one port for GPS Integrated indoor and outdoor Antenna with three ports.	2 x 4G LTE, TNC(m) 1 x GPS SMA(f)	4G LTE 698-960, 1710-2700 MHz 2.5 dBi typical 698-960 MHz 2.5 dBi typical 1710-2700 MHz	IR1101 with P-LTE cellular module

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco Cellular 2-in-1 Vehicle Mount and Fixed Infrastructure Antenna (ANT-2-4G2-O) Two port 2G, 3G, and 4G antenna with two elements. This dual port LTE antenna does not have an active GPS antenna (compared to ANT-3-4G2G1-O which does), and is useful for cases when there is no GPS required, or when GPS is connected to a completely separate GPS antenna.	2 x 4G LTE, TNC(m)	4G LTE: 698-960,1448-1511,1710-2400,2500-2700 MHz 2.6 dBi typical, 3.8 dBi max 698-960 MHz 3.8 dBi typical, 4.3 dBi max 1448-1511 MHz 4.6 dBi typical, 5.5 dBi max 1710-2700 MHz No GPS element and no Wi-Fi.	IR807, IR809, and IR829 IR1101 with P-LTE cellular module C819HG-LTE and C819HG-4G CGM-3G and CGM-4G modules with CGR1120 router. CGR1120 use case requires coax adapters
Cisco Outdoor Omnidirectional Antenna for 2G/3G/4G Cellular (ANT-4G-OMNI-OUT-N) Outdoor Omnidirectional Antenna for 2G/3G/4G Cellular antenna is designed to cover domestic LTE700/Cellular/PCS/AWS/MDS, WiMAX 2300/2500, and GSM900/GSM1800/UMTS/LTE2600 bands.	N-Type female	698 to 862 MHz 824 to 894MHz 880 to 960MHz 1710 to 1880Mhz 1850 to 1990MHz 1920 to 2170MHz 2300 to 2400MHz 2400 to 2500MHz 2500 to 2690MHz 3400 to 3800 MHz 1.5 dBi (698 to 960MHz) 3.5 dBi (1710 to 2690MHz) 5.2 dBi (3400 to 3800MHz)	IR807, IR809, and IR829 IR1101 with P-LTE cellular module C819HG-LTE and C819HG-4G CGM-3G and CGM-4G modules with CGR1120 and CGR1240. In most cases adapters or cables are required.
Cisco Multiband Panel Outdoor 4G MIMO Antenna (ANT-4G-PNL-OUT-N) Multiband Panel Outdoor 4G MIMO dual-port antenna designed to cover cellular 4G bands.	Dual type N female direct connector	698-960 MHz 8.0-10.0 dBi 1710-2170 MHz 6.0-8.5 dBi 2200-2400 MHz 6.5-9.5 dBi 2500-2700 MHz 8.5-9.5 dBi Antenna is not designed to operate in 1448-1511 MHz Japan band. Does not have high gain.	IR807, IR809, and IR829 IR1101 with P-LTE cellular module C819HG-LTE and C819HG-4G CGM-3G and CGM-4G modules with CGR1120 and CGR1240. In most cases adapters or cables are required.

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco Multiband Indoor 4G Volcano Antenna (ANT-4G-CM-IN-TNC) Multiband Indoor 4G Ceiling-mount Volcano Antenna.	1 x TNC (m)	1 dBi 698-960 MHz 3 dBi 1710-2700 MHz	IR807, IR809, and IR829 C819HG-LTE and C819HG-4G CGM-3G and CGM-4G modules with CGR1120 and CGR1240. For CGM / CGR use case adapters are required
ANT-MP2-I-OUT-M and ANT-MP2-I-O-SS-M Antenna and Cable Kits For 4G cellular use you need the ANT-MP2-I-O-SS-M antenna kit. The kit has qty 2 antennas and cables needed for Main and Aux cellular ports. ANT-MP2-I-OUT-M is for 915 MHz WPAN, and only has a single antenna and cable in the kit. Designed for direct mounting on the CGR1240 and has an MCX connector.	MCX jack	0.9 dBi typical, 2.8 dBi max 698-960 MHz 3.0 dBi typical, 4.3 dBi max 1710-2700 MHz 4.0 dBi typical, 5.0 dBi max 2300-2700 MHz **Note** Degraded performance in Japan 1448-1511 MHz band.	ANT-MP2-I-O-SS-M kit is compatible with CGM-3G and CGM-4G in CGR1240 chassis. The antennas are not mechanically compatible with the CGR1120 chassis.
Cisco Integrated 4G Low-profile Outdoor Saucer Antenna (ANT-4G-SR-OUT-TNC) Integrated 4G Low-profile Outdoor Saucer Antenna.	15 foot LMR 195 cable with TNC(m)	0.8 dBi 698-960 MHz 0.5 dBi 1448-1511 MHz 0.2 dBi 1710-2700 MHz	IR807, IR809, and IR829 C819HG-LTE and C819HG-4G CGM-3G and CGM-4G modules with CGR1120 and CGR1240. For CGM / CGR use case adapters are required.

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco 4G/3G Omnidirectional Dipole Antenna (4G-LTE-ANTM-D) LTE-ANTM-D is a high performance indoor antenna for use in the 698-960, 1448-1511 and 1710-2690 MHz frequency bands. LTE-ANTM-D antennas have high standalone efficiency, and maintain high efficiency when directly installed on front plate of a small or medium size Cisco router. However, depending on chassis size and a variety of other electromagnetic considerations, installing the antenna directly on the chassis is not always recommended.	1 x TNC(m)	2 dBi, 698-960 MHz 2.8 dBi, 1447-1511 MHz 3.7 dBi, 1710-2690 MHz	IR807, IR809, and IR829 C819HG-LTE and C819HG-4G CGM-3G and CGM-4G modules in CGR1120 (with additional adapters & cable accessories)
Cisco 4G LTEA, 4G LTE, and 3G Omnidirectional Dipole Antenna (LTE-ANTM-SMA-D) LTE-ANTM-SMA-D is a high performance indoor antenna for use in the 698-960, 1448-1511 and 1710-2690 MHz frequency bands. LTE-ANTM-SMA-D antennas have high standalone efficiency, and maintain high efficiency when directly installed on front plate of a small or medium size Cisco router. However, depending on chassis size and a variety of other electromagnetic considerations, installing the antenna directly on the chassis is not always recommended.	1 x SMA(m)	2 dBi, 698-960 MHz 2.8 dBi, 1447-1511 MHz 3.7 dBi, 1710-2690 MHz	IR1101 with P-LTE cellular module

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco 4G LTEA, 4G LTE, and 3G Omnidirectional Dipole Antenna (LTE-ANTM2-SMA-D) LTE-ANTM2-D is a high-performance indoor antenna used for 617-960, 1400- 2690, 3400-3900 and 5150-6000 MHz deployments. LTE-ANTM2-D antennas have high standalone efficiency, and maintain high efficiency when directly installed on front plate of a small or medium size Cisco router. However, depending on chassis size and a variety of other electromagnetic considerations, installing the antenna directly on the chassis is not always recommended.	1 x SMA(m)	1.0 dBi (typical), 617 – 960 MHz 4.0 dBi (typical), 1400 – 2690 MHz 4.5 dBi (typical), 3400 – 3900 MHz 5.0 dBi (typical), 5150 – 6000 MHz	IR21, IR31, 1101, IR1800, IR8300
Cisco 4G (LTE) / 5G (FR1) Omnidirectional Outdoor Antenna (ANT-5G-OMNI-OUT-N) Outdoor omnidirectional antenna for 3G/4G/5G cellular deployments.	N-type (f)	2.5 dBi (typical), 617 – 960 MHz 4.0 dBi (typical), 1400 – 4200 MHz 4.5 dBi (typical), 4400 – 7125 MHz **Note** Supports operation in LTE Japan bands (1400 – 1520 MHz)	IR21, IR31 IR1101, IR1800, IR8300 with P-LTE/LTEA/5G cellular modem IR8100 with UIM LTE/LTEA/5G cellular module
Cisco Multipurpose Omnidirectional Outdoor Antenna (ANT-5G-MP-OUT-N) Omnidirectional Outdoor Antenna.	N-type (m)	2.0 dBi (typical), 617 – 960 MHz 5.5 dBi (typical), 1700 - 5925 MHz **Note** Does not support operation in LTE Japan bands (1400 – 1520 MHz)	IR8100 with UIM WPAN/LTE/LTEA/5G cellular module

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco 4-in-1 Fixed Infrastructure Antenna w/bracket (ANT-4-5G4-O) Cisco 4-in-1 Fixed Infrastructure Antenna with bracket.	4 x N-type (m)	3G/4G/5G FR1 617-960/1710-2170/2300-2700/3300-3800/4900-5925 MHz 0.8 dBi (typical), 617-960 MHz 2.0 dBi (typical), 1710-2170 MHz 3.7 dBi (typical), 2300-2700 MHz 2.8 dBi (typical), 3300-3800 MHz 1.0 dBi (typical), 4900-5925 MHz **Note** Does not support operation in LTE Japan bands (1400 – 1520 MHz)	IR8100H Includes mounting bracket Recommended for Cat18 UIM deployment in IR8100 series
Cisco Multi-element, 5-in-1, 5G (FR1)/LTE/GNSS (ANT-5-5G4G1-O)	4x Cellular (4G/5G) SMA(m) 1x GNSS SMA(m)	4x cellular ports: 617-960/1710-5925 MHz 5G (LTE), Dual Band Average peak gain: • 617-960 MHz: 2.0 dBi • 1710-5925 MHz: 5.8 dBi	To be used with products that support the 5G Pluggable - P-5GS6-GL.
Cisco 7-in-1 Vehicle Mount and Fixed Infrastructure Antenna (ANT-7-5G4WL2G1-O) Transportation omnidirectional 7-element antenna for 3G, 4G, 5G FR1, GNSS and dual-band Wi-Fi (2.4/5GHz) deployments.	4x 4G/5G, SMA(m) 2x 2.4/5GHz Wi-Fi, RP-SMA(plug) 1x GNSS, SMA(m)	3G/4G/5G FR1 617-960/1710-2340/2400-2800/3300-3800/5100-6000 MHz Dual-band Wi-Fi (2.4/5GHz) 2400-2480/5100-5950 MHz GNSS 1560-1605 MHz	IR1800, IR8300 Can be used with products like IR1101 but has extra Wi-Fi elements not required for said product. Consider other multi-element antennas with corresponding adapters/extension cables

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco Multi-element, 9-in-1, LTE/Wi-Fi/GNSS antenna (5G-ANTM-O-4-B) Transportation omnidirectional 9-element antenna for 3G, 4G, 5G FR1, GNSS and dual-band Wi-Fi (2.4/5GHz) deployments.	4x 4G/5G, SMA(m) 4x 2.4/5GHz Wi-Fi, RP-SMA(plug) 1x GNSS, SMA(m)	3G/4G/5G FR1 617-960/1710-2340/2400-2800/3300-3800/5100-6000 MHz Dual-band Wi-Fi (2.4/5 GHz) 2400-2480/5100-5950 MHz GNSS 1560-1605 MHz	IR1800, IR8300 Can be used with products like IR1101 but has extra Wi-Fi elements not required for said product. Consider other multi-element antennas with corresponding adapters/extension cables
Cisco Multi-Band Swivel Mount Dipole Antenna (5G-ANTM-SMA-D) Indoor Omnidirectional Dipole Antenna	1 x SMA(m)	3G/4G/5G FR1 617-960/1710-2340/2400-2800/3300-3800/5100-6000 MHz 3.1 dBi (typical), 617 – 960 MHz 4.0 dBi (typical), 1400 – 2690 MHz 4.5 dBi (typical), 3400 – 3800 MHz 4.5 dBi (typical), 5150 – 5925 MHz	IR1100, IR1800, IR8300

Tri Band 2.4/5/6 GHz Antennas

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco 2.4/5/6 GHz Tri-Band Omnidirectional Antenna (IW-ANT-OMH-2567-N)	Integrated Male N(m)	6 dBi Peak @2400-2482 MHz 8 dBi Peak @4900-4990 MHz 8 dBi Peak @5170-5330 MHz 8 dBi Peak @5490-6875 MHz	IW9167
Cisco 2.4/5/6 GHz Tri-Band Omnidirectional Antenna (IW-ANT-OMV-2567-N)	Integrated Male N(m)	6 dBi Peak @2400-2482 MHz 8 dBi Peak @4900-4990 MHz 8 dBi Peak @5170-5330 MHz 8 dBi Peak @5490-6875 MHz	IW9167

GPS/GNSS Antennas

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco GPS Antenna (ANT-GPS-OUT-TNC) Active GPS antenna, integrated 15' LMR-100 cable with RA-TNC(male). The ANT-GPS-OUT-TNC integrated GPS RF front end is designed to reject collocated RF interference.	Right-angle TNC male	Active GPS antenna, 4.0 dBi min at Zenith, 1575.42 MHz, plus 25dB amplifier gain	CGR1120 router use case requires ANT-ADPTR-Q-TNC adapter. Router has QMA(f) GPS connector LoRaWAN gateways, IXM-LPWA-800-16-K9IXM-LPWA-900-16 directly attached. No adapter needed, as IX products have TNC(f) GPS connector. IR510 use case requires LTE-ADPT-SM-T adapter. IR510 has SMA(f) GPS connector IR1101 with P-LTE cellular module C819HG-LTE and C819HG-4G IR807, IR809, and IR829 All of these use cases require a LTE-ADPT-SM-TF adapter as these routers a SMA(f) GPS connector. Instead of a standalone ANT-GPS-OUT-TN antenna please consider using a multi-elem antenna that combines LTE and GPS antenn in a single antenna product such as: ANT-5-4G2WL2G1-O or ANT-3-4G2G1-

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco Indoor/Outdoor Active GPS Antenna (GPS-ACT-ANTM-SMA) Active GPS antenna that can be physically connected to the Cisco Integrated Services Routers (ISRs) and Cisco Enhanced High-Speed WAN Interface Cards (EHWICs) to receive GPS broadcasts from satellites. GPS-ACT-ANTM-SMA has GPS filters, but all the filters are after the LNA. Therefore, antenna may not be suitable for co-location with strong RF transmitters.	SMA male	Active GPS antenna, 4 dBi Zenith, 1575.42 MHz, plus 27dB amplifier gain	IR807, IR809, and IR829 IR1101 with P-LTE cellular module C819HG-LTE and C819HG-4G
Cisco indoor/outdoor, active GNSS antenna (IW-ANT-GNSS-SMA) indoor/outdoor, active GNSS antenna which can be physically connected to the Cisco Integrated Services Routers (ISRs) and Cisco Industrial Wireless (IW) Access Points and Clients to receive GNSS broadcasts from satellites.	SMA male	Active GPS antenna, 1559 – 1610 MHz, 26 dB, +/- 2 dB Amplifier Gain (LNA Gain)	IW9165E

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco Dual LTE-Single GPS Multi-band Antenna Installation Guide (4G-LTE-ANTM-O-3-B) Cellular 3-in-1 Two port for 2G, 3G, 4G LTE and one port for GPS Integrated indoor and outdoor Antenna with three ports. The 4G-LTE-ANTM-O-3-B integrated GPS RF front end is designed to reject collocated RF interference.	SMA-Male	2.5 dBi typical 698-960 MHz 2.5 dBi typical 1710-2700 MHz One port with GPS element.	IR1101 with P-LTE cellular module
Cisco Cellular and GPS 3-in-1 Vehicle Mount and Fixed Infrastructure Antenna (ANT-3-4G2G1-O) Three port antenna with two elements designed to cover the 698-960, 1448-1511 and 1710-2700 MHz cellular bands and one GPS element. The ANT-3-4G2G1-O antenna is listed under multiple antenna guide sections due to support of multiple technologies. The ANT-3-4G2G1-O integrated GPS RF front end is designed to reject collocated RF interference.	Cellular – TNC male GPS – SMA male	3G/4G 1 dBi zenith, plus 27dB amplifier gain Active GPS antenna, 1575.42 +/- 5 MHz	IR807, IR809, and IR829IR1101 with P-LT cellular module C819HG-LTE and C819HG-4G CGM-3G and CGM-4G modules with CGR router CGR1120 use case requires ANT-ADPTR-Q-TNC adapters, as CGR11 router has a QMA(f) GPS connector, and CGM-3G and CGM-4G modules have QM cellular connectors

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco Multi-element, 5-in-1, 5G (FR1)/LTE/GNSS (ANT-5-5G4G1-O)	4x Cellular (4G/5G) SMA(m) 1x GNSS SMA(m)	4x cellular ports: 617-960/1710-5925 MHz 5G (LTE), Dual Band Average peak gain: • 617-960 MHz: 2.0 dBi • 1710-5925 MHz: 5.8 dBi	To be used with products that support the 5G Pluggable - P-5GS6-GL.
Cisco 5-in-1 Vehicle Mount and Fixed Infrastructure Antenna (ANT-5-4G2WL2G1-O) Transportation omnidirectional 5-element antenna for 2G, 3G, 4G cellular, GPS, and dual-band WiFi 2.4 GHz and 5 GHz. The ANT-5-4G2WL2G1-O integrated GPS RF front end is designed to reject collocated RF interference. **Note** The ANT-5-4G2WL2G1-O antenna is listed under multiple antenna guide sections due to support of multiple technologies.	Cellular – TNC male WLAN - RP-TNC male GPS – SMA male	3G/4G 4G LTE 698-960, 1448-1511, 1710-2400, 2500-2700 MHz 1 dBi zenith, plus 27dB amplifier gain Plus 1 port GPS, and 2 ports for dual band WiFi. 1575.42 +/- 1 MHz, GPS L1	Good fit for IR829. Can be used with other products such as IR809 or IR807, but has extra WiFi elements not required for those products. Instead consider ANT-3-4G2G1-O for product without WiFi.
Cisco 7-in-1 Vehicle Mount and Fixed Infrastructure Antenna (ANT-7-5G4WL2G1-O) Transportation omnidirectional 7-element antenna for 3G, 4G, 5G FR1, GNSS and dual-band Wi-Fi (2.4/5GHz) deployments.	4x 4G/5G, SMA(m) 2x 2.4/5GHz Wi-Fi, RP-SMA(plug) 1x GNSS, SMA(m)	3G/4G/5G FR1 617-960/1710-2340/2400-2800/3300-3800/5100-6000 MHz Dual-band Wi-Fi (2.4/5GHz) 2400-2480/5100-5950 MHz GNSS 1560-1605 MHz	IR1800, IR8300 Can be used with products like IR1101 but has extra Wi-Fi elements not required for said product. Consider other multi-element antennas with corresponding adapters/extension cables

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco Multi-element, 9-in-1, LTE/Wi-Fi/GNSS antenna (5G-ANTM-O-4-B) Transportation omnidirectional 9-element antenna for 3G, 4G, 5G FR1, GNSS and dual-band Wi-Fi (2.4/5GHz) deployments.	4x 4G/5G, SMA(m) 4x 2.4/5GHz Wi-Fi, RP-SMA(plug) 1x GNSS, SMA(m)	3G/4G/5G FR1 617-960/1710-2340/2400-2800/3300-3800/5100-6000 MHz Dual-band Wi-Fi (2.4/5GHz) 2400-2480/5100-5950 MHz GNSS 1560-1605 MHz	IR1800, IR8300 Can be used with products like IR1101 but extra Wi-Fi elements not required for said product. Consider other multi-element antennas with corresponding adapters/extension cables

WPAN, ISM, and LoRaWan Antennas

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco Outdoor 5 dBI Omni Antenna for 863-928 MHz WPAN, LoRaWan, and ISM (ANT-LPWA-DB-O-N-5) 5 dBi Outdoor Omni-directional Antenna for the Cisco WPAN, LoRaWan, ISM modules and routers.	Type N Female	5.2 dBi 860-876 MHz 5.3 dBi 902-928 MHz	IR509, IR510, IR529, and IR530 WPAN CGM-WPAN-FSK-NA and CGM-WPAN-OFDM-FCC modules in CGR1240 and CGR1120 LoRaWAN gateways, IXM-LPWA-800-16-K9 IXM-LPWA-900-16-K9
Cisco WPAN Dipole Antenna (ANT-WPAN-OD-OUT-N) Omnidirectional, vertically polarized single-port antenna designed to cover the 860-928 MHz frequency bands for worldwide ISM operation.	Type N male	WPAN 860-928 MHz. 1.5 dBi max	IR509, IR510, IR529, and IR530 WPAN CGM-WPAN-FSK-NA and CGM-WPAN-OFDM-FCC modules in CGR1240 and CGR1120
Cisco Vandal Resistant Omni-directional Dome Antenna for 860-928 MHz ISM, WPAN and LoRaWAN (ANT-UN-MP-OUT-QMA) Vandal Resistant Omni-directional Dome Antenna for ISM, WPAN and LoRaWAN routers.	QMA (male), right angle	1.5-2.0 dBi typical 860-928 MHz	IR509 and IR510
Cisco WPAN Yagi Antenna (ANT-WPAN-Y-OUT-N) Directional, linearly polarized, mast mount Yagi antenna with a pigtail with N female connector.	18” RG8 pigtail with N female connector	WPAN 860-928 MHz. 9 dBi typical, 10 dBi max	Advanced Range Extenders only. IR529UBWP-915D/K9 and IR529UWP-915D/K9 only.

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
ANT-MP2-I-OUT-M and ANT-MP2-I-O-SS-M Antenna and Cable Kits For 4G cellular use you need the ANT-MP2-I-O-SS-M antenna kit. The kit has qty 2 antennas and cables needed for Main and Aux cellular ports. ANT-MP2-I-OUT-M is for 915 MHz WPAN, and only has a single antenna and cable in the kit. Designed for direct mounting on the CGR1240 and has an MCX connector.	MCX jack	0.9 dBi typical, 2.8 dBi max, 860-928 MHz	CGR1240 Connected Grid Modules ANT-MP2-I-OUT-M kit is compatible with CGM WPAN modules for use with CGR1240 chassis. The antennas are not mechanically compatible with the CGR1120 chassis.

Wi-Fi Antennas

Note Cisco has the broadest selection of Wi-Fi antennas in the industry. Not all combinations of antennas and routers are supported or tested. For detailed information about antennas supported please check the documentation available for your router or access point

For easier reference, this guide splits the Wi-Fi Antennas into 3 different categories:

- Single Band 2.4 GHz Antennas, on page 15
- Single Band 5 GHz Antennas, on page 15
- Dual Band 2.4 GHz + 5 GHz Antennas, on page 16

In addition to the information found in this guide, another detailed source for Cisco Wi-Fi antennas, Access Points and deployment considerations can be found here:

Cisco Aironet Antennas and Accessories Reference Guide

Single Band 2.4 GHz Antennas

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco Aironet 2.4 GHz 13-dBi Directional Antenna (AIR-ANT2413P2M-N) 2-Element Patch Array designed for outdoor use with Cisco Industrial Wireless Access Points.	Type N Male	WiFi 2.4 Ghz 13 dBi	IW3702 in FlexPort mode only IW3702 use case requires N-type cables. Supported on the IR829GW family, not recommended for the IR829-2LTE as the antenna is single band. IR829 use case requires cables and adapters. IW-6300, ESW-6300 IW/ESW-6300 must be configured in single band mode. Requires N-type cables.
Cisco Aironet 8-dBi Omnidirectional Antenna (AIR-ANT5180V-N) Omnidirectional antenna designed for outdoor use.	Type N Male	WiFi 2.4 GHz 8 dBi	IW-6300, ESW-6300 IW/ESW-6300 must be configured in single band mode.

Single Band 5 GHz Antennas

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco Aironet 5-GHz 13-dBi Directional Antenna (AIR-ANT5114P2M-N) 2-Port Directional antenna with N-type connectors designed for use in outdoor environments.	Type N Male	Wi-Fi 5 GHz 13 dBi	IW3702 in FlexPort mode only IW3702 use case requires N-type cables. Supported on the IR829GW family, not recommended for the IR829-2LTE as the antenna is single band. IR829 use case requires cables and adapters. IW-6300, ESW-6300 IW/ESW-6300 must be configured in single band mode. Requires N-type cables.
Cisco Aironet 8-dBi Omnidirectional Antenna (AIR-ANT5180V-N) Omnidirectional antenna designed for outdoor use.	Type N Male	Wi-Fi 5 GHz 8 dBi	IW-6300, ESW-6300 IW/ESW-6300 must be configured in single band mode

Dual Band 2.4 GHz + 5 GHz Antennas

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco Dual Port, Dual Band Vehicle Mount and Fixed Infrastructure WLAN Antenna (ANT-2-WLAN-D-O) Dual Port, Dual Band Outdoor Vehicle Mount and Fixed Infrastructure WLAN Antenna, omnidirectional, vertically polarized, 2x2 MIMO, integrated 3 foot long LMR-240 cables with RP-TNC plug connectors.	2 x 3 foot LMR-240 cables with RP-TNC(plug) connectors	Wi-Fi 2.4/5 GHz 4.0 dBi typical, 5.1 dBi max 2400-2500 MHz 6.5 dBi typical, 7.0 dBi max 4900-5875 MHz	IR829
Cisco Aironet Four-Port Dual-Band Polarization-Diverse Antenna (AIR-ANT2513P4M-N) Four-port polarization-diverse patch array with an articulating mount for use on flat surfaces and masts, and is adjustable in both the horizontal and vertical planes. Designed for use in indoor and outdoor environments.	Type N-Female Bulkhead	Wi-Fi 2.4/5 GHz 13 dBi	IW3702, IW-6300, ESW-6300 Requires N-type cables
Cisco Aironet Four-Element, MIMO, Dual-Band Ceiling Mount Omni-Directional Antenna (AIR-ANT2524V4C-R) Four-element, dual-band antenna designed for ceiling-mounting in an indoor environment.	RP-TNC	Wi-Fi 2.4 GHz band: 2 dBi 5 GHz band: 4 dBi	IW3702 IW3702 use case requires AIR-ACC370-NM-RF coaxial adapters
Cisco Aironet Dual-Band MIMO Wall-Mounted Omnidirectional Antenna (AIR-ANT2544V4M-R) Four port dual-band wall-mounted omnidirectional antenna designed for indoor or outdoor use.	RP-TNC	Wi-Fi 2.4 GHz band: 4 dBi 5 GHz band: 4 dBi	IW3702 IW3702 use case requires AIR-ACC370-NM-RF coaxial adapters

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco Aironet Dual-Band Omni-Directional Antenna (AIR-ANT2547V-N, AIR-ANT2547V-N-HZ, and ANT2547VG-N) Single port dual-band omni-directional antenna designed to directly attach to an outdoor access point or bulkhead N female connector.	Type N-Male	Wi-Fi 4 dBi 2400–2483 MHz 7 dBi 5250–5875 MHz	IW3702, IW-6300, ESW-6300 IR829 IR829 use case requires cables and adapters.
Cisco Aironet 2.4-GHz/5-GHz MIMO 4-Element Patch Antenna (AIR-ANT2566P4W-R) 4-Element Patch Antenna designed for indoor and outdoor use.	RP-TNC	Wi-Fi 2.4/5 GHz 6 dBi in both bands	IW3702 IW3702 use case requires AIR-ACC370-NM-RF coaxial adapters
Cisco 5-in-1 Vehicle Mount and Fixed Infrastructure Antenna (ANT-5-4G2WL2G1-O) Transportation omnidirectional 5-element antenna for 2G, 3G, 4G cellular, GPS, and dual-band Wi-Fi 2.4 GHz and 5 GHz. **Note** The ANT-5-4G2WL2G1-O antenna is listed under multiple antenna guide sections due to support of multiple technologies.	Cellular – TNC male WLAN - RP-TNC male GPS – SMA male	3G/4G 2 ports with dual band Wi-Fi 2.4/5 GHz. 1 port GPS, and 2 ports for 700-2700 MHz cellular. 4.8 dBi typical, 5.5 dBi max, 2400-2500 MHz 5.8 dBi typical, 7.0 dBi max, 4900-5875 MHz	IR829
Cisco Aironet Four-Element, MIMO, Dual-Band Ceiling Mount Omni-Directional Antenna (AIR-ANT2524V4C-R) High-performance, dual-band dipole antenna designed for use with Cisco Aironet 2.4 GHz and 5 GHz radio products with dual-band reverse-polarity TNC (RP-TNC) antenna ports.	RP-TNC plug	Wi-Fi 2.4/5GHz 2 dBi 2.4 GHz 4 dBi 5. GHz	IW3702 IW3702 use case requires AIR-ACC370-NM-RF coaxial adapters Matching antenna color is the white AIR-ANT2524DW-R IR829 Matching antenna color is the black AIR-ANT2524DB-R

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco Aironet 2.4 GHz and 5 GHz Dual-Band Polarization-Diverse Directional Array Antenna (AIR-ANT2566D4M-R) Four port dual-band polarization-diverse directional array antenna. It operates over the 2.4 GHz and 5 GHz Wi-Fi bands. It ships with an articulating mount for use on flat surfaces and masts, and is adjustable in both horizontal and vertical planes.	RP-TNC (with coupling ring)	2.4 GHz and 5 GHz 6 dBi	IW3702 IW3702 use case requires AIR-ACC370-NM-RF coaxial adapters IR829
Cisco Aironet Dual-Band Omni-Directional Antenna (AIR-ANT2568VG-N) Single port dual-band omnidirectional antenna designed to directly attach to an outdoor access point or bulkhead N female connector.	Type N-Male	2.4/5 GHz 6 dBi 2400 – 2483 MHz 8 dBi 5150 – 5925 MHz	IW-6300, ESW-6300
Cisco Aironet 2.4-GHz/5-GHz 8-dBi Directional Antenna (AIR-ANT2588P3M-N) Three port directional patch array with an articulating mount for use on flat surfaces and masts and is adjustable in both the horizontal and vertical planes. Designed for use in indoor and outdoor environments.	Type N-Female Bulkhead	2.4/5 GHz 8 dBi in both bands	IW-6300, ESW-6300 IW/ESW-6300 must be configured in dual-band mode. The middle port of the antenna is unused. Requires N-type cables.

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco Indoor, Dipole Antenna, single-port (W-ANTM2050D-RPSMA) W-ANTM2050D-RPSMA is a high-performance indoor antenna used for WLAN dual-band, 2.4/5GHz, indoor deployments. W-ANTM2050D-RPSMA antennas have high standalone efficiency, and maintain high efficiency when directly installed on front plate of a small or medium size Cisco router. However, depending on chassis size and a variety of other electromagnetic considerations, installing the antenna directly on the chassis is not always recommended.	1 x RP-SMA(m)	1.5 dBi (max), 2400 – 2482 MHz 3.5 dBi (max), 5100 – 5925 MHz	IR21, IR31, IR1800
Cisco 7-in-1 Vehicle Mount and Fixed Infrastructure Antenna (ANT-7-5G4WL2G1-O) Transportation omnidirectional 7-element antenna for 3G, 4G, 5G FR1, GNSS and dual-band Wi-Fi (2.4/5GHz) deployments.	4x 4G/5G, SMA(m) 2x 2.4/5GHz Wi-Fi, RP-SMA(plug) 1x GNSS, SMA(m)	3G/4G/5G FR1 617-960/1710-2340/2400-2800/3300-3800/5100-6000 MHz Dual-band Wi-Fi (2.4/5GHz) 2400-2480/5100-5950 MHz GNSS 1560-1605 MHz	IR1800, IR8300 Can be used with products like IR1101 but has extra Wi-Fi elements not required for said product. Consider other multi-element antennas with corresponding adapters/extension cables
Cisco Multi-element, 9-in-1, LTE/Wi-Fi/GNSS antenna (5G-ANTM-O-4-B) Transportation omnidirectional 9-element antenna for 3G, 4G, 5G FR1, GNSS and dual-band Wi-Fi (2.4/5GHz) deployments.	4x 4G/5G, SMA(m) 4x 2.4/5GHz Wi-Fi, RP-SMA(plug) 1x GNSS, SMA(m)	3G/4G/5G FR1 617-960/1710-2340/2400-2800/3300-3800/5100-6000 MHz Dual-band Wi-Fi (2.4/5GHz) 2400-2480/5100-5950 MHz GNSS 1560-1605 MHz	IR1800, IR8300 Can be used with products like IR1101 but has extra Wi-Fi elements not required for said product. Consider other multi-element antennas with corresponding adapters/extension cables

Industrial Wireless Access Point Antennas

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco Dual-Slant Polarized Sector Antenna (IW-ANT-DS9-516-N) Used for Point-to-Multipoint, where the installation requires a sector antenna on the AP to support Dual Slant panel antennas on the clients.	2x N-Type Female	4.9 - 5.95 GHz 16.0 dBi (min) 16.5 dBi (typ)	IW9167E IW9165D
Cisco Symmetrical Horn CC Antenna (IW-ANT-H90-510-N) Scalar horn antennas have symmetrical main beam with identical beam width in Vertical and Horizontal plane. These antennas are ideal for coverage of areas with clients close to the installation site, where null zone issues exist. High density AP clusters and radio co-location is made possible due to unique radiation patterns and compact size.	2x N Female Bulkhead Connector	5180 - 6400 MHz 9.6 dBi	IW9167E IW9165D
Cisco Horizontally Polarized Omnidirectional Antenna (IW-ANT-OMH-55-N) Designed for long-lasting operation with outdoor access points. Its rugged design withstands harsh environments, making the antenna ideal for industrial wireless, enterprise, and military applications. The antenna is DC grounded for ESD protection of radio components.	Type N Female	5.1-5.9 GHz 5 dBi	IW9167E IW9165D IW9165E
Cisco 4.9-6 GHz Omni Mobile WiFi Antenna (IW-ANT-OMM-53-N)	N-Female 1.5	4.9-6.0 GHz	IW9167EH IW9165E
Cisco Vertically Polarized Omnidirectional Base Station Antenna (IW-ANT-OMV-55-N) Design utilizes a linear array, encapsulated in a heavy-duty fiberglass radome with a thick-walled mounting base for reliable, long-term use. This rugged design withstands harsh environments, making the antenna ideal for Industrial Wireless and Military applications. The antennas in this series are DC grounded for ESD protection of radio components.	Type N Female	5.1-5.9 GHz 4 dBi	IW9167E IW9165D IW9165E
Cisco Spot-S 2x2 Wi-Fi MIMO Antenna (IW-ANT-PNL-59-N) Small directional, planar, linear polarized antenna for outdoor and indoor applications. Features include: • Dual-slant +/- 45° for MIMO antenna configuration • WLAN IEEE 802.11 a/h/p/n • Rugged design, meets EN 50155 and EN 50125-3 railway standards • Ingress protection IP66 & IP67	N, jack (female) x2	5150 - 5935 MHz 9 dBi	IW9167E IW9165E

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Industrial Wireless 2-port High Gain Panel Antenna (IW-ANT-PNL-515-N) 2-port high gain panel antenna is a directional 2-port array solution deployed in a variety of applications. Features include the following: • Compact design • 2x N(f) ports • Compatible mounting with IW9165D • IP66/67 rated • High port-to-port isolation	2x, N(m)-to-N(m), LMR-240, 3m cables	4900-5925 MHz 15 dBi	IW9165D IW9165E
Cisco Bi-Directional Train Top Antenna (IW-ANT-SKD-513-Q) Bi-Directional Train Top Antenna antenna with a QMA connector. The antenna is designed to survive high vibration rail installations, including roof mounting on locomotive and passenger cars.	QMA	4.9-5.9 GHz 10-13 dBi	IW9167E IW9165E
Cisco Directional Train Top Antenna (IW-ANT-SKS-514-Q) Directional Train Top Antenna antenna with a QMA connector. The antenna is designed to survive high vibration rail installations, including roof mounting on locomotive and passenger cars.	QMA	4.9-5.9 GHz 10-13 dBi	IW9167E IW9165E
Cisco Dual-Linear Polarized Sector Antenna (IW-ANT-SS9-516-N) Designed for point-to-multipoint connectivity in smart cities (coverage for parking lots, building-to-building connectivity etc), or ports and mines.	2x N-Type Female	4.9 - 6.425 GHz 16 dBi (typ)	IW9167E IW9165D

Planned End Of Service (EOS) Antennas

These are the antennas that are planned to reach their End Of Service. They are not recommended for new deployments.

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Cisco 4G Indoor Ceiling-Mount Omnidirectional Antenna (4G-ANTM-OM-CM). Designed for indoor use with Cisco 3G cellular Enhanced High-Speed WAN Interface Cards (EHWICs) and is compatible with Cisco 3G cellular products using a threaded Neill-Concelman (TNC) Male connector.	TNC male	1 and 1.5 dBi 700–960 MHz 2 dBi 1448-1511 MHz 1.7 and 3.2 dBi 1700–2200 MHz 3 and 4 dBi 2500–2700 MHz	IR807, IR809, and IR829 IR1101 with P-LTE cellular module CGM-3G and CGM-4G modules in CGR1120 (with additional adapters & cable accessories)
Cisco 4G/3G Omnidirectional Dipole Antenna (4G-LTE-ANTM-D). The 4G-LTE-ANTM-D omnidirectional dipole antenna is designed for indoor use with Cisco 4G and Cisco 3G wireless Integrated Services Routers Generation 2 (ISRs G2) and Enhanced High-Speed WAN Interface Cards (EHWICs).	Articulated TNC male connector	4G LTE 698-960, 1710-2170, 2500-2700 MHz. 2 dBi	IR800 CGR 1000 Connected Grid Modules
Cisco Indoor Swivel-mount Dipole Antenna (ANT-4G-DP-IN-TNC). Indoor Swivel-mount Dipole 3G/4G Antenna supported on the Connected Grid Router 1120 and is designed to support Cellular/PCS/AWS/MDS, WiMAX 2100/2300/2500/2600 and global GSM900/GSM1800/UMTS/LTE2600 bands.	TNC male	4G LTE 698-960, 1710-2400, 2500-2700 MHz 0.5 dBi 698-960 MHz) 2.2 dBi 1710-2700 MHz	IR800 CGR 1000 Connected Grid Modules
Cisco Aironet 6.5-dBi Diversity Patch Antenna (AIR-ANT2465P-R). (AEOS date 04/30/2019) Diversity patch antenna designed for use with Cisco Aironet access points and bridges but can be used with any 2.4 GHz Cisco Aironet radio device that utilizes an RP-TNC connector.	RP-TNC	WiFi 2.4G 6.5 dBi	IR829
Cisco Aironet Omnidirectional Antennas AIR-ANT5150VG-N and AIR-ANT5150HG-N Vertically and horizontally polarized omnidirectional antennas designed for outdoor use.	Type N Male	Wi-Fi 5 GHz 5 dBi	IW-6300, ESW-6300 IW/ESW-6300 must be configured in single band mode.
Cisco Aironet Omnidirectional Antennas AIR-ANT2450V-N, AIR-ANT2450VG-N, AIR-ANT2450V-N-HZ, and AIR-ANT2450HG-N Omnidirectional antennas designed for outdoor use with Cisco Aironet Outdoor Access Points.	Type N Male	WiFi 2.4 GHz 5 dBi	Cisco Aironet 1552H, 1552S, 1552WU, IW-6300, ESW-6300. IW/ESW-6300 must be configured in single band mode.

End Of Service (EOS) Antennas

These are antennas that have reached their End Of Service.

Part Number / Description	RF Connectors	Antenna Frequency Band Support and Gain	Industrial Products Where Supported
Outdoor Panel Antenna for WiMAX 1.8, 2.5, and 3.8 GHz. Outdoor Panel Antenna for WiMAX 1.8, 2.5, and 3.8 GHz	N female (x2)	WiMAX 1.8, 2.5, 3.8 GHz. 16 +/- 1 dBi	CGR 1000 Connected Grid Modules
ANT-WM-INT-OUT-M (Similar to ANT-MP2-I-O-SS-M, except covering 3.3-3.6 GHz)	MCX jack	3.3-3.8 GHz N/A	WiMax CGM module only.
Cisco Multiband Panel Outdoor 3G Antenna (ANT-3G-PNL-OUT-N). Multiband Panel Outdoor 3G antenna designed to cover cellular 3G bands.	Type N female	3G 10 dBi 806-960 MHz 11 dBi 1710-2170 MHz	CGM-3G modules only
Cisco Multi-purpose Integrated Antenna (ANT-MP-INT-OUT-M). Multi-purpose integrated monopole antenna, chassis-mounted, omnidirectional, includes non-integrated coaxial cable. No cable (option class).	MCX jack	3G 2.8 dBi 806-960 MHz 3.5 dBi 1710-2170 MHz 4 dBi 2300-2700 MHz	CGM-3G only in CGR1240 chassis. This antenna is not mechanically compatible with CGR1120 chassis
Cisco Outdoor Omni Antenna for 900 MHz WPAN (ANT-WPAN-OM-OUT-N). Outdoor Omnidirectional Antenna for the 900 MHz WPAN module. **Note** Antenna will eventually be obsoleted in favor of the dual band 5 dBi, ANT-LPWA-DB-O-N-5	Type N female	WPAN 902-928 MHz only 4 dBi	IR509, IR510, and IR529 as well as WPAN CGM-WPAN-FSK-NA and CGM-WPAN-OFDM-FCC modules in CGR1240 and CGR1120