

Cisco Connected Grid 3G and 4G LTE Cellular Modules for the Cisco 1000 Series Connected Grid Router

The Cisco® Connected Grid Cellular Modules are 3G and 4G LTE wireless WAN connections for the Cisco 1000 Series Connected Grid Routers (CGR 1000 Series). The ruggedized 3G and 4G LTE cellular modules and CGR 1000 routers together provide a versatile communications platform for a diverse set of Field Area Network (FAN) and Internet of Things (IoT) deployments. They also support and extend utility applications such as Advanced Metering Infrastructure (AMI), Distribution Automation (DA), integration of Distributed Energy Resources (DER), and Remote Workforce Automation to endpoints in the grid.

Product Overview

Cisco Connected Grid 2G/3G/4G LTE Cellular Modules deliver service provider-based (public) wireless WAN connectivity for Cisco 1000 Series Connected Grid Routers (CGR 1000). These modules support the 3G or 4G LTE standards for evolved Long Term Evolution (LTE), High-Speed Packet Access (HSPA+) and Evolution-Data Optimized (EV-DO) Rev A. They're also backward-compatible with the following 2G/3G cellular network technologies:

- High-Speed Packet Access (HSPA)
- Universal Mobile Telecommunications Service (UMTS)
- Enhanced Data Rates for Global Evolution (EDGE)
- General Packet Radio Service (GPRS)
- EV-DO Rev 0/1xRTT

The Connected Grid 2G/3G Cellular Modules have two variants:

- Global System for Mobile Communications (GSM) and UMTS models are based on 3GPP. They support HSPA+, HSPA, UMTS, EDGE, and GPRS. The ruggedized cellular module and the CGR1000 routers provide a versatile communications platform for a diverse set of FAN and IoT deployments for smart utility grids.
- Code Division Multiple Access (CDMA) models are based on 3GPP2. They support EV-DO Rev A/Rev 0 and 1xRTT.

The Connected Grid 2G/3G/4G LTE Cellular Modules support the latest Third-Generation Partnership Project (3GPP) Release 9 Category 3 LTE standards.

Figure 1 displays the Cisco Connected Grid 2G/3G Cellular Modules

Figure 1. Cisco Connected Grid 2G/3G/4G LTE Cellular Modules



There are ten SKUs in the Cisco Connected Grid 2G/3G/4G LTE Cellular Module family. They offer utilities a choice of different technologies, carriers, and regions, as defined in Table 1.

Table 1. Cisco Connected Grid 2G/3G/4G LTE Cellular Modules for CGR 1000 Series

SKU	Description	Region	Technology & Supported Frequency Bands
CGM-3G-HSPA-AB-G	Connected Grid Module - 3G (all bands) HSPA+/UMTS/GSM/EDGE	Global	GSM, GPRS, EDGE: 850 MHz, 900 MHz, 1800 MHz, and 1900 MHz UMTS, HSPA+: 900 MHz, and 2100 MHz
CGM-3G-HSPA-G	Connected Grid Module - 3G (global) HSPA+/UMTS/GSM/GPRS /EDGE	North America and rest of world (900 MHz AMI) ¹	GSM, GPRS, EDGE: 850 MHz, 1800 MHz, and 1900 MHz UMTS, HSPA+: 2100 MHz
CGM-3G-HSPA-A	Connected Grid Module - 3G AT&T HSPA+/UMTS/GSM/GPRS /EDGE	AT&T (USA)	GSM, GPRS, EDGE: 850 MHz, 1800 MHz, and 1900 MHz UMTS, HSPA+: 850 MHz, 1900 MHz, and 2100 MHz
CGM-3G-EVDO-V	Connected Grid Module - 3G Verizon EV-DO Rev A/0/1xRTT	Verizon (USA)	CDMA/EVDO: 800-900 MHz cellular band and 1800-1900 MHz PCS band
CGM-3G-EVDO-S	Connected Grid Module - 3G Sprint EV-DO Rev A/0/1xRTT	Sprint (USA)	GSM, GPRS, EDGE: 850 MHz, 900 MHz, 1800 MHz, and 1900 MHz UMTS, HSPA+: 850 MHz, 1900 MHz, and 2100 MHz
CGM-4G-LTE-MNA	Connected Grid Module - 4GLTE - North America	North America (CGR1240)	LTE: 700 MHz (band 17), 1900 MHz (band 2 PCS), 700 MHz (band 13), 1900 MHz (band 25 extended PCS) networks; or 1700/2100 MHz (band 4 AWS) UMTS and HSPA+: 850 MHz (band 5), 1900 MHz (band 2 PCS), and 1700/2100 MHz (band 4 AWS) EVDO Rev A, CDMA 1x BC0, BC1, BC10 FW Image Switching from flash (FW-MC7354-LTE-AT, FWMC7354-LTE-CA or FW-MC7350-LTE-VZ)
CGM-4G-LTE-MNA-AB	Connected Grid Module - 4GLTE – North America	North America (CGR 1120)	LTE: 700 MHz (band 17), 900 MHz (band 8), 1900 MHz (band 2 PCS), 700 MHz (band 13), 1900 MHz (band 25 extended PCS) networks; or 1700/2100 MHz (band 4 AWS) UMTS and HSPA+: 850 MHz (band 5), 1900 MHz (band 2 PCS), and 1700/2100 MHz (band 4 AWS) EVDO Rev A, CDMA 1x BC0, BC1, BC10 FW Image Switching from flash (FW-MC7354-LTE-AT, FWMC7354-LTE-CA or FW-MC7350-LTE-VZ)
CGM-4G-LTE-GA	Connected Grid Module - 4G LTE – Global	Global	LTE: 800 MHz (band 20), 900 MHz (band 8), 1800 MHz (band 3), 2100 MHz (band 1), or 2600 MHz (band 7) UMTS and HSPA+: 850 MHz (band 5), 900 MHz (band 8), 1900 MHz (band 2), and 2100 MHz (band 1) FW Image Switching from flash (FW-MC7304-LTE-AU or FWMC7304-LTE-GB)
CGM-4G-LTE-EA-AB	Connected Grid Module – 4G LTE – North America and Europe	North America and Europe	Cisco Dual LTE FDD 2100 MHz (band 1), 1900 MHz (band 2, band 25), 1800 MHz (band 3), 1700 MHz (band 4), 850 MHz (band 5, band 26), 2600 MHz (band 7), 700 MHz (band 12, band 13, band 29), 700 MHz (band 17), 800 MHz (band 20), 1900 MHz (band 25), 850 MHz (band 26), 700 MHz (band 29) and TDD LTE 2500 MHz (band 41) at Category 4 LTE speeds.

SKU	Description	Region	Technology & Supported Frequency Bands
			Backward compatibility: UMTS and HSPA+: 2100 MHz (band 1), 1900 MHz (band 2), 1800 MHz (band 3), 1700 MHz (band 4), 850 MHz (band 5), 900 MHz (band 8) FW images could be FW-7455-LTE-VZ FW-7455-LTE-AT FW-7455-LTE-GN
CGM-4G-LTE-LA-AB	Connected Grid Module – 4G LTE - APJC and LATAM	APJC and LATAM	Cisco LTE FDD 2100 MHz (band 1), 1800 MHz (band 3), 850 MHz (band 5), 2600 (band 7), 900 (band 8), 850 (band18, band19), 1500 (band 21), 700 (band 28) and TDD LTE 2600 (band 38), 1900 (band 39), 2300 (band 40) and 2500 (band 41) at Category 4 LTE speeds. Backward compatibility: UMTS and HSPA+: 2100 MHz (band 1), 850 MHz (band 5), 800 MHz (band 6, band 19), 900 MHz (band 8), 1700 MHz (band 9) and TD-SCDMA 1900 MHz (band 39) FW images could be FW-7430-LTE-JN FW-7430-LTE-JN-KD FW-7430-LTE-JN-SB FW-7430-LTE-GN
CGM-4G-LTE-EA-900	Connected Grid Module – 4G LTE – North America and Europe	North America and Europe	

¹ For 900 MHz-based AMI deployments, a CGM-3G-HSPA-G cellular module should be used (CGM-3G-HSPA-AB-G should not be used).

Table 2 provides 4G LTE specifications for the CGM-4G-LTE modules.

Note: 4G/LTE module (MC74xx-based) doesn't support 2G/GPRS

Table 2. 4G LTE Specifications

Region Theaters	CGM-4G-LTE-GA	CGM-4G-LTE-MNA	CGM-4G-LTE-MNA-AB
Bands	LTE bands 1, 3, 7, 8, 20 800 (band 20), 900 (band 8), 1800 (band 3), 2100 (band 1), and 2600 (band 7) MHz	LTE band 2 PCS 1900, band 4 AWS (1700/2100), band 17 (700), band 13 (700), band 25 extended PCS 1900	LTE band 2 PCS 1900, band 4 AWS (1700/2100), 900 (band 8) band 17 (700), band 13 (700), band 25 extended PCS 1900
Theoretical Download/upload speeds[*]	100 and 50 Mbps	100 and 50 Mbps	100 and 50 Mbps
Australia	√	X	X
Europe	√	X	X
Middle East	√	X	X
LATAM & APAC	√ (Dependent on carrier's support for the LTE bands)	√ (Dependent on carrier's support for the LTE bands)	√ (Dependent on carrier's support for the LTE bands)
United States	X	√ √ ATT, Verizon, (FW Image Switching)	√
Canada	X	√	√

Region Theaters	CGM-4G-LTE-EA-AB	CGM-4G-LTE-LA-AB
Bands	LTE bands 1, 2, 3, 4, 5, 7, 12,13, 17, 20, 25, 26,29, 41	LTE bands 1,3,5,7,8,18,19,21,28, 38, 39, 40, 41
Theoretical Download/upload speeds[*]	100 and 50 Mbps	100 and 50 Mbps
Australia	X	√
Europe	√	X
Middle East	√	X
LATAM & APAC	X	√
United States	√	X
Canada	√	X

^{*}The 100 Mbps is due to USB connection limitation inside the CGR

Utilities that need to improve business continuity and reduce operating costs should consider these modules. When they add a service provider wireless data plan, utilities gain a rapidly deployable solution for remote sites. And these modules make full use of the network services provided by Cisco CGR 1000 routers.

Connected Grid 2G/3G/4G LTE Modules offer embedded intelligence (such as intelligent WAN sensing and modem reset). Links can be restored automatically, with no need for a service visit.

In addition, Connected Grid 2G/3G/4G LTE Modules provide detailed diagnostic information about the 3G and 4G WAN link so that utilities can troubleshoot connectivity issues and provide detailed performance logs to their service providers.

Please refer to the software specifications in Table 4 for more details.

Since Connected Grid 2G/3G/4G LTE Cellular Modules can be deployed in many utility environments worldwide, they offer a variety of antenna and cabling options. They support indoor- and outdoor-rated antennas, omnidirectional stick antennas, flat-panel antennas, low-profile saucers, ceiling-mounted antennas, and standard dipole antennas. Refer to the antenna specifications (Table 4), cable specifications (Table 5), and accessories specifications (Table 6) for more details.

Table 3 shows the hardware specifications for Cisco Connected Grid 2G/3G/4G LTE Cellular Modules, plus a partial listing of regulatory compliance and safety data.¹

Table 3. Hardware Specifications for Cisco Connected Grid 2G/3G/4G LTE Cellular Modules

Feature	Description
Form Factor	<ul style="list-style-type: none"> Single 2G/3G/4G LTE cellular module per platform; no slot placement restrictions
Dimensions (H x W x D)	<ul style="list-style-type: none"> 1.50 in. x 4.24 in. x 5.25 in. 3.81 cm x 10.77 cm x 13.34 cm
Weight	<ul style="list-style-type: none"> 0.5 lb
External Interfaces	<ul style="list-style-type: none"> Cellular Radio Frequency (RF) <ul style="list-style-type: none"> M0/MAIN - Primary RF port; QMA - female M1/DIV - Diversity RF port; QMA – female
Subscriber Identity Module (SIM) Card	<ul style="list-style-type: none"> Dual SIM² card socket; compliant with ISO-7816-2 (SIM mechanical)
LEDs	<ul style="list-style-type: none"> Wireless WAN modem status: LED color (green) <ul style="list-style-type: none"> Off-modem is in reset Solid green modem is powered, associated, and authenticated on network Slow blink modem is powered, searching for service Fast blink data is being transmitted Received Signal Strength Indication (RSSI): LED color (green/amber; bi-color) <ul style="list-style-type: none"> Off: RSSI less than or equal to -110 Solid amber: -110 less than RSSI less than or equal to -90 Fast green blink: -90 less than RSSI less than or equal to -75 Slow green blink: -75 less than RSSI less than or equal to -60 Solid green: RSSI greater than -60 SVC: LED color (green/amber; bi-color) <ul style="list-style-type: none"> Solid green: (HSPA+) service is enabled Blinking green: EV-DO service is enabled Off: neither HSPA+ nor EVDO service is available
Operating Conditions	
Operating Temperature	<ul style="list-style-type: none"> 2G/3G Modules: -25° C to +65° C (-13° F to 140° F) continuous operating temperature range 2G/3G Modules with CGR1240 with 3 BBUs: -40° C to +65° C (-40° F to 140° F) continuous operating temperature range 2G/3G/4G LTE Modules: -40° C to +65° C (-40° F to 140° F) continuous operating temperature range

Feature	Description
Shock and Vibration	IEC 61850-3 Class Cm, S3
Operating Seismic Earthquake	IEC 61850-3, Class Cm, S3
Altitude	10,000 ft. (3048 m), IEEE 1613:2009, a-2008
Relative Humidity	5 to 95 percent non-condensing
Non-Operating Conditions	
Temperature	-40° to +185° F (-40° C to +85° C)
Non-Operating Relative Humidity	5 to 95 percent non-condensing
Altitude	10,000 ft. (3000 m); optimum operating temperature is derated with increasing altitude per IEEE 1613a-2008
Non-Operating Free-fall Drop	4 in. (100 mm)
Non-Operating Shock and Vibration	50 - 60 G (3.76 m/s minimum)
EMC Emissions	FCC 47 CFR Part 15 Subpart C Class A EN 55032/CISPR 32 Class A, EN 55022 Class A VCCI Class A, AS/NZS CISPR 32 Class A CISPR 11 Class A, ICES 003 Class A, CNS 13438 Class A KN 32 Class A, EN 300 386
EMC Immunity	CISPR 35, EN 55024 KN 35 EN 61000-4-2,3,4,5,6,8,9,16,17,18,29
Radio-Cellular	AS/NZS: ACMA EMR, AS/CA S042. 1,4 Japan: Article 2, 9 EN 301 489-1, 7, 24, 52 EN 301 908 - 1, 2, 13 EN 301 511 EN 50385 MPE FCC 47 CFR Part 22 FCC 47 CFR Part 15 Subpart C FCC 47 CFR Part 2 MPE RSS 102 / 247
Safety	<ul style="list-style-type: none"> • USA: UL 60950-1 • Canada: CAN/CSA C22.2 No. 60950-1 • Europe: EN 60950-1 • China: GB 60950-1 • Australia and New Zealand: AS/NZS 60950-1 • Rest of world: IEC 60950-1 • CSA-certified to UL/CSA 60950-1, 2nd Ed. • CB report to IEC60950-1, 2nd Ed., covering all group differences and national deviations
Electromagnetic Compliance	<ul style="list-style-type: none"> • 47 CFR, Part 15 • ICES-003 Class A • EN55022 Class A • CISPR22 Class A • AS/NZS 3548 Class A • VCCI V-3 • CNS 13438 • EN 300-386

Feature	Description
Radio	<p>FCC Part 2, FCC Part 22, FCC Part 24, RSS 129 and RSS 133, RSS 132 and RSS 133, EN 301 511 GSM, EN301 908-1, and EN 301 908-2</p> <ul style="list-style-type: none"> • Wireless modem and certification: <ul style="list-style-type: none"> ◦ CGM-3G-HSPA-AB-G: Sierra Wireless MC8705; FCC, IC, NCC, CE, GCF-CC, PTCRB ◦ CGM-3G-HSPA-A: Sierra Wireless MC8705; FCC, IC, NCC, CE, GCF-CC, PTCRB ◦ CGM-3G-HSPA-G: Sierra Wireless MC8705; FCC, IC, NCC, CE, GCF-CC, PTCRB ◦ CGM-3G-EVDO-V: Sierra Wireless MC5728; FCC, IC, NCC, CE, GCF-CC, PTCRB ◦ CGM-3G-EVDO-S: Sierra Wireless MC5728; FCC, IC, NCC, CE, GCF-CC, PTCRB ◦ CGM-4G-LTE-MNA: Sierra Wireless MC7354 with Qualcomm MDM9615 ◦ CGM-4G-LTE-MNA-AB: Sierra Wireless MC7354 with Qualcomm MDM9615 ◦ CGM-4G-LTE-GA: Sierra Wireless MC7304 with Qualcomm MDM9215 ◦ CGM-4G-LTE-EA-AB: Sierra Wireless MC7455 MOBILE ◦ CGM-4G-LTE-EA-900: Sierra Wireless MC7455 MOBILE ◦ CGM-4G-LTE-LA-AB: Sierra Wireless MC7430

¹ For more information, consult the Product Approval Database at <https://www.ciscofax.com> or consult your local Cisco representative (Cisco.com login required).

² Software support for dual SIM only on Cisco IOS® Software Release 15.4(1) CG.

³ Software support for Sierra Wireless MC74xx only one Cisco IOS Software Release 15.6(3)M1 and later

Table 4 shows the software specifications for Cisco Connected Grid 2G/3G/4G LTE Cellular Modules.

Table 4. Software Specifications for the Cisco Connected Grid 2G/3G Cellular Modules

Feature	Description
Software Compatibility	<ul style="list-style-type: none"> • 15.4(1)CG minimum supported Cisco IOS release for 2G/3G modules • 15.5(3)M minimum supported Cisco IOS release for 2G/3G/4G LTE modules with modem firmware 5.5.58 or later • 15.6(3)M 1mimum supported Cisco IOS release for 4G LTE modules with modem MC74xx family
Important Software Features	<ul style="list-style-type: none"> • Auto-switch failover between primary and backup link • Multichannel Interface Processor (MIP) profile configuration • Code Division Multiple Access (CDMA) data retry • Remotely initiated data call back using voice • Remotely initiated data call back using SMS • Remote firmware upgrade over 3G • Virtual diagnostic monitoring • Maintenance End Point (MEP) lock/unlock capability • SIM lock/unlock capability
MIBs	<ul style="list-style-type: none"> • 3G MIB and traps • ENTITY MIB • IF MIB • 3G WWAN MIB persistence • Enhanced 3G for 4G extension
Network Management and Diagnostics	<ul style="list-style-type: none"> • In-band and out-of-band management using Telnet (Cisco IOS Software command -line interface [CL]) and Simple Network Management Protocol (SNMP), including MIB II and other extensions • Industry-standard 3G diagnostics and monitoring tools [QUALCOMM CDMA Air Interface Tester (CAIT), and Spirent Universal Diagnostic Monitor (UDM)]
Wireless Technologies Supported (Performance and Throughput)	
Cisco Connected Grid Module 3G GSM All Band Module: CGM-3G-HSPA-AB-G	<ul style="list-style-type: none"> • HSPA+: 850, 900, 1900, and 2100 MHz (forward link up to 21.1 Mbps; reverse link up to 5.76 Mbps) • Backward compatibility: <ul style="list-style-type: none"> ◦ HSPA: 850, 900, 1900, and 2100 MHz (forward link up to 7.2 Mbps; reverse link up to 5.76 Mbps) ◦ HSDA: 850, 900, 1900, and 2100 MHz (forward link up to 7.2 Mbps; reverse link up to 384 kbps) ◦ UMTS: 850, 900, 1900, and 2100 MHz (forward link up to 2.0 Mbps; reverse link up to 384 kbps) ◦ EDGE: 850, 900, 1800, and 1900 MHz (forward link up to 236 kbps; reverse link up to 124 kbps) ◦ GPRS: 850, 900, 1800, and 1900 MHz (forward link up to 80 kbps; reverse link up to 42 kbps)

Feature	Description
Cisco Connected Grid Module 3G GSM North America Module: CGM-3G-HSPA-A CGM-3G-HSPA-G	<ul style="list-style-type: none"> HSPA+: 850, 1900, and 2100 MHz (forward link up to 21.1 Mbps; reverse link up to 5.76 Mbps) Backward compatibility: <ul style="list-style-type: none"> HSPA: 850, 1900, and 2100 MHz (forward link up to 7.2 Mbps; reverse link up to 5.76 Mbps) HSDA: 850, 1900, and 2100 MHz (forward link up to 7.2 Mbps; reverse link up to 384 kbps) UMTS: 850, 1900, and 2100 MHz (forward link up to 2.0 Mbps; reverse link up to 384 kbps) EDGE: 850, 1800, and 1900 MHz (forward link up to 236 kbps; reverse link up to 124 kbps) GPRS: 850, 1800, and 1900 MHz (forward link up to 80 kbps; reverse link up to 42 kbps)
Cisco Connected Grid Module 3G CDMA Module: CGM-3G-EVDO-V CGM-3G-EVDO-S	<ul style="list-style-type: none"> CDMA 1xEV-DO Rev A (forward link up to 3.1 Mbps; reverse link up to 1.8 Mbps) Backward compatibility: <ul style="list-style-type: none"> CDMA 1xEV-DO Rel 0 (forward link up to 2.4 Mbps; reverse link up to 153.6 kbps) CDMA 1xRTT (forward link up to 153.6 kbps; reverse link up to 153.6 kbps)
Cisco Connected Grid 4G-LTE Module CGM-4G-LTE-MNA	<ul style="list-style-type: none"> Multimode Cisco LTE 2.0 for carriers operating in LTE 700 MHz (band 17), 1900 MHz (band 2 PCS), 700 MHz (band 13), 1900 MHz (band 25 extended PCS) frequencies or 1700/2100 MHz (band 4 AWS) frequencies Backward compatibility: <ul style="list-style-type: none"> UMTS and HSPA+: 850 MHz (band 5), 1900 MHz (band 2 PCS), and 1700/2100 MHz (band 4 AWS) EVDO: Rev A/CDMA 1x BC0, BC1, BC10
Cisco Connected Grid 4G-LTE Module CGM-4G-LTE-MNA-AB	<ul style="list-style-type: none"> Multimode Cisco LTE 2.0 for carriers operating in LTE 700 MHz (band 17), 900 MHz (band 8), 1900 MHz (band 2 PCS), 700 MHz (band 13), 1900 MHz (band 25 extended PCS) frequencies or 1700/2100 MHz (band 4 AWS) frequencies Backward compatibility: <ul style="list-style-type: none"> UMTS and HSPA+: 850 MHz (band 5), 1900 MHz (band 2 PCS), and 1700/2100 MHz (band 4 AWS) EVDO: Rev A/CDMA 1x BC0, BC1, BC10
Cisco Connected Grid 4G-LTE Module CGM-4G-LTE-GA	<ul style="list-style-type: none"> Multimode Cisco LTE 2.0 for carriers operating in LTE 800 MHz (band 20), 900 MHz (band 8), 1800 MHz (band 3), 2100 MHz (band 1), or 2600 MHz (band 7) frequencies Backward compatibility: <ul style="list-style-type: none"> UMTS and HSPA+: 850 MHz (band 5), 900 MHz (band 8), 1900 MHz (band 2), and 2100 MHz (band 1).
CGM-4G-LTE-EA-AB	LTE: 850Mhz (band 5, 6, 18, 19)), 900Mhz (band 8), 1500 Mhz (band 21), 1700 Mhz (band 9), 1800 Mhz (band 3), APAC (band 28) DC-HSPA+ / HSPA+ / HSPA and UMTS: 850Mhz(band 5), 850 Mhz (band 19), 900 Mhz (band 8)
CGM-4G-LTE-LA-AB	LTE: 850 Mhz (band 5, 6, 18, 19), 900 Mhz(band 8), 1500 Mhz (band 21), 1700 Mhz (band 9), 1800 Mhz (band 3), APAC (band 28) DC-HSPA+ / HSPA+ / HSPA and UMTS: 850 Mhz (band 5), 850 Mhz (band 19), 900 Mhz (band 8)
CGM-4G-LTE-EA-900	-

* For more information about CGOS software capability support, consult your local Cisco representative (Cisco.com login required).

Table 5 lists the antenna options for Connected Grid 2G/3G/4G Cellular Modules.

Table 5. Antenna Options for Connected Grid 2G/3G/4G Cellular Modules

Item	Specification
ANT-MP-I-OUT-SS-M	<ul style="list-style-type: none"> Multipurpose integrated antenna designed to support Cisco 1240 Connected Grid Router (CGR 1240) for 2G/3G modules Outdoor
ANT-MP2-I-O-SS-M	<ul style="list-style-type: none"> Multipurpose integrated antenna designed to support Cisco 1240 Connected Grid Router (CGR 1240) for 4G/LTE modules Outdoor
ANT-4G-CM-IN-TNC	<ul style="list-style-type: none"> Ceiling mount, indoor low-profile antenna Integrated 15 ft. LMR-195 cable
ANT-4G-OMNI-OUT-N	<ul style="list-style-type: none"> Omnidirectional, stick antenna Outdoor
ANT-4G-PNL-OUT-N	<ul style="list-style-type: none"> Flat-panel antenna Outdoor
ANT-4G-SR-OUT-TNC	<ul style="list-style-type: none"> Low-profile outdoor saucer antenna
ANT-4G-DP-IN-TNC	<ul style="list-style-type: none"> Dipole, swivel-mount, indoor

Note: For an extensive description of antenna options and their potential deployment scenarios, see the Antenna Installation deployment guide:
https://www.cisco.com/en/US/docs/routers/connectedgrid/antennas/installing/cg_antenna_install_guide.html.

Table 6 lists the RF cable options for Connected Grid 2G/3G/4G LTE Cellular Modules.

Table 6. RF Cable Options for Connected Grid 2G/3G/4G LTE Cellular Modules

Item	Specification
Indoor RF Cable Options for Cisco 1120 Connected Grid Router (CGR 1120)	
CAB-L240-10-Q-N	10-ft (3 m) low loss LMR 240 cable with QMA and N connectors
CAB-L240-15-Q-N	15-ft (4.5 m) low loss LMR 240 cable with QMA and N connectors
CAB-L240-20-Q-N	20-ft (6 m) low loss LMR 240 cable with QMA and N connectors
Outdoor RF Cable Options for Cisco CGR 1120 and CGR 1240	
CAB-L400-5-N-N	5-ft (1.5 m) low loss LMR 400 cable with N connectors (straight to right angle)
CAB-L400-5-N-NS	5-ft (1.5 m) low loss LMR 600 cable with N connectors (straight to straight)
CAB-L400-20-N-N	20-ft (6 m) low loss LMR 400 cable with N connectors
CAB-L600-30-N-N	30-ft (9.14 m) ultra-low loss LMR 600 cable with N connectors

Note: For an extensive description of antenna and cable options and their potential deployment scenarios, see Antenna Installation deployment guide:
https://www.cisco.com/en/US/docs/routers/connectedgrid/antennas/installing/cg_antenna_install_guide.html.

Ordering Information

These products are available to any Cisco authorized partner. For more information, please contact your Cisco representative.

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For More Information

To learn more about Cisco Connected Grid 2G/3G/4G LTE Cellular Modules for the Cisco 1000 series Connected Grid Routers, visit <https://www.cisco.com/en/US/products/ps12277/index.html>.

Find out more about the Cisco CGR 1000 by visiting <https://www.cisco.com/go/cgr1000>.

For more information on the Cisco Field Area Network (FAN) solution, visit <https://www.cisco.com/go/fan>.



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