Cisco Third-Generation Wireless WAN High-Speed WAN Interface Cards

The Cisco® Third-Generation (3G) Wireless WAN (WWAN) High-Speed WAN Interface Cards (HWICs) for Cisco Integrated Services Routers provide the next generation of wireless WAN backup solutions.

Product Overview

The Cisco 3G WWAN HWICs are the first enterprise-class 3G WWAN solution. Suitable for both backup and primary applications, these cards support the latest 3G standards (High-Speed Packet Access [HSPA] and EVDO Rev A) and are backward-compatible with Universal Mobile Telecommunications Service (UMTS), Enhanced Data Rates for Global Evolution (EDGE), General Packet Radio Service (GPRS), and EVDO Rev0/1xRTT. The Cisco 3G WWAN HWICs Series has two variants:

- Global System for Mobile Communications (GSM) and UMTS models are based on 3GPP, and they support HSPA (HSUPA and HSDPA), UMTS, EDGE, and GPRS.
- Code Division Multiple Access (CDMA) models are based on 3GPP2, and they support EVDO RevA/Rev0 and 1xRTT.

The Cisco 3G WWAN HWICs are tightly integrated with the services provided on the award-winning Cisco integrated services routers, which deliver secure data, voice, video, and mobility services. The Cisco 3G WWAN HWICs are supported on the modular Cisco 1841 and 1861 Integrated Services Routers and the Cisco 2800 and 3800 Series Integrated Services Routers.

Enterprises are looking for ways to reduce costs, increase revenue, and improve business continuity. The Cisco 3G WWAN HWICs, when coupled with a service provider wireless data plan, provide a cost-effective, rapidly deployable, reliable, and secure backup solution for remote sites and branch offices. With data rates approaching T1 speeds, 3G networks provide an alternative to wireline backup solutions such as ISDN, cable, and DSL. If a network fails, the Cisco integrated services router routes mission-critical data to the Cisco 3G WWAN HWIC for transmission across the wireless infrastructure. In addition, the router can distinguish different types of traffic and allow only mission-critical traffic to flow over the backup interface.

The 3G wireless WAN HWICs are available in three part numbers. The CDMA part number is HWIC-3G-CDMA-x (where x reflects the wireless carrier) and the GSM part numbers are HWIC-3G-GSM and HWIC-3G-HSPA. Figure 1 shows the cards.

Figure 1. 3G Wireless WAN HWICs for Cisco Integrated Services Routers
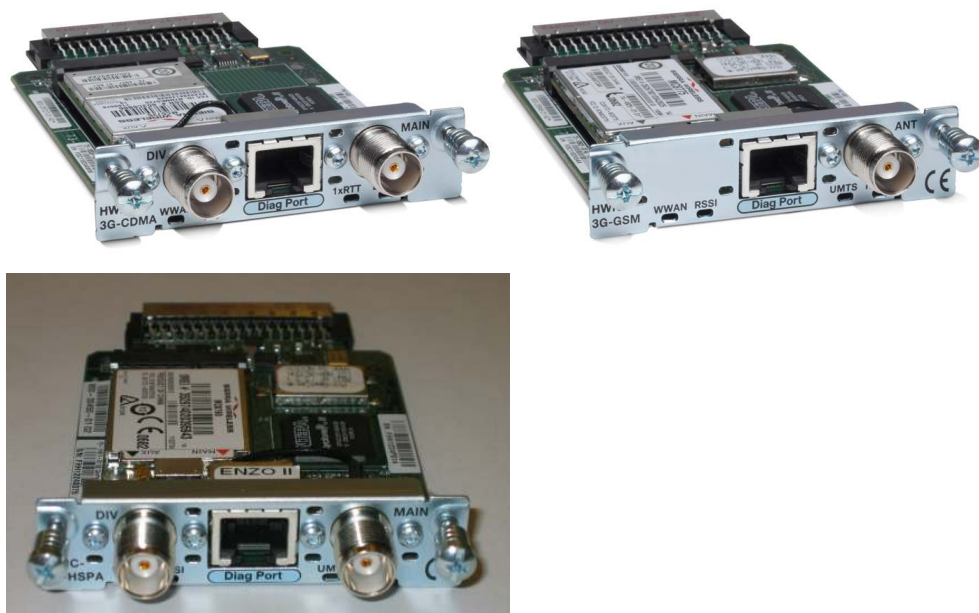

With enhanced data rates and improved latency (below 100 milliseconds), WWAN services are an ideal way to supplement traditional wireline services. 3G WWAN data services offered today have average data rates well in excess of ISDN speeds, with theoretical limits in excess of 7 Mbps on the downlink. You can use the 3G WWAN as a primary link for sites with lower bandwidth requirements and for mobile applications. You can also use the 3G WWAN data services as a cost-effective alternative in areas where broadband services are either not available or very expensive. Cisco is building on these performance milestones and adding support for wireless to our wide variety of WAN interface alternatives.

Applications

WAN Backup

Resilient WAN access is a crucial requirement for branch offices connecting to a corporate site or the Internet. Although DSL, Frame Relay, ISDN, and dialup are common choices for backup if a primary WAN link fails, a nonterrestrial data path such as a 3G WWAN provides enhanced WAN diversity (Figure 2). Cisco 3G WWAN HWICs combined with the Cisco integrated services routers offer the capability to automatically initiate connection over the 3G WWAN when the primary WAN link is unavailable. In addition, you can use Cisco 3G WWAN HWICs to provide supplemental andwidth when the primary WAN link is overloaded.

Figure 2.   Cisco 3G WWAN HWIC for WAN Backup
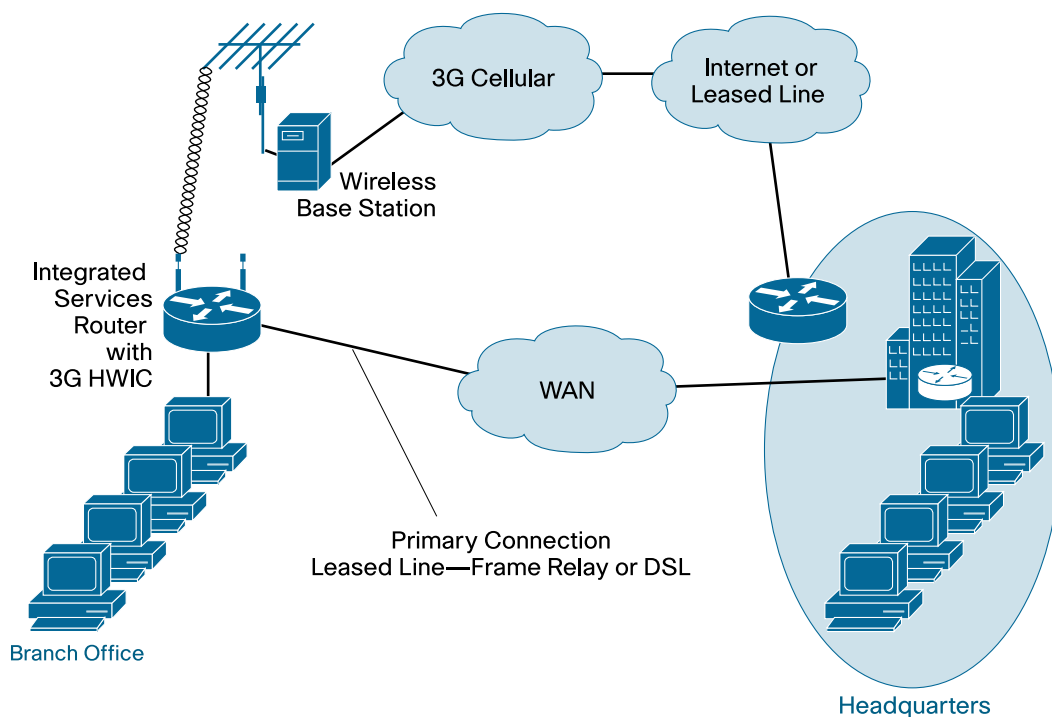
Primary Connectivity

For applications that have low data usage but high security requirements such as bank ATMs, gas station kiosks, and telemetry sites, the Cisco 3G WWAN HWIC offers a secure, simplified, and cost-effective WAN alternative to DSL or Frame Relay. In areas where terrestrial broadband services (cable, DSL, or T1) are not available or are expensive, 3G WWAN connectivity can be a viable alternative.

For businesses requiring rapid setup or temporary connectivity, 3G WWAN offers the capability to bring up a new site quickly and cost-effectively. Using the integrated services available on the Cisco integrated services routers, Cisco 3G WWAN HWICs can provide instant and mobile communications during disasters and service outages.

Key Features and Benefits

- **Integrated 3G WWAN broadband:** With the 3G WWAN modem integrated into the router, you gain the benefit of simplified installation and management. In addition, the Cisco 3G WWAN HWICs are tightly integrated with Cisco integrated services routers, which run the industry-leading Cisco IOS® Software, giving you access to all the advanced features of Cisco IOS Software such as quality of service (QoS), intelligent network queuing, and robust security.

- **Short installation time:** Businesses sometimes wait for weeks or months to get data circuits installed at new locations. For temporary or seasonal sites, wireless data services allow instant connectivity anywhere there is cellular coverage, and rapid deployment allows you to quickly set up networks with WAN connectivity.

- **Network resiliency through WAN diversity:** WAN connectivity is crucial to the functioning of your business, and any downtime means a loss of productivity and lost opportunity. Staying connected and operational during a network outage can be vital. A wireless connection for backup to a remote site provides protection against line outages and an additional level of redundancy because the 3G WWAN infrastructure is often served by separate facilities, providing redundancy for the entire local loop.

- **Reduced cost:** The emerging 3G WWAN cellular data service plans are competitively priced with existing wireline services (ISDN, DSL, and cable). 3G WWAN solutions also allow you to consolidate your service providers across large geographical areas instead of having service contracts with multiple service providers.

- **Portability:** You can easily relocate wireless routers and Cisco 3G WWAN HWICs wherever coverage is available.

- **Performance:** With increasing data usage and the proliferation of web-based applications at remote sites, there is an increasing need for high-speed (broadband) data connections to run mission-critical applications at these sites. 3G WWAN services promise low-latency links at speeds approaching T1 connections, allowing you to send and receive more mission-critical data across the WAN in backup scenarios.

Product Specifications

Table 1 provides specifications for the Cisco 3G WWAN HWICs, and Table 2 provides antenna specifications.

Table 1.   Product Specifications

Item	Specification
External interfaces	• RJ-45 interface for use with third-party diagnostics and monitoring tools • TNC RF port for antenna connection ◦ HWIC-3G-CDMA-x main and diversity antenna connector ◦ HWIC-3G-GSM single antenna connector ◦ HWIC-3G-HSPA main and diversity antenna connector
Form factor	Single wide Cisco 3G WWAN HWIC form factor
Physical dimensions (H x W x D)	0.75 x 3.08 x 4.9 in. (1.9 x 7.8 x 12.4 cm)
Weight	0.24 lb (3.84 oz)
Subscriber Identity Module (SIM) card	SIM card socket; compliant with ISO-7816-2 (SIM mechanical) and GSM 11.11
Power	4.5W maximum
Supported platforms	Modular Cisco 1841, 1861, 2801, 2811, 2821, 2851, 3825, and 3845 Integrated Services Routers
Software compatibility	• Supported Cisco IOS Release 12.4(15)T or later (Note: HWIC-3G-CDMA= requires Cisco IOS Software Release12.4(11)XW or later.) • Cisco IOS Software feature set: IP Base and later • Supported Cisco IOS Software release for the following features: Cisco IOS Release 12.4(22)YB1 ◦ HWIC-3G-HSPA ◦ 3G MIB ◦ Multichannel-interface-processor (MIP) profile configuration
MIBs	• 3G MIB • ENTITY MIB • IF MIB
Network management and diagnostics	• In-band and out-of-band management using Telnet (Cisco IOS Software command-line interface [CLI]) 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])

Modem information	• Modem form factor: Embedded Peripheral Component Interconnect (PCI) Express minicard • HWIC-3G-CDMA-x: Sierra Wireless MC5725 • HWIC-3G-GSM: Sierra Wireless MC8775 • HWIC-3G-HSPA: Sierra Wireless MC8790
Carrier support	For an updated list of carriers that offer services with Cisco 3G WWAN HWIC, please visit: http://www.cisco.com/go/3g.
Programming interfaces	Cisco IOS Software CLI
Wireless technologies supported (performance and throughput)	HWIC-3G-CDMA-x • CDMA 1xEV-DO Rev A (forward link up to 3.1 Mbps; reverse link up to 1.8 Mbps) • 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) HWIC-3G-GSM • HSDPA: 850, 1900, and 2100 MHz (forward link up to 7.2 Mbps; reverse link up to 384 kbps) • Universal Mobile Telecommunication System (UMTS): 850, 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) HWIC-3G-HSPA* • HSPA: 850, 1900, and 2100 MHz (forward link up to 7.2 Mbps; reverse link up to 2.0 Mbps) • Universal Mobile Telecommunication System (UMTS): 850, 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) **Note:** HWIC-3G-HSPA is not supported on the AT&T network but a separate product "HWIC-3G-HSPA-A" will be available at a later date for the AT&T network
Frequency bands supported	HWIC-3G-CDMA-x • 800 MHz: North American cellular band • 1900 MHz: North American PCS band HWIC-3G-GSM • 850, 1900, and 2100 MHz UMTS bands • 850-MHz GSM, GPRS, and EDGE band • 900-MHz GSM, GPRS, and EDGE band • 1800-MHz GSM, GPRS, and EDGE band • 1900-MHz GSM, GPRS, and EDGE band HWIC-3G-HSPA* • 850-, 1900-, and 2100-MHz UMTS bands • 850-MHz GSM, GPRS, and EDGE band • 900-MHz GSM, GPRS, and EDGE band • 1800-MHz GSM, GPRS, and EDGE band • 1900-MHz GSM, GPRS, and EDGE band **Note:** HWIC-3G-HSPA is not supported on the AT&T network but a separate product "HWIC-3G-HSPA-A" will be available at a later date for the AT&T network

LED indicators	HWIC-3G-CDMA-x • WWAN LED (connection status indication) • Receive Signal Strength Indication (RSSI) • EVDO and 1xRTT service indication HWIC-3G-GSM • WWAN LED (connection status indication) • Receive Signal Strength Indication (RSSI) • HSDPA and UMTS service indication HWIC-3G-HSPA* • WWAN LED (connection status indication) • RSSI • HSPA and UMTS service indication **Note:** HWIC-3G-HSPA is not supported on the AT&T network but a separate product "HWIC-3G-HSPA-A" will be available at a later date for the AT&T network
Approvals and compliance	Safety • UL 60950-1,CAN/CSA-C22.2 No. 60950-1, EN 60950-1, IEC 60950-1, AS/NZS 60950.1, FCC Part 2.1093, RSS-102, and EN 50385 EMC • FCC Part 15, Industry Canada ICES-003, EN 301 489-01, EN 301 489-07, EN 301 489-24, EN55022 (CISPR22), EN55024 (CISPR24), EN300-386, EN 61000-3-2, EN 61000-3-3, AS/NZS CISPR 22, CNS13438, and VCCI V-3 Radio • FCC Part 2, FCC Part 22, FCC Part 24, RSS 129 and RSS 133, RSS 132 and RSS 133, EN 301 511 GSM, EN 301 908-1, and EN 301 908-2 • PTCRB-approved. device ID Cisco HWIC-3G-GSM

Table 2. Antenna Specifications

Item	Specification
Diversity (dual antenna)	• HWIC-3G-CDMA-x: Diversity supported • HWIC-3G-GSM: No diversity
Antenna 3G-ANTM1919D	Description • Multiband swivel mount dipole antenna • Faceplate mount (single unit included with all Cisco 3G WWAN HWICs) Electrical specifications • Frequency range: 806 to 960 MHz and 1710 to 2170 MHz • Gain: 0 dBi (806 to 960 MHz) and 0dBi (1710 to 2170 MHz) • Maximum power: 25W • Connector: TNC male • Voltage standing wave ratio (VSWR): < 2.5:1 • Nominal impedance: 50 ohms Mechanical specifications • Antenna dimensions: 7.63 x 0.94 x 0.63 in. (19.37 x 2.34 x 1.59 cm) • Temperature rating: –22 to 158°F (–30 to 70°C)

Antenna 3G-ANTM1916-CM	Description
	• Multiband omnidirectional antenna
	• Ceiling mount
	• Electrical specifications
	• Frequency range: 806 to 960 MHz and 1710 to 2170 MHz
	• Gain : 1.5 decibels relative to isotropic (dBi) (806 to 960 MHz) and 2.5 dBi (1710 to 2170 MHz)
	• Maximum power: 50W
	• Connector: TNC male
	• VSWR: < 1.8:1 (806 to 960 MHz) and < 1.6:1 (1710 to 2170 MHz)
	• Nominal impedance: 50 ohms
	• Polarization: Vertical
	• Intermodulation
	○ <−140 decibels relative to carrier (dBc) typical (800 to 960 MHz IM3 at 2x20W)
	○ <−140 dBc (1710 to 1880 MHz IM3 at 2 x 20W)
	○ <−150 dBc (1920 to 2170 MHz IM7 at 2 x 20W)
	Mechanical specifications
	• Radome material: White ABS
	• Base material: Aluminum
	• Cable: 086FEP conformable
	• Dimensions: 7.09 OD x 2.44 H in. (18.00 OD x 6.20 H cm)
	• Weight: 0.62 lb (0.28 kg)
	• Can be used with the following cable extensions: 3G-CAB-ULL-20 and 3G-CAB-ULL-50
Antenna Extension 3G-AE015-R	Description
	○ Single unit antenna extension base (15-ft (457.2-cm) cable included)
	Electrical specifications
	○ Frequency range : 0.8 to 5.85 GHz
	○ Attenuation: < 3 decibels (dB) at or below 2.5 GHz
	○ Base connector: TNC female
	○ Pigtail connector: TNC male
	Mechanical specifications
	• Base material: UL 94 V0PC and ABS plastic
	• Dimensions: 2.8 x 2.4 x 1.8 in. (7.1 x 6.1 x 4.6 cm)
	• Weight: 6 oz (0.17 kg)
	• Cable: 15 ft (457.2 cm) non-plenum rated Pro-Flex Plus 195
Antenna Extension 3G-AE010-R	Description
	○ Single unit antenna extension base (10-ft (304.8-cm) cable included)
	Electrical specifications
	○ Frequency range : 0.8 to 5.85 GHz
	○ Attenuation: < 3 decibels (dB) at or below 2.5 GHz
	○ Base connector: TNC female
	○ Pigtail connector: TNC male
	Mechanical specifications
	• Base material: UL 94 V0PC and ABS plastic
	• Dimensions: 2.8 x 2.4 x 1.8 in. (7.1 x 6.1 x 4.6 cm)
	• Weight: 6 oz (0.17 kg)
	• Cable: 10 ft (304.8 cm) non-plenum rated Pro-Flex Plus 195

Outdoor Antenna 3G-ANTM-OUT-LP	Description
	• Multiband Outdoor Low-Profile antenna with 15 ft cable
	• Panel mount (horizontal surface)
	Electrical specifications
	• Frequency range: 806 to 960 MHz and 1710 to 2170 MHz
	• Gain : -1.5 dBi (806 to 960 MHz) and -1.5 dBi (1710 to 2170 MHz), which includes antenna gain and cable loss
	• Maximum RF power tolerated: 20W
	• Connector: TNC male, right angle
	• Cable: LMR-195, 15 ft.
	• VSWR: < 2.5:1 (806 to 960 MHz) and < 2.5:1 (1710 to 2170 MHz)
	• Nominal impedance: 50 ohms
	• Polarization: Vertical
	• Radiation Pattern (-3dB beamwidth)
	◦ Horizontal: Omni-directional
	◦ Vertical: 64 deg (806 to 960 MHz) and 90 deg (1710 to 2170 MHz)
	Mechanical specifications
	• Radome material: black MakroBlend plastic
	• Base material: Aluminum
	• Radome dimensions: 5.65 in. OD x 2.06 in. H (14.35 cm OD x 5.23 cm H)
	• Radome weight: 0.375 lb (0.17 kg)
	• Cable dimensions: 15 ft. L x 0.195 in. Dia.
	• Mounting panel thickness: 0.1 to 0.5 in. (2.54mm to 12.7mm)
	• All mounting hardware is included
	Environmental specifications
	• Mechanical Impact Rating: [IK08] 5 joules per IEC-62262
	• Operating and storage temperature: -40 to +85 deg C
	• Wind rating: 150 MPH installed
	• Water rating: IP65 installed

| Outdoor Antenna 3G-ANTM-OUT-COMBO | Includes
• 3G-ANTM-OUT-OM (Mast/Wall mount antenna)
• 3G-ACC-OUT-LA (lightning arrestor)
Description
• 3G-ANTM-OUT-OM
• Multiband Outdoor Omni-directional antenna
• Mast/Wall mount
• 3G-ACC-OUT-LA lightning arrestor (see below)
• Can be used with the following cable extensions: 3G-CAB-ULL-20, 3G-CAB-ULL-50, 3G-CAB-LMR240-25, 3G-CAB-LMR240-50, 3G-CAB-LMR240-75
Electrical specifications
• Frequency range: 806 to 960 MHz and 1710 to 2170 MHz
• Gain : +2 dBi (806 to 960 MHz) and +4 dBi (1710 to 2170 MHz)
• Maximum RF power tolerated: 20W
• Connector: TNC male
• VSWR: < 2.5:1 (806 to 960 MHz) and < 2.5:1 (1710 to 2170 MHz)
• Nominal impedance: 50 ohms
• Polarization: Vertical
• Radiation Pattern (-3dB beamwidth)
   ◦ Horizontal: Omni-directional
   ◦ Vertical: 40 deg (806 to 960 MHz) and 40 deg (1710 to 2170 MHz)
Mechanical specifications
• Radome material: Off-white pultruded fiberglass, UV-protected
• Cap material: Off-white MakroBlend plastic
• Radome dimensions: 1.25 in. OD x 16 in H (3.175 cm OD x 40.64 cm H)
• Radome weight: 0.375 lb (0.17 kg)
• Mounting hardware
   ◦ Bracket and clamps (for mast mounting)
   ◦ Bracket (for wall mounting)
   ◦ Screws not included (for wall mounting)
Environmental specifications
• Operating and storage temperature: -40 to +85 deg C
• Wind Rating: 100 MPH (operational) and 125 MPH (survival)
• Water rating: IP65 installed |
| Outdoor Antenna Lightning Arrestor 3G-ACC-OUT-LA | Description
• 3G Lightning arrestor for outdoor antennas
• Type: Inline quarter-wave arrestor with integrated high pass filter
• Bulkhead mounted and grounded with optional ground lug
• Can be used with 3G-ANTM-OUT-OM outdoor omni antenna
• Can be used with the following cable extensions: 3G-CAB-ULL-20, 3G-CAB-ULL-50, 3G-CAB-LMR240-25, 3G-CAB-LMR240-50, 3G-CAB-LMR240-75
• Indoor (preferred) or outdoor (optional) installation
• No maintenance required
Electrical specifications
• Frequency Range: 800 MHz to 2200 MHz
• Maximum insertion Loss : 0.2dB
• Maximum RF power tolerated: 20W
• Connector: TNC male (protected side) and TNC female (antenna-facing)
• VSWR: < 1.22:1 (806 to 2200 MHz)
• Return Loss: > 26 dB
• Nominal impedance: 50 Ohms
• Surge Protection: 10 KA single and 5 KA multiple strikes (8/20us test pulse)
Mechanical specifications
• Material: Corrosion-resistant brass
• Dimensions: 1.25 in. OD x 2.5 in L approx (3.175 cm OD x 6.35 cm L)
• Mounting hardware
   ◦ Ground Lug (optional grounding method)
   ◦ Nut for bulkhead mounting and grounding (preferred grounding method)
Environmental specifications
• Operating and storage temperature: -40 to +85 deg C
• Water rating: IP67 installed |

Ordering Information

To place an order, refer to Tables 3 through 5 and visit the [Cisco Ordering Home](#) Page.

Table 3. Table 3 Cisco 3G WWAN HWIC Ordering Information

Description	Part Number
3G WirelessWAN HWIC supporting GPRS/EDGE/UMTS/HSDPA (Global SKU)	HWIC-3G-GSM HWIC-3G-GSM= (Spare)
3G WirelessWAN HWIC supporting GPRS/EDGE/UMTS/HSPA (Global SKU)	HWIC-3G-HSPA HWIC-3G-HSPA= (Spare)
3G WirelessWAN HWIC supporting 1xRTT, EVDO Rev A/Rel 0 (Verizon SKU)	HWIC-3G-CDMA-V HWIC-3G-CDMA-V= (Spare)
3G WirelessWAN HWIC supporting 1xRTT, EVDO Rev A/Rel 0 (Sprint SKU)	HWIC-3G-CDMA-S HWIC-3G-CDMA-S= (Spare)
3G WirelessWAN HWIC supporting 1xRTT, EVDO Rev A/Rel 0 (Generic SKU)*	HWIC-3G-CDMA=

* The generic CDMA HWIC requires carrier provisioning to be performed by an approved Cisco partner before it can be used on the network. Please contact the CDMA carrier for more information.

Table 4. Antenna Ordering Information

Description	Part Number
Multi-Band Swivel Mount Dipole Antenna—Faceplate Mount	3G-ANTM1919D 3G-ANTM1919D= (Spare)
Multi-Band Omnidirectional Antenna—Ceiling Mount	3G-ANTM1916-CM 3G-ANTM1916-CM= (Spare)
Single Unit Antenna Extension Base (10-ft cable included(	3G-AE010-R 3G-AE010-R= (Spare)
Single Unit Antenna Extension Base (15-ft cable included)	3G-AE015-R 3G-AE015-R= (Spare)
50-ft (15m) Ultra Low Loss LMR 400 Cable with TNC Connector	3G-CAB-ULL-50 3G-CAB-ULL-50= (Spare)
20-ft (6m) Ultra Low Loss LMR 400 Cable with TNC Connector	3G-CAB-ULL-20 3G-CAB-ULL-20= (Spare)
3G Outdoor Antenna Lightning Arrestor	3G-ACC-OUT-LA 3G-ACC-OUT-LA= (Spare)
Multi-Band Outdoor Low Profile Antenna with 15ft cable	3G-ANT-OUT-LP 3G-ANT-OUT-LP= (Spare)
Multi-Band Outdoor Omnidirectional Antenna Mast/Wall Mount & 3G Outdoor Antenna Lightning Arrestor (3G-ACC-OUT-LA)	3G-ANT-OUT-COMBO 3G-ANT-OUT-COMBO= (Spare)
25-ft(7.5 m) Low Loss LMR 240 Cable with TNC Connector	3G-CAB-LMR240-25 3G-CAB-LMR240-25= (Spare)
50-ft(15 m) Low Loss LMR 240 Cable with TNC Connector	3G-CAB-LMR240-50 3G-CAB-LMR240-50= (Spare)
75-ft(23 m) Low Loss LMR 240 Cable with TNC Connector	3G-CAB-LMR240-75 3G-CAB-LMR240-75= (Spare)

Note: All 3G HWICs (including spares) ship with one default dipole antenna (3G-ANTM1919D).

Table 5. 3G Integrated Services Router Bundles Ordering Information

Description	Part Number
1841 bundle w/HWIC-3G-GSM, IP Base, 64FL/128DR	C1841-3G-G
1841 bundle w/HWIC-3G-CDMA-S, IP Base, 64FL/128DR	C1841-3G-S
1841 bundle w/HWIC-3G-CDMA-V, IP Base, 64FL/128DR	C1841-3G-V
Cisco1841, HWIC-3G-GSM, 64MB FL/256MB DRAM, Adv Security	C1841-3G-G-SEC/K9
Cisco1841, HWIC-3G-CDMA-S, 64MB FL/256MB DRAM, Adv Security	C1841-3G-S-SEC/K9
Cisco1841, HWIC-3G-CDMA-V 64MB FL/256MB DRAM, Adv Security	C1841-3G-V-SEC/K9
Cisco 2811, HWIC-3G-GSM, 64MB FL/256MB DRAM, Adv Security	C2811-3G-G-SEC/K9
Cisco 2811, HWIC-3G-CDMA-S, 64MB FL/256MB DRAM, Adv Security	C2811-3G-S-SEC/K9
Cisco 2811, HWIC-3G-CDMA-V, 64MB FL/256MB DRAM, Adv Security	C2811-3G-V-SEC/K9

Service and Support

Cisco offers a wide range of services programs to accelerate customer success. These innovative services programs are delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco services help you protect your network investment, optimize network operations, and prepare your network for new applications to extend network intelligence and the power of your business. For more information about Cisco services, refer to Cisco Technical Support Services and Cisco Advanced Services.

For More Information

For more information about the Cisco 3G WWAN HWICs, visit http://www.cisco.com/go/3g or contact your local Cisco account representative.