

Cisco 880G Series 3G Wireless Integrated Services Router

The Cisco® 880G Series Integrated Services Router with the third-generation (3G) wireless WAN (WWAN) option provides secure high-speed wireless WAN connectivity to small businesses, enterprise small branch offices, and teleworker sites (Figure 1). Transparently integrated into the enterprise-class feature set available on the Cisco 880 Series, 3G wireless connectivity allows rapid installation, deployment flexibility, and resilient WAN backup.

Product Overview

Cisco 880 Series Integrated Services Routers are the next generation of fixed-configuration routers that provide collaborative business solutions for secure data communication to small businesses and enterprise teleworkers. The 3G wireless option available on these routers offers a cost-effective, rapidly deployable, reliable, and secure backup solution. With data rates approaching T1 speeds, 3G wireless can be used for primary WAN connectivity in locations where wireline services such as DSL and ISDN are not available or are too expensive to deploy.

The Cisco 880G Series Integrated Services Routers support the latest 3G standards (High-Speed Packet Access [HSPA] and EV-DO 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 EV-DO Rev 0/1xRTT. The Cisco 880G Series has two variants (refer to Table 1 for part numbers):

- Global System for Mobile Communications (GSM) and UMTS models are based on 3GPP, and they support HSPA (High-Speed Uplink Packet Access (HSUPA) and High-Speed Downlink Packet Access (HSDPA)), UMTS, EDGE, and GPRS.
- Code Division Multiple Access (CDMA) models are based on 3GPP2, and they support EV-DO Rev A/Rev 0 and 1xRTT.

In addition to 3G wireless WAN, the Cisco 880G Series offers additional WAN options such as xDSL and Fast Ethernet WAN interface, a 4-port 10/100 Fast Ethernet managed switch with VLAN support and the latest 802.11n WLAN capability. The Cisco 880 Series provides the performance required for concurrent services, including firewall, intrusion prevention, content filtering, and encryption for VPNs; and quality-of-service (QoS) features for optimizing voice and video applications. In addition, Cisco Configuration Professional is a web-based configuration tool that simplifies setup and deployment. Centralized management capabilities give network managers visibility and control of the network configurations at the remote site.

Businesses are looking for ways to reduce costs, increase revenue, and improve business continuity. Third-generation wireless connectivity allows a small enterprise branch office or remote office to set up in a matter of hours, without worrying about availability of broadband services and the need for laying down the lines. Wireless carriers offer flexible, usage-based data plans that can be catered to meet the needs and price points of the business customer. As a WAN backup alternative, 3G wireless offers greater WAN diversity and resiliency

because it is independent of the local terrestrial infrastructure. It enables businesses to stay productive during service provider downtime or a network failure.

Figure 1. Cisco 880G Series 3G Wireless Integrated Services Routers



With enhanced data rates and improved latency (below 100 milliseconds), WWAN services are an ideal way to supplement traditional wire line 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 and 5 Mbps on the uplink. The 3G WWAN can be use as a primary link for sites with lower bandwidth requirements and for mobile applications. The 3G WWAN data services can also be use 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.

Key Business Benefits

Applications

The Cisco 880G Series is ideal for deployment by small businesses, retail locations, small branch offices that are part of a large enterprise network, and a host of other deployments that need high-speed wireless connectivity and secure data, voice, and wireless services.

Small Remote Office

The Cisco 880G Series connects users in small remote offices, such as those for insurance agents, lawyers, or sales, to the main office. You can use the integrated 3G wireless backup option for added reliability when the primary broadband link fails, or as the primary connection for deployments that are portable, such as insurance adjustment, mobile banking, and mobile retail. When connecting to the main office, VPN encryption and integrated security features such as firewall and intrusion prevention protect the network at every perimeter. IT managers can centrally manage the remote site to quickly troubleshoot network problems. Integrated secure unified WLAN connectivity simplifies the deployment and management of devices at the remote site.

Virtual Office

The Cisco 880G Series is ideal for corporate teleworkers, who might have a mix of broadband connection types such as DS, 3G and Ethernet. The Cisco 880G Series provides a secure virtual office with all the collaborative services such as data, voice, and video. Redundant WAN links help ensure business continuity. QoS features in the Cisco 880 Series allow an IP phone to be connected to the router, giving voice traffic precedence over data applications. Integrated WLAN support in the Cisco 880 Series helps ensure that if wireless connectivity is to be used, the connection will be secure. (Refer to Cisco Business-Ready Teleworker Solutions for more information, <http://www.cisco.com/go/cvo>)

Retail VPN

Retail stores migrating from dialup connections for point-of-sale transactions can use the 3G wireless option on the Cisco 880G Series for low-cost broadband access with the required security to comply with payment-card-industry (PCI) and other data security requirements. Multiple devices and applications can then be added to the store network to take advantage of the increased bandwidth and also incorporate optional WLAN support to enable secure mobility and enhance productivity.

Managed Services

Service providers and value-added resellers can use the Cisco 880G Series as a platform to offer differentiated business-class security and WLAN services for small to medium-sized business customers. Superior management capabilities such as Simple Network Management Protocol (SNMP) support with 3G MIB and Cisco Configuration Professional make remote management and provisioning easier.

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 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:** Cisco 880 with 3G WWAN can be easily relocate 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 3G specifications for the Cisco 880G Series Integrated Services Router.

Table 1. Product Specifications

Item	Specification
3G modem form factor	PCI Express card (included with the router)
Programming interfaces	Cisco IOS Software CLI
Wireless technologies supported (performance and throughput)	<div> PCEX-3G-HSPA-G <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) • Backward compatibility: <ul style="list-style-type: none"> ◦ HSDPA: 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) <p>(part number CISCO881G-G-K9 or CISCO881G-K9)</p> </div> <div> PCEX-3G-HSPA-US <ul style="list-style-type: none"> • HSPA: 850, 900, 1900, and 2100 MHz (forward link up to 7.2 Mbps; reverse link up to 2.0 Mbps) • Backward compatibility: <ul style="list-style-type: none"> ◦ HSDPA: 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) ◦ Set for North American bands above global bands ◦ 3G Firmware is PTCRB Certified and also for AT&T's network <p>(part numbers CISCO881G-A-K9 with PCEX-3G-HSPA-US)</p> </div> <div> PCEX-3G-CDMA-x* <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 Rev 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) <p>(part numbers CISCO881G-S-K9, CISCO881G-V-K9 and CISCO881G-B-K9)</p> <p>*S=For Sprint Networks; V=For Verizon Wireless Networks; B=For BSNL Networks</p> </div>
Frequency bands supported	<div> PCEX-3G-HSPA-G <ul style="list-style-type: none"> • 850-, 900-, 1900-, and 2100-MHz WCDMA bands (HSUPA, HSDPA and UMTS) • 850-, 900-, 1800-, 1900-MHz GSM bands (EDGE and GPRS) </div> <div> PCEX-3G-HSPA-US <ul style="list-style-type: none"> • 850-, 900-, 1900-, and 2100-MHz WCDMA bands (HSUPA, HSDPA and UMTS) • 850-, 900-, 1800-, 1900-MHz GSM, bands (EDGE and GPRS) </div> <div> PCEX-3G-CDMA-x* <ul style="list-style-type: none"> • 800 MHz: North American cellular band • 1900 MHz: North American PCS band </div>
Subscriber Identity Module (SIM) card	Universal Subscriber Identity Module (USIM) or Subscriber Identity Module (SIM) card slot on the PCI Express card (HSPA, UMTS, and GSM)
Antenna connector	For Express Card external antenna connection: <ul style="list-style-type: none"> • TS9 type connector requires for PCEX-3G-HSPA-G and PCEX-3G-HSPA-US • SSMB plug-type connector requires for PCEX-3G-CDMA-x*
Included antenna	0-dB gain multiband dipole antenna on cradle with 4.5-ft cable
Antitheft PCI Express card slot	PCI Express card slot on router front panel with antitheft locking bracket
LED indicators	Received signal strength indication (RSSI)

Item	Specification
IOS requirement	<p>For all 880G series routers:</p> <ul style="list-style-type: none"> • PCEX-3G-HSPA-G supported with 15.1(1)T1 or later • PCEX-3G-HSPA-US supported with 15.1(1)T1 or later • PCEX-3G-CDMA-x* supported with 15.1(1)T or later <p>* S=For Sprint Networks; V=For Verizon Wireless Networks; B=For BSNL Networks</p>
Approvals and compliance	<p>Safety</p> <p>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</p> <p>EMC</p> <p>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</p> <p>Radio</p> <p>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</p> <p>PTCRB-approved</p>
Carrier support	<p>For an updated list of carriers that offer services on the Cisco 880G Series, please visit:</p> <p>http://www.cisco.com/go/3g</p>

Table 2 lists the system specifications for the Cisco 880G Series Routers.

Table 2. System Specifications

Feature	Specification
Default DRAM	256 MB on Cisco 880 Series data models
Maximum DRAM	768 MB
Default and maximum flash memory	128 MB fix flash on Cisco 880 Series data models
802.11g/n access point based on IEEE 802.11n Draft 2.0 standard	Optional on all models
Console or auxiliary port	RJ-45: Single dual-purpose port provides direct connection to a console or external modem for management or backup access point.
One USB 1.1 port for advanced security features such as security tokens or USB flash memory	<ul style="list-style-type: none"> • One USB 1.1 port on Cisco 881 and 888 Series Routers • USB devices supported: <ul style="list-style-type: none"> ◦ USB eTokens ◦ USB flash memory <p>Note: USB 1.1 port cannot be used for connecting external devices other than those specified at: http://www.cisco.com/en/US/partner/prod/collateral/modules/ps6247/product_data_sheet0900aecd80232473.htm</p>
External power supply	Universal 100- to 240-VAC input; 60W, 12-VDC output
Inline Power over Ethernet (PoE)	Optional internal adapter for inline PoE on 2 switch ports for IP phones or external wireless access points; 802.3af- and Cisco PoE-compliant
Wireless specifications	2.4 GHz
Data rates supported	<ul style="list-style-type: none"> • 802.11b: 1, 2, 5.5, 6, 9, and 11 Mbps • 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps • 802.11n: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54, and m0-m15 (approximately fivefold of 802.11g maximum data rate using multiple input, multiple output [MIMO])
Maximum transmit power (2-channel aggregate)	<p>Note: Maximum power setting subject to changes by channel and by region, depending on regulations:</p> <ul style="list-style-type: none"> • 802.11b 20 dBm • 802.11g 17 dBm • 802.11n 16 dBm


Feature	Specification
Physical dimensions and weight	<p>Product dimensions:</p> <p>Nonwireless models:</p> <ul style="list-style-type: none"> • H x W x D = 1.9 x 12.8 x 9.8 in. (48 x 325 x 249 mm) (includes rubber feet) • H x W x D = 1.75 x 12.8 x 9.8 in. (44 x 325 x 249 mm) (without rubber feet) <p>Wireless models:</p> <ul style="list-style-type: none"> • H x W x D = 1.9 x 12.8 x 10.4 in. (48 x 325 x 264 mm) (includes rubber feet) • H x W x D = 1.75 x 12.8 x 10.4 in. (44 x 325 x 264 mm) (without rubber feet; excludes antennas) • Weight: 5.5 lb (2.5 kg) maximum
Power	<ul style="list-style-type: none"> • Product power specifications: • AC input voltage: 100 to 240 VAC • Frequency: 50 to 60 Hz • Maximum output power: 60W • Output voltages: 12 VDC • Optional internal PoE with external adapter • Maximum output power: 80W • Output voltage, external: 48 VDC
Approvals and compliance	<ul style="list-style-type: none"> • IEC 60950-1:2005, Second Edition, with all country deviations • AS/NZS 60950-1:2003, First Edition • CAN/CSA 22.2 No. 60950-1-05, Second Edition • UL 60950-1, Second Edition, 2005 • EN55024 • Industry Canada CS-03 • TIA-968-A, Addendum 1, 2, 3, 4, 5 • EMI • VCCI Class II • IEC 1000-3-2 • UNI 3.1/4.0 PVC • ITU G.991.2 G.SHDSL • California Energy Commission (CEC) Compliant • Australia and New Zealand: • Australia AS/ACIF S031: 2001 • Australia AS/ACIF S043.1: 2003 • Australia AS/ACIF S043.2: 2006 • New Zealand PTC220: 2003 • The following are supported on Enterprise Teleworker Models: • AS/NRZ 3548:1992 Class B • CFR 47 Part 15 Class B • EN60555-2 Class B • EN55022 Class B • ICES-003, Issue 2, Class B, April 1997S
Certifications	
Environmental operating range	<ul style="list-style-type: none"> • Nonoperating temperature: -4 to 149°F (-20 to 65°C) • Nonoperating humidity: 5 to 95 percent relative humidity (noncondensing) • Nonoperating altitude: 0 to 15,000 ft (0 to 4570m) <p>Operating temperature: 32 to 104°F (0 to 40°C)</p> <ul style="list-style-type: none"> • Operating humidity: 10 to 85%, relative humidity (noncondensing) • Operating altitude: 0 to 10,000 ft (0 to 3000m)

Table 3. Cisco 880 Series Data Models

Models	WAN Interface	LAN Interfaces	802.11g/n Option	Integrated 3G Wireless WAN	Integrated ISDN Dial Backup
Cisco 881	10/100-Mbps Fast Ethernet	4-port 10/100-Mbps managed switch	Yes (Cisco 881W)	Yes (Cisco 881G)	-
Cisco 886	ADSL2/2+ over ISDN (Annex B)	4-port 10/100-Mbps managed switch	Yes (Cisco 886W)	Yes (Cisco 886G)	Yes
Cisco 887	ADSL2/2+ over POTS (Annex A)	4-port 10/100-Mbps managed switch	Yes (Cisco 887W)	Yes (Cisco 887G)	Yes
Cisco 887V	VDSL2 over POTS	4-port 10/100-Mbps managed switch	Yes (Cisco 887V)	Yes (Cisco 887VG)	Yes
Cisco 888	G.SHDSL (ATM)	4-port 10/100-Mbps managed switch	Yes (Cisco 888W)	Yes (Cisco 888G)	Yes
Cisco 888E	G.SHDSL (EFM)	4-port 10/100-Mbps managed switch	Yes (Cisco 888W)	No	Yes

For more details on 880 Series Integrated Services Routers, go to

http://www.cisco.com/en/US/prod/collateral/routers/ps380/data_sheet_c78_459542.html

Ordering Information

To place an order, refer to Tables 3 and 4 and visit the [Cisco Ordering Home](#) Page.

Table 4. Cisco 880G Series 3G WWAN Ordering Information

Part Number	Description
CISCO881G Bundles	
CISCO881G-K9	Cisco 881 Fast Ethernet Security Router supporting HSPA/UMTS/EDGE/GPRS and CDMA—Global SKU with 2 modems option: PCEX-3G-HSPA-G and PCEX-3G-CDMA-B
CISCO881G-G-K9	Cisco 881 Fast Ethernet Security Router supporting HSPA/UMTS/EDGE/GPRS—Global SKU with modem option: PCEX-3G-HSPA-G
CISCO881GW-GN-A-K9	Cisco 881 Fast Ethernet Wireless Router 802.11n FCC Compliant, configurable with a choice of 3G modems
CISCO881GW-GN-E-K9	Cisco 881 Fast Ethernet Wireless Router; 802.11n ETSI Compliant—Global SKU with modem option: PCEX-3G-HSPA-G
CISCO881G A-K9	Cisco 881 Fast Ethernet Security Router supporting HSPA/UMTS/EDGE/GPRS—North American SKU with modem option: PCEX-3G-HSPA-US
CISCO881G-S-K9	Cisco 881 Fast Ethernet Security Router supporting EV-DO/1xRTT—Sprint SKU with PCEX-3G-CDMA-S
CISCO881G-V-K9	Cisco 881 Fast Ethernet Security Router supporting EV-DO/1xRTT—Verizon SKU with PCEX-3G-CDMA-V
CISCO881G-B-K9	Cisco 881 Fast Ethernet Security Router supporting EV-DO/1xRTT—BSNLSKU with PCEX-3G-CDMA-B
CISCO886G Bundles	
CISCO887G-K9	Cisco 887G ADSL2/2+ AnnexA Sec Router w/ Ad.IP,3G Global GSM/HSPA, configurable with a choice of 3G modems
CISCO887GW-GN-E-K9	Cisco 887 ADSL2/2+ Annex A Router w/ 3G 802.11n ETSI Comp—Global SKU with modem option: PCEX-3G-HSPA-G
CISCO887GW-GN-A-K9	Cisco 887 ADSL2/2+ Annex A Router w/ 3G 802.11n FCC Comp, configurable with a choice of 3G modems
CISCO887GW-GNA-E-K9	Cisco 887V VDSL2 Sec Router w/ 3G B/U and 802.11n AP - FCC—Global SKU with modem option: PCEX-3G-HSPA-G
CISCO887GW-GNE-K9	Cisco 887V VDSL2 Sec Router w/ 3G B/U and 802.11n AP—ETSI—Global SKU with modem option: PCEX-3G-HSPA-G
CISCO888G Bundles	
CISCO888G-K9	Cisco 888 G.SHDSL Router configurable with a choice of 3G modems—Global SKU with modem option: PCEX-3G-HSPA-G
CISCO888GW-GN-A-K9	Cisco 888 G.SHDSL Wireless Router 802.11n FCC Compliant, configurable with a choice of 3G modems

Part Number	Description
CISCO888GW-GN-E-K9	Cisco 888 G.SHDSL Wireless Router; 802.11n ETSI Compliant,—Global SKU with modem option: PCEX-3G-HSPA-G
Modem Spares	
PCEX-3G-HSPA-G=	3G Wireless WAN PC Express card supporting GPRS/EDGE/UMTS/HSPA — Global SKU,excluding US (including Canada)
PCEX-3G-HSPA-US=	Cisco 3G HSPA/UMTS/EDGE/GPRS Modem—AT&T Network Only
PCEX-3G-CDMA-S=	Cisco 3G EV-DO Rev A/0/1xRTT Modem—Sprint Networks
PCEX-3G-CDMA-V=	Cisco 3G EV-DO Rev A/0/1xRTT Modem—Verizon Networks
PCEX-3G-CDMA-B=	Cisco 3G EV-DO Rev A/0/1xRTT Modem—BSNL Networks

Note: The Cisco 880G 3G Wireless Integrated Services Routers ship with a default 0-dB gain multiband dipole antenna on a cradle with 4.5-ft cable.

Table 5. Cisco 880 Series 3G WWAN Options Ordering Information

Part Number	Description
POE Option	
800-IL-PM-2=	2 port 802.3af capable inline power module for 880 routers
Memory	
MEM8XX-256U512D=	256-MB DRAM upgrade to 512 MB for Cisco 880 Series Routers
MEM8XX-256U768D=	512-MB DRAM upgrade to 768 MB for Cisco 880 Series Routers
Router Software	
C880data-universalk9-mz	Universal image for Cisco 880 ISR Data Router Series
Access Point Software	
ap801-k9w7-tar	Autonomous software image for ap801
ap801-rcvk9w8-tar	LWAPP recovery image for ap801
Software License for Cisco 880 Data	
SL-880-ADSEC (default)	Cisco 880 Advanced Security Image Feature License
SL-880-AIS(=) (default upgrade)	Cisco 880 Advanced IP Services Image Feature License
WAN Optimization	
FL-C880-WAASX=	Cisco WAAS Express Feature License
Security Services	
SL-CNFIL-88x-1Y=	One year subscription to Content Filtering for Cisco 881/888-URL/Phishing
FL-WEBVPN-10-K9=	Feature License SSL VPN for Up to 10 Users (incremental)

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 can 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 products, visit <http://www.cisco.com/go/3g> or contact your local Cisco account representative.

For more information regarding Cisco 880 Series Integrated Services Routers and options, contact your Cisco representative or go to <http://www.cisco.com/go/isr>.



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