Cisco 880G Series Integrated Services Router with Embedded 3.7G (21.1-Mbps Mobile Broadband Wireless WAN) and Wireless LAN

The Cisco® 880G Series Integrated Services Router with the embedded third-generation (3G) wireless WAN (WWAN) and dual radio 802.11n wireless LAN (WLAN) capabilities option provides secure high-speed wireless WAN and LAN 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, and WiFi wireless connectivity allows for rapid installation, deployment flexibility, and resilient mobile broadband backhaul for primary, WAN backup, and WiFi LAN.

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 embedded 3G wireless on these routers offers a cost-effective, rapidly deployable, reliable, and secure backup solution. With data rates exceeding T1 speeds, 3G wireless can be used for primary WAN connectivity in locations where wire-line 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 (Evolved High-Speed Packet Access [HSPA+] and Evolved Data Optimized Revision A [EV-DO Rev A]) and are backward-compatible with High-Speed Packet Access (HSPA), 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 the Third-Generation Partnership Project (3GPP), and they support 3.7G HSPA+, 3.5G HSPA (Evolved High-Speed Packet Access HSPA+/HSPA]), 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 Next-Generation 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 with dual radio. 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.

The dual 802.11a/b/g/n 2X3 MIMO inbuilt Access Point (AP) in the Cisco 880(G)W , comes with Cisco's CleanAir technology, Industry's first to create a self-healing, self-optimizing wireless network. Moreover, with the advantage of dual radio, the Cisco AP can serve both as an AP and as a client to a wireless mesh network concurrently: Hence providing another source for WAN diversity along with GE interface, cellular. Additionally, the ClientLink feature on the AP improves reliability and coverage for legacy devices and the capability to do dynamic frequency selection (DFS) allows detecting and avoiding interfering with radar signals to comply with regulatory domains.

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

With enhanced data rates and improved latency (below 100 milliseconds), WWAN services are an ideal way to supplement traditional wire-line services. Third-generation WWAN data services offered today have average data rates well in excess of ISDN speeds, with theoretical limits in excess of 21.1 Mbps on the downlink and 5.76 Mbps on the uplink. 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.

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 you to connect an IP phone to the router, giving voice traffic precedence over data applications. Integrated WLAN support in the Cisco 880 Series helps ensure that if you use wireless connectivity, 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. Then they can add multiple devices and applications 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

- Embedded cellular modem with 3.7G HSPA+ Release 7: The new 3GPP HSPA+ Release 7 supporting 21.1 Mbps on downlink and 5.76 Mbps on uplink is capable of demanding multimedia applications such as large files data transfer and video streaming.
- Embedded cellular modem with Short Message Service (SMS) and Global Positioning System (GPS): The router supports a new standalone GPS feature, a native SMS (send and receive) gateway, remotely initiated data call-back using SMS, and 3G WWAN MIB persistence with more than 300 MIB objects.
- Dual Subscriber Identity Module (SIM) support for HSPA+/HSPA platforms
- Embedded 3G WWAN broadband: With the 3G WWAN modem embedded into the router, you gain the benefit of simplified installation and management. In addition, the Cisco 3G WWAN modems are tightly integrated and embedded 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 QoS, intelligent network queuing, and robust security. Utilizing common and consistent embedded cellular platforms

architecture across next-generation Cisco 880G product family and modular Cisco Integrated Services Routers Generation 2 (ISR G2) platforms.

- Next-generation Cisco 880G WWAN product family: The Cisco 880 3G router has a new chassis design with improved air flow, a received-signal-strength-indication (RSSI) LED status bar, and a 3G service LED with no moving parts (fanless on Cisco 881 and 880 WLAN Series models) while maintaining the same form factor. The routers have common and built-in TNC connectors for external MAIN, diversity, GPS, cable, and antenna accessories.
- 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 wire-line 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 the Cisco 880 with 3G WWAN 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. Third-generation WWAN services promise low-latency links at speeds exceeding T1 connections, allowing you to send and receive more mission-critical data across the WAN in backup scenarios.
- Building on the Cisco Aironet heritage of RF excellence, the AP 802 Series delivers industry-leading performance for secure and reliable wireless connections. Enterprise-class silicon and optimized radios deliver a robust mobility experience using Cisco M-Drive technology, which includes:
  - ClientLink improves reliability and coverage for legacy clients
  - BandSelect improves 5-GHz client connections in mixed client environments
  - VideoStream uses multicast to improve rich-media applications
- All of these features help ensure the best possible end-user experience on the wireless network
- Cisco also offers the industry's broadest selection of 802.11n antennas delivering optimal coverage for a variety of deployment scenarios. The AP 802 is a component of the Cisco Unified Wireless Network, which can scale up to 18,000 access points with full Layer 3 mobility across central or remote locations on the enterprise campus, in branch offices, and at remote sites. For more information, please refer to Cisco 3500 Access Point detail specification dataSheet: http://www.cisco.com/en/US/prod/collateral/wireless/ps5678/ps10981/data_sheet_c78-594630.html
- The Cisco Integrated Services Router G2 (ISR G2) Family delivers numerous security services, including firewall, intrusion prevention, and VPN. These security capabilities have been extended with Cisco ISR Web Security with Cisco ScanSafe for a web security and web filtering solution that requires no additional hardware or client software. Cisco ISR Web Security with Cisco ScanSafe enables branch

offices to intelligently redirect web traffic to the cloud to enforce granular security and acceptable use policies over user web traffic. With this solution, you can deploy market-leading web security quickly and easily to protect branch office users from web-based threats, such as viruses, while saving bandwidth, money, and resources.

- Cisco WAN optimization system consists of WAAS Express* (WE) routers and Wide-area Application Engines (WAEs) that work together to optimize TCP traffic in your network. When client and server applications attempt to communicate with each other, the network intercepts the traffic and acts on behalf of the client application and the destination server. The WE and WAEs examine the traffic and use built-in application policies to determine whether the traffic in the network can be optimized.

* WAAS Express support for cellular 3G/4G and WiFi will be available in Q3CY2013

Product Specifications

Table 1 provides embedded 3G specifications for the Cisco 880G Series Integrated Services Router.

Table 1. Product Specifications

Item	Specification	
3G modem form factor	Embedded PCI Express minicard	
Programming interfaces	Cisco IOS Software command-line interface (CLI)	
Wireless technologies supported (performance and throughput)	**C881G+7-K9** **C881G+7-A-K9** • HSPA+: 850, 900, 1900, and 2100 MHz (forward link up to 21.1 Mbps; reverse link up to 5.76 Mbps) • Backward compatibility: ◦ 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) **C881G-U-K9** • HSPA: 850, 900, 1900, and 2100 MHz (forward link up to 7.2 Mbps; reverse link up to 5.76 Mbps) • Backward compatibility: ◦ 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) **C881G-V-K9*** **C881G-S-K9*** **C881G-B-K9*** • CDMA 1xEV-DO Rev A (forward link up to 3.1 Mbps; reverse link up to 1.8 Mbps)	**C886VAG+7-K9** • HSPA+: 850, 900, 1900, and 2100 MHz (forward link up to 21.1 Mbps; reverse link up to 5.76 Mbps) • Backward compatibility: ◦ 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) **C887VAG+7-K9** **C887VAMG+7-K9 (Annex M)** • HSPA+: 850, 900, 1900, and 2100 MHz (forward link up to 21.1 Mbps; reverse link up to 5.76 Mbps) • Backward compatibility: ◦ 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) **C888EG+7-K9** • HSPA+: 850, 900, 1900, and 2100 MHz (forward link up to 21.1 Mbps; reverse link up to 5.76 Mbps) • Backward compatibility: ◦ HSDPA: 850, 900, 1900, and 2100 MHz (forward link up to 7.2 Mbps; reverse link up to 384 kbps)

Item	Specification	

	• Backward compatibility:
	  ◦ 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)
	*S = For Sprint Networks; V = For Verizon Wireless Networks; B = For BSNL Networks
		◦ 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

Frequency bands supported	**C881G+7-K9** **C881G+7-A-K9** **C886VAG+7-K9** **C887VAG+7-K9** **C887VAMG+7-K9** **C888EG+7-K9** • 850-, 900-, 1900-, and 2100-MHz WCDMA bands (HSPA+, HSUPA, HSDPA and UMTS) • 850-, 900-, 1800-, and 1900-MHz GSM bands (EDGE and GPRS) **C881G-U-K9** • 850-, 900-, 1900-, and 2100-MHz WCDMA bands (HSUPA, HSDPA and UMTS) • 850-, 900-, 1800-, and 1900-MHz GSM bands (EDGE and GPRS)	**C881G-V-K9*** **C881G-S-K9*** **C881G-B-K9*** **C887VAG-S-K9*** • 800 MHz: North American cellular band • 1900 MHz: North American PCS band *S = For Sprint Networks; V = For Verizon Wireless Networks; B = For BSNL Networks
SIM card	 Dual Universal SIM (USIM) or SIM card slot on the Cisco 880G chassis (HSPA, UMTS, and GSM)	
Included antenna	0-dB gain multiband swivel faceplate mount dipole antenna (includes 2 units 3G-ANTM1919D)	
SMS and GPS	 • Send and receive SMS (maximum 160 characters) • Standalone GPS	
MIBs	 • 3G MIB • ENTITY MIB • IF MIB • 3G WWAN MIB persistence	
Network management and diagnostics	• In- and out-of-band management using Telnet (Cisco IOS Software CLI) and 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 PCI minicard • C881G-U-K9: Sierra Wireless MC8795V (non-US market) • C881G-V-K9, C881G-S-K9, C881G-B-K9, and C887VAG-S-K9: Sierra Wireless MC5728V • C881G+7-A-K9 Sierra Wireless MC8705 (North America market) • C881G+7-K9, C886VAG+7-K9, C887VAG+7-K9, C887VAMG+7-K9, and C888EG+7-K9: Sierra Wireless MC8705 (non-U.S. market)	
LED indicators	 RSSI status bar	

Item	Specification
Cisco IOS Software requirement	For all embedded Cisco 880G 3G Series routers: • C881G+7-K9, C881G+7-A-K9, and C881G-U-K9 supported with Mainline 15.1(4)M or later releases • C881G-V-K9, C881G-S-K9, and C881G-B-K9 supported with Mainline 15.1(4)M or later releases • C886VAG+7-K9, C887VAG-S-K9, C887VAG+7-K9, C887VAMG+7-K9, andC888EG+7-K9 supported with Mainline 15.1(4)M or later releases For all embedded Cisco 880G 3G with WiFi Series routers: • C881GW+7-A-K9, C881GW+7-E-K9, C881GW-V-A-K9, and C881GW-S-A-K9 supported with Mainline 15.2(4)M1 or later releases • C887VAGW+7-A-K9, and C887VAGW+7-E-K9 supported with Mainline 15.2(4)M1 or later releases For all embedded Cisco 880G WiFi Series routers: • C881WD-A-K9, C881WD-E-K9, C887VA-WD-A-K9, and C887VA-WD-E-K9 supported with Mainline 15.2(4)M1 or later releases S = For Sprint Networks; V = For Verizon Wireless Networks; B = For BSNL Networks WiFi –E domain is available for Australia and New Zealand (same Unified WLC domain region) C881G+7-A-K9, C881GW+7-A-K9, and C887VAGW+7-A-K9 are PTCRB certfied
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
Carrier support	For an updated list of carriers that offer services on the Cisco 880G Series, please visit: http://www.cisco.com/go/3g
Embedded WLAN	For all embedded C881W WiFi Series routers: • C881W-A-K9, C881W-E-K9 supported 2.4 GHz single radio 802.11n WiFi For all embedded Cisco 880G 3G with WiFi Series routers: • C881GW+7-A-K9, C881GW+7-E-K9, C881GW-V-A-K9,C881GW-S-A-K9, C887VAGW+7-A-K9, and C887VAGW+7-E-K9 supported 2.4 GHz and 5.0 GHz dual radio 802.11n WiFi For all embedded Cisco 880G WiFi Series routers: • C881WD-A-K9, C881WD-E-K9, C887VA-WD-A-K9, and C887VA-WD-E-K9 supported 2.4 GHz and 5.0GHz dual radio 802.11n WiFi Embedded 2X3 MIMO antennas and default with Autonomous AP WiFi mode http://www.cisco.com/en/US/prod/collateral/wireless/ps5678/ps10981/data_sheet_c78-594630.html
802.11n Version 2.0 (and Related CapabilitiesN	• 2x3 multiple-input multiple-output (MIMO) with two spatial streams • Maximal ratio combining (MRC) • Legacy beamforming • 20- and 40-MHz channels • PHY data rates up to 300 Mbps • Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx) • 802.11 dynamic frequency selection (DFS) • Cyclic shift diversity (CSD) support Other WiFi data rates and domain specifications: http://www.cisco.com/en/US/prod/collateral/wireless/ps5678/ps10981/data_sheet_c78-594630.html
WLAN Certifications	

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

Table 2. System Specifications

Feature	Specification
Default DRAM	512 MB on Cisco 880 Series data models
Maximum DRAM	1 GB (non-WiFi model factory upgrade option only); WiFi model have fixed 512 MB
Default and maximum flash memory	256 MB fixed flash on Cisco 880 Series data, 3G, WiFi models
Console or auxiliary port	RJ-45: A 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	 • One USB 1.1 port on Cisco 881 and 888 Routers • USB devices supported: ◦ USB eTokens ◦ USB flash memory 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
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
Physical dimensions and weight	Product dimensions:  • Nonwireless models: ◦ 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) • Weight: 5.5 lb (2.5 kg) maximum
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

Feature	Specification
Approvals and compliance	• 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
Environmental operating range	 • Nonoperating temperature: –4 to 149℉ (–20 to 65℃) • Nonoperating humidity: 5 to 95 percent relative humidity (noncondensing) • Nonoperating altitude: 0 to 15,000 ft (0 to 4570m) • Operating temperature: 32 to 104℉ (0 to 40℃) • Operating humidity: 10 to 85%, relative humidity (noncondensing) • Operating altitude: 0 to 10,000 ft (0 to 3,000m)

Table 3. Cisco 880 Series Data Models

Models	WAN Interface	LAN Interfaces	Integrated with Embedded 3G Wireless WAN	802.11a/bg/n Option	Integrated ISDN Dial Backup
Cisco 881	10/100-Mbps Fast Ethernet	4-port 10/100-Mbps managed switch	Yes (Cisco 881G) 3G, 3.5G, 3.7G	Dual Radio (-A and –E domain)	–
Cisco 886VA	Multi-mode VDSL2/ADSL2/2+ over ISDN (Annex B)	4-port 10/100-Mbps managed switch	Yes (Cisco 886VAG) 3.7G	–	No
Cisco 887VA	Multi-mode VDSL2/ADSL2/2+ over POTS (Annex A)	4-port 10/100-Mbps managed switch	Yes (Cisco 887VAG) 3.7G	Dual Radio (-A and –E domain)	No
Cisco 887VAMG	Multi-mode VDSL2/ADSL2/2+ over POTS (Annex M)	4-port 10/100-Mbps managed switch	Yes (Cisco 887VAMG) 3.7G	–	No
Cisco 888E	G.SHDSL (EFM)	4-port 10/100-Mbps managed switch	Yes (Cisco 888EG) 3.7G	–	Yes

For more details about the Cisco 880 Series Integrated Services Routers, go to http://www.cisco.com/en/US/prod/collateral/routers/ps380/data_sheet_c78_459542.html.

For more details about Cisco 3500 Access Point specification, go to
http://www.cisco.com/en/US/prod/collateral/wireless/ps5678/ps10981/data_sheet_c78-594630.html

Ordering Information

To place an order, refer to Tables 4 and 5 and visit the Cisco Ordering Homepage.

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

Part Number	Description
C881G Bundles	
C881G+7-K9	Cisco 881 Fast Ethernet Secure Router supporting HSPA+/HSPA/UMTS/EDGE/GPRS—Global SKU with Embedded 3.7G MC8705
C881G-U-K9	Cisco 881 Fast Ethernet Secure Router supporting HSPA/UMTS/EDGE/GPRS—Global SKU with Embedded 3.5G MC8795V
C881G-V-K9	Cisco 881 Fast Ethernet Secure Router supporting EV-DO Rev A/Rev 0/1xRTT—Verizon SKU with Embedded 3G MC5728V
C881G-S-K9	Cisco 881 Fast Ethernet Secure Router supporting EV-DO Rev A/Rev 0/1xRTT—Sprint SKU with Embedded 3G MC5728V
C881G-B-K9	Cisco 881 Fast Ethernet Secure Router supporting EV-DO Rev A/Rev 0/1xRTT—BSNL SKU with Embedded 3G MC5728V
C886VAG Bundle	
C886VAG+7-K9	Cisco 886 Multi-mode VDSL2/ADSL2+ over ISDN Secure Router supporting HSPA+/HSPA/UMTS/EDGE/GPRS—Global SKU with Embedded 3.7G MC8705
C887VAG Bundles	
C887VAG-S-K9	Cisco 887 Multi-mode VDSL2/ADSL2+ over POTS Secure Router supporting EV-DO Rev A/Rev 0/1xRTT—Sprint SKU with Embedded 3G MC5728V
C887VAG+7-K9	Cisco 887 Multi-mode VDSL2/ADSL2+ over POTS Secure Router supporting HSPA+/HSPA/UMTS/EDGE/GPRS—Global SKU with Embedded 3.7G MC8705
C887VAMG+7-K9	Cisco 887 Multi-mode VDSL2/ADSL2+ over POTS Secure Router supporting HSPA+/HSPA/UMTS/EDGE/GPRS—Global SKU with Embedded 3.7G MC8705
C888EG Bundle	
C888EG+7-K9	Cisco 881 G.SHDSL Secure Router with 802.3ah EFM supporting HSPA+/HSPA/UMTS/EDGE/GPRS—Global SKU with Embedded 3.7G MC8705
C881GW Bundles	
C881GW+7-A-K9	Cisco 881 Fast Ethernet Secure Router supporting HSPA+/HSPA/UMTS/EDGE/GPRS—Global SKU with Embedded 3.7G MC8705 and dual radio 802.11n WiFi for FCC –A domain
C881GW+7-E-K9	Cisco 881 Fast Ethernet Secure Router supporting HSPA+/HSPA/UMTS/EDGE/GPRS—Global SKU with Embedded 3.5G MC8705 and dual radio 802.11n WiFi for ETSI –E domain
C881GW-V-A-K9	Cisco 881 Fast Ethernet Secure Router supporting EV-DO Rev A/Rev 0/1xRTT—Verizon SKU with Embedded 3G MC5728V and dual radio 802.11n WiFi for FCC –A domain
C881GW-S-A-K9	Cisco 881 Fast Ethernet Secure Router supporting EV-DO Rev A/Rev 0/1xRTT—Sprint SKU with Embedded 3G MC5728V and dual radio 802.11n WiFi for FCC –A domain
C881W Bundles	
C881W-A-K9	Cisco 881 Fast Ethernet Secure Router supporting single radio 802.11n WiFi for FCC –A domain
C881W-E-K9	Cisco 881 Fast Ethernet Secure Router supporting single radio 802.11n WiFi for ETSI –E domain
C881WD Bundles	
C881WD-A-K9	Cisco 881 Fast Ethernet Secure Router supporting dual radio 802.11n WiFi for FCC –A domain
C881WD-E-K9	Cisco 881 Fast Ethernet Secure Router supporting dual radio 802.11n WiFi for ETSI –E domain
C887VAGW Bundles	
C887VAGW+7-A-K9	Cisco 887 Multi-mode VDSL2/ADSL2+ over POTS Secure Router supporting HSPA+/HSPA/UMTS/EDGE/GPRS-Global SKU with Embedded 3.7G MC8705 and dual radio 802.11n WiFi for FCC -A domain
C887VAGW+7-E-K9	Cisco 887 Multi-mode VDSL2/ADSL2+ over POTS Secure Router supporting HSPA+/HSPA/UMTS/EDGE/GPRS—Global SKU with Embedded 3.7G MC8705 and dual radio 802.11n WiFi for ETSI –E domain

Part Number	Description
C887VA-WD Bundles	
C887VA-WD-A-K9	Cisco 887 Multi-mode VDSL2/ADSL2+ over POTS Secure Router supporting dual radio 802.11n WiFi for FCC –A domain
C887VA-WD-E-K9	Cisco 887 Multi-mode VDSL2/ADSL2+ over POTS Secure Router supporting dual radio 802.11n WiFi for ETSI –E domain

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

Part Number	Description
POE Option	
800-IL-PM-2= **800G2-POE-2=**	2 ports 802.3af capable inline power module for 880 3G routers 2 ports 802.3af capable inline power module for 880 WiFi routers
Memory	
MEM8XX-512U1GBD=	512-MB DRAM upgrade to 1 GIG DRAM for Cisco 880G Embedded 3G Series Routers (not applicable to 880 WiFi routers)
Router Software	
C880data-universalk9-mz (default)	Universal image for Cisco 880 ISR Data 3G Router Series
C880data-universalk9_npe-mz	Universal image for Cisco 880 ISR Data 3G Router Series with No Payload Encryption
C800data-universalk9-mz (default with code signing)	Universal image for Cisco 880 ISR WiFi Router Series
C800data-universalk9_npe-mz (with code signing)	Universal image for Cisco 880 ISR WiFi Router Series with No Payload Encryption
Software License for Cisco 880 Data	
SL-880-ADSEC(=) (default)	Cisco 880 Advanced Security Image Feature License
SL-880-AIS(=) (default)	Cisco 880 Advanced IP Services Image Feature License
SL-880-ADSEC-NPE(=) (default with NPE IOS Image)	Cisco 880 Advanced Security Images with No Payload Encryption Feature License
SL-880-AIS-NPE(=) (default with NPE IOS Image)	Cisco 880 Advanced IP Services Image with No Payload Encryption Feature License
WAN Optimization	
FL-C880-WAASX(=)	Cisco WAAS Express Feature License
Security Services	
FL-SSLVPN10-K9=	Feature License SSL VPN for Up to 10 Users (incremental)
Access Point Software	
ap802-k9w7-tar	Autonomous software image for ap802 (default 12.4(25d)JAX1)
ap802-rcvk9w8-tar	LWAPP recovery image for ap802 (default 15.2(2)JA)

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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 local Cisco representative or go to http://www.cisco.com/go/isr.

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Printed in USA C78-682548-04 11/13