Release Notes for EHWIC and 880G for 3.7G (HSPA+)/3.5G (HSPA)

These release notes describe the information you need to know before configuring the Universal High-Speed Packet Access (HSPA-U) and HSPA Plus (HSPA+) versions of the 3G wireless Enhanced High-Speed WAN Interface Cards (EHWICs) and Cisco 880G Series Integrated Services Routers (ISRs).

These release notes are updated as needed. To ensure that you have the latest version of these release notes, go to http://www.cisco.com/go/ciscocp. In the Support box, click on the appropriate product and choose **General Information > Release Notes**.

Contents

System Requirements

The following sections describe the system requirements:

- Hardware Supported, page 2
- Software Compatibility, page 6
- Determining the Software Version, page 6
- Feature Set Tables, page 6

Hardware Supported

Platforms

The EHWIC-3G-HSPA-U, EHWIC-3G-HSPA+7, and EHWIC-3G-HSPA+7-A cards are supported on the following Cisco Integrared Services Router Generation 2 (ISR G2) modular platforms:

- Cisco 1900
- Cisco 2900
- Cisco 3900
- Cisco 3900e

Note EHWIC-3G-HSPA+7 and EHWIC-3G-HSPA+7-A are supported with Cisco IOS Release 15.1(4)M or later releases.

The following Cisco 880G fixed platforms are supported:

Cisco IOS Release 15.1(4)M
- Cisco 881G
- Cisco 886VAG
- Cisco 887VAG
- Cisco 887VAMG
- Cisco 888EG

Cisco IOS Release 15.2(4)M1
- Cisco 881GW
- Cisco 887VAGW

Product and Frequencies

Table 1 shows the products discussed in this document and the frequencies they support.

Table 1 *Product Descriptions and Supported Frequencies*

SKU Number	Description	Region	Frequency Bands
EHWIC-3G-HSPA-U	This is a multiband, multiservice WAN card that supports Universal HSPA.	Worldwide	850/900/1900/2100 MHz for WCDMA/HSPA 850/900/1800/1900 MHz for EDGE/GPRS
EHWIC-3G-HSPA+7	This is a multiband, multiservice WAN card that supports Universal HSPA+.	Worldwide	850/900/1900/2100 MHz for WCDMA/HSPA/HSPA+R7 850/900/1800/1900 MHz for EDGE/GPRS
EHWIC-3G-HSPA+7-A	This is a multiband, multiservice WAN card that supports Universal HSPA+. The EHWIC-3G-HSPA+7-A is localized for AT&T.	United States	850/900/1900/2100 MHz for WCDMA/HSPA/HSPA+R7 850/900/1800/1900 MHz for EDGE/GPRS
C881G-U-K9	This is an ISR with an embedded multiband, multiservice WAN modem that supports Universal HSPA.	Worldwide	850/900/1900/2100 MHz for WCDMA/HSPA 850/900/1800/1900 MHz for EDGE/GPRS
C881G+7-K9	This is an ISR with an embedded multiband, multiservice WAN modem that supports Universal HSPA+.	Worldwide	850/900/1900/2100 MHz for WCDMA/HSPA/HSPA+ 850/900/1800/1900 MHz for EDGE/GPRS
C881G+7-A-K9	This is an ISR with an embedded multiband, multiservice WAN modem that supports Universal HSPA+.	United States	850/900/1900/2100 MHz for WCDMA/HSPA/HSPA+ 850/900/1800/1900 MHz for EDGE/GPRS
C881GW+7-A-K9	This is an ISR with an embedded multiband, multiservice WAN modem that supports Universal HSPA+ and WLAN. This router offers dual WiFi 802.11n radio WLAN interfaces with embedded antennas that support Cisco DFS and CleanAir technologies.	Worldwide	850/900/1900/2100 MHz for WCDMA/HSPA/HSPA+ 850/900/1800/1900 MHz for EDGE/GPRS
C881GW+7-E-K9	This is an ISR with an embedded multiband, multiservice WAN modem that supports Universal HSPA+ and WLAN. This router offers dual WiFi 802.11n radio WLAN interfaces with embedded antennas that support Cisco DFS and CleanAir technologies.	Worldwide	850/900/1900/2100 MHz for WCDMA/HSPA/HSPA+ 850/900/1800/1900 MHz for EDGE/GPRS
C886VAG+7-K9	This is an ISR with an embedded multiband, multiservice WAN modem that supports Universal HSPA+.	Worldwide	850/900/1900/2100 MHz for WCDMA/HSPA/HSPA+ 850/900/1800/1900 MHz for EDGE/GPRS

Table 1 **Product Descriptions and Supported Frequencies (continued)**

SKU Number	Description	Region	Frequency Bands
C887VAG+7-K9	This is an ISR with an embedded multiband, multiservice WAN modem that supports Universal HSPA+.	Worldwide	850/900/1900/2100 MHz for WCDMA/HSPA/HSPA+ 850/900/1800/1900 MHz for EDGE/GPRS
C887VAGW+7-A-K9	This is an ISR with an embedded multiband, multiservice WAN modem that supports Universal HSPA+ and WLAN. This router offers dual WiFi 802.11n radio WLAN interfaces with embedded antennas that support Cisco DFS and CleanAir technologies.	Worldwide	850/900/1900/2100 MHz for WCDMA/HSPA/HSPA+ 850/900/1800/1900 MHz for EDGE/GPRS
C887VAGW+7-E-K9	This is an ISR with an embedded multiband, multiservice WAN modem that supports Universal HSPA+ and WLAN. This router offers dual WiFi 802.11n radio WLAN interfaces with embedded antennas that support Cisco DFS and CleanAir technologies.	Worldwide	850/900/1900/2100 MHz for WCDMA/HSPA/HSPA+ 850/900/1800/1900 MHz for EDGE/GPRS
C887VAMG+7-K9	This is an ISR with an embedded multiband, multiservice WAN modem that supports Universal HSPA+.	Worldwide	850/900/1900/2100 MHz for WCDMA/HSPA/HSPA+ 850/900/1800/1900 MHz for EDGE/GPRS
C888EG+7-K9	This is an ISR with an embedded multiband, multiservice WAN modem that supports Universal HSPA+.	Worldwide	850/900/1900/2100 MHz for WCDMA/HSPA/HSPA+ 850/900/1800/1900 MHz for EDGE/GPRS

Antennas and Cables Supported

Table 2 lists the Cisco antennas that are supported for use with 3G EHWIC and Cisco 880G ISRs.

Table 2 **Supported Cisco Antennas (3G EHWIC and Cisco 880G ISRs)**

Cisco Part Number	Antenna Type	Maximum Gain and Frequency Range	Description
3G-ANTM1916-CM	High-gain ceiling-mount omnidirectional	1.5 dBi (806–960 MHz) 2.5 dBi (1710–2170 MHz)	This is a multiband ceiling-mounted omnidirectional antenna. For more information, see *Cisco Multiband In-Building Omnidirectional Ceiling-Mount Antenna (3G-ANTM1916-CM)*.
3G-ANTM1919D	Dipole omnidirectional	0 dBi (806–960 MHz) 0 dBi (1710–2170 MHz)	This is the default antenna. This is a multiband dipole antenna. For more information, see *Cisco Multiband Swivel-Mount Dipole Antenna (3G-ANTM1919D)*.

Table 2 Supported Cisco Antennas (3G EHWIC and Cisco 880G ISRs) (continued)

Cisco Part Number	Antenna Type	Maximum Gain and Frequency Range	Description
3G-AE015-R (Antenna Extension)	Extension base	0.8–6.0 GHz	This is an antenna extension base with a 15-foot cable included for use with a dipole omnidirectional antenna. For more information, see *Cisco Single-Port Antenna Stand for Multiband TNC Male-Terminated Portable Antenna (Cisco 3G-AE015-R)*.
3G-AE010-R (Antenna Extension)	Extension base	0.8–6.0 GHz	This is the default antenna extension. This is an antenna extension base with a 10-foot cable included for use with dipole omnidirectional antennas. For more information, see *Cisco Single-Port Antenna Stand for Multiband TNC Male-Terminated Portable Antenna (Cisco 3G-AE015-R)*. This document applies to both 3G-AE015-R and 3G-AE010-R. The only difference between these two products is the length of the cable.
3G-ANTM-OUT-OM	Outdoor omnidirectional	+2 dBi 800/900 MHz +4 dBi 1800/1900/2100 MHz	This is an outdoor low-profile omnidirectional mast antenna. For more information, see *Cisco 3G Omnidirectional Outdoor Antenna (3G-ANTM-OUT-OM)*.
3G-ANTM-OUT-LP	Low-profile stick	–1.5 dBi 850, 900 MHz –2.5 dBi 1800, 1900, 2100 MHz	This is an omnidirectional stick antenna. For more information, see *Cisco Multiband Omnidirectional Panel-Mount Antenna (3G-ANTM-OUT-LP)*.
3G-ACC-OUT-LA (Lightning Arrestor)	Lightning arrestor	800 MHz to 2200 MHz	This is a quarter-wave lightning protector with integrated high-pass filter. For more information, see *Cisco 3G Lightning Arrestor (3G-ACC-OUT-LA)*.

Table 2   Supported Cisco Antennas (3G EHWIC and Cisco 880G ISRs) (continued)

Cisco Part Number	Antenna Type	Maximum Gain and Frequency Range	Description
3G-ACC-OUT-COMBO	Lightning arrestor and antenna	—	This includes a Multiband Outdoor Omnidirectional Antenna Mast/Wall Mount (3G-ACC-OUT-OM) and a 3G Outdoor Antenna Lightning Arrestor (3G-ACC-OUT-LA).
4G-ANTM-OM-CM	Low-profile surface-mount omnidirectional	698 MHz–2690 MHz	This is a ceiling-mount omnidirectional antenna that can be used in any of the 3G or 4G bands (that is, any of the 700/800/900/1700/1800/1900/2100/2600 MHz bands). For more information, see *Cisco 4G Indoor Ceiling-Mount Omnidirectional Antenna (4G-ANTM-OM-CM)*.

Software Compatibility

For more information about the latest certified firmware version for your carrier and IOS compatibility, see http://www.cisco.com/cisco/software/navigator.html?mdfid=279119319&flowid=7001.

Determining the Software Version

To determine the release of Cisco IOS software currently running on your Cisco router, log in to the router and enter the **show version** EXEC command. The following sample output from the show version command indicates the Cisco IOS release on the second output line:

```
Router> show version
Cisco Internetwork Operating System Software
IOS (tm) C1900 Software (c1900-k8sv3y7-mz) Version 15.1(3)T
```

Feature Set Tables

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn.

New and Changed Information

This section contains the following subsections:

New Features in Cisco IOS Release 15.2(4)M1

The following SKUs are supported with Cisco IOS Release 15.2(4)M1:

- C881GW+7-A-K9
- C881GW+7-E-K9
- C887VAGW+7-A-K9
- C887VAGW+7-E-K9

The Cisco 881GW and 887VAGW ISRs provide integrated VPN, embedded Wi-Fi CERTIFIED™, 802.11b/g/n-compliant wireless AP, 3G, and backup capabilities.

Cisco Aironet 802 Access Point (AP802) is an integrated access point on the Next Generation Cisco 880 Series ISRs. The Cisco 881GW and 887VAGW with Cisco IOS Release 15.2(4)M1 support AP802 dual radio access point. For more information on AP802, see *Release Notes for Cisco 802 Access Points for Cisco IOS Releases 12.4(25d)JAX and 12.4(25d)JAX1*.

New Features in Cisco IOS Release 15.1(3)T and 15.1(4)M

This section describes the new features in this release.

Dual SIM

The Dual SIM feature implements auto-switch and failover between two cellular networks on the Cisco 880G ISRs. This feature is enabled by default with SIM slot 0 being the primary slot and slot 1 being the secondary (failover) slot.

The Dual SIM feature provides the following commands:

Command	Syntax	Description
gsm failovertimer	**gsm failovertimer** *<1–7>*	Sets the failover timer in minutes.
gsm sim authenticate	**gsm sim authenticate** *<0–7>* *<pin>* **slot** *<0–1>*	Verifies the SIM CHV1 code.
gsm sim max-retry	**gsm sim max-retry** *<0–65535>*	Specifies the maximum number of failover retries. The default value is 10.
gsm sim primary slot	**gsm sim primary slot** *<0–1>*	Modifies the primary slot assignment.
gsm sim profile	**gsm sim profile** *<1–16>* **slot** *<0–1>*	Configures the SIM profile.

GPS

The GPS feature provides the following commands:

Command	Syntax	Description
gsm gps mode	**gsm gps mode standalone**	Enables the GPS standalone mode.
gsm gps nmea	**gsm gps nmea**	Enables the NMEA mode.
show cellular gps	**show cellular** *unit* **gps**	Displays a summary of GPS data.
	show cellular *unit* **gps detail**	Displays a detailed list of GPS data.

SMS

The SMS feature enables the router to send and receive SMS messages. This feature also enables the router to save and store the SMS messages in an FTP server.

The SMS feature provides the following commands:

Command	Syntax	Description
cellular gsm sms send	**cellular** *unit* **gsm sms send** *telNum message*	Sends SMS messages (up to 160 characters per message).
cellular gsm sms delete	**cellular** *unit* **gsm sms delete {all |** *msg_ID***}**	Deletes SMS messages.
cellular gsm sms view	**cellular** *unit* **gsm sms view {summary	all |** *msg_ID***}**	Displays SMS messages.
gsm sms archive path	**gsm sms archive path ftp:***path_to_FTP_server*	Saves SMS messages on an FTP server.

Remotely Initiated Data Callback Using SMS

This feature remotely brings up the cellular interface by sending SMS messages over GSM networks.

3G WWAN MIB Persistence

This feature allows you to retain 3G WWAN MIB object values and trap settings across router reloads.

Features Supported on 3.7G (HSPA+)/3.5G (HSPA) EHWIC and 880G ISRs

The EHWIC and 880G ISRs for 3.7G (HSPA+)/3.5G (HSPA) provide the following functionalities:

- Mobile Equipment Personalization (MEP) subsidy unlocking
- Dual SIM (fixed-platform only)
- SIM lock and unlock, security, verification upon activation, SIM PIN change
- Multiple PDP support (EHWIC)
- Short Message Service (SMS)
- Remotely initiated data call back using SMS
- Global Positioning System (GPS)
- Broadband WAN connectivity using high-speed cellular data technology
- Automatic best-network selection
- Always-on capability
- Multiple antenna and cable options:
    - Diversity antenna
    - Indoor and outdoor external antennas
    - Radio Frequency Ultra-Low Loss (RF-ULL) cables
- IOS-based Mobile IP including Network Mobility (NEMO)
- Static and dynamic IP addressing
- Cellular interface based on the asynchronous interface in Cisco IOS software
- Network Address Translation (NAT) and Port Address Translation (PAT) support
- Security features such as firewall, Intrusion-Detection Systems (IDS), and Intrusion-Prevention Systems (IPS)
- Support for enhanced security features such as GET VPN, EZ VPN, DMVPN, Multi-point GRE (mGRE), and IPSec VPN
- Auto-detecting optimized WAN switchover
- Support for Hot Standby Router Protocol (HSRP) and Virtual Router Redundancy Protocol (VRRP)
- 3G cellular WAN Management Information Base (MIB)
    - 3G WWAN MIB persistence
    - MIBs for Global Positioning System (GPS) and Short Message Service (SMS)
- Diagnostic Monitoring (DM) capability
- Remote DM logging over IP
- Voice-initiated data callback
- Cellular modem upgrade over wireless link
- Power Save mode capability
- Complete Cisco IOS feature capability
- Modem management—You can access modem software and hardware information, radio and network status, and data profile information by using Cisco IOS commands.

- Dial-on-Demand Routing (DDR)—This allows you to set up a data call when there is data traffic to be sent over the wireless network.

- Fallback connection (DDR backup)—3G WAN for fixed and modular routers allows you to configure the cellular modem to initiate a dialup connection when connection to a primary service is lost.

- Teardown after fallback (part of fallback DDR)—After a primary connection has failed and the cellular connection is in fallback mode, the 3G feature in fixed and modular routers tears down the fallback-mode connection when the primary connection is available.

- Automatic teardown—After a configurable timeout, the 3G WAN for fixed and modular routers automatically tears down a connection if there has been no activity.

- Autodetect—3G WAN for fixed and modular routers automatically detects and uses the best available service.

- Profile Configuration—You can configure up to 16 APN profiles.

- Firmware upgrade—You can upgrade the firmware on the modem by using Cisco IOS commands.

- Comprehensive Cisco IOS MIB support including Interface (IF) MIBs and Entity MIBs.

EHWIC-3G-HSPA-U Features

The EHWIC-3G-HSPA-U card version supports the following services:

- General Packet Radio Services (GPRS)

- Enhanced Data Rates for GSM Evolution (EDGE)

- Universal Mobile Telecommunication System (UMTS)

- High-Speed Packet Access (HSPA)

  - High-Speed Downlink Packet Access (HSDPA)

  - High-Speed Uplink Packet Access (HSUPA)

  - HSPA Plus (HSPA+)

EHWIC-3G-HSPA-U supports multiple services on multiple bands for use in different parts of the world:

- 850/900/1800/1900 MHz for GPRS and EDGE services

- 800/850/900/1900/2100 MHz for UMTS and HSPA services

- Standalone GPS

- Short Message Service (SMS)

EHWIC-3G-HSPA+7 and EHWIC-3G-HSPA+7-A Features

The EHWIC-3G-HSPA+7 and EHWIC-3G-HSPA+7-A for 3.7G HSPA+ support the following services:

- General Packet Radio Services (GPRS)
- Enhanced Data Rates for GSM Evolution (EDGE)
- Universal Mobile Telecommunication System (UMTS)
- High-Speed Packet Access (HSPA)
  - High-Speed Downlink Packet Access (HSDPA)
  - High-Speed Uplink Packet Access (HSUPA)
- High-Speed Packet Access (HSPA) +, 3GPP Revision 7
  - Downlink speeds up to 21.1 Mb/s
  - Uplink speed up to 5.76 Mb/s

The EHWIC-3G-HSPA+7-A is localized for AT&T.

The EHWIC-3G-HSPA+7 and EHWIC-3G-HSPA+7-A cards support multiple services on multiple bands for use in different parts of the world:

- 850/900/1800/1900 MHz for GPRS and EDGE services
- 800/850/900/1900/2100 MHz for UMTS and HSPA services
- Standalone GPS
- Short Message Service (SMS)

Open Caveats - Cisco IOS Release 15.2(4)M1

Table 3 lists the open caveat for the HSPA version of Cisco 880G Series ISRs with Cisco IOS Release 15.2(4)M1.

Table 3   Open Caveats for the HSPA version of Cisco 880G Series ISRs with Cisco IOS Release 15.2(4)M1

Defect ID	Summary	Additional Information
CSCuc03913	WLAN AP should not be reset by the host router even if VLAN interfaces are down	**Symptom** WLAN AP running on Next Generation Cisco 800 Series ISRs gets reset periodically. **Conditions** VLAN interface associated to "Wlan-gigabitethernet 0" interface was shut down. **Workaround** VLAN interface associated to "Wlan-gigabitethernet 0" interface should be in admin UP state.

Note   For more information on AP802-related caveats, see *Release Notes for Cisco 802 Access Points for Cisco IOS Releases 12.4(25d)JAX and 12.4(25d)JAX1*.

Related Documentation

See the following related documentations:

Release-Specific Documents

For more information on Cisco IOS Release 15.1(3)T, Cisco IOS Release 15.1(4)M, and Cisco IOS Release 15.2(4)M1, see *Release Notes for Cisco EHWIC and 880G for 3G (EV-DO Rev A)*.

For more information on Cisco IOS Release 12.4(25d)JAX1 for AP802, see *Release Notes for Cisco 802 Access Points for Cisco IOS Releases 12.4(25d)JAX and 12.4(25d)JAX1*.

Platform-Specific Documents

To configure Cisco EHWIC and 880G for 3.7G (HSPA+)/3.5G (HSPA), see *Configuring Cisco EHWIC and 880G for 3.7G (HSPA+)/3.5G (HSPA)*.

Fore more information on Cisco 3G EHWIC and Cisco 880 Series ISRs, see the following documents:

- *Cisco 880 Series Integrated Services Router Software Configuration Guide*
- *Cisco 860 Series, Cisco 880 Series, and Cisco 890 Series Integrated Services Routers Hardware Installation Guide*
- *Configuring Cisco EHWIC and 880G for 3G (EV-DO Rev A)*

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

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