



Release Notes for Cisco EHWIC and 880G for 3G (EVDO Rev A)

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These release notes describe the features of the EVDO versions of the Cisco 3G 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 the appropriate product and choose **General Information > Release Notes**.

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System Requirements

The following sections describe the system requirements:

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Hardware Supported

Platforms

The EHWIC-3G-EVDO-*x* cards are supported on the following Cisco Integrated Service Router Generation 2 (ISR G2) modular platforms:

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

The following Cisco 880G fixed platforms are supported:

- Cisco 881G (Cisco IOS Release 15.1(4)M and later releases)
- Cisco 881GW (Cisco IOS Release 15.2(4)M1 and later releases)

Carrier-Specific Versions

EHWIC-3G-EVDO-*x* is the designated Cisco part number for the 3G interface cards, where *x* is a variable for carrier-specific versions.

The EHWIC-3G-EVDO versions currently available are:

- EHWIC-3G-EVDO-B (BSNL)
- EHWIC-3G-EVDO-S (Sprint)
- EHWIC-3G-EVDO-V (Verizon)

Additional carrier-specific versions may also be available. See the onboard Product ID (PID) sticker to differentiate between released versions.

The designated Cisco part number for the Cisco 880G platforms are C881G-*x*-K9 and C881GW-*x*-A-K9, where *x* is the variable for carrier-specific versions.

**Note**

In Cisco IOS Release 15.2(4)M1, only Sprint (C881GW-S-A-K9) and Verizon (C881GW-V-A-K9) versions are available for Cisco 881GW platforms.

Products and Frequencies

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

Table 1 *Product Descriptions and Supported Frequencies*

SKU Number	Description	Region	Frequency Bands
EHWIC-3G-EVDO-B	This is a multiband, multiservice WAN card. It works on BSNL networks.	India	800/1900 MHz for 1xRTT 800/1900 MHz for 1xEVDO Revision 0 and Revision A
EHWIC-3G-EVDO-S	This is a multiband, multiservice WAN card. It works on Sprint networks.	United States	800/1900 MHz for 1xRTT 800/1900 MHz for 1xEVDO Revision 0 and Revision A
EHWIC-3G-EVDO-V	This is a multiband, multiservice WAN card. It works on Verizon networks.	United States	800/1900 MHz for 1xRTT 800/1900 MHz for 1xEVDO Revision 0 and Revision A
C881G-B-K9	This is a router with an embedded multiband, multiservice WAN modem. It works on BSNL networks.	India	800/1900 MHz for 1xRTT 800/1900 MHz for 1xEVDO Revision 0 and Revision A
C881G-S-K9	This is a router with an embedded multiband, multiservice WAN modem. It works on Sprint networks.	United States	800/1900 MHz for 1xRTT 800/1900 MHz for 1xEVDO Revision 0 and Revision A
C881G-V-K9	This is a router with an embedded multiband, multiservice WAN modem. It works on Verizon networks.	United States	800/1900 MHz for 1xRTT 800/1900 MHz for 1xEVDO Revision 0 and Revision A
C881GW-S-A-K9	This is a router with an embedded multiband, multiservice WAN modem for use over GSM networks. It offers dual WiFi 802.11n radio WLAN interfaces with embedded antennas that support Cisco DFS and CleanAir technologies. It works on Sprint networks.	United States	800/1900 MHz for 1xRTT 800/1900 MHz for 1xEVDO Revision 0 and Revision A
C881GW-V-A-K9	This is a router with an embedded multiband, multiservice WAN modem for use over GSM networks. It offers dual WiFi 802.11n radio WLAN interfaces with embedded antennas that support Cisco DFS and CleanAir technologies. It works on Verizon networks.	United States	800/1900 MHz for 1xRTT 800/1900 MHz for 1xEVDO Revision 0 and Revision A

Multiple Bands and Services

The Evolution-Data Optimized (EVDO) SKUs support multiple bands and services:

- 800/1900 MHz for 1xRTT
- 800/1900 MHz for 1xEVDO Revision 0 and Revision A
- Standalone GPS

Supported Cisco Antennas and Cables

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

Table 2 **Supported Cisco Antennas (Cisco 3G EHWICs and Cisco 880G Series 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) .
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) .

Table 2 **Supported Cisco Antennas (Cisco 3G EHWICs and Cisco 880G Series ISRs) (continued)**

Cisco Part Number	Antenna Type	Maximum Gain and Frequency Range	Description
3G-ACC-OUT-LA (Lightning Arrestor)	Lightning arrestor	800–2200 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) .
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	698–2690 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, page 6](#)
- [New Features in Cisco IOS Release 15.1\(3\)T and Release 15.1\(4\)M, page 6](#)
- [Features Supported on EVDO EHWICs and 880G ISRs, page 8](#)

New Features in Cisco IOS Release 15.2(4)M1

The EVDO versions of the Cisco 881GW ISRs (C881GW-S-A-K9 and C881GW-V-A-K9) provide support for dual WiFi radio WLAN interfaces and 3G modem functionality on dual-core motherboards. These fixed-platform routers contain an embedded multiband, multiservice WAN modem for use over GSM networks.

Cisco Aironet 802 Access Point (AP802) is an integrated access point on the Next Generation Cisco 880 Series ISRs. Cisco 881GW 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 Release 15.1(4)M

This section describes the new features in the EVDO versions of the Cisco 3G EHWIC and Cisco 880G Series ISRs.

- [SMS, page 7](#)
- [GPS, page 7](#)
- [3G WWAN MIB Persistence, page 7](#)
- [Remotely Initiated Data Call Back Using SMS, page 7](#).

SMS

This 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.



Note

SMS is enabled by default. However, you need to define the FTP server to store incoming and outgoing SMS messages.

The SMS feature provides the following commands:

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

GPS

The GPS feature provides the following commands:

Command	Syntax	Description
cdma gps mode	cdma gps mode standalone	Enables the GPS standalone mode.
cdma gps nmea	cdma gps nmea	Enables the NMEA mode.
show cellular gps	show cellular <i>unit</i> gps	Displays a summary of GPS data.
	show cellular <i>unit</i> gps detail	Displays a detailed list of GPS data.

3G WWAN MIB Persistence

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

Remotely Initiated Data Call Back Using SMS

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

Features Supported on EVDO EHWICs and 880G ISRs

The EHWIC-3G-EVDO-*x* cards, C881G-B/S/V-K9 ISRs, and C881GW-S/V-A-K9 ISRs provide the following functionalities:

- Remote OMA-DM activation
- 800/1900 MHz for 1xRTT
- 800/1900 MHz for 1xEVDO Revision 0 and Revision A
- 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
- 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 dial-up 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.
- Mobile IP (MIP) data profile configuration—SKU dependent. You can configure up to five profiles on Sprint and BSNL SKUs.
- 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.

Open Caveats - Cisco IOS Release 15.2(4)M1

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

Table 3 *Open Caveats for the EVDO 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	<p>Symptom WLAN AP running on Next Generation Cisco 800 Series ISRs gets reset periodically.</p> <p>Conditions VLAN interface associated to “Wlan-gigabitethernet 0” interface was shut down.</p> <p>Workaround VLAN interface associated to “Wlan-gigabitethernet 0” interface should be in admin UP state.</p>



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, page 10](#)
- [Platform-Specific Documents, page 10](#)

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 EHWIC and 880G for 3.7G \(HSPA+\)/3.5G \(HSPA\)](#).

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 3G (EVDO Rev A), see [Configuring Cisco EHWIC and 880G for 3G \(EVDO Rev A\)](#).

For 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 3.7G \(HSPA+\)/3.5G \(HSPA\)](#)

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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