Sierra Wireless AirCard 313U USB Modem

User Guide



2400150 Rev. 1

Important Notice	Due to the nature of wireless communications, transmission and reception of data can never be guaranteed. Data may be delayed, corrupted (i.e., have errors) or be totally lost. Although significant delays or losses of data are rare when wireless devices such as the Sierra Wireless modem are used in a normal manner with a well-constructed network, the Sierra Wireless modem should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. Sierra Wireless accepts no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using the Sierra Wireless modem, or for failure of the Sierra Wireless modem to transmit or receive such data.
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Consult our web site for up-to-date product descriptions, documentation, application notes, firmware upgrades, troubleshooting tips, and press releases:

www.sierrawireless.com

Revision History

Revision number	Release date	Changes
1	June 2011	Initial release

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Sierra Wireless AirCard USB Modem User Guide

About the AirCard USB Modem

The Sierra Wireless AirCard[®] 313U USB Modem enables you to connect to the Internet, send and receive email, connect to a corporate network or virtual private network (VPN), or view streaming video without the need for a network cable.

The AirCard 313U USB Modem connects to a Type A USB port on your computer.

If the AirCard 313U USB Modem is TRU-Install enabled, all the required software is available on the modem. When you set up your AirCard 313U USB Modem, the software is installed on your computer. You do not need an installation CD. (Depending on your service provider, your modem may include an installation CD.)

The AirCard 313U USB Modem has a built-in antenna and a slot that accommodates a microSDTM external memory card. Depending on your service provider, a microSD card may be included in your package, or you may need to purchase it separately.

Your account and coverage area

Note: If you purchased the modem from a GSM service provider, you may already have an account and a SIM card. Otherwise, your retailer should be able to give you the names of companies that provide these items.

Note: The fee for service is usually higher when you are roaming (connected to a network other than the one belonging to your service provider). You must have an account with a GSM service provider to use the AirCard 313U USB Modem. To use the AirCard 313U USB Modem's 3G or LTE capability, your account must be with a service provider that offers 3G or LTE service. (The AirCard 313U USB Modem is backwards compatible with 2G service.)

When you obtain your account, you are given a Subscriber Identity Module (SIM) card containing account information. You must insert the SIM card into the AirCard 313U USB Modem before you use it. (Depending on your service provider, the SIM card may already be inserted.)

When establishing a connection, your AirCard 313U USB Modem uses the fastest available service. Your ability to obtain service depends on these factors:

- Network coverage—You must be within the network coverage area.
- Service provider—If you are within the coverage area of a network that is not operated by your own service provider, you can obtain service only if there is a roaming agreement between your service provider and the network operator.

Rev 1 Jun.11

- **Account provisions**—Your account may restrict your usage to certain networks or limit the amount of time you can use the network.
- Frequency band—You cannot connect to networks operating in bands not supported by your modem, regardless of roaming agreements or account provisions.

Most service providers have coverage maps on their web sites.

AirCard USB Modem features

The AirCard 313U USB Modem has a USB connector, slots for a SIM card, and (on some models) a microSD external storage card. LEDs on the front of the AirCard 313U USB Modem provide status information.

The placement of card slots, connectors, and LEDs varies depending on your modem model.



The microSD card and SIM card slots are under the back cover. See page 11 for details.

LED operation

The AirCard 313U USB Modem has two LEDs that show the current status of the modem.

LED	State	Indicates	
Power	Off	 Indicates one of the following states: The modem is not inserted in the computer. The computer is off or in "suspend and resume" mode. The modem radio has been turned off using Watcher[®] or another connection client. 	
	Solid Blue	The power is on, the modem is working normally, and the firmware is not being upgraded.	
	Blinking Blue	The firmware is being upgraded. Do not remove the modem from the computer.	
	Blinking Amber	The modem is searching for service (initializing).	
	Solid Amber	Error—either the modem is having a problem initializing (searching for service) or is offline because of a failure. Contact your service provider.	
Data	Off	The modem is unable to detect 2G or 3G service.	
11	Blinking Amber The modem has detected a 2G network (EDGE, GPRS, GSM) an to connect.		
	Solid Amber	The modem is connected to a 2G network and is able to send and receive data.	
	Blinking Blue	The modem has detected a 3G network (UMTS, HSPA, HSPA+) and is ready to connect.	
	Solid Blue	The modem is connected to a 3G network and can send and receive data.	
	Blinking Green ^a	The modem has detected an LTE network and is ready to connect.	
	Solid Green	The modem is connected to an LTE network and can send and receive data.	

a. LTE LED functionality is preliminary

Connection management software

Your AirCard 313U USB Modem comes with Sierra Wireless AirCard Watcher for Windows[®] and Mac[®], or other connection management software, depending on your service provider. Use this software to manage the modem and monitor your connections.

For information on Watcher features and using Watcher, refer to the online Help. From the main Watcher window, select Help > Help Topics or click the 2 button (Windows) or Help > Sierra Wireless Watcher Help (Mac).

Note: Watcher is compatible with earlier Sierra Wireless modems.

Watcher enables you to:

- Initiate data connections
- Determine signal strength, roaming status, GPRS, EDGE, UMTS, or HSDPA/ HSUPA availability, and other network connection parameters
- Monitor the status of the AirCard 313U USB Modem and GSM service
- Send and receive SMS messages
- Enable or disable SIM security that prevents others from using your SIM card if it is lost or stolen
- Configure startup and exit actions for Watcher and the AirCard 313U USB Modem
- Create or modify a connection profile

For more information about using Watcher, view the Online Help that comes with Watcher.

You do not need to run Watcher when you use the AirCard 313U USB Modem, but Watcher does provide useful status information.

Launching Watcher (Windows)

Unless this feature has been disabled, Watcher launches automatically when you insert the AirCard 313U USB Modem. You can also launch Watcher by:

- Double-clicking the desktop shortcut, or
- Selecting Start > Programs > Sierra Wireless > AirCard Watcher.

Depending on how your profile is configured, your browser, VPN, or other program may launch automatically anytime you launch Watcher.

Launching Watcher (Mac)

Watcher starts automatically at login. To disable this feature, go to Watcher > Preferences.

You can also start Watcher by navigating to the **Applications > Sierra Wireless** folder and double-clicking **AirCard Watcher**.

Tips

To keep the Watcher icon in the dock:

- 1. Launch Watcher.
- 2. Click and hold the Watcher icon in the dock.
- 3. From the pop-up menu, select Keep in Dock.

Reinstalling the software

Windows

If you need to reinstall or repair the Watcher software:

- 1. Go to Start > Control Panel > Add or Remove Programs.
- 2. Uninstall Watcher.
- **3.** Insert the modem into your computer.
- 4. Follow the on-screen instructions.

Or, in Watcher:

- 1. Select Tools > Software Installation Mode.
- **2.** Follow the on-screen instructions.

Note: Do not remove the AirCard 313U USB Modem until the software installation process is complete.

Mac

To uninstall Watcher:

- 1. Select AirCard Watcher > Uninstall AirCard Watcher.
- 2. Follow the on-screen instructions.

Connecting to the network

To use your account (and connect to your service provider's network), you need to have at least one profile set up on your AirCard 313U USB Modem. Depending on how your AirCard 313U USB Modem is configured, the profile may already be set up or you may need to create one.

Note: If you have a pre-paid wireless account, you'll need to have credit in your account before you can connect.

Windows

Once the software is successfully installed and the profile is set up, the AirCard 313U USB Modem is ready to use.

The first time you insert the AirCard 313U USB Modem in the computer, it takes a few seconds for it to locate the network. While the AirCard 313U USB Modem is scanning for a network, the Connect button is unavailable.

When you use the AirCard 313U USB Modem with the same computer, TRU-Install verifies that the correct software is already installed. This process may take a few seconds.

Scenario	Required action	
Watcher automatically detects or creates a default profile.	Click Connect.	
Watcher prompts you to create a data profile.	1. Click Yes, then	
• If Watcher opens the Options window Profile pane and pre-selects an appropriate profile (normally the name of your service provider) from the drop-down list	 a. Click OK to accept that profile (or choose another from the drop-down list). b. Click Connect. 	
• If Watcher opens the Options window Profile pane, the Profile name field is blank, and your service provider is not included in the drop-down list	You need to create a profile manually. Refer to the Watcher online help for details. Click Help > Help topics or click the ? button.	

If you need to re-install the software, see page 9.

Mac

The first time you run Watcher:

- 1. When your computer detects the modem, the message "New network interfaces have been detected" appears.
- 2. Click the Network Preferences... button.
- 3. In the Network window, click Apply. Your modem connects to the network.
 - **a.** If there is no profile defined, a message opens asking if you want to create a new profile.
 - b. Click Create a new profile.
 - c. In the Profiles window, click + to create a profile.

To end a high-speed connection, click Disconnect.

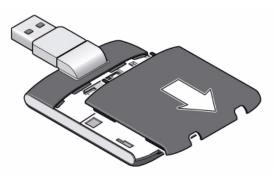
Using the microSD card

Some AirCard 313U USB Modem models can accommodate a microSD external storage card.

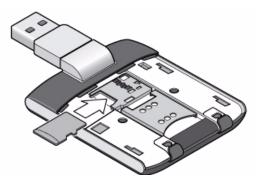
The microSD card appears as a USB memory drive when the AirCard 313U USB Modem is inserted in your computer. You can copy, paste, and drag files to and from it the same way as you can with any other external drive.

To insert and use a microSD card:

1. Remove the back cover from the modem.



2. Insert the microSD card in the slot as shown in the illustration.

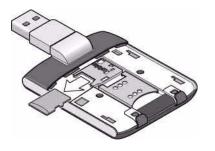


3. Replace the back cover and insert the AirCard 313U USB Modem into the computer.

If the computer does not have Watcher installed, you may be given the option to install it. If you do not want to install Watcher, cancel the installation. You can use the microSD card without having Watcher installed.

To remove the microSD card:

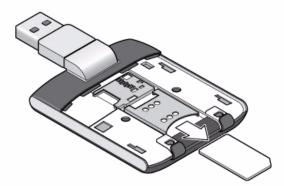
- 1. Remove the back cover from the modem.
- 2. Gently pull the microSD card out.



Removing the SIM card

For instructions on inserting the SIM card, see the printed guide that came with your product.

To remove the SIM card on the AirCard 313U USB Modem, remove the back panel and slide the SIM card out of the slot.



Care and maintenance

As with any electronic device, the AirCard 313U USB Modem must be handled with care to ensure reliable operation. Follow these guidelines when you use and store your AirCard 313U USB Modem:

- Do not apply adhesive labels to the SIM card. This may cause it to jam inside the slot, or prevent it from being inserted properly.
- When not installed in your computer, store the AirCard 313U USB Modem and SIM card in a safe place.
- The modem should fit easily into your computer's USB port. Forcing the AirCard 313U USB Modem into the port may damage the connector pins.
- Protect the AirCard 313U USB Modem from liquids, dust, and excessive heat. (See the Environmental specifications for maximum tolerances.)

Troubleshooting

This section describes possible problems and solutions for Windows users. If you have a problem that is not described in this section, visit the Sierra Wireless support page at www.sierrawireless.com/support.

Software installation does not start automatically (Windows) or you do not see the installer package (Mac)

Windows

If Watcher installation does not start after you insert the AirCard 313U USB Modem:

- 1. Double-click My Computer (Windows XP) or Computer (Windows Vista, Windows 7) on your desktop.
- 2. Click the TRU-Install drive.
- **3.** Under the **TRU-Install** drive, open the **Win** folder and double-click **Setup.exe**. Follow the on-screen prompts to install the software.

Mac OS X

If you do not see the installer package:

- 1. Open Finder.
- 2. Under Devices, click AirCard xxx (where xxx is the model name).
- **3.** Double-click the installer package.

Modem is not detected after AirCard Watcher installation completes (Windows)

You successfully complete the automatic installation process, but Watcher does not detect the AirCard 313U USB Modem:

- 1. Click Start, and then click Control Panel.
- 2. Double-click TRU-Install.
- 3. When you are prompted to switch to modem mode, click OK.
- 4. Wait for Watcher to detect the AirCard 313U USB Modem.
- 5. If the AirCard 313U USB Modem still is not detected, connect to the Internet using another method and go to www.sierrawireless.com/support for assistance.

Windows installer fails

When you try to install or uninstall Watcher, the message Windows Installer is not accessible (for example, Error code: 1601) appears.

To fix Error 1601, first see if another installation process is running.

- 1. Press Ctrl + Alt + Del and select Task Manager.
- 2. Go to the Processes tab.
- 3. Check the running processes for any of these names:
 - setup.exe
 - isetup.exe
 - ikernel.exe
 - msiexec.exe
 - idriver.exe
 - IsUninst.exe
 - IsUninst.exe
 - Uninst.exe

If any of these processes are running on the system:

- 1. Select each process.
- 2. Click End Process.
- 3. Try to run the Watcher installation again.

If the installation is not successful, connect to the Internet using another method and check Sierra Wireless Knowledge Base articles at sierrawireless.com.

Technical specifications

Radio frequency and electrical specifications

The radio frequency bands that your AirCard 313U USB Modem supports will vary depending on your region and your model.

Transmit	GSM 1900 (PCS): 1850 – 1910 MHz GSM 1800 (DCS):1710 – 1785 MHz EGSM 900: 880 – 915 MHz GSM 850: 824 – 849 MHz WCDMA 2100 (Band 1): 1920 – 1980 MHz WCDMA 1900 (Band 2): 1850 – 1910 MHz WCDMA 850 (Band 5): 824 – 849 MHz LTE Band 4: 1710 – 1755 MHz LTE Band 17: 704 – 716 MHz
Receive	GSM 1900 (PCS): 1930 – 1990 MHz GSM 1800 (DCS): 1805 – 1880 MHz EGSM 900: 925 – 960 MHz GSM 850: 869 – 894 MHz WCDMA 2100 (Band 1): 2110 – 2170 MHz WCDMA 1900 (Band 2): 1930 – 1990 MHz WCDMA 850 (Band 5): 869 – 894 MHz LTE Band 4: 2110 – 2155 MHz LTE Band 17: 734 – 746 MHz

Frequency band support

Technology	Bands	Location
2G	850 MHz (cellular band)	North America
	900 MHz (EGSM band)	Europe
	1800 MHz (DCS band)	Europe and Asia
	1900 MHz (PCS band)	North America
3G	WCDMA 850 (Band 5)	North America, Australia, and New Zealand
	WCDMA 1900 (Band 2)	North America
	WCDMA 2100 (Band 1)	Europe, Asia, and Australia
	LTE Band 4 (1700/2100)	North America
	LTE Band 17 (700)	North America

Environmental specifications

Operating temperature (ambient)	0°C to 35°C (32°F to 95°F)
Storage temperature	-40°C to +85°C, 96 hours (-40°F to +185°F)
Humidity	85°C, 85% relative humidity for 48 hours (non-condensing)
Vibration	Random vibration, 10 to 1000 Hz, nominal 6 G RMS in each of 3 mutually perpendicular axes. Test duration of 60 minutes for each axis, for a total test time of 3 hours.
Drop	1 m on concrete on each of 6 faces, 2 times

Regulatory and safety information

Notice

Because of the nature of wireless communications, transmission and reception of data can never be guaranteed. Data may be delayed, corrupted (that is, have errors), or be totally lost. Although significant delays or losses of data are rare when wireless devices such as the Sierra Wireless modem are used in a normal manner with a well-constructed network, the Sierra Wireless modem should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. Sierra Wireless and its affiliates accept no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using the Sierra Wireless modem, or for failure of the Sierra Wireless modem to transmit or receive such data.

Safety and hazards

The modem **MUST BE POWERED OFF** in all areas that may be susceptible to radio interference, in particular:

Prohibited areas

Obey all signs and notices and follow all rules and regulations. Power off the modem when instructed to do so or when you suspect that it may cause interference or danger.

- In areas where blasting is in progress
- Where explosive atmospheres may be present

Areas with a potentially explosive atmosphere are not always clearly marked. Such areas include gas stations, fuel depots, chemical transfer or storage facilities, areas where blasting is in progress, areas where the air contains chemicals or particles such as grain, dust, or metal powders, and any other area where you would normally be advised to turn off your cellular phone or vehicle engine.

• Near medical or life-support equipment

Medical equipment may be susceptible to any form of radio interference. In such areas the modem can transmit signals that could interfere with this equipment.

On board aircraft

In addition to Federal Aviation Authority (FAA) requirements, many airline regulations state that you must suspend wireless operations before boarding an aircraft. The modem is capable of transmitting signals that could interfere with various onboard systems and controls.

Failure to observe this instruction may lead to suspension or denial of cellular telephone services to the offender, legal action, or both.

Some airlines may permit the use of cellular phones while the aircraft is on the ground and the door is open. The modem may be used normally at this time.

• While operating a vehicle

The driver or operator of any vehicle should not use a wireless data device while in control of a vehicle. Doing so detracts from the driver or operator's ability to control and operate the vehicle. In some countries, using such communications devices while in control of a vehicle is an offence.

Regulatory information for North America

CAUTION: Unauthorized modifications or changes not expressly approved by Sierra Wireless, Inc. could void compliance with regulatory rules, and thereby your authority to use this equipment.

Note: This USB modem is approved for use in normal-size laptop computers only (typically with 12" or larger display screens). To comply with FCC RF exposure requirements, this modem should not be used in configurations that cannot maintain at least 5 mm from users and bystanders. For example, this modem should not be used in certain laptop and tablet computers and configurations where the USB connectors are unable to provide or ensure the necessary separation is available between the modem and its users to satisfy compliance.

FCC ID: N7NAC313U.

CAUTION: The AirCard 313U USB Modem must be 5 mm or more from users during operation, to satisfy FCC RF exposure requirements. The AirCard 313U USB Modem has been tested for compliance with FCC RF exposure limits in the laptop computer(s) configurations with horizontal and vertical USB slots (see Figure 1 below) and can be used in laptop computers with substantially similar physical dimensions, construction, and electrical and RF characteristics. This USB modem must not be used with any other antenna or transmitter that has not been approved to operate in conjunction with this modem. **Note:** This USB modem must not be used in any unapproved configurations. For details, contact Sierra Wireless.

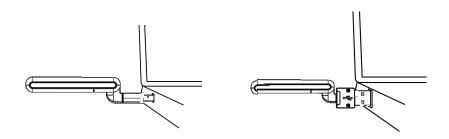


Figure 1: Acceptable operating configurations to satisfy RF exposure requirements

This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

Where appropriate, the use of the equipment is subject to the following conditions:

Warning: (EMI) – United States FCC Information – This equipment has been tested and found to comply with the limits pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in an appropriate installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

If you have purchased this product under a United States Government contract, it shall be subject to restrictions as set forth in subparagraph (c)(1)(ii) of Defense Federal Acquisitions Regulations (DFARs) Section 252.227-7013 for Department of Defense contracts, and as set forth in Federal Acquisitions Regulations (FARs) Section 52.227-19 for civilian agency contracts or any successor regulations. If further government regulations apply, it is your responsibility to ensure compliance with such regulations.

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