



USB 305 HSPA Modem

User Guide

2131219
Rev 1.1A



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.

Safety and Hazards

Do not operate the Sierra Wireless modem in areas where blasting is in progress, where explosive atmospheres may be present, near medical equipment, near life support equipment, or any equipment which may be susceptible to any form of radio interference. In such areas, the Sierra Wireless modem **MUST BE POWERED OFF**. The Sierra Wireless modem can transmit signals that could interfere with this equipment.

Do not operate the Sierra Wireless modem in any aircraft, whether the aircraft is on the ground or in flight. In aircraft, the Sierra Wireless modem **MUST BE POWERED OFF**. When operating, the Sierra Wireless modem can transmit signals that could interfere with various onboard systems.

Note: Some airlines may permit the use of cellular phones while the aircraft is on the ground and the door is open. Sierra Wireless modems may be used at this time.

The driver or operator of any vehicle should not operate the Sierra Wireless modem while in control of a vehicle. Doing so will detract from the driver or operator's control and operation of that vehicle. In some states and provinces, operating such communications devices while in control of a vehicle is an offence.

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5,515,013	5,629,960	5,845,216	5,847,553	5,878,234
5,890,057	5,929,815	6,169,884	6,191,741	6,199,168
6,339,405	6,359,591	6,400,336	6,516,204	6,561,851
6,643,501	6,653,979	6,697,030	6,785,830	6,845,249
6,847,830	6,876,697	6,879,585	6,886,049	6,968,171
6,985,757	7,023,878	7,053,843	7,106,569	7,145,267
7,200,512	7,295,171	7,287,162	D442,170	D459,303
D599,256	D560,911			

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Contact Information

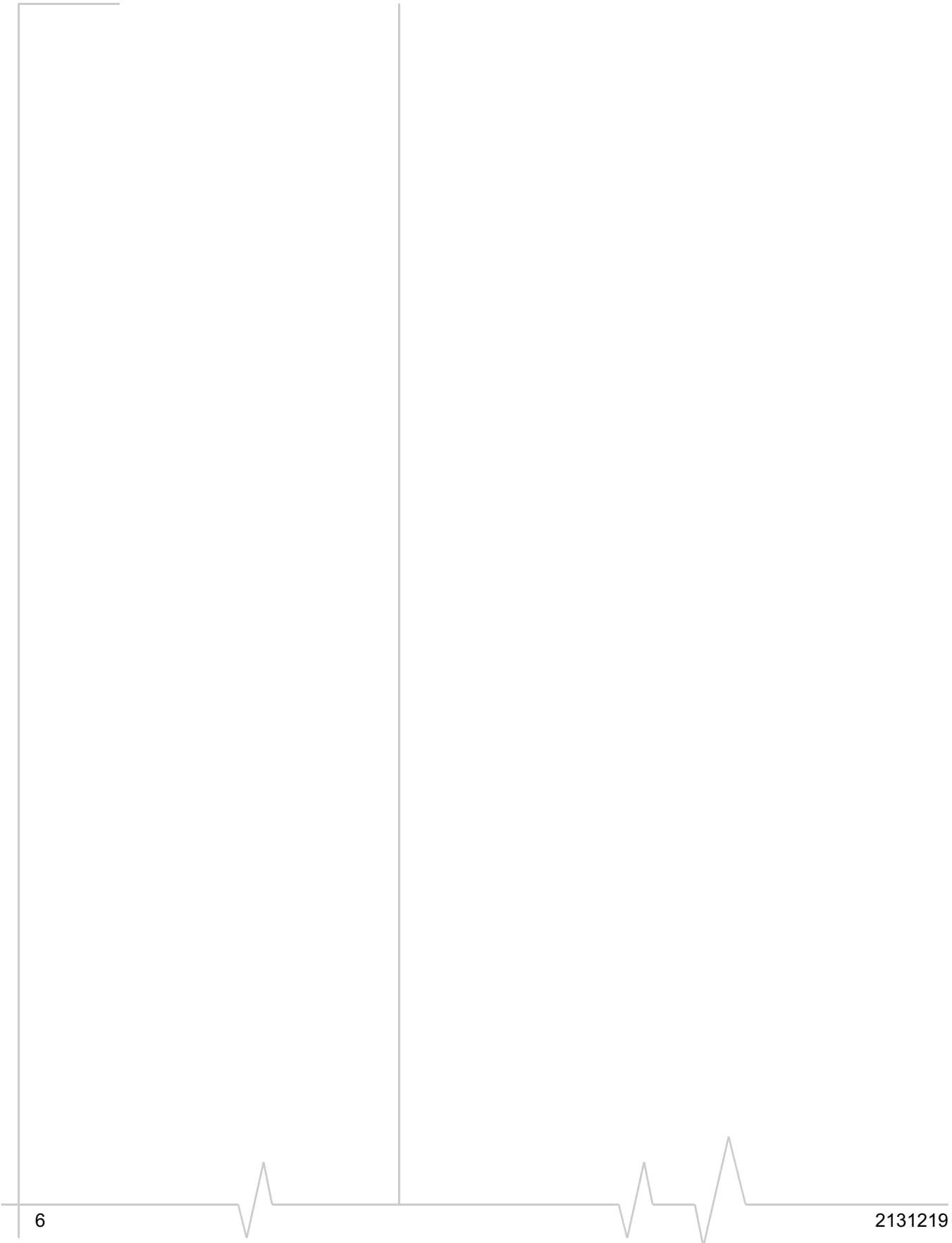
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Consult our website for up-to-date product descriptions, documentation, application notes, firmware upgrades, troubleshooting tips, and press releases:

www.sierrawireless.com

Revision History

Revision number	Release date	Changes
1.0	August 2009	New document
1.1	August 2009	Updated the description of the Mac OS X installation.



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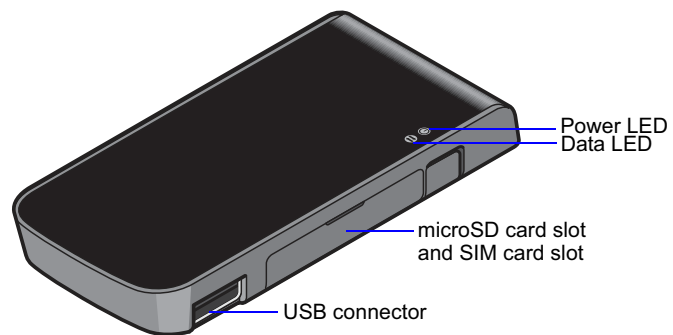
1: Introducing the USB 305 Modem

1

- Memory stick capability
- Services supported
- Your account and coverage area
- USB 305 modem software
- Frequency bands supported

The USB 305 (3G) wireless 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 cable.

The modem fits into Type A USB ports. The modem has a built-in antenna.



Operating systems

You can use your USB 305 modem on the following operating systems:

- Windows® 7
- Windows Vista®
- Windows XP
- Mac® OS X 10.4.11 or later

The USB 305 modem is TRU-Install™ enabled. All the required software is on the modem. On Windows operating systems, the software installation starts as soon as you insert the modem into the computer. On Mac OS X operating systems, you double-click the Installer package to install the software.

You do not need an installation CD.

Accessories

Depending on your service provider, your USB 305 modem may come with some or all of the following accessories:

- USB extension cable and screen clip
- Carrying case
- External antenna (See “[Use of external antennas](#)” on page 34 for information on the correct use of the external antenna.)
- microSD memory card

Memory stick capability

Your USB 305 modem is built to accommodate a microSD 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.

Services supported

Your USB 305 modem supports the latest 3G high-speed networks and is also compatible with 2G networks.

Examples of 3G technology are: HSDPA, HSUPA, HSPA, and UMTS. GPRS and EDGE are 2G technologies.

Maximum theoretical data speeds¹ are:

- High Speed Download Packet Access (HSDPA) – up to 7.2 Megabits per second (Mbps)
- High Speed Upload Packet Access (HSUPA) – up to 2.0 Mbps
- Concurrent HSDPA/HSUPA (HSPA) – up to 3.6 Mbps download and up to 1.5 Mbps upload
- Universal Mobile Telecommunications System (UMTS) – 384 kilobits per second (kbps)
- Enhanced Data rates for GSM Evolution (EDGE) – 236 kbps
- General Packet Radio Service (GPRS) – 56 kbps

1. Actual speed depends on the services offered by your service provider. Contact your service provider for details.

Note: If you purchased the USB 305 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.

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).

When establishing a connection, your USB 305 modem uses the fastest available service. If, for example, you are using a USB 305 modem in an area that has EDGE service but not UMTS or HSDPA/HSUPA service, the modem connects using EDGE service.

Once the connection is established, you have access to all Internet services.

Your account and coverage area

You must have an account with a GSM service provider to use the USB 305 modem. To use the modem's 3G capability, your account must be with a service provider that offers HSDPA/HSUPA or UMTS service. (The USB 305 modem is backwards compatible with 2G service.)

When you obtain your account, you are given a Subscriber Identity Module (SIM) card containing account information. The SIM card must be inserted whenever you use your USB 305 modem.

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.
- **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 USB 305 modem, regardless of roaming agreements or account provisions.

Most service providers have coverage maps on their web sites.

USB 305 modem software

The connection manager software that comes with your USB 305 modem depends on your service provider. Contact your service provider for more information.

Frequency bands supported

Frequency bands supported by the USB 305 modem:

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 800 (band VI)	Japan
	WCDMA 850 (band V)	North America and Australia
	WCDMA 1900 (band II)	North America
	WCDMA 2100 (band I)	Europe, Asia, and Australia

2: Getting Started

Note: Keep a written record in a secure place of the account information that your service provider gives you.

Follow the instructions in this chapter to set up and start using your USB 305 modem.

To use your USB 305 modem, you'll need:

- An account with a service provider
- A SIM card (supplied by the service provider)
- A profile, which may be:
 - Already stored on your modem when you purchase it
 - Set up automatically
 - Selected from a drop-down list
 - Created manually

Overview of installation steps

1. Check the system requirements.
2. Insert the SIM card.
3. Insert the USB modem into your computer's USB port. (The necessary software is installed and either the profile is set up automatically or the connection manager software prompts you to create a profile.)

System requirements

The USB 305 modem is supported on:

- Windows 7
- Windows Vista
- Windows XP (Home and Professional versions)
- Mac OS X 10.4.11 or later

To install the USB 305 modem, you require the following:

USB port	1 USB Type A slot (USB 1.1 or 2.0)
I/O resources	1 IRQ, 40 bytes I/O space
Memory	32 MB

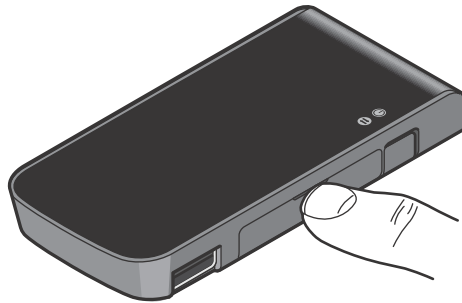
Note: To prevent the SIM card from becoming jammed in its slot, ensure the edge of the card is smooth before inserting it. Do not attach labels to your SIM card as this may also cause it to jam.

Insert the SIM card

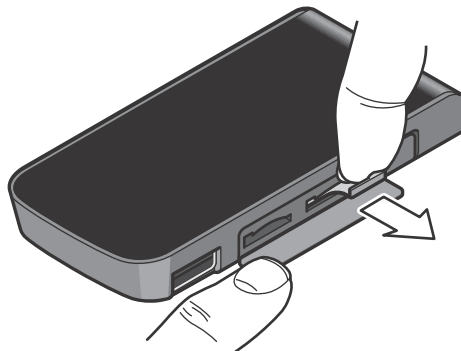
Note: Be sure to insert the SIM card before you insert the modem into the computer's USB slot.

To insert the SIM card:

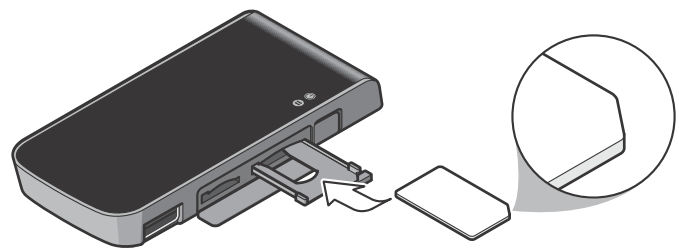
1. If your SIM card is attached to a larger card, detach the SIM card and remove any fragments stuck to it.
2. Open the flap on the side of your USB 305 modem.



3. Pull out the tray on the right side, as shown in the illustration.



4. Place the SIM card in the tray, with the SIM card notch in the outer right-hand corner.



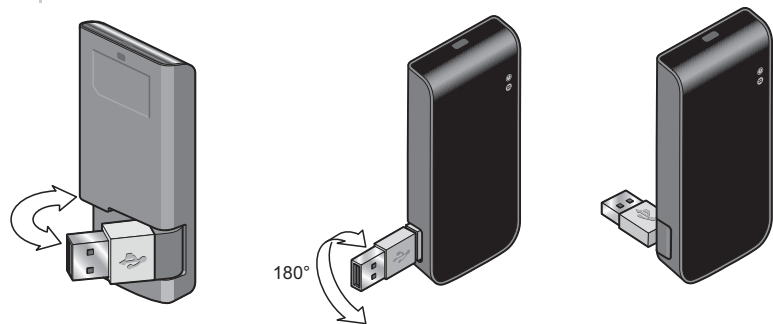
5. Slide the SIM tray back into the modem.

If the tray comes all the way out, **do not discard it**. Place the SIM card into the tray and insert the entire SIM card-tray assembly into the modem.

Note: The SIM card must be in the tray. Do not insert the SIM card into the modem without the tray.

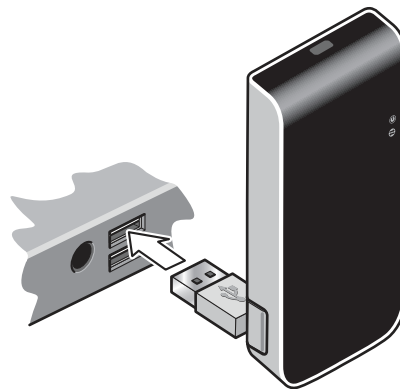
Insert the 305 USB modem directly into the USB slot

1. Flip open the USB connector.
2. To achieve optimal performance, adjust the angle of the USB connector so you can insert the modem into the computer in an upright position, as shown in the step 3 illustration.



3. Gently insert the modem into the USB slot. You can insert the modem directly into the computer, as shown in the illustration or you can place the modem in the laptop clip and use the USB extension cable to connect it to the computer. (See [“Using the extension cable and notebook computer clip”](#) on page 20.)

Note: To ensure FCC RF exposure limits, insert the modem in an upright position, as shown in the illustration. For more safety and regulatory information, see [page 31](#).



Note: Do not forcefully insert the USB 305 modem as you may damage connector pins.

Note: Users of Windows Vista must be logged in with administrative privileges. Users of Windows XP may require administrative privileges.

Note: Do not insert the USB 305 modem or the USB extension cable into a USB hub or, if your keyboard is separate from your notebook computer, a USB slot on your keyboard.

4. The installation process starts automatically when you insert the modem.

If it does not:

- a. Double-click **My Computer** (Windows XP) or **Computer** (Windows 7 or Windows Vista) on your desktop.
 - b. Click the **TRU-Install** drive (usually E: or F: drive).
 - c. Under the TRU-Install drive, go to **Win/ATT** and double-click the **Setup.exe file**.
5. Follow the on-screen instructions.
 6. Restart the computer when prompted to do so.

Connect 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 modem. Depending on how your modem is configured, the profile may already be set up or you may need to create one. Contact your service provider for more information.

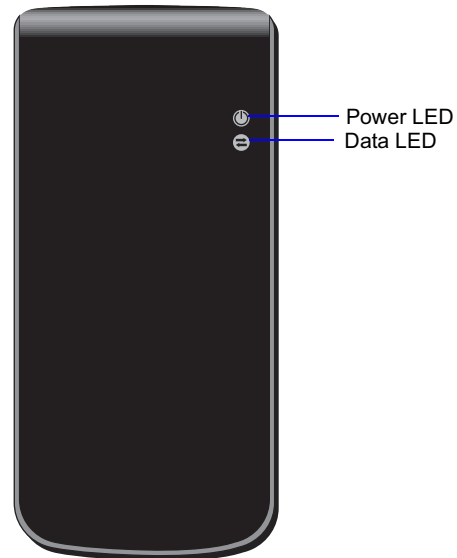
Once the software is successfully installed and the profile is set up, the USB 305 modem is ready to use.

3: Using your USB 305 Modem

3



- Removing a SIM card
- Using the microSD memory card
- Using the extension cable and notebook computer clip

Your HSPA USB 305 modem has a USB connector and slots for a SIM card and a microSD external storage card. LEDs on the front of the modem provide status information.



LEDs

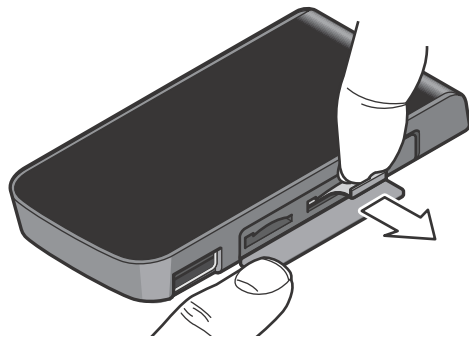
The USB 305 modem has two LEDs that show the current status of the modem.

LED	State	Indicates
Power 	Off	Indicates one of the following states: <ul style="list-style-type: none"> • 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 the connection management software.
	Solid Blue	The power is on, the modem is working normally.
	Blinking Blue	The firmware is updating. Do not remove the modem from the computer.
	Blinking Amber	The modem is searching for service (initializing).
	Solid Amber	Modem 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.
	Blinking Amber	The modem has detected a 2G network (EDGE, GPRS, GSM) and is ready 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) and is ready to connect.
	Solid Blue	The modem is connected to a 3G network and can send and receive data.

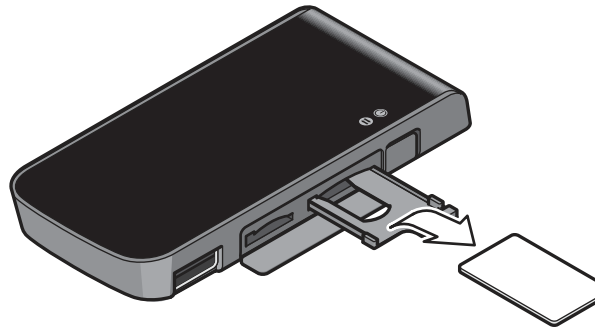
Removing a SIM card

Chapter 2 provides instructions for inserting the SIM. To remove the SIM card from the USB 305 modem:

1. Open the flap on the side of the modem and slide out the SIM tray.



2. Remove the SIM card.



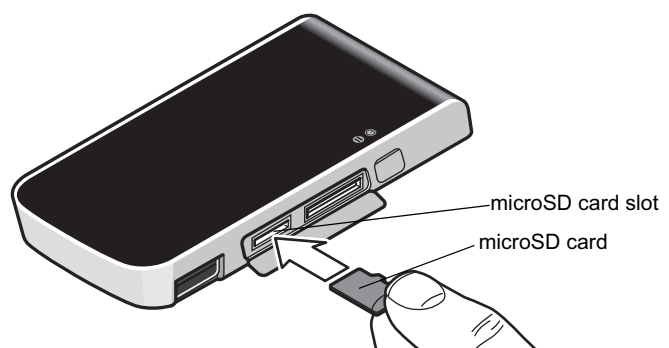
*Note: If the tray comes all the way out, **do not discard it**. Carefully insert the empty tray back into the modem.*

Using the microSD memory card

The USB 305 modem is built to accommodate a microSD external storage card.

To use a memory card:

1. If the modem is inserted into the computer's USB slot, remove it before inserting the microSD card.
2. Open the flap on the side of the modem.
3. Push the memory card into slot on the left, as shown in the illustration.



4. Insert the USB 305 modem into the computer's USB slot.

The memory card appears as a USB memory drive. You can copy, paste, and drag files to and from it the same way as you can with any other external drive.

Removing the microSD memory card

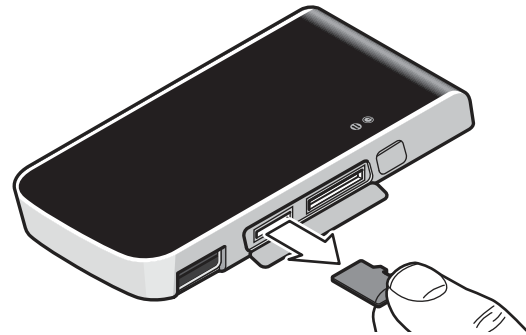
Tip: To help conserve the computer's battery life, remove the memory card when you are not using it.

To remove the memory card:

1. Open the flap on the side of the USB modem.
2. Push the microSD card in and then release it.



3. Gently pull the microSD card out.



Using the extension cable and notebook computer clip

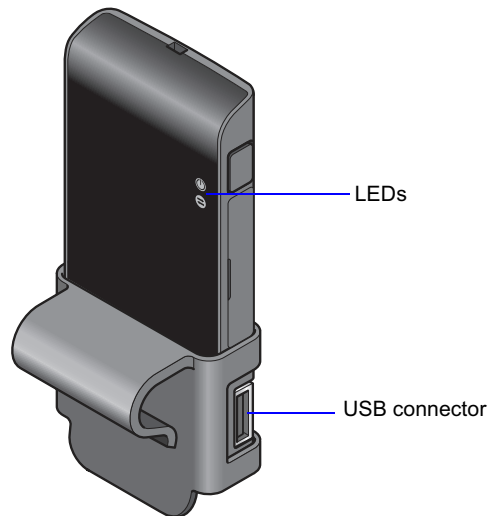
Your USB 305 modem comes with an extension cable and clip. The clip fits on the top of your notebook computer and holds your USB modem.

Note: To meet FCC (regulatory) requirements, use only the supplied extension cable and notebook computer clip; other cables and notebook computer clips should not be used.

Note: Do not insert the USB 305 modem or the USB extension cable into a USB hub or, if your keyboard is separate from your notebook computer, a USB slot on your keyboard.

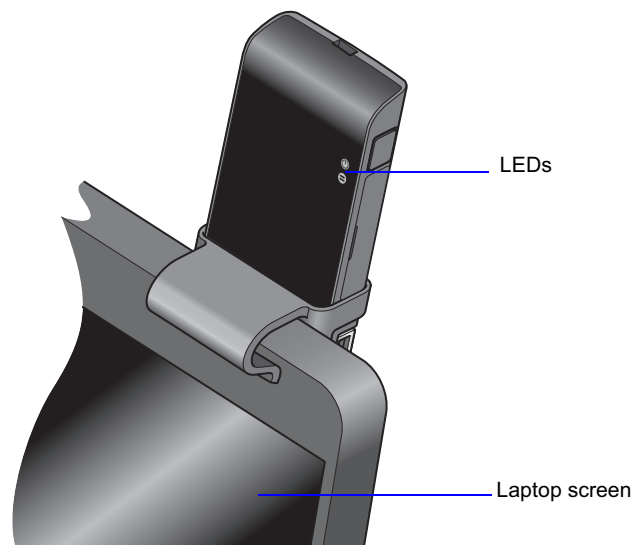
To use the extension cable and clip:

Place the modem into the laptop clip, as shown in the illustration.



Connect the extension cable to the modem.

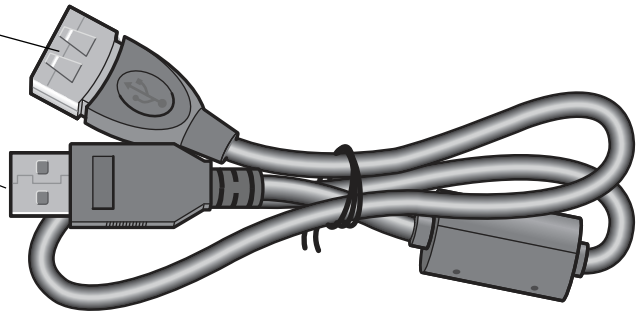
Place the modem in the clip holder, and place the clip on the top of the laptop screen. Note that the LEDs should be facing you, as you look at the screen.



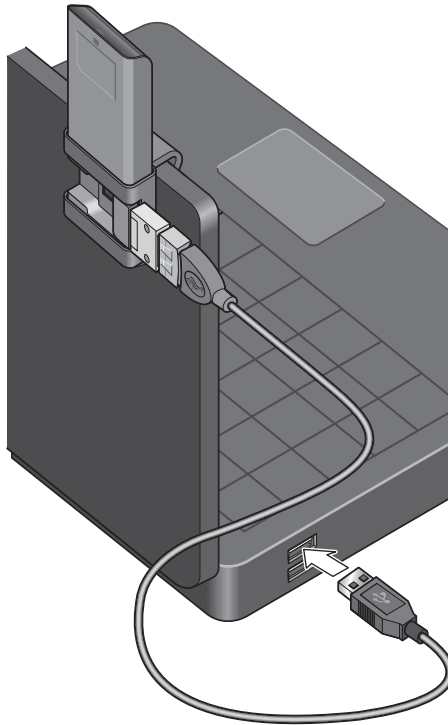
Connect the larger end of the USB extension cable to the USB connector on your modem.

Attach this end to the USB connector on the modem

Attach this end to the USB port on your computer



Connect the other end of the extension cable to the USB slot on your computer.



Your USB modem comes with connection management software.

The features and options in the connection manager software vary, depending on your service provider, but in general, the connection manager software enables you to:

- Initiate data connections

- Determine signal strength, roaming status, GPRS, EDGE, UMTS, or HSDPA/HSUPA availability, and other network connection parameters

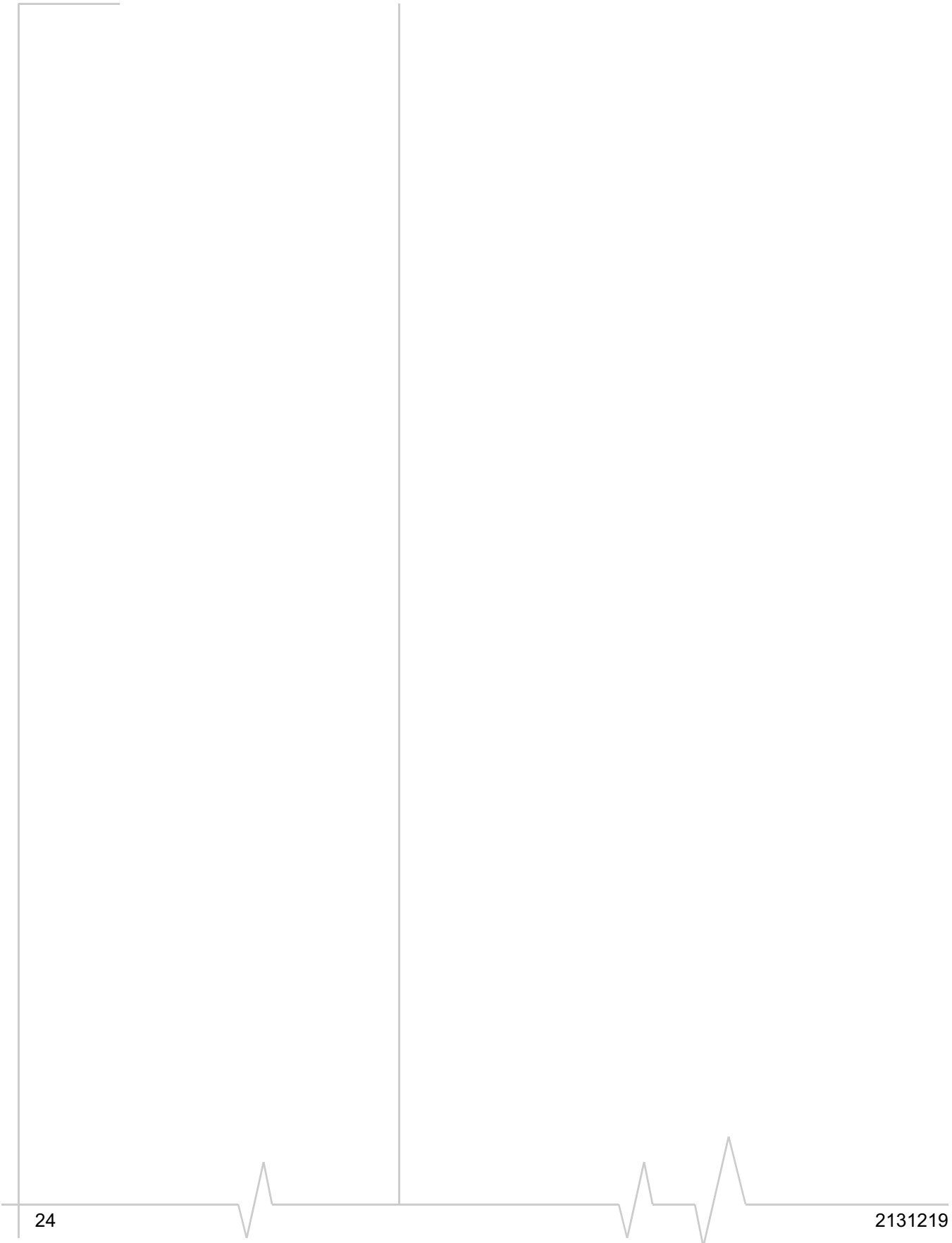
- Monitor the status of the USB 305 modem and GSM service

- Send and receive SMS messages

- Enable or disable SIM security that prevents others from using your SIM card if it is lost or stolen

- Create or modify an account profile

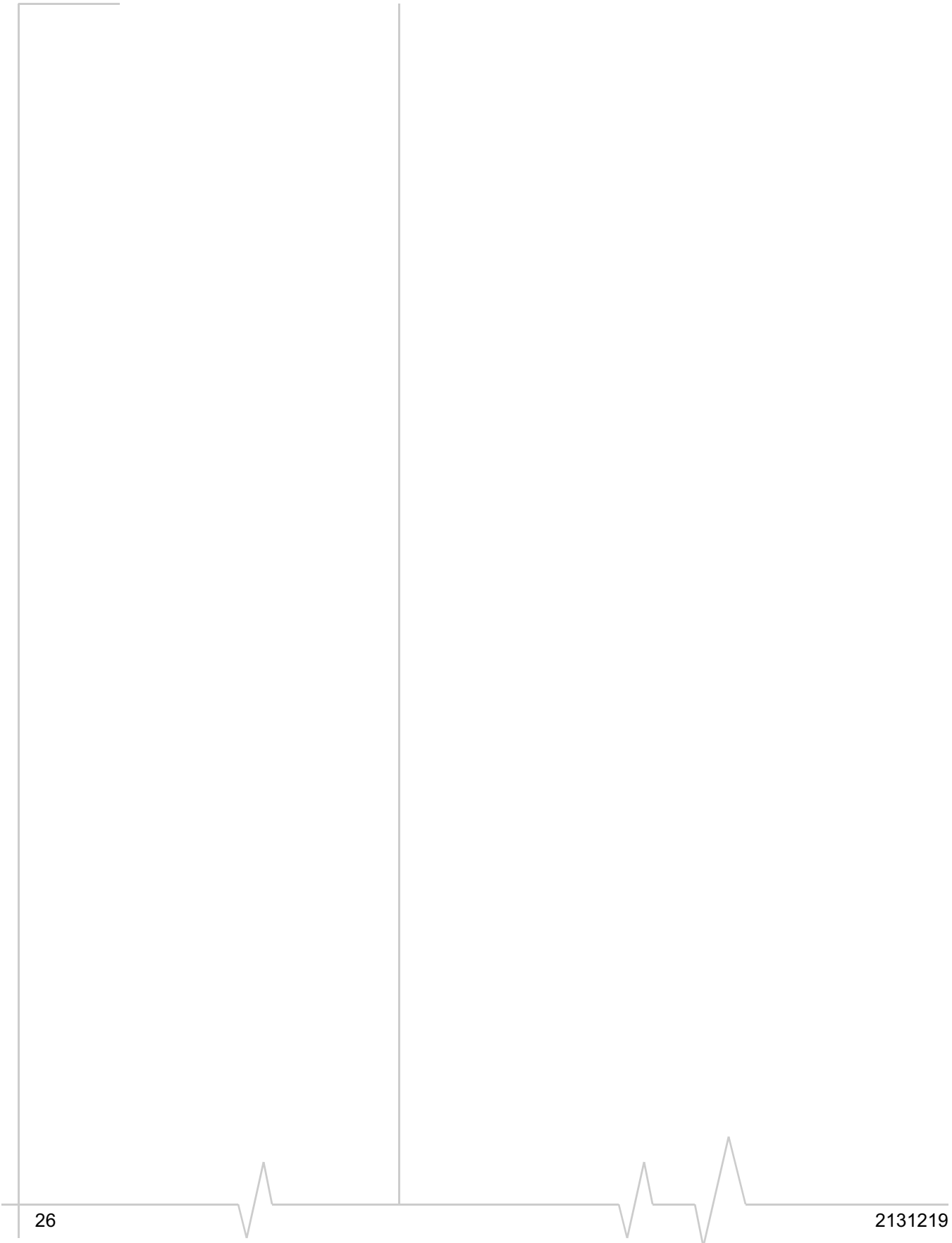
For more information on the connection manager software, contact your service provider.



4: Care and Maintenance of Your USB Modem

As with any electronic device, the USB 305 modem must be handled with care to ensure reliable operation. Follow these guidelines when you use and store your USB 305 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 USB 305 modem and SIM card in a safe place.
- The USB 305 modem should fit easily into your computer's USB port. Forcing the USB 305 modem into the port may damage the connector pins.
- Protect the USB 305 modem from liquids, dust, and excessive heat. (See the "[Environmental specifications](#)" on page 30 for maximum tolerances.)



5: FAQ and Troubleshooting

5

When should I use the USB extension cable and laptop clip?

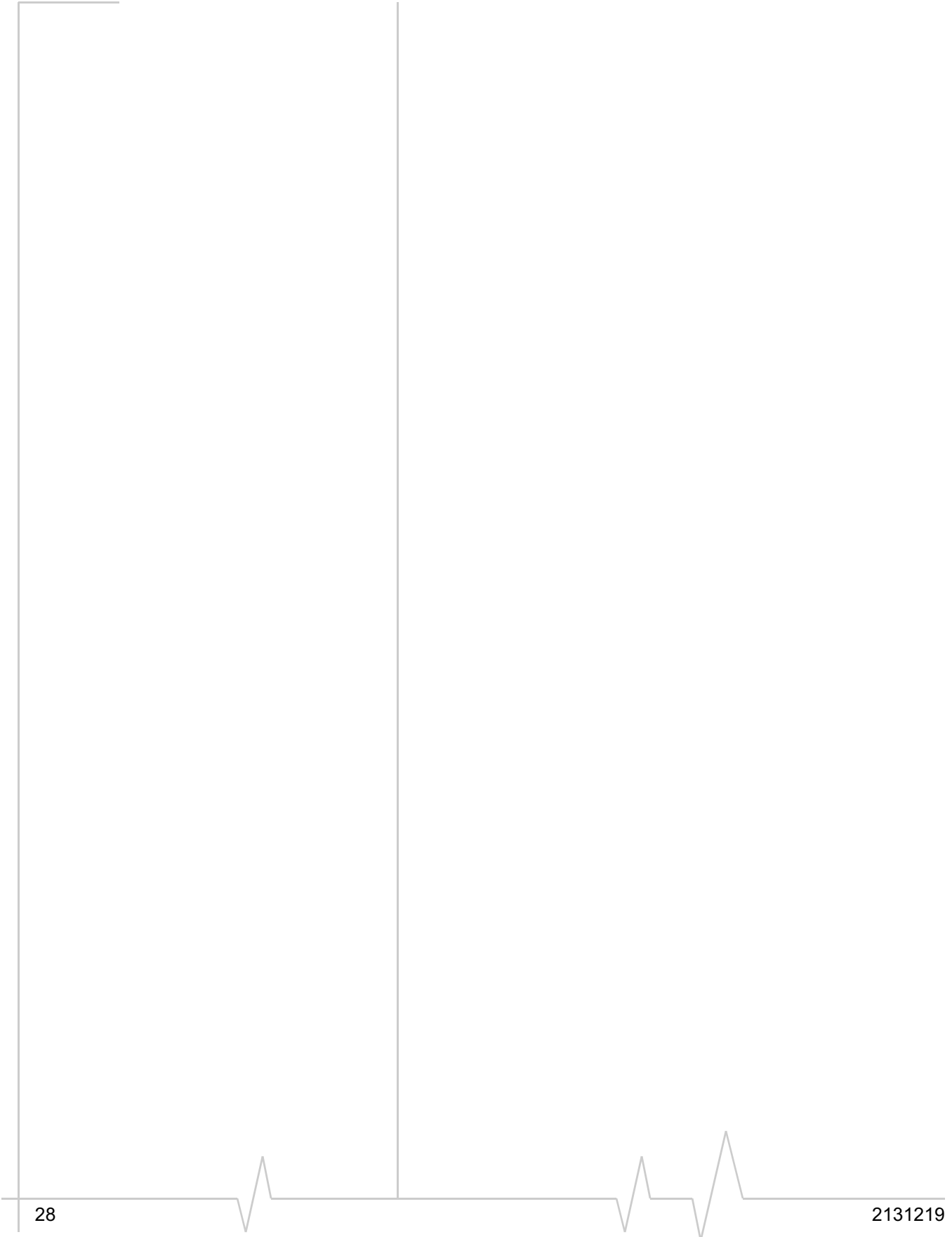
Use the USB extension cable and laptop clip in areas with low signal strength or when the position of the USB port on the computer makes it awkward to insert the modem directly into the laptop computer. For more information on using the USB extension cable and laptop clip, see [“Using the extension cable and notebook computer clip”](#) on page 20.

Is there a limit to the size of microSD card that I can use with the USB 305 modem?

The USB 305 modem was designed and tested for 16 GB microSD memory cards (the largest available at the time the modem was developed and tested). However, as memory card technology develops and cards come onto the market that have a larger capacity, the USB 305 modem should support those as well.

I inserted the microSD card, but the memory card drive doesn't appear on my computer?

Make sure you insert the microSD memory card into the modem before you insert the modem into your computer. Otherwise, the computer will not recognize the memory card drive.





6: Technical Specifications

Radio frequency and electrical specifications

Table 6-1: Radio frequency and electrical specifications

Compliance	3 GPP Release 6
Transmit	GSM 1900 (PCS): 1850 to 1910 MHz GSM 1800 (DCS): 1710 to 1785 MHz EGSM 900: 880 to 915 MHz GSM 850: 824 to 849 MHz WCDMA 2100 (Band I): 1920 to 1980 MHz WCDMA 1900 (Band II): 1850 to 1910 MHz WCDMA 850 (Band V): 824 to 849 MHz WCDMA 800 (Band VI): 830 to 840 MHz
Receive	GSM 1900 (PCS): 1930 to 1990 MHz GSM 1800 (DCS): 1805 to 1880 MHz EGSM 900: 925 to 960 MHz GSM 850: 869 to 894 MHz WCDMA 2100 (Band I): 2110 to 2170 MHz WCDMA 1900 (Band II): 1930 to 1990 MHz WCDMA 850 (Band V): 869 to 894 MHz WCDM 800 (Band VI): 875 to 885 MHz
Channel spacing	200 kHz (GSM) 5 MHz (WCDMA)
Channel raster	200 kHz
Frequency stability	0.1 ppm

Environmental specifications

Operating temperature	0°C to +45°C (+32°F to +113°F)
Storage temperature	-20°C to +85°C (-4°F to +185°F)
Humidity	85%, non-condensing
Vibration	Random vibration, 10 to 1000 Hz, nominal 6G RMS in each of 3 mutually perpendicular axes. Test duration of 60 minutes for each axis, for a total test time of 3 hours (non-operating).
Drop	1 m on non-cushioned vinyl on each of 6 faces, 3 times

7: 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 USB 305 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 USB 305 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 USB 305 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 USB 305 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 USB 305 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.

The design of the USB 305 modem complies with U.S. Federal Communications Commission (FCC) guidelines respecting safety levels of radio frequency (RF) exposure for portable devices, which in turn are consistent with the following safety standards previously set by U.S. and international standards bodies:

- ANSI/IEEE C95.1-1999, *IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300 GHz*
- National Council on Radiation Protection and Measurements (NCRP) Report 86, -1986, *Biological Effects and Exposure Criteria for Radio Frequency Electromagnetic Fields*
- International Commission on Non-Ionising Radiation Protection (ICNIRP) 1998, *Guidelines for limiting exposure to time-varying electric, magnetic, and electromagnetic fields (up to 300 GHz)*

Caution: *The USB 305 modem must be 5 mm (0.2 inches) or more from the user and bystanders during operation to satisfy FCC (regulatory) RF exposure requirements. It is approved for use with normal-size notebook computers only (typically with 12-inch or larger display screens). For notebook computers with a display screen smaller than 12 inches or if the orientation of the USB slot does not allow for at least 5 mm between the modem and the user or bystanders, use the provided extension cable and clip to ensure a safe distance between the modem antenna and users or bystanders.*

To meet FCC requirements, use only the supplied USB extension cable and laptop clip; other cables and laptop clips should not be used.

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

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 to radio communication. However, there is no guarantee that interference will not occur in a particular installation.*

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

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.

Use of external antennas

Use of external antennas is subject to the following conditions:

- At least 20 cm separation distance between the antenna and the user's body must be maintained at all times.
- The USB 305 wireless modem and its antenna must not be operated within 20 cm of any other transmitter or antenna within a host device.
- To comply with FCC/IC regulations limiting both maximum RF output power and human exposure to RF radiation, the maximum antenna gain must not exceed 8 dBi in the Cellular band and 4 dBi in the PCS band.

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