



Compass 597 USB modem with **TRUInstall**TM

User Guide



2130948
Rev 1.0

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 that 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. The Sierra Wireless modem 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.

Limitation of Liability

The information in this manual is subject to change without notice and does not represent a commitment on the part of Sierra Wireless. SIERRA WIRELESS AND ITS AFFILIATES SPECIFICALLY DISCLAIM LIABILITY FOR ANY AND ALL DIRECT, INDIRECT, SPECIAL, GENERAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS OR REVENUE OR ANTICIPATED PROFITS OR REVENUE ARISING OUT OF THE USE OR INABILITY TO USE ANY SIERRA WIRELESS PRODUCT, EVEN IF SIERRA WIRELESS AND/OR ITS AFFILIATES HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR THEY ARE FORESEEABLE OR FOR CLAIMS BY ANY THIRD PARTY.

Notwithstanding the foregoing, in no event shall Sierra Wireless and/or its affiliates aggregate liability arising under or in connection with the Sierra Wireless product, regardless of the number of events, occurrences, or claims giving rise to liability, be in excess of the price paid by the purchaser for the Sierra Wireless product.

Patents

Portions of this product may be covered by some or all of the following US patents:

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	D442,170	D459,303		

and other patents pending.

This product includes technology licensed from:

**QUALCOMM®
3G CDMA**

Licensed by QUALCOMM Incorporated under one or more of the following United States patents and/or their counterparts in other nations:

4,901,307	5,056,109	5,101,501	5,109,390	5,228,054
5,267,261	5,267,262	5,337,338	5,414,796	5,416,797
5,490,165	5,504,773	5,506,865	5,511,073	5,535,239
5,544,196	5,568,483	5,600,754	5,657,420	5,659,569
5,710,784	5,778,338			

Manufactured or sold by Sierra Wireless Inc. or its Licensees under one or more patents licensed from InterDigital Group.

Copyright

©2008 Sierra Wireless. All rights reserved.

Trademarks

AirCard and “Heart of the Wireless Machine” are registered trademarks of Sierra Wireless. Watcher is a trademark of Sierra Wireless, registered in the European Community. Sierra Wireless, the Sierra Wireless logo, TRU-Install, TRU-Locate, and the red wave design are trademarks of Sierra Wireless.

Windows[®] is a registered trademark of Microsoft Corporation.

Mac OS is a trademark of Apple Inc., registered in the U.S. and other countries.

PC Card and ExpressCard are trademarks of PCMCIA.

microSD is a trademark of SD Card Association.

QUALCOMM[®] is a registered trademark of QUALCOMM Incorporated. gpsOne is a trademark of QUALCOMM Incorporated.

InstallShield[®] is a registered trademark of Macrovision Corporation in the United States of America and/or other countries.

Other trademarks are the property of the respective owners.

Contact Information

Sales Desk:	Phone:	1-604-232-1488
	Hours:	8:00 AM to 5:00 PM Pacific Time
	E-mail:	sales@sierrawireless.com
Post:	Sierra Wireless 13811 Wireless Way Richmond, BC Canada V6V 3A4	
Fax:	1-604-231-1109	
Web:	www.sierrawireless.com	

Additional information and updates

For up-to-date product descriptions, documentation, application notes, [firmware](#) upgrades, troubleshooting tips, and press releases, visit. www.sierrawireless.com.

>> Table of Contents

Introducing the Compass 597 USB modem	9
Welcome	9
Feature summary	10
Wireless USB modem	10
TRU-Install	10
TRU-Locate	10
CDMA 3G services	11
Additional Compass USB modem features	12
Package contents	12
System components	12
Your host computing device	13
The Compass 597 USB modem	13
The Compass USB modem drivers and enabling software	13
CDMA service provider account	14
The CDMA wireless network	14
Getting Started	15
The Compass 597 software	15
Account activation and configuration	15
Installation	17
System requirements	17
Compass USB modem installation procedures	18
USB modem insertion and removal	20
Inserting the Compass USB modem	20
Removing the Compass USB modem	21

Activation	23
Account configuration procedures.....	23
Activation Wizard	23
Manual activation	24
Automated activation.....	24
Care and Maintenance of Your Compass USB modem	25
Watcher Basics	27
Starting and closing Watcher	27
Components of the Watcher window.....	28
Window controls	28
Docking	29
Always On Top	29
Interpreting icons	29
Connection Status Area	30
Call Status Area	31
Indicator area	32
Minimized icons	32
Online Help	33
Warranty.....	33
Troubleshooting	33
Using an external antenna.....	34
Technical Specifications	35
LED operation	35
Radio frequency and electrical specifications	36
Environmental specifications	37
Regulatory Information	39
Important safety/compliance information	39

Glossary43

Index47

1: Introducing the Compass 597 USB modem

- [Welcome](#)
- [Feature summary](#)
- [Package contents](#)
- [System components](#)

Note: This document applies to you, only if your wireless device is the Compass 597 USB modem from Sierra Wireless. This document does not apply, if you are using an AirCard® 595 PC Card, AirCard 595U USB modem, AirCard 597E ExpressCard, or a wireless device that is built into your computer.

Welcome

The Sierra Wireless Compass 597 USB modem is a dual-band wireless USB modem for cellular and [PCS](#) networks, and the [GPS](#) frequency band. It enhances the functionality of your mobile computing device by adding 2-way messaging and high-speed mobile data in extended areas, compared to wireless local area networks.

This USB modem allows you to do the following (subject to feature availability), without using a wireline phone or network:

- Connect to the Internet, [VPN](#) and corporate networks
- Send and receive large e-mail messages
- Send and receive [SMS](#) messages
- Use location-based services
- Conduct video-conferencing
- Access streaming, real-time media
- Play games online

Note: You can view this guide online or print it to keep on hand. If you're viewing it online, simply click a topic in the Table of Contents, or a page number in the Index, or any page reference or section reference. (Most text that is blue is a clickable link.) The PDF automatically displays the appropriate page.

Note: For step-by-step instructions to access features of the Compass USB modem, consult the [online help](#) available with Watcher® (page 33).

Feature summary

The Compass USB modem is designed to provide a wide range of capabilities using CDMA network technology. Implementation of these features depends on the particular service provider and account features you have chosen.

Some features described in this manual may not be supported by your service provider or may not be available with your network account. For details of the services and accounts available, contact your service provider.

Wireless USB modem

Once installed and configured, the Compass USB modem can connect to the CDMA network automatically. You just insert the Compass USB modem, allow Watcher to autolaunch and authenticate your account on the network, then launch your Internet browser (which you can also configure in Watcher to launch automatically)—you're online!

Alternatively, you can make a high-speed data connection without running Watcher—simply by launching whatever application you want to use (such as your web browser or e-mail application). Prerequisites: you must have previously selected, in Watcher, “**Enable NIC for Data Connection**” (subject to feature availability).

The Compass USB modem also allows you to dial up a modem (such as a corporate server).

TRU-Install

TRU-Install™ is a Sierra Wireless feature that installs the necessary software and drivers the first time you insert the Compass USB modem into your Windows or Mac computer. An installation CD is not required.

TRU-Locate

With TRU-Locate™, you can use location-based services to query, for example, the network for information on points of interest that are near your current location, or display driving instructions.

CDMA 3G services

The Compass USB modem operates over a type of wireless network called [CDMA](#) (Code Division Multiple Access).

CDMA 3G technology provides a variety of connectivity features, depending on your service provider and account:

- [1x-EVDO Rev. A](#) supports Internet connections with data rates up to 3.1 [Mbps](#) (downlink from the network) and 1.8 [Mbps](#) (uplink to the network). Average data rates are 450-800 [Kbps](#) (downlink from the network) and 300-400 [Kbps](#) (uplink to the network). Actual speed depends on the network conditions.
- [1x-EVDO Rev. 0](#) supports Internet connections with data rates up to 2.4 [Mbps](#) (downlink from the network) and 153 [Kbps](#) (uplink to the network). Average data rates are 400-700 [Kbps](#) (downlink from the network) and 40-80 [Kbps](#) (uplink to the network). Actual speed depends on the network conditions.
- [1X](#) supports Internet connections with data rates up to 153 [Kbps](#). Actual speed depends on the network conditions.

Once the connection is established, you can open your browser and connect to any web site that is accessible through the Internet, or access other Internet services (such as e-mail).

The connection is “active” when data transmission is occurring. If data transmission stops for a period of time (determined by the network), the connection becomes dormant.

- Circuit switched (dial-up) data, using the earlier [CDMA IS-95](#) specification, supports data connections to any dial-in service at rates up to 14.4 [Kbps](#).
- QNC (Quick Net Connect) provides a simplified way to dial into an Internet connection (using circuit switched data) where 3G (1xEV-DO or 1X) high-speed [packet](#) service is not available.
- [SMS](#) (Short Message Service) allows you to send and receive short text messages using the Compass USB modem.

Additional Compass USB modem features

Beyond the features of the [CDMA](#) network, the Compass USB modem provides additional software features:

- PIN security code to protect your Compass USB modem and account from unauthorized use.
- An Activation Wizard ([page 23](#)) to assist with configuring your CDMA account.
- Sound options to customize ringtones for SMS messages.
- A Call Log to track outgoing calls and determine the amount of data transferred.

The Compass USB modem has a microSD™ slot that can be used, with a microSD card (sold separately), for file transfer or storage.

Package contents

Your Compass USB modem package contains the following components:

- Compass 597 USB modem
- USB extension cable
- Notebook clip (to attach the Compass USB modem to your screen, if desired)
- Quick Start Guide

To install the Compass USB modem drivers and software, you do not need an installation CD. Your Compass USB modem uses the Sierra Wireless TRU-Install feature. The drivers and software are installed when you insert the Compass USB modem into your computer.

System components

Your Compass 597 USB modem is just one part of a system designed to provide you with a wide range of communication features. Every component of the system is needed to enable these capabilities.

Your host computing device

Your notebook or desktop computer hosts the Compass USB modem hardware and runs the communication software: your web browser or e-mail application, and Watcher—the enabling software for the Compass USB modem.

You may also have other software on your computer that can be used wirelessly with the Compass USB modem, such as: file transfer applications (FTP), chat or instant messaging, a [VPN](#) (Virtual Private Network) client, client software for a corporate server application.

The Compass 597 USB modem

The Compass USB modem provides your computer with a connection to the CDMA wireless network.

The Compass USB modem fits into a USB slot available on most notebook and desktop PCs.

Every [CDMA](#) network operates on one of three radio frequency bands. As a dual-band product, the Compass USB modem operates on two of these bands (see [page 36](#)), providing a wide coverage area.

The Compass USB modem drivers and enabling software

The Compass USB modem drivers and enabling software (Watcher) monitor and manage your wireless connections.

Your Compass USB modem uses the Sierra Wireless TRU-Install feature—the drivers and software are installed when you insert the Compass USB modem into your computer.

The device driver software enables the Compass USB modem to work with your computer's operating system.

Using the Watcher software, you can manage the Compass USB modem and monitor your connections. For step-by-step instructions to access features of Watcher, use the application's [online help](#).

Note: You can use the Lock Modem feature to prevent others from using your account, should your Compass USB modem be stolen. For information on this feature, see the [online help](#).

Note: More information about [CDMA](#) networks is available on the CDMA Development Group web site, www.cdg.org.

Note: Most service providers have coverage maps on their web sites.

Note: The fee for service is usually higher when you are roaming (connecting to a network other than the one belonging to your service provider).

CDMA service provider account

Companies that operate [CDMA](#) networks and provide access to these networks are called *service providers*. To use the Compass USB modem, you must have an account with a CDMA service provider.

Each service provider has its own pricing options. There may be flat rate accounts, which provide you a maximum number of minutes of network usage for a fixed monthly fee. There may be accounts for which you are charged for network usage by the minute or by the amount of data transmitted.

Your account may include a variety of other services such as SMS messaging or location-based services.

Each Compass USB modem has been provisioned at the factory for use with a particular service provider. This sets the Compass USB modem to use particular radio channels and enables services specific for that provider.

The process of setting up your account is called *activation*. Activation involves action by the service provider and configuration of the Compass USB modem.

The procedure to configure (activate) your Compass USB modem is covered in "[Activation](#)" on page 23.

The CDMA wireless network

This is the worldwide infrastructure providing the radio coverage that allows you to stay connected. Made up of radio towers and a variety of network switches, routers, and servers, the network is an interconnection of many service providers.

There are [CDMA](#) networks that operate in the frequency bands supported by the Compass USB modem throughout North America and parts of Latin America, Asia, and New Zealand. However, each service provider operates a network that covers a limited geographical area within the overall CDMA coverage area.

Most service providers have "[roaming](#)" agreements with other service providers, so that they can offer service outside of the coverage area of their own networks. For example, assuming you live in Vancouver (Canada), and travel frequently to Seattle (United States), you can obtain an account with a Vancouver service provider that has a roaming agreement with a service provider in Seattle. You would then have local service in Vancouver, and roaming service in Seattle.

2: Getting Started

- [The Compass 597 software](#)
- [Account activation and configuration](#)

Before you can begin using the Compass USB modem, you must:

1. Insert the Compass USB modem, to install the enabling software and drivers.
2. Activate an account and configure the Compass USB modem to use your account (unless the Compass USB modem has been pre-activated).

This section provides an overview of this process.

The Compass 597 software

The Compass USB modem comes with the following software:

- Watcher application that you use to manage the Compass USB modem and monitor your connections
- The driver software that provides the interface between the Compass USB modem and your Windows operating system

Detailed instructions for installing the Compass USB modem and its software are provided in [“Installation”](#) on page 17.

Account activation and configuration

To use the Compass USB modem, you must have an account with a [CDMA](#) service provider. The process of setting up an account is called *activation*.

If you purchased the Compass USB modem directly from a service provider, you may already have an account; your Compass USB modem may be pre-activated.

Otherwise, run Watcher and the Activation Wizard, which guides you through the activation and configuration process. (Depending on your configuration, Watcher and the Activation Wizard may start automatically.)

Configuring the Compass USB modem involves setting the phone number assigned by your service provider and may involve entering other network parameters and settings such as a user name and password to access services.

Your service provider needs to know:

- The billing information to use to collect payment for your network usage.
- The [ESN](#) (Electronic Serial Number) or [MEID](#) (Mobile Equipment Identifier) assigned to your Compass USB modem during the manufacturing process. (The ESN or MEID is printed on a label on the Compass USB modem and can be displayed in Watcher.) This number is used to help authenticate your account when you connect for service.

You require from your service provider:

- An activation code that gives you access to configure the account.
- A phone number for your Compass USB modem.
- Additional information specific to your service provider such as:
 - A user ID (username) and password to authenticate your network connection.
 - A SID (System Identifier) that identifies your home network area and is used together with your phone number to determine if you are “home” or “[roaming](#)”.

3: Installation

- System requirements
- Installation
- Inserting the Compass USB modem
- Removing the Compass USB modem

This chapter guides you through the steps necessary to install the Compass USB modem on a notebook or desktop computer.

The basic steps are:

1. Insert the Compass USB modem into the USB slot ([page 20](#)) to install the Compass USB modem drivers and the Watcher software.
2. If the Compass USB modem has not been pre-activated, use the Activation Wizard to configure the Compass USB modem (as described in [“Activation”](#) on page 23).

Before you begin the installation process, ensure your PC is running a supported operating system and meets the hardware requirements described in the next section.

System requirements

The Compass USB modem is supported on notebook and desktop PCs running:

- Windows Vista
- Windows XP (Home and Professional versions) with Service Pack 2
- Windows 2000 with Service Pack 4 and roll-up 1
- Mac OS X (supported through the Watcher Lite software—installed when you insert the Compass USB modem into your Mac). For detailed installation instructions, download the Quick Start Guide from the Support section of www.sierrawireless.com)

To install the Compass USB modem on a Windows computer, you require these system resources:

Table 3-1: System resource requirements

USB slots	One USB slot
I/O resources	1 IRQ, 40 bytes I/O space
Memory	32 MB
Disk space	32 MB

Compass USB modem installation procedures

Note: Users of Windows Vista and Windows 2000 must be logged in with administrative privileges to install the Compass USB modem software. Users of Windows XP may require administrative privileges, depending on the Windows XP installation.

To install Watcher and the Compass USB modem drivers:

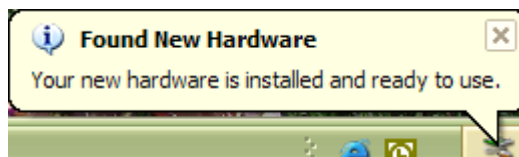
Note: Do not forcefully insert the Compass USB modem. This may damage the connector pins.


1. Insert the Compass USB modem into your USB slot (as described in “[Inserting the Compass USB modem](#)” on page 20).
2. If you’re running Windows Vista, in the AutoPlay window click **Sierra Wireless Watcher Installation**.
The Software Installation Wizard should start automatically.
3. In the installation window, click **Next**.
4. If the Open With... window appears, cancel the installation (your computer is missing some files required for the installation). Search for Instmsiw.exe (if you’re running Windows 2000) among the downloads at www.microsoft.com. Install the file on your computer, remove the Compass USB modem from your computer, then rerun the Compass USB modem installation.
5. If the Ikernel Application Error window appears:
 - a) Cancel the installation.
 - b) Download the file:
<http://support.installshield.com/kb/files/Q108312/ikernelupdate.exe>.

c) Install the file on your computer, remove the Compass USB modem from your computer, then rerun the Compass USB modem installation.

6. Use the **Next** and **Back** buttons to navigate through the wizard noting the following:
 - To proceed with the installation, you must click **I accept the terms in the license agreement** to indicate your acceptance of the terms of the license agreement.
 - Use the default settings for the **Destination Folder** unless you have special requirements and an advanced understanding of PC configuration. (The Destination Folder dictates where the software is installed.)

Windows detects the Compass USB modem and installs the drivers for it. This may take a few minutes. Once completed, the **system tray** may display the message "Your devices are ready to use" or "Your new hardware is installed and ready to use":



7. When you are notified that the installation is complete, click **Finish**.
8. If Watcher has not started automatically, start it: double-click the Watcher icon  on your desktop.

Proceed to configure the Compass USB modem to use your account (if it was not pre-activated). See "[Activation](#)" on page 23.

USB modem insertion and removal

Inserting the Compass USB modem

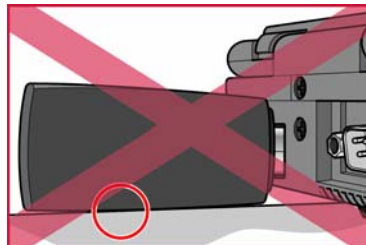
To insert the Compass USB modem into a computer:

1. Gently insert the modem into the USB slot. Alternatively, you can attach the USB extension cable (included in your package) or the docking station (sold separately) to your computer's USB slot, and insert the Compass USB modem into the USB extension cable or docking station.


Note: If your computer's USB slot is vertical, use the USB extension cable or docking station.

Do not insert the modem into a USB hub or a USB slot on a keyboard.

Warning: *If the orientation of your computer's USB slot or the thickness of your computer are such that pressure is applied to the modem's end or side (as shown by the red circle in the drawing below), you may damage the modem or your computer. In such cases, do not insert the modem directly into your computer's USB slot; use the USB extension cable or docking station instead.*



When you insert the Compass USB modem, the following should occur:

- The modem's power LED  becomes lit.
- If sound effects are enabled, the PC beeps.
- The PC Card icon appears in the [system tray](#), if it is not already displayed for another device (and unless the feature has been disabled).

Windows Vista



Windows XP



Windows 2000



- Watcher launches (unless the autolaunch feature has been disabled).

The Compass USB modem is powered as soon as you insert it.

Removing the Compass USB modem

To remove the Compass USB modem:

1. **Close** Watcher if it is open.
2. Click the PC Card icon in the [system tray](#) to display the option to stop the device.

Windows Vista



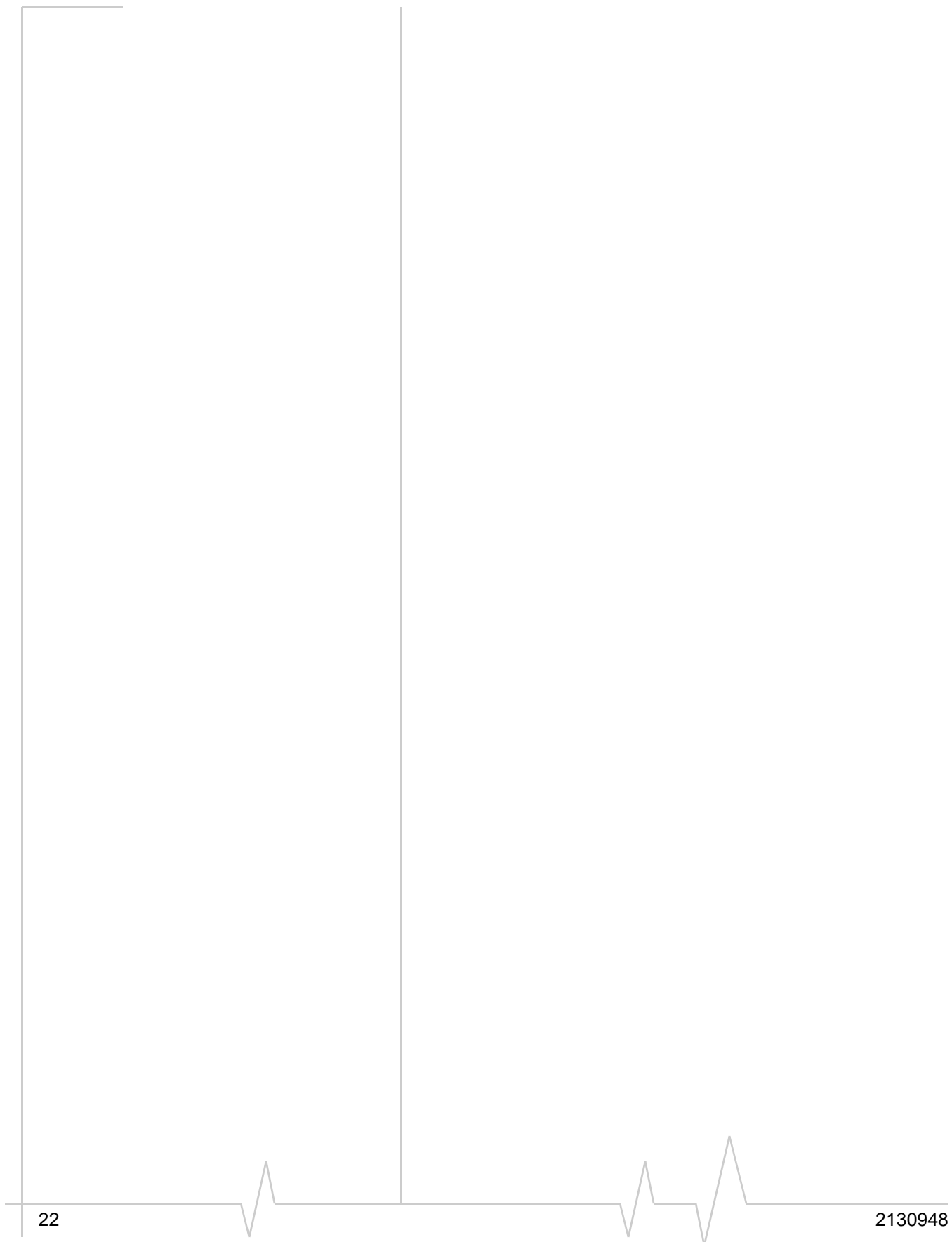
Windows XP



Windows 2000



3. Click the entry for “NEC PCI to USB Open Host Controller” or “Standard Enhanced PCI to USB Host Controller”.
4. If a dialog box appears notifying you that it is safe to remove the device, click **OK**.
5. Pull the modem out of the slot by gripping both sides of the modem and pulling the modem straight out.



>> 4: Activation

- Account configuration procedures
- Manual activation
- Automated activation

Account configuration procedures

The final step to making the Compass USB modem operational is configuring it to use your [CDMA](#) service provider account. The process of activation configures your Compass USB modem with the required account parameters (phone number, username, password, and so on).

If you purchased a pre-activated Compass USB modem, this step is not necessary. Once the application software and drivers are installed, the Compass USB modem is ready for use.


Otherwise, you must use the Activation Wizard to activate and configure your account.

Activation Wizard

The Activation Wizard walks you through the process of configuring an account. The process and options vary based on the service provider.

This section is a guide only. Consult the Quick Start Guide, and follow the directions on screen and instructions given by your service provider representative.

If your Compass USB modem does not have an activated account, and Watcher has started automatically, then the Activation Wizard should start automatically. If this does not happen:

1. Ensure Watcher is running. If it is not, double-click the Watcher icon  on your desktop.
2. Start the Activation Wizard: select **Tools > Activation Wizard**.

To begin activation of the Compass USB modem, select the method (described in the following sections) and click **Next**.

Manual activation

Activation involves phoning your service provider, exchanging information, and entering your account information into the appropriate fields in the wizard. (To use this method, you require a phone.)

To use manual activation, use the **Next** and **Back** buttons to navigate through the wizard, noting the following:

- Prepare your billing information, before you phone the service provider or proceed to the next window.
- Contact your service provider. Inform your service provider that you are activating your Sierra Wireless Compass 597 USB modem. The representative will request your [ESN](#) (Electronic Serial Number) or [MEID](#). This is displayed in the Activation Wizard (and is printed on the Compass USB modem box and on the label on the back of the Compass USB modem).
- As prompted by the wizard, enter the information provided by the service representative.
- Select **Finish** in the final window of the wizard.

On completion of the Activation Wizard, the Compass USB modem is ready for use. The following chapters explain how to use Watcher to manage and monitor your connections.

Automated activation

To use automated activation:

1. Select the **Automated Activation** radio button and click **Next**.
2. The wizard advises that it will make a network connection, dialing the displayed number. Leave the number unchanged unless told by a technical service representative to enter a different value. Click **Next**.
3. Follow any instructions or prompts provided to activate the USB modem.

Watcher displays the activation progress in the [Call Status Area](#). When the process is complete you should see the message "Ready to Connect".

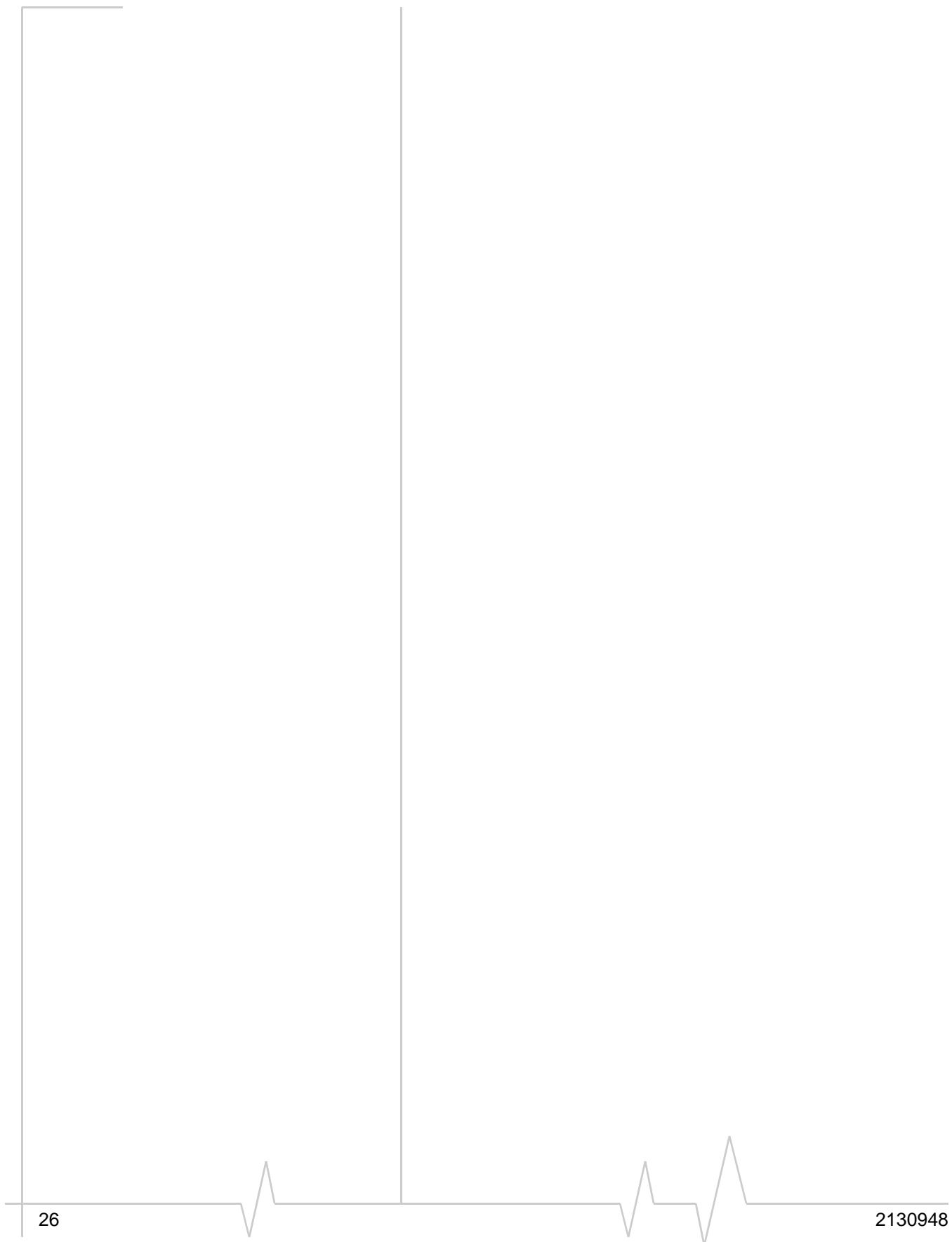
Note: If you do not get the "Ready to Connect" message, retry the process. If the process continues to fail, use [manual activation](#) (page 24) or contact your service provider.

At this point your Compass USB modem is ready to use.

5: Care and Maintenance of Your Compass USB modem

As with any electronic device, the Compass USB modem must be handled with care to ensure reliable operation. Follow these guidelines in using and storing the Compass USB modem:

- The Compass USB modem should fit easily into your USB slot. Forcing the Compass USB modem into a slot may damage connector pins.
- When inserting or removing the modem, always grip it by the sides rather than the end.
- Protect the modem from liquids, dust, and excessive heat.
- When not installed in your computer, store the Compass USB modem in a safe place.



>> 6: Watcher Basics

- Starting and closing Watcher
- Components of the Watcher Window
- Interpreting icons
- Online Help
- Warranty
- Troubleshooting
- Using an external antenna


Watcher is the application that allows you to manage and monitor the connection between the Compass USB modem and the [CDMA](#) network. You use Watcher to:

- Determine your signal strength, [roaming](#) status, 3G high-speed data availability, and other network connection parameters
- Initiate data calls
- Use location-based services
- View call statistics
- Receive and send SMS messages
- Customize features and options

Depending on Watcher settings, you may be able to connect to the CDMA network without starting Watcher—simply by launching whatever application you want to use (such as your web browser or e-mail application). However, Watcher and its icon in the system tray won't be available for you to monitor the status of the connection. Location-based services also won't be available.

Starting and closing Watcher

Depending on your settings in the Options window, Watcher launches automatically anytime you insert the Compass USB modem. You can also launch Watcher by:

- Double-clicking the Watcher icon  on your desktop
- Selecting:
 - In Windows Vista or Windows XP: **Start > All Programs > Sierra Wireless > Watcher > Watcher**
 - In Windows 2000: **Start > Programs > Sierra Wireless > Watcher > Watcher**

The standard Windows control buttons in the upper right corner of the window are used to minimize or close Watcher. When minimized, Watcher does not appear as a taskbar button. Instead, an icon is shown in the [system tray](#), usually at the right end of the taskbar. (See [“Minimized icons”](#) on page 32.)

Components of the Watcher window

The window has three areas that display messages and icons: the Connection Status Area ([page 30](#)), Call Status Area ([page 31](#)), and Indicator Area ([page 32](#)). These areas are shown in [Figure 6-1](#) that follows.

A menu bar is located on the upper left side of the window.

Windows control buttons are in the top right corner.

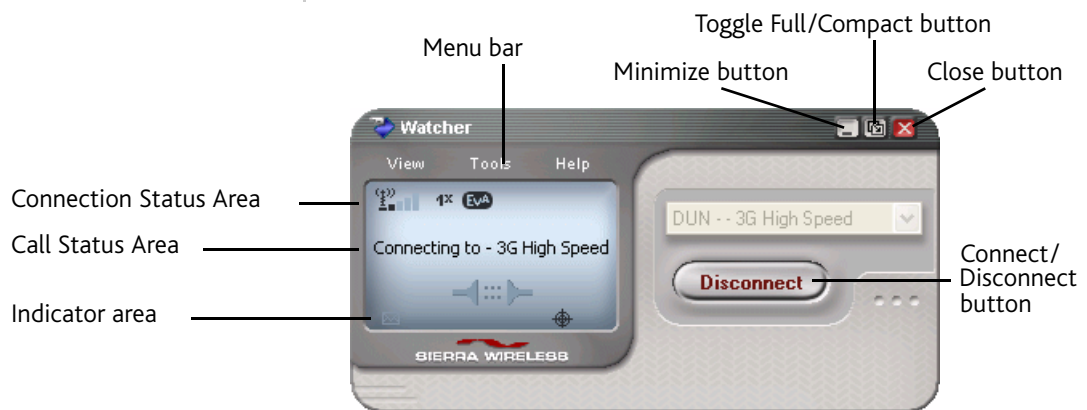



Figure 6-1: Watcher window

For a detailed description of each option in the menus, see the [online help](#).

Window controls

- The **Minimize** button closes the Watcher window but leaves the application running. When Watcher is minimized, you can use the Watcher icon in the [system tray](#) to determine the Compass USB modem status. (See [page 32](#).) This icon replaces a taskbar button for Watcher.

Once minimized, you can redisplay the Watcher window by selecting the Watcher icon in the system tray. You can also restore the window by double-clicking the desktop shortcut or launching Watcher from the Start menu.

- The **Toggle Full/Compact** button  is used to switch between the full Watcher window and the compact view:



The compact view allows you to see connection status and indicators while using less space on the desktop. If you right-click the compact view, a menu is displayed. From this menu you can open some of the other Watcher windows or establish/end a data connection.

To return to full view, select the view toggle button in the top right.

- The **Close** button  is used to exit Watcher.

Docking

You can set the Watcher window to “jump” to the edge of your screen when you move the window close to an edge. This lets you easily position Watcher in a corner of the screen.

- Select **View > Docking**

Always On Top

You can set Watcher to always display in front of other windows. This allows you to monitor connection status while using another maximized application, such as your web browser.

- Select **View > Always On Top**

Interpreting icons

Watcher makes extensive use of icons to indicate status and events. The various icons are described in the following sections on the display areas of Watcher.

Connection Status Area






The Connection Status Area uses the icons shown in the following table.

Table 6-1: Connection Status Area icons

Icon	Meaning
	Compass USB modem not detected. You may be able to resolve this by doing one of the following: - Unlocking the modem (Tools > Unlock Modem) - Powering the modem on (Tools > Turn Radio On) - Ejecting the modem and re-inserting it If this icon is still displayed, restart your computer.
	The Signal Strength indicator uses bars to show the intensity of the radio signal. The number of bars increases as signal strength increases to a maximum of five bars.
	When the bars are dimmed and the antenna icon is crossed out, no connection is possible for one of these reasons: <ul style="list-style-type: none"> • You are outside the CDMA network coverage area • The signal strength is too weak • A network or account problem is preventing the Compass USB modem from obtaining service
	1xEV-DO Rev. A icon.
	1xEV-DO Rev. 0 icon.
	1X icon.
	When only the letters are displayed, you are within the coverage area, but have not yet acquired the service.

Table 6-1: Connection Status Area icons (continued)

Icon	Meaning
	When the indicator has a gray background, the network connection is dormant. (You are connected, but there is currently no traffic.)
	When the indicator has a darker background, you have a data connection on the wireless service.
	<p>The Roaming Status indicator shows whether you are roaming onto the network of a service provider other than your own.</p> <p>When the indicator is off (gray), you are within the local coverage area of your service provider. When the indicator is on (solid black), you are in a “preferred” roaming area. When the indicator is blinking, you are within the coverage area of a CDMA network but not in a “preferred” roaming area.</p> <p>Your coverage area and account charges depend upon your service provider and the type of account you have. There may be surcharges for roaming service that vary based on whether you are in a preferred or non-preferred roaming area. If there is no roaming agreement between your service provider and the local carrier, you may be unable to complete calls.</p>

Call Status Area

The Call Status Area displays messages related to the status or progress of a connection.



Where a duration timer is shown, timing begins when the call is initiated—not from the time the call is fully connected. This is a measure of the time the Compass USB modem has been using the radio channel (a wireless network resource).

“Click this display to exit PowerSave mode” indicates that the Compass USB modem could not find a system within a 15 minute interval. To conserve power, the Compass USB modem reduces channel scanning to once every three minutes. To force the Compass USB modem out of PowerSave mode, click in the Call Status Area. The Compass USB modem performs a channel scan and, if no network is detected, returns to PowerSave mode.

Indicator area

The Indicator area displays an icon that notifies you when you receive SMS messages, and an icon that reflects the GPS status.

Table 6-2: Indicator Area icons





Icon	Meaning
	The SMS message indicator shows whether you have unread messages. A blinking icon indicates that there are one or more urgent or important unread messages. To display the SMS Express window (in which the messages are displayed) select Tools > SMS Express... or double-click the icon.
	If you position the mouse pointer over the GPS icon, the ToolTip shows the GPS status (on or off) or, if a tracking session is active, how many satellites are being tracked. Double-click the icon to open the GPS Monitor window.

Minimized icons

Watcher displays an icon in the Windows system tray (which is usually located in the lower right corner of your screen). The system tray icon indicates your connection status or notifies you when you have SMS messages.



Table 6-3: System tray icons

Icon	Meaning
	Watcher cannot detect the modem. Ensure that the modem is powered on, not locked, and properly connected to your computer.
	You are in service on the network but have no active data connection. The number of red bars indicates the signal strength.
	You have an active data connection. The number of green bars indicates the signal strength.
	You have a new SMS message.

Only one icon can be displayed at a time. The priority of icons, from highest to lowest, is:

- No modem detected
- SMS message(s)
- Active or inactive connection.

For example, if you have unread SMS messages, and then establish a data connection, the icon still displays as an unread SMS message.

Online Help

Watcher includes extensive online help to provide operating hints and step-by-step instructions for getting the most from your Compass USB modem.

You can access online help in several ways:

- Press <F1> in any window.
- Use Windows Explorer to navigate to **Program Files > Sierra Wireless Inc > 3G Watcher > Help > Watcher_ENU.chm**. Double-click to open the help file.

The help file has a table of contents, an index, and search capabilities.

Warranty

To access the warranty (PDF file):

- Windows Vista or Windows XP: select **Start > All Programs > Sierra Wireless > Watcher > Warranty**
- Windows 2000: select **Start > Programs > Sierra Wireless > Watcher > Warranty**

Troubleshooting

The [online help](#) includes descriptions of most common error messages. Look in the table of contents under Troubleshooting.

For help with other problems:

- Consult the Sierra Wireless web site at www.sierrawireless.com, where you will find an extensive knowledge base that can be searched to address most problems.
- Contact your service provider.

Using an external antenna

You can improve the signal strength, by attaching an external antenna (sold separately).

To attach the external antenna:

1. Remove the USB modem from your computer.
2. Flip open the tab (on the side of the modem).
3. Holding the antenna cable by the connector (end) part, carefully push the connector part of the cable into the corresponding connector on the Compass USB modem.
4. Carefully insert the USB modem into your computer's USB slot.

7: Technical Specifications



- LED operation
- Radio frequency and electrical specifications
- Environmental specifications

This chapter describes the function of the LEDs, and provides technical product data for the Compass USB modem.

LED operation

The Compass USB modem has two LED lights. The LEDs operate as follows:

Table 7-1: LED operation

LED	State	Indicates
	Off	The modem has no power. You have powered off the modem (Tools > Turn Radio Off), or the modem is not completely inserted into the USB slot, or the computer is in suspend mode (which powers down the modem).
	Blue, not blinking	The modem has power and is working properly.
	Blue, blinking	The modem's firmware is being updated. Do not remove the modem.
	Amber, blinking	The modem is searching for service. If this LED state persists, see the online Help ("Not In Service").
	Amber, not blinking	An error has occurred. Remove the modem (page 21) and reinsert it.
	Off	No service is available. See the online Help ("Not in Service").
	Amber, blinking	1X coverage is detected. Ready to connect to the network (click Connect).
	Amber, not blinking	The modem is connected to the 1X network, and can send or receive data.
	Blue, blinking	1x-EVDO coverage (Rev. 0 or Rev. A) is detected. Ready to connect to the network (click Connect).
	Blue, not blinking	The modem is connected to the 1x-EVDO network, and can send or receive data.

Radio frequency and electrical specifications

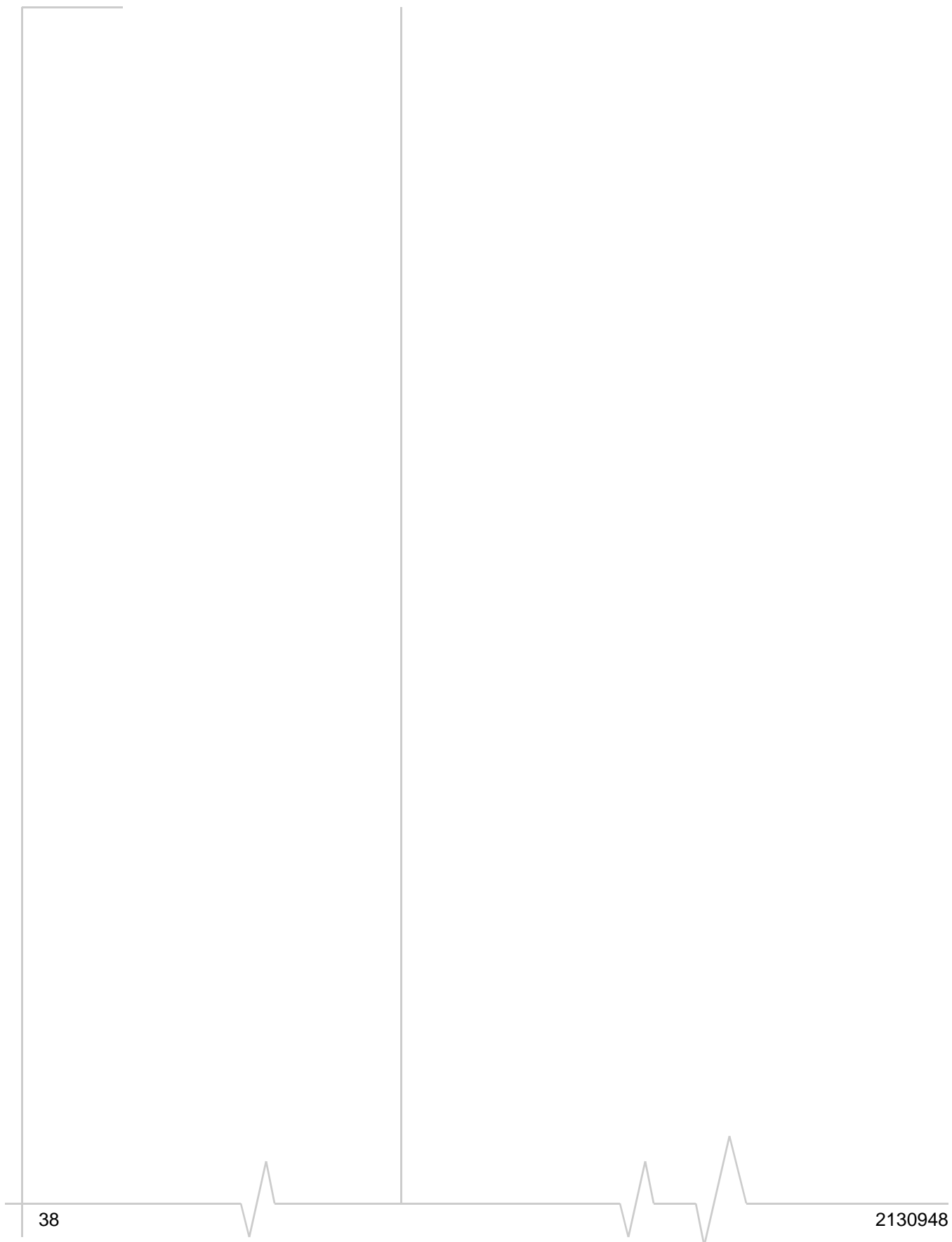
Table 7-2: Radio frequency and electrical specifications

Approvals	Compliant with: IS-2000 Release 1.0 (CDMA 1X) IS-707-A Data, IS-856 (CDMA 1x-EVDO), IS-866, IS-878, IS-890, CDMA Development Group FCC (ID: N7NC597) Industry Canada (ID: 2417C-C597)
Voltage	+5.0 Vdc from USB slot
Current	Maximum: 550 mA (from USB port) Typical data call current (talk mode), at 3.3 V: 285 mA (1X) 295 mA (1xEV-DO) Standby: 2.75 mA (1xEV-DO/IS2000 hybrid mode), at 3.3 V
Transmitter power	200 mW (+23 dBm)
Transmit	PCS: 1805 to 1870 MHz Cellular: 824 to 849 MHz
Receive	PCS: 1715 to 1780 MHz Cellular: 868 to 894 MHz GPS: 1575.42 MHz
Channel spacing	1.25 MHz
Frequency stability	±150 Hz

Environmental specifications

Table 7-3: Environmental specifications

Operating temperature	-20 to +55°C
Storage temperature	-40 to +85°C
Humidity	95%, 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 concrete on each of 6 faces, 2 times



8: Regulatory Information

- Important safety/compliance information

Important safety/compliance information

The design of the Compass 597 USB modem complies with U.S. Federal Communications Commission (FCC) and Industry Canada (IC) 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 Canadian, 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*
- Health Canada, Safety Code 6, 1999, *Limits of Human Exposure to Radio frequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz*
- 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)*

FCC ID: N7NC597

CAUTION: The Compass 597 USB modem has been tested for compliance with FCC / IC RF exposure limits in the laptop computer(s) configurations with a horizontal USB slot and can be used in laptop computers with substantially similar physical dimensions, construction, and electrical and RF characteristics. This USB modem must not be co-located or operated in conjunction with any other antenna or transmitter. Use of this device in any other configuration may exceed the FCC RF Exposure compliance limit. **Note:** If this USB modem is intended for use in any other portable device, you are responsible for separate approval to satisfy the SAR requirements of Part 2.1093 of FCC rules.

NOTE: If your computer's USB slot is vertical, use the USB extension cable or docking station. Do not insert the modem into a USB hub or a USB slot on a keyboard.

WARNING: If the orientation of your computer's USB slot or the thickness of your computer are such that pressure is applied to the modem's end or side, you may damage the modem or your

computer. In such cases, do not insert the modem directly into your computer's USB slot; use the USB extension cable or docking station instead.

WARNING (EMI) - United States FCC Information - This equipment has been tested and found to comply with the limits for a Class B computing device peripheral, pursuant to Part 15, 22, and 24 of the [FCC](#) rules. These limits are designed to provide reasonable protection against harmful interference in a residential 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 communications. However, there is no guarantee that 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:

- Reorient or relocate the receiving antenna.
- 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.

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

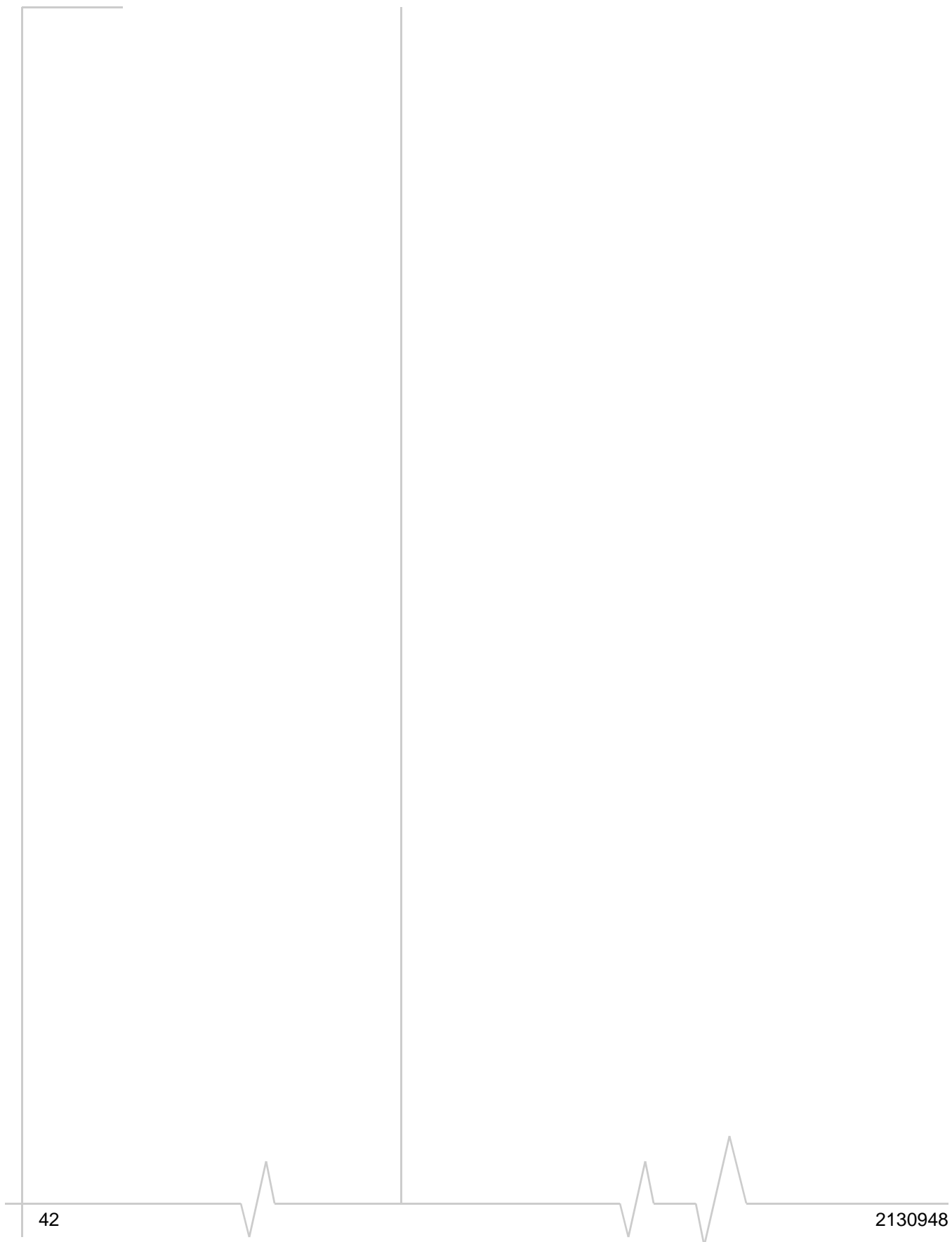
CAUTION: Any changes or modifications not expressly approved by Sierra Wireless could void the user's authority to operate the equipment.

WARNING (EMI) - Canada - This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference causing equipment standard entitled "Digital Apparatus", ICES-003 of the Department of Communications.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques", NMB-003 édictée par le ministre des Communications.

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.



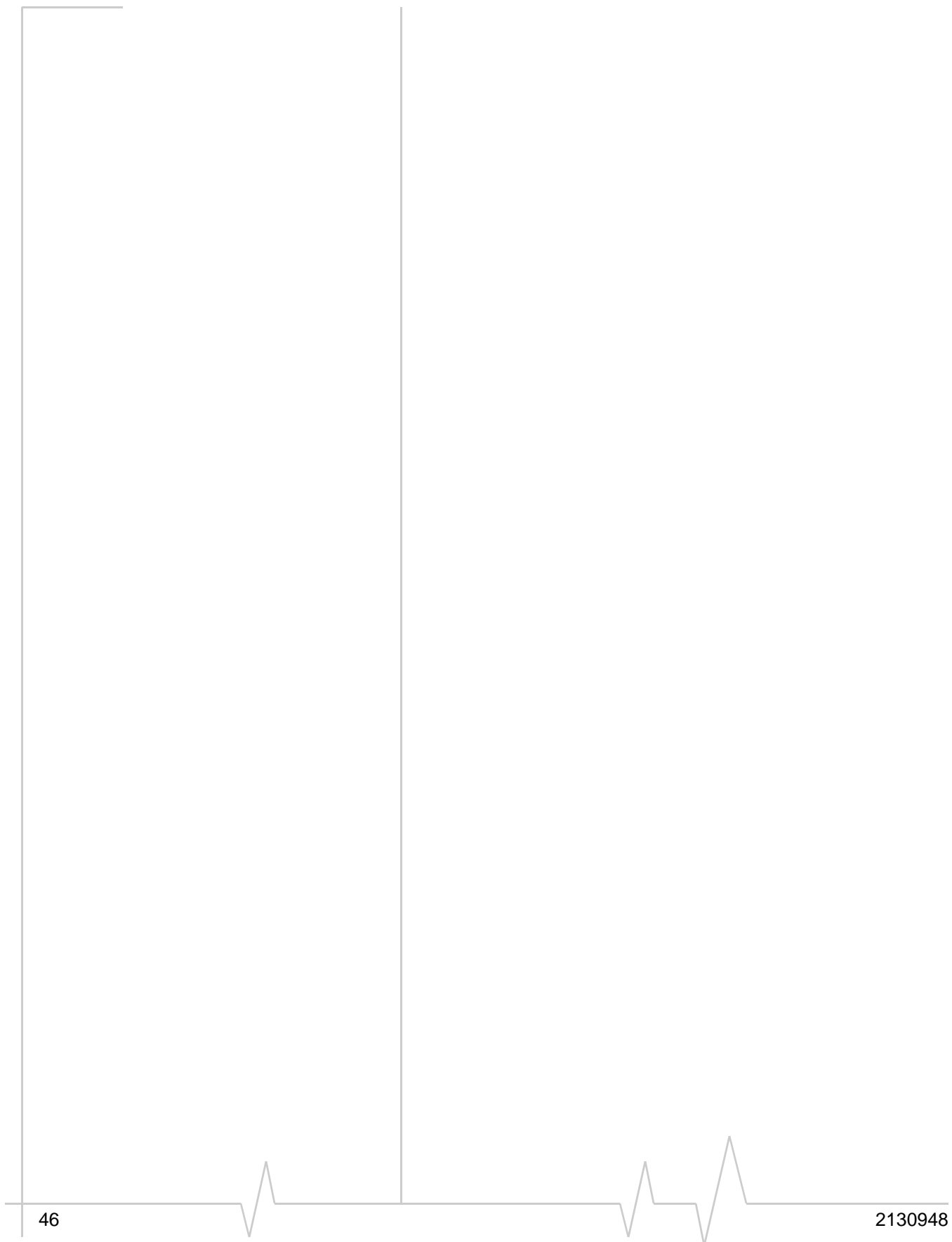
Appendix A: Glossary

A

1X	One Times Radio Transmission Technology (the "one times" refers to the frequency spectrum). Supports Internet connections with data rates up to 153 Kbps . Actual speed depends on the network conditions. Compare to 1x-EVDO .
1x-EVDO	<p>A high-speed standard for cellular packet data communications.</p> <p>Rev. A supports Internet connections with data rates up to 3.1 Mbps (downlink from the network) and 1.8 Mbps (uplink to the network).</p> <p>Rev. 0 supports Internet connections with data rates up to 2.4 Mbps (downlink from the network) and 153 Kbps (uplink to the network).</p> <p>Average data rates are: for Rev. A: 450–800 Kbps (downlink from the network) and 300–400 Kbps (uplink to the network); for Rev. 0: 400-700 Kbps (downlink from the network) and 40-80 Kbps (uplink to the network).</p> <p>Actual speed depends on the network conditions. Compare to 1X.</p>
bps	bits per second—The actual data speed over the transmission medium.
CDMA	Code Division Multiple Access—A wideband spread spectrum technique used in digital cellular, personal communications services, and other wireless networks. Wide channels (1.25 MHz) are obtained through spread spectrum transmissions, thus allowing many active users to share the same channel. Each user is assigned a unique digital code, which differentiates the individual conversations on the same channel.
CDMA 1X	Also known as 1X , this is a high-speed standard for CDMA cellular communications.
dormant	The packet data connection has the logical PPP session left open while the underlying physical link (the radio channel) is released. When traffic is to resume, a radio channel is re-acquired and the original PPP session resumes.
ESN	Electronic Serial Number—The unique first-generation serial number assigned to the Compass USB modem for cellular network use. Compare to MEID .
ExpressCard™	Add-in memory and communications cards for portable computers. ExpressCard is a trademark of the PCMCIA .

FCC	Federal Communications Commission—The U.S. federal agency that is responsible for interstate and foreign communications. The FCC regulates commercial and private radio spectrum management, sets rates for communications services, determines standards for equipment, and controls broadcast licensing. Consult www.fcc.gov .
GPS	Global Positioning System—A system that uses a series of 24 geosynchronous satellites to provide navigational data.
firmware	Software stored in ROM or EEPROM; essential programs that remain even when the system is turned off. Firmware is easier to change than hardware but more permanent than software stored on disk.
host	<ul style="list-style-type: none"> • A computer that uses a modem or a similar device to answer a calling computer. • A source or destination in the communication network. • A computer that contains data or files to be accessed by client computers. Also known as a server.
IS	Interim Standard—After receiving industry consensus, the TIA forwards the standard to ANSI for approval.
IS-95	The standard for CDMA .
Kbps	Kilobits per second—Actually 1000, not 1024, as used in computer memory size measurements of kilobytes.
LAN	Local Area Network
LED	Light Emitting Diode—A semiconductor diode that emits visible or infrared light.
MEID	Mobile Equipment Identifier—The unique second-generation serial number assigned to the Compass USB modem for cellular network use. Compare to ESN .
MHz	Mega-Hertz—One million cycles per second.
Mbps	Megabits per second
packet	A short fixed-length block of data, including a header, that is transmitted as a unit in a communications network.
PC Card™	Add-in memory and communications cards for portable computers. PC Card is a trademark of the PCMCIA .
PCMCIA	Personal Computer Memory Card International Association—The organization that standardizes ExpressCards and PC Cards.
PCS	Personal Communications Services—A cellular communication infrastructure that uses a different frequency range than AMPS.

roaming	A cellular subscriber is in an area where service is obtained from a cellular service provider that is not the subscriber's provider.
SMS	Short message services—A feature that allows users of a wireless device on a wireless network to receive or transmit short electronic alphanumeric messages (up to 160 characters, depending on the service provider).
system tray	Usually located in the lower right corner of your screen
TIA	Telecommunications Industry Association—A standards-setting trade organization, whose members provide communications and information technology products, systems, distribution services and professional services in the United States and around the world. Consult www.tiaonline.org .
VPN	Virtual Private Network



»» | Index

Numerics

- 1X
 - description, 11
- 1xEV-DO
 - description, 11
- 3G
 - description, 11

A

- account
 - activation, 15
 - configuration, 23
- activation
 - overview, 15
 - automated, 24
 - manual, 24
- Activation Wizard, 23
- always on top, 29
- antenna, external, 34
- automated activation, 24

B

- bands, frequency, 13

C

- call status area, 31
- care and maintenance, 25
- CDMA 1X
 - description, 11
- CDMA 1xEV-DO
 - description, 11
- CDMA network
 - 3G services, 11
 - frequency bands, 13
 - service providers, 14
- circuit switched data
 - description, 11
- close button, 29
- compact view, 29
- connection status
 - indicator, 32
- connection status area, 30
- coverage, 14
- CSD
 - description, 11

D

- data
 - circuit switched - description, 11
 - dial-up - description, 11
 - high-speed, 11
 - QNC, 11
- dial-up data
 - description, 11
- disk space required, 18
- docking, 29
- drivers
 - description, 13
- driving instructions, 10

E

- Electronic Serial Number (ESN), 16
- EMI warning, 40
- ESN (Electronic Serial Number), 16
- EVDO
 - description, 11
- external antenna, 34

F

- FCC
 - compliance, 40
 - ID, 39
- frequency bands, CDMA network, 13
- full view
 - description, 28
 - toggle button, 29

G

- GPS (location-based services), 10

H

- hardware
 - inserting, 20
 - removing, 21
- help, 33
- high-speed packet data, 11

I

- I/O space (input/output space), 18

icons

- connection status, 30
- indicator area, 32
- minimized, 32
- system tray, 32
- see also indicators

ID, FCC, 39

indicator area, 32

indicators

- connection status, 32
- SMS messages, 32, 32

inserting the modem, 20

installation

- hardware, 20
- software, 17

interference, 40

Internet, 11

IRQ (interrupt request), 18

L

LBS (location-based services), 10

location-based services, 10

M

Mac OS X, 17

MEID (Mobile Equipment Identifier), 16

memory required, 18

minimize button, 28

minimized icons, 32

Mobile Equipment Identifier (MEID), 16

N

notices, regulatory, 39

O

online Help, 33

operating hints, 33

operating systems supported, 17

P

packet data, high-speed, 11

points of interest, 10

PowerSave, 31

pre-activation, 15

Q

QNC, 11

Quick Net Connect (QNC), 11

R

regulatory information, 39

removing the modem, 21

requirements, system, 17

roaming

- definition, 14
- indicator, 31

S

service indicator, 32

signal strength

- indicator - CDMA network, 30

SMS message indicator, 32, 32

software

- overview, 13
- installation, 17

status area

- call status area, 31
- connection status area, 30
- indicator area, 32
- Windows system tray, 32

support, 33

suspend mode, 35

system requirements, 17

system tray icons, 32

T

taskbar icons, 32

tips, operating, 33

troubleshooting, 33

TRU-Install, 10

TRU-Locate, 10

V

virtual private network, 9

Vista, 17

VPN, 9

W

warning

- EMI, 40

warranty, 33

Windows

- system tray icons, 32
- versions supported, 17

wireless modem, 10

