TOUGHBOOK®

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User Manual
for Toughbook with integrated SB555 CDMA modem

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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 are used in a normal manner with a well-constructed network, the Panasonic Toughbook computer with integrated Sierra Wireless SB555 OEM CDMA 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. Matsushita Electric Industrial Co., Ltd. accepts no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using the Panasonic Toughbook computer, or for failure of the Panasonic Toughbook computer to transmit or receive such data.
Safety and Hazards	Do not operate the integrated Sierra Wireless SB555 CDMA 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 integrated CDMA modem **MUST BE POWERED OFF**. The integrated CDMA modem can transmit signals that could interfere with this equipment. Do not operate the integrated CDMA modem in any aircraft, whether the aircraft is on the ground or in flight. In aircraft, the integrated Sierra Wireless SB555 CDMA modem **MUST BE POWERED OFF**.

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. |
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Table of Contents

1: Introduction

The Sierra Wireless SB555 OEM CDMA modem is an embedded wireless modem for cellular and North American PCS networks. It enhances the functionality of your Toughbook by adding high speed wireless data service.

The SB555 modem functions as a wireless network card. It allows you to connect to the Internet, send and receive e-mail, and connect to a corporate network, without the need of a network cable or phone line.

The SB555 modem is designed to provide a wide range of capabilities using CDMA network technology. *Implementation of these features will depend 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. Contact your service provider for details of the services and accounts available.

CDMA2000 1X services

The Sierra Wireless SB555 modem operates over a type of wireless network called CDMA (Code Division Multiple Access).

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

- **Express Network**^{SM} high-speed packet data, sometimes known as 1xRTT, this supports Internet connections with data rates up to 153.6 kbps (downlink) and 76.8 kbps (uplink). Actual speed will depend on the network.
- **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.
- **Quick 2 Net**^{SM}**,** provides a simplified way to dial into an Internet connection (using circuit switched data) where Express Network (1X) packet service is not available. (available with Verizon Wireless)
- **SMS (Short Message Service),** allows you to send and receive short text messages using the SB555 modem.

A CDMA service provider account

Companies that operate CDMA networks and provide access to these networks are called *service providers*. You must have an account with a CDMA service provider to use the SB555 modem.

Each SB555 has been provisioned at the factory for use with a particular service provider. This sets the SB555modem to use particular radio channels and enable 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 SB555 modem. The procedure to configure (activate) your SB555 modem is covered in "Activation" on page 5.

2: Getting Started

Your Panasonic Tougbook comes with a software CD for the Sierra Wireless SB555 CMDA modem. Before you can begin using the SB555 modem, you must:

1. Install the SB555 Watcher software and modem driver.
2. Activate an account and configure the SB555 modem to use your account (unless the SB555 modem has been pre-activated).

Unless your SB555 modem has been pre-activated, the Watcher software will automatically detects that no account has been configured when you run it for the first time. Watcher then runs the *Activation Wizard* to guide you through the activation and configuration process. Configuring the SB555 modem involves setting the phone number assigned by your service provider and may involve other network parameters and settings such as a user name and password to access services.

Your service provider needs to know:
· The ESN (Electronic Serial Number) assigned to your modem. (The ESN is labeled on the back of your Toughbook 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 SB555 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 in conjunction with your phone number to determine if you are "home" or "roaming".

3: Installation

This chapter guides you through the steps necessary to install the Watcher software and modem driver.

Installing the Watcher Software

1. Insert the Sierra Wireless software CD in your CD-ROM drive. The CD should autostart. If the CD does not autostart, select [My Computer] → [Drive (D:)] and double click on the EXE file to launch the installation. where (D:) is the drive letter of your CD-ROM drive.

2. An *InstallShield Wizard* window similar to Figure 1 will appear. Click [Next] → [Yes] → [Next] → [Next] → [Continue Anyway] → [Finish] to navigate through the installation.

3. A window similar to Figure 2 below will appear. This window contains the instruction on how to install the SB555 modem driver. Since the modem installation instruction is already listed under "*Installing SB555 Modem Driver*" on page????, please click [OK] to close this window.

Note: *User of Windows 2000 or Windows XP may require to logon with administrative privileges to install the Watcher software and SB555 modem driver.*
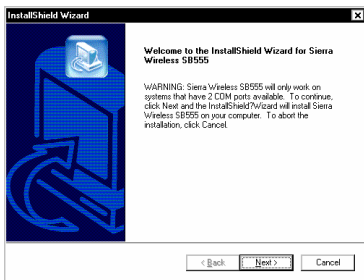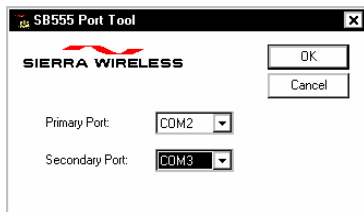
Figure 1

Figure 2

Figure 3

4. A *SB555 Port Tool* window similar to Figure 3 will appear. The Sierra Wireless SB555 modem uses two serial communication ports. The *Secondary Port* is used by the Watcher software to communicate with the SB555 modem. The *Primary Port* is used for data communication during a data session.

Table 1 listed the default COM port assignment for different Toughbook models. Please set the *Primary Port* and *Secondary Port* accordingly. Then click [OK] → [OK] to finish the installation.

*Table 1

Model	Primary Port	Secondary Port
Toughbook CF-29	COM 2	COM 4
Toughbook CF-73	COM 4	COM 5
Toughbook CF-18	COM 4	COM 5
Toughbook CF-18 Tablet	COM 4	COM 5
Toughbook CF-M34	COM 4	COM 1

* Based on Windows 2000 and Windows XP

Note: *The COM port assignments in Table 1 are based on default BIOS settings and factory loaded Operation System. The actual COM ports being used by your SB555 modem might be different then as listed in Table 1. If your SB555 modem does not work with these COM port settings, please contact your administrator or call 1-800-laptop-5 for technical support.*

Figure 4

Figure 5

Figure 6

Figure 7

Figure 8

Installing SB555 Modem Driver

We have installed the Watcher software for the SB555 modem. We must now install the modem driver for the SB555 modem.

1. Click [Start] → [Settings] → [Control Panel] to bring up the Microsoft Windows Control Panel.

2. For Windows 2000 user, please double click on the "Modem" icon. For Windows XP user, please double click on the "Phone and Modem Options" icon.

3. Select the [Modems] tab and the window as shown in Figure 6 will appear.

4. Click [Add...] → check "*Don't detect my modem; I will select it from a list*" → then click [Next]. The window as shown in Figure 7 will appear.

- On the [Manufacturer] field, please select "Sierra Wireless Inc".
- On the [Models] field, please select "Sierra Wireless SB555 modem"

5. Click [Next] and the window as shown in Figure 8 will appear. The modem driver should be installed on the SB555's *Primary Port*, which has been set during the Watcher software installation in step 4 on page 4. Check "*Selected Ports*", and then select one of the COM port accordingly.
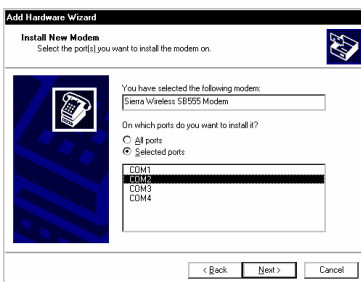
> **Note**: *The selected modem COM port must agree with the Sierra Wireless Watcher COM port settings on step 4 page 4.*

6. Click [Next] → [Continue Anyway] → [Finish] → [OK] to finish the SB555modem driver installation.

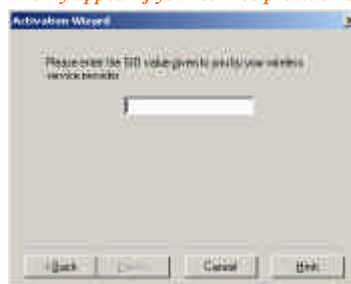# 4: Activation

Figure 9

Figure 10

Figure 11

The final step to making the SB555 modem operational is configuring it to use your CDMA service provider account. The process of activation configures your SB555 modem with the required account parameters provided by your service provider.

1. You will find the "SB555 Watcher" icon, similar to the one shown on the left, on the desktop. Double click on the icon to launch the Watcher software.

2. For a non-activated SB555 modem, the Watcher software will automatically launch the "Activation Wizard". The windows as shown in Figure 9 will appear.

> **Note**: *You can access the "Activation Wizard" by selecting [Tools] → [Activation Wizard…].*

3. Select "Manual Activation". Click [Next], the window as shown in Figure 10 will appear. In the empty field, enter the activation code that is provided by your service provider.

4. Click [Next] the windows as shown in Figure 10 will appear and prompt for activation code. Please enter the activation code that is provided by your wireless service provider.

5. Click [Next] the windows as shown in Figure 11 will appear.
- Enter the phone number that is provided by your wireless service provider.
- Enter the IMSI number that is provided by your wireless service provider.

6. Click [Next] the windows as shown in Figure 12 will appear and prompt for the SID, which is used o identify your home network area. Enter the SID that is provided by your service provider.

(This window will only appear if your service provider is Verizon Wireless)

Figure 12

7. Click [Next]. The activation process is completed. Watcher will restart the SB555 modem. At this point your modem is ready to use.

5: Using Watcher^{TM}

Watcher is the application that allows you to manage and monitor the connection between the SB555 modem and the CDMA network. You use Watcher to:

- Determine your signal strength, roaming status, 1X high speed data availability, and other network connection parameters
- Initiate data calls
- View call statistics
- Receive and send SMS messages
- Customize features and options

The Watcher's features are indicated in the figure below and the meanings of the Watcher icons are listed in Table 2.

Table 2:

Icon	Meaning
	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: • You are outside the CDMA network coverage area • The signal strength is too weak • A network or account problem is preventing the SB555 modem from obtaining wireless service • The integrated antenna or antenna connection may have been damaged
	The 1X indicator shows whether 1xRTT is available in this area.
	The Roaming Status indicator shows whether you are roaming onto the network of a service provider other than your own. • 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. 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 might NOT able to complete calls.
	A circuit-switched data call is in progress.
	A high-speed (1X) packet data call is in progress.
	A fatal error has occurred and the Watcher software is not able to communicate with the SB555 modem. (This may be resolved by closing Watcher and restarting your SB555 modem)
	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.
	The voice mail indicator shows whether you have unheard voice messages. To hear the messages, you must connect to your voice messaging system. Double click this icon to dial your voice messaging system.
	The missed call indicator appears if you failed to answer an incoming call.
	The auto-answer indicator shows whether Watcher is set to automatically answer incoming calls.
	The headset indicator shows whether a headset is connected to the SB555 modem
	This indicator shows whether the silent ring feature is enabled. When enabled, no sound is played when an incoming call is received.
	The privacy indicator shows whether encryption is in use on voice calls, if it is available on the network. (Encryption prevents your calls from being monitored.)

System Try Icon

Watcher displays an icon in Windows *System Tray*. The *System Tray* icon indicates your connection status or notifies you when you have voice mail or SMS messages, or when you have missed a call. The meanings of these icons are listed in Table 3.

Table 3:

Icon	Meaning
	You are in service on the CDMA network but have no active voice or data connection.
	You have an active voice or data connection.
	You missed an incoming call.
	You have unread SMS message(s).
	You have voice mail.

6: LED Indicators and Modem Specifications

LED Indicators

Your Toughbook has a power switch to the integrated SB555 modem. You can use the switch to power on and of f your SB555 modem. Next to the switch there are three LED indicators. Table 4 describes the functions of the LEDs.

Table 4:

LED	Meaning
	Power Indicator. Solid green indicates that the SB555 modem is powered on
	Massage Indicator: • Blinking amber indicates that there is an incoming call or message. • Solid amber indicates that there is a hardware problem with the modem
	Antenna Indicator: • Blinking green indicates that the SB555 modem is searching for CDMA network. • Solid green indicates that the SB555 modem has registered to a CDMA network

SB555 Modem Specifications.

This section describes the specifications of the integrated SB555 modem.

SB555 Modem Specifications	
Transmit Power	Maximum 224mW into 50Ω (+23.5dBm)
Transmit Frequency	PCS: 1850 to 1910 MHz Cellular: 824 to 849 MHz
Receive Frequency	PCS: 1930 to 1990 MHz Cellular: 869 to 894 MHz
Channel Spacing	1.25 MHz