



User Guide

Freedom Box 200C™

Wireless Ruggedized Modem

For Windows 2000 and XP



Warning: You must install the modem software before inserting the FB200C modem.



Notice: Restricted Proprietary Information

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Technical Support

Safety and Regulatory Notices

This product is not to be used in any environment where radio frequency equipment is prohibited or restricted in its use. To ensure that your modem is deactivated you should remove it from your computer under the above conditions.

Regulatory Notices

Federal Communications Commission Radio Frequency Interference Statement

This equipment has been certified to comply within the limits of a class B digital device pursuant to part 15 and 24 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential situations. This equipment generates, uses, and can radiate radio frequency energy, and, if not properly installed and used in accordance with the instructions, may cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off. You are encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna of the television, radio or cordless telephone.

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

Technical Support

If you have any questions or comments about your FB200C, please contact the Novatel Wireless Inc. Customer Support team.

WWW: <http://www.novatelwireless.com/support/index.html>

Email: support@novatelwireless.com

Phone: 1 (888) 888-9231

System Requirements

The following items are required to set up and use your FB200C modem:

- Pentium 90 processor or higher.
- Windows 2000 or XP
 - 64MB RAM
- 16MB hard drive space.



- CD-ROM drive.
- the Wireless Connection Manager software, included with your FB200C modem, and
- a user account, including a User Name and Password, from a network carrier with PCS CDMA 1X service.

To purchase a user account, please contact network carrier. For a list of network service provider please email Novatel Wireless at support@novatelwireless.com or call 1 (888) 888-9231.

FB200C Overview and Installation

This section provides an overview of the modem box and installation instructions.

FB200C front panel

The FB200C front panel has power, service, and data status indicators and a reset button as shown on Figure 1.



Figure 1 FB200C Front Panel

Indicator/Button	Function
Reset	Reset button for the FB200C.
Power	The power LED indicates power is on when lit.
Service	The service LED indicates that the FB200C has acquired network service.
Data	The data LED indicates data activity between the FB200C and the host computer.

FB200C Rear Panel

The rear panel of the FB200C is where the power, communication port, and antenna cables are connected. This is shown in Figure 2.



Figure 2 FB200C Rear Panel

Connector	Description
12V DC	Power cable plugs into this connector. The input supply should be between 10 to 18 Volts DC.
Serial	RS232 connector for modem main port. When using this port, the modem acts as a AT modem. The Serial port is disconnected when an active USB port is connected.
USB	USB modem port. When using the USB port, the host computer will have additional modem status information not available when using the serial connector. USB must be used when using Windows Connection Manager.
Antenna	TNC antennae connector for external mount antennae.

Connecting the power cable

The FB200C comes supplied with a power cable as illustrated in Figure 3.



Figure 3 Power cable

Wire Color	Functionality
Green	This wire is the positive terminal for the modem. The modem is designed to be always on when power is applied. Connect the green wire to vehicle IGN (IGNITION) if you only want the modem on when vehicle is on. Connect the green wire to an always on fuse protected circuit connection to have modem always on.
Black	Ground





Installing the Wireless Connection Manager Software on Windows

This section guides you step-by-step through the Wireless Connection Manager for Windows installation procedure.

Once you have completed the set up and installation process, you will be able to use your FB200C Modem with your Internet applications.

Warning: This application is only supported by Windows 2000 and XP

To install the Wireless Connection Manager onto your laptop or notebook computer:

1. Insert the Installation CD into the CD-ROM drive of your desktop computer. Run the installation program **WirelessConnectionManagerVx.xx.xx.exe**.
2. Follow the instructions displayed on screen to begin installing the Wireless Connection Manager software. The **Welcome** window will appear, shown in Figure 1.

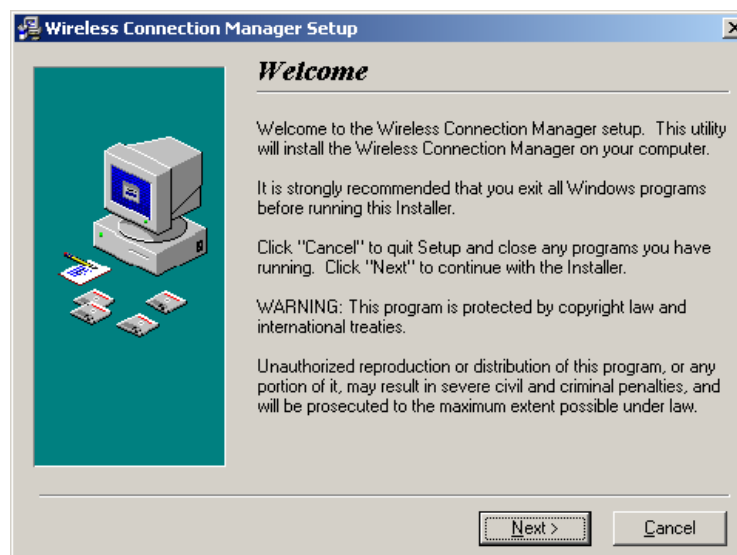


Figure 1 Welcome Window

3. Read the information displayed on screen and click **Next** to continue. The Novatel Wireless **License Agreement** will appear.
4. Read the agreement and select **I read and agree to the above terms**.
5. Click **Next** to continue. The **Start Copying Files** window will appear, shown in Figure 2.

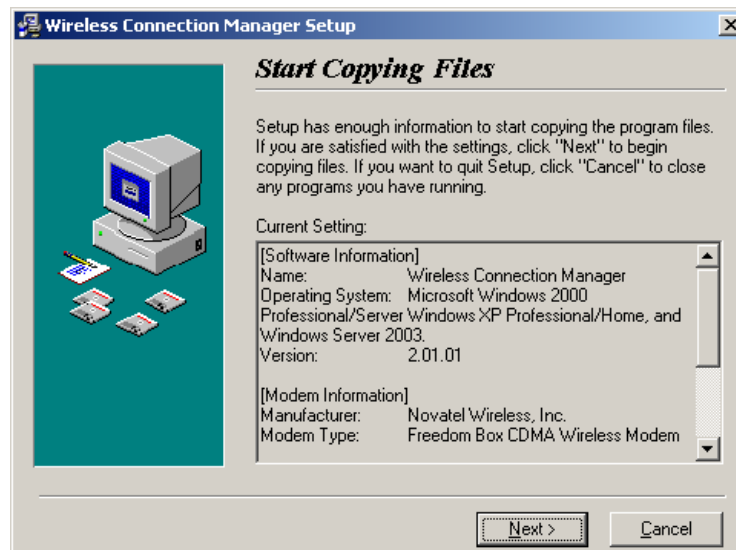


Figure 2 Start Copying Files Window



6. If you would like to review or change an installation setting, click **Back**. If you are satisfied with the installation settings click **Next** to continue. The **Installation Complete** window will appear, shown in Figure 3.

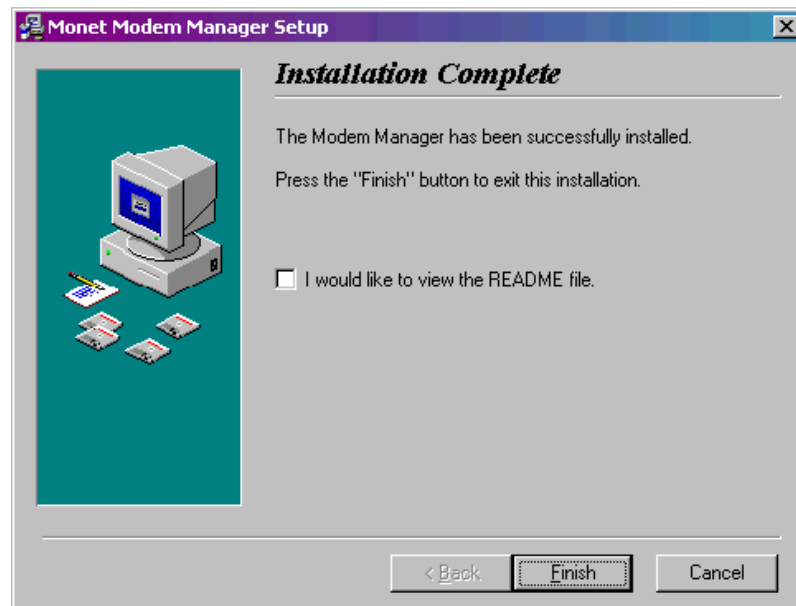


Figure 3 Installation Complete Window

7. Click **Finish** to exit the Installation program. The **Install** window will appear, shown in Figure 4.

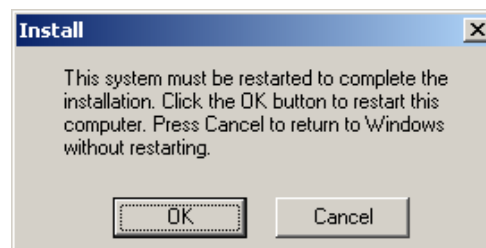


Figure 4 Install Window

8. Click **OK** to restart your computer.
9. Once your computer has rebooted, make sure the modem is powered on by checking to make sure the **Power** indicator is ON. Connect the FB200C's USB cable into the computer's USB port. Windows will automatically detect and install the necessary modem drivers in order to operate the FB200C modem.
10. When Windows has finished installing the FB200C modem drivers, you can access the Wireless Connection Manager by double-clicking on the shortcut icon that has been placed on your computer's desktop.

Uninstalling the Wireless Connection Manager Software

To uninstall the Wireless Connection Manager application, select **Start -> Programs -> Novatel Wireless -> Wireless Connection Manager -> Wireless Connection Manager Uninstall**. The Uninstall wizard will open, and guide you through removing the Wireless Connection Manager program from your computer or by using the Windows Control panel and selecting "Add or Remove Programs".



Getting Started With the Wireless Connection Manager

The Wireless Connection Manager application allows you to monitor and control the operation of your FB200C modem.

This section explains the basic steps required to operate the Wireless Connection Manager for Windows.

Connecting to the Network

In order to use your Internet applications, your modem must first establish a network connection.

To connect to the network:

1. Launch the Wireless Connection Manager application by double-clicking the **Wireless Connection Manager** icon, located on your desktop.
2. From the Wireless Connection Manager **Main** window, click **Connect**. See Figure 1.

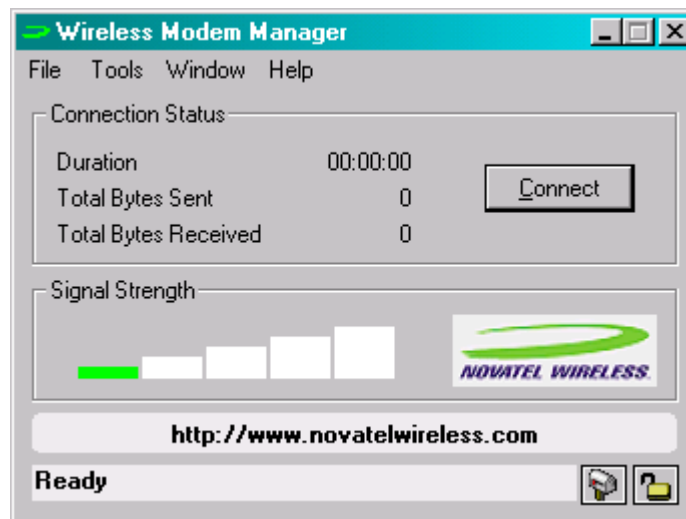


Figure 1 Wireless Connection Manager Main Window

3. If this is the first time you have attempted to connect to the network, the Wireless Connection Manager will walk you through the 5 step activation process. See Figure 2.



Figure 2 Welcome Message

4. Click Next. The **Activation Information** window will appear, as shown in Figure 3.

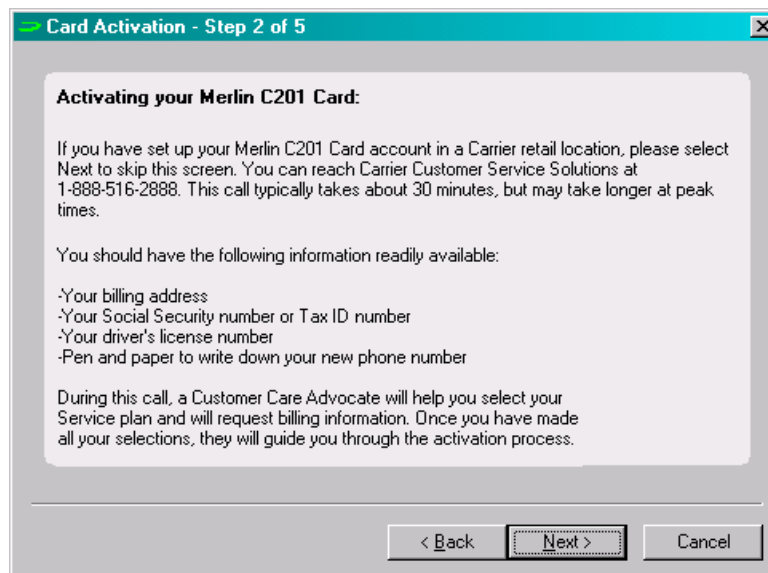
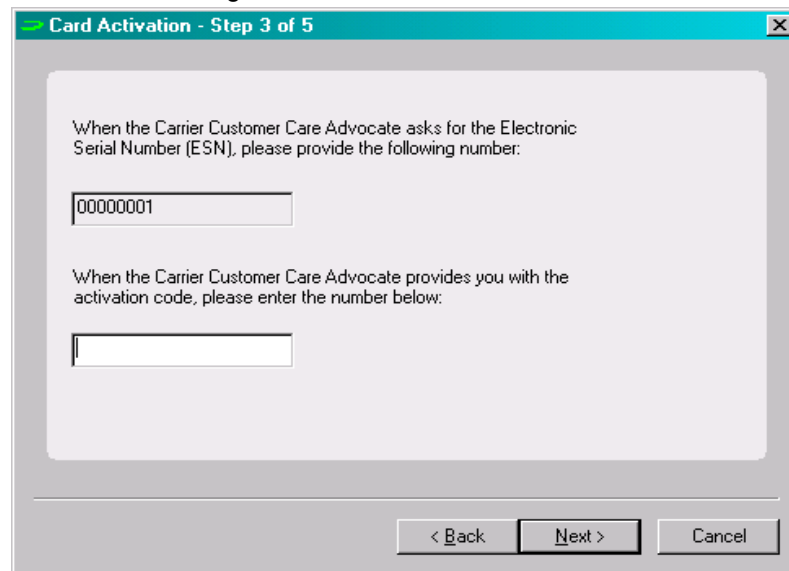


Figure 3 Activation Information Window

5. Click Next. When the enterprise administrator provides you with the activation code, enter the number as indicated in Figure 4.



Card Activation - Step 3 of 5

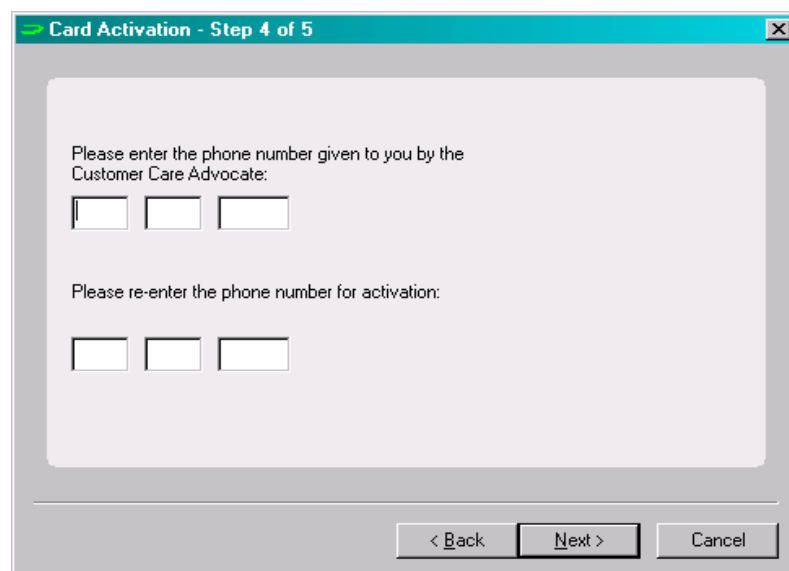
When the Carrier Customer Care Advocate asks for the Electronic Serial Number (ESN), please provide the following number:

When the Carrier Customer Care Advocate provides you with the activation code, please enter the number below:

< Back Next > Cancel

Figure 4 Activation code window

6. Click Next. Enter the phone number and MSID given by the Customer Solutions Advocate as shown in Figure 5.



Card Activation - Step 4 of 5

Please enter the phone number given to you by the Customer Care Advocate:

Please re-enter the phone number for activation:

< Back Next > Cancel

Figure 5 MDN and MSID window

7. Click Next. The FB200C modem is activated properly when you see the successful activation window as shown in Figure 6. Click Finish to close activation window.

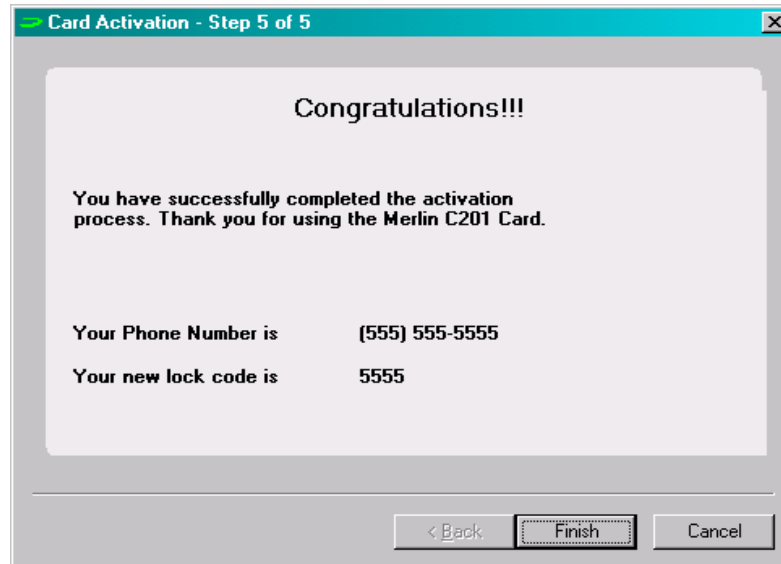


Figure 6 successful activation window

8. The modem's network connection status will be displayed in the **Modem** status bar, highlighted in Figure 7.

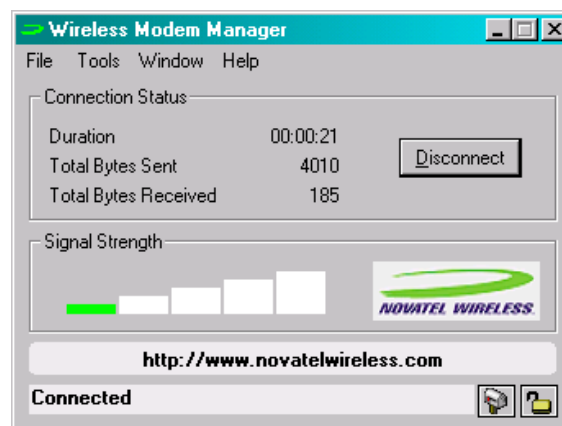


Figure 7 Modem Status Bar

If the modem is unable to connect to the network, check the modem's signal strength as displayed in the **Signal Strength** status bar. The greater the number of green bars present, the stronger the signal strength. If the signal strength is poor, try changing your location in order to pick up a stronger signal.



Disconnecting From the Network

To disconnect your modem from the network, click **Disconnect** from the Wireless Connection Manager **Main** window, shown in Figure 8.

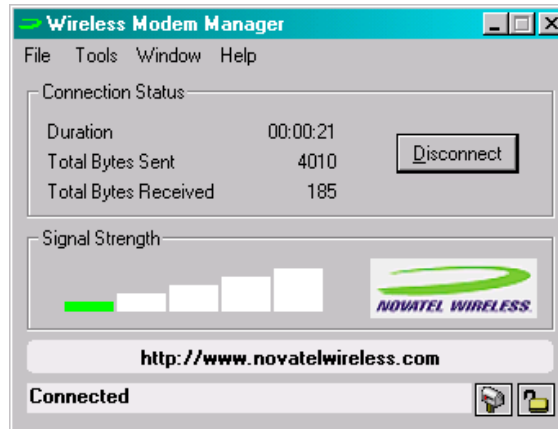


Figure 8 Disconnect Button

To disconnect from the network and close the Wireless Connection Manager application, click the  located in the top-right corner of the Wireless Connection Manager **Main** window.

Alternately, you can select **Exit** from the **Modem** menu.

Quitting the Wireless Connection Manager Application

To quit the Wireless Connection Manager application, click the  located in the top-right corner of the **Wireless Connection Manager** main window.

Alternately, you can select **Exit** from the **File** menu, shown in Figure 9.

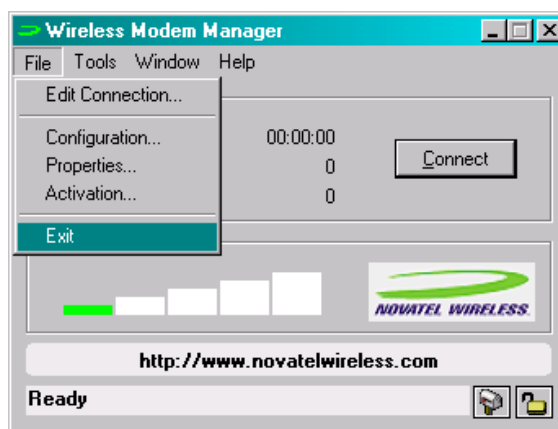


Figure 9 Exit Command

The modem will terminate its network connection, and the Wireless Connection Manager application will shut down.

System Tray Icons

When you launch the Wireless Connection Manager application, a system tray icon will appear in the bottom-right corner of your desktop. These tray icons provide easy access to the Wireless Connection Manager **Main** window and the modem's connection status.

The following icons indicate the modem's connection status:



- If this icon is visible, the modem is currently connected to the network.



- If this icon is visible, the modem is not connected to the network.

If the **Wireless Connection Manager** window is not visible, double-click the tray icon to open it.

Alternately, you can control the operation of the Wireless Connection Manager by right-clicking the tray icon and selecting an action from the pop-up menu.



Getting to Know the Wireless Connection Manager for Windows

This section introduces the various windows and menu commands that are contained in the Wireless Connection Manager application for Windows.

The Wireless Connection Manager Main Window

When you launch the Wireless Connection Manager application for Windows, the **Main** window will open, shown in Figure 1.

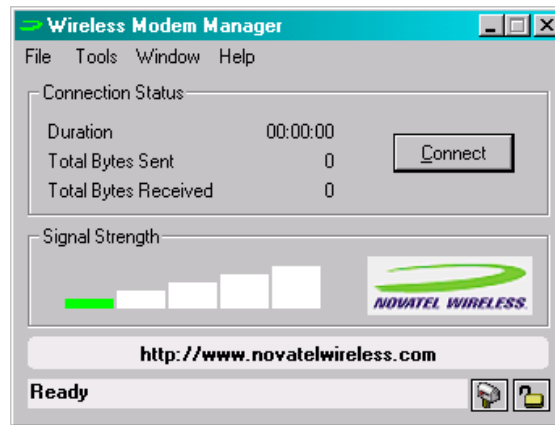


Figure 1 Wireless Connection Manager Main Window

The **Wireless Connection Manager** main window consists of the following items:

Duration Field	This field indicates how long the modem has been connected to the network.
Bytes Sent Field	This field indicates the amount of data (bytes) the modem has sent during the current network session.
Bytes Received Field	This field indicates the amount of data (bytes) the modem has received during the current network session.
Signal Strength Status Bar	This status bar indicates the modem's signal strength. If adequate signal strength is present, a number of the five bars will be shaded green.
Modem Status Bar	This status bar displays the modem's network connection status.

The Modem Configuration Window

To access the **Modem Configuration** window, shown in Figure 2, select **Configuration** from the **Modem** menu.

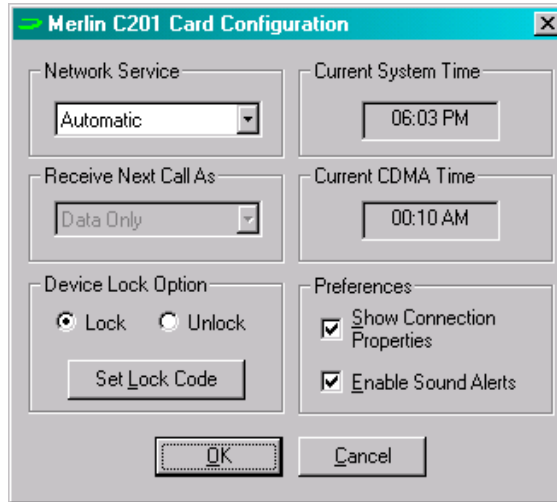


Figure 2 Modem Configuration Window

The following fields are displayed in the **Modem Configuration** window:

- | | |
|--|---|
| Network Service Field | This value directs the modem to attempt to connect only with your service provide's network. This is a read-only field and cannot be altered. |
| Receive Next Call As Field | Data Only - This value directs the modem to receive the next call as packet data only. This is a read-only field and cannot be altered. |
| Current System Time Field | This field displays the current system time as displayed on your computer's desktop. |
| Current CDMA Time Field | This field displays the time as indicated by the CDMA base station. |
| Show Connection Properties While Connecting Check Box | Select this check box if you wish to see the Connection Properties window the next time you attempt to connect to the network. |



The Modem Properties Window

To access the **Modem Properties** window, select **Properties** from the **Modem** menu

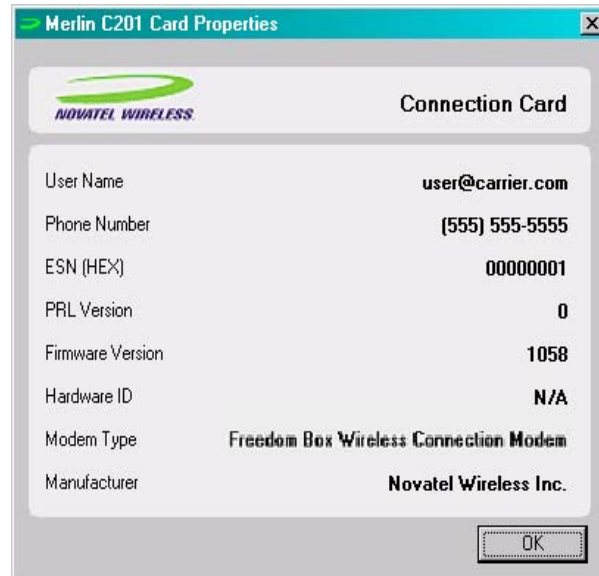


Figure 3 Modem Properties Window

The information contained in this window is useful for Customer Support in diagnosing problems you may experience while using your modem.

The following fields are contained in the **Modem Properties** window:

User Name	This field displays your network user name.
Mobile Identification Number	This field displays your modem's Mobile Identification Number. This number is used by the CDMA base station to identify your modem.
ESN (HEX)	This field displays your modem's Electronic Serial Number (ESN). The ESN is a unique number given to each modem as a means of identification.
PRL Version	This field displays your modem's Preferred Roaming List (PRL) version. The PRL is a list of networks your modem would prefer to connect with.
Firmware Version	This field displays the firmware version your modem uses.
Hardware Version	This field displays the hardware version your modem uses.
Modem Type	This field displays the type of modem core your modem uses.
Manufacturer	This field displays the name of the firmware manufacturing company.



The Detailed Status Report Window

To access the **Detailed Status Report** window, select **Detailed Status Report** from the **Tools** menu.

The **Detailed Status Report** window contains two tabs; the **General** and **History** tabs.

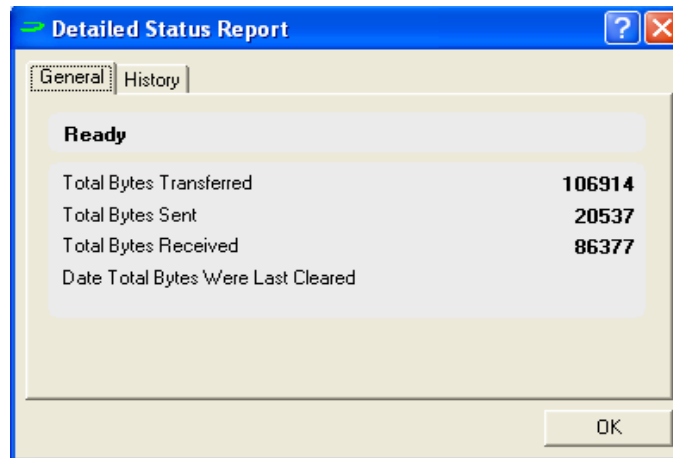


Figure 4 General Tab

The **General** tab, shown in Figure 4, is displayed by default and contains the following items:

Modem Status Bar	This status bar displays the modem's network connection status.
Total Bytes Transferred Field	This field displays the total number of bytes, both sent and received, during the current network session.
Bytes Sent Field	This field displays the total number of bytes sent, during the current network session.
Bytes Received Field	This field displays the total number of bytes received during the current network session.
Date Byte Totals Were Last Cleared Field	This field displays the date the byte totals were last cleared.

The **History** tab, shown in Figure 5, displays the date, time, and current modem and network session activities. This tab is useful when attempting to diagnose problems with either your modem or network connection.

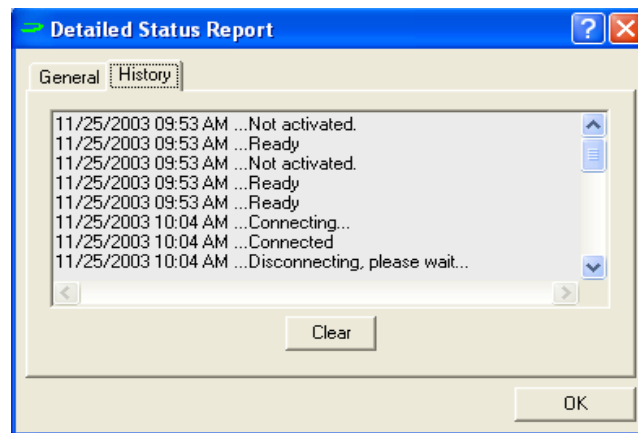


Figure 5 History Tab

The About Wireless Connection Manager Window

To access the **About Wireless Connection Manager** window, shown in Figure 6, select **About Wireless Connection Manager** from the **Help** menu.



Figure 6 About Wireless Connection Manager Window

This window contains information about the Wireless Connection Manager application, including:

- The software version
- The date the software was released
- The copyright information



Additional Menu Commands

The following menu commands are also available from the Wireless Connection Manager application.

Clear Bytes Command

To clear the modem's total bytes counted, select **Clear Bytes** from the **Tools** menu.

All byte totals counted, either sent or received, by the modem during the current network session will be cleared.

The modem's byte totals are displayed in the **General** tab of the **Detailed Status Report** window, shown in Figure 7.

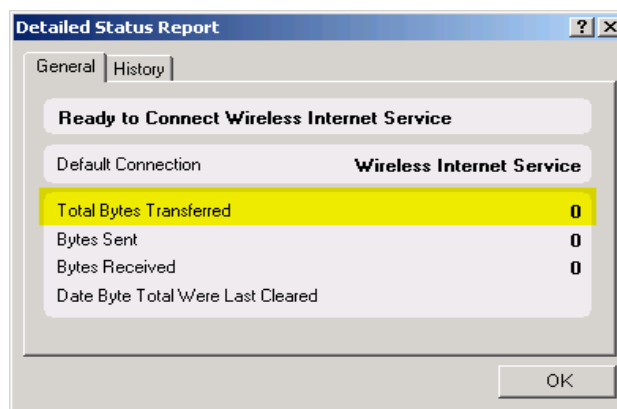


Figure 7 Total Bytes Counter

Always on Top Command

To keep the **Wireless Connection Manager** window on top of all other windows, select **Always on Top** from the **Window** menu, as shown in Figure 8.

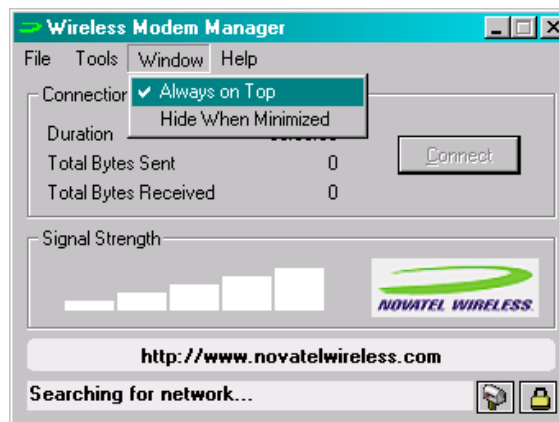


Figure 8 Always on Top Command

Note: Click **Always on Top** a second time to disable this command.

Hide Window Command

To hide the **Wireless Connection Manager** window, select **Hide Window** from the **Window** menu, as shown in Figure 9.

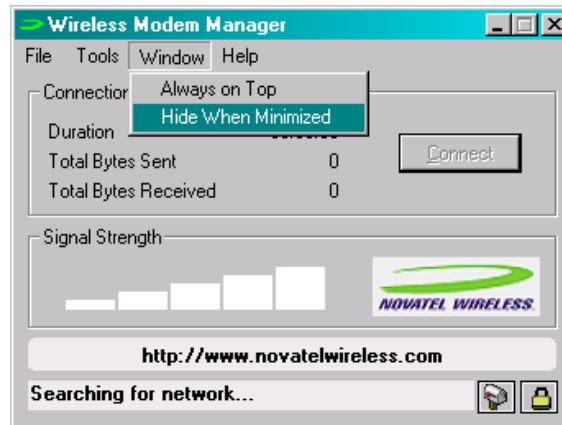


Figure 9 Hide Window Command

The **Wireless Connection Manager** window will be minimized to the system tray icon .

Double-click on the icon to re-open the **Wireless Connection Manager** window.

Wireless Connection Manager Help

To access the online help for the Wireless Connection Manager application, select **Wireless Connection Manager Help** from the **Help** menu, as shown in Figure 10. The application will launch the Wireless Connection Manager online help files.

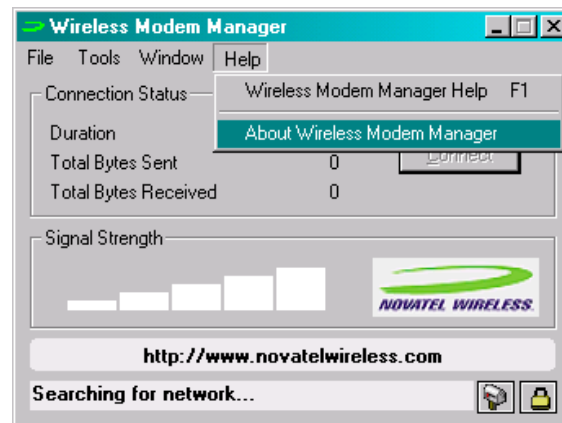


Figure 10 Wireless Connection Manager Help Command



Troubleshooting

This section provides solutions to problems you may encounter while using your FB200C Modem on a Windows operating system.

You can contact Novatel Wireless representative at support@novatelwireless.com or 1 (888) 888-9231 for additional information.

Troubleshooting a Connection Failure

If you are unable to establish a network connection, the following suggestions may correct the problem:

- Verify that your FB200C modem is powered on and communication port is connected to the computer.
- If the Wireless Connection Manager cannot communicate with the modem, exit the Wireless Connection Manager application. Reset your FB200C Modem by using a thin pen tip to push the reset button. This resets the modem hardware.
- Check your modem's signal strength (displayed on the Wireless Connection Manager **Main** window). If the signal strength is weak (less than two bars), your modem might be unable to establish a network connection. Try moving to another location in order to pick up a stronger signal.
- Launch the Wireless Connection Manager application and try to connect to the network again.

Error Messages

One of the following messages may be displayed if your modem is unable to register or connect with the Mobile Network.

Message	Solution
Modem Not Responding	This message may appear if you plug your FB200C modem into the USB port and click on the Wireless Connection Manager shortcut icon before your computer has detected the modem. Click OK on the message window and wait between 15-30 seconds before clicking the shortcut icon. If the message appears a second time, unplug and reconnect the USB port to the modem and wait until your computer detects the modem before clicking the Wireless Connection Manager shortcut icon again.
No Service	If this message is displayed, there is no service available at this time. The network could be busy or undergoing maintenance. Try connecting to the network at a later time or moving to another location if you are outside the network's coverage area.
Modem is not present	If this message is displayed, verify that the modem USB cable is plugged in properly. Note: Modem detection is only available when the modem is connected using the USB port.
Modem is already in use	This message indicates the modem port is busy. Verify whether your modem has already established a network connection. If the modem is not currently connected to the network, exit the Wireless Connection Manager program, relaunch the application and try a second time to connect to the network.
Device firmware incompatible	If this message appears, your FB200C modem's firmware is incompatible with your current version of the Wireless Connection Manager software. Please contact Novatel Wireless customer support in order to upgrade your modem's firmware.
There was no answer	If this message appears, try and connect at a later time. If the message appears again, contact your service provider customer support.
The remote access server is not responding	If this message appears, try and connect at a later time or move to a better signal strength location. If you still cannot connect to the network, contact your service provider customer support.
The modem has reported an error	If this message is displayed, reboot your computer and try to connect again. If you are still unable to connect, contact your service provider customer support.



Frequently Asked Questions

Question	Answer
How can I check the quality of my connection?	The Signal Strength status bar, located on the Wireless Connection Manager Main window, indicates the quality of the modem's signal. If two or more bars are shaded green, the modem's signal strength is good. If less than two bars are shaded green, the signal strength is poor and it will be difficult to establish and maintain a network connection.
How do I find out what version of the Wireless Connection Manager software I'm using?	Open the Wireless Connection Manager Main window and select About Wireless Connection Manager from the Help menu. The Wireless Connection Manager software version, release date, and copyright information will be displayed in the About Wireless Connection Manager window.
How do I find out what version of firmware and hardware my modem is using?	Open the Wireless Connection Manager Main window and select Properties from the Modem menu. The modem's firmware and hardware version, as well as the modem type and manufacturer, will be displayed in the Modem Properties window.
I have forgotten my User Name and Password. What do I do?	Call your network service provider customer support.
How can I tell if I have service?	The Wireless Connection Manager indicates whether you have service. The Wireless Connection Manager will indicate if there is no service available in the Modem Status field.
What is an ESN?	An ESN (electronic serial number) is a unique number that identifies your wireless modem to the network. You can check your modem's ESN by selecting Properties from the Modem menu.
Why won't the Wireless Connection Manager recognize my User Name or Password?	Verify that you are entering the correct information in the Connection Properties window. If the Caps Lock feature is activated, turn it off and enter the information again. If the problem persists, call Customer Support of the network service provider to verify you have the correct User Name and Password .





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