U630 USER MANUAL WITH MOBILINK 2.0™

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1 GETTING STARTED

In This Section

- Description of Your UMTS Merlin
- The UMTS Package
- System Requirements
- Care of Your UMTS Merlin
- Installing MobiLink 2 on Windows 2000
- Windows 2000 detects your UMTS Merlin
- Installing MobiLink 2 on Windows XP
- Windows XP detects your UMTS Merlin

This section will walk you through how to get started using your UMTS Merlin, including software and driver installation, inserting the card so Microsoft Windows is able to detect and install the drivers for your UMTS Merlin and setting up a data session to connect to the Internet.

1.1 YOUR UMTS ACCOUNT

For information about your UMTS account, User Name, Password and Access Point Name, please contact your UMTS Service Provider.

1.2 YOUR UMTS MERLIN

Your UMTS Merlin is a PC card that fits into the PC card slot (Type II, 5V) of most Windows based laptop computers. The U630 utilizes the UMTS (Universal Mobile Telecommunications System) Network to connect to the Internet transferring data at rates of 220-320 kbps, and bursts speeds of up to 384kbps. The Merlin U630 runs on Microsoft Windows 2000 and Microsoft Windows XP.
The MobiLink 2 software will allow you to control and monitor your connection to the UMTS network. It will also allow you to send and receive SMS (Short Messaging Service), get online help and has an address book.

1.3 THE UMTS PACKAGE

- Merlin U630 PC Card Protection Case
- Merlin U630 PC Card
- SIM (Subscriber Identification Module) -- Depending on Service Provider
- MobiLink 2 software on installation CD
- Quick Start Guide
- Merlin U630 user manual

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1.4 GETTING STARTED

Before you use your UMTS Merlin, you must first:

1. Have an active UMTS account with a UMTS Service Provider.
2. Have a properly configured SIM (Provided by the Service Provider) – facilitates permission to use network.
3. Install the MobiLink 2 software, located on the installation CD.
4. Insert SIM card into the UMTS Merlin U630 SIM card slot.
5. Insert into the PC card slot on your PC for Microsoft Windows to detect and configure the UMTS Merlin.
6. Launch MobiLink 2, create a profile if necessary and select the Connect button.

IMPORTANT NOTICES: DO NOT INSERT THE MERLIN INTO THE PC CARD SLOT UNTIL YOU HAVE UNINSTALLED ANY PREVIOUSLY EXISTING UMTS SOFTWARE FROM YOUR COMPUTER AND INSTALLED THE MOBILINK 2 SOFTWARE. MOBILINK 2 WILL NOT INSTALL UNLESS PREVIOUS VERSIONS OF MOBILINK ARE REMOVED. USE WINDOWS ADD/REMOVE PROGRAMS TO REMOVE.

1.5 SYSTEM REQUIREMENTS

- 133 MHz or faster Pentium- compatible
- Windows 2000 and XP (Home and Professional)
- 64 MB RAM
- 16 MB available hard drive space
- CD-ROM drive
- Type II, PC CARD slot --- 5V

1.6 CARE OF YOUR MERLIN

Novatel Wireless recommends the following handling guidelines:

- Handle with care.
- Avoid storing your UMTS Merlin in extreme temperatures.
- Store the card in a dry and clean environment.
- Avoid spilling any liquid or immersing the card in water.
- Do not place any labels on the Antenna as this may alter the sensitivity of the antenna.
- Do not place any labels on the card or the SIM as this may interfere with the PC card slot/SIM slot when inserting.
- Do not force the Merlin into the PC card slot.
- Ensure the edges of the SIM are smooth before inserting into SIM slot.
- Do not force the SIM into the SIM slot.
- Do not apply force on the top or bottom of the Merlin.
- When transporting your laptop, remove the Merlin from the PC card slot.

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NOTE: TO REMOVE YOUR MERLIN, YOU MUST EXIT MOBILINK 2, THEN STOP THE MERLIN USING THE PC CARD TRAY ICON **LOCATED IN THE BOTTOM-RIGHT CORNER OF YOUR PC. CLICK THE ICON AND SELECT STOP FROM THE DIALOG BOX. ONCE YOUR CARD HAS BEEN STOPPED, PRESS THE PC CARD EJECT BUTTON LOCATED ON YOUR PC AND REMOVE THE CARD COMPLETELY FROM THE PC CARD SLOT.**

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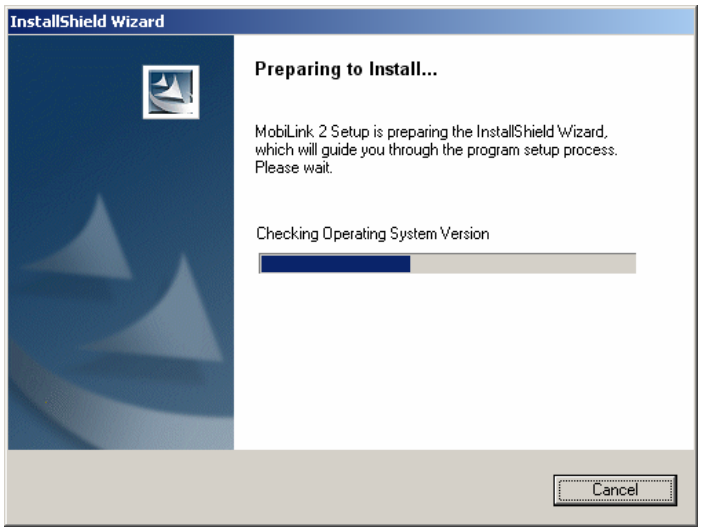
1.7 INSTALLING MOBILINK 2

This portion of the guide will instruct you how to install the MobiLink 2 software from the Installation CD.

1.7.1 Windows 2000 Installation

1. Insert the installation CD in the CD drive of your PC.
2. If the auto-run does not start, double-click on the Autorun.exe on the CD.
3. The "Preparing to Install" window will appear as below.



PREPARING TO INSTALL WINDOW

4. Following preparation the "Welcome to the InstallShield Wizard for MobiLink 2 will appear. See Figure 1.

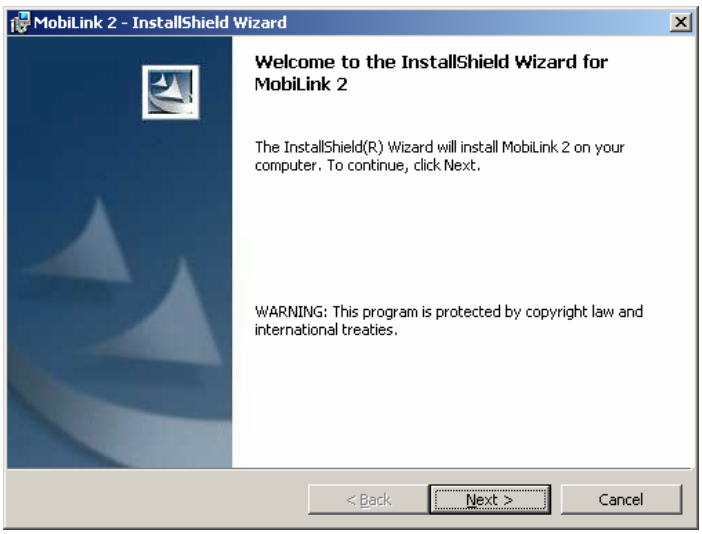


FIGURE 1

5. Read the information and click **Next.**

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6. The “License Agreement” window will appear next. See Figure 2.

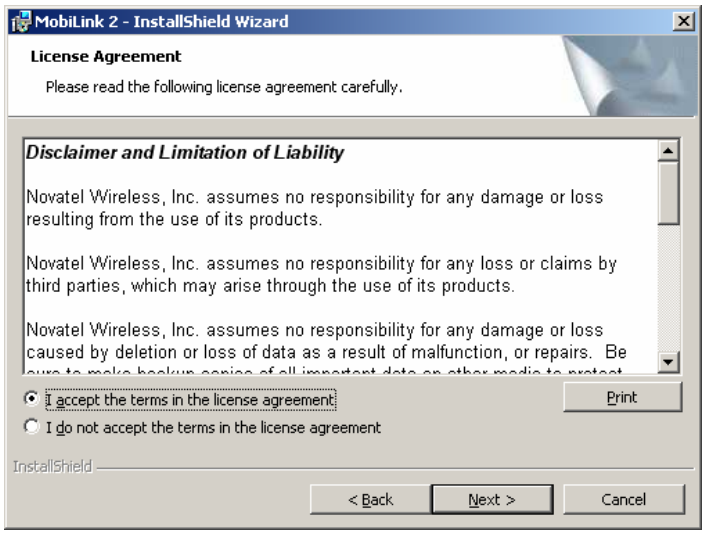

FIGURE 2

7. Read the License Agreement and acknowledge your agreement by selecting “I accept the license agreement”. Then click **Next.**
8. The "Ready to Install the Program" window will appear. See Figure 3.

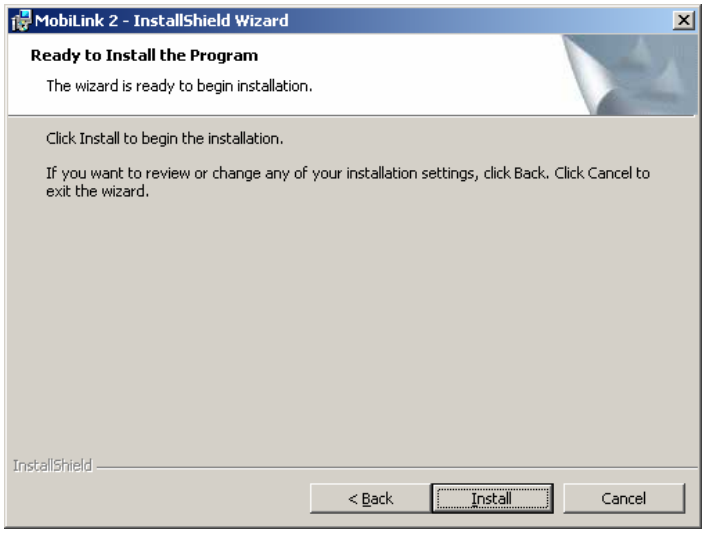

FIGURE 3

9. Click **Install.**

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10. The "Installing MobiLink 2" window will appear while MobiLink 2 is being installed. See Figure 4.

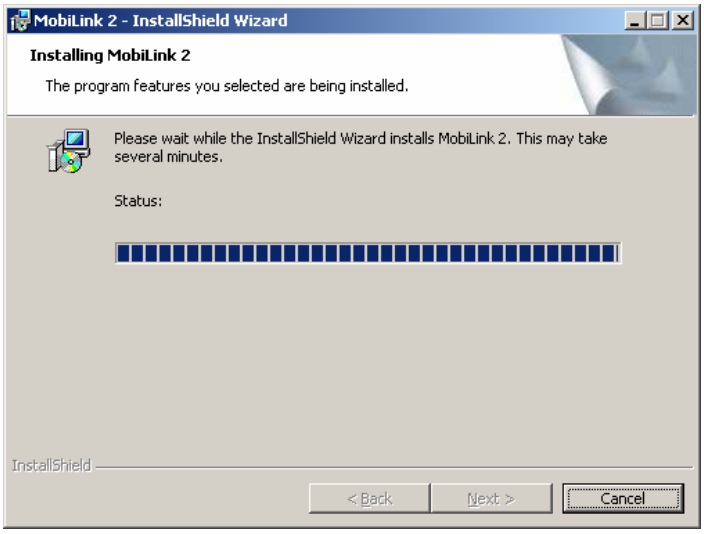

FIGURE 4

11. When the installation is complete, the "InstallShield Wizard Completed" window will appear. See Figure 5.

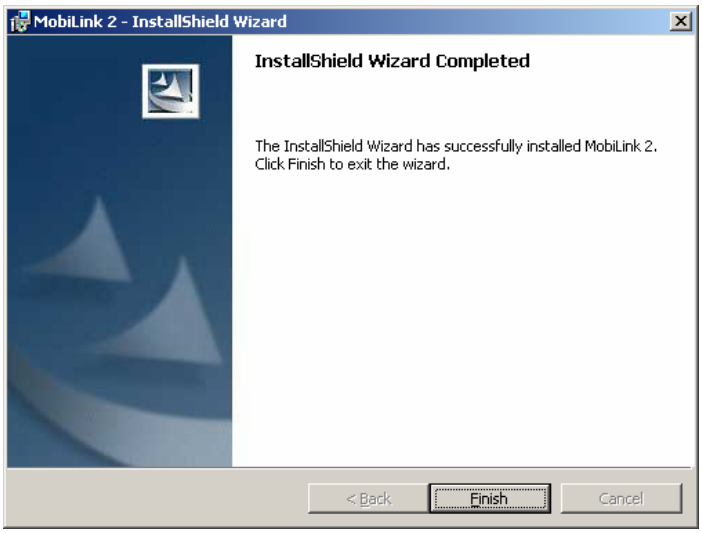

FIGURE 5

12. Click **Finish.**
13. Restart your PC.

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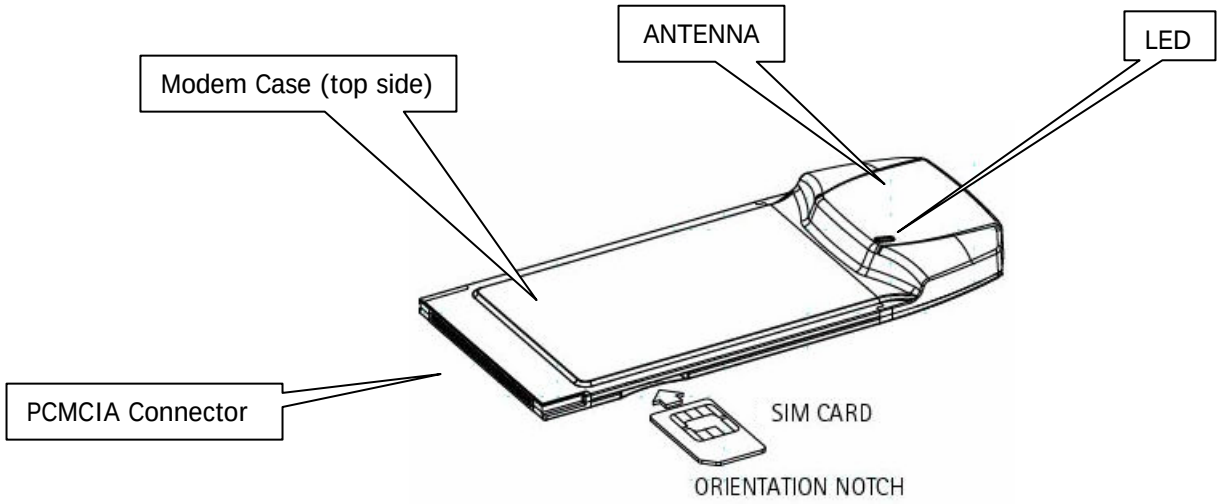
1.7.2 Windows 2000 detects your UMTS Merlin

1. Insert the SIM card into the modem. The SIM card is required to connect to the Network.

NOTE: SIM CARD CONTACT POINTS MUST FACE UPWARDS, AND THE ORIENTATION NOTCH MUST BE POSITIONED AS SHOWN IN THE PICTURE. PLEASE SEE SECTION 1.6 ON SIM CARE AND INSERTION



2. Insert the modem into the PC card slot of your PC. Windows reads the information from the Modem and installs drivers for each function of your UMTS Merlin.

The "Novatel_Wireless Merlin_UMTS_Modem" window will appear momentarily, see Figure 6. Then the "Novatel Wireless UMTS Modem Parent" window will appear. See Figure 7.

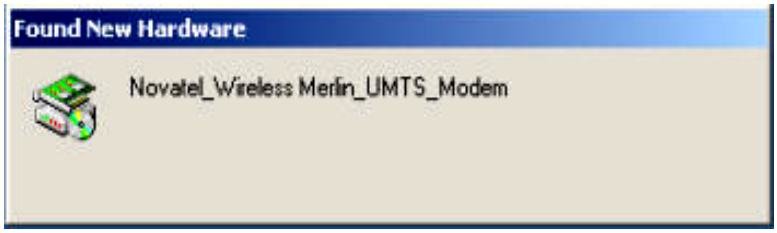


FIGURE 6

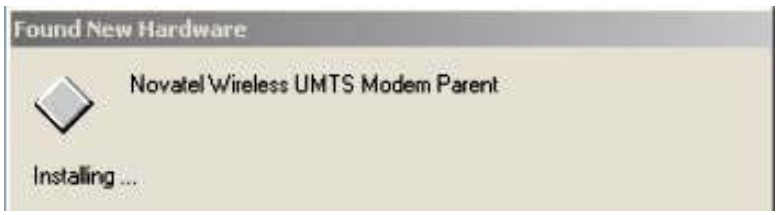


FIGURE 7

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After the Novatel Wireless Parent driver is installed, a “multifunction device” driver will be installed. Additional drivers installed are, the Novatel Wireless Modem Primary Port and the Novatel Wireless Secondary Port. See Figure 8, 9, 10, and 11.

FIGURE 8

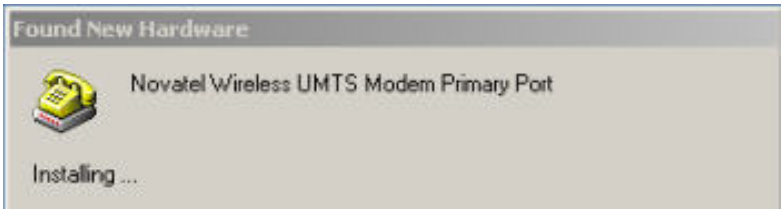

FIGURE 9

FIGURE 10

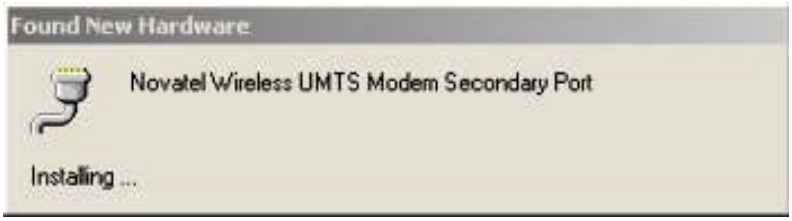

FIGURE 11

Windows has now detected and installed the drivers for your UMTS Merlin. Proceed to Section 2.

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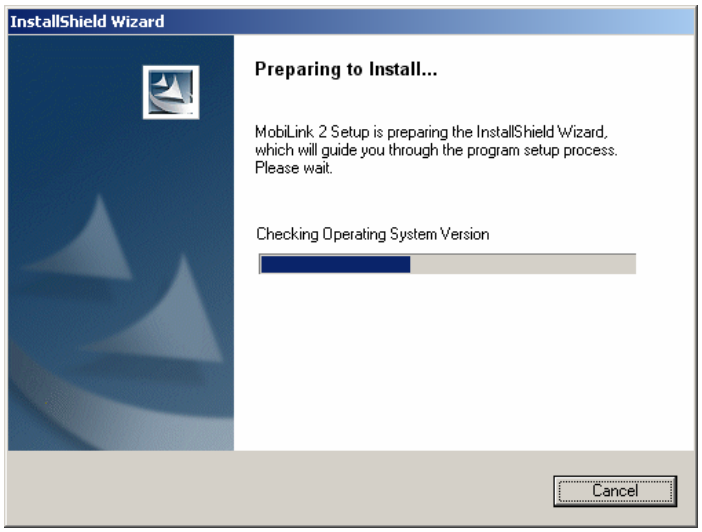
1.7.3 Windows XP Installation

1. Insert the installation CD in the CD drive of your PC.
2. If the auto-run does not start, double-click on the Autorun.exe on the CD.
3. The "Preparing to Install" window will appear as below.



PREPARING TO INSTALL WINDOW

4. Following preparation the "Welcome to the InstallShield Wizard for MobiLink 2" will appear. See Figure 12.

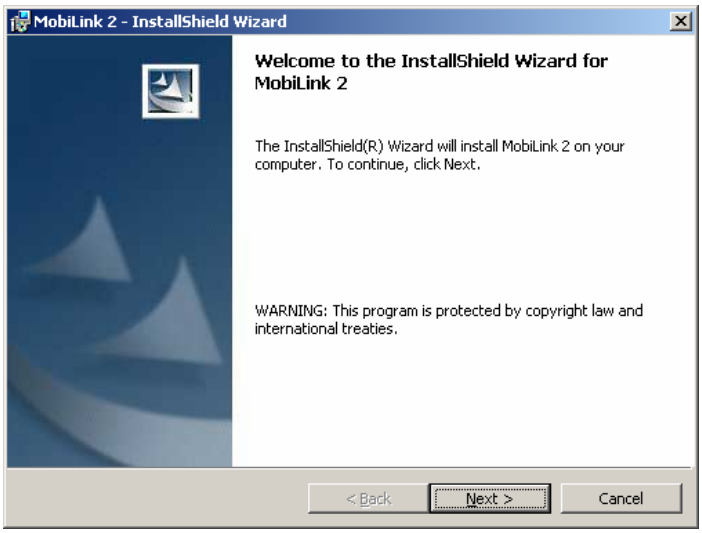


FIGURE 12

5. Read the information and click **Next**

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6. The “License Agreement” window will appear next. See Figure 13.

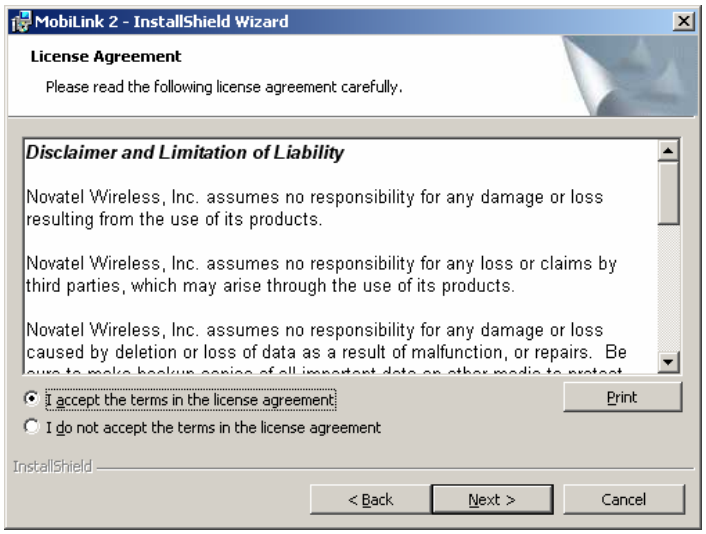

FIGURE 13

7. Read the License Agreement and acknowledge your agreement by selecting “I accept the terms in the license agreement”. Then click **Next.**
8. The "Ready to Install the Program" window will appear. See Figure 14.

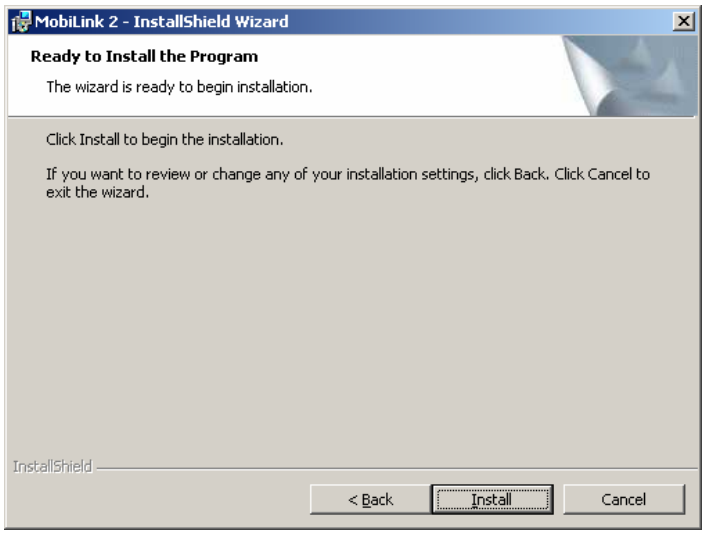

FIGURE 14

9. Click **Install.**

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10. The "Installing MobiLink 2" window will appear while MobiLink 2 is being installed. See Figure 15.

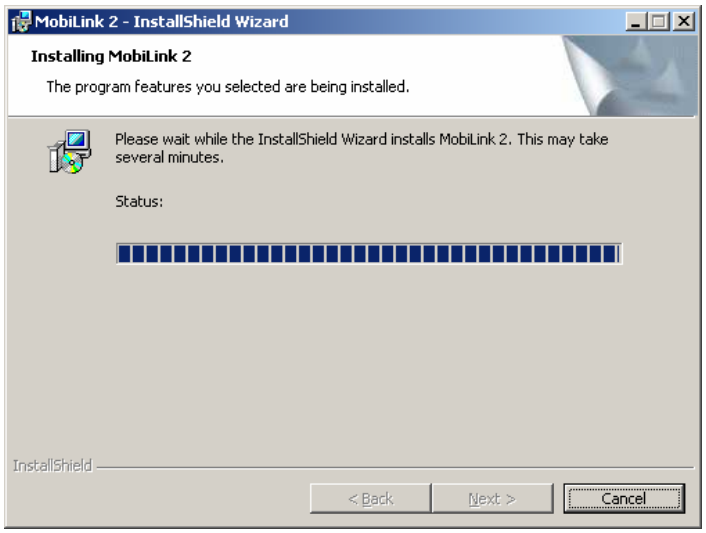

FIGURE 15

11. When the installation is complete, the "InstallShield Wizard Completed" window will appear. See Figure 16.

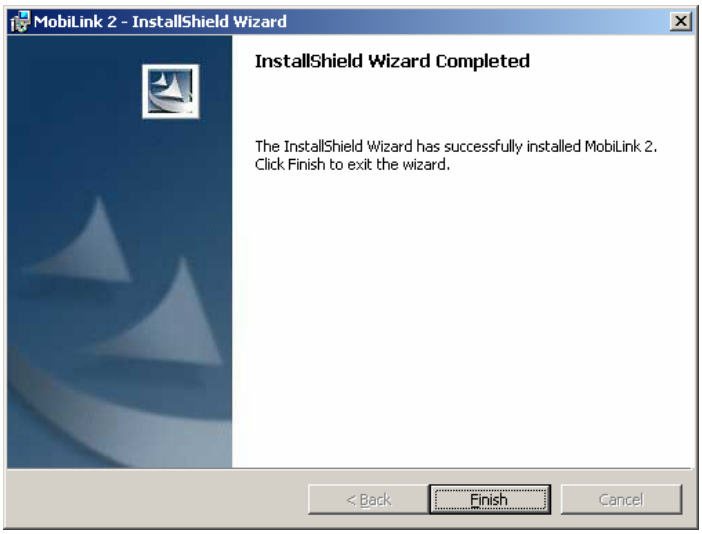

FIGURE 16

12. Click **Finish.**
13. Restart your PC.

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1.7.4 Windows XP detects your modem

1. Insert the SIM card into the modem. This is required to connect to the Network.

NOTE: SIM CARD CONTACT POINTS MUST FACE UPWARDS, AND THE ORIENTATION NOTCH MUST BE POSITIONED AS SHOWN IN THE PICTURE. (SEE PICTURE IN SECTION 1.7.2). PLEASE SEE SECTION 1.6 "CARE OF YOUR MERLIN" ON ADDITIONAL SIM CARE AND INSERTION POINTS.

2. Insert the modem into the PC card slot of your PC. Windows reads the information from the Modem and connects drivers for each function of your UMTS Merlin. You will see a sequence of callouts near the bottom right of your computer screen as Windows connects all drivers for your UMTS Merlin. See Figure 17 through Figure 23.

FIGURE 17

FIGURE 18

FIGURE 19

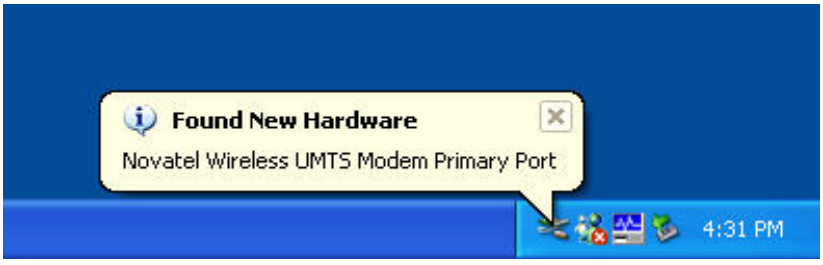

FIGURE 20

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FIGURE 21

FIGURE 22

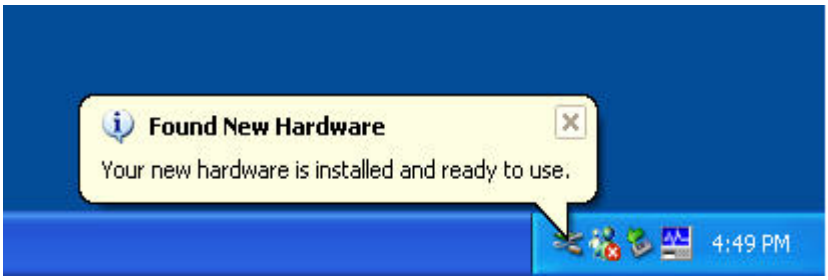

FIGURE 23

Windows has now detected and installed the drivers for your UMTS Merlin. Proceed to Section 2.

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2 MOBILINK 2

In This Section

- Describing MobiLink 2 Software Suite
- Starting MobiLink 2
- MobiLink's Main Window
- Using MobiLink 2 to connect to and disconnect from the Network
- MobiLink's 2 features
- Create a data session with MobiLink 2

This section will describe the MobiLink 2 Software Suite, how to use MobiLink 2 to connect to and disconnect from the Network along with the various functions associated with the buttons and the menu.

2.1 MOBILINK 2 OVERVIEW

The Novatel Wireless MobiLink™ Communications Software Suite is a family of wireless connectivity applications that connect mobile devices using, Wireless Wide Area Networks (WWAN) i.e 3G UMTS networks, Wireless Local Area Networks (Wi-Fi) and Ethernet in a single application to allow quick and easy access to email, the Internet and corporate networks anytime, anywhere.

The MobiLink Communications Software Suite of applications contains a messaging client that manages 2 way Short Message Service (SMS), an address book client that manages contacts and phone numbers, a connection manager that manages the various connections, and a customization utility to manage and generate pre-loaded profiles. The following section will detail the features of each application.

2.2 STARTING MOBILINK 2

To start MobiLink 2, double-click on the MobiLink 2 icon

that MobiLink 2 places on your desktop during the installation process.

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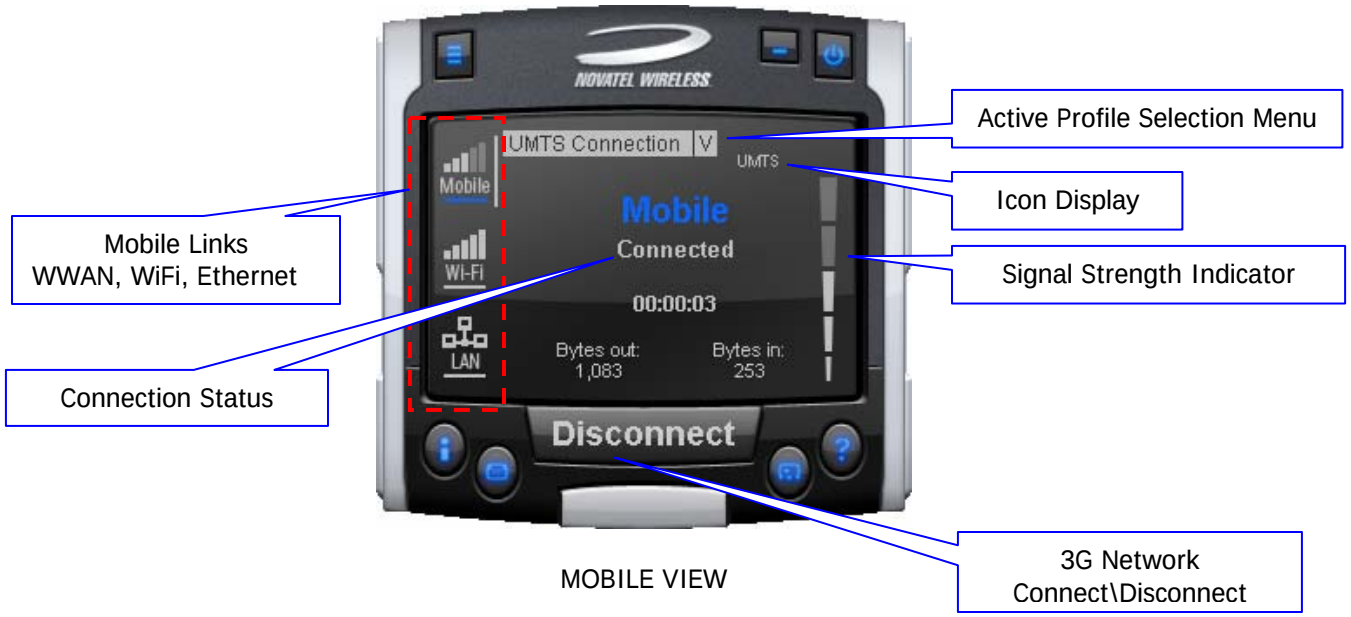
2.2.1 Main Display Window



MOBILE VIEW

2.2.2 Main Display Window Description

Mobile Links:	Active icon selection to change main display, as well as status indication for all the three types of connections. The blue line indicates which connection Windows is using to connect to the Internet.
Mobile View:(select Mobile icon)	
Connect/Disconnect Button:	Connects or Disconnects you from the Network.
Signal Strength Indicator:	Indicates the strength of the RF signal in your vicinity or area.
Active Profile Selection:	Choose a profile (Username,Password,APN,QoS) among many.
Icon Display will display:	
WWAN Technology Display:	HSDPA, UMTS, GPRS, GSM , IS95a, 1XRTT or EVDO
	Indicates Roaming, device is away from the home network
	3G in dormant mode (May not be applicable for all MAs)
	New SMS message available.
	Device is locked – Connection will be disabled in this state.
Wi-Fi View:(Select Wi-Fi icon)	Displays information about the Wi-Fi connection. See MobiLink 2 help for more information.
LAN View: (Select LAN icon)	Displays information about the LAN connection. See MobiLink 2 help for more information.

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2.2.3 MobiLink 2 Buttons

Menu button:	Displays the various features of MobiLink 2
Web browser button:	Launches your Web browser
SMS Client button:	Launches MobiLink's SMS client
Address Book Client button:	Launches MobiLink's address book client
Online help button:	Launches MobiLink's online help
Minimize button:	Will minimize MobiLink 2
Exit button:	Will exit out of MobiLink 2

2.2.4 Features

Click on the Menu Button will display various features of MobiLink 2

NOTE: SEE MOBILINK 2'S ONLINE HELP FOR MORE DETAILS ON THE FEATURES

PROFILE MANAGER:	This menu item enables you to create, edit and delete a 3G profile. (See MobiLink's online help for more details)
CONFIGURATION ITEM:	This menu item enables you to manage MobiLink's settings, including;
General tab:	Settings of the user interface preferences.
Mobile tab:	Settings of the connection preferences; locking card and Network selection. (See MobiLink's online help for more details)
WiFi tab:	Displays all Wi-Fi adapters on system. Clicking on **PROPERTIES** will launch standard Windows Wireless Network Connection properties dialog window.
LAN tab:	Displays all Ethernet adapters on system. Clicking on **PROPERTIES** will launch standard Windows LAN Connection properties dialog window.
PROPERTIES ITEM:	This menu item will display;
Firmware Version:	This is software programmed in the modem.
IMEI:	A unique number that identifies your modem on the network
Mobile Number:	SIM Number (a numeric number)
Manufacturer:	Novatel Wireless
Modem Type:	Merlin U630
Technology:	UMTS
REPORT ITEM:	Statistical information about the current connection (See MobiLink's online help for more details)
TRANSPARENCY:	Transparency in percent of the application (See MobiLink's online help for more details)
ABOUT BUTTON DISPLAYS:	MobiLink's version
EXIT:	Exit MobiLink 2

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2.2.5 Creating a data session

NOTE: PLEASE ENSURE YOU HAVE AN ACTIVE UMTS DATA ACCOUNT WITH A UMTS SERVICE PROVIDER, THE SIM MUST BE ENABLED FOR UMTS AND SMS AS REQUIRED.

1. Double-click on the MobiLink 2 icon

that MobiLink 2 places on your desktop during the installation process.
2. The MobiLink 2 software will then initialize your UMTS Merlin. See Figure 24.

FIGURE 24

3. If your SIM is locked you will be prompted for a SIM PIN code/number (originally provided by your Service Provider. You may change this – Menu > Configuration > Mobile tab >) Enter the SIM code and press **OK**. See Figure 25.

NOTE: IF YOU ARE NOT PROMPTED FOR A SIM PIN CODE CONTINUE TO STEP 4.

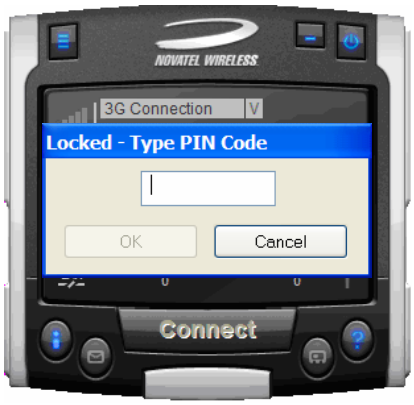

FIGURE 25

NOTE: SEE TROUBLESHOOTING SECTION FOR UNLOCKING YOUR DATA CARD IF IT IS SIM LOCKED.

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4. The Merlin will now search for available networks. See Figure 26.

FIGURE 26

5. The Merlin will then attempt to "ATTACH" to the network, and if successful, you will see Figure 27. Depending on which technology it was originally set to the LED should blink green for GPRS or blue for UMTS.

FIGURE 27

NOTE: ONCE ATTACHED TO THE NETWORK, YOU CAN CHOOSE AN AVAILABLE PROFILE TO CONNECT TO THE NETWORK FROM THE ACTIVE PROFILE SELECTION MENU (CLICKING ON V SYMBOL) OR CREATE A PROFILE IF NECESSARY.

NOTE: BEFORE PROCEEDING TO THE NEXT STEP, IF YOU ARE REQUIRED TO CREATE A NEW PROFILE (I.E YOU CANNOT CONNECT TO THE NETWORK OR YOU DON'T SEE ANY PROFILES, YOU WILL NEED THE FOLLOWING INFORMATION FROM YOUR SERVICE PROVIDER TO CREATE A PROFILE. A BASIC PROFILE CONSISTS OF;

- Profile Name – Your Name of choice
- User Name – (if required by your service provider)
- Password – (if required by your service provider)
- APN (Access Point Name) – Obtained by your Service Provider
- Phone Number – You might have to enter the standard phone number *98# (Please check with your service provider and confirm the appropriate phone number, the default is *98#, however you service provide may use a slight alteration.

To create a new profile, click on the Menu Button, and choose Profile Manager from the drop down menu. The Profile Manager Window will appear. See Figure 28.

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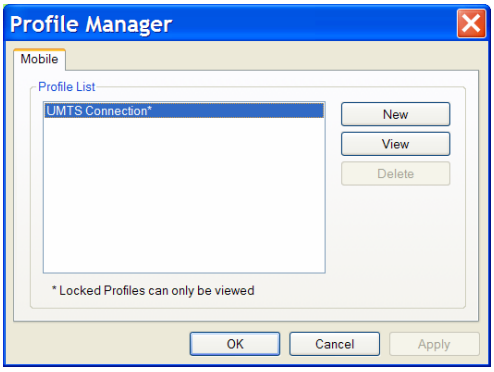

FIGURE 28

Click **New**. The Profile Wizard Window Step 1 of 3 will appear. See Figure 29.

FIGURE 29

Enter your name of choice for the profile, example, 3G Connection and your APN provided to you by your service provider, example, internet.com. Click Next. The Profile Wizard Window Step 2 of 3 will appear. See Figure 30.

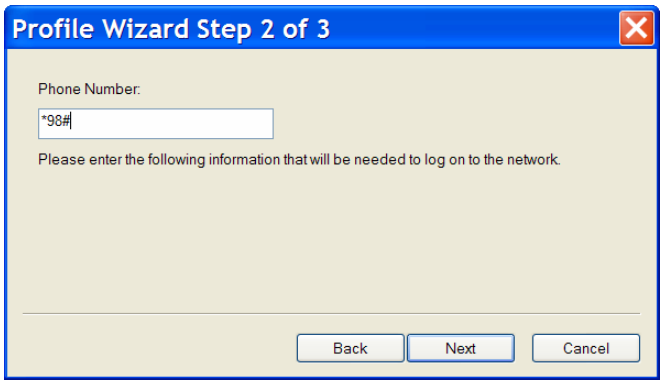

FIGURE 30

Enter the phone number *98# (or network specified phone # if necessary). Click **Next**. The Profile Wizard Window Step 3 of 3 will appear. See Figure 31.

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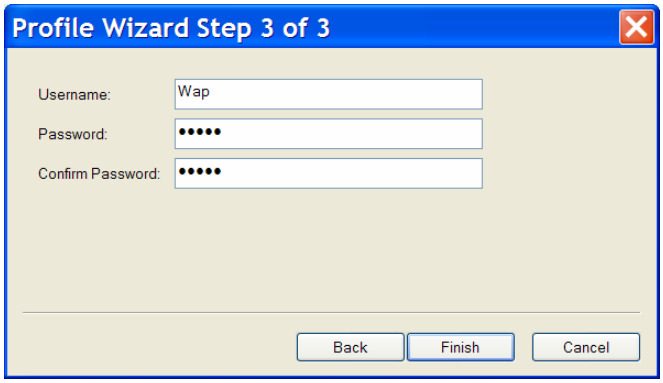

FIGURE 31

If required enter your Username, Password and Confirm password. Click **Finish**. You will now see your profile in the profile list. See Figure 32. Click **OK**.

NOTE: MOST EUROPEAN SERVICE PROVIDERS DO NOT REQUIRE A USERNAME AND PASSWORD. LEAVE THESE FIELDS BLANK IF YOUR SERVICE PROVIDER DOES NOT REQUIRE A USERNAME AND PASSWORD

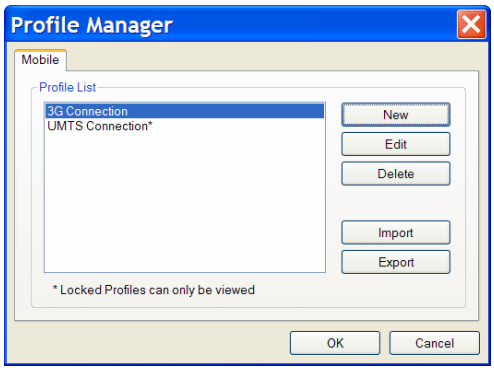

FIGURE 32

You have now created a profile that will appear in the Active Profile Selection Menu. See Figure 33.

FIGURE 33

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6. Select the available profile or a profile that you created from the Active Profile Menu (clicking on V symbol) See Figure 33 above.
7. Click **Connect.**

FIGURE 34

8. Your Merlin will attempt to connect to the network. See Figure 35.

FIGURE 35

9. Following successful authentication, your Merlin will connect to the network. See Figure 36.

FIGURE 36

10. To disconnect from the network, click the **Disconnect** button.

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3 SENDING AND RECEIVING SMS MESSAGES

In This Section

- What is SMS
- Use The SMS client in MobiLink 2 to send SMS messages
- Use the SMS client in MobiLink 2 to read messages

This section will assist you in using the Short Messaging System client in MobiLink 2

3.1 WHAT IS SMS

Short Message Service (SMS) is the transmission of short text messages to and from mobile devices. Messages cannot be longer than 160 alpha-numeric characters and cannot contain any images or graphics.
To send or receive an SMS message you only have to be attached to the Network. You may also send and receive SMS messages while connected to the Network.

NOTE: ANY SMS MESSAGES WILL BE SUBJECT TO THE TERMS AND AGREEMENTS OF YOUR SERVICE WIRELESS PROVIDER. THIS MEANS THE SENDING OF SMS MESSAGES MAY BE CHARGED AN ADDITIONAL FEE BY YOUR WIRELESS PROVIDER

NOTE: THE SMS CLIENT ICON WILL ONLY BECOME ACTIVE ONCE YOU ARE ATTACHED, HENCE YOU MAY SEND AND RECEIVE SMS MESSAGES WHILE ATTACHED TO THE NETWORK.
ATTACHED TO NETWORK: YOU CANNOT TRANSFER DATA.
CONNECTED TO NETWORK: YOU CAN TRANSFER DATA (BROWSE INTERNET, CHECK EMAIL ETC...)

3.2 MOBILINK'S SMS WINDOW

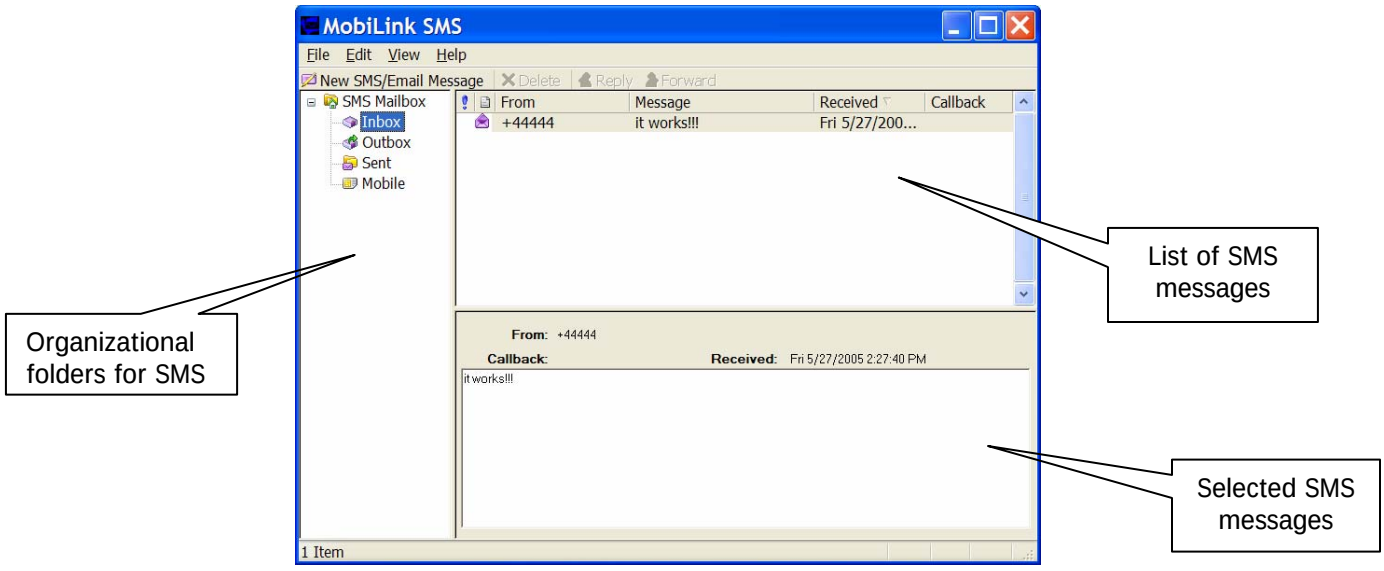

FIGURE 37

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MobiLink SMS Toolbar Description

New SMS/Email Message:	Creates a new message
Delete:	Deletes the selected SMS message(s)
Reply:	Copies the sender field to a new message
Forward	Copies the message contents to a new message

SMS Mailbox Description

Inbox:	contains received messages
Outbox:	is a temporary storage place for messages waiting to be sent
Sent:	stores the SMS messages that have been sent

3.2.1 Sending SMS Messages

1. Launch the MobiLink 2 application (See section 2.2.5 Creating a data session). After your Merlin has attached to the network (Step 5 of section 2.2.5), the SMS button will become active. See figure 38.

FIGURE 38

NOTE: AT THIS POINT YOU WILL NOT BE ABLE TO SEND OR RECEIVE DATA (BROWSE WEB OR CHECK EMAILS) UNLESS YOU CONNECT TO THE NETWORK BY CLICKING THE CONNECT BUTTON

2. Click on the SMS client icon, see Figure 38, and the MobiLink 2 SMS window will appear. See Figure 37 above.

3. Click on the New SMS/Email message button to create a new message. See Figure 39.

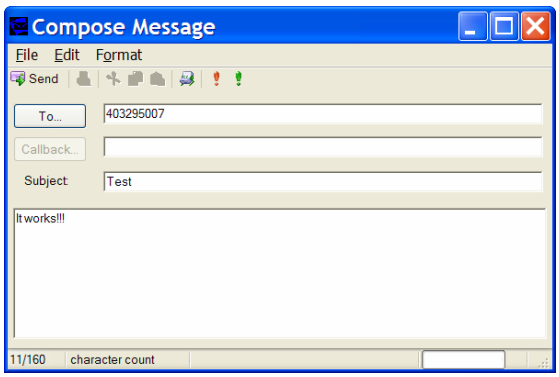

FIGURE 39

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4. In the **To** box, type the phone number of each recipient, separating names with a semicolon (;). To add phone numbers from the Address Book, click the **To** button and then select the phone number.

5. Type your message, and then click **Send** on the toolbar.

3.2.2 Receiving and Reading SMS Messages

Once you are attached to the Network, you are able to receive SMS messages. MobiLink 2 will notify you when you receive an SMS message. See Figure 40.

FIGURE 40

After the SMS Client receives your messages, you can read messages by launching the SMS client. MobiLink's SMS window will appear. See Figure 37 above.

Click the **Inbox** icon in the Folders list.
To view the message in the lower pane, click the **message** in the message list.
You may also view messages from the **OUTBOX** and **SENT** folders.

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4 DETERMINE MERLIN STATES

In This Section

- Determine the current state of your UMTS Merlin, by interpreting the cadence (flashing sequence) and colour of the Light Emitting Diode

The Light Emitting Diode (LED) is a device that lights up when power is applied to it. Interpreting the LED's flashing sequence and color, will provide you with the current state of your UMTS Merlin. See Table 1 below.

Cadence (flashing sequence)	LED Display	Merlin State	Cause	Remedy
(1/4sec) 250ms ON (1/4sec) 250ms OFF	RED	Merlin trying to read SIM	The modem is unable to read the SIM. An error has occurred in the modem firmware.	See Section 5, Problem 5
ON (Not flashing)	RED	Merlin Searching for wireless service	The Merlin is not receiving a signal from the wireless network	See Section 5, Problem 6
(1/4sec) 250ms ON (1 3/4sec) 1750ms OFF	BLUE	Your Merlin is currently receiving a UMTS circuit switched (CS) signal from the network and has registered on the circuit switched (CS) domain		
(1/4sec) 250ms ON (1/4sec) 250ms OFF (1/4sec) 250ms ON (1 3/4sec) 1750ms OFF	BLUE	Your Merlin is currently receiving a UMTS packet switched (PS) signal from the network and has registered on the packet switched (PS) domain (also CS i.e PS or PS+CS)		
ON (Not flashing)	BLUE	Your Merlin is currently PDP context activated on the UMTS system.		
(1/4sec) 250ms ON (1 3/4sec) 1750ms OFF	GREEN	Your Merlin is currently receiving a GSM circuit switched (CS) signal from the network and has registered on the GSM circuit switched (CS) domain		
(1/4sec) 250ms ON (1/4sec) 250ms OFF (1/4sec) 250ms ON (1 3/4sec) 1750ms OFF	GREEN	Your Merlin is currently receiving a GSM/GPRS packet switched (PS) signal from the network and has registered on the GSM/GPRS packet switched (PS) domain. (also CS i.e PS or CS)		
ON (Not flashing)	GREEN	Your Merlin is currently PDP (Packet Data Protocol) context activated on the GSM/GPRS system		

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NOTE: WHEN THE MODEM TRANSITIONS FROM ONE STATE TO ANOTHER, THE ACTUAL LED DISPLAY WILL NOT CHANGE IMMEDIATELY, RATHER, IT WILL ONLY CHANGE ONCE THE MODEM HAS CONFIRMED THAT THE NEW STATE IS VALID. FOR EXAMPLE, WHEN THE MODEM IS TAKEN OUT OF A SERVICE AREA IT MIGHT TAKE THE MODEM 10 TO 90 SECONDS TO CONFIRM THAT NO SERVICE IS AVAILABLE AT WHICH TIME THE LED DISPLAY WILL CHANGE STATES ACCORDINGLY.

PDP (Packet Data Protocol) Context Activation Process: To connect to a PDN (Packet Data Network), such as the Internet, some sort of session description information needs to exist (i.e. type of IP network, quality of service, IP address etc...) to enable agreement on the characteristics of any data flow between the network and the mobile terminal. This is essentially, what PDP 'context' activation is.

Circuit Switched (CS) Data connection is basically similar to a land line modem dial up call. A dedicated connection is set up for the duration of the call regardless of whether data is transferred or not.

A Packet Switched (PS) Data connection is typically set up once. Within packet-switched networks, data is divided (disassembled and packaged) into packets before it is sent. Packets are routed through the networks based on a destination address contained within each packet. Once all the packets arrive at their respective destinations, the data is recompiled (unpacked and assembled). There is no need to re-establish the connection before each transmission.

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5 TROUBLESHOOTING

In This Section

- Troubleshooting common problems

This section will assist you in resolving common problems that might arise during installation or connecting to the network.

Problem 1.1: Cannot install MobiLink 2
Problem 1.2: When I run the MobiLink 2 software, I get the message “No Card Detected” what does this mean?
Problem 1.3: When I insert the modem, I get “Unknown_PCMCIA_Manufacturer” instead of “Novatel_ Wireless Merlin_UMTS_Modem
Problem 1.4: When I run the MobiLink 2 software, I get the message “SIM not Found – Check Orientation?”
Problem 1.5: Modem cannot read SIM. LED Flashing RED
Problem 1.6: When I run MobiLink 2 software, the Window “searching for network” is displayed continuously
Problem 1.7: Cannot connnect to network
Problem 1.8: Cannot browse web

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1.1 CANNOT INSTALL MOBILINK 2

POSSIBLE CAUSE: YOU DON'T HAVE ADMINISTRATIVE PRIVILEGES

RESOLUTION:

Windows 2000 and XP

1. Talk to your system administrator if applicable
2. Log onto your computer as an administrator, or create an user account with administrator privileges

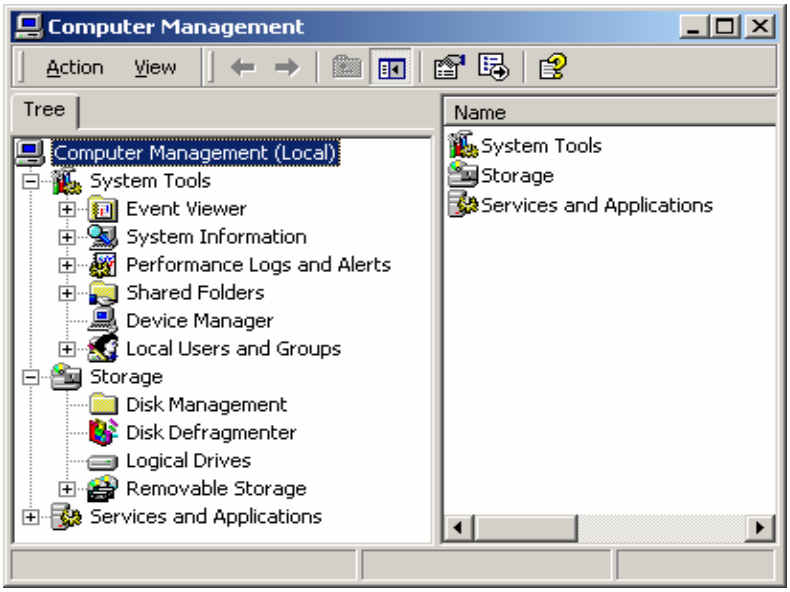
1.2 PROBLEM: WHEN I RUN THE MOBILINK 2 SOFTWARE, I GET THE MESSAGE "NO CARD DETECTED"

POSSIBLE CAUSES: YOU HAVE NOT INSERTED YOUR UMTS MERLIN PROPERLY INTO THE PC CARD SLOT OF YOUR PC, OR WINDOWS DID NOT INSTALL THE DRIVERS CORRECTLY, OR YOU MIGHT HAVE A CONFLICT.

RESOLUTION:

For Windows 2000 and XP

1. Restart MobiLink 2 again, or remove Card, reboot PC and try again or go to step 2
2. Insert your Novatel Wireless UMTS U630 modem into your PC CARD slot to install the drivers onto your computer. If you have already done so and still receive this error then you must check to see if the drivers have been installed properly.
3. Right click **My Computer Icon** (for Windows 2000 this is usually on the desktop, and for Windows XP this is usually in the Start menu) > **Manage** --- See Window 1
4. Select **Device Manager** --- See Window 2



WINDOW 1

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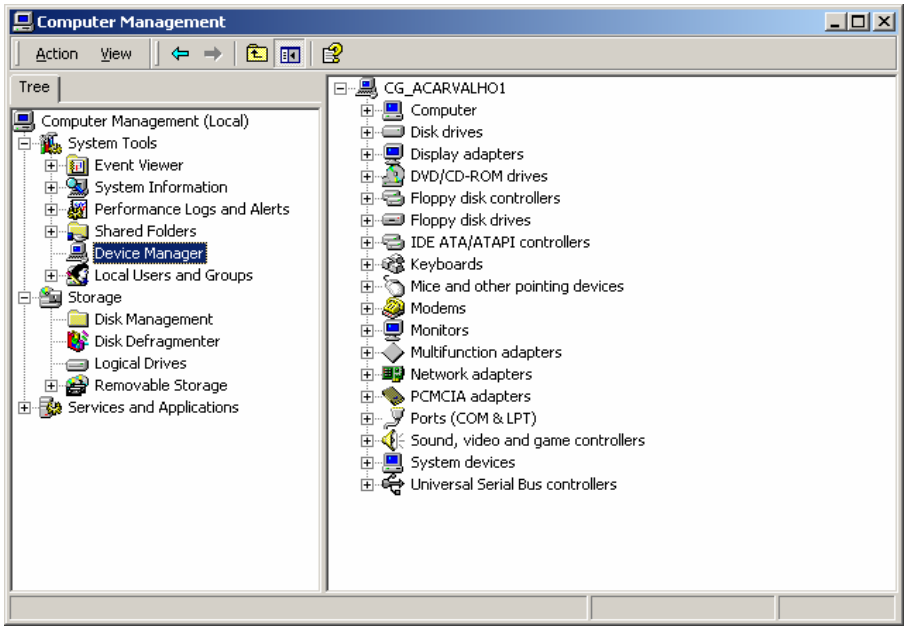
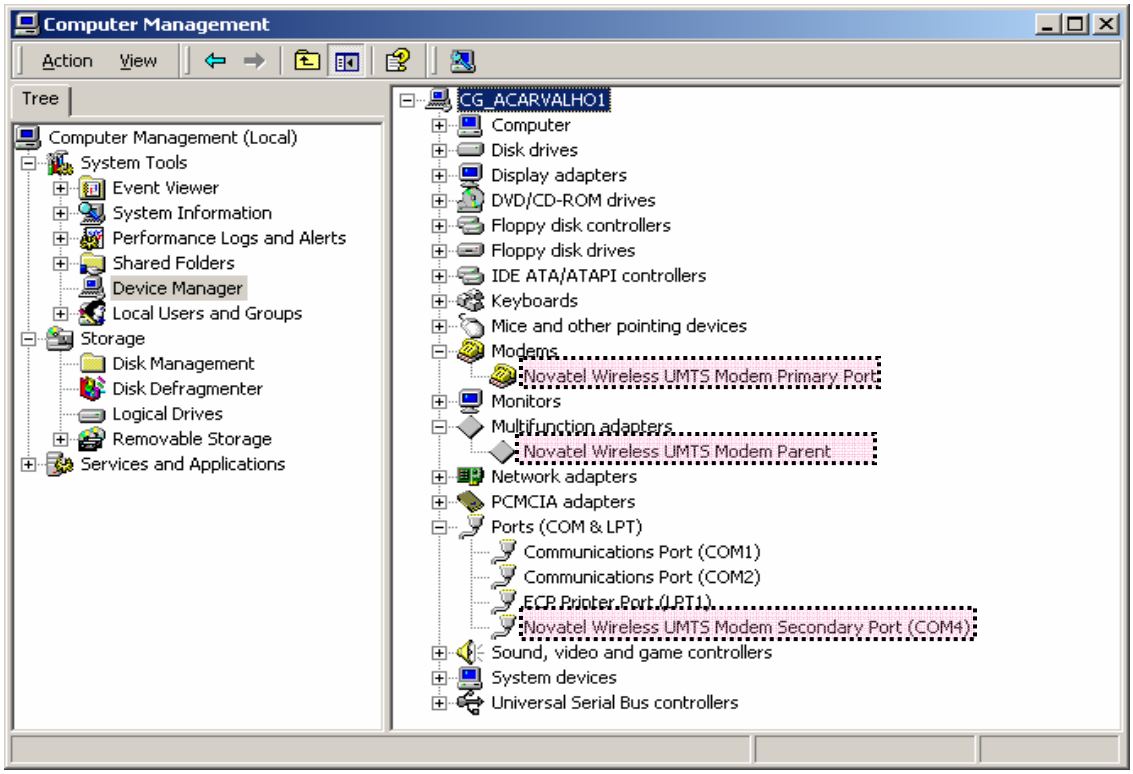


WINDOW 2

5. Expand Modems, Multifunction Adapter and Ports category by clicking on the + sign. See Window 3



WINDOW 3

NOTE: DEVICES HIGHLIGHTED. THEY WILL NOT BE HIGHLIGHTED ON YOUR MACHINE.

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6. Check and see if you have a yellow exclamation mark or red X on any device. If you do, try the following.
   - Reboot your PC or
   - Uninstall and reinstall the drivers (Do not have the Merlin plugged in when reinstalling)

To Uninstall follow these steps. For Windows 2000 and XP

1. Go to **Start** > **settings** > **control panel** > Add or remove programs > Select **MobiLink** and click **Remove**. Make sure your modem is plugged in while uninstalling. (See Windows help if necessary)
2. Remove the modem from the PC slot
3. Reboot and reinstall. Go to Section 1.7 Installing MobiLink 2

1.3 PROBLEM: WHEN I INSERT THE MODEM, I GET UNKNOWN_PCMCIA_MANUFACTURER" INSTEAD OF "NOVATEL_ WIRELESS MERLIN_UMTS_MODEM

POSSIBLE CAUSE: HARDWARE FAILURE INSIDE THE MODEM

RESOLUTION: REPLACE MODEM

1.4 PROBLEM: WHEN I RUN THE MOBILINK 2 SOFTWARE, I GET THE MESSAGE "SIM NOT FOUND – CHECK ORIENTATION

POSSIBLE CAUSE: PROBLEM WITH YOUR SIM CARD.

RESOLUTION:

1. Make sure you have inserted the SIM card exactly as the picture in this manual, or on the back of Merlin or Quick Start Guide, noting the location and orientation of the bevel corner
2. Make sure the contacts of the SIM card are clean

1.5 PROBLEM: MODEM CANNOT READ SIM. LED FLASHING RED

POSSIBLE CAUSE: SIM LOCKED OR SIM SELF DESTRUCTED

RESOLUTION

1. Enter in your PIN as required. See Section 2.2.5 Creating a data session
2. Contact your Service Provider if you entered your PIN number incorrectly 3 times. You will require a PUK code.
3. If you enter the PUK code incorrectly 10 times, the SIM is designed to self destruct. You will have to be issued a new SIM. Contact your Service Provider.
4. Depending on where you purchased your Modem, the Modem could have a Service Provider Lock (SIMLOCK) which ties the modem to a particular set of SIMs. Please contact the Service Provider to unlock the Modem.

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1.6 PROBLEM: WHEN I RUN MOBILINK 2 SOFTWARE, THE WINDOW "SEARCHING FOR NETWORK" WILL BE DISPLAYED CONTINUOUSLY

POSSIBLE CAUSE 1: OUT OF GSM COVERAGE AREA

RESOLUTION: RELOCATE TO AN AREA OF COVERAGE. CONTACT YOUR SERVICE PROVIDER FOR DETAILS OF THEIR COVERAGE AREAS.

POSSIBLE CAUSE 2: CONFIGURATION SET TO MANUAL NETWORK SELECTION

RESOLUTION: CHANGE BACK TO AUTOMATIC

1.7 PROBLEM: CANNOT CONNECT TO NETWORK

POSSIBLE CAUSE 1: INCORRECT USER NAME, PASSWORD OR ACCESS POINT NAME (APN).

RESOLUTION 1: CHECK YOUR PROFILE FOR AN INCORRECT ENTRY OF THE ABOVE PARAMETERS. RE-ENTER THE PARAMETERS OR CONTACT YOUR SERVICE PROVIDER IF NECESSARY TO CONFIRM.

1.8 PROBLEM: CANNOT BROWSE THE WEB

POSSIBLE CAUSE 1: INCORRECT SERVER SETTINGS

1. In Internet Explorer go to **Tools** > **Internet Options** > **Connections** tab

2. In Dial Up and Virtual Private Network Setting double click on 3G Connection – See Window 5

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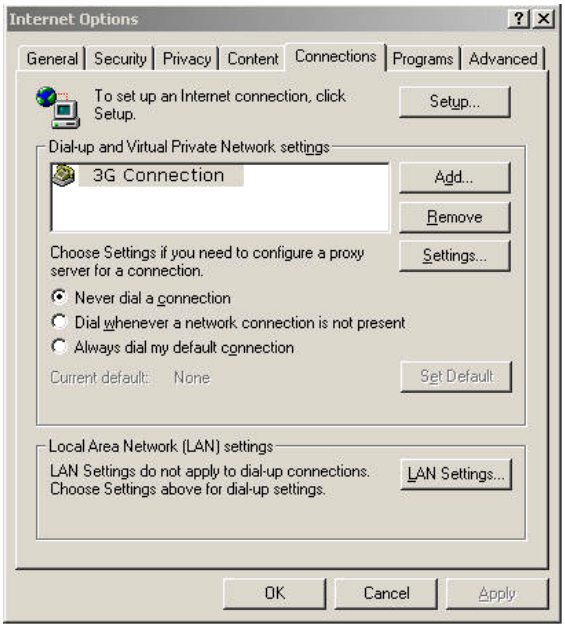
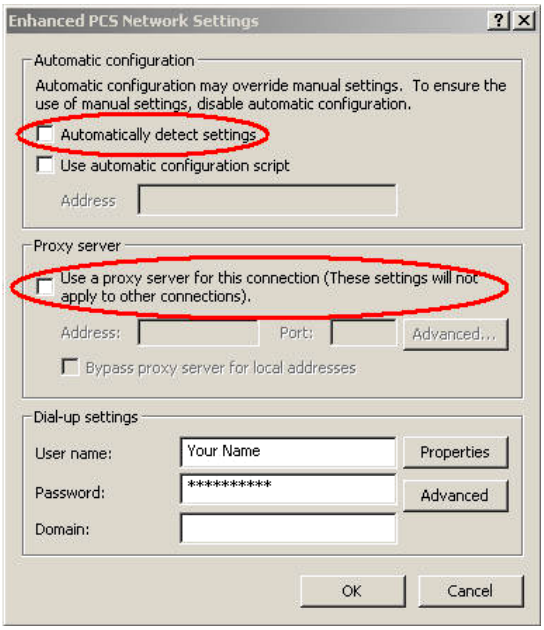


WINDOW 5

3. Check appropriate boxes if you are using a proxy server. See Window 6



WINDOW 6

POSSIBLE CAUSE 4: DNS SERVER PROBLEMS

RESOLUTION 4:

Windows 2000 and XP

1. Click **Start** > **Run** and type in **Command** in the Run Window. A DOS window should open. See Window 7

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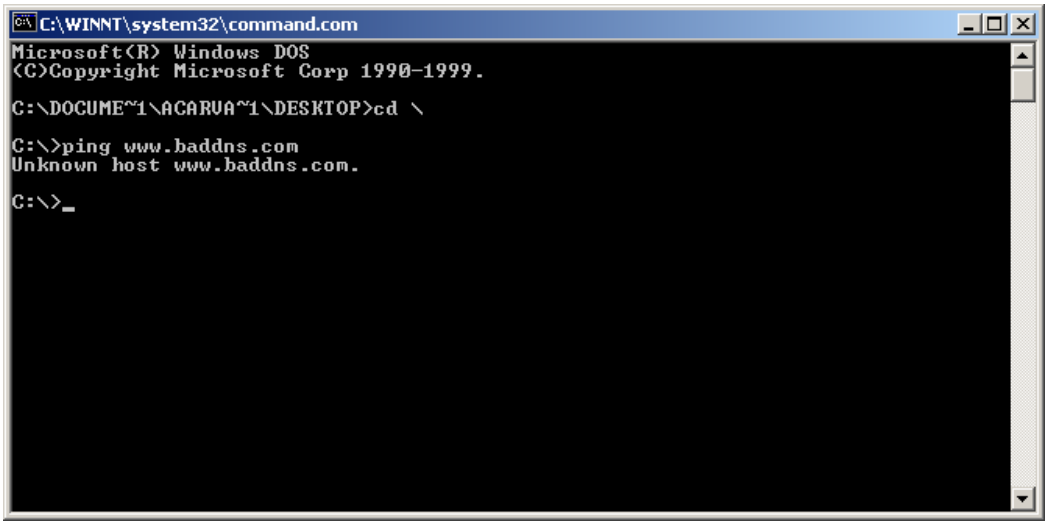

WINDOW 7

2. At the C prompt type in PING www.nvtl.com

- Response: Unknown host www.nvtl.com --- Usually faulty DNS. Call your Network Provider
- Response: Pinging nvtl.com [216.65.221.49] with 32 bytes of data. --- DNS ok even if you don't get reply from ping.

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6 PRODUCT SPECIFICATION

In This Section

- Technical and Environmental Specifications

6.1 TECHNICAL SPECIFICATION

This section outlines the technical and environmental specifications of your Merlin U630

Name:	Merlin U630
Model:	NRM–U630
Approvals:	CE Mark (Europe), FCC (North America)
Dimensions:	120.6 x 54 x 10.8 mm
Wireless Network – Dual Mode:	UMTS and GPRS
PC Card Standard:	Type II PC Card 5V

TABLE 1

Technology:	WCDMA (FDD)
Band Designation:	UMTS
Transmit Band:	1920MHz – 1980MHz
Receive Band:	2110MHz – 2170MHz
Power Output – Transmit Power:	Class 3 (+24dBm)

TABLE 2

Technology:	GPRS
Band Designation:	E-GSM
Multi Class	MS-10 (maximum: 4 RX, 2 TX, 5 slots)
Transmit Band:	880MHz – 915MHz
Receive Band:	925MHz – 960MHz
Power Output – Transmit Power:	Class 4 (+33dBm)
Band Designation	DCS
Transmit Band	1710MHz – 1785MHz
Receive Band	1805MHz – 1880MHz
Power Output – Transmit Power:	Class 1 (+30dBm)
Band Designation	PCS
Transmit Band	1850MHz – 1910MHz
Receive Band	1930MHz- 1990MHz
Power Output – Transmit Power:	Class 1 (+30dBm)

TABLE 3

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6.1.1 Environmental specification

Operating Temperature	0° Celsius to+55° Celsius
Storage Temperature	-20° Celsius to +65° Celsius
Relative Humidity	95% maximum – Non Condensing
Vibration	147 m/s^2 (15Gpeak) 10hz-2000hz

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7 SAFETY AND REGULATIONS

In This Section

- Wireless Communication
- Safety and Hazards
- Regulatory Information

This section will inform you of the important safety measures you should be aware, including the standards that the modem complies to.

7.1 WIRELESS COMMUNICATIONS

IMPORTANT NOTICE

Due to the transmission and reception properties of wireless communications, data can occasionally be lost or delayed. This can be due to the variation in radio signal strength that results from changes in the characteristics of the radio transmission path. Although data loss is rare, the environment where you operate the modem may adversely affect communications.
Variations in radio signal strength are referred to as fading. Fading is caused by several different factors including signal reflection, the ionosphere, and interference from other radio channels.

Novatel Wireless or its partners will not be held responsible for damages of any kind resulting from the delays or errors in data transmitted or received with the Merlin U630, or failure of the Merlin U630 to transmit or receive such data

7.2 SAFETY HAZARDS

Do not operate the Merlin U630 in an environment that may be susceptible to radio interference resulting in danger specifically;

- Areas where prohibited by the law
  - Follow any special rules and regulations and obey all signs and notices. Always turn off the host device and remove the modem from the card slot when instructed to do so, or when you suspect that it may cause interference or danger.

- Where explosive atmospheres may be present
  - Do not operate your modem in any area where a potentially explosive atmosphere may exist. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death. Be aware and comply with all signs and instructions.

  - Users are advised not to operate the modem while at a refuelling point or service station. Users are reminded to observe restrictions on the use of radio equipment in fuel depots (fuel storage and distribution areas), chemical plants or where blasting operations are in progress.

  - Areas with a potentially explosive atmosphere are often but not always clearly marked. Potential locations can include gas stations, below deck on boats, chemical transfer or storage facilities, vehicles using liquefied petroleum gas (such as propane or butane), areas where the air contains chemicals or particles, such as grain, dust or metal powders, and any other area where you would normally be advised to turn off your vehicle engine.

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- Near Medical and life support equipment
  - Do not operate your modem in any area where medical equipment, life support equipment, or near any equipment that may be susceptible to any form of radio interference. In such areas, the host communications device must be turned off. The modem may transmit signals that could interfere with this equipment.

- On an aircraft, either on the ground or airborne
  - In addition to FAA requirements, many airline regulations state that you must suspend wireless operations before boarding an airplane. Please ensure that the host device is turned off and your modem is removed from the card slot prior to boarding aircraft in order to comply with these regulations. The modem can transmit signals that could interfere with various onboard systems and controls.

- While operating a vehicle
  - The driver or operator of any vehicle should not operate a wireless data device while in control of a vehicle. Doing so will detract from the driver or operator's control and operation of that vehicle. In some countries, operating such communications devices while in control of a vehicle is an offence.

- Electrostatic Discharge (ESD)
  - Electrical and electronic devices are sensitive to electrostatic discharge (ESD). The MobiLink 2 software will attempt to re-initialize the device should a substantial electrostatic discharge reset the device. If the software is not operational after an ESD occurance, then restart MobiLink. See section 2.1.4.

7.3 REGULATORY NOTICES

This device has been tested to and conforms to the regulatory requirements of the European Union and has attained CE Marking. The CE Mark is a conformity marking consisting of the letters "CE". The CE Mark applies to products regulated by certain European health, safety and environmental protection legislation. The CE Mark is obligatory for products it applies to: the manufacturer affixes the marking in order to be allowed to sell his product in the European market.

This product conforms to the essential requirements of the R&TTE directive 1999/5/EC in order to attain CE Marking. A notified body has determined that this device has properly demonstrated that the requirements of the directive have been met and has issued a favorable certificate of expert opinion. As such the device will bear the notified body number 1313 after the CE mark.

The CE Marking is not a quality-mark. Foremost, it refers to the safety rather than to the quality of a product. Secondly, CE Marking is mandatory for the product it applies to, whereas most quality markings are voluntary.

Marking: The product shall bear the CE mark, the notified body number(s) and the Class II identifier (alert sign) as depicted to the right, when all the essential requirements have been met.

The applicable sections of the following standards were used to demonstrate compliance to this requirement.

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R&TTE REQUIREMENT	DESCIPLINE	APPLIED STANDARD
Article 3.1(a)	Health	ICNIRP 1998 European Council Rec. 1999/519 EC
Article 3.1(a)	Safety	IEC 60950-1
Article 3.1(b)	EMC	EN 301 489-1 EN 301 489-7 EN 301 489-24
Article 3.2	Spectrum	EN 301 511 EN 301 908-1 EN 301 908-2

ICNRP 1998
International Commission on Non-Ionizing Radiation Protection

ETSI EN 60950
Safety of Information Technology Equipment

ETSI EN 301 489-01
Electromagnetic compatibility and Radio Spectrum Matters (ERM) Electromagnetic Compatibility (EMC) standard for radio equipment and services.
Part 1: Common Technical requirements

ETSI EN 301 489-07
Electromagnetic compatibility and Radio Spectrum Matters (ERM) ElectroMagnetic Compatibility (EMC) standard for radio equipment and services.
Part 7: Specific conditions for mobile and portable radio and ancillary equipment of digital cellular radio telecommunications systems (GSM and DCS)

ETSI EN 301 489-24
Electromagnetic compatibility and Radio Spectrum Matters (ERM) ElectroMagnetic Compatibility (EMC) standard for radio equipment and services.
Part 24: Specific conditions for IMT-2000 CDMA Direct Spread (URTA) for Mobile and portable radio and ancillary equipment.

ETSI EN 301 511
Global System for Mobile communications (GSM):
Harmonized EN for mobile stations in the GSM 900 and GSM1800 bands covering essential requirements under article 3.2 of the R&TTE directive (1999/5/ED)

ETSI EN 301 908-01
Electromagnetic compatibility and Radio Spectrum Matters (ERM) Base Stations (BS) and User Equipment (UE) for IMT-2000 Third-Generation cellular networks.

ETSI EN 301 908-02
Electromagnetic compatibility and Radio Spectrum Matters (ERM) Base Stations (BS) and User Equipment (UE) for IMT-2000 Third-Generation cellular networks.
Part 2: Harmonized EN for IMT-2000,
CDMA Direct Spread (UTRA FDD) (UE) covering essential requirements of article 3.2 of the R&TTE Directive

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FEDERAL COMMUNICATIONS COMMISSION NOTICE (FCC -- UNITED STATES)

Electronic devices, including computers and wireless modems, generate RF energy incidental to their intended function and are therefore subject to FCC rules and regulations.
This equipment has been tested to, and found to be within the acceptable limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates radio frequency energy and is designed for use in accordance with the manufacturer's user manual. However, there is no guarantee that interference will not occur in any particular installation. If this equipment causes harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are 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 the 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/television technician for help

This device complies with Part 15 of the Federal Communications Commission (FCC) Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

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8 APPENDIX A

8.1 UNLOCKING A SIMLOCKED MODEM WITH MOBILINK 2

The term SIMLOCK is often used by the industry when a modem/data card is configured for use only with SIMs of a particular carrier. Technically speaking, when a modem/data card is SIMLOCKED it is actually NETWORK LOCKED. Carriers usually request specific configurations for the modem/data card, one of which is for the modem to be SIMLOCKED. An algorithm generates a Mobile Equipment Personalization code (MEP), which de-activates the mechanism that restricts the modem to SIMs of a particular carrier.

Novatel Wireless cannot, and does not provide the MEP code. Any request for the MEP code configuration must be made through the carrier from whom the modem or data card was purchased.

If your modem/ data card is SIMLOCKED, and you have obtained the MEP code from your carrier or service provider, follow the steps below to unlock it.

1. Launch MobiLink 2. See section "Creating a data session" if necessary.
2. MobiLink 2 will initialize the card, and might ask you for a PIN code. Enter PIN code in the box and click OK. This code is particular to your SIM and is different from your MEP code. See Figure 41.

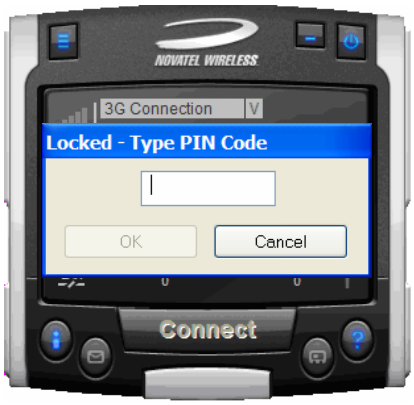

FIGURE 41

3. MobiLink 2 will now request the MEP code. Enter MEP code and click OK. See Figure 42.

FIGURE 42

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4. After approximately 30 seconds MobiLink will request that you enter the SIM PIN again. As in step 2 . See Figure 41 above. Enter PIN code in the box and click OK.
5. After a little while the Modem/data card should start searching for available networks. At this point you have successfully unlocked the modem/data card.

NOTE: YOU ONLY HAVE TO ENTER THE MEP CODE ONCE AND THE MODEM/DATA CARD WILL BE PERMANENTLY UNLOCKED.

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9 DOCUMENT CONTROL

REVISION CONTROL

Revision Number	Revision History
Rev 1	Initial Release

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