

**User Guide:
EDG1228UG001**

**Enfora [®] EDG1228 Quad-Band
SA-EL - User Manual**

Revision 1.00

**Enfora, Inc.
www.enfora.com**

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This limited warranty shall be governed by the laws of the State of Texas, United States of America, without regard to conflict of laws principles. This limited warranty shall not be governed in any respect by the United Nations Convention on Contracts for the International Sale of Goods.

Revision History

Revision Number	Release Date	Description of Changes
1.00	03/30/06	Initial Release

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1 Introduction

1.1 About the SA-EL

The GSM/GPRS/EDGE SA-EL (hereafter referred to as the “SA-EL”) is a compact, stand-alone wireless IP (GSM/GPRS/EDGE) modem. The SA-EL is designed for computing devices operating Windows XP and 2000 Professional. Enfora’s SA-EL provides maximum versatility in a single affordable device.

1.2 About this Manual

Contained in this manual are instructions on how to install and configure the SA-EL modem. Please follow the instructions herein closely to avoid damaging the SA-EL.

The SA-EL modem contains an Enfora Enabler-IIE OEM module. Detailed information pertaining to the specifications and operation of the module will pertain, in part, to the SA-EL platform. Additional support documents relevant to the SA-EL can be found on the Enfora website at:

<http://www.enfora.com/support.asp>

1.3 System Requirements

The SA-EL requires the following equipment:

- Windows XP or 2000 operating systems.
- One standard USB port for SA-EL configuration
- One USB cable to connect the SA-EL to your computer.
- One standard 2.5 mm cell phone headset for speaker and microphone*

*not required for stand alone operation

1.4 Included in the Package

The following parts are included in the SA-EL package:

- Enfora SA-EL modem.
- Software/Documentation CD.

1.5 Optional Accessories

- Antenna
- 3 foot USB cable

1.6 SA-EL Front and Back View



Figure 1 - Front view of SA-EL modem.



Figure 2 - Rear view of SA-EL modem.

1.7 Regulatory Compliance FCC

1.7.1 FCC

The modem was tested and certified to meet FCC Parts 15 in a stand-alone configuration, which demonstrated that the GSM1208 SA-G complies with Part 15 emission limits. FCC Part 22 & Part 24 is covered by the Enfora Enabler-IIG "modular approval" process for a transmitter. This approach, described by FCC Public Notice DA 00-131407 released June 26, 2000, is intended to afford relief to equipment manufacturers by eliminating the requirement for obtaining a new equipment authorization for the same transmitter when installed in a new device.

In order to use the GSM1208 SA-G without additional FCC certification approvals, the installation must meet the following conditions:

For the transmitter to meet the MPE categorical exclusion requirements of 2.1091, the ERP must be less than 1.5 watts for personnel separation distance of at least 20 cm (7.9 in). Therefore, the maximum antenna gain cannot exceed +3.3dBi. If greater than 1.5 watts exists, then additional testing and FCC approval is required.

1.7.2 R&TTE -

The GSM1208 SA-G modem has been fully tested and complies with all the requirements of EN301 489-1, EN301 489-7 and EN60950-1:2001. Compliance to EN301 511 has been demonstrated by testing on both the GSM1208 and the integrated GSM0108 module.

1.7.3 Disclaimer

The information and instructions contained within this publication comply with all FCC, GCF, PTCRB, R&TTE, IMEI and other applicable codes that are in effect at the time of publication. Enfora disclaims all responsibility for any act or omissions, or for breach of law, code or regulation, including local or state codes, performed by a third party.

Enfora strongly recommends that all installations, hookups, transmissions, etc., be performed by persons who are experienced in the fields of radio frequency technologies. Enfora acknowledges that the installation, setup and transmission guidelines contained within this publication are guidelines, and that each installation may have variables outside of the guidelines contained herein. Said variables must be taken into consideration when installing or using the product, and Enfora shall not be responsible for installations or transmissions that fall outside of the parameters set forth in this publication.

Enfora shall not be liable for consequential or incidental damages, injury to any person or property, anticipated or lost profits, loss of time, or other losses incurred by Customer or any third party in connection with the installation of the Products or Customer's failure to comply with the information and instructions contained herein.

2 Installation

2.1 Subscriber Identity Module (SIM) Card

The SIM, an integral part of any GSM terminal device, is a “smart card” that is programmed with subscriber information. The user information consists of an International Mobile Subscriber Identity (IMSI) number, which is registered with the GSM service provider, and an encryption Ki (pronounced “key”). This information consists of a microprocessor and memory installed on a plastic card. To install the SIM card into the modem, insert the SIM card in the modem as shown below in Figure 3.

Note: The SIM is *not* provided with the SA-EL modem. The SIM must be obtained from the GSM service provider and must be provisioned by the operator for data and/or voice. Always take care to protect the SIM: the GSM terminal will not operate without the SIM installed.



Figure 3 - Inserting a SIM Card in a SA-EL Module

Note: The SIM lock must be engaged (locked) in order for the SA-EL to operate properly.

2.2 Connecting the Power Supply

The SA-EL modem obtains power via the USB cable that connects the modem to your computer.

To supply power to the SA-EL modem, connect the B connector of your USB cable to the connector (labeled "USB") on the modem. Connect the A connector of the USB cable to an USB port on your computer. The user supplies the USB cable.

Note: Make sure the SIM card is inserted prior to connecting the USB cable to the SA-EL and your computer.

Also, please make sure that the **USB drivers are installed before connecting the SA-EL to your computer**. Please see page nine (9) for instruction.



Figure 4 - Connecting The Power Supply To SA-EL

2.3 Connecting the Antenna

The user is responsible for supplying the GSM antenna for the SA-EL modem. The antenna must have a nominal impedance of 50 Ohms. The VSWR must be less than 2.0:1. System antenna gain should be 0-2 dB for optimum performance. See section 1.7 Regulatory Compliance FCC.

The SA-EL operates at the 850/900/1800 and 1900 MHz frequency bands. Care needs to be taken when connecting the antenna since the right type of antenna will be required for proper operation of the modem. The antenna connector on the SA-EL modem is SMA Female. The antenna has to be connected to the connector labeled “Antenna” as shown below in Figure 5.

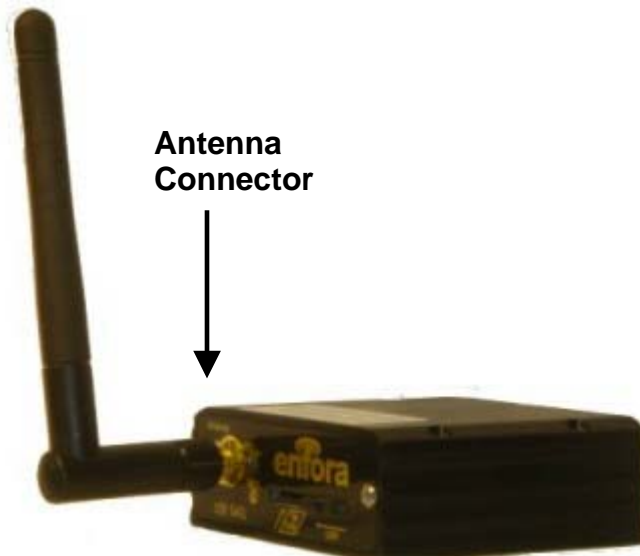


Figure 5 - SA-EL Connecting the Antenna

2.4 Attaching a Microphone/Speaker

To place a voice call from the SA-EL, connect a microphone/speaker to the port as shown below in Figure 6. The plug is a standard 2.5mm audio connector. The user must supply the microphone or speaker.



Figure 6 - Microphone/Audio Port on the SA-EL Module

2.5 LED Functions

The SA-EL modem has one LED on the front panel.

REG: Indicates GSM network registration status. This LED will flash when attempting to register on a GSM network. The LED will be solid when the modem is registered with a GSM network.

2.6 Mounting the SA-EL

The SA-EL includes two mounting options. The modem housing contains four thru holes that can utilize number 2 screws for securing the device. The other option available is the inclusion of four threaded holes for securing screws to be used to secure the device.

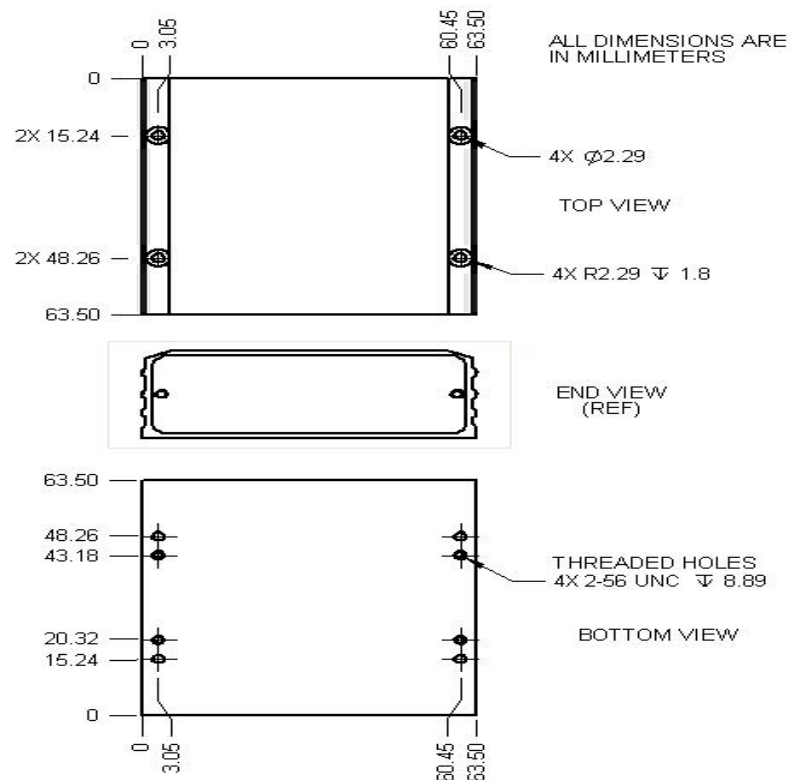


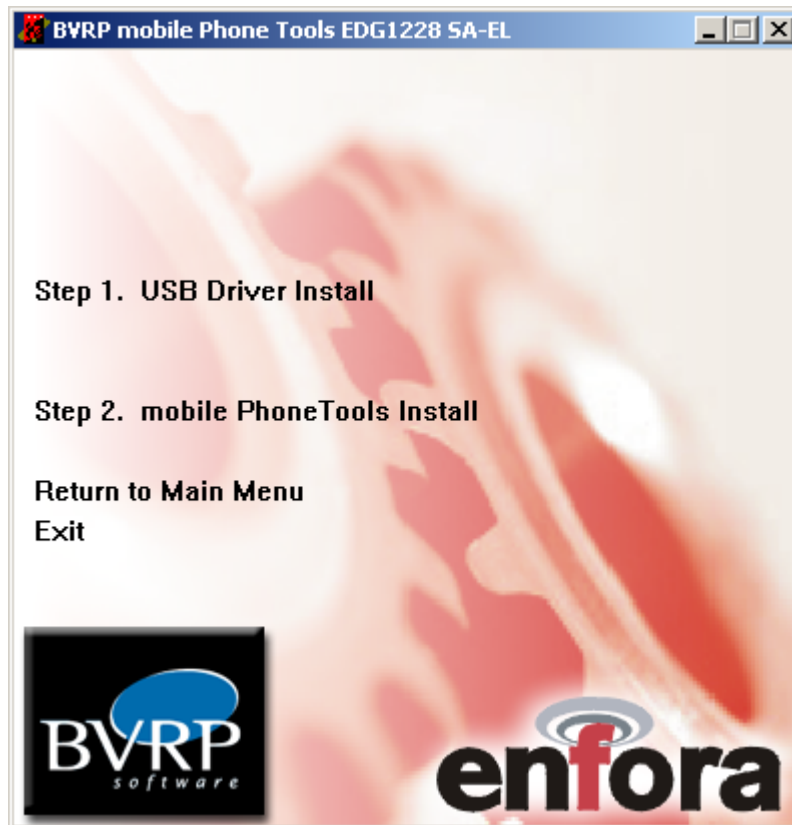
Figure 7 - Mounting Dimensions

3 mobile PhoneTools Software

The first step in installing mobile PhoneTools software is installing the SA-EL USB drivers.

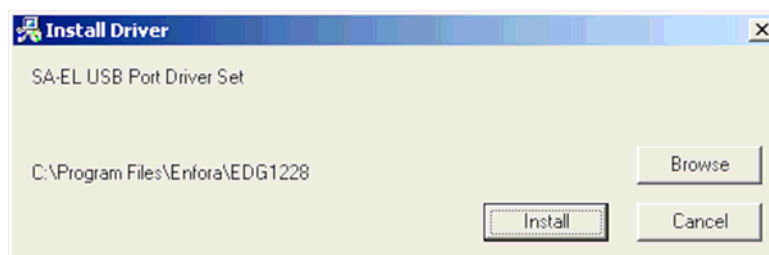
Follow these steps to install the USB drivers.

1. Click on **Step 1 – USB Driver Install** to install the SA-EL USB driver.

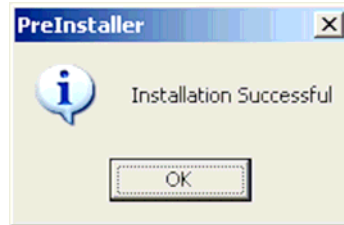


DO NOT connect the SA-EL to the computer at this time.

2. Select **Install** from the application.



3. The drivers will be installed. You will then be prompted with the **Installation Successful** window.



4. Select **OK** to exit the install.
5. Now plug in your SA-EL to the computer USB port.

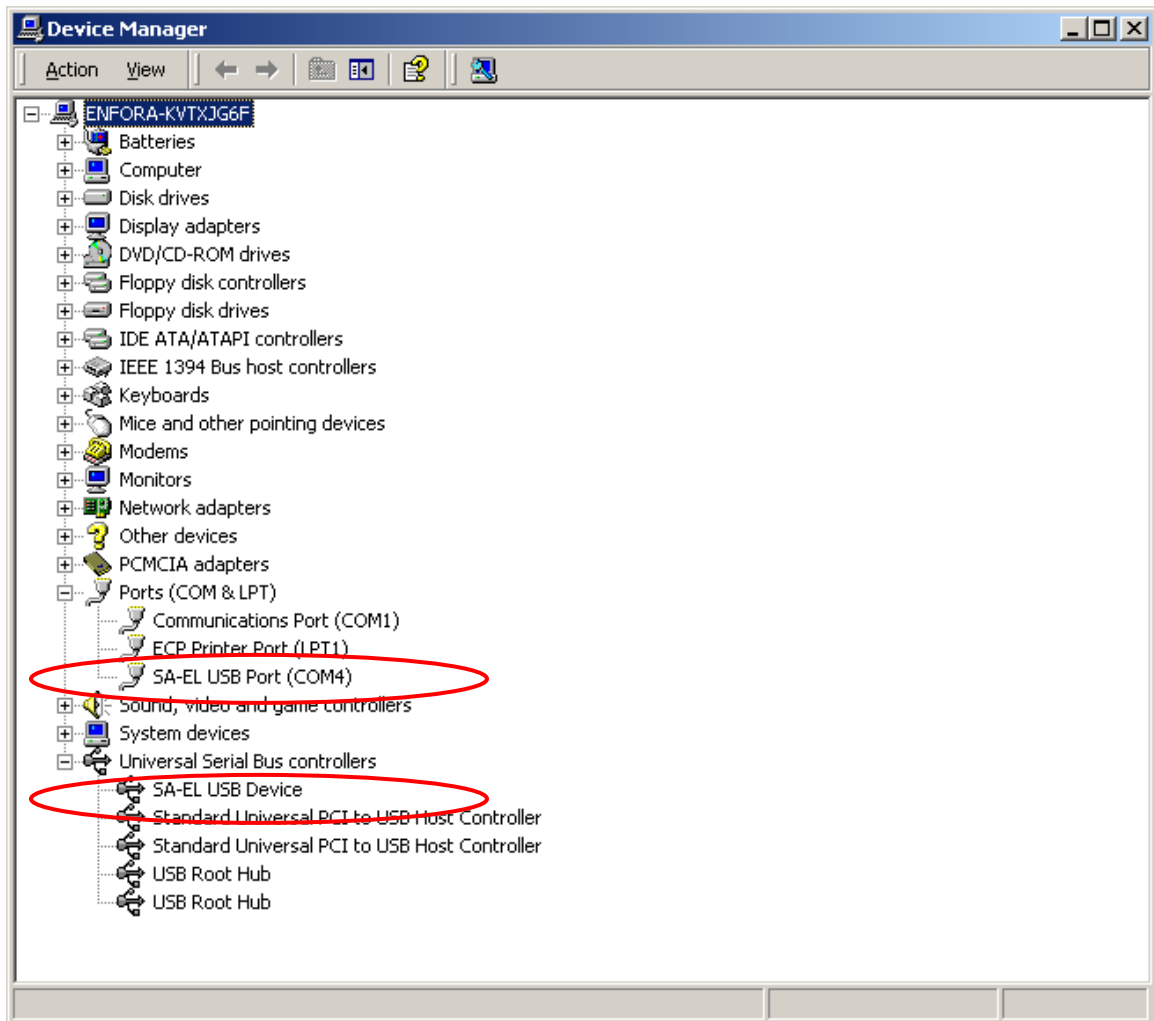
Depending upon the Operating System you are using (Windows XP or Windows 2000) you will see different screens during the installation process. .

3.1 Windows 2000 Installation Instructions

Windows 2000 will display the following screen, indicating that the Operating System has found new hardware.

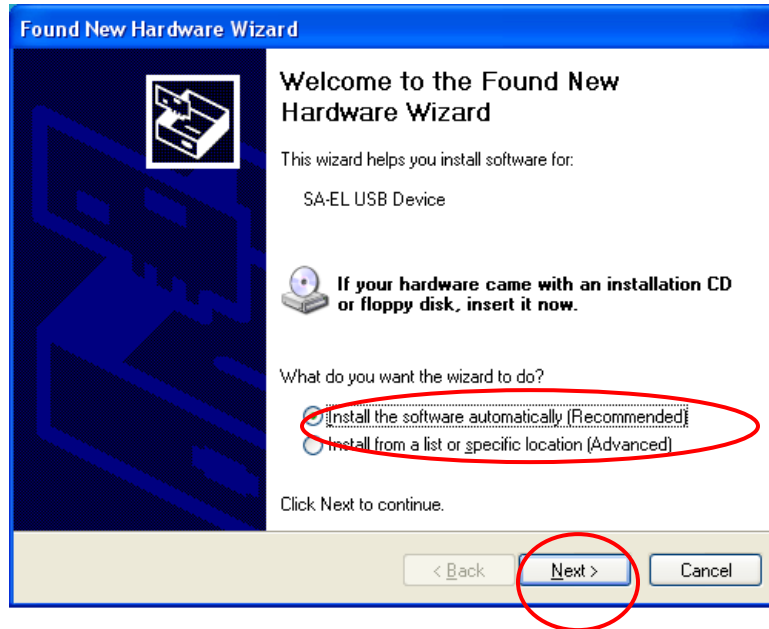


Note: Once the SA-EL is installed, you can open **Device Manager** to make sure that the installation was successful, and that the modem is ready for use.

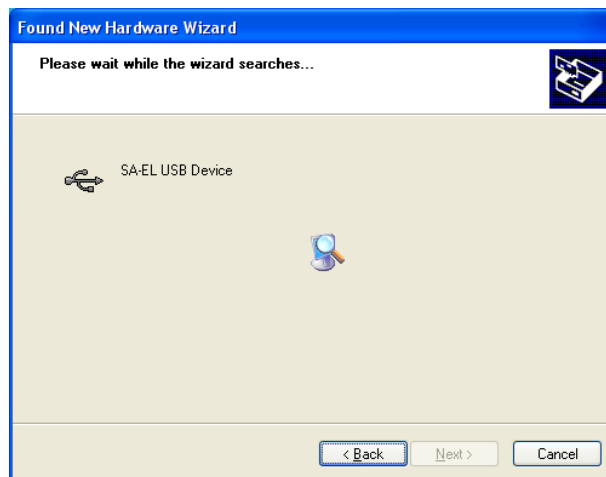


Device Manager

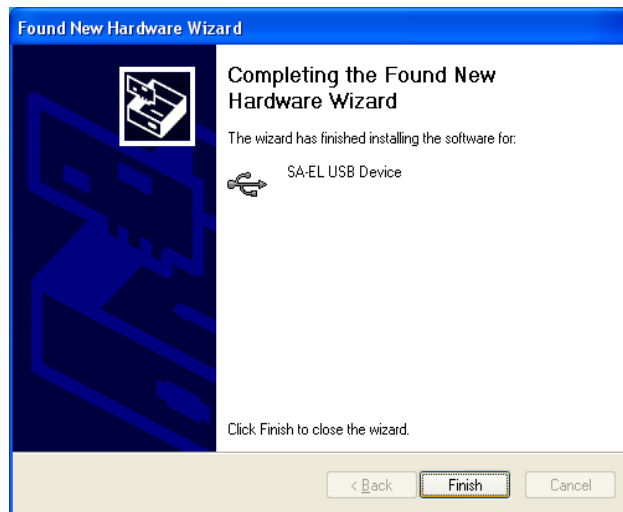
3.2 Windows XP Installation Screens



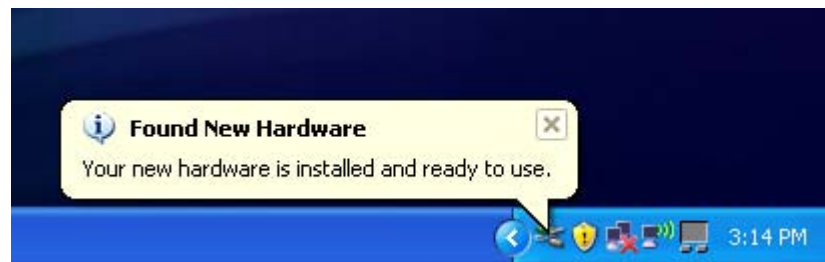
1. Select **Install the software automatically**.
2. Click **Next**.
3. Windows XP will search for the drivers.



4. Windows will finish installing the drivers. Select **Finish**.



5. Windows XP might prompt you to install the drivers again. The **Hardware Install Wizard** may appear again and a pop-up window from the system tray will indicate that Windows has found new hardware. If so, follow Steps 6 through 9 again.
6. When WindowsXP has successfully installed the SA-EL USB drivers a pop-up window from your system tray will state that your hardware is installed and ready to use.



Note: Refer to Page 12 to see how you can refer to **Device Manager**, and make sure that the modem was installed properly.

3.3 mobile PhoneTools – Using the Enfora SA-EL Modem

The following instructions will explain how to install and configure the Enfora SA-EL Modem for use in a computer. All of the instructions and references to a “menu” are specific to the mobile PhoneTools software (not your Operating System).

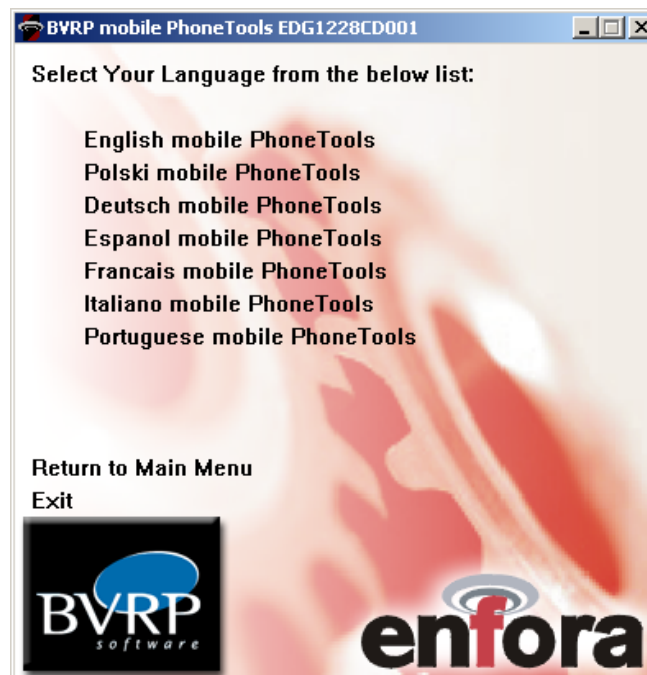
3.4 Installing mobile PhoneTools

In order to use the Enfora SA-EL Modem to make a GPRS connection, you will use mobile PhoneTools, which is provided on the CD that came with your Enfora SA-EL Modem.

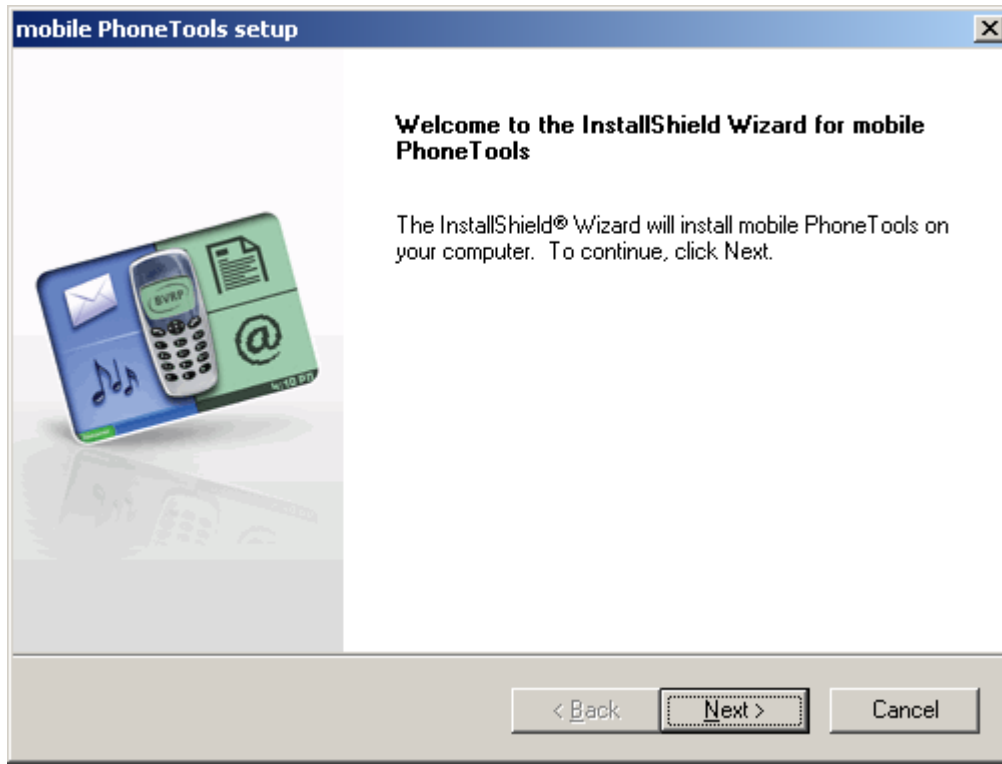
Note: Install the SA-EL USB drivers and connect the Enfora SA-EL modem to your computer’s USB port.

The following instructions explain how to install BVRP mobile PhoneTools on your computer.

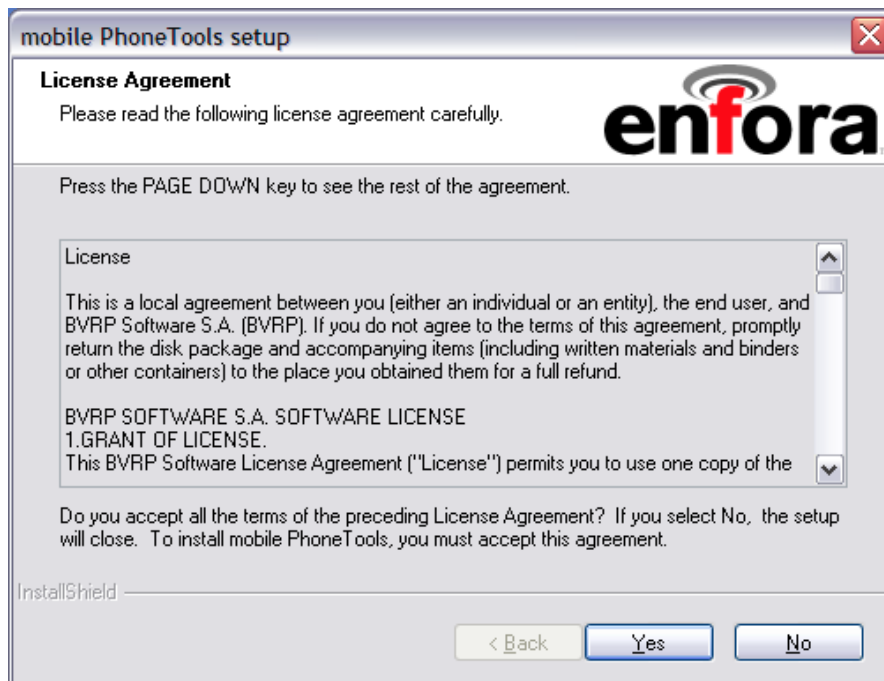
1. Place the Enfora CD into the CD drive of your computer.
2. Click on **mobile PhoneTools Software Installation**.
3. Click on the **Language Version** of mobile PhoneTools that you need.



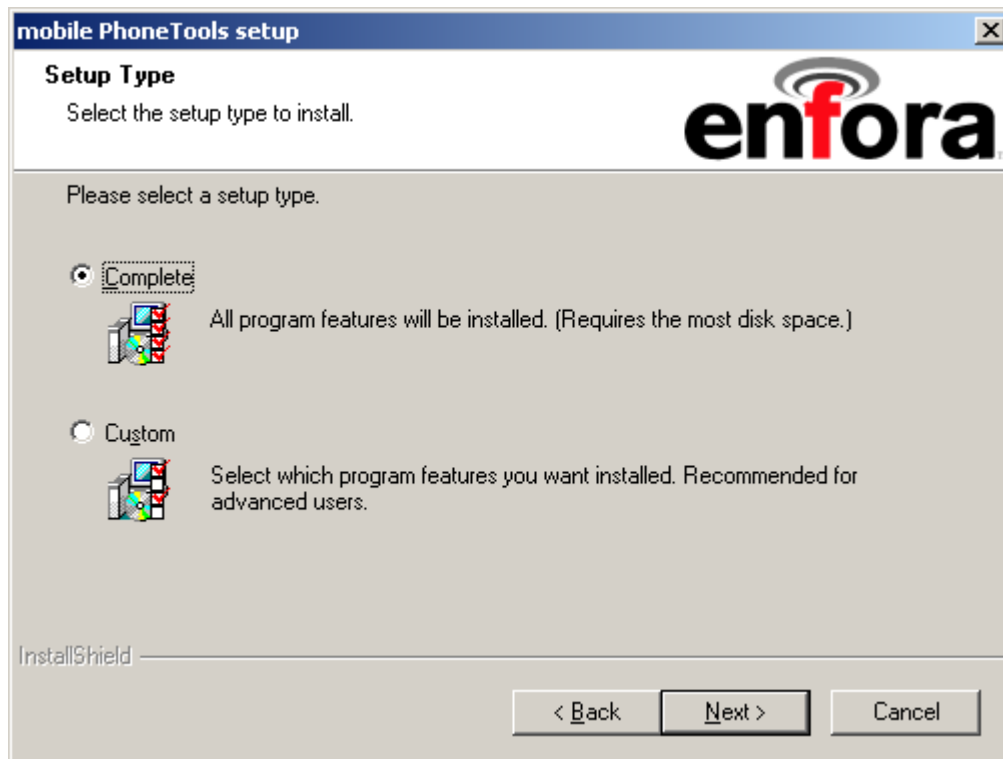
4. You will see the following **InstallShield Wizard** screen:



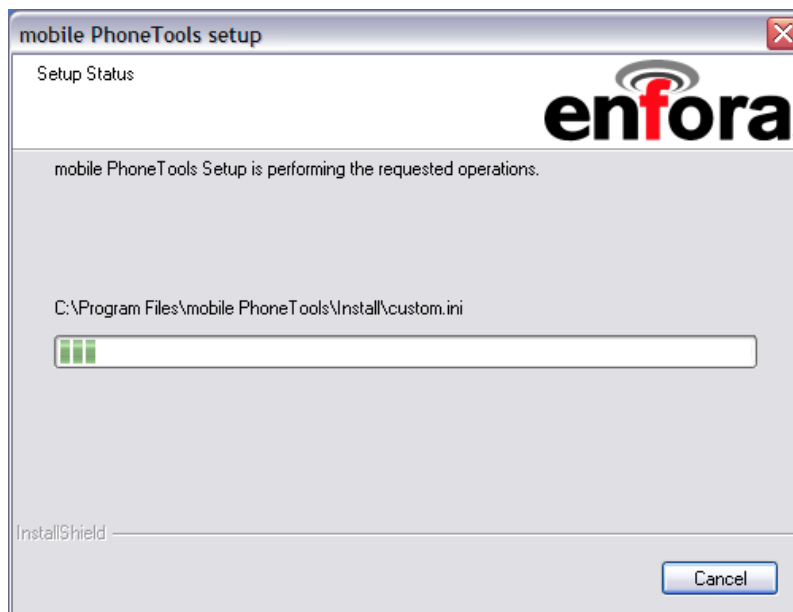
5. Click on **Next** to continue.
6. You will see the following License Agreement screen:



7. Click on **Yes** to continue. You will see the following screen:



8. Click on the radio button marked **Complete**.
9. Click on **Next** to continue. You will see the following **Setup Status** screen:



10. Once the installation is complete, you will see the following screen which prompts you to configure a **Persistent Connection**.



11. The **Persistent Connection Features** are:

Start mobile PhoneTools on boot, and

Automatic Internet Connection (connection automatically reconnects if dropped).

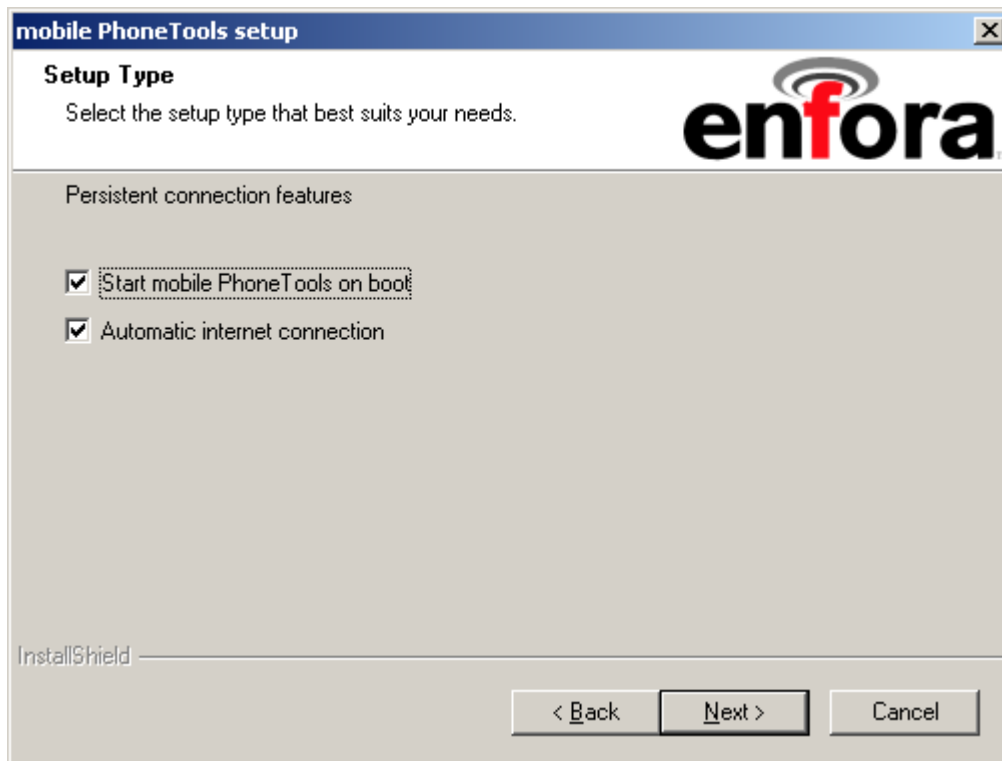
During this step of the setup process you can choose whether or not you would like to install **Persistent Connection Features**.

If you do not choose to install **Persistent Connection Features**, proceed to Step 16.

Note: Do not check the above checkmark box if you do not want to install Persistent Connection Features. If you choose *not* to install Persistent Connection Features during Setup, you will have to run the Setup program again in order to install them at a later time.



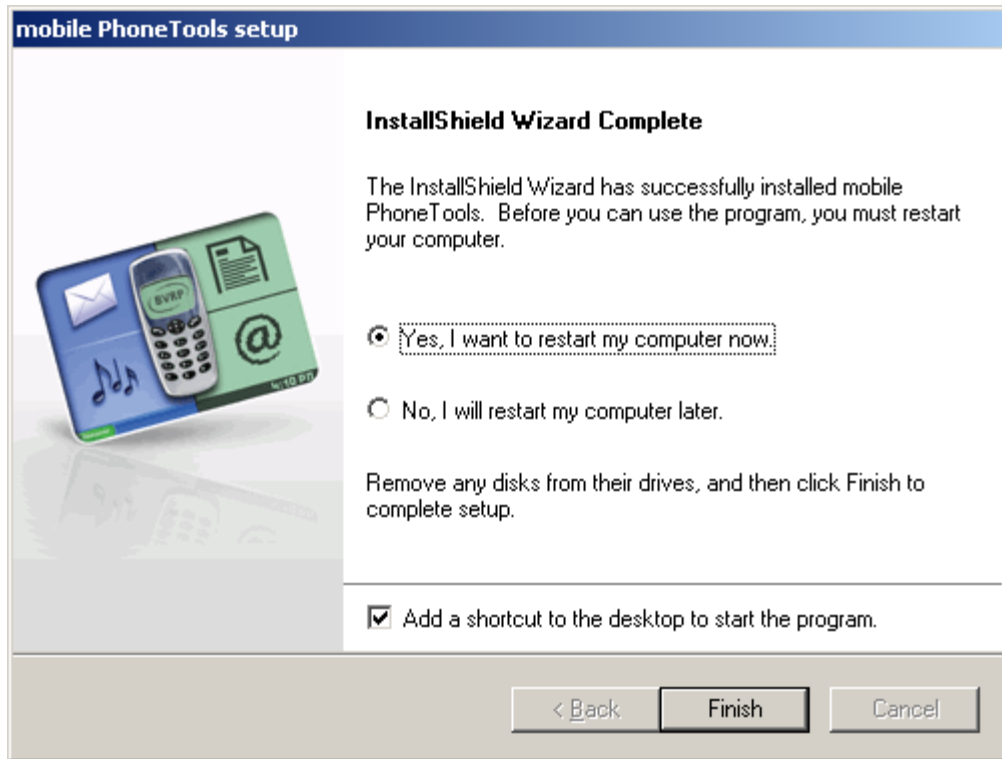
12. If you choose to install **Persistent Connection Features** click on the check mark box.
13. Click **Next** to continue. You will see the following screen:



To disable or enable the above features after installation, click on the menu from within mobile PhoneTools, then click on **Settings**, then the **Miscellaneous Tab**.

14. Select the **Persistent Connection Feature(s)** you would like to enable.
15. Click **Next** to continue. You will see the following screen:

Note: For detailed information on Persistent Connection Features, please refer to Section 4 on Page 23.



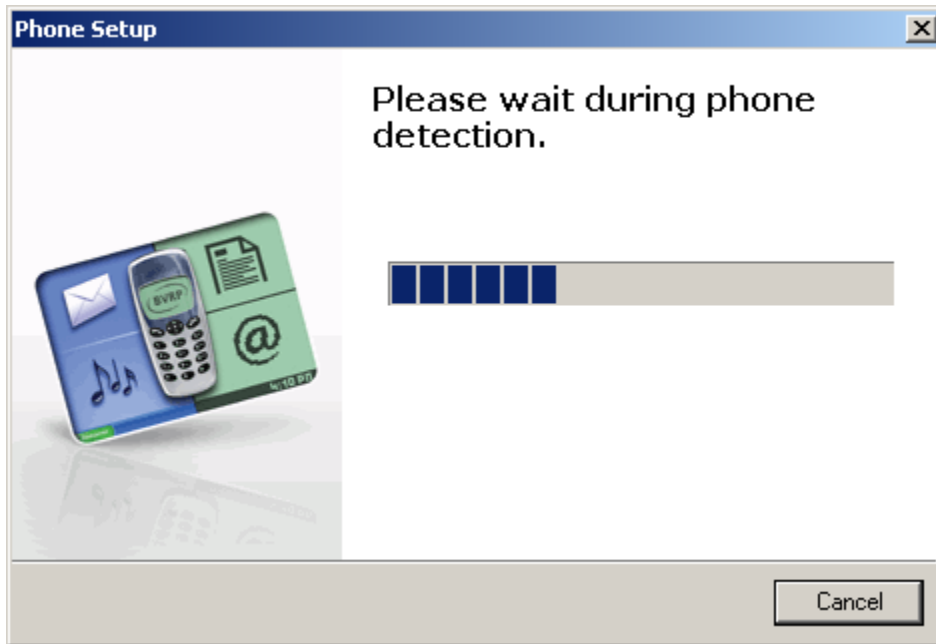
16. Click **Finish**, and allow your computer to restart.

Once the mobile PhoneTools software is successfully installed on your computer, you will see this icon on your desktop:



Note: For detailed information on Persistent Connection Features, please refer to Section 4 on Page 23.

17. Next, you will see the **Phone Detection** screen.



Please wait while your SA-EL modem is being configured by the software.

You are now ready to begin using your Enfora SA-EL modem.

4 Understanding Persistent Connection Features

During the installation of mobile PhoneTools, you will have the option of installing the following two Persistent Connection Features:

4.1 Start mobile PhoneTools on boot

This feature will automatically start the mobile PhoneTools program every time you start your computer.

If you do not choose this Persistent Connection Feature, you will need to double-click the following mobile PhoneTools icon in order to launch mobile PhoneTools:




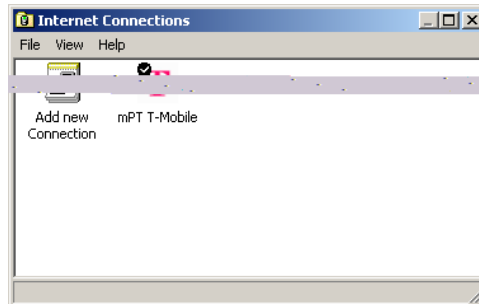
4.2 Automatic Internet Connection

This feature will automatically reconnect the Internet connection if the Dial-Up Networking (DUN) connection is dropped.

4.3 mobile PhoneTools Internet Connection Wizard:

There are two ways to create an Internet connection:

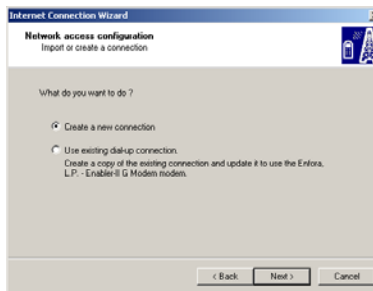
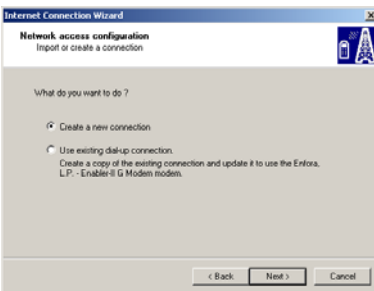
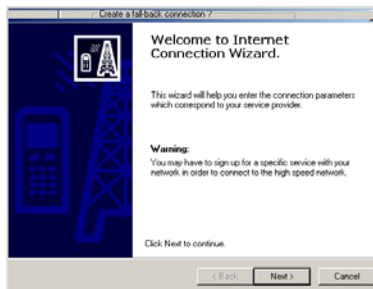
1. Select the Globe Icon  within mobile PhoneTools. The **Internet Connection Wizard** will automatically start if there are no existing Internet connections defined.
2. Use the **Menu > Setup > Internet connections** option. Then, activate **Add new Connection**.



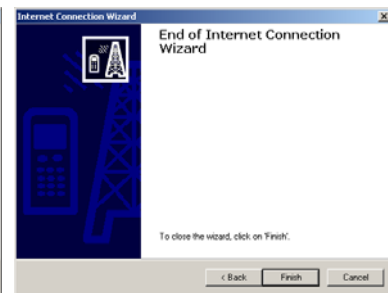
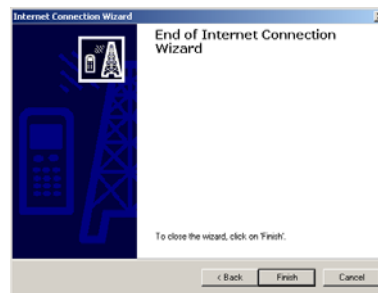
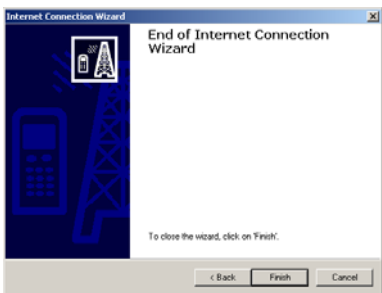
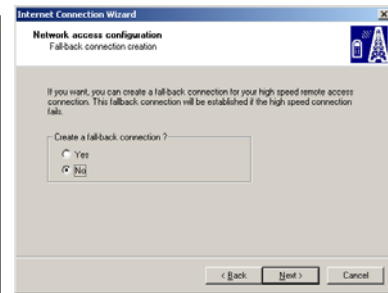
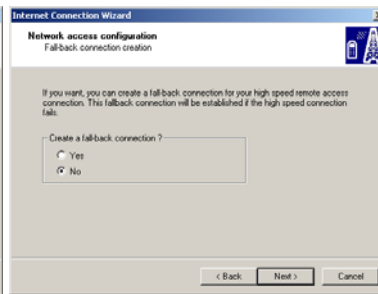
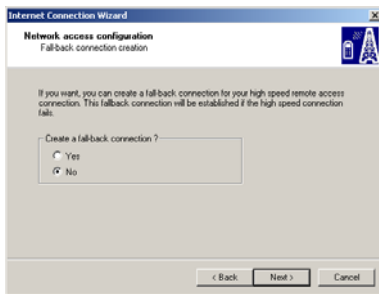
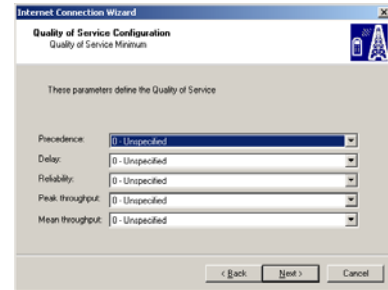
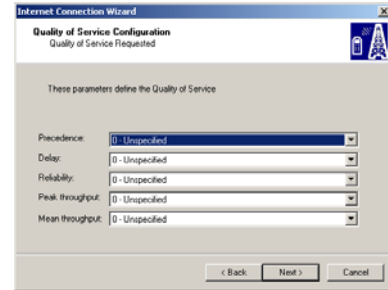
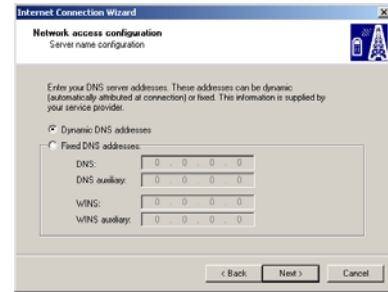
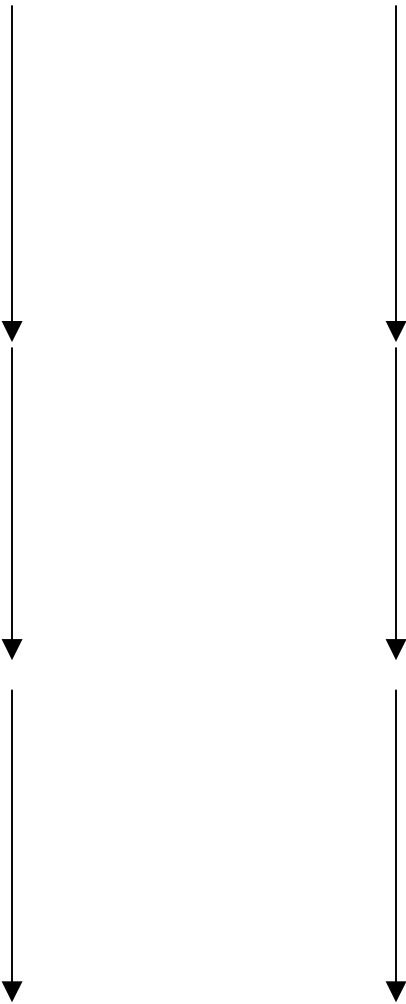
Internet Connection Wizard Using the Globe Start Option



Internet Connection Wizard Using the Add New Connection



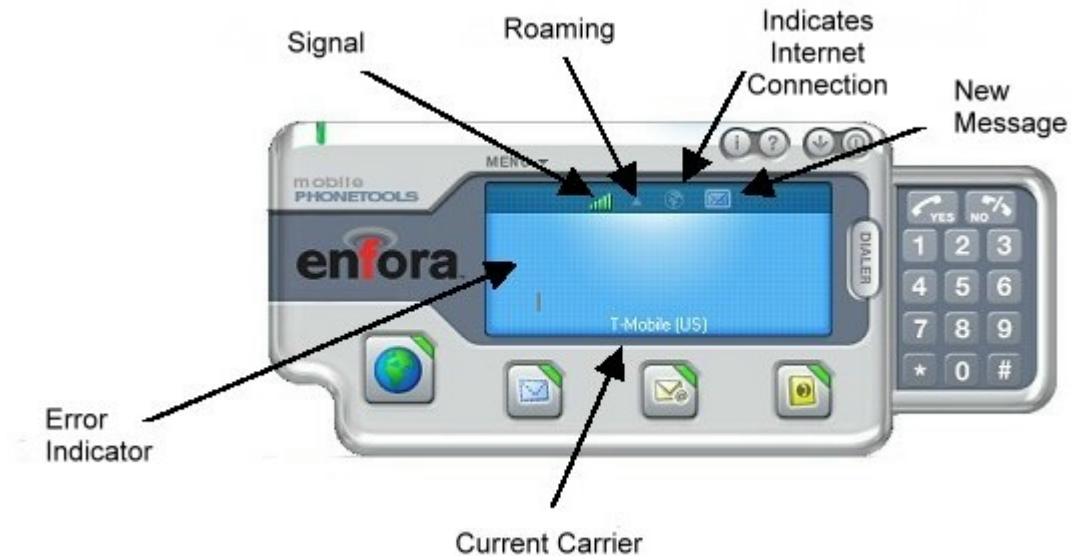




4.4 mobile PhoneTools Button Definitions



4.5 mobile PhoneTools Display Definitions



4.6 Troubleshooting

If you have any questions regarding installation, set up, or operation of the SA-EL, please contact the vendor or distributor from whom you purchased the modem, or your wireless network carrier.

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