



**California
Amplifier**

Viper Modem User Guide

For use with all Viper Modem models



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Revision A

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Proprietary

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Safety

When using CalAmp Viper electronic equipment, always follow basic safety precautions to reduce the risk of electrical shock, fire, and injury to people and/or property. Follow all warnings and instructions that come with the equipment.

1. Do not use the equipment while you are in a bathtub, shower, pool, or spa. Exposure of the equipment to water could cause severe electrical shock or serious damage to the equipment.
2. Do not immerse the equipment in any type of liquid. Use a damp cloth and if needed, water and a mild detergent to clean the plastic shell. Unplug the equipment from the power source before cleaning.
3. Follow all airport and FAA regulations when using the equipment on or near aircraft.
4. Only operate the equipment from the type of power source(s) indicated in this manual (110 VAC adapter or CalAmp supplied battery). Any other type of input power source may cause damage to the equipment.
5. Power the equipment using only the battery or the AC adapter cable provided, and in accordance with the instructions specified in the user manual.
6. Do not use a frayed or damaged power cord. Do not place the power cord where it can be stepped on or tripped over.
7. Do not touch wires where the insulation is frayed or worn unless the equipment has been disconnected from its power source.
8. Do not overload wall outlets, power strips, or extension cords. This can cause serious electrical shock or fire.
9. Do not place the equipment on an unstable surface. It can fall and cause injury or damage to the equipment.
10. Do not disassemble the equipment. Removing covers exposes dangerous voltages or other risks and also voids the warranty. Incorrect reassembly can cause equipment damage or electrical shock. Only an authorized repair technician should service this product.
11. Do not expose the equipment to extreme hot or cold temperatures.
12. Do not use the equipment under the following conditions:
 - When the equipment has been exposed to water or moisture.
 - When the equipment has been damaged.
 - When the power cord is damaged or frayed.
 - When the equipment does not operate properly or shows a distinct change in performance.

Regulatory Information

FCC Notice



CAUTION: This device is a Radio Frequency transmitter. It is required to comply with FCC RF exposure requirements for transmitting devices. A minimum separation distance of 8 inches (20 cm) or more must be maintained between the antenna and all persons during device operations to ensure compliance with the FCC's rules for Radio Frequency Exposure. If this minimum distance cannot be maintained, exposure to RF levels that exceed the FCC's limits may result.

FCC Compliance and Advisory Statement

***Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE***

This equipment has been tested and found to comply with the limits for a class B digital device, Pursuant to Part 15 of the FCC rules. The operation is subject to the following two conditions:

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

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed or used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- 1) Reorient or relocate the receiving antenna;
- 2) Increase the separation between the equipment and the receiver;
- 3) Connect the equipment to an outlet on a circuit different from that to which the receiver is connected;
- 4) Consult the dealer or an experienced radio/TV technician for additional suggestions.

INFORMATION TO USER

This device has been authorized as a radio frequency transmitter under the appropriate rules of the Federal Communications Commission. Any changes or modifications not expressly approved by CalAmp could void the user's authority to operate the equipment.

Battery Precautions



CAUTION! To reduce risk of injury or fire, follow these instructions when handling the battery.

1. Risk of explosion is possible if the battery is replaced with one not supplied by CalAmp.
2. Do not dispose of the battery in a fire. They may explode. Check with the local codes for battery disposal guidelines.
3. Do not open or mutilate the battery. The battery contains substances that are toxic, corrosive, or harmful to humans. If battery substances come in contact with the skin, seek medical help immediately.
4. Do not attempt to recharge the battery by any means except per the instructions in this manual.
5. Remove the battery from the equipment if the equipment is not going to be used for a long period of time. The battery could leak and cause damage to the equipment.
6. Exercise care when handling the battery to prevent shorting the battery with conducting materials such as bracelets, rings, and keys.
7. Store the battery pack in a dry place, 0 to +40 degrees Celsius.
8. Dispose of used batteries according to environmental guidelines.

Introduction

Congratulations! The Viper™ Modem is a user-friendly, easy-to-install device that helps you connect wirelessly to the Internet. It provides complete broadband Internet access to residential and small office/home office (SOHO) customers without the necessity of professional hardware installation. The Viper Modem also provides nomadic service availability as a computer with this device is moved from room to room, location to location, or even city to city as long as there is coverage in the area.

Package Inventory

Please verify the contents of your Viper Modem package. If you do not find all of these items in your package, notify the supplier from whom you obtained it.

- Viper Modem
- Viper Modem AC power adapter
- PC-to-Viper Modem cable (USB or Ethernet)
- Viper Modem User Guide
- Viper Modem Quick Installation Guide
- CalAmp Monitor Installation CD

Viper Models

Your Viper Modem will be a WCS (2.3 GHz) or MMDS (2.6 GHz) version. The difference is due to each one's operating band frequency range, described in Table 1 on the next page.

Operating Frequencies

Part Number	Frequency Range	Operating Band	Port Connection
530010E	2305 to 2360MHz	WCS	Ethernet
530010U	2305 to 2360MHz	WCS	USB
530009E	2596 to 2686MHz	MMDS/ITFS	Ethernet
530009U	2596 to 2686MHz	MMDS/ITFS	USB

The “E” in the model name stands for Ethernet, and the “U” in the model name stands for Universal Serial Buss (USB). Your computer will have one of these two types of ports for connecting the Modem.

- An **Ethernet** connection will function with any Win32 Operating System (Windows[®] 95 or later).



Computer Connections

- A **USB** connection will function only with Windows 98, Windows 98SE, Windows 2000, Windows ME, or Windows XP. It will not work with Windows 95 or Windows NT.



You must have the Viper Modem model with the appropriate connection for your computer port.

Minimum Computing Requirements

Operating System¹:	Ethernet Modems: Any Win32 [®] Operating System (OS) - Windows [®] 95, Windows 98 ² , Windows 98SE ² , Windows 2000, Windows ME ² , Windows XP, or later version. Windows XP must be Service Pack Level 1 or higher. Internet Explorer 3.0 or higher is required for installation on Windows 95 Operating Systems. USB Modems: Windows [®] 98 ² , Windows 98SE ² , Windows 2000, Windows ME ² , Windows XP, or later version. USB will not work with Windows 95 or Windows NT. Windows XP must be Service Pack Level 1 or higher. General Information: <ul style="list-style-type: none"> ▪ Ensure that the pc network port is enabled. ▪ MacIntosh systems and Lynx/Unix systems are not supported.
CPU:	Pentium level or higher
RAM:	32 MB or the Operating System minimum, whichever is greater
Hard Drive:	10 MB free disk space for CalAmp Monitor software
Monitor:	256 colors, 800 x 600 resolution

¹NOTE: If you are going to upgrade your Operating System after loading the CalAmp Monitor software, you must first uninstall CalAmp Monitor prior to upgrading the OS. Otherwise, CalAmp Monitor will not work. See [Uninstall](#) instructions in this Guide.

²NOTE: The Viper Modem must be left powered ON whenever you shut down or restart any Windows 98 or ME platforms. If the Modem is off, a blue screen appears on the monitor. In the event that happens you will most likely have to power cycle the PC.

The Viper Modem installation sections include instructions for both Ethernet and USB connections. Be sure to use the instructions that apply to your Viper model. The CalAmp Monitor software installation procedure is the same for any of the Viper models.

This manual will guide you through the simple process of installing the Viper Modem and software, which has been developed to optimize the ease and convenience for you, our valued customer. The 2.6 GHz model is used in most of the illustrations in this manual.

If you experience any difficulties with your unit, please contact your Service Provider or the vendor from whom you obtained your Viper Modem.

Physical Characteristics

Indicator Lights



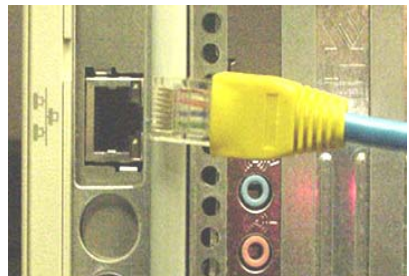



On/Off Switch

External Interfaces





Installing an Ethernet Modem

The following instructions are for the installation of a Viper Modem that has an Ethernet connection. Please read all instructions before attempting the installation. It is advisable to turn off the computer and the Viper Modem before performing the installation.





Step	Action	Illustration
1.	Connect the Ethernet cable to the Ethernet port on the computer.	
2.	Connect the other end of the Ethernet cable to the Viper Modem.	
3.	Connect the AC power adapter to the Viper Modem. Plug the other end into a 110 VAC outlet.  CAUTION! Only use the AC power adapter (P/N 71775) specifically supplied with the Viper Modem. Using any other adapter may cause damage to the Modem.	

Installing an Ethernet Modem, continued



Step	Action	Illustration
4.	Push the On/Off button on the Modem to ON.	
5.	If the Green Power indicator light comes on (center LED), proceed to Step 7. If not, there is a problem with the Modem or the AC power adapter. Check all cables for proper connection. Otherwise, contact the supplier from whom you obtained the package.	
7.	Turn your computer on and log in.	
8.	Proceed to the "Troubleshooting / Installing CalAmp Monitor" section of this manual.	

Installing a USB Modem


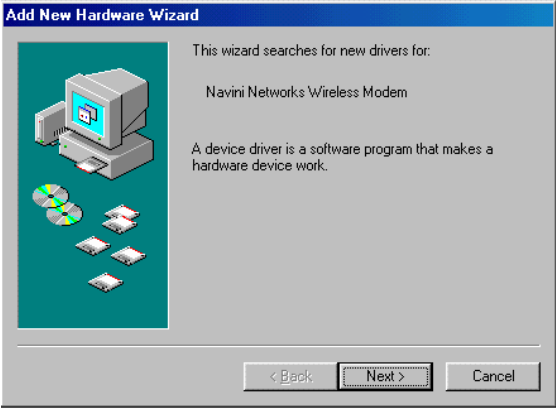
The following instructions are for the installation of a Viper Modem that has a USB connection. Please read all instructions before attempting the installation. It is advisable to turn off the computer and the Viper Modem before performing the installation.

Step	Action	Illustration
1.	Connect the USB cable to the USB port on the computer.	
2.	Connect the other end of the USB cable to the back of the Viper Modem.	
3.	<p>Connect the AC power adapter cable to the back of the Viper Modem. Plug the other end of the cable into a 110 VAC outlet.</p> <p> CAUTION! Only use the AC power adapter (P/N 71775) specifically supplied with the Viper Modem. Using any other adapter may cause damage to the Modem.</p>	

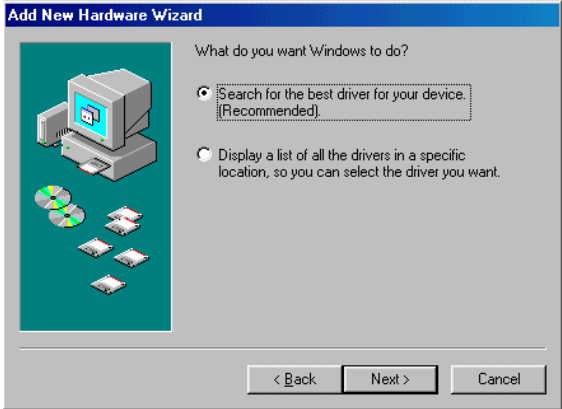


Installing a USB Modem, continued

Step	Action	Illustration
4.	Push the ON/OFF button on the Modem to ON.	
5.	If the Green Power indicator light comes on (center LED), proceed to Step 7. If not, there is a problem with the Modem or the AC Power Adapter. Check all cables for proper connection. Otherwise, contact the supplier from whom you obtained the package.	



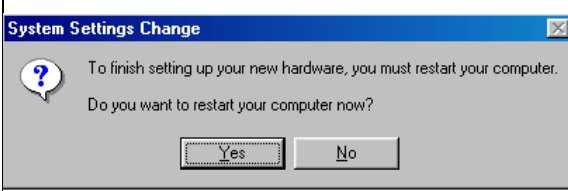
Installing a USB Modem, Continued

Step	Action	Illustration
7. 	<p>Turn your computer ON and log in.</p> <p>NOTE: For Windows 2000, you must be logged into an account having Administrative privileges to install the Viper Modem and its software.</p>	
8.	<p>Plug-and-Play will detect the Viper device now attached to the computer, and it will launch the Plug-and-Play application.</p> <p>If this does not happen, the problem may be due to one of the following:</p> <ul style="list-style-type: none"> • Windows NT and Windows 95 do not support a USB device. • The Modem is not turned on. • The Modem is not connected properly to the computer. 	
9.	The Add New Hardware Wizard dialog box appears. Click Next to continue.	

Installing a USB Modem, Continued

Step	Action	Illustration
10.	Insert the Viper Installation CD into the computer's CD-ROM drive.	
11.	Select the 'Search for the best driver for your device' option. Click Next to continue.	
12.	Select the 'CD-ROM drive' checkbox. Click Next to continue.	
13.	Confirm that the drive location is correct (it may be different than the one shown in the illustration). The file to be installed should say 'NETNNUSB.INF'. Click Next to continue.	

Installing a USB Modem, Continued

Step	Action	Illustration
14.	<p>Windows will finish installing the software files required for the Viper Modem operation. Click Finish.</p> <p> NOTE: For Window 98, a window may appear asking for drivers to be installed from the Windows 98 setup disk. If so, insert the Windows 98 setup disk into the CD-ROM drive at this time and accept the defaults.</p>	
15.	<p>After clicking Finish, the System Settings Change window appears asking if you want to restart your computer now. Click Yes.</p> <p>You must restart your computer at this point before proceeding.</p>	
16.	<p>After the computer restart is complete, proceed to the "Troubleshooting / Installing CalAmp Monitor" section of this manual.</p>	

Accessing the Internet

With your Modem now installed, and both the Modem and computer powered on, you should be able to surf the Internet! To access the Internet, open the web browser that is installed on your computer.

Troubleshooting

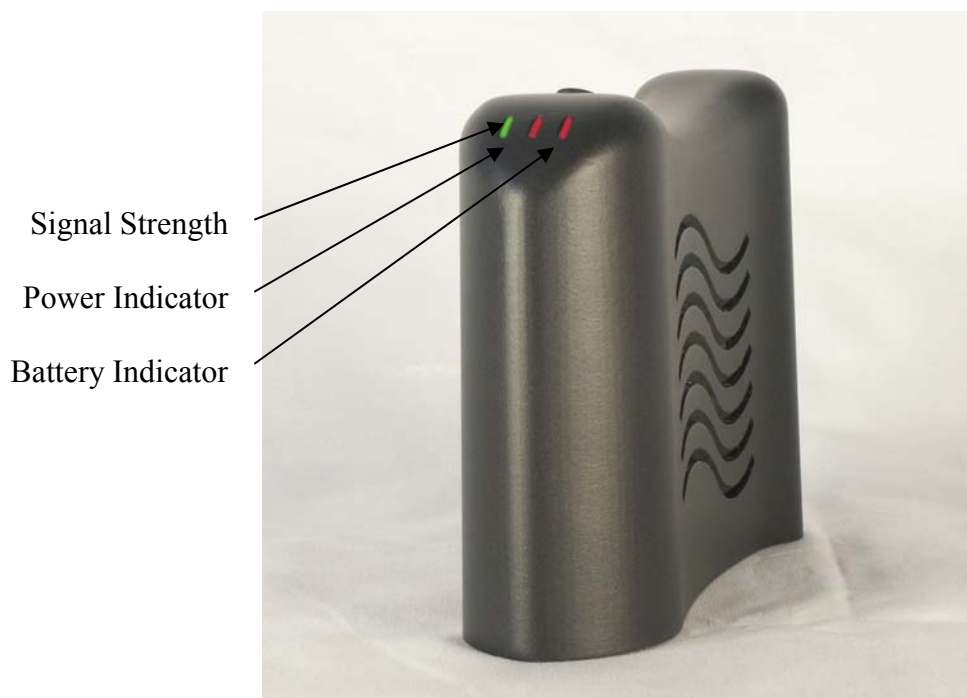
After installation, if you are experiencing difficulties with your Internet connection, please review the Minimum System Requirements section of this manual to ensure your computer meets those requirements. Next, go back over the installation procedures and ensure those steps were completed properly.

Assuming the computer requirements are met and the installation steps were completed as required, you will need to observe the light indicators on the front of the Modem. You also may need to install the CalAmp Monitor software. This software is provided on a CD that came in your Modem package.

The CalAmp Monitor software assists in solving connection problems as well as providing information about the battery power (batteries are optional).

Indicator Lights

The indicator lights on the front of the Modem provide valuable information about its operation. They change appearance to designate the state of the items that they represent. Used in conjunction with the CalAmp Monitor software, you can troubleshoot signal issues, network connections, and power problems.



Indicator Lights, Continued

Signal Strength Indicator (SSI)	
Constant Green :	Strong signal
Constant Yellow :	Medium signal
Constant Red :	Weak signal
Flashing Red :	No signal
Battery Indicator	
Constant Yellow :	Battery is charging
Constant Red :	Battery is less than 20% charged
Flashing Red :	Battery is less than 10% charged
Off :	Battery is fully charged or not installed
Power Indicator	
Constant Green :	The Modem is ON (AC or DC power)

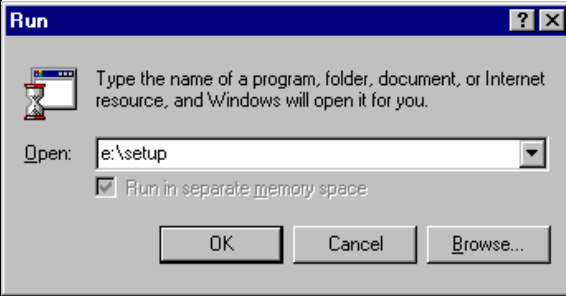
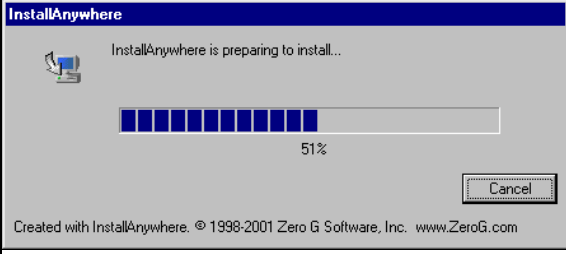
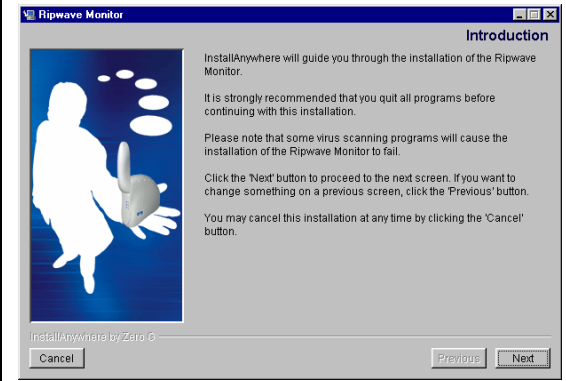
Installing CalAmp Monitor

The CalAmp Monitor software provides two types of information: signal strength and quality of the incoming signal. It can also provide information about the connectivity to the Service Provider's network. These displays may be required when troubleshooting Modem problems.


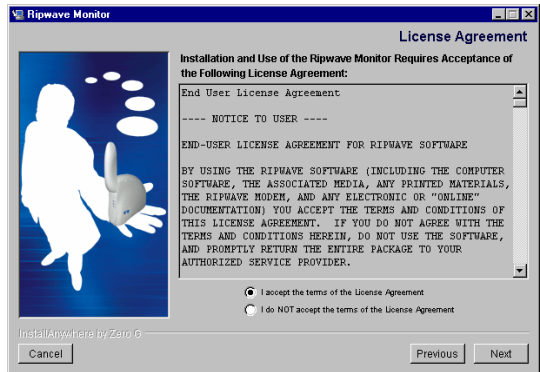
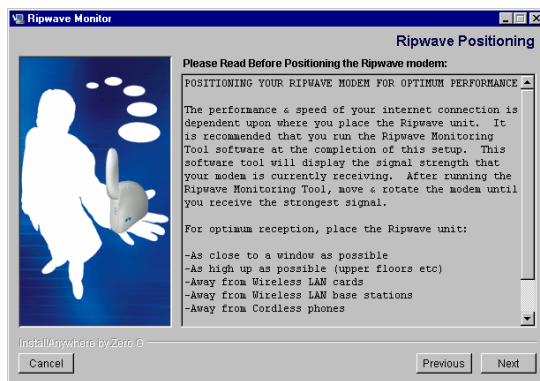
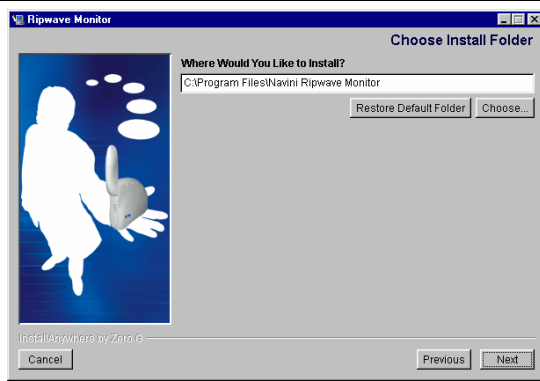
Before you install, please note:

- For Windows NT and Windows 2000 you must be logged into an account having Administrative privileges in order to install the CalAmp Monitor software.
- For Windows 95, Windows 98, and Windows 98SE Operating Systems (OS), the OS CD may be required to complete this installation. If prompted, insert the OS CD into the CD-ROM drive and accept the defaults.
- If you are going to upgrade your Operating System after loading the CalAmp Monitor software, you must first uninstall CalAmp Monitor prior to upgrading the OS. Otherwise, CalAmp Monitor will not work. See [Uninstall](#) instructions in this Guide.

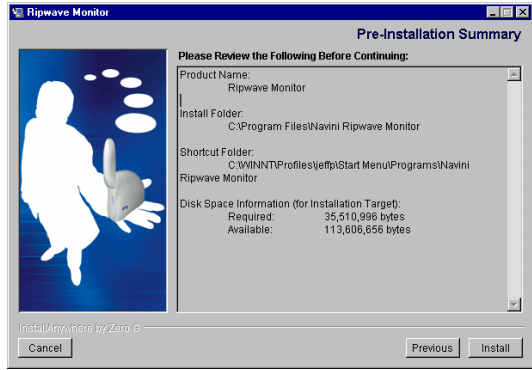


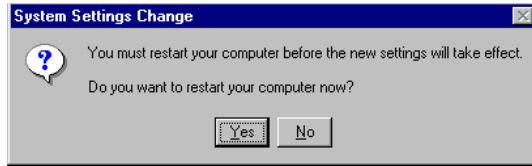
Installing CalAmp Monitor, continued

Step	Action	Illustration
1.	Shut down all programs, including anti-virus software programs, before installing the CalAmp Monitor software.	
2.	Insert the CalAmp Monitor Installation CD into the CD-ROM drive.	
3.	At the bottom left-hand corner of your screen, click Start > Run . In the Run window, enter e:\setup in the Open field (where “e” represents the CD drive). Use whatever letter that represents your CD drive. Click OK to continue.	
4.	The InstallAnywhere window appears. The progress bar indicates that InstallAnywhere has initialized.	
5.	The CalAmp Monitor Introduction screen appears. Click Next to continue.	

Installing CalAmp Monitor, continued

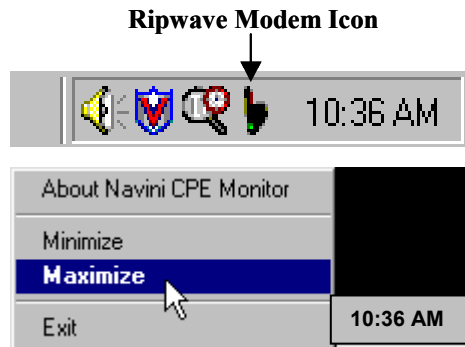
Step	Action	Illustration
6.	<p>The License Agreement screen appears. Read the Licensing Agreement. Select the I Accept option, and click Next to continue.</p> <p> NOTE: If the License Agreement is not accepted, you cannot install the software.</p>	
7.	<p>The Viper Positioning screen appears. Read the screen for positioning the Viper Modem for optimum performance. Click Next to continue.</p>	
8.	<p>The Choose Install Folder screen appears. Enter the name of the folder where you wish to install the software. Click Next to continue.</p> <p>The default installation folder provided by the software is shown in the illustration.</p>	

Installing CalAmp Monitor, continued

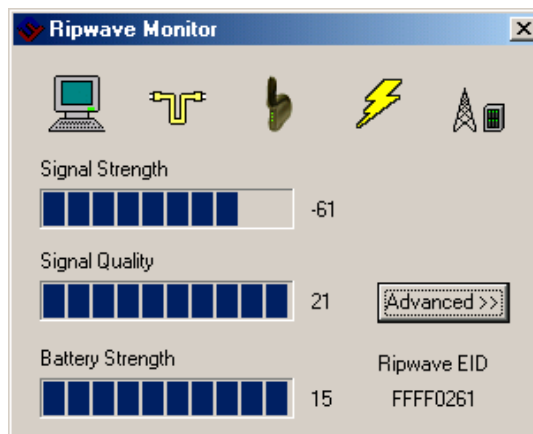
Step	Action	Illustration
9.	<p>The Pre-Installation Summary screen appears. Review the contents for accuracy. Click Install to continue.</p> <p>For your installation and computer, this screen may have different information than what is shown in the illustration.</p>	
10.	<p>The Installing screen will display as the application files are loaded.</p>	
11	<p>At the Install Complete screen, click Done to close the window.</p>	
12.	<p>After clicking Done the System Settings Change window appears, asking if you want to restart your computer now. Click Yes.</p> <p>NOTE: You must restart your computer at this point before proceeding.</p>	

Using CalAmp Monitor

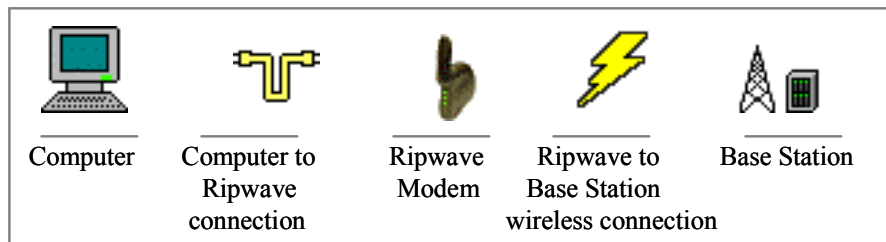
To open the CalAmp Monitor software application, right-click on the icon of the Viper Modem in the toolbar tray of your computer. Select Maximize.



A window with icons and, provided your Modem is on, bar graphs, will pop up. Notice the bottom right corner of the window shows the Equipment Identification (EID) for your specific Viper Modem. If you talk with a Service Technician while troubleshooting, you may be asked for this number.




The icons represent each of the components and connections throughout the network.

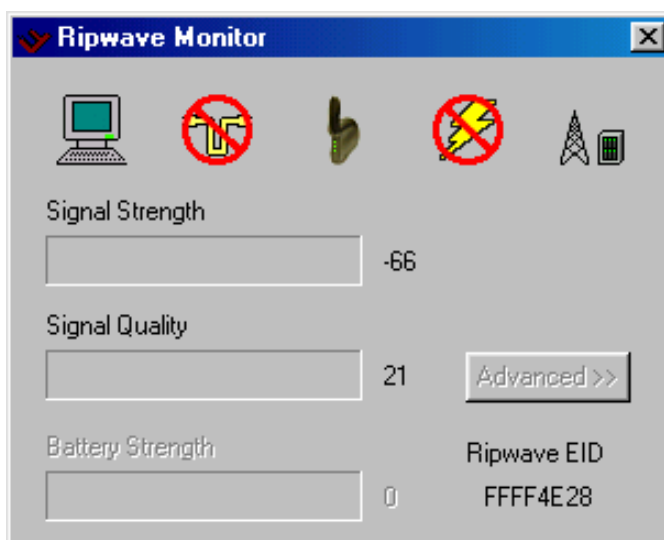


Using CalAmp Monitor, continued

The Signal Strength and Signal Quality are dynamic bar graphs that indicate how well your Modem is receiving signals from the Base Station. To increase the strength and quality of the signal, change the location of the Viper Modem. Try moving it closer to a window, to a higher location, away from other wireless devices (microwave ovens, cordless phones), and away from metal objects (shelves, file cabinets). As the Viper Modem is repositioned, observe the Signal Strength and Signal Quality bar graphs. Position the Modem for maximum signal strength and quality.

If you make a service call to your Service Provider, the Technician may ask you to read the numbers to the right of the signal bar graphs. These will help the Technician to evaluate the best position for your Viper Modem. The Battery Strength bar graph and the number to the right of it indicate how much charge is left in the battery (batteries are optional). Without a battery in the Modem, the Battery Strength bar graph and number will be disabled (grayed out).

If a problem is detected with one of the components, or if a connection goes down, a red circle with a slash  will be positioned over the icon.

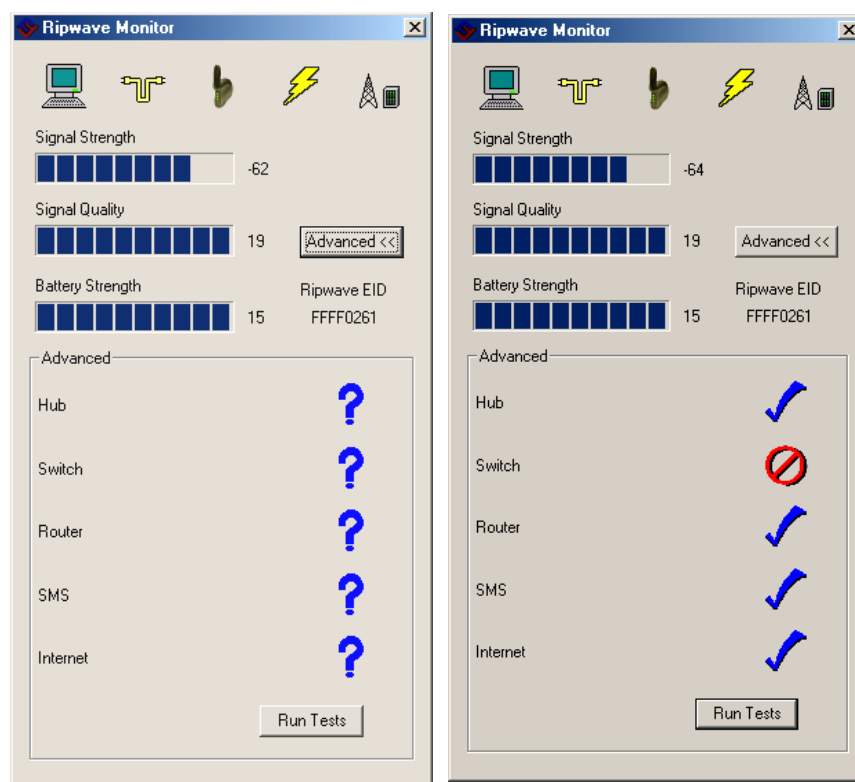


In this example, the cable connecting the computer and Modem is not operational; the wireless signal between Modem and Base Station is down; and there is no battery being used.

Using CalAmp Monitor, continued

To check connectivity to the Service Provider's network, you will click the Advanced button on the CalAmp Monitor. The Advanced section of the window appears and displays all of the connections throughout the network. The names of the network component will vary with each Operator's network. Note that if the connection between the Viper Modem and the Base Station is down, the Advanced button will be disabled (grayed out).

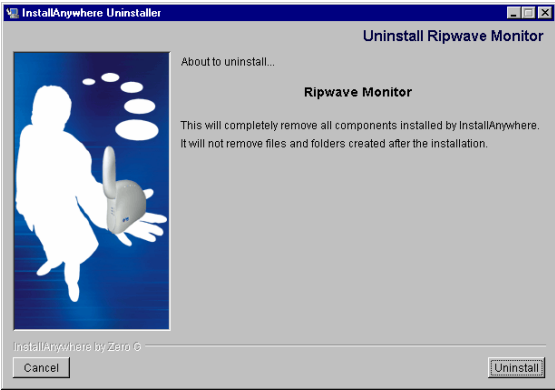
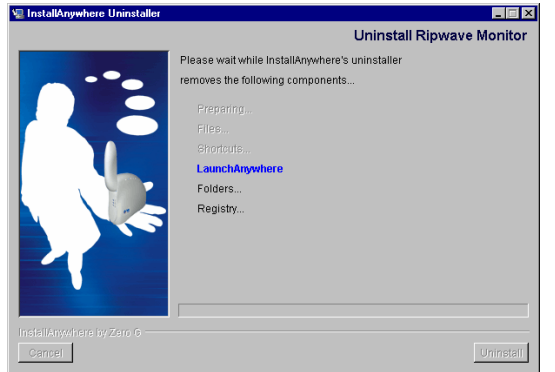
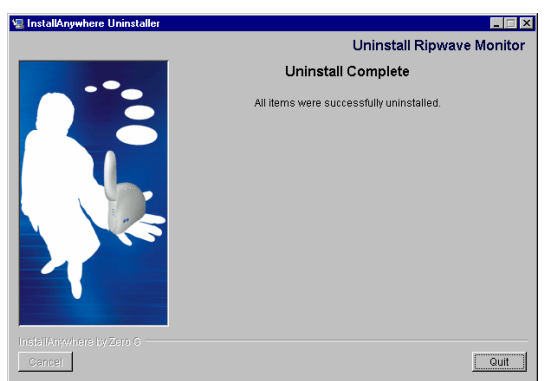
The blue question marks on the right side of the Advanced section indicate that all connections are untested. Now click on the Run Tests button at the bottom of the window. The blue question marks will change to either a blue checkmark or a red slash mark. A blue checkmark indicates that the connection is valid. A red slash mark indicates there is a problem with that connection.



The features of the Advanced and Run Tests buttons are to be used in conjunction with your Service Provider Technician to resolve problems. There is no need to use these features unless you are experiencing problems with the Modem.

Uninstalling CalAmp Monitor

If for some reason you need to uninstall the CalAmp Monitor software, e.g., to upgrade your Operating System software, follow the procedure below.

Step	Action	Illustration
1.	On your computer screen lower left corner, click on Start > Programs > CalAmp CalAmp Monitor > Uninstall CalAmp Monitor . The Install-Anywhere Uninstaller screen appears. Click Uninstall .	
2.	The screen will cycle through as the application files are uninstalled.	
3.	The Uninstall Complete screen appears when finished. Click on Quit to close the Uninstall screen.	
4.	Restart the pc to complete the uninstall process. This will ensure it functions properly after uninstalling.	

Installing & Charging the Battery

The battery pack is an option and is not included with the unit. To order a battery for the Viper Modem, contact your Service Provider or the vendor from whom you purchased the Modem.

The battery pack is installed in the bottom of the Viper Modem. To install and charge or remove the battery pack, follow the steps based on your model.

Care & Maintenance

The Viper Modem is designed to give years of trouble-free service. To ensure operation, read the following care and maintenance instructions.

- Keep the Modem free of dust and moisture. If the Modem gets wet, use a towel to dry it immediately.
- Handle the Modem gently. Dropping it or mishandling it can cause damage to the plastic shell or the electronic circuitry.
- Keep the Modem away from high temperatures. Heat can cause damage to the plastic shell or the electronic circuitry.
- Use only a mild detergent and a soft, damp cloth to clean the Modem. Do not use any chemicals or abrasives to clean the plastic shell.
- If there is a problem with the Modem, do not attempt to repair it yourself. Report the problem to your Service Provider.
- If you are going to upgrade your Operating System after loading the CalAmp Monitor software, you must first uninstall CalAmp Monitor prior to upgrading the OS. Otherwise, CalAmp Monitor will not work. See Uninstall instructions in this Guide.
- The Viper Modem must be left powered ON whenever you shut down or restart any Windows 98 or ME platforms. If the Modem is off, a blue screen appears on the monitor. In the event this happens you will mostly likely have to power cycle the PC.