# 1 Introduction

Congratulations on becoming the owner of the VisionNet 202ER ADSL Ethernet bridge/router. Your LAN (local area network) will now be able to access the Internet using your high-speed ADSL connection.

This User Guide will show you how to install and set up the VisionNet 202ER ADSL Bridge/Router, and how to customize its configuration to get the most out of your new product.

## Features

- Internal ADSL modem for high-speed Internet access
- 10/100Base-T Ethernet router to provide Internet connectivity to all computers on your LAN
- Network address translation (NAT), Firewall, and IP filtering functions to provide security for your LAN
- Network configuration through DHCP Server and DHCP Relay
- Services including IP route and DNS configuration, RIP, and IP and DSL performance monitoring
- Configuration program you access via an HTML browser

## System Requirements

In order to use the VisionNet 202ER ADSL/Ethernet router, you must have the following:

- ADSL service up and running on your telephone line, with at least one public Internet address for your LAN
- One or more computers each containing an Ethernet 10Base-T/100Base-T network interface card (NIC)
- An Ethernet hub/switch, if you are connecting the device to more than one computer on an Ethernet network.
- For system configuration using the supplied web-based program: a web browser such as Internet Explorer v5.0 or later, or Netscape v6.2 or later

## Using this Document

### Notational conventions

- Acronyms are defined the first time they appear in text and in the glossary (Appendix D).
- For brevity, the VisionNet 202ER is referred to as "the router."
- The terms *LAN* and *network* are used interchangeably to refer to a group of Ethernet-connected computers at one site.

### Typographical conventions

- *Italics* are used to identify terms that are defined in the glossary (Appendix D).
- **Bolded** text is used for items you select from menus and drop-down lists, and to identify field labels you view on-screen.

### Special messages

This document uses the following icons to call your attention to specific instructions or explanations.

**Note**

*Provides clarifying or non-essential information on the current topic.*

**Definition**

*Explains terms or acronyms that may be unfamiliar to many readers. These terms are also included in the Glossary.*

**WARNING**

*Provides messages of high importance, including messages relating to personal safety or system integrity.*

# 2 Getting to Know the VisionNet 202ER

## Parts Check

In addition to this document, your VisionNet 202ER should arrive with the following (in picture, clockwise from upper left):

- VisionNet 202ER ADSL Ethernet Router
- Power adapter and power cord
- CD with Manual
- Quick Start Guide
- Ethernet cable ("straight-through" type)
- Standard phone/DSL line cable

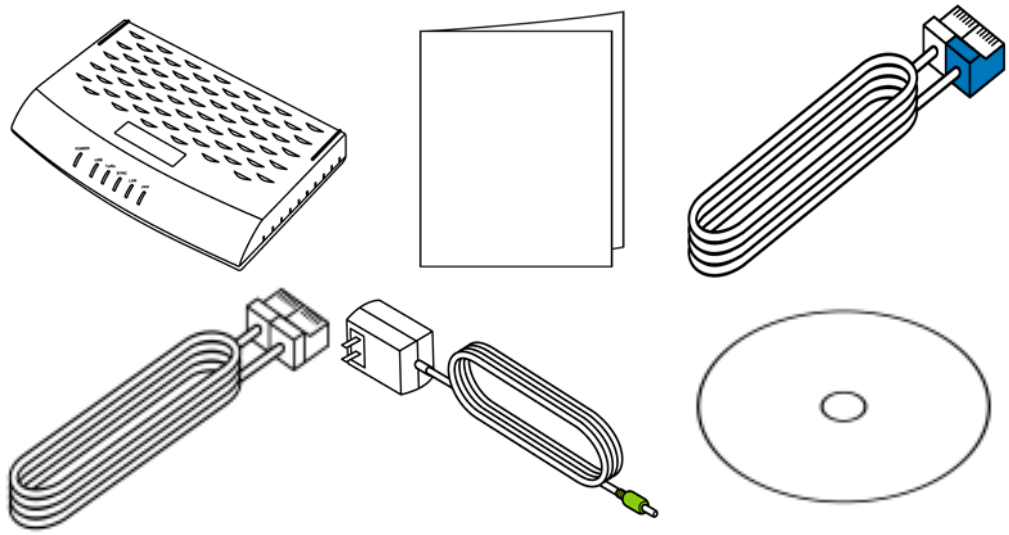

***Figure 1. VisionNet 202ER ADSL/Ethernet Router Package Contents***

## Front Panel

The front panel contains lights called LEDs that indicate the status of the unit.

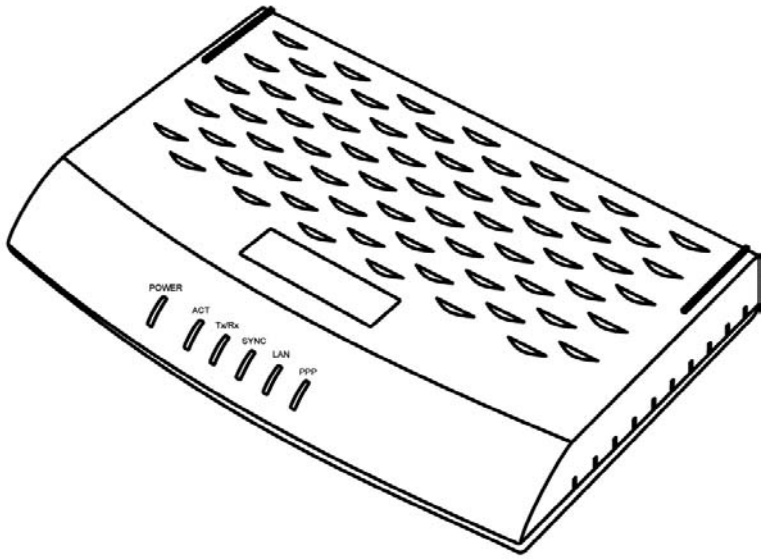


***Figure 2. Front Panel and LEDs***

| Label | When On |
|---|---|
| PPP | Solid green when using PPPoE or PPPoA, if the user has authenticated to the ISP's server. |
| LAN | On: LAN link established and active.<br>Off: No LAN link |
| SYNC | On: ADSL link established and active<br>Blinking: DSL signal found<br>Off: No ADSL link |
| Tx/Rx | Flashes when ADSL data activity occurs.<br>May appear solid when data traffic is heavy. |
| ACT | On: Device passed self test<br>Blinking: Device failed self test |
| POWER | On: Unit is powered on<br>Off: Unit is powered off |

## Rear Panel

The rear panel contains the ports for the unit's data and power connections.

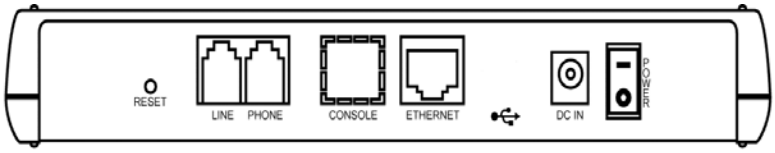


***Figure 3. Rear Panel Connections***

| Label | Function |
|---|---|
| POWER | Switches the unit on and off |
| DC INPUT | Connects to the supplied power converter cable |
| Ethernet | Connects the device to your PC's Ethernet port, or to the uplink port on your LAN's hub, using the cable provided |
| PHONE | Provides an in-line filter connection to your telephone |
| LINE | Connects the device to a telephone jack for DSL communication |
| RESET | Resets the device to the DQ's default configuration (must be pressed 3 times to reset). |

# 3 Quick Start

This Quick Start provides basic instructions for connecting the VisionNet 202ER to a computer or LAN and to the Internet.

- Part 1 describes setting up the hardware.
- Part 2 shows you how to configure basic settings on the VisionNet 202ER to get your LAN connected to the Internet.

This Quick Start assumes that you have already established ADSL service with your Internet service provider (ISP). These instructions provide a basic configuration that should be compatible with your home or small office network setup. Refer to the subsequent chapters for additional configuration instructions.

## Part 1 — Connecting the Hardware

In Part 1, you connect the device to the phone jack, the power outlet, and your computer or network.

**WARNING**

***Before you begin, turn the power off for all devices.*** *These include your computer(s), your LAN hub/switch (if applicable), and the VisionNet 202ER.*

***Figure 4*** illustrates the hardware connections. The layout of the ports on your device may vary from the layout shown. Refer to the steps that follow for specific instructions.

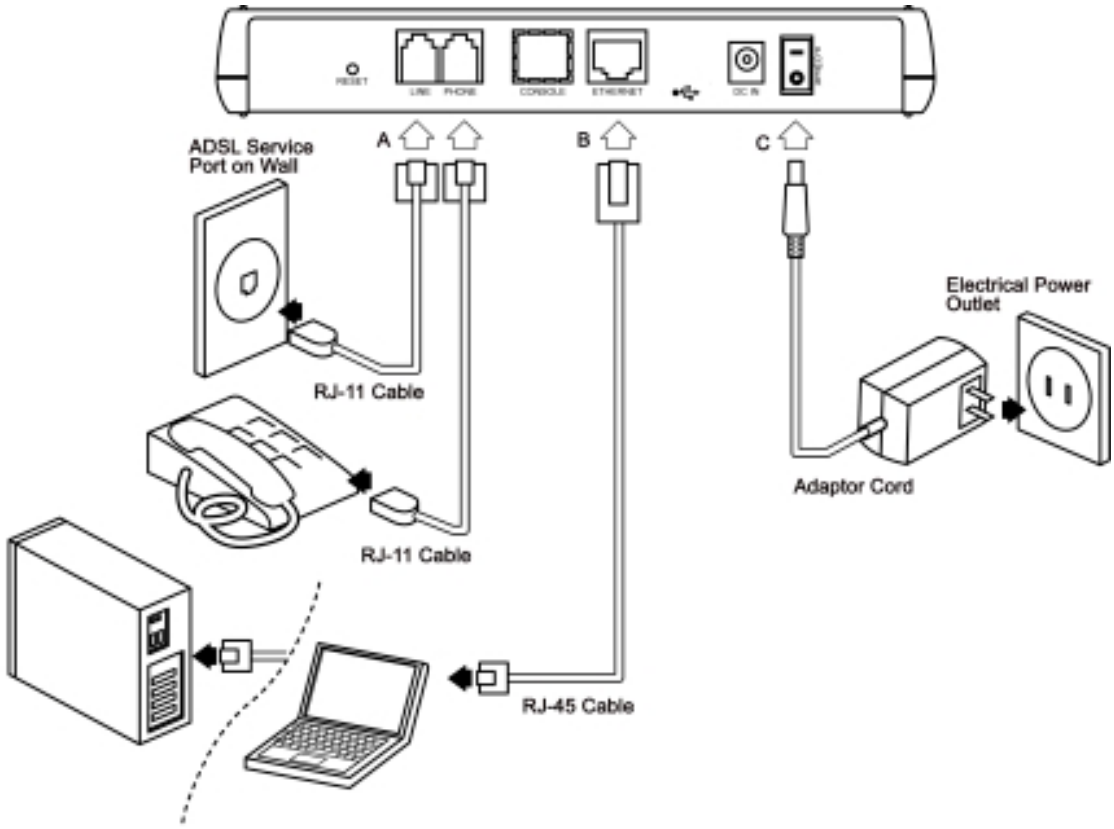


***Figure 4. Overview of Hardware Connections***

### Step 1. Connect the ADSL cable and optional telephone.

Connect one end of the provided phone cable to the port labeled ADSL on the rear panel of the device. Connect the other end to your wall phone jack.

You can attach a telephone line to the device. This is helpful when the ADSL line uses the only convenient wall phone jack. If desired, connect the telephone cable to the port labeled PHONE.

**WARNING**

*Although you use the same type of cable, The ADSL and PHONE ports are **not** interchangeable. Do not route the ADSL connection through the PHONE port.*

**Step 2. Connect the Ethernet cable.**

If you are connecting a LAN to the VisionNet 202ER ADSL/Ethernet router, attach one end of a provided Ethernet cable to your PC and the other to the Ethernet port on the VisionNet 202ER.

If you are using the VisionNet 202ER with a hub/switch, you must use a "crossover" Ethernet cable (not provided) to attach directly to the device.

**Step 3. Attach the power connector.**

Connect the AC power adapter to the PWR connector on the back of the device and plug in the adapter to a wall outlet or power strip.

**Step 4. Turn on the VisionNet 202ER and power up your systems.**

Press the Power switch on the back panel of the device to the ON position.

Turn on and boot up your computer(s) and any LAN devices such as hubs or switches.

## Part 2 — Configuring Your Computers

Part 2 of the Quick Start provides instructions for configuring the Internet settings on your computers to work with the VisionNet 202ER.

### Before you begin

By default, the VisionNet 202ER automatically assigns all required Internet settings to your PCs. You need only to configure the PCs to accept the information when it is assigned.


Note

*In some cases, you may want to assign Internet information manually to some or all of your computers rather than allow the VisionNet 202ER to do so. See "Assigning static Internet information to your PCs" on page 22 for instructions.*

- If you have connected your PC of LAN via Ethernet to the VisionNet 202ER, follow the instructions that correspond to the operating system installed on your PC.

**Windows® 95, 98 PCs:**

First, check for the IP protocol and, if necessary, install it:

1. In the Windows task bar, click the Start button, point to **Settings**, and then click **Control Panel**.
2. Double-click the Network icon.

   The Network dialog box displays with a list of currently installed network components. If the list includes TCP/IP, and then the protocol has already been enabled. Skip to step 9.
3. If TCP/IP does not display as an installed component, click 

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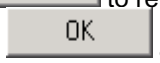
   The Select Network Component Type dialog box displays.
4. Select **Protocol**, and then click 

.

   The Select Network Protocol dialog box displays.
5. Click on **Microsoft** in the Manufacturers list box, and then click **TCP/IP** in the Network Protocols list box.
6. Click 

to return to the Network dialog box, and then click 

again.

   You may be prompted to install files from your Windows 95/98 installation CD. Follow the instructions to install the files.
7. Click 

to restart the PC and complete the TCP/IP installation.

Next, configure the PCs to accept IP information assigned by the VisionNet 202ER:

8. Open the Control Panel window, and then click the Network icon.
9. Select the network component labeled TCP/IP, and then click Properties.

   If you have multiple TCP/IP listings, select the listing associated with your network card or adapter.
10. In the TCP/IP Properties dialog box, click the IP Address tab.
11. Click the radio button labeled **Obtain an IP address automatically**.
12. Click the DNS Configuration tab, and then click the radio button labeled **Obtain an IP address automatically**.
13. Click OK twice to confirm and save your changes.

    You will be prompted to restart Windows.
14. Click Yes.

**Windows NT 4.0 workstations:**

First, check for the IP protocol and, if necessary, install it:

1. In the Windows NT task bar, click the Start button, point to **Settings**, and then click **Control Panel**.
2. In the Control Panel window, double click the Network icon.
3. In the Network dialog box, click the Protocols tab.

   The Protocols tab displays a list of currently installed network protocols. If the list includes TCP/IP, then the protocol has already been enabled. Skip to step 9.
4. If TCP/IP does not display as an installed component, click Add...
5. In the Select Network Protocol dialog box, select **TCP/IP**, and then click OK.

   You may be prompted to install files from your Windows NT installation CD or other media. Follow the instructions to install the files.

   After all files are installed, a window displays to inform you that a TCP/IP service called DHCP can be set up to dynamically assign IP information.
6. Click Yes to continue, and then click OK if prompted to restart your computer.

Next, configure the PCs to accept IP information assigned by the VisionNet 202ER:

7. Open the Control Panel window, and then double-click the Network icon.

8. In the Network dialog box, click the Protocols tab.
9. In the Protocols tab, select **TCP/IP**, and then click Properties.
10. In the Microsoft TCP/IP Properties dialog box, click the radio button labeled **Obtain an IP address from a DHCP server**.
11. Click OK twice to confirm and save your changes, and then close the Control Panel.

**Windows 2000 PCs:**

First, check for the IP protocol and, if necessary, install it:

1. In the Windows task bar, click the Start button, point to **Settings**, and then click **Control Panel**.
2. Double-click the Network and Dial-up Connections icon.
3. In the Network and Dial-up Connections window, right-click the Local Area Connection icon, and then select **Properties**.

   The Local Area Connection Properties dialog box displays with a list of currently installed network components. If the list includes Internet Protocol (TCP/IP), then the protocol has already been enabled. Skip to step 10.
4. If Internet Protocol (TCP/IP) does not display as an installed component, click Install...
5. In the Select Network Component Type dialog box, select **Protocol**, and then click Add...
6. Select **Internet Protocol (TCP/IP)** in the Network Protocols list, and then click OK.

   You may be prompted to install files from your Windows 2000 installation CD or other media. Follow the instructions to install the files.
7. If prompted, click OK to restart your computer with the new settings.

Next, configure the PCs to accept IP information assigned by the VisionNet 202ER:

8. In the Control Panel, double-click the Network and Dial-up Connections icon.
9. In Network and Dial-up Connections window, right-click the Local Area Connection icon, and then select **Properties**.
10. In the Local Area Connection Properties dialog box, select **Internet Protocol (TCP/IP)**, and then click Properties.
11. In the Internet Protocol (TCP/IP) Properties dialog box, click the radio button labeled **Obtain an IP address**

**automatically**. Also click the radio button labeled **Obtain DNS server address automatically**.

12. Click OK twice to confirm and save your changes, and then close the Control Panel.

### Windows Me PCs

1. In the Windows task bar, click the Start button, point to **Settings**, and then click **Control Panel**.
2. Double-click the Network and Dial-up Connections icon.
3. In the Network and Dial-up Connections window, right-click the Network icon, and then select **Properties**.

   The Network Properties dialog box displays with a list of currently installed network components. If the list includes Internet Protocol (TCP/IP), then the protocol has already been enabled. Skip to step 11.
4. If Internet Protocol (TCP/IP) does not display as an installed component, click Add....
5. In the Select Network Component Type dialog box, select **Protocol**, and then click Add....
6. Select **Microsoft** in the Manufacturers box.
7. Select **Internet Protocol (TCP/IP)** in the Network Protocols list, and then click OK.

   You may be prompted to install files from your Windows Me installation CD or other media. Follow the instructions to install the files.
8. If prompted, click OK to restart your computer with the new settings.

Next, configure the PCs to accept IP information assigned by the VisionNet 202ER:

9. In the Control Panel, double-click the Network and Dial-up Connections icon.
10. In Network and Dial-up Connections window, right-click the Network icon, and then select **Properties**.
11. In the Network Properties dialog box, select **TCP/IP**, and then click Properties.
12. In the TCP/IP Settings dialog box, click the radio button labeled **Server assigned IP address**. Also click the radio button labeled **Server assigned name server address**.
13. Click OK twice to confirm and save your changes, and then close the Control Panel.

### Assigning static Internet information to your PCs

In some cases, you may want to assign Internet information to some or all of your PCs directly (often called "statically"), rather than allowing the VisionNet 202ER to assign it. This option may be desirable (but not required) if:

- You have obtained one or more public IP addresses that you want to always associate with specific computers (for example, if you are using a computer as a public web server).
- You maintain different subnets on your LAN (subnets are described in Appendix A).

Before you begin, contact your ISP if you do not already have the following information:

- The IP address and subnet mask to be assigned to each PC to which you will be assigning static IP information.
- The IP address of the default gateway for your LAN. In most cases, this is the address assigned to the LAN port on the VisionNet 202ER. By default, the LAN port is assigned this IP address: **10.0.0.2**. (You can change this number, or another number can be assigned by your ISP. See Chapter 5 for more information.)
- The IP address of your ISP's Domain Name System (DNS) server.

On each PC to which you want to assign static information, follow the instructions on pages 18 through 21 relating only to checking for and/or installing the IP protocol. Once it is installed, continue to follow the instructions for displaying each of the Internet Protocol (TCP/IP) properties. Instead of enabling dynamic assignment of the IP addresses for the computer, DNS server, and default gateway, click the radio buttons that enable you to enter the information manually.

**Note**

*Your PCs must have IP addresses that place them in the same subnet as the VisionNet 202ER's LAN port. If you manually assign IP information to all your LAN PCs, you can follow the instructions in Chapter 5 to change the LAN port IP address accordingly.*

# Part 3 — Configuring the VisionNet 202ER

## Logging in to the VisionNet 202ER Quick Setup

The VisionNet 202ER provides a preinstalled software program called Configuration Manager which enables you to configure the operation of the device via your Web browser. The settings that you are most likely to need to change before using the device are grouped onto a single Quick Start page.

To access the Configuration Manager Quick Start page, open the Web browser on any PC connected to the VisionNet 202ER. Type the following URL in the address/location box and press **<Return>**:

**10.0.0.2/hag/pages/home.ssi**

***Figure 5*** shows the Quick Start page:


***Figure 5. Quick Start Page—Configuration Manager***

Configure each of the Quick Start settings **as instructed by your ISP**:

### Operation Mode

- **Enable?** This setting enables or disables the VisionNet 202ER. When set to "No", the device cannot be used to provide Internet connectivity for your network. Set it to "Yes" now, if necessary.
- **Encapsulation:** This setting determines the type of data link used to communicate with your ISP: LLC muxed or VC.
- **Bridge:** This setting enables or disables bridging between the VisionNet 202ER and your ISP. Your ISPs may also refer to this using "RFC 1483" or "Ethernet over ATM".
- **IGMP:** This setting enables or disables the Internet Group Management Protocol, which some ISPs use to perform remote configuration of your device.
- **IP Address** and **Subnet Mask:** If your ISP has assigned a public IP address to your Network, enter the address and the associated subnet mask in the boxes provided.
- **WAN Gateway**. Enter the gateway IP address for your ISP's network.

### DNS Settings

- **DNS Proxy Selection:** This setting determines how the VisionNet 202ER will obtain DNS server addresses. The DNS server matches the user-friendly website names you type into your browser with the sites' numeric IP addresses. Choose User Configured if you know the DNS server addresses; otherwise choose AutoDiscovery.
- **Primary/Secondary DNS:** If you selected *User Configured* in the DNS Proxy Selection, enter the Primary and Secondary DNS addresses provided by your ISP. If you selected *Auto Discovery + User Configured*, you are not required to enter addresses here; they will be used in addition to any addresses discovered automatically.

### PPP Settings

- **Username** and **Password:** Enter the username and password you use to log in to your ISP.
- **Disconnect timeout:** Enter the number of seconds after which your ISP connection will time out if there is no activity.
- **Authentication:** Select the user/password authentication method your ISP uses (PAP or CHAP).

### Default Router Settings

In addition to handling the DSL connection to your ISP, the VisionNet 202ER ADSL/Ethernet router can provide a variety of services to your network. The device is preconfigured with default settings for use with a typical home or small office network.

***Table 1*** lists some of the most important default settings; these and other features are described fully in the subsequent chapters. If you are familiar with network configuration, review the settings in ***Table 1*** to verify that they meet the needs of your network. Follow the instructions to change them if necessary. If you are unfamiliar with these settings, try using the device without modification, or contact your ISP for assistance.

Before you modifying any settings, review Chapter 4 for general information about accessing and using the Configuration Manager program. We strongly recommend that you contact your ISP prior to changing the default configuration.

***Table 1. Default Settings Summary***

| Option | Default Setting | Explanation/Instructions |
|---|---|---|
| *DHCP (Dynamic Host Configuration Protocol)* | DHCP server enabled with two pools of addresses:<br>For LAN computers:<br>10.0.0.3 through 10.0.0.32 | The VisionNet 202ER maintains a pool of 30 private IP addresses for dynamic assignment to your LAN. To use this service, you must have set up your computers to accept IP information dynamically, as described in Part 2 of the Quick Start. See Chapter 7 for an explanation of the DHCP service. |
| *NAT (Network Address Translation)* | napt rule enabled | Your computers' private IP addresses (see DHCP above) will be translated to your public IP address whenever they access the Internet. See Chapter 8 for a description of the NAT service. |
| *LAN Port IP Address* | Static IP address: 10.0.0.2<br>subnet mask: 255.0.0.0 | This is the IP address of the LAN port on the device. The LAN port connects the device to your Ethernet network. Typically, you will not need to change this address. See Chapter 5 for instructions. |

## Testing Your Installation

The Quick Start process you just completed should enable any computer on your LAN to use the VisionNet 202ER's ADSL connection to access the Internet.

To test the connection, turn on the device, wait about 30 seconds, and then verify that its LEDs are illuminated as shown in ***Table 2***.

***Table 2. LED Indicators***

| This LED: | ...should be: |
|---|---|
| *PWR* | Solid green to indicate that the device is turned on. If this light is not on, check the power cable attachment. |
| *LINK LAN* | Solid green to indicate that the device can communicate with your LAN. |
| *SYNC* | Solid green to indicate that the device has successfully established a connection with your DSL provider. |
| *Tx*/*Rx* | Flashing when the device is receiving data from the Internet. It may be unlit, flashing, or appear solid depending on the current activity. |
| *PPP* | When using PPPoE or PPPoA, this LED will become solid green upon successful authentication. |
| *ACT* | Solid green when the unit passes self-diagnostics. |

If the LEDs illuminate as expected, test your Internet connection from a LAN computer : Open your web browser, and type the URL of any external website (such as *http://www.yahoo.com*). The LED labeled WAN ACT should be blinking rapidly and may appear solid as the device connects to the site.

## Using VisionNet's Diagnostic Utilities

If the LEDs do not illuminate as expected or you cannot connect to the Internet, you can use utilities on the VisionNet 202ER while working with your ISP to diagnose any problems. You can access these diagnostic utilities, which are shown in ***Figure 6***, from your Web browser on any computer connected to the device.

Contact your ISP to determine the URL for displaying and using the diagnostic utilities.


Figure 6. Diagnostic Utilities