Actiontec™

USB/Ethernet

Home DSL Modem

User Manual

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Introduction 1

Thank you for purchasing the *Action*tec USB/Ethernet Home DSL Modem. This Modem can act as a DSL modem for a single computer, or as a router to connect multilple computers to a single broadband connection. This easy-to-use product is perfect for the home office or small business. If you want to take your computing to the next level, the *Action*tec USB/Ethernet Home DSL Modem is one of the keys to your success.

Package Contents

- *Action*tec USB/Ethernet Home DSL Modem
- Power cord
- Yellow cable (Ethernet)
- Purple cable (USB)
- Installation CD (Disk 1 [includes user manual])
- START HERE guide
- BLACK Quick Start guide

Minimum System Requirements

- Active DSL service
- Computer(s) with the following:
  - a 10 Mbps or 10/100 Mbps Ethernet connection, or USB connection
  - Microsoft Windows 98, 98 Second Edition (SE), Millennium Edition (Me), 2000, XP, or Apple Macintosh operating system

Note: USB LAN port is not supported with Microsoft Windows 95, NT 4.0, and Macintosh operating systems.

  - Internet Explorer 4.0+ (5.0+ recommended) or Netscape Navigator 4.0+ (4.7+ recommended)
- TCP/IP network protocol installed

Modem Features

The Modem has a series of LEDs (lights) and a variety of ports. It is recommended that the user become familiar with these features before installing or setting up the Modem.

Front Panel

There are 4 LEDs (light emitting diodes, or lights) on the front panel of the Modem.

Power LED

The Power LED glows green when power is supplied to the Modem. When it flashes, the Modem is going through its initialization process.

Ready LED

The Modem LED glows green when the Modem is connected to the Internet. When it flashes, the Modem is synchronizing the connection.

Link LED

The Link LED glows solid green when the Modem is connected to a computer via Ethernet or USB cable.

Activity LED

The Activity LED flashes when information is moving between the computer to which the Modem is connected and the Internet.

Rear Panel

The Modem has five ports on its rear panel.

Black Port (Power)

The Black port is used to connect the Modem's Power cord.

Yellow (Ethernet) Port

The Yellow port is used to connect the Modem to a computer on the home network with the Yellow (Ethernet) cable.

Purple (USB) Port

The Purple port is used to connect the Modem to a computer on the home network with the Purple (USB) cable.

Phone Port

The Phone port is used to connect the Modem to a telephone.

Line Port

The Line port is used to connect the Modem to the DSL connection.

Technical Support

*Action*tec Electronics, Inc., prides itself on making durable, high-quality, high-performance products. If you need assistance, the *Action*tec Technical Support Department is always available, 24 hours a day, seven days a week, to provide professional support.

***Action*tec Electronics, Inc.**

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Sunnyvale, CA 94085

Technical Support
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Email: techsupp@actiontec.com
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Setting Up The Modem

2

The instructions that follow parallel the steps contained in the *Action*tec Installation Buddy™, which provides a visual guide to setting up the Modem. It is recommended the user run the Installation Buddy first, before attempting any other procedures.

To set up the Modem, connect it to a computer. After connecting this first computer, other computers can be added to the network via USB, Ethernet, or wirelessly (see "Connecting Additional Computers on page 21").

☞ ***Note***: The Installation Buddy is not supported on computers running Windows 95 and NT 4.0, Macintosh, or Linix operating systems.

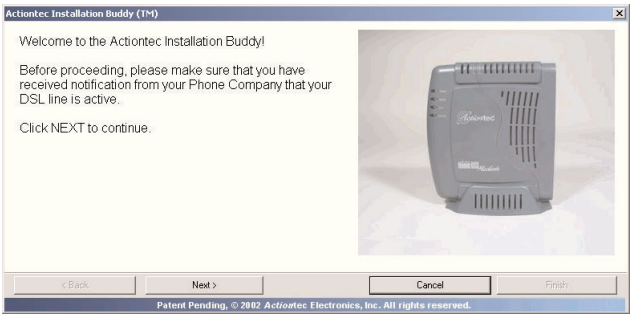
Connecting a Computer to the Modem

Connecting a computer to the Modem for setup involves three basic steps: initial setup, plugging in the Modem's Power Cord, and connecting the Modem to the computer.

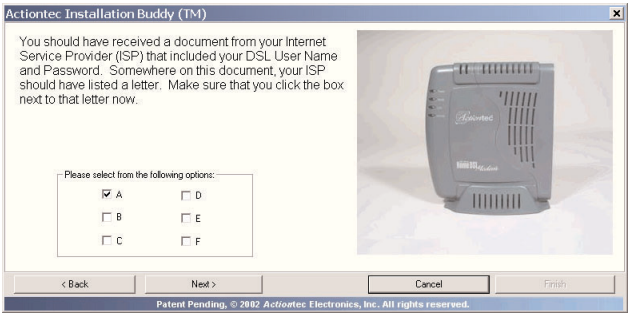
☞ ***Note***: The following procedures are for U.S. installations only.

Connecting Via Ethernet

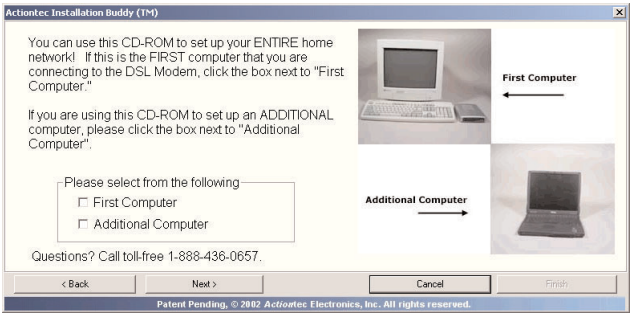
1. Insert **Disk 1** (Installation Buddy CD) in the CD-ROM drive of the computer. The Installaton Buddy will start automatically. Wait until the following screen appears, read the onscreen instructions, then click **Next**.



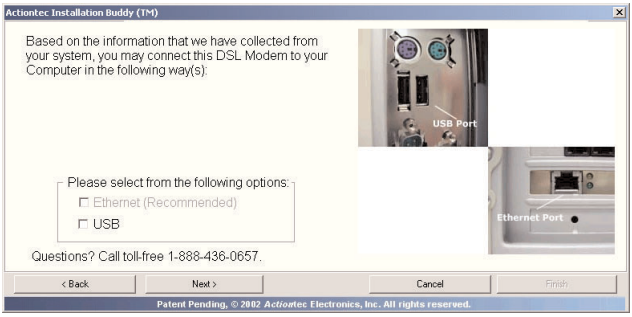
2. The next window appears. Read the instructions, select one of the options by clicking in the appropriate box, then click **Next**. If the ISP did not provide this information, contact the ISP and request the information.



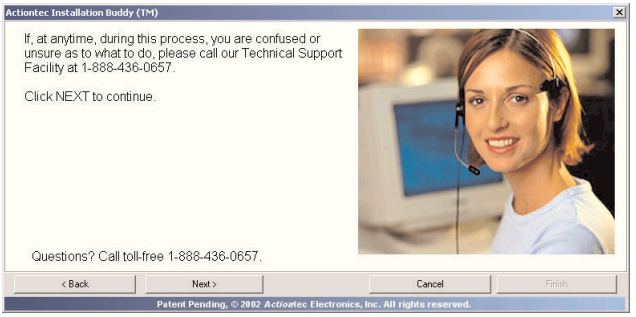
3. The next window appears. Read the instructions, select **First Computer** by clicking on the check box, then click **Next**.



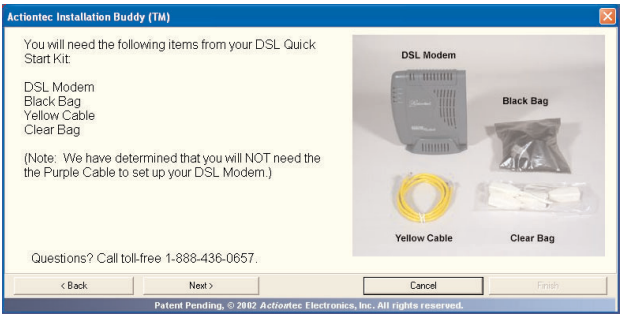
4. In the next window, select **Ethernet**, then click **Next**.



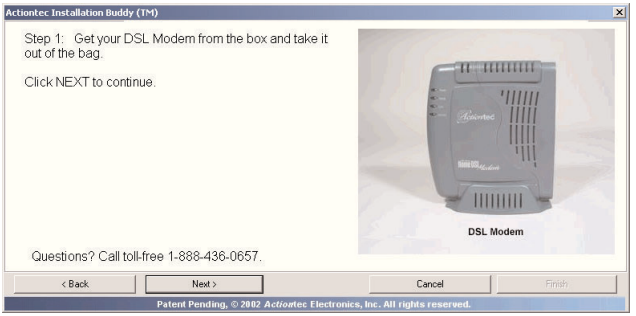
5. The next window appears, with information regarding *Action*tec's 24-hour, 7-day-a-week Technical Support. If you have any problems, call **1.888.436.0657**. Click **Next**.



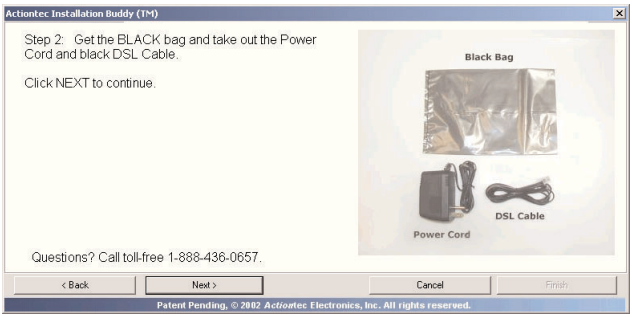
6. The next window appears, showing the items needed to set up the Modem. Click **Next**.



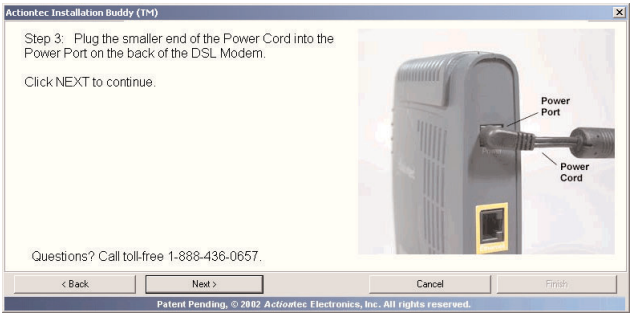
7. The next window appears. Get the Modem, take it out of its protective plastic bag, then click **Next**.



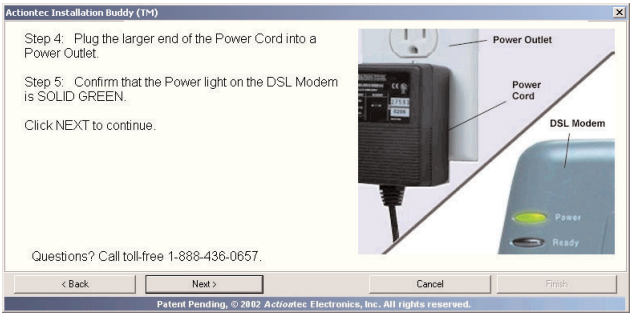
8. When the next window appears, get the **Black Bag**, take out the **Power Cord** and **Black DSL Cable**, then click **Next**.



9. In the next window, read the instructions regarding plugging in the smaller end of the **Power Cord** into the **Power Port** on the back of the Modem, then click **Next**.

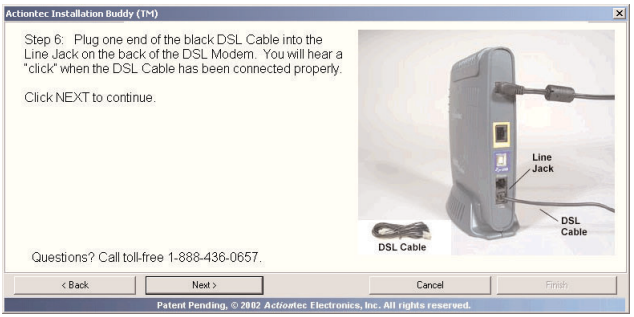


10. As shown in the next window, plug the larger end of the **Power Cord** into a **Power Outlet**, confirm the **Power Light** on the front of the Modem is **solid green**, then click **Next**.

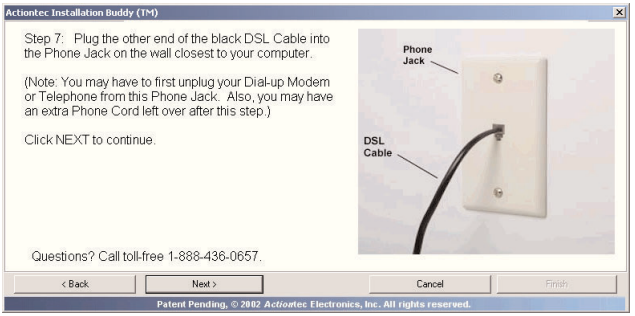


☞ ***Note***: Depending on the country, the picture in the previous figure may or may not reflect the type of power cord supplied.

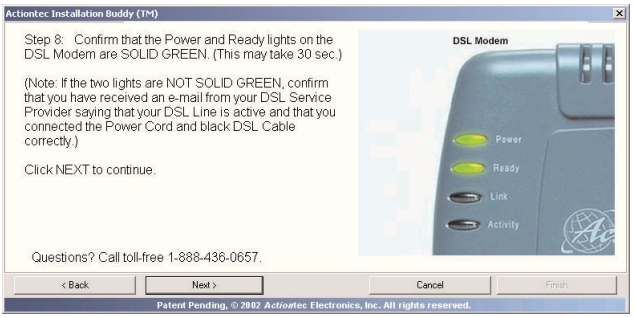
11. The next window appears. Plug one end of the **Black DSL Cable** into the **Line Jack** on the back of the Modem, then click **Next**.



12. When the next window appears, plug the other end of the **Black DSL Cable** into the **Phone Jack** nearest to the computer, then click **Next**.

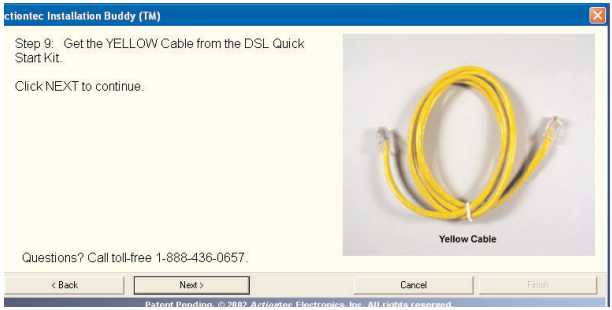


13. When the next window appears, confirm the **Power** and **Ready Lights** on the Modem **glow steadily green**. This may take up to 30 seconds. Click **Next**.

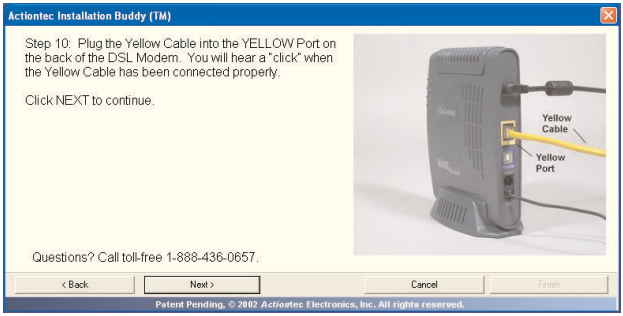


☞ ***Note***: If the Power and Ready Lights on the Modem are not solid green, confirm your DSL service provider has activated the DSL line, and check all connections to the Modem.

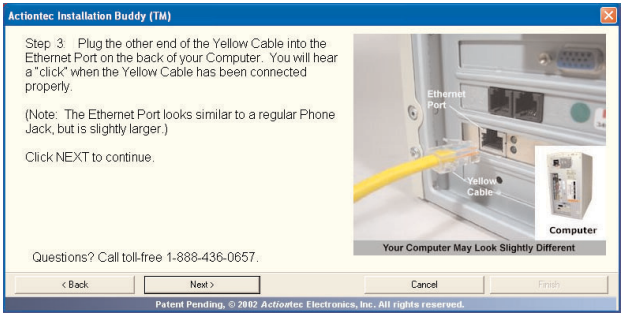
14. The following window appears. Get the **Yellow** (**Ethernet**) **Cable** from the DSL Quick Start Kit, then click **Next**.



15. When the next window appears, plug one end of the **Yellow** (**Ethernet**) **Cable** into the **Yellow Port** on the back of the Modem until it clicks, then click **Next**.

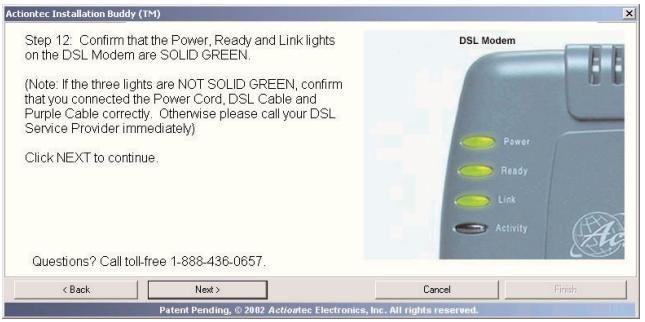


16. Another window appears. Plug the other end of the **Yellow** (**Ethernet**) **Cable** into an **Ethernet port** on the back of the computer until it clicks, then click **Next**.



☞ ***Note***: An Ethernet port looks similar to a phone jack, but is slightly larger.

17. When the next window appears, confirm the **Power**, **Ready**, and **Link Lights** on the Modem **glow steadily green**. Click **Next**.

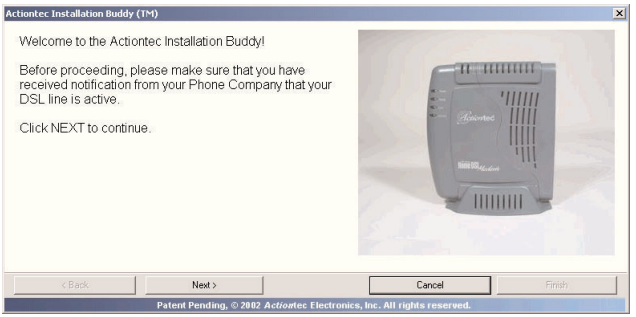


☞ ***Note***: If the Power, Ready and Link Lights on the Modem are not solid green, check all connections to the Modem. If all connections are plugged in properly, call your DSL service provider.

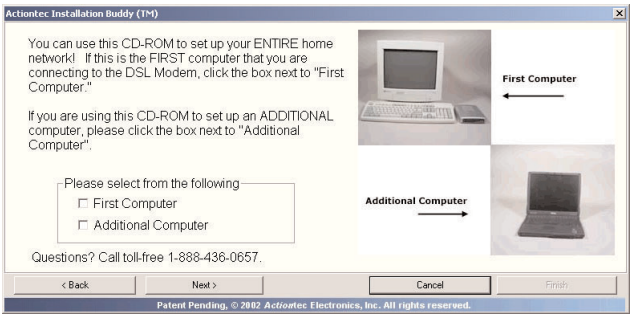
The Modem is connected to a computer via Ethernet. Next, install the filters as described in "Installing the Filters" on page 17.

Connecting Via USB

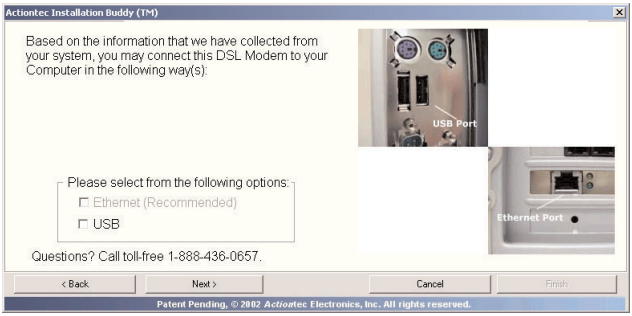
1. Insert **Disk 1** (Installation Buddy CD) in the CD-ROM drive of the computer. The Installaton Buddy will start automatically. Wait until the following screen appears, read the onscreen instructions, then click **Next**.



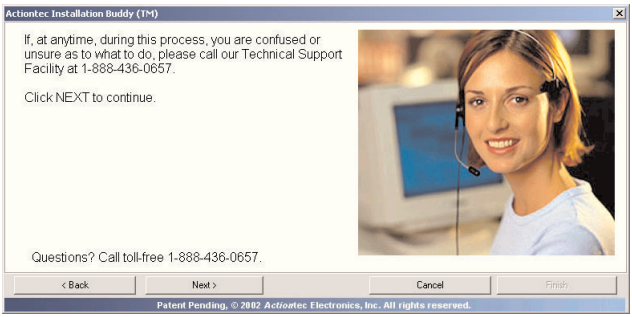
2. The next window appears. Read the instructions, select **First Computer** by clicking on the check box, then click **Next**.



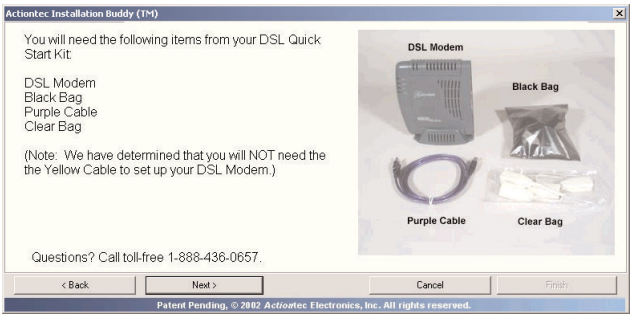
3. In the next window, select **USB**, then click **Next**.



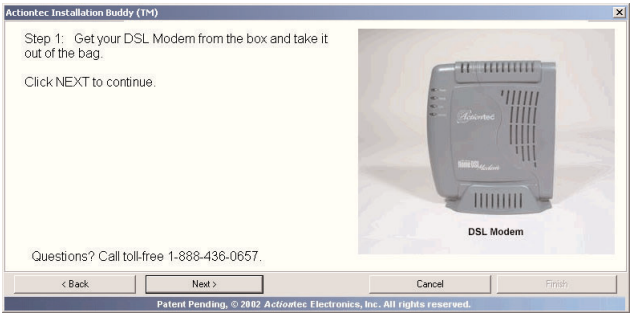
4. The next window appears, with information regarding *Action*tec's 24-hour, 7-day-a-week Technical Support. If you have any problems, call **1.888.436.0657**. Click **Next**.



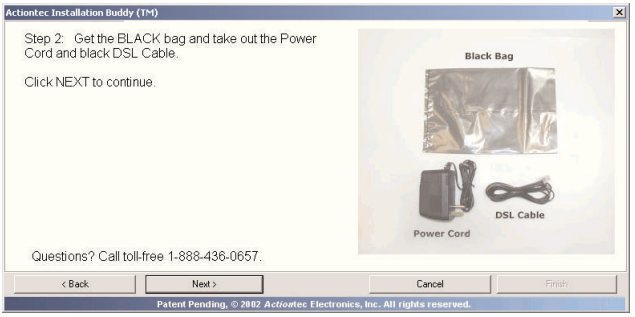
5. The next window appears, with information regarding the items needed to set up the Modem. Click **Next**.



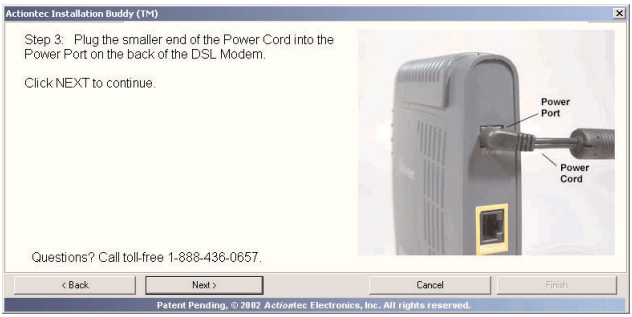
6. The next window appears. Get the Modem, take it out of its protective plastic bag, then click **Next**.



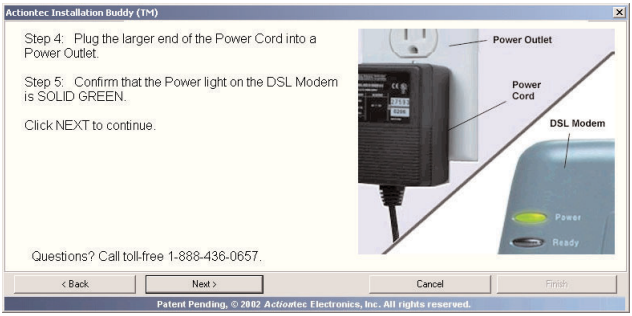
7. When the next window appears, get the **Black Bag**, take out the **Power Cord** and **Black DSL Cable**, then click **Next**.



8. In the next window, read the instructions, plug the smaller end of the **Power Cord** into the **Power Port** on the back of the Modem, then click **Next**.

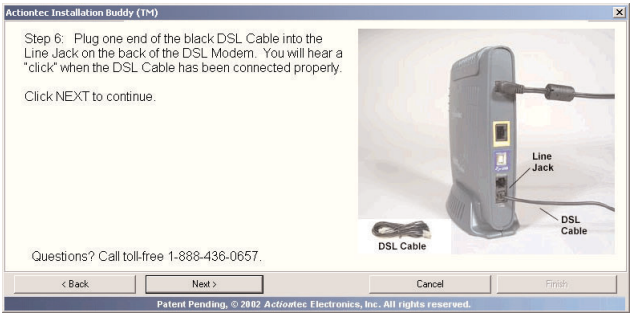


9. As shown in the next window, plug the larger end of the **Power Cord** into a **Power Outlet**, confirm the **Power Light** on the front of the Modem is **solid green**, then click **Next**.

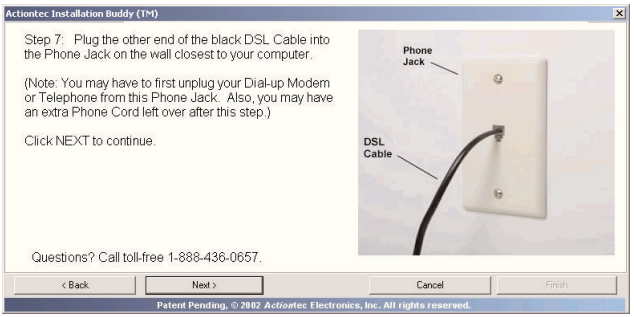


☞ ***Note***: Depending on the country, the picture in the previous figure may or may not reflect the type of power cord supplied.

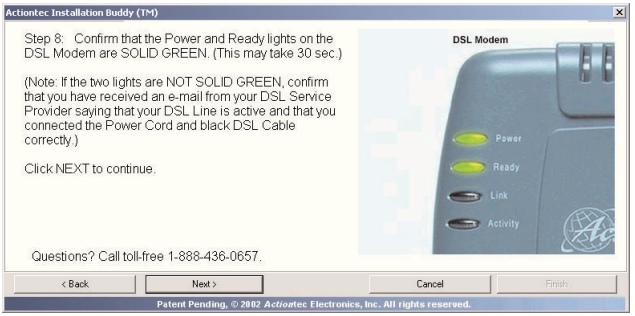
10. The next window appears. Plug one end of the **Black DSL Cable** into the **Line Jack** on the back of the Modem, then click **Next**.



11. When the next window appears, plug the other end of the **Black DSL Cable** into the **Phone Jack** nearest to the computer, then click **Next**.

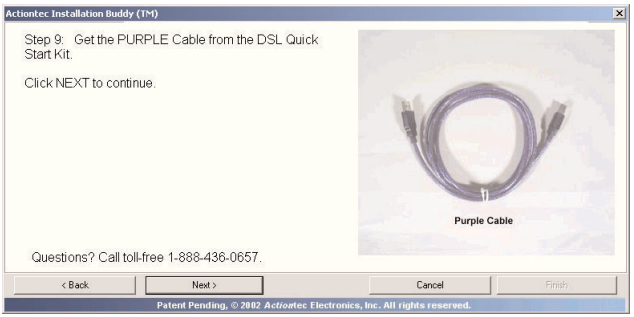


12. When the next window appears, confirm the **Power** and **Ready Lights** on the Modem **glow steadily green**. This may take up to 30 seconds. Click **Next**.

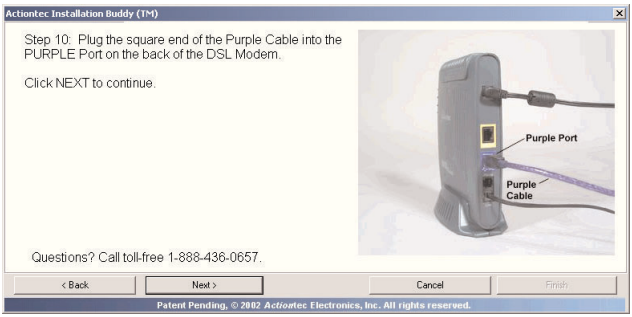


☞ ***Note***: If the Power and Ready Lights on the Modem are not solid green, confirm your DSL service provider has activated the DSL line, and check all connections to the Modem.

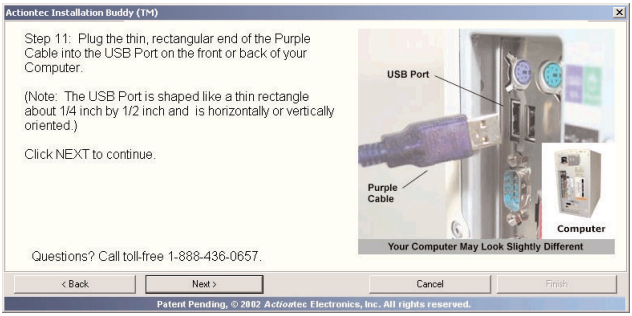
13. The following window appears. Get the **Purple (USB) Cable** from the DSL Quick Start Kit, then click **Next**.



14. When the next window appears, plug the square end of the **Purple** (**USB**) **Cable** into the **Purple Port** on the back of the Modem, then click **Next**.

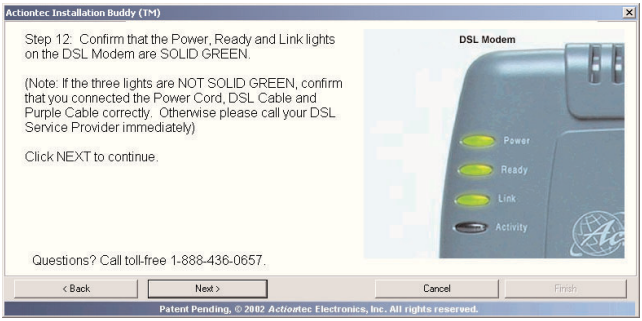


15. Another window appears. Plug the rectangular end of the **Purple** (**USB**) **Cable** into a **USB port** on the front or back of the computer, then click **Next**.



☞ ***Note***: A USB port is shaped like a thin rectangle about 1/4 inch by 1/2 inch, and may be vertically or horizontally oriented.

16. When the next window appears, confirm the **Power**, **Ready**, and **Link Lights** on the Modem **glow steadily green**. Click **Next**.



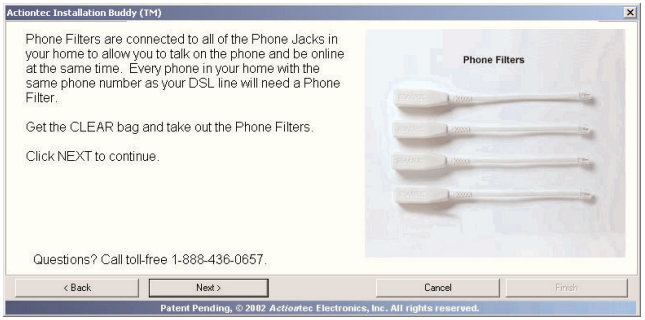
☞ ***Note***: If the Power, Ready and Link Lights on the Modem are not solid green, check all connections to the Modem. If all connections are plugged in properly, call your DSL service provider.

The Modem is connected to a computer via USB. Next, install the phone filters as described in "Installing the Phone Filters" on page 17.

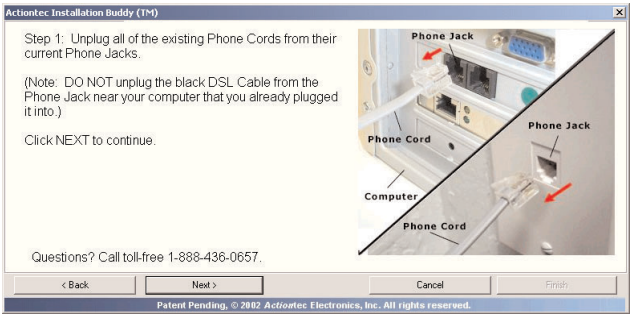
Installing Filters

Filters allow the user to use the phone while online. All phones and other devices (answering machines, fax machines, etc.) using the same line (i.e., using the same phone number) as the DSL line must have a filter installed. To install a filter, follow these instructions:

1. When the following window appears, get the **Clear Bag** from the DSL Quick Start Kit and take out the **Filters**. Click **Next** to continue.

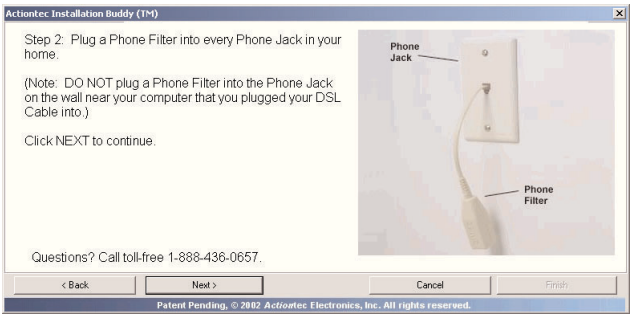


2. When the next window appears, unplug all phone cords from their respective phone jacks, then click **Next**.



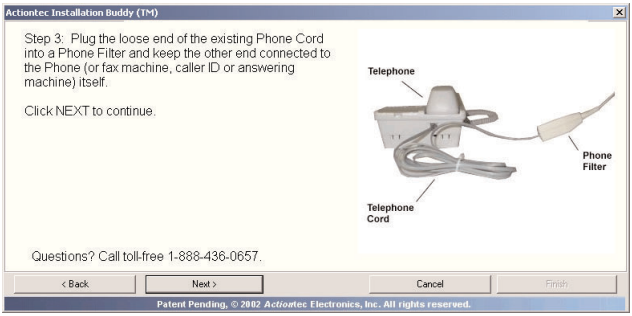
Caution: **Do not** unplug the black DSL cable from the phone jack near your computer.

3. Plug a **filter** in every phone jack using the same number as the DSL line, then click **Next**.

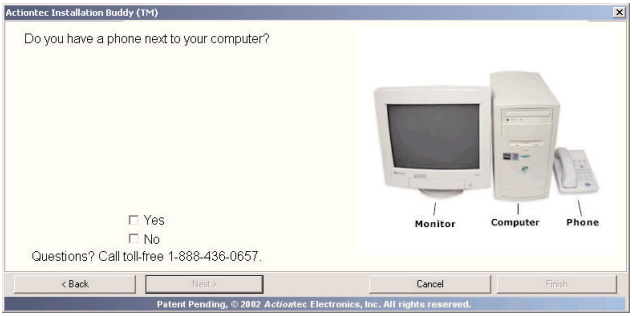


Caution: **Do not** install a filter in the phone jack used by the black DSL cable.

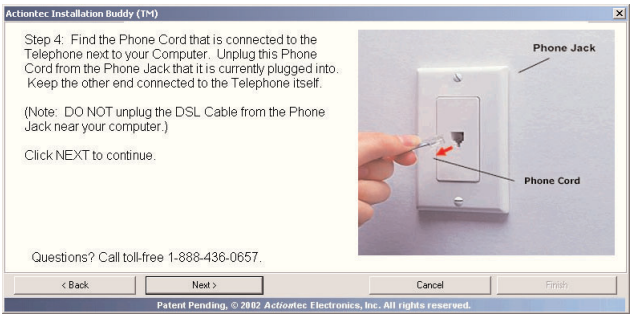
4. In the next window, read the instructions. Plug the loose end of the existing phone cord into a filter, keeping the other end connected to the device (phone, fax machine, answering machine, etc.). Click **Next**.



5. Answer the question ("Do you have a phone next to your computer?") in the following window by clicking **Yes** or **No**, then click **Next**.

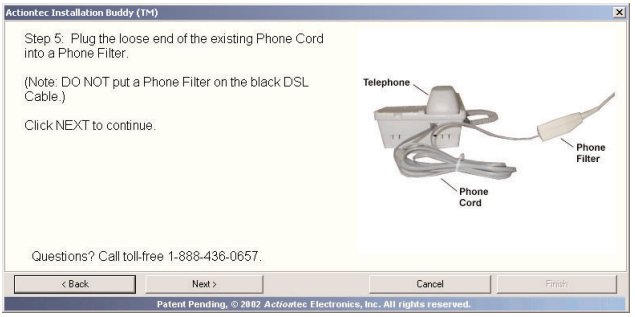


6. If you answered "No" in the previous window, go to "Setting up the DSL Connection" on page XX. If you answered "Yes," the following window appears. Unplug the phone cord connected to the phone from its phone jack in the wall, the click **Next**.



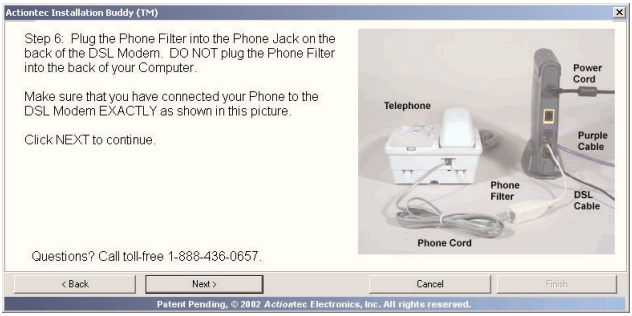
Caution: **Do not** unplug the black DSL cable from the phone jack near your computer.

7. When the next window appears, plug the loose end of the phone cord into a filter.



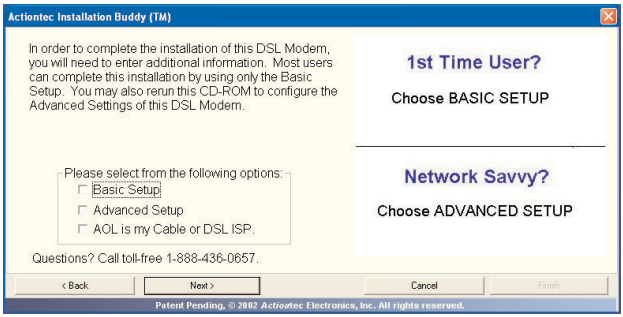
Caution: **Do not** connect a phone filter to the black DSL cable.

8. The next window appears. Plug the phone filter into the Phone Jack on the back of the Modem. Do no plug the phone filter into the phone jack on the back of the computer. Your connections should look exactly as the configuration in the picture, below. Click **Next**.



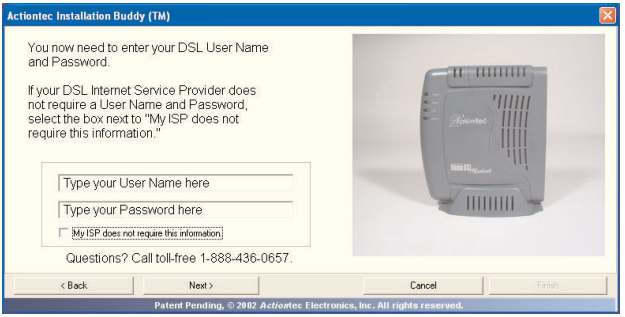
Setting Up the DSL Connection

After connection the Modem and installing phone filters, the DSL connection must be configured. When the following window appears, read the instructions and select the type of setup.

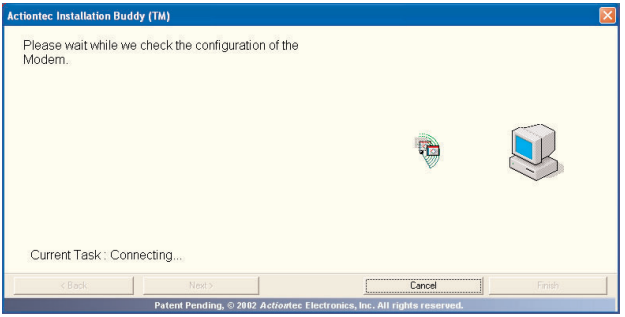


Basic Setup

1. If "Basic Setup" was chosen, the following window appears. Enter the appropriate user name and password in the text boxes. If no user name and password are needed, click on the check box next to "My ISP does not require this information." Click **Next**.



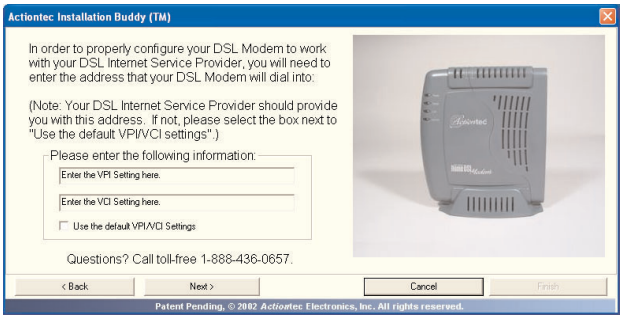
2. The next window appears, and then a prompt requesting the user to restart the computer will appear. Select **Yes**.



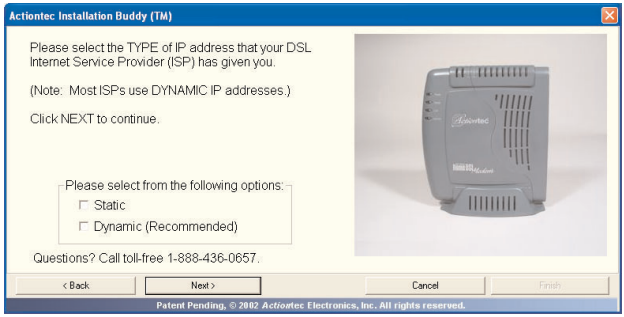
3. When the computer has rebooted, the Modem is properly set up.

Advanced Setup

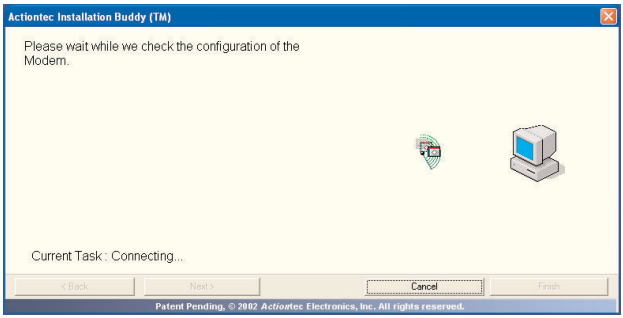
1. If "Advanced Setup" was chosen, enter the VPI and VCI settings in their appropriate boxes (if provided by the DSL service provider). If not provided with these settings, click the "Use the default VPI/VCI Settings" check box, then click **Next**.



2. The next windodow appears. Select the type of IP address used by the DSL service provider. Click **Next**.



3. The next window appears, and then a prompt requesting the user to restart the computer will appear. Select **Yes**.

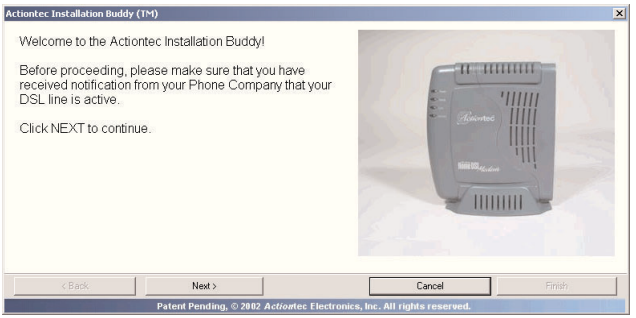


4. When the computer has rebooted, the Modem is properly set up.

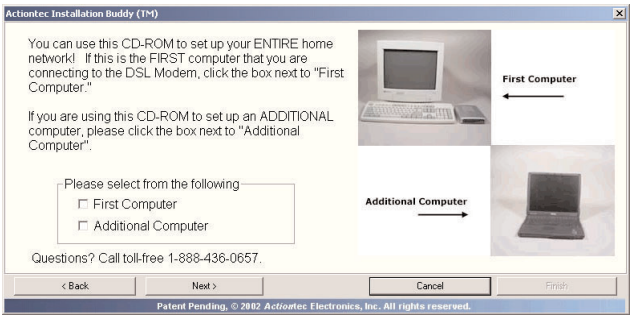
Connecting Additional Computers

Connecting Via Ethernet

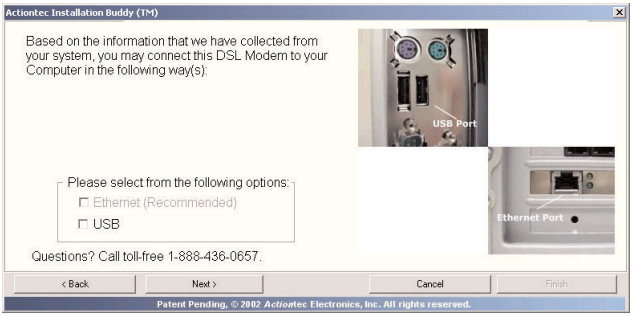
1. Insert **Disk 1** (Installation Buddy CD) in the CD-ROM drive of the computer. The Installaton Buddy will start automatically. Wait until the following screen appears, read the onscreen instructions, then click **Next**.



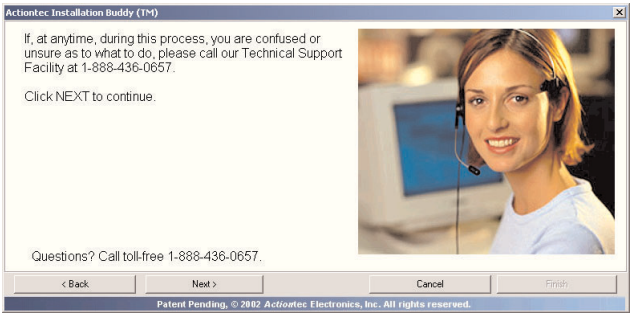
2. The next window appears. Read the instructions, select **Addtional Computer** by clicking on the check box, then click **Next**.



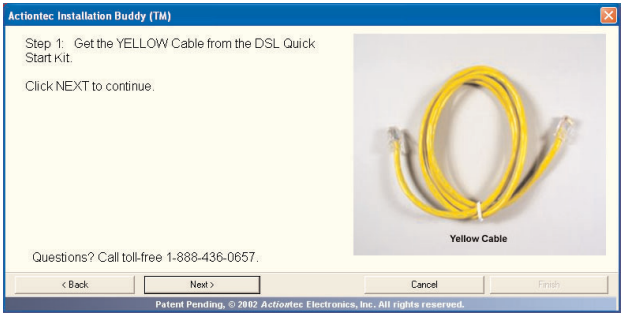
3. In the next window, select **Ethernet**, then click **Next**.



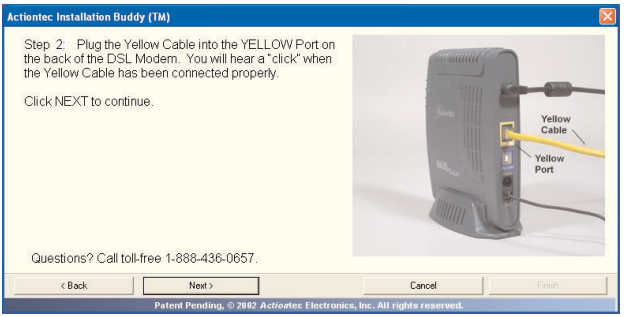
4. The next window appears, with information regarding *Action*tec's 24-hour, 7-day-a-week Technical Support. If you have any problems, call **1.888.436.0657**. Click **Next**.



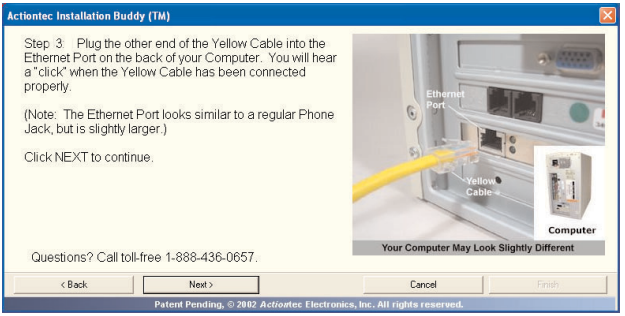
5. The following window appears. Get the **Yellow** (**Ethernet**) **Cable** from the DSL Quick Start Kit, then click **Next**.



6. When the next window appears, plug one end of the **Yellow (Ethernet) Cable** into the **Yellow Port** on the back of the Modem, then click **Next**.



7. Another window appears. Plug the other end of the **Yellow (Ethernet) Cable** into an **Ethernet port** on the back of the computer, then click **Next**.

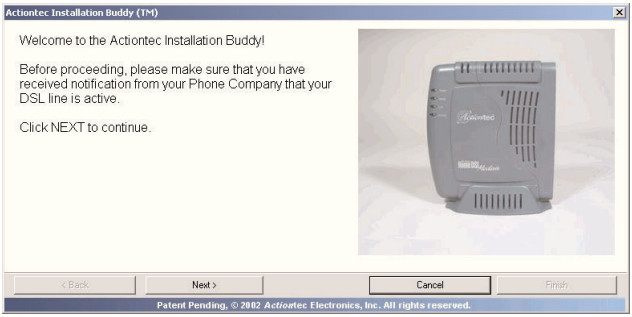


☞ ***Note***: An Ethernet port looks similar to a phone port, but is slightly bigger.

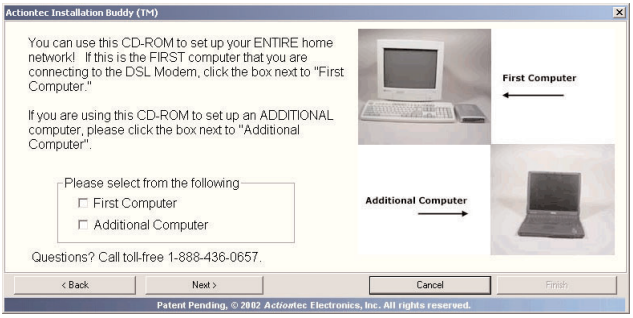
The Modem is connected to a computer via Ethernet.

Connecting Via USB

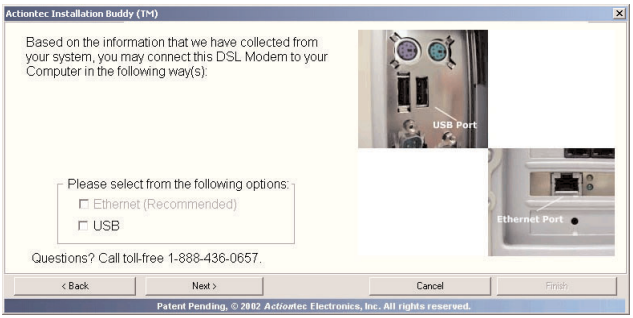
1. Insert **Disk 1** (Installation Buddy CD) in the CD-ROM drive of the computer. The Installaton Buddy will start automatically. Wait until the following screen appears, read the onscreen instructions, then click **Next**.



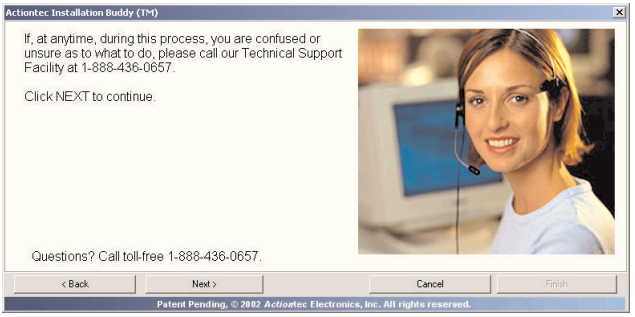
2. The next window appears. Read the instructions, select **Additional Computer** by clicking on the check box, then click **Next**.



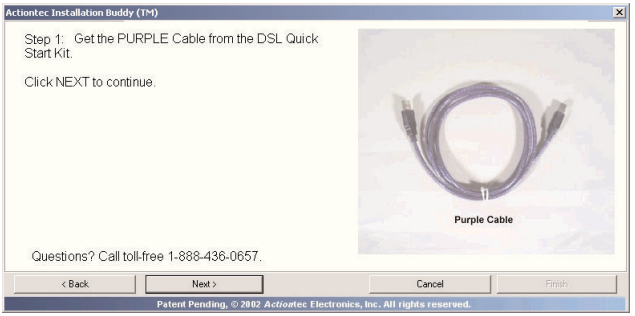
3. In the next window, select **USB**, then click **Next**.



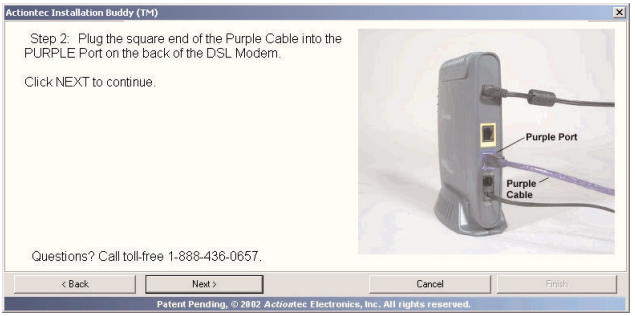
4. The next window appears, with information regarding *Action*tec's 24-hour, 7-day-a-week Technical Support. If you have any problems, call **1.888.436.0657**. Click **Next**.



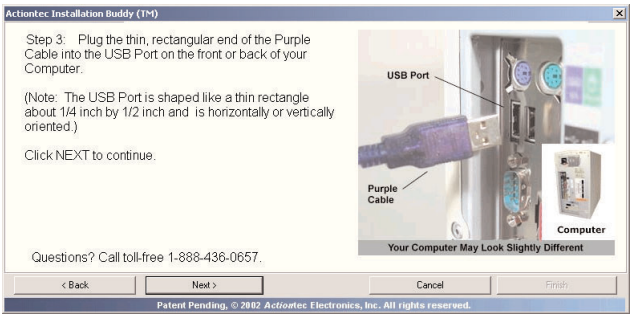
5. The following window appears. Get the **Purple (USB) Cable** from the DSL Quick Start Kit, then click **Next**.



6. When the next window appears, plug square end of the **Purple (USB) Cable** into the **Purple Port** on the back of the Modem, then click **Next**.



7. Another window appears. Plug the rectangular end of the **Purple** (**USB**) **Cable** into a **USB port** on the front or back of the computer, then click **Next**.



☞ ***Note***: A USB port is shaped like a thin rectangle about 1/4 inch by 1/2 inch, and may be vertically or horizontally oriented.

The Modem is connected to a computer via USB.

Using Advanced Settings

3

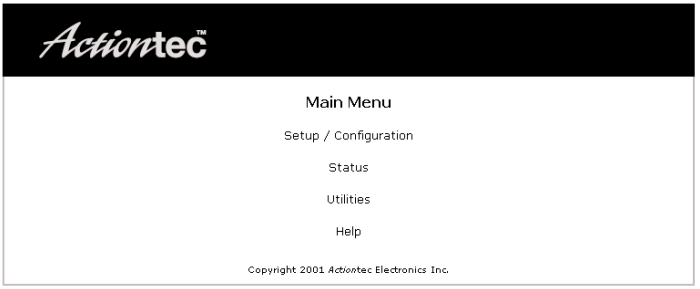
This chapter contains information regarding the advanced settings of the Modem, including WAN IP address options, port forwarding, and DMZ hosting.

Accessing Advanced Settings

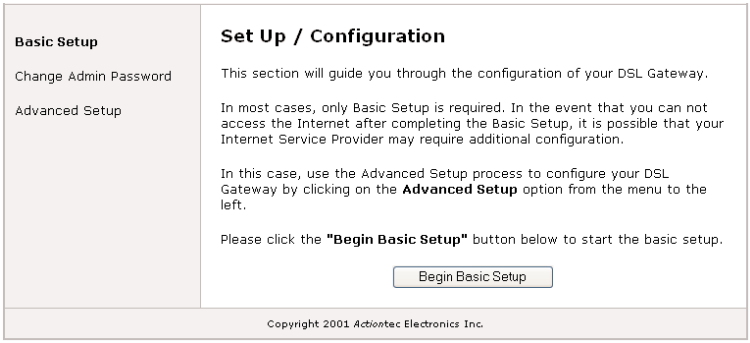
To access the advanced settings of the Modem:

1. Open your Web browser. In the address bar type
   `http://192.168.0.1`
   then press <**Enter**> on your keyboard.

2. The "Main Menu" screen appears. Select **Setup/Configuration**.

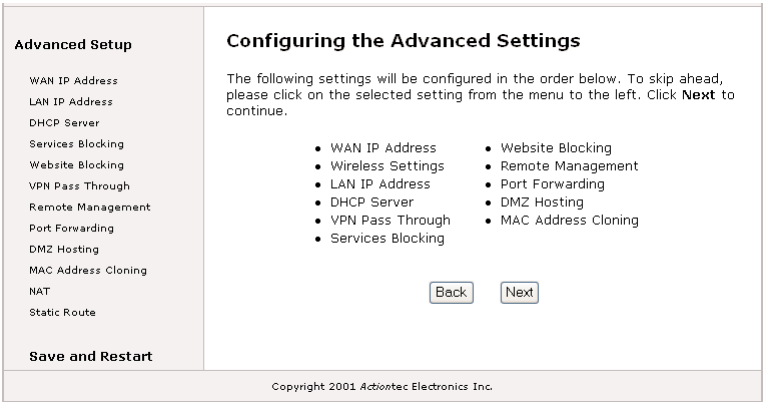


3. The "Setup/Configuration" screen appears. Select **Advanced Setup** from the menu on the left.



3. The following window appears. Click **Begin Advanced Setup**.

3. The "Configuring the Advanced Settings" screen appears. Choose the setting to be changed from the menu on the left, or click **Next** to go to the "WAN IP Address" screen.

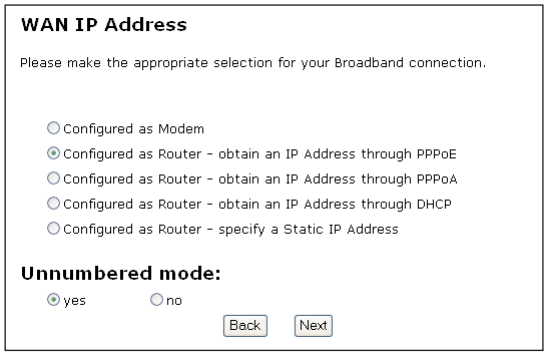


WAN IP Address

Selecting **WAN IP Address** in the "Configuring the Advanced Settings" screen generates the "WAN IP Address" screen. WAN IP Address allows manual set up of the broadband connection of the Modem. There are five options: Configured as a Modem, Configured as a Router - obtain an IP Address through PPPoE, Configured as a Router - obtain an IP Address through PPPoA, Configured as a Router - obtain an IP Address through DHCP Obtain an IP Address Through DHCP, and Specify a Static IP Address.

Note: Some DSL providers use PPPoE to establish communication with an end user, while others use static IP. Cable modem providers and other types of broadband Internet connections (such as fixed point wireless) may use either DHCP or Static IP address. If unsure about which connection is present, check with the ISP before continuing.

After selecting a connection type, click **Next** to continue configuring the connection.

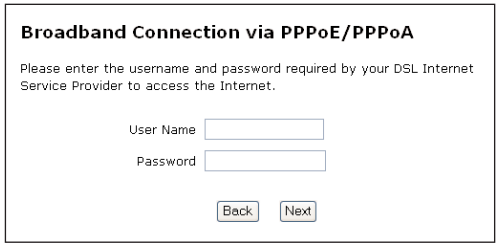


Configured as a Modem

Select this option to use the Modem as a modem, connected to a single computer.

Configured as a Router - Obtain an IP Address through PPPoE or PPPoA

Select one of these options to allow the Modem to use the Point-to-Point over Ethernet (PPPoE) or Point-to-Point over ATM (PPPoA) protocol.

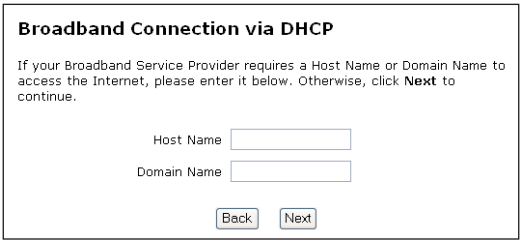


If a **User Name** and **Password** was entered during the Installation Buddy, it should be displayed in the "Broadband Connection via PPPoE/PPPoA" screen. If not, enter the information now. If the information is unavailable, contact the ISP.

Configured as a Router - Obtain an IP through DHCP

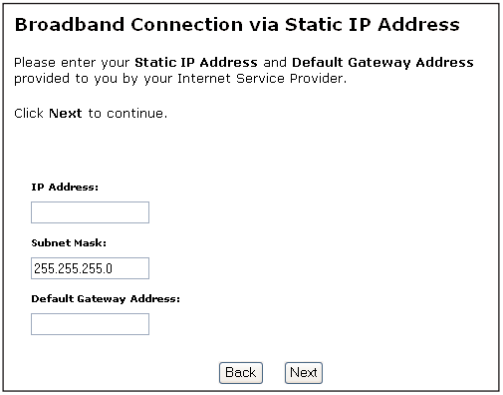
Select this option (used for cable modem configurations without a Static IP assigned by an ISP) to allow the Modem to query the ISP and receive IP address and routing information. Some ISPs need to authenticate their end users with a **Host Name** and/or **Domain Name**. If this is the case, check with the ISP for a host name and domain name and enter them in the "Broadband Connection via DHCP" screen. If the ISP does not require these settings, leave the text boxes blank.

Note: Host and domain name information may also be accessed from the computer originally connected to the cable modem.



Configured as a Router - Specify a Static IP Address

Select this option if assigned a static (specific) IP Address by the ISP. Enter the **IP Address**, along with the **Subnet Mask** and **Default Gateway Address** (also provided by the ISP), in the "Broadband Connection via Static IP Address" screen.



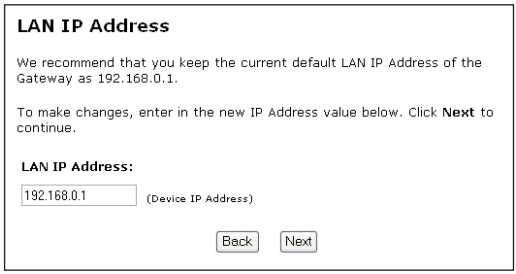
Unnumbered Mode

To allow your home network to be available to outside users using a specific IP address only, click **Yes** under "Unnumbered mode." Unnumbered mode can only be used in conjunction with PPP connections (PPPoE or PPPoA).

LAN IP Address

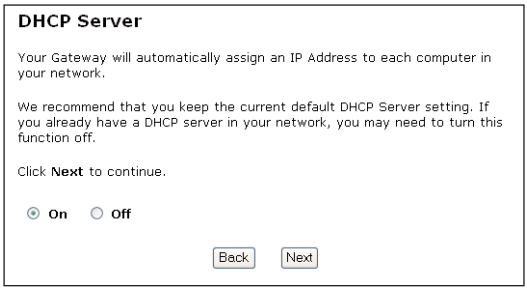
Selecting **LAN IP Address** in the "Configuring the Advanced Settings" screen generates the "LAN IP Address" screen. The value in the **LAN IP Address** text box is the IP address of the Modem as seen on the network.
The LAN IP address of the Modem can be modified, but *Action*tec recommends keeping the default factory setting (192.168.0.1).

Note: If the Modem's LAN IP Address is modified, verify the DHCP Server range is within the same subnet. For more information, see "DHCP Server Configuration."



DHCP Server

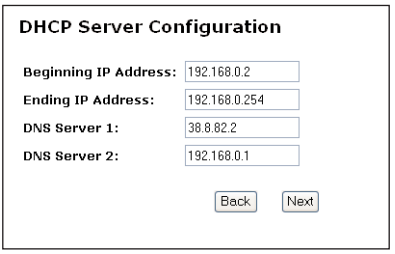
Selecting **DHCP Server** in the "Configuring the Advanced Settings" screen generates the "DHCP Server" screen. The Modem has a built-in DHCP (Dynamic Host Configuration Protocol) server that automatically assigns a different IP address to each computer on your network, eliminating IP address conflicts.
The factory default setting is **On**. To disable the DHCP Server, select **Off**.



*Action*tec strongly recommends leaving the DHCP Server option **On**. If the DHCP Server option is **Off**, ensure the IP addresses of the networked computers are on the same subnet as the IP address of the Modem. For more information, see "DHCP Server Configuration" below.

DHCP Server Configuration

Clicking **Next** in the "DHCP Server" screen generates the "DHCP Server Configuration" screen. Change IP address range and DNS server information here.



Beginning IP Address - the IP address at which the DHCP server starts assigning IP addresses. *Action*tec recommends keeping the factory default setting (192.168.0.2).

Ending IP Address - the IP Address at which the DHCP Server stops assigning IP addresses. *Action*tec recommends keeping the factory default settings (192.168.0.254).

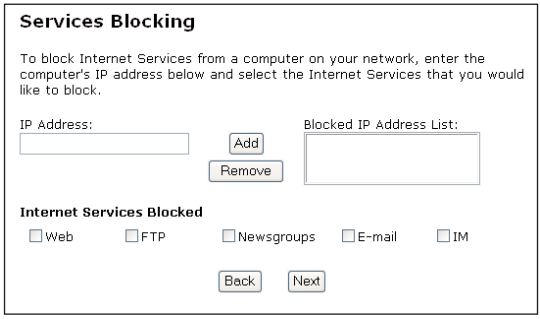
The beginning and ending IP addresses define the IP address range of the Modem. If the default values are left intact, the Modem supplies a unique IP address between 192.168.0.2 and 192.168.0.254 to each computer on its network. Note that the first three groups of numbers of the addresses are identical; this means they are on the same subnet. The IP address of the Modem must be on the same subnet as the IP address range it generates. For instance, if the Modem's IP address is changed to 111.33.222.1, set the beginning IP address to 111.33.222.2, and the ending IP address to 111.33.222.254.

DNS Server 1 - the primary DNS server provided by the ISP. If the ISP provided DNS server information, enter it here. If not, leave the text box intact.

DNS Server 2 - the secondary DNS provided by the ISP. If the ISP provided secondary DNS server information, enter it here. If not, leave the text box intact.

Services Blocking

Selecting **Services Blocking** in the "Configuring the Advanced Settings" screen generates the "Services Blocking" screen.

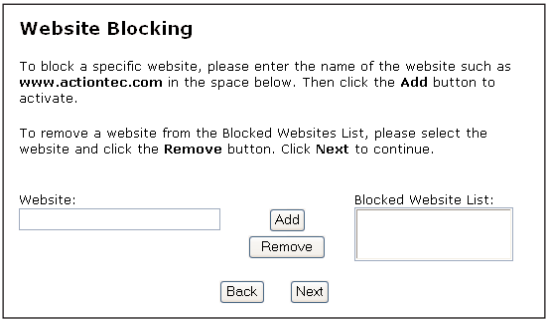


To modify Internet privileges (Web, FTP, Newsgroups, etc.) for the computers on the network:

1. Enter the computer's IP address in the **Enter IP Address:** text box.
2. At the bottom of the screen, select the Internet service(s) to be blocked.
3. Click **Add** to enter the computer's IP address in the "Blocked IP Address List" text box.
4. To remove blocked services, select the computer's IP address in the "Blocked IP Address List" text box and click **Remove**.

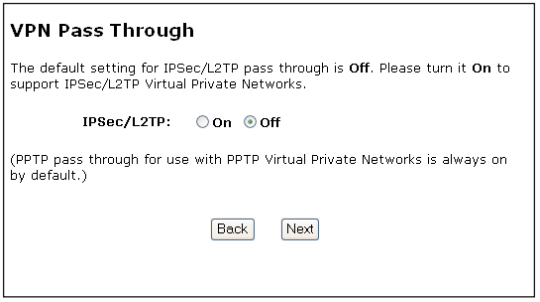
Website Blocking

Selecting **Website Blocking** in the "Configuring the Advanced Settings" screen generates the "Website Blocking" screen. This feature enables the Modem to block Web sites to all computers on the network. To block a Web site, enter the address of the Web site in the "Website" text box and click **Add**. The blocked Web site address will be displayed in the "Blocked Website List" text box, and will not be available to computers on the network. To remove a blocked Web site, click on it in the "Blocked Website List," then click **Remove**.



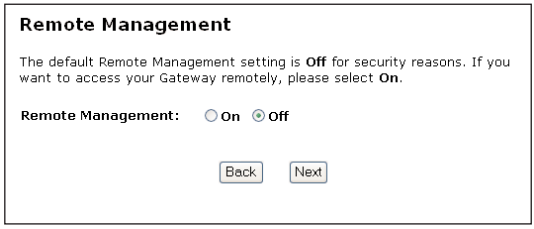
VPN Pass Through

Selecting **VPN Pass Through** in the "Configuring the Advanced Settings" screen generates the "VPN Pass Through" screen. To set up Virtual Private Networking (VPN) using IPSec/L2TP (which allows multiple, client-initiated VPN pass-through sessions), select **On**. Note that VPN via PPTP pass through is always active.



Remote Management

Selecting **Remote Management** in the "Configuring the Advanced Settings" screen generates the "Remote Management" screen. Remote Management allows access to the Modem through the Internet via another computer. *Action*tec recommends leaving the Remote Management **Off** (the factory default setting).



To access the Modem from the Internet, activate Remote Management by selecting **On** and writing down the WAN IP address of the Modem (see "WAN IP Address"). On a computer outside of the network, open a Web browser and enter the Modem's WAN IP address in the address text box. The Modem's Main Menu (or a password prompt, if a password has been set) appears in the browser window.

Port Forwarding

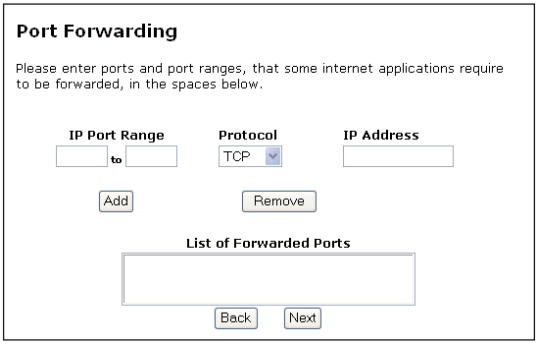
Selecting **Port Forwarding** in the "Configuring the Advanced Settings" screen generates the "Port Forwarding" screen. Port forwarding allows certain programs to bypass the Modem's built-in firewall to access parts of the network (for hosting a Web or ftp server, for example). To use port forwarding:

1. Enter the IP port range in the "IP Port Range" text boxes. (If more than 10 ports are needed, *Action*tec recommends using DMZ Hosting. See "DMZ Hosting.")

2. Select the protocol type from the "Protocol" list box.

3. Enter the IP address of the computer on the network to be used as a host, then click **Add**. The forwarded ports appear in the "List of Forwarded Ports" text box.

To remove forwarded ports, highlight them then click **Remove**.



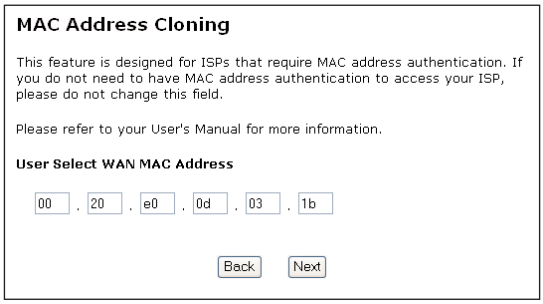
DMZ Hosting

Selecting **DMZ Hosting** in the "Configuring the Advanced Settings" screen generates the "DMZ Hosting" screen. To use DMZ hosting, enter the IP address of the computer on the network to be used as a DMZ host in the "DMZ Host IP Address" text box, then click **On**.

DMZ hosting is used to support online gaming and Internet conferencing services. These programs usually require multiple open ports, making the network accessible from the Internet. DMZ hosting symbolically places the DMZ host computer outside of the Modem's network. Access to network resources is unavailable while DMZ hosting is active. *Action*tec recommends activating DMZ hosting only as long as necessary.

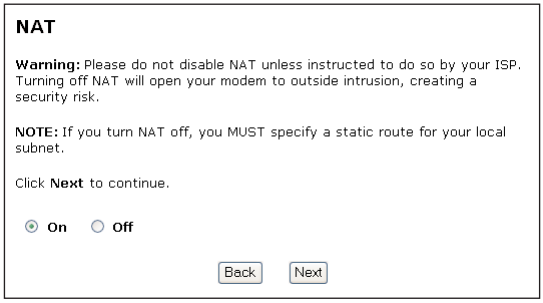
MAC Address Cloning

Selecting **MAC Address Cloning** in the "Configuring the Advanced Settings" screen generates the "MAC Address Cloning" screen. A MAC (media access control) address is an identifier unique to every networkable device. Some ISPs require a MAC address to validate a computer's permission to be on their network. If the ISP requires this information, obtain the MAC address of the computer originally configured for the ISP (see Appendix C for instructions to determine the computer's MAC address). Enter the MAC address in the "User Select WAN MAC Address" text boxes in the "MAC Address Cloning" screen.



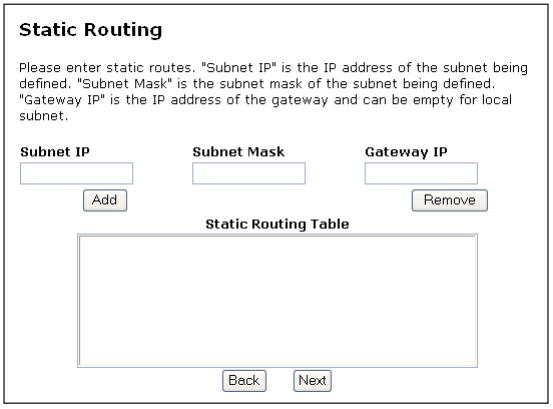
NAT (Network Address Translation)

Selecting **NAT** in the "Configuring the Advanced Settings" screen generates the "NAT" screen. Disabling NAT allows the computers connected to the Modem/Router to be accessed by outside parties. Do not turn NAT off unless instructed to do so by the ISP.



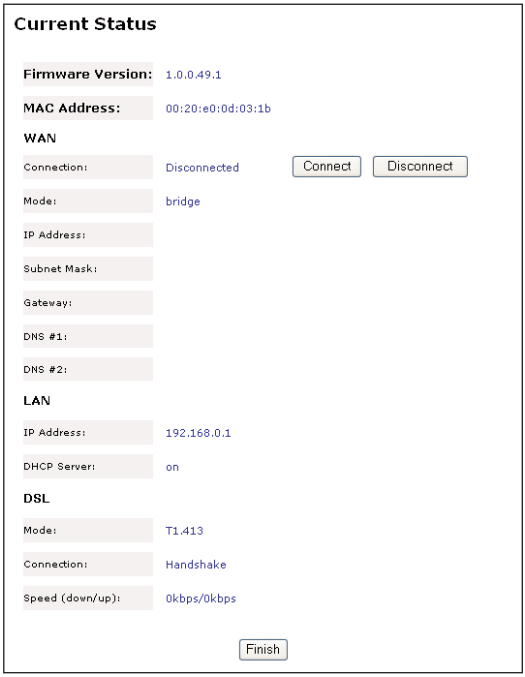
Static Routing

Selecting **Static Routing** in the "Configuring the Advanced Settings" screen generates the "Static Routing" screen. Enter the addresses in their respective text boxes, then click **Add**. The address will appear in the "Static Routing Table." To remove an address, highlight it by clicking on it in the Static Routing Table, then click **Remove**.



Status

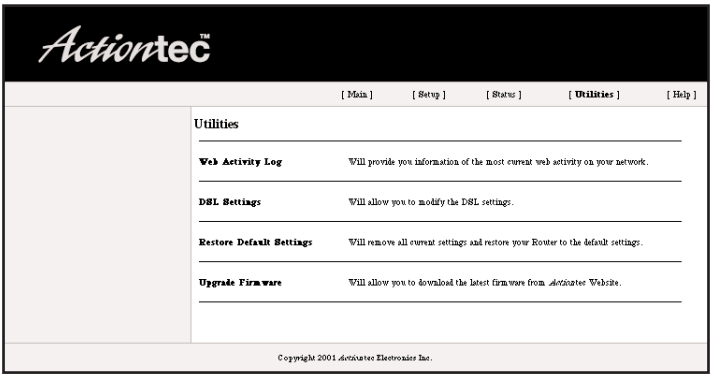
After configuring the Modem, settings can be viewed by selecting **Status** in the Main Menu. The "Current Status" screen appears, displaying many of the Modem's settings. No settings (other than connecting or disconnecting from the Internet) can be changed from the Current Status screen.



Using Utilities

4

To access the Modems' Web-based Utilities, select **Utilities** from the "Main Menu" screen. The "Utilities" screen appears.



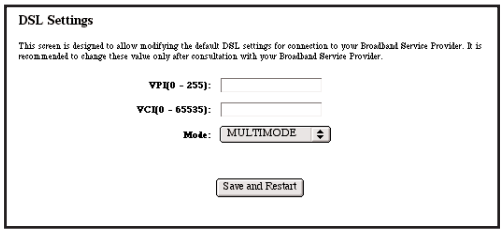
From this screen, the Web activity log can be viewed, the DSL settings changed, the Modem's factory default settings restored, and the Modem's firmware upgraded.

Web Activity Log

The Web Activity Log provides information about the Web sites each computer on the Modem's network has visited. To access the Web Activity Log, select **Web Activity Log** from the "Utilities" screen.

DSL Settings

To access DSL Settings, select **DSL Settings** from the "Utilities" screen. The Modem's VPI, VCI, and Mode settings can be changed from this screen. *Action*tec recommends not changing these values without consulting the ISP.



Restore Default Settings

To restore the Modem to its factory default settings, select **Restore Default Settings** from the "Utilities" screen. When the "Restore Default Settings" screen appears, click **Restore Default Settings**. Any changes made to the Modem's settings in the Custom Setup screens will be lost and the factory default settings will be restored. During this process, the Modem's power LED flashes and the Modem is disabled.

Warning: Do not unplug the power cord from the Modem during the Restore Default Settings process. Doing so may result in permanent damage to the Modem.

When the Power LED stops flashing and glows steadily green, the Modem is fully operational.

Upgrade Firmware

Selecting **Upgrade Firmware** in the "Utilities" screen generates the "Upgrade Firmware" screen. *Action*tec periodically posts firmware upgrades to enhance the Modem's capabilities.

To upgrade the Modem's firmware:

1. Click the link in the "Upgrade Firmware" window and download the upgrade files to the hard drive of the computer.
2. Double-click on the upgrade file (upgrade.exe).
3. Click **Start**. The upgrade process begins.

   Warning: Do not unplug the power cord from the Modem during the Upgrade Firmware process. Doing so may result in permanent damage to the Modem.

4. After the upgrade is complete, unplug the power cord from the Modem, then plug it back in again.
5. When the Power LED stops flashing and glows steadily green, the Modem is fully operational.
6. Reconfigure the Modem settings.

Troubleshooting and FAQs

5

This chapter contains a list of solutions to overcome problems the user may encounter, as well as answers to some of the more frequently asked questions about the Modem.

Troubleshooting

LAN Connection Failure

- Ensure the Modem is properly installed, the LAN connections are correct, and the power is on.
- If an Ethernet cable is being used to connect the Modem, ensure that it is a straight-through type cable, not a crossover cable.
- Ensure the LAN LED is on. If not, check the LAN connections.
- Ensure the Subnet Mask address is set to 255.255.255.0 by clicking **Status** in the "Main Menu" screen.

Cannot Connect to the Internet

- Ensure both ends of the power cord and yellow or purple cables are properly connected and the status LEDs on the front panel are working properly.
- If running Windows 98, check the computer's TCP/IP settings. Select **Start**, **Run**, then enter

  ```
  winipcfg
  ```

  in the "Open" text box. Press **Enter** on the keyboard. The computer should have an IP address in the default range (192.168.0.2 through 198.168.0.254).
- Ensure the Subnet Mask address is set to 255.255.255.0 by clicking **Status** in the "Main Menu" screen.

- Verify the Modem's settings are the same as the computer by clicking **Status** in the "Main Menu" screen.

Time out error occurs when entering a URL or IP Address

- Verify the computers are working properly.
- Ensure the IP settings are correct.
- Ensure the Modem is on and connected properly.
- Verify the Modem LED is lit. If not, check all connections
- Verify the Modem's settings are the same as the computer by clicking **Status** in the "Main Menu" screen.
- Check the cable/DSL modem by attempting to connect to the Internet.

Frequently Asked Questions

How can I connect more than one computer to the Router using only Ethernet?

If you want to connect more than one computer to the Modem via Ethernet, you must purchase and install an Ethernet hub or switch, which adds additional Ethernet ports to your network. Connect the "Uplink" port on the hub/switch to the LAN port on the back of the Modem with a standard, straight-through Ethernet cable, then connect the computers to the switch/hub. If the computers are set up for DHCP (see question 1, above), reboot the computers. No further setup is necessary.

How do I know what kind of high speed Internet access I have?

Refer to the documentation received from your ISP. If the Modem connects via phone cord (RJ-11), you probably have a DSL connection.

What do each of the lights on my Modem mean?

Power – when lit, indicates that power is being supplied to the Modem.
Modem – when lit, indicates a cable or DSL modem is connected to the Modem.
Activity – when flashing, indicates Internet activity over the Modem. May also flash when not connected to Internet (indicates communication between modem and Modem).
Link – when lit, indicates a computer is connected to the Modem via Ethernet.

What kind of firewall is included with this Modem?

When the Modem is being used as router, it is equipped with NAT (Network Address Translation), which uses IP address masquerading) protection.

Can I monitor the Web sites my children are accessing? If so, how do I do this?

Yes, you can monitor the Web sites visited by a user on a computer on the network. To do this, log on to the Modem's Web management page (default URL: 192.168.0.1) through your Web browser. From the "Main Menu" screen, select "Utilities," and then click on "Web Activity Log."

How long can I leave the Modem running?

The Modem can run non-stop, 24 hours a day, seven days a week.

What is the maximum number of IP addresses the Modem can support?

The Modem can support up to 253 different IP addresses.

Does the Modem support IPX or AppleTalk?

No. IPX (a NewWare network communication protocol) and AppleTalk (a Macintosh-based communication protocol) are both used primarily in LAN-to-LAN networks, and do not support WAN-to-LAN connections.

Is the Modem cross-platform compatible?

Any platform or operating system that supports Ethernet and TCP/IP is compatible with the Modem.

How do I upgrade the Modem's firmware?

After bringing up the Utilities section of the Web Management Tool and selecting "Upgrade Firmware," click "Upgrade Here." (See Chapter 4 "Using Utilities," for more information.) Another Web page appears, which contains the latest firmware available for the Modem, as well as firmware upgrades for other Actiontec products. Make sure you download firmware for the Modem.

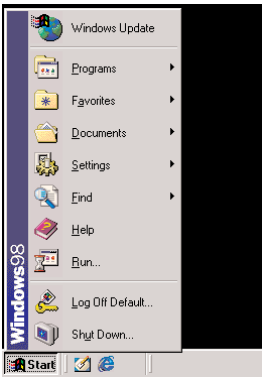
How do I change my IP address from Static to Dynamic, and why do I need to do this?

You should change the Ethernet connection IP address from Static to DHCP (Dynamic Host Connection Protocol) to take advantage of the Modem's ability to provide all the computers on your network a different IP address every time you connect to the Internet. Doing this allows you to effectively share your Internet connection without having to purchase a separate IP address for each computer.

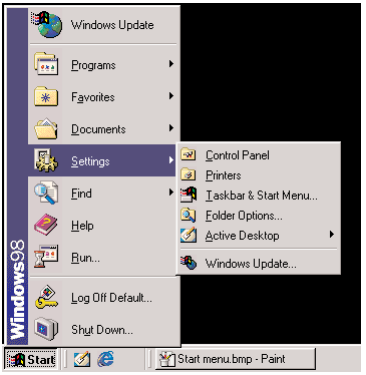
To change your Ethernet connection from Static to DHCP, choose the operating system used on your computer, and follow the directions.

Windows 98 and 98 SE

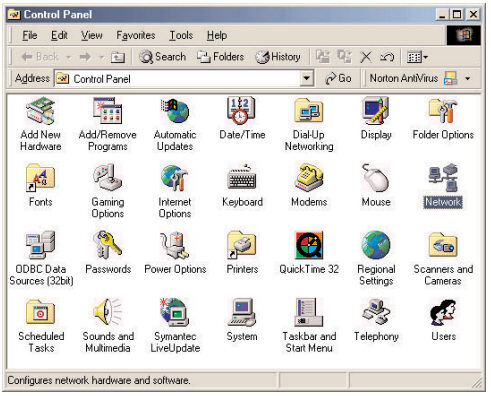
1. From the desktop, click on the **Start** button in the lower left corner.
2. From the menu that appears, select **Settings**.



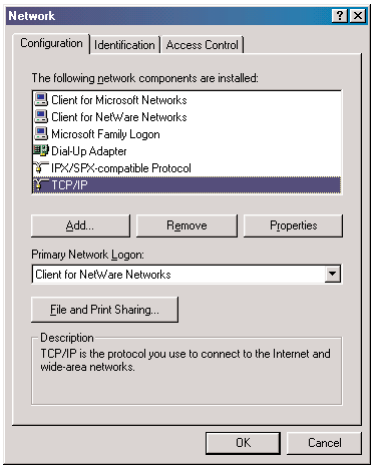
3. Another menu appears. Select **Control Panel**.



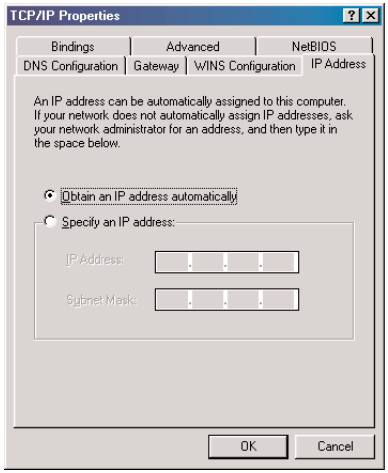
4. When the "Control Panel" window appears, double-click **Network**.



5. The "Network" window appears. In the "The following network components are installed" list box, locate and double-click **TCP/IP**.



6. The "TCP/IP Properties" window appears. Select **IP Address**.

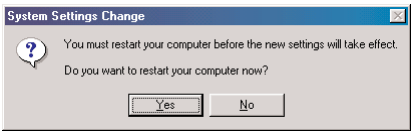


7. In the IP Address tab, activate "Obtain an IP address automatically" by clicking on the circle. When active, a black dot will appear in the circle. If the circle already contains a black dot, leave it alone.

8. Click **OK**. The TCP/IP Properties window disappears.

9. In the Network window, click **OK**. The Network window disappears.

10. The "System Settings Change" window appears, asking whether the computer should be restarted. Click **Yes**.

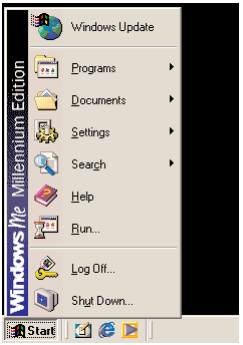


The computer restarts. It is now set up for DHCP.

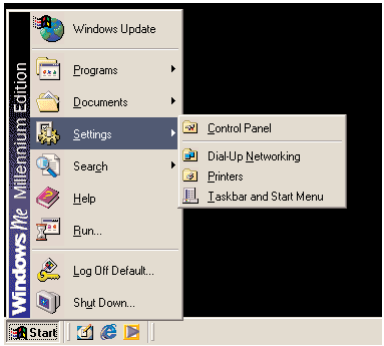
Windows Me

1. From the desktop, click on the **Start** button in the lower left corner.

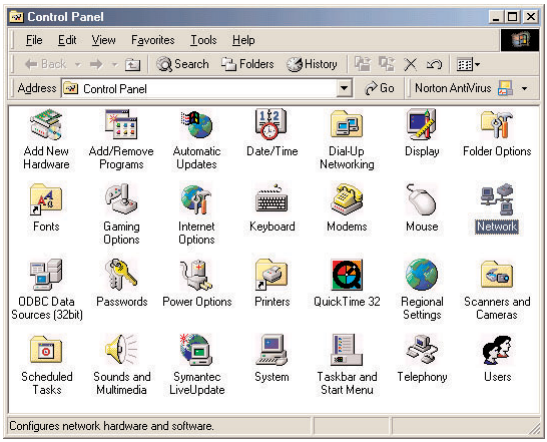
2. From the menu that appears, select **Settings**.



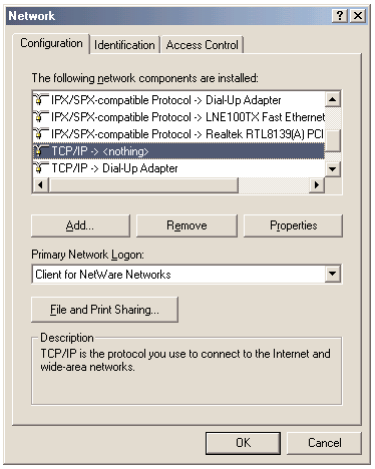
3. Another menu appears. Select **Control Panel**.



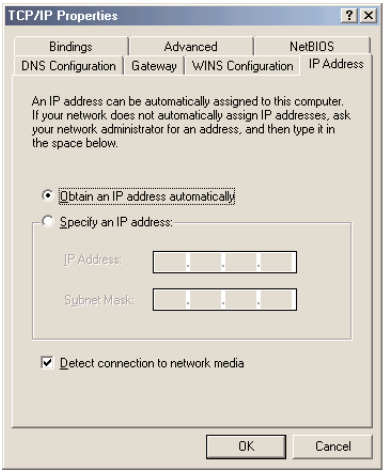
4. When the "Control Panel" window appears, double-click **Network**.



5. The "Network" window appears. In the "The following network components are installed" list box, locate and double-click **TCP/IP**.



6. The "TCP/IP Properties" window appears. Click **IP Address**.



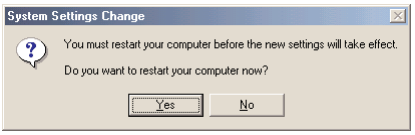
7. In the IP Address tab, activate "Obtain an IP address automatically" by clicking on the circle. When active, a black dot will appear in the circle. If the circle already contains a black dot, leave it alone.

8. Click **OK**. The TCP/IP Properties window disappears.

9. If there is a check in the box next to "Detect connection to network media," click on it to uncheck the box.

10. In the Network window, click **OK**. The Network window disappears.

11. The "System Settings Change" window appears, asking whether the computer should be restarted. Click **Yes**.



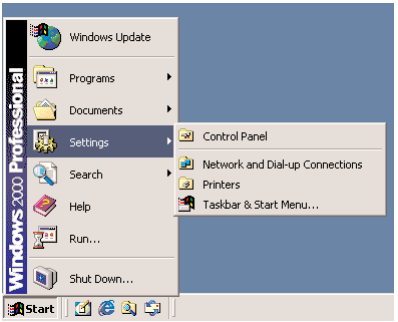
The computer restarts. It is now set up for DHCP.

Windows 2000

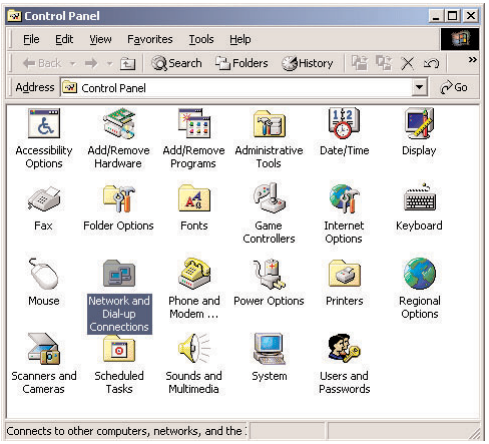
1. From the desktop, click on the **Start** button in the lower left corner.

2. From the menu that appears, select **Settings**.

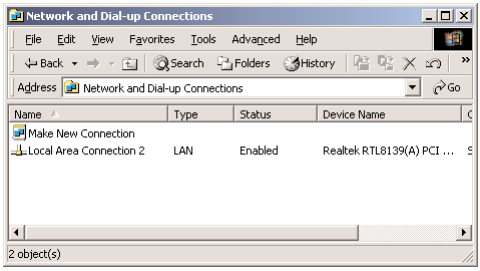
3. Another menu appears. Select **Control Panel**.



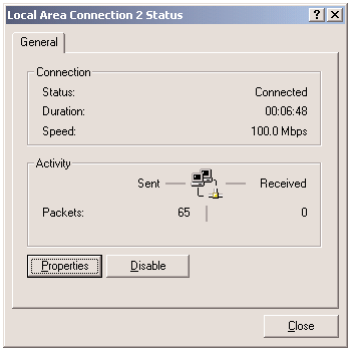
4. When the "Control Panel" window appears, double-click **Network and Dial-up Connections**.



5. In the "Network and Dial-up Connections" window, double-click **Local Area Connection**. A number may be displayed after the Local Area Connection. If there is more than one Local Area Connection listed, locate the one that corresponds to the network card installed in the computer by finding the name of the network card in the **Device Name** column.

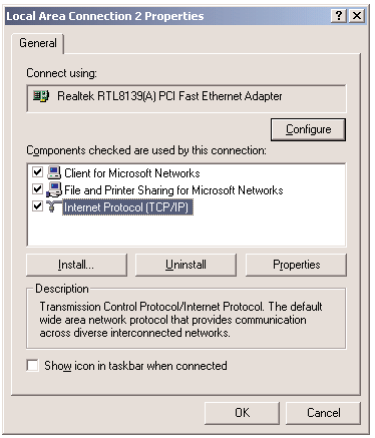


6. The "Local Area Connection Status" window appears. Select **General**, then click **Properties**.

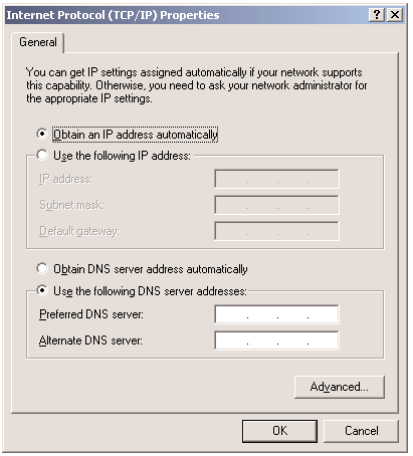


7. The "Local Area Connection Properties" window appears. Click **General**.

8. In the "Components checked are used by this connection" list box, double-click **Internet Protocol (TCP/IP)**.



9. The "Internet Protocol (TCP/IP) Properties" window appears.



10. In the **General** tab, activate "Obtain an IP address automatically" by clicking on the circle. When active, a black dot will appear in the circle. If the circle already contains a black dot, leave it alone.

12. Click **OK**. The "Internet Protocol (TCP/IP) Properties" window disappears.

13. In the "Local Area Connection Properties" window, click **OK**. The Local Area Connection Properties window disappears.

14. Click **Close** in the Local Area Connection Status window. The window disappears.

15. Close the Network and Dial-up Connections window by clicking on the "**x**" button at the upper right corner of the window.

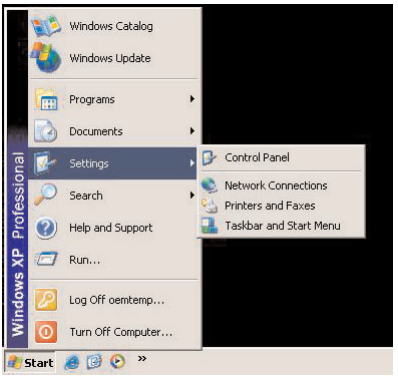
The computer is now set up for DHCP.

Windows XP

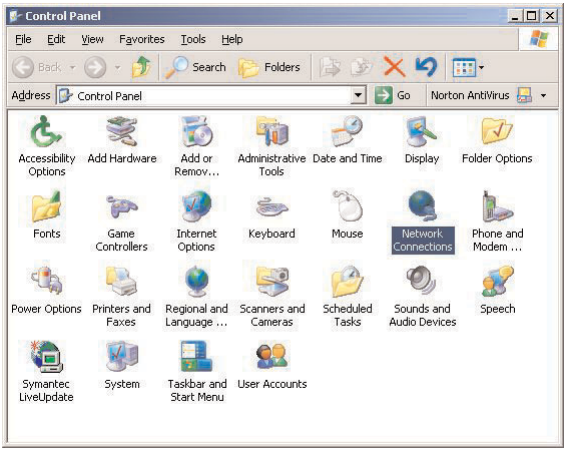
1. From the desktop, click on the **Start** button in the lower left corner.

2. From the menu that appears, select **Settings**.

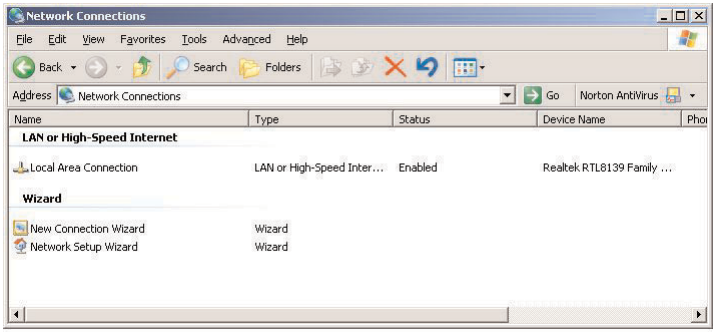
3. Another menu appears. Select **Control Panel**.



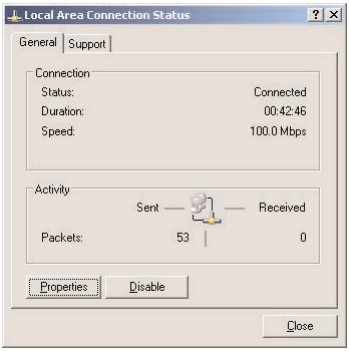
4. When the "Control Panel" window appears, double-click **Network Connections**.



5. In the "Network Connections" window, double-click **Local Area Connection**. A number may be displayed after the Local Area Connection. If there is more than one Local Area Connection listed, locate the one that corresponds to the network card installed in your computer by finding the name of the network card in the **Device Name** column.

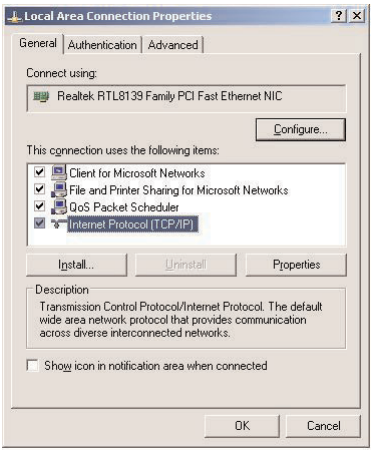


6. The "Local Area Connection Status" window appears. Select **General**, then click **Properties**.

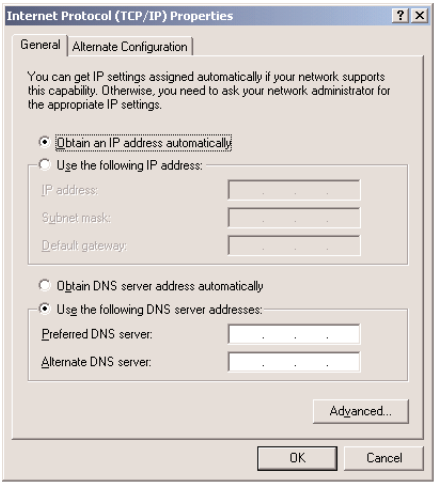


7. The "Local Area Connection Properties" window appears. Select **General**.

8. In the "Components checked are used by this connection" list box, double-click **Internet Protocol** (TCP/IP).



9. The "Internet Protocol (TCP/IP) Properties" window appears.



10. In the **General** tab, activate "Obtain an IP address automatically" by clicking on the circle. When active, a black dot will appear in the circle. If the circle already contains a black dot, leave it alone.

11. Click **OK**. The Internet Protocol (TCP/IP) Properties window disappears.

12. In the Local Area Connection Properties window, click **OK**. The Local Area Connection Properties window disappears.

13. Click **Close** in the Local Area Connection Status window. The window disappears.

14. Close the Network and Dial-up Connections window by clicking on the "**x**" button at the upper right corner of the window.

The computer is now set up for DHCP.

Setting Up Static IP Address

A

To communicate with the Modem from a computer on the network (to use the Web Configuration Utility, for example), the user may have to switch the IP address settings from DHCP-enabled to static IP, so that the computer and the Modem are on the same subnet.

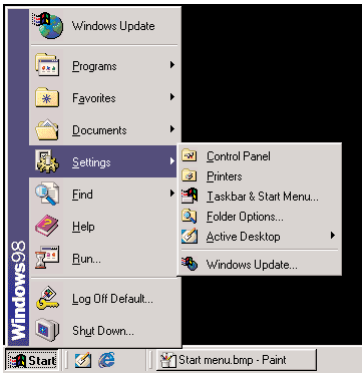
To set up static IP on a computer, select the operating system and follow the instructions.

> ***Note***: The following procedures are based on the Modem's factory default IP address. If the Modem's IP address has been changed, enter the new IP address when instructed to enter an IP address.

Windows 98 and 98 SE

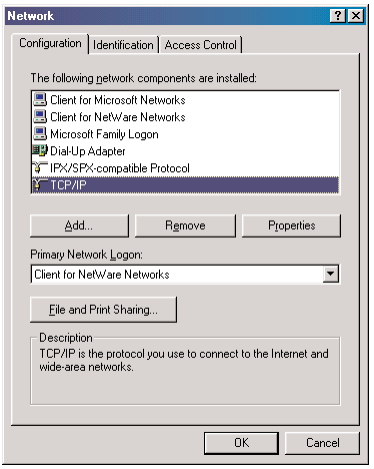
1. From the desktop, click on the **Start** button in the lower left corner.
2. From the menu that appears, select **Settings**.

3. Another menu appears. Select **Control Panel**.

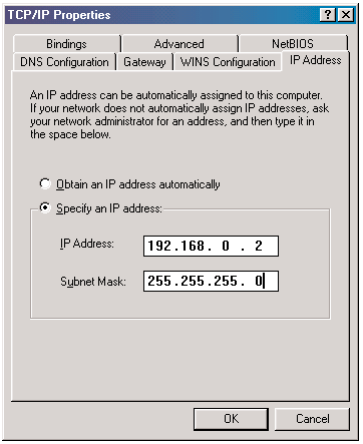


4. When the "Control Panel" window appears, double-click **Network**.

5. The "Network" window appears. In the "The following network components are installed" list box, locate and double-click **TCP/IP**.



6. The "TCP/IP Properties" window appears. Select **IP Address**.



7. In the IP Address tab, make sure the the circle next to "Specify an IP Address" is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.

8. Enter the following numbers in the "IP Address" text box:

192.168.0.2

Do not include the periods; they are automatically entered.

9. Enter the following numbers in the "Subnet mask" text box:

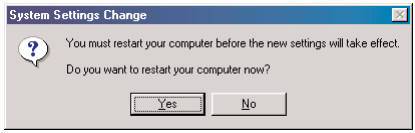
255.255.255.0

Do not include the periods; they are automatically entered.

10. Click **OK**. The TCP/IP Properties window disappears.

11. In the Network window, click **OK**. The Network window disappears.

12. The "System Settings Change" window appears, asking whether the computer should be restarted. Click **Yes**.

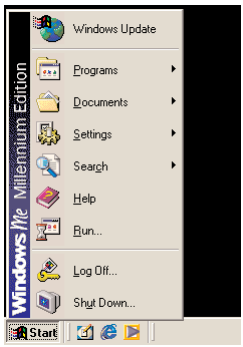


The computer restarts. It is now set up with a static IP address, allowing the user to access the Modem's Advanced Setup utility.

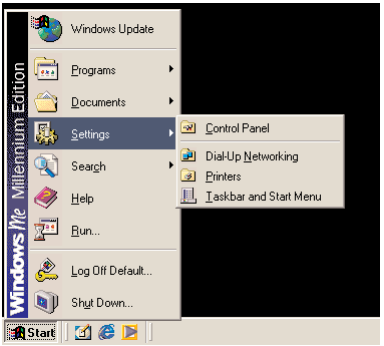
Windows Me

1. From the desktop, click on the **Start** button in the lower left corner.

2. From the menu that appears, select **Settings**.

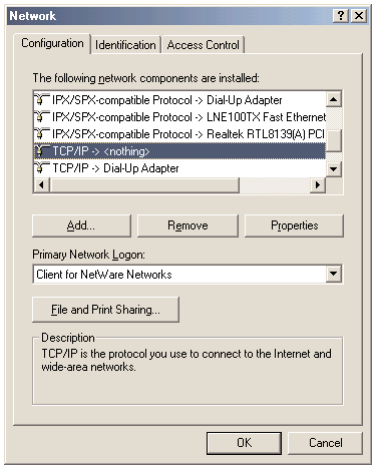


3. Another menu appears. Select **Control Panel**.

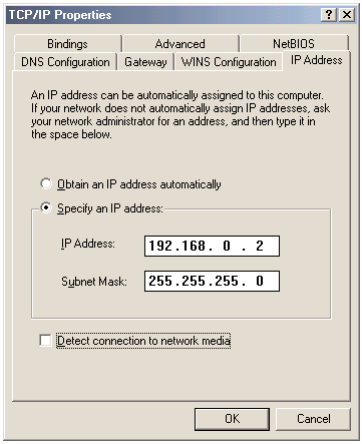


4. When the "Control Panel" window appears, double-click **Network**.

5. The "Network" window appears. In the "The following network components are installed" list box, locate and double-click **TCP/IP**.



6. The "TCP/IP Properties" window appears. Click **IP Address**.



7. In the IP Address tab, make sure the the circle next to "Specify an IP Address" is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.

8. Enter the following numbers in the "IP Address" text box:

192.168.0.2

Do not include the periods; they are automatically entered.

9. Enter the following numbers in the "Subnet mask" text box:

`255.255.255.0`

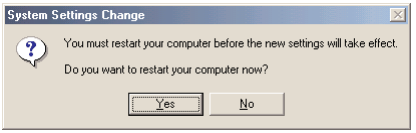
Do not include the periods; they are automatically entered.

10. Click **OK**. The TCP/IP Properties window disappears.

11. If there is a check in the box next to "Detect connection to network media," click on it to uncheck the box.

12. In the Network window, click **OK**. The Network window disappears.

13. The "System Settings Change" window appears, asking whether the computer should be restarted. Click **Yes**.



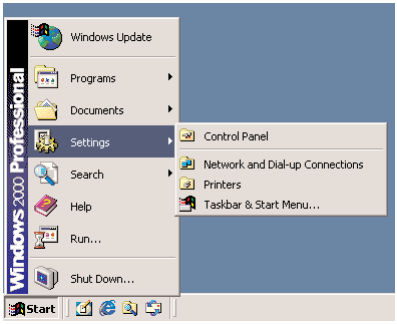
The computer restarts. It is now set up with a static IP address, allowing the user to access the Modem's Advanced Setup utility.

Windows 2000

1. From the desktop, click on the **Start** button in the lower left corner.

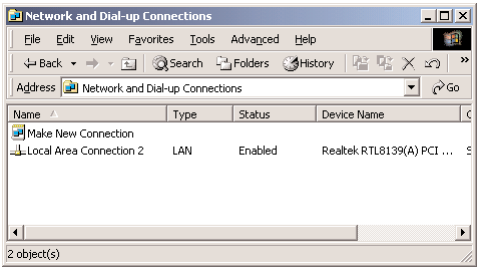
2. From the menu that appears, select **Settings**.

3. Another menu appears. Select **Control Panel**.

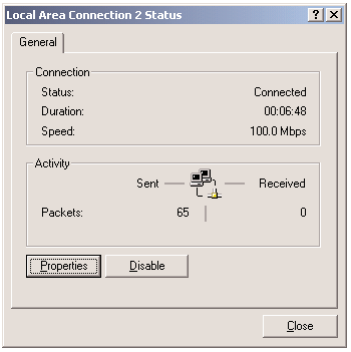


4. When the "Control Panel" window appears, double-click **Network and Dial-up Connections**.

5. In the "Network and Dial-up Connections" window, double-click **Local Area Connection**. A number may be displayed after the Local Area Connection. If there is more than one Local Area Connection listed, locate the one that corresponds to the network card installed in the computer by finding the name of the network card in the **Device Name** column.

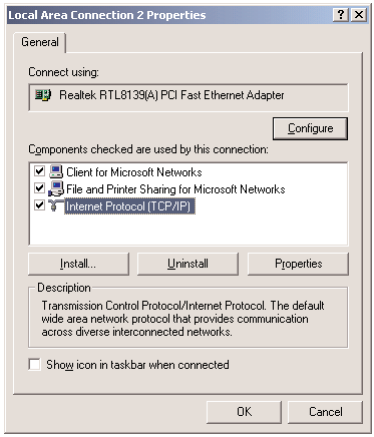


6. The "Local Area Connection Status" window appears. Select **General**, then click **Properties**.

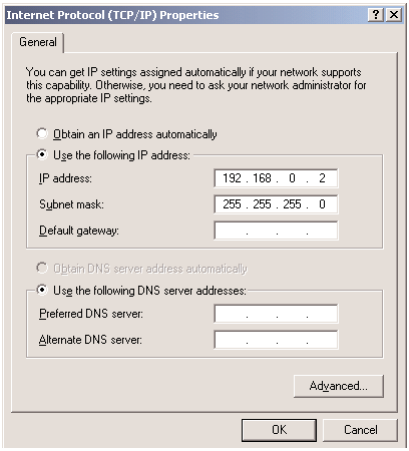


7. The "Local Area Connection Properties" window appears. Click **General**.

8. In the "Components checked are used by this connection" list box, double-click **Internet Protocol (TCP/IP)**.



9. The "Internet Protocol (TCP/IP) Properties" window appears.



10. In the **General** tab, make sure the the circle next to "Obtain an IP Address automatically" is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.

11. Enter the following numbers in the "IP Address" text box:

192.168.0.2

Do not include the periods; they are automatically entered.

12. Enter the following numbers in the "Subnet mask" text box:

255.255.255.0

Do not include the periods; they are automatically entered.

13. Click **OK**. The "Internet Protocol (TCP/IP) Properties" window disappears.

14 In the "Local Area Connection Properties" window, click **OK**. The Local Area Connection Properties window disappears.

15. Click **Close** in the Local Area Connection Status window. The window disappears.

16. Close the Network and Dial-up Connections window by clicking on the "**x**" button at the upper right corner of the window.

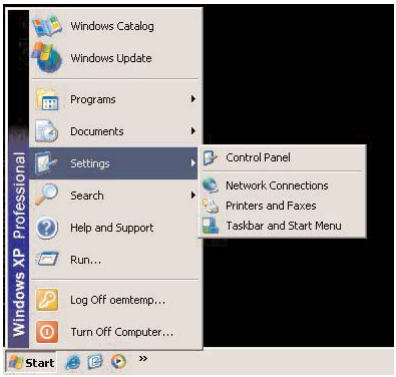
The computer is now set up with a static IP address, allowing the user to access the Modem's Advanced Setup utility.

Windows XP

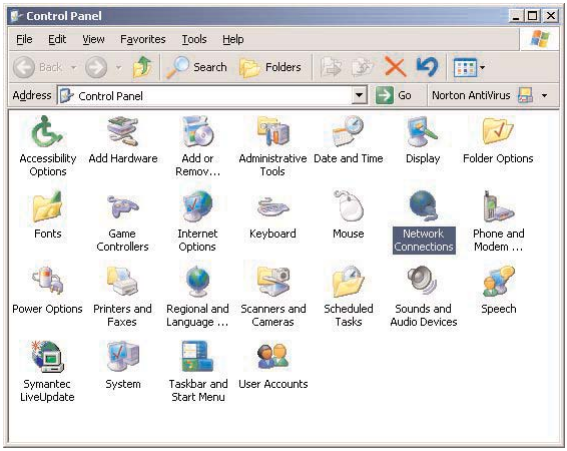
1. From the desktop, click on the **Start** button in the lower left corner.

2. From the menu that appears, select **Settings**.

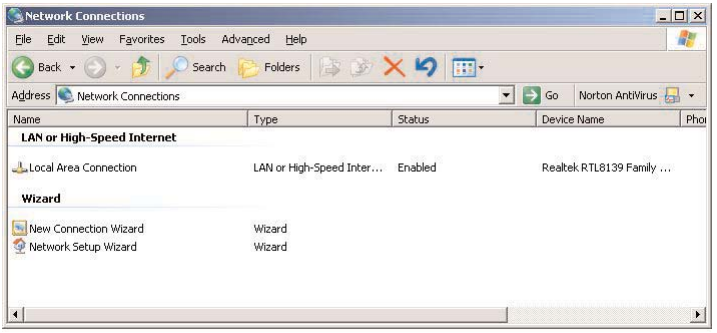
3. Another menu appears. Select **Control Panel**.



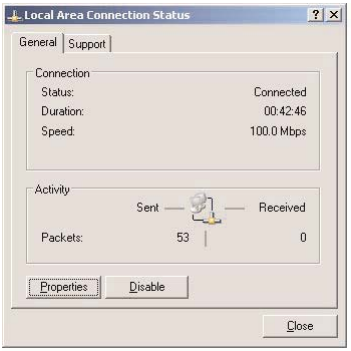
4. When the "Control Panel" window appears, double-click **Network Connections**.



5. In the "Network Connections" window, double-click **Local Area Connection**. A number may be displayed after the Local Area Connection. If there is more than one Local Area Connection listed, locate the one that corresponds to the network card installed in your computer by finding the name of the network card in the **Device Name** column.

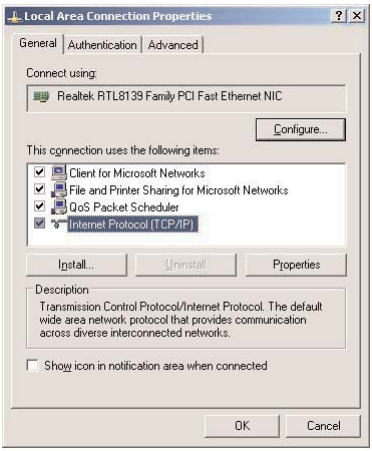


6. The "Local Area Connection Status" window appears. Select **General**, then click **Properties**.

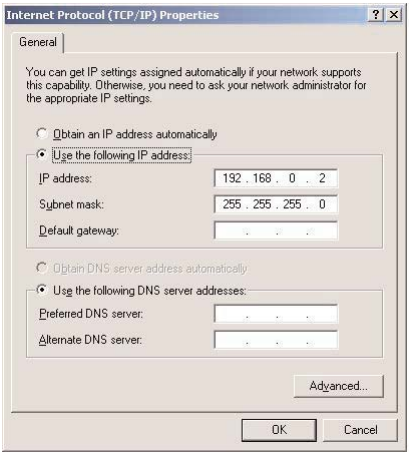


7. The "Local Area Connection Properties" window appears. Select **General**.

8. In the "Components checked are used by this connection" list box, double-click **Internet Protocol (TCP/IP)**.



9. The "Internet Protocol (TCP/IP) Properties" window appears.



10. In the **General** tab, make sure the the circle next to "Obtain an IP Address automatically" is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.

11. Enter the following numbers in the "IP Address" text box:

198.162.0.2

Do not include the periods; they are automatically entered.

12. Enter the following numbers in the "Subnet mask" text box:

255.255.255.0

Do not include the periods; they are automatically entered.

13. Click **OK**. The Internet Protocol (TCP/IP) Properties window disappears.

14 In the Local Area Connection Properties window, click **OK**. The Local Area Connection Properties window disappears.

15. Click **Close** in the Local Area Connection Status window. The window disappears.

16. Close the Network and Dial-up Connections window by clicking on the "**x**" button at the upper right corner of the window.

The computer is now set up with a static IP address, allowing the user to access the Modem's Advanced Setup utility.

Specifications

B

General

Model Number

GEU004AD9-01 (USB/Ethernet DSL Modem)

Standards

IEEE 802.3 (10BaseT)
IEEE 802.3u (100BaseTX)
G.dmt
G.lite
RFC 1483, 2364, 2516

Protocol

CSMA/CD t1.413

WAN

Full-rate DSL modem

LAN

10Mbps Ethernet port
USB port
Upload port

Cabling Type

10BaseT: UTP/STP Category 3 or 5
USB

Certifcations

FCC Class B
FCC Class C (parts 15, 68)
UL

Environmental

Power Input

External, 12V DC, 1.2 A

Operating Temperature

0º C to 40º C (32ºF to 104ºF)

Storage Temperature

-20ºC to 70ºC (-4ºF to 158ºF)

Operating Humidity

10% to 85% non-condensing

Storage Humidity

5% to 90% non-condensing

MAC Address

C

This appendix explains how to determine the MAC address of an Ethernet adapter installed on a computer. Select the operating system and follow the instructions.

Windows 95, 98

1. Click **Start**, then **Run**.
2. The "Run" window appears. In the "Open" text box, enter:
   `ipconfig/all`
3. Click **OK**. The "IP Configuration" window appears.
4. Note the "Adapter Address," which is the MAC address of the installed Ethernet adapter.

Windows Me

1. Click **Start**, then **Run**.
2. The "Run" window appears. In the "Open" text box, enter:
   `winipcfg`
3. Click **OK**. The "IP Configuration" window appears.
4. Note the "Adapter Address," which is the MAC address of the installed Ethernet adapter.

Windows 2000

1. Click **Start**, **Programs**, **Accessories**, **Command Prompt**.
2. When the "Command Prompt" window appears, enter:
   `ipconfig/all`
   then press **Enter** on the keyboard.
3. A list of information about the Ethernet adapter appears.
4. Note the "Physical Address," which is the MAC address of the installed Ethernet adapter.

Windows NT 4.0

1. Click **Start**, **Programs**, **Command Prompt**.
2. When the "Command Prompt" window appears, enter:
   `ipconfig/all`
   then press **Enter** on the keyboard.
3. A list of information about the Ethernet adapter appears.
4. Note the "Physical Address," which is the MAC address of the installed Ethernet adapter.

Macintosh

1. Select **Apple**, **Control Panels**, **TCP/IP**.
2. In the "TCP/IP" window, click **Info**.
3. The "TCP/IP Info" window appears. In the "Addresses" section, note the "Hardware address," which is the MAC address of the installed Ethernet adapter.

Program and Port List

D

Application Type	Notes	Port Forwarding Settings	
Services		**Outgoing Connection**	**Incoming Connection**
HTTP	Netscape, Internet Explorer		80/client IP
FTP	Windows FTP, Cuteftp		21/client IP
TELNET	Windows Telnet, Neterm		23/client IP
POP3	Eudora		110/client IP
SMTP	Eudora		25/client IP
mIRC	mIRC		113/client IP
Network Time Protocol (NTP)		123	123/client IP
PPTP	Windows PPTP		1723/client IP
Applications			
BAYVPN		500/client IP	
CarbonCopy/32			1023-1690/client IP
CITRIX			1494/client IP
Cu-SeeMe2	Cornell 1.1		7648/client IP
	White Pine 3.1.2	7643/client IP; 24032/client IP	Default/client IP
	White Pine 4.0 (CU-SeeMe Pro)	7643/client IP; 24032/client IP	Default/client IP
Direct Connect			375-425/client IP
FW1VPN		259/client IP	
ICQ	For file transfer, enable ICQ - preference - connections - firewall, then set the firewall time out to 80 seconds		Default/client IP
Laplink			1547/client IP
Lotus Notes			1352/client IP
Microsoft NetMeeting	2.1, 2.11		1720/client IP; 1503/client IP; 1503-TCP (T-120 data conferencing); 1720-TCP (H-323 call setup); 1731-TCP (H-323 audio call control); dynamic (1024-65535) TCP (H-323 call control), UDP (H-323 streaming)
PC Anywhere	Host must be on LAN side and client IP set		22/client IP; 5631-5632/client IP
RealPlayer	G2		
Remote Anything			3996-4000/client IP
Shiva VPN	Set mobile option to public IP address	2233/client IP	2233/client IP
Virtual Network Computing (VNC)			5500/client IP; 5800/client IP; 5900/client IP
VDO Live			

Application Type	Notes	Port Forwarding Settings	
Games		**Outgoing Connection**	**Incoming Connection**
Aliens vs. Predator			80/client IP; 2300-2400/client IP; 8000-8999/client IP
Asheron's Call	May need to open MSN/DX ports	9000-9013/client IP	9000/9013/client IP
Black and White			2611-2612/client IP; 6500/client IP; 6667/client IP; 27900/client IP
Dark Reign 2			26214/client IP
Delta Force		3100/client IP; 3568/client IP, 3999/client IP	3100/client IP; 3568/client IP; 3999/client IP
Dune 2000		1140-1234/client IP; 4000/client IP	1140-1234/client IP, 4000/client IP
Elite Force			26000/client IP; 27500/client IP; 27910/client IP; 27960/client IP
Everquest			1024-6000/client IP; 7000/client IP
F22-Lightning 3			4533-4660/client IP
Fighter Ace II			50000-50100/client IP
Fighter Ace II (DX)			2300-2400/client IP; 47624/client IP; 50000-50100/client IP
Half Life			27015/client IP
Heretic II			28910/client IP
Hexen II	Each computer must use a different port number (add 1 for each player, starting at 26900)		26900/client IP (add 1 for each player)
Kali	Each computer must use a different port number (add 1 for each player, starting at 2213)		2213/client IP (add 1 for each player); 6666/client IP
MSN GameZone			6667/client IP; 28800-29000/client IP
MSN GameZone (DX)			2300-2400/client IP; 47624/client IP
Myth			3453/client IP
Need for Speed			9942/client IP
Need for Speed 3			1030/client IP
Outlaws			5310/client IP
Quake I			Default/client IP
Quake II			27910/client IP
Quake III	Each computer must use a different port number (add 1 for each player, starting at 27660)		27600/client IP (add 1 for each player)
Rainbow Six		2346/client IP	2346/client IP
Rogue Spear		2346/client IP	2346/client IP
StarCraft			6112/client IP
Tiberian Sun		1140-1234/client IP; 4000/client IP	1140-1234/client IP, 4000/client IP
Ultima			5001-5010 Game; 7775-7777 Login; 8888, 9999 Patch; 8800-8900 Messenger; 7875 Monitor
Unreal Tournament	Modify UWEB Web Server section of the server.ini file by setting ListenPort to 8080 and SeverName to public IP of the router		7777 Game; 7778 Server; 7779-7783 UdpLink; 27900 Server Query; 8080 UT Server Admin

Glossary

Access Point

A device that allows wireless clients to connect to one another. An access point can also act as a bridge between wireless clients and a "wired" network, such as an Ethernet network. Wireless clients can be moved anywhere within the coverage area of the access point and remain connected to the network. If connected to an Ethernet network, the access point monitors Ethernet traffic and forwards appropriate Ethernet messages to the wireless network, while also monitoring wireless traffic and forwarding wireless client messages to the Ethernet network.

Client

A desktop or mobile computer connected to a network.

DHCP (Dynamic Host Configuration Protocol)

A protocol designed to automatically assign an IP address to every computer on your network.

DNS (Domain Name System) Server Address

Allows Internet host computers to have a domain name and one or more IP addresses. A DNS server keeps a database of host computers and their respective domain names and IP addresses so that when a user enters a domain name into a Web browser, the user is sent to the proper IP address. The DNS server address used by computers on the home network corresponds to the location of the DNS server the ISP has assigned.

DSL (Digital Subscriber Line) Modem

A modem that uses existing phone lines to transmit data at high speeds.

Encryption

A method to allow wireless data transmissions a level of security.

ESSID (Extended Service Set Identifier)

A unique identifier for a wireless network. Also known as "SSID."

Ethernet Network

A standard wired networking configuration using cables and hubs.

Firewall

A method preventing users outside the network from accessing and/or damaging files or computers on the network.

Gateway

A central device that manages the data traffic of your network, as well as data traffic to and from the Internet.

IP (Internet Protocol) Address

A series of four numbers separated by periods identifying a unique Internet computer host.

ISP Gateway Address

An IP address for the Internet router. This address is only required when using a cable or DSL modem.

ISP (Internet Service Provider)

A business that allows individuals or businesses to connect to the Internet.

LAN (Local Area Network)

A group of computers and devices connected together in a relatively small area (such as a house or an office). A home network is considered a LAN.

MAC (Media Access Control) Address

The hardware address of a device connected to a network.

NAT (Network Address Translation)

A method allowing all of the computers on a home network to use one IP address, enabling access to the Internet from any computer on the home network without having to purchase more IP addresses from the ISP.

PC Card

An adapter that inserts in the PCMCIA slot of a computer, enabling the communication with the Router.

PPPoE (Point-to-Point Protocol over Ethernet)

A method of secure data transmission.

Router

A central device that manages the data traffic of your network.

Subnet Mask

A set of four numbers configured like an IP address used to create IP address numbers used only within a particular network.

SSID

See "ESSID."

TCP/IP (Transmission Control Protocol/Internet Protocol)

The standard protocol for data transmission over the Internet.

WAN (Wide Area Network)

A network that connects computers located in separate areas, (i.e., different buildings, cities, countries). The Internet is a WAN.

WECA (Wireless Ethernet Compatibility Alliance)

An industry group that certifies cross-vender interoperability and compatibility of IEEE 802.11b wireless networking products and promotes the standard for enterprise, small business, and home environments.

WLAN (Wireless Local Area Network)

A group of computers and other devices connected wirelessly in a small area.

Notices

Regulatory Compliance Notices

Class B Equipment

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. 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 and 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 implementing one or more of the following measures:

- Reorient or relocate the receiving antenna;
- Increase the separation between the equipment and receiver;
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected;
- Consult the dealer or an experienced radio or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by A*ction*tec Electronics, Inc., may void the user's authority to operate the equipment.

Declaration of conformity for products marked with the FCC logo – United States only.

This device complies with Part 15 of the 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.

☞ ***Note***: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

For questions regarding your product or the FCC declaration, contact:

*Action*tec Electronics, Inc.
760 N. Mary Ave.
Sunnyvale, CA 94086
United States
Tel: 408.752.7700
Fax: 408.541.9005

Limited Warranty

Hardware: *Action*tec Electronics, Inc., warrants to the end user ("Customer") that this hardware product will be free from defects in workmanship and materials, under normal use and service, for twelve (12) months from the date of purchase from *Action*tec Electronics or its authorized reseller.

*Action*tec Electronics' sole obligation under this express warranty shall be, at *Action*tec's option and expense, to repair the defective product or part, deliver to Customer an equivalent product or part to replace the defective item, or if neither of the two foregoing options is reasonably available, *Action*tec Electronics may, in its sole discretion, refund to Customer the purchase price paid for the defective product. All products that are replaced will become the property of *Action*tec Electronics, Inc. Replacement products may be new or reconditioned. *Action*tec Electronics warrants any replaced or repaired product or part for ninety (90) days from shipment, or the remainder of the initial warranty period, whichever is longer.

Software: *Action*tec Electronics warrants to Customer that each software program licensed from it will perform in substantial conformance to its program specifications, for a period of ninety (90) days from the date of purchase from *Action*tec Electronics or its authorized reseller. *Action*tec Electronics warrants the media containing software against failure during the warranty period. The only updates that will be provided are at the sole discretion of *Action*tec Electronics and will only be available for download at the *Action*tec Web site, www.actiontec.com. *Action*tec Electronics' sole obligation under this express warranty shall be, at *Action*tec Electronics' option and expense, to refund the purchase price paid by Customer for any defective software product, or to replace any defective media with software which substantially conforms to applicable *Action*tec Electronics published specifications. Customer assumes responsibility for the selection of the appropriate applications program and associated reference materials. *Action*tec Electronics makes no warranty or representation that its software products will meet Customer's requirements or work in combination with any hardware or applications software products provided by third parties, that the operation of the software products will be uninterrupted or error free, or that all defects in the software products will be corrected. For any third-party products listed in the *Action*tec Electronics software product documentation or specifications as being compatible, *Action*tec Electronics will make reasonable efforts to provide compatibility, except where the non-compatibility is caused by a "bug" or defect in the third party's product or from use of the software product not in accordance with *Action*tec Electronics published specifications or user guide.

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THIS *ACTION*TEC ELECTRONICS WARRANTY DOES NOT APPLY TO SUCH THIRD-PARTY SOFTWARE. FOR THE APPLICABLE WARRANTY, PLEASE REFER TO THE END-USER LICENSE AGREEMENT GOVERNING THE USE OF SUCH SOFTWARE.

Obtaining Warranty Service: Customer may contact *Action*tec Electronics Technical Support Center within the applicable warranty period to obtain warranty service authorization. Dated proof of purchase from *Action*tec Electronics or its authorized reseller may be required. Products returned to *Action*tec Electronics must be pre-authorized by *Action*tec Electronics with a Return Merchandise Authorization (RMA) number marked on the outside of the package, and sent prepaid and packaged appropriately for safe shipment, and it is recommended that they be insured or sent by a method that provides for tracking of the package. The repaired or replaced item will be shipped to Customer, at *Action*tec Electronics' expense, not later than thirty (30) days after *Action*tec Electronics receives the defective product.

Return the product to:
(In the United States)
*Action*tec Electronics, Inc.
760 North Mary Avenue
Sunnyvale, CA 94085

*Action*tec Electronics shall not be responsible for any software, firmware, information, memory data, or Customer data contained in, stored on, or integrated with any products returned to *Action*tec Electronics for repair, whether under warranty or not.

WARRANTIES EXCLUSIVE: IF AN *ACTION*TEC ELECTRONICS' PRODUCT DOES NOT OPERATE AS WARRANTED ABOVE, CUSTOMER'S SOLE REMEDY FOR BREACH OF THAT WARRANTY SHALL BE REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE PAID, AT *ACTION*TEC ELECTRONICS' OPTION. TO THE FULL EXTENT ALLOWED BY LAW, THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, TERMS OR CONDITIONS, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, INCLUDING WARRANTIES, TERMS OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY, CORRESPONDENCE WITH DESCRIPTION, AND NON-INFRINGEMENT, ALL OF WHICH ARE EXPRESSLY DISCLAIMED. *ACTION*TEC ELECTRONICS

NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE OR USE OF ITS PRODUCTS.

*ACTION*TEC ELECTRONICS SHALL NOT BE LIABLE UNDER THIS WARRANTY IF ITS TESTING AND EXAMINATION DISCLOSE THAT THE ALLEGED DEFECT OR MALFUNCTION IN THE PRODUCT DOES NOT EXIST OR WAS CAUSED BY CUSTOMER'S OR ANY THIRD PERSON'S MISUSE, NEGLECT, IMPROPER INSTALLATION OR TESTING, UNAUTHORIZED ATTEMPT TO OPEN, REPAIR OR MODIFY THE PRODUCT, OR ANY OTHER CAUSE BEYOND THE RANGE OF THE INTENDED USE, OR BY ACCIDENT, FIRE, LIGHTNING, OTHER HAZARDS, OR ACTS OF GOD.

LIMITATION OF LIABILITY: TO THE FULL EXTENT ALLOWED BY LAW, *ACTION*TEC ELECTRONICS ALSO EXCLUDES FOR ITSELF AND ITS SUPPLIERS ANY LIABILITY, WHETHER BASED IN CONTRACT OR TORT (INCLUDING NEGLIGENCE), FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY KIND, OR FOR LOSS OF REVENUE OR PROFITS, LOSS OF BUSINESS, LOSS OF INFORMATION OR DATA, OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE, USE, PERFORMANCE, FAILURE, OR INTERRUPTION OF ITS PRODUCT, EVEN IF *ACTION*TEC ELECTRONICS OR ITS AUTHORIZED RESELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, AND LIMITS ITS LIABILITY TO REPAIR, REPLACEMENT,OR REFUND OF THE PURCHASE PRICE PAID, AT *ACTION*TEC ELECTRONICS' OPTION. THIS DISCLAIMER OF LIABILITY FOR DAMAGES WILL NOT BE AFFECTED IF ANY REMEDY PROVIDED HEREIN SHALL FAIL OF ITS ESSENTIAL PURPOSE.

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Dispute Resolution: The customer may contact the Director of Technical Support in the event the Customer is not satisfied with *Action*tec Electronics' response to the complaint. In the event that the Customer is still not satisfied with the response of the Director of Technical Support, the Customer is instructed to contact the Director of Marketing. In the event that the Customer is still not satisfied with the response of the Director of Marketing, the Customer is instructed to contact the Chief Financial Officer and/or President.

Governing Law: This Limited Warranty shall be governed by the laws of the State of California, U.S.A., excluding its conflicts of laws and principles, and excluding the United Nations Convention on Contracts for the International Sale of Goods.