

*Actiontec*TM

Dual-Mode

Wireless-Ready Cable DSL Router

User Manual

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Introduction

Thank you for purchasing the *Actiontec* Dual-Mode Wireless-Ready Cable/DSL Router. This Router is the simplest way to connect a small number of computers to a single high-speed broadband modem. 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 *Actiontec* Wireless-Ready Cable/DSL Router is one of the keys to your success.

Package Contents

- *Actiontec* Wireless-Ready Cable/DSL Router
- Power cord
- Yellow cable (Ethernet)
- Purple cable (USB)
- Installation CD (Disk 1 [includes user manual])
- Orange bag (contains Disk #2 and Orange Quick Start Guide)
- Clear bag (contains AOL Broadband CD and Quick Start Guide)
- START HERE Guide

Minimum System Requirements

- 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: Connecting the Router via USB is not supported when using Macintosh operating systems.

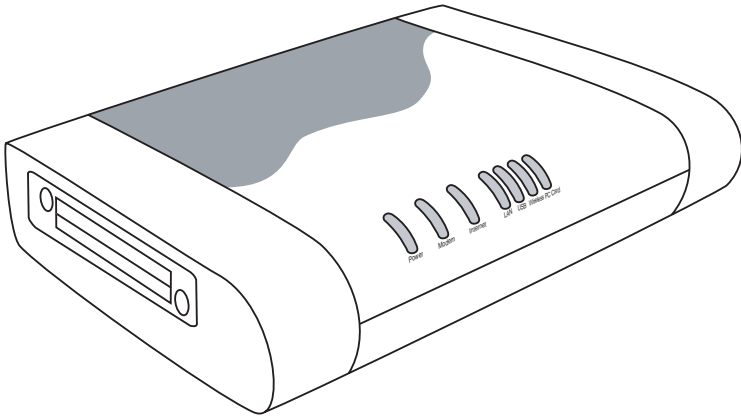
- Internet Explorer 4.0 or higher (5.x recommended) or Netscape Navigator 4.0 or higher (4.7 recommended)
- TCP/IP network protocol installed

Router Features

The Router has a series of LEDs (lights), as well as two PC Card slots and a variety of ports. It is recommended that the user become familiar with these features before installing or setting up the Router.

Front Panel

There are seven LEDs (light emitting diodes, or lights) on the front panel of the Router, as shown in the figure, below.



Power LED

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

Modem LED

The Modem LED glows green when a broadband device (cable/DSL modem, for example) is connected to the Router, and flashes when the Router is going through its initialization process.

Internet LED

The Internet LED flickers green when the Router connects to the Internet through a cable/DSL modem.

LAN LED

The LAN LED glows green when the Router is successfully connected to a computer with the yellow (Ethernet) cable.

USB LED

The USB LED glows green when the Router is successfully connected to a computer with the purple (USB) cable.

Wireless LED

The Wireless LED glows green when the Router (with an optional *Actiontec* 11 Mbps Wireless PC Card installed in the PC Card slot) has successfully connected to a wireless network.

PC Card LED

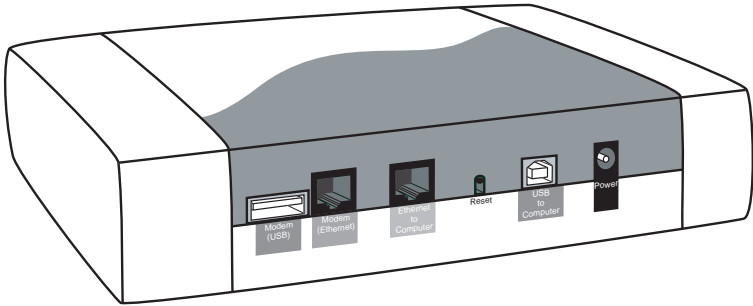
The PC Card LED glows green when an *Actiontec* 11Mbps Wireless PC Card is installed in the Router's PC Card slot.

PC Card Slots

The Router has two PC Card slots, located on the left side of the Router, as shown in the figure on the preceding page. These slots can be used with an *Actiontec* 11 Mbps Wireless PC Card to allow wireless networking, or for possible future *Actiontec* products and/or applications.

Rear Panel

The Router has five ports and a Reset button on its rear panel.



Blue Port (Modem [USB])

The Blue port is used to connect the Router to the *Actiontec* USB Home DSL Modem with a USB cable.

Red Port (Modem [Ethernet])

The Red port is used to connect the Router to any Ethernet cable or DSL modem.

Yellow Port (Ethernet to Computer)

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

Purple Port (USB to Computer)

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

Black Port (Power)

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

Reset Button

The Reset button is used to reset the Router. Holding the button down for less than 10 seconds causes the Router to restart, with all settings remaining intact. If the Reset button is held for more than 10 seconds, the default settings will be reloaded onto the Router, and any changes made to the settings must be reinstalled on the Router.

Technical Support

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



Actiontec Electronics, Inc.

760 N. Mary Avenue
Sunnyvale, CA 94085

Technical Support

Phone: 1.888.436.0657

Email: techsupp@actiontec.com

Internet: www.actiontec.com/support

Setting Up the Router

2

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

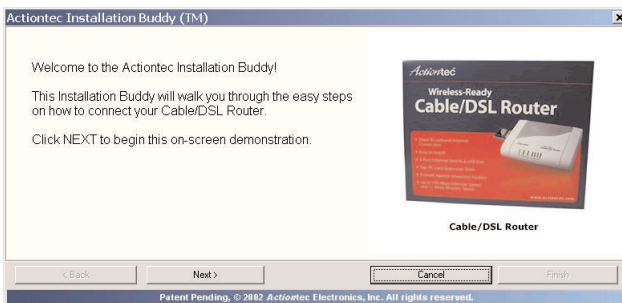
To set up the Router, the user must connect it to both a cable or DSL modem and a computer. After connecting this first computer, other computers can be added to the network via USB, Ethernet, or wirelessly (see “Connecting Additional Computers on page 21).

Connecting a Computer to the Router

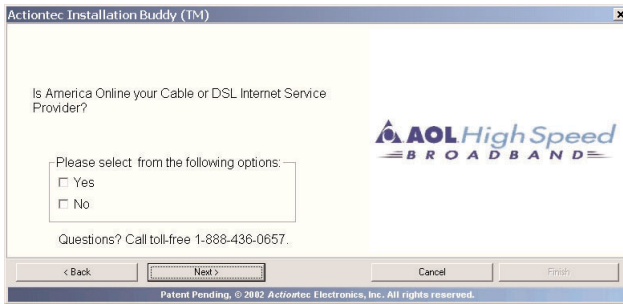
Connecting a computer to the Router for setup involves three basic steps: initial setup and plugging in the Router’s Power Cord, connecting the Router to the cable/DSL modem, and connecting the Router to the computer.

Initial Set Up and Plugging in the Power Cord

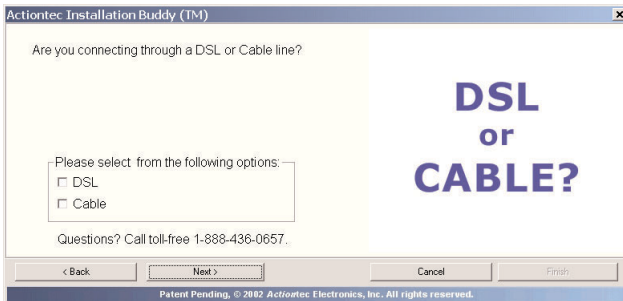
1. Insert **Disk 1** (Installation Buddy CD) in the CD-ROM drive of the computer. The Installation Buddy will start automatically. Wait until the following screen appears, read the onscreen instructions, then click **Next**.



2. The next window appears. Answer the onscreen question (**Yes** if AOL provides Broadband Internet access, **No** if another company provides the access), then click **Next**.

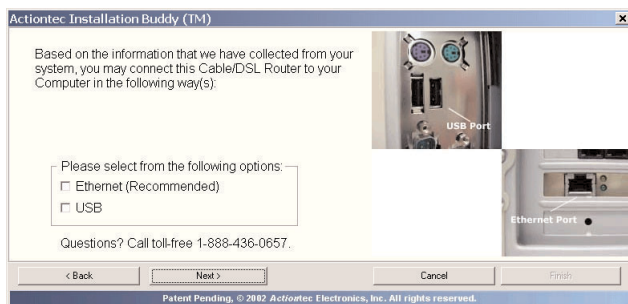


3. In the next window, select the type of Internet access provided (**Cable** or **DSL**), then click **Next**.

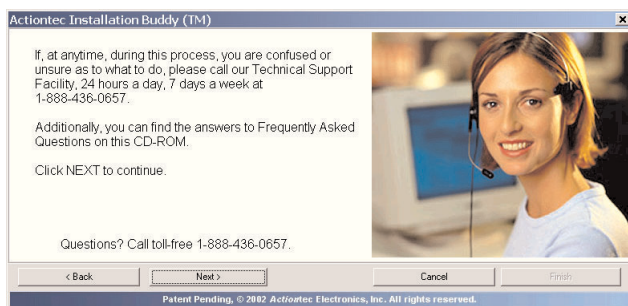


Note: To determine what kind of Internet access is provided, check the modem to see whether it is identified as either cable or DSL. If no identification exists, check the type of cable that connects to the modem. If the cable is a phone cord, it is a DSL modem; if the cable is a coaxial cable, it is a cable modem.

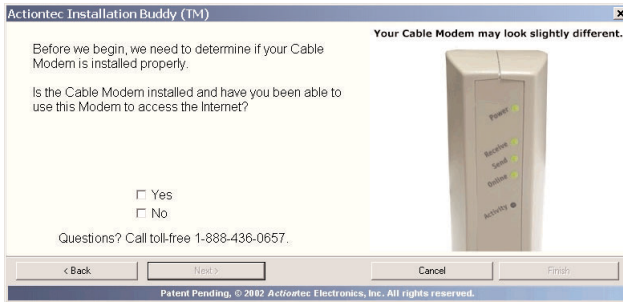
4. When the next window appears, select the type of connection to be used between the modem and computer (**Ethernet** or **USB**). If only one selection appears, select it, then click **Next**.




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

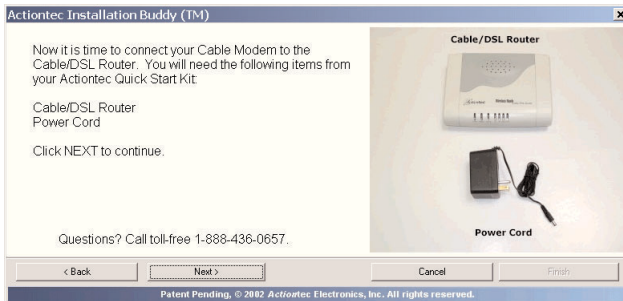


- The next window appears, asking whether the cable or DSL modem has been connected properly. Read the instructions, answer the question (**Yes** or **No**), then click **Next**.

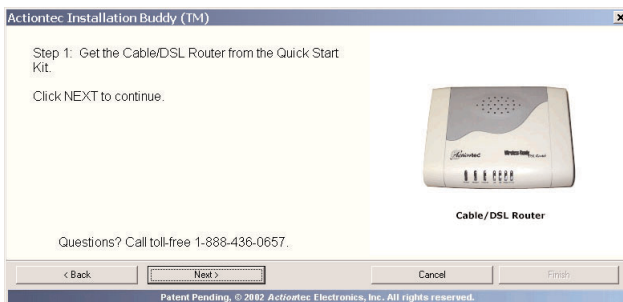


 **Note:** Depending on the configuration, the window shown in the figure above may vary.

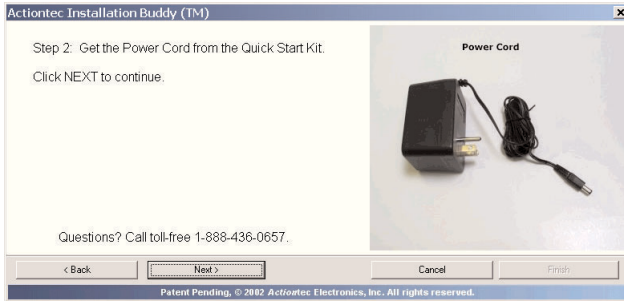
- When the next window appears, check the *Actiontec* Quick Start Kit to ensure the items onscreen are present, then click **Next**.




- In the next window, read the instructions regarding taking the Router out of its protective plastic bag and placing it a desired location, then click **Next**.

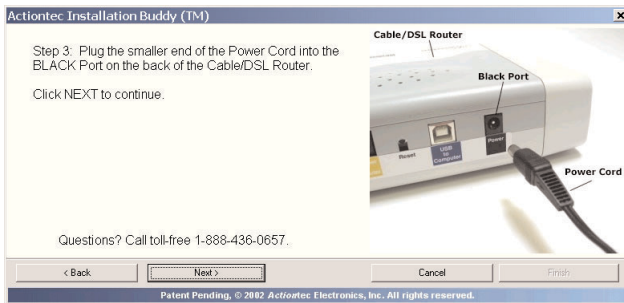


9. In the next window, read the instructions regarding getting the power cord, then click **Next**.

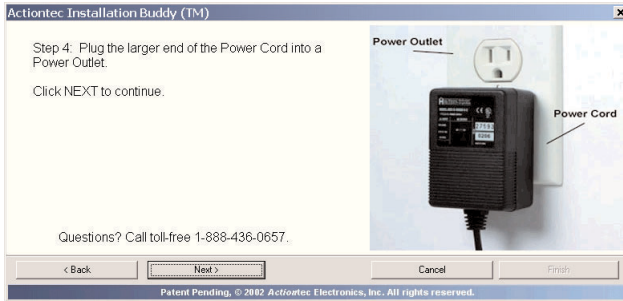



 **Note:** Depending on the country, the picture in the figure above may or may not reflect the type of power cord supplied.

10. The next window appears. Plug the smaller end of the power cord into the **BLACK** port on the back of the Router, then click **Next**.

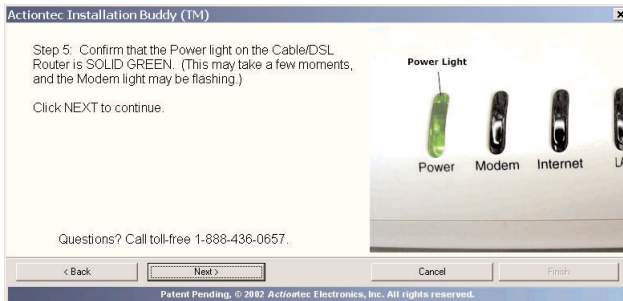


11. When the next window appears, plug the larger end of the power cord into a power outlet, then click **Next**.



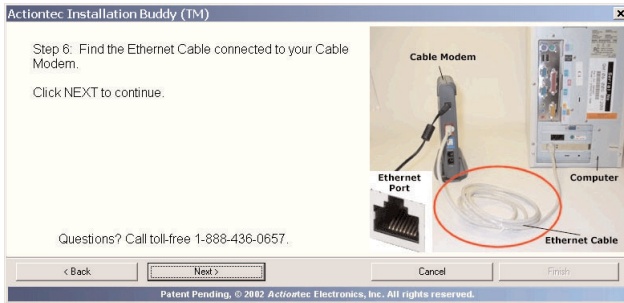
 **Note:** Depending on the country, the picture in the figure above may or may not reflect the type of power cord and power outlet being used.


12. The Router powers up. When the next window appears, confirm that the Power light on the Router glows steadily green (it may take a few moments for this to occur as the Router goes through its initialization process and the Power light flickers), then click **Next**.



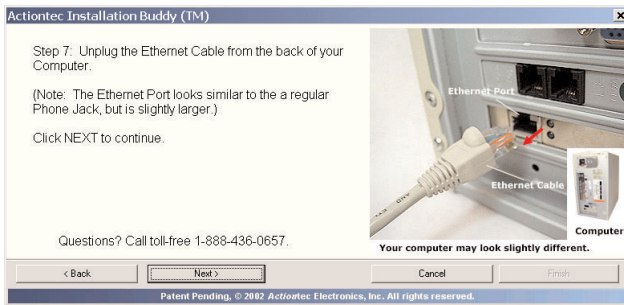
Connecting to the Modem

1. The following window appears, find the Ethernet cable connecting the computer to your modem, then click **Next**.



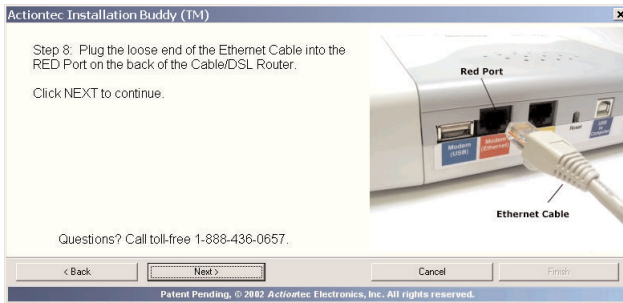
 **Note:** Depending on the type of modem, the picture in the figure above may or may not reflect the configuration used.

2. When the next window appears, unplug the Ethernet cable from the back of the computer, then click **Next**.



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

3. Another window appears. Plug the loose end of the Ethernet cable into the RED port on the back of the Router, then click **Next**.

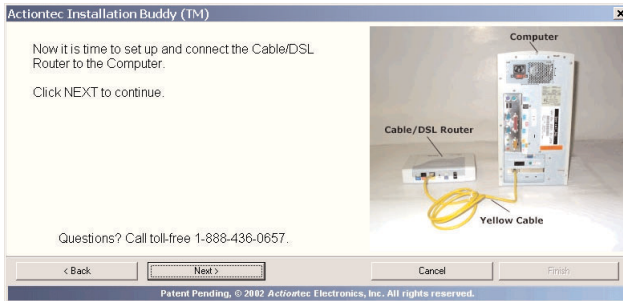


4. Ensure the other end of the Ethernet cable is still plugged into the modem. The Ethernet cable should now be connecting the modem to the Router.

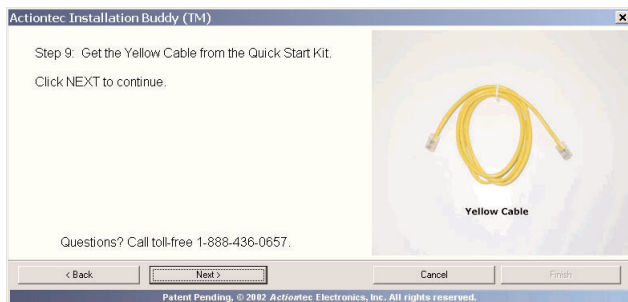
Connecting to a Computer

Connecting via Ethernet (Recommended)

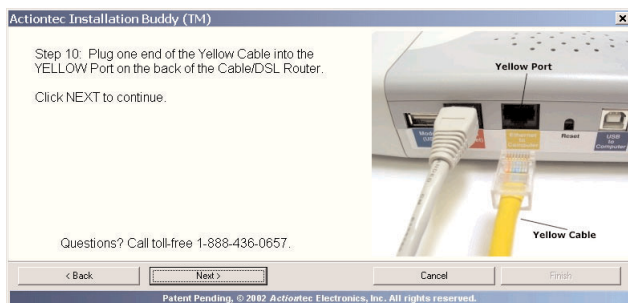
1. If Ethernet was selected previously (see step 4 in “Initial Setup...”), the following window will appear. Click **Next** to continue.



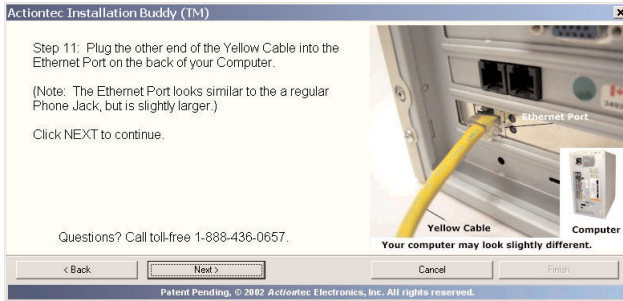
2. When the next window appears, get the **Yellow Cable** (Ethernet) from the *Actiontec* Quick Start Kit, then click **Next**.



3. Another window appears. Plug one end of the **Yellow Cable** (Ethernet) into the **Yellow Port** (Ethernet to Computer) on the back of the Router, then click **Next**.

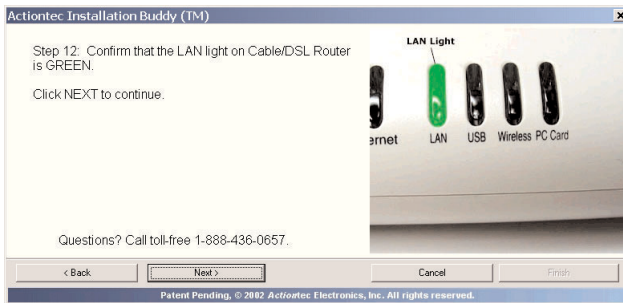


4. In the next window, read the instructions. Plug the other end of the yellow (Ethernet) cable into an Ethernet port on the back of the computer, then click **Next**.

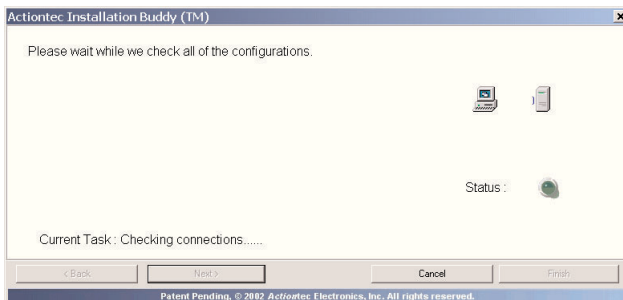


 **Note:** An Ethernet port looks similar to a phone jack, but is slightly larger.

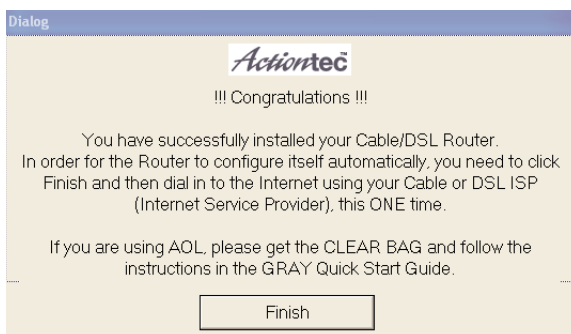
5. Ensure that the **LAN light** on the Router glows steadily green, as shown in the following window, then click **Next**.



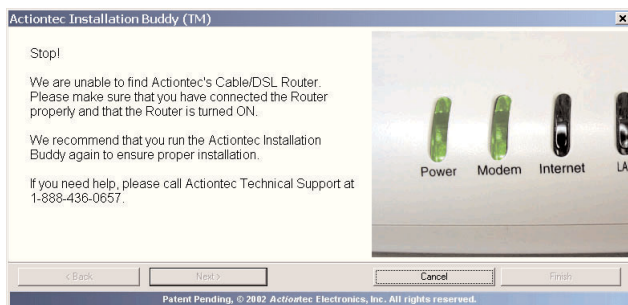
6. The following window appears while the Router is being configured. Wait until the process is completed.



7. A Congratulations window similar to the one shown below may appear when the Router has finished its configuration process, stating that the Router has been successfully set up and is currently operating properly.

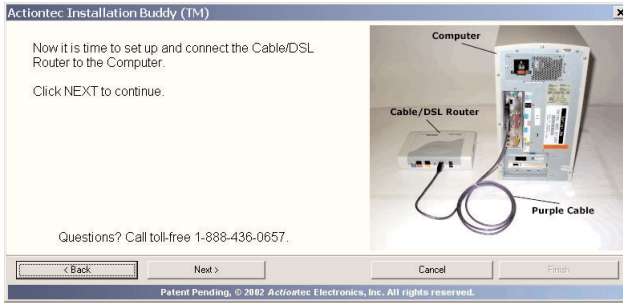


If the window below appears, the Router was not set up correctly. Click **Cancel** and run the Installation Buddy again. If the Router cannot be set up correctly, call *Actiontec* Technical Support at **1.888.436.0657** for assistance.

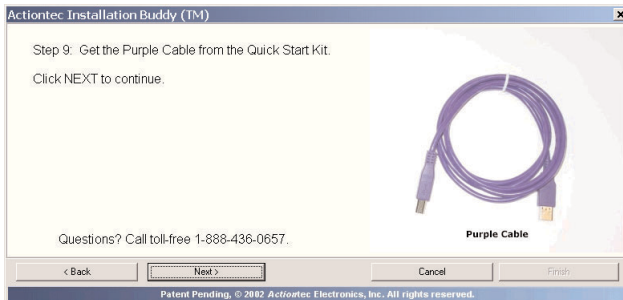


Connecting via USB

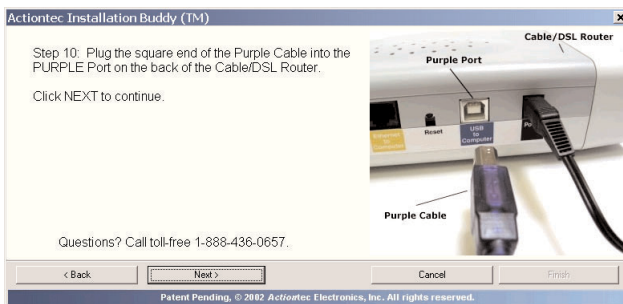
1. If USB was selected previously, (see step 4 under “Initial Setup...”), the following window will appear. Click **Next** to continue.



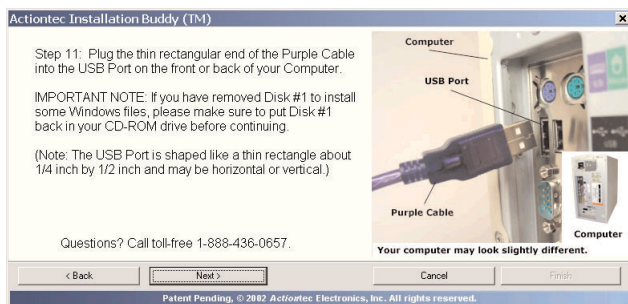
2. When the next window appears, get the **Purple Cable** (USB) from the *Actiontec* Quick Start Kit, then click **Next**.



3. Another window appears. Plug the square end of the **Purple Cable** (USB) into the **Purple Port** (USB to Computer) on the back of the Router, then click **Next**.

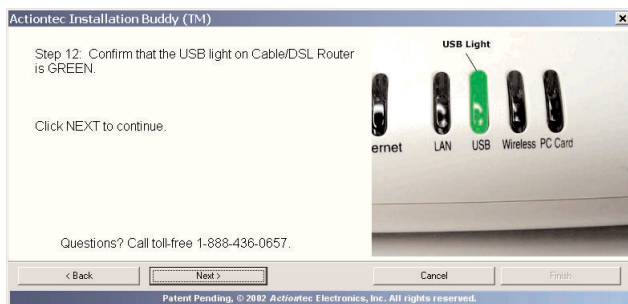


- In the next window, read the instructions. Plug the thin, rectangular end of the **Purple Cable (USB)** into a **USB port** on the front or back of the computer, then click **Next**.

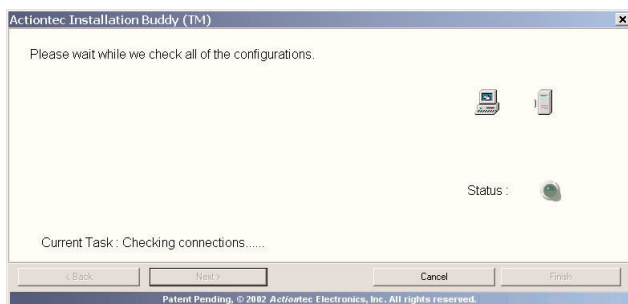


 **Note:** A USB port is shaped like a thin rectangle about 1/4 inch by 1/2 inch, and may be vertically or horizontally oriented.

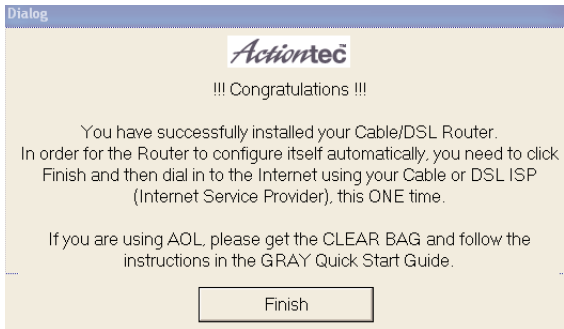
- Ensure that the **USB light** on the Router glows steadily green, as shown in the following window, then click **Next**.



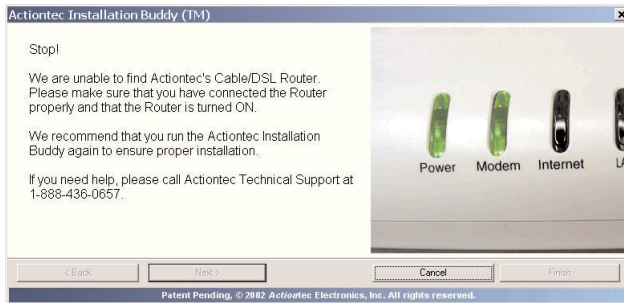
- The following window appears while the Router is being configured. Wait until the process is completed.



7. A Congratulations window similar to the one shown below may appear when the Router has finished its configuration process, stating that the Router has been successfully set up and is currently operating properly.




If the window below appears, the Router was not set up correctly. Click **Cancel** and run the Installation Buddy again. If the Router cannot be set up correctly, call *Actiontec* Technical Support at **1.888.436.0657** for assistance.



Connecting Additional Computers

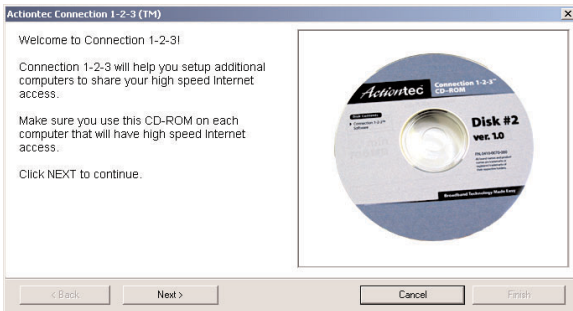
There are three ways to connect the Router to additional computers for networking: USB or Ethernet cable, or wirelessly. Select the type of connection, then follow the instructions.

Connecting via Ethernet

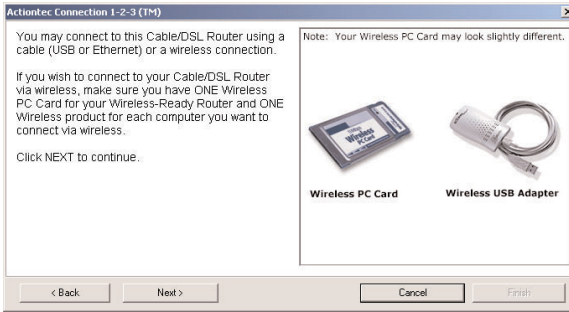
 **Note:** If the first computer was connected via Ethernet, an Ethernet hub or switch must be purchased and installed to add more Ethernet-connected computers to the network. To connect more computers to the network using an Ethernet hub or switch, see the documentation that came with the hub/switch.

The following procedure assumes that a computer has not already been connected to the Router via Ethernet.

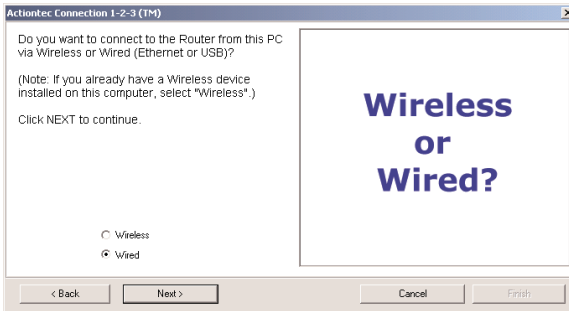
1. Insert the **Connection 1-2-3** CD in the CD-ROM drive of the computer. When the following window appears, click **Next**.



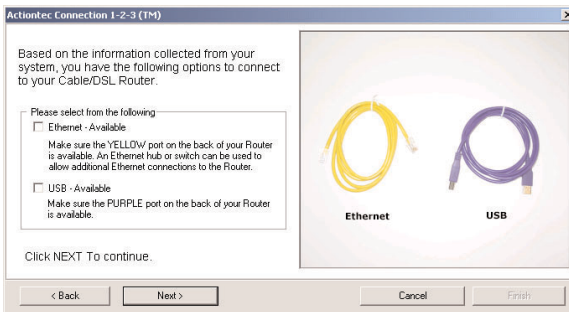
2. Read the instructions in the next window, then click **Next**.



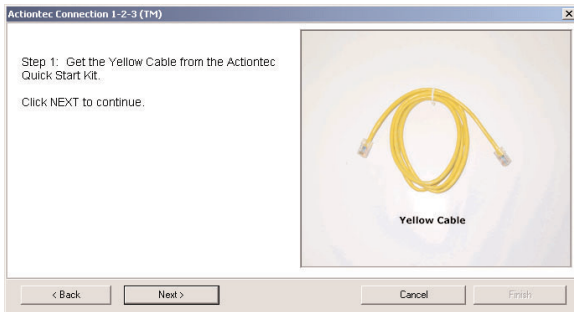
3. Select **Wired** in the next window, then click **Next**.



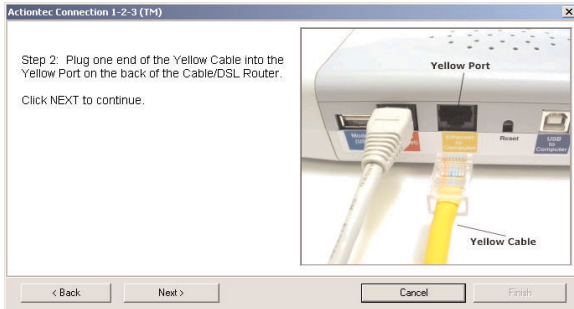
4. When the next window appears, select **Ethernet**, then click **Next**.



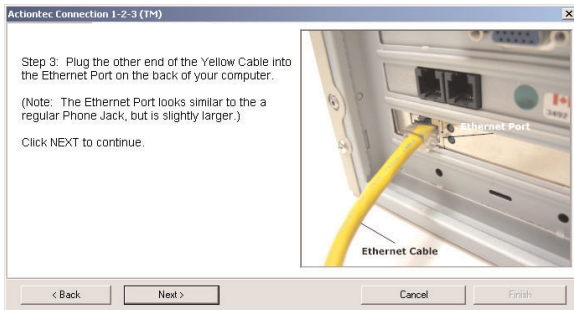
5. Get the **Yellow Cable (Ethernet)** from the Quick Start Kit, then click **Next**.



6. The next window appears. Plug one end of the **Yellow Cable** in the **Yellow Port** on the back of the Router, then click **Next**.

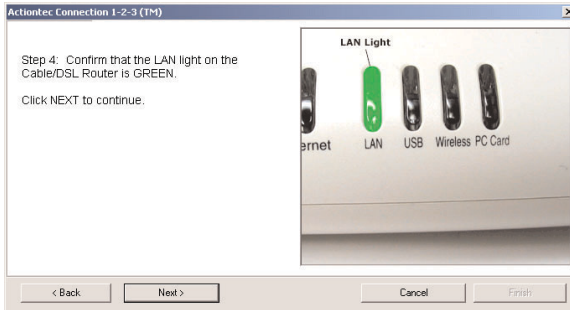


7. When the next window appears, plug the other end of the **Yellow Cable** into the **Ethernet Port** on the back of the computer.

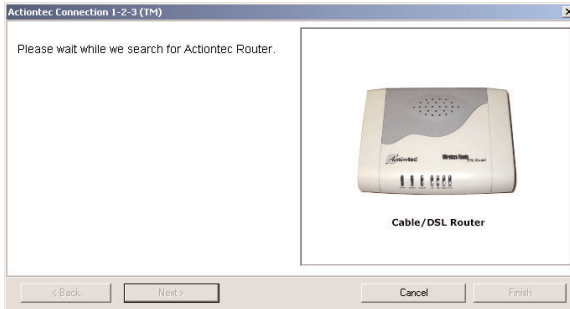


 **Note:** An Ethernet port looks similar to a phone jack, but is slightly larger.

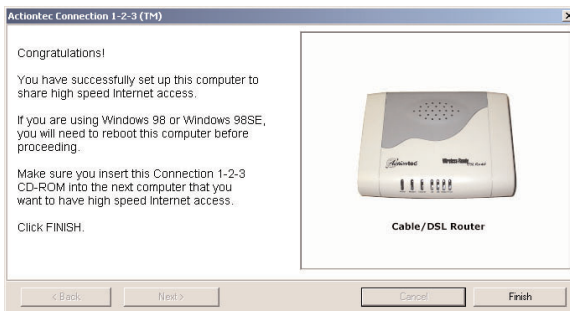
8. Ensure that the **LAN light** on the Router glows steadily green, as shown in the following window, then click **Next**.



9. The next window appears as the Router is being located.




10. When the Router is located, a Congratulations window similar to the one shown below appears.

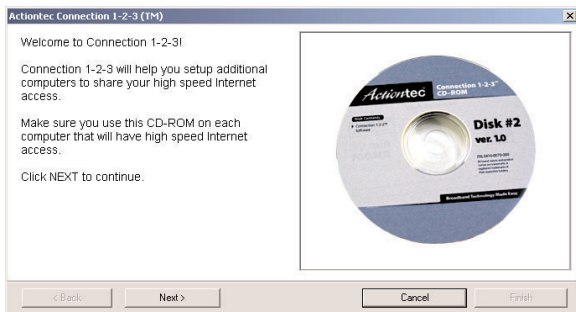


11. Click **Finish**. The computer is now connected to the Router with an Ethernet cable.

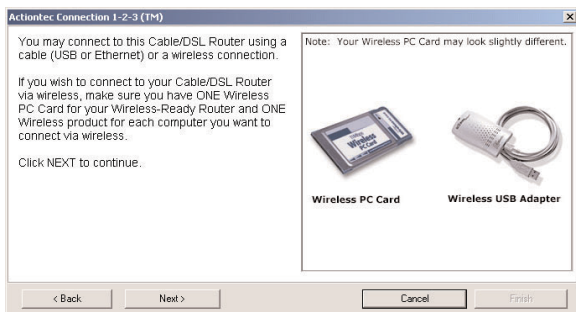
Connecting via USB

 **Note:** Only one computer can be connected to the Router via USB. If the first computer has already been connected to the Router via USB, other computers can only be connected via Ethernet cable or wirelessly.

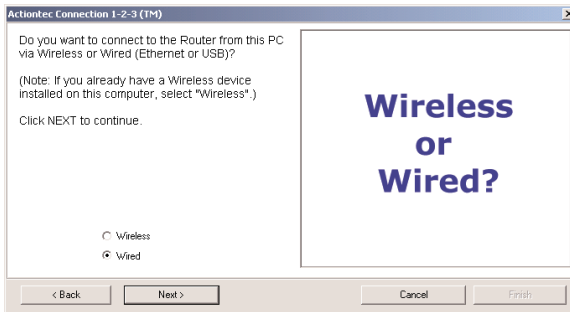
1. Insert the **Connection 1-2-3 CD** in the CD-ROM drive of the computer. When the following window appears, click **Next**.



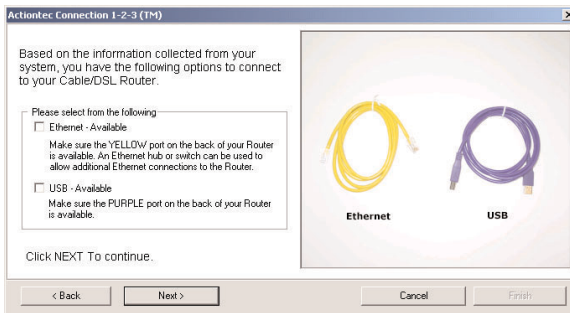
2. Read the instructions in the next window, then click **Next**.



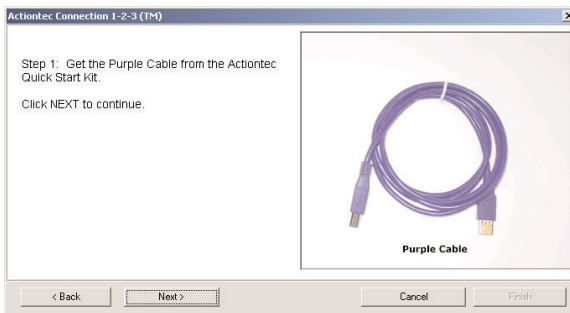
3. Select **Wired** in the next window, then click **Next**.



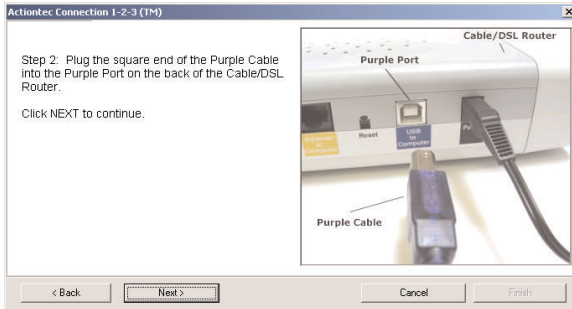
4. When the next window appears, select **USB**, then click **Next**.



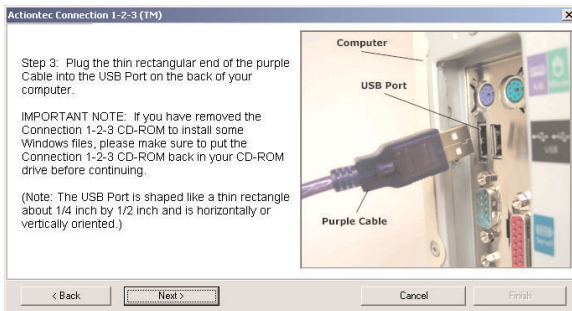
5. Get the **Purple Cable (USB)** from the Quick Start Kit, then click **Next**.



6. The next window appears. Plug square end of the **Purple Cable** in the **Purple Port** on the back of the Router, then click **Next**.

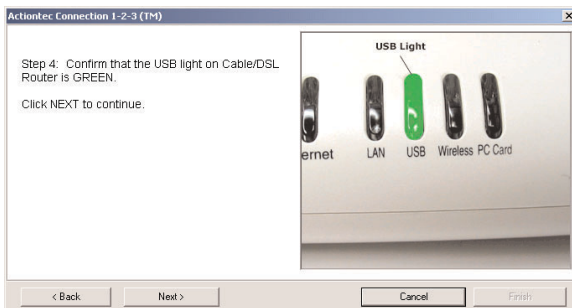


7. When the next window appears, plug the rectangular end of the **Purple Cable** into the **USB Port** on the front or back of the computer.

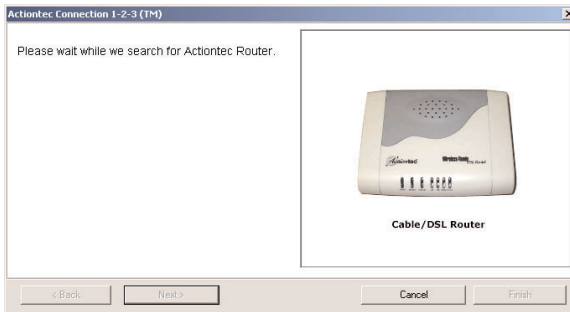


 **Note:** A USB port is shaped like a thin rectangle about 1/4 inch by 1/2 inch, and may be vertically or horizontally oriented.

8. Ensure that the **USB light** on the Router glows steadily green, as shown in the following window, then click **Next**.



9. The next window appears as the Router is being located.




10. When the Router is located, a Congratulations window similar to the one shown below appears.

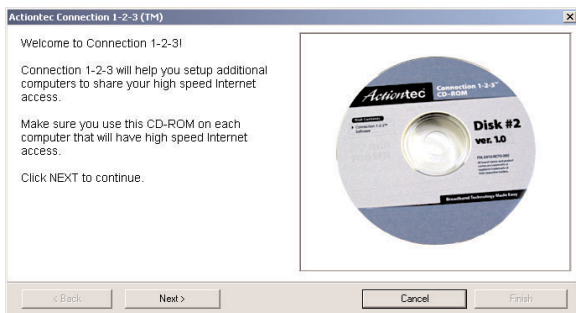


11. Click **Finish**. The computer is now connected to the Router with a USB cable.

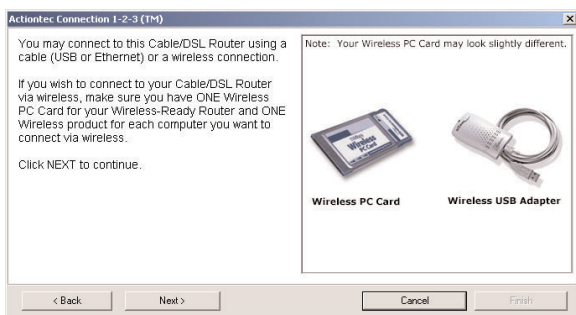
Connecting Wirelessly

 **Note:** Computers to be added to the network wirelessly must have wireless capabilities (PCI wireless adapter, USB wireless adapter, etc.).

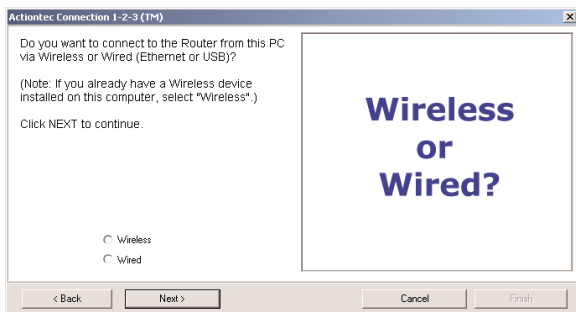
1. Insert the **Connection 1-2-3 CD** in the CD-ROM drive of the computer. When the following window appears, click **Next**.



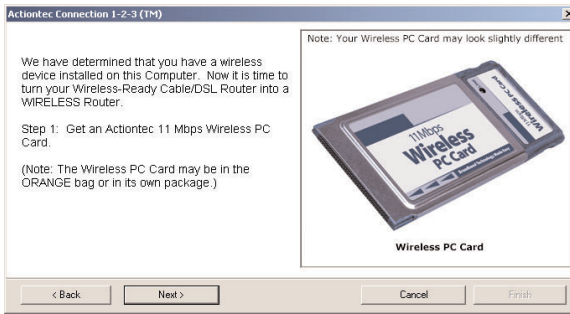
2. Read the instructions in the next window, then click **Next**.



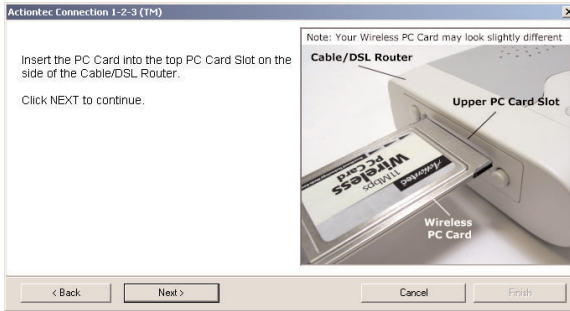
3. Select **Wireless** in the next window, then click **Next**.



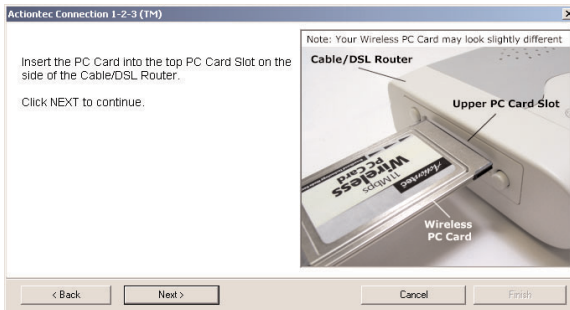
4. The following window appears. Read the instructions, then get the wireless card.



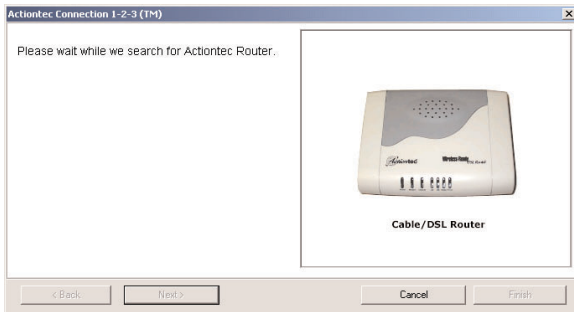
4. When the next window appears, insert the PC Card in the **upper PC Card slot** on the side of the Router.



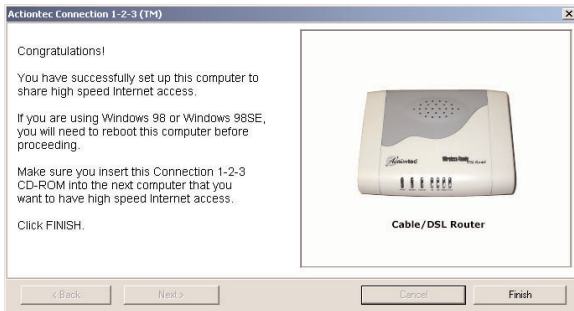
5. Another window appears. Ensure the **Wireless light** on the front of the Router glows steadily green, then click **Next**.



- The next window appears as the Router is being located.



- When the Router is located, a Congratulations window similar to the one shown below will appear.



- Click **Finish**.
- To connect a non-*Actiontec* wireless adapter to the Router, enter the following in the wireless client's settings:

Network name (SSID): ACTIONTEC

Encryption: None, or disabled

Refer to the documentation that came with the wireless adapter for more information on how to set the Network name (SSID) and encryption.

The computer is now connected to the Router wirelessly.

Using Custom Setup

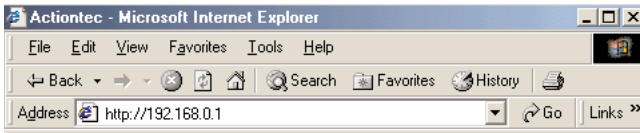
3

This chapter contains information regarding the custom setup of the DSL Router, including wireless settings, port forwarding, and DMZ hosting.

Accessing Custom Settings

To access the Custom Setup configuration screens:

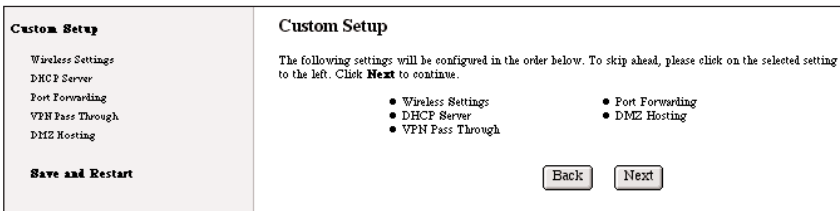
1. Open your Web browser. In the address bar type
http://192.168.0.1
then press <Enter> on your keyboard.



2. The “Main Menu” screen appears. Select **Custom Settings**.



3. The “Custom Setup” screen appears. To check all settings, or unsure of which setting to modify, select **Next**. To modify a specific configuration, click on its name in the menu on the left.



Wireless Settings

Selecting **Wireless Settings** in the “Custom Setup” screen generates the “Wireless Settings” screen. Modify the wireless capabilities of the Router here.

Wireless Settings

We recommend that you keep the current default wireless settings for your Router. The default ESSID is **ACTIONTEC**, the Channel is **1** and the default WEP encryption selection value is **Off**. The values defined on this screen must also be used for all your wireless computers.

Click **Next** to continue.

ESSID:

Channel:

WEP: Off 64-bit 128-bit

NOTE: WEP (Wired Equivalent Privacy) encryption is an optional security measure for your wireless network.

ESSID

ESSID is the network name assigned to your wireless network. The factory default setting is “ACTIONTEC.” Although *Actiontec* recommends you keep the default value intact, you can change the ESSID value, using any combination of alphanumeric characters (i.e., A-Z, a-z, 0-9). **All wireless-capable computers included on the Router’s wireless network must have this same ESSID value.** (For the *Actiontec* 11 Mbps Wireless PC Card, the ESSID value must be the same as the SSID value.)

Channel

Channel assigns the frequency band at which the Router communicates. The factory default value is set to 1.

Wireless Equivalent Privacy

Wireless Equivalent Privacy (WEP) is an encryption method used with the 802.11b standard to ensure data security over wireless networks. The Router offers three

levels of WEP: Off, 64-bit, and 128-bit. If you do not require encryption, *Actiontec* recommends you select **Off** (the factory default setting). Encryption is not required for wireless operation, and can reduce network performance. If you select **64-bit** or **128-bit** encryption, click **Next** to continue WEP configuration.

Off

Selecting **Off** disables encryption. Selecting this option allows any computer with wireless capability and the correct ESSID value to join your wireless network.

64-bit WEP

64-bit WEP requires four separate keys. Each key comprises five hexadecimal digit pairs. A hexadecimal digit consists of an alphanumeric character ranging from 0-9 or A-F. An example of a 64-bit WEP key is: 4E-A3-3D-68-72. To create a set of 64-bit WEP keys, enter five hexadecimal digit pairs in each **Key** text box (**Key 1**, **Key 2**, **Key 3**, **Key 4**). After you activate 64-bit WEP on the Router, a computer with wireless capability can join the network only if these same keys are entered in the computer's wireless encryption scheme.



Note: If the WEP keys on the Router have been changed, the WEP keys on any wireless clients must also be changed, or they will not be able to access the Router.

Wireless Settings: 64-Bit WEP Key

Key 1:

Key 2:

Key 3:

Key 4:

NOTE: A hexadecimal digit consists of alphanumeric characters in the range 0-9 or A-F. A 64-bit encryption value should appear like this: 4D-33-EF-C6-1A

128-bit WEP


128-bit WEP requires one key of 13 hexadecimal pairs. A hexadecimal digit consists of alphanumeric characters ranging from 0-9 or A-F. An example of a 128-bit WEP key is: 3D-44-FE-6C-A1-EF-2E-D3-C4-21-74-5D-B1. To create a 128-bit WEP key, enter 13 hexadecimal digit pairs in the **Key:** text box. After you activate 128-bit WEP on the Router, a computer with wireless capability can join the network only if this key is entered in the computer's wireless encryption scheme.

 **Note:** If the WEP keys on the Router have been changed, the WEP keys on any wireless clients must also be changed, or they will not be able to access the Router.

Wireless Settings: 128-Bit WEP Key

Key :

NOTE: A hexadecimal digit consists of alphanumeric characters in the range 0-9 or A-F. A 128-bit encryption value should appear like this: 3D-44-FE-6C-A1-EF-2E-D3-C4-21-74-5D-B1.

 **Note:** Not all wireless PC Cards support 128-bit WEP. Ensure that all PC Cards on your networked computers support 128-bit WEP before activating.

DHCP Server

Selecting **DHCP Server** in the “Custom Setup” screen generates the “DHCP Server” screen. The Router 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**.

DHCP Server

Your Router will automatically assign an IP Address to each computer in your network.

We recommend that you keep the current default DHCP Server setting. If you already have a DHCP server in your network, you may need to turn this function off.

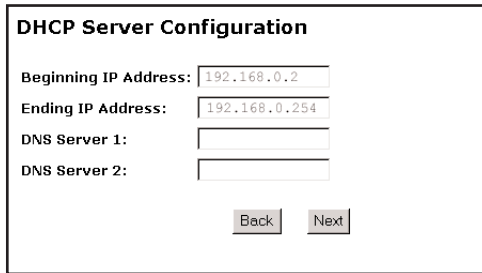
Click **Next** to continue.

On **Off**

Actiontec 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 Router. 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.



DHCP Server Configuration

Beginning IP Address:

Ending IP Address:

DNS Server 1:

DNS Server 2:

Beginning IP Address - the IP address at which the DHCP server starts assigning IP addresses. Actiontec 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. Actiontec recommends keeping the factory default settings (192.168.0.254).

The beginning and ending IP addresses define the IP address range of the Router. If the default values are left intact, the Router 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 Router must be on the same subnet as the IP address range it generates. For instance, if the Router’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.

VPN Pass Through

Selecting **VPN Pass Through** in the “Custom Setup” screen generates the “VPN Pass Through” window. To allow Virtual Private Networking (VPN) using IPSec/L2TP (with multiple, client-initiated pass-through sessions), click **On**. Note that VPN using PPTP is always on by default.

VPN Pass Through

The default setting for IPSec/L2TP pass through is **Off**. Please turn it **On** to support IPSec/L2TP Virtual Private Networks.

IPSec/L2TP: **On** **Off**

(PPTP pass through for use with PPTP Virtual Private Networks is always on by default.)

Port Forwarding

Selecting **Port Forwarding** in the “Custom Setup” screen generates the “Port Forwarding” screen. Port forwarding allows certain programs to bypass the Router’s built-in firewall to access parts of the network (for hosting a Web or ftp server, for example). To use port forwarding, select one of the Internet services listed, activate it by clicking on its “On” radio button, then enter the IP address of the computer on the network receiving the selected service.

Port Forwarding

Please select Port Forwarding for key Internet services below.

Services		IP Address
HTTP (port 80)	<input type="radio"/> On <input checked="" type="radio"/> Off	<input style="width: 100%;" type="text"/>
FTP (port 21)	<input type="radio"/> On <input checked="" type="radio"/> Off	<input style="width: 100%;" type="text"/>
TELNET (port 23)	<input type="radio"/> On <input checked="" type="radio"/> Off	<input style="width: 100%;" type="text"/>
EMAIL/POP3 (port 110)	<input type="radio"/> On <input checked="" type="radio"/> Off	<input style="width: 100%;" type="text"/>
EMAIL/SMTP (port 25)	<input type="radio"/> On <input checked="" type="radio"/> Off	<input style="width: 100%;" type="text"/>

Advanced Port Forwarding Settings

Clicking **Advanced Port Forwarding Settings** generates the “Advanced Port Forwarding” screen. This screen allows the user more control over port forwarding settings. To configure:

1. Enter the IP port range in the “IP Port Range” text boxes. (If more than 10 ports are needed, Actiontec 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**.

Port Forwarding

Please enter ports and port ranges, that some internet applications require to be forwarded, in the spaces below.

IP Port Range	Protocol	IP Address
<input type="text"/> to <input type="text"/>	TCP ▾	<input type="text"/>
<input type="button" value="Add"/>	<input type="button" value="Remove"/>	

List of Forwarded Ports

DMZ Hosting

Selecting **DMZ Hosting** in the “Custom Setup” 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

Your Router can be configured to support Online Gaming and Internet Conferencing services on a network computer. To use this feature, enter the IP Address of the computer in the DMZ Host field below.

DMZ Host IP Address

On Off

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 Router’s network. Access to network resources is unavailable while DMZ hosting is active. *Actiontec* recommends activating DMZ hosting only as long as necessary.

Status

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

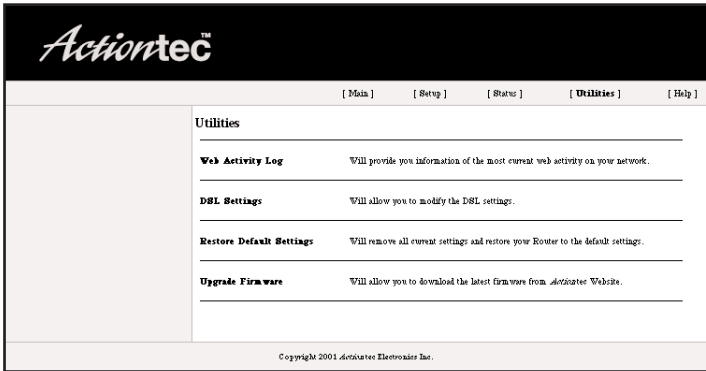
Current Status

Firmware Version:
MAC Address:
WAN
Connection:
Mode:
IP Address:
Subnet Mask:
Gateway:
DNS #1:
DNS #2:
LAN
IP Address:
DHCP Server:
DSL
Mode:
Connection:
Speed (down/up):

Using Utilities

4

To access the Routers' 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 Router's factory default settings restored, and the Router's firmware upgraded.

Web Activity Log

The Web Activity Log provides information about the Web sites each computer on the Router'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 Router’s VPI, VCI, and Mode settings can be changed from this screen. Actiontec recommends not changing these values without consulting the ISP.

<p>Web Activity Log</p> <p>DSL Settings</p> <p>Restore Default Settings</p> <p>Upgrade Firmware</p>	<p>DSL Settings</p> <p>This screen is designed to allow modifying the default DSL settings for connection to your Broadband Service Provider. It is recommended to change these values only after consultation with your Broadband Service Provider.</p> <p>VPI#0 - 255): <input type="text"/></p> <p>VCI#0 - 65535): <input type="text"/></p> <p>Mode: <input type="text" value="MULTIMODE"/></p> <p><input type="button" value="Save and Restart"/></p>
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Restore Default Settings

To restore the Router 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 Router’s settings in the Custom Setup screens will be lost and the factory default settings will be restored. During this process, the Router’s power LED flashes and the Router is disabled.



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

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

<p>Web Activity Log</p> <p>DSL Settings</p> <p>Restore Default Settings</p> <p>Upgrade Firmware</p>	<p>Restore Default Settings</p> <p>To restore your Router to default settings click on the “Restore Default Settings” button below.</p> <p><input type="button" value="Restore Default Settings"/></p>
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Upgrade Firmware

Selecting **Upgrade Firmware** in the “Utilities” screen generates the “Upgrade Firmware” screen. *Actiontec* periodically posts firmware upgrades to enhance the Router’s capabilities.



To upgrade the Router’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 Router during the Upgrade Firmware process. Doing so may result in permanent damage to the Router.

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

Troubleshooting

5

This chapter contains a list of problems that may be encountered while using the Router, and solutions to overcome the problem.

LAN Connection Failure

- Ensure the Router is properly installed, the LAN connections are correct, and the power is on.
- If an Ethernet cable is being used to connect the Router, ensure that it is a crossover type cable, not a straight-through 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 (192.168.1.2 through 198.168.1.254).
- Ensure the Subnet Mask address is set to 255.255.255.0 by clicking **Status** in the “Main Menu” screen.
- Verify the Router’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 Router is on and connected properly.
- Verify the Modem LED is lit. If not, check all connections
- Verify the Router'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.

Router and computer will not connect wirelessly


- Verify the Router is powered up and the wireless card is inserted properly.
- Ensure there are no other wireless access points in the vicinity.
- Ensure the wireless card installed in the computer has an SSID identical to that of the Router. The default ESSID setting of the Router is "ACTIONTEC."
- Ensure the wireless client and the Router are set to the same encryption scheme.

Setting Up Static IP Address

A

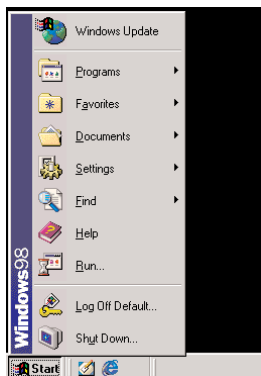
To communicate with the Router from a computer on the network (to use the Web Configuration Utility, for example), the user may have to switch the IP address settings from DHCP-enabled to static IP, so that the computer and the Router are on the same subnet.

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

 **Note:** The following procedures are based on the Router's factory default IP address. If the Router'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**.



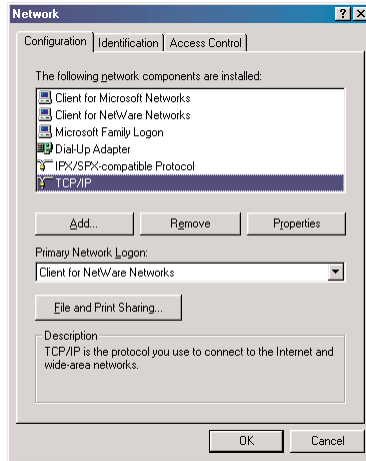
3. Another menu appears. Select **Control Panel**.



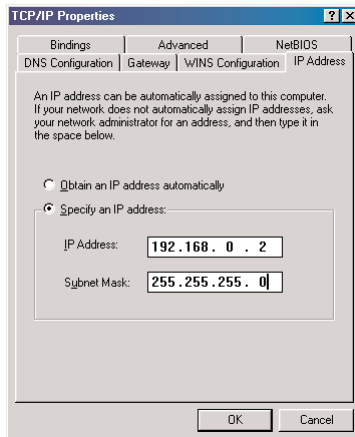
4. When the “Control Panel” window appears, double-click **Network**.



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



- The “TCP/IP Properties” window appears. Select IP Address.



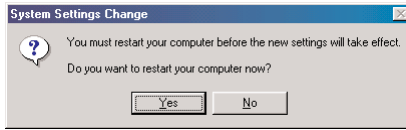
- In the IP Address tab, make sure the the circle next to “Specify an IP Address” is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.
- Enter the following numbers in the “IP Address” text box:
192.168.0.2
Do not include the periods; 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.

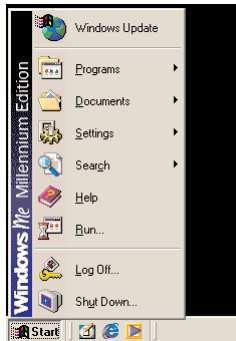
10. Click **OK**. The TCP/IP Properties window disappears.
11. In the Network window, click **OK**. The Network window disappears.
12. The “System Settings Change” window appears, asking whether the computer should be restarted. Click **Yes**.



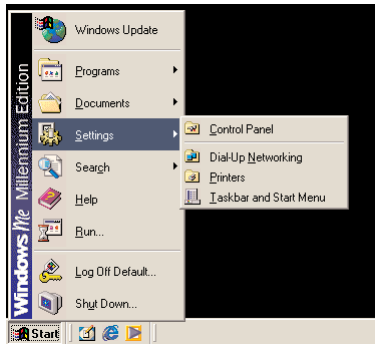
The computer restarts. It is now set up with a static IP address, allowing the user to access the Router’s Advanced Setup utility.

Windows Me

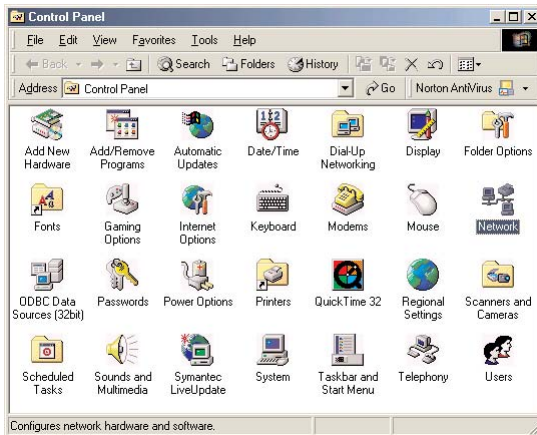
1. From the desktop, click on the **Start** button in the lower left corner.
2. From the menu that appears, select **Settings**.



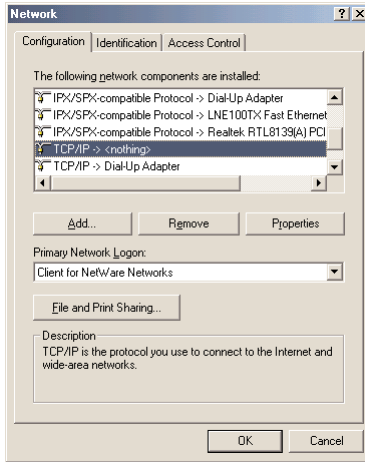
3. Another menu appears. Select **Control Panel**.



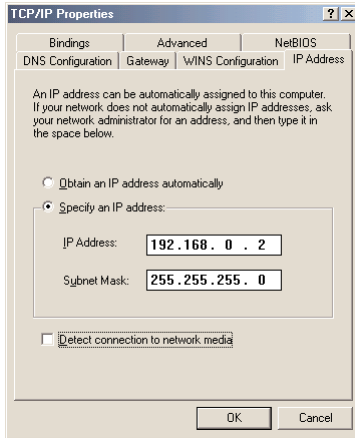
4. When the “Control Panel” window appears, double-click **Network**.



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



- The “TCP/IP Properties” window appears. Click **IP Address**.



- 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.

- Enter the following numbers in the “IP Address” text box:

192.168.0.2

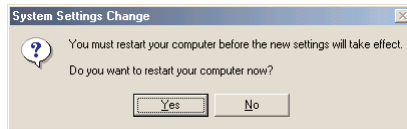
Do not include the periods; they are automatically entered.

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

255 . 255 . 255 . 0

Do not include the periods; they are automatically entered.

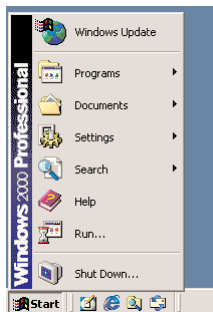
10. Click **OK**. The TCP/IP Properties window disappears.
11. If there is a check in the box next to “Detect connection to network media,” click on it to uncheck the box.
12. In the Network window, click **OK**. The Network window disappears.
13. The “System Settings Change” window appears, asking whether the computer should be restarted. Click **Yes**.



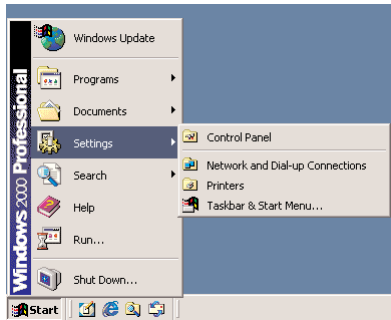
The computer restarts. It is now set up with a static IP address, allowing the user to access the Router’s Advanced Setup utility.

Windows 2000

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



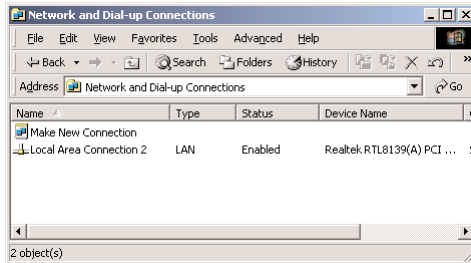
3. Another menu appears. Select **Control Panel**.



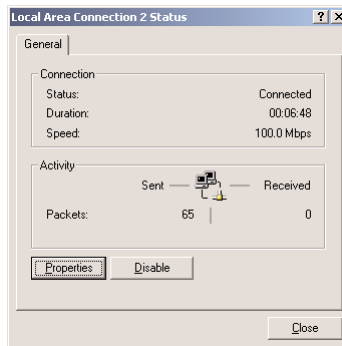
4. When the “Control Panel” window appears, double-click **Network and Dial-up Connections**.



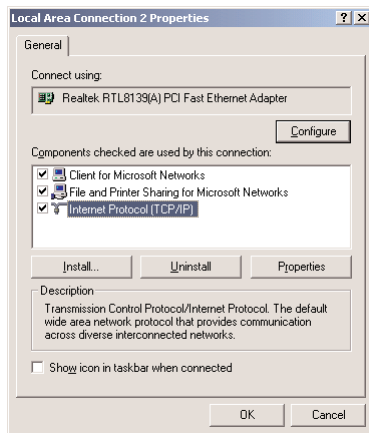
5. In the “Network and Dial-up Connections” window, double-click **Local Area Connection**. A number may be displayed after the Local Area Connection. If there is more than one Local Area Connection listed, locate the one that corresponds to the network card installed in the computer by finding the name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



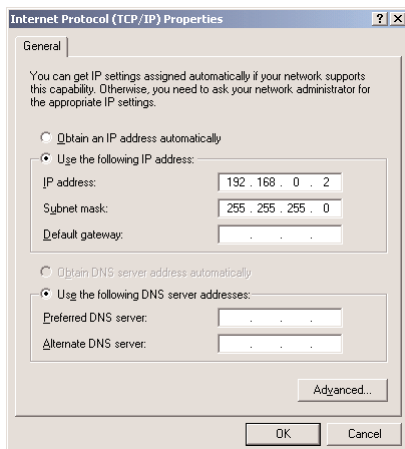
6. The “Local Area Connection Status” window appears. Select **General**, then click **Properties**.



- The “Local Area Connection Properties” window appears. Click **General**.
- In the “Components checked are used by this connection” list box, double-click **Internet Protocol (TCP/IP)**.



- The “Internet Protocol (TCP/IP) Properties” window appears.



- 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.
- 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 Router’s Advanced Setup utility.

Windows XP

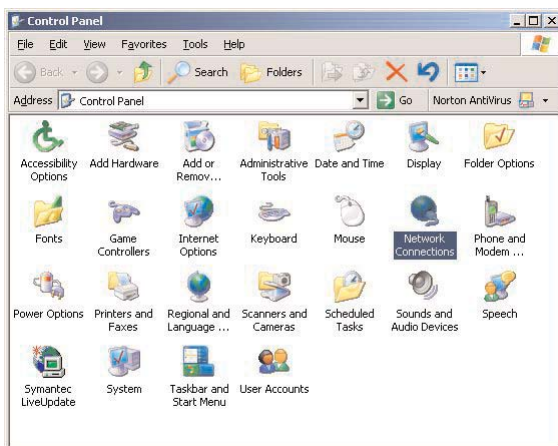
1. From the desktop, click on the **Start** button in the lower left corner.
2. From the menu that appears, select **Settings**.



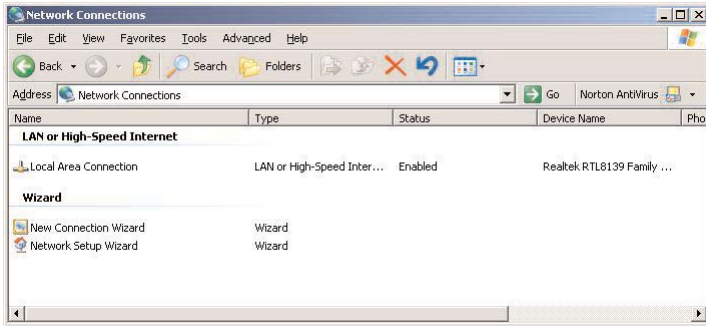
3. Another menu appears. Select **Control Panel**.



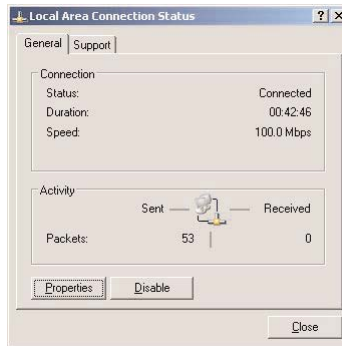
4. When the “Control Panel” window appears, double-click **Network Connections**.



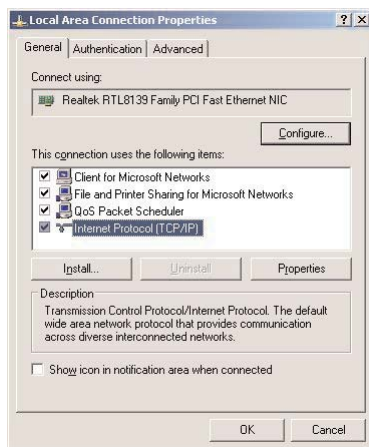
- In the “Network Connections” window, double-click **Local Area Connection**. A number may be displayed after the Local Area Connection. If there is more than one Local Area Connection listed, locate the one that corresponds to the network card installed in your computer by finding the name of the network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



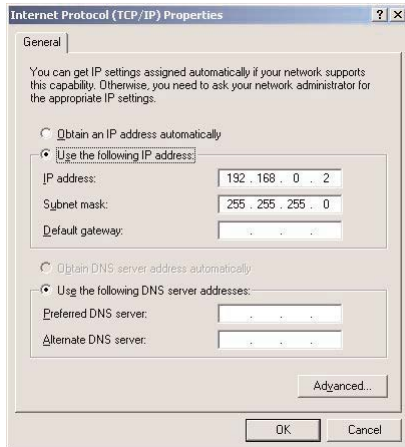
- The “Local Area Connection Status” window appears. Select **General**, then click **Properties**.



- The “Local Area Connection Properties” window appears. Select **General**.
- In the “Components checked are used by this connection” list box, double-click **Internet Protocol (TCP/IP)**.



- The “Internet Protocol (TCP/IP) Properties” window appears.



- 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 Router’s Advanced Setup utility.

Specifications



General

Model Number

GEU404000-01 (Wireless-Ready Cable/DSL Router)

Standards

IEEE 802.3 (10BaseT)

IEEE 802.11b (Wireless, with *Actiontec* 11Mbps Wireless PC Card installed)

Protocol

CSMA/CD

WAN

USB port for *Actiontec*'s USB Home DSL modem

Ethernet port for any Ethernet cable/DSL modem

LAN

10/100 RJ-45 port

USB port

Expansion

PCMCIA expansion slots (2)

Speed

LAN Ethernet: 10 Mbps

Wireless: See "Wireless Operating Range"

Cabling Type

10BaseT: UTP/STP Category 3 or 5

Wireless Operating Range

(with Actiontec 11Mbps Wireless PC Card installed)

Indoors

Up to 30M (100 ft.) @ 11 Mbps

Up to 50M (165 ft.) @ 5.5 Mbps

Up to 70M (230 ft.) @ 2 Mbps

Up to 91M (300 ft.) @ 1 Mbps

Outdoors

Up to 152M (500 ft.) @ 11 Mbps

Up to 270M (885 ft.) @ 5.5 Mbps

Up to 396M (1300 ft.) @ 2 Mbps

Up to 457M (1500 ft.) @ 1 Mbps

Topology

Star (Ethernet)

Certifications

FCC Class B

FCC Class C

CE Mark Commercial

UL

Wi-Fi

Environmental

Power Input

External, 12V DC, 1 A

Operating Temperature

0° C to 40° C (32°F to 104°F)

Storage Temperature

-20°C to 70°C (-4°F to 158°F)

Operating Humidity

10% to 85% non-condensing

Storage Humidity

5% to 90% non-condensing

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 *Actiontec 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:

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

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Hardware: *Actiontec* 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 *Actiontec* Electronics or its authorized reseller.

Actiontec Electronics’ sole obligation under this express warranty shall be, at *Actiontec*’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, *Actiontec* 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 *Actiontec* Electronics, Inc. Replacement products may be new or reconditioned. *Actiontec* 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: *Actiontec* 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 *Actiontec* Electronics or its authorized reseller. *Actiontec* 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 *Actiontec* Electronics and will only be available for download at the *Actiontec* Web site, www.actiontec.com. *Actiontec* Electronics’ sole obligation under this express warranty shall be, at *Actiontec* 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 *Actiontec* Electronics published specifications. Customer assumes responsibility for the selection of the appropriate applications program and associated reference materials. *Actiontec* 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 *Actiontec* Electronics software product documentation or specifications as being compatible, *Actiontec* 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 *Actiontec* Electronics published specifications or user guide.

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

Actiontec 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 *Actiontec Electronics* for repair, whether under warranty or not.

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Dispute Resolution: The customer may contact the Director of Technical Support in the event the Customer is not satisfied with *Actiontec 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.

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