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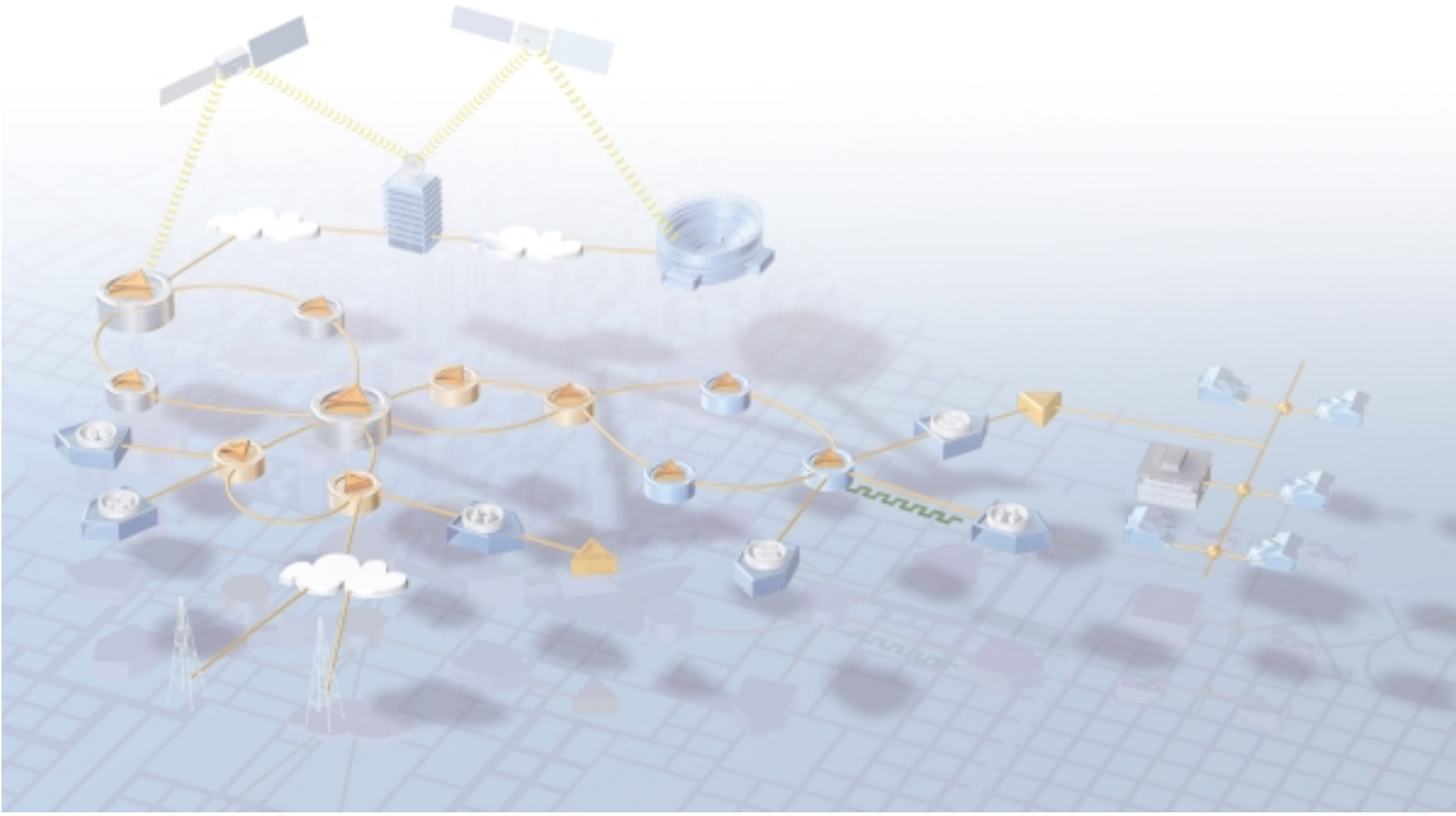
WebSTAR™ DPR2320/2325™ and EPR2320/2325™ Gateway Cable Modems User's Guide

Software Release v2.0.1 r1132



WebSTAR™ DPR2320/2325™ and EPR2320/2325™ Gateway Cable Modems User's Guide

Introduction

Welcome to the exciting world of home and office networking. Your new WebSTAR™ DPR2320™ or EPR2320™ Gateway Cable Modem allows several users to share one high-speed broadband connection across multiple PCs, laptops, digital cameras, personal data assistants (PDAs), and Internet devices. The WebSTAR DPR2320 and EPR2320 Gateway Cable Modems make sharing files and photos with your family and friends hassle free. With a WebSTAR Gateway Cable Modem, your Internet enjoyment and business productivity will surely soar.

This guide provides procedures and recommendations for placing, installing, configuring, operating, and troubleshooting your gateway cable modem for Internet access and for high-speed wired or wireless broadband networking for your home or office. Refer to the appropriate section in this guide for the specific information you need for your situation. Contact your cable service provider for more information about subscribing to these services.

Benefits and Features

Your new gateway cable modem offers the following outstanding benefits and features:

- Provides a high-speed broadband Internet connection that energizes your online experience, and makes downloading and sharing files and photos with your family and friends hassle free
- Allows you to attach multiple devices in your home or office to the gateway cable modem for high-speed networking and sharing of files and folders without first copying them onto a CD or diskette
- Facilitates high-speed wireless networking of PCs, laptops, and PDAs
- Offers an integrated router (gateway) to simplify setting up a home or office network
- Features Plug and Play operation for easy set up and installation
- Provides parental control and advanced firewall technology
- Includes both USB and Ethernet connections
- Allows vertical, horizontal, or wall-mount placement
- Allows automatic software upgrades by your cable service provider
- Assures a broad range of interoperability with most cable service providers by complying with Data Over Cable System Interface Specifications (DOCSIS) 1.0, 1.1, and 2.0 standards along with CableHome 1.0 specifications

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IMPORTANT RULES FOR SAFE OPERATION

Note to Installer

Note to CATV System Installer

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC (Section 54, Part I of the Canadian Electrical Code), that provides guidelines for proper grounding and, in particular, specifies that the CATV cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

AVIS

RISQUE DE CHOC ÉLECTRIQUE
NE PAS OUVRIR

CAUTION: To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.

WARNING
TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

This symbol is intended to alert you that uninsulated voltage within this product may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this product.

This symbol is intended to alert you of the presence of important operating and maintenance (servicing) instructions in the literature accompanying this product.

Read and Retain These Instructions

- Read all of the instructions before you operate this equipment. Give particular attention to all safety precautions. Retain the instructions for future reference.
- Comply with all warning and caution statements in the instructions. Observe all warning and caution symbols that are affixed to this equipment.
- Comply with all instructions that accompany this equipment.

Cleaning the Equipment

Before cleaning this equipment, unplug it from the electrical outlet. Use a damp cloth to clean this equipment. Do not use a liquid cleaner or an aerosol cleaner. Do not use a magnetic/static cleaning device (dust remover) to clean this equipment.

Placement

WARNING:

Avoid personal injury and damage to this equipment. An unstable surface may cause this equipment to fall.

Place this equipment in a location that is close enough to an electrical outlet to accommodate the length of the power cord. Place this equipment on a stable surface. The surface must support the size and weight of this equipment. Place this equipment either horizontally or vertically.

Accessories

Do not use accessories with this equipment unless recommended by your cable service provider.

Ventilation

This equipment has openings for ventilation that protect it from overheating. To ensure the reliability of this equipment, do not obstruct the openings.

- Do not place other equipment, lamps, books, or any other object on the top of or beside this equipment.
- Do not place this equipment in any of the locations that follow:
  - On a bed, sofa, rug, or similar surface
  - Over a radiator or a heat register
- In an enclosure, such as a bookcase or equipment rack, unless the installation provides proper ventilation

Overloading

Do not overload electrical outlets, extension cords, or integral convenience receptacles, as this can result in a risk of fire or electric shock. For equipment that requires battery power or other sources to operate, refer to the operating instructions for that equipment.

Object and Liquid Entry

Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Do not expose this equipment to liquid or moisture. Do not place this equipment on a wet surface. Do not spill liquids on or near this equipment.

Lightning and Power Surges

Plug your equipment into a surge protector in order to reduce the risk of damage from lightning strikes and power surges. If you are unsure of the type of surge protector to use, contact your cable service provider.

Servicing

Do not open the cover of this equipment. If you open the cover, your warranty will be void. Refer all servicing to qualified personnel only. Contact your cable service provider for instructions.

Power Cord Protection

Arrange all power cords so that people cannot walk on the cords, place objects on the cords, or place objects against the cords, which can damage the cords. Pay particular attention to cords that are at plugs, at electrical outlets, and at the places where the cords exit the equipment.

Power Sources

A label on the AC power adapter that is supplied with this equipment indicates the correct power source for this equipment. Operate this equipment only from an electrical outlet that has the voltage and frequency that the label indicates.

If you are unsure of the type of power supply to your residence, consult Scientific-Atlanta, Inc., or your local power company.

Grounding

This equipment may be provided with a three-prong plug. Properly ground (earth) this equipment by inserting the plug into a grounded electrical, three-socket outlet. If you are unable to insert this plug fully into the outlet, contact an electrician to replace your obsolete outlet.

Damage that Requires Service

For damage that requires service, unplug this equipment from the electrical outlet. Contact your cable service provider when any of the following situations occur:

- There is damage to the power cord or plug
- Liquid enters the equipment
- A heavy object falls on the equipment
- There is exposure to rain or water
- Operation is not normal (the instructions describe the proper operation)
- If you drop this equipment, or damage the cabinet of this equipment
- If this equipment exhibits a distinct change in performance

Upon completion of any service or repairs to this equipment (cable modem), ask the service technician to perform safety checks to determine that the equipment is in proper operating condition.

What's In the Carton?

When you receive your gateway cable modem, you should check the equipment and accessories to verify that each item is in the carton and that each item is undamaged. The carton contains the following items:

One Model DPR2320 or EPR2320 Gateway Cable Modem with detachable antenna

One Ethernet cable (CAT5/RJ-45)

One power adapter with power cord

One USB cable

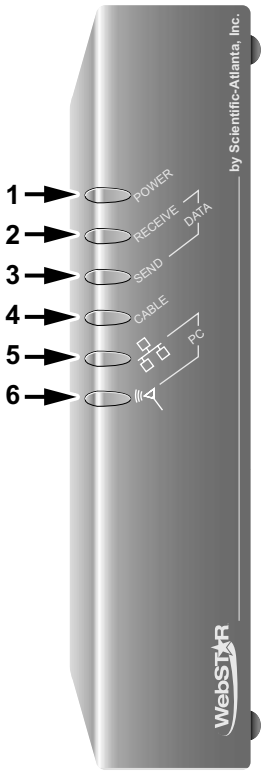
One CD-ROM containing the user's guide and the USB drivers

If any of these items are missing or damaged, please contact your cable service provider for assistance.

You will need an optional cable signal splitter and additional standard RF coaxial cables if you want to connect a VCR, a Digital Home Communications Terminal (DHCT) or a set-top converter, or a TV to the same cable connection as your cable modem.

Front Panel Description

The front panel of your cable modem provides status lights that indicate how well and at what state your cable modem is operating. After the cable modem is successfully registered on the network, the POWER and CABLE status indicators illuminate continuously to show that the cable modem is active and fully operational. See **Front Panel Status Indicator Functions**, later in this guide, for more information on front panel status indicator functions.



T10948

1 **POWER**—Illuminates solid green to indicate that power is being applied to the cable modem

2 **RECEIVE DATA**—Blinks to indicate that the cable modem is receiving data from the cable network

3 **SEND DATA**— Blinks to indicate that the cable modem is sending data to the cable network

4 **CABLE**—Illuminates solid green when the cable modem is registered on the network and fully operational. This indicator blinks to indicate one of the following conditions:

- The cable modem is booting up and not ready for data
- The cable modem is scanning the network and attempting to register
- The cable modem has lost registration on the network and will continue blinking until it registers again

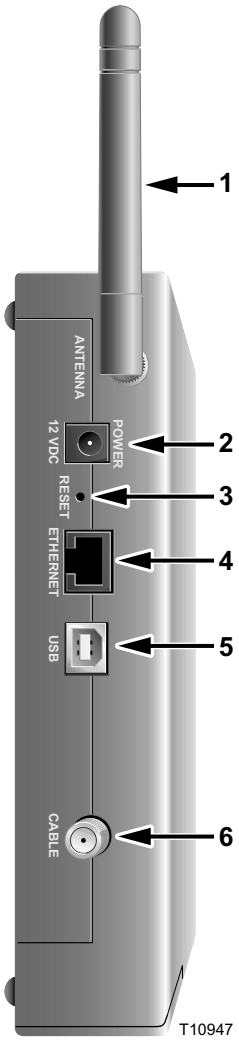
5 **PC**—Illuminates solid green to indicate that an Ethernet/USB carrier is present and blinks to indicate that Ethernet/USB data is being transferred between the PC and the cable modem

6 **PC Wireless**—Illuminates solid green to indicate that a wireless access point is enabled and blinks to indicate that wireless data is being transferred over the wireless connection

Note: After the cable modem is successfully registered on the network, the **POWER** (LED 1) and **CABLE** (LED 4) indicators illuminate continuously to indicate that the cable modem is online and fully operational.

Back Panel Description

The following illustration describes the back panel components of the DPR2320 and the EPR2320.



1 **ANTENNA**— Provides a communication connection for the built-in wireless access point (WAP) to allow wireless devices to communicate with the cable modem

2 **POWER**—Connects the cable modem to the DC output of the AC power adapter that is provided with your cable modem.

> **CAUTION:**
>
> **Avoid damage to your equipment. Only use the AC power adapter and power cord that is provided with your cable modem.**

3 **RESET**—Reset-to-Default button (Factory Reset)

This button is for maintenance purposes only.
Do not use unless directed to do so by your service provider.

4 **ETHERNET**—RJ-45 Ethernet port connects to the Ethernet port on your PC or your home network

5 **USB**—12 Mbps USB port connects to the USB port on your PC

6 **CABLE**—F-Connector connects to an active cable signal from your cable service provider

Where is the Best Location for My Gateway Cable Modem?

The ideal location for your gateway cable modem is where it has access to outlets and other devices. Think about the layout of your home or office, and consult with your cable service provider to select the best location for your gateway cable modem.

Consider these recommendations:

- Position your PC and gateway cable modem so that they are located near an AC power outlet.
- Position your PC and gateway cable modem so that they are located near an existing cable input connection to eliminate the need for an additional cable outlet. There should be plenty of room to guide the cables away from the modem and the PC without straining or crimping them.
- Airflow around the gateway cable modem should not be restricted.
- Choose a location that protects the gateway cable modem from accidental disturbance or harm.
- Read this user's guide thoroughly before you decide where to place your gateway cable modem.

What are the System Requirements for Internet Service?

To ensure that your gateway cable modem operates efficiently for high-speed Internet service, verify that all of the Internet devices on your system meet or exceed the following minimum hardware and software requirements.

You will also need an active cable input line and an Internet connection.

Minimum System Requirements for a PC

- A PC with a Pentium MMX 133 processor or greater
- 32 MB of RAM
- Web browsing software (Netscape or Internet Explorer)
- CD-ROM drive

Minimum System Requirements for Macintosh

- MAC OS 7.5
- 32 MB of RAM

System Requirements for an Ethernet Connection

- A PC with Microsoft Windows 95 operating system (or later) with TCP/IP protocol installed, or an Apple Macintosh computer with TCP/IP protocol installed
- An active 10/100BaseT Ethernet network interface card (NIC) installed PC

System Requirements for a USB Connection

- A PC with Microsoft Windows 98SE, ME, 2000, or XP operating system
- A master USB port installed in your PC

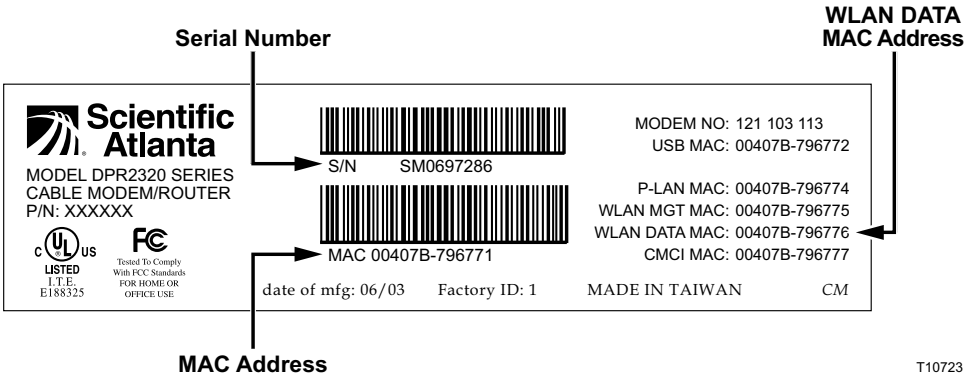
How Do I Set Up My High-Speed Internet Access Account?

Before you can use your gateway cable modem, you need to have a high-speed Internet access account. If you do not have a high-speed Internet access account, you need to set up an account with your local cable service provider. Choose *one* of the following two options.

I Do Not Have a High-Speed Internet Access Account

If you do *not* have a high-speed Internet access account, your cable service provider will set up your account and become your Internet Service Provider (ISP). Internet access enables you to send and receive e-mail, access the World Wide Web, and receive other Internet services. When you contact your cable service provider, they will ask you for the serial number, the Media Access Control (MAC) address, and the WLAN data MAC address of the cable modem.

These numbers appear on a label located on the side of the gateway cable modem. The serial number consists of a series of alphanumeric characters preceded by **S/N**. The MAC address consists of a series of alphanumeric characters preceded by **MAC**. The WLAN data MAC address consists of a series of alphanumeric characters preceded by **WLAN DATA MAC**. See the following illustration of a sample label.



Write down these numbers in the space provided here.

Serial Number _____
MAC Address _____
WLAN DATA MAC Address _____

I Already Have an Existing High-Speed Internet Access Account

If you have an existing high-speed Internet access account, you must give your cable service provider the serial number, the MAC address, and the WLAN data MAC address of the cable modem. Refer to the serial number and MAC address information listed previously in this section.

You may be able to continue to use your existing e-mail account with your gateway cable modem. Contact your cable service provider for more information.

How Do I Connect My Devices to Use the Internet?

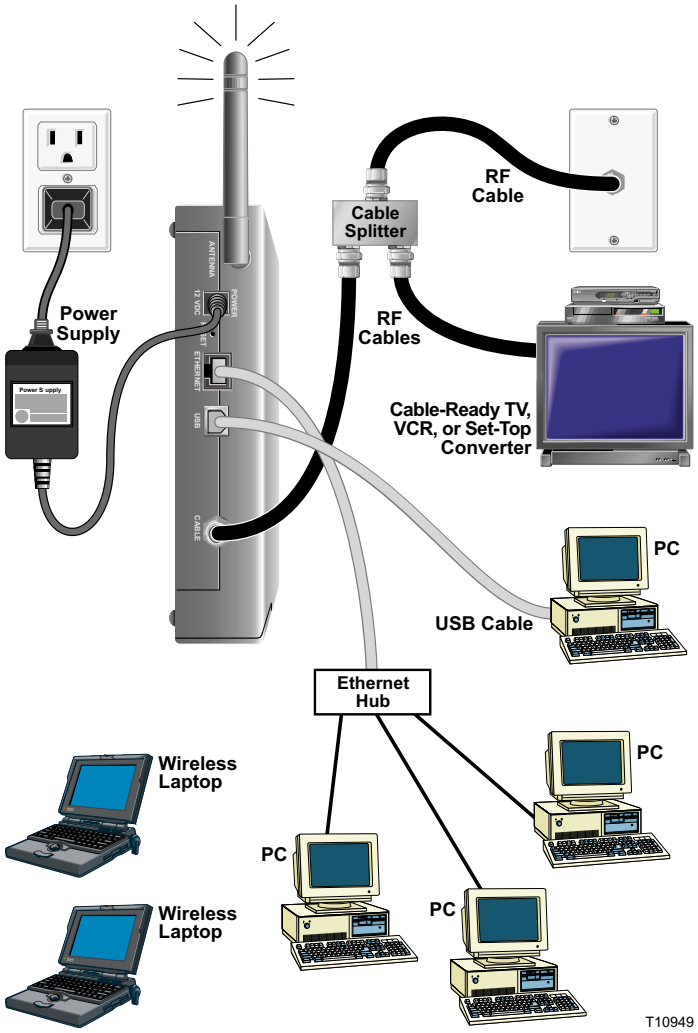
You can use your gateway cable modem to access the Internet, and you can share that Internet connection with other Internet devices in your home or office. Sharing one connection among many devices is called networking.

Connecting and Installing Internet Devices

You must connect and install your gateway cable modem to access the Internet. Professional installation may be available. Contact your local cable service provider for further assistance.

To connect devices

The following diagram illustrates one of the various Internet connection options that are available to you.



WARNING:
To avoid personal injury or damage to your equipment, follow these steps in the exact order shown.

To install the gateway cable modem

1. Power down your PC and unplug it from the power source.
2. Connect your PC to *either* the **ETHERNET** port *or* the **USB** port using the appropriate data cable. Do not connect your PC to *both* the Ethernet and USB ports at the same time. You *can* connect two separate PCs to the gateway cable modem at the same time by connecting one PC to the Ethernet port and one PC to the USB port.
3. Connect the active RF coaxial cable to the **CABLE** connector. Use an optional cable signal splitter to add a TV, a DHCT or set-top converter, or a VCR.
4. Insert the AC power adapter cord into the DC **POWER** connector on the back of the gateway cable modem, and then plug the power adapter into an AC power source.
5. Plug in and power on your networked devices including your PC. The gateway cable modem will then begin an automatic search to locate and sign on to the broadband data network. This process may take up to 5 minutes. The modem will be ready for use when the **CABLE** indicator on the front panel stops blinking and illuminates continuously.
6. The next step in setting up your gateway cable modem is to configure your Internet devices for Internet access. Choose one of the following options:
   - If you want to use Ethernet connections, you must configure the TCP/IP protocol. To configure the TCP/IP protocol go to **How Do I Configure TCP/IP Protocol**, next in this guide**.**
   - If you want to use USB connections, you must install the USB drivers. To install the USB Drivers for USB go to **How Do I Install USB Drivers**, later in this guide**.**

How Do I Configure TCP/IP Protocol?

To configure TCP/IP protocol, you need to have an Ethernet Network Interface Card (NIC) with TCP/IP communications protocol installed on your system. TCP/IP is a communications protocol used to access the Internet. This section contains instructions for configuring TCP/IP on your Internet devices to operate with the gateway cable modem in Microsoft Windows or Macintosh environments.

Configuring TCP/IP on Your Internet Devices

TCP/IP protocol in a Microsoft Windows environment is different for each Windows version. Follow the appropriate instructions in this section for your operating system.

To configure Windows 95, 98, 98SE, or ME systems

1. Click **Start**, select **Settings**, and choose **Control Panel**.
2. Double-click the **Network** icon in the Control Panel window.
3. Read the list of installed network components under the **Configuration** tab to verify that your PC contains the TCP/IP protocol/Ethernet adapter.
4. Is TCP/IP protocol listed in the installed network components list?
   - If **yes**, go to step 7.
   - If **no**, click **Add**, click **Protocol**, click **Add**, and then go to step 5.
5. Click **Microsoft** in the Manufacturers list.
6. Click **TCP/IP** in the Network Protocols list, and then click **OK**.
7. Click the **TCP/IP Ethernet Adapter** protocol, and then choose **Properties**.
8. Click the IP Address tab, and then select **Obtain an IP address automatically**.
9. Click the **Gateway** tab and verify that these fields are empty. If they are not empty, highlight and delete all information from the fields.
10. Click the **DNS Configuration** tab, and then select **Disable DNS**.
11. Click **OK**.
12. Click **OK** when the system finishes copying the files, and then close all networking windows**.**
13. Click **YES** to restart your computer when the System Settings Change dialog box opens. The computer restarts. The TCP/IP protocol is now configured on your PC and your Ethernet devices are ready for use.
14. Try to access the Internet. If you cannot access the Internet, go to **Having Difficulty**, later in this guide. If you still cannot access the Internet, contact your cable service provider for further assistance.

To configure Windows 2000 systems

1. Click **Start**, select **Settings**, and choose **Network and Dial-up Connections**.
2. Double-click the **Local Area Connection** icon in the Network and Dial-up Connections window.
3. Click **Properties** in the Local Area Connection Status window.
4. Click **Internet Protocol (TCP/IP)** in the Local Area Connection Properties window, and then click **Properties**.
5. Select *both* **Obtain an IP address automatically** and **Obtain DNS server address automatically** in the Internet Protocol (TCP/IP) Properties window, and then click **OK**.
6. Click **Yes** to restart your computer when the Local Network window opens. The computer restarts. The TCP/IP protocol is now configured on your PC and your Ethernet devices are ready for use.
7. Try to access the Internet. If you cannot access the Internet, go to **Having Difficulty**, later in this guide. If you still cannot access the Internet, contact your cable service provider for further assistance.

To configure Windows XP systems

1. Click **Start**, select **Connect to**, and choose **Show all connections**.
2. Double-click the **Local Area Connection** icon in the **LAN or High-Speed Internet** section of the Network Connections window.
3. Click **Properties** in the Local Area Connection Status window.
4. Click **Internet Protocol (TCP/IP)**, and then click **Properties** in the Local Area Connection Properties window.
5. Select *both* **Obtain an IP address automatically** and **Obtain DNS server address automatically** in the Internet Protocol (TCP/IP) Properties window, and then click **OK**.
6. Click **Yes** to restart your computer when the Local Network window opens. The computer restarts. The TCP/IP protocol is now configured on your PC and your Ethernet devices are ready for use.
7. Try to access the Internet. If you cannot access the Internet, go to **Having Difficulty**, later in this guide. If you still cannot access the Internet, contact your cable service provider for further assistance.

To configure Macintosh systems

1. Click the **Apple** icon in the upper left corner of the Finder. Scroll down to **Control Panels**, and then click **TCP/IP**.
2. Click **Edit** on the Finder (gray bar) at the top of the screen. Scroll down to the bottom of the menu, and then click **User Mode**.
3. Click **Advanced** in the User Mode window, and then click **OK**.
4. Click the **Up/Down** selector arrows located to the right of the Connect Via section of the TCP/IP window, and then click **Using DHCP Server**.
5. Click **Options** in the TCP/IP window, and then click **Active** in the TCP/IP Options window.

   Note: In some cases, the **Load only when needed** option will not appear. If it appears, select the option. A check mark appears in the option.
6. Verify that the **Use 802.3** option located in the upper right corner of the TCP/IP window is unchecked. If there is a check mark in the option, deselect the option, and then click **Info** in the lower left corner.
7. Is there a Hardware Address listed in this window?
   - If **yes**, click **OK**. To close the **TCP/IP Control Panel** window, click **File**, and then scroll down to click **Close**. You have completed this procedure.
   - If **no**, you must power off your Macintosh.
8. With the power off, simultaneously press and hold down the **Command (Apple), Option, P**, and **R** keys on your keyboard. Keeping those keys pressed down, power on your Macintosh but do not release these keys until you hear the Apple chime.
9. Continue pressing these keys for at least three chimes, then release the keys and allow the computer to restart.
10. When your computer fully reboots, repeat steps 1 through 7 to verify that all TCP/IP settings are correct. If your computer *still* does not have a Hardware Address, contact your authorized Apple dealer or Apple technical support center for further assistance.

How Do I Install USB Drivers?

To install USB drivers, your PC must be equipped with a USB network interface and a Microsoft Windows 98SE, ME, 2000, or XP operating system. This section contains instructions for installing the gateway cable modem USB drivers.

If you are not using the USB interface, skip this section.

Installing USB Drivers

The USB driver installation procedures are different for each operating system. Follow the appropriate instructions in this section for your operating system.

To install Windows 98SE and Windows ME USB drivers

1. Insert the **USB Cable Modem Driver Installation Disk** into the CD-ROM drive of your PC.
2. Wait until the **Power** and **Cable** indicators on the cable modem illuminate solid green.

   Result: The Add New Hardware Wizard window opens.
3. Click **Next** in the Add New Hardware Wizard window.
4. Select **Search for the best driver for your device (Recommended)** in the Add New Hardware Wizard window, and then click **Next**.
5. Select **CD-ROM drive** in the Add New Hardware Wizard window, and then click **Next**.
6. Select **The updated driver (Recommended)** in the Add New Hardware Wizard window, and then click **Next**.
7. Click **Next** in the Add New Hardware Wizard window. The Copying Files window opens. After 10 to 20 seconds have passed, the Add New Hardware Wizard window reopens.
8. Click **Finish**. The USB driver installation is complete.
9. Click **Yes** in the System Settings Change window to restart your computer. The computer restarts. The USB drivers are now installed on your PC and your USB devices are ready for use.
10. Try to access the Internet. If you cannot access the Internet, go to **Having Difficulty**, later in this guide. If you still cannot access the Internet, contact your cable service provider for further assistance.

To install Windows 2000 drivers

1. Insert the **USB Cable Modem Driver Installation Disk** into the CD-ROM drive of your PC.
2. Wait until the **Power** and **Cable** indicators on the cable modem illuminate solid green.
3. Click **Next** in the Found New Hardware Wizard window.
4. Select **Search for a suitable driver for my device (recommended)** in the Found New Hardware Wizard window, and then click **Next**.
5. Select **CD-ROM drives** in the Found New Hardware Wizard window, and then click **Next**.
6. Click **Next** in the Found New Hardware Wizard window. The system searches for the driver file for your hardware device.
7. After the system finds the USB driver, the Digital Signature Not Found window opens and displays a confirmation message to continue the installation.
8. Click **Yes** to continue the installation. The Found New Hardware Wizard window reopens with a message that the installation is complete.
9. Click **Finish** to close the Found New Hardware Wizard window. The USB drivers are installed on your PC and your USB devices are ready for use.
10. Try to access the Internet. If you cannot access the Internet, go to **Having Difficulty**, later in this guide. If you still cannot access the Internet, contact your cable service provider for further assistance.

To install Windows XP drivers

1. Insert the **USB Cable Modem Driver Installation Disk** into the CD-ROM drive of your PC.
2. Wait until the **Power** and **Cable** indicators on the cable modem illuminate solid green.
3. Select **Install from a list or specific location (Advanced)** in the Found New Hardware Wizard window, and then click **Next**.
4. Select **Search removable media (floppy, CD-ROM)** in the Found New Hardware Wizard window, and then click **Next**.
5. Click **Continue Anyway** in the Hardware Installation window to continue the installation. The Found New Hardware Wizard window reopens with a message that the installation has finished.
6. Click **Finish** to close the Found New Hardware Wizard window. The USB drivers are installed on your PC and your USB devices are ready for use.
7. Try to access the Internet. If you cannot access the Internet, go to **Having Difficulty**, later in this guide. If you still cannot access the Internet, contact your cable service provider for further assistance.

How Do I Troubleshoot My Internet Service Installation?

I cannot connect to the Internet

- Verify that the plug to your gateway cable modem AC adapter is properly inserted into an electrical outlet.
- Verify that your gateway cable modem AC adapter is not plugged into an electrical outlet that is controlled by a wall switch. If a wall switch controls the electrical outlet, make sure the switch is in the **ON** position.
- Verify that the **POWER**, **CABLE**, and the appropriate indicator lights for your network connection and on the front panel of your gateway cable modem are illuminated.
- Verify that all cables are properly connected, and that you are using the correct cables.
- Verify that your cable service is active and that it supports two-way service.
- Verify that TCP/IP is properly installed and configured on all devices if you are using the Ethernet connections.
- Verify that you have followed the procedure for **Installing the USB Drivers for Windows 98SE, ME, 2000, and XP**, earlier in this guide, if you are using the USB connection.
- Verify that you have called your cable service provider and given them the serial number and MAC address of your gateway cable modem.
- If you are using a cable signal splitter so that you can connect the cable signal to other devices, remove the splitter and reconnect the cable so that the gateway cable modem is connected directly to the main cable input. If the gateway cable modem now functions properly, the cable signal splitter may be defective and may need to be replaced.

My gateway cable modem does not register an Ethernet connection

Even new devices do not always have Ethernet capabilities. Verify that your device has a 10/100BaseT Ethernet card and that the Ethernet driver software is properly installed. If you purchase and install an Ethernet card, follow the installation instructions very carefully.

My gateway cable modem does not register a cable connection

- The gateway cable modem works with a standard, 75-ohm, RF coaxial cable. If you are using a different cable, your gateway cable modem will not function properly. Contact your cable service provider to determine if you are using the correct cable.
- You may need to renew the IP address on your PC. Refer to **I need to renew the IP address on my PC**, next in this section for instructions on how to renew the IP address for your particular operating system.
- Your USB interface may be malfunctioning. Refer to the troubleshooting information in your USB documentation.

I need to renew the IP address on my PC

If your PC cannot access the Internet after the cable modem is online, it is possible that your PC did not renew its IP address. Follow the appropriate instructions in this section for your operating system to renew the IP address on your PC.

To renew the IP Address for Windows 95, 98, 98SE, and ME systems

1. Click **Start**, and then click **Run** to open the Run window.
2. Type **winipcfg** in the Open field, and click **OK** to execute the winipcfg command. The IP Configuration window opens.
3. Click the down arrow to the right of the top field, and select the Ethernet adapter that is installed on your PC. The IP Configuration window displays the Ethernet adapter information.
4. Click **Release**, and then click **Renew**. The IP Configuration window displays a new IP address.
5. Click **OK** to close the IP Configuration window, you have completed this procedure.

   If you cannot access the Internet, contact your cable service provider for further assistance.

To renew the IP Address for Windows 2000, NT, or XP systems

1. Open a Command Prompt (DOS) window.
2. Type **ipconfig/release** at the C:/ prompt and press **Enter**. The system releases the IP address.
3. Type **ipconfig/renew** at the C:/ prompt and press **Enter**. The system displays a new IP address.
4. Click on the **X** in the upper-right corner of the window to close the Command Prompt window. You have completed this procedure.

   If you cannot access the Internet, contact your cable service provider for further assistance.

What are the Requirements for Ethernet Network Devices?

How Many Ethernet Network Devices Can I Connect?

The gateway cable modem can support several Ethernet network devices using either the Ethernet port on the back panel of the unit, or external Ethernet hubs that must be purchased separately. The theoretical maximum number of Ethernet network devices supported is by the gateway cable modem 253. However, under normal circumstances, the number of devices connected should be a much lower number. Contact your cable service provider for more information on the maximum number of Ethernet network devices to connect to the gateway cable modem in order to maintain optimal network performance.

What are the Wiring Requirements for Ethernet Networking?

A number of factors can impact the practical limit of the network. Although the gateway cable modem is designed to support several Ethernet network devices, it is important to view the characteristics of the entire network and not just each individual node. The theoretical distance between two 10/100BaseT CAT-5 Ethernet hubs is 382 feet (100 meters). Contact your cable service provider or consult the documentation for your Ethernet network devices for more information.

Scientific-Atlanta recommends that you use CAT-5 Ethernet cables.

Do I Need to Configure the TCP/IP Protocol on My Computer?

In order for you to use Ethernet network devices on your network, you must have the TCP/IP protocol properly configured on your PC. Refer to **How Do I Configure TCP/IP Protocol**, earlier in this guide, for detailed information on configuring the TCP/IP protocol.

How Do I Select and Place Ethernet Network Devices?

You can use a large variety of Ethernet network devices with your gateway cable modem. These include NIC cards, hubs, bridges, etc. Contact your cable service provider or consult the documentation for your Ethernet network devices for more information on configuring Ethernet network devices.

Where is the Best Location for My Ethernet Network Devices?

You should work with your cable service provider to choose the best location for your Ethernet network devices. Consider these recommendations:

- Location of two-way cable outlets
- Distance of the Ethernet network devices from the gateway cable modem
- Location of computers and other equipment from AC power outlets
- Ease of running Ethernet cable to the Ethernet network devices

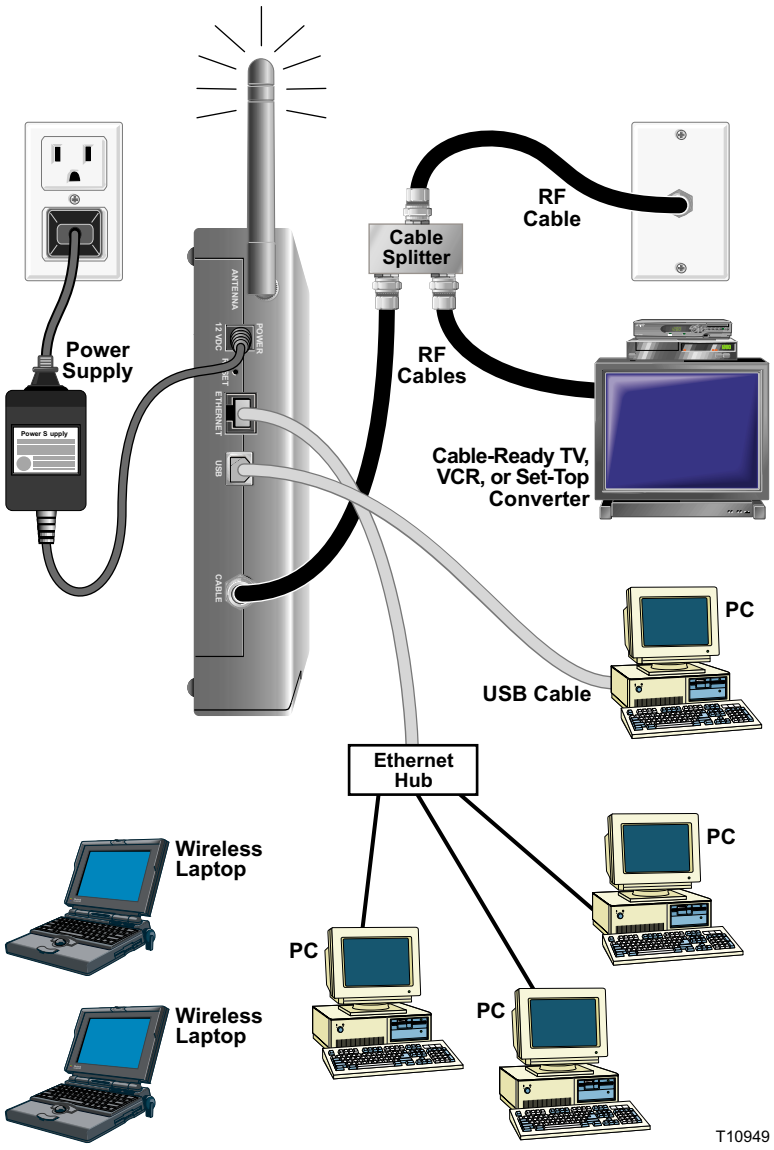
Now that you have selected a location for your Ethernet network devices, the next step is to place and connect your Ethernet network devices. Go to **How Do I Connect Ethernet Network Devices**, next in this guide.

How Do I Connect Ethernet Network Devices?

Connecting Ethernet Devices

You must connect your Ethernet devices for use with the gateway cable modem. Professional installation may be available. Contact your local cable service provider for further assistance.

The following diagram illustrates one of the various Ethernet network connection options that are available to you.



WARNING:

- **Hazardous electrical voltages can be present on any connected wiring. Ethernet wiring and connections must be properly insulated to prevent electrical shock. Disconnect power from the gateway cable modem before attempting to connect to any device.**
- **To avoid personal injury, follow these steps in the exact order shown.**

CAUTION:
To prevent possible damage to the equipment, disconnect any other service before connecting your gateway cable modem to other devices.

To connect Ethernet devices

Read the warnings and caution on this page. Then, follow the subsequent installation procedures to ensure proper gateway cable modem operation when connecting Ethernet network devices.

1. Select locations for Ethernet network devices. For more information, see **How Do I Select and Place Ethernet Network Devices**, earlier in this guide.
2. Connect an Ethernet port on the gateway cable modem to your PC.
3. Connect additional Ethernet network devices using the other Ethernet ports on the gateway cable modem, or by connecting an Ethernet hub or router to the gateway cable modem.
4. Connect the active RF coaxial cable to the **CABLE** connector on the back of the gateway cable modem. Use an optional cable signal splitter to add a TV, a DHCT or set-top converter, or a VCR.
5. After all connections are complete, insert the AC power adapter cord into the DC **POWER** connector on the back of the gateway cable modem, and then plug the power adapter into an AC power source.
6. The gateway cable modem begins an automatic search to locate and sign on to the network. In some unusual circumstances, this process may take up to 5 minutes. The gateway cable modem is ready for use when the **CABLE** status indicator on the front panel stops blinking and illuminates continuously.
7. Verify that all Ethernet network devices are working properly.

   You will not be able to check the Ethernet front panel status indicators on the gateway cable modem until after two or more Ethernet network devices are connected to the gateway cable modem.

What are the Requirements for USB Network Devices?

How Many USB Devices Can I Connect?

Contact your cable service provider for more information on the maximum number of USB network devices to connect to the gateway cable modem in order to maintain optimal network performance.

What are the Wiring Requirements?

Several factors can impact the practical limit of the network. Use correct USB cables. Contact your cable service provider or consult the documentation for your USB network device for more information.

Do I Need to Install USB Drivers on My Computer?

To use USB network devices, you must have the correct USB drivers install on your PC. Refer to **How Do I Install USB Drivers**, earlier in this guide, for information on installing USB drivers.

How Do I Select and Place USB Network Devices?

You can use a large variety of USB network devices with your gateway cable modem. These include desktop computers, laptop computers, devices with USB ports, USB adapters. Contact your cable service provider or consult the documentation for your USB network devices for more information on selecting USB network devices.

Where is the Best Location for My USB Network Devices?

You should work with your cable service provider to choose the best location for your USB network devices. Consider these recommendations:

- Location of two-way coaxial cable outlets
- Distance of the USB network devices from the gateway cable modem
- Location of computers and other equipment from AC power outlets
- Ease of running USB cable to the USB network devices

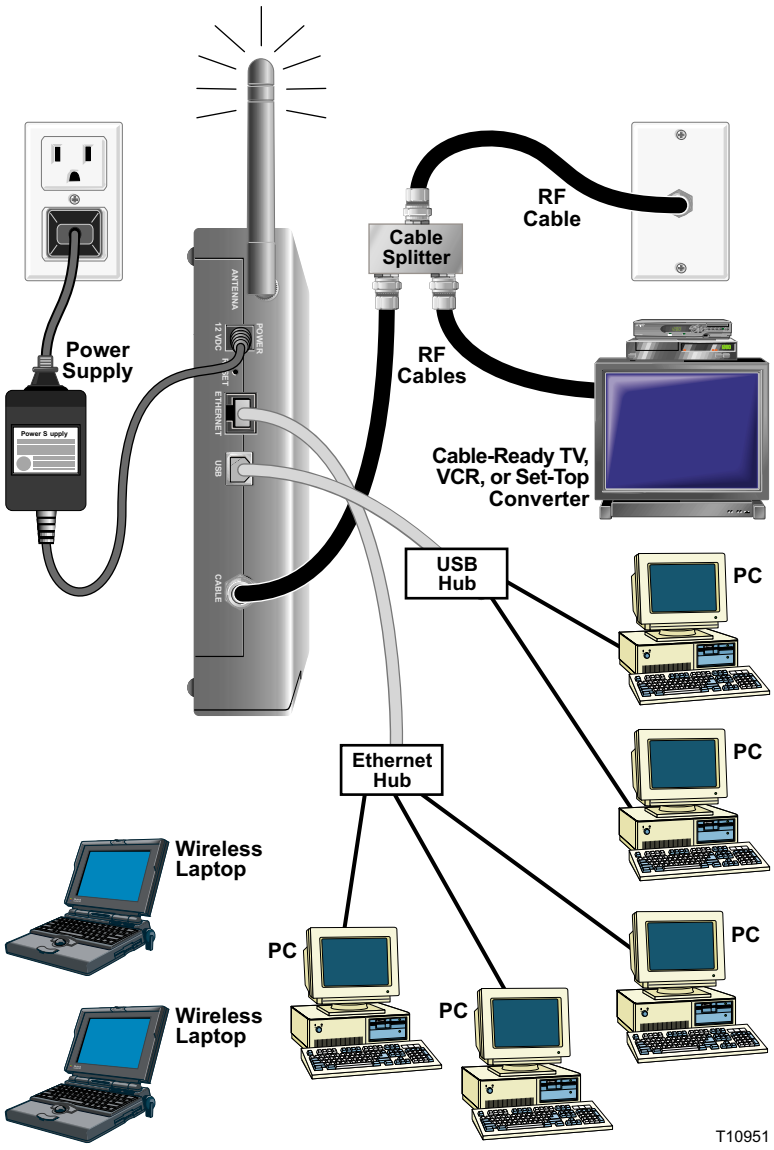
Now that you have selected a location for your USB network devices, the next step is to place and connect your USB network devices. Go to **How Do I Connect USB Network Devices**, next in this guide.

How Do I Connect USB Network Devices?

Connecting USB Devices

You must connect your USB devices for use with your gateway cable modem. Professional installation may be available. Contact your local cable service provider for further assistance.

The following diagram illustrates one of the various USB network connection options that are available to you.



WARNING:

- **Hazardous electrical voltages can be present on any connected wiring. Ethernet wiring and connections must be properly insulated to prevent electrical shock. Disconnect power from the gateway cable modem before attempting to connect to any device.**
- **To avoid personal injury, follow these steps in the exact order shown.**

CAUTION:
To prevent possible damage to the equipment, disconnect any other service before connecting your gateway cable modem to other devices.

To connect USB devices

Read the warnings and caution on this page. Then, follow the subsequent installation procedures to ensure proper gateway cable modem operation when connecting USB network devices.

Verify that you have installed the USB drivers on your PC before continuing with these instructions. See **How Do I Install USB Drivers**, earlier in this guide for more information on installing the USB drivers.

1. Select locations for USB network devices. For more information, see **How Do I Select and Place USB Network Devices**, earlier in this guide.
2. Connect the USB port on the gateway cable modem to your computer.
3. Connect one or more USB network device to the gateway cable modem.

   If you want to connect more than one USB network device to the gateway cable modem or to your computer, you will need to purchase and install a USB hub.
4. Connect the active RF coaxial cable to the **CABLE** connector on the back of the gateway cable modem. Use an optional cable signal splitter to add a TV, a DHCT or set-top converter, or a VCR.
5. After all connections are complete, insert the AC power adapter cord into the DC **POWER** connector on the back of the gateway cable modem, and then plug the power adapter into an AC power source.
6. The gateway cable modem begins an automatic search to locate and sign on to the network that provides the telephone service. This process may take up to 5 minutes. The gateway cable modem is ready for use when the **CABLE** status indicator on the front panel stops blinking and illuminates continuously.
7. Verify that all USB devices are working properly.

   You will not be able to check the USB front panel status indicator on the gateway cable modem until after at least one USB network device is connected and operating on the network.

What are the Requirements for Wireless Network Devices?

How Many Wireless Devices Can I Connect?

The gateway cable modem serves as a wireless access point (WAP). The WAP on the gateway cable modem provides wireless network service to multiple wireless network devices. Contact your cable service provider for more information on the maximum number of wireless network devices to connect to the gateway cable modem in order to maintain optimal network performance.

What are the Requirements for Wireless Networking?

It is important to view the characteristics of the entire network and not just each individual node. The theoretical distance between wireless network devices is 100 feet inside of a building, and 300 feet outdoors.

A number of factors can impact the practical limit of the network. Contact your cable service provider or consult the documentation for your wireless network devices for more information.

How Do I Select and Place Wireless Network Devices?

You can use a large variety of wireless network devices with your gateway cable modem. These include computers, PDAs, etc. On the wireless network, all devices impact the characteristics of the network, because each device transmits a wireless signal. Contact your cable service provider or consult the documentation for your wireless network device for more information on selecting the appropriate wireless network devices for your home or office network.

Where is the Best Location for My Wireless Network Devices?

You should work with your cable service provider to choose the best location for your wireless network devices. Consider these recommendations:

- Distance from the gateway cable modem to the wireless network devices.
- Do not place the gateway cable modem near metallic surfaces that may block the wireless communications path. Wireless communication is “line-of-sight” through non-metallic walls. However, the more structures (walls) the signal must pass through, the weaker the received signal.
- Do not place wireless network devices near a microwave oven. When operating, microwave ovens can interfere with wireless transmissions.
- Do not place your wireless network devices near 2.4 GHz wireless telephones because these telephones may also cause interference with your wireless network.

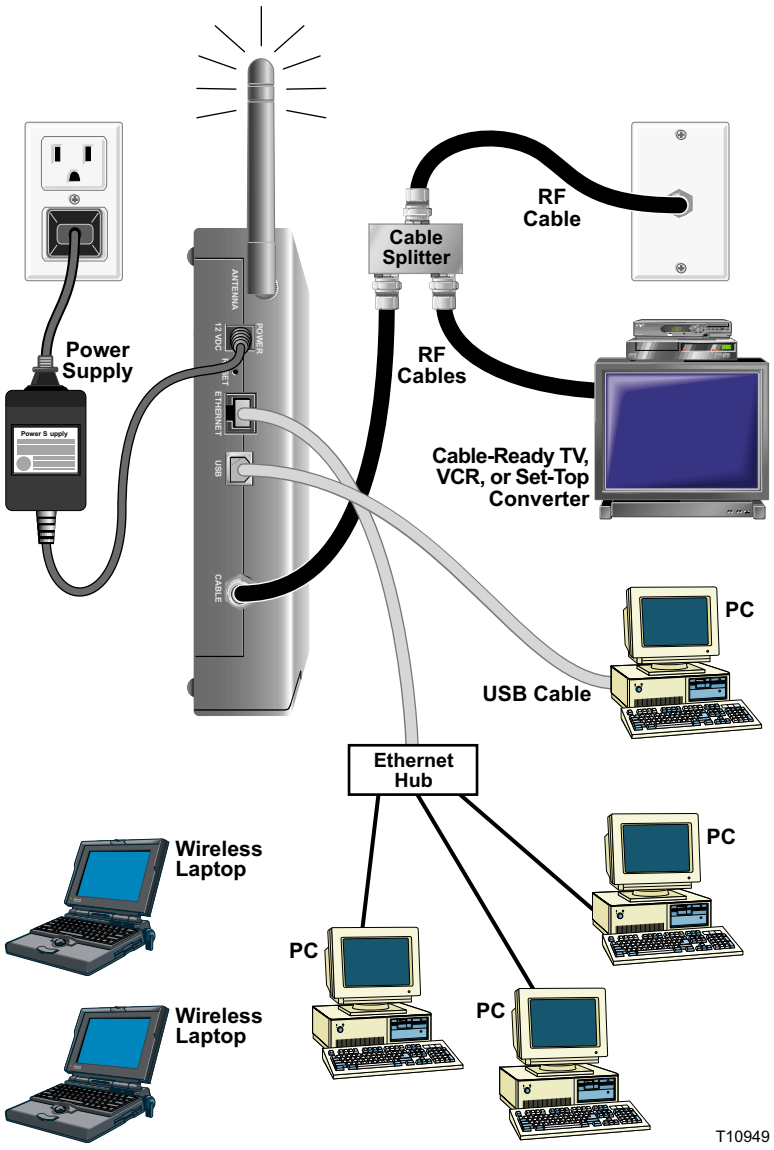
Now that you have selected a location for your wireless network devices, the next step is to place and install your wireless network devices. Go to **How Do I Install Wireless Network Devices**, next in this guide.

How Do I Install Wireless Network Devices?

Installing Wireless Network Devices

You must install wireless network devices for use with your gateway cable modem. Professional installation may be available. Contact your local cable service provider for further assistance.

The following diagram illustrates one of the various wireless network connection options that are available to you.



WARNING:

- **Hazardous electrical voltages can be present on any connected wiring. Ethernet wiring and connections must be properly insulated to prevent electrical shock. Disconnect power from the gateway cable modem before attempting to connect to any device.**
- **To avoid personal injury, follow these steps in the exact order shown.**

CAUTION:
To prevent possible damage to the equipment, disconnect any other service before connecting your gateway cable modem to other devices.

To install wireless network devices

Read the warnings and caution on this page. Then, follow the subsequent installation procedures to ensure proper gateway cable modem operation when using wireless network devices.

Follow these steps to install the gateway cable modem for accessing wireless network devices.

1. Select locations for wireless network devices. For more information, see **How Do I Select and Place Wireless Network Devices**, earlier in this guide.
2. Connect and install the wireless network device(s).
3. Connect the active RF coaxial cable to the **CABLE** connector on the back of the gateway cable modem. Use an optional cable signal splitter to add a TV, a DHCT or set-top converter, or a VCR.
4. After all connections are complete, insert the AC power adapter cord into the DC **POWER** connector on the back of the gateway cable modem, and then plug the power adapter into an AC power source. The gateway cable modem begins an automatic search to locate and sign on to the network that provides the telephone service. In some unusual circumstances, this process may take up to 5 minutes. The gateway cable modem is ready for use when the **CABLE** status indicator on the front panel stops blinking and illuminates continuously.

   Some 2.4 GHz cordless telephones can interfere with wireless signals. Unplug and disconnect any cordless phones until your wireless network is operating properly.
5. Verify that all wireless network devices are working properly.

How Do I Configure the Gateway Cable Modems?

To configure your gateway cable modem, you must access the WebWizard configuration pages. This section provides detailed instructions and procedures for configuring your gateway cable modem to operate correctly and presents an example of each WebWizard page. Use the WebWizard pages to customize your gateway cable modem to your needs rather than using the default settings.

The WebWizard pages and the examples shown in this section are for illustration purposes only. Your pages will differ from the pages shown here.

If you are not familiar with the network configuration procedures detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default settings.

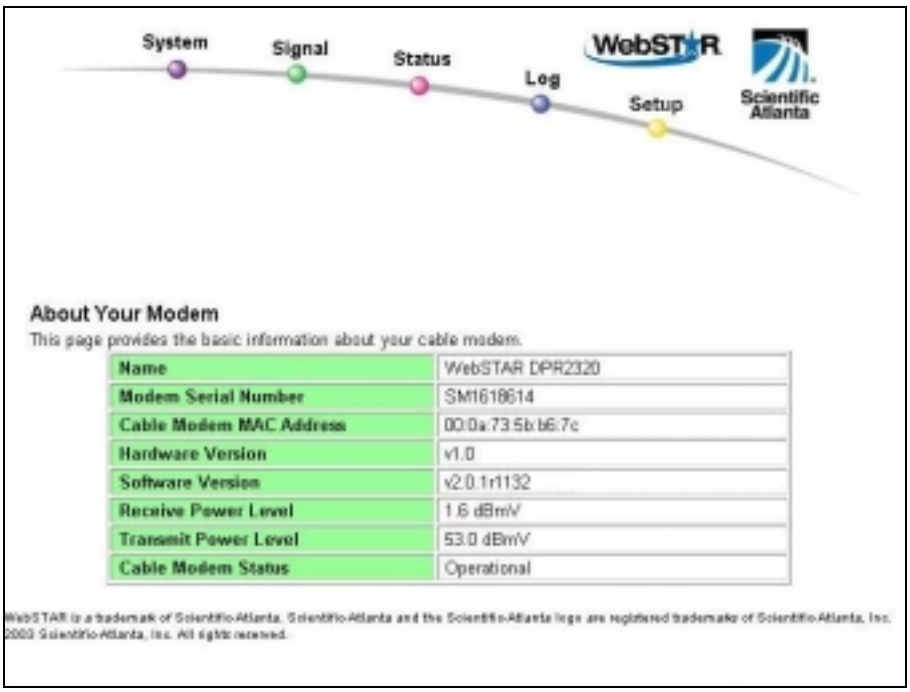
Configuring the Gateway Cable Modem

You must access the WebWizard in order to configure the gateway cable modem. To gain access to the WebWizard, use the Web browser on the PC attached to the cable modem. Type the following IP address and then select **Go**: **http://192.168.0.1**

The Web browser accesses the WebWizard and displays the default About Your Modem page. This page displays information about the gateway cable modem.

About Your Modem Page Example

The following illustration is an example of the About Your Modem page.



About Your Modem Page Description

The following table provides a description of each field within the About Your Modem page.

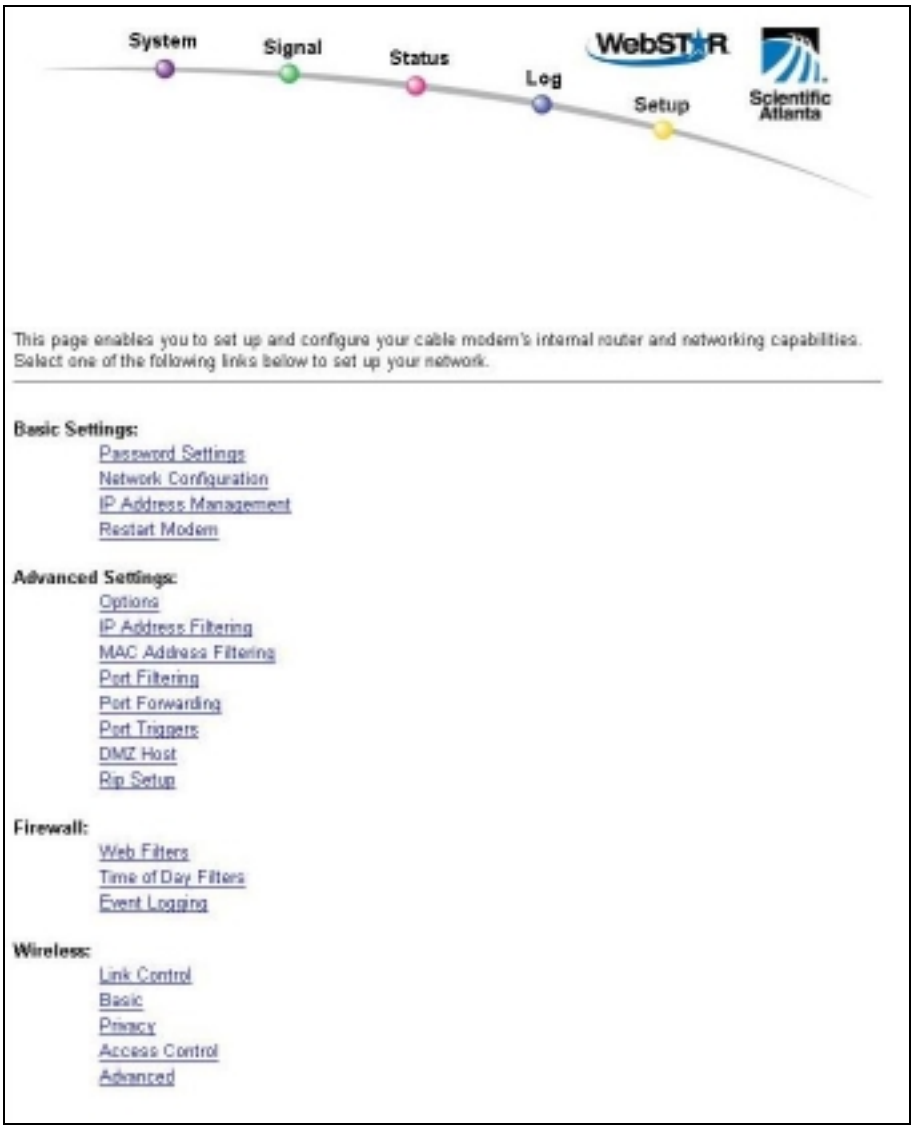
Field Name	Description
Name	The name of the gateway cable modem
Cable Modem Serial Number	A unique sequential series of alphanumeric characters provided to every modem during manufacturing
Cable Modem MAC Address	A unique alphanumeric address for the cable modem coaxial interface, which is used to connect to the cable modem termination system (CMTS) at the headend. A media access control (MAC) address is a hardware address that uniquely identifies each node of a network
Hardware Version	Identifies the revision of the circuit board design
Software Version	Identifies the software version placed into the modem at the time of manufacturing
Receive Power Level	The input level of the downstream CMTS carrier
Transmit Power Level	Indicates the upstream power level
Cable Modem Status	Lists one of the following possible current states of the modem: • other • notReady • notSynchronized • phySynchronized • usParametersAcquired • rangingComplete • ipComplete • todEstablished • securityEstablished • psrsmTransferComplete • registrationComplete • operational • accessDenied

Setting Configuration Options

Click **Setup** on the arc logo located in the upper portion of the About Your Modem screen to access the Setup page. Use the Setup page to access the various gateway cable modem configuration options. Detailed descriptions of each configuration option follow later in this guide.

Setup Page Example

The following illustration is an example of the Setup page.



Setup Page Section Headings

The Setup page is divided into the following section headings:

- Basic Settings
- Advanced Settings
- Firewall
- Wireless

In the Setup page, click the selections listed within these sections to access the WebWizard page for that selection. A description of the selections available in each section follows next.

Basic Settings

The following table provides a description of the pages available from within the Basic Settings section of the Setup page.

Field Name	Description
Password Settings	Use this page to modify your password settings
Network Configuration	Use this page to enter or modify the basic settings for your network
IP Address Management	Use this page to configure how Internet protocol (IP) addresses are assigned and managed in your network
Restart Modem	Use this page to restart your gateway modem

Advanced Settings

The following table provides a description of the pages available from within the Advanced Settings section of the Setup page.

Field Name	Description
Options	Use this page to enable or disable advanced features on your network
IP Address Filtering	Use this page to configure IP address filters. These filters prevent designated IP addresses from accessing the Internet
MAC Address Filtering	Use this page to configure MAC address filters. These filters prevent designated MAC addresses from accessing the Internet
Port Filtering	Use this page to configure transmission control protocol (TCP) and user datagram protocol (UDP) port filters. These filters prevent a range of TCP/UDP ports from accessing the Internet

Field Name	Description
Port Forwarding	Use this page to configure port forwarding for local IP addresses. Port forwarding allows you to run a server on the local area network (LAN) by specifying the mapping of TCP/UPD ports to local PCs or to the IP address of other devices. This is a static setting that holds the ports open at all times
Port Triggers	Use this page to configure TCP/UPD port triggers. Port triggering is similar to port forwarding, but is a dynamic function. In other words, the ports are not held open, and the ports close if no outgoing data is detected on the selected ports for a period of 10 minutes
DMZ Host (Demilitarized Zone)	Use this page to configure an IP address that is visible to the wide area network (WAN). DMZ hosting is commonly referred to as "exposed host," and allows you to specify the "default" recipient of WAN traffic that Network Address Translation (NAT) is unable to translate to a known local PC. A DMZ is used by a company that wants to host its own Internet services without sacrificing unauthorized access to its private network. DMZ allows one IP address to be unprotected while others remain protected. The DMZ is located between the Internet and an internal network's line of defense that is a combination of firewalls and bastion hosts. Typically, the DMZ contains devices accessible to Internet traffic, such as Web (HTTP) servers, FTP servers, SMTP (e-mail) servers, and domain name system (DNS) servers
Rip Setup (Routing Information Protocol)	RIP is used to authenticate this device to the gateway when using a static IP address

Firewall

The following table provides a description of the pages available from within the Firewall section of the Setup page.

Field Name	Description
Web Filters	Use this page to configure Web page filtering, parental control, and firewall protection. This page allows you to block/allow Internet access based on keywords and/or domain names
Time of Day Filters	Use this page to block all traffic to and from specific computers based on the day of week and the time of day
Event Logging	Use this page to access the firewall event log and to enter your e-mail address in order to receive e-mail alerts related to firewall attacks by hackers

Wireless

The following table provides a description of the pages available from within the Wireless section of the Setup page.

Field Name	Description
Link Control	Use this page to enable or disable the wireless access point on the cable modem
Basic	Use this page to configure your wireless access point (WAP) parameters, including service set identifier (SSID) and channel number
Privacy	Use this page to configure your WAP wired equivalent privacy (WEP) encryption keys and authentication. Using encryption and authentication prevents unauthorized access to your wireless devices
Access Control	Use this page to configure the WAP to restrict access to only selected wireless client devices. Authorized clients are selected by MAC address. Use this page to select Open System or Share Key authentication and to enable and disable broadcast of the WAP SSID
Advanced	Use this page to configure your WAP data rates and wireless fidelity (WiFi) thresholds

Configuring Your Password Settings

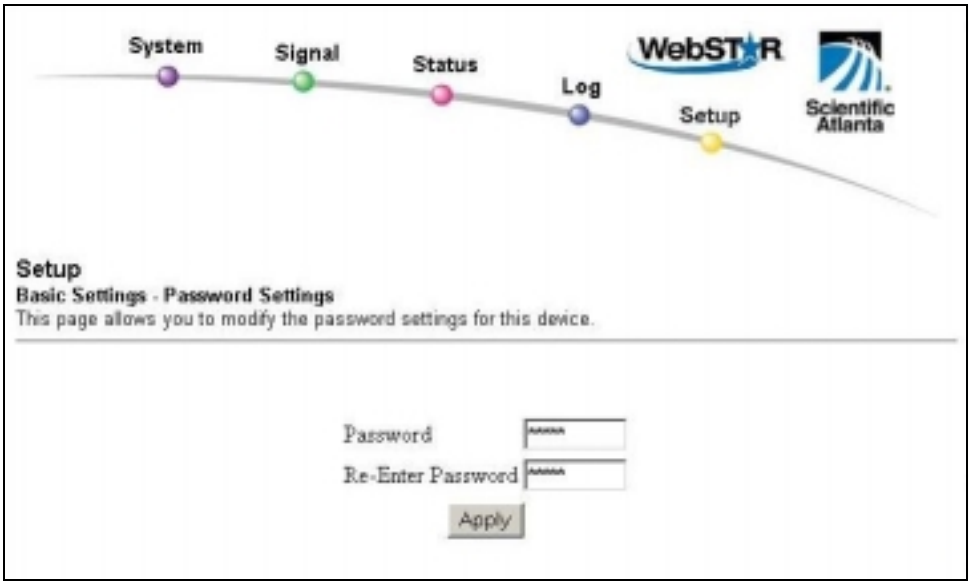
Use the Basic Settings - Password Settings page to set up a password to restrict unauthorized persons from accessing to your gateway cable modem settings. Click **Password Settings** in the Basic Settings section of the Setup page to access the Password Settings page.

Your gateway modem comes from the factory with no password enabled. We highly recommend that you set up a user password to prevent unauthorized users from modifying the settings of your network.

If you do choose to set up a password, use a password that you can easily remember. Do *not* forget your password.

Setup Basic Settings – Password Settings Page Example

The following illustration is an example of the Basic Settings – Password Settings page.



Setting Up Your Password

To set up your password, type your password in the Password field, and then re-type your password in the Re-Enter Password field. Click **Apply** to save your password.

If you set a password, on subsequent access to the WebWizard pages, a screen similar to the following appears. Do *not* forget your password. Write your password and store it in a secure location known only to you.

Configuring the Default Settings

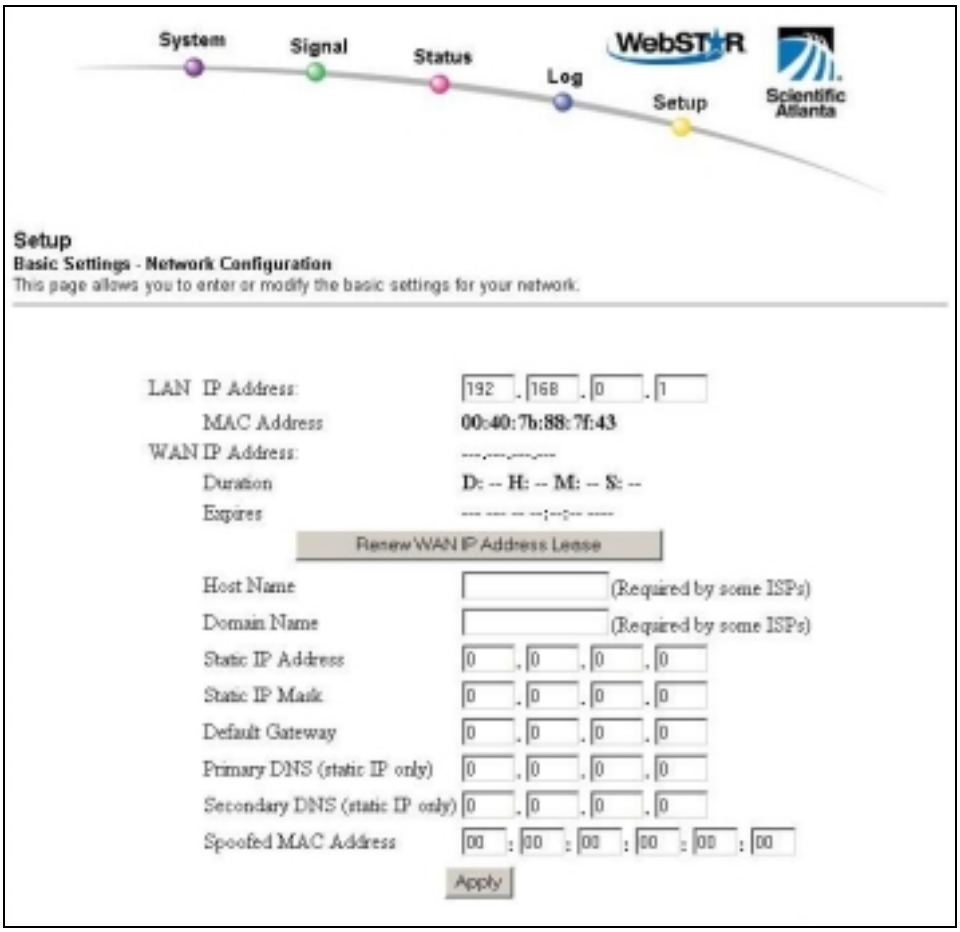
You can use the default settings, or, if your system requires different settings to operate correctly, you can change the default settings using the Setup Basic Settings – Network Configuration page.

If you are not familiar with the network configuration procedures detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default network configuration settings.

Click **Network Configuration** in the Basic Settings section of the Setup page to access the Setup Basic Settings – Network Configuration page.

Setup Basic Settings – Network Configuration Page Example

The following illustration is an example of the Setup Basic Settings – Network Configuration page.



Setup Basic Settings – Network Configuration Page Description

The following table provides a description of the fields within the Setup Basic Settings – Network Configuration page.

Field Name	Description
LAN IP Address	The base IP address of the private home LAN and the WebWizard IP address. Your gateway cable modem assigns private IP addresses to your attached computers by its internal dynamic host configuration protocol (DHCP) server
MAC Address	The MAC address for the WAN. The factory assigned MAC address for the WAN is also referred to as the WLAN Data MAC address unless a spoofed MAC address is used. (See *Spoofed MAC Address* later in this table)
WAN IP Address	The public IP address assigned to your cable modem by your ISP. The WAN will be assigned a public IP address by your cable service provider. The WAN IP address will be shared by all the PCs in your private local area network to access the Internet
Duration	The length of time your WAN IP address is valid. This length of time renews when this duration expires
Expires	The date and time your WAN IP address expires
Host Name	Some ISPs require this information for authentication and will supply it to you
Domain Name	Some ISPs require this information for authentication and will supply it to you
Static IP Address	Some ISPs require this information for authentication and will supply it to you When setting a static IP address, you must enter the IP address, subnet mask, and default gateway before the static IP address will become operational
Static IP Mask	Some ISPs require this information for authentication and will supply it to you
Default Gateway	Some ISPs require this information for authentication and will supply it to you
Primary DNS	Some ISPs require this information for authentication and will supply it to you
Secondary DNS	Some ISPs require this information for authentication and will supply it to you
Spoofed MAC Address	Some ISPs require the MAC address of the network interface card (NIC) in your computer for authentication. When installing the gateway cable modem, you can enter your computer MAC address here to allow you to connect to your ISP. If a Spoofed MAC address is used, the gateway will use the Spoofed MAC address to obtain the public WAN IP address in place of using the WLAN Data MAC address assigned at the factory

Function Keys

The following function keys appear on the Setup Basic Settings – Network Configuration page.

Key	Description
Renew WAN IP Address Lease	Forces a release and renewal of your WAN IP address
Apply	Saves the values you enter into the fields without closing the screen

Configuring and Managing IP Addresses

Use the Setup Basic Settings – IP Management page to configure how your system manages and assigns IP addresses in your network.

If you are not familiar with the IP management procedures detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default IP management settings.

Click **IP Management** in the Basic Settings section of the Setup page to access the Setup Basic Settings – IP Management page.

Setup Basic Settings – IP Management Page Example

The following illustration is an example of the Setup Basic Settings – IP Management page.

Setup Basic Settings – IP Management Page Description

The following table provides a description of the fields within the Basic Settings – IP Management page.

Field Name	Description
DHCP Server	Allows you to enable or disable the DHCP server
Starting Local Address	The starting address used by the built-in DHCP server to distribute Private LAN IP addresses. In the example shown, addresses between 2 and 9 can be used for devices on your Private LAN that require fixed IP addresses such as printers or a device assigned as a DMZ host The LAN IP address ending in 1 is reserved for the internal gateway server. The LAN IP address ending in 255 is also reserved and should not be used for CPE devices
Number of CPEs	Enter the maximum number of devices allowed to connect to the Private LAN. The maximum number of devices is 255. This is the combined total of addresses reserved for static IP addresses, for example, the sum of the IP addresses between 1 and the value entered in the Starting Local Address field and the value entered in the Number of CPEs field. **Note:** The sum of the value entered in the Starting Local Address field and the value entered in the Number of CPEs field must *always* be 255 or less.
DHCP Client Lease Info	Displays the MAC address, IP Address, Subnet Mask, Duration and Expiration date of all devices issued an IP address by the built-in DHCP server. This field also displays the current system time and date

Function Keys

The following function keys appear on the Basic Settings – IP Management page.

Key	Description
Apply	Saves the values you enter into the fields without closing the screen
Force Available	Forces the release of an IP address for you to re-use

Restarting the Gateway Modem

Use the Setup Basic Settings – Restart Cable Modem page to restart your cable modem.

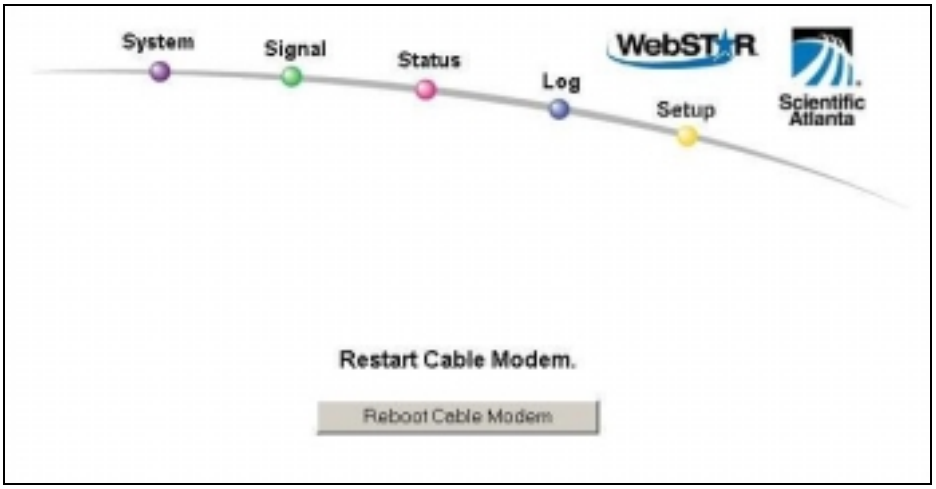
Click **Restart Modem** in the Basic Settings section of the Setup page to access the Basic Settings – Restart Cable Modem page.

Click **Reboot Cable Modem** to restart the gateway modem.

Restarting your gateway modem does not reset any of the settings.

Setup Basic Settings - Restart Cable Modem Page Example

The following illustration is an example of the Restart Cable Modem page.



Enabling and Disabling Advanced Features

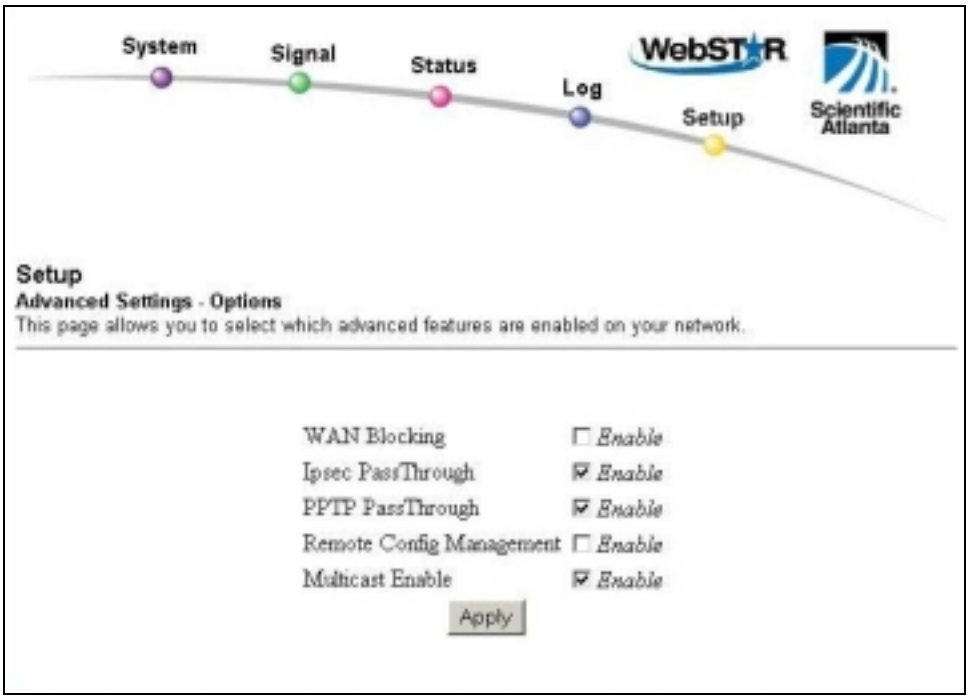
Use the Setup Advanced Settings – Options page to enable or disable advanced features on your network. When the wireless interface is disabled, the transmitter is turned off.

If you are not familiar with the advanced settings detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default advanced options settings.

Click **Options** in the Advanced Settings section of the Setup page to access the Setup Advanced Settings – Options page.

Setup Advanced Settings – Options Page Example

The following illustration is an example of the Setup Advanced Settings – Options page.



Setup Advanced Settings – Options Page Description

The following table provides a description of the fields within the Setup Advanced Settings – Options page.

If you make changes in the Setup Advanced Settings – Options page, click **Apply** to apply and save your new IP address filter settings.

Field Name	Description
WAN Blocking	Checking this box prevents the gateway cable modem from being visible to the WAN. For example, pings to the WAN IP address are not returned
Ipsec PassThrough	Checking this box allows applications that use IPSec (IP Security) to pass through the firewall
PPTP PassThrough	Checking this box allows applications that use Point to Point Tunneling Protocol (PPTP) to pass through the firewall
Remote Config Management	Checking this box allows Remote Configuration Management from the WAN side of the gateway cable modem. Access is allowed by using the password to access the WebWizard. If you enable (check) Remote Configuration Management, when you are away from your home or office, you can access the settings of your gateway by entering the WAN IP address into any PC browser. If you choose to enable (check) this feature, be sure to set up a user password to prevent unauthorized access to your gateway settings.
Multicast Enable	Checking this box allows multicasts to pass from the WAN side through to the private network

Configuring IP Address Filters

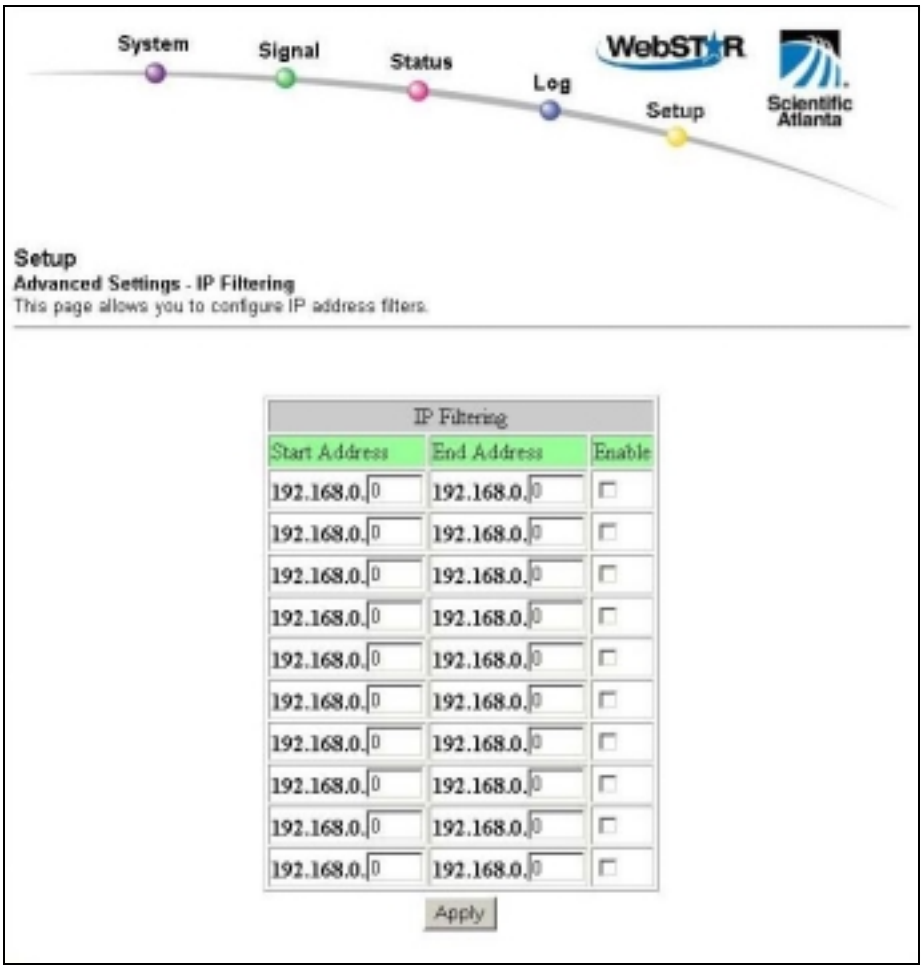
Use the Setup Advanced Settings – IP Filtering page to configure IP address filters. These filters block a range of IP addresses from accessing the Internet.

If you are not familiar with the advanced settings detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default advanced IP filtering settings.

Click **IP Filtering** in the Advanced Settings section of the Setup page to access the Setup Advanced Settings – IP Filtering page.

Setup Advanced Settings – IP Filtering Page Example

The following illustration is an example of the Setup Advanced Settings – IP Filtering page.



Setup Advanced Settings – IP Filtering Page Description

Use this page to specify and enable a range of IP addresses that cannot have access to the Internet. Click **Apply** to apply and save your new IP address filter settings.

Configuring MAC Address Filters

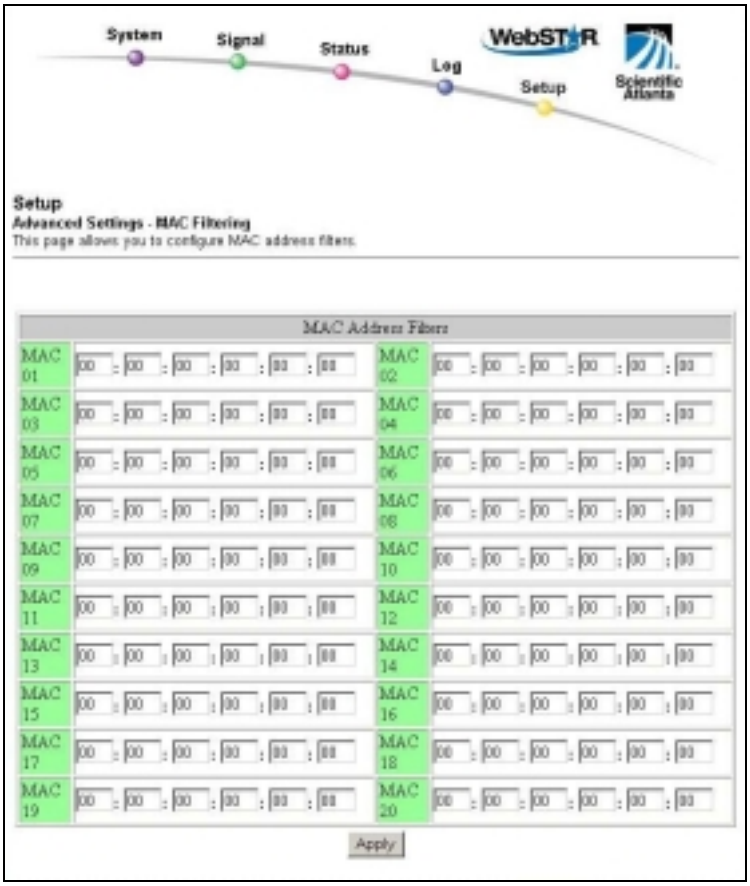
Use the Setup Advanced Settings – MAC Filtering page to configure MAC address filters. These filters prevent individual MAC addresses from accessing the Internet. You can also prevent individual PCs from sending outgoing TCP/UDP traffic to the WAN using their MAC address.

If you are not familiar with the advanced settings detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default advanced MAC filtering settings.

Click **MAC Address Filtering** in the Advanced Settings section of the Setup page to access the Setup Advanced Settings – MAC Filtering page.

Setup Advanced Settings – MAC Filtering Page Example

The following illustration is an example of the Setup Advanced Settings – MAC Filtering page.



Setup Advanced Settings – MAC Filtering Page Description

Use this page to enter the MAC address or MAC addresses of devices that cannot have access to the Internet. Click **Apply** to apply and save your new MAC address filter settings.

Configuring and Enabling TCP and UDP Port Filters

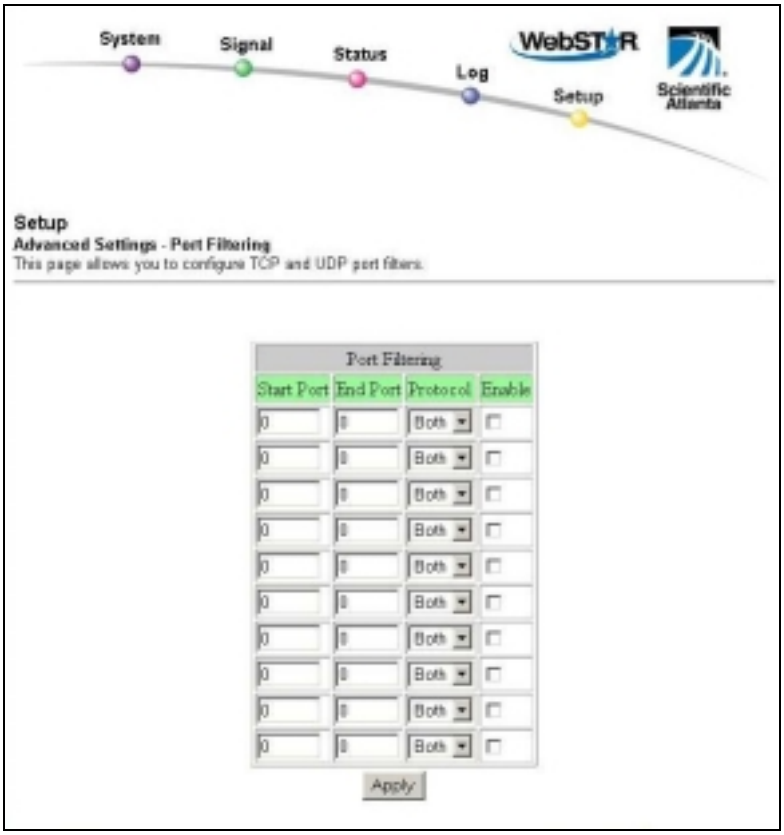
Use the Setup Advanced Settings – Port Filtering page to configure and enable TCP and UDP port filters. These filters prevent a range of TCP/UDP ports from accessing the Internet. You can also prevent PCs from sending outgoing TCP/UDP traffic to the WAN on specific IP port numbers. This filter is *not* IP address- or MAC address-specific. The system blocks the specified port ranges for *all* PCs.

If you are not familiar with the advanced settings detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default advanced port filtering settings.

Click **Port Filtering** in the Advanced Settings section of the Setup page to access the Setup Advanced Settings – Port Filtering page.

Setup Advanced Settings – Port Filtering Page Example

The following illustration is an example of the Setup Advanced Settings – Port Filtering page.



Setup Advanced Settings – Port Filtering Page Description

Use this page to enter and enable the desired port filtering ranges and protocols in the appropriate fields and then click **Apply** to apply and save your new port filtering settings.

Configuring Port Forwarding for Local IP Addresses

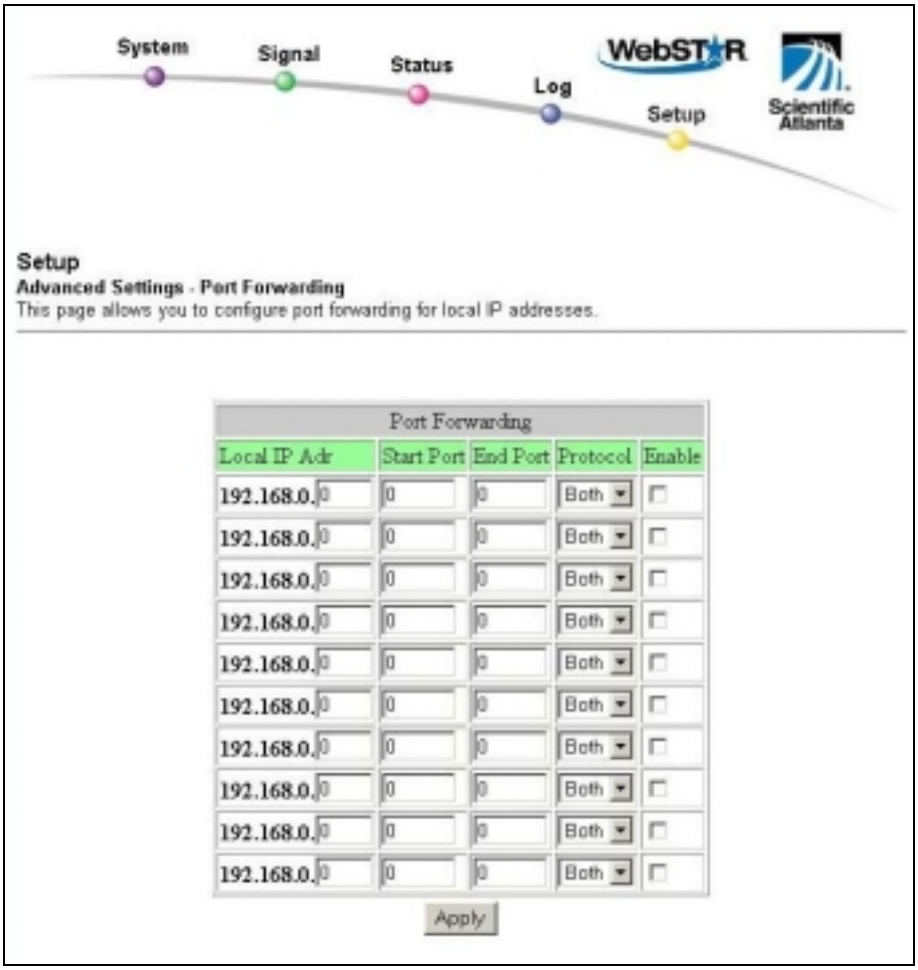
Use the Setup Advanced Settings – Port Forwarding page to configure port forwarding for local IP addresses. Port forwarding allows you to run a server on the LAN by specifying the mapping of TCP/UDP ports to a local PC. You must also set up a fixed private LAN IP address for the destination device.

If you are not familiar with the advanced settings detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default advanced port forwarding settings.

Click **Port Forwarding** in the Advanced Settings section of the Setup page to access the Setup Advanced Settings – Port Forwarding page.

Setup Advanced Settings – Port Forwarding Page Example

The following illustration is an example of the Setup Advanced Settings – Port Forwarding page.



Setup Advanced Settings – Port Forwarding Page Description

The following example illustrates how to use the port forwarding feature to configure the Microsoft X-Box Online Live for Internet gaming.

For most widely used applications (including Microsoft X-Box Online Live), the WebSTAR firewall automatically maps and opens ports required for that application while the application is in use.

1. Set the device to be used for port forward to a fixed IP address, for example, **192.168.0.5**.
2. In the first entry of the Port Forwarding area of the page, enter the same IP address (192.168.0.5) in the Local IP Address field.
3. In the same row, enter the appropriate port numbers in the Start Port and End Port fields.
4. In the same row, select the appropriate protocol from the drop-down list in the Protocol field, and then select the box in the **Enable** field.
5. To add additional ports, repeat steps 1 through 4, and then go to step 6.
6. Click **Apply** to apply and save your new port forwarding settings.

Configuring TCP/UDP Port Triggers

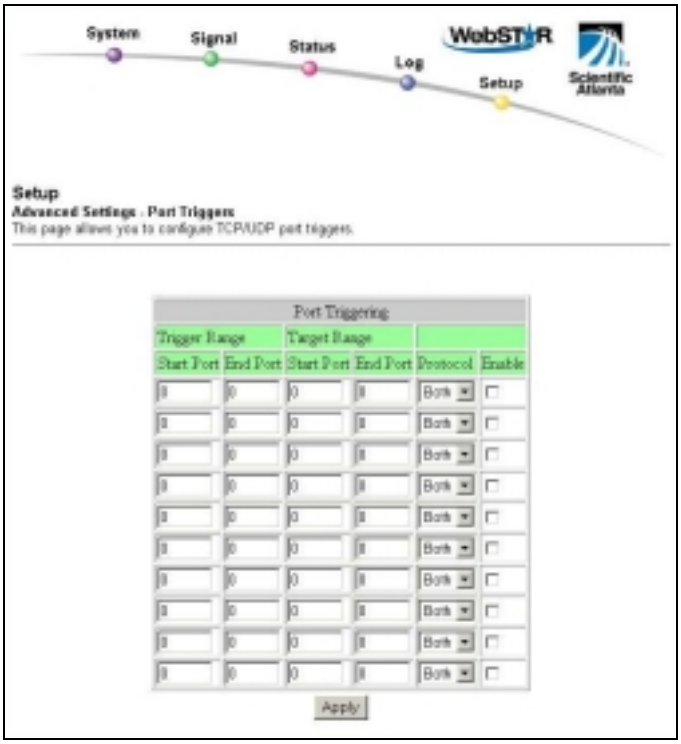
Use the Setup Advanced Settings – Port Triggers page to configure TCP/UDP port triggers. Port triggering is similar to port forwarding but is dynamic. In other words, the system does not hold the ports open indefinitely. For example, when the gateway cable modem detects outgoing data on a specific IP port number set in the “Trigger Range,” the resulting ports set in the “Target Range” will open for incoming data. If the system detects no outgoing traffic on the “Trigger Range” ports for a period of 10 minutes, the “Target Range” ports close. This is a safer method for opening specific ports for special applications, such as, video conferencing programs, interactive gaming, and file transfer in chat programs. This is safe because the ports are dynamically triggered and not held open continuously or erroneously left open by the router administrator. Therefore, these ports are not exposed and vulnerable for potential hackers to discover.

If you are not familiar with the advanced settings detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default advanced port triggers settings.

Click **Port Triggers** in the Advanced Settings section of the Setup page to access the Setup Advanced Settings – Port Triggers page.

Setup Advanced Settings – Port Triggers Page Example

The following illustration is an example of the Setup Advanced Settings – Port Triggers page.



Setup Advanced Settings – Port Triggers Page Description

Use this page to enter and enable the port forwarding trigger and target range start and end ports along with protocol information in the appropriate fields. The following example illustrates how to use the port triggering feature to configure the Microsoft X-Box Online Live for Internet gaming.

For most widely used applications (including Microsoft X-Box Online Live), the WebSTAR firewall automatically maps and opens ports required for that application while the application is in use.

1. In the first row, enter **88** in *both* Start Port and End Port fields.
2. In the same row, select **UDP** from the drop-down list in the Protocol field, and then select the box in the **Enable** field.
3. In the second row, enter **3074** in *both* Start Port and End Port fields.
4. In the same row as the second entry, select **Both**, and then select the box in the **Enable** field.
5. Click **Apply** to apply and save your new port forwarding settings.

Configuring the DMZ Host

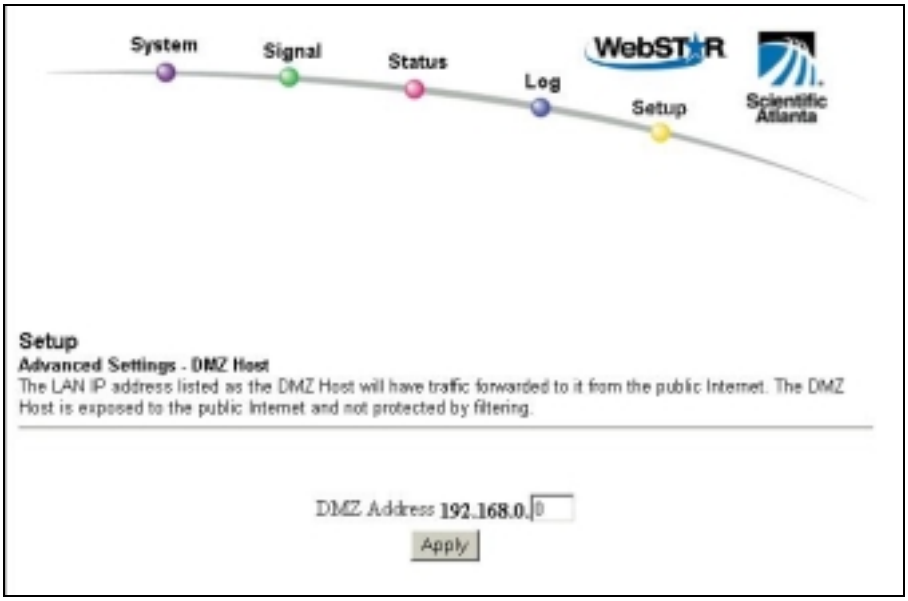
Use the Setup Advanced Settings – DMZ Host page to configure an IP address that is visible to the WAN. DMZ hosting is commonly referred to as “exposed host,” and allows you to specify the “default” recipient of WAN traffic that Network Address Translation (NAT) is unable to translate to a known local PC. DMZ allows one IP address to be unprotected while others remain protected.

If you are not familiar with the advanced settings detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default advanced DMZ host settings.

Click **DMZ Host** in the Advanced Settings section of the Setup page to access the Setup Advanced Settings – DMZ Host page.

Setup Advanced Settings – DMZ Host Page Example

The following illustration is an example of the Setup Advanced Settings – DMZ Host page.



Setup Advanced Settings – DMZ Host Page Description

Use this page to place a Private LAN IP device, for example, an FTP, Mail, or Web server directly on the Internet (bypassing the firewall). You set the server with a fixed IP address as a DMZ Host by entering its IP address in the DMZ Address field. Make sure the IP address used is not in the range of addresses delivered by the built-in DHCP server. After setting up a DMZ Host, all ports on this device are open to the Internet. You may configure only one PC to be the DMZ host. DMZ is generally used for PCs running “problem” applications that use random port numbers and do not function correctly with the specific port triggers or port forwarding setups described earlier in this guide. After entering a DMZ Address, click **Apply** to apply and save your new DMZ Host setting.

Configuring Web Page Filtering, Parental Control, and Firewall Protection

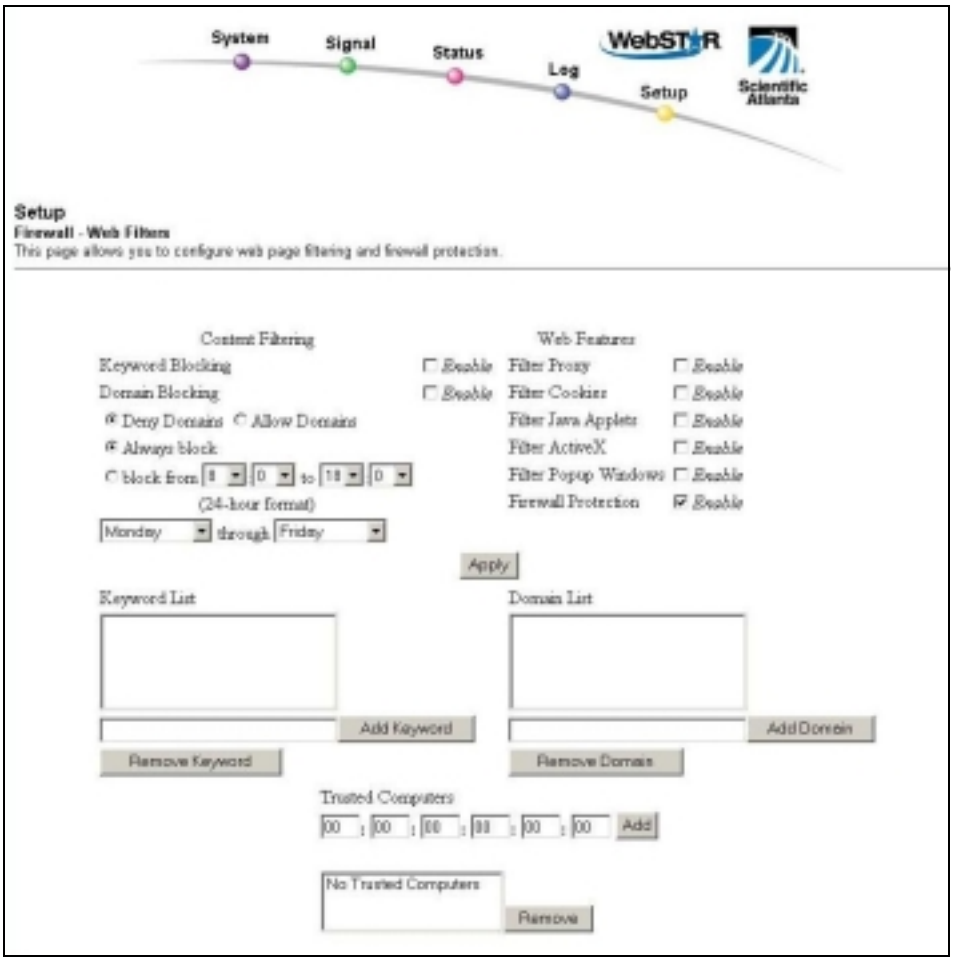
Use the Setup Firewall – Web Filters page to configure Web page filtering and firewall protection. This page allows you either block or allow Internet access based on keywords and/or domain names. You can also filter on the time of day and the day of the week.

If you are not familiar with the advanced settings detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default firewall Web filters settings.

Click **Web Filters** in the Firewall section of the Setup page to access the Setup Firewall – Web Filters page.

Setup Firewall – Web Filters Page Example

The following illustration is an example of the Setup Firewall – Web Filters page.



Setup Firewall – Web Filters Page Description

This section describes the section headings and fields descriptions of the Setup Firewall – Web Filters page.

Section Headings

The Setup Firewall – Web Filters page is divided into the following section headings:

- Content Filtering (Parental control)
- Web Features
- Keyword List
- Domain List
- Trusted Computers

If you make changes in *any* of the fields in the Setup Firewall – Web Filters page, click **Apply** to apply and save your Content Filter settings.

Content Filtering

The following table provides a description of each field name within the Content Filtering section heading.

Field Name	Description
Keyword Blocking	Allows you to block or allow Internet access based on keywords
Domain Blocking	Allows you to block or allow Internet access based on domain names and on time of day and day of week. Verify that the Status page reflects the correct time of day. If it does not reflect the correct time of day, contact your ISP. You can also adjust your settings to account for the difference.

Web Features

The following table provides a description of each field name within the Web Features section heading.

Field Name	Description
Filter Proxy	Enables/disables proxy
Filter Cookies	Enables/disables cookie blocking
Filter Java Applets	Enables/disables java applets
Filter ActiveX	Enables/disables ActiveX controls
Filter Popup Windows	Enables/disables popup windows. Some commonly used applications employ popup windows as part of the application. If you disable popup windows, it may interfere with some of these applications.
Firewall Protection	Enables/disables the firewall. When the firewall is enabled, the firewall will allow most commonly used applications to pass without any special setup or manual port configuration

Keyword List

Use the Keyword List to permanently add keywords to the Web Filter feature by typing a word into the Keyword List field, and then clicking **Add Keyword**. To remove a keyword from the Keyword List, highlight the keyword in the Keyword List field, and then click **Remove Keyword**.

Domain List

Use the Domain List to permanently add domain names to the Web Filter by typing a domain name into the Domain List field, and then clicking **Add Domain**. To remove a domain name from the Domain List, highlight the domain name in the Domain Name list, and then click **Remove Domain**.

Trusted Computers

Use the Trusted Computers field to specify the MAC address of computers whose content will always be trusted and allowed unrestricted access to the Internet.

Configuring Firewall Time of Day Access Filters

Use the Setup Firewall – Time of Day Access Filter page to block all traffic to and from specific computers based on the day of week and the time of day.

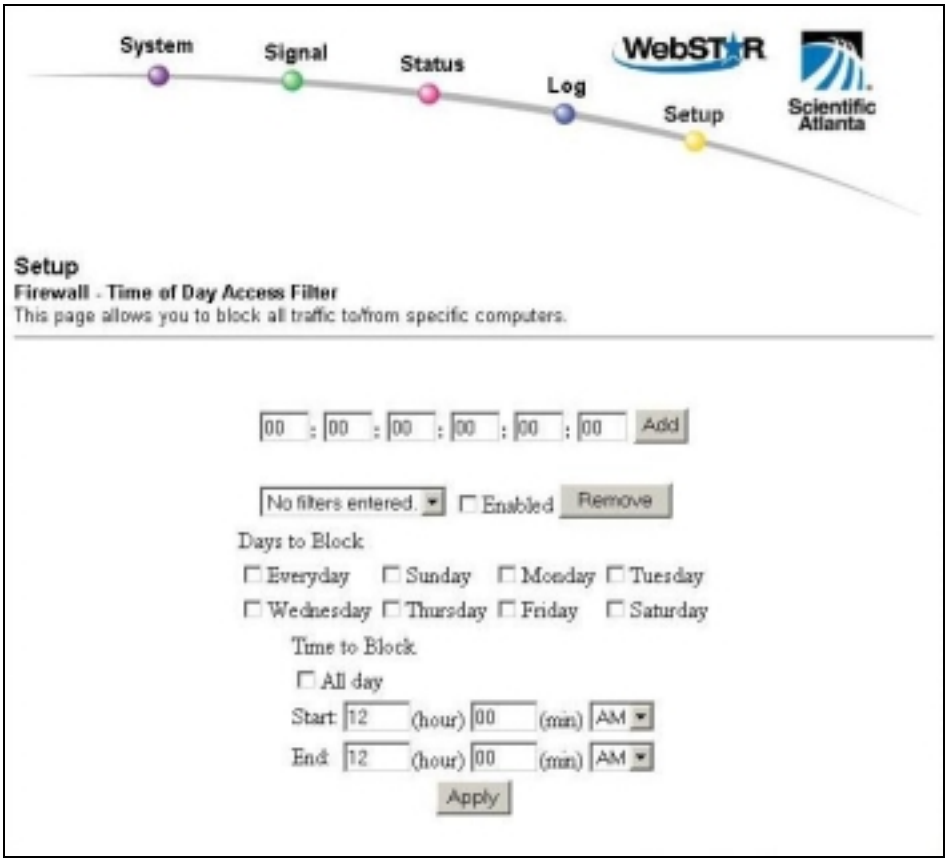
If you are not familiar with the advanced settings detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default firewall event logging settings.

Click **Time of Day Filters** in the Firewall section of the Setup page to access the Setup Firewall – Time of Day Access Filter page.

Setup Firewall – Time of Day Access Filter Page Example

The following illustration is an example of the Setup Firewall – Time of Day Access Filter page.

Time of day refers to your ISP's time of day server. The time of day server must be accurate and represent the time of day in your time zone for this feature to operate properly. Verify that the Status page reflects the correct time of day. If it does not reflect the correct time of day, contact your ISP. You can also adjust you settings to account for the difference.



Configuring Firewall Event Logging and E-mail Alerts

Use the Setup Firewall – Event Logging page to access the firewall event log and allows you to enter your e-mail address in order for you to receive e-mail alerts related to firewall attacks by hackers.

If you are not familiar with the advanced settings detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default firewall event logging settings.

Click **Event Logging** in the Firewall section of the Setup page to access the Setup Firewall – Event Logging page.

Setup Firewall – Event Logging Page Example

The following illustration is an example of the Setup Firewall – Event Logging page.

Setup Firewall – Event Logging Page Description

The Setup Firewall – Event Logging page shows events captured by the firewall. The log displays the following items:

- Description of the event
- Number of events that have occurred
- Last occurrence of an event
- Target and source addresses

You can configure the system to e-mail log events to the administrator in order for the administrator to monitor the firewall.

This section describes the section headings and fields descriptions of the Setup Firewall – Event Logging page.

Field Name	Description
Contact Email Address	Allows you to enter the e-mail address of the person who monitors the firewall
SMTP Server Name	Allows you to enter the mail server name of your outgoing mail server, or the mail server of your Internet service provider (ISP)
E-mail Alerts	Allows you to enable or disable sending e-mail alerts

Function Keys

The following function keys appear on the Setup Firewall – Event Logging page.

Key	Description
Apply	Saves the values you enter into the fields without closing the screen
E-mail Log	Allows you to force the system to send an e-mail alert even if the E-mail Alerts box is left unchecked
Clear Log	Allows you to clear all entries in the log

Enable or Disable the Wireless Interface

Use the Setup Wireless – Link Control page to turn the wireless access point on the gateway cable modem on or off.

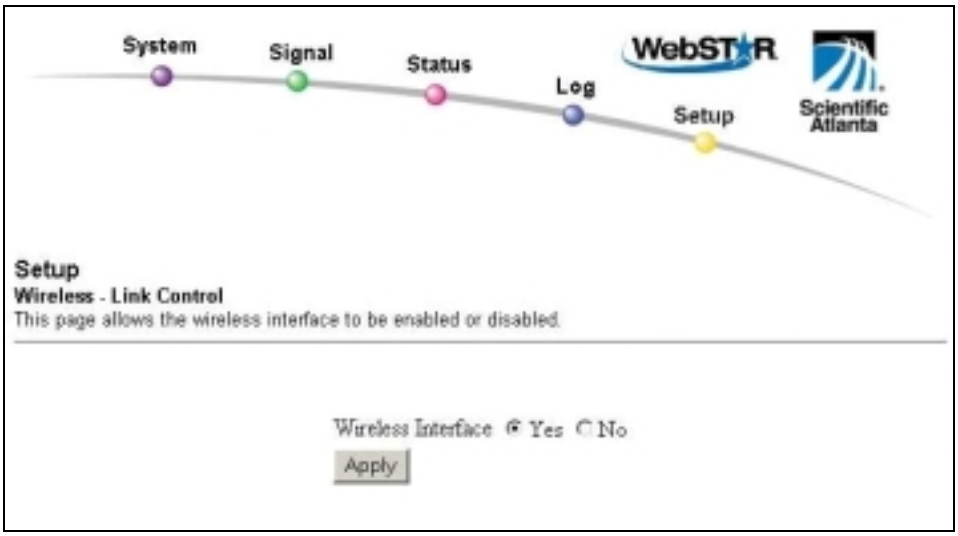
When the wireless interface is disabled, the transmitter is turned off.

If you are not familiar with the advanced settings detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default wireless basic settings.

Click **Link Control** in the Wireless section of the Setup page to access the Setup Wireless – Link Control page. Select **Yes** or **No** in the page to enable to disable the wireless interface, and then click **Apply**.

Setup Wireless – Link Control Page Example

The following illustration is an example of the Setup Wireless – Link Control page.



Configuring Your Wireless Access Point Parameters

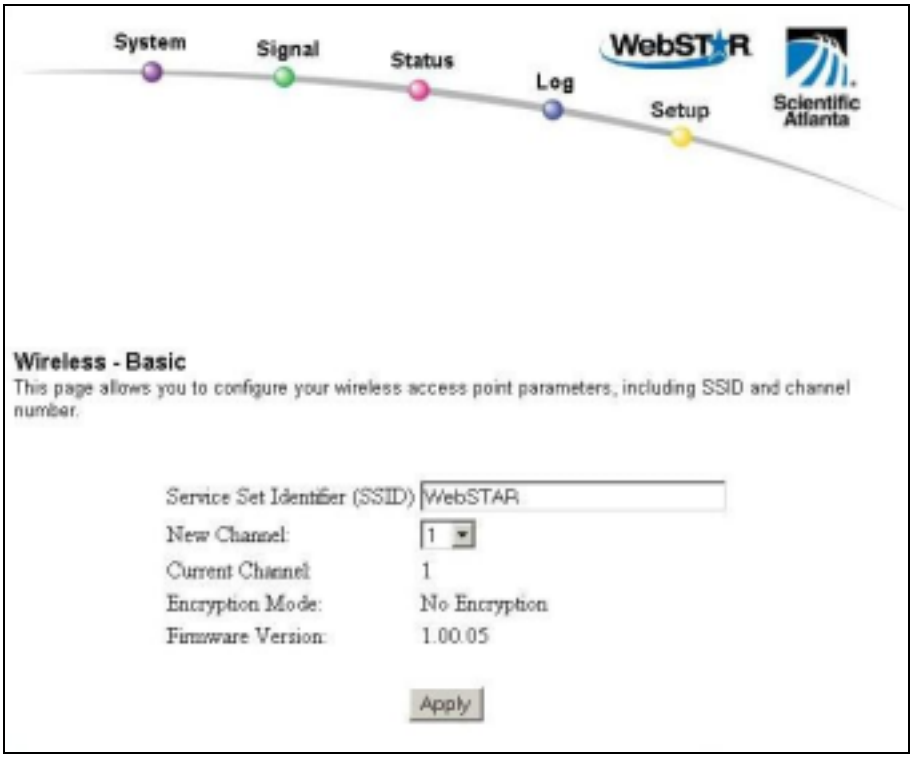
Use the Setup Wireless – Basic page to configure your wireless access point (WAP) parameters, included SSID and channel number.

If you are not familiar with the advanced settings detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default wireless basic settings.

Click **Basic** in the Wireless section of the Setup page to access the Setup Wireless – Basic page.

Setup Wireless – Basic Page Example

The following illustration is an example of the Setup Wireless – Basic page showing the factory default settings.



Setup Wireless – Basic Page Description

This section describes the section headings and fields descriptions of the Setup Wireless – Basic page.

If you make changes in the Setup Wireless – Basic page, click **Apply** to apply and save your wireless basic settings.

Field Name	Description
Service Set Identifier (SSID)	The name assigned to this access point The factory default for the SSID field should contain the product name **WebSTAR**.
New Channel (1-11)	Allows setting a communications channel for your access point Wireless networking channels overlap. Channels 1, 6, and 11 do not overlap with each other. For best performance, select one of these channels. If there are other access points in use in the area, select one of these channels that is farthest away from the other access points. **Example:** If channel 8 is in use by another access point, use channel 1 for your wireless network. If your wireless network is not operating correctly, or if external devices are interfering with your signal, select a different channel. Use your PC wireless utility software to scan for other access points in your area.
Current Channel	Present channel the WAP is using
Encryption Mode	Shows current encryption mode
Firmware Version	Shows current firmware version

Configuring Your Wireless Network Privacy and Encryption Parameters

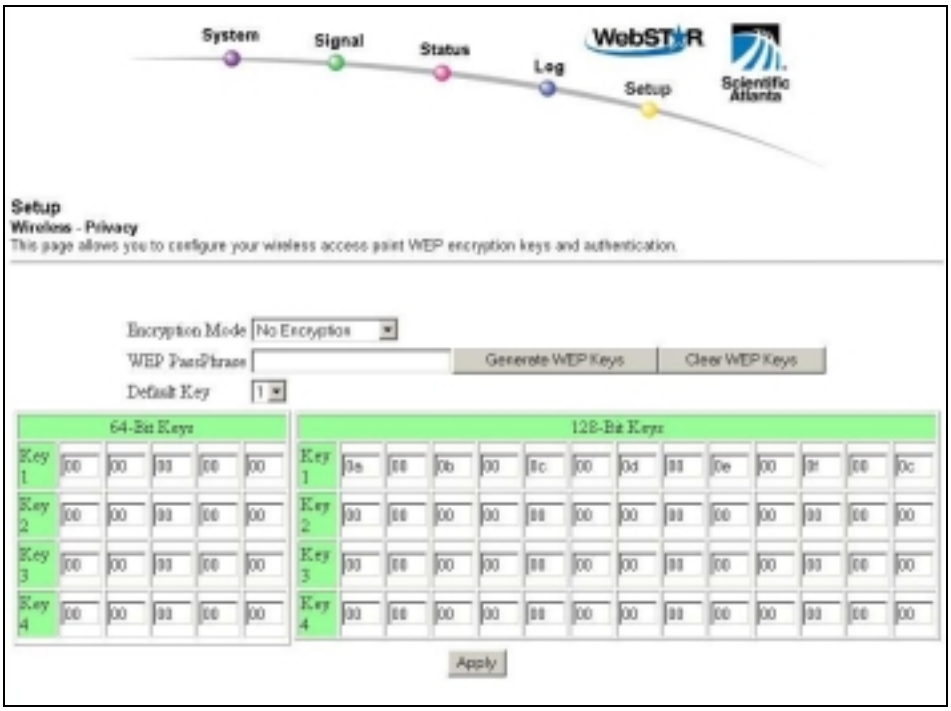
Use the Setup Wireless – Privacy page to configure your WAP wired equivalent privacy (WEP) encryption keys and authentication.

If you are not familiar with the advanced settings detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default wireless privacy settings.

Click **Privacy** in the Wireless section of the Setup page to access the Setup Wireless – Privacy page.

Setup Wireless – Privacy Page Example

The following illustration is an example of the Setup Wireless – Privacy page.



Setup Wireless – Privacy Page Description

This section describes the section headings and fields descriptions of the Setup Wireless – Privacy page.

If you make changes in the Setup Wireless – Privacy page, click **Apply** to apply and save your wireless privacy settings.

Field Name	Description
Encryption Mode	Allows setting No Encryption, 64-bit Encryption, or 128-bit encryption modes.
WEP PassPhrase	Allows you to designate a unique WEP PassPhrase (password) for additional security purposes
Generate WEP Keys	Allows your to generate WEP keys after entering the values in the appropriate fields • For 64-bit WEP, four unique 64-bit WEP keys will be generated • For 128-bit WEP, only one 128-bit WEP key will be generated. The same key will be entered into all four key locations.
Clear WEP Keys	Clears all WEP keys
Default Key	Select which of the four 64-bit or 128-bit Keys to activate. Only one WEP is in use at a time. You must manually change keys. They do not change automatically. • 64-bit and 40-bit encryption are two different names for the same encryption • 128-bit and 104-bit encryption are two different names for the same encryption

64 Bit Keys	For use with Encryption Mode set to 64-bit encryption. Enter 5-byte values for a Key. You do not have to set all four Keys. Only one Key is used for a home network. Each value is represented in hexadecimal. Use only these numbers or letters: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, a, b, c, d, e, and f. It is generally a good practice to use only lowercase characters when entering WEP encryption keys. Uppercase characters can sometimes be confused with numbers. For example, the uppercase letter “B” is often mistaken for the number “8.” Using lowercase characters minimizes the risk of confusing characters when copying keys from one device to another. Uppercase characters will automatically be converted to lowercase when the key or keys are applied and saved to memory. Use two numbers or letters in each box. Record your Key values. You will need these Key values when you set up your client wireless adapter. The Key values in each wireless network device *must* match.
128 Bit Keys	For use with Encryption Mode set to 128-bit encryption. Enter 13-byte values for a Key. You do not have to set all four Keys. Usually only one is needed for a home network. Each value is represented in hexadecimal. Use only these numbers or letters: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, a, b, c, d, e, and f. It is generally a good practice to use only lowercase characters when entering WEP encryption keys. Uppercase characters can sometimes be confused with numbers. For example, the uppercase letter “B” is often mistaken for the number “8.” Using lowercase characters minimizes the risk of confusing characters when copying keys from one device to another. Uppercase characters will automatically be converted to lowercase when the key or keys are applied and saved to memory. Use two numbers or letters in each box. Record your Key values. You will need these Key values when you set up your client wireless adapter. The Key values in each wireless network device *must* match.

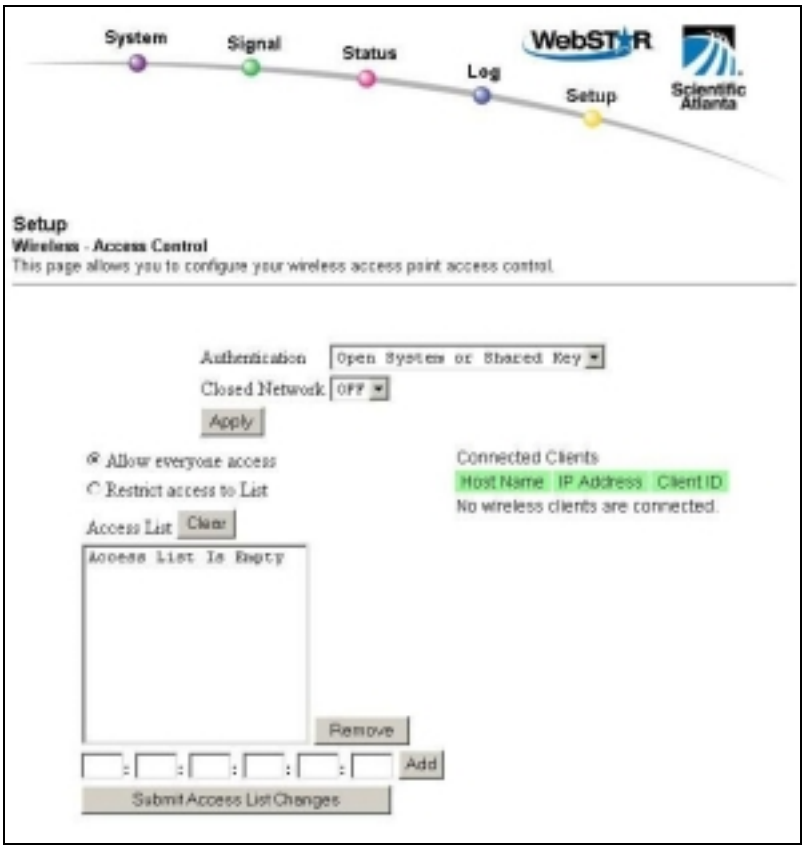
Configuring Wireless Access Point Access Control

Use the Setup Wireless – Access Control page to configure your configure your wireless access point access control.

If you are not familiar with the advanced settings detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default wireless advanced settings.

Click **Access Control** in the Wireless section of the Setup page to access the Setup Wireless – Access Control page.

Setup Wireless Access Control Page Example



Setup Wireless – Access Control Page Description

This section describes the section headings and field descriptions of the Setup Wireless – Access Control page.

Field Name	Description
Authentication	When encryption is enabled, this selection allows you to choose one of the following authentication methods from the drop-down list: • Open System—Open system authentication allows any device to authenticate and then attempt to communicate with the WAP. Communication occurs if both devices have matching pre-configured WEP keys. Open System authentication does not provide the client with confirmation that the link has been established. This makes it more difficult for a hacker to access the network. • Shared Key—During shared key authentication, the WAP sends an unencrypted challenge text string to any device attempting to communicate with the WAP. The device requesting authentication encrypts the challenge text and sends it back to the WAP. If the challenge text is encrypted correctly, the access point allows the requesting device to authenticate. Shared key authentication provides the client with feedback when a link is denied where Open System authentication does not. • Open System or Shared Key—Either Open System or Shared Key can associate with the WAP and the WAP accepts data from wireless clients using the appropriate form of authentication.
Closed Network	Allows you to disable or enable the network to access by wireless clients. When ON is selected, the access point does not broadcast the SSID. The client device must be configured manually with the SSID and the MAC address of the access point in order to access with wireless network.
Allow/Restrict Access	Enables unrestricted access or limits access to clients listed in the Access List
Access List	Displays the MAC address of the clients that are allowed to access the wireless access point
Connected Clients	Displays the Host Name, IP Address, and Client ID of wireless clients that are connected to (associated with) the gateway modem

Function Keys

The following function keys appear on the Setup Firewall – Event Logging page.

Key	Description
Apply	Applies and saves the values you enter into the fields without closing the screen
Clear	Clears the Access List
Remove	Removes entries from the Access List
Add	Adds a client to the Access List
Submit Access List Changes	Saves and activates changes to the Access List

Configuring Wireless Data Rates and WiFi Thresholds

Use the Setup Wireless – Advanced page to configure your WAP data rates and wired fidelity (WiFi) thresholds.

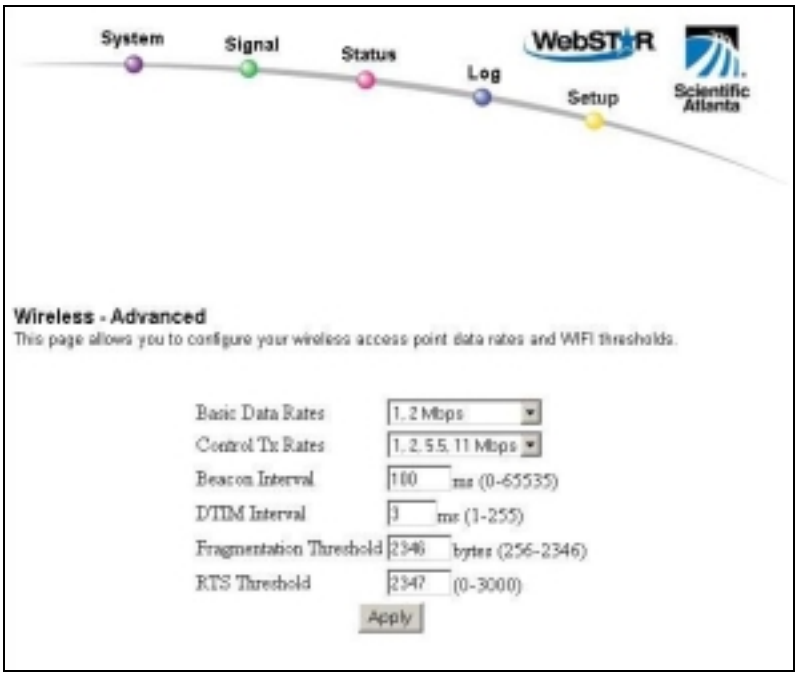
If you are not familiar with the advanced settings detailed in this section, contact your cable service provider before you attempt to change any of the gateway cable modem default wireless advanced settings.

Click **Advanced** in the Wireless section of the Setup page to access the Setup Wireless – Advanced page.

Setup Wireless – Advanced Page Example

The following illustration is an example of the Setup Wireless – Advanced page.

We recommend that you do *not* change the default wireless settings that are shown in the preceding illustration unless you are instructed to do so by your cable service provider.



Setup Wireless – Advanced Page Description

This section describes the section headings and fields descriptions of the Setup Wireless – Advanced page.

If you make changes in the Setup Wireless – Advanced page, click **Apply** to apply and save your wireless advanced settings.

Field Name	Description
Basic Data Rates	Displays the default initial data rate for associating with a WAP. For maximum client compatibility, it is recommended that the Basic Data Rates are set at 1, 2 Mbps so that older cards can easily gain access to the network. This setting specifies the minimal set of required data rates
Control Tx Rates	Displays the transmit data rates the WAP uses is a function of signal strength and signal quality. For maximum potential link speed, it is recommended that you select all control Tx rates: 1, 2 Mbps, 5.5 Mpbs, and 11 Mbps
Beacon Interval	Displays the time interval that the WAP uses to announce itself to remote devices. The Beacon Interval should be left at 100ms for compliance with most client cards. The Beacon Interval specifies how often packets are sent by the Access Point (AP) to synchronize a wireless network and it's clients
DTIM Interval	Displays the time interval between Broadcasts/Multicast transmissions. The DTIM (Delivery Traffic Indication Message) Interval is a countdown informing the wireless clients of the next window for listening to broadcast and multicast messages. When the AP has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. AP clients hear the beacons and awaken to receive the broadcast and multicast messages. The DTIM Interval should be left at 3 ms for compliance with most client cards
Fragmentation Threshold	Fragmentation and ready to send (RTS) thresholds should be set equivalent to the maximum Ethernet frame size allowable on the link including overhead (1536 bytes). Lesser settings can damage data throughput as large frames could be fragmented or collisions could occur
RTS Threshold	The RTS/CTS threshold determines at what packet size beyond which the RTS/CTS mechanism is invoked.

Having Difficulty?

Frequently Asked Questions

Q. What if I don't subscribe to cable TV?

A. If cable TV is available in your area, data service may be made available with or without subscribing to cable TV service. Contact your local cable service provider for complete information on cable services, including high-speed Internet access.

Q. How do I arrange for installation?

A. Professional installation from your cable service provider may be provided. A professional installation ensures proper cable connection to the modem and to your PC, and ensures proper configuration of all hardware and software settings. Contact your cable service provider for more information about installation.

Q. How does the gateway cable modem connect to my computer?

A. The cable modem connects to the USB port or the 10/100BaseT Ethernet port on your PC. If your PC is not equipped with an Ethernet interface, an Ethernet card is available from your local PC or office supply retailer, or from your cable service provider.

Q. After my cable modem is connected, how do I access the Internet?

A. Your local cable service provider becomes your Internet Service Provider (ISP). They offer a wide range of services including e-mail, chat, news, and information services. Your cable service provider will provide the software you will need.

Q. Can I watch TV and surf the Internet at the same time?

A. Absolutely! If you subscribe to cable television service, you can watch TV and use your cable modem at the same time by connecting your TV and your cable modem to the cable network using an optional cable signal splitter.

Q. Can I run more than one device on the modem?

A. Yes—a single WebSTAR cable modem will theoretically support up to 253 Ethernet devices utilizing user-supplied Ethernet hubs or routers that you can purchase at your local PC or office supply retailer. Another user at your location can simultaneously connect to the USB port on the cable modem. Contact your cable service provider for further assistance.

Common Troubleshooting Issues

I don't understand the front panel status indicators.

See **Front Panel Status Indicator Functions**, later in this guide for more detailed information on the front panel status indicator operation and function.

The modem does not register an Ethernet connection.

- Verify that your computer has a 10/100BaseT Ethernet card and that the Ethernet driver software is properly installed. If you purchase and install an Ethernet card, follow the installation instructions very carefully.
- Verify the status of the front panel status indicator lights.

The modem does not register an Ethernet connection after connecting to a hub.

If you are connecting multiple PCs to the cable modem, you should first connect the modem to the up-link port of the hub. The **LINK** LED of the hub will illuminate continuously.

The modem does not register a cable connection.

- The modem works with a standard 75-ohm RF coaxial cable. If you are using a different cable, your cable modem will not function properly. Contact your cable service provider to determine whether you are using the correct cable.
- Verify that you have followed the procedure in **How Do I Renew the IP Address on My PC**, later in this guide.
- Your NIC card or USB interface may be malfunctioning. Refer to the troubleshooting information in the NIC or USB documentation.

Tips for Improved Performance

Check and Correct

If your cable modem does not perform as expected, the following tips may help. If you need further assistance, contact your cable service provider.

- Verify that the plug to your cable modem AC adapter is properly inserted into an electrical outlet.
- Verify that your cable modem AC adapter is *not* plugged into an electrical outlet that is controlled by a wall switch. If a wall switch controls the electrical outlet, make sure the switch is in the **ON** position.
- Verify that the **POWER** and **CABLE** indicators on the front panel of your cable modem are illuminated.
- Verify that all cables are properly connected, and that you are using the correct cables.
- Verify that your cable service is active and that it supports two-way service.
- Verify that your TCP/IP is properly installed and configured if you are using the Ethernet connection.
- Verify that you have followed the procedures in **How Do I Install the USB Drivers**, earlier in this guide, if you are using the USB connection.
- Verify that you have called your cable service provider and given them the serial number and MAC address of your cable modem.
- If you are using a cable signal splitter so that you can connect the cable modem to other devices, remove the splitter and reconnect the cables so that the cable modem is connected directly to the cable input. If the cable modem now functions properly, the cable signal splitter may be defective and may need to be replaced.

How Do I Renew the IP Address on My PC?

If your PC cannot access the Internet after the cable modem is online, it is possible that your PC did not renew its IP address.

Renewing the IP Address on Your PC

Follow the appropriate instructions in this section for your operating system to renew the IP address on your PC.

To renew the IP address for Windows 95, 98, 98SE, or ME systems

1. Click **Start**, and then click **Run** to open the Run window.
2. Type **winipcfg** in the Open field, and click **OK** to execute the winipcfg command. The IP Configuration window opens.
3. Click the down arrow to the right of the top field, and select the Ethernet adapter that is installed on your PC. The IP Configuration window displays the Ethernet adapter information.
4. Click **Release**, and then click **Renew**. The IP Configuration window displays a new IP address.
5. Click **OK** to close the IP Configuration window, you have completed this procedure.

   If you cannot access the Internet, contact your cable service provider for further assistance.

To renew the IP address for Windows 2000, NT, or XP systems

1. Open a Command Prompt (DOS) window.
2. At the C:/ prompt, type **ipconfig/release** and press **Enter**. The system releases the IP address.
3. At the C:/ prompt, type **ipconfig/renew** and press **Enter**. The system displays a new IP address.
4. To close the Command Prompt window, click on the **X** in the upper right corner of the window. You have completed this procedure.

   If you cannot access the Internet, contact your cable service provider for further assistance.

Front Panel Status Indicator Functions

Initial Power Up, Calibration, and Registration

The following chart illustrates the sequence of steps and the corresponding appearance of the cable modem front panel status indicators during power up, calibration, and registration on the network. Use this chart to troubleshoot the power up, calibration, and registration process of your cable modem.

After the cable modem completes step 7 (Registration Completed), the modem proceeds immediately to step 8 (Normal Operations).

Front Panel LED Status Indicators During Initial Power Up, Calibration, and Registration

Step →		1	2	3	4	5	6	7
Front Panel Indicator		Self Test	Downstream Scan	Downstream Signal Lock	Ranging	Requesting IP Address	Registering	Registration Completed
1	POWER	ON	ON	ON	ON	ON	ON	ON
2	RECEIVE	ON	OFF	OCCASIONAL BLINKING	OCCASIONAL BLINKING	OCCASIONAL BLINKING	OCCASIONAL BLINKING	ON
3	SEND	ON	OFF	OFF	OCCASIONAL BLINKING	OCCASIONAL BLINKING	OCCASIONAL BLINKING	ON
4	CABLE	ON	SLOW BLINKING 1 blink	MOMENTARY ON	OFF	BLINKING 2 blinks	BLINKING 4 blinks	ON
5	PC	ON	ON or BLINKING	ON or BLINKING	ON or BLINKING	ON or BLINKING	ON or BLINKING	ON
6	WIRELESS	ON	ON or BLINKING	ON or BLINKING	ON or BLINKING	ON or BLINKING	ON or BLINKING	ON

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Normal Operations

The following chart illustrates the appearance of the cable modem front panel LED status indicators during normal operations.

Front Panel LED Status Indicators During Normal Operations

Step		8
Front Panel Indicator		Normal Operations (Bold denotes normal)
1	POWER	ON
2	RECEIVE	BLINKS - To indicate data is being transferred between the modem and the network.
3	SEND	BLINKS - To indicate data is being transferred between the modem and the network.
4	CABLE	ON
5	PC	ON - When a single device is connected to either the Ethernet or USB port and no data is being sent to or from the modem. BLINKS - LED blinks when only one Ethernet or USB device is connected and data is being transferrd between the consumer premise equipment (CPE) and the cable modem. OFF - When no devices are connected to either the Ethernet or USB ports. **Note:** With both Ethernet and USB devices connected to the modem at the same time, when data is being transferred through only one of the devices (Ethernet or USB), the indicator will illuminate continuously. Whenever data is being sent through both data ports (Ethernet and USB) simultaneously, the indicator will blink as described above.
6	WIRELESS	ON - When the wireless access point is operational. BLINKS - To indicate data is being transmitted through the wireless access point. OFF - When the user disables the wireless access point.

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Special Conditions

The following chart describes the appearance of the cable modem front panel status indicators during special conditions to show that you have been denied network access.

Front Panel LED Status Indicators During Special Conditions		
Front Panel Indicator		**Network Access Denied**
1	POWER	SLOW BLINKING 1 time per second
2	RECEIVE	SLOW BLINKING 1 time per second
3	SEND	SLOW BLINKING 1 time per second
4	CABLE	SLOW BLINKING 1 time per second
5	PC	SLOW BLINKING 1 time per second
6	WIRELESS	ON or BLINKING

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FCC Compliance

United States FCC Compliance

This equipment has been tested and found to comply with the applicable limits of Part 15 of 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 or TV reception, which can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult your cable company or an experienced radio/TV technician for help

Any changes or modifications not expressly approved by Scientific-Atlanta could void the user's authority to operate the equipment.

The information shown in the FCC Declaration of Conformity paragraph below is a requirement of the FCC and is intended to supply you with information regarding the FCC approval of this device. *The phone numbers listed are for FCC-related questions only and not intended for questions regarding the connection or operation for this device. Please contact your cable service provider for any questions you may have regarding the operation or installation of this device.*

FCC Declaration of Conformity

This device complies with *Part 15 of FCC Rules*. Operation is subject to the following two conditions: 1) the device may not cause harmful interference, and 2) the device must accept any interference received, including interference that may cause undesired operation.

WebSTAR Gateway Cable Modems
Model DPR2320 and Model EPR2320
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Canada EMI Regulation

This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilleur du Canada.

For Information

If You Have Questions

If you have technical questions, contact your local cable service provider.

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Bringing the Interactive Experience Home

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CAUTION: To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with minimum distance 20cm between the radiator and your body. Use on the supplied antenna. Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.