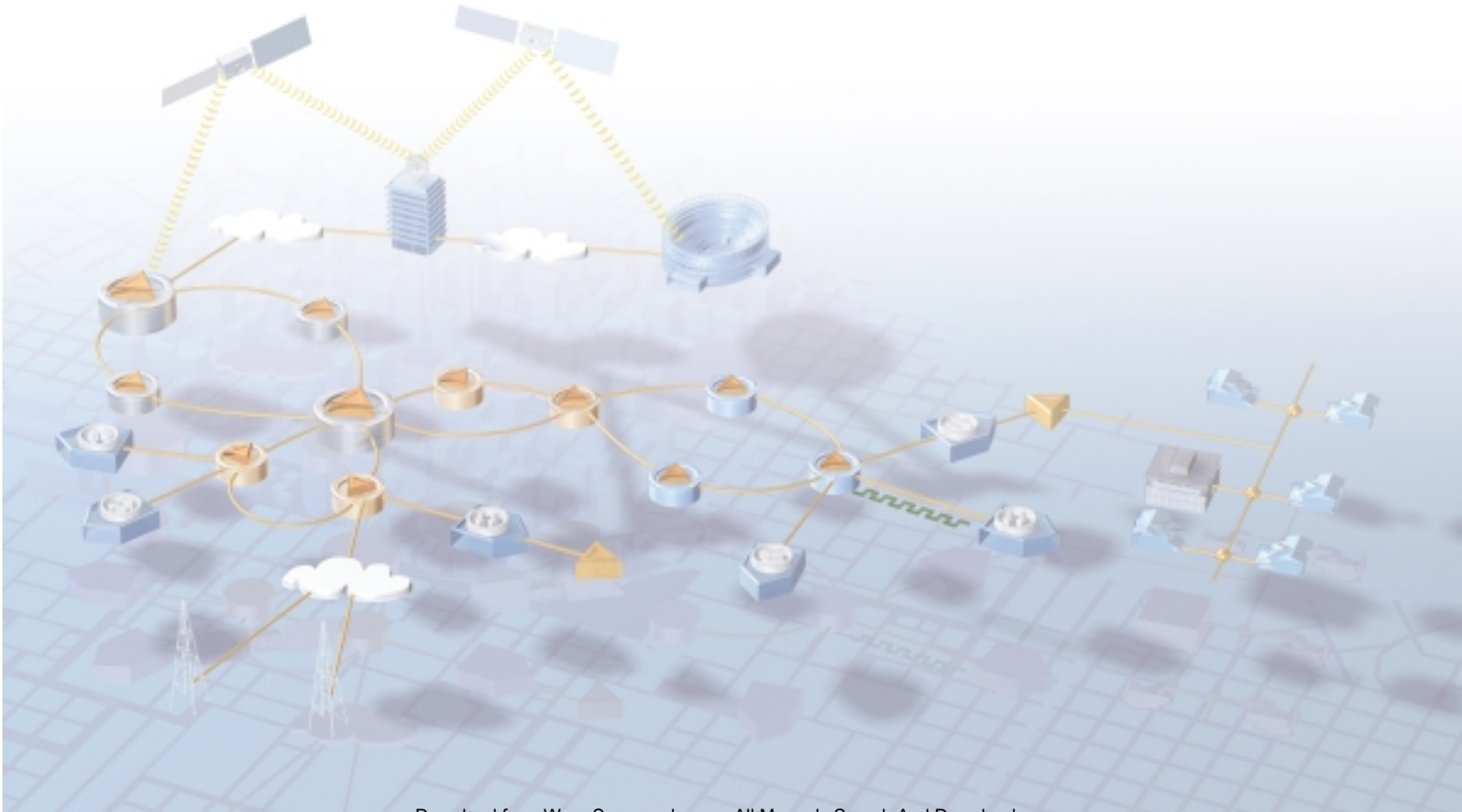


WebSTAR™ DPX2203™ and EPX2203™ VoIP Cable Modem User's Guide



WebSTAR DPX2203 or EPX2203 VoIP Cable Modem User's Guide

Overview

Introduction

Welcome to the world of high-speed Internet and high quality digital telephone service. Your new WebSTAR™ Model DPX2203™ or Model EPX2203™ Cable Modem with Embedded MTA is a modem that meets industry standards for high-speed data connectivity along with digital telephone service. The DPX2203 or EPX2203 offers the following outstanding features:

- Data Over Cable System Interface Specifications (DOCSIS) technology to deliver high-end performance and reliability
- 10/100BaseT Ethernet and USB ports to provide connectivity for high-speed data services or to other Internet devices
- Two RJ-11 telephony ports for connecting conventional telephones or fax machines

This guide provides procedures and recommendations for placing, installing, configuring, operating, and troubleshooting your DPX2203 or EPX2203 cable modem for high-speed Internet or digital telephone service, or both simultaneously. 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.

In This Guide

This guide contains the following topics.

Topic	See Page
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Section A

IMPORTANT RULES FOR SAFE OPERATION

Overview

Introduction

This section provides important safety instructions that you must read and follow.









In this Section

This section contains the following topic.

Topic	See Page
IMPORTANT RULES FOR SAFE OPERATION	3

IMPORTANT RULES FOR SAFE OPERATION

Note to Installer

<p>Note to CATV System Installer</p> <p>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.</p>	<table border="1"><tr><td></td><td>CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN</td><td></td></tr><tr><td></td><td>AVIS RISQUE DE CHOC ÉLECTRIQUE NE PAS OUVRIR</td><td></td></tr></table>		CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN			AVIS RISQUE DE CHOC ÉLECTRIQUE NE PAS OUVRIR	
	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN						
	AVIS RISQUE DE CHOC ÉLECTRIQUE NE PAS OUVRIR						
 <p>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.</p>	<p>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.</p> <p>WARNING TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.</p>  <p>This symbol is intended to alert you of the presence of important operating and maintenance (servicing) instructions in the literature accompanying this product.</p>						

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

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.

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

Continued on next page

IMPORTANT RULES FOR SAFE OPERATION, Continued

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.

Continued on next page

IMPORTANT RULES FOR SAFE OPERATION, Continued

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.

Section B

Before You Begin

Overview

Introduction

When you receive your WebSTAR Cable Modem, you should check the cable modem equipment and accessories to verify that each item is in the carton and that each item is undamaged. This section provides an equipment checklist.

In this Section

This section contains the following topics.

Topic	See Page
Check Your Equipment	7

Check Your Equipment

Equipment Checklist

Before you install your cable modem, check the items in the carton. The carton contains the following items:

- One WebSTAR Cable Modem
- One Ethernet cable (CAT5/RJ-45)
- One USB cable
- One power adapter with power cord

If any of the items listed is missing, please contact SciCare™ Broadband Services at 1-800-283-2636 for assistance.

Notes:

- You will need an optional cable signal splitter and additional standard RF coaxial cable 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.
 - Cables and other equipment needed for telephone service must be purchased separately. Contact your cable service provider to inquire about the equipment and cables you need for telephone service.
-

Section C

Front and Back Panel Components

Overview

Introduction

This section provides descriptions of the DPX2203 or EPX2203 front and back panel components and the functions of the lights on the front panel.

In this Section

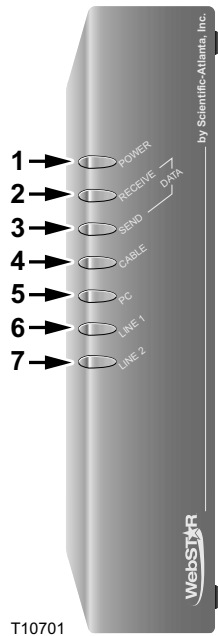
This section contains the following topics.

Topic	See Page
WebSTAR Cable Modem Front Panel	9
WebSTAR Cable Modem Back Panel	10
Functions of the Front Panel Lights	11

WebSTAR Cable Modem Front Panel

Front Panel Components

The following illustration describes the lights on the front panel of the cable modem.



- 1 **POWER** - Indicates that power is being applied to the cable modem
- 2 **RECEIVE** - Indicates that the modem is receiving data from the cable network
- 3 **SEND** - Indicates that the modem is sending data to the cable network
- 4 **CABLE** - Indicates that the modem is registered on the network and fully operational
- 5 **PC** - Indicates that an Ethernet/USB device or PC is present
- 6 **LINE 1** - Telephone line 1 status light
- 7 **LINE 2** - Telephone line 2 status light

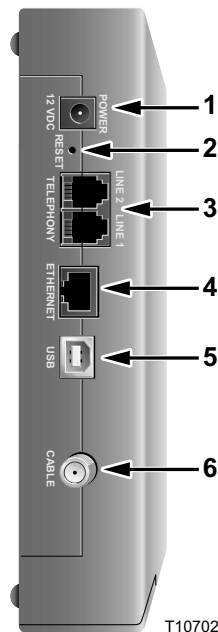
Notes:

- After the cable modem is successfully registered on the network, the **POWER** (light 1) and **CABLE** (light 4) lights illuminate continuously to indicate that the cable modem is active and fully operational.
- See **Functions of the Front Panel Lights**, later in this guide, for more information on front panel lights.

WebSTAR Cable Modem Back Panel

Back Panel Components

The following illustration describes the back panel components of the cable modem.



- 1 **POWER** - Connects the cable modem to the DC output of the AC power adapter that is provided with your cable modem

Note: Only use the power cord and the AC power adapter that are provided with your cable modem.

- 2 **RESET** - Reset-to-Default button (Factory Reset)

CAUTION: This button is for maintenance purposes only. Do not use unless instructed to do so by your cable or telephone service provider!

- 3 **LINE 1/LINE 2** - RJ-11 telephone ports connect to home telephone wiring to conventional telephones or fax machines

- 4 **ETHERNET** - RJ-45 Ethernet port connects to the Ethernet port on your PC

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

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

CAUTION: Do not connect your PC to *both* the Ethernet and USB ports at the same time.

Note: You can connect two separate PCs to the cable modem at the same time by connecting one to the Ethernet port and one to the USB port. This dual-connection requires that you purchase two IP addresses from your ISP. See **Internet Service: Install the Cable Modem**, in Section D of this guide.

Functions of the Front Panel Lights

Initial Power Up, Calibration, and Registration

The following chart illustrates the sequence of steps and the corresponding appearance of the front panel lights on the cable modem 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.

Note: After the cable modem completes step 8 (Registration Completed), the modem proceeds immediately to Normal Operations, on page 12.

Front Panel Lights During Initial Power Up, Calibration, and Registration									
Step→		1	2	3	4	5	6	7	8
	Front Panel Light	Power Up	Self Test	Downstream Scan	Downstream Signal Lock	Ranging	Requesting IP Address	Registering	Registration Complete
1	Power	On	On	On	On	On	On	On	On
2	Receive	Off	On	Off	Off	Occasional Blinking	Occasional Blinking	Occasional Blinking	On
3	Send	Off	On	Off	Off	Occasional Blinking	Occasional Blinking	Occasional Blinking	On
4	Cable	Off	On	Slow Blinking 1 Blink	Momentary On	Off	Blinking 2 Blinks	Blinking 4 Blinks	On
5	PC ¹	Off	On	Off, On or Blinking	Off, On or Blinking	Off, On or Blinking	Off, On or Blinking	Off, On or Blinking	Off or On
6	Line 1	Off	On	Off	Off	Off	Off	Off	Off
7	Line 2	Off	On	Off	Off	Off	Off	Off	Off
¹ The PC light is on whenever a PC is connected to the modem, and it blinks to indicate that data is being transferred. If the modem is used to provide telephone service only and is not connected to a PC, the PC light is off.									

Continued on next page

Functions of the Front Panel Lights, Continued

Normal Operations

The following chart illustrates the appearance of the front panel lights on the cable modem during normal operations.

Front Panel Lights During Normal Operations		
Front Panel Light	Normal Operations	
1	Power	On
2	Receive	Blinks – To indicate that the modem is receiving data from the network
3	Send	Blinks – To indicate that the modem is sending data to 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 – When only one Ethernet or USB device is connected and data is being transferred 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 light illuminates continuously. Whenever data is being sent through both data ports (Ethernet and USB) simultaneously, the light blinks as described above.
6	Line 1	On when line 1 is in use
7	Line 2	On when line 2 is in use

Continued on next page

Functions of the Front Panel Lights, Continued

Special Conditions

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

If the front panel lights on the cable modem indicate that network access is denied, contact your cable service provider.

Front Panel Lights During Special Conditions		
Front Panel Lights		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	Line 1	Off
7	Line 2	Off

Section D

Internet Service Installation

Internet Service: Overview

Introduction

This section provides information and procedures to assist you in placing, installing, configuring, operating, and troubleshooting your DPX2203 or EPX2203 Cable Modem for high-speed Internet service.

In this Section

This section contains the following topics.

Topic	See Page
Internet Service: Before You Begin	15
Internet Service: System Requirements	16
Internet Service: Install the Cable Modem	17
Internet Service: Configure TCP/IP	19
Internet Service: Install USB Drivers	23
Internet Service: Frequently Asked Questions	26
Internet Service: Troubleshooting	27

Internet Service: Before You Begin

Contacting Your Local Cable Service Provider

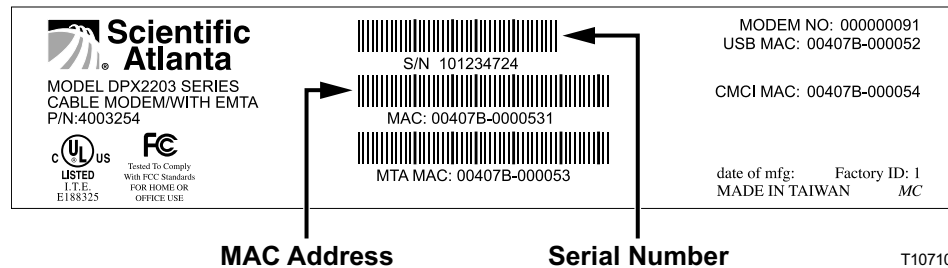
You need to set up an Internet access account with your local cable service provider in order to use your cable modem. When you contact your cable service provider, verify the following conditions:

- Does the cable service to your home support two-way, DOCSIS-compatible cable modem access? If your cable service provider does not provide two-way service, this modem will not be able to communicate with your cable service provider's Internet access service.
- Do you have an active RF coaxial cable connection near your PC? If your current cable input is not conveniently located near your PC, your cable service provider can install one.
- Do you have an Internet access account? Your cable service provider will set up your Internet access account, and they will become your Internet Service Provider (ISP) to enable you to send and receive e-mail, access the World Wide Web, and receive other Internet services.

You may also need to give your cable service provider the following information:

- The serial number of the modem
- The Media Access Control (MAC) address of the modem

These numbers appear on a bar code label located on the 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 following illustration shows a sample bar code label.



Selecting a Location for Your Modem

Select the location for your workspace and consider these recommendations:

- Position your PC and cable modem so that they are located near your cable input. There should be plenty of room to guide the cables away from the modem without straining or crimping them.
 - Airflow around the cable modem should not be restricted.
 - Read this user's guide thoroughly before installing the cable modem.
-

Internet Service: System Requirements

Introduction

This section provides hardware and software requirements for connecting your cable modem to a PC for high-speed Internet service.

Minimum System Requirements for PCs

- 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 in your PC

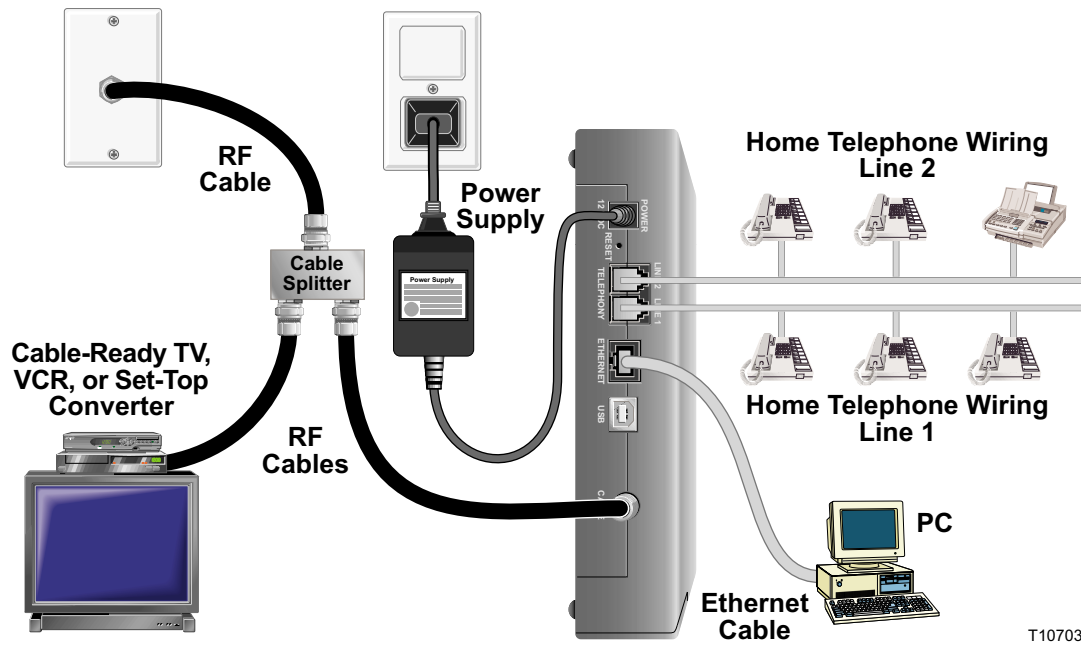
System Requirements for a USB Connection

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

Internet Service: Install the Cable Modem

Installation Diagram

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



T10703

Note: Professional installation may be available. Contact your local cable service provider for further assistance.

Continued on next page

Internet Service: Install the Cable Modem, Continued

Installing the Modem for High-Speed Data Service

The following installation procedures explain how to set up and configure your cable modem if you plan to use high-speed data service. If you plan to use your modem for telephone service **only**, go to **Telephone Service: Install the Cable Modem**, later in this guide.



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

Follow these steps to install your modem for high-speed data service.

1. Power off 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.
Note: You can connect two separate PCs to the cable modem at the same time by connecting one to the Ethernet port and one to the USB port.
3. Insert the AC power adapter cord into the DC power connector on the back of the cable modem, and then plug the power adapter into an AC power source.
4. Plug in and power on your PC.
5. Connect one or both of the telephone ports to your home telephone jack(s), or plug a telephone directly into one of the telephone ports.
6. Connect the active RF coaxial cable to the **CABLE IN** connector.
Note: Use an optional cable signal splitter to add a TV, a DHCT or set-top converter, or a VCR.
7. The cable modem will then begin an automatic search to locate and sign on to the broadband data network.
Note: This process may take up to 5 minutes. The modem will be ready for use when the **CABLE** light on the front panel stops blinking and illuminates continuously.
8. Your next step is to configure the modem. Choose one of the following options:
 - To configure the TCP/IP protocol for Ethernet, go to **Configure TCP/IP**, next in this guide.
 - To install the USB Drivers for USB, go to **Install USB Drivers**, later in this guide.

Internet Service: Configure TCP/IP

Introduction

This section contains instructions for configuring the WebSTAR Cable Modem to run in Microsoft Windows or Macintosh environments. In addition, the TCP/IP protocol in a Microsoft Windows environment is different for each Microsoft Windows 95, 98, 98SE, ME, 2000, and XP version. Go to the appropriate section and follow the instructions to configure the TCP/IP protocol.

Microsoft Windows 95, 98, 98SE, and ME

Follow the instructions in this section to configure the WebSTAR cable modem for TCP/IP in a Microsoft Windows 95, 98, 98SE, and ME environment.

Configuring the TCP/IP Protocol for Microsoft Windows 95, 98, 98SE, and ME

Note: Before you install your cable modem, you need to have either an Ethernet Network Interface Card (NIC) with TCP/IP communications protocol or a USB network interface installed on your system.

Follow these steps to install and configure the TCP/IP protocol for Microsoft Windows 95, 98, 98SE, and ME environments.

1. Click **Start**, select **Settings**, and choose **Control Panel**.
Result: The Control Panel window opens.
2. In the Control Panel window, double-click the **Network** icon.
Result: A list of installed network components appears.
3. Under the **Configuration** tab, read the list of installed network components to verify your PC contains the TCP/IP protocol.
4. Does your PC have the TCP/IP protocol?
 - If **yes**, go to step 8.
 - If **no**, click **Add**.
5. Click **Protocol**, and then click **Add**.
6. In the Manufacturers list, click **Microsoft**.
7. In the Network Protocols list, click **TCP/IP**, and then click **OK**.
8. Click the **TCP/IP Ethernet Adapter** protocol, and then choose **Properties**.
9. Click the IP Address tab, and then select **Obtain an IP address automatically**.
10. Click the **Gateway** tab and verify that these fields are empty. If they are not empty, highlight and delete all information from the fields.

Continued on next page

Internet Service: Configure TCP/IP, Continued

11. Click the **DNS Configuration** tab, and then select **Disable DNS**.
12. Click **OK**.
Result: The Copying Files window opens.
13. When the system finishes copying the files, click **OK**.
14. Close all networking windows.
15. When the System Settings Change dialog box opens, click **YES** to restart your computer.

Results:

- The computer restarts.
- The TCP/IP protocol is now configured on your PC and your cable modem and it is ready for use.

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

Renewing the IP Address for Microsoft Windows 95, 98, 98SE, and ME

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 these steps to renew the IP address on your PC.

1. Click **Start**, and then click **Run** to open the Run window.
2. Type **winnipcfg** in the Open field, and click **OK** to execute the winipcfg command.
Result: 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.

Result: The IP Configuration window displays the Ethernet adapter information.

4. Click **Release**, and then click **Renew**.

Result: The IP Configuration window displays a new IP address.

5. Click **OK** to close the IP Configuration window, you have completed this procedure.

Notes:

- If you have Microsoft Windows 2000, NT, or XP, consult your user's manual for the procedure for renewing the IP address on your PC.
- If you cannot access the Internet, contact your cable service provider for further assistance.

Continued on next page

Internet Service: Configure TCP/IP, Continued

Microsoft Windows 2000

Follow these steps to install and configure the TCP/IP protocol for Microsoft Windows 2000 environments.

1. Click **Start**, select **Settings**, and choose **Network and Dial-up Connections**.

Result: The Network and Dial-up Connections window opens.

2. In the Network and Dial-up Connections window, double-click the **Local Area Connection** icon.

Result: The Local Area Connection Status window opens.

3. In the Local Area Connection Status window, click **Properties**.

Result: The Local Area Connection Properties window opens.

4. In the Local Area Connection Properties window, click **Internet Protocol (TCP/IP)**, and then click **Properties**.

Result: The Internet Protocol (TCP/IP) Properties window opens.

5. In the Internet Protocol (TCP/IP) Properties window select *both* **Obtain an IP address automatically**, and **Obtain DNS server address automatically**; then, click **OK**.

6. When the Local Network window opens, click **Yes** to restart your computer.

Results:

- The computer restarts.
- The TCP/IP protocol is now configured on your PC and your cable modem and it is ready for use.

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

Microsoft Windows XP

Follow these steps to install and configure the TCP/IP protocol for Microsoft Windows XP environments.

1. Click **Start**, select **Connect to**, and choose **Show all connections**. The Network Connections window opens.
2. In the **LAN or High-Speed Internet** section, double-click the **Local Area Connection** icon. The Local Area Connection window opens.
3. Follow steps 3 through 6 of the previous procedure, Microsoft **Windows 2000**, in this section.

Continued on next page

Internet Service: Configure TCP/IP, Continued

Macintosh

Follow these steps to verify that the TCP/IP communications protocol and an Ethernet device are installed on your Macintosh computer.

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-hand 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-hand 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 down 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. The computer will start, and you will hear the Apple chime; do *not* release these keys.
9. Continue pressing these keys for up to 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.

Internet Service: Install USB Drivers

Introduction

This section contains instructions for installing the WebSTAR cable modem USB drivers if your PC is equipped with a USB interface and a Microsoft Windows 98, 98SE, ME, 2000, or XP operating system. The USB driver installation procedures are different for each operating system. Follow the appropriate instructions in this section for your operating system.

Note: If your PC does not have a USB interface, you may skip this section.

Microsoft Windows 98, 98SE, or ME

Follow these steps to install the WebSTAR cable modem USB drivers for Microsoft Windows 98, 98SE, ME environments.

1. Insert the **USB Cable Modem Driver Installation Disk** into the CD-ROM drive of your PC.
2. Wait until the **POWER** and **CABLE** lights on the cable modem appear solid green; then, plug the USB cable into the USB port on your PC.
Result: The Add New Hardware Wizard window opens.
3. Click **Next**.
4. In the Add New Hardware Wizard window, select **Search for the best driver for your device (Recommended)**, then click **Next**.
5. In the Add New Hardware Wizard window, select **CD-ROM drive**, and then click **Next**.
6. In the Add New Hardware Wizard window, select **The updated driver (Recommended)**, and then click **Next**.
7. In the Add New Hardware Wizard window, click **Next**.

Results:

- The Copying Files window opens.
- After 10 to 20 seconds have passed, the Add New Hardware Wizard window reopens.

8. Click **Finish**.

Result: The System Settings Change window opens. The driver installation is complete.

9. Click **Yes** to restart your computer.

Results:

- The computer restarts.
- The USB drivers are now installed on your PC and your cable modem is ready for use.

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

Continued on next page

Internet Service: Install USB Drivers, Continued

Microsoft Windows 2000

Follow these steps to install the WebSTAR cable modem USB drivers for Microsoft Windows 2000 environments.

1. Insert the **USB Cable Modem Driver Installation Disk** into the CD-ROM drive of your PC.
2. Wait until the **POWER** and **CABLE** lights on the cable modem appear solid green; then, plug the USB cable into the USB port on your PC.
Result: The Found New Hardware Wizard window opens.
3. In the Found New Hardware Wizard window, click **Next**.
4. In the Found New Hardware Wizard window, select **Search for a suitable driver for my device (recommended)**, then click **Next**.
5. In the Found New Hardware Wizard window, select **CD-ROM drives**, and then click **Next**.
6. In the Found New Hardware Wizard window, click **Next**.
Result: 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 displaying a confirmation message to continue the installation.
8. Click **Yes** to continue the installation.
Result: 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.
Result: The USB drivers are installed on your PC and your cable modem is ready for use.
Note: If you cannot access the Internet, contact your cable service provider for further assistance.

Continued on next page

Internet Service: Install USB Drivers, Continued

Microsoft Windows XP

Follow these steps to install the WebSTAR cable modem USB drivers for Microsoft Windows XP environments.

1. Insert the **USB Cable Modem Driver Installation Disk** into the CD-ROM drive of your PC.
2. Wait until the **POWER** and **CABLE** lights on the cable modem appear solid green; then, plug the USB cable into the USB port on your PC.

Result: The Found New Hardware Wizard window opens.

3. In the Found New Hardware Wizard window, select **Install from a list or specific location (Advanced)**, then click **Next**.
4. In the Found New Hardware Wizard window, select **Search removable media (floppy, CD-ROM)**, and then click **Next**.

Result: The Hardware Installation window opens.

5. In the Hardware Installation window, click **Continue Anyway** to continue the installation.

Result: 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.

Result: The USB drivers are installed on your PC and your cable modem is ready for use.

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

Internet Service: Frequently Asked Questions

Introduction

This section provides answer to frequently asked questions about cable modem Internet service. For questions about cable modem telephone service, see **Telephone Service: Frequently Asked Questions**, later in this guide.

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 this installation ensures proper configuration of all hardware and software settings. Contact your cable service provider for more information about installation.

Q. How does the WebSTAR 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. Once my cable modem is connected, how do I access the Internet?

A. Your local cable service provider becomes your Internet Service Provider (ISP), offering 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 support up to 31 Ethernet devices utilizing a user-supplied Ethernet hub 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.

Internet Service: Troubleshooting

Common Troubleshooting Suggestions

The modem does not register an Ethernet connection.

Even new computers do not always have Ethernet capabilities. Be sure to 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.

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** light of the hub illuminates 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 for **Renewing the IP address for Microsoft Windows 95, 98, 98SE, or ME PCs** earlier in this guide.

Note: If you have Microsoft Windows 2000, NT, or XP, consult your user's manual for the procedure for renewing the IP address on your PC.

- Your USB interface may be malfunctioning. Refer to the troubleshooting information in your USB documentation.

Continued on next page

Internet Service: Troubleshooting, Continued

Check and Correct

If your cable modem does not operate 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** lights on the front panel of your cable modem are shining.
 - 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 procedure for **Installing the USB Drivers for Microsoft Windows 98, 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 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.
-

Section E

Telephone Service Installation

Telephone Service: Overview

Introduction

This section provides procedures to assist you in placing, installing, configuring, operating, and troubleshooting your DPX2203 or EPX2203 Cable Modem for telephone service.

In this Section

This section contains the following topics.

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Telephone Service: Install the Cable Modem	33
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Telephone Service: Before You Begin

Contacting Your Local Cable Service Provider

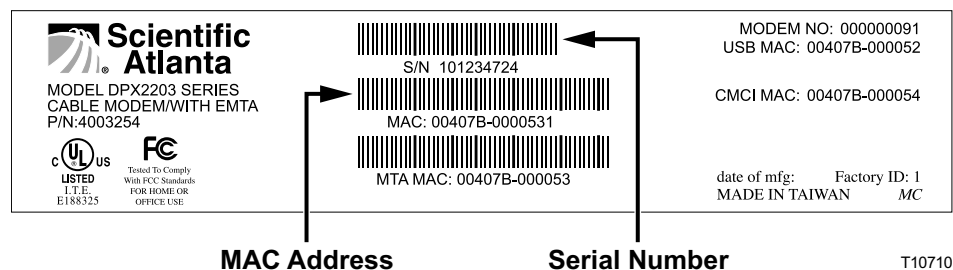
You need to set up a telephone account with your local cable service provider in order to use your cable modem for telephone service. When you contact your cable service provider, verify the following conditions:

- Does the cable service to your home support two-way, DOCSIS-compatible cable modem access? If your cable service provider does not provide two-way service, this modem will not be able to communicate with your cable service provider's Internet access and telephone services.
- Can you transfer your existing telephone numbers from another telephony service provider to your current cable telephony service provider? In some areas, you may be able to transfer your existing telephone numbers, or your cable telephony service provider will assign a new telephone number for each current or additional active telephone line. Discuss these options with your cable telephony service provider.

You may also need to give your cable service provider the following information:

- The serial number of the modem
- The Media Access Control (MAC) address of the modem

These numbers appear on a bar code label located on the 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 following illustration shows a sample bar code label.



Continued on next page

Telephone Service: Before You Begin, Continued

Selecting a Location for Your Modem

You should work with your cable telephony service provider to choose the best location for your cable modem. Consider these recommendations:

- Choose a location close to your computer if you will also use the cable modem for high-speed Internet service.
- Choose a location that is near an existing RF coaxial connection to eliminate the need for an additional RF coaxial outlet.
- Choose a location for the cable modem that is adjacent to your telephone equipment if you are using only one or two pieces of telephone equipment.

Note: If you are using the cable modem to provide service to several telephones, a professional installer can connect the cable modem to your existing home telephone wiring. To minimize changes to the home telephone wiring, you may want to locate the cable modem near an existing telephone outlet. See **Install the Cable Modem to Provide Telephone Service**, later in this guide for further instructions.

- Choose a location that is relatively protected from accidental disturbance or harm, such as a closet, basement, or other protected area.
 - Choose a location so that there is plenty of room to guide the cables away from the modem without straining or crimping them.
 - Airflow around the cable modem should not be restricted.
 - Read this user's guide thoroughly before installing the cable modem.
-

Telephone Service: Telephone Requirements

Introduction

This section provides hardware and software requirements for utilizing your cable modem for telephone service.

Number of Telephone Devices

The RJ-11 telephone-style connectors on the cable modem can each provide telephone service to multiple telephones, fax machines, and analog modems. The maximum number of telephone devices connected to each RJ-11 port is limited by the total Ringing Load of the telephone devices that are connected. Many telephone devices are marked with a Ringer Equivalent Number (REN). Each telephone port on the cable modem can support up to a 5 REN load. The sum of the REN load on all of the telephone devices attached to each port must *not* exceed 5 REN.

Telephone Device Types

You can use telephone devices that are *not* labeled with a REN number, but the maximum number of attached telephone devices cannot be accurately calculated. With telephone devices that are not labeled, each device should be connected and the ring signal should be tested before adding additional devices. If too many telephone devices are attached and the ring signal can no longer be heard, telephone devices should be removed until the ring signal works properly.

Telephones, fax machines, and other telephone devices should use the center 2 pins of the RJ-11 connectors to connect to the cable modem telephone ports. Some telephones use other pins on the RJ-11 connectors and require adapters in order to work.

Dialing Requirements

All of your telephones must support Dual Tone Multi-Frequency (DTMF) touch-tone dialing.

Important: Pulse dialing is not supported.

Telephone Wiring Requirements

The cable modem is designed to support interior telephone wiring. The maximum distance from the unit to the most distant telephone device must not exceed 1000 feet (300 meters). Use 26-gauge twisted-pair, or larger, telephone wiring.

Important: Connection to an existing or a new permanently installed home telephone wiring network must be done by a qualified installer.

Telephone Service: Install the Cable Modem

Introduction

The cable modem can be used to provide telephone service for one or two telephone lines. This section describes how to connect a single telephone, fax machine, analog telephone modem, or other telephone device to each telephone port on the cable modem.

Important: Connecting the cable modem permanently to the installed home telephone wiring is not covered by this document.

Installing the Cable Modem to Provide Telephone Service

Heed the following warnings and caution, and then follow the subsequent installation procedures to ensure proper cable modem installation and configuration for providing telephone service.



WARNING:

- **Telephone connections to an installed home telephone wiring network must be done by a qualified installer. The cable telephone service provider may offer professional installation and connection to the home telephone wiring network. A fee may be charged for this service.**
- **Hazardous electrical voltages can exist on the telephone ports on the cable modem and can be present on any connected wiring. Telephone wiring and connections must be properly insulated to prevent electrical shock. Disconnect power from the cable modem before attempting to modify any connected telephone wiring.**
- **To avoid personal injury, follow the steps on page 35 in the exact order shown.**



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

Continued on next page

Telephone Service: Install the Cable Modem, Continued

Installing the Cable Modem

Follow these steps to install the cable modem to provide telephone service.

1. Connect a telephone, fax machine, or analog modem to each of the appropriate RJ-11 ports on the cable modem.

Notes:

- The cable modem provides one line of telephone service on each of the RJ-11 connectors.
 - Service must be set up and enabled by the cable telephone service provider.
 - The two center conductors (pins 3 and 4) on the RJ-11 connector provide electrical connections to directly attached telephone devices or to a permanently installed in-home telephone wiring network.
 - The telephone port labeled Line 1 also supports multi-line telephone devices. Line 1 is supported on pins 3 and 4, and Line 2 is supported on pins 2 and 5.
 - The use of telephones that require electrical connections to other RJ-11 pins requires an adapter.
2. After all telephone connections are complete, insert the AC power adapter cord into the DC power connector on the back of the cable modem, and then plug the power adapter into an AC power source.
 3. Connect the active RF coaxial cable to the **CABLE IN** connector on the back of the cable modem.

Note: Use an optional cable signal splitter to add a TV, a DHCT or set-top converter, or a VCR.

4. The cable modem begins an automatic search to locate and sign on to the network that provides the telephone service.

Note: This process may take up to 5 minutes. The modem will be ready for use when the **CABLE** light on the front panel stops blinking and illuminates continuously.

5. Test your telephone service by lifting the receiver of each attached telephone to verify that dial tone can be heard and that you can make and receive telephone calls.

Note: The **Line 1** or the **Line 2** front panel light also illuminates when the attached device is “off the hook.”

Telephone Service: Frequently Asked Questions

Introduction

This section provides answers to frequently asked questions regarding cable modem telephone service. For questions about cable modem internet service, see **Internet Service: Frequently Asked Questions**, earlier in this guide.

Frequently Asked Questions

Q. What if I don't subscribe to telephone service from my cable operator, can I still use the cable modem to make and receive phone calls?

A. No. Telephone service is enabled for each telephone port on the cable modem by the cable telephone service provider. Contact your cable telephone service provider to get telephone service through the cable modem.

Q. How do I arrange for installation?

A. Professional installation from your cable service provider may be provided. A professional installer can connect the telephone service to your existing telephone wiring in your home or install new wiring if needed. Professional installation also ensures proper cable connection to the modem and to your PC, and ensures proper configuration of all hardware and software settings. Contact your cable telephone service provider for more information about installation.

Q. Can I use my existing phone number with the cable modem?

A. Telephone numbers are portable in some areas. Contact your telephone service provider for more information about using an existing telephone number.

Q. Do I automatically receive high-speed Internet service with the cable modem?

A. Your cable modem may be used to provide telephone service, high-speed Internet service, or both services. Your cable service provider enables Internet service. Contact your cable service provider for more information if you are not currently subscribing to Internet service.

Q. How many telephones can I connect?

A. The RJ-11 telephone-style connectors on the cable modem can each provide telephone service to multiple telephones, fax machines, and analog modems. The maximum number of telephone devices connected to each RJ-11 port is limited by the total Ringing Load of the telephone devices that are connected. Many telephone devices are marked with a Ringer Equivalent Number (REN). Each telephone port on the cable modem can support up to a 5 REN load. The sum of the REN load on all of the telephone devices attached to each port must *not* exceed 5 REN.

Q. Can I surf the Internet and make telephone calls at the same time?

A. Absolutely! Telephone service is provided separately from Internet data services. Internet surfing and other data services do not affect the quality of your telephone calls. If these services are enabled by your cable service provider, you can make telephone calls and surf the net at the same time.

Telephone Service: Troubleshooting

Common Troubleshooting Suggestions

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.

There is no dial tone when I lift the telephone handset.

- Your telephone service may not be enabled from your cable telephone service provider. Contact your cable telephone service provider for more information.
- Your telephone wiring may be connected to the wrong RJ-11 port on the cable modem. The cable modem has two telephone ports. Verify that you are connected to the correct telephone port.
- There may be a problem with your home telephone wiring. Use a telephone and connect directly to the same RJ-11 port on the back of the unit. If the dial tone is working here but does not work at other locations in the home, a professional may need to diagnose and repair a problem with your telephone wiring.
- There may be a problem with your telephone set. Use a different telephone set and listen to hear dial tone.

Check and Correct

If your cable modem does not operate 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** lights on the front panel of your cable modem are on.
- 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 you have called your cable service provider and given them the serial number and MAC address of your cable modem, if your cable service provider requests this information.
- 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.

Notices

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Firmware Use Notice

The firmware in this equipment is copyrighted. You may only use the firmware in the equipment in which it is provided. Any reproduction or distribution of this firmware or any portion of it, without express written consent is prohibited.

FCC Compliance

United States FCC Compliance

Note: This device has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against such interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment OFF and ON, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- 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 the cable company or an experienced radio/television 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.

<p>WebSTAR Cable Modem Models DPX2203 and EPX2203 Scientific-Atlanta, Inc. 5030 Sugarloaf Parkway Lawrenceville, Georgia 30044 USA Telephone: 770-236-1077</p>

Continued on next page

FCC Compliance, Continued

Canada EMI Regulation

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la class B est conforme à la norme NMB-003 du Canada.

FCC Part 68

The Federal Communications Commission (FCC) of the United States restricts specific uses of modems, and places registration responsibilities on both the manufacturer and the individual user.

1. The modem may not be connected to a party line or to a coin-operated telephone.
2. The modem manufacturer must make any repairs to the modem to maintain valid FCC registration.
3. Notification to the telephone company is no longer required prior to connecting registered equipment, but upon request from the telephone company, the user shall tell the telephone company which line the equipment is connected to as well as the registration number and ringer equivalence number of the registered protective circuitry. FCC information is printed on a label on the bottom of the modem.

Continued on next page

IC (Industry Canada) Notice

Notice: The Industry Canada (formerly Canadian Department of Communications) label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. The department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single-line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user may give the telecommunications company cause to request the user to disconnect the equipment. Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.



CAUTION:

Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

For Information

If You Need Technical Assistance

If you need technical assistance, contact your cable service provider.

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