

Zoom CableModem

U S E R ' S M A N U A L

Zoom USB Cable Modem



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Getting Started

Your Zoom® USB (Universal Serial Bus) Cable Modem is designed to connect your personal computer to the Internet through the same cable that you use for television reception.

A cable modem provides several advantages over traditional dial-up analog modems:

- Transmission speeds are much faster. Because of the increased speed of a cable modem, you can enjoy faster, more productive Internet sessions.
- A cable modem frees up your phone line, so you don't miss phone calls or have to obtain a dedicated telephone line for Internet access.
- The cable connection can be "always-on," so Internet access is fast and easy.

Cable Modem Service

Your local television cable company provides cable modem service, also known as cable data service or broadband Internet. The cable that supplies television service to your home or office is connected to the modem in the same way that it is connected to your television set or cable box. You can then get the benefit of high-speed access to the Internet through the local cable company's service. The cable connection to the Internet does not interfere with your regular cable television signals because the modem service is provided on different channels than television programming.

System Requirements

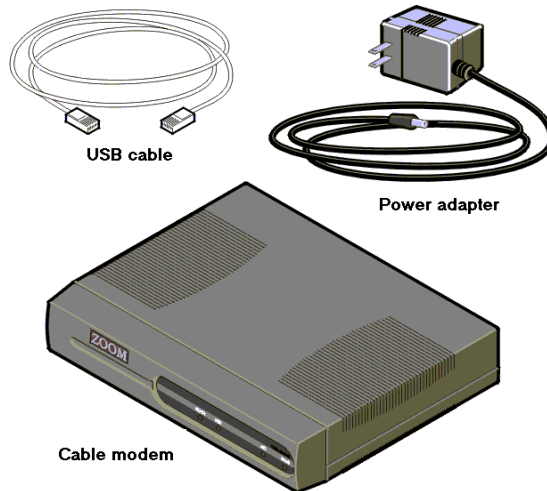
- A computer running Windows® 98, Windows Me (Millennium Edition), or Windows 2000.
- A USB port on your computer. If you do not have one, you will need to acquire a USB expansion card and install it in an available PCI slot.

What You Will Need For Installation

In addition to this manual, check to see that your package includes the following items. If you are missing any item, contact your dealer.

- Zoom Cable Modem
- 6-foot USB cable
- Power adapter
- CD-ROM or floppy diskette.

Some models may also include a mounting stand.



In addition to the items packaged with your modem, you will need the following items to complete your installation.

- Cable modem service provided by your cable company. The service must be DOCSIS (Data Over Cable Service Interface Specification) compatible.
- A power outlet.
- A cable TV outlet.
- The proper length of 75-ohm coaxial cable to reach between your cable modem and the cable outlet

Note: Because there is great variety in the way cable is installed, Zoom does not provide a coaxial cable to connect to your cable system. If your cable service company does not provide one, you should purchase a coaxial cable with an RG-59 or RG-61U rating (75 ohm) and industry-standard F connectors. For best performance, do not use “push-on” F connectors; use only “screw-on” F connectors.

1

Installing Your Cable Modem

Note: If your cable company provides you with an installation procedure, follow it instead of the procedure described in this chapter.

This chapter illustrates a typical cable installation in your home or office and describes how to connect the Zoom Cable Modem to your computer.

Installation consists of a few simple steps:

- 1. Requesting cable modem service from your local cable company.*
- 2. Connecting the modem and installing the USB driver.*
- 3. Configuring your computer's network settings.*

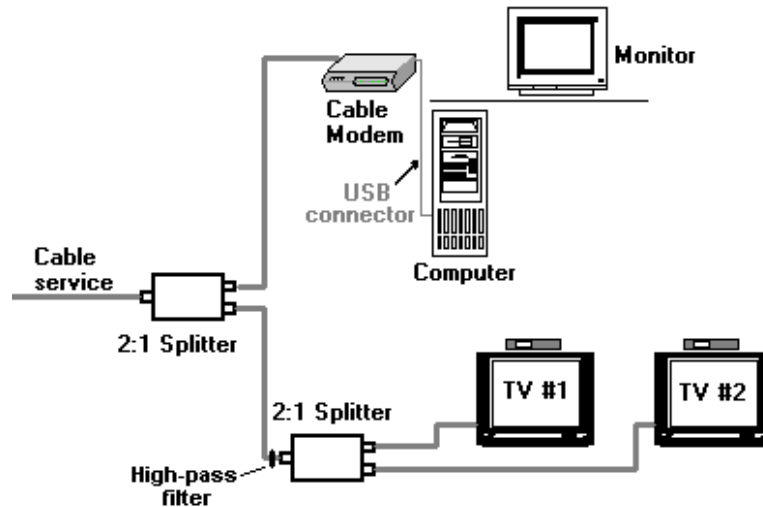
Contacting your Cable Company

Before you install the Zoom Cable Modem, contact your cable company to arrange for cable modem service and to establish a cable modem account. You should have the following information at hand before you contact your cable company:

1. The Cable Media Access Control (C-MAC) address of the modem, located on the modem's bottom case label.
2. The USB Media Access Control (U-MAC) address, also located on the modem's bottom case label.

We advise that you record all MAC addresses in the **Reference Information** section at the end of this manual.

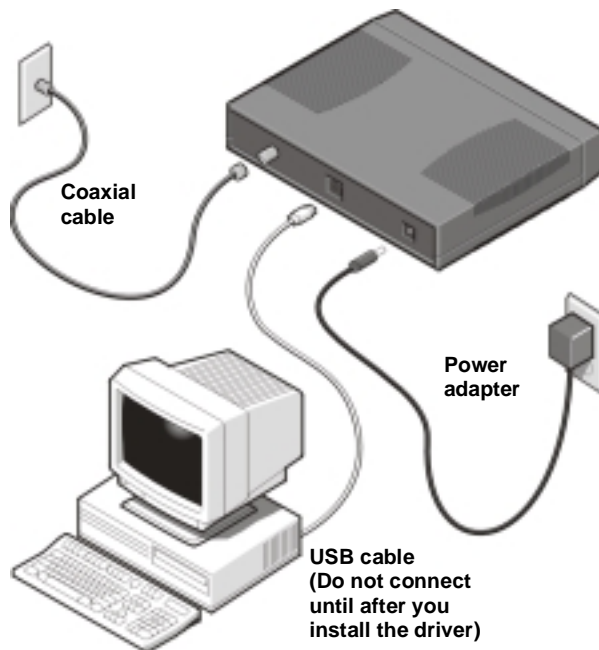
The diagram below shows a typical cable modem installation. The cable modem should be placed on a port of the first splitter inside your home or office, and should be kept on a separate circuit from your cable television service.



It is possible that the signal coming from the cable modem back to the cable provider's central office may interfere with signals from the TV set-top box for Pay Per View or Video on Demand services. If this happens, install a high-pass filter at the input of the 2:1 splitter going to the TV sets (see the preceding diagram).

Making the Connections

Connecting your cable modem is simple. Typical connections are shown below.



CAUTION



Locate the modem so that there is one inch of free space between its top and sides and any other device or the wall. This free space will ensure proper air circulation. Do not block the vents in any way. Failure to allow proper air circulation can result in serious damage to the cable modem.

Do not place any items on top of the modem while it is powered up.

Do not place the modem near a heating or air conditioning duct, in direct sunlight, or in a location susceptible to drastic temperature changes.

Multiple USB-compatible devices can share one USB port through the use of a hub or splitter cables. Because the Zoom USB Cable Modem is a high-speed network device, we advise against sharing its USB port with low-speed peripherals such as keyboards, printers, or joysticks. However, you can share the port with other high-speed devices such as external CD-ROM drives.

All connections are made on the rear panel of the modem as shown below.



Cable and Power Connections

- 1 **DO NOT** connect the USB cable until after you install the driver (see page 10).
- 2 Connect the coaxial cable to the cable jack on your wall. Connect the other end of the cable to the cable connector on the back of the Zoom Cable Modem.
- 3 Insert the small round end of the power cord into the power socket on the back of the modem. Plug the power adapter into the wall socket.

The cable modem now starts the automated power-up process that is described below.

Automated Power-Up and Synchronization



The lights on the front panel (see above) indicate the status of the power-up and synchronization process.

The **READY** light comes on when you connect the power adapter to the wall socket.

After the modem completes a self-test, it synchronizes with the cable network. During this process, the **SYNC** light blinks, rapidly at first, then slowly. The **USB** and **ACT** lights may flicker briefly.

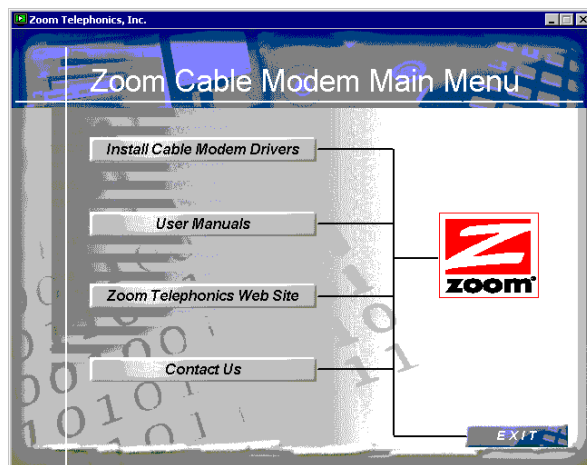
Note: Synchronization may take several minutes.

When the process is complete, the **SYNC** light becomes steady On. For details on the front panel lights and their modes, see **Appendix A** on page 23.


Now follow the steps below to install the driver.

USB Cable Modem Driver Installation

- 1 Restart your computer.
- 2 Insert the Zoom USB Cable Modem CD into your CD-ROM drive. The CD will run automatically. (If it doesn't, select **My Computer** on your desktop. Then select the icon for your CD-ROM drive.)
- 3 At the **Zoom Cable Modem Main Menu**, select **Install Cable Modem Drivers**.



- 4 At the **Zoom Cable Modem Driver Installation** screen, select **USB**, and then follow the prompts.

- 5 When the Zoom Cable Modem Driver Installation screen reappears, click the Close box  to exit.
- 6 Shut down your computer and complete the following steps to connect the USB cable and finish the installation.

USB Cable Connection

Note: The driver must be installed before you connect the USB cable.

- 1 Connect the USB cable from your modem to your computer. The **USB** light on the modem's front panel will go on, indicating that the modem and the computer's data interface are linked. If the light does not go on, make sure that the USB cable is securely connected at both the modem and the computer.
- 2 Restart the computer.
- 3 If prompted, insert your Windows operating system CD and follow the instructions.
- 4 If prompted, restart your computer one more time. Then configure your computer's network settings as described below.

Configuring Your Computer's Network Settings

Select your operating system:

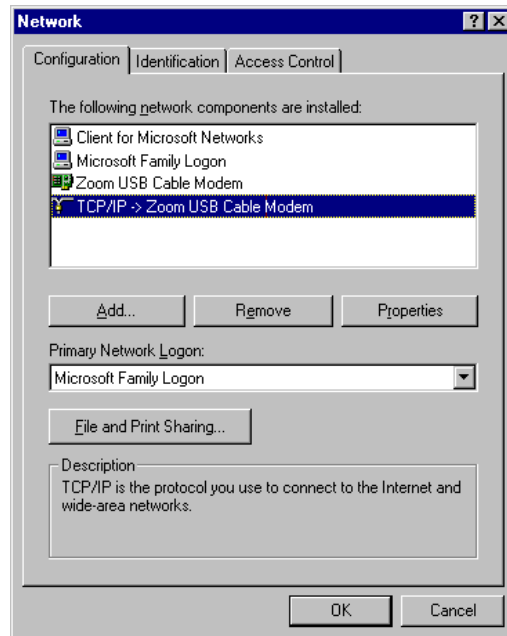
- For **Windows 98/Me** network settings, see page 11.
- For **Windows 2000** network settings, see page 16.

Windows 98/Me Network Settings

To configure network settings on a computer running Windows 98/Me, follow these steps.

Note: The dialog boxes shown below are representative of a typical computer. Individual computer dialog boxes may vary.

- 1 From your computer's desktop, click **Start | Settings | Control Panel**, and then double-click the **Network** icon. The **Network** dialog box appears.

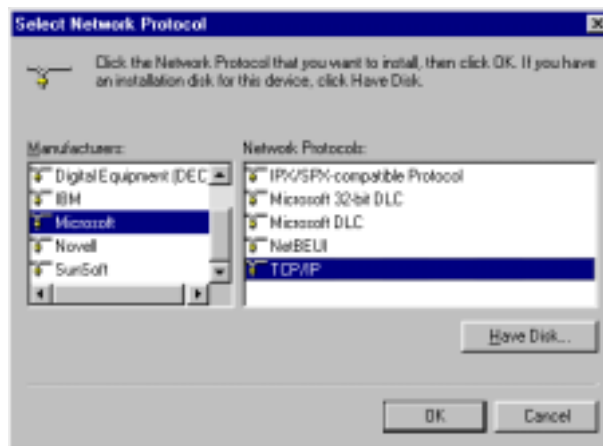


Click the **Configuration** tab. A list of installed network components is displayed. If you see a line that includes **TCP/IP (Transmission Control Protocol/Internet Protocol)**, skip to Step 5. If you don't see that line, continue with Step 2.

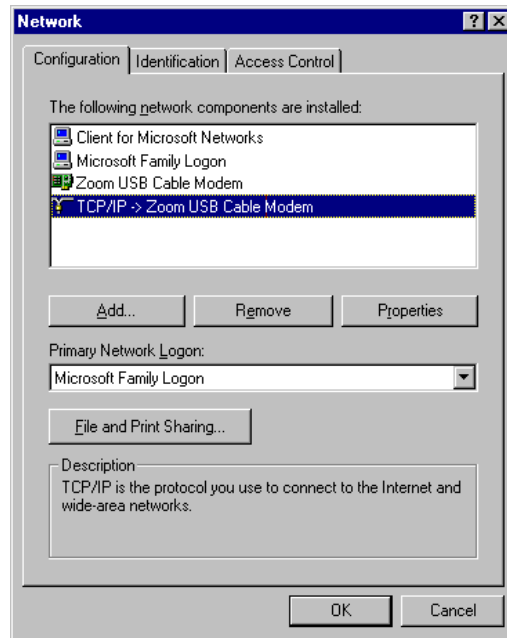
- 2 In the **Network** dialog box, if TCP/IP is not listed, click the **Add** button.
- 3 In the **Select Network Component Type** dialog box, click to highlight **Protocol** and then click **Add**.



- 4 In the **Select Network Protocol** dialog box, under **Manufacturers**, click to highlight **Microsoft**. Under **Network Protocols**, click to highlight **TCP/IP**. Then click **OK**.



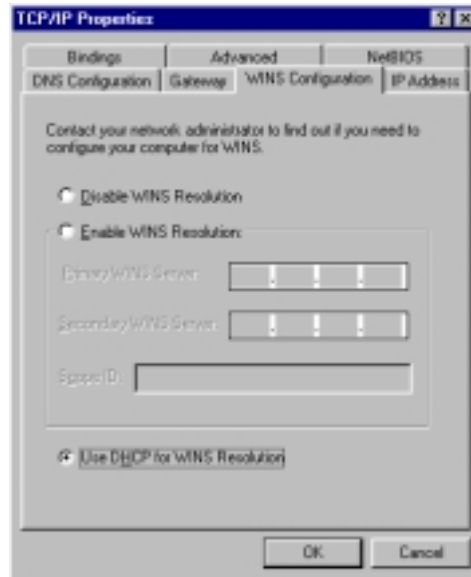
- 5 In the **Network** dialog box there should now be an entry for **TCP/IP**. (Click **NO** if you are asked to restart your computer.) Highlight **TCP/IP** and click **Properties**.



- 6 The **TCP/IP Properties** dialog box is displayed. In the **IP Address** tab, click **Obtain an IP address automatically**.



- 7 Click the **WINS Configuration** tab. Click **Use DHCP for WINS Resolution** and click **OK**.



- 8 The **Network** dialog box from Step 1 is displayed again. Make sure **TCP/IP** is highlighted, and click **OK** to enable your settings.
- 9 If prompted, insert the Windows 98/Me CD-ROM and click **OK**.
- 10 If prompted, restart the computer.

You have configured your network settings successfully.

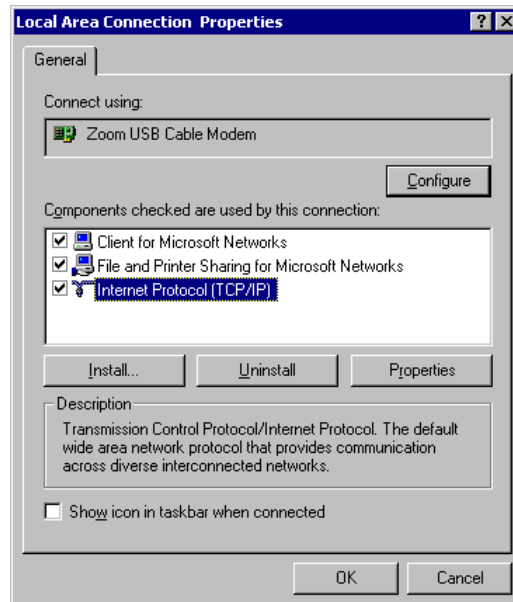
Now proceed to **Chapter 2, Configuring Your Browser**, on page 19.

Windows 2000 Network Settings

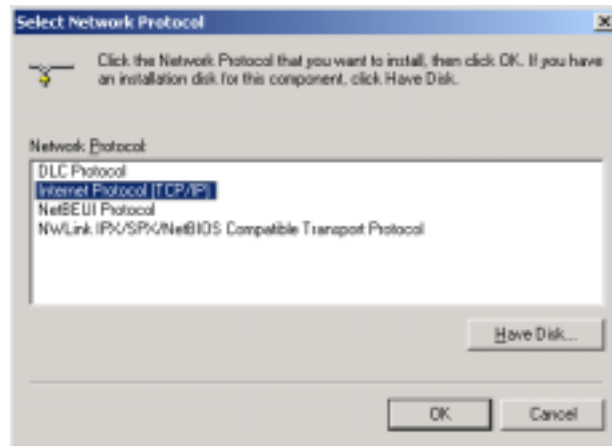
To configure network settings on a computer running Windows 2000, follow these steps.

Note: The dialog boxes shown below are typical. Individual computer dialog boxes may vary.

- 1 From your computer's desktop, click **Start | Settings | Network and Dial-Up Connections**.
- 2 The **Network and Dial-Up Connections** window is displayed. Right-click the **Local Area Connection** icon, and click **Properties**.
- 3 The **Local Area Connection Properties** dialog box appears. You see a list of installed network components. If you see a line that includes **TCP/IP (Transmission Control Protocol/Internet Protocol)**, skip to Step 7. If you don't see the line, click the **Install** button and continue with Step 4.

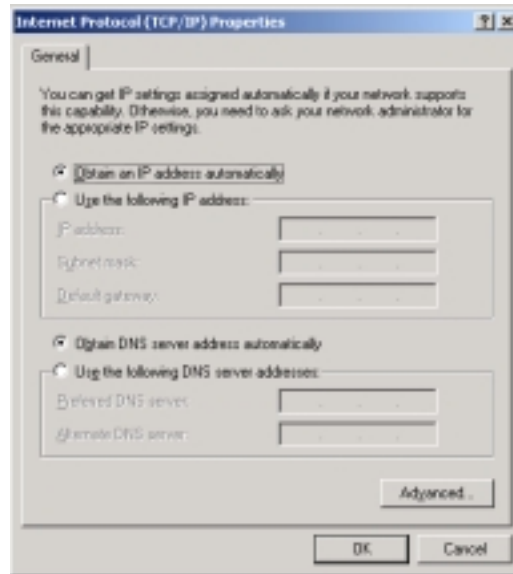



- 4 In the **Select Network Protocol** dialog box, click to highlight **Internet Protocol (TCP/IP)** and click **OK**.



- 5 The **Local Area Connection Properties** dialog box from Step 3 is displayed. Click to select **Internet Protocol (TCP/IP)**, and then click **Properties**.

- 6 In the **Internet Protocol (TCP/IP) Properties** dialog box, select **Obtain an IP address automatically**, and **Obtain DNS server address automatically**. Click **OK** to enable your settings.



- 7 The **Local Area Connection Properties** dialog box from Step 3 is displayed again. Click **OK**.
- 8 If prompted, insert the Windows 2000 CD in your CD-ROM drive and click **OK**. Otherwise, in the **Network and Dial-Up Connections** window, click  to close.
- 9 If prompted, restart the computer.

You have configured your network settings successfully. Now proceed to **Chapter 2, Configuring Your Browser**, on page 19.

2

Configuring Your Browser

An Internet browser is a program used to find and display Web pages. To find a page, the browser must connect to the Internet, via either phone lines or a LAN (Local Area Network).

When using a cable modem, you need to set the browser to connect to the Internet via a LAN.

This chapter describes how to configure some of the most common Internet browsers. It is beyond the scope of this manual to give step-by-step instructions for all versions of all browsers, so the instructions below cover only the major versions of the most common browsers. If you are using another browser, please consult the documentation that came with it.

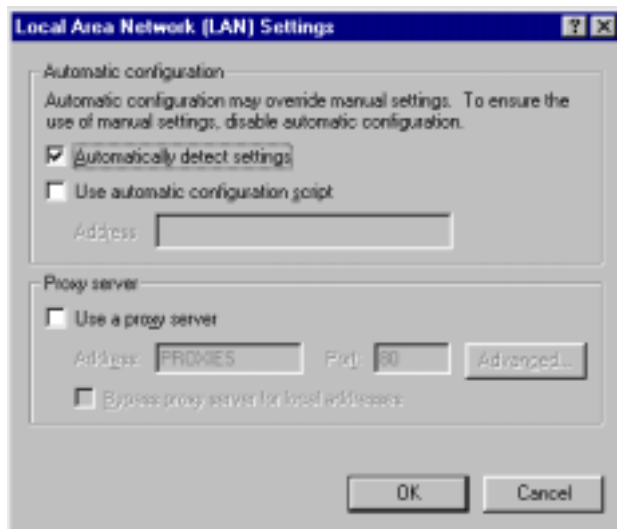
Internet Explorer 4.0

Start Internet Explorer. Click **View** and then click **Internet Options**. The **Internet Properties** dialog box appears. Click the **Connections** tab to view options for setting or changing the connection. Click **Connect to the Internet using local area network**. Click **OK** to enable the settings.

Internet Explorer 5.0

Start Internet Explorer. Click **Tools** and then click **Internet Options**. The **Internet Options** dialog box appears. Click the **Connections** tab to view the options for setting or changing the connection. You can click **Setup** to use the Internet Connection Wizard to guide you through setup, or you can click **LAN Settings** to configure your connection manually.

If you click **LAN Settings**, the following dialog box is displayed.



Select the **Automatically detect settings** check box. Click **OK**.

Netscape Navigator

Start Netscape Navigator. Click **Edit** and then click **Preferences**. The **Preferences** dialog box appears. Click the **Advanced** option, and then click **Proxies**. Select the option that allows you to connect to the Internet directly.

AOL

If you are using AOL 5.0 or higher, it has a cable modem option that configures your connection automatically.

Now that you've configured your browser, turn to **Chapter 3, Using Your Cable Modem**, on page 21.

3

Using Your Cable Modem

Once you've installed the modem and configured your browser to use a LAN, connecting to the Internet is as simple as clicking the icon that corresponds to the desired Internet application.

Note: At this time you may also want to install and use other software, such as the programs furnished by your cable service provider. Refer to the CD(s) for installation instructions.

Connecting to the Internet

When you have correctly installed the Zoom Cable Modem, it powers up and synchronizes itself with the cable network. The **READY** light, **SYNC** light, and **USB** light go on, indicating that the modem is synchronized and fully operational.

To connect to the Internet, start your browser or other Internet application.

Ending an Internet Session

After you have completed your Internet session, just close your browser. The Zoom Cable Modem remains connected with the cable system and stays ready to open another session.

Unplugging the Modem

If the Zoom Cable Modem is unplugged or if power is lost for any other reason, all communication between the modem and the cable system is terminated. When the power is restored, the cable modem must go through the full startup and synchronization process before you can connect to the Internet. This process is performed automatically when the modem is powered up.

Note: If your cable TV service is interrupted, your cable modem service will also be interrupted. If you are unable to connect to the Internet, or if your browser notes that it is unable to find a selected URL, check to make sure that your cable TV service is operational. If not, contact your cable service provider.

Uninstalling the Modem

If you need to uninstall your modem, follow these instructions:

- 1 At the Windows desktop, click **Start | Settings | Control Panel**.
- 2 In the **Control Panel** window, select the **Add/Remove Programs** icon.
- 3 *Windows 98/Me:*
In the **Add/Remove Programs Properties** dialog box, select **Zoom USB Cable Modem** and click **Add/Remove**.
Windows 2000:
In the **Add/Remove Programs** window, select **Zoom USB Cable Modem** and click **Change/Remove**.
- 4 At the message, “This will remove the Zoom USB Cable Modem from your computer. Do you wish to proceed?” click **Yes**.
- 5 At the message, “The Zoom Cable Modem has been successfully uninstalled from your machine,” click **OK**.

Appendix A

Front Panel Information

*After you've correctly installed the Zoom Cable Modem, the **READY** light, **SYNC** light, and **USB** light go on to indicate that the modem is fully operational.*

<u>LIGHT NAME</u>	<u>MODE</u>	<u>STATUS</u>
READY	On	Power is on.
USB	On	The USB computer interface is connected, linked, and active.
	Flickering	The modem is synchronizing with the cable network.
ACT	Blinking	Data activity is present on the cable. The cable modem is communicating with the cable network. This means that it could be downloading or uploading data to the cable service provider and the Internet. This light may flicker during the synchronization process.
SYNC	Blinking Fast	Searching for a data channel from the cable provider.
	Blinking Slow	Synchronizing with the cable network and adjusting the signal for optimum performance.
	Steady On	The modem is synchronized to the cable network.

Appendix B

Troubleshooting

This section provides tips for troubleshooting your cable modem in the event of minor problems. By referring to these tips, you may be able to quickly correct the problem and avoid a call to Technical Support. In addition, you should check our Web site and the Cable Modem Frequently Asked Questions (FAQs) section.

Note: If your cable modem is not responding, the first step should be to reinstall it. This may take a few minutes, but it is frequently the quickest and easiest solution.

Problem: I cannot access my Internet service or send or receive email.

Solutions:

- Check all physical connections. The **SYNC**, **READY**, and **USB** lights on the modem's front panel must all be a steady green before your cable modem will work.
- Check to see that your cable TV service is working. If not, call your cable service provider.
- Verify that the C-MAC and U-MAC addresses you gave to your service provider are correct, and that they are entered into their system. See page 5.
- Check that TCP/IP is configured correctly. Refer to the section of this manual entitled **Configuring Your Computer's Network Settings** on page 10. Verify that the TCP/IP parameters supplied by your cable company are correct and up-to-date.

Problem: The power to my cable modem goes on and off.

Solution: Check that you are using the adapter that came with your cable modem.

Problem: I receive the message “Unknown Network Adapter.”

Solution: This problem can occur if a USB adapter is physically present and was recognized by Plug-and-Play, but the proper driver was not installed. Reinstall the USB driver (see page 9).

Problem: I receive the message “Undetected Network Adapter.”

Solution: The USB adapter was not installed correctly. Reinstall the driver (see page 9).

Problem: I receive the message “Missing Internet Protocol.”

Solution: Refer to **Configuring Your Computer’s Network Settings** on page 10.

Problem: I receive the message “Cannot Find Files; Insert Operating System Disk.”

Solution: Your computer is looking for the files included on the original operating system CD or diskettes that came with your computer. Remove your modem CD or diskette (if any) and insert your operating system CD or disk. Be sure to remove the Windows CD when you’re done and reinsert your modem CD or diskette if applicable.

Problem: The Cable Modem's SYNC light blinks for 5 minutes, goes off, comes on again and repeats.

Solution:

- Make sure the connection is secure.
- Check with your cable service provider to make sure that high speed access is available and running.
- In rare instances, the cable signal may be low. Be sure the cable modem is attached to one of the ports on the first splitter after the cable enters your home or office (see page 6).
- Make sure there is not a video amplifier on the same line with the cable modem. (A video amplifier prevents data from returning to the cable provider's central office.)

Tip: When your cable modem service is restored after a disruption, reinstall the modem before attempting to use it.

Appendix C

Regulatory Information

FCC Part 15 Emissions Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by 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 dealer or an experienced radio/TV technician for help.

Industry Canada Emissions Statement

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 Règlement sur le matériel brouilleur du Canada.

Electrostatic Discharge Statement

This unit may require resetting after a severe electrostatic discharge event.

Declaration of Conformity

The manufacturer declares under sole responsibility that this equipment is compliant to Directive 1999/5/EC (R&TTE Directive) via the following:

<u>Directives</u>	<u>Standards</u>
73/23/EEC	EN 60950
89/336/EEC	EN 55024
89/336/EEC	EN 55022

The product is CE marked.

Reference Information

We recommend that you take a few moments to fill in the following information for your future reference.

In the event you need to call Customer Support, you will need the information below.

Zoom Cable Modem Model _____
(located on the box)

Serial Number _____
(located on the label on the bottom of the modem)

C-MAC Address _____
*Media Access Control address of the cable (RF) interface
(located on the label on the bottom of the modem)*

U-MAC Address _____
*Media Access Control address of the USB interface
(located on the label on the bottom of the modem)*

Date of Purchase _____

Store or Dealer _____