ADSL X5

U S E R G U I D E

NOTICE

Contents

Overview

The X5 integrates an ADSL modem, a router, and a four-port switch in one device. It includes an advanced firewall, which allows you to control Internet access from your local network, and which protects your local network from unwanted Internet traffic.

With four ETHERNET ports, the X5 supports the direct connection of up to four computers with Ethernet ports. Users with a network device (such as a wireless access point) can plug it into one of the ETHERNET ports to support up to 253 Internet connections. (There is also a USB port for Windows computers that do not have an Ethernet port, or for Windows users who want to connect five computers directly to the modem.)

The X5 modem is also enabled for Universal Plug and Play (UPnP™). This means that if you plug other devices with UPnP capabilities into your computer or network (for example, a gaming application, router, or stand-alone firewall) they should automatically detect the X5 and make the needed configurations for them to work together.

This User Guide contains installation instructions for Macintosh, and Linux computers and provides instructions for manually installing the X5 on a Windows computer. There is also information about the X5's advanced setup options. Though most users will not need to use the advanced setup options, there are cases in which these advanced settings are necessary (for example, if you have a static IP address).

1

Installation Instructions

This chapter covers the basic instructions needed to install your X5 and connect to the Internet. These instructions can be used with a Macintosh, Linux, or Windows operating system.

Important! Before You Begin

Before installing your X5, you must have ADSL service enabled on your telephone line. To do this, you need to sign up with an ADSL service provider. (Your service provider may refer to "ADSL service" as "DSL service.")

Package Contents

Your package contains the items shown below:

Zoom X5 ADSL Modem

USB Cable

Phone Cord

Power Cube

Ethernet Cable

Software CD

The CD contains the installation software, documentation, warranty, and Customer Support information.

If anything is missing or damaged, please contact Zoom Customer Support or your retailer or distributor.

In addition, the package may include:

- Phone-jack adapter to adapt the phone cord to a particular phone jack (certain countries only)
- ADSL line filter(s) (certain units only)

You Will Also Need

- An ADSL-enabled telephone wall jack to plug the X5 modem into.
- **One or more computers that you want to connect to the Internet.** The X5 supports the connection of up to four Macintosh, Linux, or Windows computers with Ethernet ports.

  Note for Windows users:
  Your computers must use Windows 98/Me/2000/XP or Vista. We recommend that you connect all of your Windows computers using Ethernet ports. If any of your computers do not have an Ethernet port, you can purchase a Network Interface Card (NIC) to add one. Alternately, you can connect one of your computers using its USB port. (This also enables Windows users to connect five computers, instead of four, directly to the X5.)

- **[Optional] Network device:** You can connect a network device (such as a wireless access point, router, hub, or switch) to the X5 modem. If you plan to connect a network device, be aware that you must first connect at least one of your computers directly to the X5.

  Because network devices can be set up in many ways, this user's guide provides only general instructions about connecting a network device to the X5. For information about setting up your particular network device, see the device's documentation.

- **Additional Ethernet cables.** These are required only if you plan to connect more than one computer/network device with an Ethernet port to the X5. (The X5 comes with one Ethernet cable and one USB cable.)

Installing the X5

➢ Macintosh and Linux users: please go to page 10.

Windows Installation

Windows users can quickly install the software and hardware and configure the X5 using Zoom's multilingual Installation Assistant on the CD.

If you encounter a problem using the Installation Assistant, follow the instructions for Macintosh and Linux users starting on page 10.

Regardless of how many Windows computers you plan to connect to the X5, you only have to run the Installation Assistant on one of them. This computer will also be the first computer that you physically connect to the X5.

Determining which computer to run the Installation Assistant on depends on how the computers will be connected to the X5:

- **If all of your Windows computers will be connected using their Ethernet ports:** You can run the Installation Assistant on any one of these computers.
- **If one of the Windows computers will be connected using its USB port and the rest using their Ethernet ports:** You must run the Installation Assistant on the computer with the USB port. (Note, however, that we recommend you connect your computers using Ethernet ports, if possible.)
- **If you will be connecting a network device (such as a wireless access point, router, hub, or switch):** You must run the Installation Assistant on a Windows computer that will be directly connected to the X5. For most users, this will probably be the computer that is closest to the ADSL-enabled phone jack.

Note
If you need to use the X5's USB option, you must remove any existing USB modem drivers on your Windows computer before installing this software.On the desktop, click the **Start** button, and then—depending on your operating system—either click **Control Panel**, or click **Settings** and then **Control Panel**. In **Control Panel**, double-click **Add/Remove Programs** (*Vista users*: select **Programs and Features** and then **Uninstall or change a program**). On the **Add or Remove** tab (*Vista*: **Uninstall** tab), select the USB modem you are removing, click **Remove** or **Uninstall**, and then click **OK**.

1 Turn your computer on.

For Windows Vista only, follow these steps to turn on Telnet Client:

a Click **Start**, select **Control Panel**, then double-click **Programs and Features**.

b In Programs and Features, in the Tasks pane, click **Turn Windows features on or off**.

c At the **User Account Control** message, click **Allow**.

d In the **Windows Features** dialog box, select **Telnet Client,** click **OK**, and wait while the feature is configured.

e In the **Uninstall or Change a Program** window, click the Close box to exit.

2 Close all open programs, including antivirus software or pop-up blockers.

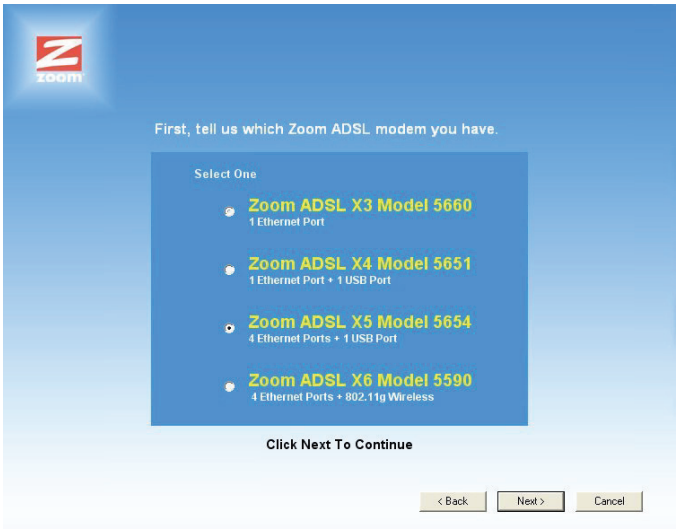
3 Insert the supplied CD into the CD drive of your computer. The CD should start automatically. (If the CD does not start automatically, on the desktop, click the **Start** button, click **Run**, and then type **E:\setup.exe**, where **E** is the letter of your CD drive.)

Windows Vista:

If the **AutoPlay** dialog box appears, click **Run Setup.exe**.

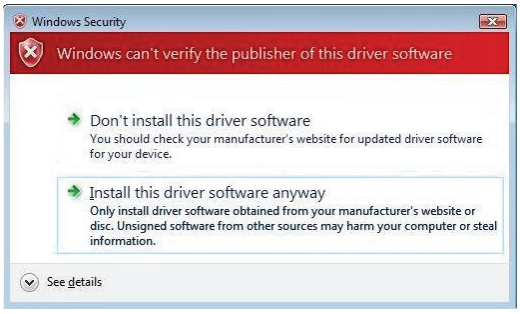
If the **User Account Control** dialog box appears, click **Allow**.

4 Select your language, select **Installation Wizard**, and follow the prompts to install the X5.



Windows Vista:

If a message tells you that Windows can't verify the publisher of the driver software, select **Install this driver software anyway**.



If you are prompted to enter your user name and password, remember that they are case-sensitive:

5 When you complete the installation and setup, click **Finish** to update your modem and close the Install Assistant.

Congratulations! You have established communication and your computer is now connected to the Internet. If you want to connect more computers or a network device to the X5, continue with **Connecting Additional Devices to the Internet** on page 22. Otherwise, you are done with this user's guide. Enjoy your X5!

Macintosh and Linux Installation

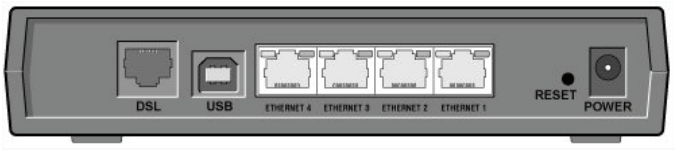
There is no software installation for Macintosh and Linux systems.

Windows users: If you did not run the Install Assistant on the CD, follow these instructions to install the hardware and configure your X5.

Installing the Hardware

1 Shut down and power off the computer that you plan to plug directly into the X5. If you plan to use a network device (such as a wireless access point, router, hub, or switch) you must connect at least one of your computers directly to the modem.

2 Plug one end of the Ethernet cable into one of the X5's four ETHERNET ports and plug the other end into your computer's Ethernet port.



Important!
Do not connect additional computers or a network device (such as a wireless access point, router, hub, or switch) to the other ETHERNET ports at this time. These instructions will let you know when to connect them.

Windows users only: If you are connecting via USB, plug one end of the USB cable into the modem's **USB** port and the other end into your computer's USB port.

3 Plug the power cube into a power strip or wall outlet and then plug the power cube's other end into the modem's **POWER** jack.

Important!
Use only the power cube shipped with the X5. Other power cubes may damage your hardware.

The **POWER** light on the front panel of the modem should become steady on, and the **DSL** light should blink. If the **POWER** light does not turn on, make sure there is power at the wall outlet or power strip where you plugged in the power cube.

4 Turn the computer on.

Windows users: If you connected your computer to the **USB** port, you may see a **Found New Hardware** box indicating the progression of the installation. Typically no user action is necessary. If you are using Windows XP, you may be required to click **Next**.

Depending on your operating system, you may also see a **Hardware Installation** box or a **Digital Signature Not Found** box. You can safely ignore these messages and click **Yes** or **Continue Anyway**. If prompted, click **Finish** and/or **Yes** to restart your computer to finish setting up your new hardware.

5 Plug one end of the supplied phone cord into the modem's **DSL** port and the other into the ADSL wall jack. The blinking

DSL light should become steady on. If it does not, refer to the **Troubleshooting** section on page 57.

Note: We recommend that at this point, if you haven't already done so, you **put an ADSL filter on every phone** connected to the ADSL phone line. **DO NOT** put a filter between the X5and the wall jack that it is connected to.

(In some countries, including the UK, a splitter is supplied with the X5. The PHONE line plug of the splitter plugs into the wall jack that has ADSL service, and the X5 plugs into the splitter's MODEM jack, which is not filtered. The PHONE jack, for an optional telephone, is filtered.)

Congratulations! You have installed the hardware. Now continue below with **Establishing Communication**.

Important!
Macintosh and Linux users: you must ensure that your computer's TCP/IP settings are configured properly. See **Macintosh TCP/IP Settings** on page 51 or **Linux TCP/IP Settings** on page 53 for instructions on how to do this.

Establishing Communication

You must set up the X5 so that it can communicate with your Internet service provider. To do this, you use the Zoom Configuration Manager.

1 To log in to the Zoom Configuration Manager, do this:

a Open your Web browser and, in its address bar, type **http://10.0.0.2** if you are using the Ethernet jack or **http://10.0.0.3** if you are using the USB port (Windows only), then press the **Enter** key on your keyboard.

b When prompted, type the following user name and password in the appropriate boxes using lowercase letters, then click **OK**.

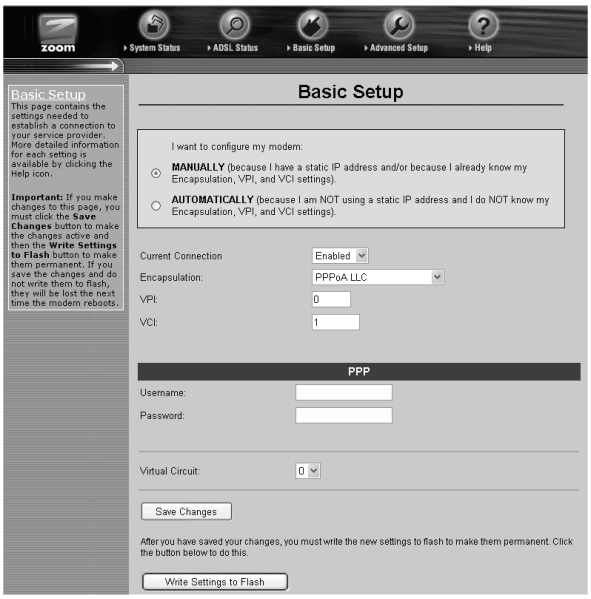
User Name: **admin**

Password: **zoomadsl**

If you are not prompted for a user name and password, do the following in this order: Recheck all connections; restart the modem and computer; and reset the modem by inserting a paper clip into the **Reset** pinhole in the center of the modem's back panel and holding it for five seconds.

The user name and password you enter here do not serve the same purpose as any name and password that your Internet service provider may have given you.

2 The Zoom Configuration Manager opens and displays its **Basic Setup** page.



Use this Web page to configure the modem so it can connect with your Internet service provider. You can configure the X5 manually or you can have the modem automatically configure itself. Depending on your situation, do the following:

- Select **MANUALLY** if one or both of the following are true:
  - You already have the **VPI, VCI**, and **Encapsulation** settings from your Internet service provider.
  - You have a static IP address that you plan use with the X5. (Only those whose Internet service provider instructs them to use a static IP address and advanced users with special configuration needs will require static IP addressing.)

To continue configuring the modem manually, skip the rest of the steps in this section and follow the instructions on page 17

(if you are NOT using a static IP address) or on page 20 (if you have a static IP address).

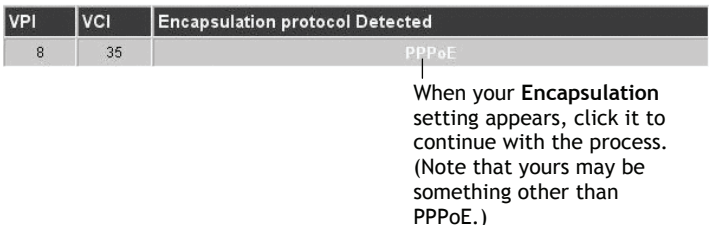
- Select **AUTOMATICALLY** if neither of the special circumstances mentioned above fits your situation. When this option is selected, the screen changes to show automatic configuration options. Do the following:

  a Select the **Enable** option button, then click **Save Changes**.

  b The page changes to the **Autodetect** page and a **Start** button appears. Click the **Start** button to begin the automatic configuration. A message appears to let you know that the current configuration, if any, will be lost when the X5 configures itself. Click **OK** to dismiss this message.

  c Wait while the X5 modem searches for the correct **VPI**, **VCI**, and **Encapsulation** settings and connects with your Internet service provider. This may take a few minutes because the modem must try various combinations until it finds the settings that match your service provider's.

3 Once the modem detects your settings, your **VPI**, **VCI**, and **Encapsulation** settings will appear in the table on the **Autodetect** page. Click the **Encapsulation** setting to continue with the process.



Note:
If your **Encapsulation** setting is not found (that is, if "**No Encapsulation Protocol Detected**" remains on the screen), select the **Disable** button, click **Save Changes**, then click the **Basic Setup** icon at the top of the screen and manually configure the modem, as explained in **Configuring the X5 Manually** on page 17.

4 .Depending on your **Encapsulation** setting, the following will happen when you click it:

- **If your Encapsulation setting begins with PPP:** You will be prompted for your **Login Name** and **Password**. Your Internet service provider should have given you a User ID or Username (usually your email address or the characters preceding the @ sign in your email address) and a Password. Enter this information in the applicable boxes, then click **Save Changes**. A screen appears to let you know that the process was a success. Click **Close** to return to the **Autodetect** page and notice that the **Encapsulation** setting has changed from bold to regular text. (These are NOT the same **User Name** and **Password** that you used earlier to open the Zoom Configuration Manager.)

When the configuration is complete, your **Encapsulation** setting will change from bold to regular text.

Tip:
If you do not know your **Login Name** and **Password**, contact your service provider and tell them that you misplaced the information.

- **If your Encapsulation setting begins with something *other than* PPP:** The **EOA Interface—Add** page will open. Click **Save Changes** on this page (without changing any settings on it). A screen appears to let you know that the process was a success. Click **Close** to return to the **Autodetect** page and notice that the **Encapsulation** setting has changed from bold to regular text.

5 On the **Autodetect** page, click **Write Settings to Flash**.

6 Verify that your Internet connection is working. Open your Web browser and try to connect to a familiar Web address.

If you connect successfully, your installation is complete and you are ready to browse the Web!

If you want to connect more computers or a network device to the X5, continue with **Connecting Additional Devices to the Internet** on page 22. Otherwise, you are done with this user's guide. Enjoy your X5!

Important!
If you did not connect, see **Appendix D: Troubleshooting** on page 57.

Configuring the X5 Manually

Some users may need to configure the X5's IP settings manually, instead of having the modem automatically configure itself.

Typically, you would manually configure your modem if:

- You already have the **VPI**, **VCI**, and **Encapsulation** settings from your Internet service provider.
- You have a static IP address that you plan to use with the X5. If this is the case, skip this section and continue with **Using Static IP Addressing** on page 20.
- The auto configuration process was unable to find your settings.

Manually configuring the modem requires that you log in to the Zoom Configuration Manager and enter information on its **Basic Setup** page. (If you need help logging in, see page 13.)

1 On the **Basic Setup** page, ensure that the **MANUAL** option button is selected.

2 Do the following, depending on whether you know your **VPI**, **VCI**, and **Encapsulation** settings:

- If your Internet service provider gave you the settings, continue with step 3 below.
- If you do not know the settings, refer to the **ADSL Internet Settings Tables** beginning on 45. Find your service provider on the list and make note of its settings. If there is more than one listing for your service provider, the most common one is labeled (1), the next (2), and so on.

> **Tip:**
> If you are in the United States and your service provider is not on the list, use the settings for **Service Provider Not Shown** at the bottom of the table.

3 Select **Enabled** from the **Current Connection** drop-down list. (That is, click the arrow  at the far right of the box to view the items in the list, then select **Enabled**.)

4 Select your service provider's Encapsulation setting from the **Encapsulation** drop-down list. Depending on your selection, do the following:

- If your Encapsulation setting begins with PPP: Enter your Username and Password in the boxes provided. Your Internet service provider should have given you a User ID or User Name (usually your email address or the characters preceding the @ sign in your email address) and a Password. (These are NOT the same User Name and Password you that you used earlier to open the Zoom Configuration Manager.)

Tip:
If you do not know your **Username** and **Password**, contact your service provider and tell them that you misplaced the information.

- **If your Encapsulation setting begins with 1483 Bridged or 1483 Routed:** The **Username** and **Password** boxes will automatically disappear from the page because you do not need to enter this information. Continue with step 5.

Important!
If you plan to use a static IP address, you must manually configure the X5 from the **WAN Configuration** page and not the **Basic Setup** page. For more information, see **Using Static IP Addressing** on page 20. Typically, you must make arrangements with (and pay) your Internet service provider for a static IP address.

5 In the **VPI** and **VCI** boxes, enter the settings for your service provider.

6 Click **Save Changes** and then **Write Settings to Flash**. Once the process is complete, the X5's **DSL** light should remain on steady (this should take about 15 seconds).

7 Verify that your Internet connection is working. Open your Web browser and try to connect to a familiar Web address.

If you connect successfully, your installation is complete and you are ready to browse the Web!

If you want to connect more computers or a network device to the X5, continue with **Connecting Additional Devices to the Internet** on page 22. Otherwise, you are done with this user's guide. Enjoy your X5!

If You Did Not Connect

If you did not connect and you are using settings provided by your service provider, repeat steps 3–7 above and ensure that you enter the information correctly (especially your **Username** and **Password**, if your **Encapsulation** begins with PPP). If you still cannot connect, look up your provider in the **ADSL Internet Settings Tables** on page 45 and try the setting(s) shown, if different.

If you did not connect and were using settings from the **ADSL Internet Settings Tables**, return to the tables and find the next most frequently used settings—those labeled (2) if you just entered (1), or (3) if you just entered (2), and repeat steps 3–7 above.

Using Static IP Addressing

If your Internet service provider's **Encapsulation** setting is either **1483 Bridged** or **1483 Routed**, the X5 can be set for either a Dynamic Host Configuration Protocol (DHCP) address (also known as a dynamic IP address) or for a static IP address.

Because most Internet service providers use DHCP, the X5 is set for dynamic IP addressing by default.

There is typically an extra charge for a static IP address, and you usually have to make a special request to get one.

Important!
If you do not know what static IP addressing is or why you would use it, you most likely do not need to change the default setting. Only advanced users who specifically want to use static IP addressing and/or those users whose IP provider specifically instructed them to use static IP addressing should change this setting.

1. Click the **Advanced Setup** icon at the top of any page in the Zoom Configuration Manager to open the **Advanced Setup** page.

2. Click the **WAN Configuration** button, located in the **Configuration** group.

3 Enter the appropriate information on the **WAN Configuration** page. Use the table below as a guide.

For this setting…	Do this…
Current Connection	Select **Enabled** from the drop-down list. (That is, click the arrow at the far right of the box to view the items in the list, then select **Enabled**.)
Encapsulation	Select your service provider's Encapsulation setting from the drop-down list.
VPI and **VCI**	Enter the VPI and VCI settings for your service provider. (If you do not know these settings, refer to the **ADSL Internet Settings Tables** on page 45.)
Bridge and **IGMP**	Ensure that **Disabled** is selected from both drop-down lists.
IP Address and **Subnet Mask**	Enter the values assigned to you by your service provider for each.
Use DHCP	Ensure that the **Disabled** option button is selected.
Default Route	Ensure that **Enabled** is selected from the drop-down list.
Gateway IP Address	Enter the value assigned to you by your service provider.
Use DNS	Ensure that the **Disabled** option button is selected.
Primary DNS Server	Enter the value assigned to you by your service provider.
Secondary DNS Server	If your service provider gave you a second DNS server address, enter it.

4 Click **Save Changes** on the **WAN Configuration** page.

5 You are redirected automatically to the **Basic Setup** page. Click **Write Settings to Flash**.

6 Verify that your Internet connection is working. Open your Web browser and try to connect to a familiar Web address.

If you connect successfully, your installation is complete and you are ready to browse the Web!

If you want to connect more computers or a network device to the X5, continue with the next section, **Connecting Additional Devices to the Internet**. Otherwise, you are done with this user's guide. Enjoy your X5!

Important!
If you did not connect, see **Appendix D: Troubleshooting** on page 57.

Connecting Additional Devices to the Internet

The X5 supports the direct connection of up to four computers with Ethernet ports. (Windows users can connect a fifth computer using the X5's USB port.)

To increase the number of Internet connections, you can plug a network device (such as a wireless access point, router, hub, or switch) into one of the modem's ETHERNET ports. This expands the maximum number of Internet connections supported by the modem to 253.

Note:
Depending on how many computers/network devices you plan to connect, you may need to purchase additional Ethernet cables. The X5 comes with one Ethernet cable and one USB cable.

Once your initial computer has been successfully connected to the Web, you can now connect the other computers and/or a network device.

- To connect additional computers directly to the X5, see the next section.
- To connect a network device to the X5, see page 24.

To Connect Additional Computers

1. Shut down the computer you want to add to the X5. (This is important because the computer must locate the correct IP address for the modem. This is done when the computer is turned back on in step 3 below.)

2. Plug one end of an Ethernet cable into one of the modem's four ETHERNET ports and plug the other end into your computer's Ethernet port.

   Note for Windows users:
   At this point, you should not be connecting any of your additional computers using the X5 modem's **USB** port. If you planned to use the **USB** port, it should already be connected to the computer on which you ran the Installation Assistant, as explained above on page 7.

3. Turn on the computer.

4. Verify that your Internet connection is working. Open your Web browser and try to connect to a familiar Web address.

5. Repeat steps 1–4 for each computer you want to add.

Congratulations! You have completed all you need to do to get your additional computers on the Internet. You are done with this user's guide. Enjoy your X5!

To Connect a Network Device

This section provides general instructions for connecting a network device (such as a wireless access point, router, hub, or switch) to the X5. For information about setting up your network device, please refer to the documentation that came with that device.

1. Plug one end of an Ethernet cable into one of the modem's ETHERNET ports (**1**, **2**, **3**, or **4**) and the other end into the network device's Ethernet port. (For a hub or a switch, this is typically called an Uplink or Expansion port. For a router or wireless access point, this is typically called a WAN port.)

2. Set up your network. Refer to the documentation provided with your particular network device for instructions on how to do this.

3. Once your network is set up, reboot any computer that is part of the network. For example, if you are connecting a wireless access point, reboot any computer that will use the wireless network.

4. Verify that your Internet connection is working. Open your Web browser on each computer using your network and try to connect to a familiar Web address.

Congratulations! You have connected your network device to the Internet. You are done with this user's guide. Enjoy your X5!

Removing the X5 Software

If you have a Windows computer and want to remove your X5—for instance, if you move your computer to a location without ADSL service—you should remove the software before disconnecting the hardware.

Note:
Because Macintosh and Linux computers do not require the X5 software be installed, users of those operating systems do not have to remove the software prior to removing the X5.

1. From your Windows desktop, click the **Start** button, point to **Programs** or **All Programs**, point to **Zoom ADSL Modem**, then select **Uninstall X5 ADSL Modem**.

2. When prompted to confirm your choice, click **Yes**.

3. When the process is complete, you will be prompted to click **Finish**.

4. Unplug your X5 hardware.

Universal Plug and Play

The X5 is enabled for Universal Plug and Play (UPnP™). This means that other devices plugged into your computer or network (for example, a gaming application, router, or stand-alone firewall) that use UPnP will automatically detect the X5 and make the needed configurations for them to work together. There is no setup for you to do.

If You Need Help

Zoom has many Technical Support services available to its customers. You can access these services in a variety of ways:

- Visit our Web site at **www.zoom.com** and select **Technical Support**. From there, you can **register your X5** and/or **contact our technical support experts** and/or use our intelligent database **SmartFacts™** and/or get **warranty** information.

  Tip:
  From time to time, Zoom may release improved firmware. This is also available at **www.zoom.com**, along with upgrade instructions. We recommend that you check our Web site periodically for updates.

- Call our support office. The appropriate number depends on your country:

  US: (561) 241-7170

  UK: 0870 720 0090

  Other country (US number): (561) 997-9683

- Some retailers of Zoom products provide support or can recommend a convenient support center.

2

Status Monitoring

This chapter discusses how to check the status of your modem and its ADSL connection.
Most users can skip this chapter, as it is primarily for advanced users and for those who are instructed by their Internet service provider or Zoom Technical Support to verify settings, usually for troubleshooting.
If you are using an access point or a network hub, you can monitor your X5 from any of the computers that are connected to the access point or hub.

Why Monitor Status?

The X5 provides two easy-to-read screens for you to review the status of the modem and its ADSL connection.

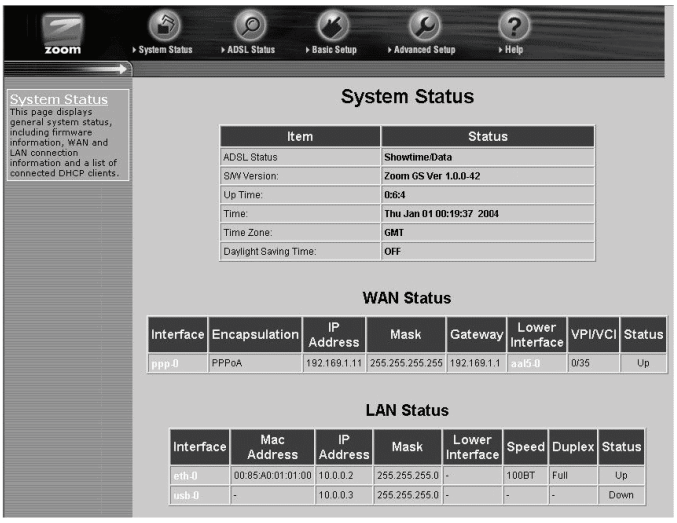
While most users will probably never need to check the status, there are some cases in which it would be helpful. For example, you may need to know the IP address assigned to you by your Internet service provider.

For advanced users with special configuration needs, the status information is useful for overall system maintenance.

Monitoring System Status

If you want to check the overall system status, click the **System Status** icon at the top of any page in the Zoom Configuration Manager. (If you forgot how to log in to the Zoom Configuration Manager, see page 13.)

The **System Status** page provides information about many aspects of your X5, including how long it has been since you last rebooted the modem, your WAN settings, your LAN settings, and so forth.

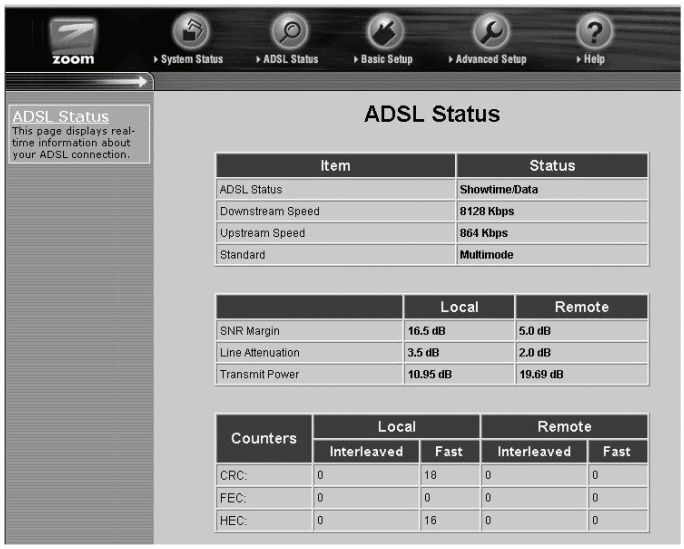


For more detailed information about the system status information provided, click the **Help** icon at the top of the **System Status** page to open the online help.

Monitoring ADSL Status

If you want to check the status of your ADSL connection, click the **ADSL Status** icon at the top of the Zoom Configuration Manager. (If you forgot how to log in to the Zoom Configuration Manager, see page 13.)

The **ADSL Status** page provides information about your ADSL connection. For example, you can verify whether your ADSL connection is active or not (the **ADSL Status** setting will display **Showtime** if connected). You can also monitor related ADSL parameters—for example, how fast the X5 is transferring data (**Downstream Speed** and **Upstream Speed**).



Note:
The **ADSL Status** page does not provide a way to change any of these settings—see Chapter 3, "Advanced Setup Options," on page 31 if you need to make changes to these settings.

For more detailed information about the ADSL status information provided, click the **Help** icon at the top of the **ADSL Status** page to open the online help.

3

Advanced Setup Options

The options that are set by default when the X5 is installed are sufficient for most users. However, those that want or need to change the X5's settings can do so using the Advanced Setup *page. This chapter explains how to specify advanced options. The information in this chapter applies to you if:*

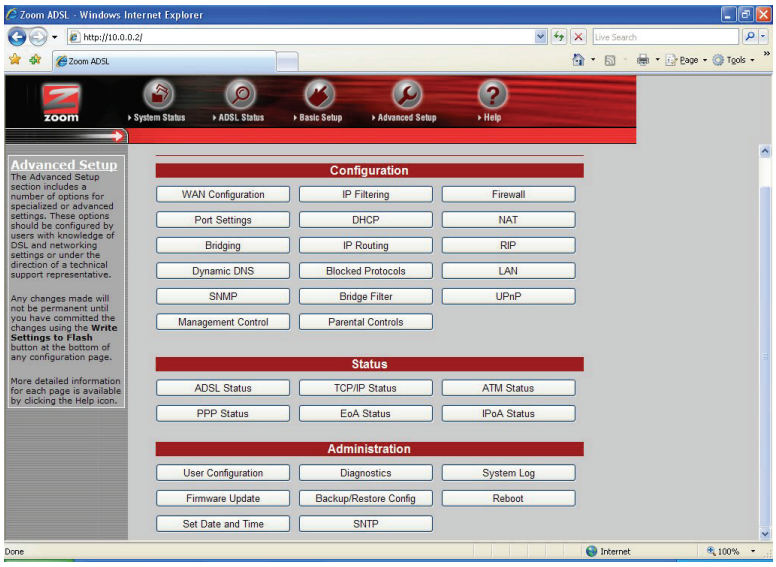
- *Your Internet service provider instructs you to enable, disable, or change the default settings for your X5 in order for it to work properly with your ADSL service. See* How To Use the Advanced Options *on page 31 for a table listing the Advanced Setup areas that you can customize.*
- *You need to change your Wide Area Network settings (for example, if you have a static IP address). See* Changing Your WAN Settings *on page 37 for more information.*
- *You want to change the default firewall settings (for example, if you have multiple computers connected to the Web, you can specify that one or more users receive an email alert if the network is attacked). See* Changing Your Firewall Settings *on page 38 for more information.*
- *You want to change your ADSL password. See* Changing User Names and Passwords *on page 39 for more information.*
- *You have customized your configuration and want to back it up for future use. See* Backing Up Your Configuration *on page 41 for more information.*
- *You want to add, remove, or change the IP Filters. See* Using IP Filters *on page 44 for more information.*

How To Use the Advanced Options

Configuring the X5 for the situations described at the beginning of this chapter requires the use of the Advanced Setup page. To access this page, click the Advanced Setup icon at the top of any page in the Zoom Configuration Manager. (If you forgot how to log in to the Zoom Configuration Manager, see page 13.)

You will notice that there are numerous buttons on the page, broken into three groups: **Configuration**, **Status**, and **Administration**.

Most users will not need to use any of the buttons on the **Advanced Setup** page.



Tip:
If you plan to specify advanced options, you can view detailed information about each option in the online help. To open the help, click the button for the settings you want to specify (for example, the **Firewall** button to open the **Firewall Configuration** page), then click the **Help** icon at the top of the screen to open a help topic specifically about the page you are viewing.

Configuration Buttons

Use the buttons in the **Configuration** group to perform advanced configuration tasks.

This button…	Opens a page that lets you…
WAN Configuration	Specify how your Wide Area Network ADSL setup is configured. This page is also where you would set up a static IP address (if you have arranged for one with your Internet service provider).
Port Settings	Set the ports used when you use FTP or Telnet with the device or if you are running a Web server behind it.
Bridging	Specify which device interfaces are capable of bridging data between your LAN/WAN and Internet service provider. Interfaces can be routable (for example, assigned an IP address), bridgeable, or both.
Dynamic DNS	Enter the Host name you registered with a Dynamic DNS service provider. This page is for those who are using dynamic IP addressing (the X5's default) and want to host a Web site. The Dynamic DNS service provider keeps track of your constantly changing IP address and routes those trying to access your Web site to the correct location.
SNMP	Set up Simple Network Management Protocol (SNMP). This enables a host computer to access configuration, performance, and other system data that resides in a database on the modem.
Management Control	Enable or deny access to X6 services – HTTP, Telnet, UPnP, SNMP, TFTP – to local network devices and/or remote users.

This button…	Opens a page that lets you…
IP Filtering	Set up rules to control the forwarding of incoming and outgoing data between your LAN and the Internet and within your LAN. For example, you can create IP filter rules to block attempts by certain computers on your LAN to access certain types of data or Internet locations. You can also block or allow incoming access to computers on your LAN. This page displays the current filters and lets you edit and add filters.
DHCP	Specify Dynamic Host Configuration Protocol (DHCP) settings to enable network administrators to centrally manage the assignment and distribution of IP information to computers on a network. When you enable DHCP on a network, you allow a device (such as your X5's router or a router located with your Internet service provider) to assign temporary IP addresses to your computers whenever they connect to your network.
IP Routing	Set up the routes on which you want the X5 to send data it receives on a particular interface (for example, LAN interface, Ethernet interface, etc.) Routes specify the IP address of the next device interface or Internet destination to forward data to, given the ultimate destination of the data.
Blocked Protocols	Select the protocols you want blocked from your computer (for example, IP Milticast, NetBEUI, IPX, APR, AppleTalk).
Bridge Filter	Filter packets at the Ethernet protocol level.
Parental Controls	Block Internet access from one or more computers on the network for a specified time period each day.
Firewall	Modify the default firewall settings. For example, use this page to specify the email address(es) to which you want an alert sent if your computer/network is attacked.
NAT	Specify Network Address Translation settings. The most common reason for changing the default settings is if you have a LAN and require each computer to have its own public IP address. Otherwise, the default NAT setting provides sufficient protection for most users.

This button…	Opens a page that lets you…
RIP	Specify whether the X5 can communicate with other routing devices and, if so, on which interfaces. It also lets you specify how long routes remain in memory.
LAN	Specify the settings that control the connection between the X5 modem and your Ethernet jack or USB port (depending on which you used to connect the modem).
UPnP (**U**niversal **P**lug a**n**d **P**lay)	Connect automatically with other UPnP-enabled software and hardware. The **Internet Gateway Device** (**IGD**) protocol makes it possible for applications running on the network to automatically configure NAT routing.

Status Buttons

The buttons in the **Status** group are typically used for maintenance and troubleshooting.

The following table lists each button in the **Status** group and gives a brief description of the settings you can specify.

Click a button below, then click the **Help** icon at the top of the screen to open an online help topic about the page you are viewing.

This button…	Opens a page that lets you…
ADSL Status	View in-depth information about your ADSL connection.
PPP Status	Configure a Point-to-Point Protocol (PPP) to enable communication between the X5 modem and your Internet service provider.
TCP/IP Status	View information about the IP packets handled by your modem.
EoA Status	Configure an Ethernet-over-ATM (EoA) interface on the ADSL/Ethernet router, if one is needed to communicate with your ISP.
ATM Status	Configure an Asynchronous Transfer Mode (ATM) Virtual Circuit (VC) interface to enable the X5 to communicate using the ATM protocol.
IPoA Status	Configure an Internet Protocol over ATM (IPoA) interface on the ADSL/Ethernet router. An IPoA interface can be used to exchange IP packets over the ATM network, without using an underlying Ethernet over ATM (EOA) connection.

Administration Buttons

The buttons in the **Administration** group are typically used for administrative tasks, such as diagnostic testing, upgrading firmware, changing your Zoom Configuration Manager password, etc.

Click a button below, then click the **Help** icon at the top of the screen to open an online help topic about the page you are viewing.

This button…	Opens a page that lets you…
User Configuration	Manage the User IDs and passwords that can access the Zoom Configuration Manager. This is where you can change the default password supplied to you with the X5.
Firmware Update	Specify the path to the upgrade file you need to update your firmware. Use the **Browse** button on this page to navigate to the file, then click the **Upload** button to perform the firmware update.
Set Date and Time	Set the X5's internal date and time settings (including time zone and whether Daylight Savings Time is in effect).
Diagnostics	Run a series of diagnostic tests of your system software and hardware connections. You can also run the Ping and Traceroute utilities to troubleshoot connection problems.
Backup/Restore Config	Save your current configuration settings so that they may be restored at a later time.
SNTP	Synchronize the X5 with an SNTP (Simple Network Time Protocol) server.
System Log	View data generated or acquired by routine system communication with other devices. This information does not necessarily represent unexpected or improper functioning and is not captured by the system traps that create alarms. You can save the system log to a file.
Reboot	Reboot the X5 and reset its configuration to the factory defaults.

Changing Your WAN Settings

Use the **WAN Configuration** page to change your Wide Area Network (WAN) settings and to specify a static IP address (if you have arranged/paid for one). To open this page, click the **WAN Configuration** button on the **Advanced Setup** page.

Important!
If you want to use static IP addressing, see **Using Static IP Addressing** on page 20 for information on how to do this.

The settings you can change on this page include **Encapsulation**, **VPI**, **VCI**, **DHCP Client**, **IP Address**, **Subnet Mask**, and so forth.

Once you have made the changes you want on this page, click the **Save Changes** button, and then click the **Write Settings to Flash** button.

For more information about changing your **WAN Configuration** settings, click the **Help** icon at the top of the screen while you are on this page. This opens the online help and displays a topic containing detailed information about the **WAN Configuration** page.

Changing Your Firewall Settings

Use the **Firewall Configuration** page to change the X5's firewall settings. To open this page, click the **Firewall** button in the **Configuration** section of the **Advanced Setup** page.

When you install the X5, a firewall is automatically established to offer your computer protection as you use the Internet. (This built-in firewall is in addition to the NAT settings on your X5.)

By default, the firewall is set up to be relatively strict – that is, the only Internet traffic it allows to access your computer is that which you are likely to need (for example, a Web page you request in your browser's address bar).

For most users, this access is secure and sufficient. Most users will never need to change their firewall settings.

However, use the **Firewall Configuration** page if you want to:

- Blacklist computers that try to hack into your computer or network so that they are denied access. (By default, this feature is disabled.)
- Have email sent if your computer or network is attacked by an outside computer.

Once you have made the changes you want on this page, click the **Save Changes** button, and then click the **Write Settings to Flash** button.

For details about the individual firewall settings you can specify, click the **Help** icon at the top of the screen while you are on the **Firewall Configuration** page. This opens the online help and displays a topic containing detailed information about the X5's firewall settings.

Changing User Names and Passwords

Use the **User Configuration** page to manage the user names and passwords that can access the Zoom Configuration Manager. To open this page, click the **User Configuration** button, located in the **Administration** group on the **Advanced Setup** page.

When you installed the X5 and tried to open the Zoom Configuration Manager, you were prompted for a User Name and Password in order to gain access. (The default name and password were supplied to you on page 13.)

If you want, you can change the default password. **Changing the password is not required.**

To change the default password

1 On the **User Configuration** page, locate the row that contains the default **admin** user name. (Unless you have added additional users, it should be the only row shown.)

User ID	Privilege	Action(s)
admin	Root	

2 Click the pencil icon  at the right end of the row to open the **User Config – Modify** screen.

3 In the **Old Password** box, enter **zoomadsl**. (This is the default password you used on page 13 during installation.) Note that it must be typed in lowercase letters.

4 In the **New Password** box, enter the new password you would like to use. The password is case sensitive and cannot exceed 128 characters.

5 In the **Confirm Password** box, enter the new password again to confirm it.

6 Click **Save Changes**. A message appears to let you know that the password has been changed. Click **Close** to return to the **User Configuration** page.

7 Click **Write Settings to Flash**.

In addition, you can also create additional logins (that is, user names and passwords) with varying degrees of access to the Zoom Configuration Manager.

For more information about managing logins, click the **Help** icon at the top of the screen while you are on the **User Configuration** page. This opens the online help and displays a topic containing detailed information about user names and passwords.

Backing Up Your Configuration

Use the **Backup/Restore Config** page to back up your current configuration or restore an old configuration to your X5. To open this page, click the **Backup/Restore Config** button, located in the **Administration** group on the **Advanced Setup** page.

Users who change the configuration settings for the X5 may want to back up their settings. This will enable them to restore those settings at a later time, if needed.

This feature may be especially useful when you receive firmware updates from Zoom. Installing the update may overwrite your customized settings with default values. Before you update the firmware, backup your configuration. Then, after the firmware has been updated, restore your configuration.

Note:
You do not need to back up the default settings. This is because you can easily restore the defaults by clicking the **Reboot** button on the **Advanced Setup** page. For more information, see **Restoring Default Settings** on page 43.

To back up your current configuration

1. On the **Backup/Restore Config** page, click **Save Config** to download a configuration file from the X5 to a folder on your computer.

2. Name the file and specify a location for it on your computer. Be sure to note the name and location. You will need this information if you ever want to restore the X5 to this backed-up configuration.

To restore a configuration

1 On the **Backup/Restore Config** page, click **Browse** and navigate to the file containing the configuration to which you want the X5 restored.

2 Click **Upload**.

For more information about backing up and restoring your customized settings, click the **Help** icon at the top of the screen while you are on the **Backup/Restore Config** page. This opens the online help and displays a topic containing detailed information about this process.

Restoring Default Settings

If you have changed the system settings on your X5 and for some reason want to restore them to the factory default settings, you can do so in one of two ways: You can perform a **software reset** or a **hard reset**.

To reset using the X5's Web interface

If you can open your Web browser and access your X5's user interface, do the following to perform a software reset:

1. Log into the Zoom Configuration Manager and click the **Advanced Setup** icon to open the **Advanced Setup** page. (See page 13 if you need help logging in.)

2. In the **Administration** section, click the **Reboot** button.

3. From the **Reboot Mode** drop-down list, select **Reboot From Default Configuration**.

4. Click the **Reboot** button. Once this process is complete, your unit is reset to its factory settings.

To perform a hard reset

If you lose your link to the unit and cannot communicate with it via the Web browser, do the following to perform a hard reset:

1. Insert a paper clip into the **RESET** pinhole in the center of the modem's back panel.

2. Hold it there for five seconds. The unit's **DSL** light will turn off and then it will blink slowly, about once per second.

You are now guaranteed that all system settings are restored to the X5's factory defaults.

Using IP Filters

Use the **IP Filter Configuration** page to set up IP filters to allow or block traffic coming into your computer from the Internet. To open this page, click the **IP Filtering** button in the **Configuration** section of the **Advanced Setup** page.

To filter Internet traffic, you must define one or more rules (that is, criteria you want the information to meet before it can proceed). As information comes in from the Internet, the X5 examines it and—if it meets the rule—moves forward to its destination on your computer or network. If it does not, it is discarded.

The rule can be based on many characteristics, including the network or Internet protocol it carries, IP address of the sending computer, the port that the traffic is coming in on, and so forth.

Once you have set up the IP filters you want, click the **Save Changes** button, and then click the **Write Settings to Flash** button.

For more information about setting up IP filters, click the **Help** icon at the top of the screen while you are on the **IP Filter Configuration** page. This opens the online help and displays a topic containing detailed information about this process.

Appendix A
ADSL Internet Settings Tables

These tables are for customers whose service providers do not supply them with the ADSL settings to connect to the Internet. Many ADSL providers use different settings depending on the region in which they are operating, which is why there may be more than one setting for your service provider. We post updated tables on our Web site. If your country is not listed in the tables below, please consult **www.zoom.com**

Note to USA customers

If your ADSL service provider is not shown below, first use the settings for **Service Provider Not Shown** at the bottom of the table. If those settings do not work, use the settings for the company that provides local telephone service in your area. (Refer to page 17 for more detailed installation instructions on entering the settings.)

Table A: USA

Service Provider	VPI	VCI	Encapsulation
AllTel (1)	0	35	PPPoE LLC
AllTel (2)	0	35	1483 Bridged IP LLC
AT&T (1)	0	35	PPPoE LLC
AT&T (2)	0	35	1483 Bridged IP LLC
AT&T (3)	8	35	1483 Bridged IP LLC
August.net (1)	0	35	1483 Bridged IP LLC
August.net (2)	8	35	1483 Bridged IP LLC
BellSouth	8	35	PPPoE LLC
Casstel.net	0	96	1483 Bridged IP LLC
CenturyTel (1)	8	35	PPPoE LLC
CenturyTel (2)	8	35	1483 Bridged IP LLC
Covad	0	35	PPPoE LLC
Earthlink (1)	0	35	PPPoE LLC
Earthlink (2)	8	35	PPPoE LLC
Eastex	0	100	PPPoA LLC
Embarq (Sprint) (1)	0	35	PPPoA LLC
Embarq (Sprint) (2)	8	35	PPPoE LLC
GWI	0	35	1483 Bridged IP LLC
Hotwire	0	35	1483 Bridged IP LLC
Internet Junction	0	35	1483 Bridged IP LLC
Qwest (1)	0	32	PPPoA LLC
Qwest (2)	0	32	PPPoA VC-MUX

Service Provider	VPI	VCI	Encapsulation
SBC (1)	0	35	PPPoE LLC
SBC (2)	0	35	1483 Bridged IP LLC
SBC (3)	8	35	1483 Bridged IP LLC
Socket (1)	8	35	1483 Bridged IP LLC
Socket (2)	0	35	1483 Bridged IP LLC
Socket (3)	0	35	PPPoE LLC
Sonic	0	35	1483 Bridged IP LLC
Sprint (Embarq) (1)	0	35	PPPoA LLC
Sprint (Embarq) (2)	8	35	PPPoE LLC
Uniserve	0	33	1483 Bridged IP LLC
Verizon (1)	0	35	PPPoE LLC
Verizon (2)	0	35	1483 Bridged IP LLC
Service Provider Not Shown	0	35	PPPoE LLC

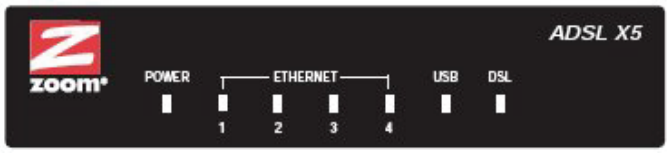
Table B: Countries Other Than The USA

Service Provider	VPI	VCI	Encapsulation
Australia-Telstra	8	35	PPPoA LLC
Argentina-Telecom	0	33	PPPoE LLC
Argentina-Telefonica	8	35	PPPoE LLC
Belgium-ADSL Office	8	35	1483 Routed IP LLC
Belgium-Turboline	8	35	PPPoA LLC
Bermuda (1)	0	35	PPPoA LLC
Bermuda (2)	0	35	PPPoE LLC
Bolivia (1)	0	34	1483 Routed IP LLC
Bolivia (2)	0	35	PPPoE LLC
Brazil- 3 Corp (1)	8	35	PPPoE LLC
Brazil- 3 Corp (2)	8	35	Classical IP over ATM
Brazil-Brasil Telcom	0	35	PPPoE LLC
Brazil-Telefonica	8	35	PPPoE LLC
Brazil-Telmar	0	33	PPPoE LLC
Brazil-South Region	1	32	PPPoE LLC
Colombia-EMCALI	0	33	PPPoA VC-MUX
Costa Rica	1	50	PPPoA LLC
Denmark-Cybercity, Tiscali	0	35	PPPoA VC-MUX
France (1)	8	35	PPPoE LLC
France (2)	8	67	PPPoA LLC
France (3)	8	35	PPPoA VC-MUX
France (4)	0	35	1483 Bridged LLC
France (5)	8	35	1483 Bridged LLC
Germany	1	32	PPPoE LLC
Greece	8	35	PPPoA VC-MUX
Hungary	1	32	PPPoE LLC
Hungary-Sci-Network	0	35	PPPoE LLC
Iceland-Islandssimi	0	35	PPPoA VC-MUX
Iceland-Siminn	8	48	PPPoA VC-MUX
Israel	8	48	PPPoA VC-MUX

Service Provider	VPI	VCI	Encapsulation
Italy	8	35	PPPoA VC-MUX
Jamaica (1)	8	35	PPPoA VC-MUX
Jamaica (2)	0	35	PPPoA VC-MUX
Jamaica (3)	8	35	1483 Bridged IP LLC SNAP
Jamaica (4)	0	35	1483 Bridged IP LLC SNAP
Kazakhstan	0	33	PPPoA VC-MUX
Mexico	8	35	PPPoE LLC
Netherlands-Baby XL	0	34	1483 Bridged IP LLC
Netherlands-BBNED	0	35	PPPoA VC-MUX
Netherlands-BBNED-Bridged	0	35	1483 Bridged IP LLC
Netherlands-MX Stream	8	48	PPPoA VC-MUX
Portugal	0	35	PPPoE LLC
Saudi Arabia (1)	0	33	PPPoE LLC
Saudi Arabia (2)	0	35	PPPoE LLC
Saudi Arabia (3)	0	33	1483 Bridged IP LLC
Saudi Arabia (4)	0	33	1483 Routed IP LLC
Saudi Arabia (5)	0	35	1483 Bridged IP LLC
Saudi Arabia (6)	0	35	1483 Routed IP LLC
Spain- Albura, Tiscali	1	32	PPPoA VC-MUX
Spain- Colt Telecom, Ola Internet	0	35	PPPoA VC-MUX
Spain -EresMas, Retevision	8	35	PPPoA VC-MUX
Spain-Knet Comunicaciones S.L.	8	32	PPPoA VC-MUX
Spain- Servidores Voz	0	33	PPPoA VC-MUX
Spain-Telefonica (1)	8	32	PPPoE LLC
Spain-Telefonica (2), Terra	8	32	1483 Routed IP LLC
Spain- Wanadoo (1)	8	35	PPPoA VC-MUX
Spain- Wanadoo (2)	8	32	PPPoE LLC
Spain- Wanadoo (3)	8	32	1483 Routed IP LLC
Sweden-Telenordia	8	35	PPPoE
Sweden-Telia	8	35	1483 Bridged IP LLC
Switzerland	8	35	PPPoE LLC
Turkey (1)	8	35	PPPoE LLC
Turkey (2)	8	35	PPPoA VC-MUX
UK (1)	0	38	PPPoA VC-MUX
UK (2)	0	38	PPPoE LLC
Venezuela-CANTV	0	33	1483 Routed IP LLC
Vietnam	0	35	PPPoE LLC

Appendix B
Front and Back Panels

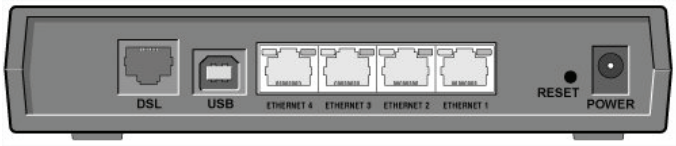
The front panel of the X5 looks like this:



The following table describes the LEDs on the front panel.

LED	Description
POWER	Lights when the X5 is plugged into a power source.
ETHERNET **1** **2** **3** **4**	Lights when the corresponding **ETHERNET** port of the X5 is connected to the Ethernet port of a powered-up device. Blinks when data is sent.
USB	Lights when the X5's USB port is connected to the USB port of a powered-up Windows computer.
DSL	Blinks when the X5 is trying to connect to your ADSL service. Steady on when the unit is connected to your ADSL service. **Note:** If the light fails to switch from blinking to steady after a minute or two, check with your ADSL provider that the ADSL connection is activated, or refer to **Appendix D: Troubleshooting** on page 55.

The back panel of the X5 looks like this:



Port or button	Description
DSL	Connects the modem to the ADSL telephone wall jack.
USB	Connects the modem to the Ethernet port of a Windows computer.
ETHERNET **4** **3** **2** **1**	Ports for connecting the modem to an access point, a network hub, or the Ethernet port of a computer.
RESET	Resets the modem to its factory settings. To reset, insert a paper clip and press the button three times.
POWER	Connects the unit to the power adapter.

Appendix C
TCP/IP Network Settings

If you are using a Macintosh or Linux computer, you **must** ensure that your computer's TCP/IP network settings are configured properly. Otherwise, you will not be able to connect to the Internet.

Note:
If you are using a Windows computer, you do not have to configure the TCP/IP settings. This is because your Windows computer will automatically configure them for you. Only Windows users who are troubleshooting the X5 will need to verify the TCP/IP settings.

Depending on your operating system, follow the steps in the appropriate section to ensure your TCP/IP settings are correct.

- If you are using Macintosh, see **Macintosh TCP/IP Settings** on page 51.
- If you are using Linux, see **Linux TCP/IP Settings** on page 53.
- If you are using Windows, see **Windows TCP/IP Settings** on page 54.

Macintosh TCP/IP Settings

How you configure your Macintosh computer's network settings differs, depending on your Mac OS. For OS X, follow the instructions below. Otherwise, go to page 52.

Mac OS X

1. From the **Dock**, choose **System Preferences** and then **Network** to display the **Network** pane. (For OS X 3, you also have to click the **Configure** button.)

2. Ensure that **Automatic** is selected from the **Location** list box.

3. Under the **Show** drop-down tab, choose **Built-in Ethernet**.

4. Under the **TCP/IP** tab, make sure that **Using DHCP** is highlighted in the **Configure:** list box. Do not enter anything into the **DHCP Client ID** field.

5. Click **Apply Now** (or **Save** if prompted) and close the **Network** pane.

Mac OS 7.6.1 - 9.2.2

1. From the **Apple** menu, choose **Control Panels** and then **TCP/IP** to display the **TCP/IP** Window.

2. Under Connect via:, select **Ethernet built-in**.

3. Under Configure:, select **Using DHCP Server**. Do not enter anything in the **DHCP Client ID** field.

4. Close the **TCP/IP** Window. You will be asked if you want to save the changes. Click **Save**.

Linux TCP/IP Settings

The instructions for setting up boot-time DHCP vary dramatically by distribution, so you may want to refer to your particular version's documentation.

Note:
If you have more than one network card installed, you will need to pick distinct Ethernet identifiers for each (eth0, eth1, eth2, and so forth). If you select an identifier other than eth0 for your ADSL modem, use that identifier throughout.

RedHat

Edit or create **/etc/sysconfig/network-scripts/ifcfg-eth0** so that it contains the following three lines:

```
DEVICE=eth0
ONBOOT=yes
BOOTPROTO=dhcp
```

SuSE

Edit the file **/etc/rc.config**; search for the variables **NETCONFIG**, **NETDEV_0**, and **IFCONFIG_0**.

Set them as follows (see the instructions in **rc.config**):

```
NETCONFIG="_0"
NETDEV_0="eth0"
IFCONFIG_0="dhcpclient"
```

Reboot with this command: **/sbin/shutdown -r now**.

Debian

Add this line to the **file /etc/network/interfaces**:

```
iface eth0 inet dhcp
```

Reboot with this command: **/sbin/shutdown -r now**.

Windows TCP/IP Settings

How you configure your Windows computer's network settings differs, depending on your operating system.

Windows XP

1 Open the **Internet Protocol (TCP/IP) Properties** dialog box.

a From the desktop, click the **Start** button, point to **Control Panel**, and then click **Network and Internet Connections**.

b Click **Network Connections**.

c Right-click the **Local Area Connection** icon, and select **Properties**.

d Select your NIC card's TCP/IP entry (it should include "TCP/IP" in it, but not "AOL," "Dial-up," or "Adapter") and click the **Properties** button.

2 Ensure the following is selected, depending on whether you are using dynamic (DHCP) or static IP addressing:

- **If you are using DHCP (most users):** Ensure that **Obtain an IP address automatically** is selected and that either **Obtain a DNS server address automatically** or **Enable DNS** is selected. All fields should be blank.
- **If you are using a static IP address:** Ensure that **Use the following IP address** and **Use the following DNS server addresses** are selected. The **IP address**, **Subnet mask**, **Default gateway**, and **Preferred DNS server** settings should match those given to you by your Internet provider when you arranged for a static IP address.

Windows 2000

1 Open the **Internet Protocol (TCP/IP) Properties** dialog box.

a From the desktop, click the **Start** button, point to **Settings**, then **Network and Dial-up Connections**.

b Right-click the **Local Area Connection** icon, and select **Properties**.

c Select your NIC card's TCP/IP entry (it should include "TCP/IP" in it, but not "AOL," "Dial-up," or "Adapter") and click the **Properties** button.

2 Ensure the following is selected, depending on whether you are using dynamic (DHCP) or static IP addressing:

- **If you are using DHCP (most users):** Ensure that **Obtain an IP address automatically** is selected and that either **Obtain a DNS server address automatically** or **Enable DNS** is selected. All fields should be blank.
- **If you are using a static IP address:** Ensure **that Use the following IP address** and **Use the following DNS server addresses** are selected. The **IP address**, **Subnet mask**, **Default gateway**, and **Preferred DNS server** settings should match those given to you by your Internet provider when you arranged for a static IP address.

Windows 98/Me

1 Open the **Internet Protocol (TCP/IP) Properties** dialog box.

a From the desktop, click the **Start** button, point to **Settings**, then **Control Panel**.

b Double-click the **Network** icon to display the **Network** dialog box.

c Select your NIC card's TCP/IP entry (it should include "TCP/IP" in it, but not "AOL," "Dial-up," or "Adapter") and click the **Properties** button and then click **OK**

2 Ensure the following is selected, depending on whether you are using dynamic (DHCP) or static IP addressing:

- **If you are using DHCP (most users):** Ensure that **Obtain an IP address automatically** is selected and that either **Obtain a DNS server address automatically** or **Enable DNS** is selected. All fields should be blank.
- **If you are using a static IP address:** Ensure that **Specify an IP address** is selected and that the correct **IP Address** and **Subnet Mask** values appear. On the **DNS Configuration** tab, ensure that **Enable DNS** is selected and that something appears in the **Host** box. (If not, enter any name, word, or combination of letters and numbers.) Ensure that the **DNS Server Search Order** box contains either **10.0.0.2** (if you are connecting the X5 though its **ETHERNET** jack) or **10.0.0.3** (if you are connecting the X5 through its **USB** port).

Appendix D
Troubleshooting

The following are some problems you may experience and some possible solutions to remedy the situation.

Problem

My X5's **DSL** light is solidly lit, but I cannot connect to the Internet.

Solution

First, perform a power cycle on your computer and the X5. Take the following steps in the order given:

1. Turn off the computer.
2. Turn off your X5 and wait a few seconds.
3. Turn the X5 back on.
4. Turn on the computer.

If that doesn't work, check these items:

- Ensure that you are using the correct **VPI**, **VCI** and **Encapsulation** settings.
- If your **Encapsulation** begins with **PPP**, ensure that you have typed your ADSL Username and Password correctly. (Note that this is NOT the username and password you used to log into the Zoom Configuration Manager on page 13.)
    - If you had the modem automatically configure its settings, open the **Basic Setup** page, ensure that **MANUAL** is selected, then select **7** from the **Virtual Circuit** drop-down list. When the screen changes to show the automatic configuration settings, select **MANUAL** again, then enter the correct **Username** and **Password** in the boxes provided. Click **Save Changes** and **Write Settings to Flash**.

- If you manually configured your modem, open **the Basic Setup** page, ensure that **MANUAL** is selected, then enter the correct **Username** and **Password** in the boxes provided. Click **Save Changes** and **Write Settings to Flash**.

- Verify that your service provider's ADSL connection is functioning properly. (Place a call to your service provider's customer support department to verify this.)

- Verify that your TCP/IP network settings are properly configured on your computer. To do this, refer to the appropriate section.
  - If you are using Macintosh, see **Macintosh TCP/IP Settings** on page 51.
  - If you are using Linux, see **Linux TCP/IP Settings** on page 53.
  - If you are using Windows, see **Windows TCP/IP Settings** on page 54.

- Make sure that your Web browser is configured properly. It must be set for a **network connection**, not a **dial-up connection**. The following instructions are for Internet Explorer Version 5.0 or later.

  1. On the desktop, right-click the **Internet Explorer** icon, and select **Properties**.
  2. On the **Internet Properties** dialog box, select the **Connections** tab, then click the **Setup** button.
  3. The setup process will proceed differently, depending on your operating system. The following table details the process for your Windows computer.

Windows XP	Windows 98/Me/2000
a. On the **Welcome to the New Connection Wizard** dialog box, click **Next**. (If you see a **Location Information** dialog box, click **Cancel** and then when asked if you are sure you want to cancel, click **Yes** to return to the **Welcome** dialog box.) b. On the **Network Connection Type** dialog box, select **Connect to the Internet**, then click **Next**. c. On the **Getting Ready** dialog box, select **Set up my connection manually**, then click **Next**. d. On the **Internet Connection** dialog box, select **Connect using a broadband connection that is always on**, then click **Next**. e. On the **Completing the New Connection Wizard** dialog box, click **Finish**.	a. On the **Internet Connection Wizard** dialog box, select **I want to set up my Internet connection manually, or I want to connect through a local area network (LAN)**, then click **Next**. b. On the **Setting up your Internet connection** dialog box, **I connect through a local area network (LAN)**, then click **Next**. c. On the **Local area network Internet configuration** dialog box, uncheck the **Automatic discovery of proxy server** check box, then click **Next**. d. On the **Set Up Your Internet Mail Account** dialog box select **No**, then click **Next**. e. On the **Completing the New Connection Wizard** dialog box, uncheck the **To connect to the Internet immediately, select this box…** check box (if it appears) and click **Finish**.

Problem

My X5's **DSL** light continually blinks and does not stay solidly lit.

Solution

There are several issues that could cause this problem. Check these items:

- Ensure that the phone cord is firmly plugged into the wall jack and the **ADSL** jack on the back of the X5.
- Verify that the jack the phone cord is connected to is enabled for ADSL service. Unless your service provider has enabled it, you cannot use a standard telephone jack for ADSL service.
- Your phone cord may be defective. Replace the phone cord with a known good one.
- You have installed phone filters on all the phones and fax machines using the same ADSL line as the X5. These devices can produce noise and interfere with your ADSL connection.

Problem

I cannot log into the **Zoom Configuration Manager**. I have typed **http://10.0.0.2** or **http://10.0.0.3** (depending on whether I am using the X5's Ethernet jack or USB port), but I am not prompted for a User Name and Password.

Solution

There are several issues that could cause this problem. Check these items:

- If you are using a Macintosh or Linux computer, your TCP/IP settings may not be properly configured. See page 50 for more information.
- If you are using Mac OS X 10.3 and above, renew your IP address: Point to **System Preferences**, then choose **Network**. Click the **Configure** button and then the **Renew DHCP Lease** button.

- If you are using a Windows computer, perform a Release/Renew operation:
  - **Windows 2000/XP:** From the desktop, click the **Start** button, then point to **Programs**, point to **Accessories**, and then select **Command Prompt**. Type **ipconfig /all** and press the **Enter** key on your keyboard. In the subsequent dialog box, make sure the NIC adapter is highlighted in the drop-down list, click **Renew** and then click **Release**. Type **10.0.0.2** or **10.0.0.3** (as appropriate) in your browser's address bar and press **Enter**. The **Network Password** box should display.
  - **For Windows 98/Me:** From the desktop, click the **Start** button and the point to **Run**. Type **winipcfg**, and click **OK**. In the subsequent dialog box, make sure the NIC adapter is highlighted in the drop-down list, click **Renew** and then click **Release**. Type **10.0.0.2** or **10.0.0.3** (as appropriate) in your browser's address bar and press **Enter**. The **Network Password** box should display.

Problem

The computer on which I installed the X5 software is connected to the Web, but one or more of the additional computers I have connected directly to the modem cannot access the Internet.

Solution

There are several issues that could cause this problem. Check these items:

- Try rebooting each computer. This will allow for the computers to release and renew their IP addresses.
- If only one of your added computers cannot access the Web, ensure that it is connected using its Ethernet port and one of the X5 modem's LAN ports. If it is using the **USB** port, it requires the X5 software be installed. Run the installation CD, reboot the computer, then try to connect to a familiar Web address to ensure that the Internet connection is made.

Problem

The computer on which I installed the X5 software is connected to the Web, but the computers connected through my network device cannot access the Internet.

Solution

The problem is most likely with your network device (such as a wireless access point, router, hub, or switch). Check these items:

- Try rebooting each computer on your network. For example, if you are using a router, reboot each computer that is connected to the router. This will allow for the computers to release and renew their IP addresses.
- If you are using a wireless access point or a router, verify that the device is using Dynamic Host Configuration Protocol (DHCP). This is also known as dynamic IP addressing. Depending on your device, this may be controlled by an **Obtain an IP address automatically** option. If you need help, refer to the documentation that came with your network device or contact its manufacturer.

Refer to the documentation provided with your network device or contact its manufacturer for assistance.

Appendix E
Regulatory Information

U.S. FCC Part 68 Statement

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. The unit bears a label on the back which contains among other information a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

This equipment uses the following standard jack types for network connection: RJ11C:

This equipment contains an FCC compliant modular jack. It is designed to be connected to the telephone network or premises wiring using compatible modular plugs and cabling which comply with the requirements of FCC Part 68 rules.

The Ringer Equivalence Number, or REN, is used to determine the number of devices which may be connected to the telephone line. An excessive REN may cause the equipment to not ring in response to an incoming call. In most areas, the sum of the RENs of all equipment on a line should not exceed five (5.0).

In the unlikely event that this equipment causes harm to the telephone network, the telephone company can temporarily disconnect your service. The telephone company will try to warn you in advance of any such disconnection, but if advance notice isn't practical, it may disconnect the service first and notify you as soon as possible afterwards. In the event such a disconnection is deemed necessary, you will be advised of your right to file a complaint with the FCC.

From time to time, the telephone company may make changes in its facilities, equipment, or operations which could affect the operation of this equipment. If this occurs, the telephone company is required to provide you with advance notice so you can make the modifications necessary to obtain uninterrupted service.

There are no user serviceable components within this equipment. See Warranty flyer for repair or warranty information.

It shall be unlawful for any person within the United States to use a computer or other electronic device to send any message via a telephone facsimile unless such message clearly contains, in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business, other entity, or individual sending the message and the telephone number of the sending machine or of such business, other entity, or individual. The telephone number provided may not be a 900 number or any other number for which charges exceed local or long distance transmission charges. Telephone facsimile machines manufactured on and after December 20, 1992, must clearly mark such identifying information on each transmitted message. Facsimile modem boards manufactured on and after December 13, 1995, must comply with the requirements of this section.

This equipment cannot be used on public coin phone service provided by the telephone company. Connection to Party Line Service is subject to state tariffs. Contact your state public utility commission, public service commission, or corporation commission for more information.

U.S. 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 CS03 Statement

NOTICE: This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

The Ringer Equivalence Number (REN) for this terminal equipment is identified on the bottom label of the equipment. The REN assigned to each terminal equipment provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed five.

AVIS : Le présent matériel est conforme aux spécifications techniques d'Industrie Canada applicables au matériel terminal. Cette conformité est confirmée par le numéro d'enregistrement. Le sigle IC, placé devant le numéro d'enregistrement, signifie que l'enregistrement s'est effectué conformément à une déclaration de conformité et indique que les spécifications techniques d'Industrie Canada ont été respectées. Il n'implique pas qu'Industrie Canada a approuvé le matériel.

L'indice d'équivalence de la sonnerie (IES) du présent matériel est montré sur l'étiquette inférieure du produit. L'IES assigné à chaque dispositif terminal indique le nombre maximal de terminaux qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5.

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.

Safety Notices

CAUTION: To reduce the risk of fire, use the supplied phone cord or an AWG 26 or larger UL-listed or CSA-certified telecommunication line cord.

Do not use this product near water – for example, in a wet basement or near a swimming pool.

Avoid using this product during an electrical storm. There may be a remote risk of electric shock from lightning.

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

Declaration of Conformity

Declaration of Conformity
Conformiteitsverklaring van de EU
Konformitätserklärung
Dichiarazione di conformità
Declaração de Conformidade
Konformitetsdeklaration
Overensstemmelseserklæring
Déclaration de conformité
Δήλωση Συμμόρφωσης
Deklaracja zgodności
Declaración de conformidad
Cam kết về sự tuân thủ ở Châu Âu

Manufacturer/Producent/Fabrikant/ Constructeur/Hersteller/Κατασκευαστής/ Fabbricante/ Fabricante/Tillverkare/Nhà sản xuất	**Zoom Technologies, Inc. 207 South Street Boston, MA 02111 USA / 617-423-1072 www.zoom.com**
Brand/Varemærke/Merk/Marque/Mark e/Μάρκα/Marchio/Marka/Marca/Märke/ Thương hiệu	**Zoom X5 DSL/ADSL Modem Router**
Type/Typ/Μάρκα/Tipo/Türü/Kiểu mẫu	**Series 1065, Models 5654A, 5624A, 1652A, 1654A**

The manufacturer declares under sole responsibility that this equipment is compliant to Directive 1999/5/EC via the following. This product is CE marked.

Producenten erklærer under eneansvar, at dette udstyr er i overensstemmelse med direktivet 1999/5/EC via følgende. Dette produkt er CE-mærket.

De fabrikant verklaart geheel onder eigen verantwoordelijkheid dat deze apparatuur voldoet aan Richtlijn 1999/5/ EC op grond van het onderstaande. Dit product is voorzien van de CE-markering.

Le constructeur déclare sous son entière responsabilité que ce matériel est conforme à la Directive 1999/5/EC via les documents ci-dessous. Ce produit a reçu le marquage CE.

Hiermit erklärt Zoom die Übereinstimmung des Gerätes modem mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 1999/5/EC. Dieses Produkt ist das gekennzeichnete CE.

Ο κατασκευαστής δηλώνει με αποκλειστική του ευθύνη ότι αυτό το προϊόν συμμορφώνεται με την Οδηγία 1999/5/EC μέσω των παρακάτω. Αυτό το προϊόν φέρει τη Σήμανση CE.

Il fornitore dichiara sotto la sola responsabilità che questa apparecchiatura è compliant a 1999/5/EC direttivo via quanto segue. Questo prodotto è CE contrassegnato.

Producent stwierdza że to urządzenie zostało wyprodukowane zgodnie z Dyrektywą 1999/5/EC. Jest to potwierdzone poprzez umieszczenie znaku CE na urządzeniu.

O fabricante declara sob sua exclusiva responsabilidade que este equipamento está em conformidade com a Directiva 1999/5/EC através do seguinte. Este produto possui Marcação CE.

El fabricante declara bajo su exclusiva responsabilidad que este equipo satisface la Directiva 1999/5/EC por medio de lo siguiente. Este producto tiene marca CE.

Bu ürünün imalatçısı tüm sorumluluk kendisinde olmak kaydıyla bu cihazın aşağıdaki tabloda gösterilen biçimde 1999/5/EC (R&TTE Yönetmeliği) no.lu Yönetmeliğe uygun olduğunu beyan etmektedir. Bu ürün CE İşareti taşımaktadır.

Nhà sản xuất cam kết với trách nhiệm của mình là thiết bị này tuân theo Hướng dẫn 1999/5/EC thông qua các mục sau. Sản phẩm này được đánh dấu là CE.

73/23/EEC – LVD	EN60950-1:2001
89/336/EEC – EMC	EN55022:1998+A1, 2000+A2, 2003 EN55024:1998+A1, 2001+A2, 2003

CE

Andy Pollock
31 August, 2007
1065/TF, Boston, MA, USA

Director, Hardware Engineering/Direktør, Hardware Engineering/Director, Sustaining Engineering /Directeur, ingénierie de soutien/Direktør, Sustaining Engineering /Διευθυντής, Μηχανικής Διατήρησης /Direttore, Hardware Engineering /Dyrektor, Inżynieria ciągła/Director, Engenharia de Manutençã/Director, Ingeniería de apoyo/Giám Đốc Kỹ thuật Phần cứng