Quick Start

ADSL X6 Modem, Wireless-G Router, Firewall, and 4-Port Switch

Model 5590

This Quick Start contains instructions for using a Windows computer to set up a wired and/or wireless network. Macintosh and Linux users should refer to the User's Guide on the CD.

About the ADSL X6

The Zoom ADSL X6 supports up to 253 Internet connections.

You can connect a computer or network device (for example, a router, hub, or switch) into any of the unit's four **LAN** ports, and you can "connect" wireless devices via the unit's wireless access point.

We recommend that you first configure the modem and establish an Internet connection using a Windows computer that is directly connected to one of the modem's **LAN** ports.

Then—once you are certain your connection is working—you should set up your network.

Package Contents

Your package contains the following items:

Modem

Power Cube

Phone Cord

Ethernet Cable
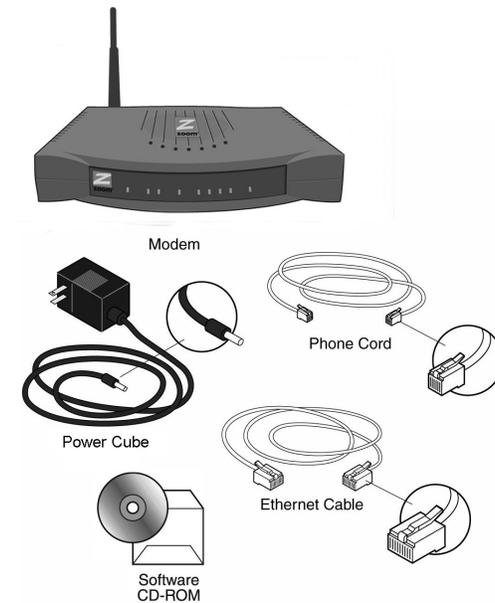
Software
CD-ROM

The CD contains the installation software, documentation, information about security and other advanced features, the warranty, and detailed Customer Support information. The most complete and up-to-date information can normally be found at: **http://www.zoom.com/techsupport/adsl/adsl_x6.shtml**

If anything is missing or damaged, please contact Zoom Customer Support or whoever sold you the modem.

In addition, the package may include:

• A splitter to enable you to use a single ADSL wall jack for both an Internet connection and for telephone service (certain countries only)

• Phone-jack adapter to adapt the phone cord to a particular phone jack (certain countries only)

• ADSL line filter(s) (certain models only)

Before You Begin

Before you begin installing the X6 modem using this Quick Start, you must have the following available to you:

- **ADSL service enabled on your telephone line.** To do this, you need to sign up with an ADSL service provider. Once this service is enabled, you should have an ADSL-enabled telephone wall jack to plug the X6 modem into. (Your service provider may refer to "ADSL service" as "DSL service.")

- **A Windows computer (98/Me/2000/XP) with an Ethernet port for setting up the X6.** This is the computer that you will physically connect to the X6 (using an Ethernet cable), and then use to configure the modem.

- **An Ethernet port for each additional computer that you plan to plug into one of the unit's LAN ports (or into a network device that is plugged into one of the LAN ports).** The additional computers that connect can be Windows, Macintosh, and/or Linux computers.

- **Wireless capability for each desktop or notebook computer that will make a wireless connection to the X6.** The X6 supports 802.11b- and 802.11g-compatible network adapters.

- **Additional Ethernet cables.** If you plan to connect more than one computer directly to the modem, you will need additional Ethernet cables to make the connection. The modem supports up to four direct connections via its four **LAN** ports.

Quick Start Instructions

Installing the X6 involves four steps: **Installing the Software**, **Installing the Hardware**, **Establishing Communication**, and **Setting Up Your Wired and/or Wireless Network**.

Step 1: Installing the Software

Regardless of how many computers you plan to use with the X6, you only have to install the software on one of them.

You will install the software on a Windows computer that you directly connect to the X6, and then use that computer to configure the modem. This computer must have an Ethernet port. If it does not, you can purchase a Network Interface Card to add one.

Important!
If possible, use a computer that is centrally located in your home or office and that has easy access to an ADSL line. If you do not have a desktop computer located centrally in your home (for example, it is in the basement), or you only have notebook computers, you should still directly connect this desktop computer or one of your notebooks to the X6 to configure it. Once the X6 is set up and your Internet connection is working, you can unplug the computer from the unit and move the X6 to a more central location.

1 Turn on your computer (if it is not on already).

2 Insert the supplied CD into the CD-ROM drive of your computer. The CD should start automatically and the **Language Selection** screen should appear. (If the CD does not start automatically, on the Windows desktop, click the **Start** button, click **Run**, and then type **D:\setup.exe**, where **D** is the letter of your CD-ROM drive.)

3 Select your language. The **Main Menu** screen opens.

4 Click **Installation Wizard** to start the software installation, then click **Next** when prompted.

5 When the installation is complete, click **Finish**, then click **Exit**.

6 Close any applications that may be open, then remove the CD from the CD-ROM drive.

7 Shut down the computer.

Congratulations! You have installed the software. Now continue with the next section, **Installing the Hardware**.

Step 2: Installing the Hardware

<u>Be sure that you have already installed the software BEFORE beginning this section.</u>

1 Shut down your computer (if it is not shut down already). This is the computer on which you just installed the software.

2 Rotate the antenna on the back of the modem to a vertical position.

3 Connect the modem to the computer's Ethernet port.

Plug one end of the Ethernet cable into any one of the X6 modem's **LAN** ports (**LAN 1**, **LAN 2**, **LAN 3**, or **LAN 4**) and plug the other end into your computer's Ethernet port.

4 Plug the included power cube into a power strip or wall outlet and then plug its other end into the modem's power (**PWR**) jack.

> **Important!**
> Only use the power cube shipped with the X6. Other power cubes may damage your hardware.

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

5 Turn the computer on.

6 Plug one end of the supplied phone cord into the modem's **ADSL** port and the other into the ADSL wall jack. The blinking **LINK** light should become steady on. If it does not, refer to **Troubleshooting Tips** on page 22.

> **Tip!**
> If your X6 came with an ADSL splitter, you can plug it into the ADSL wall jack. This enables you to use the wall jack for both your ADSL connection and for telephone service. The splitter has two jacks, one labeled for your ADSL modem connection and the other for your phone.

7 Phone filters are not absolutely required, but we **HIGHLY RECOMMEND that you use a filter for EVERY phone and fax that is sharing the ADSL phone line.** (Do not plug a filter between the ADSL wall jack and the X6.) Phone filters block the ADSL frequencies so that someone making a normal phone call will not hear modem noise on the line. They also keep phone noise from interfering with ADSL performance.

You may have received ADSL phone filters with your X6. If you did not, or if you need more filters, they are available at most retail stores that carry consumer electronics.

Typically, you plug a phone or fax into the filter's **PHONE** jack and plug the filter's **LINE** end into the wall jack.

Congratulations! You have installed the hardware. Now continue with the next section, **Establishing Communication**.

Step 3: Establishing Communication

You must set up the X6 so that it can communicate with your Internet service provider. To do this, you must use the **Zoom Configuration Manager**.

1 Log in to the **Zoom Configuration Manager** from the computer on which you installed the X6 software:

a On your desktop, double-click the **Zoom** icon.

This icon should have been placed there automatically when you installed the software earlier. (If the **Zoom** icon is not there: Open your Web browser and, in its address bar, type **http://10.0.0.2** and then press the **Enter** key on your keyboard.)

> **Note:**
> Even though you are not yet configured to browse the Internet, your Web browser can access the Web interface of the X6 modem.

b On the **Enter Network Password** dialog box, type the following user name and password in the appropriate boxes, then click **OK**. You must enter them using lowercase letters.

User Name: **admin**

Password: **zoomadsl**

As you type your password, it will appear as bullets or asterisks (depending on your operating system). This is to protect your password from being seen by others.

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 pressing it three times.

Tip:
If you want to choose your own password, you can do so later. For instruction on how to do this, see the User's Guide (located in PDF format on the CD).

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. Do the following:

a Enter your **Protocol, Encapsulation, VPI** and **VCI** settings in the appropriate boxes. If you do not know these settings, refer to the tables on page 31 and look up your service provider.

Tip!
If you refer to the tables and there is more than one listing for your service provider, the most common is labeled (1), the next (2), and so on.

NAT (**N**etwork **A**ddress **T**ranslation) is **Enabled** by default. This feature lets multiple users access the Internet sharing a single IP address.

Select **Disable** if users on your LAN have public IP addresses and can access the Internet directly.

b Depending on the **Encapsulation** setting you selected, the bottom half of the page will change so that you can enter additional information.

- **If you selected PPPoA or PPPoE**, enter your ADSL **Username** and **Password** in the appropriate boxes. This information should have been given to you by your Internet service provider. (Your **Username** is typically your email address or the characters preceding the @ sign in your email address. This is NOT the same login you that you used earlier to open the **Zoom Configuration Manager**.)

- **If you selected 1483 Bridged or 1483 Routed**, you have the option of using either dynamic or static IP addressing. Depending on your situation, select the appropriate option button:

    - **[MOST USERS]** Ensure that **Obtain an IP address Automatically** is selected if you are using Dynamic Host Configuration Protocol (also known as DHCP or dynamic IP addressing). This option is selected by default because most Internet service providers use dynamic IP addressing.

    - Select **Use the following IP Address** if you have a static IP address that you plan to use with the X6. Then, in the boxes that appear, enter the **IP Address**, **Subnet Mask**, **Default Gateway**, and **DNS** that you plan to use. There is typically an extra charge for a static IP address and you usually have to make special arrangements with your Internet service provider to get one.

c Click the **Save Changes** button, then click the **Write Settings to Flash** button.

3 Verify that your Internet connection is working. Open your Web browser (i.e., Internet Explorer or Netscape Navigator) and try to connect to a familiar Web address.

If you connect successfully, you are ready to set up the rest of your wired and/or wireless Internet connections. (If you do not connect, see the **Troubleshooting Tips** on page 15.)

Tip!
If you configured the X6 using a notebook computer, you can keep it plugged in or you can disconnect it from the unit's **LAN** port. As long as it remains plugged into an ADSL wall jack and a power source, the X6 can function as a stand-alone device. You can then make your notebook part of your wireless network.

Congratulations! You have established communication and your computer is now connected to the Internet. Now continue with **Establishing a Wired and/or Wireless Network** on page 11.

Step 4: Establishing A Wired and/or Wireless Network

Once a computer that is directly connected to the X6 modem is able to browse the Web, you know for certain that your Web connection is working. Now you can set up the rest of your wired and/or wireless network.

It is up to you whether you want to have some computers connected directly to the X6 and others connected wirelessly. The X6 supports both wired and wireless connections. You can have up to 253 connections, four of which can be wired through the use of the unit's four **LAN** ports. You can also plug a network device (such as a hub, switch, or router) into one of the **LAN** ports.

To set up your network, you can do any or all of the following, in any order that you choose:

- If you want to connect additional computers directly to the X6, see **To Connect Additional "Wired" Computers** below.

- If you want to connect a hub, switch, or router directly to the X6, see **To Connect a Network** on page 12.

- If you want to set up a wireless network, see **To Set Up a Wireless Network** on page 13.

To Connect Additional "Wired" Computers

You can connect up to four computers with Ethernet ports directly to the X6.

1 Shut down the computer you want to add to the X6. (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 **LAN** ports and plug the other end into your computer's Ethernet port.

3 Turn on the computer.

4 Verify that your Internet connection is working. Open your Web browser (i.e., Internet Explorer or Netscape Navigator) and try to connect to a familiar Web address.

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

To Connect a Network Device

You can use one of the **LAN** ports on the X6 to plug in a network device (for example, hub, switch, or router).

1 Plug one end of an Ethernet cable into one of the modem's **LAN** ports 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, 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.

4 Verify that your Internet connection is working. Open the Web browser (for example, Internet Explorer or Netscape Navigator) on each computer and try to connect to a familiar Web address.

To Set Up a Wireless Network

1 Ensure that each computer that you plan to use on your wireless network has wireless 802.11b or 802.11g capability.

➢ Some newer notebooks have built-in wireless networking capabilities and do not require that a wireless component be installed. If this is the case, you must set up that notebook's wireless connection using Windows XP, instead of following the rest of the steps in this section. To do this, see **Using Windows XP to Establish Your Wireless Network** on page 15.

Tip!
To see if your notebook has built-in wireless capabilities, try this: On the Windows desktop, click **Start**, click **Connect to**, and then locate the **Wireless Network Connection** option. If **Connect to** does not appear, or if there is no **Wireless Network Connection** option, then your notebook does not have wireless capabilities.

➢ Some desktop and notebook computers may need a wireless network adapter installed. This can be a USB adapter, PC card adapter, or PCI adapter. When you install the adapter, access its interface and ensure that it is set to **infrastructure** or **access point** mode (NOT **ad-hoc** or **peer to peer** mode). If you need help installing your wireless adapter or setting its mode, refer to the documentation that came with it.

2 If you installed a wireless component, allow its software to perform a "site search" to scan for available wireless networks in your area. When the **Service Set Identifier (SSID)** of your X6 wireless network appears in the list—the SSID is **zoom**—select it as the network you want to use to connect to the Internet.

Tip!

For most wireless adapters, you will use its wireless configuration manager software and click a **Scan** button or select a **Site Scan**, **Scan Networks**, or other similarly named tab to do a site search. If you need help, refer to the documentation that came with your wireless adapter.

There are several site scan issues you should be aware of:

➢ If you installed a wireless adapter on a desktop or notebook computer that is running Windows XP, your operating system may try to configure it (rather than let you use the software provided with the wireless adapter). You will know this is happening because you are prompted with a message about one or more wireless networks being available and you will be able to click a link to open the **Wireless Network Connection Properties** dialog box. If this happens, click the link and clear the **Use Windows to configure my wireless network settings** check box to disable it, then click **OK**. You can then use the software provided with your wireless adapter without interruption from Windows XP.

➢ More than one wireless network may appear in the list. These other wireless networks are those of your neighbors. Each wireless network will have a channel associated with it. We recommend there be at least a five channel difference between your network and those of your neighbors. Having less than a five channel difference may result in interference with your connection. By default, the X6 uses channel **10**. If you need to change this channel, you must do so using the **Wireless** page of the **Zoom Configuration Manager**. See the User's Guide on the CD or **www.zoom.com/techsupport/adsl/adsl_x6.shtml** for more information about changing the channel used by the X6.

> ➤ If you do not want your wireless network to be accessible to your neighbors, you can encrypt it by specifying security settings. To learn how, see **Setting Wireless Security** on page 17 (By default, the wireless Internet connections provided via the X6 do not have any security applied.)

4 Test your wireless connections. From each desktop or notebook computer that you just set up, open your Web browser (i.e., Internet Explorer or Netscape Navigator) and try to connect to a familiar Web address.

If you connect successfully, your wireless network is up and running and you are ready to browse the Web!

Important!
If you want to add security to your network, please go to page 17.

Using Windows XP to Establish Your Wireless Network

This section only applies to newer notebooks that have built-in wireless capabilities.

Note:
If your notebook does not have built-in wireless capabilities, see the previous section, starting on page 11.

1 On your Windows desktop, click the **Start** button, then click **Control Panel**.

2 Double-click the **Network Connections** icon.

3 Right-click the **Wireless Network Connection** icon, then select **Properties**.

4 On the **Wireless Network Connection Properties** dialog box, select the **Wireless Networks** tab. Windows XP will automatically scan for available wireless networks in your area. Its findings will appear in the **Available networks** list. It should find the wireless network of the X6—named **zoom**.

(The scan is done automatically because the **Use Windows to configure my wireless network settings** check box is selected by default.)

5 Select **zoom** from the **Available networks** list, then click the **Configure** button to add it to the **Preferred networks** list. The notebook will try to connect to the Internet using the wireless networks listed here, in the order in which they appear. (If you already have networks listed here, we recommend you either remove them or use the **Move up** button to move **zoom** to the top of the list.)

6 Click **OK**.

7 Test your wireless connection. From the notebook that you just set up, open your Web browser (for example, Internet Explorer or Netscape Navigator) and try to connect to a familiar Web address.

<u>**If you connect successfully, your notebook's wireless abilities are configured and you are ready to browse the Web!**</u>

Important!
If you want to add security to your network, please go to page 17.

Setting Wireless Security

Setting up the security feature of the X6 helps prevent unauthorized access to your network. To do this, you will create and enter a unique passphrase or an alphanumeric "key". Once entered, only devices with the proper "key" or passphrase will be allowed to establish a connection to the network.

There are two ways to configure and implement a passphrase or key. They are referred to as WPA (**W**iFi **P**rotected **A**ccess, sometimes called WPA Shared Key) and WEP (**W**ired **E**quivalent **P**rivacy), 64 and 128 bit).

Setting Up Security Using WPA (or WPA Shared Key)

WPA, the recommended security method, uses a passphrase that you choose and enter on the other wireless devices on the network (clients) to set up security. To use WPA, <u>all</u> of the other wireless devices on the network must support WPA.

1 **Check to see that all other clients that you plan to put on the network support WPA or WPA Shared Key**. You can do this by checking the manual that came with each device, or by checking the configuration software for the installed device. Look under **Security** or **Encryption** or **Setup** or **Advanced Features**. If all the clients support WPA, proceed with step 2. If they do not, skip down to "**Setting Up Security Using WEP**".

2 **Click the Wireless button in the Zoom Configuration Manager.** This will open the **Wireless Setup** menu. Go to **Encryption** (which should say "None") and select **WPA** from the drop-down menu. A new fill-in box labeled **WPA Passphrase** should open directly below the **Encryption** box.

3 **Choose and enter a Passphrase. with at least eight characters.** You can enter a word, a phrase, or for greater security you can enter a combination of numbers and letters.

The Passphrase is case-sensitive, so be sure to notice whether each letter is capitalized.

4 Click **Save Changes** and then **Write Settings to Flash**.

5 **Enter the Passphrase on all other wireless devices on the network.** Every wireless network client needs to be set individually. Open the software that came with the device, which should be running on the computer where the device is installed. Find the configuration menu for security, choose WPA, and enter the Passphrase, exactly as you entered it on the X6 "Wireless Setup" page. **Your security setup configuration is now complete!**

Setting Up Security Using WEP

If all of your network devices DO NOT support WPA you can use WEP to configure network security. WEP can be configured two ways: 64-bit and 128-bit. They configure the same way. 128-bit WEP provides a bit more security than 64, but it also tends to hurt network performance. We recommend that most people configure their WEP for 64-bit security.

1 **Click the Wireless button in the Zoom Configuration Manager**. This will open the **Wireless Setup** menu.

2 Go to **Encryption** (which should say "None") and select **WEP-64 bit** (or **WEP-128 bit** for more security but diminished network performance) from the drop-down menu. Six new boxes should open directly below the **Encryption** box.

3 Check the box marked **Passphrase** and then choose and enter a Passphrase of at least eight characters in the box immediately to the right. You can enter a word, a phrase, or for greater security you can enter a combination of numbers and letters. The Passphrase is case-sensitive, so be sure to notice whether each letter is capitalized.

4 Click **Save Changes** and then **Write Settings to Flash**. With WEP 128-bit security, the same key appears in all four **Key** boxes:

With WEP 64-bit security, a different key appears in each of the **Key** boxes. One key is indicated on the screen as the **Default Key**, explained in Step 6 below.

Encryption	WEP-64 bit ▾
Passphrase ☐	
Default Key	1 ▾
Key 1	77-C0-4F-D4-5C
Key 2	6A-7F-F4-27-C4
Key 3	7E-10-C4-5B-B3
Key 4	C7-E7-5E-9E-60

In this example, the **Default Key** is Key 1.

(Take a snapshot of this screen or write down the keys and keep them in a convenient place in case you need them to configure non-Zoom network devices.)

5 If <u>ALL</u> of the wireless devices (clients) on the network are Zoom devices, enter the Passphrase that you just entered on each client. Every wireless network client needs to be set individually. Open the software that came with the device, which should be running on the computer where the device is installed. Find the configuration menu for security, choose WEP, and enter the Passphrase, exactly as you entered it on the X6 **Wireless Setup** page. **Your security setup configuration is now complete!**

If any or all of the other wireless devices on the network (clients) are not Zoom devices, proceed with Step 7 below.

6 **If any or all of the other wireless devices on the network (clients) are not Zoom devices, you will enter one of the "keys" shown below the Passphrase on each client.** You must enter the same key on each one. The key that you must use is the key corresponding to the **Default Key** number shown.

If the number in the **Default Key** box is 1, use Key 1, and so on. You can choose the default key you prefer using the pull-down **Default Key** menu box.

7 **Enter the Key that you just selected on each client.** Every wireless network client needs to be set individually. Open the

software that came with the device, which should be running on the computer where the device is installed. Find the configuration menu for security, choose WEP (64-bit or 128-bit depending on what you selected), and enter the Default Key, exactly as it appears on the X6 Wireless Setup page.

(With WEP 64-bit security, a device may require you to enter all four keys. If you have to do this, be sure to enter the keys in the same order that they appear on the X6.)

Your security setup configuration is now complete!

Troubleshooting Tips

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

Problem

My X6's **LINK** light is solidly lit, but I cannot connect to the Internet from any of my computers.

Solution

Before you try to solve the problem, you should first determine whether you can access the Internet from the computer or computers that are directly plugged into the X6 with Ethernet cables.

- If you cannot access the Internet from these computers, see **My X6 is Not Properly Configured** on page 23.

- If you can access the Internet from these computers, but cannot surf the Web from computers connected via a network device (for example, a router) that is plugged into the X6, see **Computers Connected to a Network Device that is Plugged into the X6 Cannot Access the Web** on page 25.

- If you can access the Internet from the computer(s) plugged into the X6, but you cannot surf the Web from your wirelessly connected desktop and/or notebook computers, see **My Wireless Network is Not Properly Configured** on page 25.

My X6 is Not Properly Configured

If you cannot access the Web from the computers that are directly plugged into the X6 with Ethernet cables, check these items:

- Try rebooting each computer. This will allow for the computers to release and renew their IP addresses.

- Ensure that you are using the correct **VPI**, **VCI**, **Protocol**, and **Encapsulation** settings. To enter the information again, log into the **Zoom Configuration Manager**, enter the correct information on the **Basic Setup** page, then click **Save Settings** and **Write Settings to Flash**.

  ➢ **If you used settings provided by your service provider**, make sure that you entered the information correctly. If you still cannot connect, look up your provider in the **ADSL Internet Settings Tables** on page 31 and try the setting(s) shown, if different.

  ➢ **If you used settings from the ADSL Internet Settings Tables**, return to the tables and find the next most frequently used settings for your provider.

- If your **Encapsulation** begins with **PPP**, ensure that you have typed your ADSL Username and Password correctly. (Note that this is NOT the user name and password you used to log into the **Zoom Configuration Manager** on page 7.) Open the **Basic Setup** page, then enter the correct **User Name** and **Password** in the boxes provided. Click **Save Settings** 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 the Web browser on the computer on which you installed the software is configured for a **network connection** (this might be called a "Local Area Network" or "broadband" connection). If you need help configuring your Web browser, refer to the User's Guide on the CD for more detailed instructions.

- Verify that the TCP/IP properties on all your computers are correct. Open the **Internet Protocol (TCP/IP) Properties** dialog box (depending on your computer, this may just be called **TCP/IP Properties**) and ensure the following is selected, depending on whether you are using dynamic (DHCP) or static IP addressing:

  ➢ **[MOST USERS] If you are using DHCP:** 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:** Verify the following, depending on your computer:

    ▪ **Windows 2000/XP:** Ensure that **Use the following IP address** and **Use the following DNS server addresses** are selected and that the correct **IP address**, **Subnet mask**, **Default gateway**, and **Preferred DNS server** values appear.

    ▪ **Windows 98/Me:** 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 **10.0.0.2**.

Note:
If you need help accessing your computer's TCP/IP settings, refer to the User's Guide on the CD for more detailed instructions or go to
www.zoom.com/techsupport/adsl/adsl_x6.shtml

Computers Connected to a Network Device that is Plugged into the X6 Cannot Access the Web

If the computers that are plugged directly into the X6 can access the Web, but those connected via a network device that is plugged into the X6 cannot, check the following:

- 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 to match the one used by the modem.

- If you are using 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 in that device's configuration menu. 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.

My Wireless Network is Not Properly Configured

If a computer that is directly plugged into the X6 can access the Web, but the desktop and/or notebook computers on your wireless network cannot, check the following:

- Ensure that each desktop or notebook computer has an 802.11b or 802.11g wireless adapter installed. This can be a built-in adapter, a USB adapter, PC card adapter, or PCI adapter.

- Ensure that you rotated the antenna on the X6 to a vertical position and that the antenna on each of your wireless adapters is pointing in an appropriate direction. Note that many wireless adapters have built in "patch" antennas and not ones that can be moved. If this is the case and you think your antenna is the problem, try different orientations of you modem's antenna to find the best orientation. For example, try having your modem's antenna and the wireless adapter card be on the same plane (for example, if your wireless adapter with a patch antenna is inserted into a notebook and is horizontal, rotate your modem's antenna to a horizontal position).

- The setup of your home or office (that is, the number and thickness of walls, number of stories, etc.) may impact the antenna's reach. Try locating the X6 in a more central location. Once it is configured (and a computer plugged into it with an Ethernet cable can access the Web), the X6 can be moved. The X6 can function as a stand-alone device as long as it is plugged into an ADSL jack and has a power connection.

  An Example:
  Your desktop computer is located in your basement. You plugged it into the X6, configured the unit, and can access the Web from that computer. You also have a notebook set up for wireless use. This notebook can access the Web from the first floor of your home, but not from the second floor. To try to resolve this issue, move the X6 to the first floor so that it is in a more central location. (Once configured, the X6 only needs to be plugged into an ADSL wall jack and a power source.) Doing this, however, means that your desktop computer in the basement is no longer connected to the Web. To solve this issue, install a wireless adapter (as explained in **To Set Up a Wireless Network** on page 13) and make it part of your wireless network.

- To improve the signal, try relocating the wireless adapter your computer is using. If your computer is using an internal PCI adapter, try relocating the computer.

- Verify that each wireless adapter is using the same **SSID** and **Channel** as the X6 modem. By default, the modem uses **zoom** as its SSID and is set to Channel **10**. The **SSID** is case sensitive. See your particular wireless adapter's documentation for information on how to access its **SSID** and **Channel** settings. If you still cannot access the Internet, try one or both of the following:

  ➢ Set the **SSID** for each wireless adapter to **ALL** (note that this must be all capital letters). This will allow the adapter to connect to any SSID.

  ➢ Try changing the channel used by both the X6 and your wireless adapters from **10** to **1**. (To change the channel used by the X6, you must log into the **Zoom Configuration Manager**, click the **Wireless** icon at the top of any page, then change the value for the **Channel**

setting. For more information about the **Wireless** page, see the User's Guide on the CD or go to **www.zoom.com/techsupport/adsl/adsl_x6.shtml**)

- Ensure that the security settings (if any) are the same for your X6 and all of the wireless devices you are using with it. For more information about security, see the User's Guide on the CD.

Problem

My X6's **LINK** 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** port on the back of the X6.

- 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.

- The phones that are sharing your ADSL line may be causing noise on the line. Ensure that you have installed phone filters for each phone or fax or that you have a single filter at your demarcation point.

Universal Plug and Play

The X6 is enabled for Universal Plug and Play (UPnP™). This means that applications running on your PC and devices plugged into your computer or network that use UPnP should automatically detect the X6 and make the needed configurations for them to work together. For example, this could be a gaming application, router, or stand-alone firewall. 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:

*   Insert the CD, select your language, and then click the **Customer Support** link to view comprehensive support information, including how to reach our support experts. The CD also includes a User's Guide (available in many different languages) containing additional information about your new modem.

*   Visit our Web site at **www.zoom.com** and select **Technical Support**. From here, you can send email to our technical support experts and/or do a smart search through our intelligent database by using **SmartFacts™**.

> **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 and for more detailed product information.

*   Call our support office in the United States at **(561) 241-7170** or in the United Kingdom at **44 (0)1276 704440**.

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

Front and Back Panel Descriptions

The front panel of the X6 looks like this:
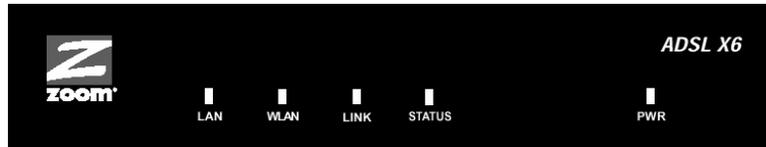
The following table describes each light on the front panel.

Light	Description
LAN	Lights when a LAN port of the X6 is plugged into the Ethernet port of a powered-up device. Blinks when data is sent.
WLAN	Lights when the wireless access point is running. Blinks when data is sent.
LINK	Blinks when the X6 is performing its startup sequence. Stays on solid when the unit has synched up with its ADSL connection. **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 22.
STATUS	Blinks red once while the X6 is powering up. Then, it will only light when there is a problem with the unit.
PWR	Lights when the X6 is plugged into a power source.

The following table describes the back panel.

Port	Description
PWR	Port to connect the unit to the X6's power cube.
RESET	Button to reset the modem to its system default settings (necessary if communication link is lost). To reset, you must insert a paper clip and press the button quickly three times.
LAN 1 **LAN 2** **LAN 3** **LAN 4**	LAN ports that can connect the unit to an access point, a network hub, or the Ethernet port of a computer. The X6 has four LAN ports. Each port has a small yellow and a green light above it. The yellow light turns on when data is being received at 100 megabits per second and off when it is receiving at 10 megabits per second. The green light blinks when there is activity on that particular LAN line.
ADSL	Jack to connect the modem to the ADSL telephone wall jack.

ADSL Internet Settings Tables

These tables are for those 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 7 for more detailed installation instructions on entering the settings.)

Table A: USA

Service Provider	VPI	VCI	Protocol	Encapsulation
AllTel (1)	0	35	PPPoE	LLC
AllTel (2)	0	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
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
GWI	0	35	1483 Bridged IP	LLC
Qwest (1)	0	32	PPPoA	LLC
Qwest (2)	0	32	PPPoA	VC-MUX
SBC (1)	0	35	PPPoE	LLC
SBC (2)	0	35	1483 Bridged IP	LLC
SBC (3)	8	35	1483 Bridged IP	LLC
Sprint (1)	0	35	PPPoA	LLC
Sprint (2)	8	35	PPPoE	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	Protocol	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
Bolivia	0	34	1483 Routed IP	LLC
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
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
Germany	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
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-BBNED	0	35	PPPoA	VC-MUX
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

Table B (Continued): Countries Other Than The USA

Service Provider	VPI	VCI	Protocol	Encapsulation
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-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	0	38	PPPoA	VC-MUX
Venezuela-CANTV	0	33	1483 Routed IP	LLC
Vietnam	0	35	PPPoE	LLC

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.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

Industry Canada Emissions Statement

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.
The use of this device in a system operating either partially or completely outdoors may require the user to obtain a license for the system according to the Canadian regulations.

Tested to meet Industry Canada RSS-210.

Industry Canada CS03 Statement

Notice: The Industry Canada label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing the equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of concern. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas. Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

Notice: The Ringer Equivalence Number (REN) assigned to each terminal device 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 5.

European 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. This product is CE Marked.

CE

Directive	Standard	Test Report
73/23/EEC-Low Voltage	EN 60950-1 IEC 60950-1	Electrical safety
89/336/EEC-EMC	EN 55024 EN 55022	EMC-immunity EMC-emissions
	EN300 328 EN301 489-01 EN301 489-17	Radio Equipment

Caution: This equipment is intended to be used in all EU and EFTA countries. Outdoor use may be restricted to certain frequencies and/or may require a license for operation. Contact local Authority for procedure to follow.

Note: Combinations of power levels and antennas resulting in a radiated power level of above 100 mW equivalent isotropic radiated power (EIRP) are considered as not compliant with the above mentioned directive and are not allowed for use within the European community and countries that have adopted the European R&TTE directive 1999/5/EC.

Electrostatic Discharge Statement

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

Safety Notices

Caution: To reduce the risk of fire, use only No.26 AWG or larger 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.

Additional compliance information is located on the CD.