

# *P-2301/2R-P1C*

*VoIP ATA / Station Gateway*

# *P-2301RL-P1C*

*VoIP ATA / Station Gateway with Lifeline*

## ***User's Guide***

Version 3.60

3/2007

Edition 1

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The logo for ZyXEL, featuring the word "ZyXEL" in a bold, blue, sans-serif font. The "Z" and "X" are slightly larger and more prominent than the other letters.

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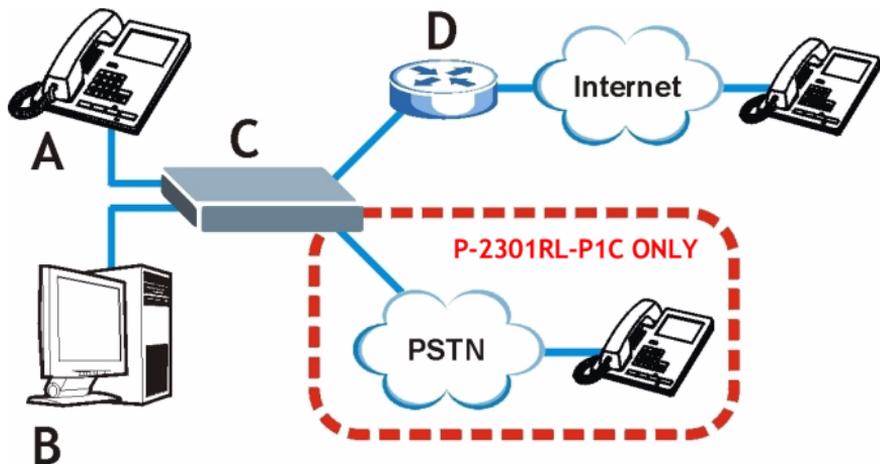
# 1 Overview

This guide helps you set up and use your ZyXEL P-2301R-P1C, P-2301RL-P1C or P-2302R-P1C (the “ZyXEL Device”).

This guide contains the following sections:

Section	Page	Description
<a href="#">Installation Requirements</a>	4	A checklist of things you need before you install the ZyXEL Device.
<a href="#">Making Hardware Connections</a>	5	How to connect the ZyXEL Device to your network, your computer and telephone(s).
<a href="#">Initial Configuration</a>	6	How to configure your ZyXEL Device to access the Internet and make Voice over Internet (VoIP) phonecalls. For the P-2301RL-P1C, it also explains how to set up regular phone services that do not use the Internet.
<a href="#">Making Phone Calls</a>	26	How to make calls from the phone(s) connected to the ZyXEL Device.
<a href="#">Wall Mounting Instructions</a>	40	How to attach the ZyXEL Device to a wall.
<a href="#">Specifications</a>	41	Information about your ZyXEL Device's physical specifications
<a href="#">Features</a>	43	Supported firmware specifications.
<a href="#">Safety Warnings</a>	45	Using the ZyXEL Device safely.
<a href="#">Legal Information</a>	47	Certifications, warranty and customer support information.

The following figure shows a typical way to use your ZyXEL Device.



- When you make a phone call over the Internet, you use a telephone (A) to dial the number. The P-2301R-P1C and P-2301RL-P1C support one telephone connection, and the P-2302R-P1C supports two telephone connections.

The telephone is connected to your ZyXEL Device (C), which is connected to the broadband modem or router that provides Internet access (D).

- When you want to use the Internet, you use your computer (B). Your computer is connected to your ZyXEL Device (C), which is connected to the broadband modem or router that provides Internet access (D).

When you want to configure the ZyXEL Device, you also use your computer.

- **P-2301RL-P1C only:** use your telephone (**A**) to make calls over the regular telephone network (PSTN or Public Switched Telephone Network).

The following table contains useful information about your ZyXEL Device.

Default management IP Address	192.168.1.1
Default Subnet Mask	255.255.255.0
Default Password	1234

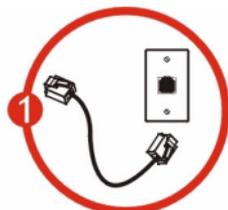
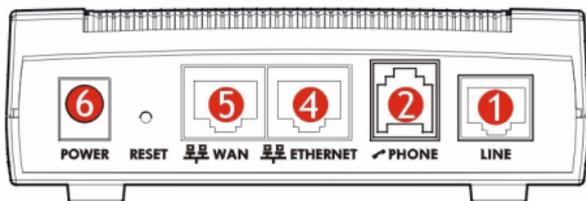
## 2 Installation Requirements

Make sure you have the following things before you set up your ZyXEL Device.

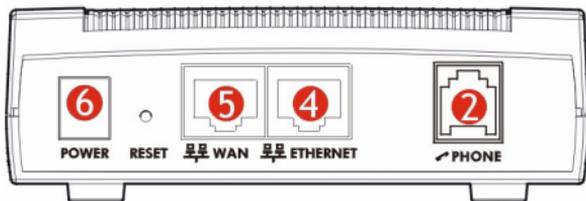
- Internet access - account information provided by your ISP, such as user name, password, and so on.
- VoIP account - You need the account information provided by your VoIP service provider (the company that lets you make phone calls over the Internet). This information might include your URI, number, and so on.
- Internet Explorer 6.0 or later or Netscape Navigator 7.0 or later, with JavaScript enabled.

### 3 Making Hardware Connections

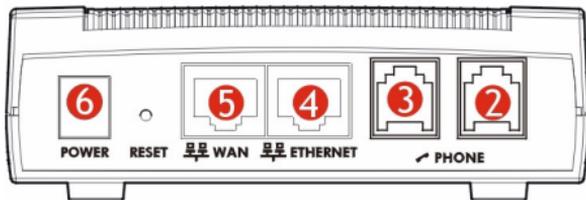
P-2301RL-P1C



P-2301R-P1C



P-2302R-P1C



**1 LINE (P-2301RL-P1C only):** Use a telephone cable to connect the telephone jack to this port.

- 2 PHONE / PHONE 1:** Use a telephone cable (and any telephone adaptor provided with your ZyXEL Device) to connect your telephone to this port.
- 3 PHONE 2 (P-2302R-P1C only):** connect another telephone to this port. If you have only one phone, use the **PHONE 1** port.
- 4 ETHERNET:** Use an Ethernet cable to connect your computer to this port.
- 5 WAN:** Use an Ethernet cable to connect your broadband modem or router to this port.
- 6 POWER:** Use the power adaptor provided with your ZyXEL Device to connect an appropriate power source to this port.

On the front panel, the **POWER** light flashes green while your ZyXEL Device starts up, and stays green once it is ready. The **WAN** and **ETHERNET** lights turn on if the **WAN** and **ETHERNET** ports are properly connected. These lights flash when the ZyXEL Device is sending or receiving data.

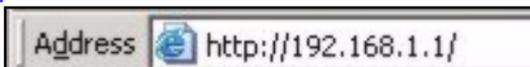
## 4 Initial Configuration

Use a web browser on your computer to set up your ZyXEL Device. See [Troubleshooting](#) on page 27 if you have any problems.

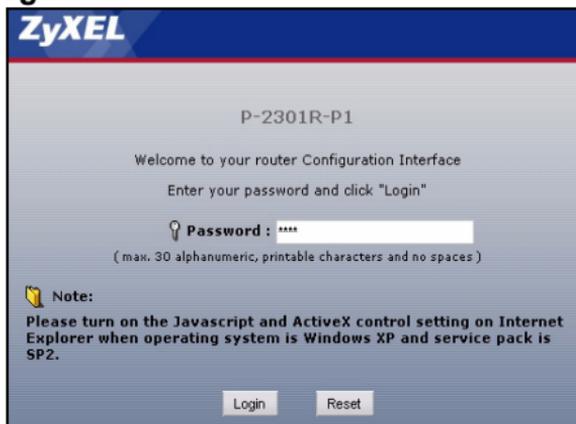
### 4.1 Open the Wizard Setup Screen

- 1 Launch your web browser.

2 Enter <http://192.168.1.1> as the address.



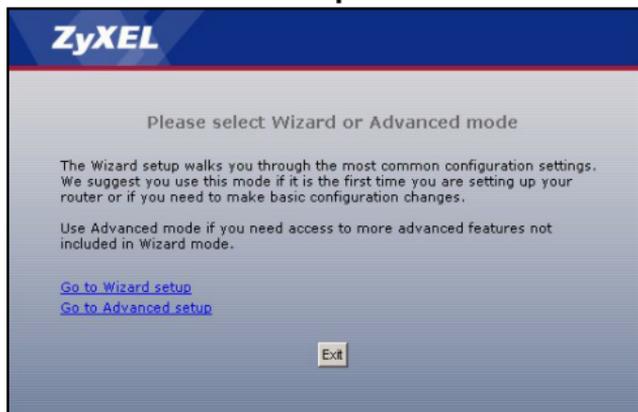
3 Click **Login**.



4 Type a new password, re-type it to confirm, and click **Apply**. The next time you log in, you should not see this screen.



## 5 Click **Go to Advanced setup**.



## 6 The **Status** screen appears. Click the **Wizard** icon ( ) in the upper right corner.

**ZyXEL**

3 Status

Refresh Interval: None Refresh

**Device Information**

System Name: P2301P1  
 Firmware Version: V3.400A00-0302 | 11/28/2006

**WAN Information**

- IP Address: -  
 - IP Subnet Mask: -  
 - DHCP: -

**LAN Information**

- IP Address: 172.23.37.210  
 - IP Subnet Mask: 255.255.255.0  
 - DHCP: Server

**System Status**

System Up Time: 1:18:30  
 Current Date/Time: 2008-01-01 06:18:07

**System Resource:**

- CPU Usage: 0.49%  
 - Memory Usage: 37%

**Interface Status**

Interface	Status	Rate
WAN	Down	N/A
LAN	Up	100M/Full

**Summary**

Any IP Table ([Details...](#))      BW MGMT Monitor ([Details...](#))  
 DHCP Table ([Details...](#))      Packet Statistics ([Details...](#))  
 VoIP Statistics ([Details...](#))

**VoIP Status**

Account	Registration	URI
SIP 1	Register	changeme@127.0.0.1

Message: Ready

If the **INTERNET** light is green, go to section 4.34.3 on page 16. Otherwise, go to section 4.24.2 on page 94.2.

## 4.2 Connection Wizard

If you subscribe to a Roadrunner service, you cannot use the [Connection Wizard](#) to set up your Internet connection. In this case, please use the **Network > WAN > Internet Connection** screen to enter your information.



You must have an Internet account set up and ready to use to complete this section.

1 In the **Wizard Setup** screen, click **Connection Wizard**.

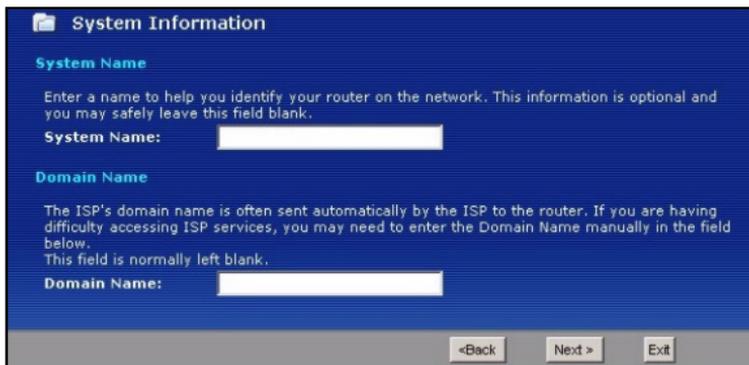


**2 Click Next.**

**3 System Name** is used to identify the ZyXEL Device on the network. Use the default value, unless you know the name is already used in the network.

**Domain Name** (optional): Enter the appropriate name, if there is one, or use the default value.

Click **Next**.



**4** This screen has different fields, depending on the connection type (encapsulation) your ISP uses. Select **Ethernet** or **PPP over Ethernet** (PPPoE).

If you are not sure which type of encapsulation to select:

- If your ISP gave you a user name and password, select **PPP over Ethernet**.
- If your ISP did not give you a username and password, select **Ethernet**.

Then, follow the instructions in the appropriate section below.



## 4.2.1 Connection Wizard (Ethernet)

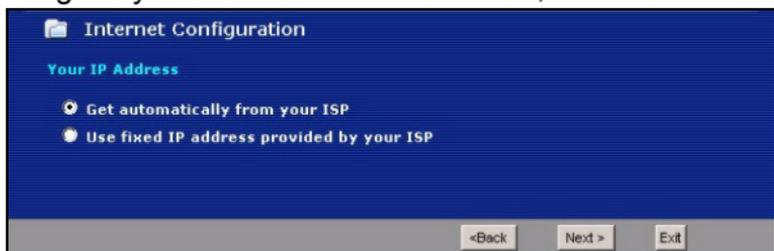
Follow these steps if your ISP uses an Ethernet connection.

### 1 Click **Next**.

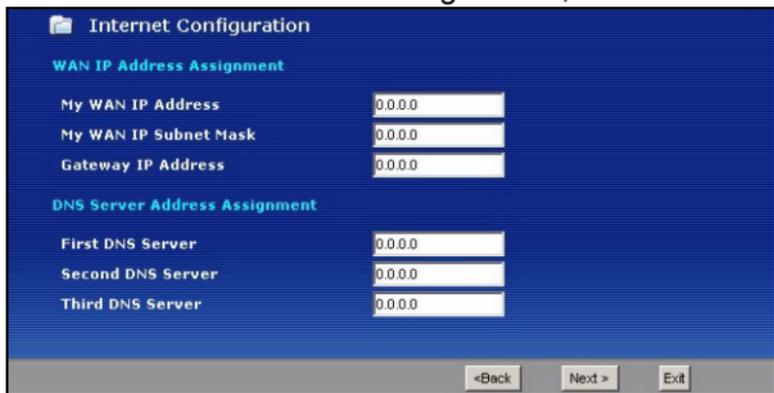


- ### 2 Select **Get automatically from your ISP** if your ISP did not give you a static IP address. Then, click **Next**, and go to step 4 below.

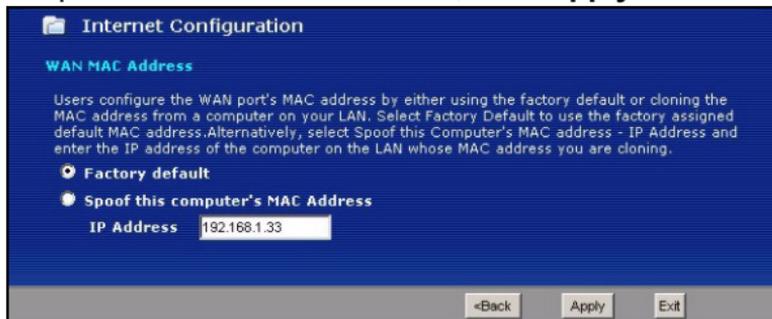
Select **Use fixed IP address provided by your ISP** if your ISP gave you a static IP address. Then, click **Next**.



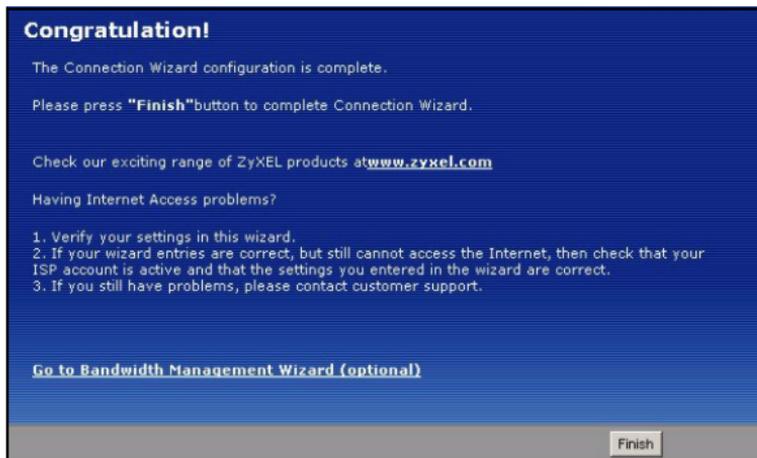
- 3 Enter the information provided by your ISP. If your ISP did not provide information for any of the fields in this screen, leave them at their default settings. Then, click **Next**.



- 4 Select **Factory default**, unless you need to spoof your computer's MAC address. Then, click **Apply**.



- 5 Click **Finish**.

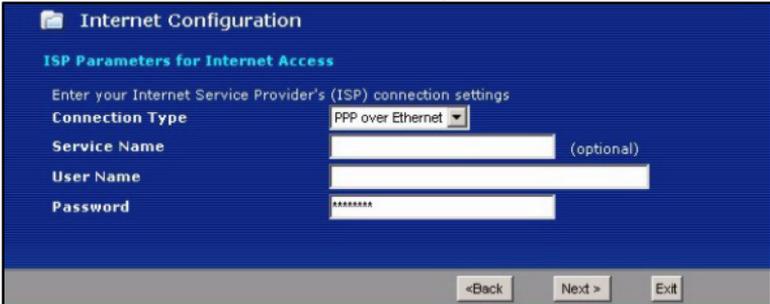


- 6 Launch another web browser, and go to any web site (for example, <http://www.zyxel.com>). If you cannot access the Internet, see [Troubleshooting](#) on page 27.

## 4.2.2 Connection Wizard (PPP over Ethernet)

Follow these steps if your ISP uses a PPP over Ethernet (PPPoE) connection.

- 1 Enter the information provided by your ISP. If your ISP did not provide information for any of the fields in this screen, leave them at their default settings. Then, click **Next**.



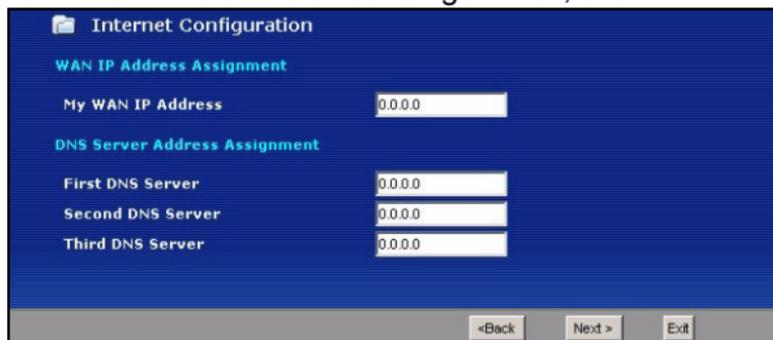
The screenshot shows a window titled "Internet Configuration" with a sub-header "ISP Parameters for Internet Access". Below this, it says "Enter your Internet Service Provider's (ISP) connection settings". There are four fields: "Connection Type" is a dropdown menu set to "PPP over Ethernet"; "Service Name" is a text box with "(optional)" to its right; "User Name" is a text box; and "Password" is a text box with asterisks. At the bottom are three buttons: "<Back", "Next >", and "Exit".

- 2 Select **Get automatically from your ISP** if your ISP did not give you an IP address. Then, click **Next**, and go to step 4. Select **Use fixed IP address provided by your ISP** if your ISP gave you a static IP address. Then, click **Next**, and go to step 3.



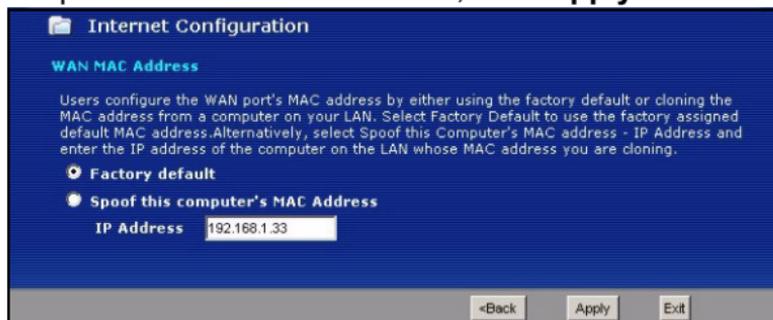
The screenshot shows a window titled "Internet Configuration" with a sub-header "Your IP Address". There are two radio button options: "Get automatically from your ISP" (which is selected) and "Use fixed IP address provided by your ISP". At the bottom are three buttons: "<Back", "Next >", and "Exit".

- 3 Enter the information provided by your ISP. If your ISP did not provide information for any of the fields in this screen, leave them at their default settings. Then, click **Next**.



The screenshot shows the 'Internet Configuration' window. Under the heading 'WAN IP Address Assignment', there is a text box labeled 'My WAN IP Address' containing '0.0.0.0'. Below this, under 'DNS Server Address Assignment', there are three text boxes: 'First DNS Server' (0.0.0.0), 'Second DNS Server' (0.0.0.0), and 'Third DNS Server' (0.0.0.0). At the bottom right, there are three buttons: '<Back', 'Next >', and 'Exit'.

- 4 Select **Factory default**, unless you need to spoof your computer's MAC address. Then, click **Apply**.



The screenshot shows the 'Internet Configuration' window. Under the heading 'WAN MAC Address', there is a paragraph of text: 'Users configure the WAN port's MAC address by either using the factory default or cloning the MAC address from a computer on your LAN. Select Factory Default to use the factory assigned default MAC address. Alternatively, select Spoof this Computer's MAC address - IP Address and enter the IP address of the computer on the LAN whose MAC address you are cloning.' Below the text are two radio button options: 'Factory default' (which is selected) and 'Spoof this computer's MAC Address'. Under the second option, there is a text box labeled 'IP Address' containing '192.168.1.33'. At the bottom right, there are three buttons: '<Back', 'Apply', and 'Exit'.

## 5 Click Finish.



- 6 Launch another web browser, and go to any web site (for example, <http://www.zyxel.com>). If you cannot access the Internet, see [Troubleshooting](#) on page 40.

## 4.3 VoIP Setup Wizard

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You must have Internet access and a VoIP account before you can complete this section.

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**1** In the **Wizard Setup** screen, click **VoIP Setup**.



- 2** Enter the information provided by your VoIP service provider. If you have a VoIP account like “1234@VoIP-provider.com”, the **SIP Number** is “1234”, and the **SIP Service Domain** is “VoIP-provider.com”. If your VoIP service provider did not provide information for any of the fields in this screen, leave them at their default settings.

**P-2302R-P1C only:** If you want to set up the ZyXEL Device's second VoIP account now, select **Check here to set up SIP2 settings**. In this case, enter the information for the first VoIP account, click **Apply**, and then enter the information for the second VoIP account. Alternatively, you can set up the second account later.

Click **Apply**.

**VoIP Configuration**

**SIP1 Settings**

SIP Number:

SIP Server Address:

SIP Service Domain:

**Authentication**

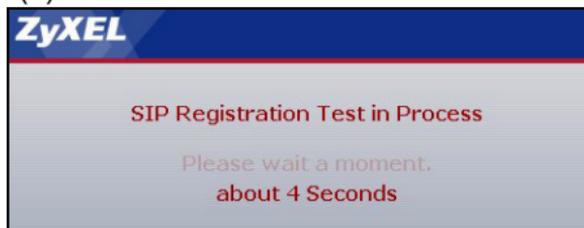
User Name:

Password:

Check here to set up SIP2 settings. **P-2302R-P1C Only**

<Back    Apply    Exit

- 3 Wait while the ZyXEL Device tries to register the VoIP account(s).



- 4 Click **Finish**. The **PHONE** light should be green.

**Congratulation**

You have completed the VoIP setup

Press "Finish" button to close this wizard, or click the following link to open other pages.

⚡ [Return to Wizard Main Page](#)

⚡ [Go to Advanced Setup page](#)

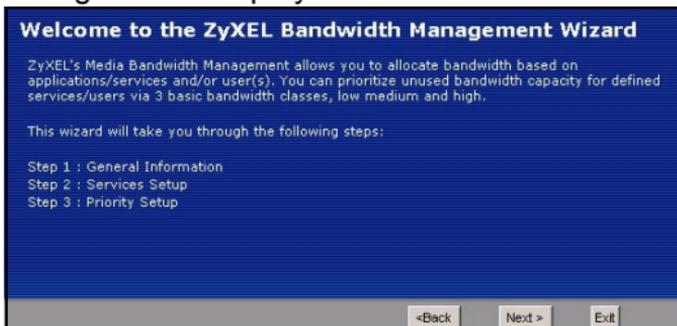
Finish

## 4.4 Bandwidth Management Wizard

This Bandwidth Management Wizard allows you to specify the amount of bandwidth you allow certain applications to use on the ZyXEL Device. Use this wizard only if you want to ensure that certain applications, such as you VoIP calls, get enough bandwidth. If you want to use the wizard, click **Bandwidth Management Wizard** in the Wizards screen.



The following screen displays.



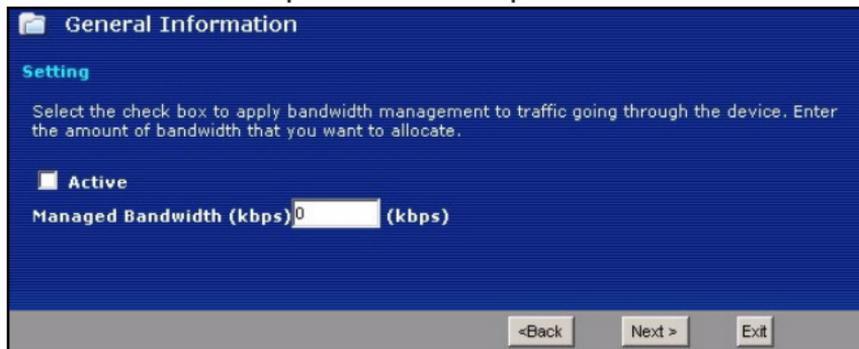
- 1 Click **Next**. In the screen that appears, select the **Active** checkbox. Enter the total amount of traffic the device can send to the WAN in the **Managed Bandwidth (kbps)** field.



This does not affect the total amount of traffic the device can send to the LAN.

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You should enter the maximum amount of data the ZyXEL Device can send to the WAN. For example, set this field to 1000 kbps if a broadband device connected to the WAN port has a maximum speed of 1000 kbps.

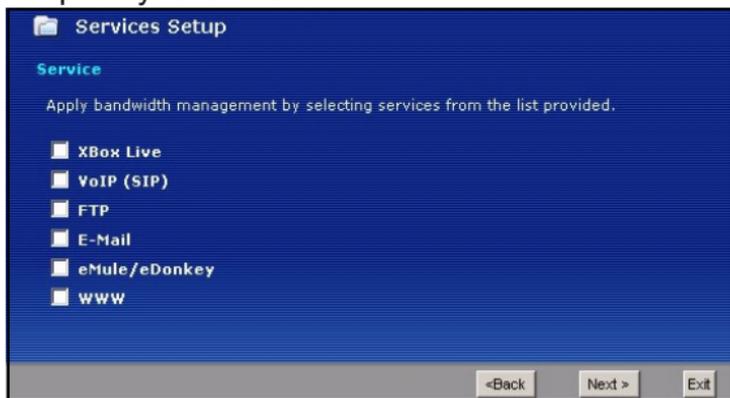


The screenshot shows a configuration screen with a blue background. At the top left, there is a folder icon and the text "General Information". Below this, the word "Setting" is written in red. A paragraph of text reads: "Select the check box to apply bandwidth management to traffic going through the device. Enter the amount of bandwidth that you want to allocate." Below this text is a checkbox labeled "Active", which is currently unchecked. Underneath the checkbox is a text input field containing the number "0", followed by the label "(kbps)". At the bottom of the screen, there is a grey bar containing three buttons: "<Back", "Next >", and "Exit".

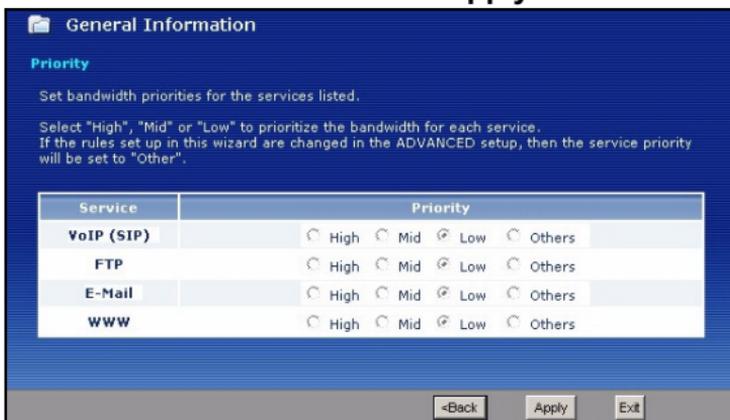
2 In the next screen, select the services you want to have higher priority. The following table describes the services available in this screen.

<b>Service</b>	<b>Description</b>
XBox Live	This is Microsoft's online gaming service that lets you play multiplayer Xbox games over the Internet via broadband technology.
VoIP (SIP)	Sending voice signals over the Internet is called Voice over IP or VoIP. Session Initiated Protocol (SIP) is an internationally recognized standard for implementing VoIP.
FTP	File Transfer Program enables fast transfer of files, including large files that may not be possible by e-mail.
E-Mail	Electronic mail consists of messages sent through a computer network to specific groups or individuals.
eMule / eDonkey	These programs use advanced file sharing applications relying on central servers to search for files.
WWW	The World Wide Web (WWW) is an Internet system to distribute graphical, hyper-linked information, based on Hyper Text Transfer Protocol (HTTP) - a client/server protocol for the World Wide Web. The Web is not synonymous with the Internet; rather, it is just one service on the Internet. Other services on the Internet include Internet Relay Chat and Newsgroups.

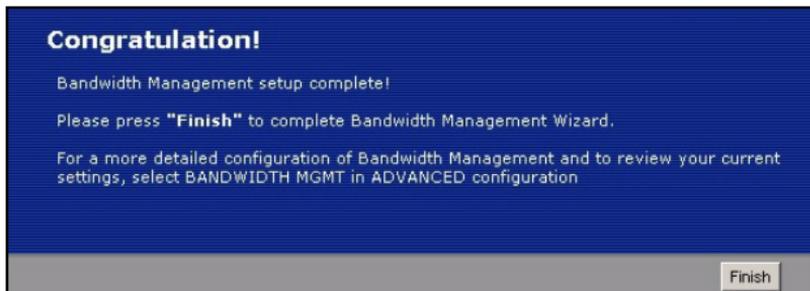
You should select at least one service. If you do not select a service, or do not see its name in this screen, it receives a lower priority. Click **Next**.



- 3 Set the priority of each service. If a service has higher priority than other services, then it can use as much remaining bandwidth as it needs. If there is no more bandwidth left, other services have to wait. Click **Apply**.



#### 4 Click **Finish**.



### 4.5 PSTN Phone Line Configuration (P-2301RL-P1 only)

When one of your VoIP accounts is registered, the ZyXEL Device normally uses the Internet (VoIP) rather than the regular PSTN phone line to make phone calls. Use this section to set certain phone numbers (emergency services, for example) to always use the regular (PSTN) line. You can also set the PSTN line prefix number you enter on your telephone keypad before dialing a phone number. This prefix number makes the ZyXEL Device use the PSTN line for the call.

In the main screen, click **VoIP > PSTN Line**.

The screenshot shows a web-based configuration interface. At the top, there is a tab labeled 'General'. Below the tab is a header 'Call through PSTN Line'. The main area contains a form with the following elements:

- A label 'PSTN Line Pre-fix Number' followed by a text input field containing the value '0000'.
- A label 'Relay to PSTN Line' followed by a list of nine numbered input fields (1 through 9), each with a small arrow icon on the right side.
- At the bottom right of the form area, there are two buttons: 'Apply' and 'Reset'.

**PSTN Line Pre-fix Number:** Enter a number of 1 ~ 4 digits. When you enter this number on your telephone keypad, the ZyXEL Device uses the PSTN line to call the number you dial next.

**Relay to PSTN Line:** Enter phone numbers for regular phone calls (that do not use the Internet) that you always want to dial without the prefix number. For example, enter emergency phone numbers here.

Click **Apply**.

## 4.6 Bridge Mode

The ZyXEL Device supports two modes, **Router** and **Bridge**. Usually, you should use **Router** mode because it supports all the features available in the ZyXEL Device. However, you might use **Bridge** mode in the following situation:

- There is another router or gateway in the network,  
AND
- You only want to use the ZyXEL Device for VoIP and Internet access. You do not want to use other features, such as the firewall, even with their default settings.

If you want to use **Bridge** mode, follow these steps.

**1** In the main screen, click **Maintenance > System > General**.

The screenshot shows the 'General' configuration page for the ZyXEL device. At the top, there are three tabs: 'General' (selected), 'Dynamic DNS', and 'Time Setting'. Below the tabs is the 'System Setup' section, which includes the following fields and options:

- Mode:** Radio buttons for 'Router' and 'Bridge'. The 'Bridge' option is selected.
- System Name:** An empty text input field.
- Domain Name:** An empty text input field.
- Administrator Inactivity Timer:** A numeric input field containing '5', with '(minutes, 0 means no timeout)' to its right.
- Management IP Address:** A text input field containing '192.168.5.2'.

Below the System Setup section is a 'Note' icon followed by two instructions:

- 1.If change to Bridge mode, the system will automatic to disable firewall and NAT
- 2.If chnage to Bridge mode, Please set Management IP Address

The 'Password Setup' section contains three text input fields for 'Old Password', 'New Password', and 'Retype to Confirm', each with four asterisks (\*\*\*\*) as a placeholder. At the bottom of the form are two buttons: 'Apply' and 'Reset'.

**2** In the **Mode** field, select **Bridge**.

**3** In the **Management IP Address** field, enter the IP address you want to use to access the ZyXEL Device in **Bridge** mode. For example, enter "192.168.5.1".

**4** Click **Apply**.

The ZyXEL Device automatically restarts. When the **POWER** light stops blinking and stays on, follow the directions in section 4 on page 64.1 to log in to the web configurator again. However, use the **Management IP Address** you set up in step 3, instead of <http://192.168.1.1>. If your computer's IP address is in a different subnet, follow the directions in [Setting Up Your Computer's IP Address](#) on page 31 to change your computer's IP address.

## 5 Making Phone Calls

Use the following sections to make outgoing calls (from a phone attached to the ZyXEL Device, to another phone) and incoming calls (from another phone, to a phone connected to the ZyXEL Device).

### 5.1 Making Outgoing Calls

Follow these directions to make calls over the Internet.

- If you want to dial a SIP number that only uses numbers (for example, "12345"), dial the number on your phone's keypad. You can also set up a speed-dial entry, if you want, in the **Phone Book > Speed Dial** screen.
- If you want to dial a SIP number that uses letters or if you want to make a peer-to-peer call, set up a speed-dial entry first. Use the **Phone Book > Speed Dial** screen. Then, dial the speed-dial number to make the call.
- If you want to call a PSTN phone over the Internet, follow your VoIP provider's instructions.

For the P-2301RL-P1, follow these directions to make phone calls that do not use the Internet.

- If the **PHONE** light is off (indicating that you do not have a VoIP account registered) just dial the phone number.
- If you set up the phone number in the **Relay to PSTN** section (section 4.5 on page 23), just dial the phone number.
- Otherwise, first dial the prefix you set in section 4.5 on page 23, and then dial the phone number.

## 5.2 Making Incoming Calls

Follow these directions to call the phone that is connected to the ZyXEL Device.

- **P-2302R-P1**: Follow your VoIP provider's instructions for making incoming calls. The P-2302R-P1 must be on.
- **P-2301RL-P1**: Either follow your VoIP provider's instructions for making incoming calls, or just dial the phone number.

## 6 Troubleshooting

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None of the lights turn on when I plug in the ZyXEL Device.

---

Make sure that you are using the power adaptor provided with the ZyXEL Device.

Check all the connections you made in section 3 on page 5.

Make sure the power source is turned on.  
If the problem continues, contact your vendor.



The **POWER** light is red.

---

Unplug the device, and plug it in again.  
If the problem continues, contact your vendor.



I can open the web browser, but I cannot see the **Login** screen.

---

Make sure your web browser meets the requirements identified in section 2.

Check the connection between your computer and the ZyXEL Device. See section 3.

Make sure your computer's IP address is in the same subnet as the ZyXEL Device's IP address.

- If your ZyXEL Device is in **Router** mode, let the ZyXEL Device assign an IP address to your computer. See [Setting Up Your Computer's IP Address](#) on page 31.
- If your ZyXEL Device is in **Bridge** mode, set up a static IP address for your computer. For example, if you set the **Management IP Address** to 192.168.5.1, set up a static IP address in the range 192.168.5.2 ~ 192.168.5.254 on your computer (see section 6.2 on page 31). When you finish, set up the original settings again.

Make sure your computer's Ethernet adapter is installed and functioning properly.

If you changed the ZyXEL Device's mode or IP address, make sure you use the new IP address in the **Address** or **URL** field in the web browser.

If the problem continues, contact your local vendor.



My password is not working.

or

I forgot my password for the ZyXEL Device.

---

Make sure you enter the password correctly. It is case-sensitive.

If you changed the password in section 4.1 and then forgot it, you can reset the device.



The web configurator returns to the **Login** screen when I try to do something.

---

By default, the web configurator times out in five minutes. Log in again. You can change this setting. Click **Maintenance > System > General**, and change the **Administrator Inactivity Timer**.



When I pick up the phone's receiver, I hear no dial tone.

---

Check the connection between your telephone and the ZyXEL Device. See section 3.

Test the telephone wire.

- 1 Connect the wire to a telephone and a regular telephone outlet.
- 2 If you cannot hear the dial tone, the wire might be broken. Use a different one.

If the problem continues, contact your local vendor.

---



I cannot make VoIP phone calls.  
or  
The dial tone beeps or pulses.

---

Log in to the ZyXEL Device. Select **Go to Advanced setup**. The **Status** screen appears. In the **VoIP Status** section (at the bottom), make sure at least one of the VoIP accounts is registered. If neither account is registered, click **Register** for the VoIP account(s) that you set up in section 4.34.3.

If the problem continues, contact your vendor.

## 6.1 Resetting the ZyXEL Device

This changes all the ZyXEL Device's settings to their original values. You have to make all of your changes again. See section 1 on page 2 for information on default settings.



Make a note of your settings before you reset the ZyXEL Device.

---

To reset the ZyXEL Device,

- 1 Press the **RESET** button until the **POWER** light starts to blink. (This usually takes ten seconds or less.)
- 2 Release the **RESET** button.

## 6.2 Setting Up Your Computer's IP Address



Follow these instructions only if you are following a suggestion in [Troubleshooting](#).

---

This section shows you how to set up your computer to automatically get an IP address from the ZyXEL Device.

### 6.2.1 Windows NT/2000/XP

- 1 In Windows XP, click **Start > Control Panel**.  
In Windows 2000/NT, click **Start > Settings > Control Panel**.

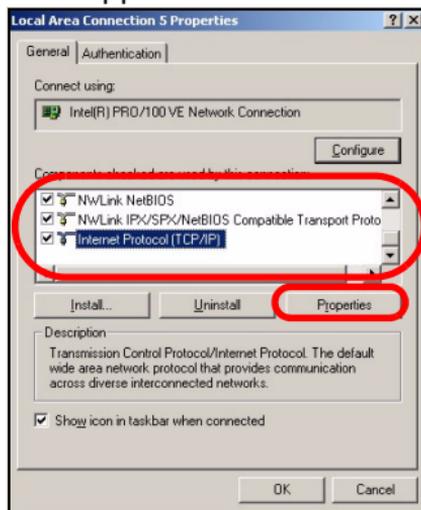
2 In Windows XP, click **Network Connections**.

In Windows 2000/NT, click **Network and Dial-up Connections**.

3 Right-click on your network connection (for example, **Local Area Connection**). A menu appears, like the one shown here.

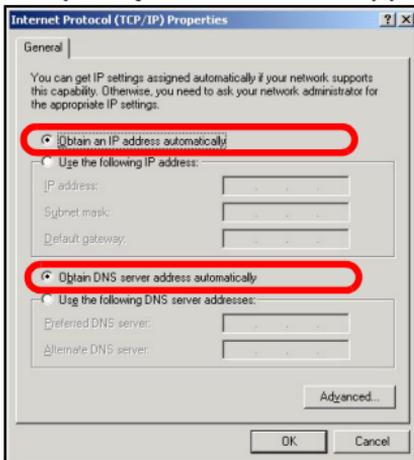


4 In the menu, click **Properties**. The network connection's properties screen appears.



5 In the list in the middle of the screen, look for **Internet Protocol (TCP/IP)**, and select it.

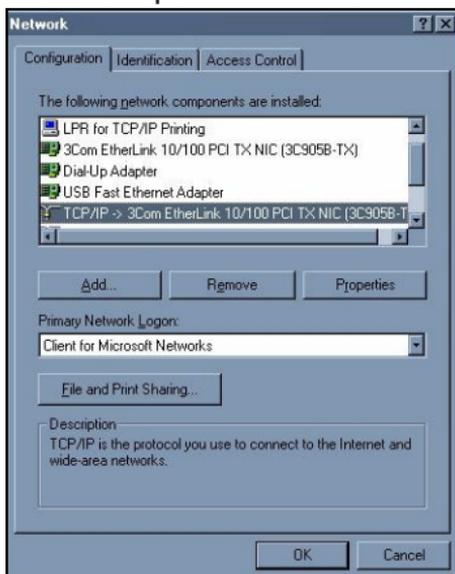
- 6** Click **Properties** underneath the list. The **Internet Protocol (TCP/IP) Properties** screen appears.



- 7** Select **Obtain an IP address automatically**.
- 8** Select **Obtain DNS server address automatically**.
- 9** Click **OK**.
- 10** Close the other windows.

## 6.2.2 Windows 95/98/Me

- 1 Click **Start > Settings > Control Panel** and double-click the **Network** icon to open the **Network** window.



The **Network** window **Configuration** tab displays a list of installed components. You need a network adapter, the TCP/IP protocol and Client for Microsoft Networks.

- 2 If you need the adapter:

- In the **Network** window, click **Add**.
- Select **Adapter** and then click **Add**.
- Select the manufacturer and model of your network adapter and then click **OK**.

If you need TCP/IP:

- In the **Network** window, click **Add**.
- Select **Protocol** and then click **Add**.
- Select **Microsoft** from the list of **manufacturers**.

- Select **TCP/IP** from the list of network protocols and then click **OK**.

If you need Client for Microsoft Networks:

- Click **Add**.
- Select **Client** and then click **Add**.
- Select **Microsoft** from the list of manufacturers.
- Select **Client for Microsoft Networks** from the list of network clients and then click **OK**.

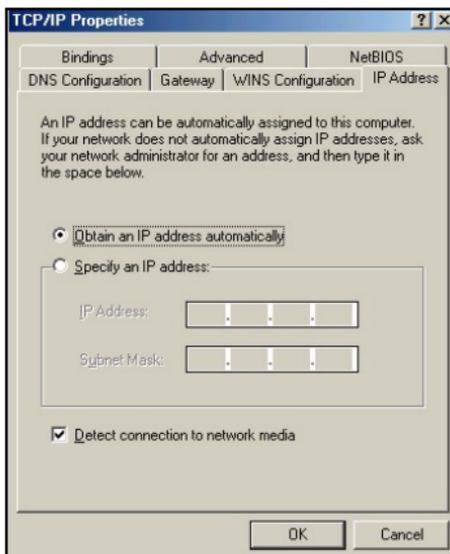
If you added any of these components, restart your computer so the changes you made take effect.

**3** In the **Network** window **Configuration** tab, select your network adapter's TCP/IP entry and click **Properties**

**4** Click the **IP Address** tab.

- If your IP address is dynamic, select **Obtain an IP address automatically**.

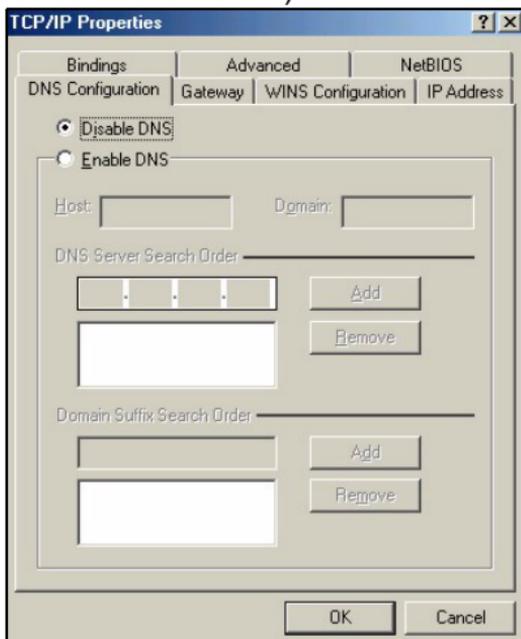
- If you have a static IP address, select **Specify an IP address** and type your information into the **IP Address** and **Subnet Mask** fields.



**5** Click the **DNS Configuration** tab.

- If you do not know your DNS information, select **Disable DNS**.

- If you know your DNS information, select **Enable DNS** and type the information in the fields below (you may not need to fill them all in).



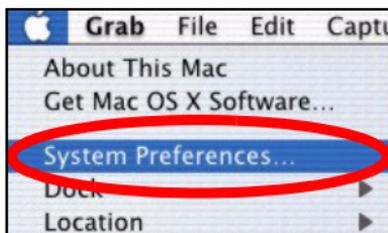
**6** Click the **Gateway** tab.

- If you do not know your gateway's IP address, remove previously installed gateways.
- If you have a gateway IP address, type it in the **New gateway field** and click **Add**.

**7** Click **OK** to save and close the **TCP/IP Properties** window. Click **OK** to close the **Network** window. Insert the Windows CD if prompted. Restart your computer when prompted.

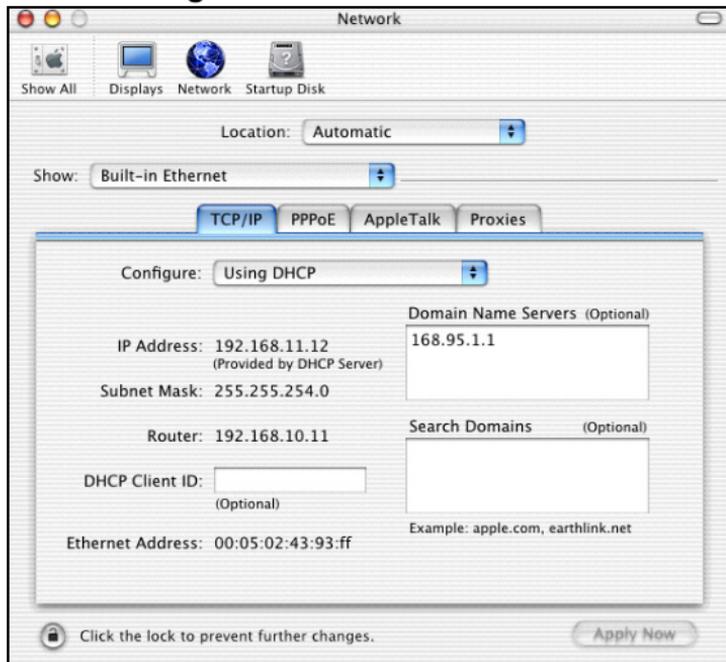
## 6.2.3 Macintosh OS X

- 1 Click the **Apple** menu, and click **System Preferences** to open the **System Preferences** window.



- 2 Click **Network** in the icon bar.
  - Select **Automatic** from the **Location** list.
  - Select **Built-in Ethernet** from the **Show** list.
  - Click the **TCP/IP** tab.

- 3 For dynamically assigned settings, select **Using DHCP** from the **Configure** list.



- 4 For static settings, do the following:
- From the **Configure** box, select **Manually**.
  - Type your IP address in the **IP Address** box.
  - Type your subnet mask in the **Subnet mask** box.
  - Type the IP address of your gateway in the **Router address** box.
- 5 Click **Apply Now** and close the window. If prompted, restart your computer.

## 7 Wall Mounting Instructions

Do the following to hang your ZyXEL Device on a wall.

- 1 Select a position free of obstructions on a sturdy wall.
- 2 Drill two holes for the screws. Make sure the distance between the centers of the holes, and the size of screws you use, match what is listed in section 8 on page 41.

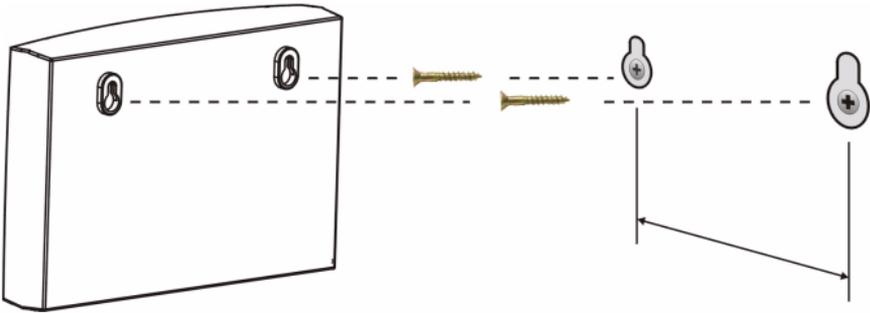


Be careful to avoid damaging pipes or cables located inside the wall when drilling holes for the screws.

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- 3 Do not screw the screws all the way into the wall. Leave a small gap of about 0.5 cm between the heads of the screws and the wall.
- 4 Make sure the screws are snugly fastened to the wall. They need to hold the weight of the ZyXEL Device with the connection cables.

- 5** Align the holes on the back of the ZyXEL Device with the screws on the wall. Hang the ZyXEL Device on the screws.



## 8 Specifications

Specifications are accurate at the time of writing.

Feature	Specification
Default IP address	192.168.1.1
Default subnet mask	255.255.255.0 /24 bits
Default password	1234
Dimensions (mm)	108 (Wide) x 105 (Deep) x 33 (High)
Distance between the wall-mounting holes on the device's back	77 mm
Screw size for wall-mounting	M4 tap screw
Weight	168 g
Ethernet ports	Two RJ-45, 10/100Mbps Half / Full Auto-negotiation, Auto-crossover Ethernet ports

Feature	Specification
Phone ports	P-2301R-P1C and P-2301RL-P1C: One FXS (Foreign eXchange Station) POTS port.  P-2302R-P1C: Two FXS (Foreign eXchange Station) POTS ports.
Feeding Voltage	On hook: -48V; Minimum Voltage: -20V Off hook: -24V
Ringing Voltage	P-2302R-P1: 40V RMS at 5 REN P-2301RL-P1: 40V RMS at 3 REN
Line Ports (P-2301RL-P1C Only)	One FXO (Foreign eXchange Office) PSTN line port
Operation Temperature	0° C ~ 40° C
Storage Temperature	0° ~ 60° C
Operation Humidity	10% ~ 85% RH
Storage Humidity	10% ~ 90% RH

## 9 Features

Voice Functions	SIP (RFC 3261) version 2 SDP (RFC 2327) RTP (RFC 1889) RTCP (RFC 1890) G.168 Echo Cancellation VAD (Voice Activity Detection) Silence Suppression CNG (Comfort Noise Generation) QoS Supports ToS and Diffserv Tagging Compression: G.711 (PCM), G.729 (ADPCM) Loop Start Signaling Support Modem and Fax Tone Detection and Pass Through DTMF Detection Point to Point Calling (Direct IP to IP Calling) Speed Dial Phonebook PSTN Line Support (Prestige P-2302RL-P1) Support NAT Traversal / RFC 3489- IETF Simple Traversal of UDP Through NAT (STUN) Caller ID Dialing Type: Tone, Pulse (Auto detection) Tip/ring polarity reversal
Protocol Support	PPP over Ethernet (RFC 2516) Transparent bridging for unsupported network layer protocols. DHCP Client

Management	<p>Embedded Web Configurator          CLI (Command Line Interpreter)          Remote Management via Telnet or Web          FTP/TFTP for firmware downloading,          configuration backup and restoration          Syslog          Built-in Diagnostic Tools for FLASH memory, RAM          and LAN port</p>
Firewall	<p>Stateful Packet Inspection.          Prevent Denial of Service attacks such as Ping of          Death, SYN Flood, LAND, Smurf etc.          Real-time E-mail alerts.          Reports and logs.</p>
Content Filtering	<p>Service blocking.          Web page blocking by URL keyword.</p>
NAT/SUA	<p>Port Forwarding          1024 NAT sessions          Multimedia application.          PPTP under NAT/SUA.          IPSec passthrough          SIP ALG passthrough.</p>
Static Routes	<p>16 IP and 4 Bridge</p>
Other Features	<p>Internal SPTGEN          DNS Proxy          Dynamic DNS          Any IP          IP Alias          Traffic Redirect</p>

## 10 Safety Warnings

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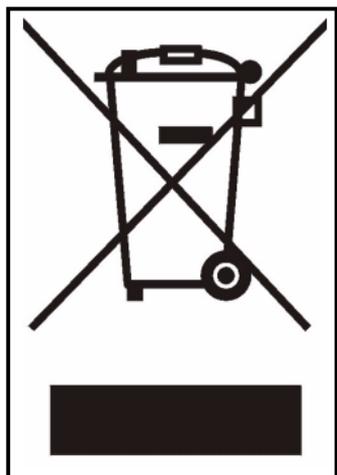
**For your safety, be sure to read and follow all warning notices and instructions.**

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- Do NOT use this product near water, for example, in a wet basement or near a swimming pool.
- Do NOT expose your device to dampness, dust or corrosive liquids.
- Do NOT store things on the device.
- Do NOT install, use, or service this device during a thunderstorm. There is a remote risk of electric shock from lightning.
- Connect ONLY suitable accessories to the device.
- Do NOT open the device or unit. Opening or removing covers can expose you to dangerous high voltage points or other risks. ONLY qualified service personnel should service or disassemble this device. Please contact your vendor for further information.
- Make sure to connect the cables to the correct ports.
- Place connecting cables carefully so that no one will step on them or stumble over them.
- Always disconnect all cables from this device before servicing or disassembling.
- Use ONLY an appropriate power adaptor or cord for your device. Connect it to the right supply voltage (for example, 110V AC in North America or 230V AC in Europe).
- Do NOT allow anything to rest on the power adaptor or cord and do NOT place the product where anyone can walk on the power adaptor or cord.
- Do NOT use the device if the power adaptor or cord is damaged as it might cause electrocution.
- If the power adaptor or cord is damaged, remove it from the device and the power source.
- Do NOT attempt to repair the power adaptor or cord. Contact your local vendor

to order a new one.

- Do not use the device outside, and make sure all the connections are indoors. There is a remote risk of electric shock from lightning.
- Do NOT obstruct the device ventilation slots, as insufficient airflow may harm your device.
- Use only No. 26 AWG (American Wire Gauge) or larger telecommunication line cord.
- If you wall mount your device, make sure that no electrical lines, gas or water pipes will be damaged.
- This product is recyclable. Dispose of it properly.



## Related Documentation

Please go to <http://www.zyxel.com> for product news, firmware, documentation, and other support materials.

# 11 Legal Information

## Certifications

### Federal Communications Commission (FCC) Interference Statement

The device complies with Part 15 of FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operations.

This device has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this device does cause harmful interference to radio/television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- 1 Reorient or relocate the receiving antenna.
- 2 Increase the separation between the equipment and the receiver.
- 3 Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- 4 Consult the dealer or an experienced radio/TV technician for help.

### Notices

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

### Viewing Certifications

- 1 Go to <http://www.zyxel.com>.
- 2 Select your product on the ZyXEL home page to go to that product's page.

- 3 Select the certification you wish to view from this page.

## ZyXEL Limited Warranty

ZyXEL warrants to the original end user (purchaser) that this product is free from any defects in materials or workmanship for a period of up to two years from the date of purchase. During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, ZyXEL will, at its discretion, repair or replace the defective products or components without charge for either parts or labor, and to whatever extent it shall deem necessary to restore the product or components to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal or higher value, and will be solely at the discretion of ZyXEL. This warranty shall not apply if the product has been modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions.

### Note

Repair or replacement, as provided under this warranty, is the exclusive remedy of the purchaser. This warranty is in lieu of all other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular use or purpose. ZyXEL shall in no event be held liable for indirect or consequential damages of any kind to the purchaser.

To obtain the services of this warranty, contact ZyXEL's Service Center for your Return Material Authorization number (RMA). Products must be returned Postage Prepaid. It is recommended that the unit be insured when shipped. Any returned products without proof of purchase or those with an out-dated warranty will be repaired or replaced (at the discretion of ZyXEL) and the customer will be billed for parts and labor. All repaired or replaced products will be shipped by ZyXEL to the corresponding return address, Postage Paid. This warranty gives you specific legal rights, and you may also have other rights that vary from country to country.

### Registration

Register your product online to receive e-mail notices of firmware upgrades and information at [www.zyxel.com](http://www.zyxel.com) for global products, or at [www.us.zyxel.com](http://www.us.zyxel.com) for North American products.

## Customer Support

Please have the following information ready when you contact customer support.

- Product model and serial number.

- Warranty Information.
- Date that you received your device.
- Brief description of the problem and the steps you took to solve it.

### **Corporate Headquarters (Worldwide)**

- Support E-mail: support@zyxel.com.tw
- Sales E-mail: sales@zyxel.com.tw
- Telephone: +886-3-578-3942
- Fax: +886-3-578-2439
- Web Site: www.zyxel.com, www.europe.zyxel.com
- FTP Site: ftp.zyxel.com, ftp.europe.zyxel.com
- Regular Mail: ZyXEL Communications Corp., 6 Innovation Road II, Science Park, Hsinchu 300, Taiwan

### **Costa Rica**

- Support E-mail: soporte@zyxel.co.cr
- Sales E-mail: sales@zyxel.co.cr
- Telephone: +506-2017878
- Fax: +506-2015098
- Web Site: www.zyxel.co.cr
- FTP Site: ftp.zyxel.co.cr
- Regular Mail: ZyXEL Costa Rica, Plaza Roble Escazú, Etapa El Patio, Tercer Piso, San José, Costa Rica

### **Czech Republic**

- E-mail: info@cz.zyxel.com
- Telephone: +420-241-091-350
- Fax: +420-241-091-359
- Web Site: www.zyxel.cz
- Regular Mail: ZyXEL Communications, Czech s.r.o., Modranská 621, 143 01 Praha 4 - Modrany, Česká Republika

### **Denmark**

- Support E-mail: support@zyxel.dk
- Sales E-mail: sales@zyxel.dk
- Telephone: +45-39-55-07-00
- Fax: +45-39-55-07-07
- Web Site: www.zyxel.dk
- Regular Mail: ZyXEL Communications A/S, Columbusvej, 2860 Soeborg, Denmark

### **Finland**

- Support E-mail: support@zyxel.fi
- Sales E-mail: sales@zyxel.fi
- Telephone: +358-9-4780-8411
- Fax: +358-9-4780 8448

- Web Site: [www.zyxel.fi](http://www.zyxel.fi)
- Regular Mail: ZyXEL Communications Oy, Malminkaari 10, 00700 Helsinki, Finland

### **France**

- E-mail: [info@zyxel.fr](mailto:info@zyxel.fr)
- Telephone: +33-4-72-52-97-97
- Fax: +33-4-72-52-19-20
- Web Site: [www.zyxel.fr](http://www.zyxel.fr)
- Regular Mail: ZyXEL France, 1 rue des Vergers, Bat. 1 / C, 69760 Limonest, France

### **Germany**

- Support E-mail: [support@zyxel.de](mailto:support@zyxel.de)
- Sales E-mail: [sales@zyxel.de](mailto:sales@zyxel.de)
- Telephone: +49-2405-6909-69
- Fax: +49-2405-6909-99
- Web Site: [www.zyxel.de](http://www.zyxel.de)
- Regular Mail: ZyXEL Deutschland GmbH., Adenauerstr. 20/A2 D-52146, Wuerselen, Germany

### **Hungary**

- Support E-mail: [support@zyxel.hu](mailto:support@zyxel.hu)
- Sales E-mail: [info@zyxel.hu](mailto:info@zyxel.hu)
- Telephone: +36-1-3361649
- Fax: +36-1-3259100
- Web Site: [www.zyxel.hu](http://www.zyxel.hu)
- Regular Mail: ZyXEL Hungary, 48, Zoldlomb Str., H-1025, Budapest, Hungary

### **Kazakhstan**

- Support: <http://zyxel.kz/support>
- Sales E-mail: [sales@zyxel.kz](mailto:sales@zyxel.kz)
- Telephone: +7-3272-590-698
- Fax: +7-3272-590-689
- Web Site: [www.zyxel.kz](http://www.zyxel.kz)
- Regular Mail: ZyXEL Kazakhstan, 43, Dostyk ave., Office 414, Dostyk Business Centre, 050010, Almaty, Republic of Kazakhstan

### **North America**

- Support E-mail: [support@zyxel.com](mailto:support@zyxel.com)
- Sales E-mail: [sales@zyxel.com](mailto:sales@zyxel.com)
- Telephone: +1-800-255-4101, +1-714-632-0882
- Fax: +1-714-632-0858
- Web Site: [www.us.zyxel.com](http://www.us.zyxel.com)
- FTP Site: <ftp.us.zyxel.com>
- Regular Mail: ZyXEL Communications Inc., 1130 N. Miller St., Anaheim, CA

92806-2001, U.S.A.

### **Norway**

- Support E-mail: [support@zyxel.no](mailto:support@zyxel.no)
- Sales E-mail: [sales@zyxel.no](mailto:sales@zyxel.no)
- Telephone: +47-22-80-61-80
- Fax: +47-22-80-61-81
- Web Site: [www.zyxel.no](http://www.zyxel.no)
- Regular Mail: ZyXEL Communications A/S, Nils Hansens vei 13, 0667 Oslo, Norway

### **Poland**

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- Telephone: +48 (22) 333 8250
- Fax: +48 (22) 333 8251
- Web Site: [www.pl.zyxel.com](http://www.pl.zyxel.com)
- Regular Mail: ZyXEL Communications, ul. Okrzei 1A, 03-715 Warszawa, Poland

### **Russia**

- Support: <http://zyxel.ru/support>
- Sales E-mail: [sales@zyxel.ru](mailto:sales@zyxel.ru)
- Telephone: +7-095-542-89-29
- Fax: +7-095-542-89-25
- Web Site: [www.zyxel.ru](http://www.zyxel.ru)
- Regular Mail: ZyXEL Russia, Ostrovityanova 37a Str., Moscow, 117279, Russia

### **Spain**

- Support E-mail: [support@zyxel.es](mailto:support@zyxel.es)
- Sales E-mail: [sales@zyxel.es](mailto:sales@zyxel.es)
- Telephone: +34-902-195-420
- Fax: +34-913-005-345
- Web Site: [www.zyxel.es](http://www.zyxel.es)
- Regular Mail: ZyXEL Communications, Arte, 21 5ª planta, 28033 Madrid, Spain

### **Sweden**

- Support E-mail: [support@zyxel.se](mailto:support@zyxel.se)
- Sales E-mail: [sales@zyxel.se](mailto:sales@zyxel.se)
- Telephone: +46-31-744-7700
- Fax: +46-31-744-7701
- Web Site: [www.zyxel.se](http://www.zyxel.se)
- Regular Mail: ZyXEL Communications A/S, Sjöporten 4, 41764 Göteborg, Sweden

## Ukraine

- Support E-mail: support@ua.zyxel.com
- Sales E-mail: sales@ua.zyxel.com
- Telephone: +380-44-247-69-78
- Fax: +380-44-494-49-32
- Web Site: www.ua.zyxel.com
- Regular Mail: ZyXEL Ukraine, 13, Pimonenko Str., Kiev, 04050, Ukraine

## United Kingdom

- Support E-mail: support@zyxel.co.uk
- Sales E-mail: sales@zyxel.co.uk
- Telephone: +44-1344 303044, 08707 555779 (UK only)
- Fax: +44-1344 303034
- Web Site: www.zyxel.co.uk
- FTP Site: ftp.zyxel.co.uk
- Regular Mail: ZyXEL Communications UK, Ltd., 11 The Courtyard, Eastern Road, Bracknell, Berkshire, RG12 2XB, United Kingdom (UK)

+<sup>n</sup> is the (prefix) number you dial to make an international telephone call.

## User Guide Feedback

Help us help you. E-mail all User Guide-related comments, questions or suggestions for improvement to techwriters@zyxel.com.tw or send regular mail to The Technical Writing Team, ZyXEL Communications Corp., 6 Innovation Road II, Science-Based Industrial Park, Hsinchu, 300, Taiwan. Thank you.

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