

ZyAIR G-2000

802.11g Wireless 4-port Router

Quick Installation Guide

Version 3.60

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Procedure to View a Product's Certification(s)

1. Go to www.zyxel.com.
2. Select your product from the drop-down list box on the ZyXEL home page to go to that product's page.
3. Select the certification you wish to view from this page

1 Introducing the ZyAIR

The ZyAIR B-G2000 is a broadband sharing gateway with a built-in wireless LAN access point and four-port switch that makes it easy for people to set up a small home/office network and share Internet access via a broadband (cable/DSL) modem. Key features of the ZyAIR include 802.1x wireless LAN security, WPA (Wi-Fi Protected Access), firewall, remote management and UPnP. See your *User's Guide* for more details on all ZyAIR features.

You should have an Internet account already set up and have been given most of the following information.

INTERNET ACCOUNT CHECKLIST	
Your device's WAN IP Address (if given): _____	
Encapsulation: (choose one below)	
<input type="checkbox"/> Ethernet	Service Type: _____ Login Server IP Address: _____ User Name: _____ Password: _____
<input type="checkbox"/> PPTP	User Name: _____ Password: _____ Your WAN IP Address: _____ PPTP Server IP Address: _____ Connection ID (if required): _____
<input type="checkbox"/> PPPoE	(PPPoE) Service Name: _____ User Name: _____ Password: _____

2 Hardware Connections

2.1 Side Panel and Connections



LABEL	DESCRIPTION AND FUNCTION
1. LAN	Use an Ethernet cable to connect at least one computer for initial ZyAIR configuration. These ports are auto-negotiating (can connect at 10 or 100Mbps) and auto-crossover (automatically adjust to the type of Ethernet cable you use (straight-through or crossover)).
2. WAN	Connect your cable/DSL modem to this port with the cable that came with your modem.
3. POWER 12V DC	Connect the end of the included power adaptor (use only this adaptor) to this power socket.
After you've made the connections, connect the power cable to a power supply and look at the front panel LEDs.	
RESET	You only need to use this button if you've forgotten the ZyAIR's password. It returns the ZyAIR to the factory defaults (password is 1234, LAN IP address 192.168.1.1 etc. see your <i>User's Guide</i> for details).

2.2 The Front Panel

The **PWR** LED turns steady on when the power adaptor is connected. The **SYS** LED blinks while performing system testing and then turns steady on if the testing is successful. The link LED and the ZyAIR LED turn steady on while the wireless card on the ZyAIR is working. The **LAN** and **WAN** LEDs turn on, if they are properly connected. Refer to the *User's Guide* for more detailed LED descriptions.



Table 1 Front Panel LED Description

LED	COLOR	STATUS	DESCRIPTION
ZyAIR	Blue	On	The ZyAIR is ready, but is not sending/receiving data through the wireless LAN.
		Blinking (Breathing)	The ZyAIR is sending/receiving data through the wireless LAN.
LAN 1-4		Off	The ZyAIR does not have an Ethernet connection.
		Green	The ZyAIR has a successful 10Mbps Ethernet connection.
	Orange	Blinking	The ZyAIR is sending/receiving data.
		On	The ZyAIR has a successful 100Mbps Ethernet connection.
WAN		Off	The ZyAIR does not have a WAN connection.
		Green	The ZyAIR has a successful 10Mbps WAN connection.
	Orange	Blinking	The ZyAIR is sending/receiving data.
		On	The ZyAIR has a successful 100Mbps WAN connection.
SYS		Off	The ZyAIR is not ready or has malfunctioned.
		Green	The ZyAIR is functioning properly.
	Red	Blinking	The ZyAIR is rebooting.
PWR	Green	On	The ZyAIR is receiving power.
		Off	The ZyAIR is not receiving power.

3 Setting Up Your Computer's IP Address

Skip this section if your computer is already set up to accept a dynamic IP address. This is the default for most new computers.

The ZyAIR is already set up to assign your computer an IP address. Use this section to set up your computer to receive an IP address or assign it a static IP address in the 192.168.1.2 to 192.168.1.254 range with a subnet mask of 255.255.255.0. This is necessary to ensure that your computer can communicate with your ZyAIR.

Your computer must have a network card and TCP/IP installed. TCP/IP should already be installed on computers using Windows NT/2000/XP, Macintosh OS 7 and later operating systems. Refer to the *Setting Up Your Computer's IP Address* appendix in the *User's Guide* for configuring the IP address in other operating systems.

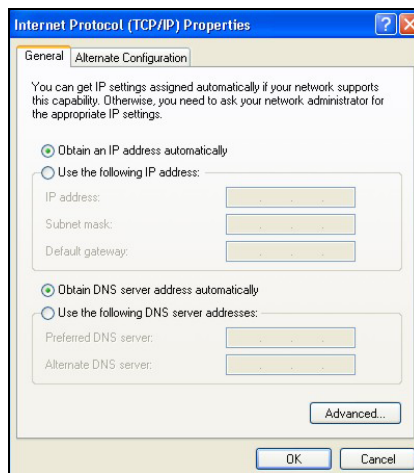
3.1 Windows 2000/NT/XP

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 **Local Area Connection** and then click **Properties**.
4. Select **Internet Protocol (TCP/IP)** (under the **General** tab in Windows XP) and click **Properties**.
5. The **Internet Protocol TCP/IP Properties** screen opens (the **General** tab in Windows XP).

-To have your computer accept a dynamic IP address, click **Obtain an IP address automatically**.

-If you want a static IP address, click **Use the following IP Address** and fill in the **IP address** (use one between 192.168.1.2 and 192.168.1.254), **Subnet mask** (255.255.255.0), and **Default gateway** (192.168.1.1) fields.

Click **Advanced**.



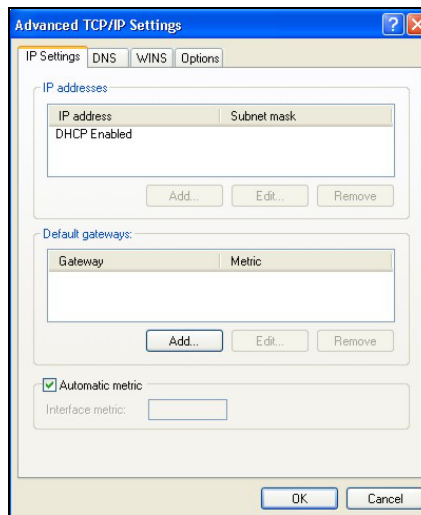
6. Remove any previously installed gateways in the **IP Settings** tab and click **OK** to go back to the **Internet Protocol TCP/IP Properties** screen.

7. Click **Obtain DNS server address automatically** if you do not know your DNS server IP address(es).

If you know your DNS server IP address(es), click **Use the following DNS server addresses**, and type them in the **Preferred DNS server** and **Alternate DNS server** fields.

If you have previously configured DNS servers, click **Advanced** and then the **DNS** tab to order them.

8. Click **OK** to close the **Internet Protocol (TCP/IP) Properties** window.
9. Click **OK** to close the **Local Area Connection Properties** window.



3.2 Checking/Updating Your Computer's IP Address

1. In the computer, click **Start, (All) Programs, Accessories** and then **Command Prompt**.
2. In the **Command Prompt** window, type "ipconfig" and then press **ENTER** to verify that your computer's static IP address is in the correct subnet (in the range between 192.168.1.2 and 192.168.1.254 if using the default ZyAIR LAN IP address). Alternatively, to have the ZyAIR assign your computer a new IP address (from the IP pool), make sure your ZyAIR is turned on, type "ipconfig/renew" and then press **ENTER**.

3.3 Testing the Connection to the ZyAIR

The default IP address of the ZyAIR is 192.168.1.1.

1. Click **Start, (All) Programs, Accessories** and then **Command Prompt**.
2. In the **Command Prompt** window, type "ping" followed by a space and the IP address of the ZyAIR.

3. Press **ENTER** and the reply messages displays.

```
C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time=10ms TTL=254
Reply from 192.168.1.1: bytes=32 time<10ms TTL=254
Reply from 192.168.1.1: bytes=32 time<10ms TTL=254
Reply from 192.168.1.1: bytes=32 time<10ms TTL=254

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 10ms, Average = 2ms

C:\>
```

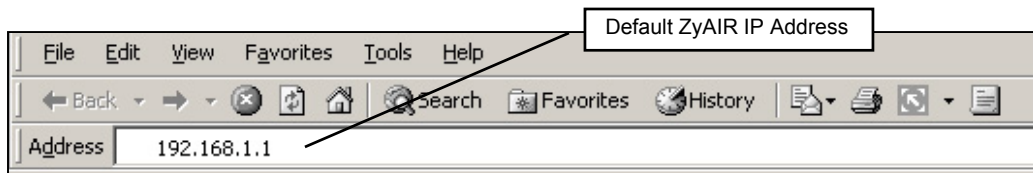
Your computer can now communicate with the ZyAIR using the LAN port.

4 Internet Access Setup Using the Web Configurator Wizard

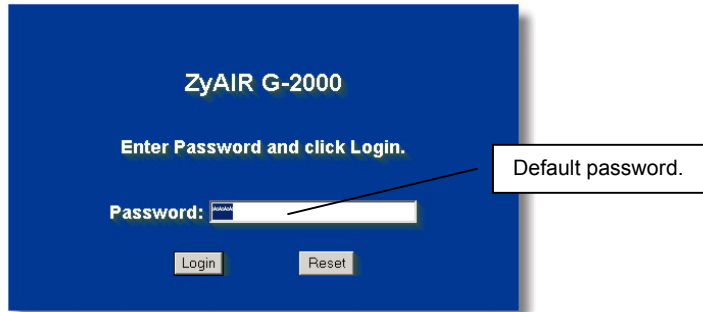
The *Quick Installation Guide* shows you how to use the web configurator Wizard and introduces the ZyAIR's key features. See your *User's Guide* for configuration details and background information on all ZyAIR features using the SMT (System Management Terminal) and web configurator.

4.1 Accessing the ZyAIR via the Web Configurator

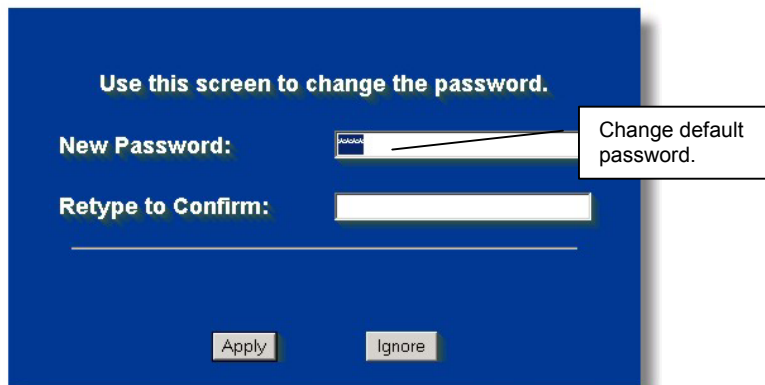
1. Launch your web browser. Enter "192.168.1.1" as the web site address.



2. The default password (“1234”) is already in the password field (in non-readable format). Click **Login** to proceed to a screen asking you to change your password. Click **Reset** to revert to the default password in the password field.



3. It is highly recommended you change the default password! Enter a new password, retype it to confirm and click **Apply**; alternatively click **Ignore** to proceed to the **SYSTEM** screen if you do not want to change the password now.



4. You should now see the web configurator **SYSTEM** screen.

The screenshot shows the ZyXEL web configuration interface. On the left is a blue sidebar with a menu. The main content area is yellow and titled 'SYSTEM'. It has four tabs: 'General', 'DDNS', 'Password', and 'Time Setting'. The 'General' tab is active, showing fields for System Name (G-2000), Domain Name (zyxel.com.tw), Administrator Inactivity Timer (5 minutes), and three DNS servers. There are 'Apply' and 'Reset' buttons at the bottom. Three callout boxes provide instructions: one pointing to 'WIZARD SETUP', one pointing to the 'SYSTEM' submenus, and one pointing to 'LOGOUT'.

WIZARD SETUP Click **WIZARD SETUP** to help you configure your ZyAIR for Internet access and set up a wireless network.

SYSTEM Use the submenus to configure the ZyAIR features.

LOGOUT Click **LOGOUT** at any time to exit the web configurator.

The management session automatically times out when the time period set in the Administrator Inactivity Timer field expires (default five minutes). Simply log back into the ZyAIR if this happens to you.

4.2 Common Screen Command Buttons

The following table shows common command buttons found on many web configurator screens.

Back	Click Back to return to the previous screen.
Apply	Click Apply to save your changes back to the ZyAIR.
Reset	Click Reset to begin configuring this screen afresh.

4.3 Configuring the ZyAIR Using the Wizard

The wizard consists of a series of screens to help you configure your ZyAIR for wireless stations to access your wired LAN and set up Internet access. Refer to your *User's Guide* for more background information.

1. Click **WIZARD SETUP** to display the first wizard screen. Refer to your *User's Guide* for more background information on each field.

WIZARD

General Setup:
This information is optional, but may be helpful in accessing services of your Internet Service Provider, such as mail and news servers and customer support web pages.

Enter a descriptive name for identification purposes. We recommend using your computer's name.

System Name:

The ISP's domain name is often sent automatically by the ISP to the router. If you are having difficulty accessing ISP services, you may need to enter the Domain Name manually in the field below.

Domain Name:

System Name is a unique name to identify the ZyAIR in the Ethernet network. Enter a descriptive name.

The **Domain Name** entry is what is propagated to the DHCP clients on the LAN. If you leave this blank, the domain name obtained by DHCP from the ISP is used. Click **Next** to continue.

2. Use the second wizard screen to set up the wireless LAN.

WIZARD

Wireless LAN Setup

ESSID

Choose Channel ID

WEP Encryption

64-bit WEP: Enter 5 ASCII characters or 10 hexadecimal characters (0-9, "A-F") for each Key(1-4).
128-bit WEP: Enter 13 ASCII characters or 26 hexadecimal characters (0-9, "A-F") for each Key(1-4).
(Select one WEP key as an active key to encrypt wireless data transmission.)

ASCII Hex

Key 1

Key 2

Key 3

Key 4

ESSID is a unique name to identify the ZyAIR in the wireless LAN. Enter a descriptive name.

The range of radio frequencies used by IEEE 802.11b wireless devices is called a channel.

Select a radio channel from the **Choose Channel ID** drop-down list.

WEP (Wired Equivalent Privacy) encrypts data frames before transmitting over the wireless network. Select either **64-bit** or **128-bit** from the **WEP Encryption** drop-down list box to activate WEP encryption. Select **Disable** to turn off WEP data encryption.

Select **ASCII** or **HEX** WEP key input method and then follow the on-screen instructions to set up the WEP keys. Click **Next** to continue.

The wireless stations and ZyAIR must use the same ESSID, channel ID and WEP encryption key (if WEP is enabled) for wireless communication.

3. The third wizard screen has three variations depending on what encapsulation type you use. Use the information in the *Internet Account Checklist* table and the online help to fill in the fields. Click **Next** in each screen to continue.

WIZARD

ISP Parameters for Internet Access

Encapsulation	Ethernet
Service Type	Standard
User Name	N/A
Password	N/A
Login Server IP Address	N/A

Back Next

Choose **Ethernet** when the WAN port is used as a regular Ethernet. Choose from **Standard** or a RoadRunner version. You'll need **User Name**, **Password** and **Login Server IP Address** for some Roadrunner versions.

Point-to-Point Protocol over Ethernet (**PPPoE**) also functions as a dial-up connection. Therefore you'll also need a username and password and possibly the PPPoE service name. Your ISP will give you all needed information.

Choose **PPTP** if your service provider uses a DSL terminator with PPTP login. The ZyAIR must have a static IP address in this case. You'll also need a login name, associated password, the DSL terminator IP address and possibly a connection ID.

Click **Next** to continue.

4. Fill in the fields in the last wizard configuration screen.

The screenshot shows a configuration wizard with a yellow background. It is divided into three sections:

- WAN IP Address Assignment:**
 - Radio buttons: Get automatically from ISP (Default), Use fixed IP address
 - My WAN IP Address:
 - My WAN IP Subnet Mask:
 - Remote IP Address:
- DNS Server Address Assignment:**
 - Radio buttons: Get automatically from ISP (Default), Use fixed IP Address - DNS Server IP Address
 - Primary DNS Server:
 - Secondary DNS Server:
- WAN MAC Address:**
 - Radio buttons: Factory default, Spoof this computer's MAC Address - IP Address
 - IP Address (for spoofing):

At the bottom right, there are "Back" and "Next" buttons.

WAN IP Address Assignment
 Select **Get automatically from ISP** to have the ZyAIR obtain an IP address automatically from the ISP. Select **Use fixed IP address** to give the ZyAIR a fixed, unique IP address. Enter a subnet mask appropriate to your network and the gateway IP address if applicable.

DNS Server Assignment
 Select **Get automatically from ISP** if your ISP does not give you DNS server addresses.

If you selected the **Use fixed IP address – Primary/Secondary DNS Server** option, enter the provided DNS addresses in these fields.

WAN MAC Address

The WAN MAC address field allows you to 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

5. In the final screen, click **Finish** and change the wireless parameter settings in the wireless stations to match those of the ZyAIR. Refer to the user's guide for your wireless adapter.

4.4 Test Your Internet Connection

Launch your web browser and navigate to www.zyxel.com. You don't need a dial-up program such as Dial Up Networking. Internet access is just the beginning. Refer to the *User's Guide* for more detailed information on the complete range of ZyAIR features.

5 Hardware Installation

5.1 Attaching Antennas

Follow the steps below to connect the supplied antennas.

1. Locate the antenna connectors on the sides of your ZyAIR.
2. Screw the antennas clockwise onto the antenna connectors. The antennas should be perpendicular to the ground and parallel to each other.

Make sure the antennas are securely screwed onto the antenna connectors.



Figure 1 Attaching Antenna

5.2 Hardware Mounting Installation

In general, the best location for the access point is at the center of your intended wireless coverage area. For better performance, mount the ZyAIR high up free of obstructions.

Free-standing

Place your ZyAIR on a flat, level surface (on a desk or shelf) that is strong enough to support the weight of the ZyAIR with connection cables.

With the Desktop Holder

The included desktop holder helps you organize the ZyAIR's connection cables.

1. Secure the desktop holder to the back of the ZyAIR with the included screw.
2. Turn the desktop holder up to the right.
3. Refer to the *Hardware Connections* section. Connect the cables to the ports on the ZyAIR through the desktop holder.
4. Turn the desktop holder down and place the unit on a flat, sturdy surface (on a desk or shelf).

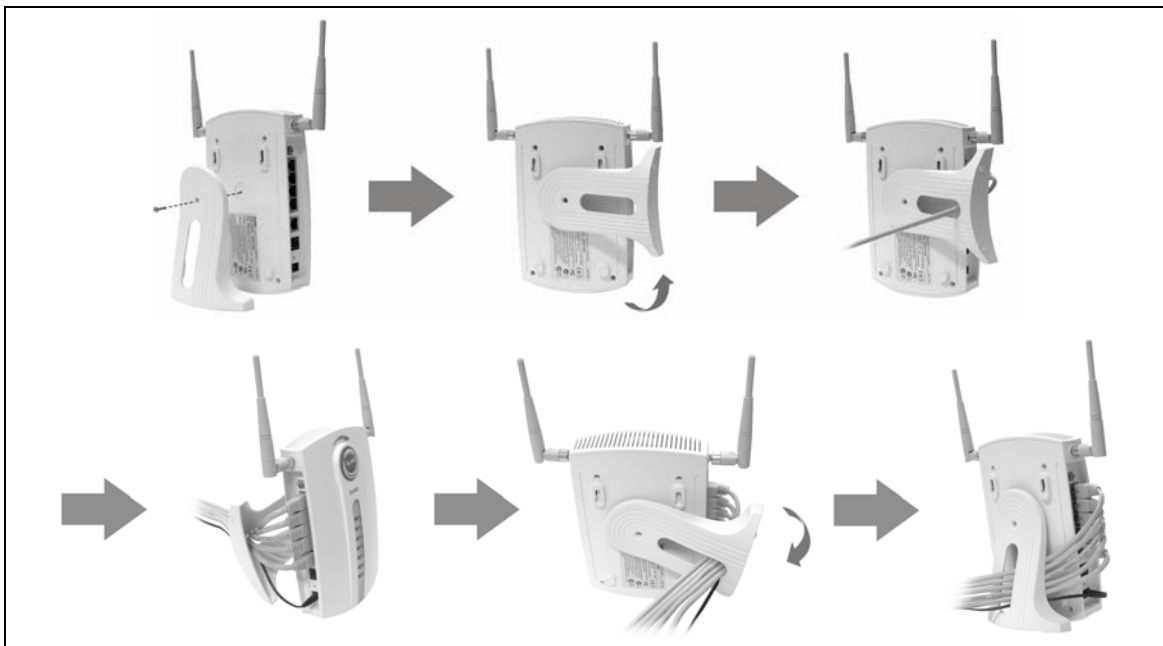


Figure 2 Instructions using the Desktop Holder

Wall-mounted

Follow the steps to attach your ZyAIR to a wall.

1. Locate a high position on the wall that is free of obstructions.
2. Use screws with 6mm ~7.5mm (0.24" ~ 0.30") wide heads. Connect two screws (not included) in the wall 80mm (3.15") apart. Do not screw the screws all the way into the wall. Leave a small gap between the head of the screws and the wall.

Make sure the screws are securely fixed to the wall and strong enough to hold the weight of the ZyAIR with the connection cables.

3. Align the holes on the back of the ZyAIR with the screws on the wall. Hang the ZyAIR on the screws.

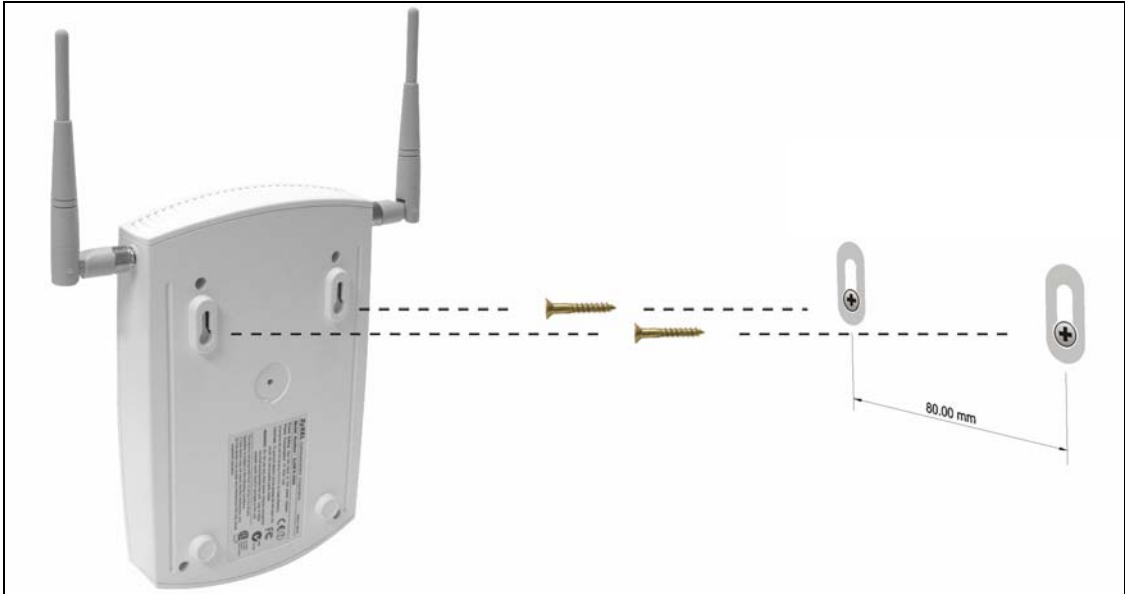


Figure 3 Wall Mounting your ZyAIR

6 Troubleshooting

PROBLEM	CORRECTIVE ACTION
The PWR and/or SYS LED are off.	<p>Make sure you are using the correct power adaptor and the power adaptor is plugged into an adequate power supply.</p> <p>Turn the ZyAIR off and on. If the error persists, you may have a hardware problem. In this case, you should contact your vendor.</p>
The LAN LED is off.	<p>Check the cable connection to the ZyAIR LAN port.</p> <p>Make sure your computer's network card is working properly.</p>
The ZyAIR LED is off.	<p>Turn the ZyAIR off and on. If the error persists, you may have a hardware problem. In this case, you should contact your vendor.</p>
I cannot access the web configurator.	<p>Make sure the IP addresses and subnet masks of the ZyAIR and the computer are in the same IP address range. (For example, if the ZyAIR is using the default IP address and subnet mask, check that the IP address of the computer is in the range 192.168.1.2 ~192.168.1.254 and the subnet mask is 255.255.255.0). Refer to the <i>Setting Up Your Computer's IP Address</i> section.</p> <p>If you change the ZyAIR default IP address, then enter the new IP address as the web site address.</p> <p>The default password is "1234". If you have changed the password and have now forgotten it, you will need to reset the ZyAIR. Refer to the <i>User's Guide</i> for how to use the RESET button.</p>
I cannot ping any computer on the LAN.	<p>If all of the LAN LEDs are off, check the cables between the ZyAIR and your computer or hub.</p> <p>Verify that the IP address and the subnet mask of the ZyAIR and the computers are on the same IP address range.</p>
I cannot get a WAN IP address from the ISP.	<p>The WAN IP is provided after the ISP verifies the MAC address, host name or user ID.</p> <p>Find out the verification method used by your ISP and configure the corresponding fields.</p>
I cannot access the Internet.	<p>Make sure the ZyAIR is turned on and connected to the network.</p> <p>Make sure you entered your username correctly. A username may be case-sensitive.</p>