ZyAIR G-3000

802.11g Business Access Point/Bridge/Repeater

Quick Start Guide

Version 3.50

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ZyXEL

Unleash Networking Power

Table of Contents

1 Introducing the ZyAIR

The ZyAIR G-3000 is a wireless access point with two WLAN interfaces that are compliant with both IEEE802.11g and IEEE802.11b standards. It is suitable for wireless connections to the wired network in small office environments and businesses. The key features of the ZyAIR are the dual WLAN interface, internal RADIUS server, PoE (Power over Ethernet), wireless security, and WDS (Wireless Distribution System). See your *User's Guide* for more details on all ZyAIR features. 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.

2 Hardware Connections

2.1 Side Panel and Connections

Figure 1 ZyAIR Side Panel and Connections

LABEL	DESCRIPTION
CONSOLE	Only connect this port if you want to configure the ZyAIR using the SMT (System Management Terminal) via console port; see your *User's Guide* for details. Connect PS/2 end of the console cable to the console port of the ZyAIR and the other end to a serial port (COM1, COM2 or other COM port) on your computer. Your computer should have a terminal emulation communications program (such as HyperTerminal) set to VT100 terminal emulation, no parity, 8 data bits, 1 stop bit, no flow control and 9600 bps port speed.
ETHERNET	Use an Ethernet cable to connect a computer (with an Ethernet card) or switch to the ETHERNET port. The port is auto-negotiating (can connect at 10 or 100Mbps) and auto-crossover (automatically adjusts to the type of Ethernet cable you use (straight-through or crossover)).
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 and LAN IP address 192.168.1.2). Refer to the *User's Guide*.
POWER 12VDC	Connect the end of the included power adaptor to this power socket. You only need to connect the external power adaptor if you are not using PoE. If you simultaneously use both PoE and the external power adaptor, the ZyAIR will draw power from the PoE connection only. **Use only the included power adaptor.**
EXTENSION CARD SLOT	This slot allows you to add an IEEE802.11g or IEEE802.11b WLAN card adaptor. You must have a WLAN card inserted before you can configure it. The ZyAIR also contains a built-in wireless card.

2.2 The LED Display

When the power is connected the **PWR**, **ZyAIR**, **SYS**, **WLAN** LEDs turn on in that order. The **ETHN** LED turns on, if the **ETHERNET** port is properly connected. See the *ZyAIR Front Panel LED Description* table for more information.

Figure 2 ZyAIR Front Panel

Table 1 ZyAIR Front Panel LED Description

LED	COLOR	STATUS	DESCRIPTION
BDG/RPT	Red	Blinking	The ZyAIR is not ready or is rebooting in **AP+Bridge** or **Bridge/Repeater** mode.
		Off	The ZyAIR has a successful reboot in **AP+Bridge** or **Bridge/Repeater** mode.
	Green	On	The ZyAIR is set up as an **AP+Bridge** or **Bridge/Repeater**.
		Off	The ZyAIR is set up as an **Access Point**.
ZyAIR	Blue	Blinking (Breathing)	ZyAIR is sending/receiving data through the wireless LAN.
		On	The ZyAIR is ready, but is not sending/receiving data.
		Off	The LED has been disabled in the web configurator or SMT.
WLAN		Off	Neither of the WLAN interfaces is communicating successfully with another device.
	Green	On	Both or one of the WLAN interfaces is communicating successfully with another device.
		Blinking	TX/RX packets are being sent through the ZyAIR.
ETHN		Off	The Ethernet connection is not ready, or has failed.
	Green	On	The ZyAIR has a successful 10Mbps Ethernet connection.
		Blinking	The ZyAIR is sending/receiving data.
	Orange	On	The ZyAIR has a successful 100Mbps Ethernet connection.
		Blinking	The ZyAIR is sending/receiving data.
SYS		Off	The ZyAIR is not receiving power.
	Green	On	The ZyAIR is receiving power.
		Blinking	The ZyAIR is receiving power but is not ready.
	Orange	On	The ZyAIR is receiving low power.
PWR		Off	The ZyAIR is not receiving power.
	Green	On	The ZyAIR is receiving power.
	Red	On	The ZyAIR is receiving power over the Ethernet cable.

To access the ZyAIR, configure your computer's IP address and subnet mask to be in the same range as the ZyAIR's.

The default IP address of the ZyAIR is 192.168.1.2.

3 Set Up Your Computer's IP Address

Skip this section if your computer's IP address is already in the range of 192.168.1.3 ~ 192.168.1.254 with subnet mask 255.255.255.0.

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 for other operating systems.

3.1 Windows 2000/NT/XP

The following example figures use the default Windows XP GUI theme.

1. Click **start** (**Start** in Windows 2000/NT), **Settings**, **Control Panel**.

2. In the **Control Panel**, double-click **Network Connections** (**Network and Dial-up Connections** in Windows 2000/NT).

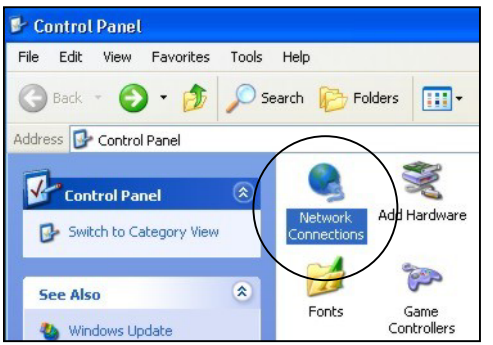


Figure 3 Control Panel

3. Right-click **Local Area Connection** and then **Properties**.

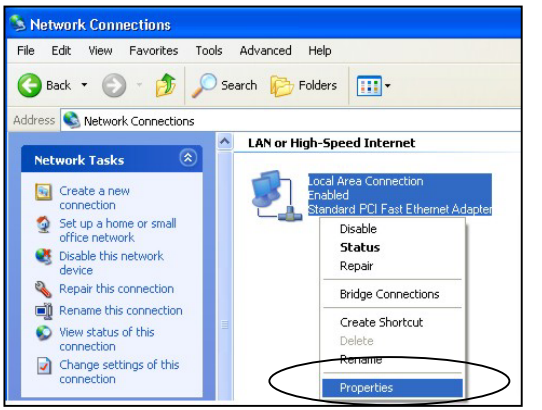


Figure 4 Network Connection

4. Select **Internet Protocol (TCP/IP)** and then click **Properties**.

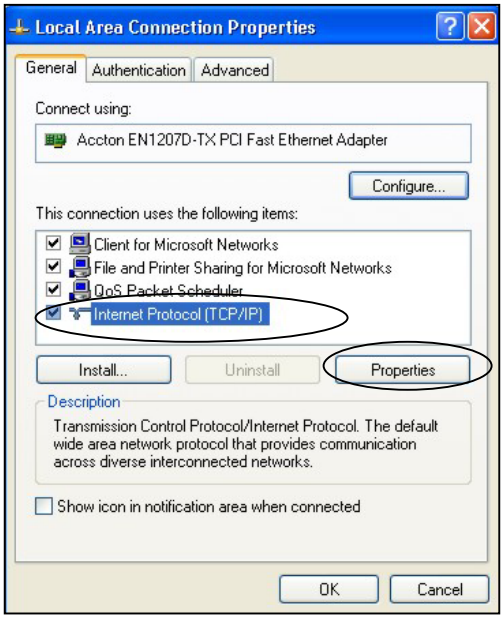


Figure 5 Local Area Connection Properties

5. Select **Use the following IP Address** and fill in an **IP address** (between 192.168.1.3 and 192.168.1.254).

6. Type 255.255.255.0 as the **Subnet mask**.

7. Click **Advanced**.[1]

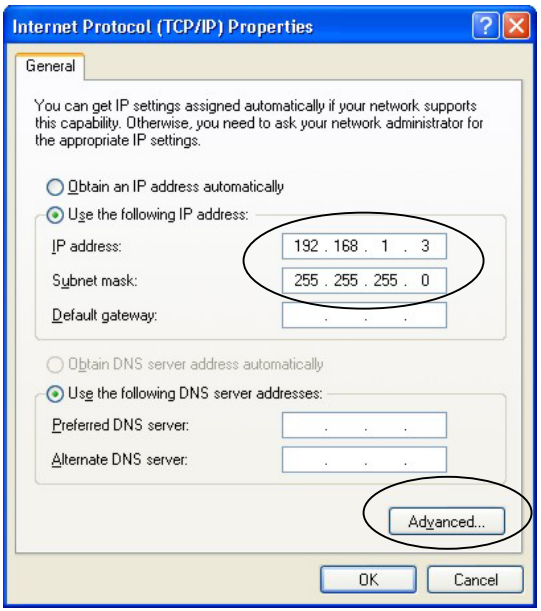


Figure 6 Internet Protocol Properties

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

[1] See the appendices for information on configuring DNS server addresses.

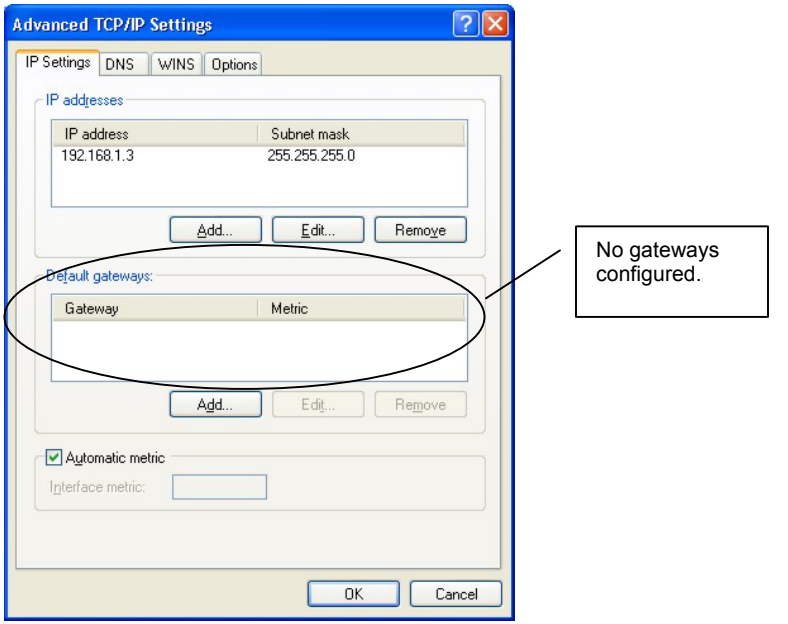


Figure 7 Advanced TCP/IP Settings

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

10. Click **Close** (**OK** in Windows 2000/NT) to close the **Local Area Connection Properties** window.

11. Close the **Network Connections** window (**Network and Dial-up Connections** in Windows 2000/NT).

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 192.168.1.3 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

1. Click Start, (All) Programs, Accessories and then Command Prompt.

2. In the **Command Prompt** window, type "ping 192.168.1.2" followed by a space and the IP address of the ZyAIR (192.168.1.2 is the default).

3. Press **ENTER**. The following screen displays.

```
C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time=10ms TTL=254
Reply from 192.168.1.2: bytes=32 time<10ms TTL=254
Reply from 192.168.1.2: bytes=32 time<10ms TTL=254
Reply from 192.168.1.2: bytes=32 time<10ms TTL=254

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  10ms, Average =  2ms

C:\>
```

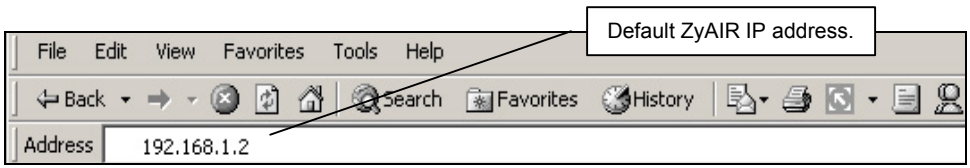
Your computer can now communicate with the ZyAIR via the **ETHERNET** port.

4 Configure the ZyAIR

This *Quick Start Guide* introduces the ZyAIR and shows you how to use the web configurator Wizard. 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 "192.168.1.2" 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.

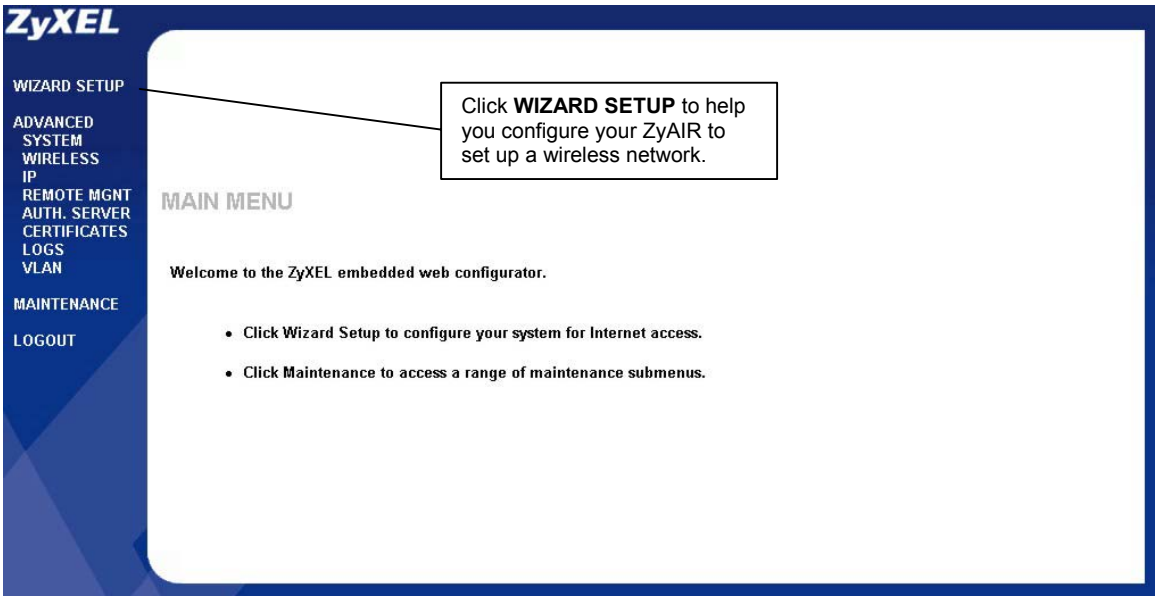
3. It is highly recommended you change the default password! Enter a new password, retype it to confirm and click **Apply**; alternatively click **Ignore** to proceed to the **Replace Factory Default Certificate** screen.

If you do not change the password, the following screen appears every time you login.

4. Click Apply in the **Replace Factory Default Certificate** screen to create a certificate using your ZyAIR's MAC address that will be specific to this device; alternatively click **Ignore** to proceed to the **MAIN MENU** screen if you do not want to change the certificate now.

If you do not replace the default certificate here or in the CERTIFICATES **screen, this screen displays every time you access the web configurator.**

5. You should now see the web configurator **MAIN MENU** screen.



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

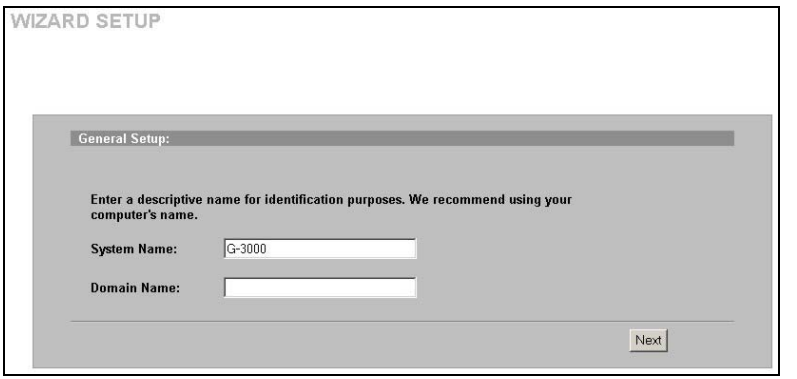
The following table shows common command buttons found on many web configurator screens.

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.

5 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. Refer to your *User's Guide* for more background information.

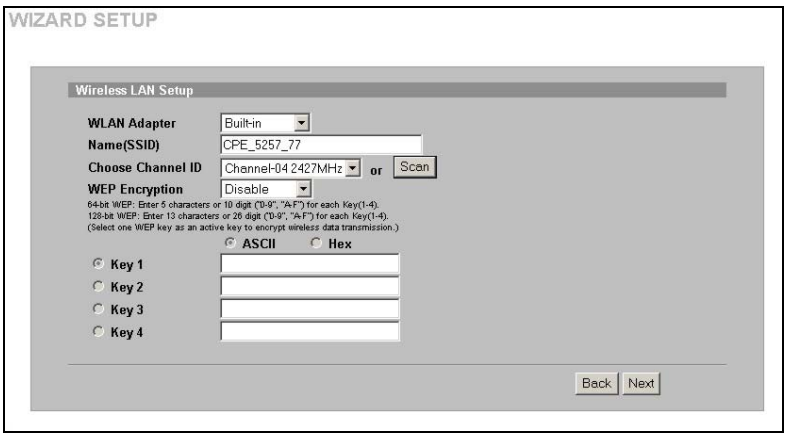
1. Click **WIZARD SETUP** in the main menu to display the first wizard screen shown next.



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

Enter a **Domain Name** if your ISP requires a domain name for authentication; otherwise leave it blank. Click **Next** to continue

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

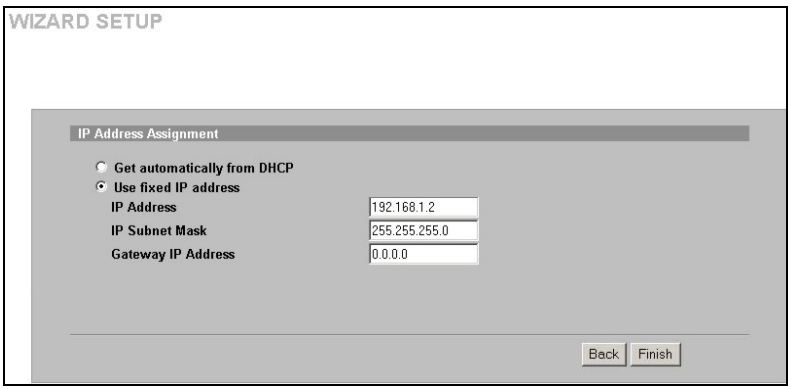


The **WLAN Adapter** field is only available when you have an external wireless card inserted in the ZyAIR. Select **Built-in** to use the internal WLAN card.
Name (SSID) is a unique name to identify the ZyAIR in the wireless LAN. Enter a descriptive name.
A channel is the range of radio frequencies used by IEEE 802.11b and 802.11g wireless devices.
Click **Scan** to have the ZyAIR automatically select a channel. The selected channel automatically appears in the **Channel ID** field.

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 Name (SSID), channel ID and WEP encryption key (if WEP is enabled) for wireless communication.

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

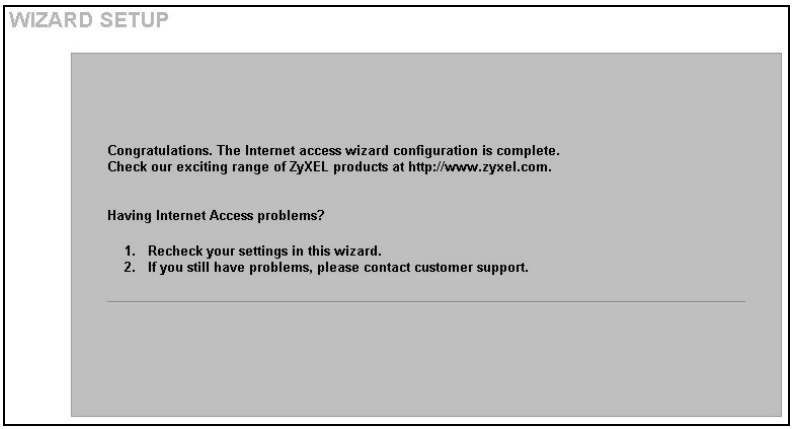


Select **Get automatically from DHCP** to have the ZyAIR obtain an IP address from a DHCP server.
You must know the IP address assigned to the ZyAIR (by the DHCP server) to access the ZyAIR again.

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.
Click **Finish**.

If you change the ZyAIR's IP address, you must use the *new* IP address if you want to access the web configurator again.

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.



This is the final wizard screen. You may return to the **Main Menu** and continue to configure your ZyAIR.

6 Hardware Installation

6.1 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 8 Attaching Antennas

6.2 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.

Follow the steps to position your ZyAIR on a level surface. You can use the diagrams below for instructions on how to do this.

1. Connect the screw (included) to the support holder.
2. Connect the support holder to the ZyAIR but do not tighten the screw.
3. Twist the support holder to the side.
4. Run the connection wires through the gap in the support holder

Figure 9 Support Holder Connections

5. Twist the support holder back to the vertical position and tighten the screw that connects the support holder to the ZyAIR.

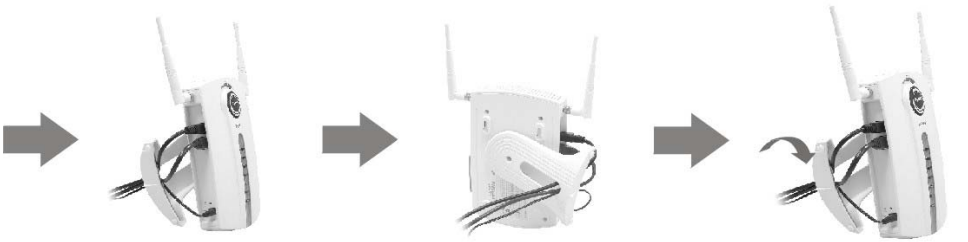


Figure 10 Support Holder Connection Pass Through

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. Connect two screws (not included) in the wall 80mm apart. You can use the diagram at the end of this guide to help you mark the screw holes correctly. Use screws with 6mm ~ 8mm (0.24" ~ 0.31") wide heads.

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. Adjust the cables.
4. Align the holes on the back of the ZyAIR with the screws on the wall. Hang the ZyAIR on the screws.

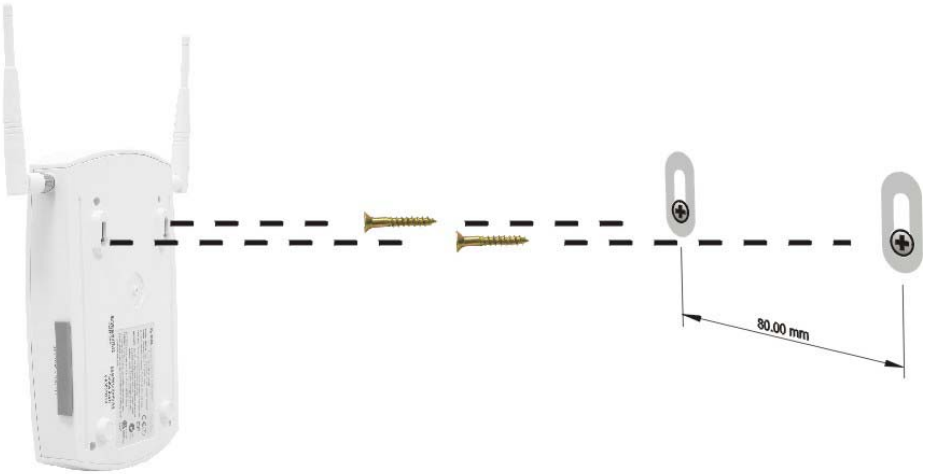


Figure 11 Wall Mounting the ZyAIR

7 Troubleshooting

Make sure you are using the correct power adaptor and the power adaptor is plugged into an appropriate power supply.

PROBLEM	CORRECTIVE ACTION
The **PWR** LED is off.	Make sure you are using the correct power adaptor and the power adaptor is plugged into an appropriate power supply. Unplug the power adaptor and plug it in again. If the error persists you should contact your vendor.
The **BDG/RPT** LED is off.	If the LED is off then maybe the ZyAIR is set up to communicate in **Access Point** mode and is not in **AP+Bridge** mode or **Bridge/Repeater** mode. Make sure that the access point and the associated computers are turned on and working properly. Move your computer closer to the access point or the peer computer(s) within the transmission range.
The **ZyAIR** LED is off.	Unplug the power adaptor and plug it in again. If the error persists, you may have a hardware problem. In this case, you should contact your vendor.
The **WLAN** LED is off.	Make sure that the access point and the associated computers are turned on and working properly. Move your computer closer to the access point or the peer computer(s) within the transmission range. There is too much radio interference (for example microwave or another access point) around your wireless network. Relocate or reduce the radio interference. Optimize the performance of the WLAN by ensuring that the distance between access points is not too far. In most buildings, most WLAN adapters operate within a range of 100 ~ 300 feet, depending on the thickness and structure of the walls. Radio waves can pass through walls and glass but not metal. If there is interference in transmitting through a wall, it may be that the wall has reinforcing metal in its structure. Install another access point to circumvent this problem. Floors usually have metal girders and metal reinforcing struts that interfere with WLAN transmission.
The **ETHN** LED is off.	Check the wired connection between the ZyAIR **ETHERNET** port and your computer or hub. Make sure your computer's network card is working properly.

PROBLEM	CORRECTIVE ACTION
The **SYS** LED is off.	Unplug the power adaptor and plug it in again. If the error persists, you may have a hardware problem. In this case, you should contact your vendor.
I cannot ping any computer on the wireless LAN.	If the **ETHN** LED is off, check the cables between the ZyAIR and your computer or hub. Verify that the IP address and the subnet mask of the ZyAIR and the computers are in the same range.