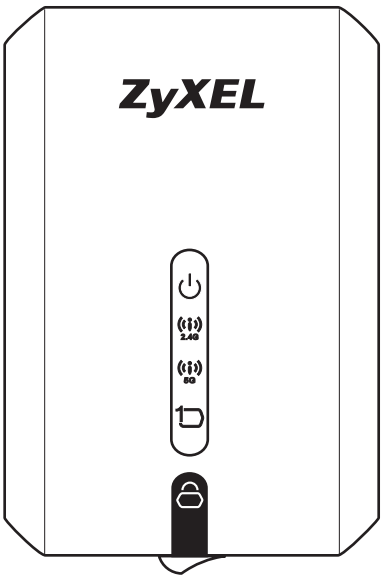
WRE6505

Wireless AC750 Range Extender

Version 1.00
Edition 4, 12/2015



User's Guide

Default Login Details	
Web Address	http://zyxelsetup
User Name	admin
Password	1234

IMPORTANT!

READ CAREFULLY BEFORE USE.

KEEP THIS GUIDE FOR FUTURE REFERENCE.

Related Documentation

- Quick Start Guide

  The Quick Start Guide shows how to connect the WRE6505 and access the Web Configurator wizards. (See the wizard real time help for information on configuring each screen.) It also contains a connection diagram and package contents list.

- More Information

  Go to **support.zyxel.com** to find other information on the WRE6505.

Contents Overview

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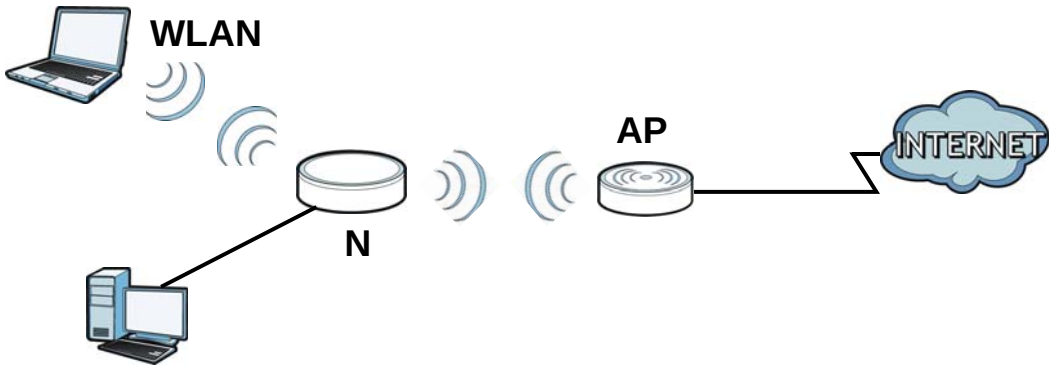
PART I
User's Guide

1 Introduction

1.1 Overview

The ZyXEL WRE6505 Wireless AC750 Range Extender allows you to easily extend existing IEEE 802.11 b/g/n/ac wireless networks fast and easy. The ZyXEL WRE6505 Wireless AC750 Range Extender allows you to easily extend existing IEEE 802.11 b/g/n wireless networks fast and easy. Simply plug the WRE6505 directly into a power outlet and the LED signal strength indicator allows you to determine the ideal installation location. The one-click Wi-Fi Protected Setup (WPS Button on page 11) provides frustration-free wireless client setup and completes the instant network access setup.

Figure 1 Universal Repeater



Your can create the following connections using the WRE6505:

- **LAN**. You can connect network devices via the Ethernet port of the WRE6505 so that they can communicate with each other and access the Internet.
- **WLAN**. Wireless clients can connect to the WRE6505 to access network resources.

Use a (supported) web browser to manage the WRE6505.

See Chapter 7 on page 38 for more information.

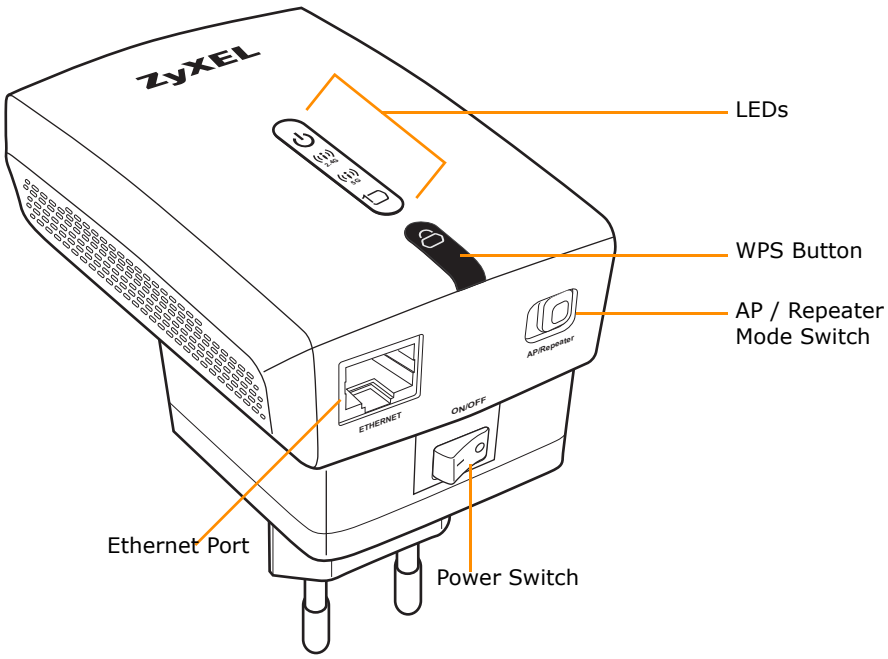
1.2 Securing the WRE6505

Do the following things regularly to make the WRE6505 more secure and to manage the WRE6505 more effectively.

- Change the password. Use a password that's not easy to guess and that consists of different types of characters, such as numbers and letters.
- Write down the password and put it in a safe place.
- Back up the configuration (and make sure you know how to restore it). Restoring an earlier working configuration may be useful if the device becomes unstable or even crashes. If you forget your password, you will have to reset the WRE6505 to its factory default settings. If you backed up an earlier configuration file, you would not have to totally re-configure the WRE6505. You could simply restore your last configuration.

1.3 Front Panel

Figure 2 Front Panel



The following table describes the LEDs and the WPS button.

Table 1 Front Panel LEDs and WPS Button

LED	STATUS	DESCRIPTION
Power ⏻	On (Green)	The WRE6505 is receiving power and functioning properly.
	Blinking (Green)	The WRE6505 is booting or resetting to factory defaults.
	Off	The WRE6505 is not receiving power.

Table 1 Front Panel LEDs and WPS Button (continued)

LED	STATUS	DESCRIPTION
Wi-Fi 2.4G 		The device uses two LEDs to generate the following three signal colors: • Red: signifies a signal strength under 50% • Orange: signifies a signal strength under 75% • Green: signifies a signal strength over 75%
	Repeater mode	
	On	WLAN signal detected.
	Blinking	The WRE6505 is sending/receiving data through the wireless LAN.
	Off	The wireless LAN is not ready or fault detected.
	AP mode	
	On	WLAN is powered on.
	Blinking	The WRE6505 is sending/receiving data through the wireless LAN.
	Off	WLAN is off.
Wi-Fi 5G 		The device uses two LEDs to generate the following three signal colors: • Red: signifies a signal strength under 50% • Orange: signifies a signal strength under 75% • Green: signifies a signal strength over 75%
	Repeater mode	
	On	WLAN signal detected.
	Blinking	The WRE6505 is sending/receiving data through the wireless LAN.
	Off	The wireless LAN is not ready or fault detected.
	AP mode	
	On	WLAN is powered on.
	Blinking	The WRE6505 is sending/receiving data through the wireless LAN.
	Off	WLAN is off.
LAN 	On (Green)	The WRE6505 has a successful 10/100MB LAN connection.
	Blinking (Green)	The WRE6505 is transmitting data.
	Off	Link is off.
WPS 	On (Blue)	This remains on for 5 minutes after a successful WPS connection has been established.
	Blinking (Blue)	The WRE6505 is waiting for another WPS device to connect.
	Off	There is no WPS connection established.

1.4 WPS Button

The WPS button can be used to begin Wi-Fi Protected Setup (WPS), reboot the WRE6505 while keeping it's configuration or reboot the WRE6505 to factory default configuration.

Table 2 WPS Button Functions

ACTION	RESULT
Push once or hold for less than 5 seconds	AP Mode: Press (less than five seconds) to connect to a client. See Section 1.4 on page 11. Repeater mode: Press (less than five seconds) to enable WPS. Press twice to connect to a client. See Section 1.4 on page 11.
AP Mode	
Hold for 5 to 10 seconds	The WRE6505 resets its configuration to factory defaults and reboots. See Section 5.3 on page 29.
Hold for more than 10 seconds	The WRE6505 keeps its configuration and reboots.
Repeater Mode	
Push twice	The WRE6505 begins connecting to a wireless client via WPS. See Section 1.4 on page 11.
Hold for 5 to 10 seconds	The WRE6505 resets its configuration to factory defaults and reboots. See Section 5.3 on page 29.
Hold for more than 10 seconds	The WRE6505 keeps its configuration and reboots.

1.4.1 Wi-Fi Protected Setup

Your WRE6505 supports Wi-Fi Protected Setup (WPS), which is an easy way to set up a secure wireless network. WPS is an industry standard specification, defined by the Wi-Fi Alliance.

WPS allows you to quickly set up a wireless network with strong security, without having to configure security settings manually. Each WPS connection works between two devices. Both devices must support WPS (check each device's documentation to make sure).

Depending on the devices you have, you can either press a button (recommended) on the device itself, or in its configuration utility or enter a PIN (a unique Personal Identification Number that allows one device to authenticate the other) in each of the two devices. When WPS is activated on a device, it has two minutes to find another device that also has WPS activated. Then, the two devices connect and set up a secure network by themselves.

For more information on using WPS, see Section 3.5 on page 18.

2

WRE6505 Modes

2.1 Overview

This chapter introduces the different modes available on your WRE6505.

- **Sys OP mode**. This is the operating mode of your WRE6505, or simply how the WRE6505 is being used in the network.

2.1.1 Device Modes

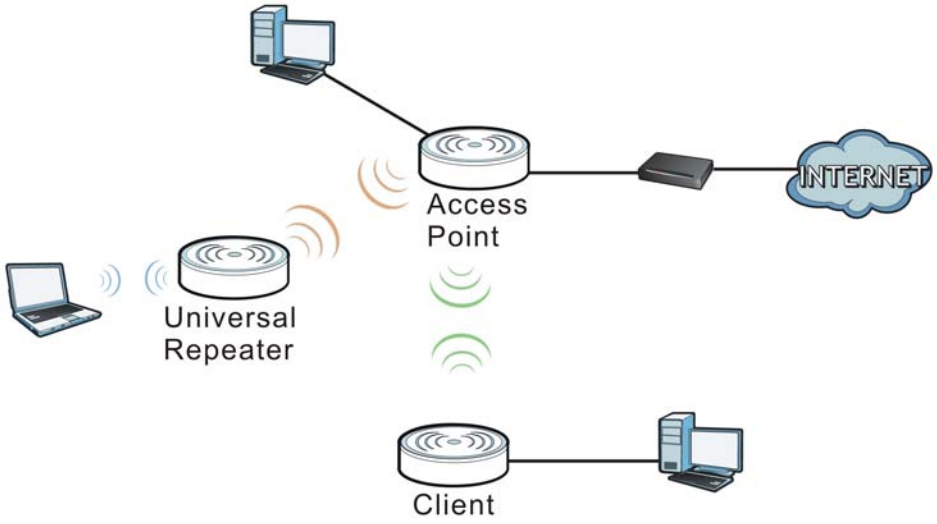
This refers to the operating mode of the WRE6505, which can act as a:

- **Universal Repeater:** In this mode, the WRE6505 can be an access point and a wireless client at the same time. Go to Section 3.4 on page 15 to view the **Status** screen in this mode. Use this mode if there is an existing wireless router or access point in your network and you also want to allow clients to connect to the WRE6505 wirelessly.
- **Access Point:** Use this mode if you want to extend your network by allowing network devices to connect to the WRE6505 wirelessly. Go to Section 4.4 on page 21 to view the **Status** screen in this mode.

  In this mode, you can also set the WRE6505 to work as an AP only, a wireless bridge to establish wireless links with other APs (WDS bridge), or an AP and bridge simultaneously (WDS repeater). See Section 4.2 on page 20 for more information.

The following figure is an illustration of the device configuration modes of the WRE6505.

Figure 3 Device Mode Example



Note: Choose your device mode carefully to avoid having to change it later.

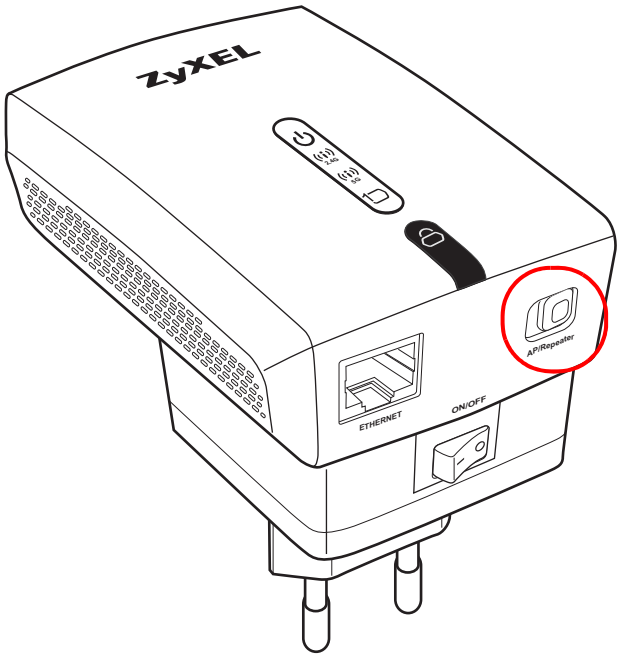
Under Repeater mode, the WRE6505 supports three WPS behaviors: Normal mode, Range boost mode, and Speed boost mode. These behaviors are only available in Repeater mode through the Maintenance screen.

2.1.1.1 Changing Operating Mode

Push the **AP / Repeater** mode switch on the WRE6505's bottom panel to the **AP** position to have the WRE6505 act as an access point. Push the switch to the **Repeater** position to have the WRE6505 work as a universal repeater.

The WRE6505 restarts automatically after you change operating modes.

Figure 4 Bottom Panel



3

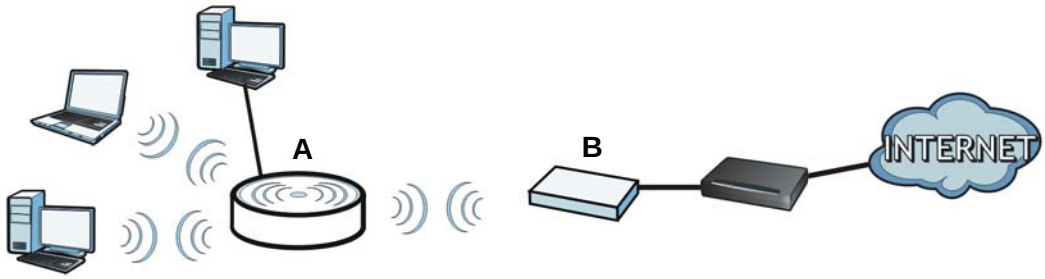
Universal Repeater Mode

3.1 Overview

In universal repeater mode, your WRE6505 can act as an access point and wireless client at the same time. The WRE6505 can connect to an existing network through another access point and also lets wireless clients connect to the network through it. This helps you expand wireless coverage when you have an access point or wireless router already in your network.

In the example below, the WRE6505 (**A**) is configured as a universal repeater. It has three clients that want to connect to the Internet. The WRE6505 wirelessly connects to the available access point (**B**).

Figure 5 Universal Repeater Mode



After the WRE6505 and the access point connect, the WRE6505 acquires its IP address from the access point. The clients of the WRE6505 can now surf the Internet.

3.2 What You Can Do

- Use the **Status** screen (Section 7.1 on page 38) to view read-only information about your WRE6505.
- Use the **LAN** screen (Chapter 10 on page 63) to set the IP address for your WRE6505.
- Use the **Wireless LAN > WPS** screen (Section 3.5 on page 18) to configure WPS on the WRE6505 to associate to another access point.
- Use the **Network > Wireless LAN (2.4G/5G) > Security** screen (Section 9.5 on page 56) to configure the wireless security between the WRE6505 and another access point.
- Use other **Wireless LAN** screens (Section 9.4 on page 55) to configure the wireless settings and wireless security between the wireless clients and the WRE6505.

3.3 What You Need to Know

With the exception of the **System Mode** other configuration screens in Universal Repeater mode are similar to the ones in Access Point Mode. See Chapter 2 on page 12 of this User's Guide.

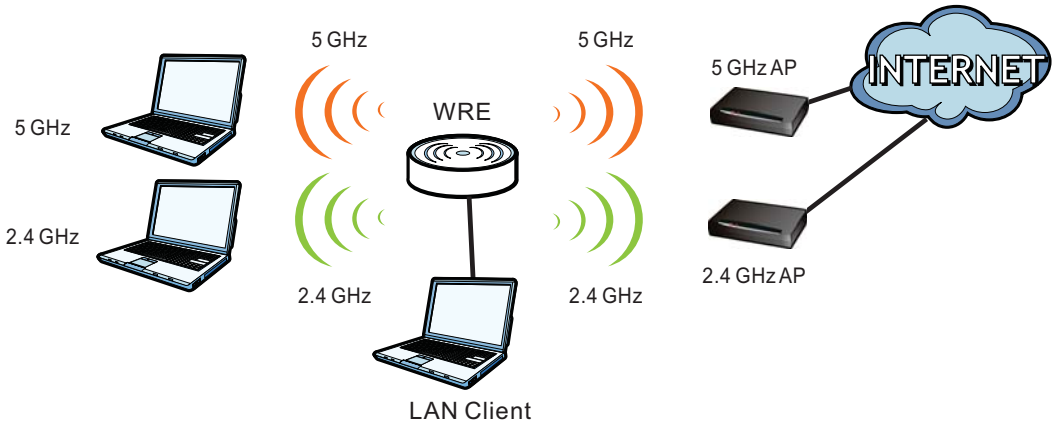
3.3.1 Setting your WRE6505 to Universal Repeater Mode

1. To use your WRE6505 as a universal repeater, see Section 2.1.1.1 on page 13.
2. Connect your computer to the LAN port of the WRE6505.
3. Open a web browser such as Internet Explorer and type http://zyxelsetup as the web address in your web browser.
4. Enter "1234" (default) as the password and click **Login**.
5. Type a new password and retype it to confirm, then click **Apply**. Otherwise, click **Ignore**.

Note: You have to log in to the Web Configurator again when you change modes. As soon as you do, your WRE6505 is already in Universal Repeater mode.

Note: If a client is connected to the WRE6505 through the wired Ethernet connection, the client can only access the 2.4 GHz Wi-Fi. In the following figure, the LAN Client is only able to communicate with devices in the 2.4 GHz wireless network.

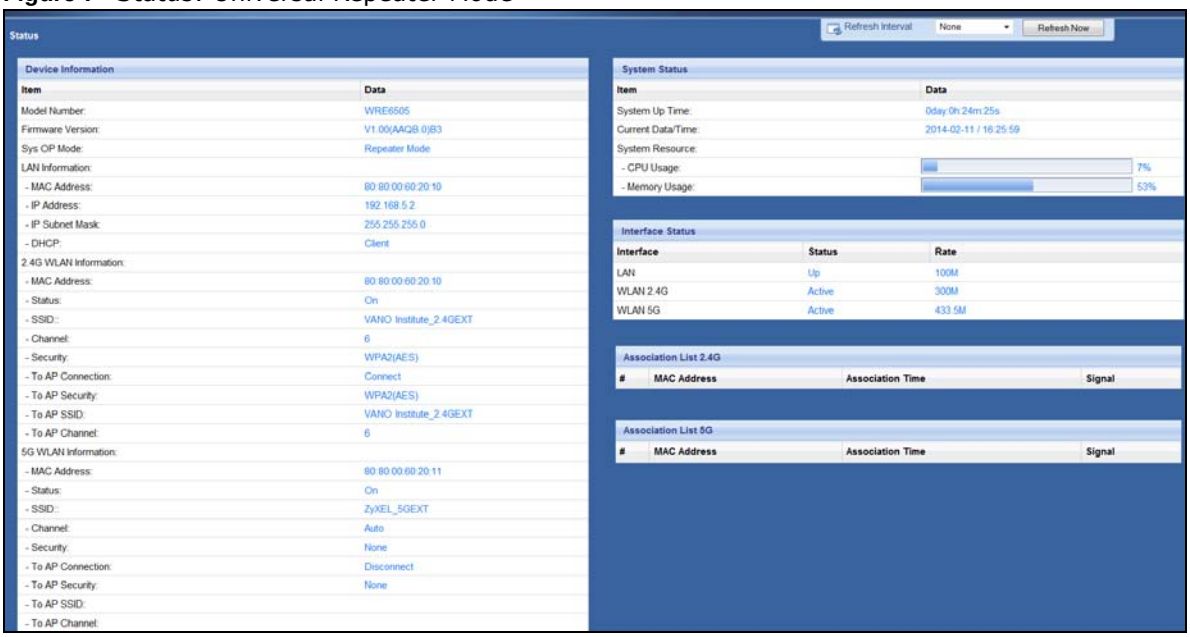
Figure 6 Repeater Mode Overview



3.4 Universal Repeater Mode Status Screen

Click  to open the **Status** screen.

Figure 7 Status: Universal Repeater Mode



The following table describes the labels shown in the **Status** screen.

Table 3 Status Screen: Universal Repeater Mode

LABEL	DESCRIPTION
Logout	Click this at any time to exit the Web Configurator.
Device Information	
Model Number	This is the WRE6505's model name.
Firmware Version	This is the firmware version and the date created.
Sys OP Mode	This is the device mode (Section 2.1.1 on page 12) to which the WRE6505 is set - **Universal Repeater Mode**.
LAN Information	
MAC Address	This shows the LAN Ethernet adapter MAC Address of your device.
IP Address	This shows the LAN port's IP address.
IP Subnet Mask	This shows the LAN port's subnet mask.
DHCP	This shows the LAN port's DHCP role - **Client** or **None**.
2.4G WLAN Information	
MAC Address	This shows the wireless adapter MAC Address of your WRE6505.
Status	This shows the current status of the Wireless LAN - **ON**.
SSID	This shows a descriptive name used to identify the WRE6505 in the wireless LAN.
Channel	This shows the channel number which you select manually or the WRE6505 automatically scans and selects.
Security	This shows the level of wireless security the WRE6505 is using.
To AP Connection	This displays whether the WRE6505 is connected to an AP or not.
To AP Security	This displays the type of established security protocol with the AP.
To AP SSID	This displays the SSID of the connected AP.
To AP Channel	This displays the current channel in use with the connected AP.

Table 3 Status Screen: Universal Repeater Mode

LABEL	DESCRIPTION
5G WLAN Information	
MAC Address	This shows the wireless adapter MAC Address of your WRE6505.
Status	This shows the current status of the Wireless LAN - **ON**.
SSID	This shows a descriptive name used to identify the WRE6505 in the wireless LAN.
Channel	This shows the channel number which you select manually or the WRE6505 automatically scans and selects.
Security	This shows the level of wireless security the WRE6505 is using.
To AP Connection	This displays whether the WRE6505 is connected to an AP or not.
To AP Security	This displays the type of established security protocol with the WRE6505.
To AP SSID	This displays the SSID of the connected AP.
To AP Channel	This displays the current channel in use with the connected AP.
System Status	
Item	This column shows the type of data the WRE6505 is recording.
Data	This column shows the actual data recorded by the WRE6505.
System Up Time	This is the total time the WRE6505 has been on.
Current Date/Time	This field displays your WRE6505's present date and time.
System Resource	
CPU Usage	This displays what percentage of the WRE6505's processing ability is currently used. When this percentage is close to 100%, the WRE6505 is running at full load, and the throughput is not going to improve anymore. If you want some applications to have more throughput, you should turn off other applications (for example, using bandwidth management.
Memory Usage	This shows what percentage of the heap memory the WRE6505 is using.
Interface Status	
Interface	This displays the WRE6505 port types. The port types are: **LAN** and **WLAN**.
Status	For the LAN port, this field displays **Down** (line is down) or **Up** (line is up or connected). For the WLAN, it displays **Up** when the WLAN is enabled or **Down** when the WLAN is disabled.
Rate	For the LAN ports, this displays the port speed and duplex setting or **NA** when the line is disconnected. For the WLAN, it displays the maximum transmission rate when the WLAN is enabled and **NA** when the WLAN is disabled or **Auto**.
Association List 2.4G	
#	This is the index number of an associated wireless station.
MAC Address	This field displays the MAC address of an associated wireless station.
Association Time	This field displays the time a wireless station first associated with the WRE6505's WLAN network.
Signal	This is the signal strength number of the associated client.
Association List 5G	
#	This is the index number of an associated wireless station.
MAC Address	This field displays the MAC address of an associated wireless station.
Association Time	This field displays the time a wireless station first associated with the WRE6505's WLAN network.
Signal	This is the signal strength number of the associated client.

3.5 WPS Screen

Use this screen to connect to another AP. Go to **Configuration > Wireless LAN (2.4G/5G) > WPS** to open the following screen.

Note: Wireless clients cannot use WPS to set up a wireless network with the WRE6505 in universal repeater mode.

Figure 8 Universal Repeater: Configuration > Wireless LAN (2.4G/5G) > WPS

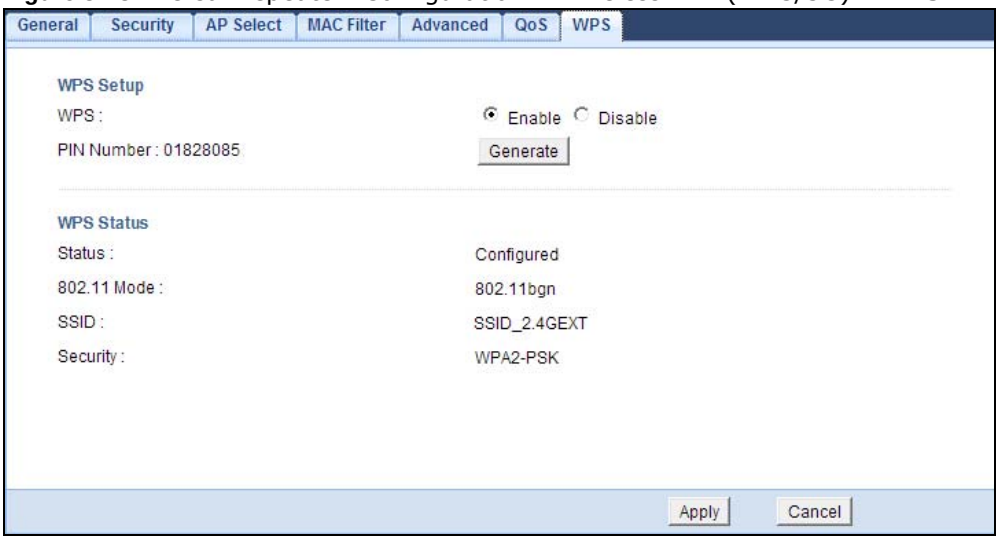
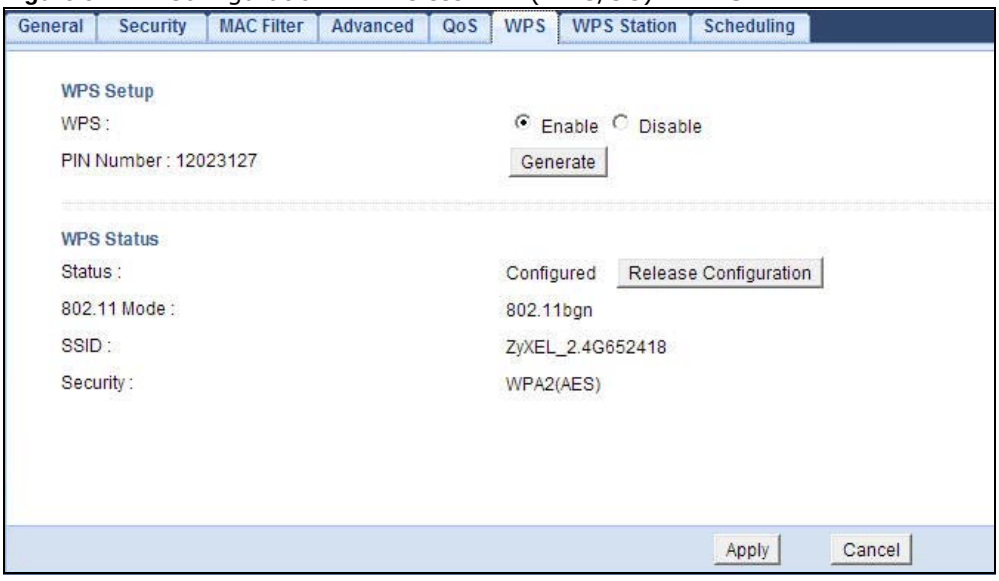


Figure 9 AP: Configuration > Wireless LAN (2.4G/5G) > WPS



The following table describes the labels in this screen.

Table 4 Universal Repeater: Configuration> Wireless LAN (2.4G / 5G) > WPS

LABEL	DESCRIPTION
WPS Setup	
WPS	Select this to enable the WPS feature.

Table 4 Universal Repeater: Configuration> Wireless LAN (2.4G / 5G) > WPS (continued)

LABEL	DESCRIPTION
PIN Number	This displays a PIN number last time system generated. Click **Generate** to generate a new PIN number.
Generate	Click **Generate** to have the WRE6505 generate a PIN number.
WPS Status	
Status	This displays **Configured** when the WRE6505 has connected to a wireless network using WPS or when **Enable WPS** is selected and wireless or wireless security settings have been changed. The current wireless and wireless security settings also appear in the screen. This displays **Unconfigured** if WPS is disabled and there are no wireless or wireless security changes on the WRE6505 or you click **Release Configuration** to remove the configured wireless and wireless security settings.
Release Configuration (AP Mode Only)	This button is only available in AP mode when the WPS status displays **Configured**. Click this button to remove all configured wireless and wireless security settings for WPS connections on the WRE6505.
802.11 Mode	Displays the wireless protocol configured for the WPS connection.
SSID	Displays the network name for the WPS connection.
Security	Displays the security protocol selected for the WPS connection.
Apply	Click **Apply** to save your changes back to the WRE6505.
Cancel	Click **Cancel** to return to the previous menu without saving.

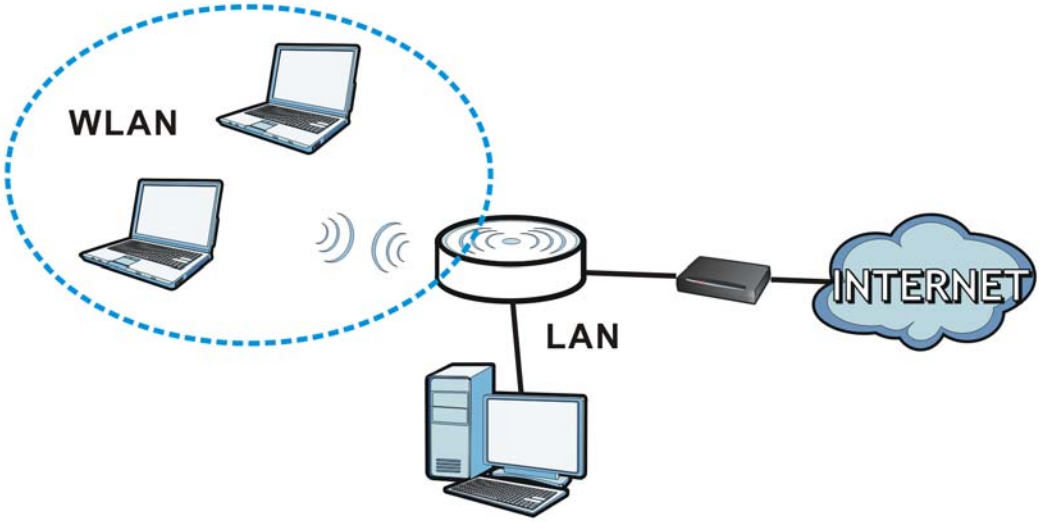
4

Access Point Mode

4.1 Overview

In Access Point (AP) mode your WRE6505 bridges a wired network (LAN) and wireless LAN (WLAN) in the same subnet. See the figure below for an example.

Figure 10 Wireless Internet Access in Access Point Mode



Note: See Chapter 8 on page 44 for an example of setting up a wireless network in Access Point mode.

4.2 What You Can Do

- Use the **Status** screen (Section 4.4 on page 21) to view read-only information about your WRE6505.
- Use the **LAN** screen (Chapter 10 on page 63) to set the IP address for your WRE6505 acting as an access point.
- Use the **Wireless LAN > WPS** screen (Section 9.9 on page 59) to configure WPS on the WRE6505 to associate to another access point.

4.3 What You Need to Know

With the exception of the **System Mode** other configuration screens in Access Point mode are similar to the ones in Universal Repeater mode. See Chapter 2 on page 12 of this User's Guide.

4.3.1 Setting your WRE6505 to AP Mode

By default, AP mode in the WRE6505 is not configured with a static IP address. To setup your WRE6505 in AP mode for the first time, the directly-connected router must have the DHCP server function enabled.

1. To use your WRE6505 as an access point, set the mode switch to AP mode. See Section 2.1.1.1 on page 13.
2. Connect one end of an Ethernet cable to the Ethernet port on the WRE6505 and the other end to your router.
3. Connect your computer to your network, make sure both the WRE6505 and computer are under the same subnet.
4. Open a web browser window and type "http://zyxelsetup" in the web address.
   The login screen displays.
5. Enter "1234" (default) as the password and click **Login**.
6. Type a new password and retype it to confirm, then click **Apply**. Otherwise, click **Ignore**.

   The WRE6505 Web Configurator displays, which allows you to configure the AP mode.

4.3.2 Configuring your WLAN, LAN and Maintenance Settings

- See Chapter 9 on page 53 and Chapter 10 on page 63 for information on configuring your wireless network and LAN settings.
- See Chapter 11 on page 64 for information on configuring your Maintenance settings.

4.4 AP Mode Status Screen

Click  to open the **Status** screen.

Figure 11 Status Screen: Access Point Mode

The following table describes the icons shown in the **Status** screen.

Table 5 Status Screen Icon Key: Access Point Mode

ICON	DESCRIPTION
	Click this icon to view copyright and a link for related product information.
	Click this icon to open the wizard. See Chapter 6 on page 30.
	Select a number of seconds or **None** from the drop-down list box to refresh all screen statistics automatically at the end of every time interval or to not refresh the screen statistics.
	Click this button to refresh the status screen statistics.
	Click this icon to see the **Status** page. The information in this screen depends on the device mode you select.
	Click this icon to see the **Configuration** navigation menu.
	Click this icon to see the **Maintenance** navigation menu.

The following table describes the labels shown in the **Status** screen.

Table 6 Status Screen: Access Point Mode

LABEL	DESCRIPTION
Logout	Click this at any time to exit the Web Configurator.
Device Information	
Model Number	This is the WRE6505's model name.
Firmware Version	This is the firmware version and the date created.
Sys OP Mode	This is the device mode (Section 2.1.1 on page 12) to which the WRE6505 is set - **Access Point Mode**.
LAN Information	
MAC Address	This shows the LAN Ethernet adapter MAC Address of your device.
IP Address	This shows the LAN port's IP address.

Table 6 Status Screen: Access Point Mode (continued)

LABEL	DESCRIPTION
IP Subnet Mask	This shows the LAN port's subnet mask.
DHCP	This shows the LAN port's DHCP role - **Client** or **None**.
2.4G WLAN Information	
MAC Address	This shows the wireless adapter MAC Address of your device.
Status	This shows the current status of the Wireless LAN - **ON**.
SSID	This shows a descriptive name used to identify the WRE6505 in the wireless LAN.
Channel	This shows the channel number which you select manually or the WRE6505 automatically scans and selects.
Security	This shows the level of wireless security the WRE6505 is using.
5G WLAN Information	
MAC Address	This shows the wireless adapter MAC Address of your device.
Status	This shows the current status of the Wireless LAN - **ON**.
SSID	This shows a descriptive name used to identify the WRE6505 in the wireless LAN.
Channel	This shows the channel number which you select manually or the WRE6505 automatically scans and selects.
Security	This shows the level of wireless security the WRE6505 is using.
System Status	
Item	This column shows the type of data the WRE6505 is recording.
Data	This column shows the actual data recorded by the WRE6505.
System Up Time	This is the total time the WRE6505 has been on.
Current Date/Time	This field displays your WRE6505's present date and time.
System Resource	
CPU Usage	This displays what percentage of the WRE6505's processing ability is currently used. When this percentage is close to 100%, the WRE6505 is running at full load, and the throughput is not going to improve anymore. If you want some applications to have more throughput, you should turn off other applications (for example, using bandwidth management.
Memory Usage	This shows what percentage of the heap memory the WRE6505 is using.
Interface Status	
Interface	This displays the WRE6505 port types. The port types are: **LAN** and **WLAN**.
Status	For the LAN port, this field displays **Down** (line is down) or **Up** (line is up or connected). For the WLAN, it displays **Up** when the WLAN is enabled or **Down** when the WLAN is disabled.
Rate	For the LAN ports, this displays the port speed and duplex setting or **NA** when the line is disconnected. For the WLAN, it displays the maximum transmission rate when the WLAN is enabled and **NA** when the WLAN is disabled or **Auto**.
Association List 2.4G	
#	This is the index number of an associated wireless client.
MAC Address	This field displays the MAC address of an associated wireless client.
Association Time	This field displays the time a wireless station first associated with the WRE6505's WLAN network.
Signal	This is the signal strength number of the associated client.

Table 6 Status Screen: Access Point Mode (continued)

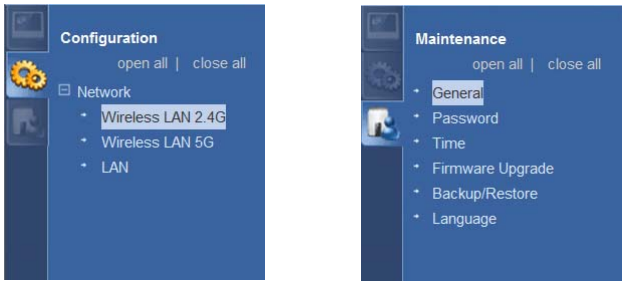
LABEL	DESCRIPTION
Association List 5G	
#	This is the index number of an associated wireless client.
MAC Address	This field displays the MAC address of an associated wireless client.
Association Time	This field displays the time a wireless station first associated with the WRE6505's WLAN network.
Signal	This is the signal strength number of the associated client.

4.4.1 Navigation Panel

Use the menu in the navigation panel to configure WRE6505 features in Access Point mode.

The following screen and table show the features you can configure in Access Point mode.

Figure 12 Menu: Access Point Mode



The following table describes the sub-menus.

Table 7 Navigation Panel: Access Point Mode

LINK	TAB	FUNCTION
Status		This screen shows the WRE6505's general device, system and interface status information. Use this screen to access the wizard, and summary statistics tables.
CONFIGURATION		
Network		
Wireless LAN 2.4G	General	Use this screen to configure general wireless LAN settings.
	Security	Use this screen to configure wireless security settings.
	MAC Filter	Use the MAC filter screen to configure the WRE6505 to block access to devices or block the devices from accessing the WRE6505.
	Advanced	This screen allows you to configure advanced wireless settings.
	WPS	Use this screen to configure WPS.
	WPS Station	Use this screen to add a wireless station using WPS. Only available in AP mode.
	Scheduling	Use this screen to schedule the times the Wireless LAN is enabled.

Table 7 Navigation Panel: Access Point Mode

LINK	TAB	FUNCTION
Wireless LAN 5G	General	Use this screen to configure general wireless LAN settings.
	Security	Use this screen to configure wireless security settings.
	MAC Filter	Use the MAC filter screen to configure the WRE6505 to block access to devices or block the devices from accessing the WRE6505.
	Advanced	This screen allows you to configure advanced wireless settings.
	WPS	Use this screen to configure WPS.
	WPS Station	Use this screen to add a wireless station using WPS. Only available in AP mode.
	Scheduling	Use this screen to schedule the times the Wireless LAN is enabled.
LAN	IP	Use this screen to configure LAN IP address and subnet mask.
MAINTENANCE		
General		Use this screen to view and change administrative settings such as system and domain names.
Password	Password Setup	Use this screen to change the password of your WRE6505.
Time	Time Setting	Use this screen to change your WRE6505's time and date.
Firmware Upgrade		Use this screen to upload firmware to your WRE6505.
Backup/ Restore		Use this screen to backup and restore the configuration or reset your WRE6505 to the factory defaults.
Language		Use this screen to select the language to display in the interface.

5

The Web Configurator

5.1 Overview

This chapter describes how to access the WRE6505 Web Configurator and provides an overview of its screens.

The Web Configurator is an HTML-based management interface that allows easy setup and management of the WRE6505 via Internet browser. Use Internet Explorer 6.0 and later versions, Mozilla Firefox 3 and later versions, or Safari 2.0 and later versions. The recommended screen resolution is 1024 by 768 pixels.

In order to use the Web Configurator you need to allow:

- Web browser pop-up windows from your device. Web pop-up blocking is enabled by default in Windows XP SP (Service Pack) 2.
- JavaScript (enabled by default).
- Java permissions (enabled by default).

Refer to Chapter 12 Troubleshooting to see how to make sure these functions are allowed in Internet Explorer.

5.2 Accessing the Web Configurator

1. Make sure your WRE6505 hardware is properly connected and prepare your computer or computer network to connect to the WRE6505 (refer to the Quick Start Guide).
2. Launch your web browser.
3. Open a web browser such as Internet Explorer and type “http://zyxelsetup” as the web address in your web browser.

5.2.1 Login Screen

The Web Configurator initially displays the following login screen.

Figure 13 Login Screen

The following table describes the labels in this screen.

Table 8 Login screen

LABEL	DESCRIPTION
Password	Type "1234" (default) as the password.
Language	Select the language you want to use to configure the Web Configurator. Click **Login**.
	This shows the current weather, either in celsius or fahrenheit, of the city you specify in Section 5.2.2.1 on page 28.
	This shows the time (hh:mm) and date (yyyy:mm:dd) of the timezone you select in Section 5.2.2.2 on page 28. The time is in 24-hour format, for example 15:00 is 3:00 PM.

5.2.2 Password Screen

You should see a screen asking you to change your password (highly recommended) as shown next.

Figure 14 Change Password Screen

The following table describes the labels in this screen.

Table 9 Change Password Screen

LABEL	DESCRIPTION
New Password	Type a new password.
Retype to Confirm	Retype the password for confirmation.
Apply	Click **Apply** to save your changes back to the WRE6505.
Ignore	Click **Ignore** if you do not want to change the password this time.

5.2.2.1 Weather Edit

You can change the temperature unit and select the location for which you want to know the weather.

Click the icon to change the weather display.

Figure 15 Change Weather

The following table describes the labels in this screen.

Table 10 Change Weather

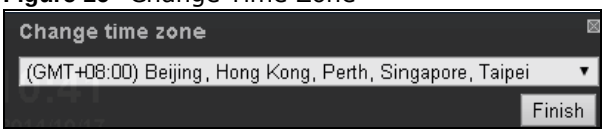
LABEL	DESCRIPTION
Change Unit	Choose which temperature unit you want the WRE6505 to display.
Change Location	Select the location for which you want to know the weather. If the city you want is not listed, choose one that is closest to it.
Finish	Click this to apply the settings and refresh the date and time display.

5.2.2.2 Time/Date Edit

One timezone can cover more than one country. You can choose a particular country in which the WRE6505 is located and have the WRE6505 display and use the current time and date for its logs.

Click the icon to change the time and date display.

Figure 16 Change Time Zone



The following table describes the labels in this screen.

Table 11 Change Time Zone

LABEL	DESCRIPTION
Change time zone	Select the specific country whose current time and date you want the WRE6505 to display.
Finish	Click this to apply the settings and refresh the weather display.

5.3 Resetting the WRE6505

If you forget your password or IP address, or you cannot access the Web Configurator, press the **WPS** button for more than 5 seconds (no longer than 10 seconds) to reload the factory-default configuration file. This means that you will lose all configurations that you had previously saved, the password will be reset to **1234**.

1. Make sure the power LED is on.
2. Press and hold the **WPS** button. After 5 (no longer than 10) seconds, the power LED begins flashing.
3. Release the **WPS** button. The WRE6505 reloads factory defaults and begins to reboot.

6

Connection Wizard

6.1 Overview

This chapter provides information on the wizard setup screens in the Web Configurator.

The Web Configurator's wizard setup helps you configure your device.

After you access the WRE6505 Web Configurator, click  to start wizard setup.

6.2 Using the Web Configurator Wizard

The Web Configurator for the WRE6505 is available in Repeater and AP mode. The following section reflects the web configuration process while in Repeater Mode.

6.2.1 Extending the Network

The first step in setting up your network is to select the type of network to extend.

Click the **2.4 Ghz Wireless** or **5 Ghz Wireless** button to continue.

Figure 17 Wizard Step 1: Selecting Network

The wizard scans for available networks and displays the **AP Select** menu.

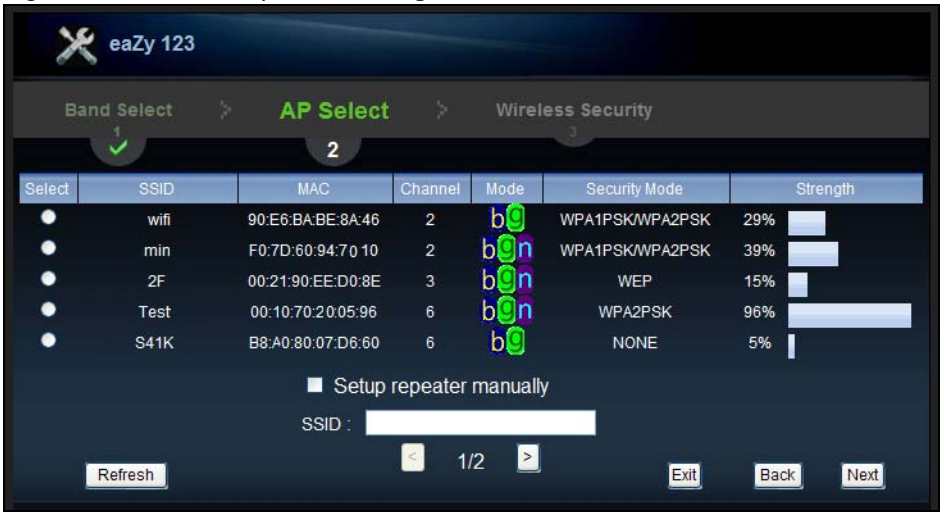
6.2.2 Configuring the WRE6505 for Connection to an AP

In this step of the configuration wizard, you must configure the WRE6505 with the security parameters of the AP you want to connect to. These parameters can be configured by selecting those automatically detected by the WRE6505, or by configuring them manually. Manual configuration is useful when the AP is hidden.

6.2.2.1 Selecting Automatically Detected AP Parameters

1 Select an available AP, see the following screen.

Figure 18 Wizard Step 2: Selecting an AP



The following table describes the labels in this screen.

Table 12 Network > Wireless LAN > AP Select

LABEL	DESCRIPTION
Select	Use the radio button to select the wireless device to which you want to connect.
SSID	This displays the Service Set IDentity of the wireless device. The SSID is a unique name that identifies a wireless network. All devices in a wireless network must use the same SSID.
MAC	This displays the MAC address of the wireless device.
Channel	This displays the channel number used by this wireless device.
Mode	This displays which IEEE 802.11b/g/n wireless networking standards the wireless device supports.
Security Mode	This displays the type of security configured on the wireless device. When **no** is shown, no security is configured and you can connect to it without a password.
Strength	This displays the strength of the wireless signal. The signal strength mainly depends on the antenna output power and the distance between your WRE6505 and this device.
Setup repeater manually	Select this to set up the AP manually. You will need to know the wireless router's SSID. This is the only option that allows you to manually set the channel.
SSID	If **Setup repeater manually** is selected, use this field to type the SSID of the AP. This is useful when the AP's SSID is hidden.
Refresh	Click this to search for available wireless devices within transmission range and update this table.
Back	Click this to go back to the previous step in the wizard.

Table 12 Network > Wireless LAN > AP Select (continued)

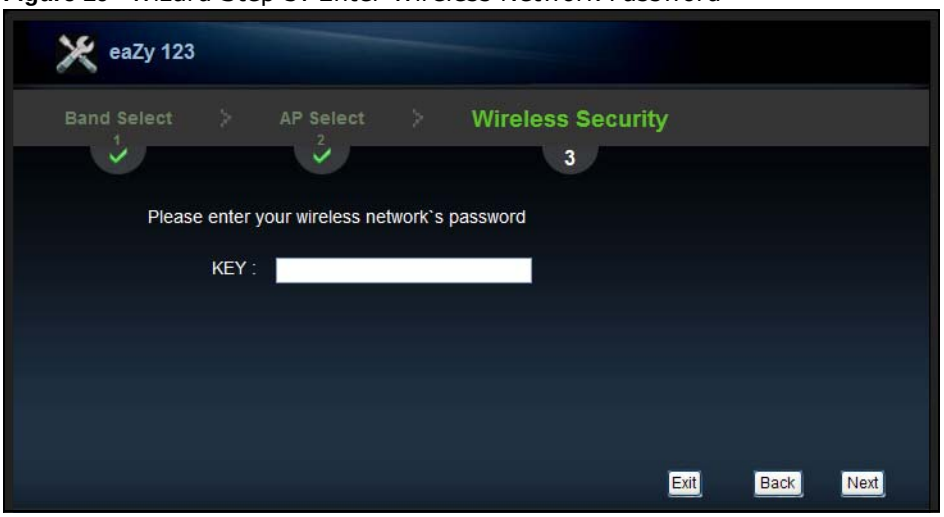
LABEL	DESCRIPTION
Next	Click this to start the next step in the AP setup process.
Exit	Click this to exit the wizard.
Previous	Click this to see the previous page of APs.
Next	Click this to see the next page of APs.

Note: The wireless stations and WRE6505 must use the same SSID, channel ID, WPA-PSK (if WPA-PSK is enabled) or WPA2-PSK (if WPA2-PSK is enabled) for wireless communication.

2 Click **Next** to continue.

3 Type the selected network's wireless password (key). The number of characters accepted by the KEY field is shown in the following table.

Figure 19 Wizard Step 3: Enter Wireless Network Password



The following table describes the labels in this screen.

Table 13 Maximum Key Lengths

ENCRYPTION	KEY FORMAT	KEY LENGTH
64-bit WEP	ASCII	5 characters
	Hex	10 characters
128-bit WEP	ASCII	13 characters
	Hex	26 characters
WPA pre-shared key	Passphrase	8-63 characters
	Hex	64 characters

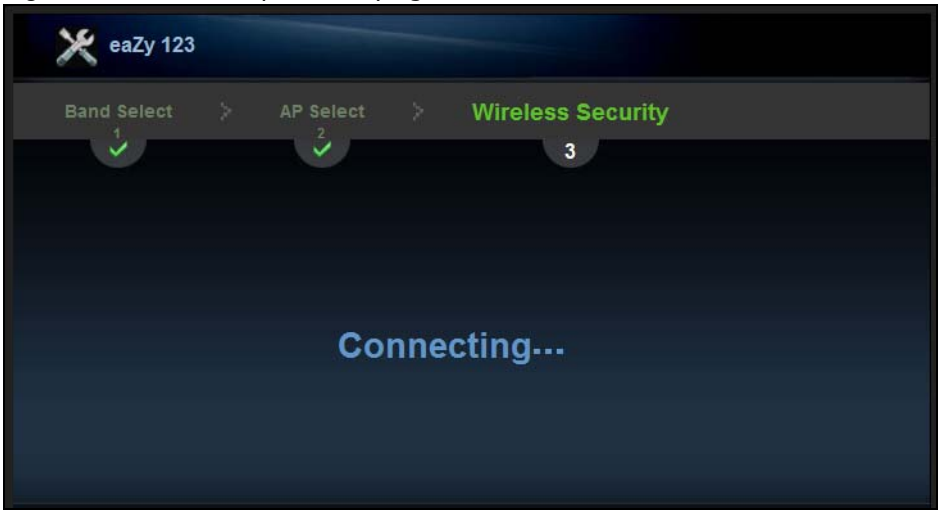
4 Click **Next** to continue and verify the password.

6.2.2.2 Completing the Connection Wizard

Complete the installation process by reviewing the wireless network settings and applying the configuration.

After entering the wireless network's password, the verification screen displays as follows.

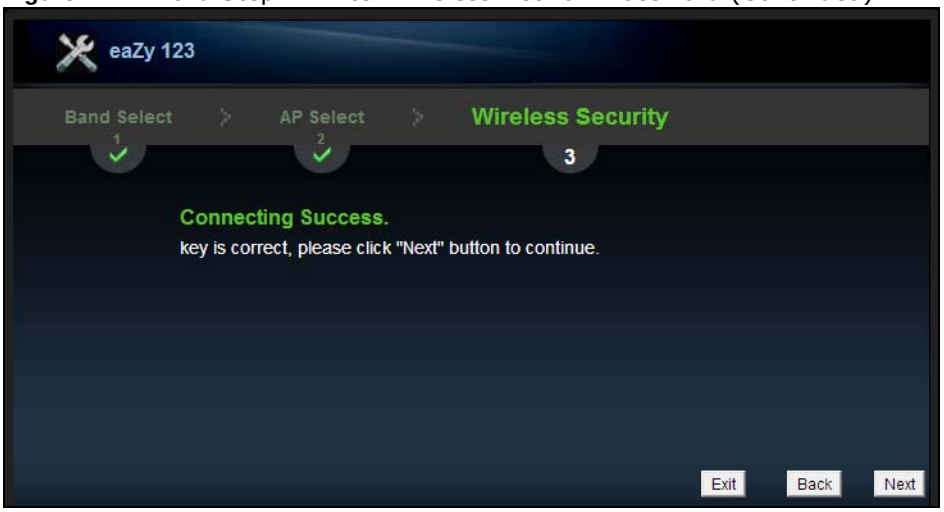
Figure 20 Wizard Step 3: Verifying the Password



The following screen appears if the key verifies successfully.

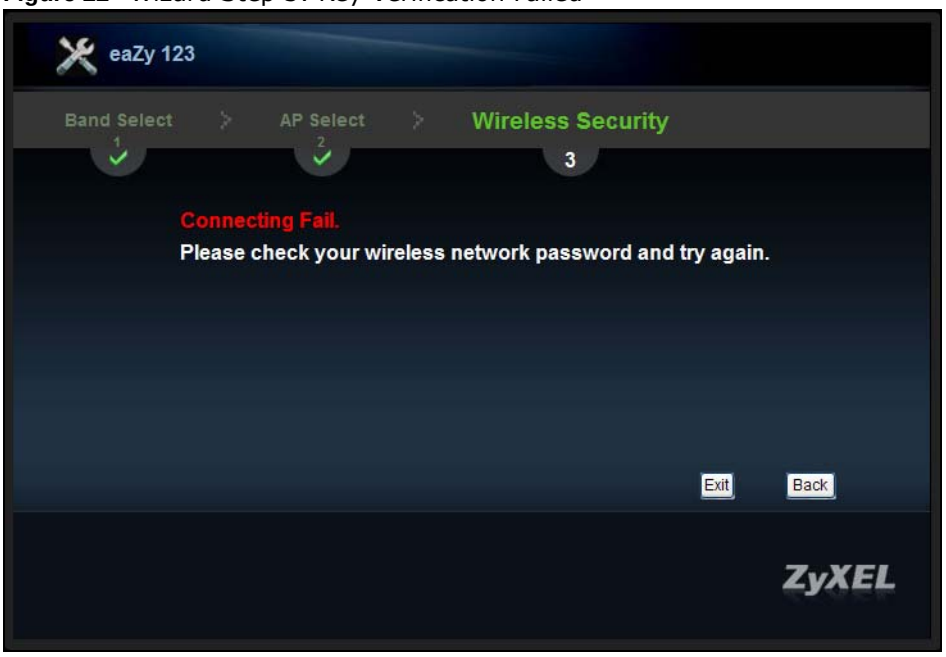
1 Click **Next** to continue. The Wireless Security overview page displays.

Figure 21 Wizard Step 4: Enter Wireless Network Password (Continued)



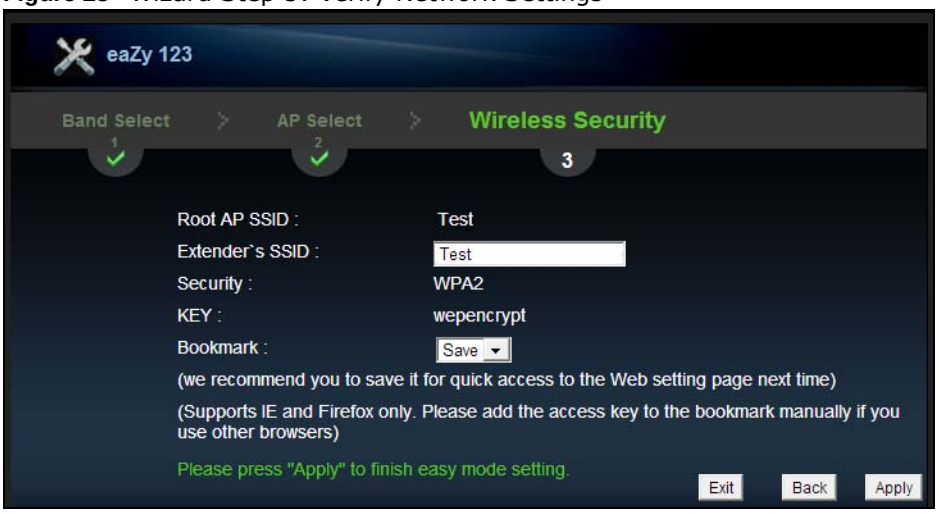
If the network password is invalid a pop-up and displays a connection failure. Click **OK** to return to the network password page.

Figure 22 Wizard Step 3: Key Verification Failed



2 Click **Apply** to complete the easy mode setting process, or click **Back** to return to the initial setup screen. You can also click **Exit** to return to the main menu and exit the setup process.

Figure 23 Wizard Step 5: Verify Network Settings



3 Verify the selected wireless network settings. Click the **Bookmark** drop-down menu and select **Save** to save the settings to your web browser's cache. Select **No** to continue without saving. The Bookmark function creates a bookmark in your browser and allows for quick access to web settings the next time you log in.

Note: The Bookmark function is only supported by the following browsers: Microsoft Internet Explorer and Mozilla Firefox.

A secondary 5 GHz setup screen displays. Click **Yes** to setup a 5 GHz wireless network. Click **No** to restart the device.

The eaZy 123 setup wizard is complete.

6.2.2.3 Manually Configuring AP Parameters

If the AP you want to connect to is not listed, then follow these steps to configure the security settings of the AP manually.

1 Select **Setup repeater manually**.

2 Type the SSID of the wireless router into the **SSID** field.

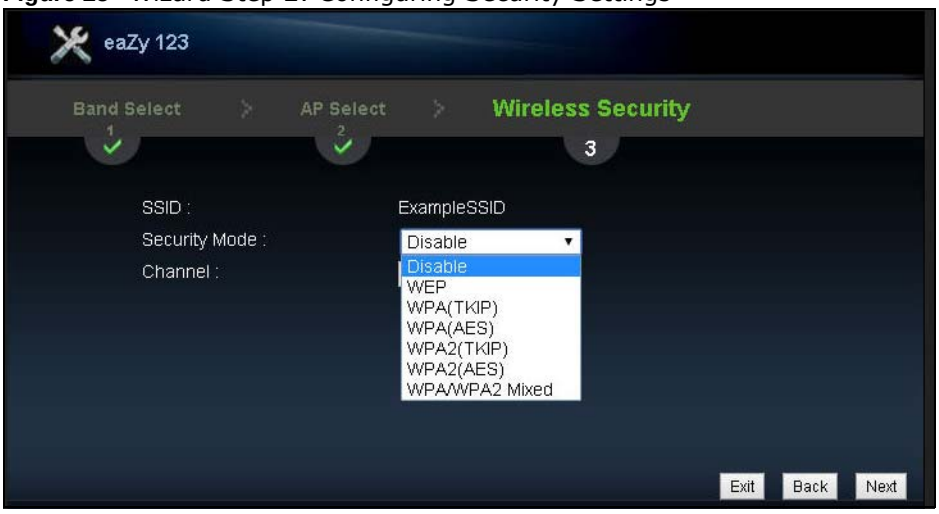
3 Click **Next** to continue.

Figure 24 Wizard Step 1: Entering the SSID

4 Select the security mode used by the wireless router from the drop-down menu.

5 Configure the security settings. The number of characters accepted by the KEY field is shown in the following table.

Figure 25 Wizard Step 2: Configuring Security Settings



The following table describes the labels in this screen.

Table 14 Maximum Key Lengths

ENCRYPTION	KEY FORMAT	KEY LENGTH
64-bit WEP	ASCII	5 characters
	Hex	10 characters
128-bit WEP	ASCII	13 characters
	Hex	26 characters
WPA pre-shared key	Passphrase	8-63 characters
	Hex	64 characters

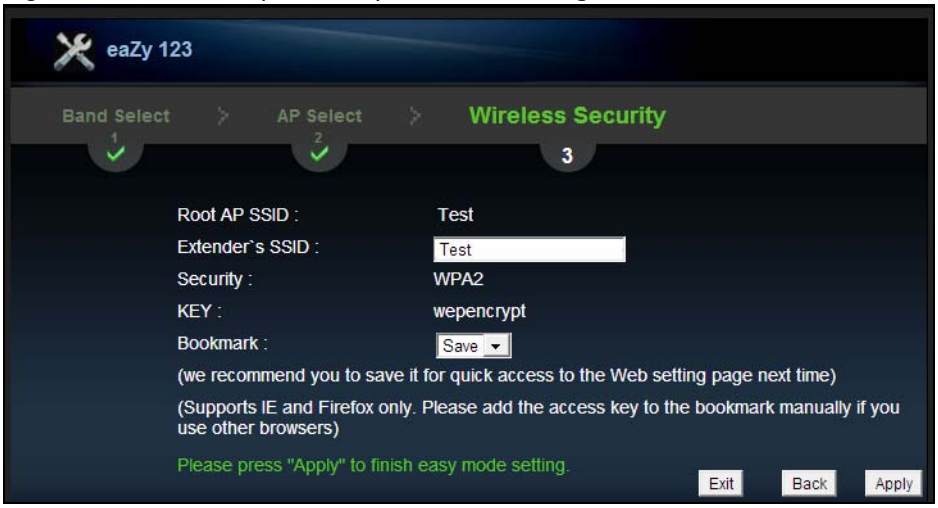
6 Select the channel from the drop-down menu.

Figure 26 Wizard Step 2: Configuring Security Settings

7 Click **Next** to continue.

8 Click **Apply** to complete the easy mode setting process, or click **Back** to return to the initial setup screen. You can also click **Exit** to return to the main menu and exit the setup process.

Figure 27 Wizard Step 5: Verify Network Settings



9 Verify the selected wireless network settings. Click the **Bookmark** drop-down menu and select **Save** to save the settings to your web browser's cache. Select **No** to continue without saving. The Bookmark function creates a bookmark in your browser and allows for quick access to web settings the next time you log in.

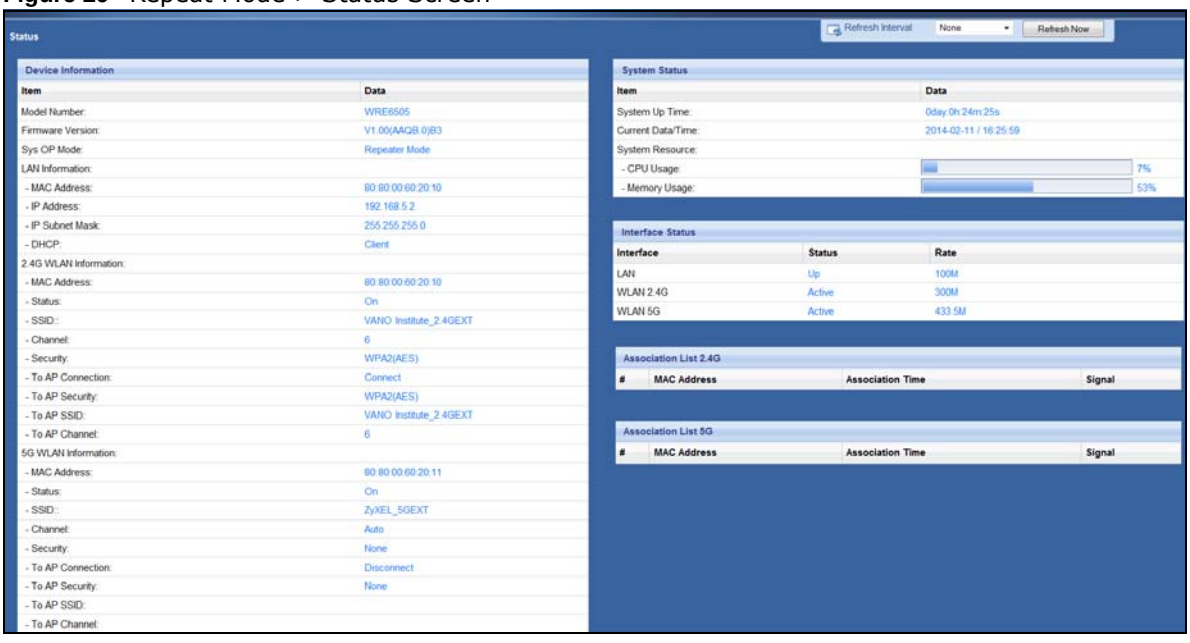
Note: The Bookmark function is only supported by the following browsers: Microsoft Internet Explorer and Mozilla Firefox (prior to version 23).

7.1 WRE6505 Status

The screen below shows the status screen.

Figure 28 AP Mode > Status Screen

Figure 29 Repeat Mode > Status Screen



The following table describes the icons shown in the **Status** screen.

Table 15 Status Screen Icon Key

ICON	DESCRIPTION
	Click this icon to open the setup wizard.
	Click this icon to view copyright and a link for related product information.
	Select a number of seconds or **None** from the drop-down list box to refresh all screen statistics automatically at the end of every time interval or to not refresh the screen statistics.
	Click this button to refresh the status screen statistics.

The following table describes the labels shown in the **Status** screen.

Table 16 Web Configurator Status Screen

LABEL	DESCRIPTION
Device Information	
Model Number	This is the Model Number.
Firmware Version	This is the current firmware version of the WRE6505.
Sys OP Mode	This is the system's current operating mode: AP or Repeater mode
LAN Information	
- MAC Address	This shows the LAN Ethernet adapter MAC Address of your device.
- IP Address	This shows the LAN port's IP address.
- IP Subnet Mask	This shows the LAN port's subnet mask.
- DHCP	This shows the LAN port's DHCP role.
2.4G WLAN Information	
- MAC Address	This shows the wireless adapter MAC Address of your device.
- Status	This shows the current status of the Wireless LAN - **On** or **Off**.
- SSID	This shows a descriptive name used to identify the WRE6505 in the wireless LAN.
- Channel	This shows the channel number which the WRE6505 is currently using over the wireless LAN.
- Security	This shows the level of wireless security the WRE6505 is using.
- To AP Connection	This displays whether the WRE6505 is connected to an AP or not.
- To AP Security	This displays the type of established security protocol with the device.
- To AP SSID	This displays the SSID of the connected network router.
- To AP Channel	This displays the current channel in use with the connected network router.
5G WLAN Information	
- MAC Address	This shows the wireless adapter MAC Address of your device.
- Status	This shows the current status of the Wireless LAN - **On** or **Off**.
- SSID	This shows a descriptive name used to identify the WRE6505 in the wireless LAN.
- Channel	This shows the channel number which the WRE6505 is currently using over the wireless LAN.
- Security	This shows the level of wireless security the WRE6505 is using.
- To AP Connection	This displays whether the WRE6505 is connected to an AP or not.

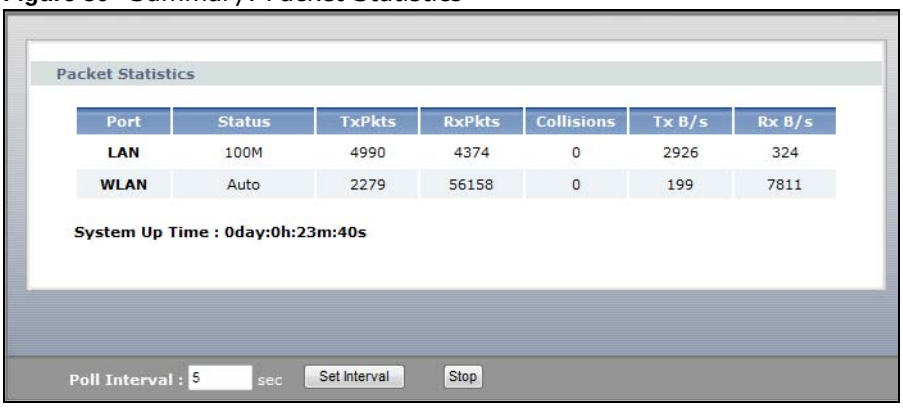
Table 16 Web Configurator Status Screen (continued)

LABEL	DESCRIPTION
- To AP Security	This displays the type of established security protocol with the device.
- To AP SSID	This displays the SSID of the connected network router.
- To AP Channel	This displays the current channel in use with the connected network router.
System Status	
System Up Time	This is the total time the WRE6505 has been on.
Current Date/Time	This field displays your WRE6505's present date and time.
System Resource	
- CPU Usage	This displays what percentage of the WRE6505's processing ability is currently used. When this percentage is close to 100%, the WRE6505 is running at full load, and the throughput is not going to improve anymore. If you want some applications to have more throughput, you should turn off other applications.
- Memory Usage	This shows what percentage of the heap memory the WRE6505 is using.
Interface Status	
Interface	This displays the WRE6505 port types. The port types are: **LAN** and **WLAN**.
Status	For the LAN port, this field displays **Down** (line is down) or **Up** (line is up or connected). For the WLAN, it displays **Up** when the WLAN is enabled or **Down** when the WLAN is disabled.
Rate	For the LAN ports, this displays the port speed and duplex setting or **NA** when the line is disconnected. For the WLAN, it displays the maximum transmission rate when the WLAN is enabled and **NA** when the WLAN is disabled or **Auto**.
Association List 2.4G	
#	This is the index number of an associated wireless client.
MAC Address	This field displays the MAC address of an associated wireless client.
Association Time	This field displays the time a wireless client is first associated with the WRE6505's WLAN network.
Signal	This is the signal strength number of the associated client.
Association List 5G	This table displays all the associated wireless clients and respective signal strength.
#	This is the index number of an associated wireless client.
MAC Address	This field displays the MAC address of an associated wireless client.
Association Time	This field displays the time a wireless client is first associated with the WRE6505's WLAN network.
Signal	This is the signal strength number of the associated client.

7.1.1 Summary: Packet Statistics

Click the **Packet Statistics (Details...)** hyperlink in the **Status** screen. Read-only information here includes port status, packet specific statistics and the "system up time". The **Poll Interval(s)** field is configurable and is used for refreshing the screen.

Figure 30 Summary: Packet Statistics



The following table describes the labels in this screen.

Table 17 Summary: Packet Statistics

LABEL	DESCRIPTION
Port	This is the WRE6505's port type.
Status	For the LAN ports, this displays the port speed and duplex setting or **Down** when the line is disconnected. For the WLAN, it displays **Up** when the WLAN is enabled or **Down** when the WLAN is disabled or **Auto**.
TxPkts	This is the number of transmitted packets on this port.
RxPkts	This is the number of received packets on this port.
Collisions	This is the number of collisions on this port.
Tx B/s	This displays the transmission speed in bytes per second on this port.
Rx B/s	This displays the reception speed in bytes per second on this port.
System Up Time	This is the total time the WRE6505 has been on.
Poll Interval	Enter the time interval for refreshing statistics in this field.
Set Interval	Click this button to apply the new poll interval you entered in the **Poll Interval** field.
Stop	Click **Stop** to stop refreshing statistics.

7.1.2 Summary: WLAN Station Status

Click the **WLAN Station Status (Details...)** hyperlink in the **Status** screen. View the wireless stations that are currently associated to the WRE6505 in the **Association List**. Association means that a wireless client (for example, your network or computer with a wireless network card) has connected successfully to the AP (or wireless router) using the same SSID, channel and security settings.

Figure 31 Summary: WLAN Station Status

The following table describes the labels in this screen.

Table 18 Summary: WLAN Station Status

LABEL	DESCRIPTION
#	This is the index number of an associated wireless station.
MAC Address	This field displays the MAC address of an associated wireless station.
Association Time	This field displays the time a wireless station first associated with the WRE6505's WLAN network.
Refresh	Click **Refresh** to reload the list.

7.2 Navigation Panel

Use the menu in the navigation panel menus to configure WRE6505 features.

Figure 32 Menus

The following table describes the sub-menus.

Table 19 Menus

LINK	TAB	FUNCTION
Status		This screen shows the WRE6505's general device, system and interface status information. Use this screen to access the wizard, and summary statistics tables.
Configuration		

Table 19 Menus (continued)

LINK	TAB	FUNCTION
Wireless LAN 2.4G	General	Use this screen to configure wireless LAN.
	Security	Use this screen to select the available security modes as defined by the paired AP or wireless router.
	AP Select	Use this screen to connect to an access point.
	MAC Filter	Use the MAC Address List screen to allow devices to access the WRE6505.
	Advanced	This screen allows you to configure advanced wireless settings.
	WPS	Use this screen to configure WPS.
	WPS Station	Use this screen to connect the WRE6505 to a wireless station or access point using WPS.
Wireless LAN 5G	General	Use this screen to configure wireless LAN.
	Security	Use this screen to select the available security modes as defined by the paired AP or wireless router.
	AP Select	Use this screen to connect to an access point.
	MAC Filter	Use the MAC Address List screen to allow devices to access the WRE6505.
	Advanced	This screen allows you to configure advanced wireless settings.
	WPS	Use this screen to configure WPS.
	WPS Station	Use this screen to connect the WRE6505 to a wireless station or access point using WPS.
LAN	IP	Use this screen to configure LAN IP address, subnet mask and gateway.
Maintenance		
	General	This screen displays the system and domain names.
	Password	Use this screen to change the password.
	Firmware Upgrade	Use this screen to upload firmware to your WRE6505.
	Backup/ Restore	Use this screen to backup and restore the configuration or reset the factory defaults to your WRE6505.
	Language	Use this screen to select the language setting for the user interface.
	System Mode	Use this screen to select the WPS mode behavior.

8

Tutorials

8.1 Overview

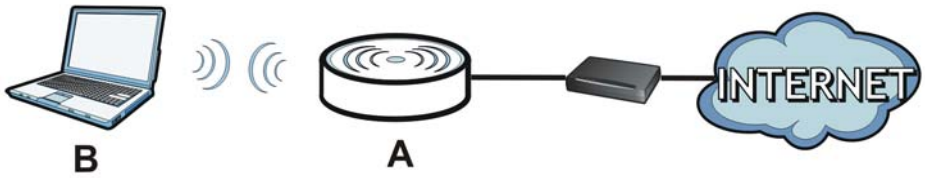
This chapter provides tutorials for your WRE6505 as follows (in access point or universal repeater mode) as follows:

- Connecting to the Internet from an Access Point
- Connecting to a Wireless Network Using WPS
- Connecting the WRE6505 to an AP

8.2 Connecting to the Internet from an Access Point

This section gives you an example of how to set up an access point (AP) and wireless client (a notebook (**B**), in this example) for wireless communication. **B** can access the Internet through the access point (**A**) wirelessly.

Figure 33 Wireless Access Point Connection to the Internet



8.3 Connecting to a Wireless Network Using WPS

This section gives you an example of how to set up wireless network using WPS. The following example uses the WRE6505 as the AP and NWD-211AN as the wireless client which connects to a notebook.

Note: The wireless client must be a WPS-aware device (for example, a WPS USB adapter or PCI card).

The following WPS methods for creating a secure connection are described in the tutorial.

- **Push Button Configuration (PBC)** - create a secure wireless network simply by pressing a button. See Section 8.3.1 on page 45.This is the easier method.

- **PIN Configuration** - create a secure wireless network simply by entering a wireless client's PIN (Personal Identification Number) in the WRE6505's interface. See Section 8.3.2 on page 46. This is the more secure method, since one device can authenticate the other.

8.3.1 Push Button Configuration (PBC)

The push button configuration function found in the interface is only available in AP mode. The WPS button, see Section 1.3 on page 9, can also be used for PBC configurations in either AP or Repeater mode.

1. Make sure that your WRE6505 is turned on and set to work in AP mode and that it is connected to your network.
2. Launch your wireless client's configuration utility.
3. In the wireless client utility, find the WPS settings. Enable WPS and press the WPS button (**Start** or **WPS** button).
4. Log into WRE6505's Web Configurator. Make sure WPS is enabled in the **Network** > **Wireless LAN** > **WPS** screen.
5. Navigate to **Network** > **Wireless LAN** > **WPS Station** and press the **Push Button**.

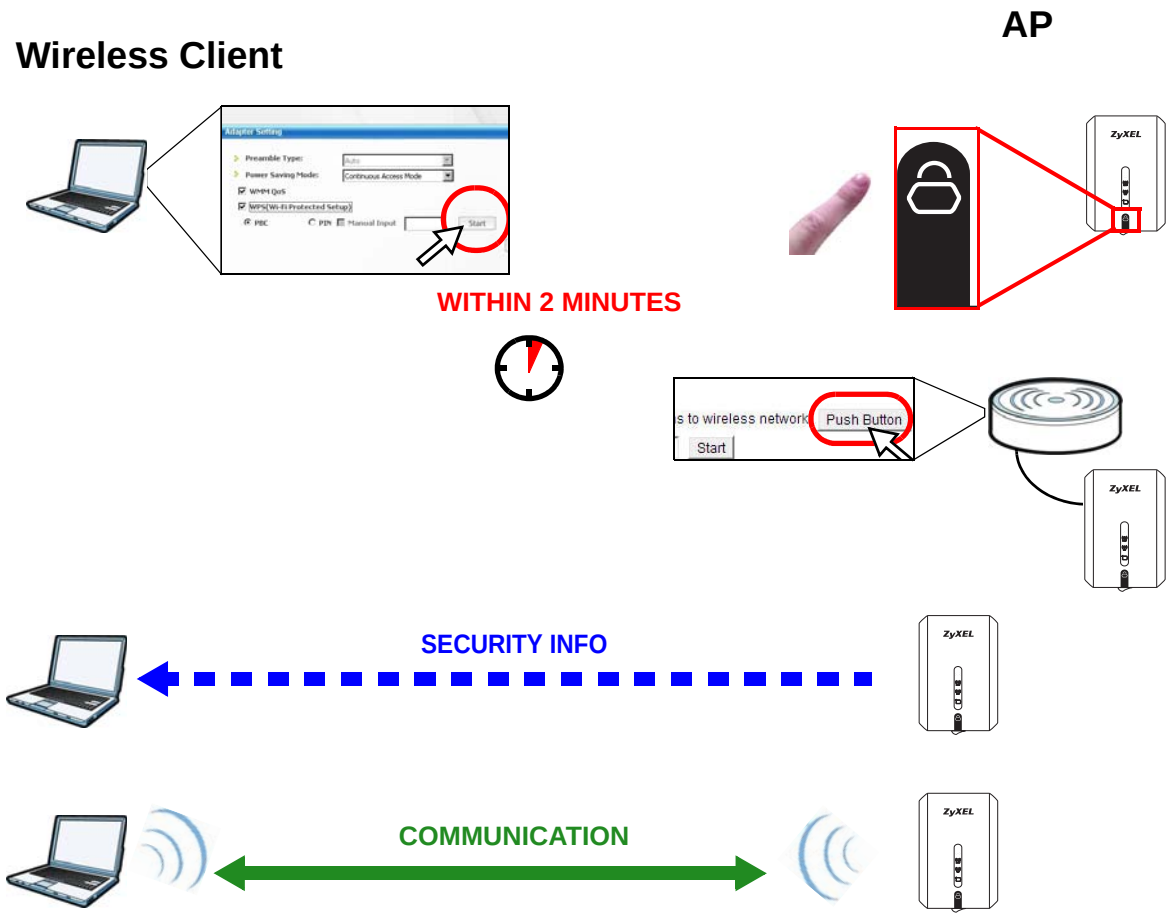
Note: Your WRE6505 has a WPS button located on its panel, as well as a WPS button in its configuration utility (AP mode only). Both buttons have exactly the same function; you can use one or the other.

Note: It doesn't matter which button is pressed first. You must press the second button within two minutes of pressing the first one.

The WRE6505 sends the proper configuration settings to the wireless client. This may take up to two minutes. Then the wireless client is able to communicate with the WRE6505 securely.

The following figure shows you how to set up wireless network and security by pressing a button on both WRE6505 and wireless client (the NWD-211AN in this example).

Figure 34 Example WPS Process: PBC Method



8.3.2 PIN Configuration

When you use the PIN configuration method, you need to use both WRE6505's configuration interface and the client's utilities.

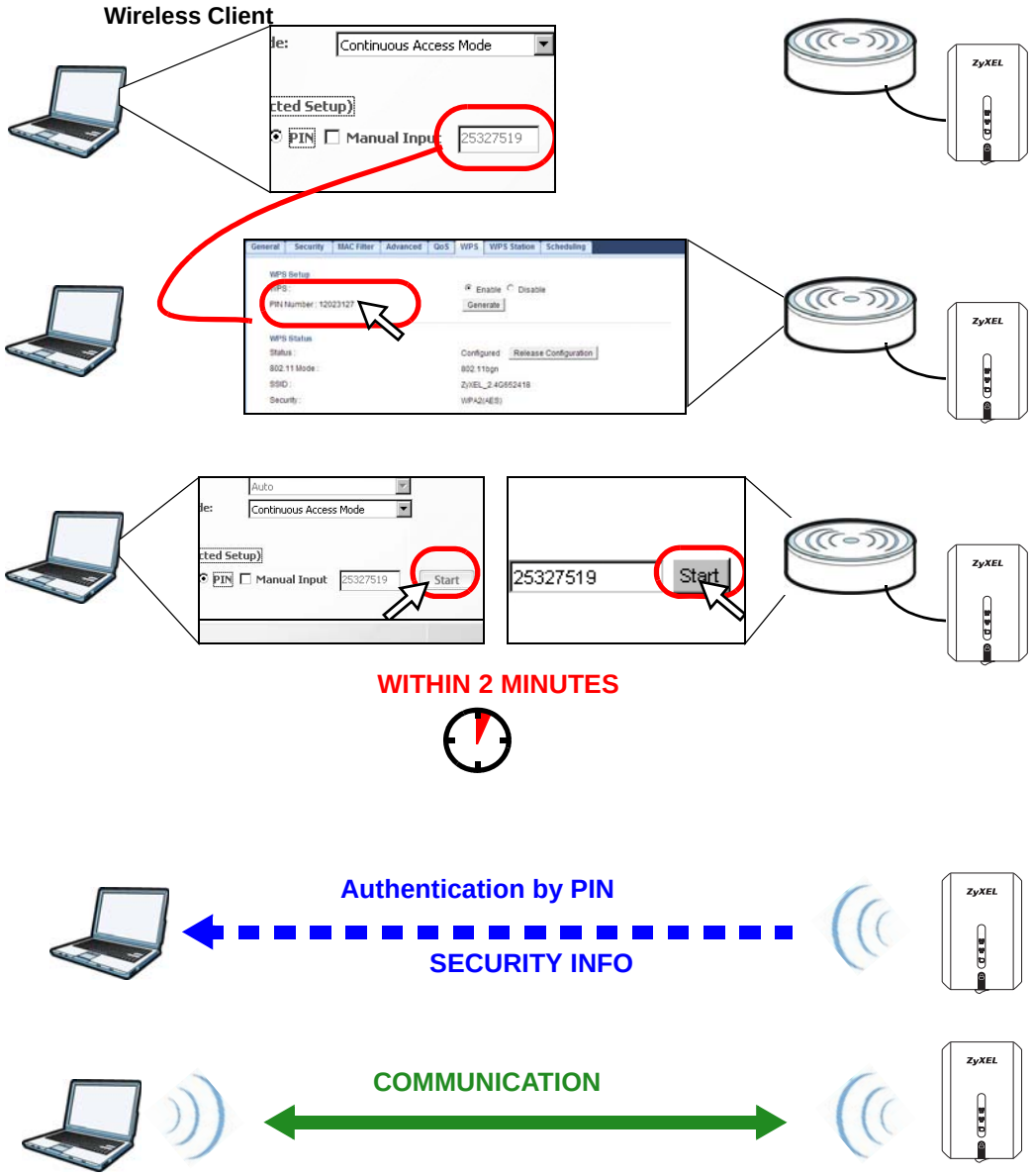
The push button configuration function is only available in AP mode.

1. Launch your wireless client's configuration utility. Go to the WPS Station settings and select the PIN method to get a PIN number.
2. On the WRE6505, navigate to the **Network** > **Wireless LAN (2.4G/5G)** > **WPS** screen.
3. Obtain the PIN number for the WRE6505 or press the **Generate** button to create a new PIN number. See Section 9.9 on page 59
4. Enter the WRE6505 PIN number in the wireless station's utility screen.

   The WRE6505 authenticates the wireless client and sends the proper configuration settings to the wireless client. This may take up to two minutes. Then the wireless client is able to communicate with the WRE6505 securely.

The following figure shows an example of how to set up wireless network and security on WRE6505 and wireless client (ex. NWD210N in this example) by using PIN method.

Figure 35 Example WPS Process: PIN Method



8.4 Connecting the WRE6505 to an AP

Repeater mode allows you to extend the original AP coverage.

- **Selecting an AP from an Automatically Detected List** - create a secure wireless network simply by selecting an AP from a list of detected APs. See Section 8.4.1 on page 48.This is the easier method.

- **Selecting an AP by Manually Entering Security Information** - create a secure wireless network by manually entering the AP's wireless security settings in the WRE6505's interface. See Section 8.4.2 on page 50. This is useful when the AP is hidden.

8.4.1 Selecting an AP from an Automatically Detected List

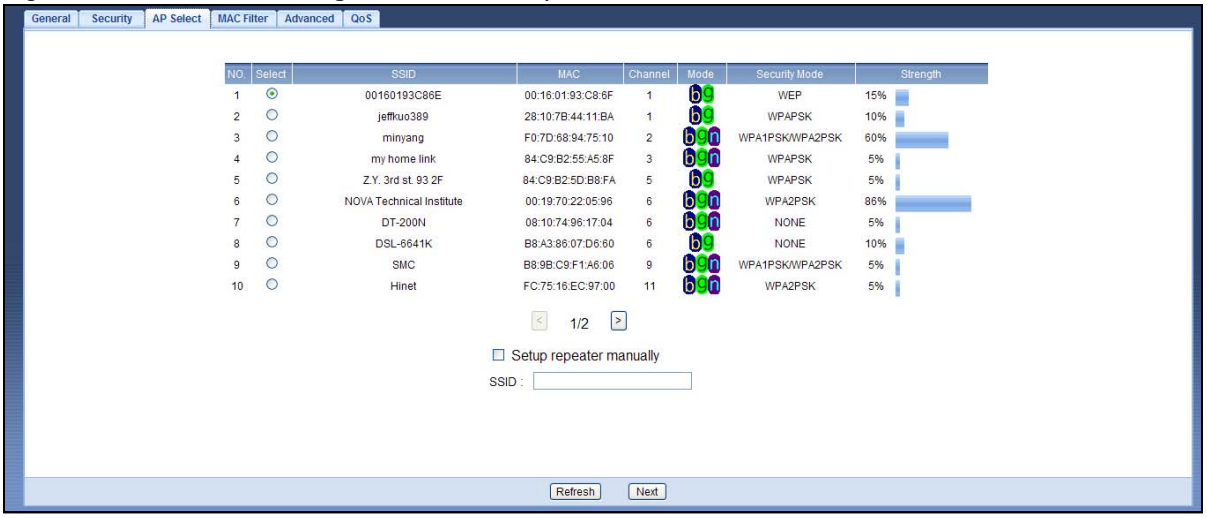
Follow the steps below to create a secure wireless network by selecting an AP from a list of detected APs.

The AP select function is only available in repeater mode. See Section 2.1.1 on page 12.

The instructions require that your hardware is connected (see the Quick Start Guide) and you are logged into the Web Configurator through your LAN connection (see Section 5.2 on page 26).

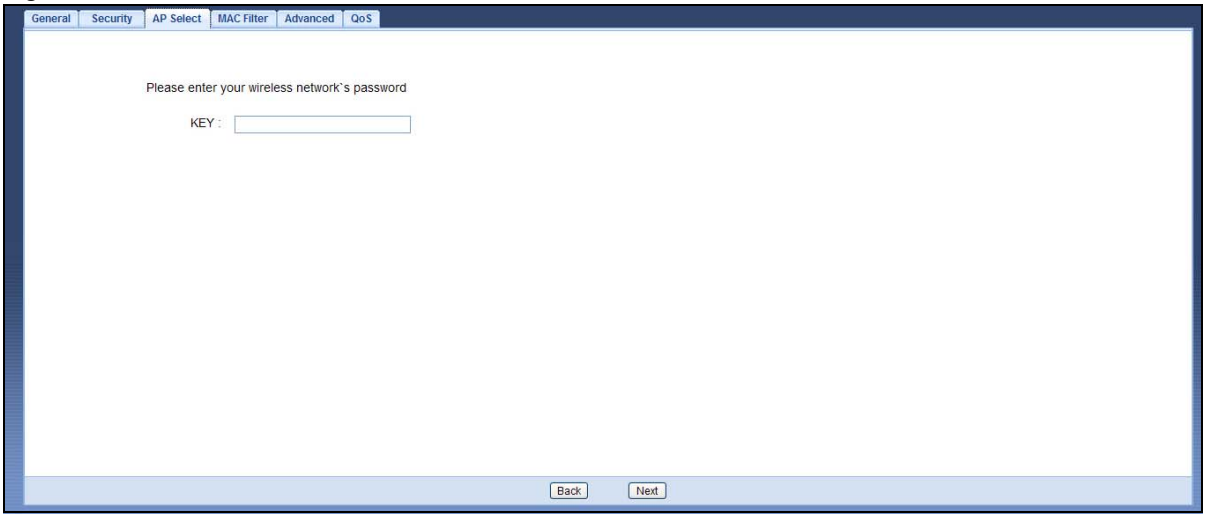
1 Select an AP form the **Select** column and click **Next**.

Figure 36 Tutorial: Selecting an automatically detected AP



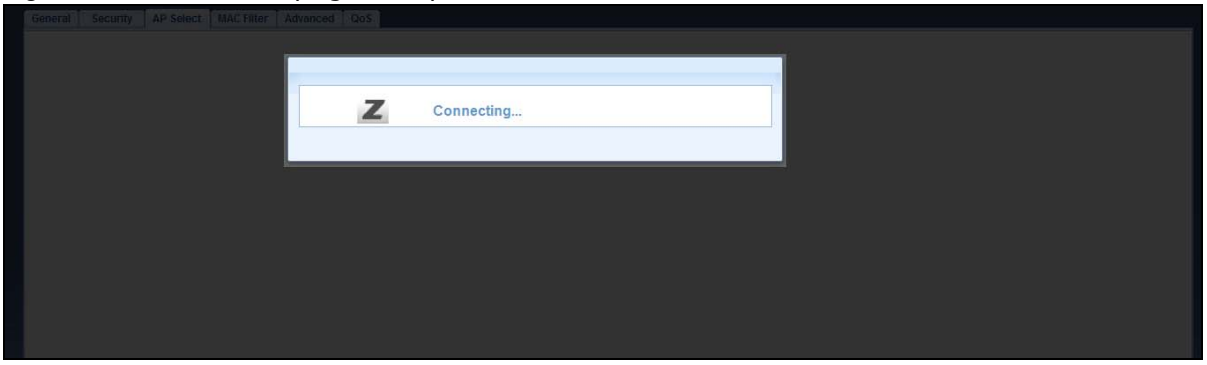
2 Type a key into the **KEY** field and click **Next**.

Figure 37 Tutorial: The KEY field



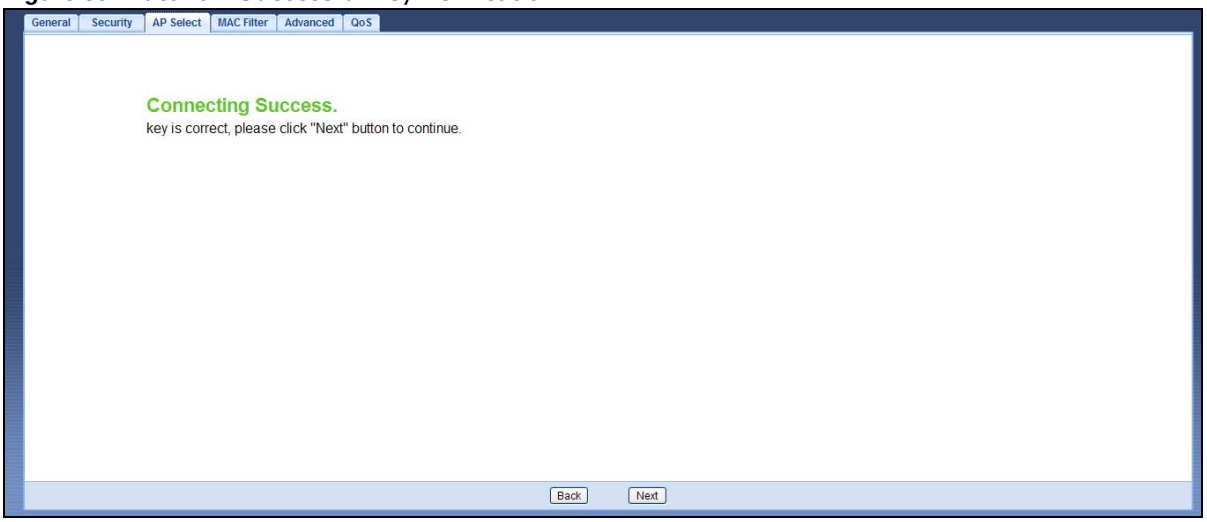
3 Wait for the WRE6505 to verify the key with the AP.

Figure 38 Tutorial: Verifying the key



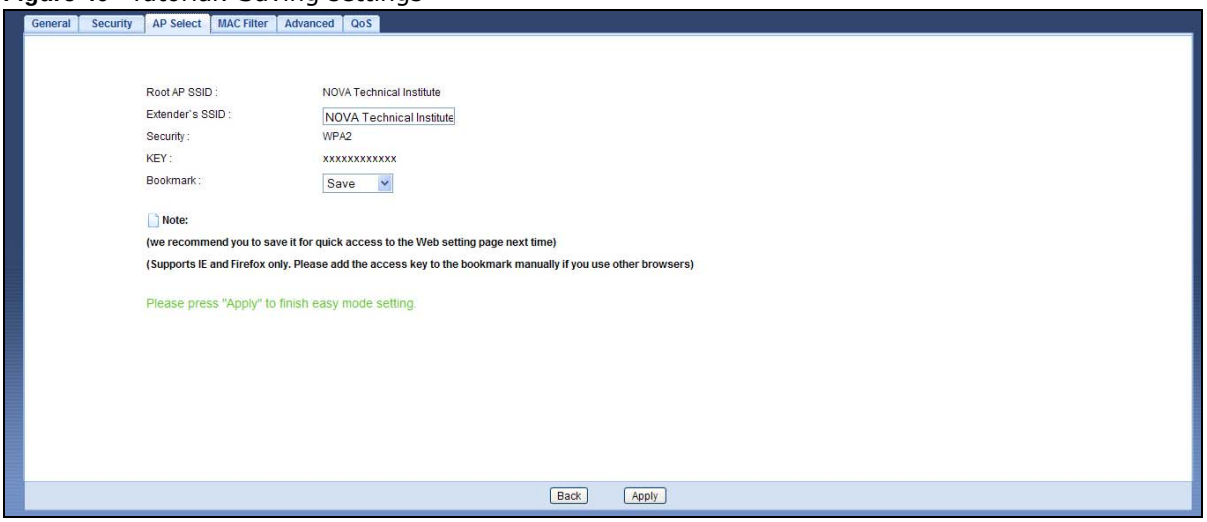
4 When the key is verified, click **Next**.

Figure 39 Tutorial: Successful key verification



5 Click **APPLY** to save settings and restart the WRE6505. Click **CONTINUE** to go to the Status screen without saving the settings and restarting the WRE6505.

Figure 40 Tutorial: Saving settings



8.4.2 Selecting an AP by Manually Entering Security Information

This example shows you how to configure wireless security settings with the following parameters on your WRE6505.

SSID	ExampleSSID
Channel	7
Security	WPA2 PSK

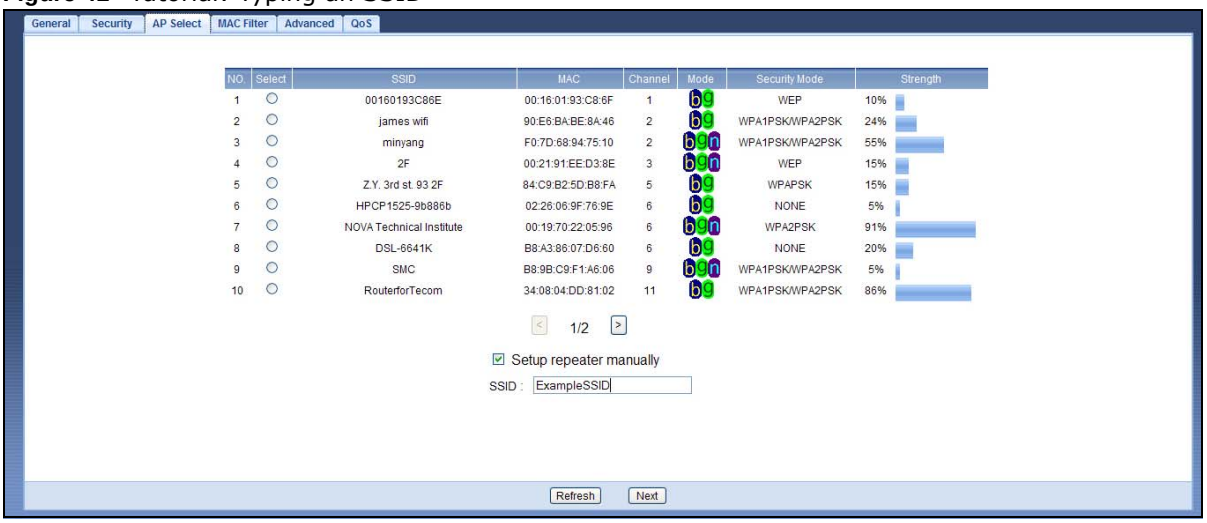
Follow the steps below to create a secure wireless network by manually entering the AP's wireless security settings in the WRE6505's interface.

The instructions require that your hardware is connected (see the Quick Start Guide) and you are logged into the Web Configurator through your LAN connection (see Section 5.2 on page 26).

1 Select **Setup repeater manually**.

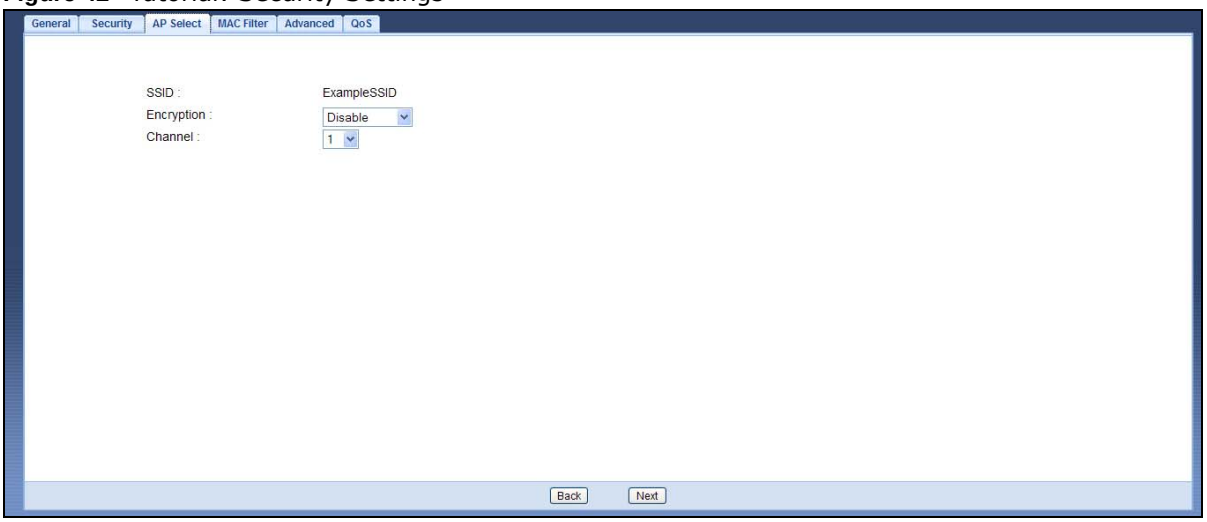
2 Type the SSID of the AP into the **SSID** field and click **Next**.

Figure 41 Tutorial: Typing an SSID



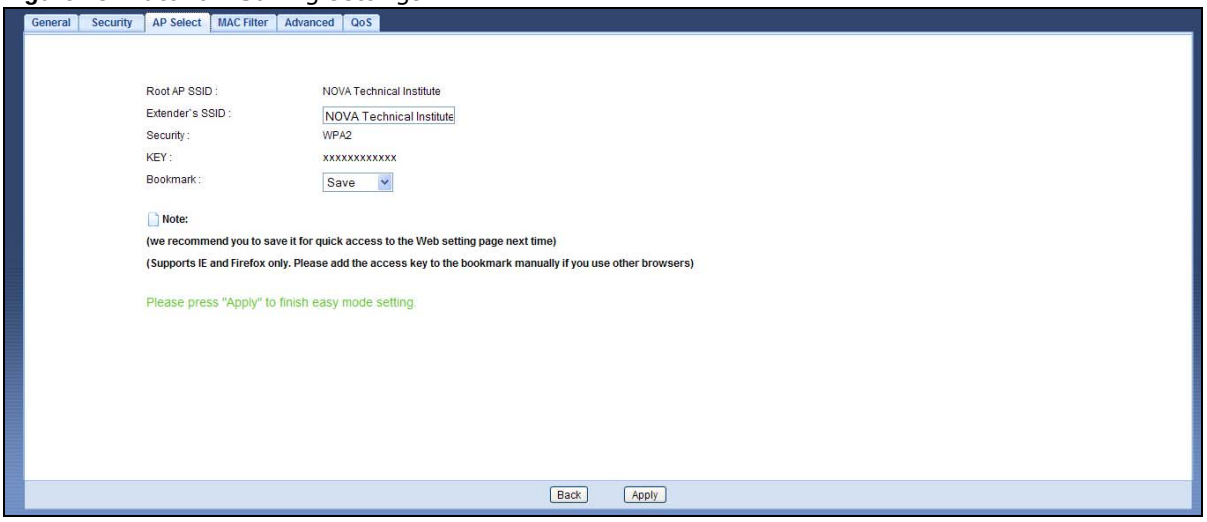
3 Select the security settings and click **Next**.

Figure 42 Tutorial: Security Settings



4 Click **Apply** to save settings and restart the WRE6505. Click **CONTINUE** to go to the Status screen without saving the settings and restarting the WRE6505.

Figure 43 Tutorial: Saving settings



PART II
Technical Reference

9

Wireless LAN

9.1 Overview

This chapter discusses how to configure the wireless network settings in your WRE6505. See Section 1.1 on page 8 for an overview of wireless networks.

9.2 What You Can Do

- Use the **General** screen to enable the Wireless LAN (2.4G/5G), enter the SSID and select the wireless security mode (Section 9.4 on page 55).
- Use the **Security** screen to (Section 9.5 on page 56).
- Use the **MAC Filter** screen to allow or deny wireless stations based on their MAC addresses from connecting to the WRE6505 (Section 9.7 on page 57).
- Use the **Advanced** screen to allow intra-BSS networking and set the RTS/CTS Threshold (Section 9.8 on page 59).
- Use the **WPS** screen to quickly set up a wireless network with strong security, without having to configure security settings manually (Section 9.9 on page 59).
- Use the **AP Select** screen to choose an access point that you want the WRE6505 to connect to. You should know the security settings of the target AP (Section 9.6 on page 56).

9.3 What You Should Know

Every wireless network must follow these basic guidelines.

- Every wireless client in the same wireless network must use the same SSID.

  The SSID is the name of the wireless network. It stands for Service Set IDentity.
- If two wireless networks overlap, they should use different channels.

  Like radio stations or television channels, each wireless network uses a specific channel, or frequency, to send and receive information.
- Every wireless client in the same wireless network must use security compatible with the AP.

  Security stops unauthorized devices from using the wireless network. It can also protect the information that is sent in the wireless network.

9.3.1 Wireless Security Overview

The following sections introduce different types of wireless security you can set up in the wireless network.

9.3.1.1 MAC Address List

Every wireless client has a unique identification number, called a MAC address.[1] A MAC address is usually written using twelve hexadecimal characters[2]; for example, 00A0C5000002 or 00:A0:C5:00:00:02. To get the MAC address for each wireless client, see the appropriate User's Guide or other documentation.

You can use the MAC Address List to tell the AP which wireless clients are allowed to use the wireless network. If a wireless client is allowed to use the wireless network, it still has to have the correct settings (SSID, channel, and security). If a wireless client is not allowed to use the wireless network, it does not matter if it has the correct settings.

This type of security does not protect the information that is sent in the wireless network. Furthermore, there are ways for unauthorized devices to get the MAC address of an authorized wireless client. Then, they can use that MAC address to use the wireless network.

9.3.1.2 Encryption

Wireless networks can use encryption to protect the information that is sent in the wireless network. Encryption is like a secret code. If you do not know the secret code, you cannot understand the message.

Table 20 Types of Encryption for Each Type of Authentication

	NO AUTHENTICATION
Weakest	No Security
↕	Static WEP
	WPA-PSK
Strongest	WPA2-PSK

For example, if users do not log in to the wireless network, you can choose no authentication, if users do log on to the wireless network, you can choose No Security, **Static WEP**, **WPA-PSK**, or **WPA2-PSK**.

Usually, you should set up the strongest encryption that every wireless client in the wireless network supports. Suppose the wireless network has two wireless clients. Device A only supports WEP, and device B supports WEP and WPA-PSK. Therefore, you should set up **Static WEP** in the wireless network.

Note: It is recommended that wireless networks use WPA-PSK, or stronger encryption. IEEE 802.1x and WEP encryption are better than none at all, but it is still possible for unauthorized devices to figure out the original information pretty quickly.

Many types of encryption use a key to protect the information in the wireless network. The longer the key, the stronger the encryption. Every wireless client in the wireless network must have the same key.

1. Some wireless devices, such as scanners, can detect wireless networks but cannot use wireless networks. These kinds of wireless devices might not have MAC addresses.
2. Hexadecimal characters are 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, and F.

9.3.1.3 WPS

Wi-Fi Protected Setup (WPS) is an industry standard specification, defined by the Wi-Fi Alliance. WPS allows you to quickly set up a wireless network with strong security, without having to configure security settings manually. Depending on the devices in your network, you can either press a button (on the device itself, or in its configuration utility) or enter a PIN (Personal Identification Number) in the devices. Then, they connect and set up a secure network by themselves. See how to set up a secure wireless network using WPS in the Section 8.3 on page 44.

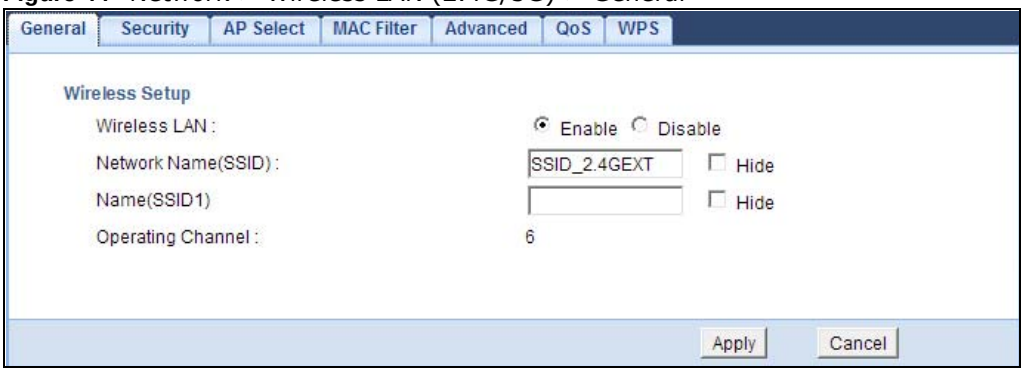
9.4 General Wireless LAN Screen

Use this screen to enable the Wireless LAN, enter the SSID and select the wireless security mode.

Note: If you are configuring the WRE6505 from a computer connected to the wireless LAN and you change the WRE6505's SSID, channel or security settings, you will lose your wireless connection when you press **Apply** to confirm. You must then change the wireless settings of your computer to match the WRE6505's new settings.

Click **Network** > **Wireless LAN (2.4G/5G)** to open the **General** screen.

Figure 44 Network > Wireless LAN (2.4G/5G) > General



The following table describes the general wireless LAN labels in this screen.

Table 21 Network > Wireless LAN (2.4G/5G) > General

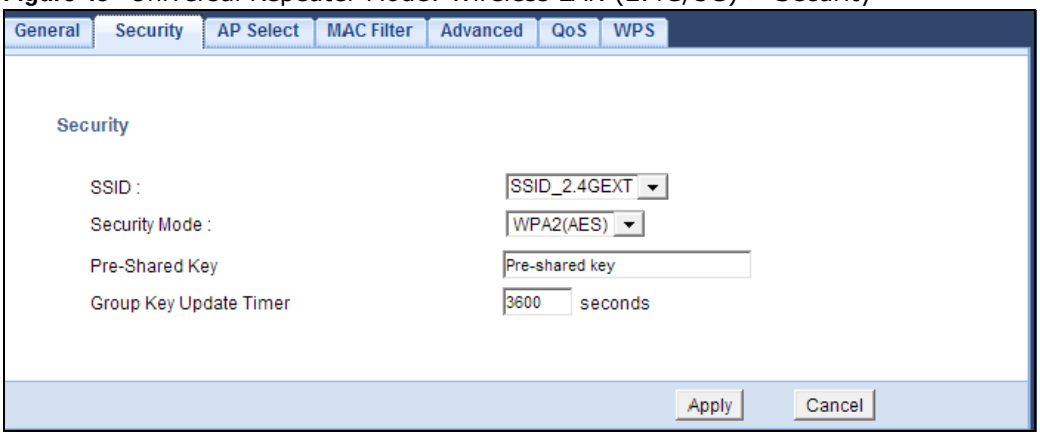
LABEL	DESCRIPTION
Wireless Setup	
Wireless LAN	This is turned on by default. Click **Disable** to turn off the wireless LAN function.
Network Name (SSID) or Name (SSID1~3)	The SSID (Service Set IDentity) identifies the Service Set with which a wireless client is associated. Enter a descriptive name (up to 32 printable characters found on a typical English language keyboard) for the wireless LAN. You can configure up to two SSIDs to enable two BSSs (Basic Service Sets) on the WRE6505. Wireless clients can use different SSIDs to associate with the same access point.
Hide	Select this check box to hide the SSID in the outgoing beacon frame so a wireless client cannot obtain the SSID through scanning using a site survey tool.
Operating Channel	This displays the channel the WRE6505 is currently using.

Table 21 Network > Wireless LAN (2.4G/5G) > General (continued)

LABEL	DESCRIPTION
Apply	Click **Apply** to save your changes back to the WRE6505.
Cancel	Click **Cancel** to return to the previous menu without saving.

9.5 Security

Figure 45 Universal Repeater Mode: Wireless LAN (2.4G/5G) > Security



The following table describes the labels in this screen.

Table 22 Universal Repeater Mode: Wireless LAN (2.4G/5G) > Security

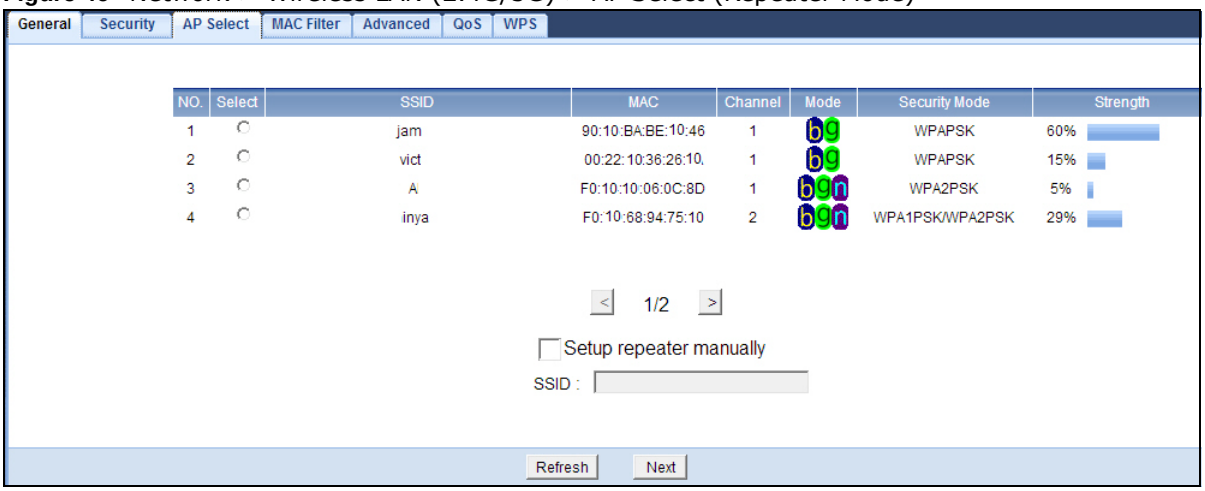
LABEL	DESCRIPTION
Security	
SSID	Enter the name of the access point to which you are connecting.
Security Mode	Select **No Security** or the available modes to match as provided by the source AP or wireless router.
Pre-Shared Key	Enter the security pre-shared key as provided by the source AP or wireless router.
Group Key Update Timer	The Group Key Update Timer is the rate at which the AP sends a new group key out to all clients. The default is 3600 seconds (60 minutes).
Apply	Click **Apply** to save your changes back to the WRE6505.
Cancel	Click **Cancel** to reload the previous configuration for this screen.

9.6 AP Select Screen

Use this screen (available in repeater mode only) to choose an access point that you want the WRE6505 to connect to. You should know the security settings of the target AP.

To open this screen, click **Network** > **Wireless LAN (2.4G/5G)** > **AP Select** tab.

Figure 46 Network > Wireless LAN (2.4G/5G) > AP Select (Repeater Mode)



The following table describes the labels in this screen.

Table 23 Network > Wireless LAN (2.4G/5G) > AP Select (Repeater Mode)

LABEL	DESCRIPTION
Select	Use the radio button to select the wireless device to which you want to connect.
SSID	This displays the Service Set IDentity of the wireless device. The SSID is a unique name that identifies a wireless network. All devices in a wireless network must use the same SSID.
MAC	This displays the MAC address of the wireless device.
Channel	This displays the channel number used by this wireless device.
Mode	This displays which IEEE 802.11b/g/n wireless networking standards the wireless device supports.
Security Mode	This displays the type of security configured on the wireless device. When **no** is shown, no security is configured and you can connect to it without a password.
Strength	This displays the strength of the wireless signal. The signal strength mainly depends on the antenna output power and the distance between your WRE6505 and this device.
<	Click **<** to see the previous page of APs.
>	Click **>** to see the next page of APs.
Setup repeater manually	Select this to setup the AP manually.
SSID	If **Setup repeater manually** is selected, use this field to type the SSID of the AP. This is useful when the AP's SSID is hidden.
Refresh	Click **Refresh** to search for available wireless devices within transmission range and update this table.
Next	Click **Next** to start the next step in the AP setup process.

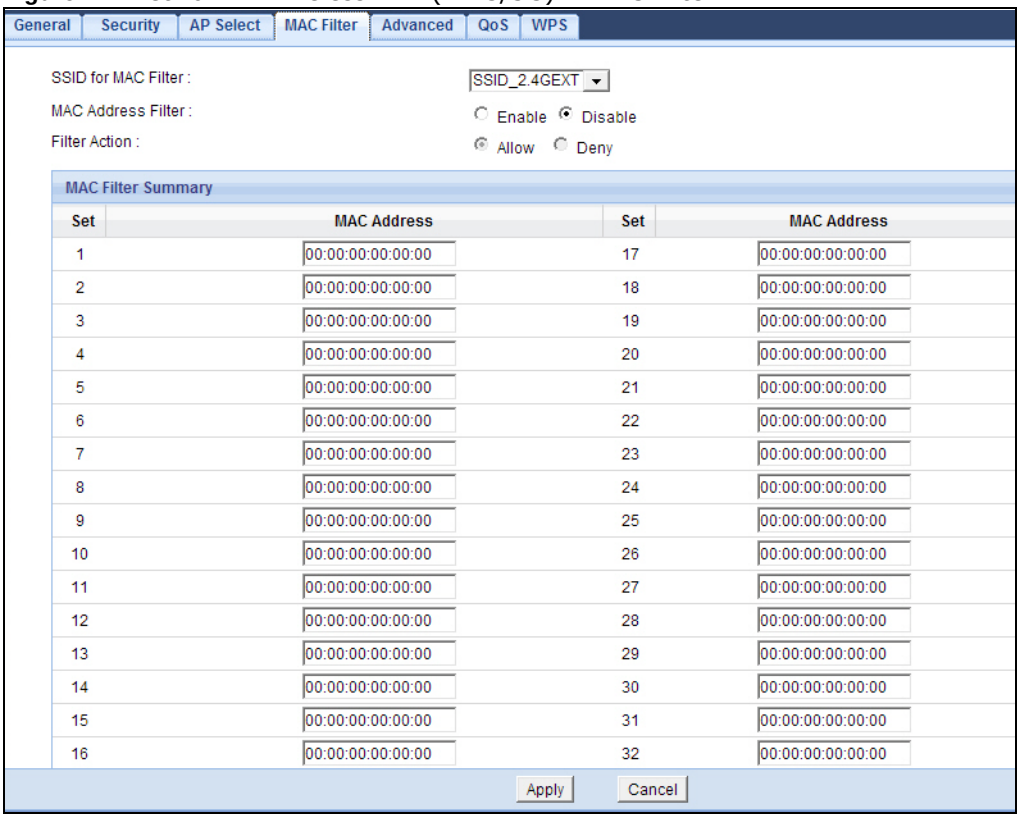
9.7 MAC Filter

The MAC Filter screen allows you to specify which devices are allowed to access the WRE6505, while denying access to all unspecified devices. Every Ethernet device has a unique MAC (Media Access Control) address. The MAC address is assigned at the factory and consists of six pairs of

hexadecimal characters, for example, 00:A0:C5:00:00:02. You need to know the MAC address of the devices to configure this screen.

To change your WRE6505's MAC Address List settings, click **Network** > **Wireless LAN (2.4G/5G)** > **MAC Filter**. The screen appears as shown.

Figure 47 Network > Wireless LAN (2.4G/5G) > MAC Filter



The following table describes the labels in this menu.

Table 24 Network > Wireless LAN (2.4G/5G)> MAC Address List

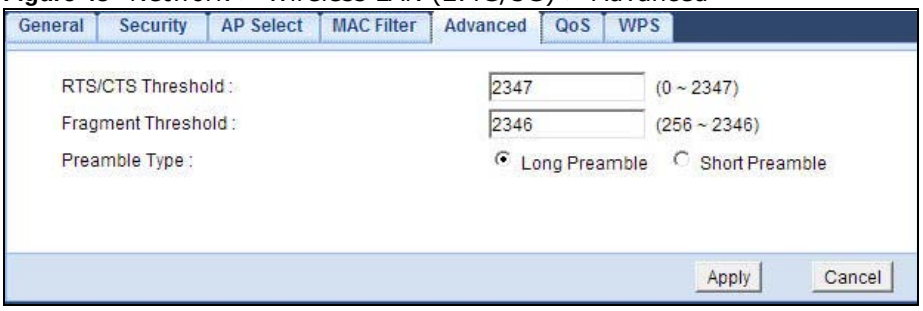
LABEL	DESCRIPTION
Active	Select this to enable MAC address filtering.
SSID for MAC Filter	Select the SSID for which you want to configure MAC filtering.
MAC Address Filter	Select **Enable** to allow MAC address filtering (default: Disable).
Filter Action	Select **Disable** to deactivate the MAC filtering rule. Select **Allow** to permit access to the WRE6505, MAC addresses not listed will be denied access to the WRE6505.
Set	This is the index number of the MAC address.
MAC Address	Enter the MAC addresses of the wireless station to include in the rule. Enter the MAC addresses in a valid MAC address format, that is, six hexadecimal character pairs, for example, 12:34:56:78:9a:bc.
Apply	Click **Apply** to save your changes back to the WRE6505.
Cancel	Click **Cancel** to return to the previous menu without saving.

9.8 Wireless LAN Advanced Screen

Use this screen to configure advanced wireless LAN parameters.

Click **Network** > **Wireless LAN (2.4G/5G)** > **Advanced**. The screen appears as shown.

Figure 48 Network > Wireless LAN (2.4G/5G) > Advanced



The following table describes the labels in this screen.

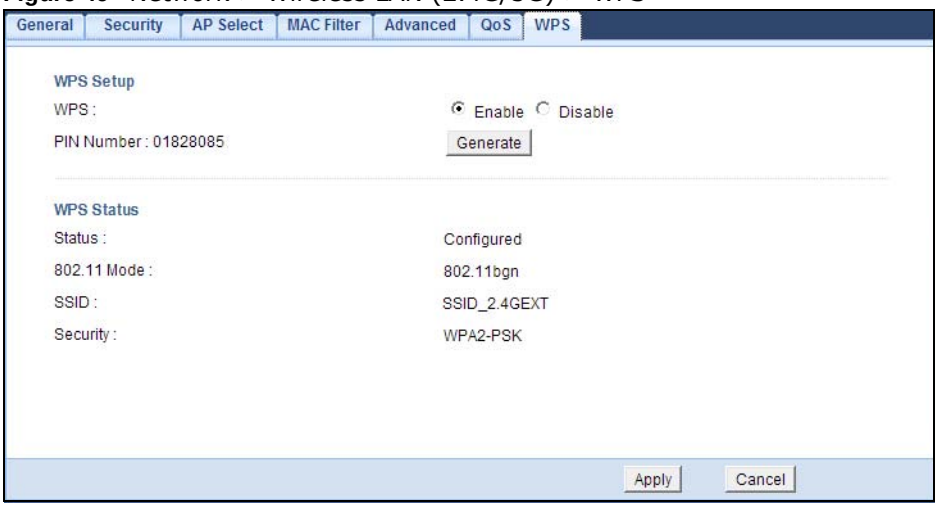
Table 25 Network > Wireless LAN (2.4G/5G) > Advanced

LABEL	DESCRIPTION
RTS/CTS Threshold	Data with its frame size larger than this value will perform the RTS (Request To Send)/ CTS (Clear To Send) handshake. Enter a value between **0** and **2347**.
Fragmentation Threshold	The threshold (number of bytes) for the fragmentation boundary for directed messages. It is the maximum data fragment size that can be sent. Enter an even number between **256** and **2346**.
Preamble Type	A preamble affects the timing in your wireless network. There are two preamble modes: long and short. If a device uses a different preamble mode than the WRE6505 does, it cannot communicate with the WRE6505.
Apply	Click **Apply** to save your changes to the WRE6505.
Cancel	Click **Cancel** to return to the previous menu without saving.

9.9 WPS Screen

Use this screen to enable/disable WPS, view or generate a new PIN and check current WPS status. To open this screen, click **Network** > **Wireless LAN (2.4G/5G)** > **WPS** tab.

Figure 49 Network > Wireless LAN (2.4G/5G) > WPS



The following table describes the labels in this screen.

Table 26 Network > Wireless LAN (2.4G/5G) > WPS

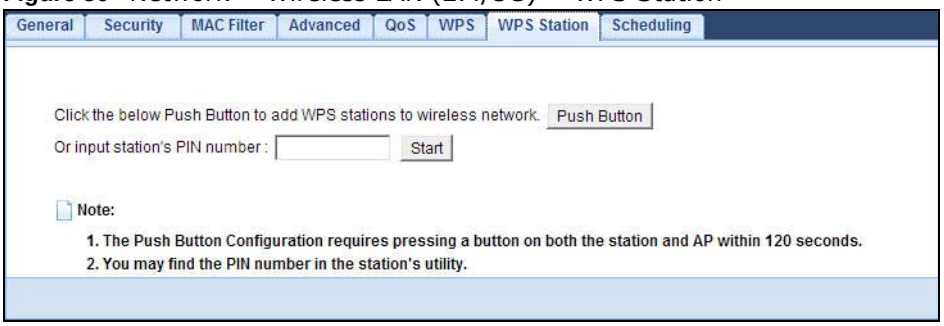
LABEL	DESCRIPTION
WPS Setup	
WPS	Select this to enable the WPS feature.
PIN Number	This displays a PIN number last time system generated. Click **Generate** to generate a new PIN number.
WPS Status	
Status	This displays **Configured** when the WRE6505 has connected to a wireless network using WPS or when **Enable WPS** is selected and wireless or wireless security settings have been changed. The current wireless and wireless security settings also appear in the screen. This displays **Unconfigured** if WPS is disabled and there are no wireless or wireless security changes on the WRE6505 or click **Release Configuration** (AP mode only) to remove the configured wireless and wireless security settings.
Release Configuration (AP mode only)	This button is only available when the WPS status displays **Configured**. Click this button to remove all configured wireless and wireless security settings for WPS connections on the WRE6505.
802.11 Mode	This is the 802.11 mode used. Only compliant WLAN devices can associate with the WRE6505.
SSID	This is the name of the wireless network (the WAP3205 v2's first SSID).
Security	This is the type of wireless security employed by the network.
Apply	Click **Apply** to save your changes back to the WRE6505.
Cancel	Click **Cancel** to return to the previous menu without saving.

9.10 WPS Station Screen

Use this screen (available in AP mode only) when you want to add a wireless station using WPS. To open this screen, click **Network** > **Wireless LAN (2.4/5G)** > **WPS Station** tab.

Note: After you click **Push Button** on this screen, you have to press a similar button in the wireless station utility within 2 minutes. To add the second wireless station, you have to press these buttons on both device and the wireless station again after the first 2 minutes.

Figure 50 Network > Wireless LAN (2.4/5G) > WPS Station



The following table describes the labels in this screen.

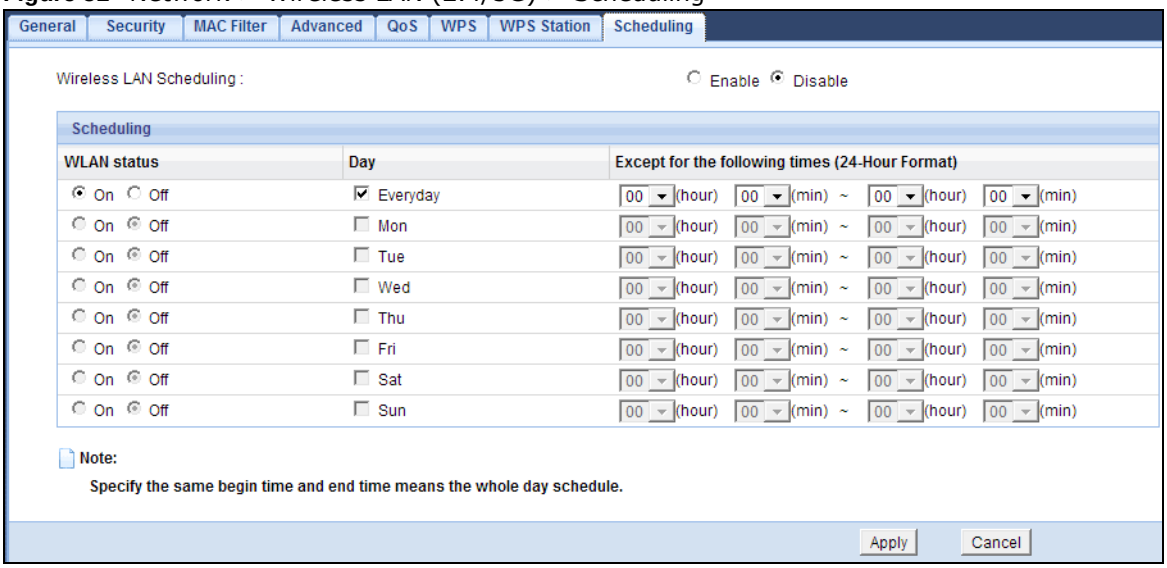
Table 27 Network > Wireless LAN (2.4/5G)> WPS Station

LABEL	DESCRIPTION
Push Button	Use this button when you use the PBC (Push Button Configuration) method to configure wireless stations's wireless settings. See Section 8.3.1 on page 45. Click this to start WPS-aware wireless station scanning and the wireless security information synchronization.
Or input station's PIN number	Use this button when you use the PIN Configuration method to configure wireless station's wireless settings. See Section 8.3.2 on page 46. Type the same PIN number generated in the wireless station's utility. Then click **Start** to associate to each other and perform the wireless security information synchronization.

9.11 Scheduling Screen

Use this screen (available in AP mode only) to set the times your wireless LAN is turned on and off. Wireless LAN scheduling is disabled by default. The wireless LAN can be scheduled to turn on or off on certain days and at certain times. To open this screen, click **Network** > **Wireless LAN (2.4/5G)** > **Scheduling** tab.

Figure 51 Network > Wireless LAN (2.4/5G) > Scheduling



The following table describes the labels in this screen.

Table 28 Network > Wireless LAN (2.4/5G) > Scheduling

LABEL	DESCRIPTION
Wireless LAN Scheduling	
Enable Wireless LAN Scheduling	Select this to enable Wireless LAN scheduling.
Scheduling	
WLAN Status	Select **On** or **Off** to specify whether the Wireless LAN is turned on or off. This field works in conjunction with the **Day** and **For the following times** fields.
Day	Select **Everyday** or the specific days to turn the Wireless LAN on or off. If you select **Everyday** you can not select any specific days. This field works in conjunction with the **For the following times** field.
For the following times (24-Hour Format)	Select a begin time using the first set of **hour** and minute (**min**) drop down boxes and select an end time using the second set of **hour** and minute (**min**) drop down boxes. If you have chosen **On** earlier for the WLAN Status the Wireless LAN will turn on between the two times you enter in these fields. If you have chosen **Off** earlier for the WLAN Status the Wireless LAN will turn off between the two times you enter in these fields.
Apply	Click **Apply** to save your changes back to the WRE6505.
Cancel	Click **Cancel** to reload the previous configuration for this screen.

10 LAN

10.1 Overview

This screen allows you to assign the WRE6505 a fixed or dynamic management IP address. The default IP address of the WRE6505 in repeater mode is 192.168.1.2, while the default IP address of the WRE6505 in AP mode is 169.254.168.254. Alternatively, you can connect to the WRE6505 using the default domain name, http://zyxelsetup.

10.2 LAN IP Screen

Use this screen to change the WRE6505's management IP address. Click **Network** > **LAN**.

Figure 52 Network > LAN > IP

The following table describes the labels in this screen.

Table 29 Network > LAN > IP

LABEL	DESCRIPTION
Get from DHCP Server	Select this to have the WRE6505 get a dynamic IP address from a DHCP server.
User Defined LAN IP	Click this to enable the manual IP configuration.
IP Address	Enter the IP address of your WRE6505 in dotted decimal notation.
IP Subnet Mask	Enter the subnet mask of your WRE6505 in dotted decimal notation.
IP Gateway	Enter the gateway of your WRE6505 in dotted decimal notation.
Apply	Click **Apply** to save your changes back to the WRE6505.
Cancel	Click **Cancel** to reload the previous configuration for this screen.

11

Maintenance

11.1 Overview

This chapter provides information on the **Maintenance** screen.

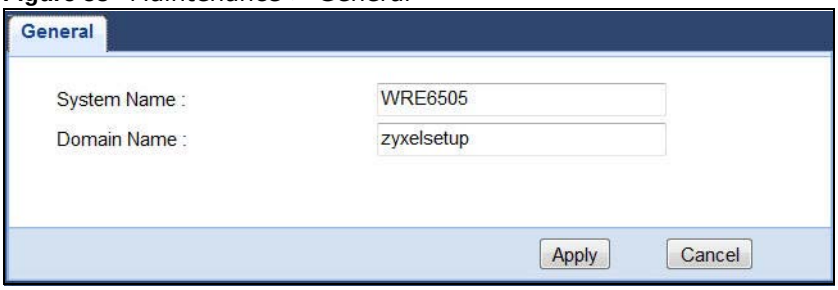
11.2 What You Can Do

- Use the **Password** screen to set the password (Section 11.4 on page 65).
- Use the **Firmware Upgrade** screen to update firmware (Section 11.5 on page 65).
- Use the **Backup / Restore** screen to backup and restore device configurations (Section 11.6 on page 67).
- Use the **Language** screen to select the interface display language (Section 11.7 on page 69).
- Use the **System Mode** screen to select the WPS behavior (Section 11.8 on page 69).

11.3 General

Use this screen to set the system and domain names. Click **Maintenance** > **General**. The following screen displays.

Figure 53 Maintenance > General



The following table describes the labels in this menu.

Table 30 Maintenance > General

LABEL	DESCRIPTION
System Name	Type the name used to designate the system.
Domain Name	Type the domain name used to designate the system.
Apply	Click **Apply** to save your changes back to the WRE6505.
Cancel	Click **Cancel** to reload the previous configuration for this screen.

11.4 System Password Screen

Use this screen to set the web configurator password. Click **Maintenance** > **System**. The following screen displays.

Figure 54 Maintenance > Password

The following table describes the labels in this screen.

Table 31 Maintenance > System > Password

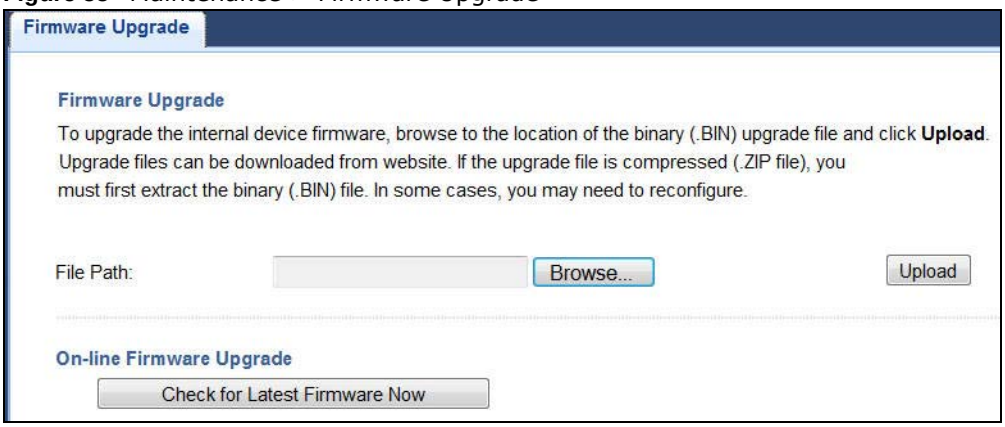
LABEL	DESCRIPTION
Old Password	Type the default password or the existing password you use to access the system in this field.
New Password	Type your new system password (up to 30 characters). Note that as you type a password, the screen displays an asterisk (*) for each character you type.
Retype to Confirm	Type the new password again in this field.
Apply	Click **Apply** to save your changes back to the WRE6505.
Cancel	Click **Cancel** to reload the previous configuration for this screen.

11.5 Firmware Upgrade Screen

Find firmware at www.zyxel.com in a file that (usually) uses the system model name with a "*.bin" extension, e.g., "WRE6505.bin". The upload process uses HTTP (Hypertext Transfer Protocol) and may take up to two minutes. After a successful upload, the system will reboot.

Click **Maintenance > Firmware Upgrade**. Follow the instructions in this screen to upload firmware to your WRE6505.

Figure 55 Maintenance > Firmware Upgrade



The following table describes the labels in this screen.

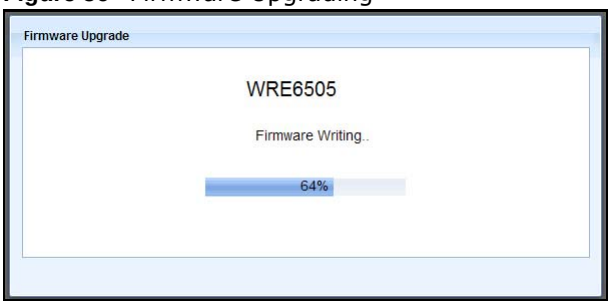
Table 32 Maintenance > Firmware Upgrade

LABEL	DESCRIPTION
Firmware Upgrade	
File Path	Type in the location of the file you want to upload in this field or click **Browse...** to find it.
Browse...	Click **Browse...** to find the .bin file you want to upload. Remember that you must decompress compressed (.zip) files before you can upload them.
Upload	Click **Upload** to begin the upload process. This process may take up to two minutes.
On-line Firmware Upgrade	
Check for Latest Firmware Now	The following fields display when you click this button.
You are currently using firmware version:	The firmware version consists of the trunk version number, model code, and release number. For example, V1.00(AAAG.5) means V1.00 is the trunk number, AAAG represents WRE6505, and 5 means the fifth release.
The Latest Firmware Version	Compare the release number in the previous field with the release number in this one to see if you have the latest firmware. In this example, V1.00(AAAG.5), the numbers are the same (5), so the WRE6505 already has the latest firmware.
Release Date	The date the firmware was issued is shown in year-month-date format.
Release Note	The release note shows what has changed (new features, bug fixes, known issues) in this firmware version. Check the Release Note before deciding to use new firmware.
Size	This is the size of the firmware in bytes. 15073234 is about 15 MB.
Do_Firmware_ Upgrade	Click this button to download and upgrade the new firmware to the WRE6505.

Note: Do not turn off the WRE6505 while firmware upload is in progress!

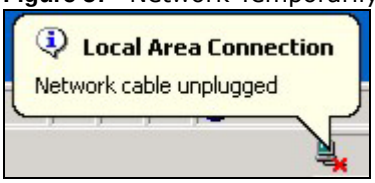
After you see the **Firmware Upgrading** screen, wait until the upgrade process is complete.

Figure 56 Firmware Upgrading



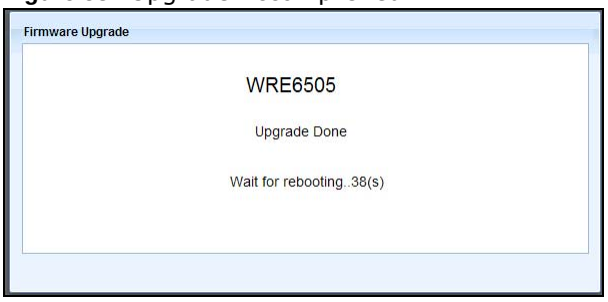
The WRE6505 automatically restarts in this time causing a temporary network disconnect. In some operating systems, you may see the following icon on your desktop.

Figure 57 Network Temporarily Disconnected



After the WRE6505 restarts, the **Upgrade Accomplished** screen appears.

Figure 58 Upgrade Accomplished

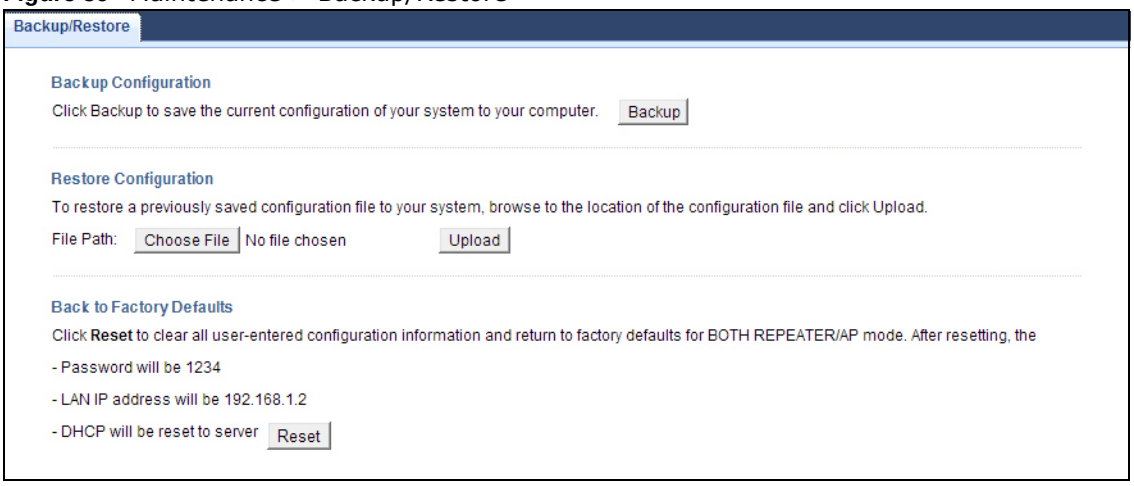


Refresh the web page and log in again and check your new firmware version in the **Status** screen.

11.6 Backup / Restore Screen

Click **Maintenance > Backup / Restore**. Information related to factory defaults, backup configuration, and restoring configuration appears as shown next.

Figure 59 Maintenance > Backup/Restore



11.6.1 Backup Configuration

Backup configuration allows you to back up (save) the WRE6505's current configuration to a file on your computer. Once your WRE6505 is configured and functioning properly, it is highly recommended that you back up your configuration file before making configuration changes. The backup configuration file will be useful in case you need to return to your previous settings.

Click **Backup** to save the WRE6505's current configuration to your computer.

11.6.2 Restore Configuration

Restore configuration allows you to upload a new or previously saved configuration file from your computer to your WRE6505.

Table 33 Maintenance Restore Configuration

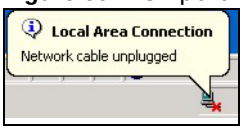
LABEL	DESCRIPTION
File Path	Type in the location of the file you want to upload in this field or click **Browse...** to find it.
Browse...	Click **Browse...** to find the file you want to upload. Remember that you must decompress compressed (.ZIP) files before you can upload them.
Upload	Click **Upload** to begin the upload process.

Note: Do not turn off the WRE6505 while configuration file upload is in progress.

After you see a "configuration upload successful" screen, you must then wait one minute before logging into the WRE6505 again.

The WRE6505 automatically restarts in this time causing a temporary network disconnect. In some operating systems, you may see the following icon on your desktop.

Figure 60 Temporarily Disconnected



If you uploaded the default configuration file you may need to change the IP address of your computer to be in the same subnet as that of the default WRE6505 IP address (192.168.1.2). Refer to your operating system's help files for details on how to set up your computer's IP address.

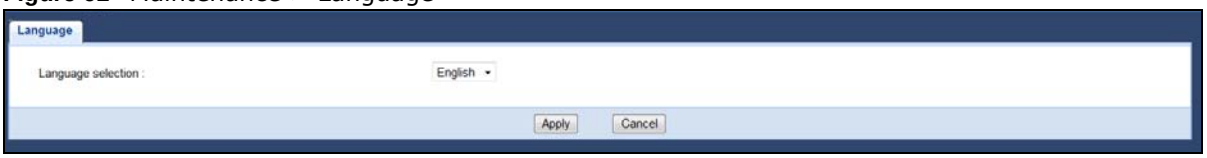
11.6.3 Restore to Factory Defaults

Pressing the **WPS** button (see Section 1.4 on page 11) on the front panel for more than 10 seconds resets the factory defaults of your WRE6505. Refer to Section 1.4 on page 11 for more information on the resetting the WRE6505.

11.7 Language

Click Maintenance > Language to select the language for use in the user interface.

Figure 61 Maintenance > Language



The following table describes the labels in this menu.

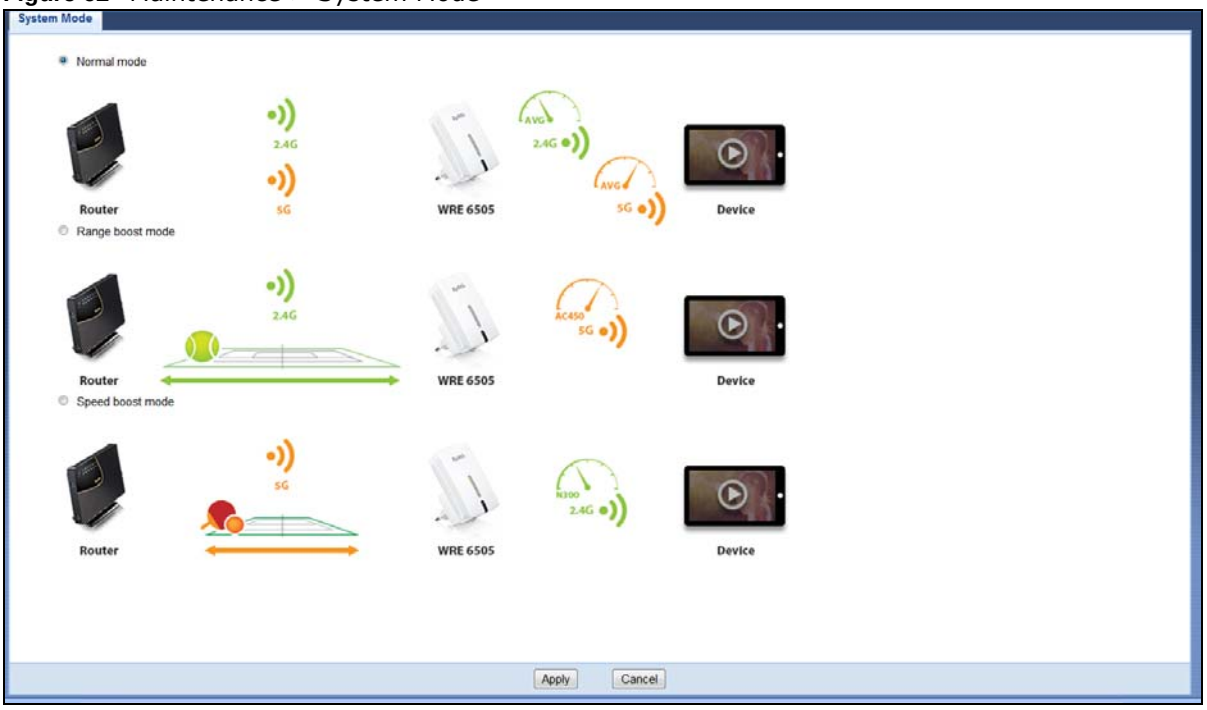
Table 34 Maintenance > Language

LABEL	DESCRIPTION
Language selection	Click the drop-down menu to select the display language.
Apply	Click **Apply** to save your changes back to the WRE6505.
Cancel	Click **Cancel** to reload the previous configuration for this screen.

11.8 System Mode

For further information on System Mode see Section 2.1.1 on page 12.

Figure 62 Maintenance > System Mode



The following table describes the labels in this menu.

Table 35 Maintenance > System Mode

LABEL	DESCRIPTION
Normal mode	The default WPS behavior, both 2.4 GHz and 5 GHz bands are supported in up and down broadcasting.
Range boost mode	Select to set the device to Range **Boost mode--**the 2.4 GHz band is supported on the Down behavior, while the 5 GHz band is supported on the Up behavior.
Speed boost mode	Select to set the device to Range **Boost mode--**the 5 GHz band is supported on the Down behavior, while the 2.4 GHz band is supported on the Up behavior.
Apply	Click **Apply** to save your changes back to the WRE6505.
Cancel	Click **Cancel** to reload the previous configuration for this screen.

11.8.1 System WPS Behavior

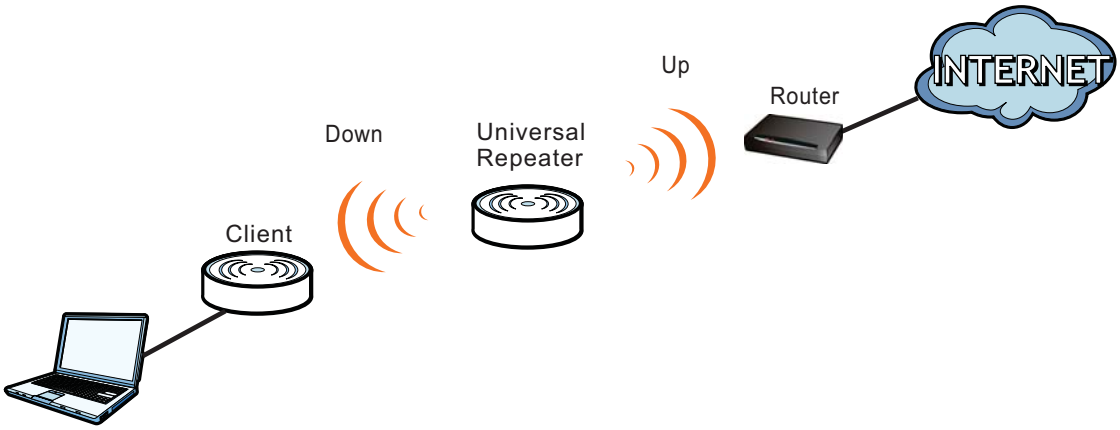
In Universal Repeater mode (see Chapter 2 on page 13), you can select the type of WPS behavior: Normal Mode, Range Boost, or Speed Boost mode.

The device enables you to extend the range of your dual-band router to eliminate "dead spots" in your wireless network. You can choose from normal mode, range boost, or speed boost modes for both your 2.4GHz and 5GHz networks.

The following terms are used to describe the WPS behavior:

- Up: The connection from the WRE6505 to the Router
- Down: The connection from the WRE6505 to a client

Figure 63 Normal Mode with Up and Down Broadcasting



- Home wireless network: 2.4G SSID = Home2.4G_2.4GEXT; 5G SSID = Home5G_5GEXT.
- Work wireless network: 2.4G SSID = Work2.4G_2.4GEXT; 5G SSID = Work5G_5GEXT.
- No profile: There is no currently defined profile.

The following section describes the Normal, Range Boost, and Speed Boost mode (WPS) behaviors in a home and work network connection.

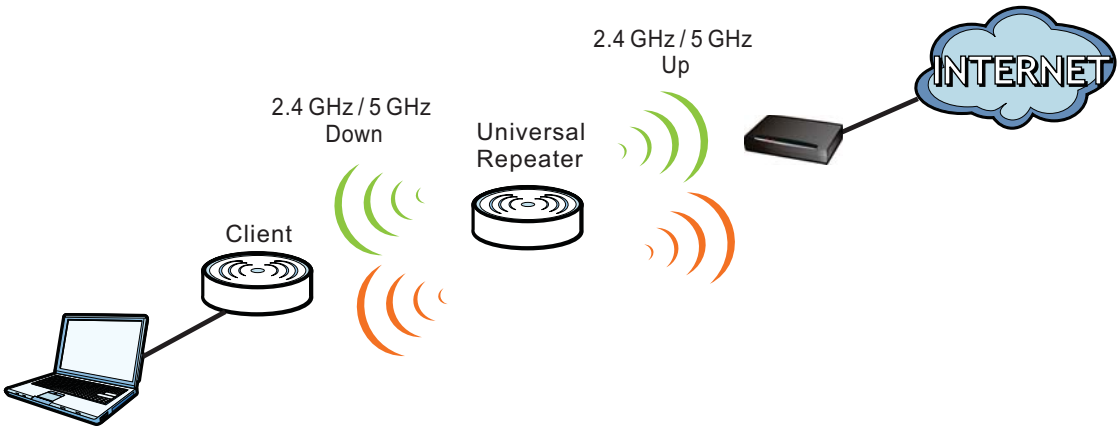
As connection profiles are established, the WRE6505 maintains a record of the varying profiles and automatically joins the network when in range.

Note: The home wireless network is the initial setup environment. The WRE6505 does not have any established network profiles at the time of initial setup.

11.8.1.1 Normal Mode

In normal mode, both Down and Up WPS behaviors are supported for both 2.4 GHz and 5 GHz bands.

Figure 64 Maintenance > System Mode> Normal mode



The following table describes the labels in the previous screen.

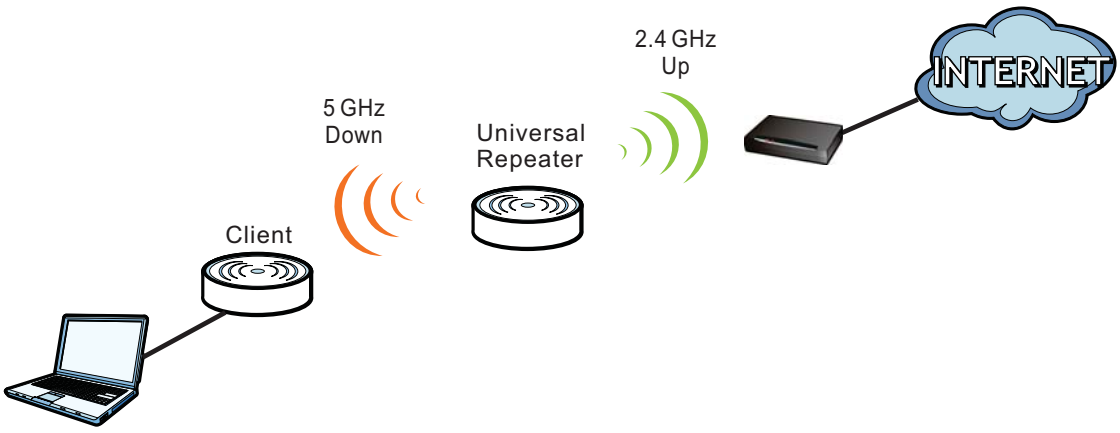
Table 36 WPS Behavior: Normal Mode

	HOME WIRELESS NETWORK		WORK WIRELESS NETWORK	
WPS BAND	**UP**	**DOWN**	**UP**	**DOWN**
2.4 GHz	No profile (Initial Setup)	No profile (Initial Setup)	Work1	Work1_2.4GEXT
	No profile	No profile	No profile	Work2_2.4GEXT
	Home1	Home1_2.4GEXT	Work3	Work3_2.4GEXT
	no profile	no profile	No profile	Work4_2.4GEXT
	Home1	Home1_2.4GEXT	Work3	Work3_2.4GEXT
	Home1	Home1_2.4GEXT	Work1	Work1_2.4GEXT
5 GHz	No profile (Initial Setup)	No profile (Initial Setup)	No profile	Work1_5GEXT
	No profile	No profile	Work2_5GEXT	Work2_5GEXT
	No profile	No profile	No profile	Work3_5GEXT
	Home2	Home2_5GEXT	Work4	Work4_5GEXT
	Home2	Home2_5GEXT	Work2_5GEXT	Work2_5GEXT
	Home2	Home2_5GEXT	Work4	Work4_5GEXT

11.8.1.2 Range Boost Mode

In range boost mode, the 2.4 GHz band is supported on the Down behavior, while the 5 GHz band is supported on the Up behavior.

Figure 65 WPS Behavior: Range Boost Mode



The following table describes the labels in the previous screen.

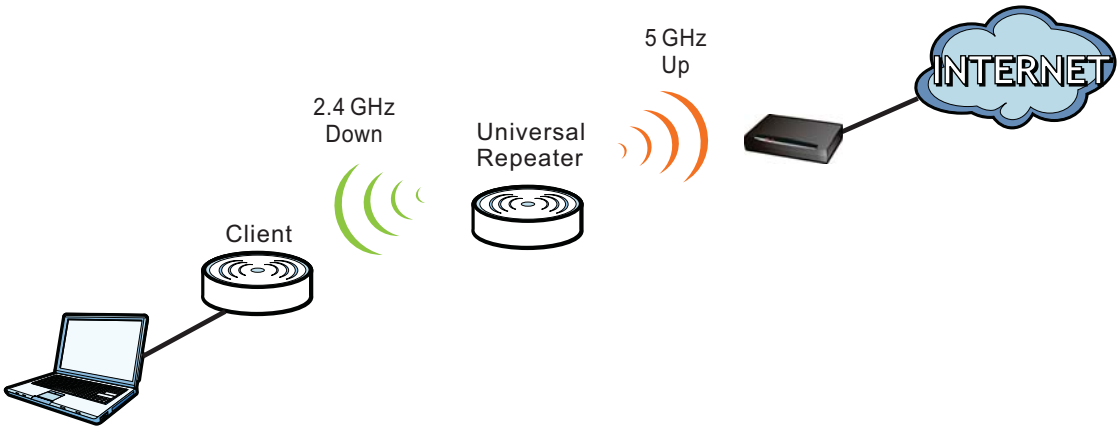
Table 37 WPS Behavior: Range Boost Mode

	HOME WIRELESS NETWORK		WORK WIRELESS NETWORK	
WPS BAND	**UP**	**DOWN**	**UP**	**DOWN**
2.4 GHz	No profile (Initial Setup)	No profile (Initial Setup)	Work1	Off
	Home1	Home1_2.4GEXT	Work3	Off
	No profile	Home2_2.4GEXT	Work3	Off
	Home1	Home1_2.4GEXT	Work3	Off
5 GHz	No profile (Initial Setup)	No profile (Initial Setup)	No profile	Work1_5GEXT
	Home2	Home2_5GEXT	Work2	Work3_5GEXT
	Home2	Home2_5GEXT	Work2	Work3_5GEXT
	No profile	No profile	No profile	Work3_5GEXT

11.8.1.3 Speed Boost Mode

In speed boost mode, the 5 GHz band is supported on the Down behavior, while the 2.4 GHz band is supported on the Up behavior.

Figure 66 WPS Mode: Speed Boost Mode



The following table describes the labels in the previous screen.

Table 38 WPS Mode: Speed Boost Mode

	HOT SPOT 1 (HOME)		HOT SPOT 2 (WORK)	
WPS BAND	**UP**	**DOWN**	**UP**	**DOWN**
2.4 GHz	No profile (Initial Setup)	No profile (Initial Setup)	No profile	Work2_2.4GEXT
	Home1	Home1_2.4GEXT	Work1	Work4_2.4GEXT
	No profile	Home2_2.4GEXT	No profile	Work4_2.4GEXT
	Home1	Home1_2.4GEXT	Work1	Work3_2.4GEXT

Table 38 WPS Mode: Speed Boost Mode (continued)

	HOT SPOT 1 (HOME)		HOT SPOT 2 (WORK)	
WPS BAND	**UP**	**DOWN**	**UP**	**DOWN**
5 GHz	No profile (Initial Setup)	No profile (Initial Setup)	Work2	Off
	Home2	Home2_5GEXT	Work4	Off
	Home2	Home2_5GEXT	Work4	Off
	No profile	No profile	Work3	Off

12

Troubleshooting

This chapter offers some suggestions to solve problems you might encounter. The potential problems are divided into the following categories.

12.1 Power, Hardware Connections, and LEDs

The WRE6505 does not turn on. None of the LEDs turn on.

1. Make sure the WRE6505 is plugged in to an appropriate power source. Make sure the power source is turned on.
2. Disconnect and re-connect the power adaptor or cord to the WRE6505.
3. If the problem continues, contact the vendor.

One of the LEDs does not behave as expected.

1. Make sure you understand the normal behavior of the LED. See Section 1.3 on page 9.
2. Make sure you understand how the LEDs are enabled or disabled. See Section 1.3 on page 9.
3. Check the hardware connections. See the Quick Start Guide.
4. Inspect your cables for damage. Contact the vendor to replace any damaged cables.
5. Disconnect and re-connect the power adaptor to the WRE6505.
6. If the problem continues, contact the vendor.

12.2 WRE6505 Access and Login

I forgot the password.

1. The default password is **1234**.
2. If this does not work, you have to reset the device to its factory defaults. See Section 11.6.3 on page 69.

I cannot see or access the **Login** screen in the Web Configurator.

1. Make sure you are using the correct address.
   - The default web address (URL) of the WRE6505 is **http://zyxelsetup**.
2. Check the hardware connections, and make sure the LEDs are behaving as expected. See the Quick Start Guide.
3. Make sure your Internet browser does not block pop-up windows and has JavaScript and Java enabled.
4. Reset the device to its factory defaults, and try to access the WRE6505 with the default address.
5. If the problem continues, contact the network administrator or vendor, or try one of the advanced suggestions.

   Advanced Suggestions

   - If your computer is connected wirelessly, use a computer that is connected to a **LAN**/**ETHERNET** port.

I can see the **Login** screen, but I cannot log in to the WRE6505.

1. Make sure you have entered the password correctly. The default password is **1234**.
2. This can happen when you fail to log out properly from your last session. Try logging in again after 5 minutes.
3. Disconnect and re-connect the power adaptor or cord to the WRE6505.
4. If this does not work, you have to reset the device to its factory defaults. See Section 12.4 on page 78.

12.3 Internet Access

I cannot access the Internet.

1. Check the hardware connections, and make sure the LEDs are behaving as expected. See the Quick Start Guide.
2. Try to connect directly to the AP. If you can access the Internet, check that the WRE6505 has associated with the AP by checking the **WLAN STA Information** SSID field shows the SSID of the AP. See Section 9.4 on page 55.
3. If you are trying to access the Internet wirelessly, make sure the wireless settings in the wireless client are the same as the settings in the AP.
4. Disconnect all the cables from your device, and follow the directions in the Quick Start Guide again.
5. If the problem continues, contact your ISP.

I cannot access the Internet anymore. I had access to the Internet (with the WRE6505), but my Internet connection is not available anymore.

1. Check the hardware connections, and make sure the LEDs are behaving as expected. See the Quick Start Guide and Section 1.3 on page 9.
2. Reboot the WRE6505.
3. Try to connect directly to the AP. If you can access the Internet, check that the WRE6505 has associated with the AP by checking the **WLAN STA Information** SSID field shows the SSID of the AP. See Section 9.4 on page 55.
4. If the problem continues, contact your ISP.

The Internet connection is slow or intermittent.

1. There might be a lot of traffic on the network. Look at the LEDs, and check Section 1.3 on page 9. If the WRE6505 is sending or receiving a lot of information, try closing some programs that use the Internet, especially peer-to-peer applications.
2. Check the signal strength. If the signal strength is low, try moving the WRE6505 closer to the AP if possible, and look around to see if there are any devices that might be interfering with the wireless network (for example, microwaves, other wireless networks, and so on).
3. Reboot the WRE6505.

4 If the problem continues, contact the network administrator or vendor, or try one of the advanced suggestions.

Advanced Suggestion

- Check the settings for QoS. If it is disabled, you might consider activating it.

12.4 Resetting the WRE6505 to Its Factory Defaults

If you reset the WRE6505, you lose all of the changes you have made. The WRE6505 re-loads its default settings, and the password resets to **1234**. You have to make all of your changes again.

You will lose all of your changes when you reset the WRE6505 to its factory defaults.

To reset the WRE6505,

1 Make sure the power LED is on.

2 Press the **WPS** button for longer than 10 seconds, the Power LED begins to blink, to set the WRE6505 back to its factory-default configuration.

OR

3 Click **Maintenance > Backup/Restore** > **Restore** and then click **Reset**.

If the WRE6505 restarts automatically, wait for the WRE6505 to finish restarting, and log in to the Web Configurator. The password is **1234**.

If the WRE6505 does not restart automatically, disconnect and reconnect the WRE6505's power. Then, follow the directions above again.

12.5 Wireless Problems

I cannot access the WRE6505 or ping any computer from the WLAN.

1 Make sure the wireless LAN is enabled on the WRE6505.

2 Make sure the wireless adapter on the wireless station is working properly.

3 Make sure the wireless adapter installed on your computer is IEEE 802.11 compatible and supports the same wireless standard as the WRE6505.

4 Make sure your computer (with a wireless adapter installed) is within the transmission range of the WRE6505.

5 Check that both the WRE6505 and your wireless station are using the same wireless and wireless security settings, and that both the WRE6505 and the AP are using the same wireless and wireless security settings.

6 Make sure traffic between the WLAN and the LAN is not blocked by the MAC Address List of the WRE6505. See Section 9.7 on page 57.

A

Customer Support

In the event of problems that cannot be solved by using this manual, you should contact your vendor. If you cannot contact your vendor, then contact a ZyXEL office for the region in which you bought the device.

See *http://www.zyxel.com/homepage.shtml* and also *http://www.zyxel.com/about_zyxel/zyxel_worldwide.shtml* for the latest information.

Please have the following information ready when you contact an office.

Required Information

- 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)

Taiwan

- ZyXEL Communications Corporation
- http://www.zyxel.com

Asia

China

- ZyXEL Communications (Shanghai) Corp.
  ZyXEL Communications (Beijing) Corp.
  ZyXEL Communications (Tianjin) Corp.
- http://www.zyxel.cn

India

- ZyXEL Technology India Pvt Ltd
- http://www.zyxel.in

Kazakhstan

- ZyXEL Kazakhstan
- http://www.zyxel.kz

Korea

- ZyXEL Korea Corp.
- http://www.zyxel.kr

Malaysia

- ZyXEL Malaysia Sdn Bhd.
- http://www.zyxel.com.my

Pakistan

- ZyXEL Pakistan (Pvt.) Ltd.
- http://www.zyxel.com.pk

Philippines

- ZyXEL Philippines
- http://www.zyxel.com.ph

Singapore

- ZyXEL Singapore Pte Ltd.
- http://www.zyxel.com.sg

Taiwan

- ZyXEL Communications Corporation
- http://www.zyxel.com/tw/zh/

Thailand

- ZyXEL Thailand Co., Ltd
- http://www.zyxel.co.th

Vietnam

- ZyXEL Communications Corporation-Vietnam Office
- http://www.zyxel.com/vn/vi

Europe

Austria

- ZyXEL Deutschland GmbH
- http://www.zyxel.de

Belarus

- ZyXEL BY
- http://www.zyxel.by

Belgium

- ZyXEL Communications B.V.
- http://www.zyxel.com/be/nl/
- http://www.zyxel.com/be/fr/

Bulgaria

- ZyXEL България
- http://www.zyxel.com/bg/bg/

Czech Republic

- ZyXEL Communications Czech s.r.o
- http://www.zyxel.cz

Denmark

- ZyXEL Communications A/S
- http://www.zyxel.dk

Estonia

- ZyXEL Estonia
- http://www.zyxel.com/ee/et/

Finland

- ZyXEL Communications
- http://www.zyxel.fi

France

- ZyXEL France
- http://www.zyxel.fr

Germany

- ZyXEL Deutschland GmbH
- http://www.zyxel.de

Hungary

- ZyXEL Hungary & SEE
- http://www.zyxel.hu

Italy

- ZyXEL Communications Italy
- http://www.zyxel.it/

Latvia

- ZyXEL Latvia
- http://www.zyxel.com/lv/lv/homepage.shtml

Lithuania

- ZyXEL Lithuania
- http://www.zyxel.com/lt/lt/homepage.shtml

Netherlands

- ZyXEL Benelux
- http://www.zyxel.nl

Norway

- ZyXEL Communications
- http://www.zyxel.no

Poland

- ZyXEL Communications Poland
- http://www.zyxel.pl

Romania

- ZyXEL Romania
- http://www.zyxel.com/ro/ro

Russia

- ZyXEL Russia
- http://www.zyxel.ru

Slovakia

- ZyXEL Communications Czech s.r.o. organizacna zlozka
- http://www.zyxel.sk

Spain

- ZyXEL Communications ES Ltd
- http://www.zyxel.es

Sweden

- ZyXEL Communications
- http://www.zyxel.se

Switzerland

- Studerus AG

- http://www.zyxel.ch/

Turkey

- ZyXEL Turkey A.S.
- http://www.zyxel.com.tr

UK

- ZyXEL Communications UK Ltd.
- http://www.zyxel.co.uk

Ukraine

- ZyXEL Ukraine
- http://www.ua.zyxel.com

Latin America

Argentina

- ZyXEL Communication Corporation
- http://www.zyxel.com/ec/es/

Brazil

- ZyXEL Communications Brasil Ltda.
- https://www.zyxel.com/br/pt/

Ecuador

- ZyXEL Communication Corporation
- http://www.zyxel.com/ec/es/

Middle East

Israel

- ZyXEL Communication Corporation
- http://il.zyxel.com/homepage.shtml

Middle East

- ZyXEL Communication Corporation
- http://www.zyxel.com/me/en/

North America

USA

- ZyXEL Communications, Inc. - North America Headquarters
- http://www.zyxel.com/us/en/

Oceania

Australia

- ZyXEL Communications Corporation
- http://www.zyxel.com/au/en/

Africa

South Africa

- Nology (Pty) Ltd.
- http://www.zyxel.co.za

B

Setting Up Your Computer's IP Address

Note: Your specific WRE6505 may not support all of the operating systems described in this appendix. See the product specifications for more information about which operating systems are supported.

This appendix shows you how to configure the IP settings on your computer in order for it to be able to communicate with the other devices on your network. Windows Vista/XP/2000, Mac OS 9/OS X, and all versions of UNIX/LINUX include the software components you need to use TCP/IP on your computer.

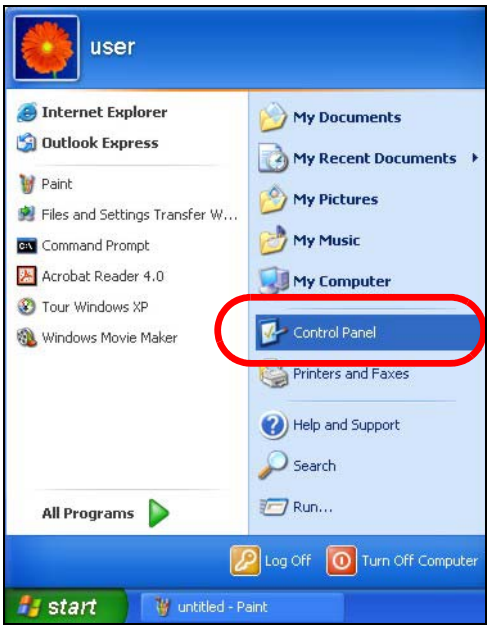
If you manually assign IP information instead of using a dynamic IP, make sure that your network's computers have IP addresses that place them in the same subnet.

In this appendix, you can set up an IP address for:

Windows XP/NT/2000

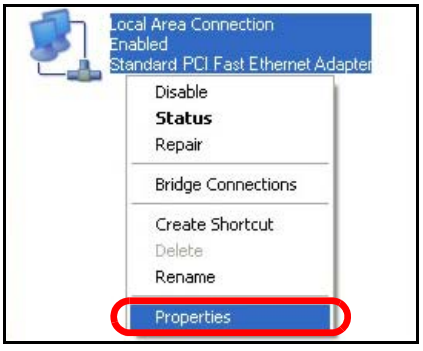
The following example uses the default Windows XP display theme but can also apply to Windows 2000 and Windows NT.

1 Click **Start** > **Control Panel**.

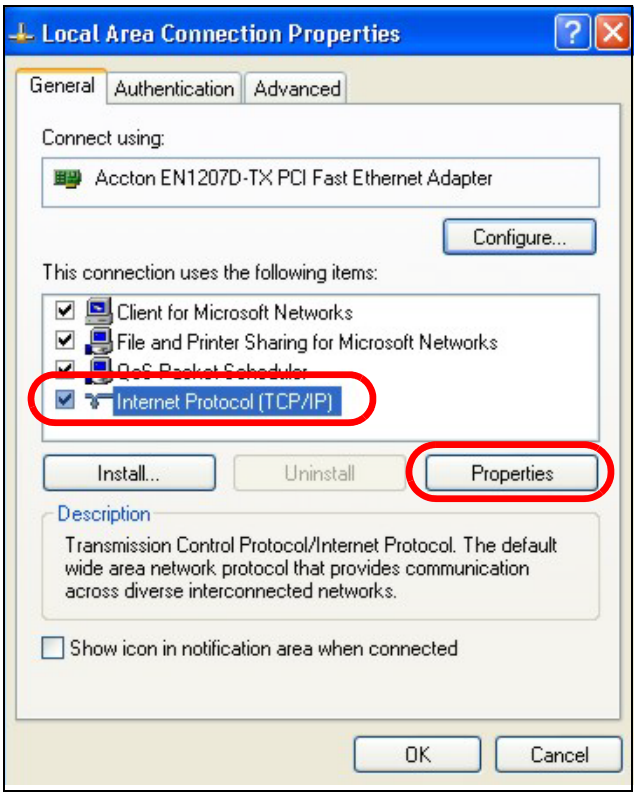


2 In the **Control Panel**, click the **Network Connections** icon.

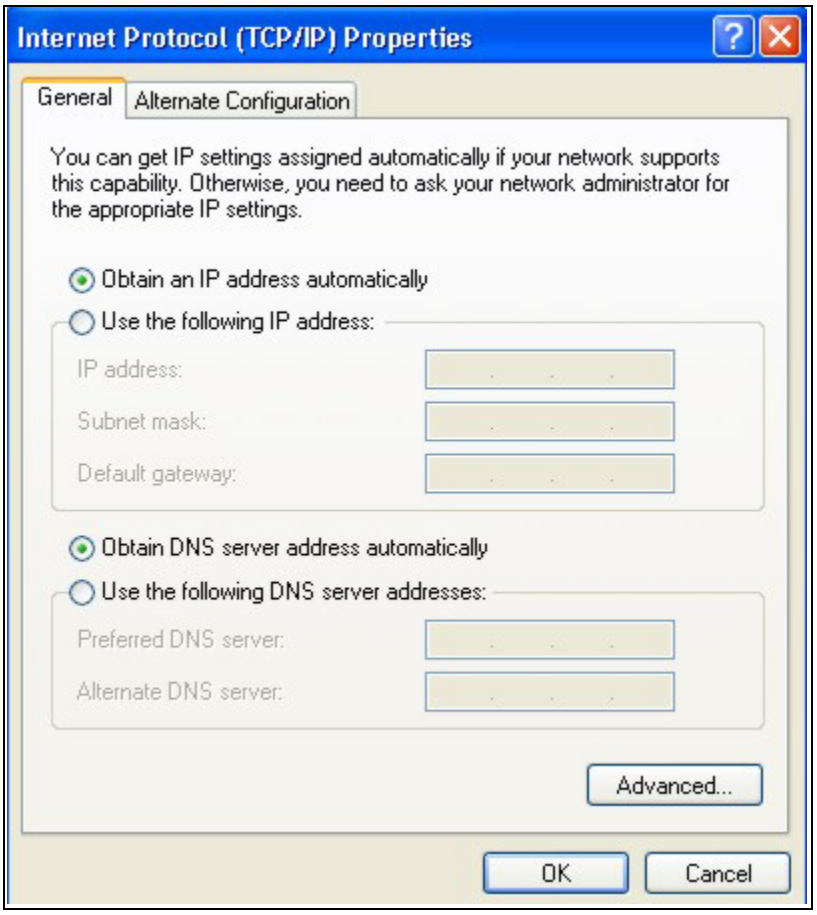
3 Right-click **Local Area Connection** and then select **Properties**.



4 On the **General** tab, select **Internet Protocol (TCP/IP)** and then click **Properties**.



5 The **Internet Protocol TCP/IP Properties** window opens.



6 Select **Obtain an IP address automatically** if your network administrator or ISP assigns your IP address dynamically.

Select **Use the following IP Address** and fill in the **IP address**, **Subnet mask**, and **Default gateway** fields if you have a static IP address that was assigned to you by your network administrator or ISP. You may also have to enter a **Preferred DNS server** and an **Alternate DNS server,** if that information was provided.

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

8 Click **OK** to close the **Local Area Connection Properties** window.

Verifying Settings

1 Click **Start** > **All Programs** > **Accessories** > **Command Prompt**.

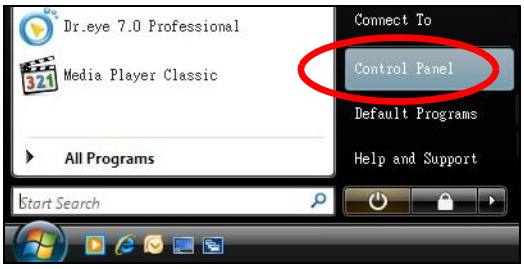
2 In the **Command Prompt** window, type "ipconfig" and then press [ENTER].

You can also go to **Start > Control Panel > Network Connections**, right-click a network connection, click **Status** and then click the **Support** tab to view your IP address and connection information.

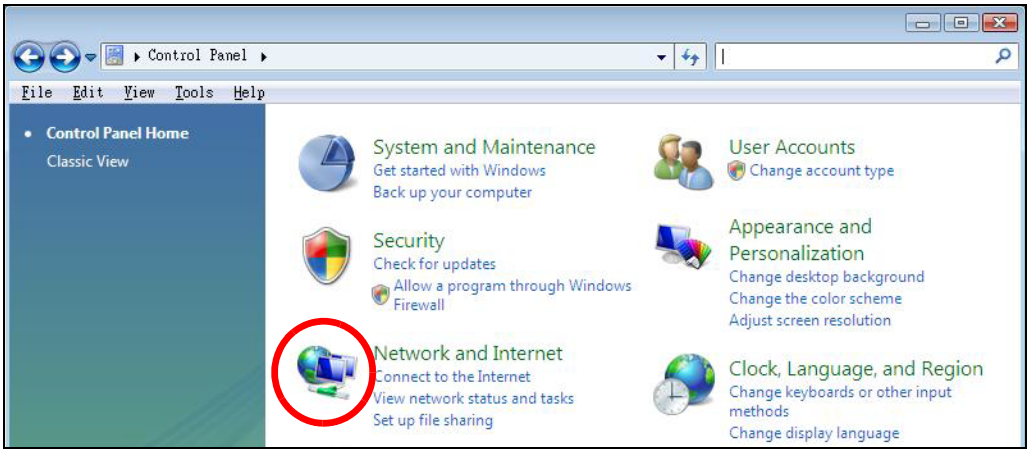
Windows Vista

This section shows screens from Windows Vista Professional.

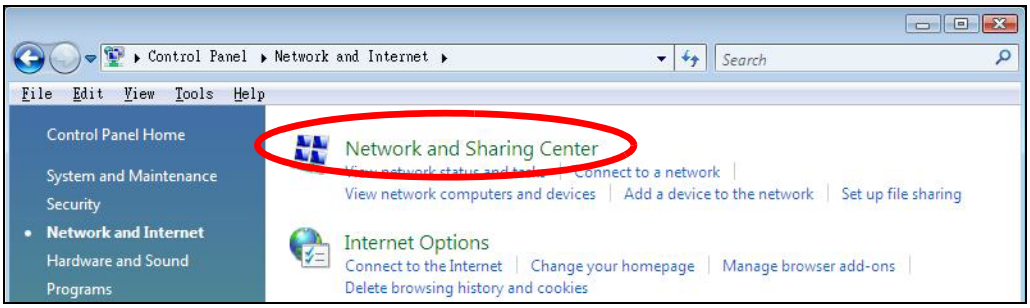
1 Click **Start** > **Control Panel**.



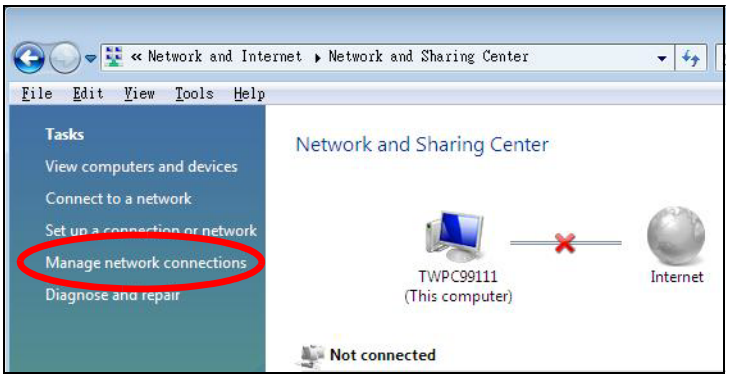
2 In the **Control Panel**, click the **Network and Internet** icon.



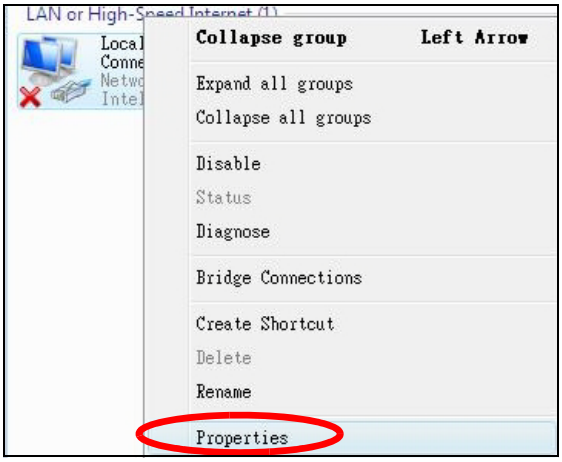
3 Click the **Network and Sharing Center** icon.



4 Click **Manage network connections**.

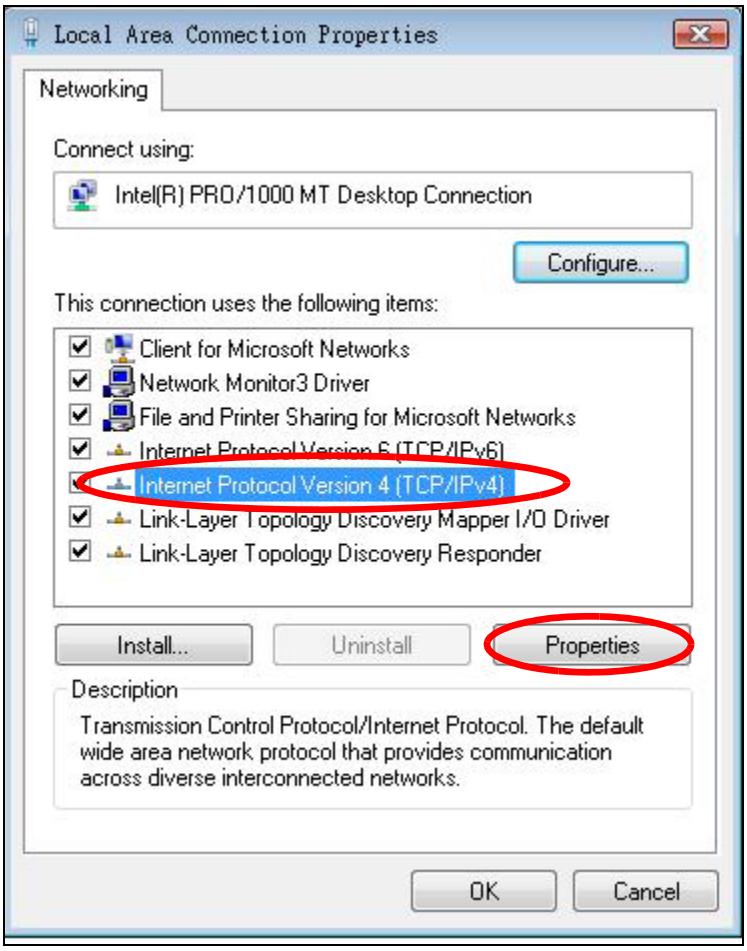


5 Right-click **Local Area Connection** and then select **Properties**.



Note: During this procedure, click **Continue** whenever Windows displays a screen saying that it needs your permission to continue.

6 Select **Internet Protocol Version 4 (TCP/IPv4)** and then select **Properties**.



7 The **Internet Protocol Version 4 (TCP/IPv4) Properties** window opens.

8 Select **Obtain an IP address automatically** if your network administrator or ISP assigns your IP address dynamically.

Select **Use the following IP Address** and fill in the **IP address**, **Subnet mask**, and **Default gateway** fields if you have a static IP address that was assigned to you by your network administrator or ISP. You may also have to enter a **Preferred DNS server** and an **Alternate DNS server,** if that information was provided.Click **Advanced**.

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

10 Click **OK** to close the **Local Area Connection Properties** window.

Verifying Settings

1 Click **Start** > **All Programs** > **Accessories** > **Command Prompt**.

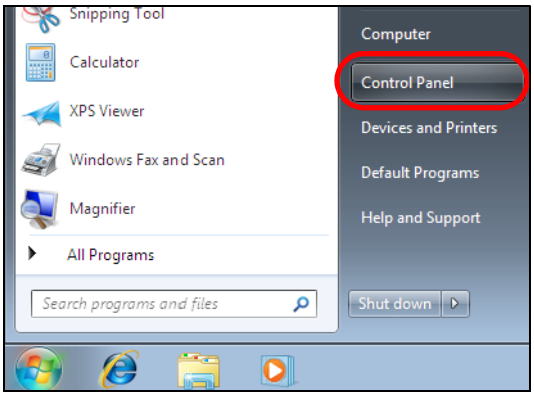
2 In the **Command Prompt** window, type "ipconfig" and then press [ENTER].

You can also go to **Start > Control Panel > Network Connections**, right-click a network connection, click **Status** and then click the **Support** tab to view your IP address and connection information.

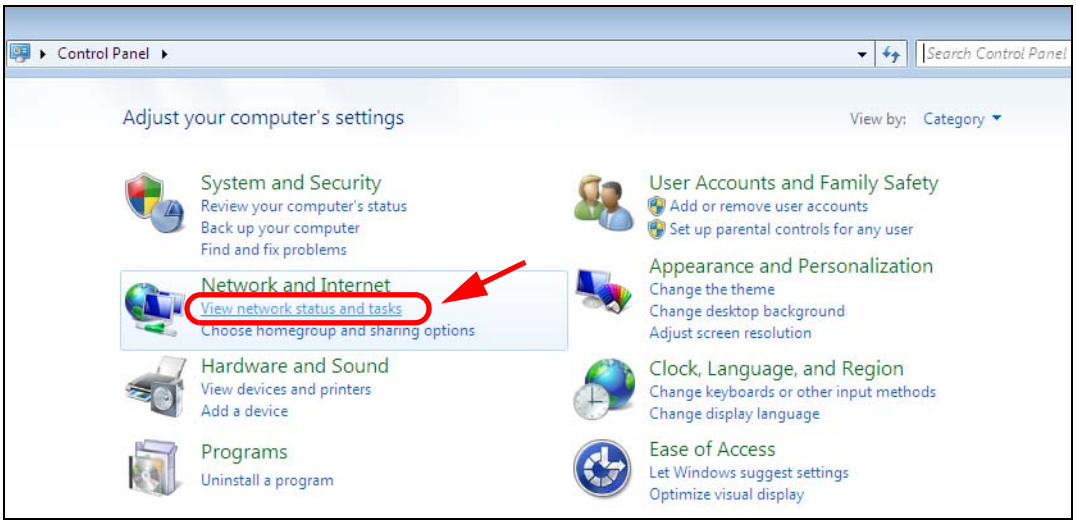
Windows 7

This section shows screens from Windows 7 Enterprise.

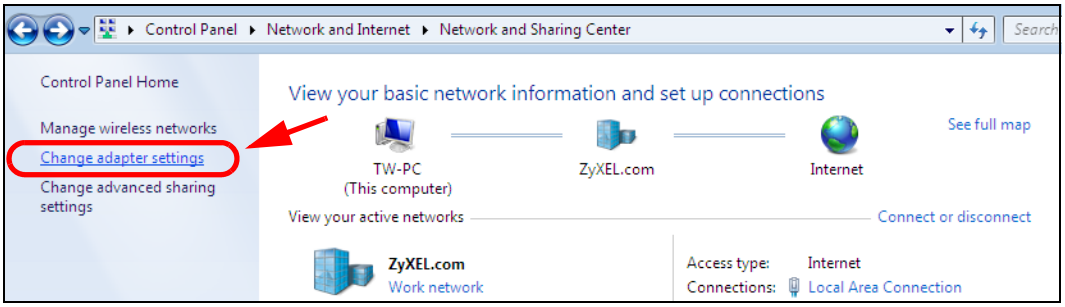
1 Click **Start** > **Control Panel**.



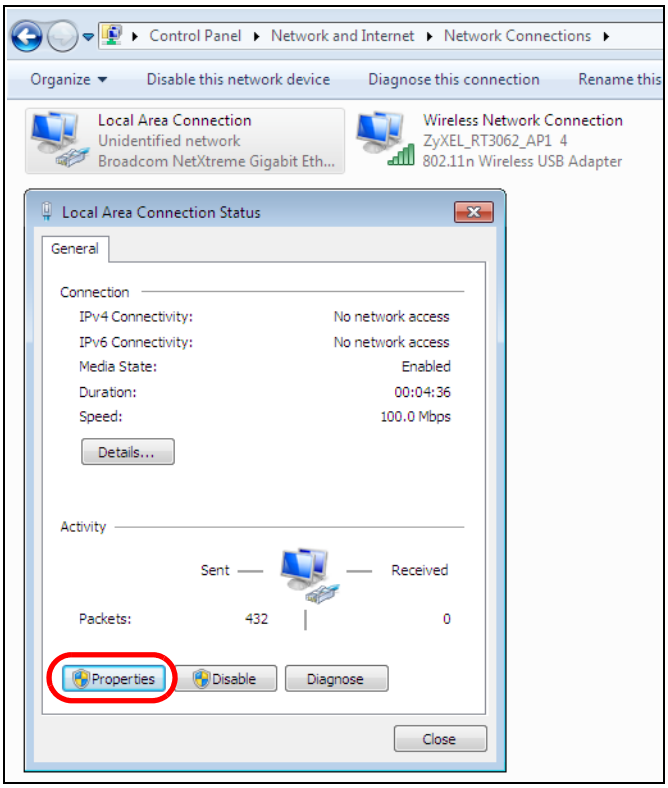
2 In the **Control Panel**, click **View network status and tasks** under the **Network and Internet** category.



3 Click **Change adapter settings**.

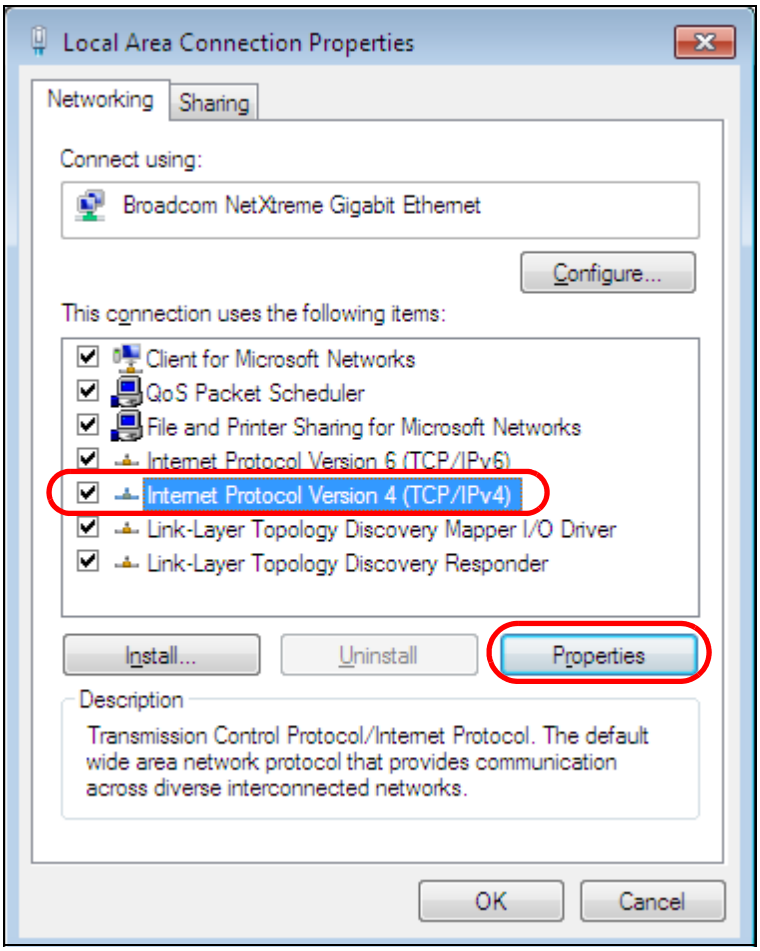


4 Double click **Local Area Connection** and then select **Properties**.

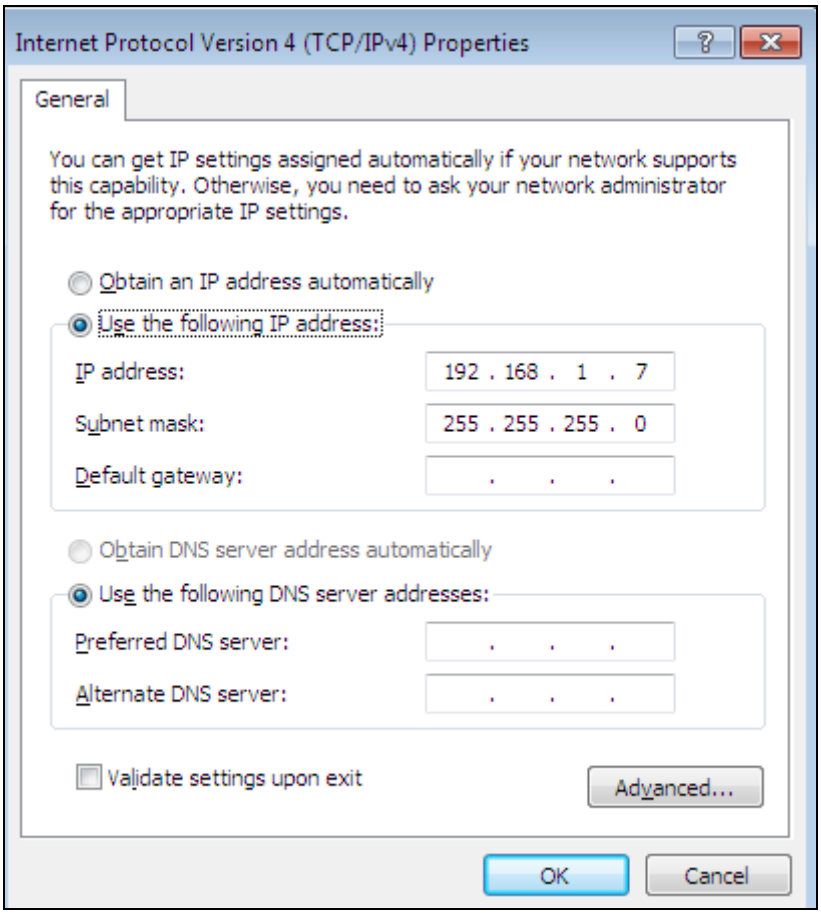


Note: During this procedure, click **Continue** whenever Windows displays a screen saying that it needs your permission to continue.

5 Select **Internet Protocol Version 4 (TCP/IPv4)** and then select **Properties**.



6 The **Internet Protocol Version 4 (TCP/IPv4) Properties** window opens.



7 Select **Obtain an IP address automatically** if your network administrator or ISP assigns your IP address dynamically.

Select **Use the following IP Address** and fill in the **IP address**, **Subnet mask**, and **Default gateway** fields if you have a static IP address that was assigned to you by your network administrator or ISP. You may also have to enter a **Preferred DNS server** and an **Alternate DNS server,** if that information was provided. Click **Advanced** if you want to configure advanced settings for IP, DNS and WINS.

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

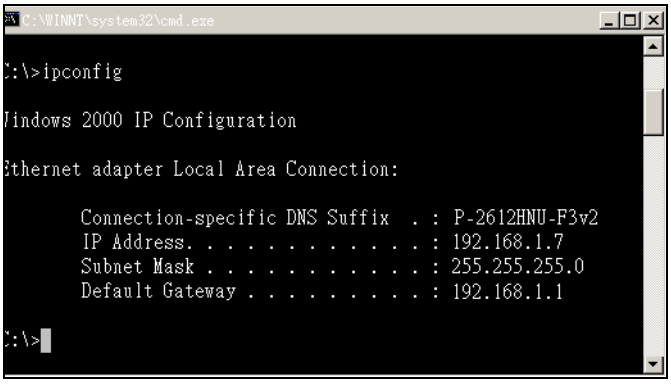
9 Click **OK** to close the **Local Area Connection Properties** window.

Verifying Settings

1 Click **Start** > **All Programs** > **Accessories** > **Command Prompt**.

2 In the **Command Prompt** window, type "ipconfig" and then press [ENTER].

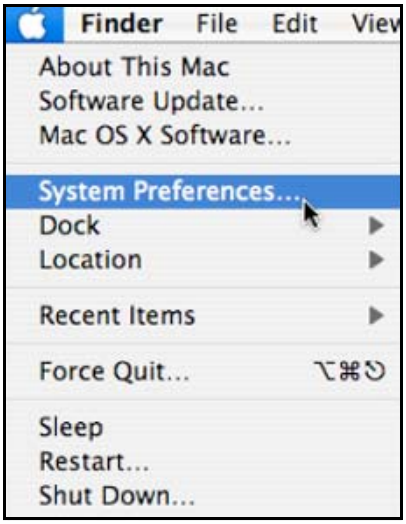
3 The IP settings are displayed as follows.



Mac OS X: 10.3 and 10.4

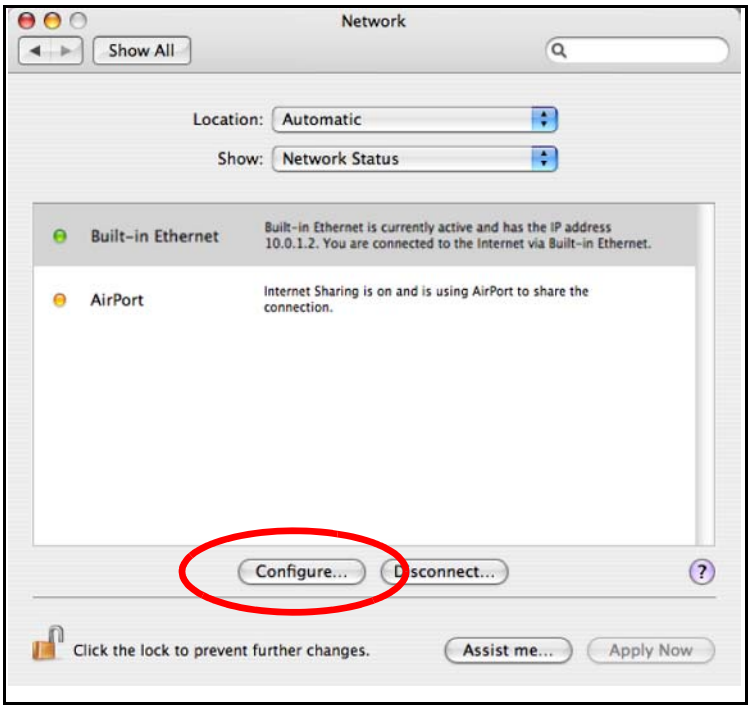
The screens in this section are from Mac OS X 10.4 but can also apply to 10.3.

1 Click **Apple** > **System Preferences**.

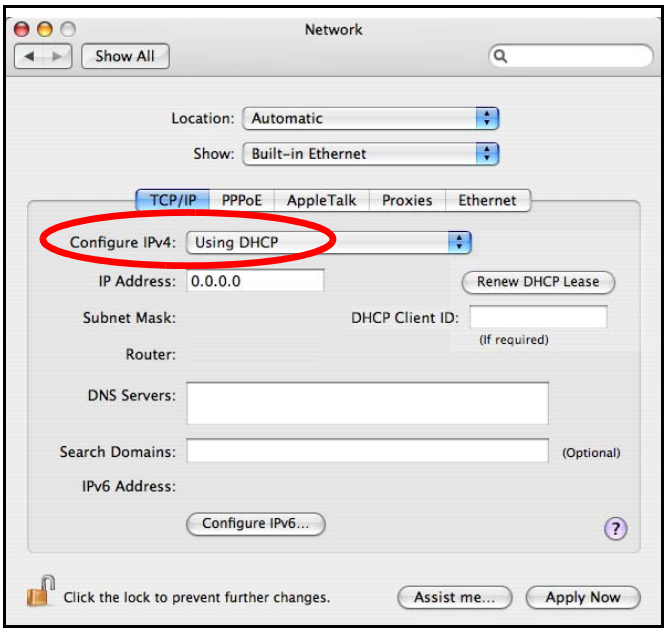


2 In the **System Preferences** window, click the **Network** icon.

3 When the **Network** preferences pane opens, select **Built-in Ethernet** from the network connection type list, and then click **Configure.**

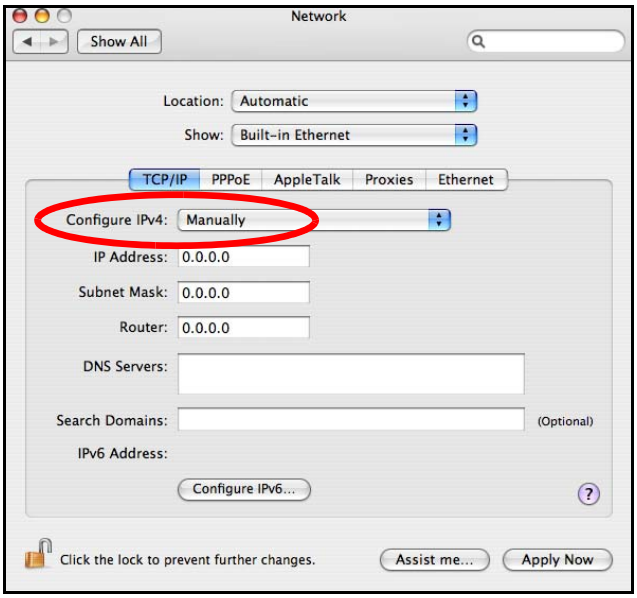


4 For dynamically assigned settings, select **Using DHCP** from the **Configure IPv4** list in the **TCP/IP** tab.



5 For statically assigned settings, do the following:

- From the **Configure IPv4** list, select **Manually**.
- In the **IP Address** field, type your IP address.
- In the **Subnet Mask** field, type your subnet mask.
- In the **Router** field, type the IP address of your device.

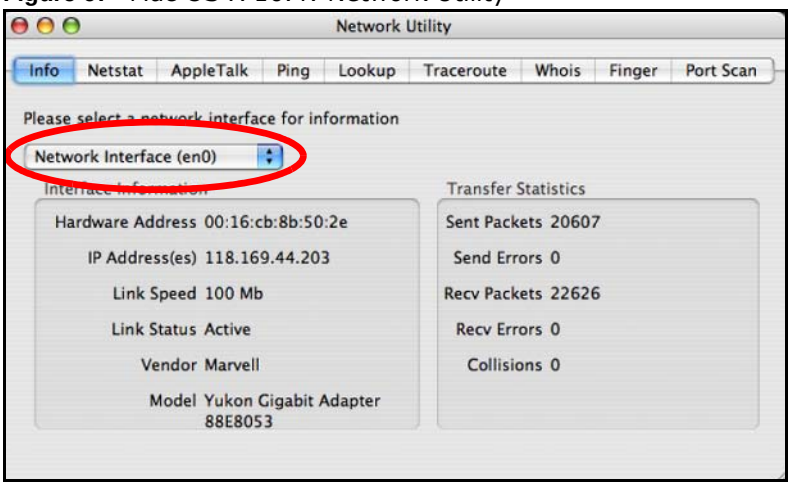


6 Click **Apply Now** and close the window.

Verifying Settings

Check your TCP/IP properties by clicking **Applications > Utilities > Network Utilities**, and then selecting the appropriate **Network Interface** from the **Info** tab.

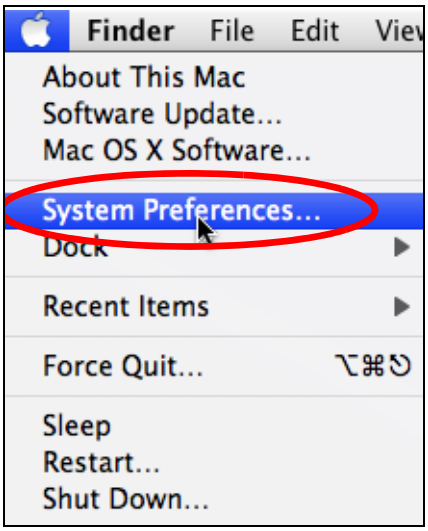
Figure 67 Mac OS X 10.4: Network Utility



Mac OS X: 10.5 and 10.6

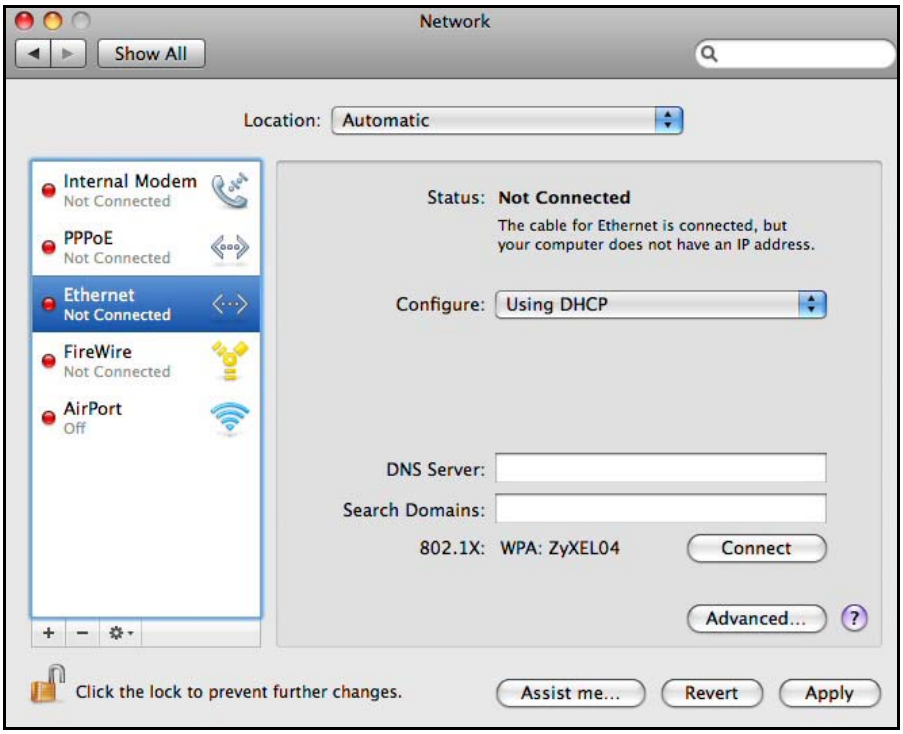
The screens in this section are from Mac OS X 10.5 but can also apply to 10.6.

1 Click **Apple** > **System Preferences**.



2 In **System Preferences**, click the **Network** icon.

3 When the **Network** preferences pane opens, select **Ethernet** from the list of available connection types.

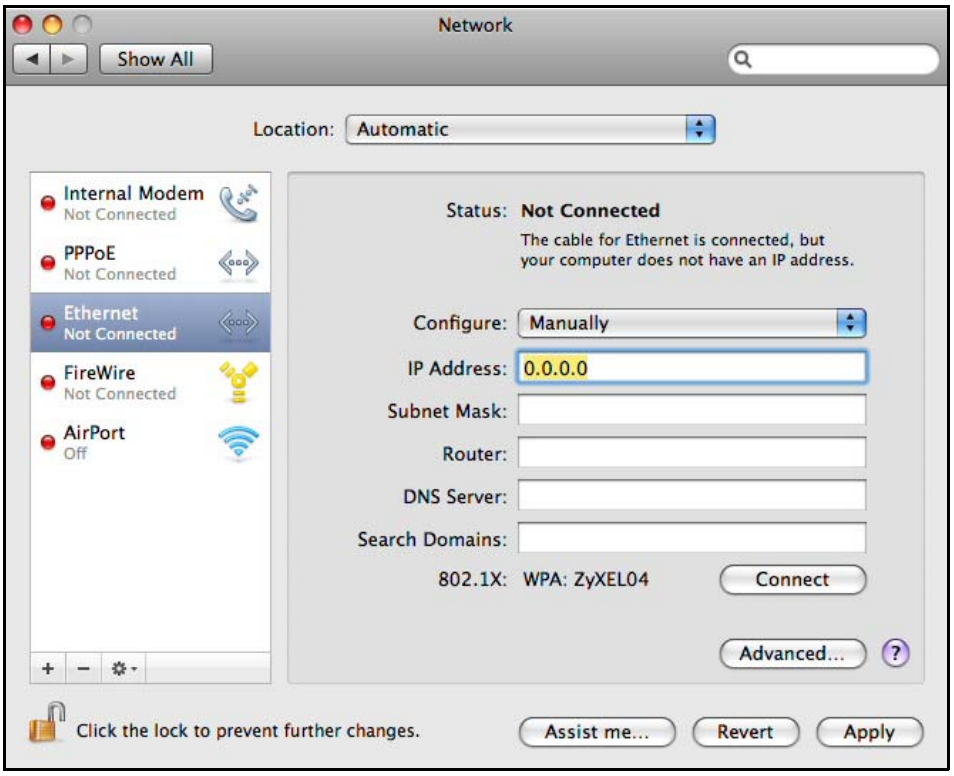


4 From the **Configure** list, select **Using DHCP** for dynamically assigned settings.

5 For statically assigned settings, do the following:

- From the **Configure** list, select **Manually**.
- In the **IP Address** field, enter your IP address.

- In the **Subnet Mask** field, enter your subnet mask.
- In the **Router** field, enter the IP address of your WRE6505.

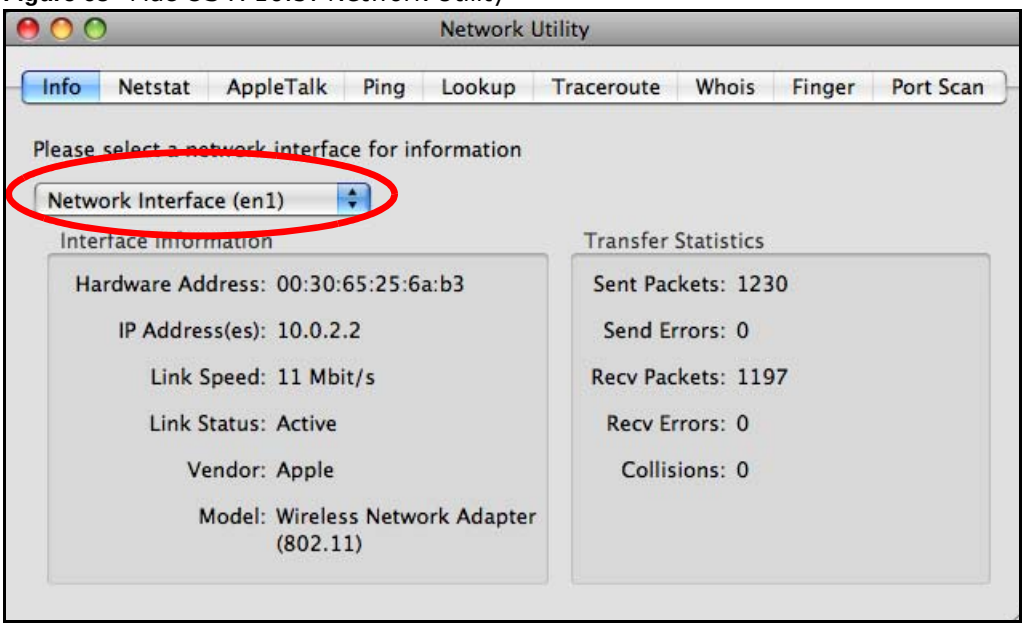


6 Click **Apply** and close the window.

Verifying Settings

Check your TCP/IP properties by clicking **Applications > Utilities > Network Utilities**, and then selecting the appropriate **Network interface** from the **Info** tab.

Figure 68 Mac OS X 10.5: Network Utility



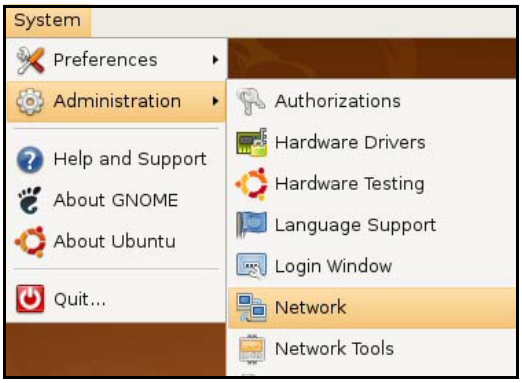
Linux: Ubuntu 8 (GNOME)

This section shows you how to configure your computer's TCP/IP settings in the GNU Object Model Environment (GNOME) using the Ubuntu 8 Linux distribution. The procedure, screens and file locations may vary depending on your specific distribution, release version, and individual configuration. The following screens use the default Ubuntu 8 installation.

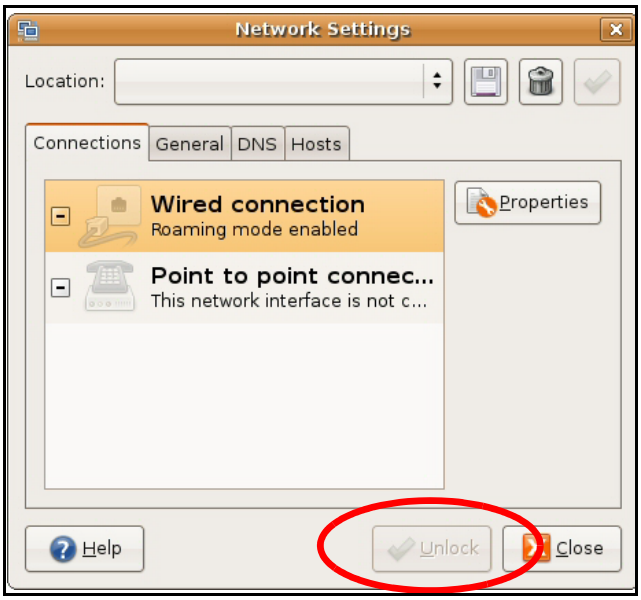
Note: Make sure you are logged in as the root administrator.

Follow the steps below to configure your computer IP address in GNOME:

1 Click **System > Administration > Network**.

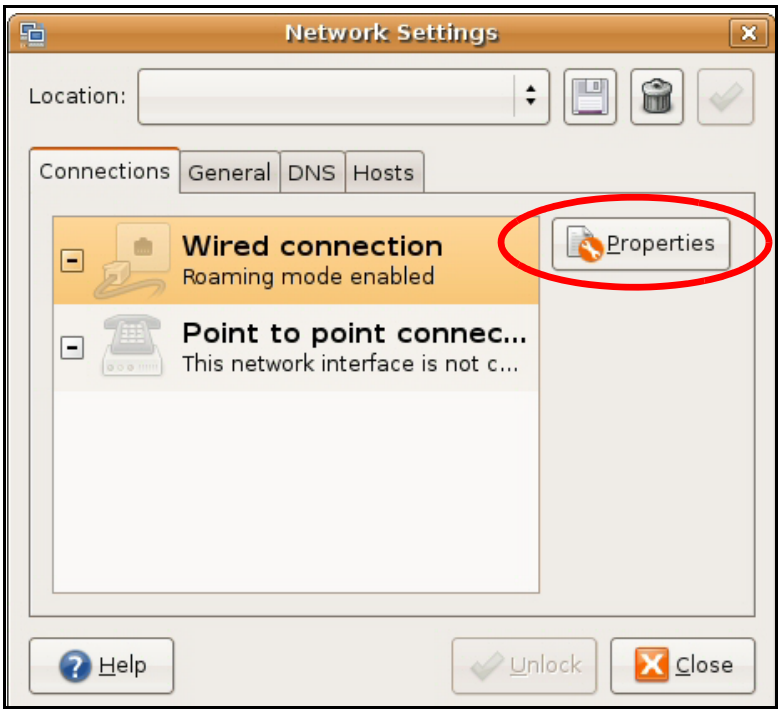


2 When the **Network Settings** window opens, click **Unlock** to open the **Authenticate** window. (By default, the **Unlock** button is greyed out until clicked.) You cannot make changes to your configuration unless you first enter your admin password.



3 In the **Authenticate** window, enter your admin account name and password then click the **Authenticate** button.

4 In the **Network Settings** window, select the connection that you want to configure, then click **Properties**.

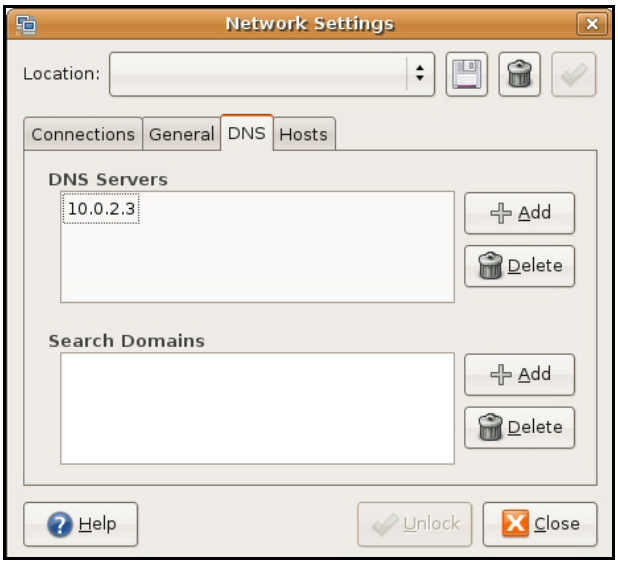


5 The **Properties** dialog box opens.

- In the **Configuration** list, select **Automatic Configuration (DHCP)** if you have a dynamic IP address.
- In the **Configuration** list, select **Static IP address** if you have a static IP address. Fill in the **IP address**, **Subnet mask**, and **Gateway address** fields.

6 Click **OK** to save the changes and close the **Properties** dialog box and return to the **Network Settings** screen.

7 If you know your DNS server IP address(es), click the **DNS** tab in the **Network Settings** window and then enter the DNS server information in the fields provided.

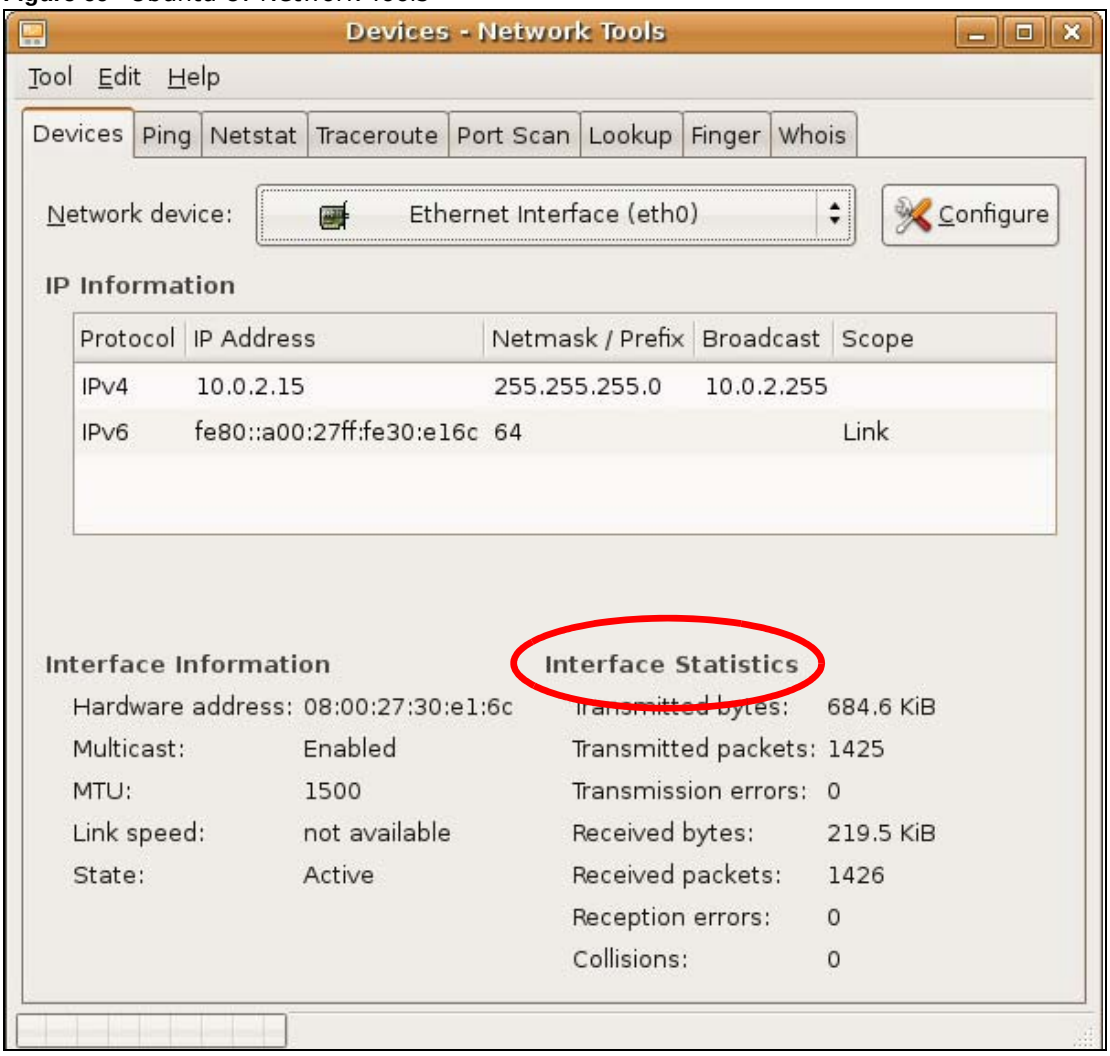


8 Click the **Close** button to apply the changes.

Verifying Settings

Check your TCP/IP properties by clicking **System > Administration > Network Tools**, and then selecting the appropriate **Network device** from the **Devices** tab. The **Interface Statistics** column shows data if your connection is working properly.

Figure 69 Ubuntu 8: Network Tools



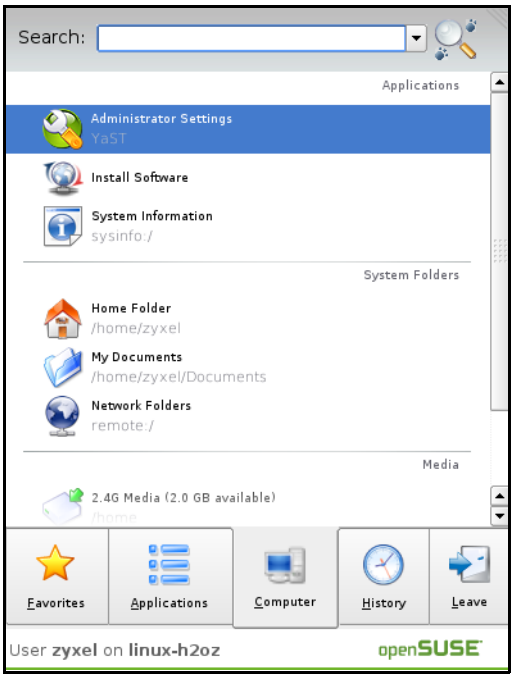
Linux: openSUSE 10.3 (KDE)

This section shows you how to configure your computer's TCP/IP settings in the K Desktop Environment (KDE) using the openSUSE 10.3 Linux distribution. The procedure, screens and file locations may vary depending on your specific distribution, release version, and individual configuration. The following screens use the default openSUSE 10.3 installation.

Note: Make sure you are logged in as the root administrator.

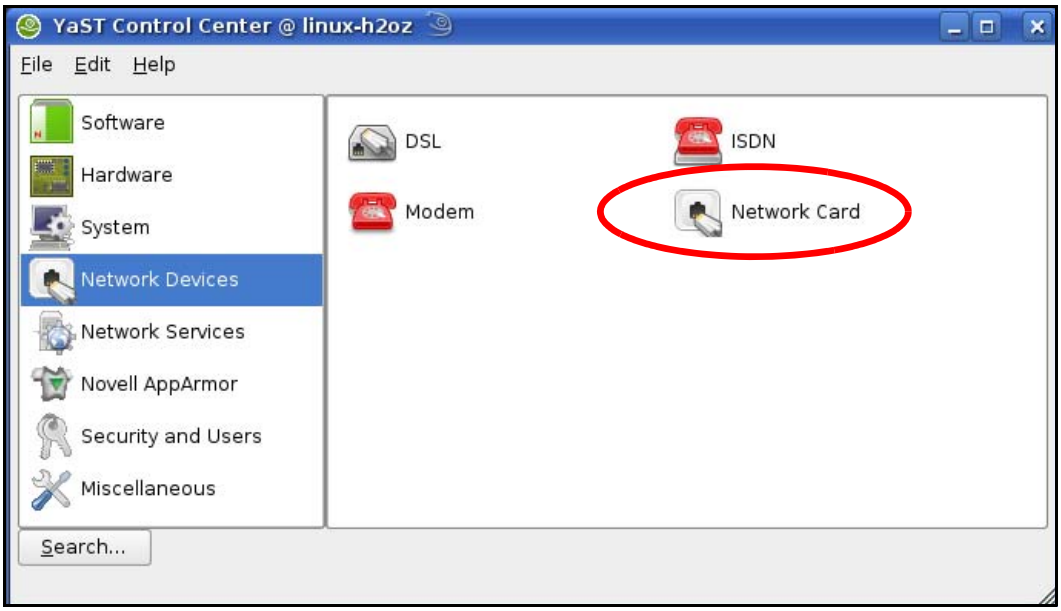
Follow the steps below to configure your computer IP address in the KDE:

1 Click **K Menu > Computer > Administrator Settings (YaST)**.

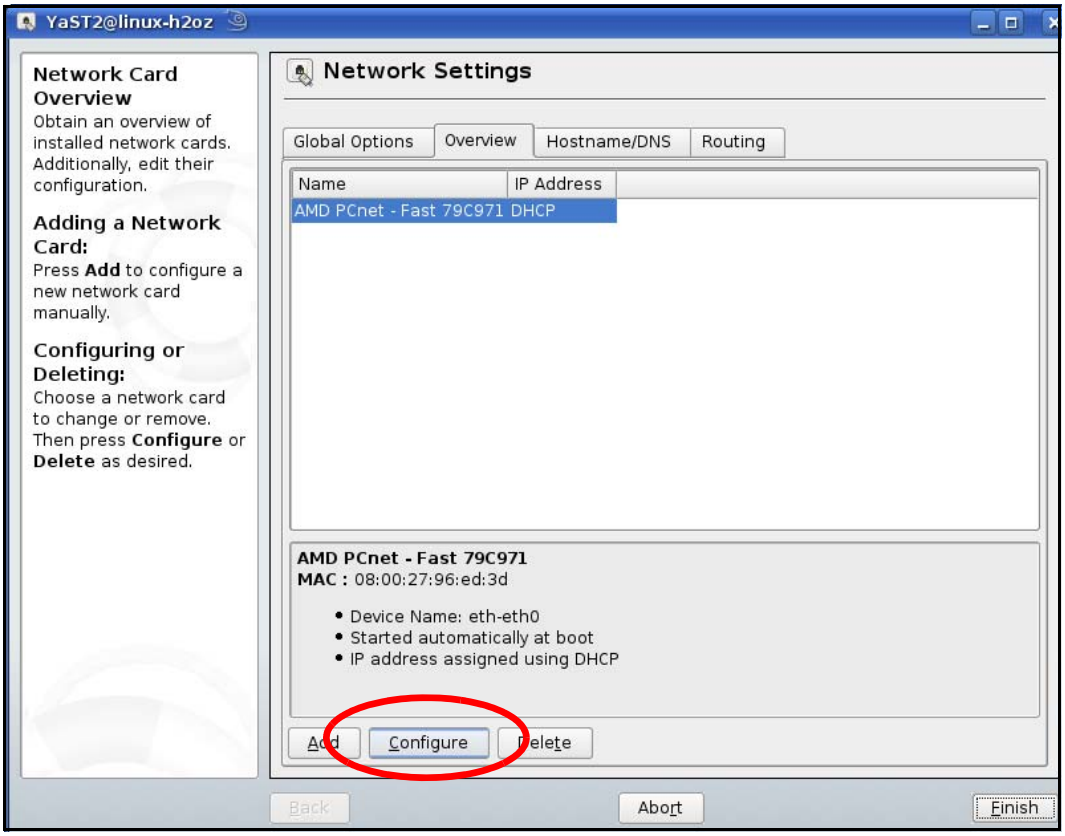


2 When the **Run as Root - KDE su** dialog opens, enter the admin password and click **OK**.

3 When the **YaST Control Center** window opens, select **Network Devices** and then click the **Network Card** icon.

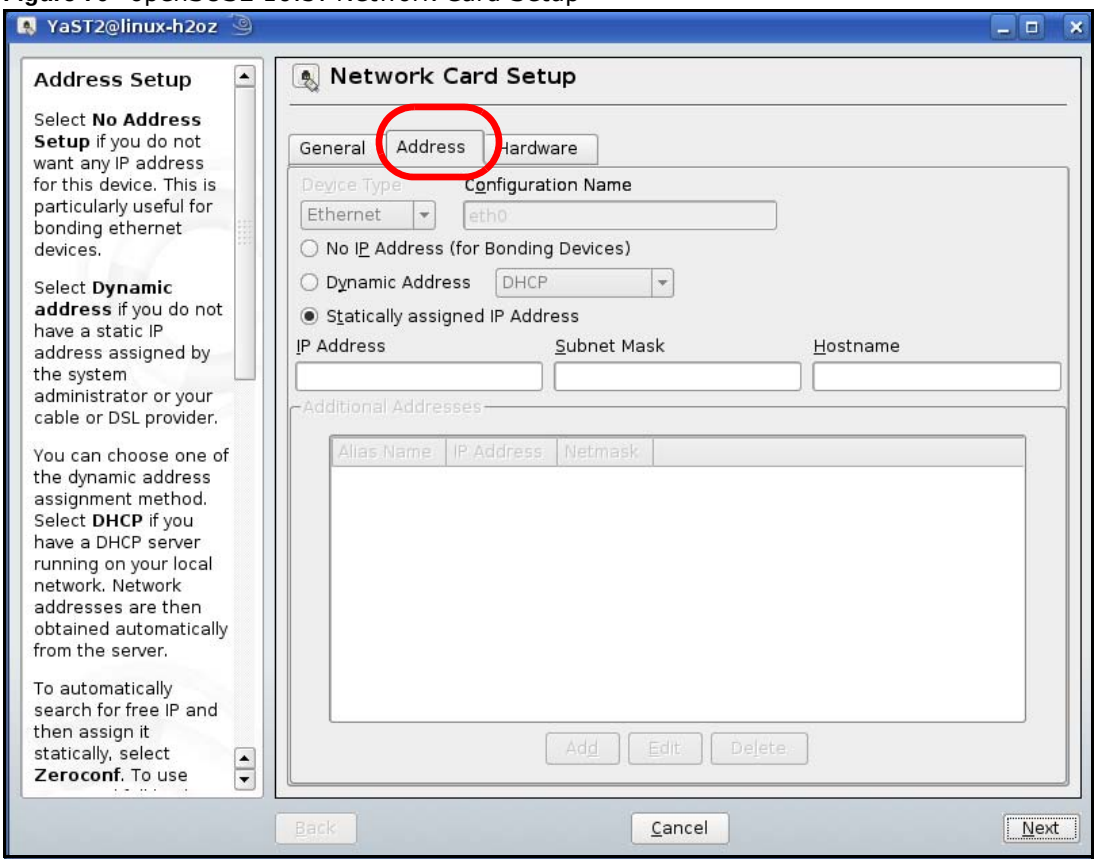


4 When the **Network Settings** window opens, click the **Overview** tab, select the appropriate connection **Name** from the list, and then click the **Configure** button.



5 When the **Network Card Setup** window opens, click the **Address** tab

Figure 70 openSUSE 10.3: Network Card Setup

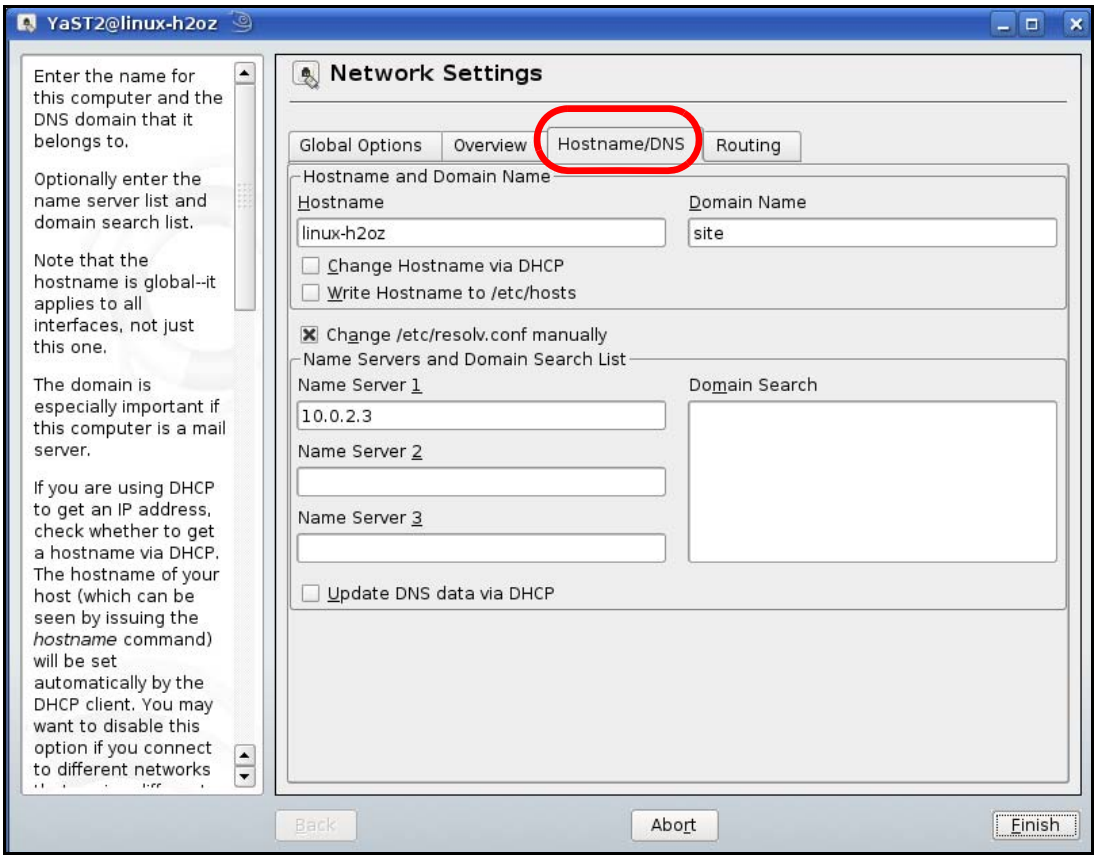


6 Select **Dynamic Address (DHCP)** if you have a dynamic IP address.

Select **Statically assigned IP Address** if you have a static IP address. Fill in the **IP address**, **Subnet mask**, and **Hostname** fields.

7 Click **Next** to save the changes and close the **Network Card Setup** window.

8 If you know your DNS server IP address(es), click the **Hostname / DNS** tab in **Network Settings** and then enter the DNS server information in the fields provided.

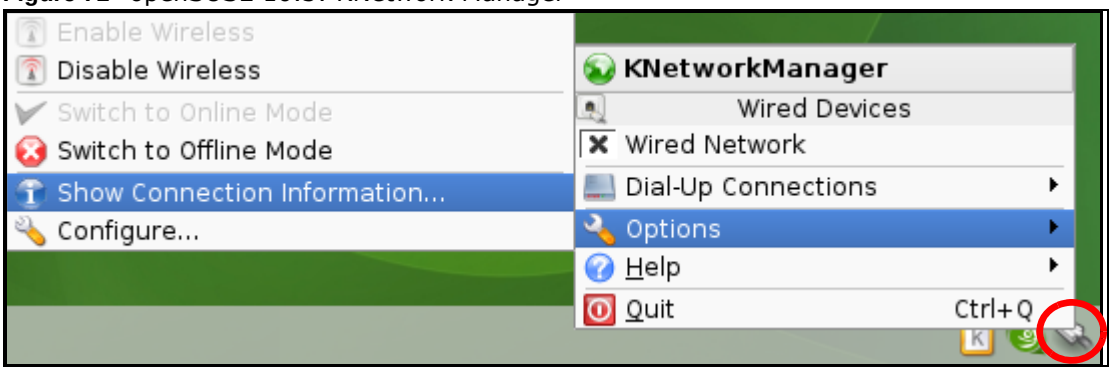


9 Click **Finish** to save your settings and close the window.

Verifying Settings

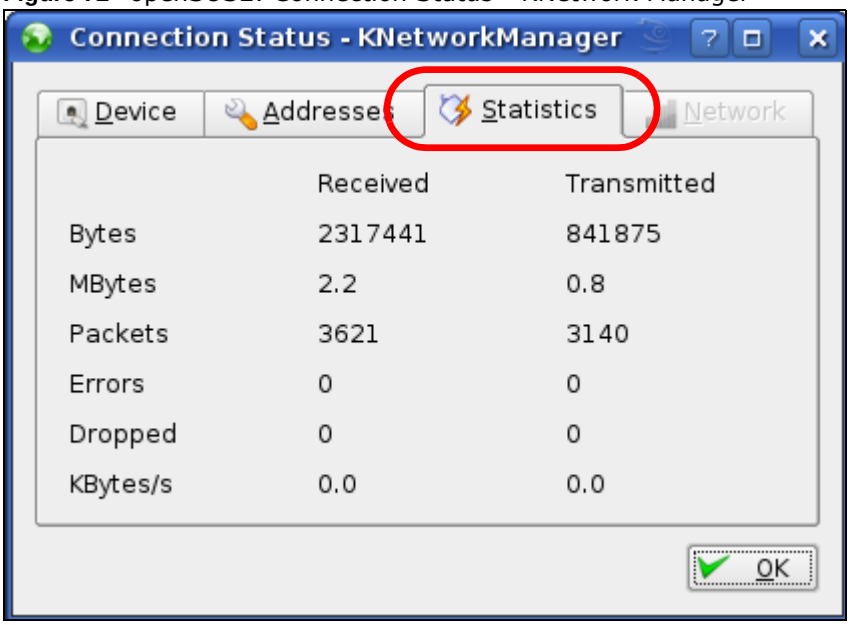
Click the **KNetwork Manager** icon on the **Task bar** to check your TCP/IP properties. From the **Options** sub-menu, select **Show Connection Information**.

Figure 71 openSUSE 10.3: KNetwork Manager



When the **Connection Status - KNetwork Manager** window opens, click the **Statistics tab** to see if your connection is working properly.

Figure 72 openSUSE: Connection Status - KNetwork Manager



C

Legal Information

Copyright

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Regulatory Notice and Statement

UNITED STATES of AMERICA

The following information applies if you use the product within USA area.

FCC EMC Statement

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

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the device.
- This product has been tested and complies with the specifications 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 according to 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 or television reception, which is found 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:
  - Reorient or relocate the receiving antenna
  - Increase the separation between the devices
  - Connect the equipment to an outlet other than the receiver's
  - Consult a dealer or an experienced radio/TV technician for assistance

FCC Radiation Exposure Statement

- This device complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.
- This transmitter must be at least 20 cm from the user and must not be co-located or operating in conjunction with any other antenna or transmitter.

CANADA

The following information applies if you use the product within Canada area

Industry Canada ICES statement

ICAN ICES-3 (B)/NMB-3(B)

Industry Canada RSS-GEN & RSS-247 statement

- This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
- This radio transmitter (2468C-WRE6505) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Antenna Information

TYPE	MANUFACTURER	GAIN	CONNECTOR
Internal 2.4G PIFA antenna	N/A	3.03 dBi	N/A
Internal 2.4G PIFA antenna	N/A	2.36 dBi	N/A
Internal 5G PIFA antenna	N/A	4.44 dBi	N/A

If the product with 5G wireless function operating in 5150-5250 MHz and 5725-5850 MHz , the following attention must be paid,

- The device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.
- For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate; and
- The worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in Section 6.2.2(3) of RSS 247 shall be clearly indicated.

If the product with 5G wireless function operating in 5250-5350 MHz and 5470-5725 MHz , the following attention must be paid.

- For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit.
- Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
- Le présent émetteur radio (2468C-WRE6505) de modèle s'il fait partie du matériel de catégorieI) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Informations Antenne

TYPE	FABRICANT	GAIN	CONNECTEUR
Internal 2.4G PIFA antenna	N/A	3.03 dBi	N/A
Internal 2.4G PIFA antenna	N/A	2.36 dBi	N/A
Internal 5G PIFA antenna	N/A	4.44 dBi	N/A

Lorsque la fonction sans fil 5G fonctionnant en5150-5250 MHz and 5725-5850 MHz est activée pour ce produit , il est nécessaire de porter une attention particulière aux choses suivantes

- Les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;
- Pour les dispositifs munis d'antennes amovibles, le gain maximal d'antenne permis (pour les dispositifs utilisant la bande de 5 725 à 5 850 MHz) doit être conforme à la limite de la p.i.r.e. spécifiée pour l'exploitation point à point et l'exploitation non point à point, selon le cas;
- Les pires angles d'inclinaison nécessaires pour rester conforme à l'exigence de la p.i.r.e. applicable au masque d'élévation, et énoncée à la section 6.2.2 3) du CNR-247, doivent être clairement indiqués.

  Lorsque la fonction sans fil 5G fonctionnant en 5250-5350 MHz et 5470-5725 MHz est activée pour ce produit , il est nécessaire de porter une attention particulière aux choses suivantes.
- Pour les dispositifs munis d'antennes amovibles, le gain maximal d'antenne permis pour les dispositifs utilisant les bandes de 5 250 à 5 350 MHz et de 5 470 à 5 725 MHz doit être conforme à la limite de la p.i.r.e.

Industry Canada radiation exposure statement

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

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

EUROPEAN UNION

The following information applies if you use the product within the European Union.

Declaration of Conformity with Regard to EU Directive 1999/5/EC (R&TTE Directive)

Compliance information for 2.4GHz and/or 5GHz wireless products relevant to the EU and other Countries following the EU Directive 1999/5/EC (R&TTE)

Български (Bulgarian)	С настоящото ZyXEL декларира, че това оборудване е в съответствие със съществените изисквания и другите приложими разпоредбите на Директива 1999/5/ЕС.
Español (Spanish)	Por medio de la presente ZyXEL declara que el equipo cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Čeština (Czech)	ZyXEL tímto prohlašuje, že tento zařízení je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/EC.
Dansk (Danish)	Undertegnede ZyXEL erklærer herved, at følgende udstyr udstyr overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch (German)	Hiermit erklärt ZyXEL, dass sich das Gerät Ausstattung in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EU befindet.
Eesti keel (Estonian)	Käesolevaga kinnitab ZyXEL seadme seadmed vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
Ελληνικά (Greek)	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ ZyXEL ΔΗΛΩΝΕΙ ΟΤΙ εξοπλισμός ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕC.
English	Hereby, ZyXEL declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Français (French)	Par la présente ZyXEL déclare que l'appareil équipements est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/EC.
Hrvatski (Croatian)	ZyXEL ovime izjavljuje da je radijska oprema tipa u skladu s Direktivom 1999/5/EC.
Íslenska (Icelandic)	Hér með lýsir, ZyXEL því yfir að þessi búnaður er í samræmi við grunnkröfur og önnur viðeigandi ákvæði tilskipunar 1999/5/EC.
Italiano (Italian)	Con la presente ZyXEL dichiara che questo attrezzatura è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviešu valoda (Latvian)	Ar šo ZyXEL deklarē, ka iekārtas atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių kalba (Lithuanian)	Šiuo ZyXEL deklaruoja, kad šis įranga atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Magyar (Hungarian)	Alulírott, ZyXEL nyilatkozom, hogy a berendezés megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EK irányelv egyéb elõírásainak.
Malti (Maltese)	Hawnhekk, ZyXEL, jiddikjara li dan tagħmir jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
Nederlands (Dutch)	Hierbij verklaart ZyXEL dat het toestel uitrusting in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EC.
Polski (Polish)	Niniejszym ZyXEL oświadcza, że sprzęt jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
Português (Portuguese)	ZyXEL declara que este equipamento está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/EC.
Română (Romanian)	Prin prezenta, ZyXEL declară că acest echipament este în conformitate cu cerinţele esenţiale şi alte prevederi relevante ale Directivei 1999/5/EC.
Slovenčina (Slovak)	ZyXEL týmto vyhlasuje, že zariadenia spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/EC.
Slovenščina (Slovene)	ZyXEL izjavlja, da je ta oprema v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/EC.
Suomi (Finnish)	ZyXEL vakuuttaa täten että laitteet tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

Svenska (Swedish)	Härmed intygar ZyXEL att denna utrustning står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EC.
Norsk (Norwegian)	Erklærer herved ZyXEL at dette utstyret er I samsvar med de grunnleggende kravene og andre relevante bestemmelser I direktiv 1999/5/EF.

This device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.

National Restrictions

This product may be used in all EU countries (and other countries following the EU Directive 1999/5/EC) without any limitation except for the countries mentioned below:

Ce produit peut être utilisé dans tous les pays de l'UE (et dans tous les pays ayant transposés la directive 1999/5/CE) sans aucune limitation, excepté pour les pays mentionnés ci-dessous:

Questo prodotto è utilizzabile in tutte i paesi EU (ed in tutti gli altri paesi che seguono le direttiva 1999/5/EC) senza nessuna limitazione, eccetto per i paesii menzionati di seguito:

Das Produkt kann in allen EU Staaten ohne Einschränkungen eingesetzt werden (sowie in anderen Staaten die der Richtlinie 1999/5/CE folgen) mit Außnahme der folgenden aufgeführten Staaten:

In the majority of the EU and other European countries, the 2.4GHz and 5GHz bands have been made available for the use of wireless local area networks (LANs). Later in this document you will find an overview of countries in which additional restrictions or requirements or both are applicable.

The requirements for any country may evolve. ZyXEL recommends that you check with the local authorities for the latest status of their national regulations for both the 2.4GHz and 5GHz wireless LANs.

The following countries have restrictions and/or requirements in addition to those given in the table labeled "*Overview of Regulatory Requirements for Wireless LANs*":.

Belgium

The Belgian Institute for Postal Services and Telecommunications (BIPT) must be notified of any outdoor wireless link having a range exceeding 300 meters. Please check http://www.bipt.be for more details.

Draadloze verbindingen voor buitengebruik en met een reikwijdte van meer dan 300 meter dienen aangemeld te worden bij het Belgisch Instituut voor postdiensten en telecommunicatie (BIPT). Zie http://www.bipt.be voor meer gegevens.

Les liaisons sans fil pour une utilisation en extérieur d'une distance supérieure à 300 mètres doivent être notifiées à l'Institut Belge des services Postaux et des Télécommunications (IBPT). Visitez http://www.ibpt.be pour de plus amples détails.

Denmark

In Denmark, the band 5150 - 5350 MHz is also allowed for outdoor usage.

I Danmark må frekvensbåndet 5150 - 5350 også anvendes udendørs.

Italy

This product meets the National Radio Interface and the requirements specified in the National Frequency Allocation Table for Italy. Unless this wireless LAN product is operating within the boundaries of the owner's property, its use requires a "general authorization." Please check http://www.sviluppoeconomico.gov.it/ for more details.

Questo prodotto è conforme alla specifiche di Interfaccia Radio Nazionali e rispetta il Piano Nazionale di ripartizione delle frequenze in Italia. Se non viene installato all 'interno del proprio fondo, l'utilizzo di prodotti Wireless LAN richiede una "Autorizzazione Generale". Consultare http://www.sviluppoeconomico.gov.it/ per maggiori dettagli.

Latvia

The outdoor usage of the 2.4 GHz band requires an authorization from the Electronic Communications Office. Please check http://www.esd.lv for more details.

2.4 GHz frekvenèu joslas izmantoðanai ârpus telpâm nepiecieðama atïauja no Elektronisko sakaru direkcijas. Vairâk informâcijas: http://www.esd.lv.

Notes:

1. Although Norway, Switzerland and Liechtenstein are not EU member states, the EU Directive 1999/5/EC has also been implemented in those countries.

2. The regulatory limits for maximum output power are specified in EIRP. The EIRP level (in dBm) of a device can be calculated by adding the gain of the antenna used(specified in dBi) to the output power available at the connector (specified in dBm).

List of national codes

COUNTRY	ISO 3166 2 LETTER CODE	COUNTRY	ISO 3166 2 LETTER CODE
Austria	AT	Liechtenstein	LI
Belgium	BE	Lithuania	LT
Bulgaria	BG	Luxembourg	LU
Croatia	HR	Malta	MT
Cyprus	CY	Netherlands	NL
Czech Republic	CZ	Norway	NO
Denmark	DK	Poland	PL
Estonia	EE	Portugal	PT
Finland	FI	Romania	RO
France	FR	Serbia	RS
Germany	DE	Slovakia	SK
Greece	GR	Slovenia	SI
Hungary	HU	Spain	ES
Iceland	IS	Switzerland	CH
Ireland	IE	Sweden	SE
Italy	IT	Turkey	TR
Latvia	LV	United Kingdom	GB

Safety Warnings

- 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.
- Do not remove the plug and connect it to a power outlet by itself; always attach the plug to the power adaptor first before connecting it to a power outlet.
- 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.
- Please use the provided or designated connection cables/power cables/ adaptors. Connect it to the right supply voltage (for example, 110V AC in North America or 230V AC in Europe). If the power adaptor or cord is damaged, it might cause electrocution. Remove it from the device and the power source, repairing the power adapter or cord is prohibited. 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.
- CAUTION: Risk of explosion if battery is replaced by an incorrect type, dispose of used batteries according to the instruction. Dispose them at the applicable collection point for the recycling of electrical and electronic devices. For detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the store where you purchased the product.
- Do not obstruct the device ventilation slots, as insufficient airflow may harm your device.
- The following warning statements apply, where the disconnect device is not incorporated in the device or where the plug on the power supply cord is intended to serve as the disconnect device,
  - For permanently connected devices, a readily accessible disconnect device shall be incorporated external to the device;
  - For pluggable devices, the socket-outlet shall be installed near the device and shall be easily accessible.

Environment Statement

ErP (Energy-related Products)

ZyXEL products put on the EU market in compliance with the requirement of the European Parliament and the Council published Directive 2009/125/EC establishing a framework for the setting of ecodesign requirements for energy-related products (recast), so called as "ErP Directive (Energy-related Products directive) as well as ecodesign requirement laid down in applicable implementing measures, power consumption has satisfied regulation requirements which are:

Network standby power consumption < 12W, and/or

Off mode power consumption < 0.5W, and/or

Standby mode power consumption < 0.5W.

Wireless setting, please refer to "Wireless" chapter for more detail.

European Union - Disposal and Recycling Information

The symbol below means that according to local regulations your product and/or its battery shall be disposed of separately from domestic waste. If this product is end of life, take it to a recycling station designated by local authorities. At the time of disposal, the separate collection of your product and/or its battery will help save natural resources and ensure that the environment is sustainable development.

Die folgende Symbol bedeutet, dass Ihr Produkt und/oder seine Batterie gemäß den örtlichen Bestimmungen getrennt vom Hausmüll entsorgt werden muss. Wenden Sie sich an eine Recyclingstation, wenn dieses Produkt das Ende seiner Lebensdauer erreicht hat. Zum Zeitpunkt der Entsorgung wird die getrennte Sammlung von Produkt und/oder seiner Batterie dazu beitragen, natürliche Ressourcen zu sparen und die Umwelt und die menschliche Gesundheit zu schützen.

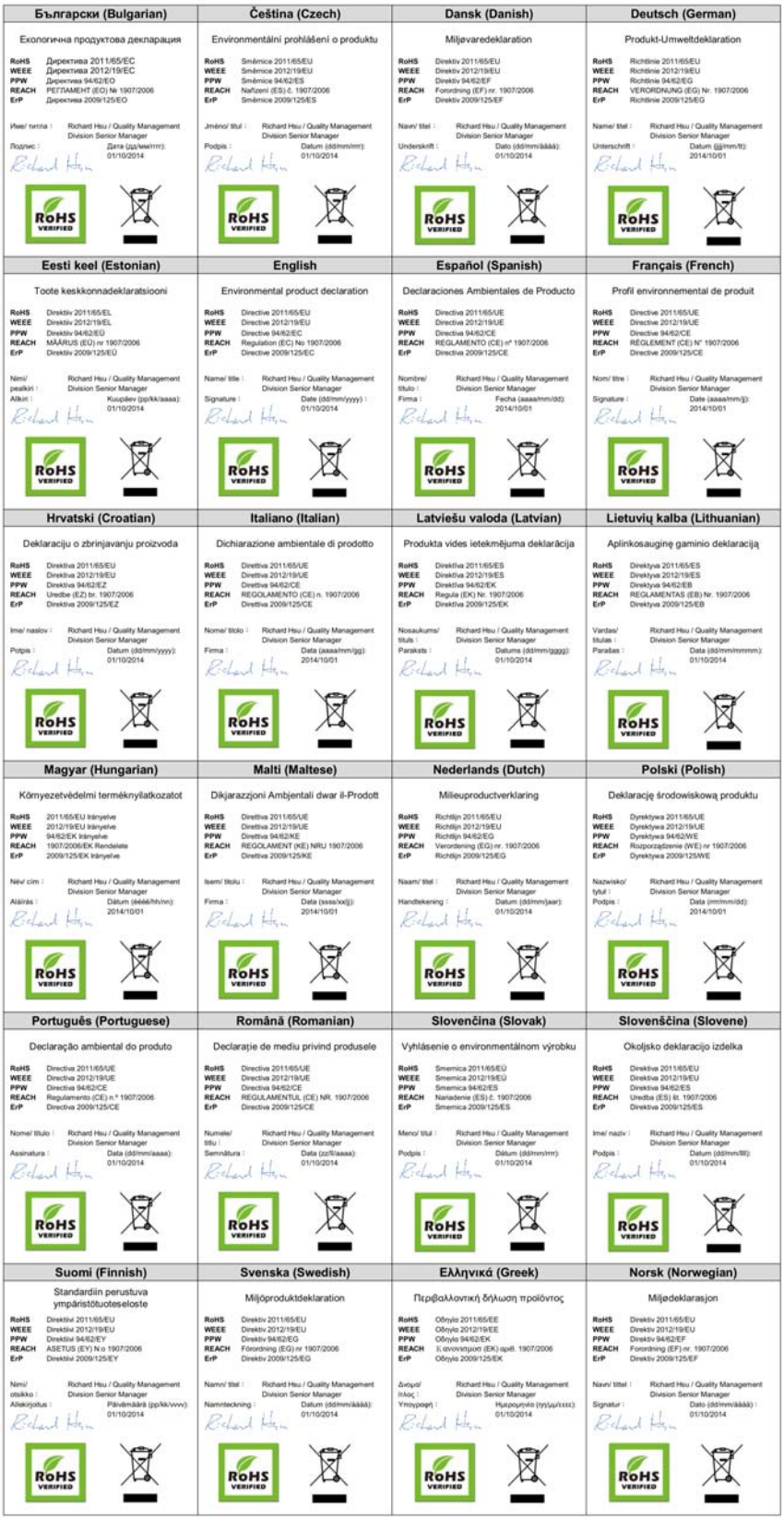
El símbolo de abajo indica que según las regulaciones locales, su producto y/o su batería deberán depositarse como basura separada de la doméstica. Cuando este producto alcance el final de su vida útil, llévelo a un punto limpio. Cuando llegue el momento de desechar el producto, la recogida por separado éste y/o su batería ayudará a salvar los recursos naturales y a proteger la salud humana y medioambiental.

Le symbole ci-dessous signifie que selon les réglementations locales votre produit et/ou sa batterie doivent être éliminés séparément des ordures ménagères. Lorsque ce produit atteint sa fin de vie, amenez-le à un centre de recyclage. Au moment de la mise au rebut, la collecte séparée de votre produit et/ou de sa batterie aidera à économiser les ressources naturelles et protéger l'environnement et la santé humaine.

Il simbolo sotto significa che secondo i regolamenti locali il vostro prodotto e/o batteria deve essere smaltito separatamente dai rifiuti domestici. Quando questo prodotto raggiunge la fine della vita di servizio portarlo a una stazione di riciclaggio. Al momento dello smaltimento, la raccolta separata del vostro prodotto e/o della sua batteria aiuta a risparmiare risorse naturali e a proteggere l'ambiente e la salute umana.

Symbolen innebär att enligt lokal lagstiftning ska produkten och/eller dess batteri kastas separat från hushållsavfallet. När den här produkten når slutet av sin livslängd ska du ta den till en återvinningsstation. Vid tiden för kasseringen bidrar du till en bättre miljö och mänsklig hälsa genom att göra dig av med den på ett återvinningsställe.

Environmental Product Declaration



Български (Bulgarian)

Екологична продуктова декларация

RoHS Директива 2011/65/EC
WEEE Директива 2012/19/EC
PPW Директива 94/62/EO
REACH РЕГЛАМЕНТ (ЕО) № 1907/2006
ErP Директива 2009/125/EO

Име/ титла : Richard Hsu / Quality Management Division Senior Manager
Подпис : Дата (дд/мм/гггг): 01/10/2014

Čeština (Czech)

Environmentální prohlášení o produktu

RoHS Směrnice 2011/65/EU
WEEE Směrnice 2012/19/EU
PPW Směrnice 94/62/ES
REACH Nařízení (ES) č. 1907/2006
ErP Směrnice 2009/125/ES

Jméno/ titul : Richard Hsu / Quality Management Division Senior Manager
Podpis : Datum (dd/mm/rrrr): 01/10/2014

Dansk (Danish)

Miljøvaredeklaration

RoHS Direktiv 2011/65/EU
WEEE Direktiv 2012/19/EU
PPW Direktiv 94/62/EF
REACH Forordning (EF) nr. 1907/2006
ErP Direktiv 2009/125/EF

Navn/ titel : Richard Hsu / Quality Management Division Senior Manager
Underskrift : Dato (dd/mm/åååå): 01/10/2014

Deutsch (German)

Produkt-Umweltdeklaration

RoHS Richtlinie 2011/65/EU
WEEE Richtlinie 2012/19/EU
PPW Richtlinie 94/62/EG
REACH VERORDNUNG (EG) Nr. 1907/2006
ErP Richtlinie 2009/125/EG

Name/ titel : Richard Hsu / Quality Management Division Senior Manager
Unterschrift : Datum (tt/mm/jj): 2014/10/01

Eesti keel (Estonian)

Toote keskkonnadeklaratsiooni

RoHS Direktiiv 2011/65/EL
WEEE Direktiiv 2012/19/EL
PPW Direktiiv 94/62/EÜ
REACH MÄÄRUS (EÜ) nr 1907/2006
ErP Direktiiv 2009/125/EÜ

Nimi/ pealkiri : Richard Hsu / Quality Management Division Senior Manager
Allkiri : Kuupäev (pp/kk/aaaa): 01/10/2014

English

Environmental product declaration

RoHS Directive 2011/65/EU
WEEE Directive 2012/19/EU
PPW Directive 94/62/EC
REACH Regulation (EC) No 1907/2006
ErP Directive 2009/125/EC

Name/ title : Richard Hsu / Quality Management Division Senior Manager
Signature : Date (dd/mm/yyyy) : 01/10/2014

Español (Spanish)

Declaraciones Ambientales de Producto

RoHS Directiva 2011/65/UE
WEEE Directiva 2012/19/UE
PPW Directiva 94/62/CE
REACH REGLAMENTO (CE) nº 1907/2006
ErP Directiva 2009/125/CE

Nombre/ título : Richard Hsu / Quality Management Division Senior Manager
Firma : Fecha (aaaa/mm/dd): 2014/10/01

Français (French)

Profil environnemental de produit

RoHS Directive 2011/65/UE
WEEE Directive 2012/19/UE
PPW Directive 94/62/CE
REACH RÈGLEMENT (CE) N° 1907/2006
ErP Directive 2009/125/CE

Nom/ titre : Richard Hsu / Quality Management Division Senior Manager
Signature : Date (aaaa/mm/jj): 2014/10/01

Hrvatski (Croatian)

Deklaraciju o zbrinjavanju proizvoda

RoHS Direktiva 2011/65/EU
WEEE Direktiva 2012/19/EU
PPW Direktiva 94/62/EZ
REACH Uredbe (EZ) br. 1907/2006
ErP Direktiva 2009/125/EZ

Ime/ naslov : Richard Hsu / Quality Management Division Senior Manager
Potpis : Datum (dd/mm/yyyy): 01/10/2014

Italiano (Italian)

Dichiarazione ambientale di prodotto

RoHS Direttiva 2011/65/UE
WEEE Direttiva 2012/19/UE
PPW Direttiva 94/62/CE
REACH REGOLAMENTO (CE) n. 1907/2006
ErP Direttiva 2009/125/CE

Nome/ titolo : Richard Hsu / Quality Management Division Senior Manager
Firma : Data (aaaa/mm/gg): 2014/10/01

Latviešu valoda (Latvian)

Produkta vides ietekmējuma deklarācija

RoHS Direktīva 2011/65/ES
WEEE Direktīva 2012/19/ES
PPW Direktīva 94/62/EK
REACH Regula (EK) Nr. 1907/2006
ErP Direktīva 2009/125/EK

Nosaukums/ tituls : Richard Hsu / Quality Management Division Senior Manager
Paraksts : Datums (dd/mm/gggg): 01/10/2014

Lietuvių kalba (Lithuanian)

Aplinkosauginę gaminio deklaraciją

RoHS Direktyva 2011/65/ES
WEEE Direktyva 2012/19/ES
PPW Direktyva 94/62/EB
REACH REGLAMENTAS (EB) Nr. 1907/2006
ErP Direktyva 2009/125/EB

Vardas/ titulas : Richard Hsu / Quality Management Division Senior Manager
Parašas : Data (dd/mm/mmmm): 01/10/2014

Magyar (Hungarian)

Környezetvédelmi terméknyilatkozatot

RoHS 2011/65/EU irányelve
WEEE 2012/19/EU irányelve
PPW 94/62/EK irányelve
REACH 1907/2006/EK Rendelete
ErP 2009/125/EK irányelve

Név/ cím : Richard Hsu / Quality Management Division Senior Manager
Aláírás : Dátum (éééé/hh/nn): 2014/10/01

Malti (Maltese)

Dikjarazzjoni Ambjentali dwar il-Prodott

RoHS Direttiva 2011/65/UE
WEEE Direttiva 2012/19/UE
PPW Direttiva 94/62/KE
REACH REGOLAMENT (KE) NRU 1907/2006
ErP Direttiva 2009/125/KE

Isem/ titolu : Richard Hsu / Quality Management Division Senior Manager
Firma : Data (sssa/xx/jj): 2014/10/01

Nederlands (Dutch)

Milieuproductverklaring

RoHS Richtlijn 2011/65/EU
WEEE Richtlijn 2012/19/EU
PPW Richtlijn 94/62/EG
REACH Verordening (EG) nr. 1907/2006
ErP Richtlijn 2009/125/EG

Naam/ titel : Richard Hsu / Quality Management Division Senior Manager
Handtekening : Datum (dd/mm/jaar): 01/10/2014

Polski (Polish)

Deklarację środowiskową produktu

RoHS Dyrektywa 2011/65/UE
WEEE Dyrektywa 2012/19/UE
PPW Dyrektywa 94/62/WE
REACH Rozporządzenie (WE) nr 1907/2006
ErP Dyrektywa 2009/125/WE

Nazwisko/ tytuł : Richard Hsu / Quality Management Division Senior Manager
Podpis : Data (rrrr/mm/dd): 2014/10/01

Português (Portuguese)

Declaração ambiental do produto

RoHS Directiva 2011/65/UE
WEEE Directiva 2012/19/UE
PPW Directiva 94/62/CE
REACH Regulamento (CE) n.º 1907/2006
ErP Directiva 2009/125/CE

Nome/ título : Richard Hsu / Quality Management Division Senior Manager
Assinatura : Data (dd/mm/aaaa): 01/10/2014

Română (Romanian)

Declarație de mediu privind produsele

RoHS Directiva 2011/65/UE
WEEE Directiva 2012/19/UE
PPW Directiva 94/62/CE
REACH REGLAMENTUL (CE) NR. 1907/2006
ErP Directiva 2009/125/CE

Numele/ titlu : Richard Hsu / Quality Management Division Senior Manager
Semnătura : Data (zz/ll/aaaa): 01/10/2014

Slovenčina (Slovak)

Vyhlásenie o environmentálnom výrobku

RoHS Smernica 2011/65/EÚ
WEEE Smernica 2012/19/EÚ
PPW Smernica 94/62/ES
REACH Nariadenie (ES) č. 1907/2006
ErP Smernica 2009/125/ES

Meno/ titul : Richard Hsu / Quality Management Division Senior Manager
Podpis : Dátum (dd/mm/rrrr): 01/10/2014

Slovenščina (Slovene)

Okoljsko deklaracijo izdelka

RoHS Direktiva 2011/65/EU
WEEE Direktiva 2012/19/EU
PPW Direktiva 94/62/ES
REACH Uredba (ES) št. 1907/2006
ErP Direktiva 2009/125/ES

Ime/ naziv : Richard Hsu / Quality Management Division Senior Manager
Podpis : Datum (dd/mm/ll): 01/10/2014

Suomi (Finnish)

Standardiin perustuva ympäristötuoteseloste

RoHS Direktiivi 2011/65/EU
WEEE Direktiivi 2012/19/EU
PPW Direktiivi 94/62/EY
REACH ASETUS (EY) N:o 1907/2006
ErP Direktiivi 2009/125/EY

Nimi/ otsikko : Richard Hsu / Quality Management Division Senior Manager
Allekirjoitus : Päivämäärä (pp/kk/vvvv): 01/10/2014

Svenska (Swedish)

Miljöproduktdeklaration

RoHS Direktiv 2011/65/EU
WEEE Direktiv 2012/19/EU
PPW Direktiv 94/62/EG
REACH Förordning (EG) nr 1907/2006
ErP Direktiv 2009/125/EG

Namn/ titel : Richard Hsu / Quality Management Division Senior Manager
Namnteckning : Datum (dd/mm/åååå): 01/10/2014

Ελληνικά (Greek)

Περιβαλλοντική δήλωση προϊόντος

RoHS Οδηγία 2011/65/ΕΕ
WEEE Οδηγία 2012/19/ΕΕ
PPW Οδηγία 94/62/ΕΚ
REACH Κ ανανησμοσ (ΕΚ) αρθ. 1907/2006
ErP Οδηγία 2009/125/ΕΚ

Όνομα/ Τίτλος : Richard Hsu / Quality Management Division Senior Manager
Υπογραφή : Ημερομηνία (ηη/μμ/εεεε): 01/10/2014

Norsk (Norwegian)

Miljødeklarasjon

RoHS Direktiv 2011/65/EU
WEEE Direktiv 2012/19/EU
PPW Direktiv 94/62/EF
REACH Forordning (EF) nr. 1907/2006
ErP Direktiv 2009/125/EF

Navn/ tittel : Richard Hsu / Quality Management Division Senior Manager
Signatur : Dato (dd/mm/åååå) : 01/10/2014

台灣

以下訊息僅適用於產品具有無線功能且銷售至台灣地區

第十二條 經型式認證合格之低功率射頻電機，非經許可，公司，商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信法規定作業之無線電通信。 低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

無線資訊傳輸設備忍受合法通信之干擾且不得干擾合法通信；如造成干擾，應立即停用， 俟無干擾之虞，始得繼續使用。

無線資訊傳設備的製造廠商應確保頻率穩定性，如依製造廠商使用手冊上所述正常操作， 發射的信號應維持於操作頻帶中

以下訊息僅適用於產品操作於 5.25-5.35 秭赫頻帶內並銷售至台灣地區

- 在 5.25-5.35 秭赫頻帶內操作之無線資訊傳輸設備，限於室內使用。

以下訊息僅適用於產品屬於專業安裝並銷售至台灣地區

- 本器材須經專業工程人員安裝及設定，始得 設置使用，且不得直接販售給一般消費者

安全警告

為了您的安全，請先閱讀以下警告及指示：

- 請勿將此產品接近水、火焰或放置在高溫的環境。
- 避免設備接觸任何液體 - 切勿讓設備接觸水、雨水、高濕度、污水腐蝕性的液體或其他水份。
- 灰塵及污物 - 切勿接觸灰塵、污物、沙土、食物或其他不合適的材料。
- 雷雨天氣時，不要安裝，使用或維修此設備。有遭受電擊的風險。
- 切勿重摔或撞擊設備，並勿使用不正確的電源變壓器。
- 若接上不正確的電源變壓器會有爆炸的風險。
- 請勿隨意更換產品內的電池。
- 如果更換不正確之電池型式，會有爆炸的風險，請依製造商說明書處理使用過之電池。
- 請將廢電池丟棄在適當的電器或電子設備回收處。
- 請勿將設備解體。
- 請勿阻礙設備的散熱孔，空氣對流不足將會造成設備損害。
- 請插在正確的電壓供給插座 (如：北美 / 台灣電壓 110V AC，歐洲是 230V AC)。
- 假若電源變壓器或電源變壓器的纜線損壞，請從插座拔除，若您還繼續插電使用，會有觸電死亡的風險。
- 請勿試圖修理電源變壓器或電源變壓器的纜線，若有毀損，請直接聯絡您購買的店家，購買一個新的電源變壓器。
- 請勿將此設備安裝於室外，此設備僅適合放置於室內。
- 請勿隨一般垃圾丟棄。
- 請參閱產品背貼上的設備額定功率。
- 請參考產品型錄或是彩盒上的作業溫度。
- 產品沒有斷電裝置或者採用電源線的插頭視為斷電裝置的一部分，以下警語將適用：
  - 對永久連接之設備， 在設備外部須安裝可觸及之斷電裝置；
  - 對插接式之設備， 插座必須接近安裝之地點而且是易於觸及的。

Viewing Certifications

Go to http://www.zyxel.com to view this product's documentation and certifications.

ZyXEL Limited Warranty

ZyXEL warrants to the original end user (purchaser) that this product is free from any defects in material or workmanship for a specific period (the Warranty Period) from the date of purchase. The Warranty Period varies by region. Check with your vendor and/or the authorized ZyXEL local distributor for details about the Warranty Period of this product. 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 your vendor. You may also refer to the warranty policy for the region in which you bought the device at http://www.zyxel.com/web/support_warranty_info.php.

Registration

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

Open Source Licenses

This product contains in part some free software distributed under GPL license terms and/or GPL like licenses. Open source licenses are provided with the firmware package. You can download the latest firmware at www.zyxel.com. To obtain the source code covered under those Licenses, please contact support@zyxel.com.tw to get it.

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