# ZyXEL

# WRE2205

Wireless N300 Range Extender

Version 1.00
Edition 1, 06/2012

## User's Guide

| Default Login Details | |
|---|---|
| LAN IP Address | http://192.168.1.2 |
| 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 WRE2205 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.

Note: It is recommended you use the Web Configurator to configure the WRE2205.

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# PART I
# User's Guide

# Introduction

## 1.1  Overview

The WRE2205 (N) is a universal repeater that is an access point and a wireless client at the same time. The WRE2205 (N) wirelessly relays communications from its wireless clients to the access point.

**Figure 1**   Universal Repeater
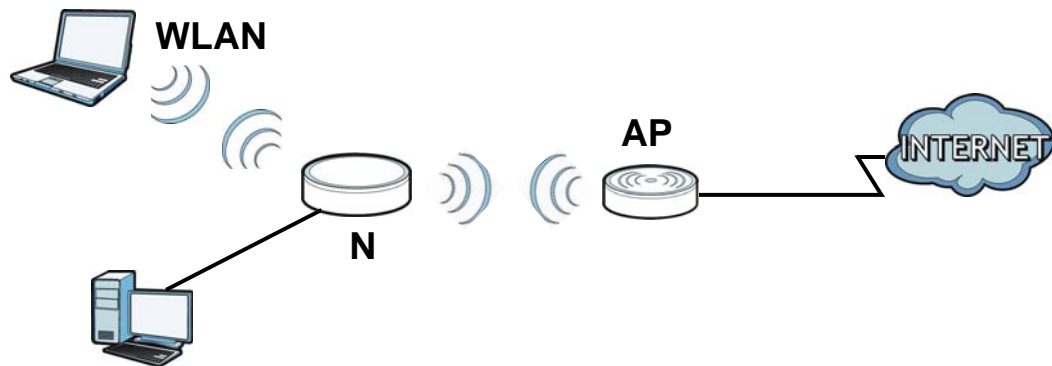


Your can create the following connections using the WRE2205:

• **LAN**. You can connect network devices via the Ethernet port of the WRE2205 so that they can communicate with each other and access the Internet.

• **WLAN**. Wireless clients can connect to the WRE2205 to access network resources.

Use a (supported) web browser to manage the WRE2205.



See for more information.

## 1.2  Securing the WRE2205

Do the following things regularly to make the WRE2205 more secure and to manage the WRE2205 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 WRE2205 to its factory default settings. If you backed up an earlier configuration file, you would not have to totally re-configure the WRE2205. You could simply restore your last configuration.

## 1.3  Front Panel

**Figure 2**  Front Panel
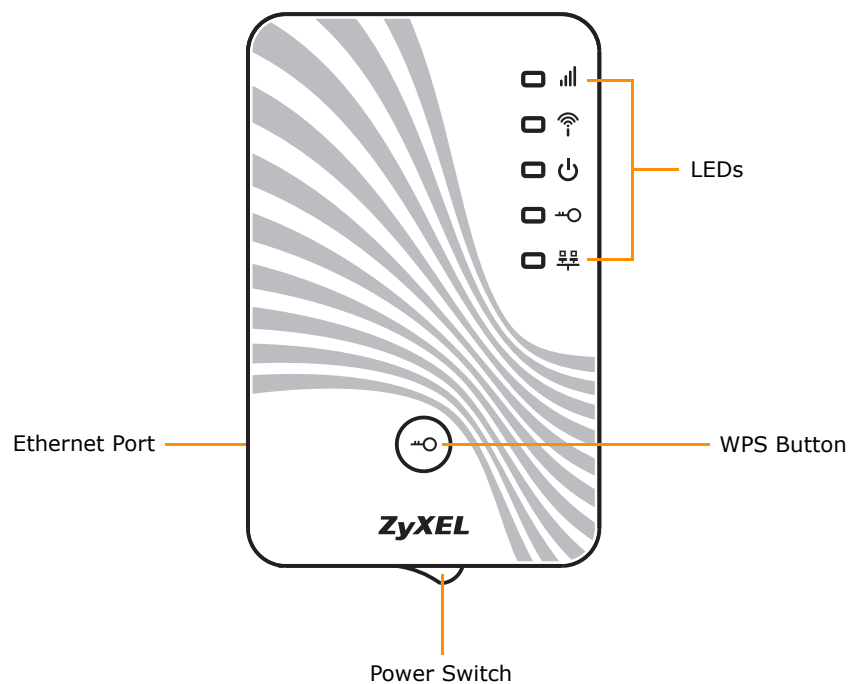


The following table describes the LEDs and the WPS button.

**Table 1**  Front Panel LEDs and WPS Button

| LED | STATUS | DESCRIPTION |
|---|---|---|
| Signal Strength | On | Signal strength 50-100% |
| | Blinking | Signal strength 25-50% |
| | Blinking rapidly | Signal strength <25% |
| | Off | No signal detected, disconnected or the LED is turned off in the firmware. |

**Table 1**   Front Panel LEDs and WPS Button (continued)

| LED | STATUS | DESCRIPTION |
|---|---|---|
| Wi-Fi | Blinking | The WRE2205 is sending/receiving data through the wireless LAN. |
| | Off | The wireless LAN is not ready or the LED is turned off in the firmware. |
| Power | On | The WRE2205 is receiving power and functioning properly. |
| | Blinking | The WRE2205 is resetting to factory defaults. |
| | Off | The WRE2205 is not receiving power or the LED is turned off in the firmware. |
| WPS | On | This remains on for 5 minutes after a successful WPS connection has been established. |
| | Blinking | The WRE2205 is waiting for another WPS device to connect. |
| | Off | There is no WPS connection established or the LED is turned off in the firmware. |
| LAN | On | The WRE2205 has a successful 10/100MB LAN connection. |
| | Blinking | The WRE2205 is sending/receiving data through the LAN. |
| | Off | The LAN is not connected or the LED is turned off in the firmware. |

# 1.4  The WPS Button

The WPS button can be used to begin WiFi Protected Setup (WPS), reboot the WRE2205 while keeping it's configuration or reboot the WRE2205 to factory default configuration.

**Table 2**   WPS Button Functions

| ACTION | RESULT |
|---|---|
| Push once or hold for less than 5 seconds | The WRE2205 begins connecting to an AP via WPS. See Section 5.3 on page 32. |
| Push twice | The WRE2205 begins connecting to a wireless client via WPS. See Section 5.2 on page 29. |
| Hold for 5 to 10 seconds | The WRE2205 keeps its configuration and reboots. |
| Hold for more than 10 seconds | The WRE2205 resets its configuration to factory defaults and reboots. See Section 2.3 on page 14. |

## 1.4.1  WiFi Protected Setup

Your WRE2205 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 WiFi 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 5.2 on page 29.

# 2

# The Web Configurator

## 2.1  Overview

This chapter describes how to access the WRE2205 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 WRE2205 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 to see how to make sure these functions are allowed in Internet Explorer.

## 2.2  Accessing the Web Configurator

**1**	Make sure your WRE2205 hardware is properly connected and prepare your computer or computer network to connect to the WRE2205 (refer to the Quick Start Guide).

Note: Your computer or the part of your network connected to the WRE2205 must be on the same subnet as the WRE2205.

The WRE2205's DHCP server is enabled before the WRE2205 is associated with your AP or wireless router and disabled after association. If this is the first time you are accessing your WRE2205, you can configure your computer as a DHCP client (computer factory default) so it will get an IP address automatically from the WRE2205. After the WRE2205 is associated with your wireless router, your computer will get its IP address from the wireless router.

**2**	Launch your web browser.

**3**	If this is the first time you are accessing your WRE2205, type "http://192.168.1.2" as the website address in your web browser. This is the default LAN IP address. Alternatively, after the WRE2205 has successfully associated with your wireless router, type "http://zyxelsetupxxxx" instead of the default IP address, where xxxx is the last four digits of the MAC address.

**4** Type **admin** (default) as the user name and **1234** (default) as the password and click **OK**.

**Figure 3** Login Screen
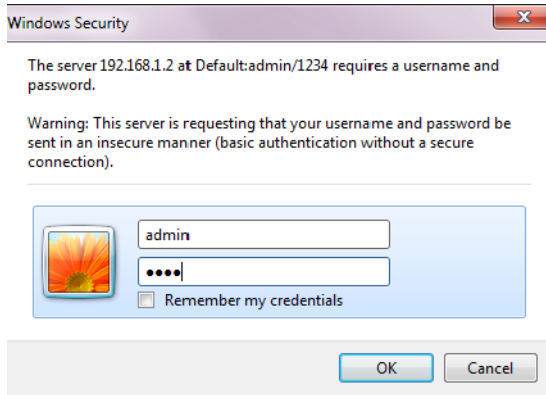


## 2.3  Resetting the WRE2205

If you forget your password or IP address, or you cannot access the Web Configurator, press the **WPS** button for more than 10 seconds to reload the factory-default configuration file. This means that you will lose all configurations that you had previously saved, the username will be reset to **admin** and password will be reset to **1234**. The IP address will be reset to "192.168.1.2".

**1** Make sure the power LED is on.

**2** Press and hold the **WPS** button. After 10 seconds, the power LED begins flashing.

**3** Release the **WPS** button. The WRE2205 reloads factory defaults and begins to reboot.
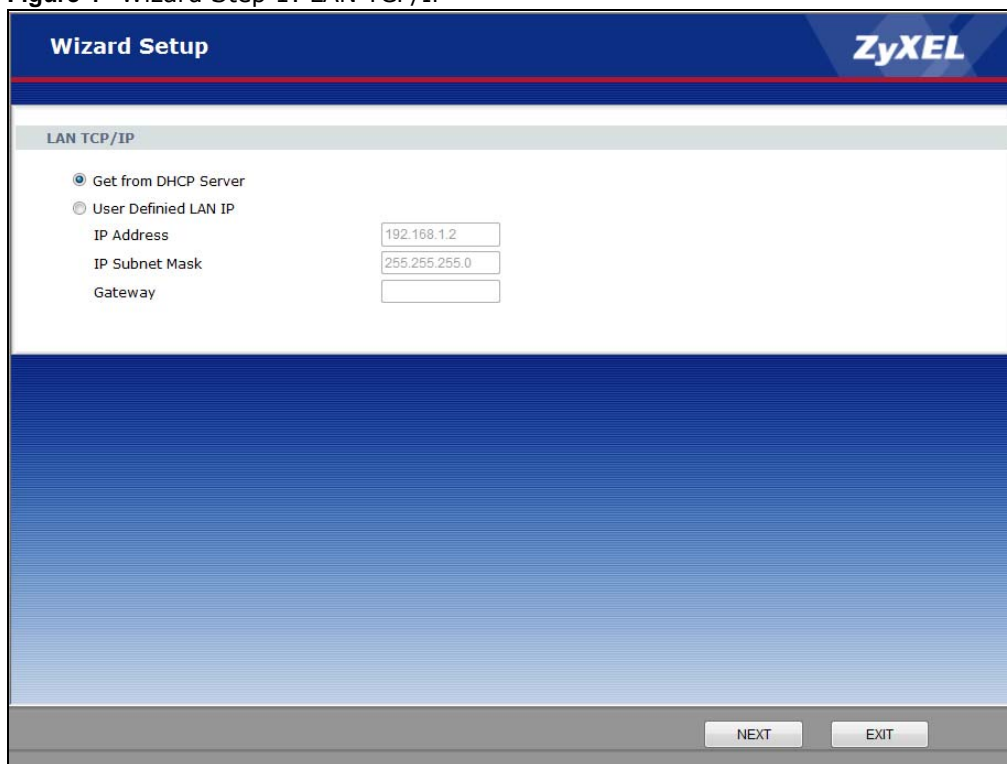
# Connection Wizard

## 3.1  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 WRE2205 Web Configurator, click [icon] to start wizard setup.

## 3.2  Configuring LAN TCP/IP

**Figure 4**   Wizard Step 1: LAN TCP/IP

The following table describes the labels in this screen.

**Table 3** Wizard Step 1: LAN TCP/IP

| LABEL | DESCRIPTION |
|---|---|
| Get from DHCP Server | Click this to enable the DHCP client of the WRE2205 to get the IP configuration automatically. |
| User Defined LAN IP | Click this to enable the manual IP configuration. |
| IP Address | Type the IP address of your WRE2205 in dotted decimal notation 192.168.1.2 (factory default). |
| IP Subnet Mask | The subnet mask specifies the network number portion of an IP address. Your WRE2205 will automatically calculate the subnet mask based on the IP address that you assign. Unless you are implementing subnetting, use the subnet mask computed by the WRE2205. |
| Next | Click **Next** to start the next step. |
| Exit | Click **Exit** to leave the wizard. |

# 3.3  Configuring the WRE2205 for Connection to an AP

In this step of the configuration wizard, you must configure the WRE2205 with the security parameters of the AP you want to connect to. These parameters can be configured by selecting those automatically detected by the WRE2205, or by configuring them manually. Manual configuration is useful when the AP is hidden.

## 3.3.1  Selecting Automatically Detected AP Parameters

**1** Select an AP using the following screen.

**Figure 5** Wizard Step 2: Selecting an AP



The following table describes the labels in this screen.

**Table 4** 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 WRE2205 and this device. |
| 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 this to search for available wireless devices within transmission range and update this table. |

**Table 4** Network > Wireless LAN > AP Select (continued)

| LABEL | DESCRIPTION |
|---|---|
| BACK | Click this to go back to the previous step in the wizard. |
| 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 WRE2205 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** Type a key. The number of characters accepted by the KEY field is shown in the following table.

**Table 5** 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 |

**Figure 6** Wizard Step 2: Type a Key

## 3.3.2  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 AP into the **SSID** field.

**Figure 7**  Wizard Step 2: Typing the SSID



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

**Table 6**  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 |

**Figure 8** Wizard Step 2: Configuring Security Settings



## 3.4 Completing the Connection Wizard

**1** Click **Next**. The key verification screen appears.

**Figure 9**   Wizard Step 3: Verifying the Key
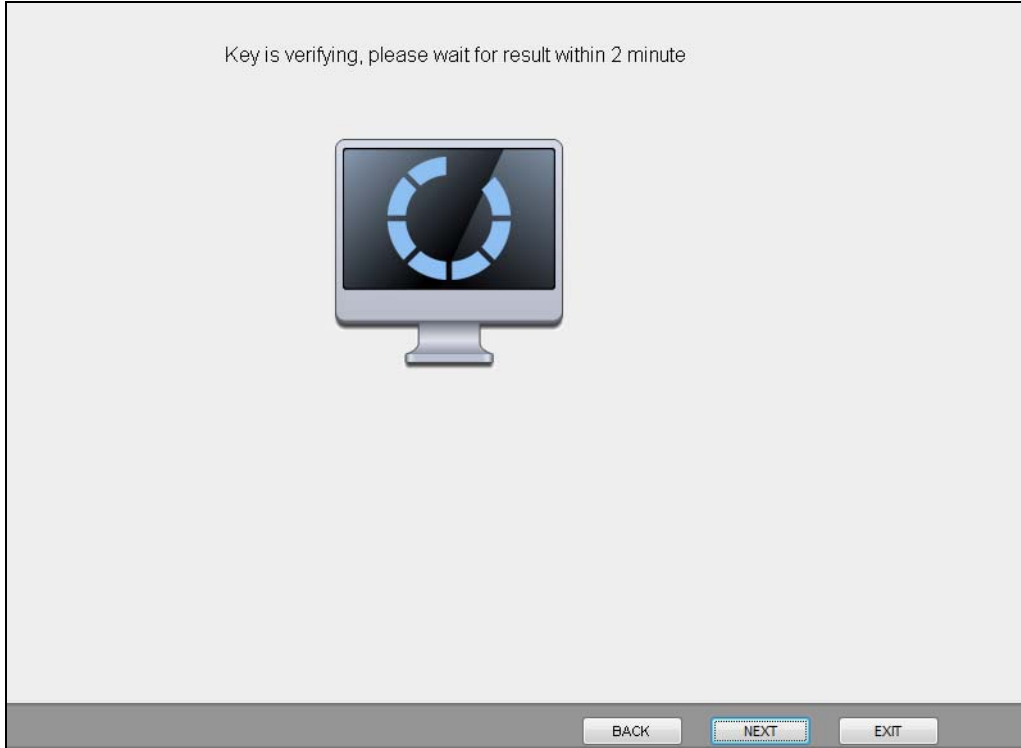


The following screen appears if the key verifies successfully.

**Figure 10**   Wizard Step 3: Key Verification Success
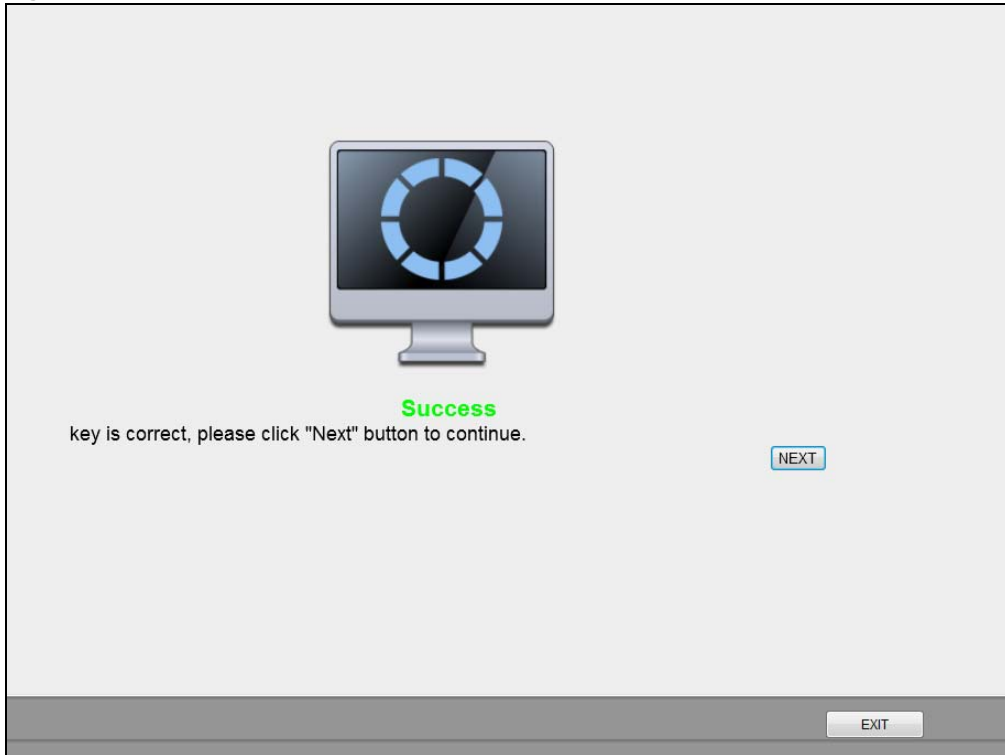


The following screen appears if the key fails to verify. Click **BACK** and check the key.

**Figure 11** Wizard Step 3: Key Verification Failed
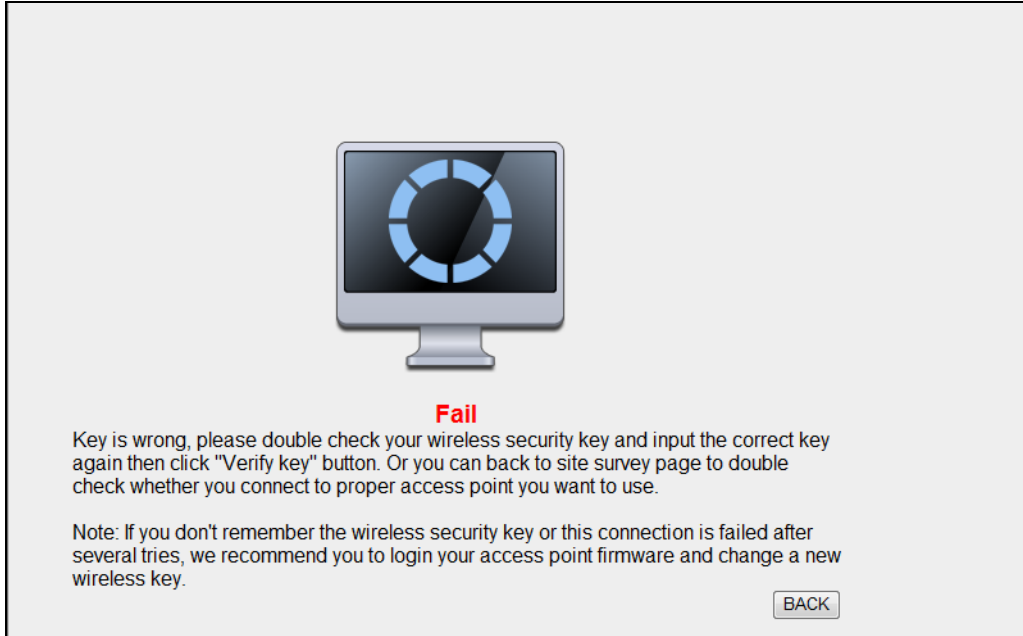


**2** Click **Apply** to complete the wizard setup.

**Figure 12** Connection Wizard Complete
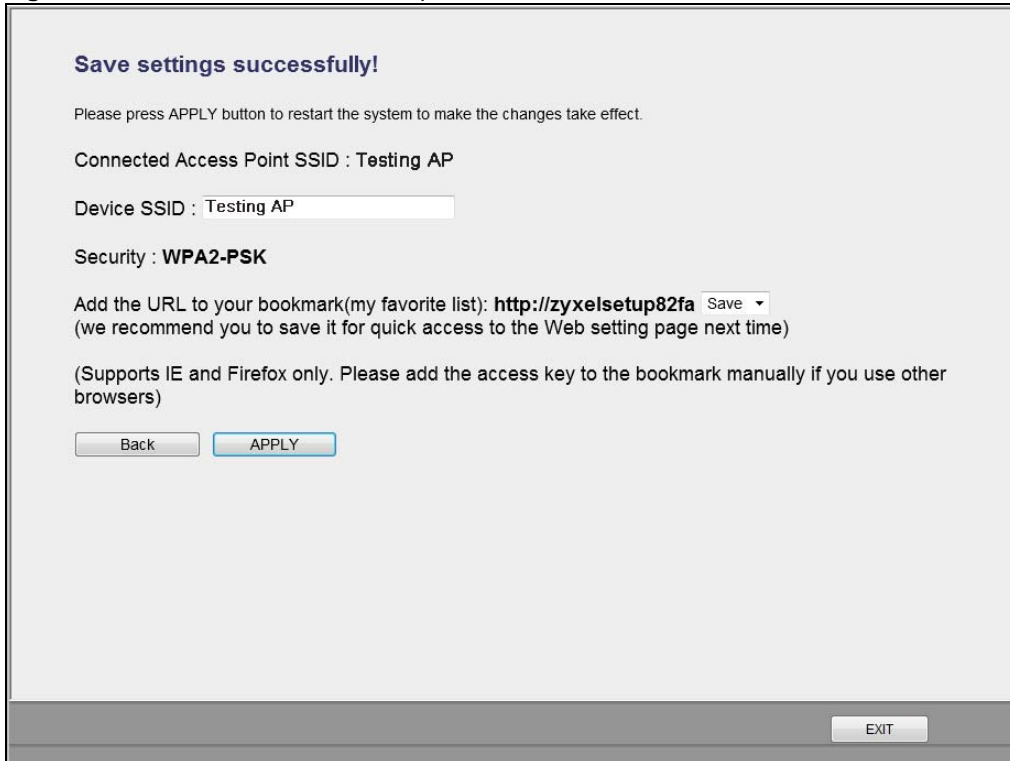
# Status

## 4.1 WRE2205 Status
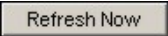
The screen below shows the status screen.

**Figure 13** Status Screen



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

**Table 7** 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. |
| Refresh Interval: 20 seconds | 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. |
| Refresh Now | Click this button to refresh the status screen statistics. |

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

**Table 8** Web Configurator Status Screen

| LABEL | DESCRIPTION |
|---|---|
| Device Information | |
| System Name | This is the **System Name**. |

**Table 8** Web Configurator Status Screen (continued)

| LABEL | DESCRIPTION |
|---|---|
| Firmware Version | This is the current firmware version of the WRE2205. |
| 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. |
| 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**. |
| - Name (SSID) | This shows a descriptive name used to identify the WRE2205 in the wireless LAN. |
| - Channel | This shows the channel number which you select manually or the WRE2205 automatically scans and selects. |
| - Operating Channel | This shows the channel number which the WRE2205 is currently using over the wireless LAN. |
| - Security Mode | This shows the level of wireless security the WRE2205 is using. |
| - 802.11 Mode | This shows the wireless standard. |
| - WPS | This displays **Configured** when the WPS has been set up. This displays **Unconfigured** if the WPS has not been set up. Click the status to display **Network** > **Wireless LAN** > **WPS** screen. |
| - To AP Connection | This shows whether the WRE2205 is connected to an AP or not. |
| System Status | |
| System Up Time | This is the total time the WRE2205 has been on. |
| Current Date/Time | This field displays your WRE2205's present date and time. |
| System Resource | |
| - CPU Usage | This displays what percentage of the WRE2205's processing ability is currently used. When this percentage is close to 100%, the WRE2205 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 WRE2205 is using. |
| Interface Status | |
| Interface | This displays the WRE2205 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**. |
| Summary | |
| Packet Statistics | Use this screen to view port status and packet specific statistics. |
| WLAN Station Status | Use this screen to view the wireless stations that are currently associated to the WRE2205. |

## 4.1.1  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 14**   Summary: Packet Statistics
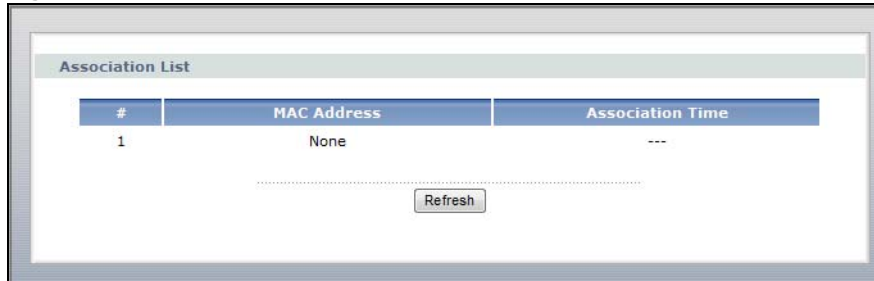


The following table describes the labels in this screen.

**Table 9**   Summary: Packet Statistics

| LABEL | DESCRIPTION |
|---|---|
| Port | This is the WRE2205'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 WRE2205 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. |

## 4.1.2  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 WRE2205 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 15** Summary: WLAN Station Status



The following table describes the labels in this screen.

**Table 10** 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 WRE2205's WLAN network. |
| Refresh | Click **Refresh** to reload the list. |

# 4.2  Navigation Panel

Use the menu in the navigation panel menus to configure WRE2205 features.

**Figure 16**  Menus



The following table describes the sub-menus.

**Table 11**  Menus

| LINK | TAB | FUNCTION |
|---|---|---|
| Status | | This screen shows the WRE2205's general device, system and interface status information. Use this screen to access the wizard, and summary statistics tables. |
| Network | | |

**Table 11** Menus (continued)

| LINK | TAB | FUNCTION |
|---|---|---|
| Wireless LAN | AP Select | Use this screen to connect to an access point. |
| | General | Use this screen to configure wireless LAN. |
| | MAC Address List | Use the MAC Address List screen to allow devices to access the WRE2205. |
| | Advanced | This screen allows you to configure advanced wireless settings. |
| | QoS | Use this screen to configure Wi-Fi Multimedia Quality of Service (WMM QoS). WMM QoS allows you to prioritize wireless traffic according to the delivery requirements of individual services. |
| | WPS | Use this screen to configure WPS. |
| | WPS Station | Use this screen to connect the WRE2205 to a wireless station or access point using WPS. |
| LAN | IP | Use this screen to configure LAN IP address, subnet mask and gateway. |
| Maintenance | | |
| System | Password | Use this screen to change the password. |
| Tools | Firmware | Use this screen to upload firmware to your WRE2205. |
| | Configuration | Use this screen to backup and restore the configuration or reset the factory defaults to your WRE2205. |
| | Restart | This screen allows you to reboot the WRE2205 without turning the power off. |
| | LED | Use this screen to configure which LEDs are enabled or disabled. |

# Tutorials

## 5.1  Overview

This chapter provides tutorials for your WRE2205 as follows:

• Connecting a Wireless Client using WPS
  • Push Button Configuration (PBC)
  • PIN Configuration
• Connecting the WRE2205 to an AP
  • Connecting to an AP with the WPS PBC Method
  • Connecting to an AP with the WPS PIN Method
  • Selecting an AP from an Automatically Detected List
  • Selecting an AP by Manually Entering Security Information

## 5.2  Connecting a Wireless Client using WPS

This section gives you an example of how to connect a client to the WRE2205 using WPS.

There are two WPS methods for creating a secure connection. This tutorial shows you how to do both.

• **Push Button Configuration (PBC)** - create a secure wireless network by simply pressing the WPS button twice on the WRE2205's front panel or by clicking the **Start PBC** button in the **Network** > **Wireless LAN** > **WPS Station** screen. See Section 5.2.1 on page 29. 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 WRE2205's interface. See Section 5.2.2 on page 31. This is the more secure method, since one device can authenticate the other.

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

### 5.2.1  Push Button Configuration (PBC)

This section gives you an example of how to set up a wireless network using WPS PBC. This example uses the WRE2205 as the registrar and NWD210N as the wireless client in a notebook.

**1**   Make sure that your WRE2205 is turned on and that it is within range of your computer.

**2** Make sure that you have installed the wireless client (this example uses the NWD210N) driver and utility in your notebook.

**3** In the wireless client utility, find the WPS settings. Enable WPS and press the WPS button (**Start** or **WPS** button)

**4** Log into WRE2205's Web Configurator and navigate to the **Network** > **Wireless LAN** > **WPS Station** screen.

**5** In the WRE2205's Web Configurator, select **Registrar** in **Config Mode** and then press **Start PBC**.

Note: Your WRE2205 has a WPS button located on its panel, as well as a **Start PBC** button in the Web Configurator. 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 WRE2205 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 WRE2205 securely.

The following figure shows an example of how to set up wireless network and security by pressing a button on both WRE2205 and wireless client (the NWD210N in this example).

**Figure 17** Example WPS Process: PBC Method
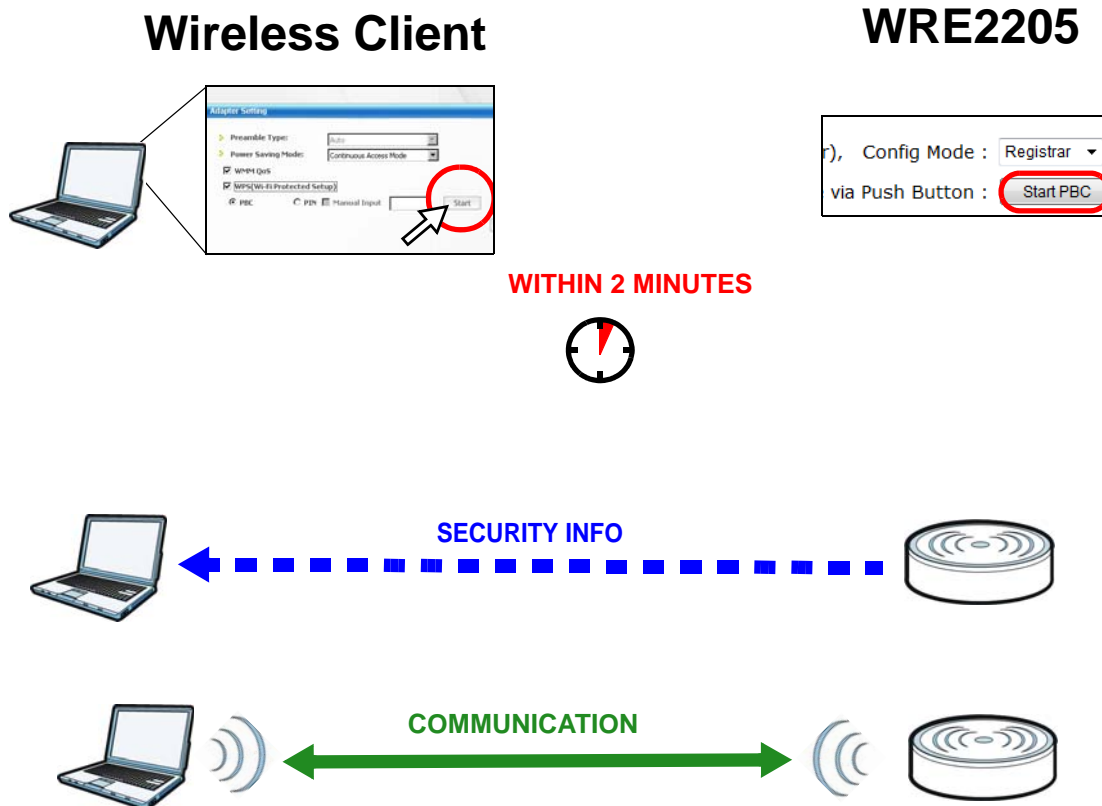
## 5.2.2  PIN Configuration

When you use the PIN configuration method, you need to use both WRE2205's configuration interface and the client's utilities.

**1** Launch your wireless client's configuration utility. Go to the WPS settings and select the PIN method to get a PIN number.

**2** On the WRE2205, navigate to the **Network** > **Wireless LAN** > **WPS Station** screen.

**3** In the WRE2205's Web Configurator, select **Registrar** in **Config Mode**.

**4** In the WRE2205's Web Configurator, enter the PIN number in the **Input client PIN code**.

**5** Click the **Start** buttons (or the buttons next to the PIN fields) on both the wireless client utility screen and the WRE2205's **WPS Station** screen within two minutes.

The WRE2205 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 WRE2205 securely.

The following figure shows an example of how to set up wireless network and security on WRE2205 and wireless client (ex. NWD210N in this example) by using PIN method.

**Figure 18** Example WPS Process: PIN Method
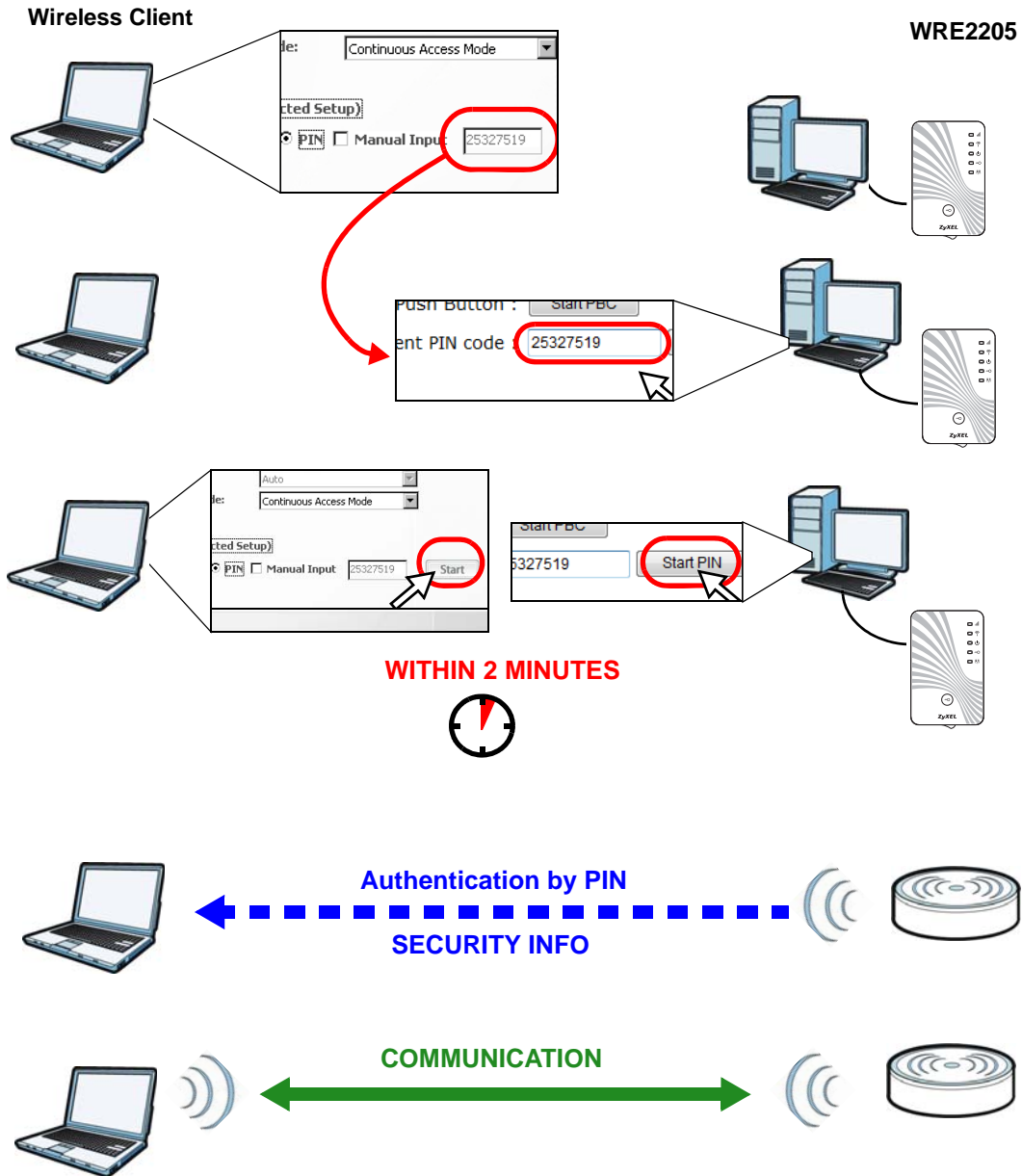


## 5.3  Connecting the WRE2205 to an AP

This section gives you an example of how to connect the WRE2205 to an AP.

There are four AP connection methods. This tutorial shows you how to use all of them.

- **Connecting to an AP with the WPS PBC method** - create a secure wireless network simply by pressing a button. See Section 5.3.1 on page 33. This is the easier method.

- **Connecting to an AP with the WPS PIN method** - create a secure wireless network simply by entering the WRE2205's PIN (Personal Identification Number) in the AP's interface. See Section 5.3.2 on page 34. This is the more secure method, since one device can authenticate the other.

- **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 5.3.3 on page 35.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 WRE2205's interface. See Section 5.3.4 on page 37. This is useful when the AP is hidden.

## 5.3.1  Connecting to an AP with the WPS PBC Method

This section gives you an example of how to connect to an AP using WPS PBC. This example uses the WRE2205 as the enrollee and an AP as the registrar.

**1**   Make sure that your WRE2205 is turned on and that it is within range of the AP.

**2**   Make sure that you have installed the AP and have access to the configuration interface of the AP or the AP's WPS button.

**3**   Log into WRE2205's Web Configurator and navigate to the **Network** > **Wireless LAN** > **WPS Station** screen. Select **Enrollee** in **Config Mode** and press **Start PBC**.

**4**   In the configuration interface of the AP, find the WPS settings. Enable WPS and press the WPS button (**Start** or **WPS** button)

Note: Your WRE2205 has a WPS button located on its panel, as well as a WPS button in its configuration utility. 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 AP sends the proper configuration settings to the WRE2205. This may take up to two minutes. Then the WRE2205 is able to communicate with the AP securely.

The following figure shows an example of how to set up wireless network and security by pressing a button on both WRE2205 and AP.

**Figure 19** Example Connection to AP using WPS: PBC Method
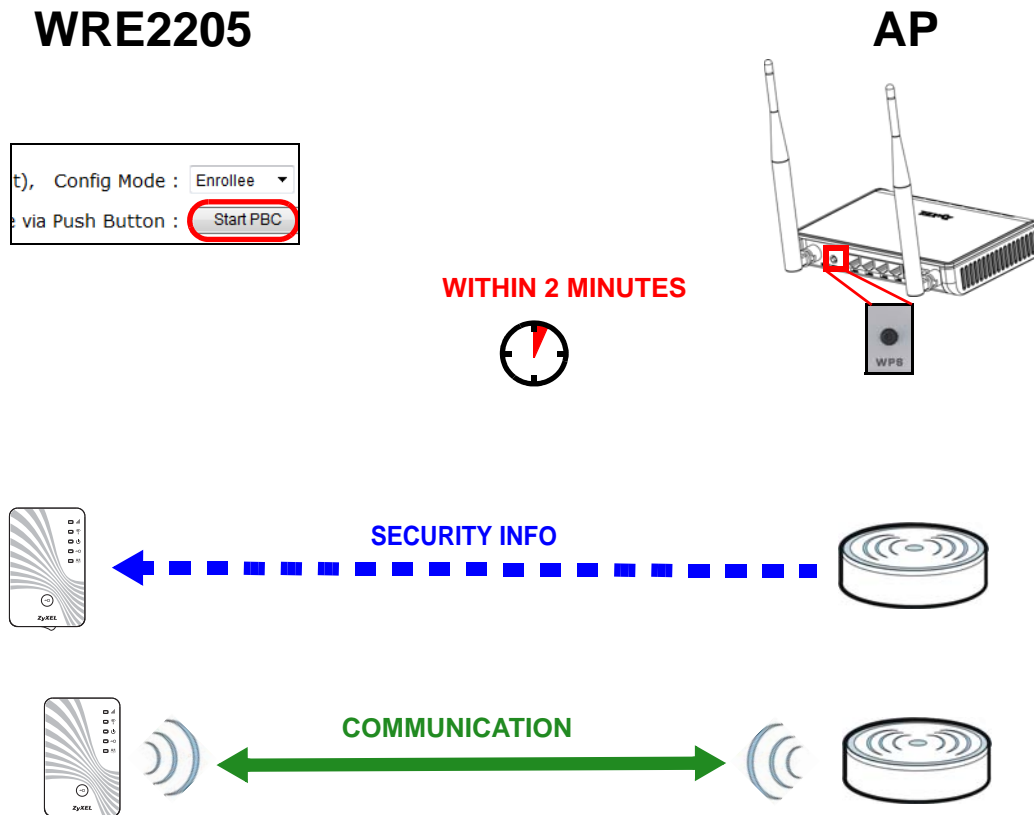


## 5.3.2 Connecting to an AP with the WPS PIN Method

When you use the PIN configuration method, you need to use both the configuration interface of the AP and the WRE2205's configuration interface.

1 Log into WRE2205's Web Configurator and navigate to the **Network** > **Wireless LAN** > **WPS Station** screen. Select **Enrollee** in **Config Mode** to get a PIN number.

2 Enter the PIN number in the WPS PIN field of the AP's configuration interface.

3 Click the **Start PIN** button on the WRE2205 and the Start button (or the button next to the PIN field) on the AP's configuration interface within two minutes.

The AP authenticates the WRE2205 and sends the proper configuration settings to the WRE2205. This may take up to two minutes. Then the WRE2205 is able to communicate with the AP securely.

The following figure shows an example of how to set up wireless network and security on the AP and WRE2205 by using PIN method.

**Figure 20**   Example Connection to AP using WPS: PIN Method
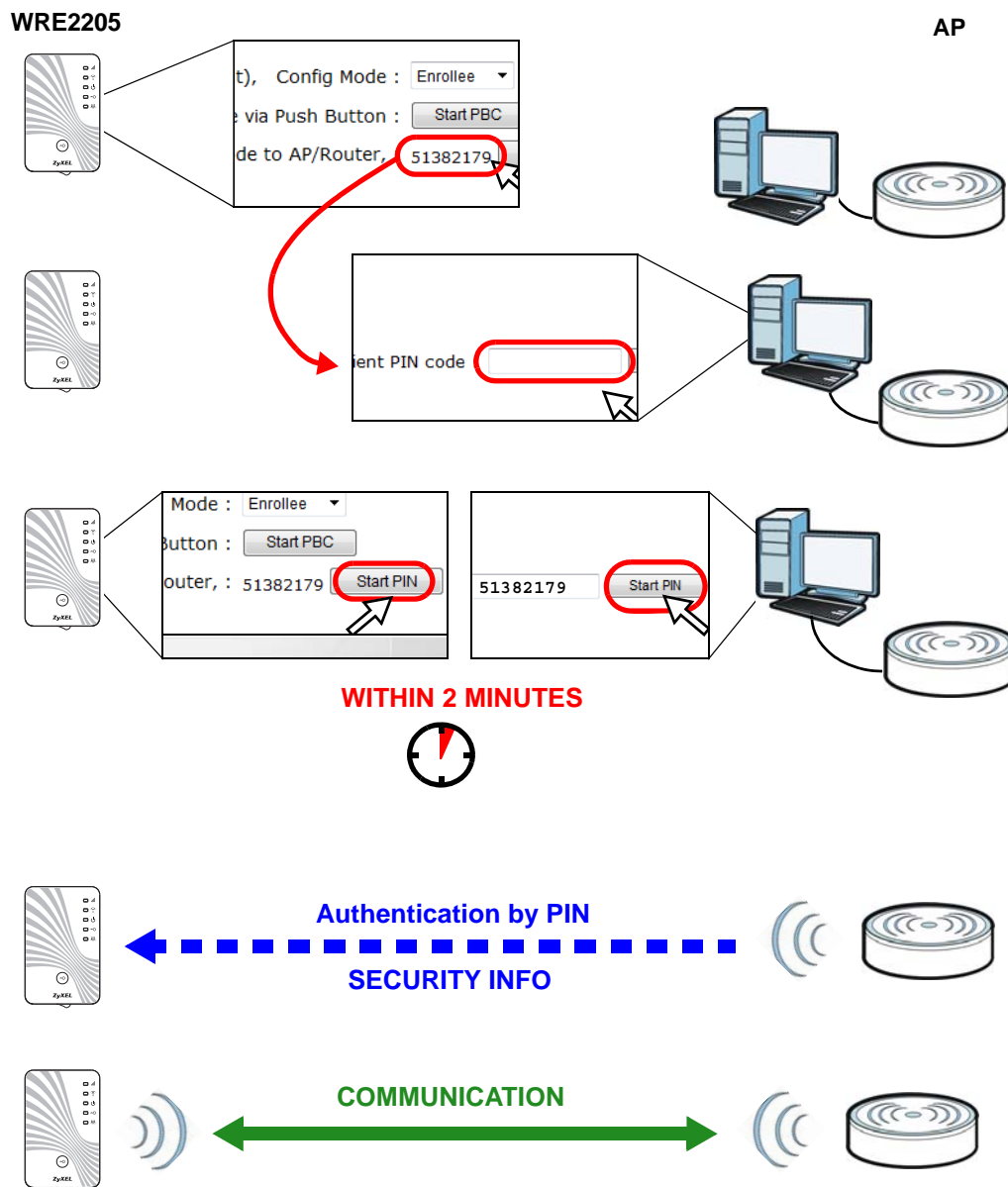


### 5.3.3  Selecting an AP from an Automatically Detected List

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

The 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 2.2 on page 13).

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

**Figure 21**   Tutorial: Selecting an automatically detected AP
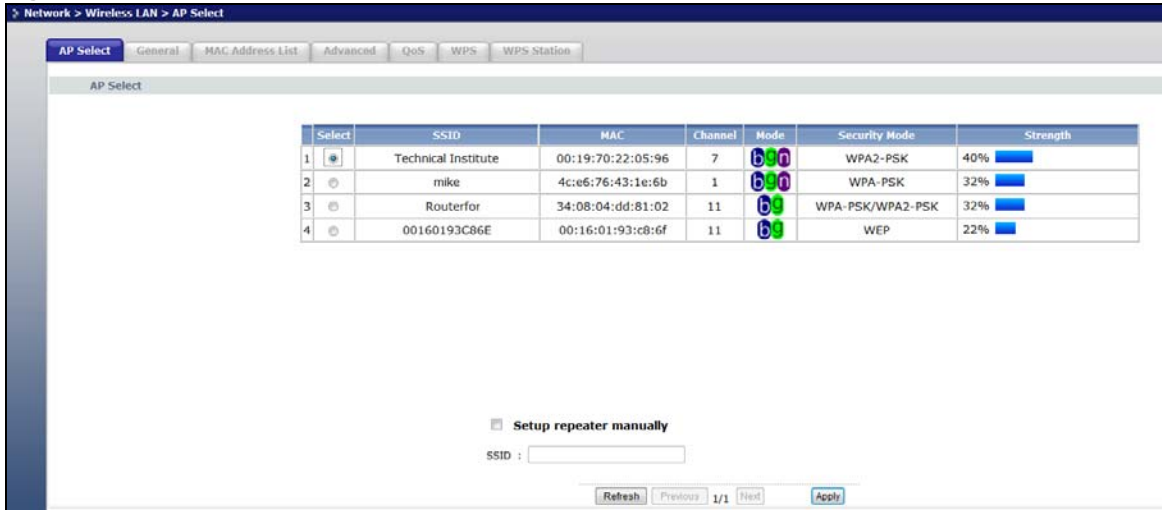


**2**   Type a key into the **KEY** field and click **Next**.

**Figure 22**   Tutorial: The KEY field



**3**   Wait for the WRE2205 to verify the key with the AP.

**Figure 23**   Tutorial: Verifying the key
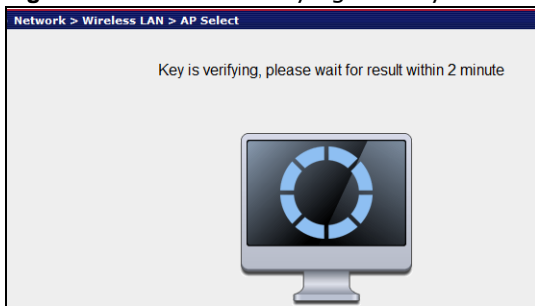


**4**   When the key is verified, click **Next**.

**Figure 24**   Tutorial: Successful key verification
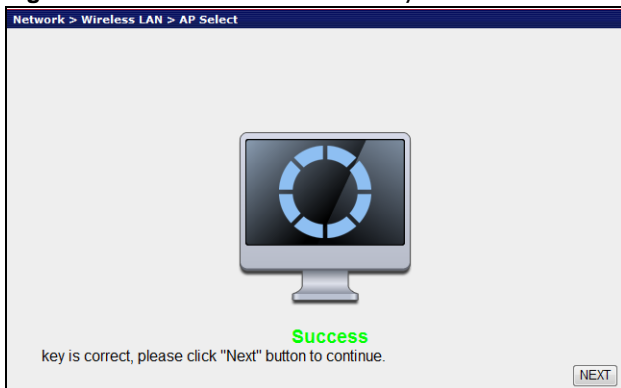
**5** Click **APPLY** to save settings and restart the WRE2205. Click **CONTINUE** to go to the Status screen without saving the settings and restarting the WRE2205.

**Figure 25** Tutorial: Saving settings
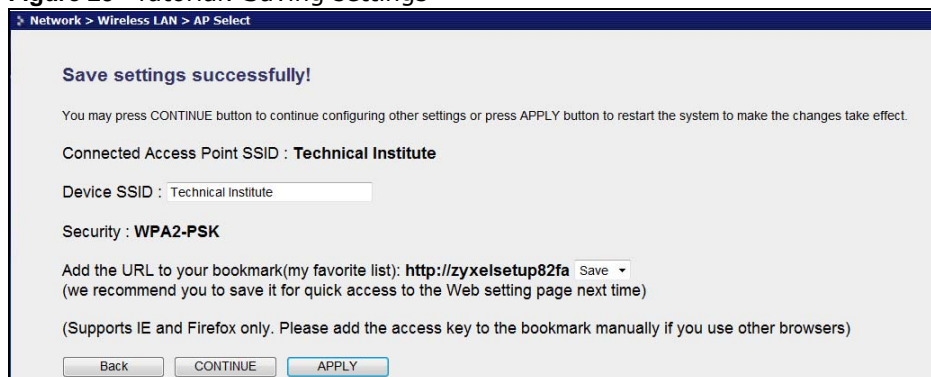


## 5.3.4 Selecting an AP by Manually Entering Security Information

This example shows you how to configure wireless security settings with the following parameters on your WRE2205.

| 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 WRE2205'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 2.2 on page 13).

**1** Select **Setup repeater manually**.

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

**Figure 26** Tutorial: Typing an SSID
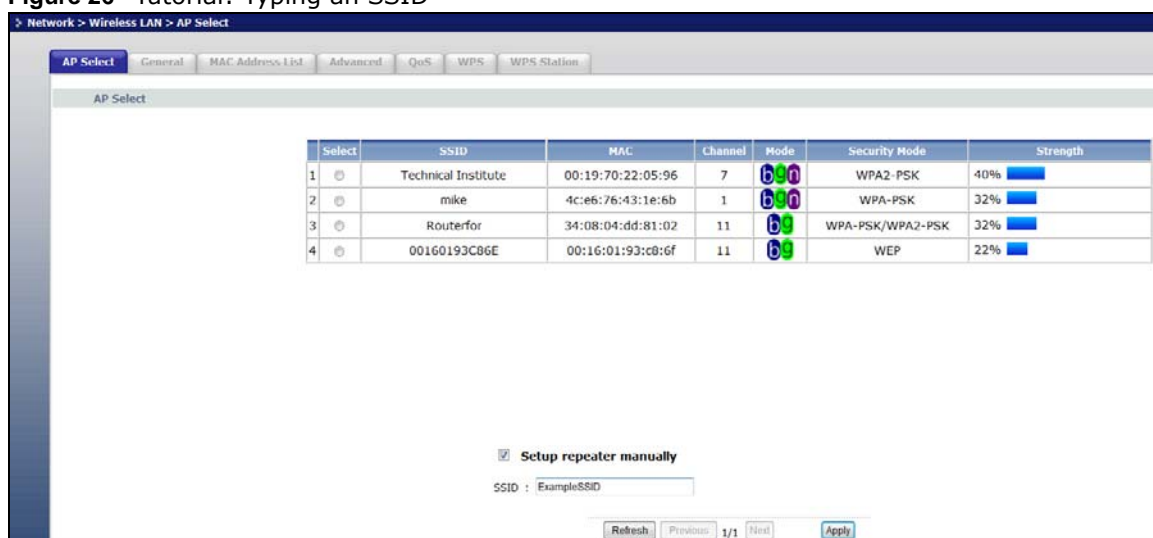
**3** Select the security settings and click **Next**.

**Figure 27** Tutorial: Security Settings
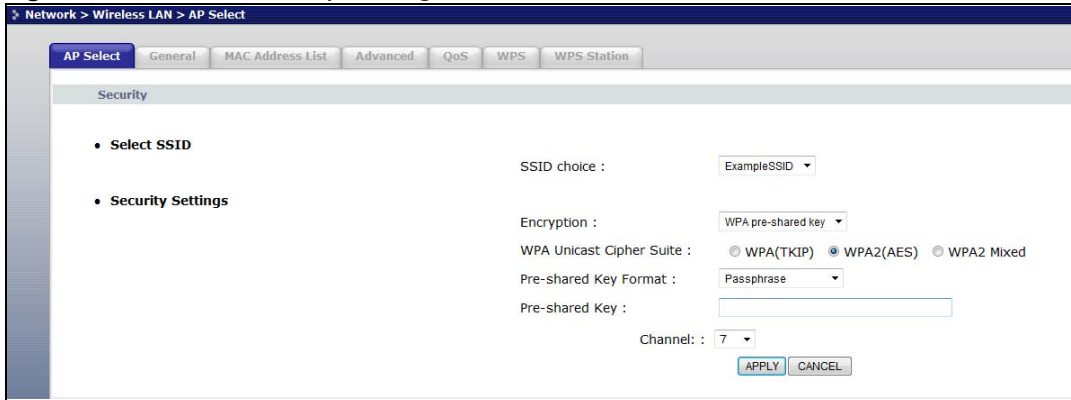


**4** Click **Apply** to save settings and restart the WRE2205. Click **CONTINUE** to go to the Status screen without saving the settings and restarting the WRE2205.

**Figure 28** Tutorial: Saving settings
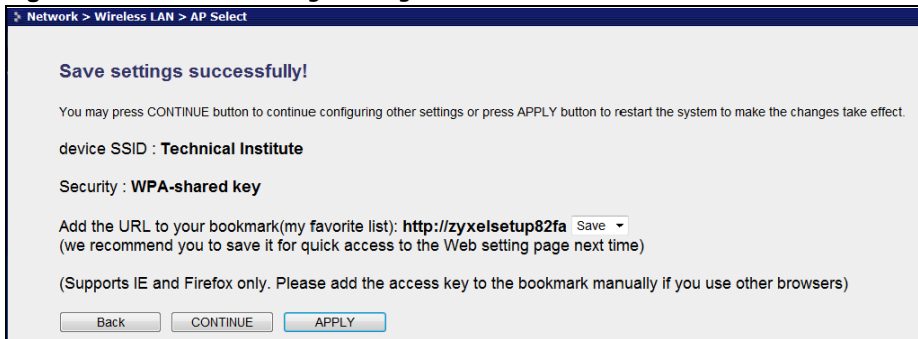
# PART II
# Technical Reference

# Wireless LAN

## 6.1  Overview

This chapter discusses how to configure the wireless network settings in your WRE2205. See Section 1.1 on page 9 for an overview of wireless networks.

## 6.2  What You Can Do

- Use the **General** screen to enable the Wireless LAN, enter the SSID and select the wireless security mode (Section 6.4 on page 43).
- Use the **MAC Address List** screen to allow or deny wireless stations based on their MAC addresses from connecting to the WRE2205 (Section 6.5 on page 44).
- Use the **Advanced** screen to allow intra-BSS networking and set the RTS/CTS Threshold (Section 6.6 on page 45).
- Use the **QoS** screen to enable Wifi MultiMedia Quality of Service (WMM QoS). WMM QoS prioritizes traffic using pre-defined voice, video, best-effort and background priorities (Section 6.7 on page 46).
- Use the **WPS** screen to quickly set up a wireless network with strong security, without having to configure security settings manually (Section 6.8 on page 46).
- Use the **WPS Station** screen to add a wireless station using WPS (Section 6.9 on page 47).
- Use the **AP Select** screen to choose an access point that you want the WRE2205 to connect to. You should know the security settings of the target AP (Section 6.10 on page 48).

## 6.3  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.

## 6.3.1  Wireless Security Overview

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

### 6.3.1.1  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.

### 6.3.1.2  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 12**  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.

---

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.

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.

### 6.3.1.3  WPS

WiFi Protected Setup (WPS) is an industry standard specification, defined by the WiFi 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 .

# 6.4  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 WRE2205 from a computer connected to the wireless LAN and you change the WRE2205'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 WRE2205's new settings.

Click **Network** > **Wireless LAN** to open the **General** screen.

**Figure 29**   Network > Wireless LAN > General



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

**Table 13**   Network > Wireless LAN > General

| LABEL | DESCRIPTION |
|---|---|
| WLAN STA Information | This shows the wireless and security settings of the selected AP wireless network. |
| SSID | This displays the Service Set IDentity of the wireless device to which you are connecting. |
| WLAN AP Information / Wireless Setup | Use this section to configure the wireless settings between the WRE2205 and its wireless clients. |
| Name(SSID) | (Service Set IDentity) The SSID identifies the Service Set with which a wireless station is associated. Wireless stations associating to the access point (AP) must have the same SSID. Enter a descriptive name (up to 32 printable 7-bit ASCII characters) for the wireless LAN. |

**Table 13**   Network > Wireless LAN > General (continued)

| LABEL | DESCRIPTION |
| --- | --- |
| Hide SSID | Select this check box to hide the SSID in the outgoing beacon frame so a station cannot obtain the SSID through scanning using a site survey tool. |
| Operating Channel | This displays the channel the WRE2205 is currently using. |
| Apply | Click **Apply** to save your changes back to the WRE2205. |
| Reset | Click **Reset** to reload the previous configuration for this screen. |

# 6.5  MAC Address List

The MAC Address List screen allows you to specify which devices are allowed to access the WRE2205, 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 WRE2205's MAC Address List settings, click **Network** > **Wireless LAN** > **MAC Address List**. The screen appears as shown.

**Figure 30**   Network > Wireless LAN > MAC Address List

The following table describes the labels in this menu.

**Table 14** Network > Wireless LAN > MAC Address List

| LABEL | DESCRIPTION |
|---|---|
| Active | Select this to enable MAC address filtering. |
| Set | This is the index number of the MAC address. |
| MAC Address | Enter the MAC addresses of the wireless station that are allowed access to the WRE2205 in these address fields. 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 WRE2205. |
| Reset | Click **Reset** to reload the previous configuration for this screen. |

# 6.6  Wireless LAN Advanced Screen

Use this screen to configure advanced wireless LAN parameters.

Click **Network** > **Wireless LAN** > **Advanced**. The screen appears as shown.

**Figure 31**   Network > Wireless LAN > Advanced
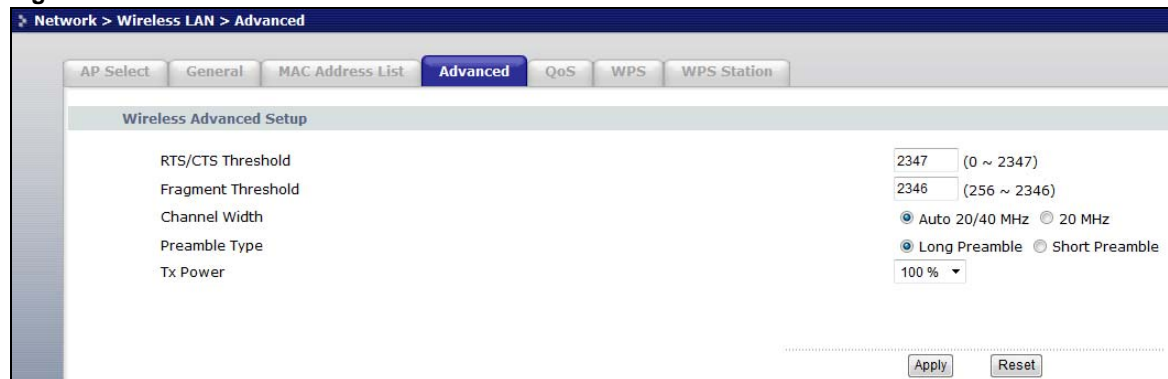


The following table describes the labels in this screen.

**Table 15**   Network > Wireless LAN > Advanced

| LABEL | DESCRIPTION |
|---|---|
| Wireless Advanced Setup | |
| 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**. |
| Channel Width | Select whether the WRE2205 uses a wireless channel width of 20MHz or Auto 20/40MHz. A standard 20MHz channel offers transfer speeds of up to 150Mbps whereas a 40MHz channel uses two standard channels and offers speeds of up to 300 Mbps. Because not all devices support 40MHz channels, select Auto 20/40MHz to allow the WRE2205 to adjust the channel bandwidth automatically. |

**Table 15** Network > Wireless LAN > Advanced (continued)

| LABEL | DESCRIPTION |
|-------|-------------|
| 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 WRE2205 does, it cannot communicate with the WRE2205. |
| Tx Power | This field controls the transmission power of the WRE2205. When using the WRE2205 with a notebook computer, select a lower transmission power level when you are close to the AP in order to conserve battery power. |
| Apply | Click **Apply** to save your changes to the WRE2205. |
| Reset | Click **Reset** to reload the previous configuration for this screen. |

## 6.7  Quality of Service (QoS) Screen

Use the **QoS** screen to enable Wifi MultiMedia Quality of Service (WMM QoS). WMM QoS prioritizes traffic using pre-defined voice, video, best-effort and background priorities.

Click **Network** > **Wireless LAN** > **QoS**. The following screen appears.

**Figure 32** Network > Wireless LAN > QoS
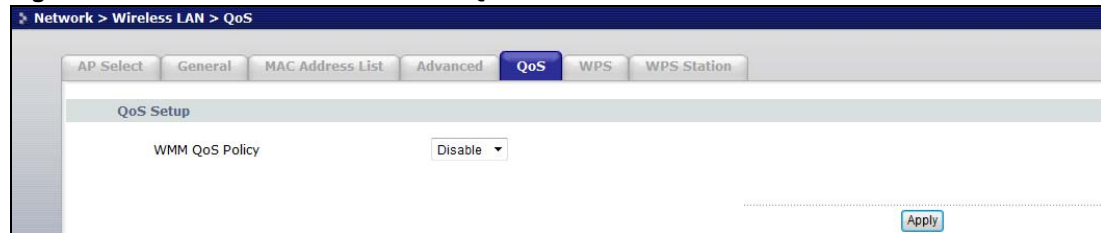


The following table describes the labels in this screen.

**Table 16** Network > Wireless LAN > QoS

| LABEL | DESCRIPTION |
|-------|-------------|
| WMM QoS Policy | Enable this to have the WRE2205 automatically give a service a priority level according to the ToS value in the IP header of packets it sends. WMM QoS (Wifi MultiMedia Quality of Service) gives high priority to voice and video, which makes them run more smoothly. |
| Apply | Click **Apply** to save your changes to the WRE2205. |

## 6.8  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** > **WPS** tab.

**Figure 33** Network > Wireless LAN > WPS
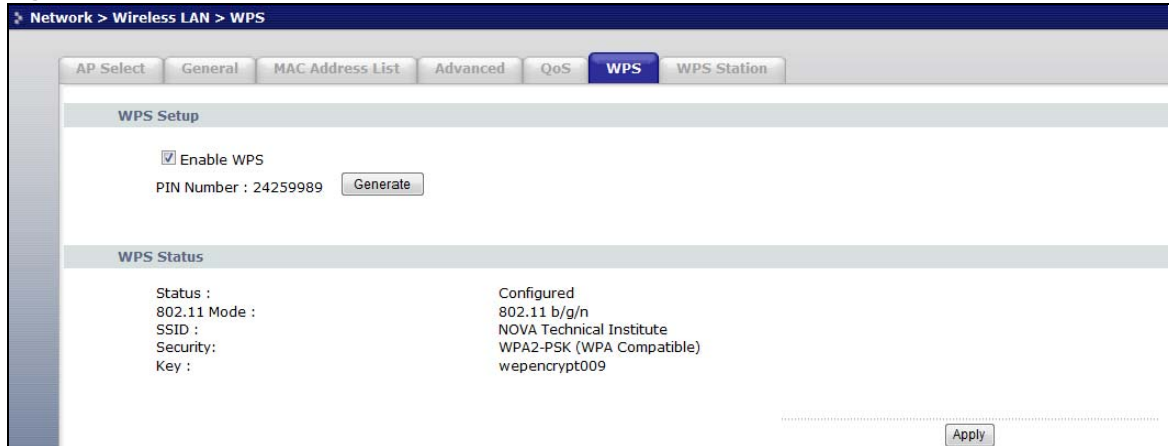


The following table describes the labels in this screen.

**Table 17** Network > Wireless LAN > WPS

| LABEL | DESCRIPTION |
|---|---|
| WPS Setup | |
| Enable 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 WRE2205 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.<br><br>This displays **Unconfigured** if WPS is disabled and there are no wireless or wireless security changes on the WRE2205 or you click **Release_Configuration** to remove the configured wireless and wireless security settings. |
| Release Configuration | This button is only available when the WPS status displays **Configured**.<br><br>Click this button to remove all configured wireless and wireless security settings for WPS connections on the WRE2205. |
| Apply | Click **Apply** to save your changes back to the WRE2205. |
| Refresh | Click **Refresh** to get this screen information afresh. |

# 6.9  WPS Station Screen

Use this screen when you want to add a wireless station using WPS. To open this screen, click **Network** > **Wireless LAN** > **WPS Station** tab.

Note: 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 34**   Network > Wireless LAN > WPS Station



The following table describes the labels in this screen.

**Table 18**   Network > Wireless LAN > WPS Station

| LABEL | DESCRIPTION |
|---|---|
| Config Mode | Use this to select **Registrar** or **Enrollee** mode. Select **Registrar** mode to make wireless clients follow the wireless settings of the WRE2205. Select **Enrollee** mode to make the WRE2205 follow the wireless settings of an access point. |
| Push Button | Use this button when you use the PBC (Push Button Configuration) method to configure wireless stations's wireless settings. See Section 5.2.1 on page 29. |
| | Click this to start WPS-aware wireless station scanning and the wireless security information synchronization. |
| Input station's PIN number | Use this button when you use the PIN Configuration method to configure wireless station's wireless settings. See Section 5.2.2 on page 31. |
| | 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. |

## 6.10  AP Select Screen

Use this screen to choose an access point that you want the WRE2205 to connect to. You should know the security settings of the target AP.

To open this screen, click **Network** > **Wireless LAN** > **AP Select** tab.

**Figure 35**   Network > Wireless LAN > AP Select

The following table describes the labels in this screen.
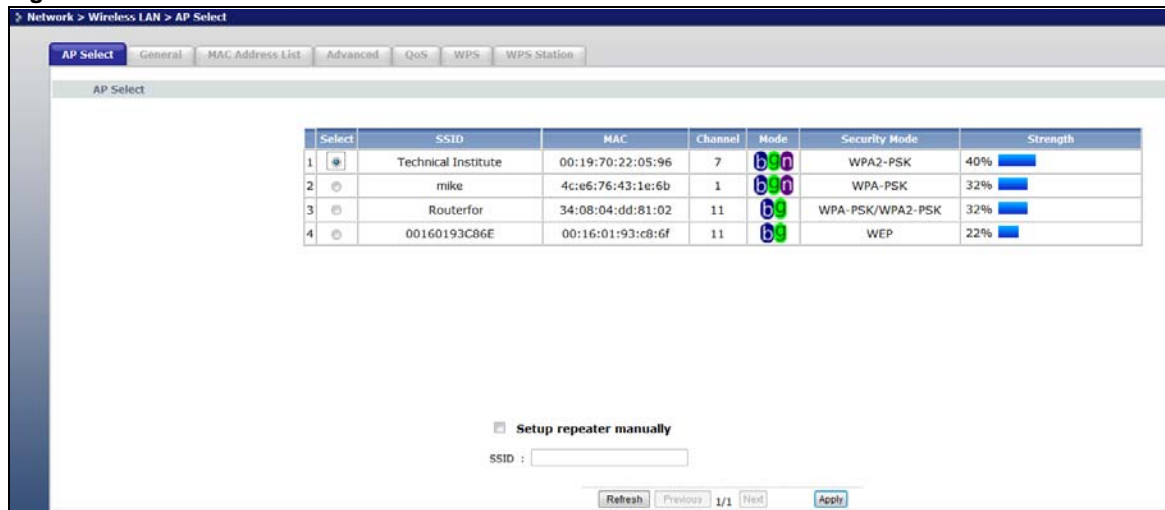
**Table 19** Network > Wireless LAN > AP Select

| 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 WRE2205 and this device. |
| 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 this to search for available wireless devices within transmission range and update this table. |
| Previous | Click this to see the previous page of APs. |
| Next | Click this to see the next page of APs. |
| Apply | Click this to start the next step in the AP setup process. |

# 7.1  Overview

This screen allows you to assign the WRE2205 a fixed or dynamic IP address. The default IP address is 192.168.1.2. In initial configuration, the WRE2205 acts as a DHCP server, so it can assign your computer an IP address in the same network range as the default IP. After the WRE2205 connects to an AP, the DHCP server function is disabled and your computer gets its IP from the AP. If the AP connection is dropped, connect to the WRE2205 again using the default domain name, http://zyxelsetupxxxx where xxxx is the last four numbers of the MAC address. The MAC address can be found on a label on the product.

# 7.2  What You Need To Know

The LAN parameters of the WRE2205 are preset in the factory with the following values:

• IP address of 192.168.1.2 with subnet mask of 255.255.255.0 (24 bits)

# 7.3  LAN IP Screen

Use this screen to change your basic LAN settings. Click **Network** > **LAN**.

**Figure 36**   Network > LAN > IP

The following table describes the labels in this screen.

**Table 20**   Network > LAN > IP

| LABEL | DESCRIPTION |
|---|---|
| Get from DHCP Server | Select this to have the WRE2205 get a dynamic IP address from a DHCP server. |
| User Defined LAN IP | Click this to enable the manual IP configuration. |
| IP Address | Type the IP address of your WRE2205 in dotted decimal notation 192.168.1.2 (factory default). |
| IP Subnet Mask | The subnet mask specifies the network number portion of an IP address. |
| Apply | Click **Apply** to save your changes back to the WRE2205. |
| Reset | Click **Reset** to begin configuring this screen afresh. |

# System

## 8.1  Overview

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

## 8.2  What You Can Do

Use the **Password** screen to set the password (Section 8.3 on page 53).

## 8.3  System Password Screen

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

**Figure 37**   Maintenance > System > Password



The following table describes the labels in this screen.

**Table 21**   Maintenance > System > Password

| LABEL | DESCRIPTION |
|---|---|
| Password Setup | Change your WRE2205's password (recommended) using the fields as shown. |
| 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 WRE2205. |
| Reset | Click **Reset** to begin configuring this screen afresh. |

# Tools

## 9.1 Overview

This chapter shows you how to upload a new firmware, upload or save backup configuration files, restart the WRE2205 and configure LEDs.

## 9.2 What You Can Do

- Use the **Firmware** screen to upload firmware to your WRE2205 (Section 9.3 on page 55).
- Use the **Configuration** screen to view information related to factory defaults, backup configuration, and restore configuration (Section 9.4 on page 56).
- Use the **Restart** screen to have the WRE2205 reboot (Section 9.5 on page 58).
- Use the **LED** screen to configure the LEDs (Section 9.6 on page 58).

## 9.3 Firmware Upload Screen

Find firmware at www.zyxel.com in a file that (usually) uses the system model name with a "*.bin" extension, e.g., "WRE2205.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 > Tools**. Follow the instructions in this screen to upload firmware to your WRE2205.

**Figure 38** Maintenance > Tools > Firmware
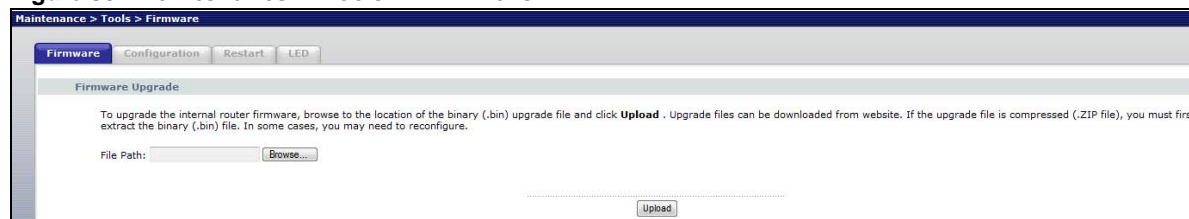


The following table describes the labels in this screen.

**Table 22** Maintenance > Tools > Firmware

| LABEL | DESCRIPTION |
|---|---|
| File Path | Type in the location of the file you want to upload in this field or click **Browse...** to find it. |

**Table 22** Maintenance > Tools > Firmware (continued)

| LABEL | DESCRIPTION |
|---|---|
| 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. |

Note: Do not turn off the WRE2205 while firmware upload is in progress!

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

**Figure 39** Firmware Upgrading



The WRE2205 automatically restarts in this time causing a temporary network disconnect. In some operating systems, you may see the following icon on your desktop.

**Figure 40** Network Temporarily Disconnected
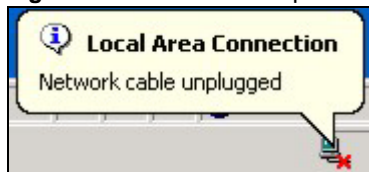


After the WRE2205 restarts, the **Upgrade Accomplished** screen appears.

**Figure 41** Upgrade Accomplished
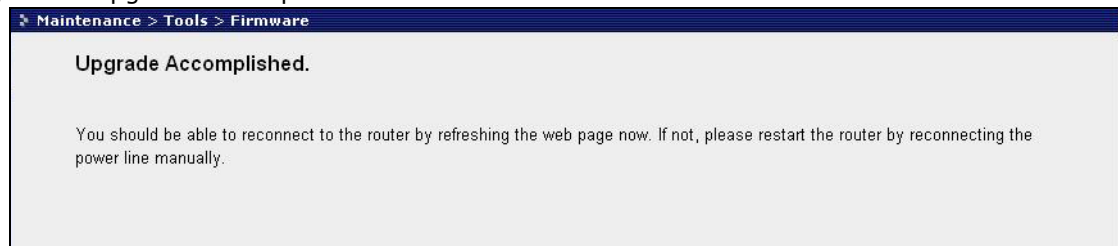


Refresh the web page and log in again and check your new firmware version in the **Status** screen.

# 9.4  Configuration Screen

Click **Maintenance > Tools** > **Configuration**. Information related to factory defaults, backup configuration, and restoring configuration appears as shown next.

**Figure 42**   Maintenance > Tools > Configuration
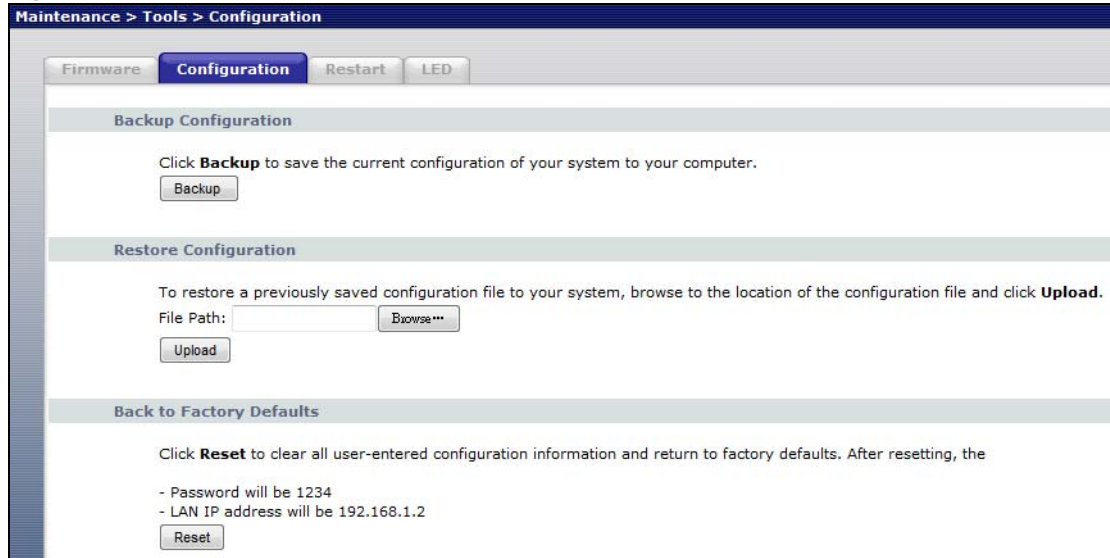


## 9.4.1  Backup Configuration

Backup configuration allows you to back up (save) the WRE2205's current configuration to a file on your computer. Once your WRE2205 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 WRE2205's current configuration to your computer.

## 9.4.2  Restore Configuration

Restore configuration allows you to upload a new or previously saved configuration file from your computer to your WRE2205.

**Table 23**   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 WRE2205 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 WRE2205 again.

The WRE2205 automatically restarts in this time causing a temporary network disconnect. In some operating systems, you may see the following icon on your desktop.

**Figure 43**   Temporarily Disconnected
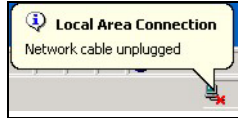


If you uploaded the default configuration file you may need to change the IP address of your computer to be in the same subnet as that of the default WRE2205 IP address (192.168.1.2). Refer to your operating system's help files for details on how to set up your computer's IP address.

### 9.4.3  Back to Factory Defaults

Pressing the **Reset** button on the Maintenance > Tools > Configuration screen clears all user-entered configuration information and returns the WRE2205 to its factory defaults.

You can also press the **WPS** button on the front panel for more than 10 seconds to reset the factory defaults of your WRE2205. Refer to for more information on the resetting the WRE2205.

## 9.5  Restart Screen

System restart allows you to reboot the WRE2205 without turning the power off.

Click **Maintenance > Tools** > **Restart**. Click **Restart** to have the WRE2205 reboot. This does not affect the WRE2205's configuration.

**Figure 44**   Maintenance > Tools > Restart



## 9.6  LED Screen

Click **Maintenance** > **Tools** > **LED**. Use this screen to configure which LEDs are enabled or disabled.

**Figure 45**   Maintenance > Tools > LED
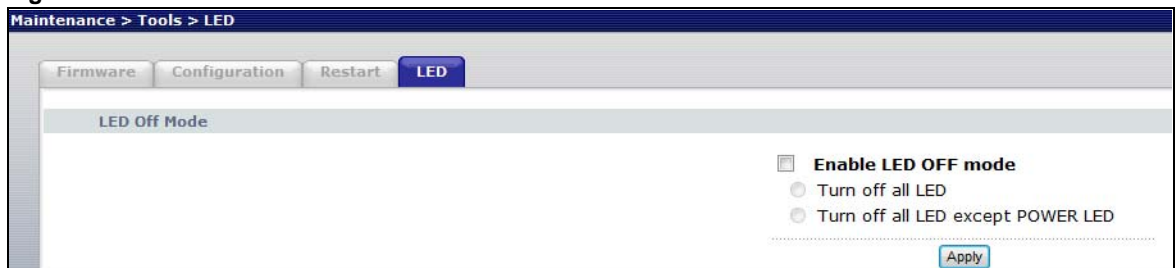
The following table describes the labels on the LED screen.

**Table 24** Maintenance > Tools > LED Screen

| LABEL | DESCRIPTION |
|---|---|
| Enable LED OFF mode | Type in the location of the file you want to upload in this field or click **Browse...** to find it. |
| Turn off all LED | Select this to turn off all LEDs. |
| Turn off all LED except POWER LED | Select this to turn off all LEDs except the power LED. |
| Apply | Click **Apply** to save your changes back to the WRE2205. |

# Troubleshooting

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

- Power, Hardware Connections, and LEDs
- WRE2205 Access and Login
- Internet Access
- Resetting the WRE2205 to Its Factory Defaults
- Wireless Problems

## 10.1  Power, Hardware Connections, and LEDs

The WRE2205 does not turn on. None of the LEDs turn on.

**1** Make sure you are using the power adaptor or cord included with the WRE2205.

**2** Make sure the power adaptor or cord is connected to the WRE2205 and plugged in to an appropriate power source. Make sure the power source is turned on.

**3** Disconnect and re-connect the power adaptor or cord to the WRE2205.

**4** 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 10.

**2** Make sure you understand how the LEDs are enabled or disabled. See Section 9.6 on page 58.

**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 WRE2205.

**6** If the problem continues, contact the vendor.

# 10.2  WRE2205 Access and Login

I don't know the IP address of my WRE2205.

**1**  Click **Start** > **Run**, enter **cmd**, and then enter **Ping zyxelsetupxxxx**, where xxxx is the last four digits of the MAC address of the WRE2205. You can find the MAC address on a label on the WRE2205.

**2**  The default IP address is **192.168.1.2**.

**3**  If you changed the IP address and have forgotten it, you might get the IP address of the WRE2205 by looking up the IP address of the default gateway for your computer. To do this in most Windows computers, click **Start** > **Run**, enter **cmd**, and then enter **ipconfig**. The IP address of the **Default Gateway** might be the IP address of the WRE2205 (it depends on the network), so enter this IP address in your Internet browser. Login (see the Quick Start Guide for instructions) and go to the **Device Information** table in the **Status** screen. Your WRE2205's IP address is available in the **Device Information** table.

- If the **DHCP** setting under **LAN information** is **None**, your device has a fixed IP address.
- If the **DHCP** setting under **LAN information** is **Client**, then your device receives an IP address from a DHCP server on the network.

**4**  If your WRE2205 is a DHCP client, you can find your IP address from the DHCP server. This information is only available from the DHCP server which allocates IP addresses on your network. Find this information directly from the DHCP server or contact your system administrator for more information.

**5**  Reset your WRE2205 to change all settings back to their default. This means your current settings are lost. See Section 10.4 on page 65 in the **Troubleshooting** for information on resetting your WRE2205.

I forgot the username and password.

**1**  The default username is **admin** and default password is **1234**.

**2**  If this does not work, you have to reset the device to its factory defaults. See Section 10.4 on page 65.

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

**1**  Make sure you are using the correct IP address.

- The default IP address is 192.168.1.2.
- If you changed the IP address, use the new IP address.

- If you changed the IP address and have forgotten it, see the troubleshooting suggestions for I don't know the IP address of my WRE2205.

**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** Make sure your computer is in the same subnet as the WRE2205. (If you know that there are routers between your computer and the WRE2205, skip this step.)

- If there is a DHCP server on your network, make sure your computer is using a dynamic IP address.
- If there is no DHCP server on your network, make sure your computer's IP address is in the same subnet as the WRE2205.

**5** Reset the device to its factory defaults, and try to access the WRE2205 with the default IP address.

**6** 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 WRE2205.

**1** Make sure you have entered the password correctly. The default username is **admin** and default password is **1234**. This field is case-sensitive, so make sure [Caps Lock] is not on.

**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 WRE2205.

**4** If this does not work, you have to reset the device to its factory defaults. See Section 10.4 on page 65.

# 10.3  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.

**63**

**2** Try to connect directly to the AP. If you can access the Internet, check that the WRE2205 has associated with the AP by checking the **WLAN STA Information** SSID field shows the SSID of the AP. See Section 6.4 on page 43.

**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 WRE2205), 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 10.

**2** Reboot the WRE2205.

**3** Try to connect directly to the AP. If you can access the Internet, check that the WRE2205 has associated with the AP by checking the **WLAN STA Information** SSID field shows the SSID of the AP. See Section 6.4 on page 43.

**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 10. If the WRE2205 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 WRE2205 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 WRE2205.

**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.

## 10.4  Resetting the WRE2205 to Its Factory Defaults

If you reset the WRE2205, you lose all of the changes you have made. The WRE2205 re-loads its default settings, and the username/password resets to **admin**/**1234**. You have to make all of your changes again.

You will lose all of your changes when you reset the WRE2205 to its factory defaults.

To reset the WRE2205,

**1**   Make sure the power LED is on.

**2**   Press the **WPS** button for longer than 10 seconds to set the WRE2205 back to its factory-default configuration.

      OR

**3**   Click **Maintenance** > **Tools** > **Restart** and then click **Restart**.

If the WRE2205 restarts automatically, wait for the WRE2205 to finish restarting, and log in to the Web Configurator. The username is **admin** and password is **1234**.

If the WRE2205 does not restart automatically, disconnect and reconnect the WRE2205's power. Then, follow the directions above again.

## 10.5  Wireless Problems

I cannot access the WRE2205 or ping any computer from the WLAN.

**1**   Make sure the wireless LAN is enabled on the WRE2205.

**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 WRE2205.

**4**   Make sure your computer (with a wireless adapter installed) is within the transmission range of the WRE2205.

**5**   Check that both the WRE2205 and your wireless station are using the same wireless and wireless security settings, and that both the WRE2205 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 WRE2205. See <span>Section 6.5 on page 44</span>.

# Legal Information

## Copyright

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### Disclaimer

ZyXEL does not assume any liability arising out of the application or use of any products, or software described herein. Neither does it convey any license under its patent rights nor the patent rights of others. ZyXEL further reserves the right to make changes in any products described herein without notice. This publication is subject to change without notice.

## Certifications

### Federal Communications Commission (FCC) Interference Statement

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

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

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

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

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

### FCC Radiation Exposure Statement

• This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
• IEEE 802.11b, 802.11g or 802.11n (20MHz) operation of this product in the U.S.A. is firmware-limited to channels 1 through 11. IEEE 802.11n (40MHz) operation of this product in the U.S.A. is firmware-limited to channels 3 through 9.
• To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.

### 注意！

依據　低功率電波輻射性電機管理辦法

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，指依電信規定作業之無線電信。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。

### Notices

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

This device has been designed for the WLAN 2.4 GHz network throughout the EC region and Switzerland, with restrictions in France.

Ce produit est conçu pour les bandes de fréquences 2,4 GHz conformément à la législation Européenne. En France métropolitaine, suivant les décisions n°03-908 et 03-909 de l'ARCEP, la puissance d'émission ne devra pas dépasser 10 mW (10 dB) dans le cadre d'une installation WiFi en extérieur pour les fréquences comprises entre 2454 MHz et 2483,5 MHz.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

## Viewing Certifications

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 (all products)

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.

## Regulatory Information

### 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 5GHz Wireless Products Relevant to the EU and Other Countries Following the EU Directive 1999/5/EC (R&TTE Directive)

| [Czech] | ZyXEL tímto prohlašuje, že tento zařízení je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/EC. |
|---|---|
| [Danish] | Undertegnede ZyXEL erklærer herved, at følgende udstyr udstyr overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF. |
| [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. |
| [Estonian] | Käesolevaga kinnitab ZyXEL seadme seadmed vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele. |
| English | Hereby, ZyXEL declares that this equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. |
| [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. |
| [Greek] | ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ ZyXEL ΔΗΛΩΝΕΙ ΟΤΙ εξοπλισμός ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΕ. |
| [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. |
| [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. |
| [Latvian] | Ar šo ZyXEL deklarē, ka iekārtas atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem. |
| [Lithuanian] | Šiuo ZyXEL deklaruoja, kad šis įranga atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas. |
| [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. |
| [Maltese] | Hawnhekk, ZyXEL, jiddikjara li dan tagħmir jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC. |

| [Hungarian] | Alulírott, ZyXEL nyilatkozom, hogy a berendezés megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EK irányelv egyéb elõírásainak. |
|---|---|
| [Polish] | Niniejszym ZyXEL oświadcza, że sprzęt jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC. |
| [Portuguese] | ZyXEL declara que este equipamento está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/EC. |
| [Slovenian] | ZyXEL izjavlja, da je ta oprema v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/EC. |
| [Slovak] | ZyXEL týmto vyhlasuje, že zariadenia spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/EC. |
| [Finnish] | ZyXEL vakuuttaa täten että laitteet tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen. |
| [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. |
| [Bulgarian] | С настоящото ZyXEL декларира, че това оборудване е в съответствие със съществените изисквания и другите приложими разпоредбите на Директива 1999/5/EC. |
| [Icelandic] | Hér með lýsir, ZyXEL því yfir að þessi búnaður er í samræmi við grunnkröfur og önnur viðeigandi ákvæði tilskipunar 1999/5/EC. |
| [Norwegian] | Erklærer herved ZyXEL at dette utstyret er I samsvar med de grunnleggende kravene og andre relevante bestemmelser I direktiv 1999/5/EF. |
| [Romanian] | Prin prezenta, ZyXEL declară că acest echipament este în conformitate cu cerinţele esenţiale şi alte prevederi relevante ale Directivei 1999/5/EC. |

$C \in \textcircled{0}$

**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 direttive EU 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 EU Direktive 1995/5/CE folgen) mit Außnahme der folgenden aufgeführten Staaten:

In the majority of the EU and other European countries, the 2, 4- and 5-GHz 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 inwhich 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 2,4- and 5-GHz 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*":.

| Overview of Regulatory Requirements for Wireless LANs | | | |
|---|---|---|---|
| Frequency Band (MHz) | Max Power Level (EIRP)[1] (mW) | Indoor ONLY | Indoor and Outdoor |
| 2400-2483.5 | 100 | | V |
| 5150-5350 | 200 | V | |
| 5470-5725 | 1000 | | V |

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.

France

For 2.4 GHz, the output power is restricted to 10 mW EIRP when the product is used outdoors in the band 2454 - 2483.5 MHz. There are no restrictions when used indoors or in other parts of the 2.4 GHz band. Check http://www.arcep.fr/ for more details.

Pour la bande 2.4 GHz, la puissance est limitée à 10 mW en p.i.r.e. pour les équipements utilisés en extérieur dans la bande 2454 - 2483.5 MHz. Il n'y a pas de restrictions pour des utilisations en intérieur ou dans d'autres parties de la bande 2.4 GHz. Consultez http://www.arcep.fr/ pour de plus amples détails.

| R&TTE 1999/5/EC | | |
|---|---|---|
| WLAN 2.4 – 2.4835 GHz | | |
| IEEE 802.11 b/g/n | | |
| Location | Frequency Range(GHz) | Power (EIRP) |
| Indoor (No restrictions) | 2.4 – 2.4835 | 100mW (20dBm) |
| Outdoor | 2.4 – 2.454 | 100mW (20dBm) |
| | 2.454 – 2.4835 | 10mW (10dBm) |

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

## 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.
- Use ONLY an appropriate power adaptor or cord for your device.

- Connect the power adaptor or cord to the right supply voltage (for example, 110V AC in North America or 230V AC in Europe).
- Do NOT allow anything to rest on the power adaptor or cord and do NOT place the product where anyone can walk on the power adaptor or cord.
- Do NOT use the device if the power adaptor or cord is damaged as it might cause electrocution.
- If the power adaptor or cord is damaged, remove it from the power outlet.
- Do NOT attempt to repair the power adaptor or cord. Contact your local vendor to order a new one.
- Do not use the device outside, and make sure all the connections are indoors. There is a remote risk of electric shock from lightning.
- Do NOT obstruct the device ventilation slots, as insufficient airflow may harm your device.
- Antenna Warning! This device meets ETSI and FCC certification requirements when using the included antenna(s). Only use the included antenna(s).
- If you wall mount your device, make sure that no electrical lines, gas or water pipes will be damaged.

Your product is marked with this symbol, which is known as the WEEE mark. WEEE stands for Waste Electronics and Electrical Equipment. It means that used electrical and electronic products should not be mixed with general waste. Used electrical and electronic equipment should be treated separately.

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