



# WA-2200 Series

802.11ac 2x2 Wave 2 Access Point  
User Guide



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# Introduction

As the central component of your wireless network, the WA-2200 802.11ac 2x2 Wave 2 Access Point provides you with high-speed, high-range wireless 802.11ac networking. The AP broadcasts on both the 5 GHz and 2.4 GHz bands so that select devices can choose their preferred source of wireless connectivity, improving the overall stability, reliability, and performance of the wireless network.

- For product regulatory information, see [ctrl4.co/reg](http://ctrl4.co/reg).
- For product patent information, see [ctrl4.co/patents](http://ctrl4.co/patents).

# System requirements

Minimum system requirements:

- PoE switch or injector, or an AC power adapter (not included).
- A computer with an Ethernet port (for first AP setup).

# Hardware installation

For hardware installation and first-time startup instructions, see the *Quick Start Guide* found in the box.

# Default settings and credentials

- IP address: IP will be automatically assigned by router if a DHCP server is detected or, if no DHCP server is detected, the default IP address will be automatically set to **192.168.1.21**.
- Username/Password (default): **admin/password**
- SSIDs (default): **Pakedge\_Main** (5 GHz) and **Pakedge\_Alt** (2.4 GHz)  
Security/password: WPA2-PSK/**pakedgewireless**
- Guest SSIDs (default): **PakedgeGuest2.4** and **PakedgeGuest5**, security/password: WPA2/**pakedgeguest**
- Transmit power: 18 dBm for 5 GHz and 13 dBm for 2.4 GHz.

# First-time login

The first time you log in, you are brought to the *Configure* tab. Here you can change your username and password (strongly recommended), specify the device's network name and physical location, set the Country Code, and create or hide wireless networks.

For BakPak Lite setup instructions, see the *WA-2200 Quick Start Guide*.

**Note:** For APs sold in the U.S. and Israel, the Country Code will be preconfigured and locked. For units sold in the rest of the world, the Country Code will be blank and *must* be configured on the *Configure* tab during first-time setup.

# Configure

The *Configure* tab allows you to change the most common AP settings in one screen. This is the default tab that displays after login.

The screenshot shows the 'Configure' tab of the WA-2200 web interface. At the top, there are tabs for Overview, Connections, Configure (selected), Backup/Restore, Logs, and Advanced. The main content area is divided into three sections: 'Edit Login Credentials' with fields for Username, Current Password, and New Password; 'General Device Information' with fields for Friendly DeviceName (My WA-2200), Device Location (Lobby), and Device Note (WA-2200-C in lobby); and 'Device Settings' with a Time Zone dropdown (America/Los\_Angeles) and a Country Code dropdown (United States (Locked)).

- **Username and Password:** The first time you log in, you should change these from the defaults (“admin” and “password”) to new credentials.
- **Friendly Device Name:** Give the AP a descriptive name to identify it on its web interface screen and in BakPak.
- **Device Location:** Describe the physical location of the AP here.
- **Device Note:** Add any other notes here, such as date of installation and the technician name.
- **Time Zone:** Select the time zone used for the AP’s event logs.
- **Country Code:** Select the country where the AP is installed.

**Note:** For APs sold in the U.S. and Israel, the Country Code will be preconfigured and locked. For units that are sold in the rest of the world, the Country Code will be blank and *must* be configured on the *Configure* tab.

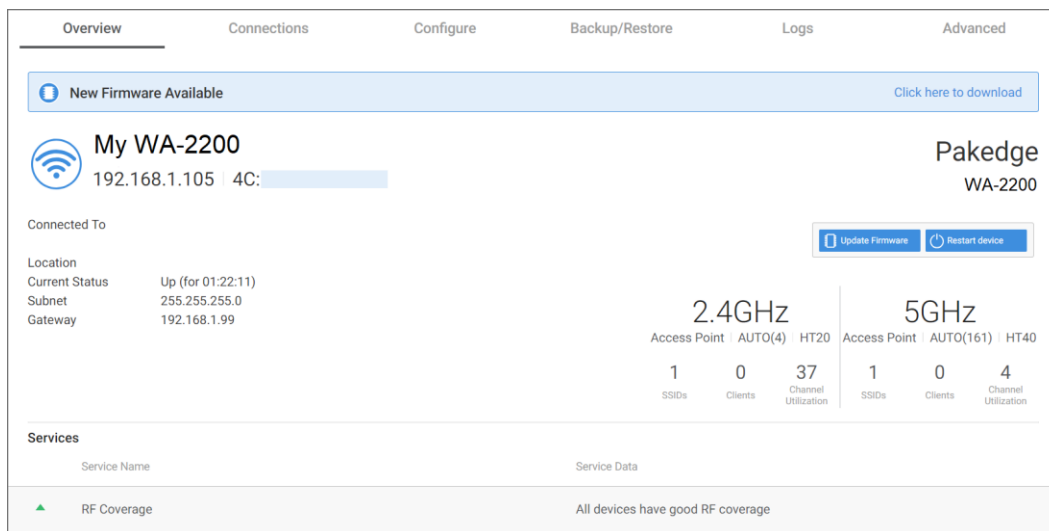
- LAN Settings:

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- **IP Network Settings:** Select the method used for assigning IP addresses (DHCP or Static).
- **IP Address:** For a static IP network, enter the AP's IP address here. For a DHCP network, this field is read-only.
- **Subnet Mask:** For a static IP network, enter the AP's subnet mask here. For a DHCP network, this field is read-only.
- **Gateway:** For a static IP network, enter the AP's Gateway address here. For a DHCP network, this field is read-only.
- **DNS Settings:**
  - **DNS Server *n*** (server's IP address): For a static IP network, enter up to two DNS server IP addresses here. For a DHCP network, these fields are read-only.
- **5 GHz Networks and 2.4 GHz Networks, and guest networks:** Enter an SSID (wireless network name), the authentication type to use, the WiFi password, and the VLAN this wireless network is associated with. To view the password that's entered, click the eye icon. Select **Hide** to not broadcast the wireless network's SSID.
- **5 GHz Guest Network and 2.4 GHz Guest Network:** Enter an SSID (wireless network name), the authentication type to use, and the WiFi password. To view the password that's entered, click the eye icon. Select **Hide** to not broadcast the wireless network's SSID.

## Overview

The Overview tab gives you a quick view of the AP's status and critical settings.



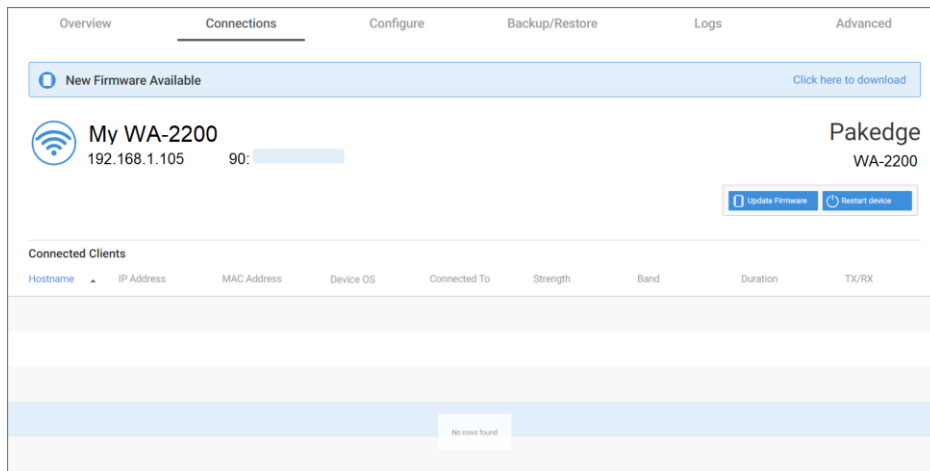
- **Notifications:** System notifications display at the very top of the tab. This example shows a firmware update is available.
- **Name:** The device name (assigned in the Configure tab) appears here.
- **IP address and MAC address:** The device's assigned IP address and unique MAC address is shown here.

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- **Update Firmware:** Click to open the Update Firmware screen (also accessible under the Advanced tab). The screen also displays the firmware's release notes.
- **Restart device:** Click to restart (power cycle) the AP. It happens immediately, with no confirmation dialog.
- **Network information:** Displays the number of wireless network SSIDs and the number of channels used by each.
- **Services:** Displays the status of current services and settings and indicates with an icon whether the service or setting is optimally configured.

## Connections

The *Connections* tab displays a list of connected wireless devices.



Click any column head to sort the list by that field. Available fields are:

- Hostname
- IP Address
- MAC Address
- Device OS
- Connected To
- Strength
- Band
- Duration
- TX/RX

# Backup/Restore

The *Backup/Restore* tab allows you to save a configuration (backup) and restore the configuration file.

The screenshot shows the 'Backup/Restore' tab selected in a navigation menu. Below the menu, there are two main sections: 'Create Backup' and 'Restore Configuration File'. The 'Create Backup' section has a 'Save Configuration' button. The 'Restore Configuration File' section has a 'Choose File' button (with 'No file chosen' text) and a 'Restore' button.

- **Save Configuration:** Click to save a file that contains all of this AP's settings.
- **Choose File:** Click to select a saved configuration backup file to use for restoring settings.
- **Restore:** Click to restore AP settings using the selected configuration backup file.

# Logs

The *Logs* tab displays a record of system events effected by the AP. The events are categorized and sortable by severity, timestamp, and details.

The screenshot shows the 'Logs' tab selected in a navigation menu. Below the menu, there are settings for 'Remote Syslog' and a table for logs. The 'Remote Syslog' section has an 'Enable' toggle switch, a 'Server IP Address' input field (with '0.0.0.0' entered), and a 'Port' input field (with '514' entered). Below this, there is a table with columns 'Severity', 'Timestamp', and 'Detail'. A 'Download Detailed Logs' button is located to the right of the table.

- **Enable Remote Syslog** to save the logs on another network. You'll also need to specify the remote Syslog server IP address and port.
- **Download Detailed Logs:** Click to download more verbose descriptions of the logged events.

# Advanced

## Device Settings

Click this tile to configure LED settings, change the hostname or factory defaults, or to access diagnostic tools.

Overview Connections Configure Backup/Restore Logs **Advanced**

**Device Settings**

LEDs

☒ Enable

Hostname: WA-2200

Factory Default

**Diagnostic Tools**

Type: ping

IP Address / Domain:

Run

- **LEDs:** Select to enable (or deselect to disable) the AP's LEDs.
- **Hostname:** Enter the hostname here.
- **Factory Default:** Click to restore factory default settings.
- **Diagnostic Tools**
  - **Ping:** Select to ping a device at the indicated address.
  - **Traceroute:** Select to run a traceroute to the indicated address.

## LAN Settings

Click this tile to configure the advanced LAN port settings, such as management VLAN and STP.

Overview Connections Configure Backup/Restore Logs **Advanced**

**LAN Settings**

**Extended LAN Configuration**

Management VLAN: ☒ Enable

VLAN ID: 1

Spanning Tree Protocol: ☒ Enable

Priority: 32768

- **Management VLAN:** Click this toggle to enable the management VLAN.
- **VLAN ID:** Enter the VLAN ID the AP is associated with.
- **Spanning Tree Protocol:** Click this toggle to enable spanning tree protocol, then select **Priority** to change the priority from its default (32768). The lower the priority, the more likely the switch is to become the root bridge. (STP is changed in increments of 4,096.)



# Wireless Settings

Click this tile to configure advanced WiFi radio settings such as channel, power, RF scan, and roaming features.

The screenshot displays the 'Advanced' configuration page for the WA-2200 Series. The 'Wireless Settings' section includes a 'Bandsteering' toggle. The '5.0GHz Radio Settings' section features a '5GHz Radio Settings' toggle, a 'Wireless Mode' dropdown set to 'Access Point', and a 'Channel Width' dropdown set to '40MHz'. The 'Channel' dropdown is set to 'Auto', and the 'Transmit Power Level' dropdown is set to '11 dBm (13 mW)'. The 'Multicast Handling' section has a 'Convert to Unicast' toggle. The 'Roaming' section includes checkboxes for 'Fast BSS transition (802.11r)' and 'Client Reject RSSI', and a 'Client Reject RSSI Value' input field set to '-85'. An 'RF Scan' button is located in the top right corner.

- **Wireless Settings**
  - **Band Steering:** Band steering steers 5 GHz-capable clients to that frequency. By enabling this function, the 2.4 GHz SSID and settings will be copied to the 5 GHz band.
  - **RF Scan:** Click to perform an automatic site survey of RF signals. The AP will scan the channels for connected devices and will then display them in a table.
- **5 GHz and 2.4 GHz Radio Settings**
  - **Enable:** Click this toggle to enable this WiFi radio band.
  - **Operation Mode:** Both the 5 and the 2.4 GHz bands have the following operating modes:
    - **Access Point:** Standard mode of operation. Allows a wireless connection to the LAN.
    - **WDS Root:** The AP with this mode set will be the “root” device that APs configured with WDS Repeater and WDS Bridge will connect to.
    - **WDS Bridge:** This mode allows the AP to connect to a WDS Root Access Point. This mode takes in the SSID broadcasted by the WDS Root Access Point and turns it into Ethernet connectivity for client devices.
    - **WDS Repeater:** This mode allows the AP to connect to a WDS Root Access Point. This setting will take the SSID broadcasted by the WDS Root Access Point and rebroadcast it to end-user devices.
    - Additional WDS Bridge and WDS Repeater settings:
      - WDS Root Access Point BSSID:
      - WDS Root Access Point SSID:

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- **Wireless Mode:** Choose the setting that corresponds to the type of wireless clients connected to your network. If you aren't sure which type of clients will access the wireless networks, we recommend you keep the default settings.
- **Channel Width:** Select the channel width for the selected channel to use. By default, it's set to HT 80 MHz (when using 5 GHz) and HT 20 MHz (when using 2.4 GHz). Selecting 40 MHz on the 2.4 GHz band is possible, but not recommended, because it will also increase the risk of impacting wireless performance. We recommend keeping the 2.4 GHz radio set to 20 MHz and using only channel 1, 6, or 11, because they are the only three non-overlapping channels.
- **Channel:** Using the default setting (Auto), the AP automatically selects the channel with best performance for the wireless network. To select a channel manually, click the drop-down list and select a channel. The channel options available depend on the Country Code selected.
- **Transmit Power Level:** The power depends on the distance of the devices in your wireless network. You can use this feature to increase or decrease the coverage area; however, we do not recommend changing this setting unless a professional site survey is conducted. Contact your network administrator for help.
  - **Auto:** This setting adjusts the power of the AP based on the distance to the furthest client device.
  - **11 dBm (13mW) – 25 dBm (316mW):** These are static power settings. The AP will broadcast at the selected power level.
- **Multicast Handling:** Enable the **Convert to Multicast** toggle to enhance the video/audio quality when streaming multicast content to multiple devices over WiFi. When enabled, all the multicast traffic is converted to unicast, which increases the delivery speed to individual devices. This feature is not recommended if the multicast group exceeds 10 devices.
- **Roaming**
  - **Fast BSS transition (802.11r):** IEEE 802.11r standard for fast roaming reduces the authentication time when clients roam from one AP to the other. This feature is beneficial for video streaming and voice application. 802.11r requires WPA2/AES encryption in order to work.

**Note:** The roaming behavior depends on clients. To obtain full benefit from fast roaming, wireless clients need to support 802.11r fast roaming standard. It is not recommended to enable both band steering and fast roaming features, which will cause some incompatibility issues.
  - **Client Reject RSSI:** Helps with “sticky” clients that don't reliably roam to the closest AP. By enabling this feature, the AP continuously monitors the station's received signal and will de-authenticate the client when the RSSI falls below the user-defined **Client Reject RSSI Value** threshold. This setting can be configured independently on 5 GHz and 2.4 GHz radios.

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- Guest Network Client IP Assignment
  - **DHCP:** Select **Internal** or **External**.
  - **Starting IP Address:** This is the beginning of the DHCP range used on the guest network. If you have multiple APs, you can give them the same DHCP range because the guest network of each AP will be independent of each other.
  - **Ending IP Address:** This is the last IP address available on the DHCP range.
  - **Subnet Mask:** Select the class of the guest network. 255.255.255.0 is the standard setting and is selected by default.
  - **GW IP Address:** Enter the Gateway IP address
  - **DNS server IP address:** The DNS Server IP can be set to an external DNS or to the router's IP address if the router provides a DNS server.

## Access Control

Click this tile to set up access control for connected clients.

Overview

Connections

Configure

Backup/Restore

Logs

Advanced

Access Control

Add

Hostname	IP Address	MAC Address	Remove

No rows found

To add a client for access control, click **Add**, then select the client and click **Apply**. The client and its identifying information are added to the *Access Control* list.

Click any column head to sort the list by that field. Available fields are:

- Hostname
- IP Address
- MAC Address
- Remove

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### Firmware

Click this tile to access cloud and local firmware upgrades.

New Firmware Available v0.9.9

[What's New / Release Notes 08/30/2018](#)

Features:

- 1-click remote management with BakPak Lite
  - View WAN settings
  - Edit LAN settings
  - Edit wireless SSID configuration and security profiles
- Configure 2 additional Packedge WAPs directly from the WR-1
  - Requires WAPs to be on firmware version 1.20 or later

Bug fixes:

- Some GUI compatibility issues with Internet Explorer 11
- Speed test results may reflect slower download speeds when connecting to certain servers
- Some secondary controllers are not discovered via SDDP when connected to wireless with multicast enhancements enabled

Hot fix:

- Addressed issue in 1.02.0 which could cause a US region wireless setting to be lost on factory default. Please update to this patch as soon as possible

Upgrade

Current / Insatalled Firmware v0.3.0.0

[Release Notes 08/28/2018](#)

If your firmware is up to date, this screen shows your current firmware version and provides a link for that firmware's release notes.

If a firmware update is available, this screen also shows the update version and the update's release notes. Click **Upgrade** to update the firmware from the cloud.

### BakPak Lite

BakPak Lite is designed to provide remote cloud monitoring and configuration to the AP. Using BakPak, you can remotely monitor and configure your customer's AP without requiring a truck roll or a VPN session to the customer's network. In just a few clicks, register your AP with your new or existing BakPak account. Registration is a two-step process where you register the Management Agent in BakPak, and then you link the management agent to an existing site or create a new site.

### BakPak Lite

The AP has BakPak Lite built in, which means it can remotely monitor other WE Series APs via BakPak. After the AP has been enrolled in BakPak, you can access it from anywhere in the world by using the BakPak app or the web interface at [mybakpak.com](http://mybakpak.com).

If you see this message bar at the top of your access point's web interface, the AP is not yet enrolled in BakPak.

! This product is not managed by Packedge

[Click here to enroll](#)

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### To enroll the AP in BakPak:

1. On the message bar, click **Click here to enroll**. You are automatically redirected to mybakpak.com.
2. Log in with your BakPak credentials or create a new admin account. When you are logged in, the serial number and MAC address will be automatically populated on your BakPak account.

### To log in and view a site using the web interface:

1. In a web browser, log in to **mybakpak.com**.
2. Under *Sites*, click **Manage**. A list of BakPak and BakPak Lite sites opens.
3. Click the site you want to access, then click the BakPak Lite device that you want to manage. The site's management window expands, providing the following information:
  - **Device information:** Identifies all information about the device, including the serial number and firmware version, and has ability to reboot the wireless router remotely.
  - **SSID configuration:** Configure/edit wireless information for the primary SSID and guest networks.
  - **Network Settings:** Allows control of network settings such as DHCP, Spanning Tree Protocol, and Management VLAN.
  - **Advanced Settings:** Remotely configure the AP's advanced settings (set the Country Code and Time Zone and enable bandsteering) and control 5GHz and 2.4 GHz radio settings (Channel, Channel Width, Wireless Mode, Operation Mode, Transmit Power Level, Fast BSS Transition, and Client Reject RSSI).
  - **Connected Clients:** View information on connected clients, such as the SSID, Device OS, Hostname, Signal Strength, MAC Address, and IP Address.
  - **Events:** Displays network analytics, including a log of user events, for network troubleshooting.
  - **Firmware:** Applies firmware updates to the device.
  - **Configuration:** View the configuration files available on the AP. Using the buttons, Apply a configuration file to the AP or Delete the configuration files you are no longer using.

# Reset to factory default settings

While setting up or troubleshooting, you may need to reboot the AP or restore it to its factory default settings.

**Caution:** Do *not* power off the AP during a factory reset.

## Reset using the interface

**To only restart the AP, maintaining all settings:**

1. In the Overview or Connections tab, click Restart Device. The AP restarts.

**To reset to factory default settings, deleting all user settings:**

**Caution:** Performing this reset will delete all of your settings on the AP.

1. Go to the Advanced tab and click Device Settings.
2. Click **Factory Default**, then click **Yes**.

## Reset using the physical RESET button

Your AP has a recessed RESET button accessible through a pinhole next to the Ethernet port underneath the AP.

**To only reboot the AP, maintaining all settings:**

1. While power is connected, insert a narrow, pointed object (such as a straightened paper clip) into the hole.
2. Press and release the button.

**To reset to factory default settings, deleting all user settings:**

**Caution:** Performing this reset will delete all of your settings on the AP.

1. While power is connected, insert a narrow, pointed object (such as a straightened paper clip) into the hole.
2. Press and hold the button for at least **ten** seconds, then release it.



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