

pakedgedevice&software<sub>inc.</sub>

**WK-1,WK-1-B, WK-1-O**

**802.11ac Dual Band Access Point**

User Guide – Version 1.0



### **FCC Declaration of Conformity**

Pakedge Device & Software, 3847 Breakwater Avenue, Hayward, CA 94545, declares under sole responsibility that the WK-1x complies with 47 CFR Parts 2 and 15 of the FCC Rules as a Class B digital device. This device complies with Part 15 of FCC Rules. Operation of the device is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference that may cause undesired operation.

### **FCC Compliance Class B Digital Device**

This equipment 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 environment. This equipment 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 equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

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

### **Wireless LAN and Your Health**

The WK-1x, like other radio devices, emits radio frequency electromagnetic energy, but operates within the guidelines found in radio frequency safety standards and recommendations.

### **FCC Certification**

The WK-1x contains a radio transmitter. Accordingly, it has been certified as compliant with 47 CFR Part 15 of the FCC Rules for intentional radiators. Products that contain a radio transmitter are labeled with FCC ID and the FCC logo.

### **Restrictions on Use of Wireless Devices**

In some situations or environments, the use of wireless devices may be restricted by the proprietor of the building or responsible representatives of the organization. For example, these situations may include:

- Using wireless equipment on board an airplane.
- Using wireless equipment in any environment where the risk of interference to other devices or services is perceived or identified as harmful.
- The availability of some specific channels and / or operational frequency bands are country dependent and are firmware programmed at factory to match the intended destination. The firmware setting is not accessible by the end user.

If you are uncertain of the applicable policy for the use of wireless equipment in a specific organization or environment (such as airports), you are encouraged to ask for authorization to use the device prior to turning on the equipment. The manufacturer is not responsible for any radio or television interference caused by unauthorized modification of the devices included with this product, or the substitution or attachment of connecting cables and equipment other than specified by the manufacturer. Correction of interference caused by such unauthorized modification, substitution, or attachment is the responsibility of the user. The manufacturer and its authorized resellers or distributors are not liable for any damage or violation of government regulations that may arise from failing to comply with these guidelines.

**Caution: Exposure to Radio Frequency Radiation.**

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provide with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

**WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. THE UNIT MUST NOT BE EXPOSED TO DRIPPING OR SPLASHING WATER. CAUTION: DO NOT OPEN THE UNIT. DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE INSTALLATION AND TROUBLESHOOTING INSTRUCTIONS. REFER ALL SERVICING TO QUALIFIED SERVICE PERSONNEL. CAUTION: THIS DEVICE MUST BE INSTALLED AND USED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AS DESCRIBED IN THE USER DOCUMENTATION THAT COMES WITH THE PRODUCT. WARNING: POSTPONE INSTALLATION UNTIL THERE IS NO RISK OF THUNDERSTORM OR LIGHTNING ACTIVITY IN THE AREA. CAUTION: ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE GRANTEE OF THIS DEVICE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.**

**SAFETY PRECAUTIONS:**

*When using this device, always follow basic safety precautions, to reduce the risk of fire, electric shock, and injury to persons, including the following:*

- Read all of the instructions (listed here and/or in the user manual) before you operate this equipment.
- Comply with all warning and caution statements in the instructions.
- Retain the instructions for future reference.
- Observe all warning and caution symbols that are affixed to this equipment.
- Comply with all instructions that accompany this equipment.
- Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in safe operating condition.
- Installation of this product must be in accordance with national wiring codes and conform to local regulations.
- Avoid using this product during an electrical storm. There may be a risk of electric shock from lightning. For added protection for this product during a lightning storm, or when it is left unattended and unused for long

periods of time, unplug the power supply, and disconnect the CAT5e to the WK-1x at the PoE. This will prevent damage to the product due to lightning and power surges.

- Give particular attention to all safety precautions.
- Operate this product only from the type of power source indicated on the product's marking label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.
- It is recommended that the customer install an AC surge protector in the AC outlet to which this device is connected. This is to avoid damage to the equipment from lightning strikes and other electrical surges.
- Place POE Injector unit to allow for easy access when disconnecting the power cord/adapter of the device from the AC wall outlet.
- Wipe the unit with a clean, dry cloth. Never use cleaning fluid or similar chemicals. Do not spray cleaners directly on the unit or use forced air to remove dust.
- Keep the device away from excessive heat and humidity and keep the device free from vibration and dust.
- Do not directly cover the device, or block the airflow to the device with insulation or any other objects.

"Hereby, Packedge Device and Software Inc, declares that this wireless access point is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC."



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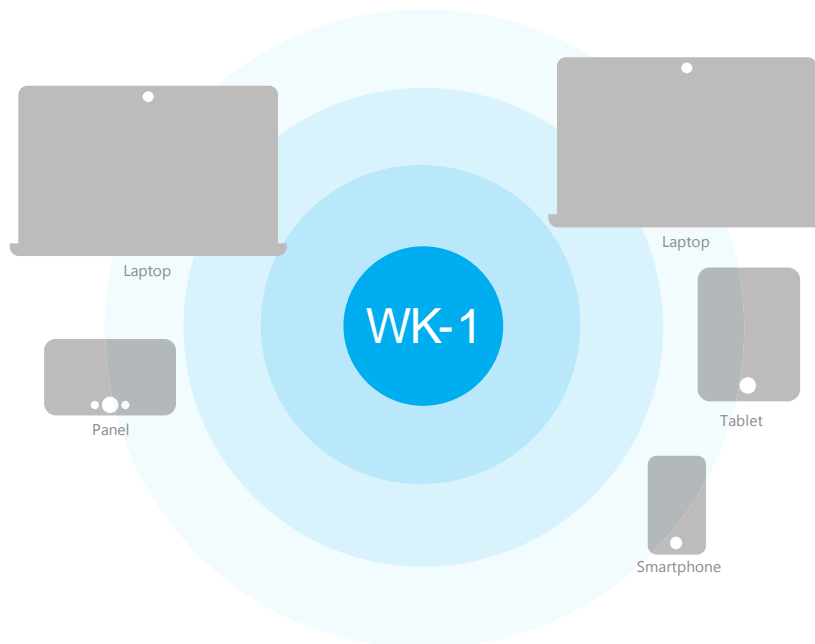
## INTRODUCTION

Thank you for purchasing the Pakedge WK-1x 802.11ac Dual Band Access Point

As the central component of your wireless network, the WK-1 can connect multiple computers, allowing you to share files, audio, video, printers, a high-speed Internet connection, and other resources. You can easily connect devices that have a wireless adapter to the WK-1x to create a secure, high-speed link between your computers, PDAs, and other electronics; And with the WK-1x being able to broadcast both 2.4GHz and 5GHz signals simultaneously, 5GHz capable wireless devices are now free to choose the best signal with the least noise and interference, improving the overall stability, reliability and performance of the wireless network.

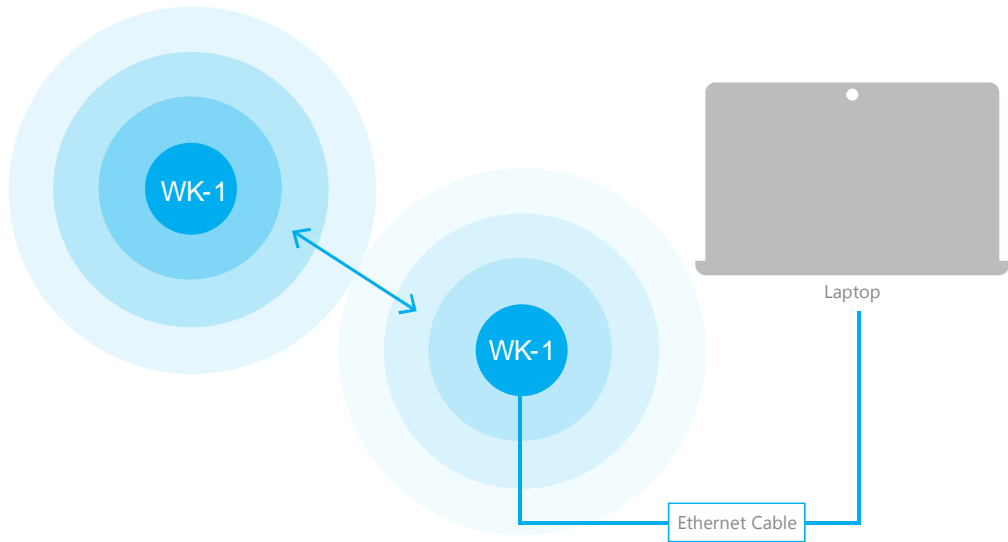
Each band (either 2.4GHz or 5GHz) of the WK-1x can operate in any one of three modes:

- **Access Point Mode:** This is the typical configuration for most Wi-Fi networks. In this mode, the WK-1x broadcasts two Wi-Fi signals (2.4 GHz and 5GHz) that clients can associate with, as shown in the figure below.

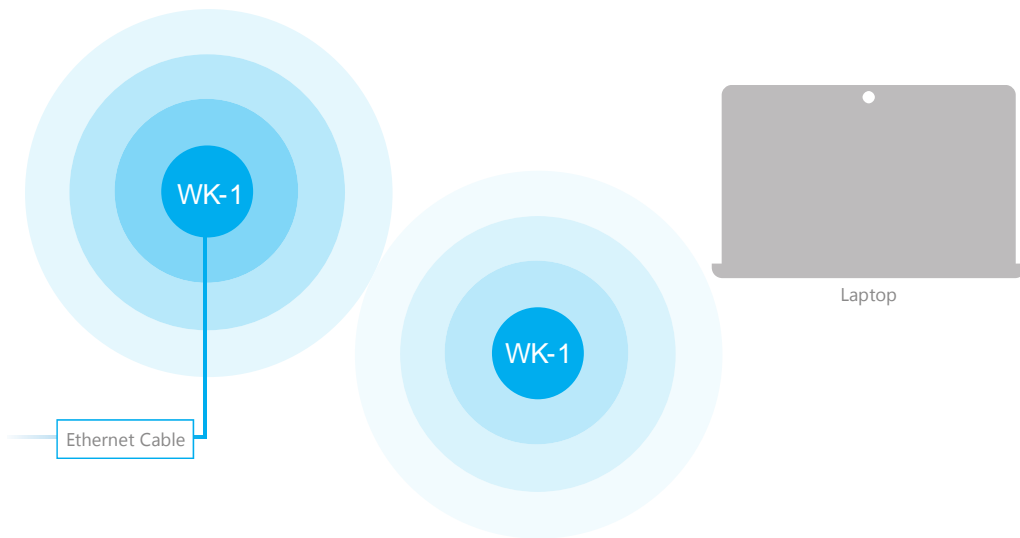


- **Client Bridge Mode:** In this mode, you can connect one WK-1x to a client by its Ethernet port, as shown below. In Client Bridge Mode, the WK-1x can receive a wireless signal from an Access Point and send the

signal through its Ethernet port to a client. This mode is used when you need to have network connectivity to hard wired device(s) but are unable to run cable to them.



- **Repeater Mode** – Normally for repeater work, this mode will with Any AP set up as the main AP and then the WK-1x will repeat off the unit



Because the functionality of the WK-1x changes depending on its operating mode, this manual offers both general and mode-specific content.

## SYSTEM REQUIREMENTS

The minimum system requirements for the WK-1x are:

- PC or Mac book compatible with an Ethernet interface
- Operating system that supports an HTTP Web browser

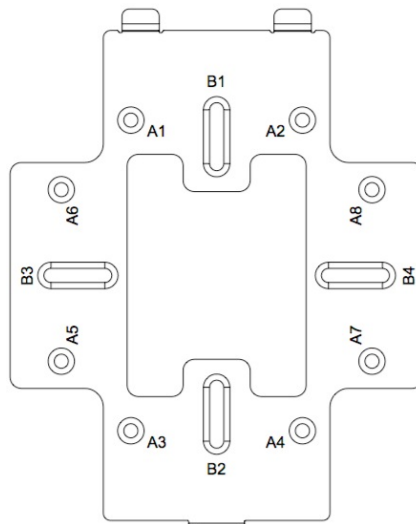
## HARDWARE INSTALLATION

**Note:** the product is designed for specific application and must be professionally installed by a qualified personal who has RF and related knowledge.

### WK-1/WK-1-B Mounting Options

#### Using the Provided Wall Mount

If planning on mounting the WK-1x

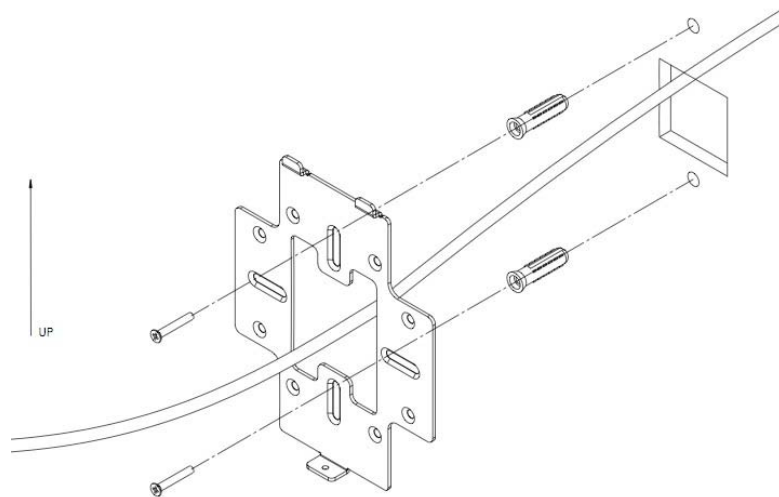


A: DOUBLE-GANG ELECTRICAL BOX, WALL

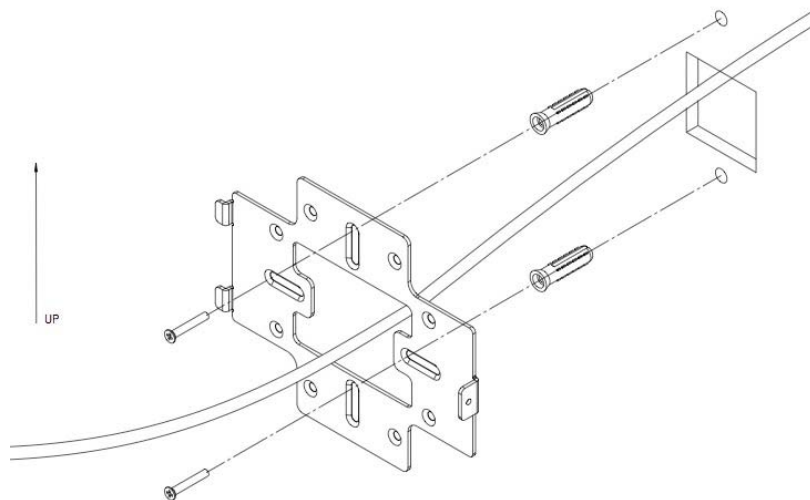


B: WALL, SINGLE-GANG ELECTRICAL BOX, EUROPEAN OUTLET BOX US 4" ROUND JUNCTION BOX, US 3.5" ROUND JUNCTION BOX

**Vertical mount:** Secure the Wall Bracket to the wall anchors using the included hardware.

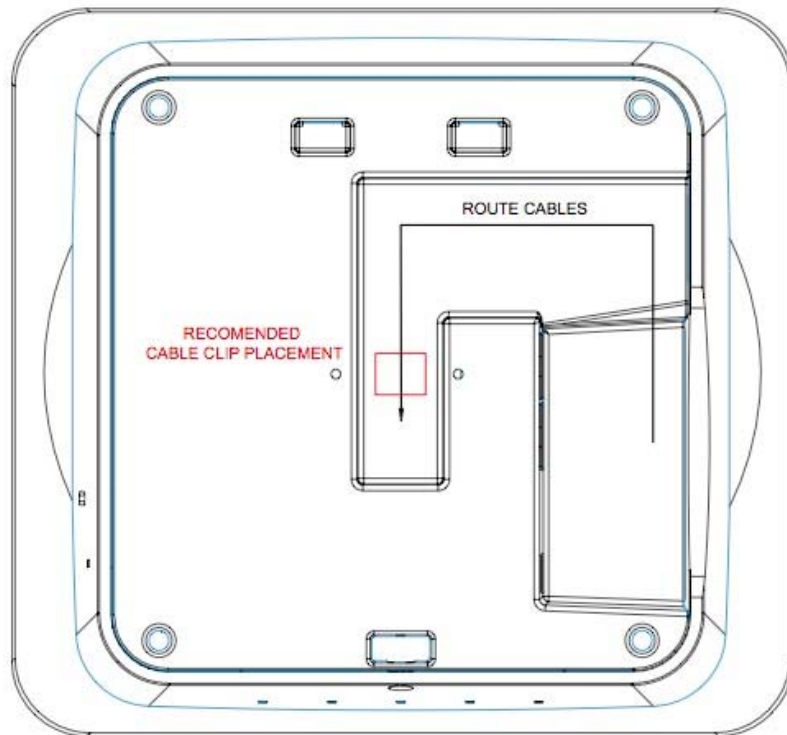


**Horizontal mount:** Line up the slots and secure the wall bracket to the wall anchors using the included hardware.

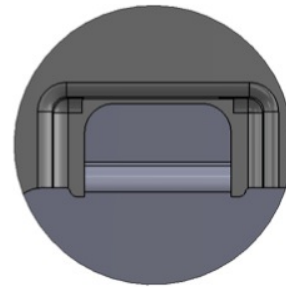
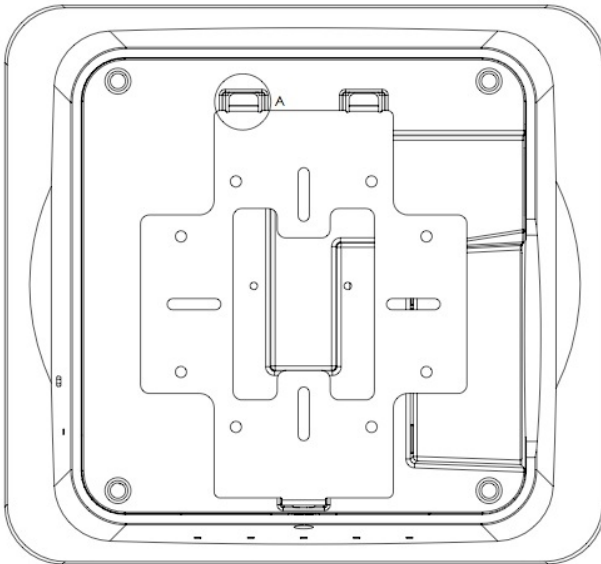
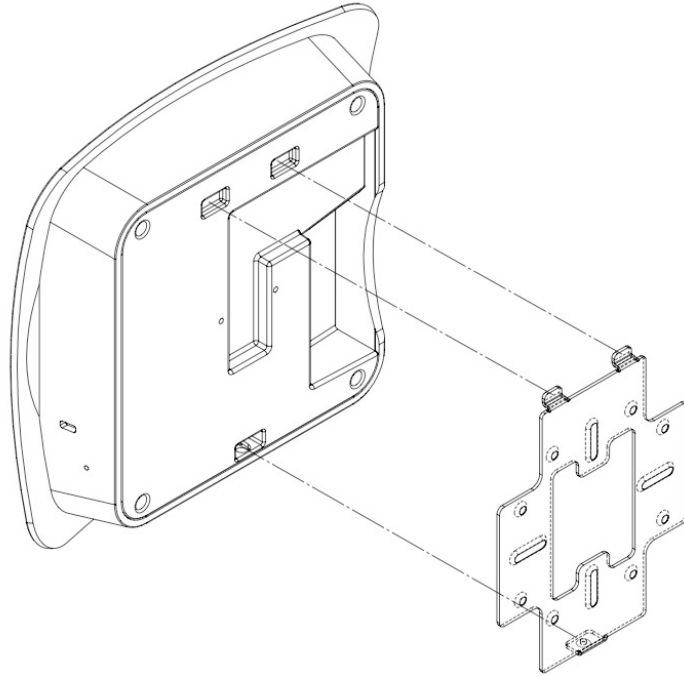


Line the two tabs on the top of the Wall Bracket with the two pockets on the back of the access point.

Attach the recommended plastic cable clip. Route cables along the channel on the back of the WAP and secure cables to the plastic clip by pressing the cable to the clip

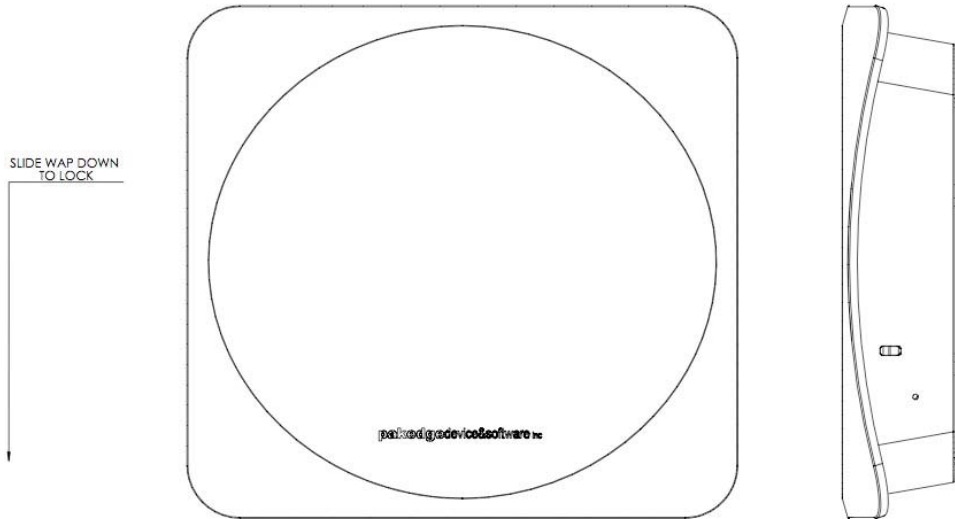


Place the WAP firmly against the Wall Bracket, ensuring the cables are tucked in the channel on the back of the WAP and/or behind the Wall Bracket

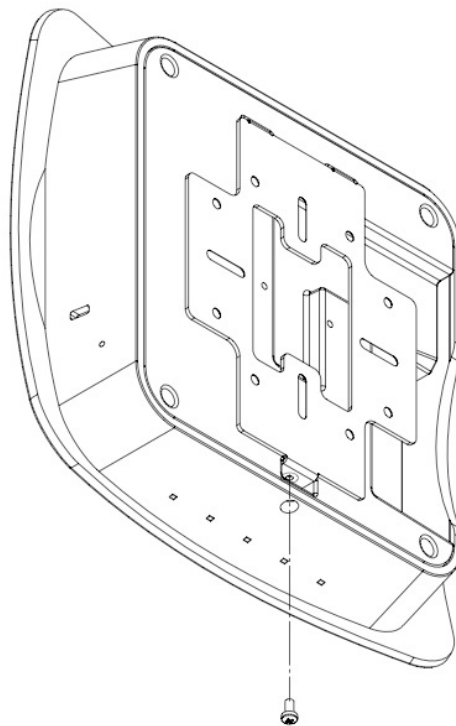


DETAIL A  
SCALE 5 : 1

Slide the WAP downward until the top two tabs on the Wall Bracket are locked into place

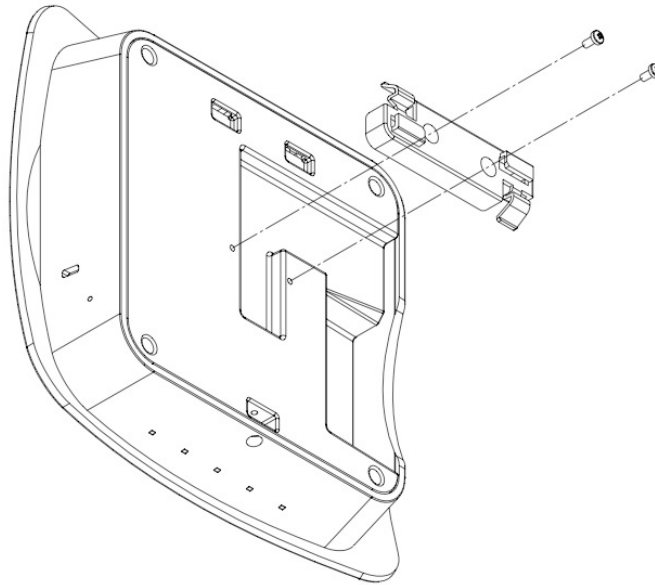


Secure the WAP to the Wall Bracket's bottom tab with the included security screw.

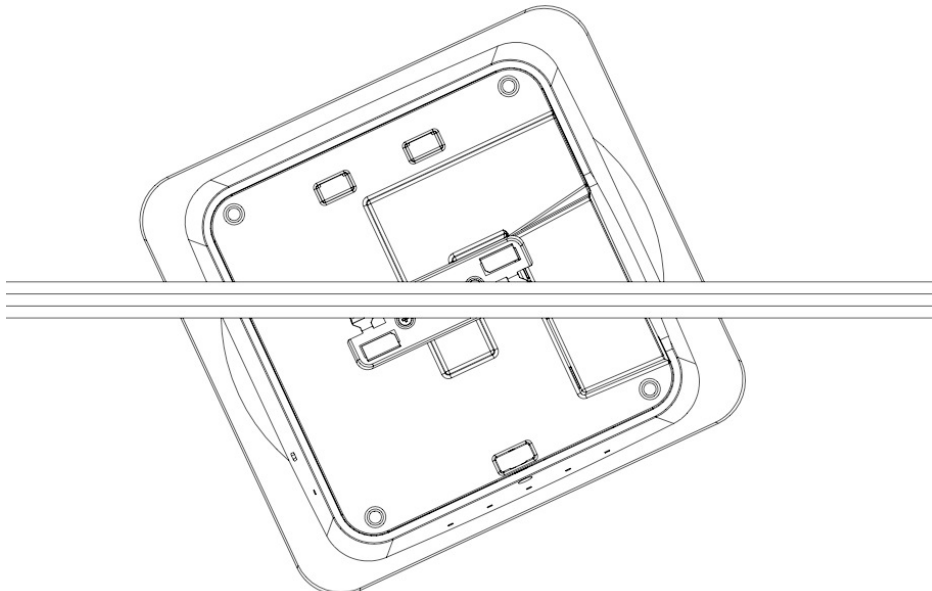


## Using provided T-bar

1. Place the appropriate sized T-bar bracket into the slots on the back of the WAP and line up the two holes on the T-Bar Bracket with the two mounting points on the back of the WAP. Using the supplied hardware, mount the T-Bar Bracket to the WAP.



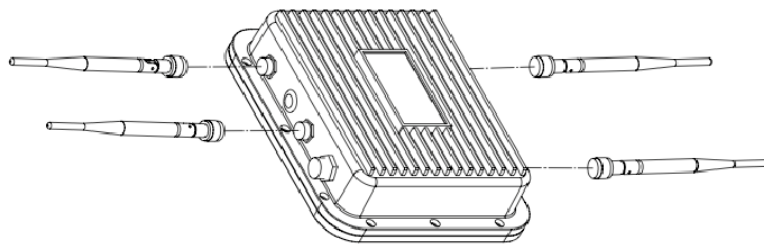
2. Rotate the WAP counter-clockwise until the T-Bar Bracket is secured to the T-Bar.



## WK-1-O Installation

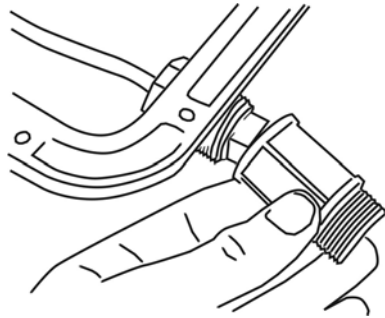
1. Place the unit in an appropriate place using the mounting kit.
2. Run an Ethernet cable to the device and plug one end of the Ethernet cable into the Wireless Access Point.
3. Plug the other end of the Ethernet cable into a PoE injector or PoE Switch.
4. The LED lights will begin to light up and indicate that WAP is connected.
5. Once the WAP fully boots up, you may log into the WAP and configure the settings. Refer to the Quick Start Guide for assistance.

## Antennas

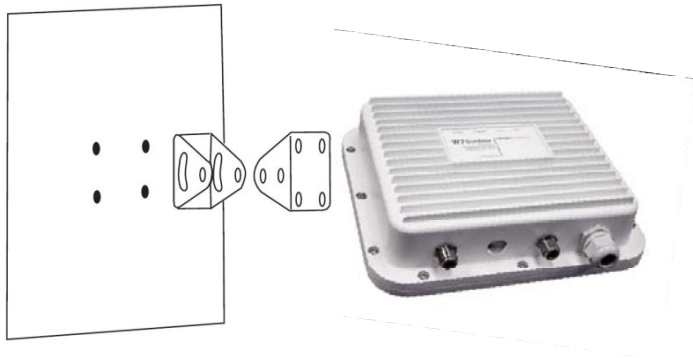


## Weather Proof RJ-45

Be sure to run the Ethernet cable through the plastic element, and seal it tightly to insure weather-proofing



## Wall Mounting



## Pipe Mounting



The diagrams below depict the configuration using a PoE injector or a PoE Switch to power the WK-1x

Power using PoE Injector



Power using PoE Switch





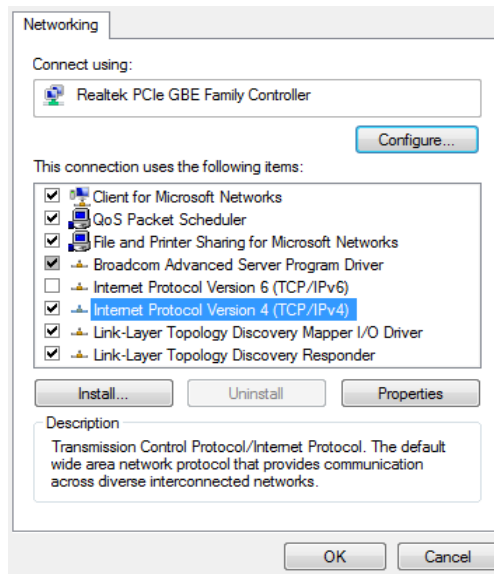
Power using the included power adapter



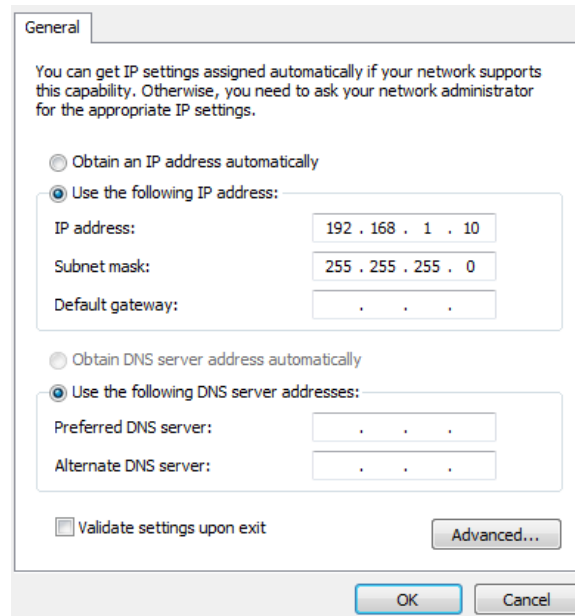
The WK-1x can be configured in Client Bridge, WDS Access Point, or Access Point mode. When shipped from the factory, the WK-1x is set to Access Point mode. The default IP address of the WK-1x is **192.168.1.250** and username/password of **pakedge/pakedgea**

In order to log into the WK-1x, you must first configure the TCP/IP settings of your PC/Notebook. Follow these steps:

1. Under **“Control Panel”**, double-click **“Network Connections”** and double-click the connection of your Network Interface Card (NIC). The Local Area Connection Properties dialog appears:



2. Select **“Internet Protocol (TCP/IP)”** and click **“Properties”**. The Internet Protocol (TCP/IP) dialog appears where you can configure the TCP/IP settings of your PC.



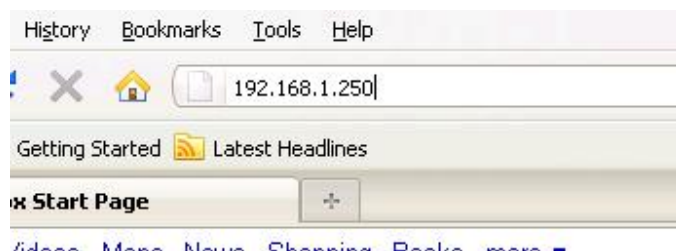
3. Select **“Use the following IP Address”** and type the IP address and subnet mask, as in the example below. (Be sure the IP address and subnet mask are on the same subnet as the WK-1x.)

WK-1x IP address:	192.168.1.250
PC IP address:	192.168.1.10
PC subnet mask:	255.255.255.0

4. Click **“OK”** to close the dialog, and click **“OK”** to close the Local Area Connection Properties dialog.

## WK-1X START UP

To configure the WK-1x through a Web Browser, in the address bar of the browser type the IP address of the WK-1x (default **192.168.1.250**) and press **Enter**.



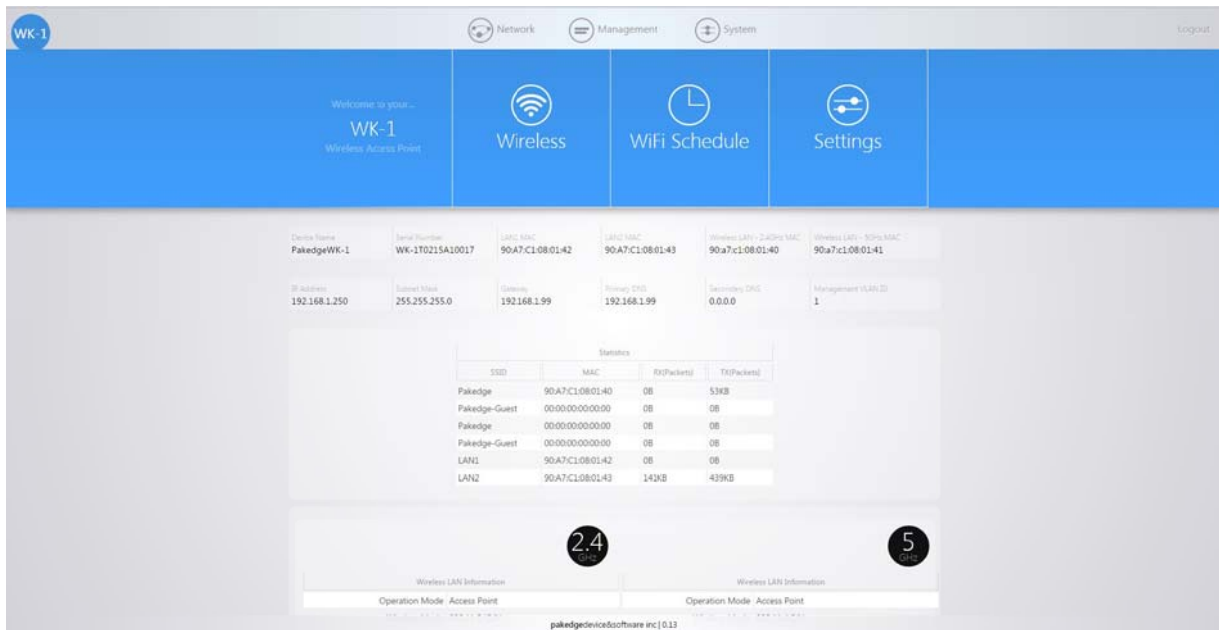
**NOTE:** Make sure the Access Point and your computer are configured on the same subnet. To configure the IP address of your computer, follow the steps in the previous section.

The WK-1x login dialog appears.



In the **User Name** box, type **pakedge**, and in the **Password** box type **pakedgea**, and click “**Login**”.

The WK-1x main menu appears (see figure below). The main menu displays the current status of WK-1x, general system information such as Device Name, MAC address, Current Time, Firmware Version and Management VLAN ID. The 2.4GHz/5GHzWireless section displays the device operating mode, 802.11 mode, channel bandwidth, wireless Channel and Profile Settings. Because the WK-1x supports multiple SSIDs, the Wireless section also displays the details of each SSID, and the security settings of each SSID



## MENU OPTIONS



The navigation bar on the top has 3 groups:

- **Network:** Allow user access to LAN, Wireless, WiFi Scheduler and Advanced settings
- **Management:** Allows user to access Tools, modify SNMP settings
- **System:** Allows user to modify AP settings as in login to the AP's web interface, firmware updates, and configuration back and restores.

## NETWORK



- LAN
- Wireless
- WiFi Scheduler
- Advanced

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## LAN



Hover over **Network** icon, click “**LAN**”. This page displays the LAN settings for WK-1x. To configure the IP address of your WK-1x, you can configure the WK-1x with a static IP address, or obtain an IP address automatically using a DHCP client.

The screenshot shows two configuration sections. The top section, titled "IP Settings", contains the following fields: "IP Network Setting" is a dropdown menu set to "Static address"; "IP Address" is a text box containing "192.168.1.148"; "Subnet Mask" is a dropdown menu set to "255.255.255.0"; "Gateway" is a text box containing "192.168.1.99"; and "Use custom DNS servers" is a text box containing "192.168.1.99" with a red plus sign to its right. The bottom section, titled "Management VLAN Settings", contains an "Enable" checkbox which is unchecked, and a "VLAN ID" text box containing the number "1".

IP Settings

- **IP Network Setting:** If your WK-1x is connected to a DHCP server (such as a router), choose “**DHCP Client**”. Your WK-1x will be assigned an IP address from the DHCP pool (**Not recommended**).
- **Specify an IP address (default):** Select this option if you want to use a static IP address. Type the appropriate entries in the text boxes for **IP Address**, **IP Subnet Mask**, **Gateway**, and **Use Custom DNS Servers**.

VLAN Management

If you enable VLAN tagging in the WK-1x Wireless section under any of the SSIDs, you can choose a VLAN Management ID for the WK-1x to access the administrative functions of your WK-1x. Let’s say you pick VLAN 3 to be the VLAN used for management and the subnet range for VLAN 3 is 192.168.3.X. The IP address for the WK-1x must be 192.168.3.X, where X is any value in range.

- **VLAN Id for Management:** To turn on VLAN Management, select the **VLAN Id** button.
- In the **VLAN Id** text box, type the ID number of the VLAN you want to allow access to the administrative functions of the WK-1x. For example, if VLAN3 is used for management, type in 3.
- Click **Accept** to save your changes.

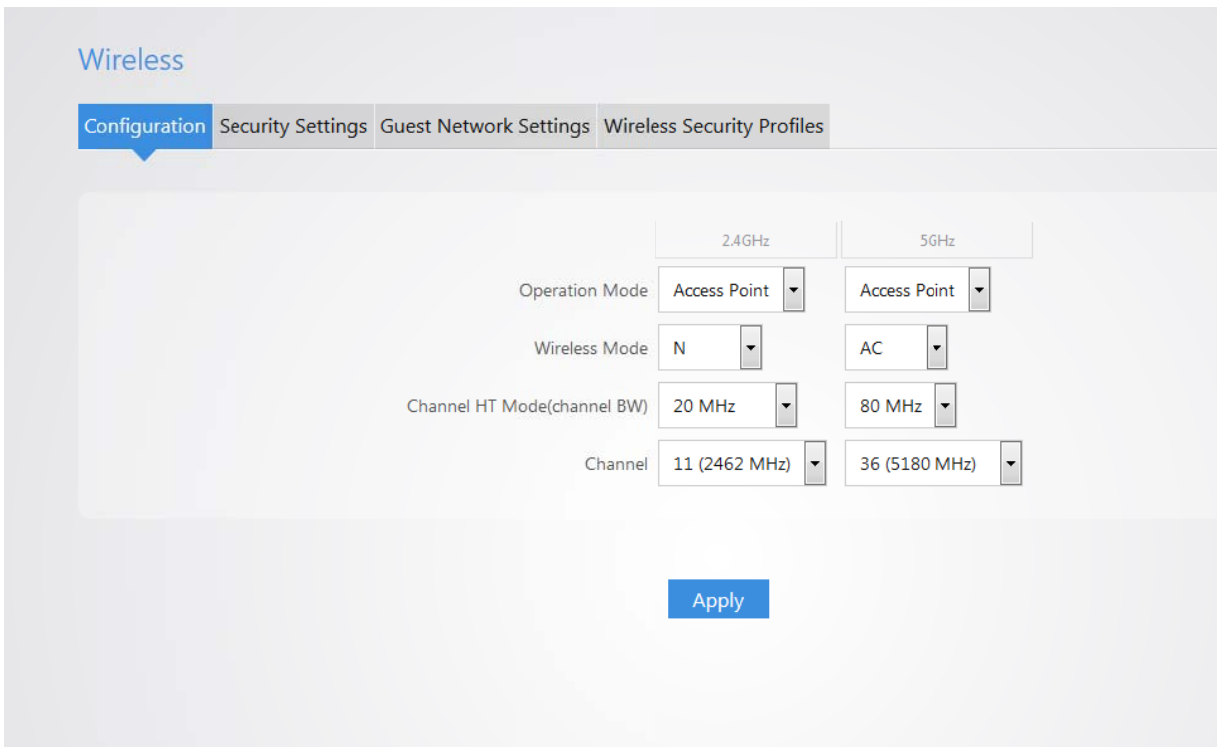
## WIRELESS



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## CONFIGURATION

Hover over “**Network**” and click on “**Wireless**”, you will be directed to wireless configuration page under **Configuration** tab.





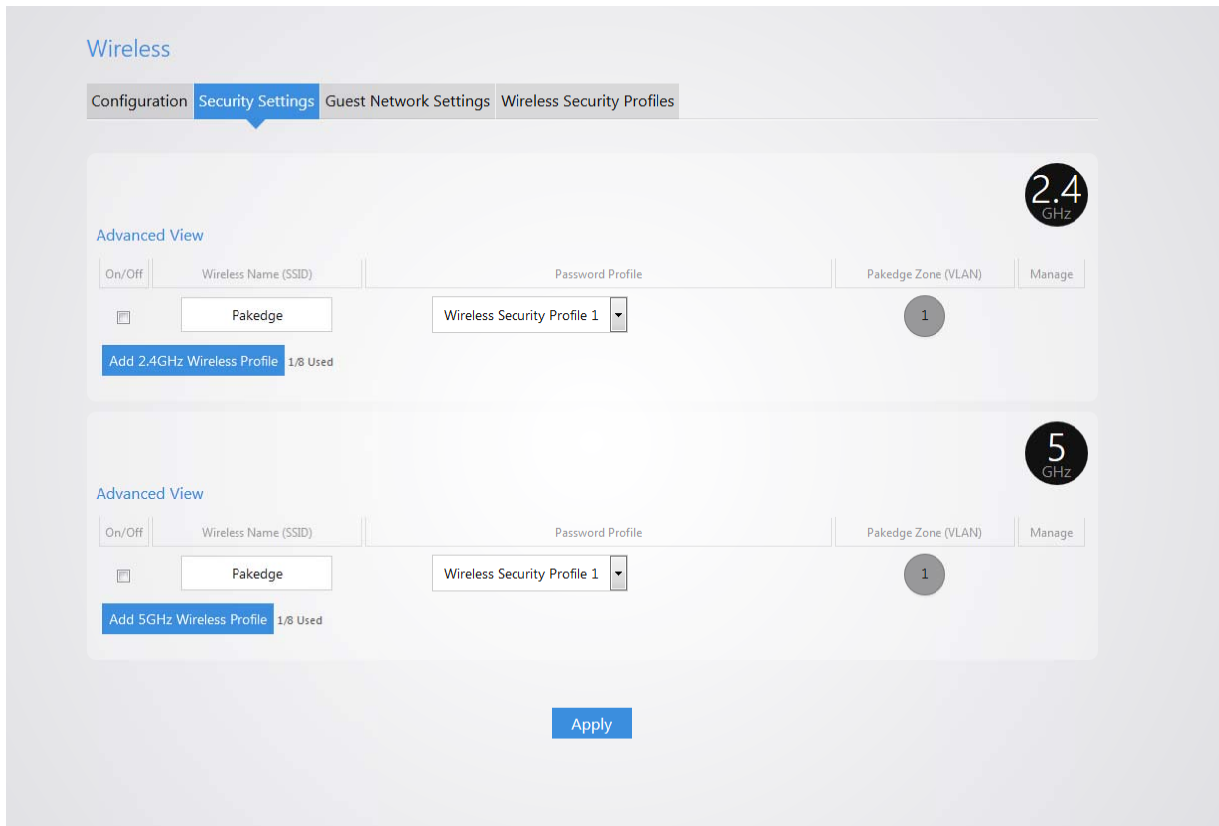
- **Operation Mode:** Both the 2.4 and the 5 GHz band have the following operating modes: Access Point mode, client bridge mode, and WDS AP.
- **Wireless Mode-802.11 Mode:** Choose the setting that corresponds to the type of wireless clients connected to your network: **B, G, N, B/G or B/G/N** (on the 2.4GHz) or **N/AC** (on the 5GHz). If you aren't sure which type(s) of clients will access the wireless networks, it's recommended to choose **B/G/N Mixed** (on the 2.4GHz) or **AC** (on the 5GHz) for best performance.  
**NOTE:** When set to a mixed mode ALL devices connected to the wireless will use the mode that is compatible for ALL devices. Example – If you have the 2.4GHz Wireless set to B/G/N Mixed and a devices connects using G, all devices will be connected at G speed.
- **Channel HT Mode:** By default, the “**Channel Mode**” is set to 20/40MHZ (when using N). Selecting the 40MHz channel mode on 2.4GHz will allow for a greater overall throughput of data but it will also increase the size of the channel.  
**NOTE:** When using 20MHz channel width on the 2.4GHz radio, channel 6 would bleed into channels 4, 5, 7 and 8 giving you three non-overlapping channels (1, 6 and 11). When using 40MHz channel width on the 2.4GHz radio, channel 6 would bleed into channels 2, 3, 4,5,7,8, 9, and 10 giving you only one channel without overlap.
- **Channel -**In the default setting (**Auto**), the WK-1x automatically associates to the channel with best performance for the wireless network. To select a channel manually, uncheck the “**Auto**” box and select a channel from the drop-down list. The channel options on the list depend on the selected country's regulations.

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## SECURITY

Under the **Security** tab, you will be able to configure the wireless SSID's for both the 2.4 GHz and the 5 GHz band. The WK-1 give you the option to set up up to 8 SSID's per band.

- **Current Profiles:** You can configure up to eight wireless profiles, per band, each with its own VLAN ID. To modify and activate a profile check “**Enable**” and then click “**Edit**” to configure the settings.
- **SSID:** The SSID is the name associated with the W7x WIFI network. By default, the SSID is broadcast on the network for easy association by clients. An SSID cannot exceed 32 characters.
- **Wireless Security Profile** – this will add the security set up to the SSID.
- **Pakedge Zone ( VLAN )** : Type the VLAN ID associated with this profile if the SSID will be broadcasting a VLAN other than 1.



## GUEST NETWORK SETTINGS

The Guest Network is designed for router that do not support VLAN's. The Guest Network acts as its own network with no communication with the other SSID/s or the main network.

First you will need to enable the Guest network. By default the guest network name is Pakedge-Guest and the IP scheme I set to 192.168.200.X. You have the option to change the default setting, if desired. You can change the BSSID , the IP address is will, distribute , subnet and the starting IP address and ending IP address. Once changes are complete click **Apply** to save changes.

Wireless

Configuration Security Settings **Guest Network Settings**

BSSID

Enabled  Pakedge-Guest

Manual IP Settings

IP Address 192.168.200.1

Subnet Mask 255.255.255.0

Automatic DHCP Server Settings

Starting IP Address 192.168.200.100

Ending IP Address 192.168.200.200

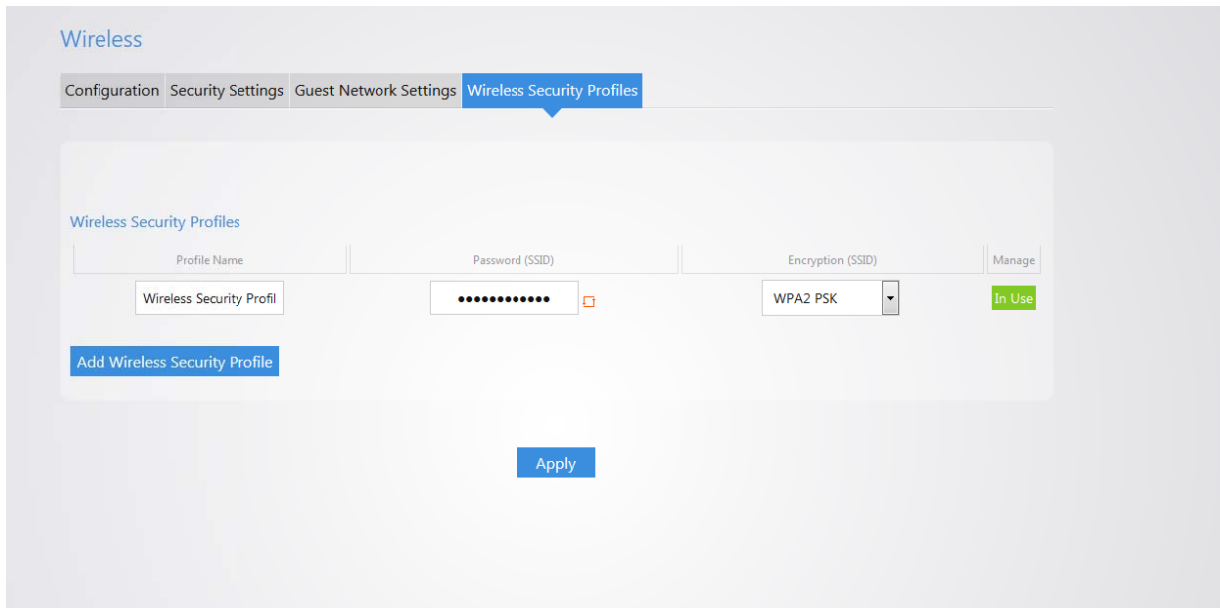
WINS Server IP 0.0.0.0

Apply

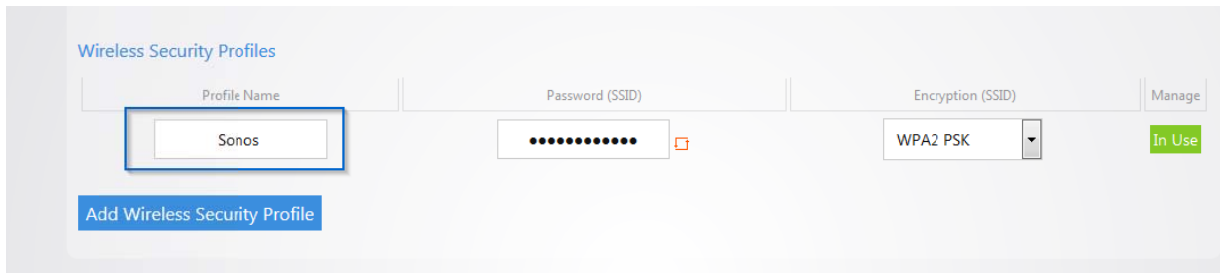
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## WIRELESS SECURITY PROFILES

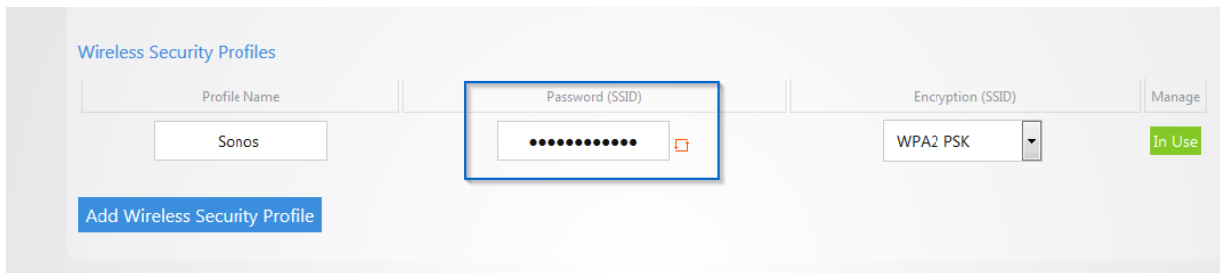
This section you can create security setting that will be added to the SSID.



You will name the Profile< for example you have an SSID that will be only Sonos devices. You can have the security profile name Sonos:

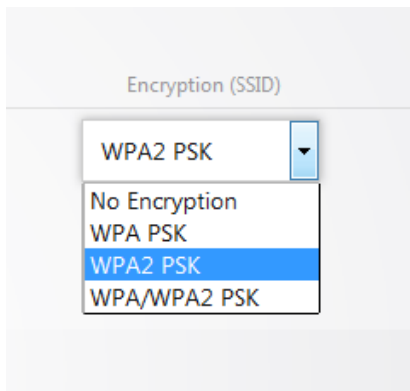


Enter the password

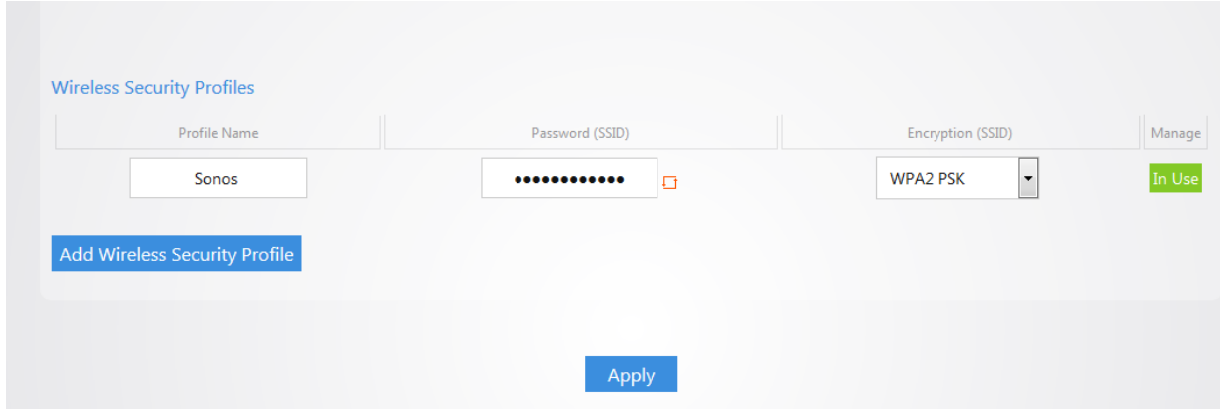


Security- drop down menu will allow you to select a certain security for your profile.

Note: The most secure and common mode is WPA2-PSK with AES encryption. This security is known to be the most secure and is compatible with all the latest devices. An example of a less secure mode is WEP. WEP Wired Equivalent Privacy (WEP) is the most widely-used WiFi security algorithm, meaning it's easier to exploit. The device/client you are working with factors into its security types. For example, older laptops or phones do not support WPA2 security. Also, some devices only accept a certain security type. You may want to reference your device specifications.



Let say you select the WPA1-PSK for the Sonos profile, click apply



After the security profile is saved you will then navigate to the setting game and apply the security profile to your SSID. You can apply the profile to both the 2.4 and the 5 Ghz band

Wireless

Configuration Security Settings Guest Network Settings Wireless Security Profiles

2.4 GHz

Advanced View

On/Off	Wireless Name (SSID)	Password Profile	Pakedge Zone (VLAN)	Manage
<input type="checkbox"/>	Sonos	sonos	1	

Add 2.4GHz Wireless Profile 1/8 Used

5 GHz

Advanced View

On/Off	Wireless Name (SSID)	Password Profile	Pakedge Zone (VLAN)	Manage
<input type="checkbox"/>	Pakedge	sonos	1	

Add 5GHz Wireless Profile 1/8 Used

## WiFi SCHEDULER

Network

LAN

Wireless

WiFi Scheduler

Advanced

WiFi Scheduler allows you to set a specific day and time to turn on/off a radio and SSID. By default WiFi Scheduler is disabled. To enable WiFi Scheduler, check the **“Enable”** box, then select the proper Wireless Radio and SSID that you want to enable the scheduler

*Note: Please assure that the Time Zone Settings is synced with your local time when enabling the Wi-Fi Scheduler.*

Wireless Radio

SSID Selection

In the Schedule Table below, you can set the availability of Radio for each day of the week and the duration.

Schedule Table

Day	Availability	Duration
Sunday	<input type="text" value="available"/>	<input type="text" value="00 : 00"/> ~ <input type="text" value="24 : 00"/>
Monday	<input type="text" value="available"/>	<input type="text" value="00 : 00"/> ~ <input type="text" value="24 : 00"/>
Tuesday	<input type="text" value="available"/>	<input type="text" value="00 : 00"/> ~ <input type="text" value="24 : 00"/>
Wednesday	<input type="text" value="available"/>	<input type="text" value="00 : 00"/> ~ <input type="text" value="24 : 00"/>
Thursday	<input type="text" value="available"/>	<input type="text" value="00 : 00"/> ~ <input type="text" value="24 : 00"/>
Friday	<input type="text" value="available"/>	<input type="text" value="00 : 00"/> ~ <input type="text" value="24 : 00"/>
Saturday	<input type="text" value="available"/>	<input type="text" value="00 : 00"/> ~ <input type="text" value="24 : 00"/>

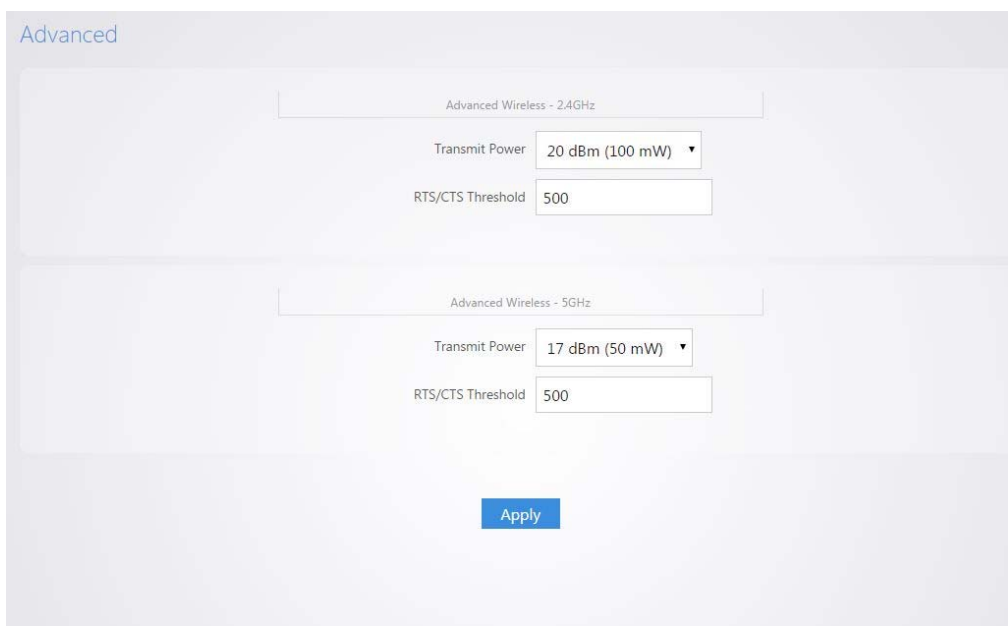
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ADVANCED



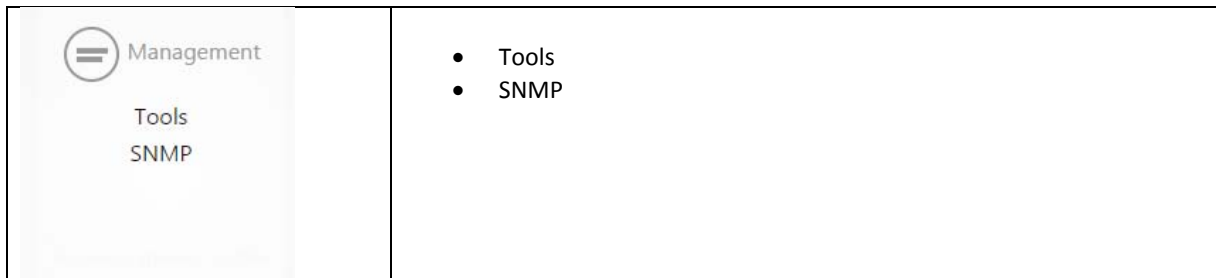
In the **Advanced** page, you can configure:

- **Transmit Power:** The power needed depends on the distance of the devices in your wireless network. From the drop-down list, select the desired power. You can use this feature to limit the coverage area of the wireless network.
- **RTS/CTS Threshold:** Type the packet size threshold for RTS/CTS (Request to Send/Clear to send) to occur.

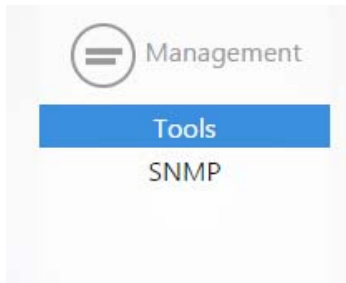


**MANAGEMENT**





## TOOLS



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## PING TEST

Hover over **Management** and click on **Tools**, you will be directed to ping test under the **Ping Test** tab:



- Ping –
  - **Target IP:** Type the IP Address of the device to check.
  - **Ping Packet Size:** Type the size of the ping packets (In Bytes).
  - **Number of Pings:** Type the number of ping attempts.
  - Click **Start Ping** to start the test.

---

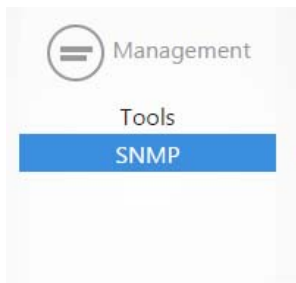
## TRACEROUTE TEST

Click on **Traceroute Test** tab

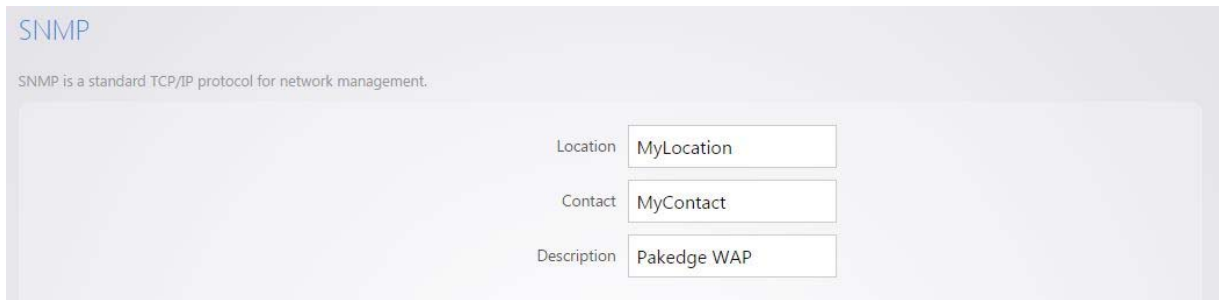


A Traceroute test can help you identify obstacles you may have in the network. The Traceroute text maps the path that packets take between the WK-1x and the target device. To run a Traceroute test, type the Traceroute Target IP and click **“Start”** to begin the test.

## SNMP




Hover over **Management** and click on SNMP, the SNMP Settings page appears, where you can enter a community name and password to manage the W7x device remotely, using an SNMP client.



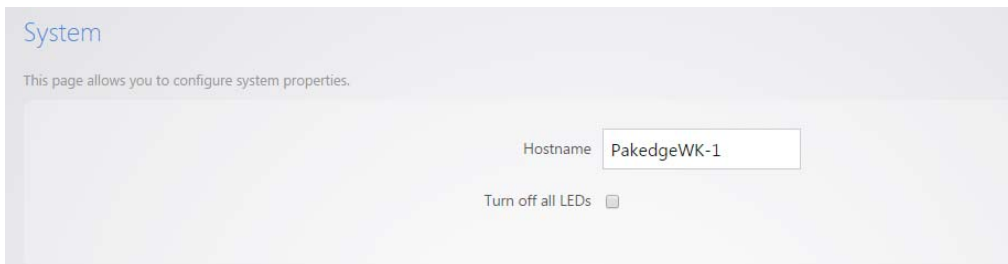
- **Location** – Enter the location of the WK-1x for reference by the SNMP manager.
- **Contact** – Enter the contact information for the SNMP manager.
- **Description** - what is this description for ?

## MAINTENANCE

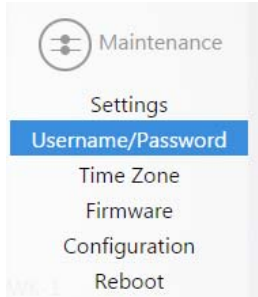
<p> Maintenance</p> <ul style="list-style-type: none"><li>Settings</li><li>Username/Password</li><li>Time Zone</li><li>Firmware</li><li>Configuration</li><li>Reboot</li></ul>	<ul style="list-style-type: none"><li>• Settings</li><li>• Username/Password</li><li>• Time Zone</li><li>• Firmware</li><li>• Configuration</li><li>• Reboot</li></ul>
---	--

## SETTINGS

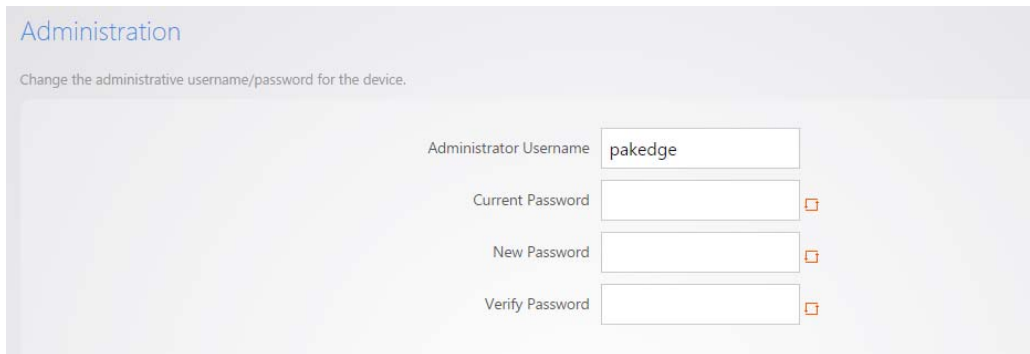
Hover over **Maintenance** and click on **Settings**, on this page you can configure the Hostname and control LED lights.



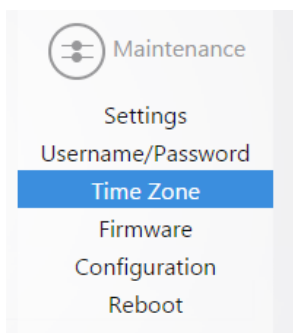
## USERNAME/PASSWORD



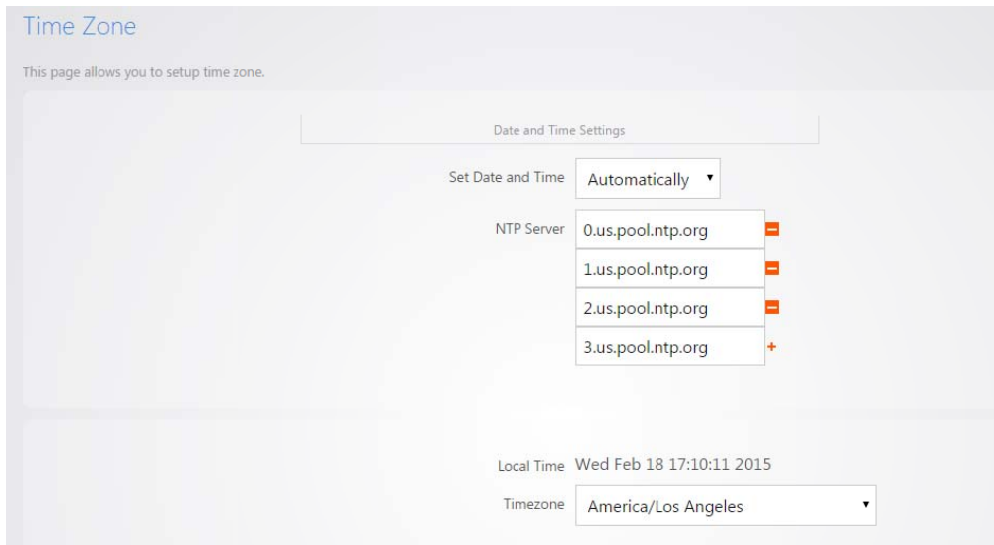
Hover over **Maintenance** and click on **Username/Password**. Under the Administration page, you can change the Username and Password for the device.



## TIME ZONE



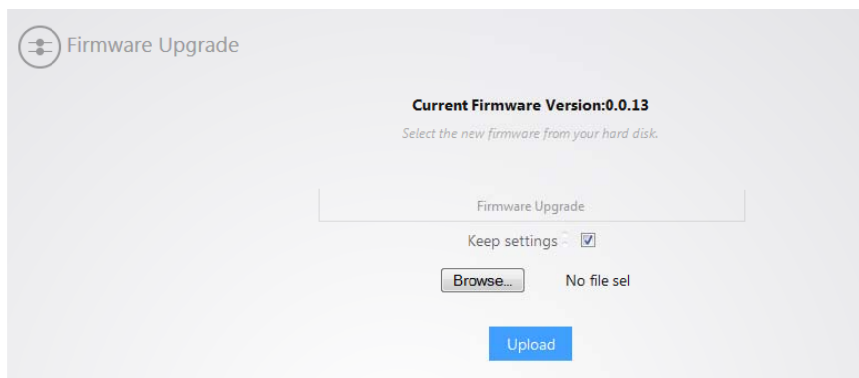
Hover over **Maintenance** and click on **Time Zone**, this page allows you to setup time zone.



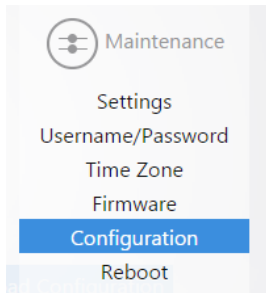
## FIRMWARE

### Firmware-

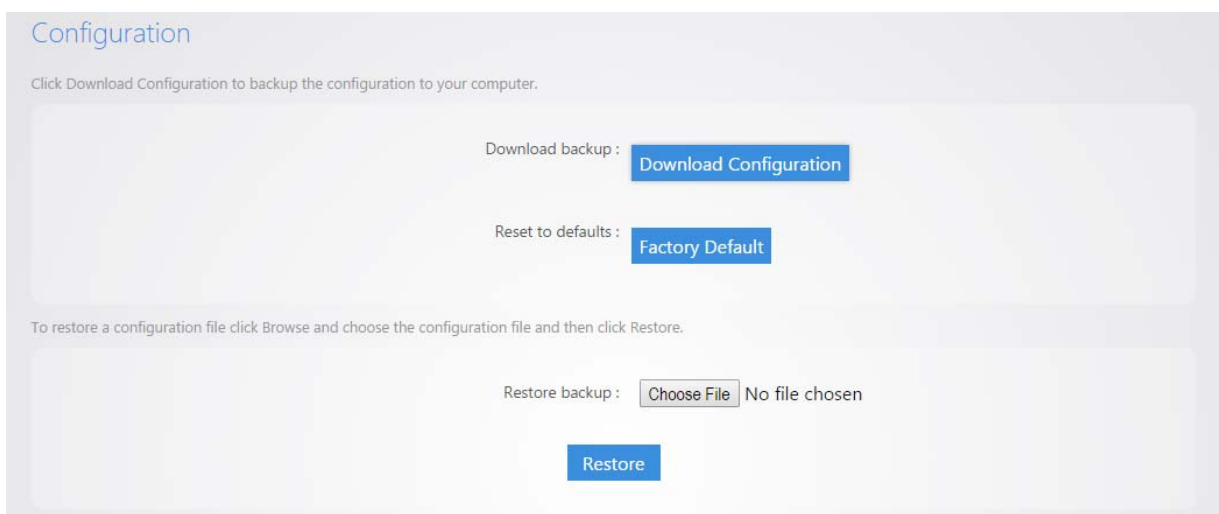
- **Firmware Upgrade** – allow you to update the firmware for the unit. Click **Browse** and upload the firmware onto the unit and then click Upload. If you want to keep the same settings and configurations on the new firmware, check the **“Keep Settings”** box, otherwise the settings will reset back to default after upload is complete.



## CONFIGURATION



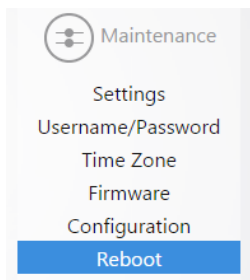
Hover over **Maintenance** and click on **Configuration**:



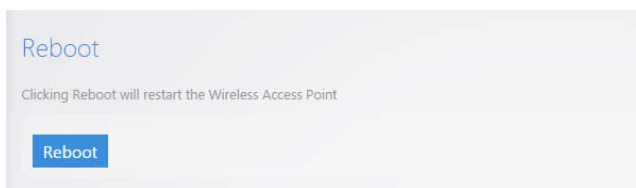
- **Download Backup** – click on **Download Configuration** to save and export the current settings.
- **Reset to Defaults** – click the **Factory Default** button to reset the device back to original factory default settings.
- **Restore Backup** – load an existing saved configuration.

## REBOOT

Hover over **Maintenance** and click on Reboot



Under the **Reboot** page, clicking the Reboot Button allows you to reboot the device. After the device restarts, you can access theWK-1x at the default IP address: **192.168.1.250** and login:**pakedge / pakedgea**



## APPENDIX A – SPECS

### HARDWARE SPECIFICATIONS

- 1 x 10/100/1000 Gigabit Ethernet RJ-45 port with IEEE 802.3af Power over Ethernet (PoE) support
- Configurable LED Indicators for Power, Ethernet, 2.4GHz Wireless and 5GHz Wireless
- Power over Ethernet (PoE) IEEE802.3af compliant 48 VDC / 0.375A
- Power Supply: 100 to 240 VDC  $\pm$  10%, 50/60 Hz (depends on different countries)
- DC input: 12V/1.5A

### RF INFORMATION

- Frequency Band:
  - 802.11 B/G/N on 2.4 to 2.462GHz, which can be programmed based on country regulations.
  - 802.11 A/N/AC on 5 to 5.805GHz, which can be programmed based on country regulations.
- Operating Channels:
  - 2.4GHz - 11 for North America, 13 for Europe, 14 for Japan
  - 5GHz – 24 Channels depending on country

Maximum Transmit Power (per chain) +/- 2 dBm		
	2.4GHz	5GHz
11 b (1Mbps)	24	-
11 b (11Mbps)	24	-
11 g (6Mbps)	24	-
11 g (54Mbps)	22	-
11 a (6Mbps)	-	24
11 a (54Mbps)	-	22
HT20(MSC 0/8)	24/23	24/23
HT20(MSC 7/15)	22	20
HT40(MSC 0/8)	23	23/20
HT40(MSC 7/15)	22	20/19
VHT40 256QAM @ 3/4 Code Rate	-	18
VHT40 256QAM @ 5/6 Code Rate	-	18
VHT80 256QAM @ 3/4 Code Rate	-	18
VHT80 256QAM @ 5/6 Code Rate	-	17

- Transmit Power (Typical):
- Receiver Sensitivity (Typical)



Receive sensitivity (per chain) +/- 2 dBm		
	2.4GHz	5GHz
11 g (6Mbps)	-91	-
11 g (54Mbps)	-74	-
11 a (6Mbps)	-	-90
11 a (54Mbps)	-	-72
HT20(MSC 0/8)	-91	-90
HT20(MSC 7/15)	-70	-70
HT40(MSC 0/8)	-87	-86
HT40(MSC 7/15)	-67	-67
VHT40 256QAM @ 3/4 Code Rate	-	-65
VHT40 256QAM @ 5/6 Code Rate	-	-63
VHT40 256QAM @ 3/4 Code Rate	-	-62
VHT40 256QAM @ 5/6 Code Rate	-	-60
VHT80 256QAM @ 3/4 Code Rate	-	-59
VHT80 256QAM @ 5/6 Code Rate	-	-57

## OPERATIONS

- Operation Modes:
  - 2.4/5GHz Have independent operation modes.
  - Access Point/Client Bridge/WDS Bridge/WDS AP/Repeater
- Up to 16 SSID
- Supports 802.1q VLANs
- Spanning Tree Supports 802.1d Spanning Tree Protocol
- IP Auto-configuration – DHCP client
- Transmission rate options:
  - 2.4GHZ – N ONLY, B/G/N MIX, B ONLY, G ONLY
  - 5GHZ – N ONLY, AC ONLY

## MANAGEMENT AND SECURITY

- User Power Control Adjustment by dBm
- Web-based configuration (HTTP)/Telnet
- Upgrade firmware via web browser
- Auto-channel Selects least congested channel
- Backup & Restore settings through Web interface
- QoSWM
- WEP/WPA/WPA2/ WPA MIXED Encryption
- WPA-PSK using TKIP or AES / WPA-EAP using TKIP
- 802.1x Authenticator
- SSID broadcast enable/disable
- WLAN L2 Isolation (AP mode only)
- Wireless Client connected list

## ENVIRONMENT

- Temperature Range: 0 to 50° C (32° to 122° F)
- Storage: -20 to 60° C (-4° to 140° F)
- Humidity (non-condensing):
  - Operating: 90% or less
  - Storage: 90% of less

## MECHANICAL

Enclosure: 9.81inches X 7.05 inches

- Depth: 1.44 inches
- Base 7.76 inches X 5.55 inches

## APPENDIX B – TECHNICAL SUPPORT

Please visit our website for up-to-date support information:

Website: [www.pakedge.com](http://www.pakedge.com)

Email: [support@pakedge.com](mailto:support@pakedge.com)

CONTACT INFORMATION:

**Northern California Office**

Pakedge Device & Software  
3847 Breakwater Avenue  
Hayward, CA 94545-3606

**Southern California Office:**

Pakedge Device & Software  
17011 Beach Blvd.  
Suite 600  
Huntington Beach, CA 92647-5946

## APPENDIX C – LIMITED WARRANTY

# MODEL WK-1X

Congratulations on your purchase of a Pakedge Device & Software wireless product! Pakedge designs and manufactures the finest home networking products. With proper installation, setup, and care, you should enjoy many years of unparalleled performance. Please read this consumer protection plan carefully and retain it with your other important documents.

This is a LIMITED WARRANTY as defined by the U.S. Consumer Product Warranty and Federal Trade Commission Improvement Act.

### What Is Covered Under the Terms of This Warranty

**SERVICE LABOR:** Pakedge will pay for service labor by an approved Pakedge service center when needed as a result of manufacturing defect for a period of one (3) year from the effective date of delivery to the end user.

**PARTS:** Pakedge will provide new or rebuilt replacement parts for parts that fail due to defects in materials or workmanship for a period of one (1) year from the effective date of delivery to the end user. Such replacement parts are then subsequently warranted for the remaining portion (if any) of the original warranty period.

### **What Is Not Covered Under the Terms of This Warranty**

This warranty only covers failure due to defects in materials and workmanship that occur during normal use and does not cover normal maintenance. This warranty does not cover any appearance item; any damage to living structure; failure resulting from accident (for example: flood, electrical shorts, insulation); misuse, abuse, neglect, mishandling, misapplication, faulty or improper installation or setup adjustments; improper maintenance, alteration, improper use of any input signal and/or power, damage due to lightning or power line surges, spikes and brownouts; damage that occurs during shipping or transit; or damage that is attributed to acts of God.

The foregoing limited warranty is Pakedge' s sole warranty and is applicable only to Products sold as new by Authorized Dealers. The remedies provided herein are in lieu of a) any and all other remedies and warranties, whether expressed, implied or statutory, including but not limited to, any implied warranty of merchantability, fitness for a particular purpose or non-infringement, and b) any and all obligations and liabilities of Pakedge for damages including but not limited to incidental, consequential or special damages, or any financial loss, lost profits or expense, or loss of network connection arising out of or in connection with the purchase, use or performance of the Product, even if Pakedge has been advised of the possibility of such damages.

**CAUTION: DAMAGE RESULTING DIRECTLY OR INDIRECTLY FROM IMPROPER INSTALLATION OR SETUP IS SPECIFICALLY EXCLUDED FROM COVERAGE UNDER THIS WARRANTY. IT IS IMPERATIVE THAT INSTALLTION AND SETUP WORK BE PERFORMED ONLY BY AN AUTHORIZED PAKEDGE DEALER TO PROTECT YOUR RIGHTS UNDER THIS WARRANTY. THIS WILL ALSO ENSURE THAT YOU ENJOY THE FINE PERFORMANCE YOUR PAKEDGE PRODUCT IS CAPABLE OF PROVIDING.**

### **Rights, Limits, and Exclusions**

Pakedge limits its obligation under any implied warranties under state laws to a period not to exceed the warranty period. There are no express warranties. Pakedge also excludes any obligation on its part for incidental or consequential damages related to the failure of this product to function properly. Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion or limitation of incidental or consequential damages. In this case, the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

### **Effective Warranty Date**

This warranty begins on the effective date of delivery to the end user. For your convenience, keep the original bill of sale as evidence of the purchase date from your authorized dealer.

**Important- Warranty Registration**

Please register your product at [www.pakedge.com](http://www.pakedge.com). It is imperative that Pakedge knows how to reach you promptly if we should discover a safety problem or product update for which you must be notified. In addition, you may be eligible for discounts on future upgrades as new networking standards come about.

**To Obtain Service, Contact Your Pakedge Dealer.**

Repairs made under the terms of the Limited Warranty covering your Pakedge product will be performed by an Authorized Pakedge Service Center. These arrangements must be made through the selling Pakedge Dealer. If this is not possible, contact Pakedge directly for further instructions. Prior to returning a defective Product directly to Pakedge, you must obtain a Return Material Authorization number and shipping instructions. Return shipping costs will be the responsibility of the owner.

For additional information about this warranty, visit our website:

**Northern California Office**

Pakedge Device & Software  
3847 Breakwater Avenue  
Hayward, CA 94545-3606

**Southern California Office:**

Pakedge Device & Software  
17011 Beach Blvd.  
Suite 600  
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pakedgedevice&software<sup>inc.</sup>

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Visit Us At:

[www.pakedge.com](http://www.pakedge.com)

