WK-2x

WK-2, WK-2-B, WK-2-C

802.11ac Dual Band Access Point

User Guide Version 1.0

Content

Introduction 3
System Requirements 6
Hardware Installation 6
WK-2/WK-2-B Mounting Options 6
Using Provided Wall Mount 6
Using Provided T-bar 11
WK-2-C Mounting 12
WK-2-C Pre-construction Bracket Installation 16
Power Method for the WK-2x 17
WK-2x Start Up 20
Menu Options 212
Status 212
Dashboard 223
System Log 234
Network 245
LAN 245
Wireless 267
Radio 267
Security Profiles 29
Configuration 30
Guest Network Settings 32
Advanced 34
Management 35
Diagnostics 36
Ping 36
Traceroute 37
SNMP 38
LEDs 39

Maintenance 39
Username/Password 40
Time Zone 41
Firmware 42
Configuration 43
Reboot 44
Appendix A – Specs 45
HARDWARE SPECIFICATIONS 45
RF INFORMATION 45
OPERATIONS 46
MANAGEMENT AND SECURITY 47
ENVIRONMENT 47
MECHANICAL 48
Appendix B – Accessory List 48
Appendix C – Technical Support 48
Appendix D – Limited Warranty 49
FCC Declaration of Conformity 51
Industry Canada Statement 52
Europe – EU Declaration of Conformity 54
Safety Precautions 56

Introduction

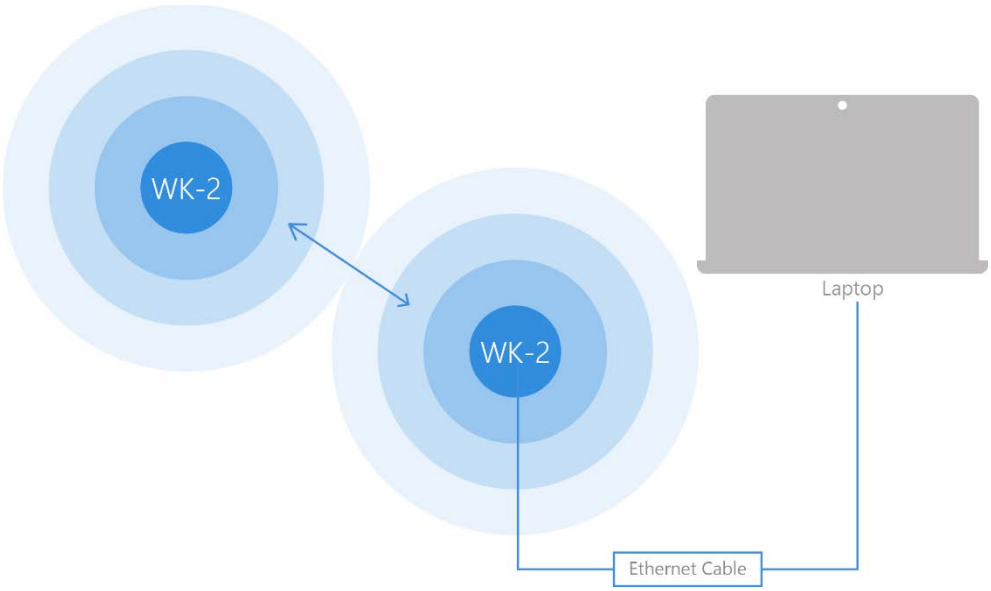
Thank you for purchasing the Pakedge WK-2x 802.11ac Dual Band Access Point.

As the central component of your wireless network, the WK-2x provides you with high-speed, high-range wireless AC networking. The WK-2x broadcasts on both the 2.4 GHz and 5 GHz band so that select devices can choose their preferred source of wireless internet, improving the overall stability, reliability and performance of the wireless network.

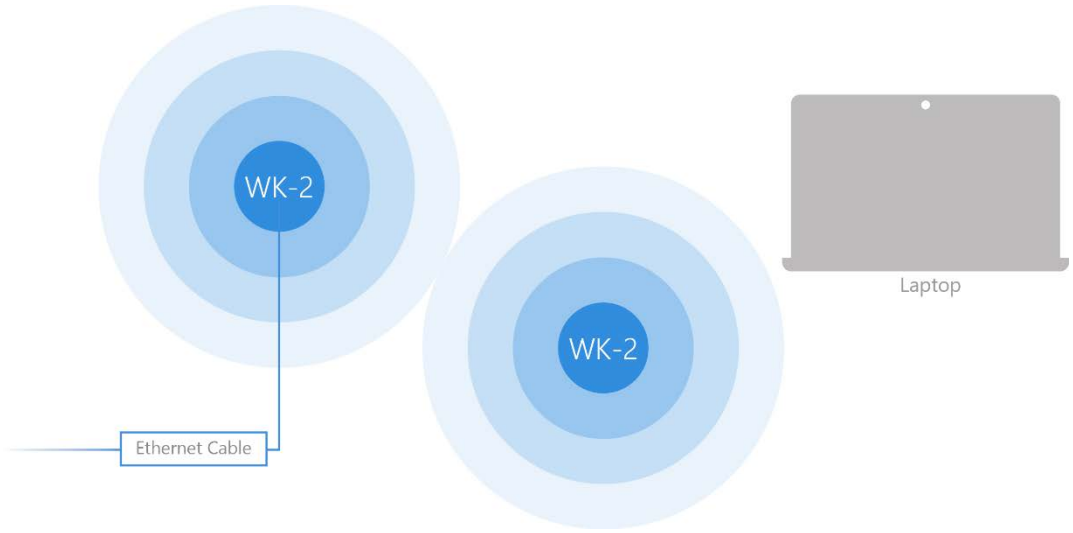
Each band (either 2.4 GHz or 5 GHz) of the WK-2x can operate in three modes:

- ***Access Point Mode***: This is the typical configuration for most Wi-Fi networks, as shown below.

- ***WDS Bridge Mode***: This mode is used to send wireless internet to a hardwired device when you cannot use an Ethernet cable directly. Let's say you have a desktop computer in an isolated portion of an old home and can't run a cable through the whole house to get internet to that specific computer. When you put the WK-2x in bridge mode, it can receive a wireless signal from an access point in root access point mode and send it to a client device through an Ethernet connection.



- ***WDS Repeater –*** The repeater also receives wireless signal from another access point. However, unlike a brige access point, a repeater access point sends out Wi-Fi so that client devices can connect to it wirelessly.



The functionality of the WK-2x changes depending on its operating mode. This manual offers both general and mode-specific content.

System Requirements

The minimum system requirements for the WK-2x are:

- PC or MAC book with Ethernet
- Operating system that supports an HTTP web browser

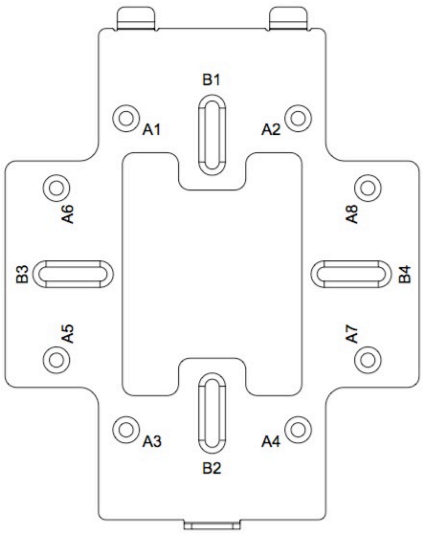
Hardware Installation

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

WK-2/WK-2-B Mounting Options

Using the Provided Wall Mount

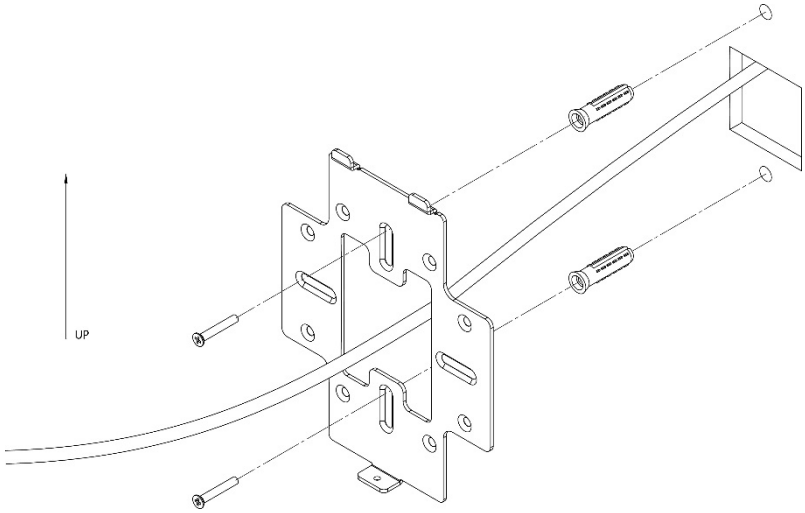
If planning on mounting the WK-2x



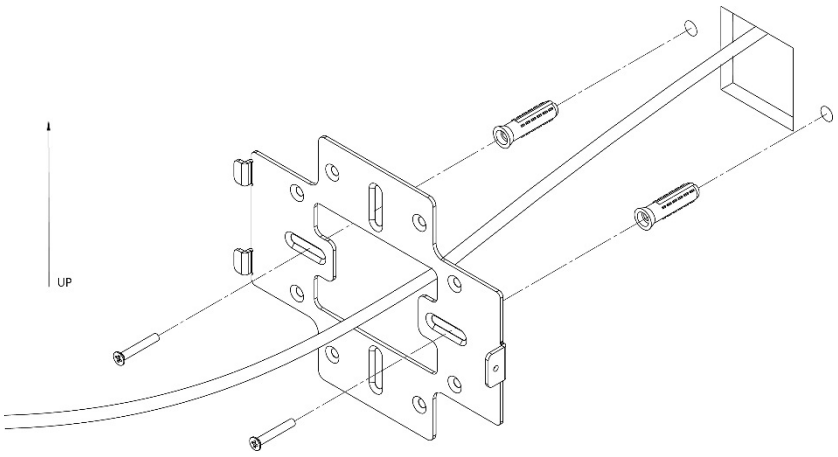
A: DOUBLE-GANG ELECTRICAL BOX, WALL

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.

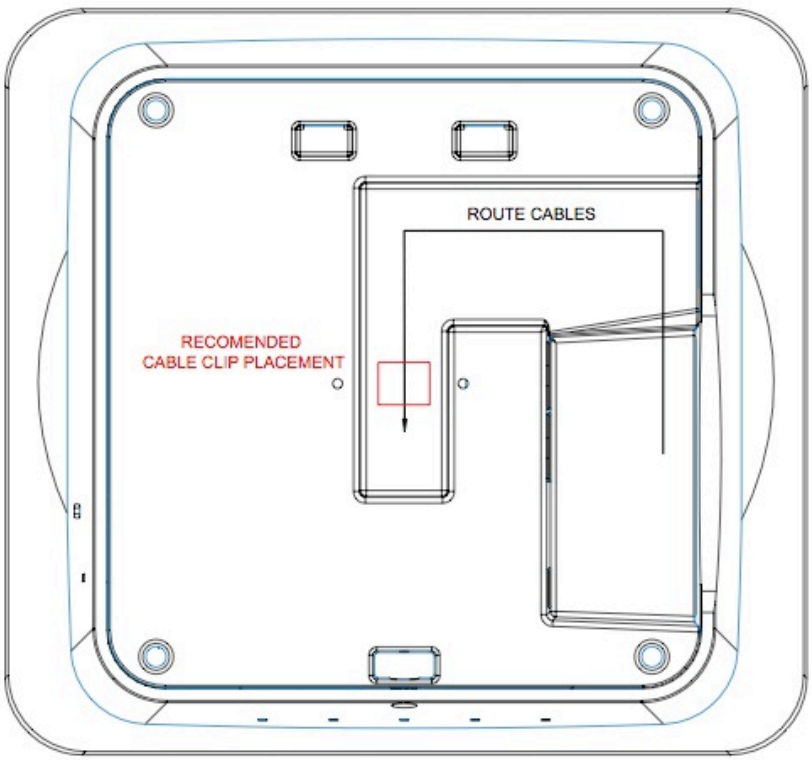


Horizontal mount: Line up the slots and secure the wall bracket to the wall anchors using the included hardware.

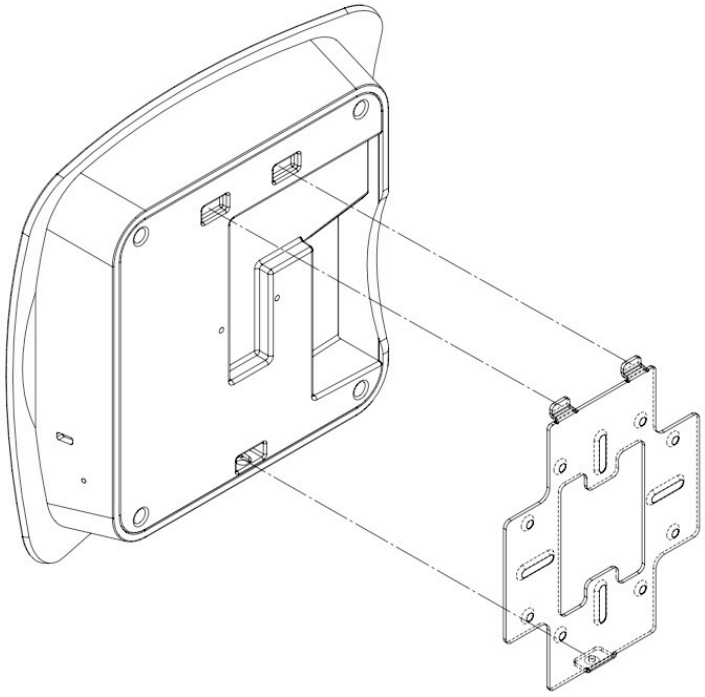


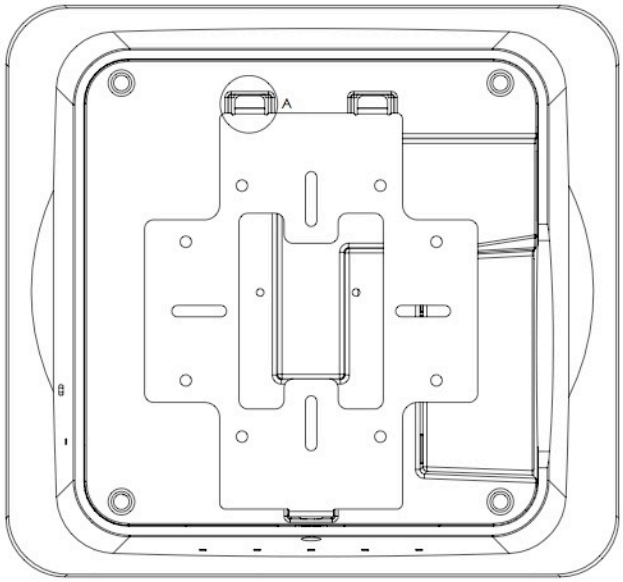
Line the two tabs on the top of the Wall Bracket with the two pockets on the back of the access point.

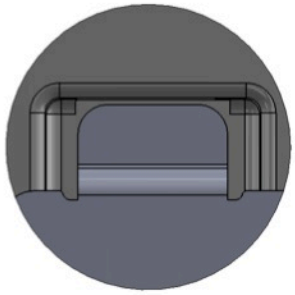
Attach the recommended plastic cable clip. Route cables along the channel on the back of the WAP and secure them to the plastic clip by pressing the cable to the clip.



Place the access point firmly against the wall bracket, ensuring the cables are tucked in the channel on the back of the access point and/or behind the wall bracket.

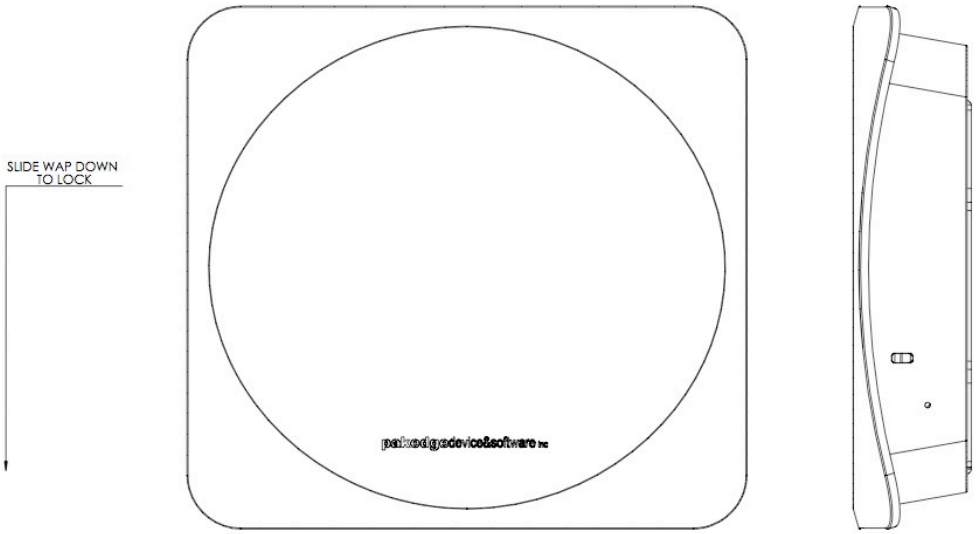




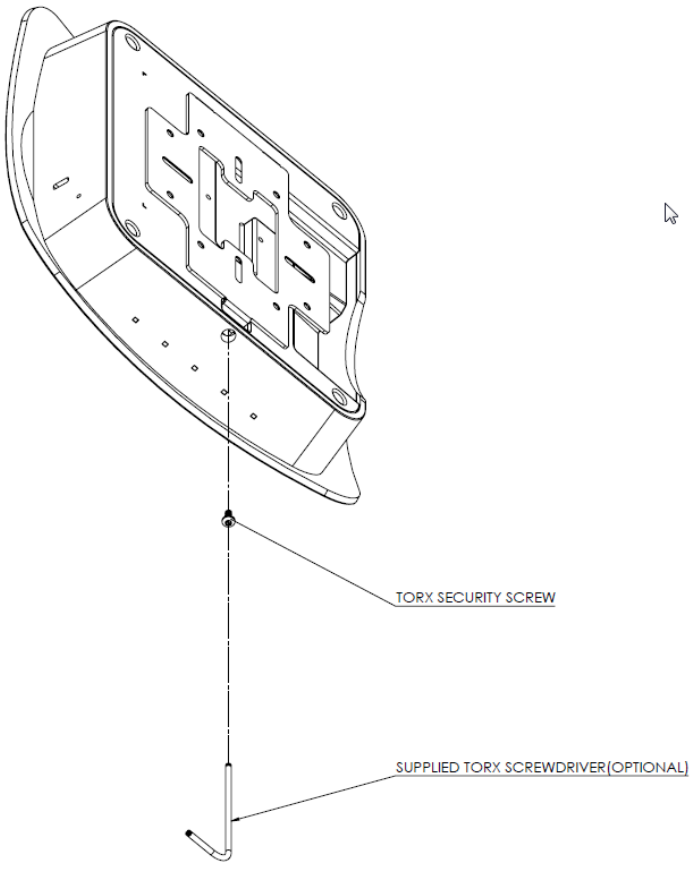


DETAIL A
SCALE 5 : 1

Slide the WAP downward until the top two tabs on the wall bracket lock into place.



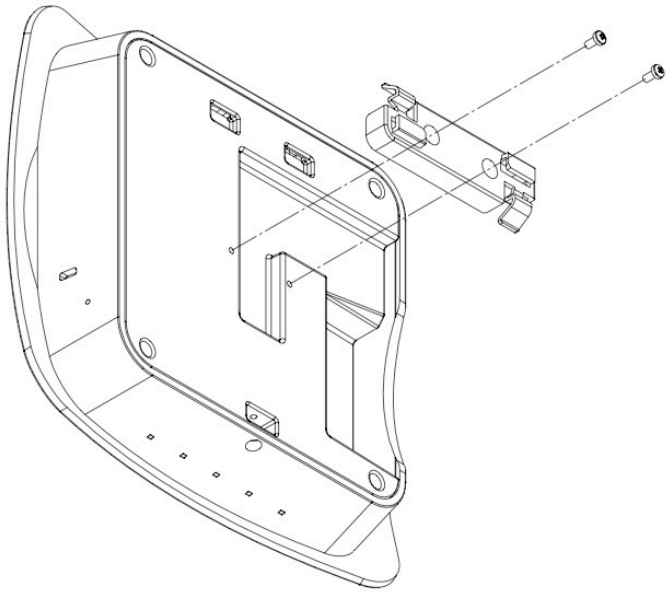
Secure the WAP to the bottom tab of the wall bracket with the included security screw.



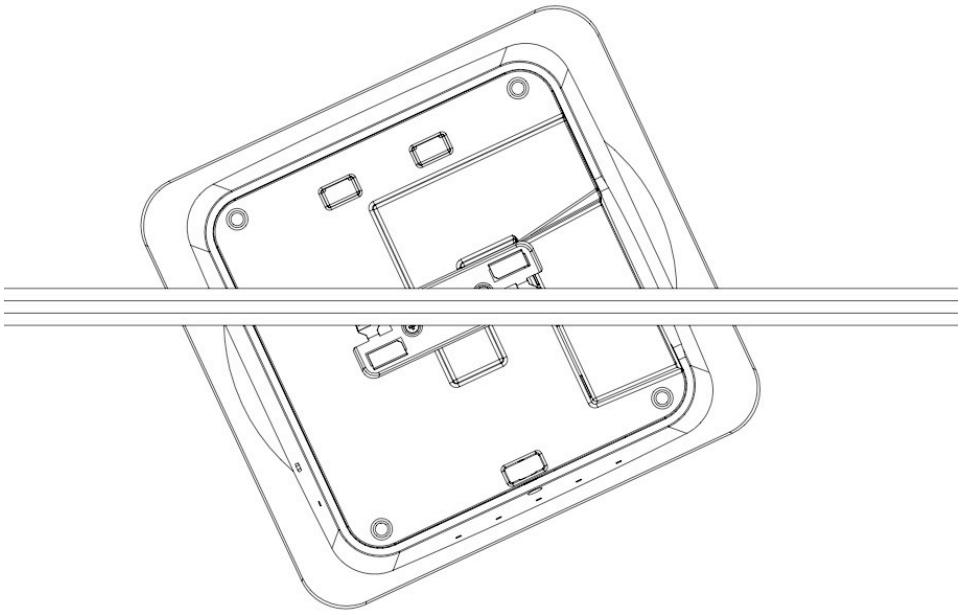
TORX SECURITY SCREW INSTALLATION

Using Provided T-bar Bracket

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

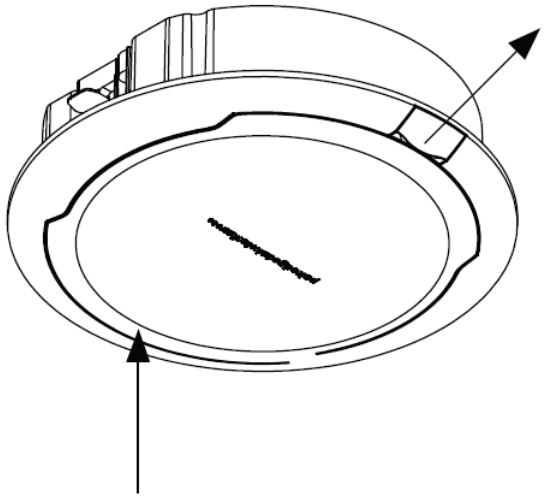


2. Rotate the WAP counter-clockwise until the T-bar bracket is secured to the T-bar.

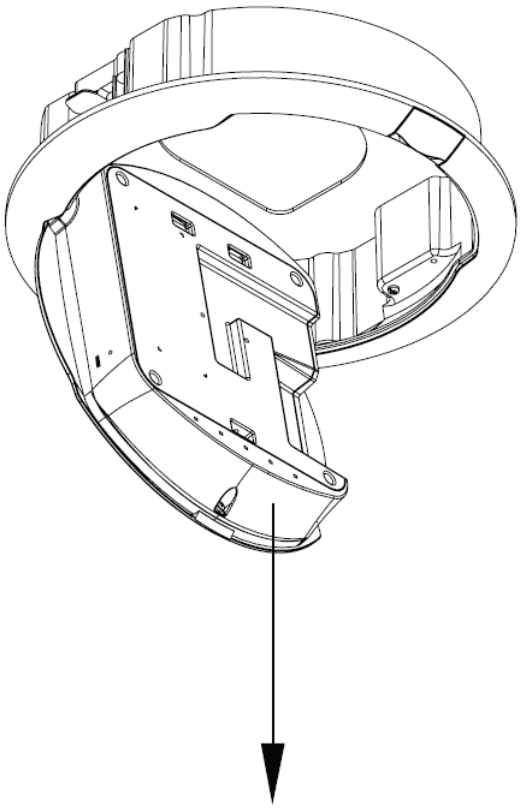


WK-2-C Mounting

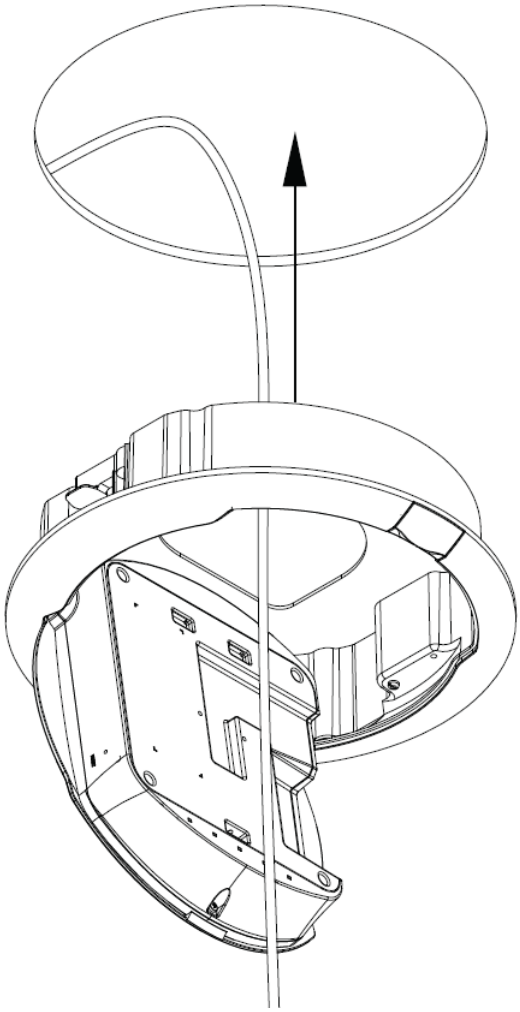
1. Open release latch, push on back of WK-2-C to swing WAP down from ceiling/wall bracket.



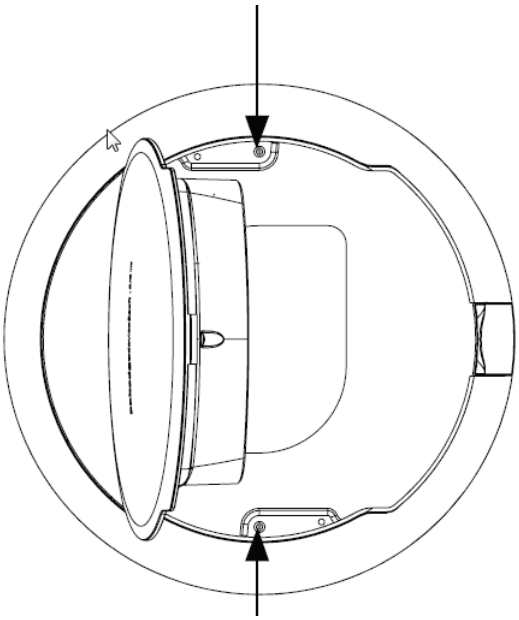
2. Swing WAP down



3. Using supplied template, cut a 9.125" inch diameter circle at desired mounting location of WK-2-C. Route in-wall Ethernet cable through the opening on the back of WK-2-C housing. Insert WK-2-C into ceiling/wall.

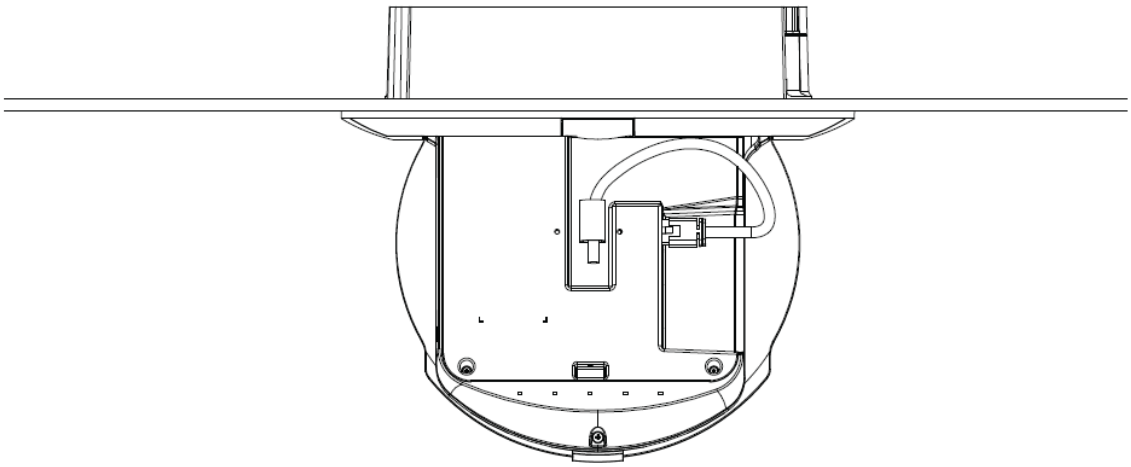


4. Use a Phillips screwdriver to engage the mounting-ears as shown in a clockwise rotation until the screws are difficult to rotate.

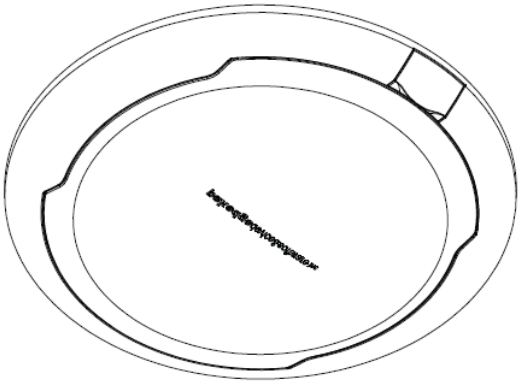


NOTE: Do not over-tighten the mounting-ears as excessive torque will strip the mounting-ears and render them non-functional.

5. Plug Ethernet cable into WK-2-C. Route Ethernet cable as shown, use optional cable clip if necessary.



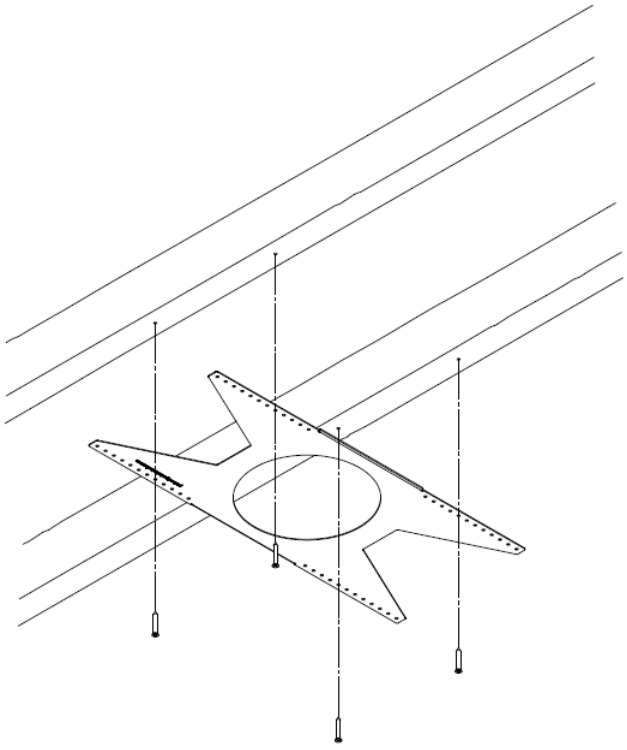
5. Swing WAP back into WK-2-C housing.



WK-2-C installation with optional pre-construction bracket

The pre-construction bracket is sold separately.

1. Place the pre-construction bracket against the bottom of the ceiling studs at the desired mounting location.
2. Mark locations for mounting screws. Drill 1/16" pilot holes at marked locations. Secure pre-construction bracket to ceiling studs using the provided hardware.
3. Install sheet rock over pre-construction bracket. Make note of where the cutout on the pre-construction bracket is when installing the drywall.
4. Cut opening in sheet rock using the cutout on the pre-construction bracket as a guide.



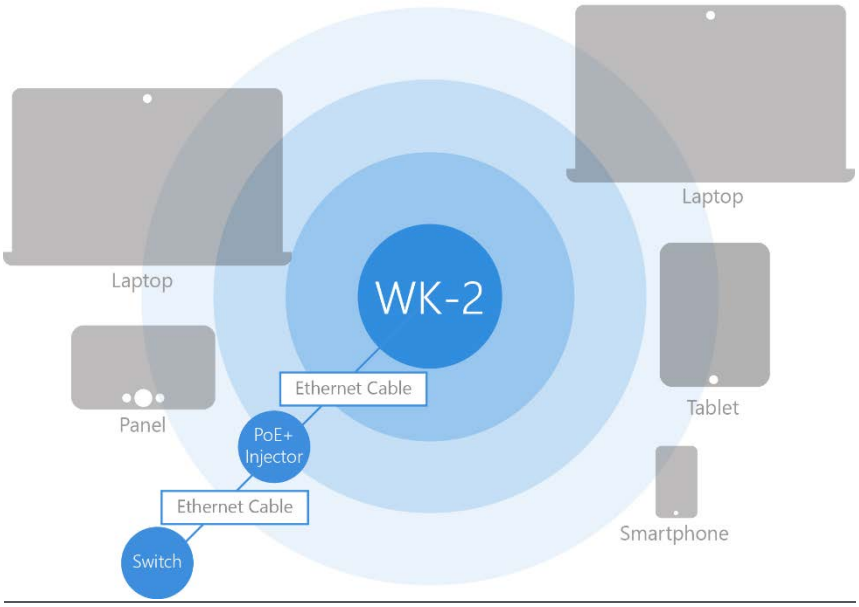
Note: the "pakedgedevice&software inc" logo should be facing outwards.

Power Method for the WK-2x

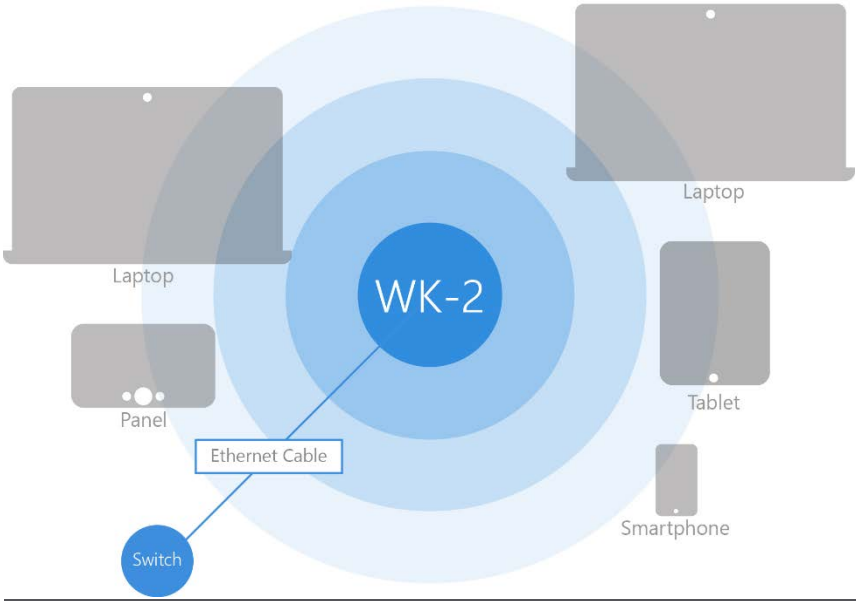
The diagrams below show using a PoE+ injector or a PoE+ switch to power the WK-2x.

Note: the product must be powered by 802.3at - compliant Power over Ethernet (PoE+) injector or switch

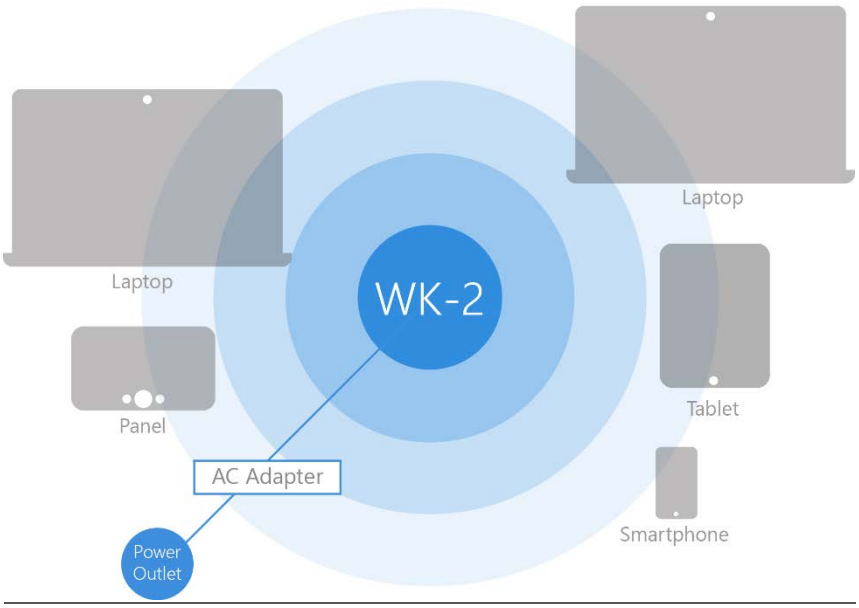
Power via PoE+ Injector



Power via PoE+ Switch



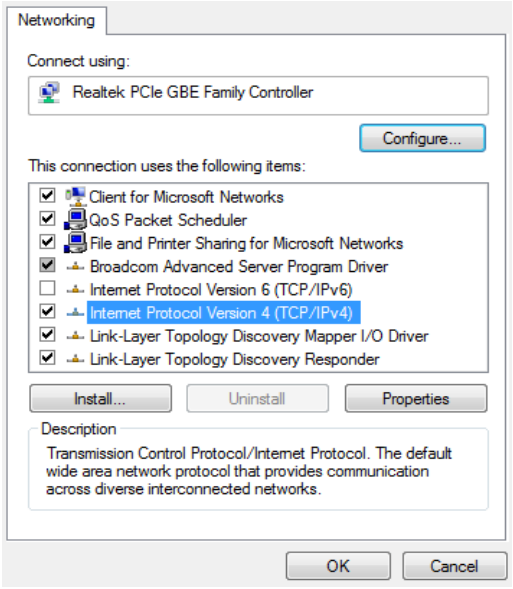
Power using the included power adapter



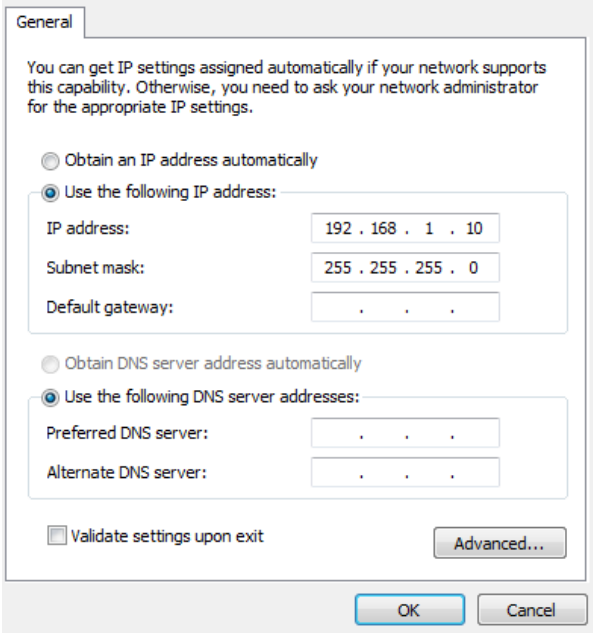
The WK-2x can be configured in several modes: Access Point, WDS Root Access Point, WDS Repeater or WDS Bridge. When shipped from the factory, the WK-2x is set to Access Point mode. The default IP address of the WK-2x is **192.168.1.250** and username/password of **pakedge/pakedgea.**

In order to log in to the WK-2x, 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 Version 4 (TCP/IPv4)** and click **Properties**. The Internet Protocol (TCP/IP) dialog appears where you can configure the TCP/IP settings of your PC.

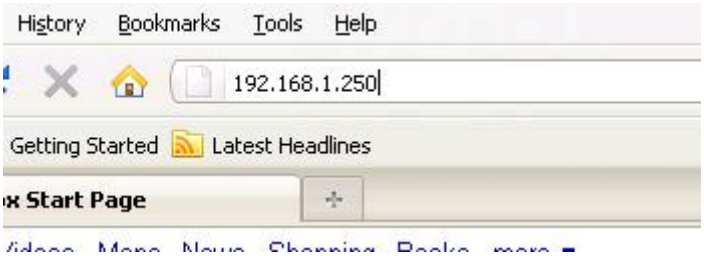


3. Select **Use the following IP Address** and type the IP address and subnet mask, as in the example below. (Be sure the IP address and subnet mask are on the same subnet as the WK-2x.)

WK-2x IP address:	192.168.1.250
PC IP address:	192.168.1.10
PC subnet mask:	255.255.255.0

WK-2x Start Up

To configure the WK-2x through a web browser, type the IP address of the WK-2x (default **192.168.1.250**) and press **Enter**.

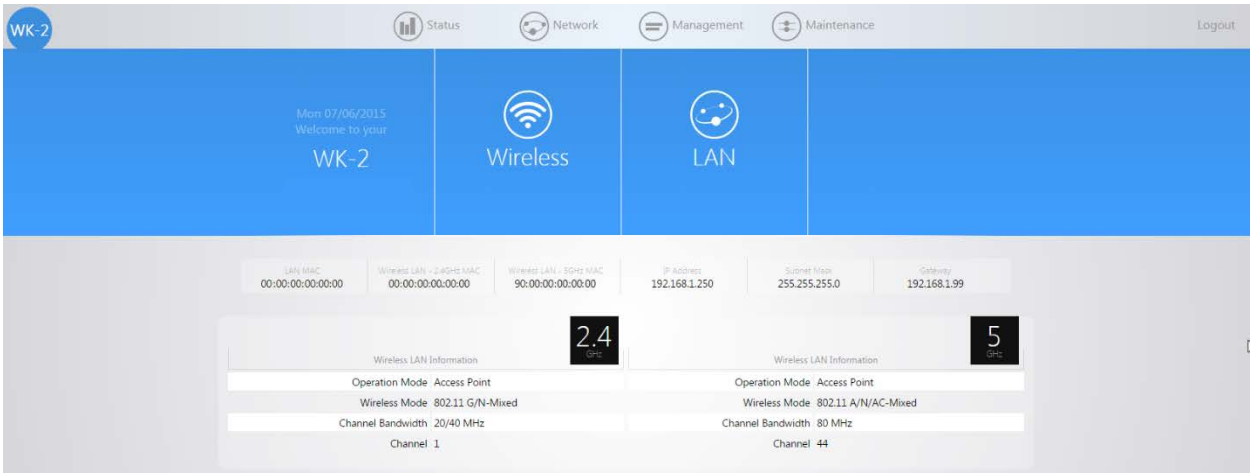


NOTE: Make sure the WK-2x and your computer are configured on the same subnet. To configure the IP address of your computer, follow the steps listed in the previous section.

The WK-2x login dialog appears.

In the username box, type **pakedge**. In the password box, type **pakedgea** and click **Login**.

The WK-2x main menu appears (see figure below). The main menu displays the current status of WK-2x and general information such as the IP address, subnet mask, and MAC addresses. The 2.4 GHz and 5 GHz sections display the device operating mode, wireless mode, channel bandwidth and channel settings. The WK-2x supports multiple SSIDs along with details and security settings for each SSID.

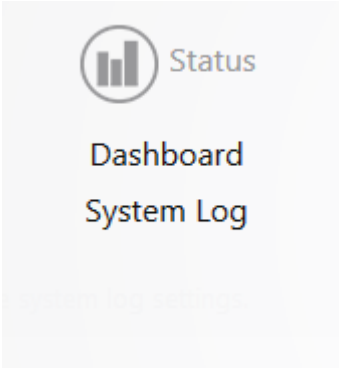


Menu Options

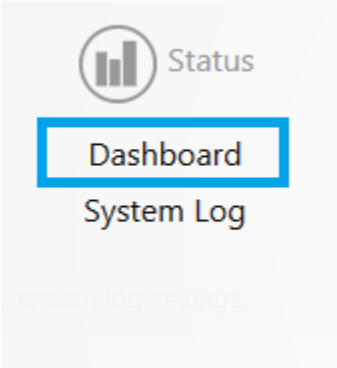
The navigation bar on the top of the window comes with 4 options:

- **Status**: Shows the dashboard and logs of the WK-2x access point. The dashboard is the default page that comes up when you log in to the WK-2x GUI.
- **Network**: User can make changes to the network settings, such as the LAN, wireless settings, and transmit power settings.
- **Management**: View diagnostics, enable SNMP, and control your LEDs.
- **Maintenance:** Modify your personal account settings and update your firmware.

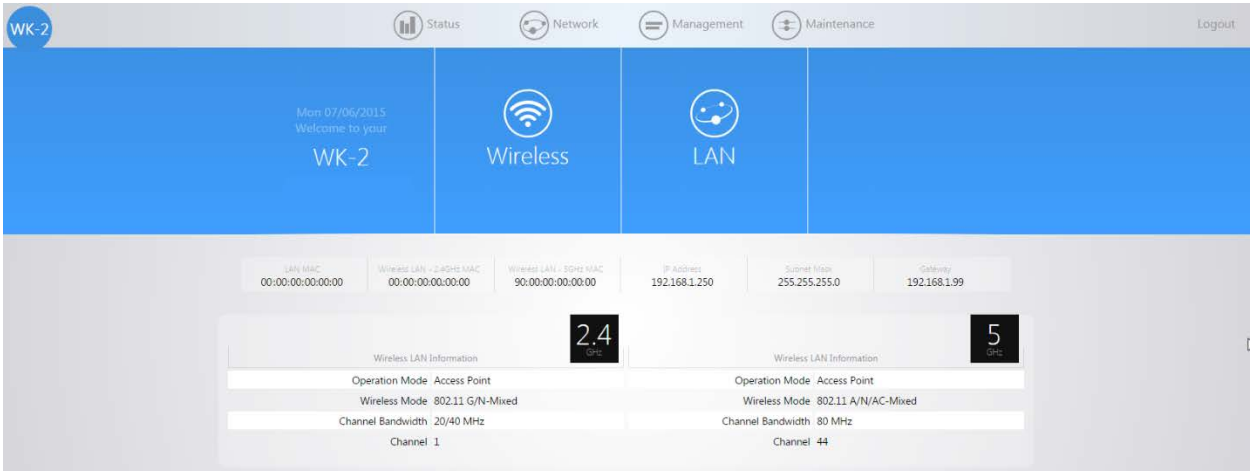
Status



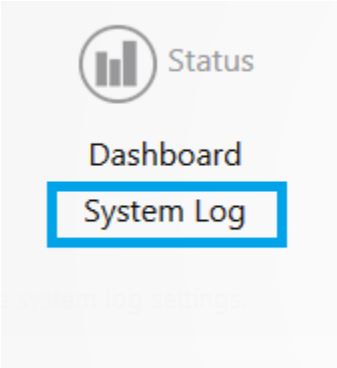
Dashboard



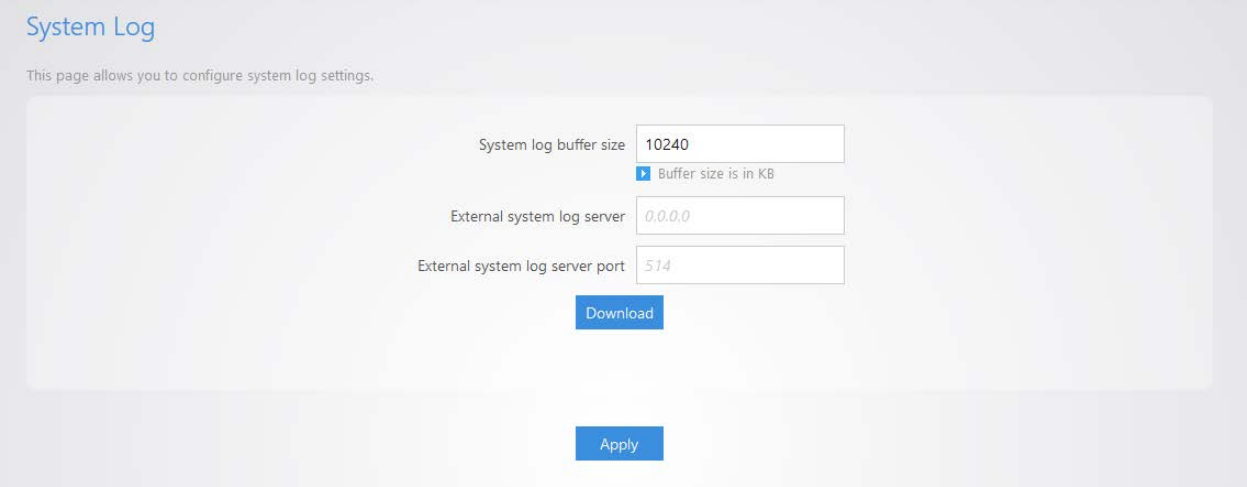
The Dashboard is the default landing page of the access point. You can also access this page by hovering over the **Status** icon and clicking **Dashboard**. This page displays the MAC and IP addresses, operation mode, WLAN information, SSIDs and connected clients.



System Log



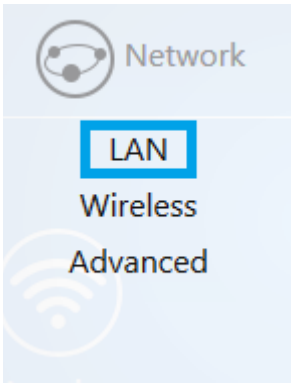
The System Log page has an activity log that can be used by Pakedge Technical Support for troubleshooting purposes.



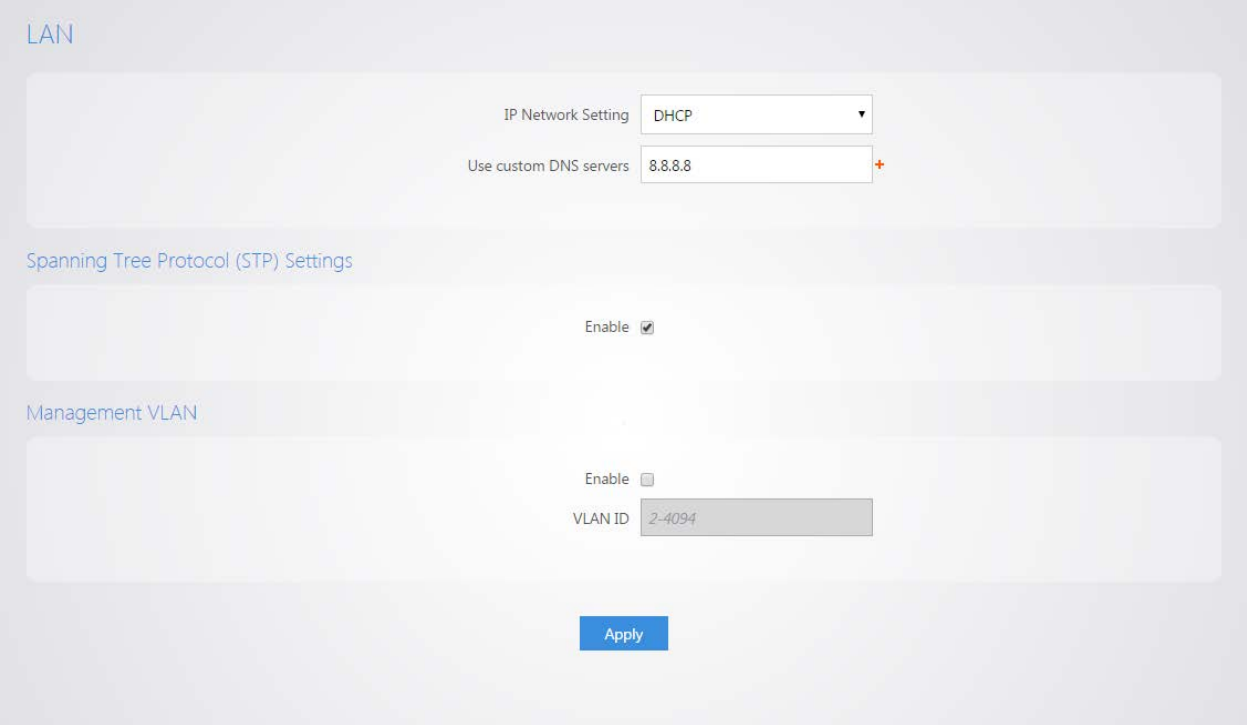
- **System log buffer size**: Maximum value of the buffer is 10240 KB (10MB), which is also the default setting.
- **External system log server**: An external server may be set up to receive log activity. Enter the IP address of the external server.
- **External system log port**: A port number for the external server may be entered here.
- **Download**: Download the encrypted log.

Network

LAN



Hover over the **Network** icon and click **LAN**. This page displays the LAN settings for the WK-2x. To configure the IP address of your WK-2x, you can configure the WK-2x with a static IP address or obtain an IP address automatically by using a DHCP client.



LAN

- **IP Network Setting**: The default IP setting is DHCP. If this option is selected, the WK-2x will automatically be assigned an IP address. Please make sure there is a DHCP server in your network if you would like to use this option.

  If you want to assign a static IP to the WK-2x, select **Static IP** from drop-down menu and fill in IP address, subnet mask and gateway information. Click **Apply** to implement your changes.

Spanning Tree Protocol (STP)

Spanning Tree Protocol (STP) prevents bridge loops. By default, this feature is enabled.

Management VLAN

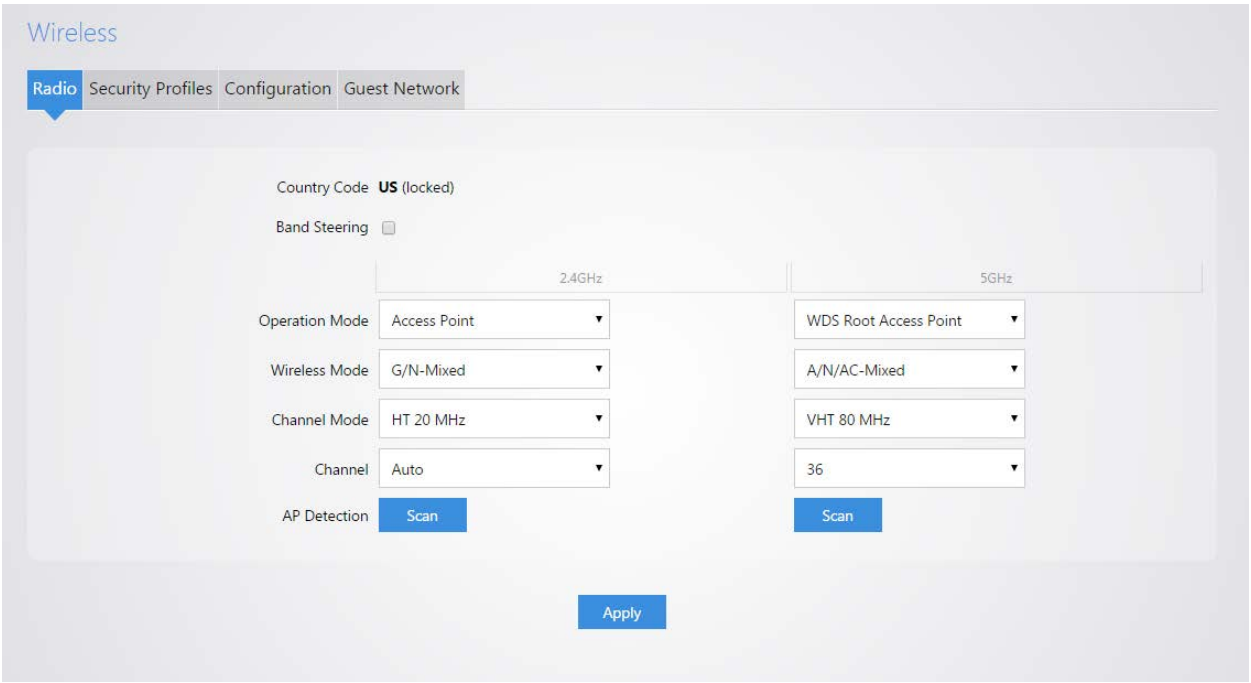
Warning: Do not enable this feature unless you need to tag the default VLAN on the access point. If configured incorrectly, the access point will become inaccessible and will need to be reset to factory default. VLAN tagging can only be set on a managed switch capable of using VLANs.

- **VLAN ID for Management:** To turn on VLAN Management, check **Enable** under Management VLAN.
- In the **VLAN ID** textbox, enter the number of the VLAN you want to access the administrative functions of the WK-2x through. For example, if VLAN3 is used for management, type in 3.
- Click **Apply** to save your changes.

Wireless

Radio

Hover over **Network** and click on **Wireless**. You will be directed to the Radio configuration page under the **Radio** tab.



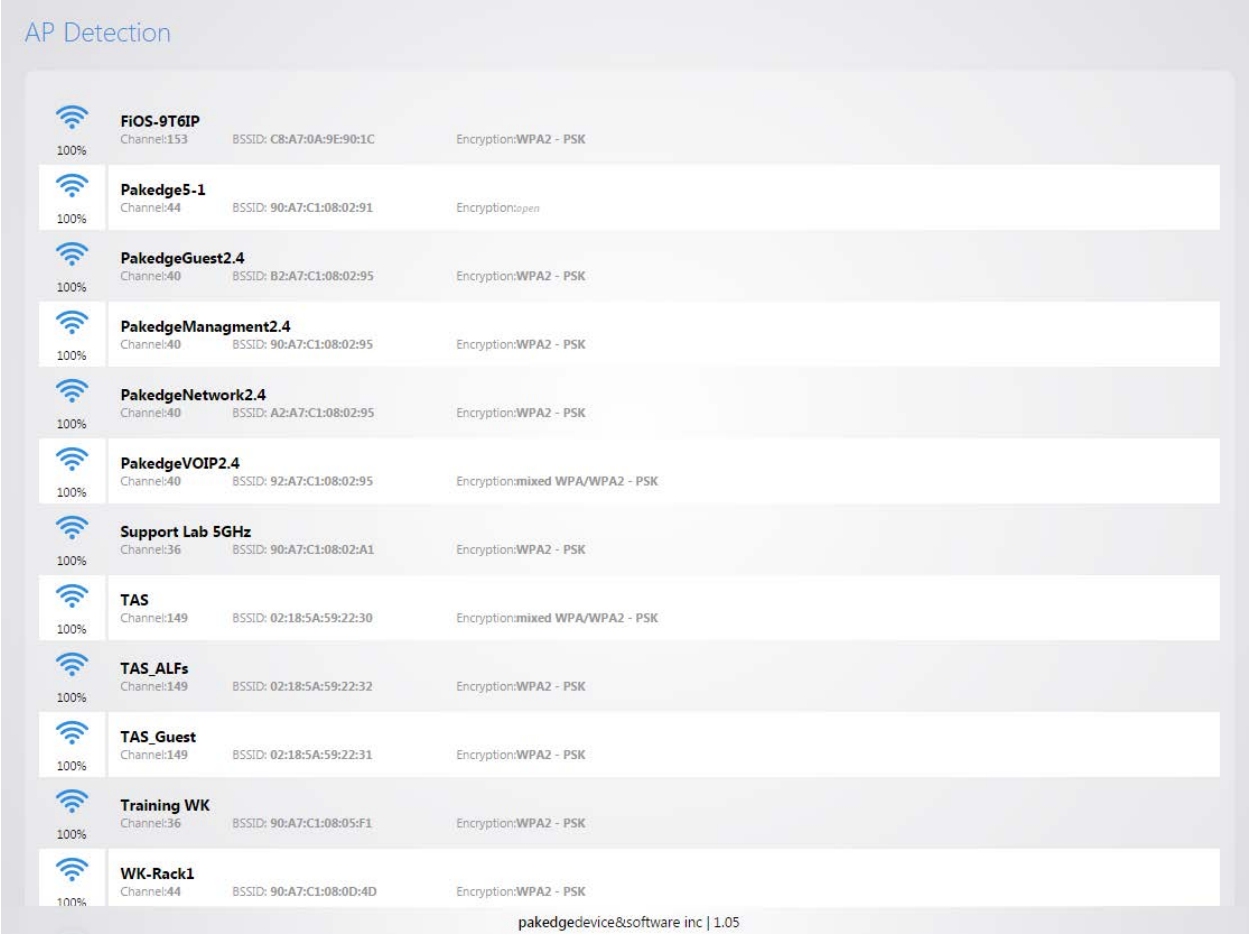
- **Country Code**: Selecting your country is required for proper functionality of this device and may be required by law. After selecting your country and clicking **Apply**, the Country Code feature will lock. To regain access to Country Code, the access point must be reset to factory default.

- **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.
- **Operation Mode**: Both the 2.4 and the 5 GHz band have the following operating modes: Access Point, WDS Root Access Point, WDS Repeater and WDS Bridge.
    - **Access Point**: Standard mode of operation. Allows a wireless connection to the LAN.
    - **WDS Root Access Point**: The access point with this mode set will be the "root" device that access points configured with WDS Repeater and WDS Bridge will connect to.
    - **WDS Repeater**: This mode allows the access point 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.
    - **WDS Bridge**: This mode allows the access point 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 devicess.
- **Wireless Mode**: Choose the setting that corresponds to the type of wireless clients connected to your network: B-Only, G-Only, B/G-Mixed, N/G-Mixed or B/G/N-Mixed (on the 2.4 GHz) or A-Only, N-Only, N/A-Mixed, AC-Only, AC/N-Mixed or A/AC/N-Mixed (on the 5 GHz). 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 2.4 GHz and A/AC/N-Mixed on the 5 GHz 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 2.4 GHz Wireless set to B/G/N Mixed and all connected devices use G, the speeds will slow accordingly.

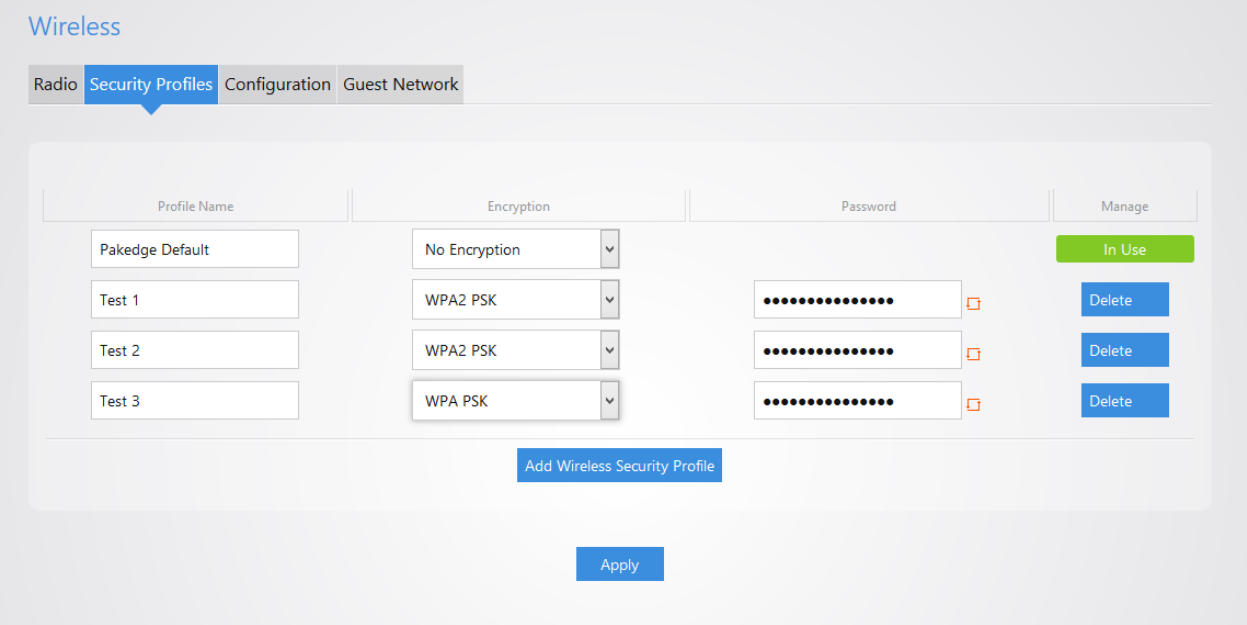
- **Channel Mode**: By default, the **Channel Mode** is set to HT 20 MHz (when using 2.4 GHz) and HT 80 MHz (when using 5 GHz). Selecting the HT 40 MHz channel mode on 2.4 GHz will allow for greater speeds, but at the risk of also increasing interference.
    - **Example**: When using the 20 MHz channel width on the 2.4 GHz band, channel 6 would bleed into channels 4, 5, 7 and 8 giving you three non-overlapping channels (1, 6 and 11). When using 40 MHz channel width on the 2.4 GHz radio, channel 6 would bleed into channels 2, 3, 4, 5, 7, 8, 9, and 10.
- **Channel** – Using the default setting (**Auto**), the WK-2x 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.

- **AP Detection –** Click **Scan** to perform an automatic site survey. A new window will open and display the site survey utility. The WK-2x will scan the frequency for devices currently broadcasting their SSID and then will display them in the table.



Security Profiles

Under the **Security Profiles** tab, you will be able to configure security profiles that can be used when creating SSIDs under the configuration tab.

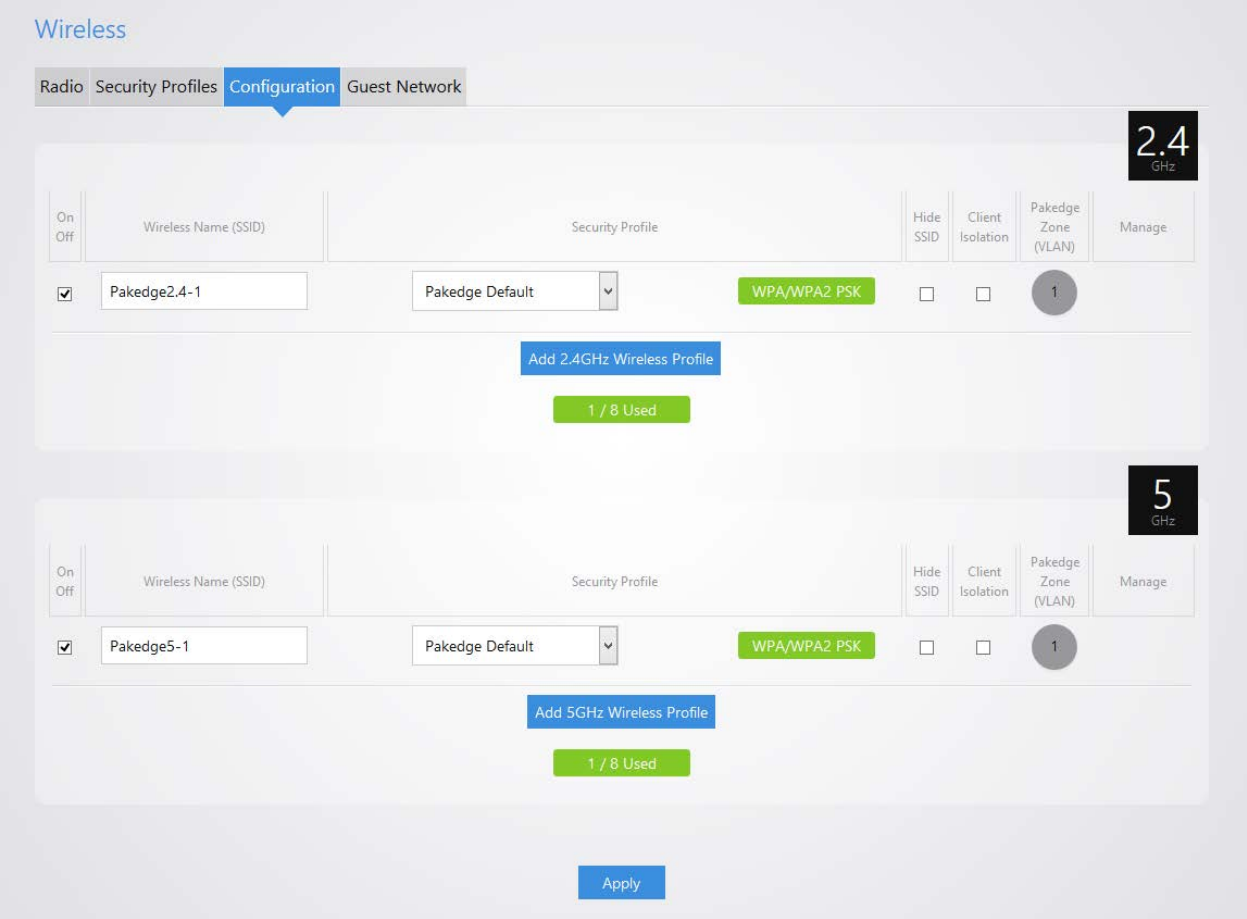


- **Profile Name**: Create a name for the security profile.
- **Encryption**: Select an encryption type for your security profile. The four available options are, No Encryption, WPA PSK, WPA2 PSK, and WPA/WPA2 PSK.
    - **No Encryption**: This will leave your profile without security (not recommended).
    - **WPA PSK**: Password must be at least 8 characters long. This is a legacy encryption protocol (not recommended).
    - **WPA2 PSK**: Password must be at least 8 characters long. AES-only encryption. (Recommended)
    - **WPA/WPA2 PSK**: Password must be at least 8 characters long. This feature is also known as Mixed Mode and uses TKIP encryption.

NOTE: Passwords may only contain numbers and letters. Special characters are not allowed. Examples of special characters: (!@#$%:;^&*).

Configuration

To configure SSIDs for both the 2.4 GHz and 5 GHz bands, go to the **Configuration** tab. The WK-2x can set up to 8 SSIDs per band for a total of 16 SSIDs.

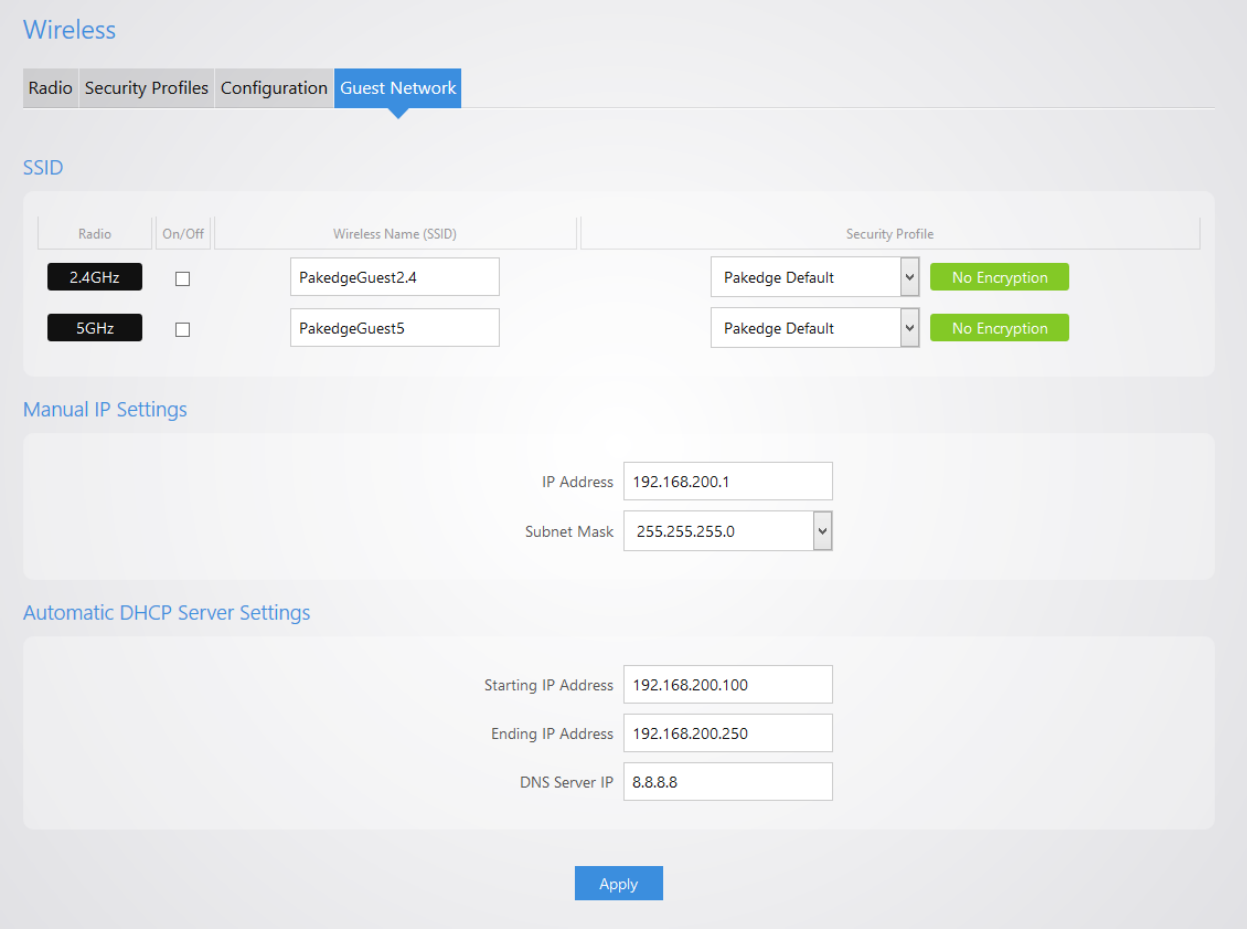


- **On Off**: The SSID may be turned on or turned off using this checkbox.
- **Wireless Name (SSID)**: The SSID is the name associated with the Wi-Fi network. An SSID cannot exceed 32 characters.
- **Security Profile**: The profiles created under the Security Profiles tab may be applied to the SSID here.
- **Hide SSID**: Enabling this feature will keep the SSID name from being broadcast. The SSID will still be available for client access, provided the SSID is turned on. This is not a security feature.
- **Client Isolation**: This feature is also referred to as "station separation". This feature prevents clients on the same SSID from being able to access other clients on the network.
- **Pakedge Zone (VLAN)**: This option defines the VLAN on which the SSID will reside. To change the VLAN, select the grey circle with the number 1 inside it. A selection ring will appear with the available VLAN options.
- **Manage**: This column displays the management settings that were configured under Management VLAN. Management VLAN is located on the LAN page under Network.

Guest Network Settings

The Guest Network feature is designed for networks that do not have a guest VLAN. The Guest Network acts as its own network and only has access to the internet. Each access point's guest network is independent from the guest networks of other access points.

To enable the Guest Network, select On/Off. By default, the guest network name is Pakedge-Guest and the IP scheme is set to 192.168.200.X. You have the option to change the default settings, if desired. You can change the SSID, IP address, subnet, starting IP address and ending IP address. Once changes are complete, click **Apply** to save them.

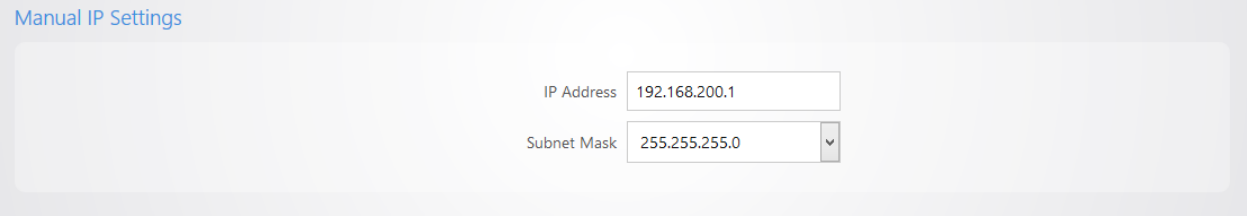


SSID

- **Radio**: There is a guest network available on both the 2.4 GHz and 5 GHz band.
- **On/Off**: This option turns the Guest Network on and off.
- **Wireless Name (SSID)**: The SSID of the Guest Network can be entered in this textbox.

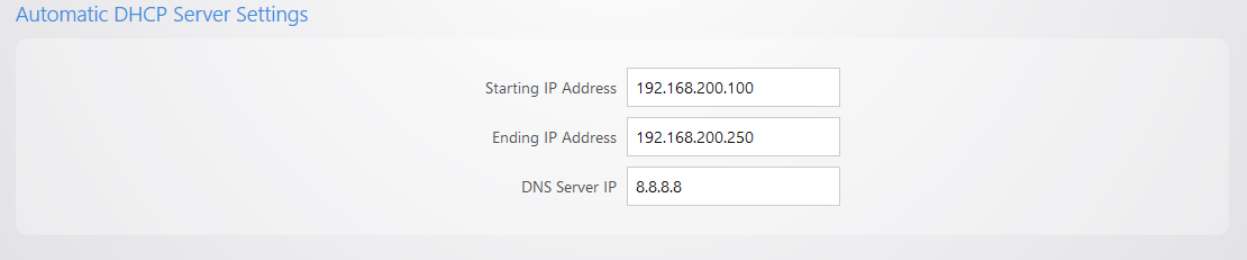
- **Security Profile**: Select a security profile that has already been defined under the Security Profiles tab.

Manual IP Settings



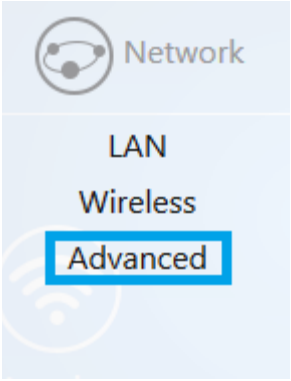
- **IP Address**: Enter in the IP address the access point will be used on.
- **Subnet Mask**: Select the class of the guest network. 255.255.255.0 is the standard setting and is selected by default.

Manual IP Settings



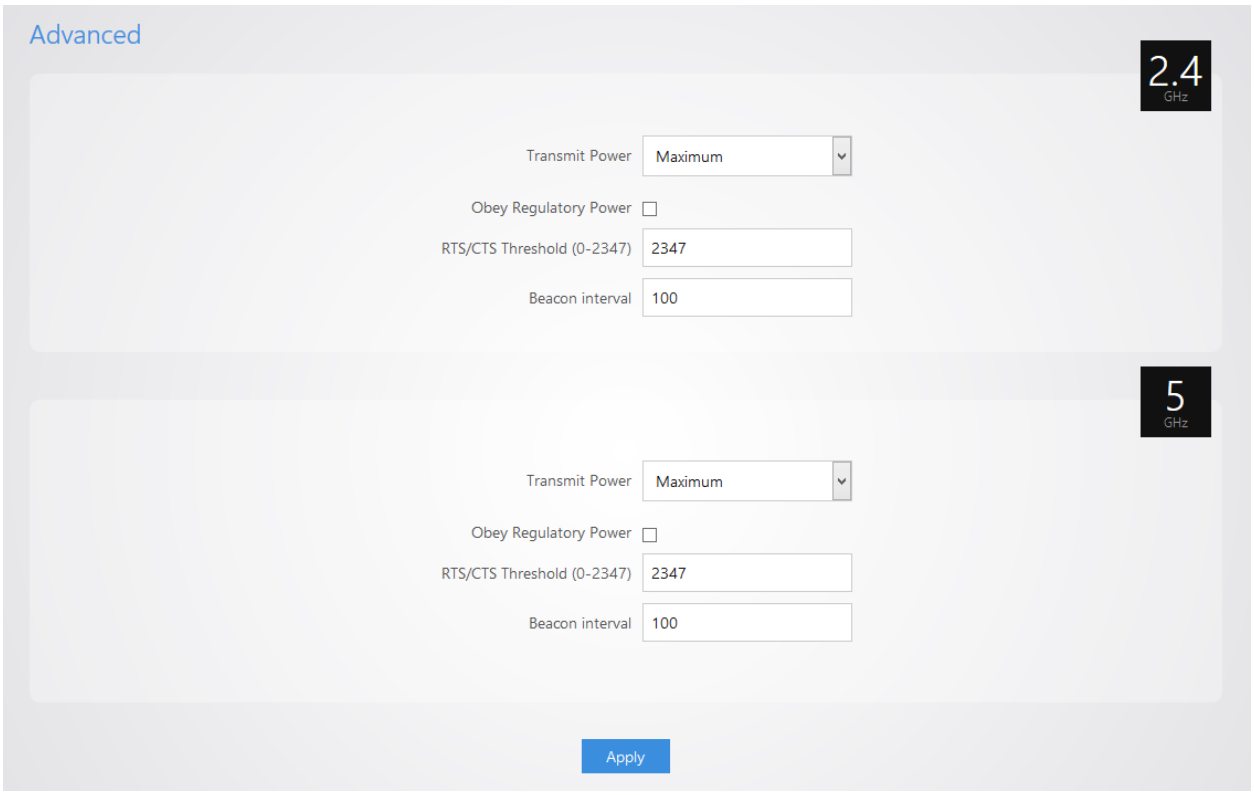
- **Starting IP Address**: This is the beginning of the DHCP range used on the guest network. If you have multiple access points, you can give them the same DHCP range because the guest network of each access point will be independent of one another.
- **Ending IP Address**: This is the last IP address available on the DHCP range.
- **DNS Server IP**: 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.

Advanced

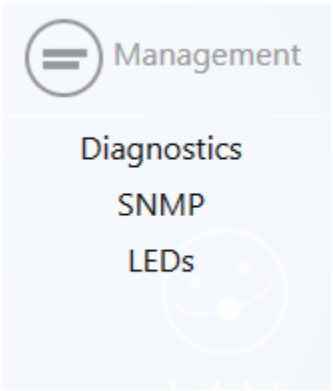


On the **Advanced** page, you can configure:

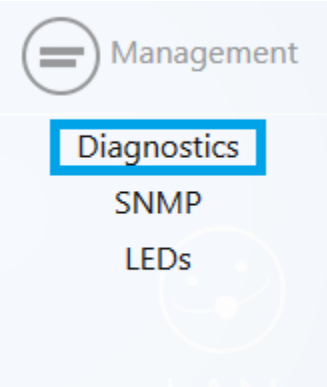
- **Transmit Power:** The power depends on the distance of the devices in your wireless network. From the drop-down list, select the desired power. You can use this feature to limit the coverage area of the wireless network.
    - Maximum: This setting will broadcast at the maximum allowed mW for the channel selected if Obey Regulatory Power is checked. If Obey Regulatory Power is not checked, then the maximum 30 dBm (1000 mW) will be broadcast.
    - Automatic: This setting will adjust the power of the access point based on the distance to the furthest client device. The access point will lower its power if the furthest client is 10 feet away and will raise the power if the furthest client is 100 feet away.
    - 1 dBm (1 mW) – 30 dBm (1000 mW): These are static power settings. The access point will broadcast at the selected power level.
- **Obey Regulatory Power:** This feature will enable government mandated power levels per channel based on the access point's Country Code.
- **RTS/CTS Threshold**: Enter the packet size threshold for RTS/CTS (Request to Send/Clear to Send) to occur. The primary reason for implementing this function is to minimize the collision between hidden stations, which occurs when access points and wireless users are spread out in a location and there is a high occurrence of retransmissions on the wireless LAN. Default setting is 2347.
- **Beacon Interval**: Adjusting Beacon Interval will allow clients to sleep longer. Clients have to wake up for every beacon, so this setting tells your client how many milliseconds it can sleep for (e.g., if BP = 100 your stations are allowed to sleep for up to 100 ms).


Advanced
2.4
GHz
Transmit Power
Maximum
Obey Regulatory Power
RTS/CTS Threshold (0-2347)
2347
Beacon interval
100
5
GHz
Transmit Power
Maximum
Obey Regulatory Power
RTS/CTS Threshold (0-2347)
2347
Beacon interval
100
Apply

Management

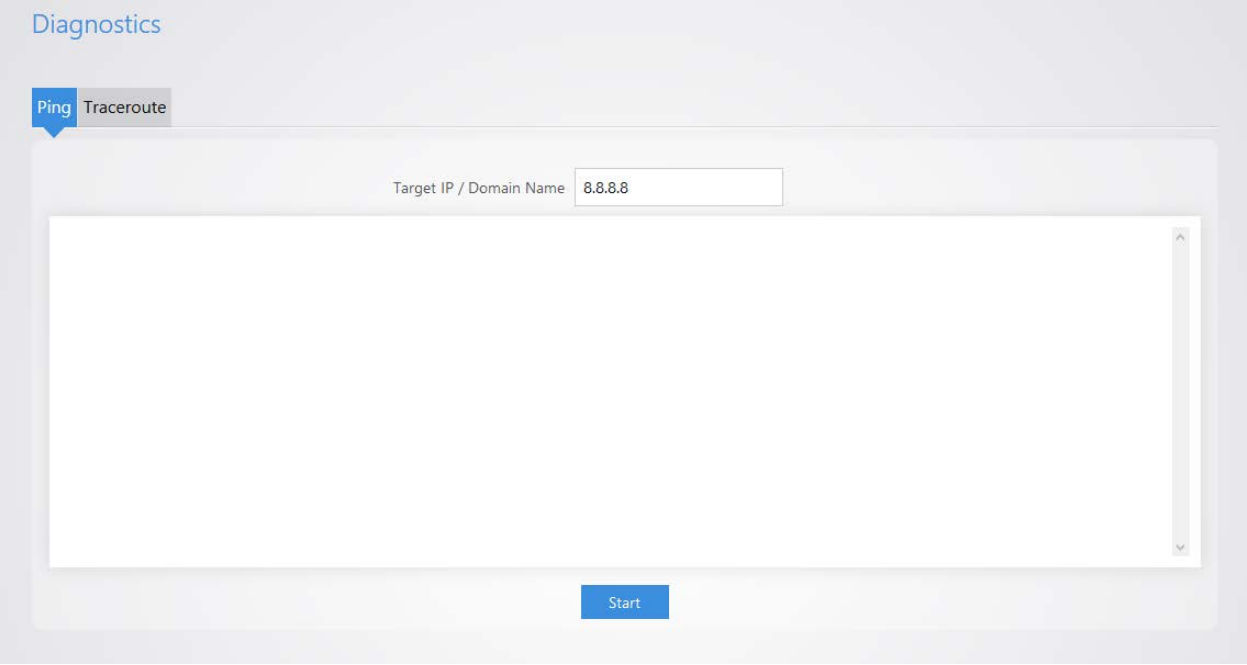

Management
Diagnostics
SNMP
LEDs

Diagnostics



Ping

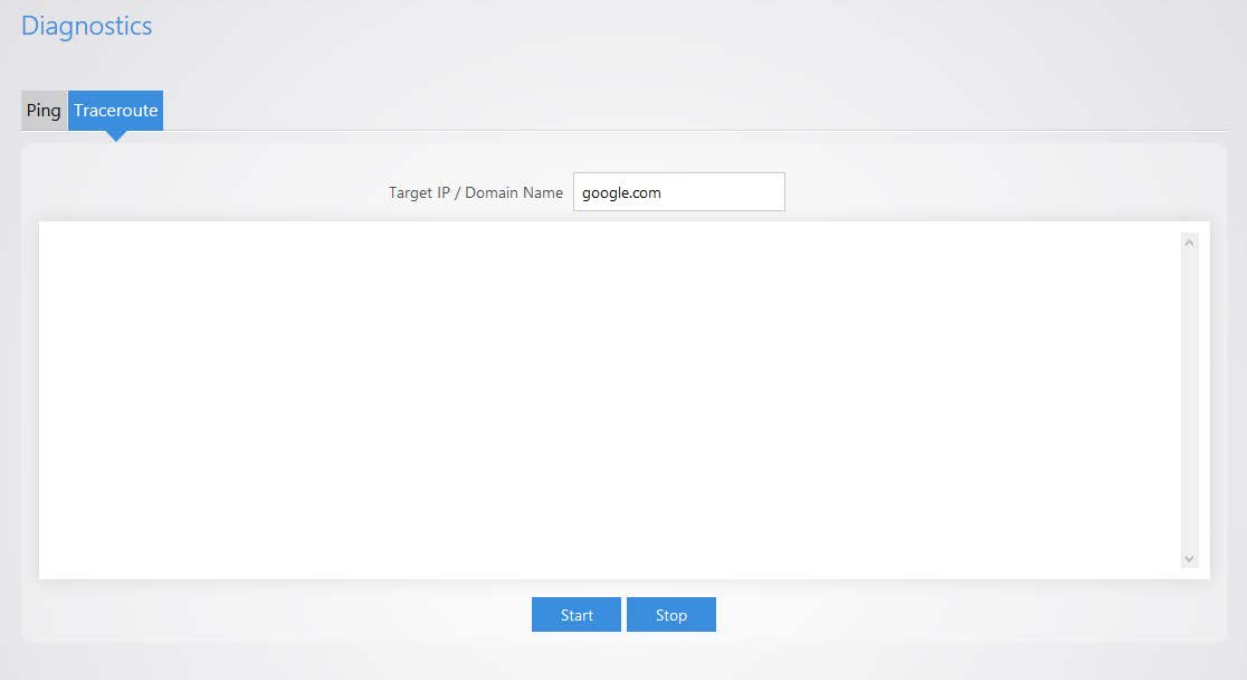
Hover over **Management** and click on **Diagnostics**. You will be directed to the ping test under the **Ping** tab:



- Ping –
    - **Target IP / Domain Name**: Enter the IP address of a location to ping. 8.8.8.8 is a Google DNS server.
    - Click **Start** to start the test.

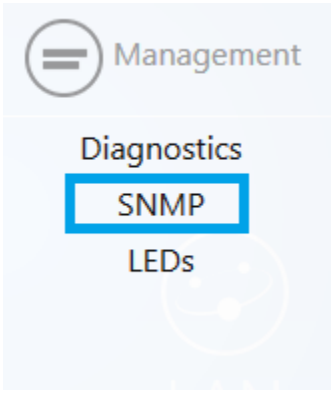
Traceroute

Click on the **Traceroute** tab.

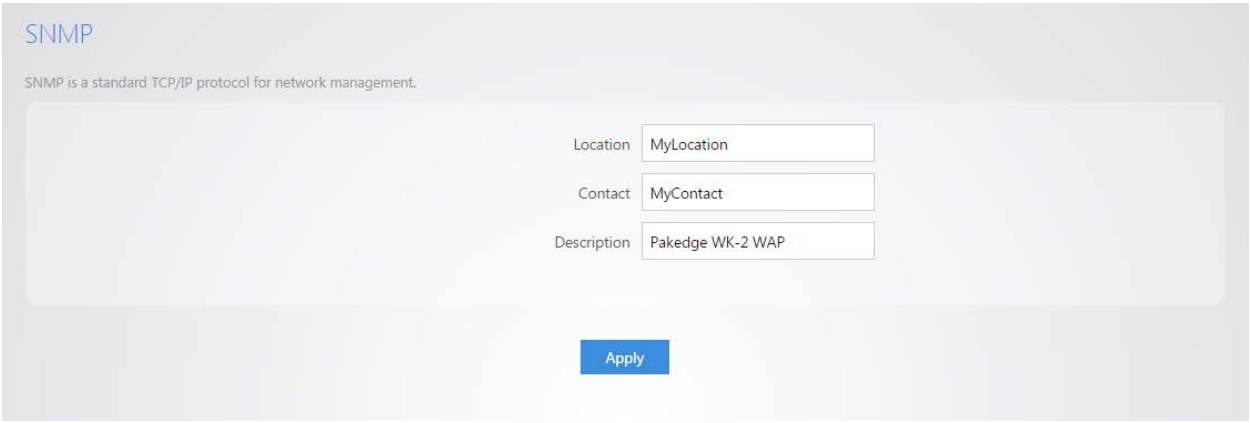


A Traceroute test can help you identify obstacles you may have in the network. The Traceroute text maps the path for packets moving between the WK-2x and the target location. To run a Traceroute test, enter an IP Address or Domain Name into the **Target IP / Domain Name** textbox and click **Start** to begin the test. If the test fails to complete or takes too long, click **Stop.**

SNMP

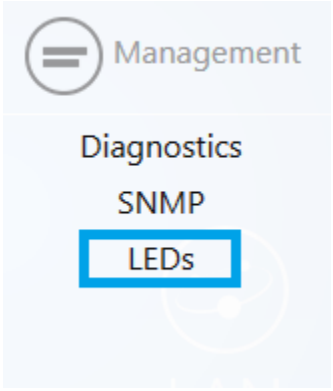


Hover over **Management** and click on SNMP.

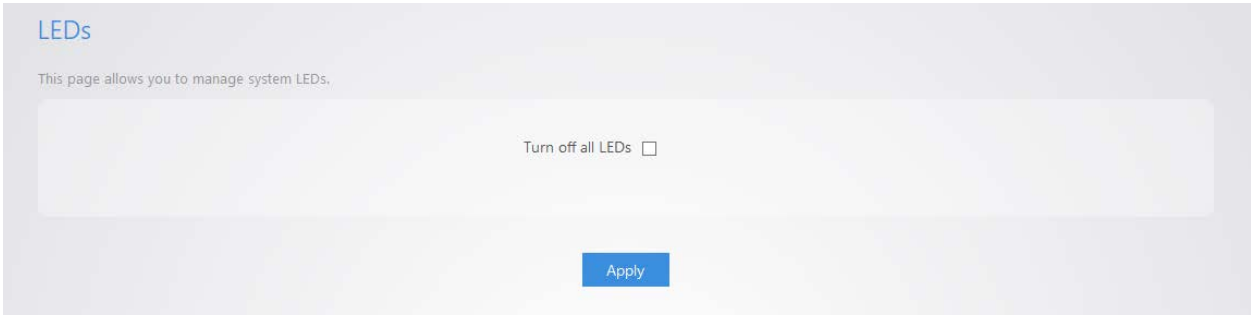


- **Location**: Enter the physical location of the WK-2x as a reference.
- **Contact**: Enter the contact information of the installer or network administrator for the SNMP manager.
- **Description**: Enter in a description of the device. The default description is Pakedge WK-2 WAP.

LEDs

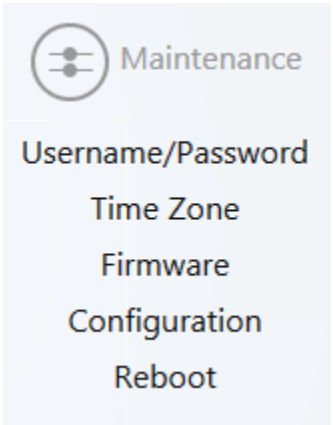


Hover over **Management** and click on LEDs.

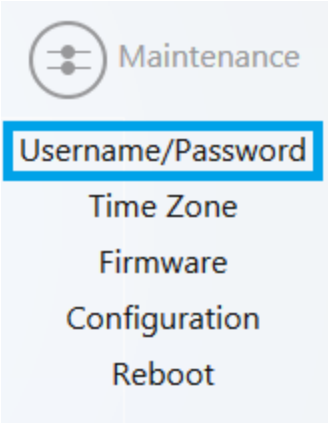


- **Turn off all LEDs**: Check to turn LEDs off.

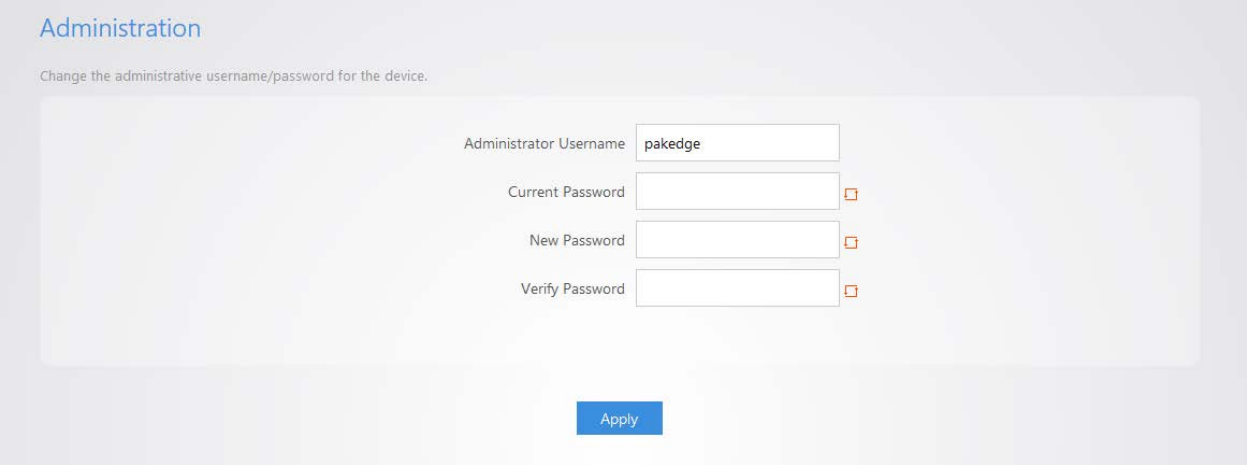
Maintenance



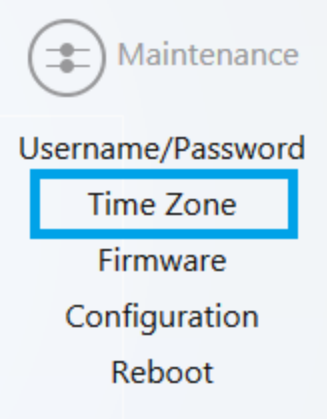
Username/Password



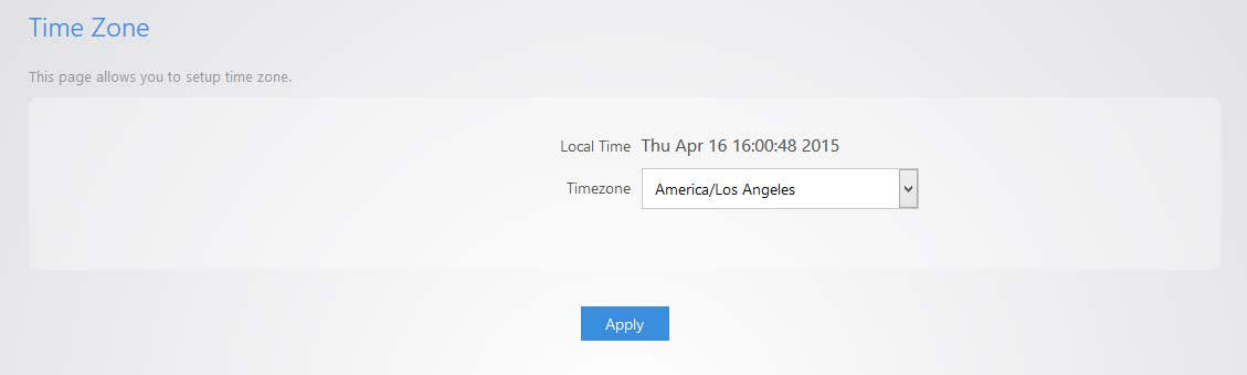
Hover over **Maintenance** and click on **Username/Password**. You can change the username and password for the device here.



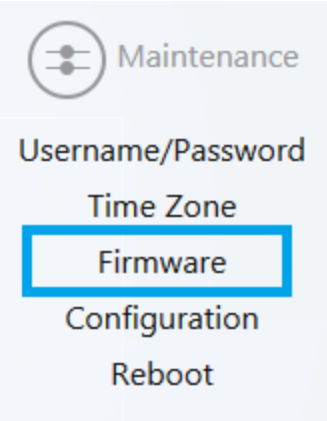
Time Zone



Hover over **Maintenance** and click on **Time Zone**. This page allows you to set up the timezone.

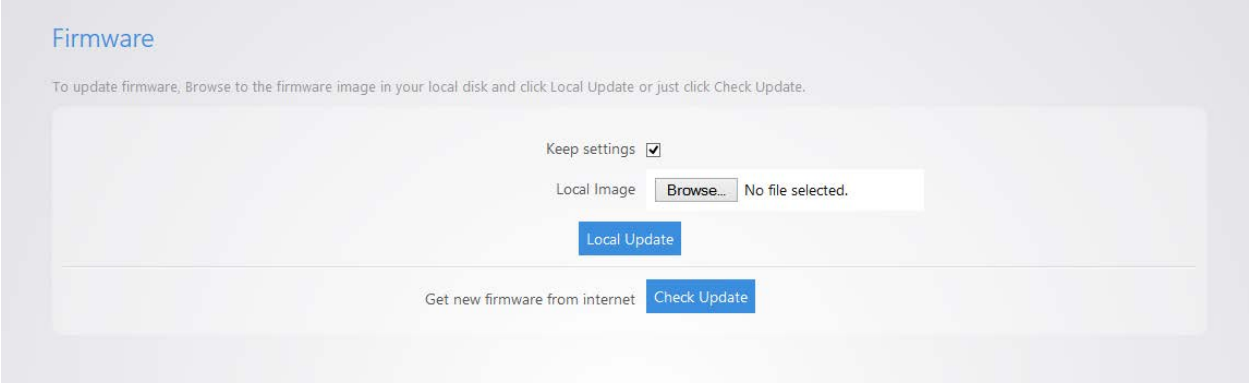


Firmware

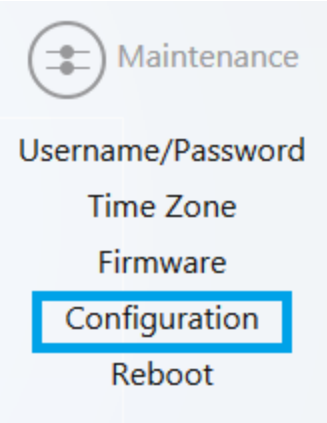


Allows you to update the firmware for the unit.

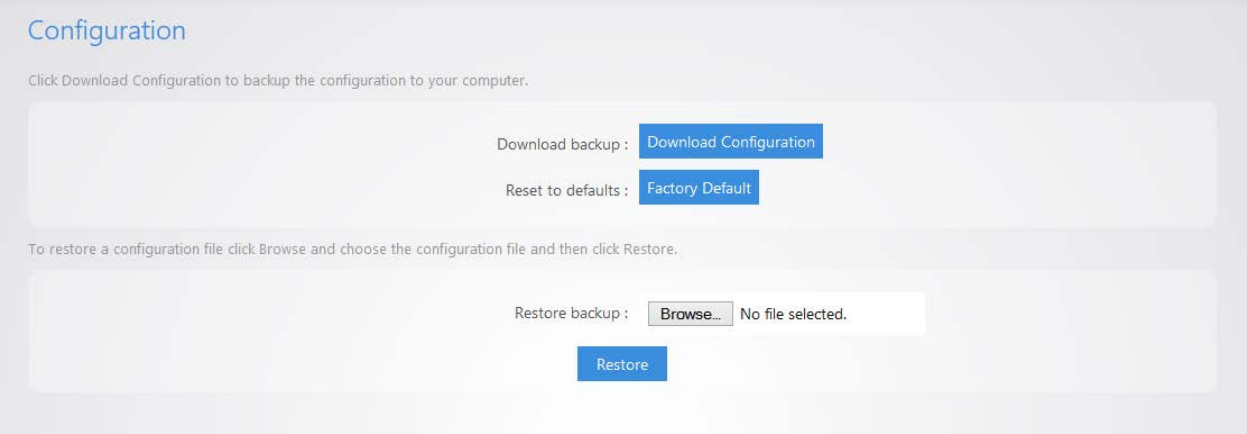
- **Keep Settings**: Selecting this will preserve your current configurations after the firmware update.
- **Local Image**: Click Choose File to select the firmware file.
- **Local Update**: Updates the firmware with the file you selected.
- **Check Update**: This feature will only work if the WK-2x is connected to the internet.



Configuration



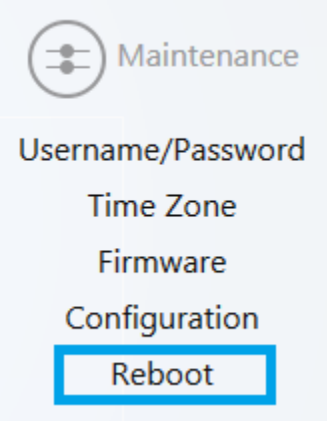
Hover over **Maintenance** and click on **Configuration**:



- **Download backup**: Click Download Configuration to save and export the current settings of the WK-2x.
- **Reset to defaults**: Click Factory Default to reset the the WK-2x back to its factory default settings.
- **Restore backup** – Load a configuration file using the Browse button to restore the WK-2x to a previous configuration.

Reboot

Hover over **Maintenance** and click on Reboot.



Clicking the Reboot Button allows you to reboot the device.

Appendix A – Specs

HARDWARE SPECIFICATIONS

- 1 x 10/100/1000 Gigabit Ethernet RJ-45 port with IEEE 802.3at Power over Ethernet (PoE+) support
- 1 x 10/100/1000 Gigabit Ethernet RJ-45 port
- Configurable LED Indicators for Power, Ethernet, 2.4GHz Wireless and 5GHz Wireless
- Power over Ethernet (PoE+) IEEE802.3at compliant
- Power Supply: 100 to 240 VDC ± 10%, 50/60 Hz (depends on different countries)
- DC input: 12V/2A

RF INFORMATION

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

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

- 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:

    - 2.4/5 GHz have independent operation modes
    - Access Point/ WDS Bridge/WDS AP/Repeater
- Up to 16 SSIDs
- Supports 802.1q VLANs
- Spanning Tree Supports 802.1d Spanning Tree Protocol
- IP Auto-configuration – DHCP client
- Transmission rate options:
    - 2.4 GHZ – B-ONLY, G-ONLY, B/G-MIXED, N-ONLY, G/N-MIXED, B/G/N-MIXED
    - 5 GHZ – A-ONLY, N-ONLY, A/N MIXED, AC-ONLY, N/AC-MIXED, A/N/AC-MIXED

MANAGEMENT AND SECURITY

- User can adjust power by dBm
- Web-based configuration (HTTP)
- Upgrade firmware via web browser/internet
- Auto-channel selects the least congested channel
- Backup and restoration settings available through web interface
- QoS WMM
- WPA-PSK/WPA2-PSK/ WPA/WPA2 Mixed using TKIP or AES
- SSID broadcast can be enabled or disabled
- WLAN L2 Isolation (AP mode only)
- List of connected wireless clients available

ENVIRONMENT

- Temperature Range: 0 to 45° C (32° to 113° F)
- Storage: -20 to 60° C (-4° to 140° F)
- Humidity (non-condensing):

- Operating: 90% or less
- Storage: 90% of less

MECHANICAL

Enclosure: 8.02 inches X 7.47 inches

- Depth: 1.63 inches
- Base 6.38 inches X 6.23 inches

Appendix B – Accessory List

WK-2, WK-2-B

- Quick Start Guide
- AC100-240V, 50-60Hz DC12V 2A power adapter
- CAT5e cable
- Mounting bracket
- T-bar mount
- Screws

WK-2-C

- Quick Start Guide
- CAT5e cable

Appendix C – Technical Support

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

Website: www.pakedge.com
Email: 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 D – Limited Warranty

Model WK-2x

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 WARRRANTY. 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. 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 at www.pakedge.com.

FCC Declaration of Conformity

Pakedge Device & Software, 3847 Breakwater Avenue, Hayward, CA 94545, declares under sole responsibility that the WK-2x 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-2x, 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-2x 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.

Industry Canada statement:

This device complies with RSS-247 of the Industry Canada Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ce dispositif est conforme à la norme CNR-247 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas

produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Caution :

(i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

(ii) the maximum antenna gain permitted for devices in the bands 5250-5350MHz and 5470-5725MHz shall be such that the equipment still complies with the e.i.r.p. limit;

(iii) the maximum antenna gain permitted for devices in the band 5725-5850MHz shall be such that the equipment still complies with the e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate; and

(iv) the worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in Section 6.2.2(3) shall be clearly indicated.

(v) Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350MHz and 5650-5850MHz and that these radars could cause interference and/or damage to LE-LAN devices.

Avertissement:

Le guide d'utilisation des dispositifs pour réseaux locaux doit inclure des instructions précises sur les restrictions susmentionnées, notamment :

(i) les dispositifs fonctionnant dans la bande 5150-5250MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

(ii) le gain maximal d'antenne permis pour les dispositifs utilisant les bandes de 5250 à 5350MHz et de 5470 à 5725MHz doit être conforme à la limite de la p.i.r.e;

(iii) le gain maximal d'antenne permis (pour les dispositifs utilisant la bande de 5725 à 5850MHz) doit être conforme à la limite de la p.i.r.e. spécifiée pour l'exploitation point à point et l'exploitation non point à point, selon le cas;

(iv) les pires angles d'inclinaison nécessaires pour rester conforme à l'exigence de la p.i.r.e. applicable au masque d'élévation, et énoncée à la section 6.2.2 3), doivent être clairement indiqués.

(v) De plus, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5250-5350 MHz et 5650-5850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 30cm between the radiator & your body.

Déclaration d'exposition aux radiations:
Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 30cm de distance entre la source de rayonnement et votre corps.

Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

- EN60950-1
  Safety of Information Technology Equipment
- EN62311
  Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz - 300 GHz)
- EN 300 328
  Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
- EN 301 893
  Broadband Radio Access Networks (BRAN); 5 GHz high performance RLAN; Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive
- EN 301 489-1
  Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
- EN 301 489-17
  Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment

This device is a 5GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

Česky [Czech]	*Pakedge Device & Software Inc.* tímto prohlašuje, že tento *WK-2x* je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
Dansk [Danish]	Undertegnede *Pakedge Device & Software Inc.* erklærer herved, at følgende udstyr *WK-2x* overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch [German]	Hiermit erklärt *Pakedge Device & Software Inc.,* dass sich das Gerät *WK-2x* in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
Eesti [Estonian]	Käesolevaga kinnitab *Pakedge Device & Software Inc.* seadme *WK-2x* vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English	Hereby, *Pakedge Device & Software Inc.*, declares that this *WK-2x* is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Español [Spanish]	Por medio de la presente *Pakedge Device & Software Inc.* declara que el *WK-2x* cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ *Pakedge Device & Software Inc.* ΔΗΛΩΝΕΙ ΟΤΙ *WK-2x* ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
Français [French]	Par la présente *Pakedge Device & Software Inc.* déclare que l'appareil *WK-2x* est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
Italiano [Italian]	Con la presente *Pakedge Device & Software Inc.* dichiara che questo *WK-2x* è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo *Pakedge Device & Software Inc.* deklarē, ka *WK-2x* atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.

lt Lietuvių [Lithuanian]	Šiuo *Pakedge Device & Software Inc.* deklaruoja, kad šis *WK-2x* atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
nl Nederlands [Dutch]	Hierbij verklaart *Pakedge Device & Software Inc.* dat het toestel *WK-2x* in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
mt Malti [Maltese]	Hawnhekk, *Pakedge Device & Software Inc.* jiddikjara li dan *WK-2x* jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
hu Magyar [Hungarian]	Alulírott, *Pakedge Device & Software Inc.* nyilatkozom, hogy a *WK-2x* megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
pl Polski [Polish]	Niniejszym *Pakedge Device & Software Inc.* oświadcza, że *WK-2x* jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
pt Português [Portuguese]	*Pakedge Device & Software Inc.* declara que este *WK-2x* está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
sl Slovensko [Slovenian]	*Pakedge Device & Software Inc.* izjavlja, da je ta *WK-2x* v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
sk Slovensky [Slovak]	*Pakedge Device & Software Inc.* týmto vyhlasuje, že *WK-2x* spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
fi Suomi [Finnish]	*Pakedge Device & Software Inc.* vakuuttaa täten että *WK-2x* tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
sv Svenska [Swedish]	Härmed intygar *Pakedge Device & Software Inc.* att denna *WK-2x* står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

Safety Precautions:

- This product is not intended for use in air-handling space.

- The equipment is to be connected only to PoE networks without routing to the outside plant." Or equivalent.
- 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-2x 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.

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