

WX-1-0

802.11ac Dual Band Access Point

User Guide Version 1.0



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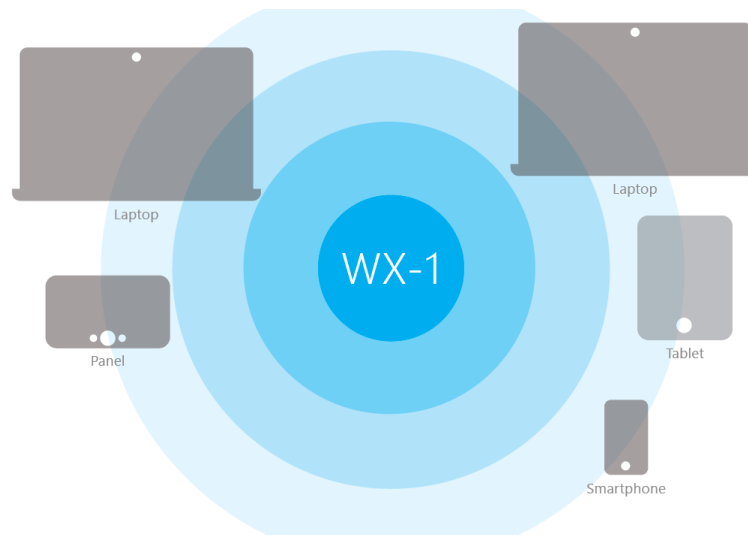
Introduction

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

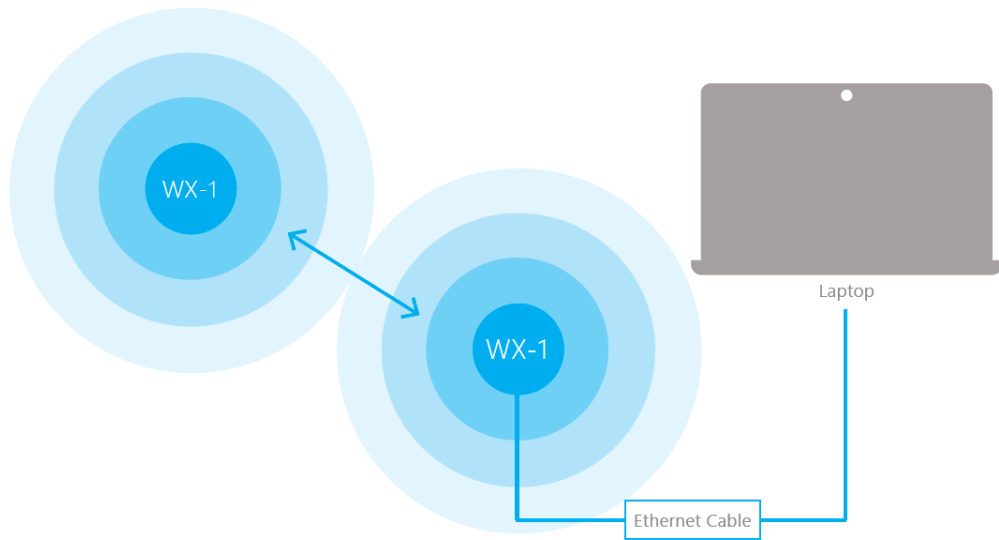
As the central component of your wireless network, the WX-1x provides you with high-speed, high-range wireless AC networking. The WX-1x broadcasts on both the 2.4 GHz and 5 GHz band so that select devices can choose their preferred source of wireless internet, improving the overall stability, reliability and performance of the wireless network.

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

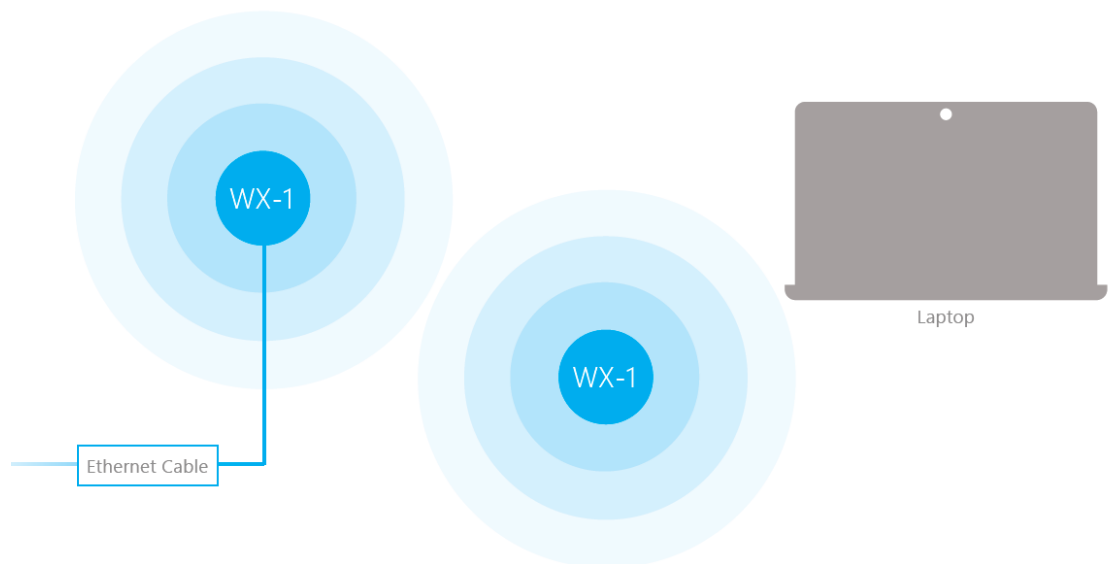
- **Access Point Mode:** This is the typical configuration for most Wi-Fi networks, as shown below.



- **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 WX-1x 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 bridge access point, a repeater access point sends out Wi-Fi so that client devices can connect to it wirelessly.



The functionality of the WX-1x changes depending on its operating mode. This manual offers both general and mode-specific content.

System Requirements

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

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

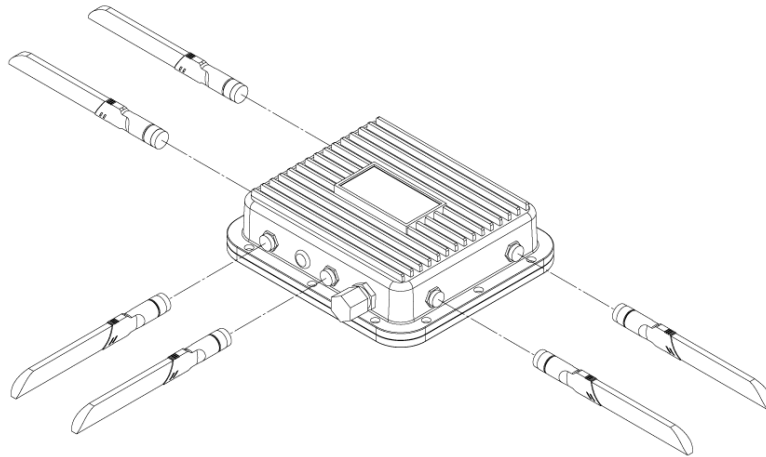
Hardware Installation

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

WX-1-O Installation

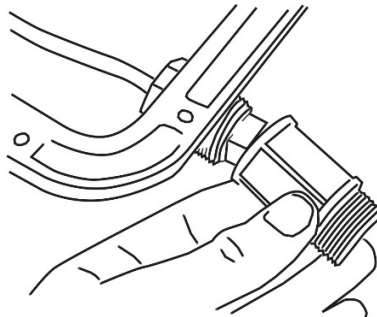
1. Place the unit in an appropriate place using the mounting kit.
2. Run an Ethernet cable to the device and plug one end into the WX-1-O access point.
3. Plug the other end of the Ethernet cable into a PoE+ injector or PoE+ Switch.
4. The LED lights will begin to light up and indicate that WAP is connected.
5. Once the WAP fully boots up, you may log into the WAP and configure the settings.

Antennas

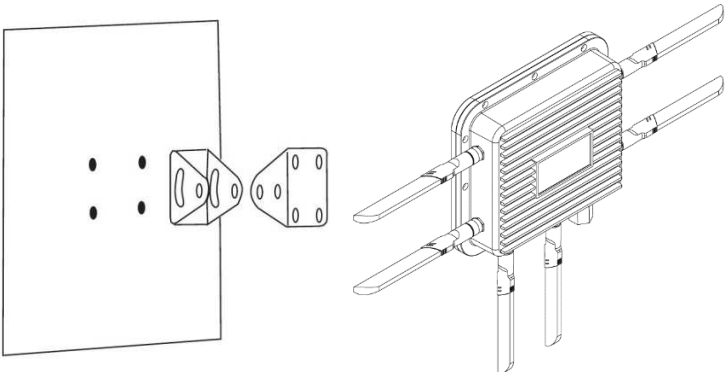


Weather Proof RJ-45

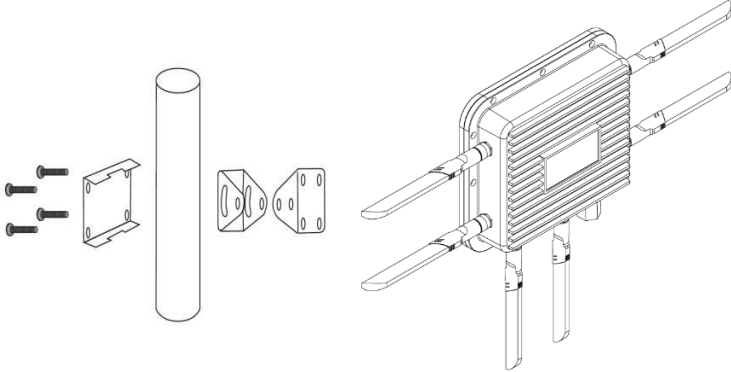
Be sure to run the Ethernet cable through the plastic element, and seal it tightly to insure weather-proofing.



Wall Mounting



Pipe Mounting

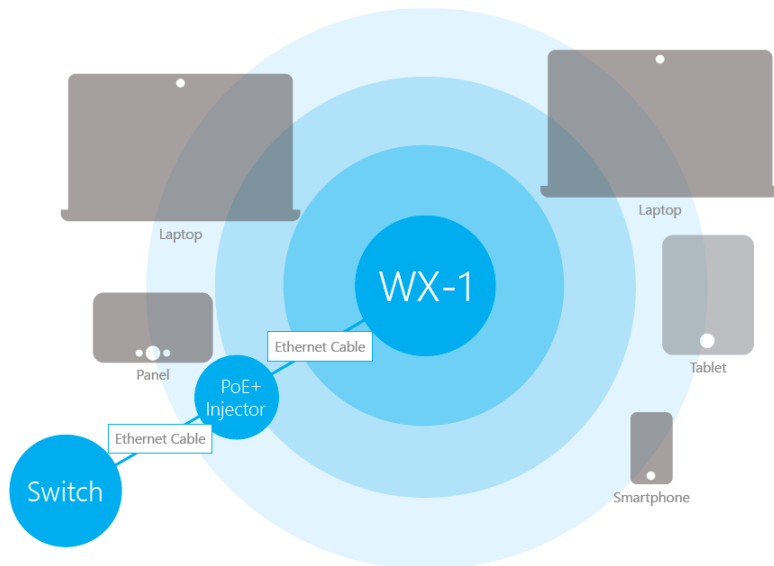


Power Method for the WX-1x

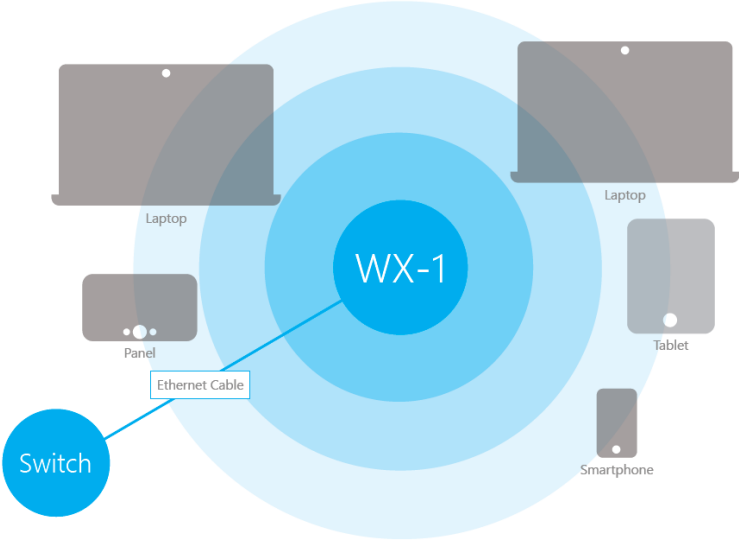
The diagrams below show using a PoE+ injector or a PoE+ switch to power the WX-1x.

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

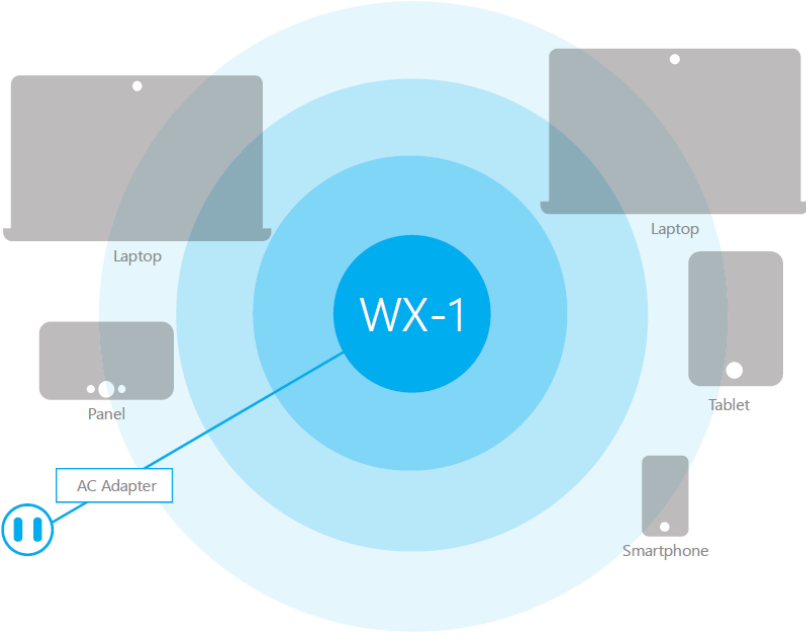
Power via PoE+ Injector



Power via PoE+ Switch



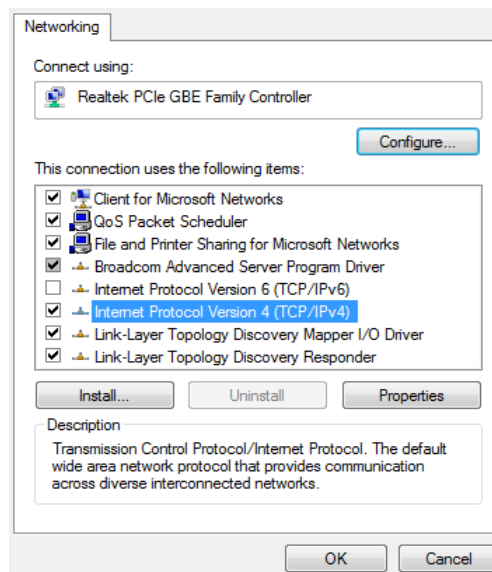
Power using the included power adapter



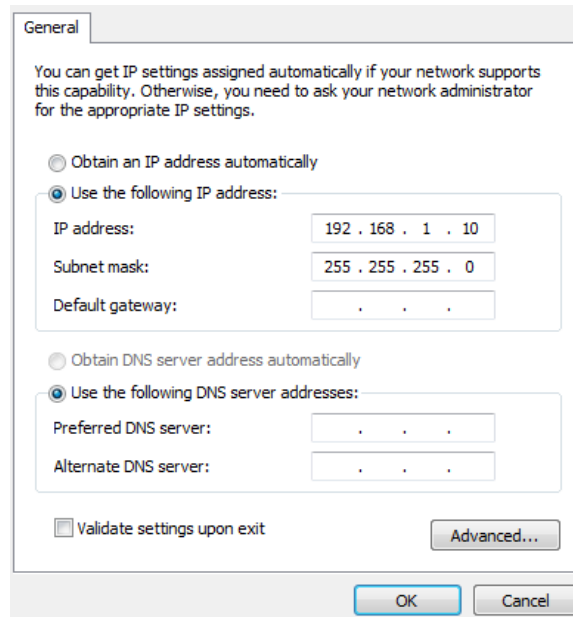
The WX-1x can be configured in several modes: Access Point, WDS Root Access Point, WDS Repeater or WDS Bridge. When shipped from the factory, the WX-1x is set to Access Point mode. The default IP address of the WX-1x is **192.168.1.250** and username/password of **pakedge/pakedgea**.

In order to log into the WX-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 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.

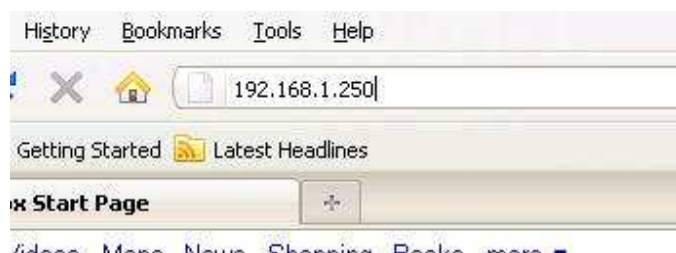


3. Select **Use the following IP Address** and type the IP address and subnet mask, as in the example below. (Be sure the IP address and subnet mask are on the same subnet as the WX-1x.)

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

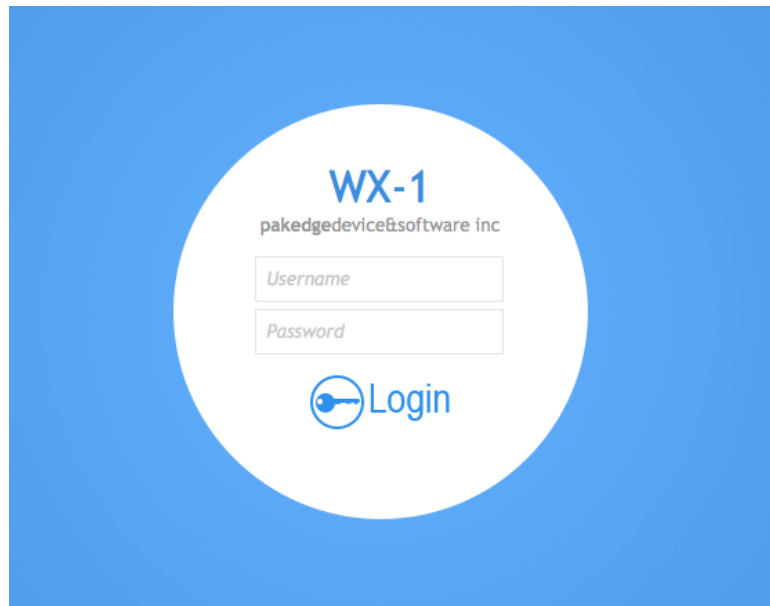
WX-1x Start Up

To configure the WX-1x through a web browser, type the IP address of the WX-1x (default **192.168.1.250**) and press **Enter**.



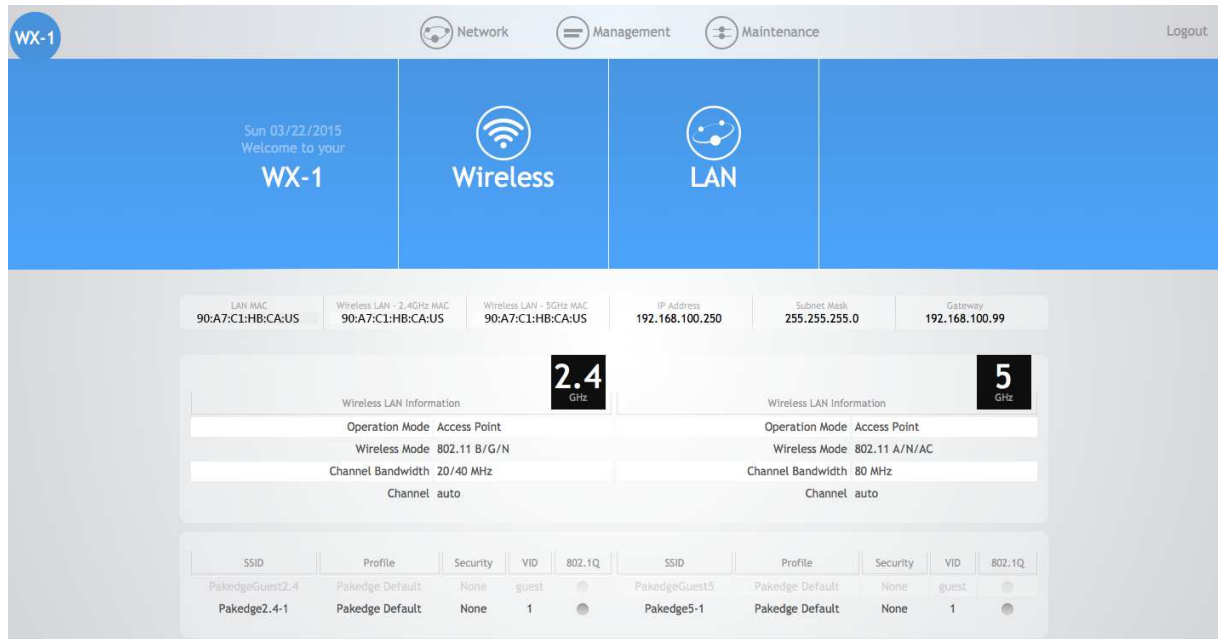
NOTE: Make sure the WX-1 and your computer are configured on the same subnet. To configure the IP address of your computer, follow the steps in the previous section.

The WX-1x login dialog appears.



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

The WX-1x main menu appears (see figure below). The main menu displays the current status of WX-1x 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 WX-1x supports multiple SSIDs along with details and security settings for each SSID.



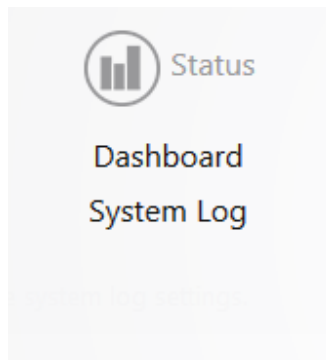
Menu Options



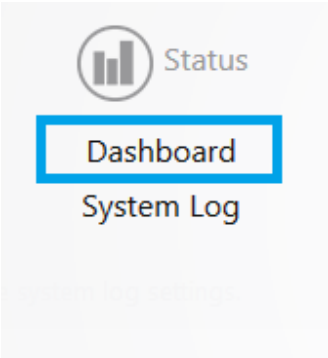
The navigation bar on the top of the window comes with 4 options:

- **Status:** Shows the dashboard and logs of the WX-1x access point. The dashboard is the default page that comes up when you log into the WX-1x 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.

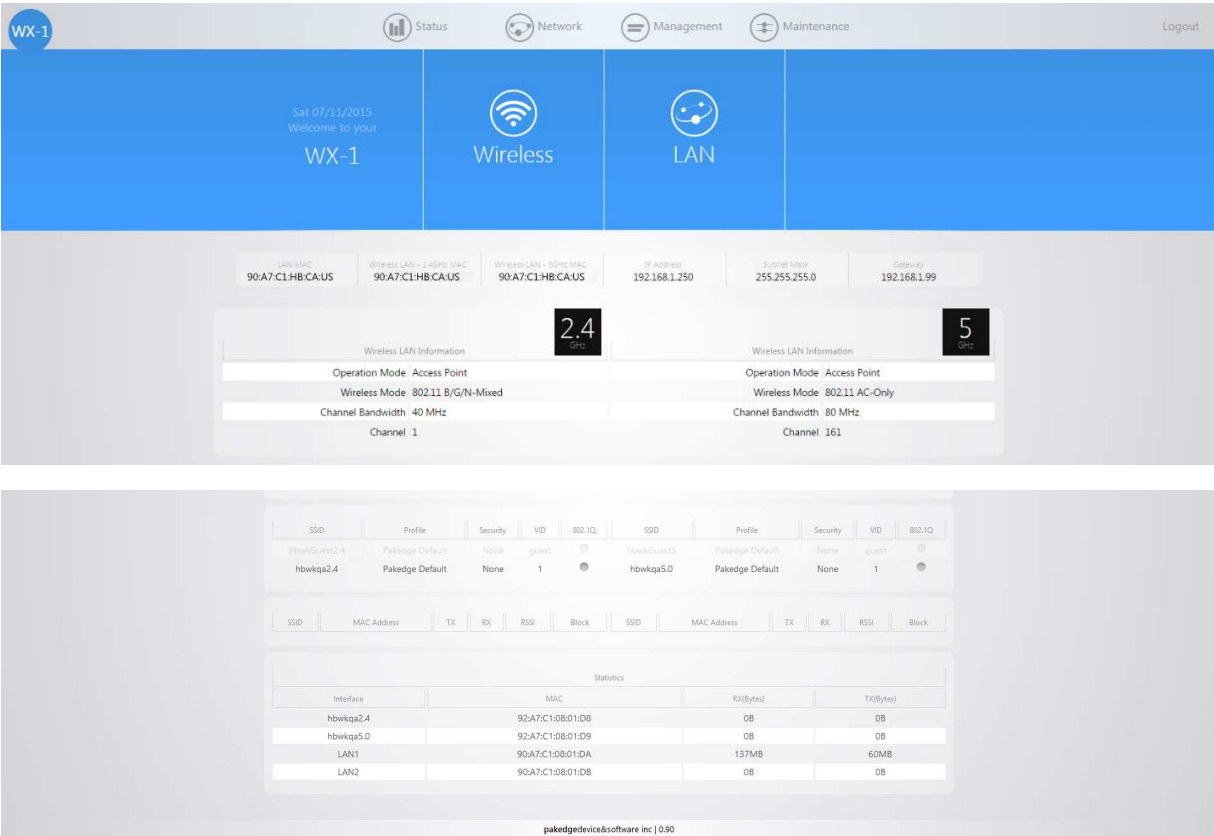
Status



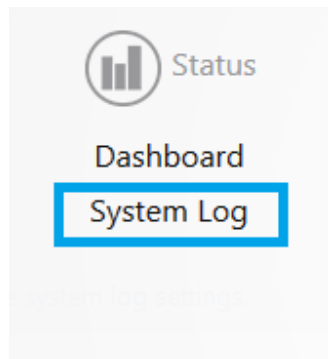
Dashboard



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.

A screenshot of the 'System Log' configuration page. The page title is 'System Log' and it includes the text 'This page allows you to configure system log settings.' Below this is a form with three input fields: 'System log buffer size' with the value '10240', 'External system log server' with the value '0.0.0.0', and 'External system log server port' with the value '514'. There is a checkbox labeled 'Buffer size is in KB' which is checked. At the bottom of the form are two buttons: 'Download' and 'Apply'.

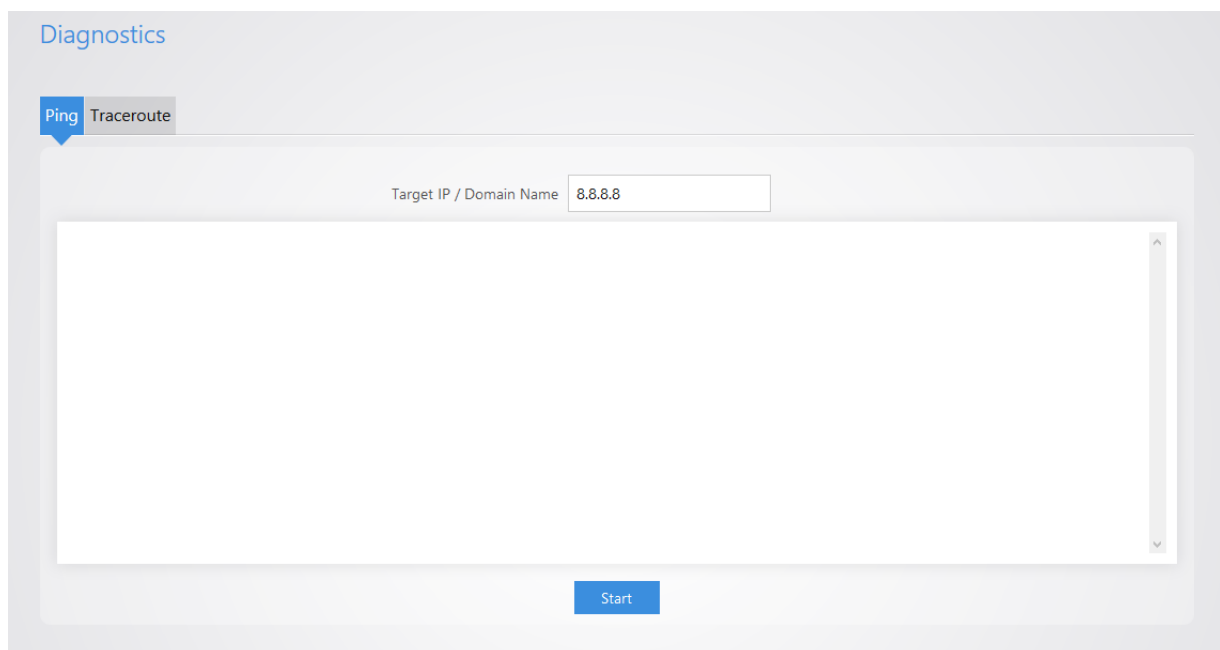
- **System log buffer size:** Maximum value of the buffer is 10240 KB (10MB), which is also the default setting.
- **External system log server:** An external server may be set up to receive log activity. Enter the IP address of the external server.
- **External system log port:** A port number for the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

Network



Ping

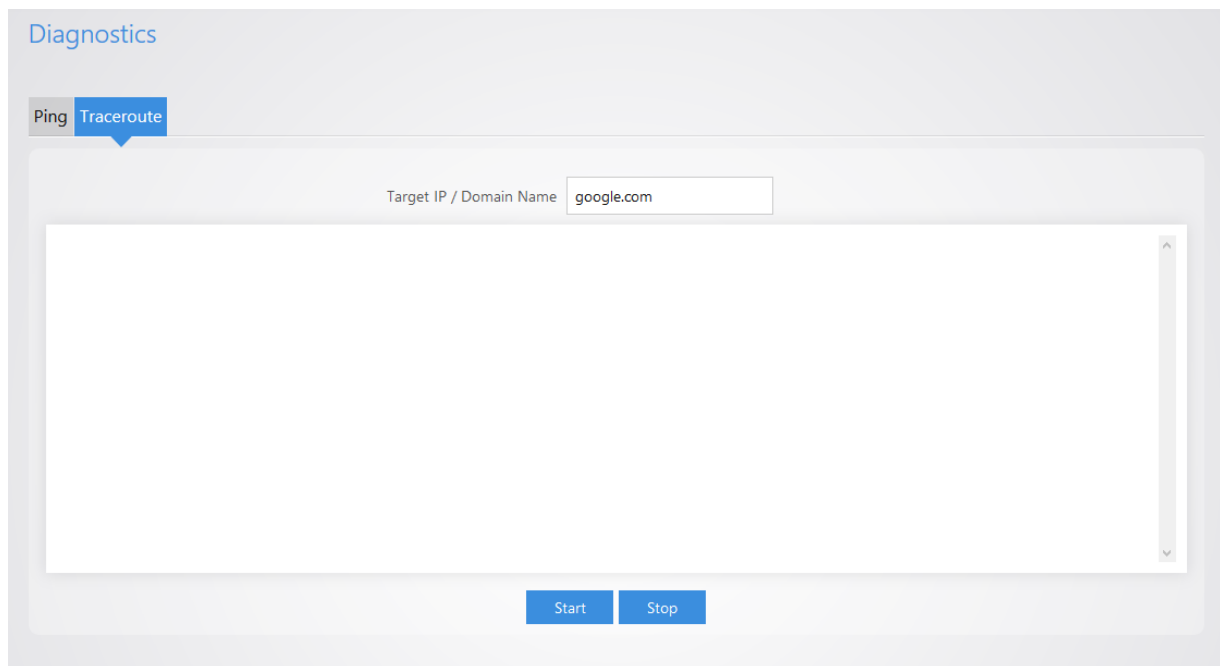
Hover over **Management** and click on **Diagnostics**. You will be directed to the ping test under the **Ping** tab:



- 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 WX-1x 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.

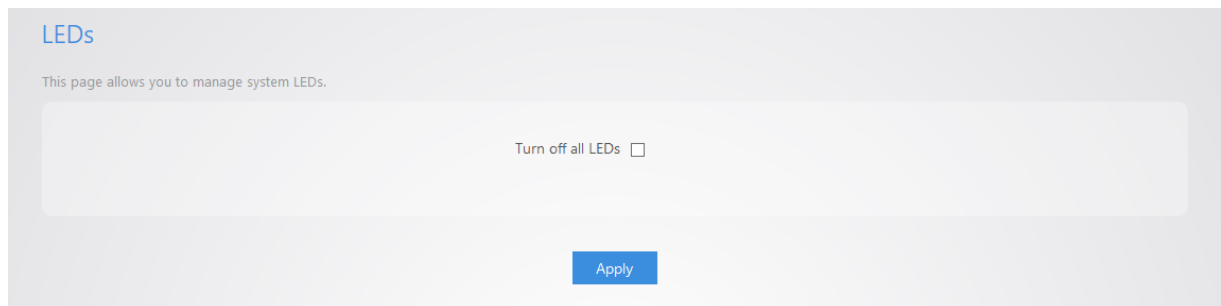
A screenshot of the 'SNMP' configuration page. The page title is 'SNMP'. Below the title is a descriptive sentence: 'SNMP is a standard TCP/IP protocol for network management.' There are three input fields: 'Location' with the value 'MyLocation', 'Contact' with the value 'MyContact', and 'Description' with the value 'Pakedge WK-1 WAP'. At the bottom center of the form is a blue 'Apply' button.

- **Location:** Enter the physical location of the WX-1x 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 WX-1x WAP.

LEDs

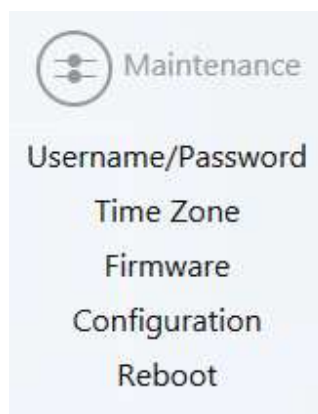


Hover over **Management** and click on LEDs.

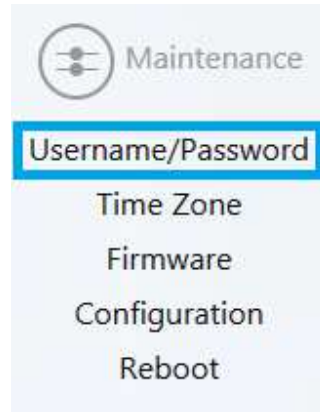


- **Turn off all LEDs:** Check to turn LEDs off.

Maintenance



Username/Password



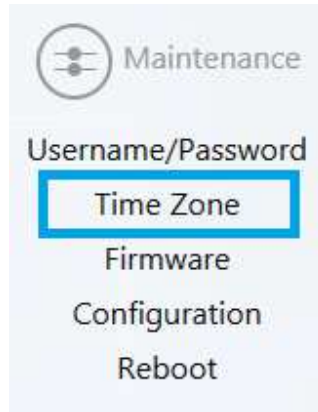
Hover over **Maintenance** and click on **Username/Password**. You can change the username and password for the device here.

Administration

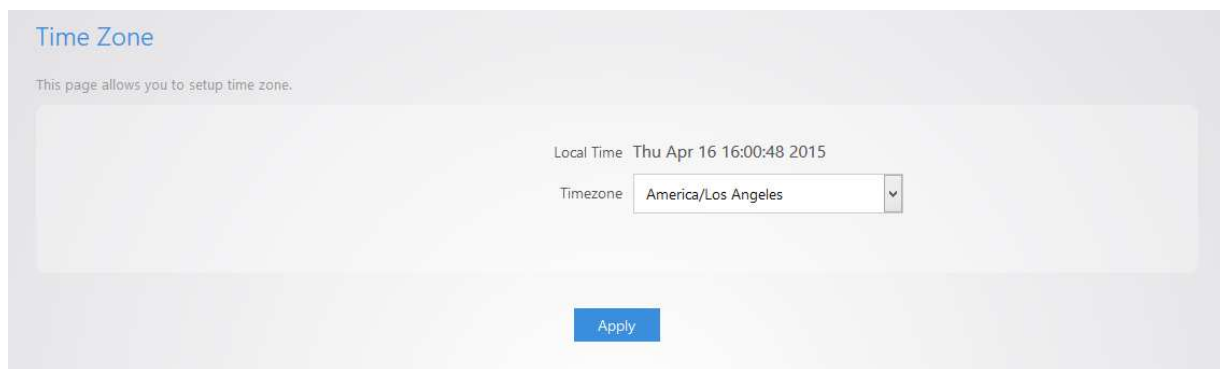
Change the administrative username/password for the device.

Administrator Username	<input type="text" value="pakedge"/>
Current Password	<input type="password"/>
New Password	<input type="password"/>
Verify Password	<input type="password"/>

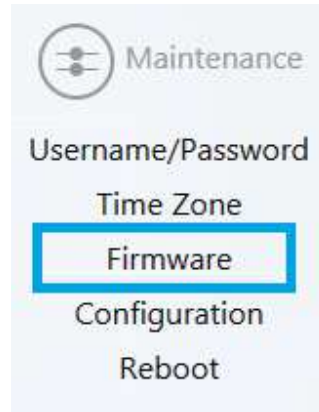
Time Zone



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

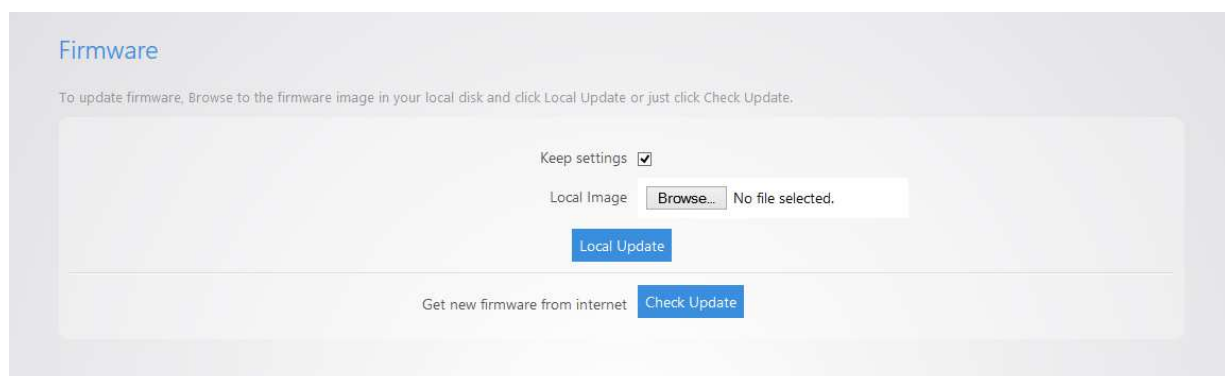


Firmware

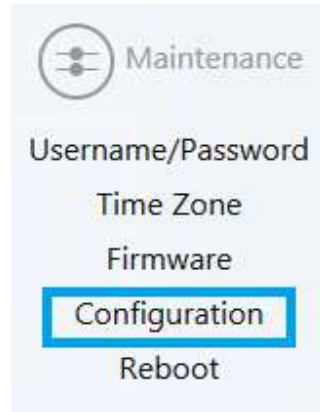


Allows you to update the firmware for the unit.

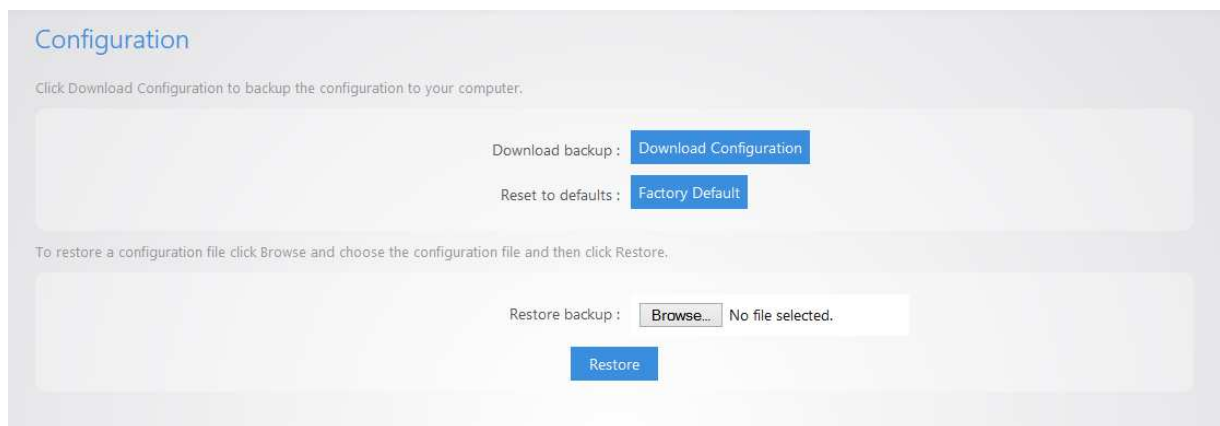
- **Keep Settings:** Selecting this will preserve your current configurations after the firmware update.
- **Local Image:** Click Choose File to select the firmware file.
- **Local Update:** Updates the firmware with the file you selected.
- **Check Update:** This feature will only work if the WX-1x is connected to the internet.



Configuration



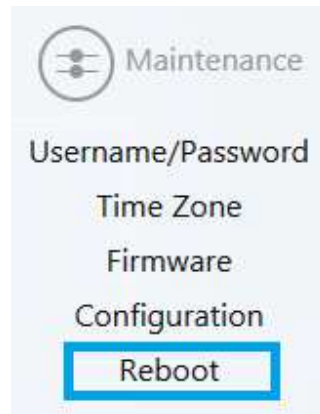
Hover over **Maintenance** and click on **Configuration**:



- **Download backup:** Click Download Configuration to save and export the current settings of the WX-1x.
- **Reset to defaults:** Click Factory Default to reset the the WX-1x back to its factory default settings.
- **Restore backup** – Load a configuration file using the Browse button to restore the WX-1x 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
- 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 \pm 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

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
 - Operating: 0°C to 45°C (32° to 113°F)
 - Storage: -20°C to 60°C (-4F° to 140°F)
- Humidity (non-condensing)
 - Operating: 90% or less
 - Storage: 90% or less

MECHANICAL

Enclosure: 9.81 inches X 7.05 inches

- Depth: 1.51 inches
- Base 7.76 inches X 5.55 inches

Appendix B – Accessory List

WX-1

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

WX-1-O

- Quick Start Guide
- CAT5e cable
- External outdoor antennas
- Waterproof RJ45 plastic protector
- Mounting bracket

B-WX-1 In Ceiling Bracket

- B-WX-1 In-Ceiling/In-Wall Bracket
- Installation Guide
- Installation screws

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 WX-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. 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.

Federal Communication Commission Interference Statement

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 installation. 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This device meets all the other requirements specified in Part 15E, Section 15.407 of the FCC Rules.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 22cm between the radiator & your body.

Professional installation instruction

1. Installation personal

This product is designed for specific application and needs to be installed by a qualified personal who has RF and related rule knowledge. The general user shall not attempt to install or change the setting.

2. Installation location

The product shall be installed at a location where the radiating antenna can be kept 22cm from nearby person in normal operation condition to meet regulatory RF exposure requirement.

3. External antenna

Use only the antennas which have been approved by the applicant. The non-approved antenna(s) may produce unwanted spurious or excessive RF transmitting power which may lead to the violation of FCC limit and is prohibited.

4. Installation procedure

Please refer to user's manual for the detail.

5. Warning


Please carefully select the installation position and make sure that the final output power does not exceed the limit set force in relevant rules. The violation of the rule could lead to serious federal penalty.


Safety Precautions:


- Suitable for use in environmental air space in accordance with Section 300.22.C of National Electrical Code, and Sections 2-128, 12-010(3) and 12-100 of the Canadian Electrical Code, Part 1, C22.1. (Marking or Instruction)
- 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 WX-1-O 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/adaptor 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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