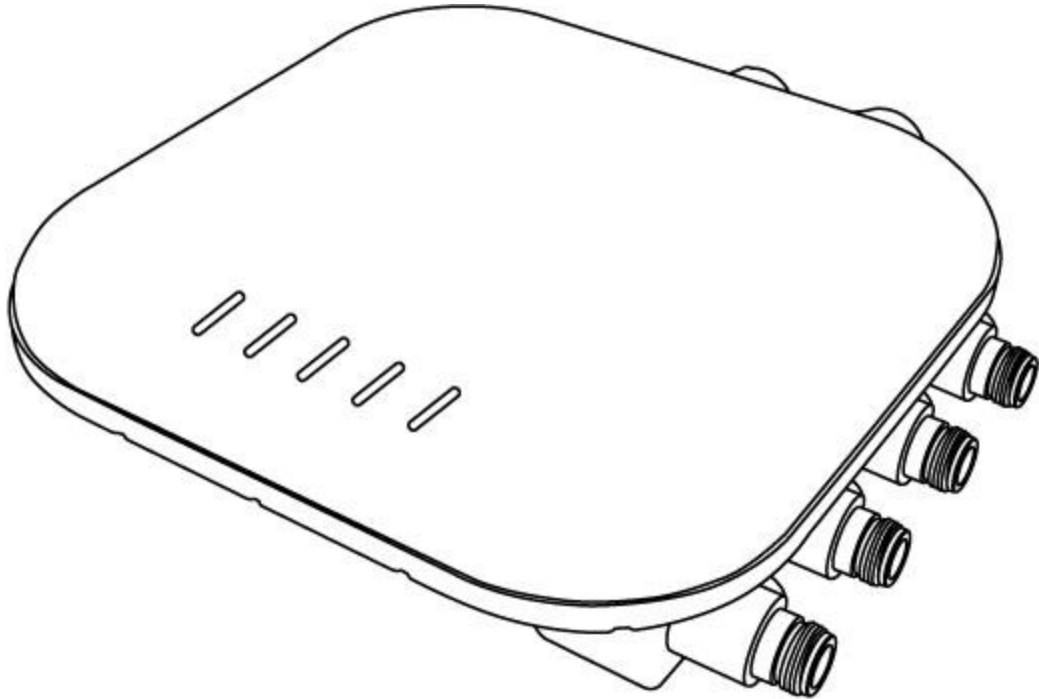


# Outdoor Enterprise Access Point



**WM-OAP8251AG**

## User Manual

Version 1.0

Document Part Number: 91711110100E

# Preface

## Copyright Notice

No part of this document may be reproduced, copied, translated, or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the prior written permission of the original manufacturer.

## Trademark Acknowledgement

Brand and product names are trademarks or registered trademarks of their respective owners.

## Disclaimer

We reserve the right to make changes, without notice, to any product, including circuits and/or software described or contained in this manual in order to improve design and/or performance. We assume no responsibility or liability for the use of the described product(s) conveys no license or title under any patent, copyright, or masks work rights to these products, and make no representations or warranties that these products are free from patent, copyright, or mask work right infringement, unless otherwise specified. Applications that are described in this manual are for illustration purposes only. We make no representation or guarantee that such application will be suitable for the specified use without further testing or modification.

## Warranty

Our warranty guarantees that each of its products will be free from material and workmanship defects for a period of one year from the invoice date. If the customer discovers a defect, we will, at his/her option, repair or replace the defective product at no charge to the customer, provide it is returned during the warranty period of one year, with transportation charges prepaid. The returned product must be properly packaged in its original packaging to obtain warranty service. If the serial number and the product shipping data differ by over 30 days, the in-warranty service will be made according to the shipping date. In the serial numbers the third and fourth two digits give the year of manufacture, and the fifth digit means the month (e. g., with A for October, B for November and C for December).

For example, the serial number 1W15Axxxxxxx means October of year 2015.

## Customer Service

We provide a service guide for any problem by the following steps: First, visit the website of our distributor to find the update information about the product. Second, contact with your distributor, sales representative, or our customer service center for technical support if you need additional assistance.

You may need the following information ready before you call:

- Product serial number
- Software (OS, version, application software, etc.)
- Detailed description of the problem
- The exact wording of error messages

In addition, free technical support is available from our engineers every business day. We are always ready to give advice on application requirements or specific information on the installation and operation of any of our products.

## Advisory Conventions

Four types of advisories are used throughout the user manual to provide helpful information or to alert you to the potential for hardware damage or personal injury. These are Notes, Important, Cautions, and Warnings. The following is an example of each type of advisory.



### **NOTE:**

A note is used to emphasize helpful information

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### **IMPORTANT:**

An important note indicates information that is important for you to know.

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### **CAUTION/ ATTENTION**

A Caution alert indicates potential damage to hardware and explains how to avoid the potential problem.

Une alerte d'attention indique un dommage possible à l'équipement et explique comment éviter le problème potentiel.

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### **WARNING!/ AVERTISSEMENT!**

An Electrical Shock Warning indicates the potential harm from electrical hazards and how to avoid the potential problem.

Un Avertissement de Choc Électrique indique le potentiel de chocs sur des emplacements électriques et comment éviter ces problèmes.

---

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### **ALTERNATING CURRENT / MISE À LE TERRE!**

The Protective Conductor Terminal (Earth Ground) symbol indicates the potential risk of serious electrical shock due to improper grounding.

Le symbole de Mise à Terre indique le risqué potentiel de choc électrique grave à la terre incorrecte.

---

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## Federal Communications Commission Radio Frequency Interface 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/ FCC ATTENTION**

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

Tout changement ou modification non expressément approuvé par la partie responsable de la conformité peut annuler l'autorisation de l'utilisateur d'utiliser cet équipement.

---

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.

### IMPORTANT NOTE:

### 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 41 cm between the radiator & your body.

## CE Interference Statement



### 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
- **EN50385**  
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.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.

## Safety Information

For your safety carefully read all the safety instructions before using the device. All cautions and warnings on the equipment should be noted. Keep this user manual for future reference.



### CAUTION/ATTENTION

Do not cover the openings!

Ne pas couvrir les ouvertures!

---

**\*Let service personnel to check the equipment in case any of the following problems appear:**

- The power cord or plug is damaged.
  - Liquid has penetrated into the equipment.
  - The equipment has been exposed to moisture.
  - The equipment does not work well or you cannot get it to work according to the user manual.
  - The equipment has been dropped and damaged.
  - The equipment has obvious signs of breakage.
  - Do not leave this equipment in an uncontrolled environment where the storage temperature is below -20°C (-4°F) or above 60°C (140°F). It may damage the equipment.
- 



### CAUTION/ATTENTION

Use the recommended mounting apparatus to avoid risk of injury.

Utiliser l'appareil de fixation recommandé pour éliminer le risque de blessure.

---



### WARNING! / AVERTISSEMENT!

Only use the connection cords that come with the product. When in doubt, please contact the manufacturer.

Utiliser seulement les cordons d'alimentation fournis avec le produit. Si vous doutez de leur provenance, contactez le fabricant.

---



### WARNING! / AVERTISSEMENT!

Always ground yourself against electrostatic damage to the device.

Toujours vérifier votre mise à la terre afin que l'équipement ne se décharge pas sur vous.

---

## Professional Installation Instruction

### 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 these settings.

### Installation Location

The product shall be installed at a location where the radiating antenna can be kept 41cm from nearby person in normal operation condition to meet regulatory RF exposure requirement.

### External Antenna

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

### Installation Procedure

Please refer to user's manual for details on proper installation methods.



#### **WARNING! / AVERTISSEMENT!**

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

Veuillez sélectionner soigneusement la position d'installation et veiller à ce que la puissance de sortie finale ne dépasse pas la force de consigne fixée dans les règles correspondantes. Une violation de ces règles pourrait entraîner de graves sanctions fédérales.

---

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# **About This User Manual**

This User Manual provides information about using the Winmate® Outdoor Enterprise Access Point WM-OAP8251AG.

The documentation set for the WM-OAP8251AG provides information for specific user needs, and includes:

- **The WM-OAP8251AG User Manual** – contains detailed description how to use the display, its components and features.
- **The WM-OAP8251AG Quick Start Guide** – describes how to get your WM-OAP8251AG up and running.



**NOTE:**

Some pictures in this guide are samples and can differ from actual product.

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## **Revision History**

| Version | Date        | Note                |
|---------|-------------|---------------------|
| 1.0     | 15-Nov-2016 | Preliminary release |

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## Introduction

This chapter provides the WM-OAP8251AG Outdoor Enterprise Access Point product overview, describes its features and hardware specifications.



# Chapter 1: Introduction

This chapter provides the Outdoor Enterprise Access Point WM-OAP8251AG product overview, describes its features and hardware specifications.

## **1.1 Overview**

Thank you for choosing the Winmate® Outdoor Enterprise Access Point. The WM-OAP8251AG is an enterprise class, outdoor dual radio 2.4G (11n) and 5G (11ac Wave2) concurrent 4x4 MU-MIMO access point with built-in internal antenna. The device has two Ethernet ports and one of it is a PSE port that supplies power to the remote unit. With certified IP67 protection, Winmate® Outdoor Enterprise Access Point is designed to deliver high reliability under harsh outdoor environment.

## **1.2 Product Features**

Wimate® Outdoor Enterprise Access Point WM-OAP8251AG offers the following features:

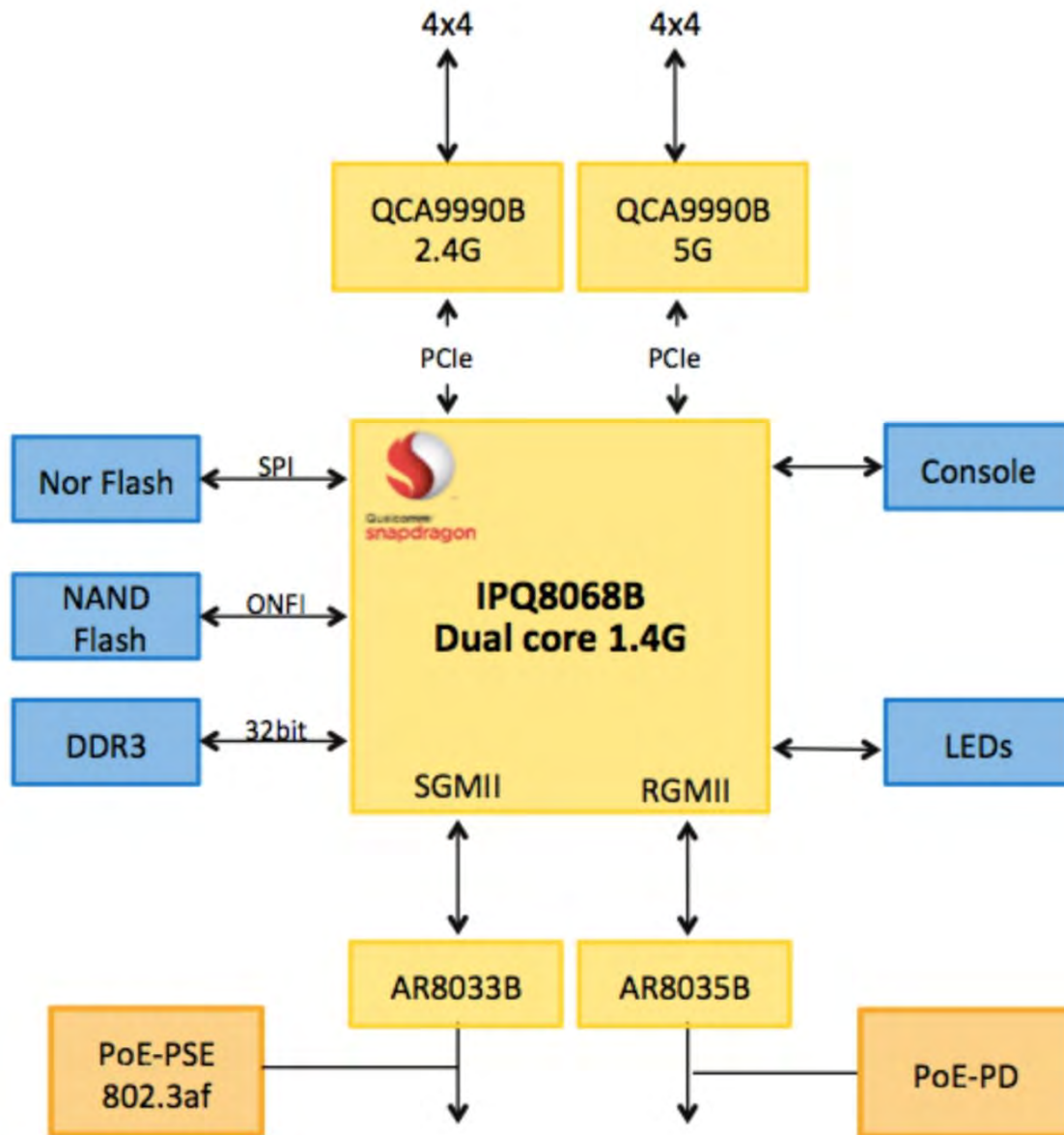
- Main Chip:
  - Processor: Qualcomm QCA8068B, dual core, 1.4GHz
  - Radios 4x4 dual band dual concurrent
    - Radio 1: QCA9990B 4x4 to support 2.4GHz
    - Radio 2: QCA9990B 4x4 to support 5GHz
  - Ethernet PHY: AR8035B\*1 + AR8033B\*1 (Industrial graded components)
- Available interface:
  - 2 x Gigabit Ethernet (RJ45)
  - 1 x Console (RJ45)
  - LEDs
  - Gore vent for pressure equalization
  - N-type connectors for external antenna model
- IP67 compliance enclosure design
- Ethernet surge protection support (4KV)
- OAP8251AG can be powered with 802.3at+ (60W) Power Source on the 1st LAN port (PD) and provide power to other device through the 2nd LAN port (PSE).
- Max power consumption is < 55W when operating as OAP8251AG and providing 802.3af power on 2<sup>nd</sup> LAN
- Pole mount and wall mount locking mechanism

## 1.3 Hardware Specifications

|                         |                           | Model Name                                                                                                                                     |
|-------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
|                         |                           | WM-OAP8251AG                                                                                                                                   |
| Hardware Specifications | Standard                  | Dual band dual radio (Concurrent)                                                                                                              |
|                         | Main Chip                 | MCU: Qualcomm QCA8068B<br>RF: Qualcomm QCA9990B*2<br>GE Ethernet PHY: AR8035B + AR8033B                                                        |
|                         | Memory                    | Flash: <ul style="list-style-type: none"> <li>NAND flash 512MB (Optional)</li> <li>SPI NOR flash 32MB</li> </ul> DDR3: 512MB*2 (Note: 1G max.) |
|                         | Physical Interface        | 2 x RJ-45 for 10/100/1000 Gigabit Ethernet<br>8 N-Type connector<br>1 x RJ-45 console port<br>5 x LEDs                                         |
|                         | Surge Protection          | EN 61000-4-5 (4KV surges in the ant) (optional)<br>EN 55024 (4KV surges line to ground)                                                        |
|                         | Power Requirements        | PD: IEEE 802.at+ compliance<br>PSE: IEEE 802.3af                                                                                               |
| Mechanical Environment  | Temperature Range         | Operating -30°C~60°C<br>Storage -40°C to 70°C (-22°F to 158°F)                                                                                 |
|                         | Humidity (non-condensing) | 5%~90% typical                                                                                                                                 |
|                         | Enclosure Design          | IP67                                                                                                                                           |
|                         | Wind Survivability        | Up to 145mph (232kph)                                                                                                                          |
|                         | Dimensions (L x W x H)    | 210mm x 210mm x 51mm                                                                                                                           |
|                         | Weight                    | 2.0 kg                                                                                                                                         |
| Accessory List          | PoE Adapter               | EAP5006GAT                                                                                                                                     |
|                         | Bracket (Optional)        | Wall Mount, Pole Mount                                                                                                                         |
|                         | Cable (Optional)          | Grounding cable (Green) AWG10 180cm                                                                                                            |
| Compliance Standard     | Safety                    | EN60950-1, EN60950-22 (Capable but not certified)<br>UL/cUL 60950-1, 60950-22 (Capable but not certified)                                      |
|                         | Radio Approvals           | FCC Part 15.247, 15.407<br>CE EN300.328, EN301.893                                                                                             |
| Maximum Output Power    | Maximum Output Power      | 2.4GHz: 27.88dBm<br>5GHz Band 1: 24.84dBm<br>5GHz Band 4: 27.36dBm                                                                             |

## 1.4 Function Block Diagram

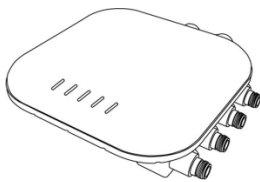
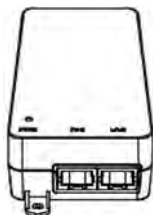
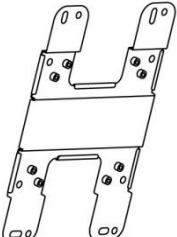
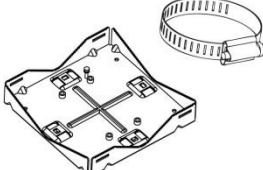
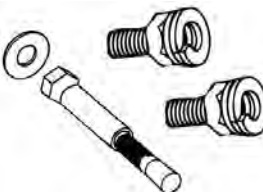
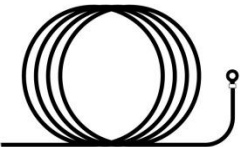
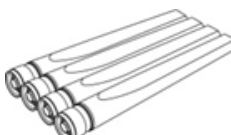
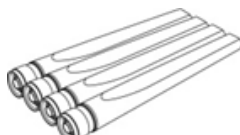
The picture below shows the WM-OAP8251AG function block diagram:



## **1.5 Package Contents**

Carefully remove the box and unpack Outdoor Enterprise Access Point WM-OAP8251AG. Please check if all the items listed below are inside your package. If any of these items are missing or damaged contact us immediately.

Standard factory shipment list includes the following items:

|                                                                                     |                                                                                     |                                                                                      |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|    |    |    |    |
| <b>Access Point<br/>WM-OAP8251AG</b>                                                | <b>Quick Start Guide<br/>(Hardcopy)</b>                                             | <b>User Manual<br/>EzMaster<br/>Software &amp; User<br/>Manual</b>                   | <b>PoE Injector</b>                                                                   |
|   |   |   |   |
| <b>Wall Mounting Kit</b>                                                            | <b>Pole Mounting Kit</b>                                                            | <b>Mounting Screws<br/>and Bolts</b>                                                 | <b>Ground Cable<br/>(Green)<br/>AWG10 180cm</b>                                       |
|  |  |  |  |
| <b>Power Adapter</b>                                                                | <b>Power Cable</b>                                                                  | <b>2.4GHz Detachable<br/>Antennas x 4</b>                                            | <b>5GHz Detachable<br/>Antennas x 4</b>                                               |

## **1.6 Minimum Requirements**

- **Broadband Internet Service**  
(Cable or DSL Modem)
- **Internet Browser**  
(Internet Explorer, Safari, Firefox, Chrome, Edge)

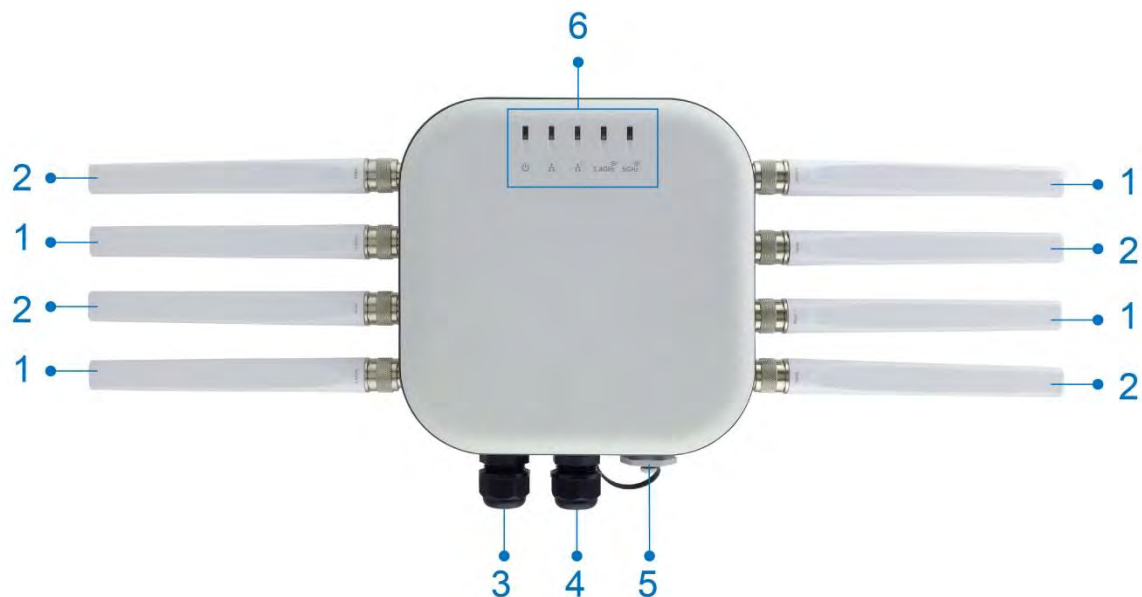
## 1.7 Appearance and Dimensions

This section includes mechanical drawing and dimensions of the WM-OAP8251AG.

*Unit dimensions (L x W x H): 210mm x 210mm x 51mm*

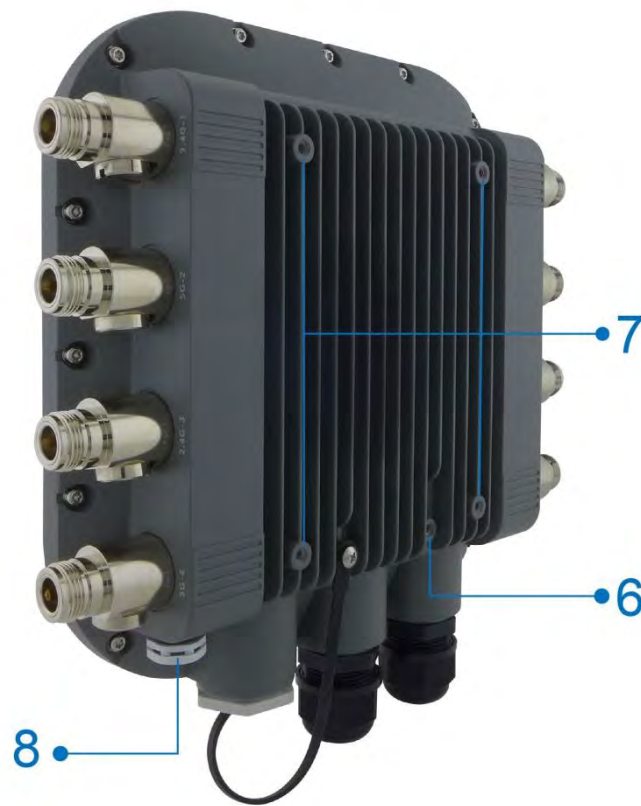
*Weight: 1.5 kg*

### Front View



| No. | Description                                                                                                   |
|-----|---------------------------------------------------------------------------------------------------------------|
| 1   | <b>2.4 GHz Antennas:</b> Detachable 5 dBi 2.4 GHz omni-directional                                            |
| 2   | <b>5 GHz Antennas :</b> Detachable 7 dBi 5 GHz omni-directional                                               |
| 3   | <b>LAN Port 1 (802.3at PoE Input):</b> Ethernet port for RJ-45 cable.                                         |
| 4   | <b>LAN Port 2 (802.3af PSE Output):</b> Ethernet port for RJ-45 cable.                                        |
| 5   | <b>Console/ Reset:</b> Console panel/ reset button.                                                           |
| 6   | <b>LED Indicators:</b> LED lights for Power, LAN Port 1, LAN Port 2, 2.4 GHz Connection and 5 GHz Connection. |

## Rear View



| No. | Description                                                                                             |
|-----|---------------------------------------------------------------------------------------------------------|
| 6   | Ground                                                                                                  |
| 7   | <b>Mounting Holes:</b> Using the provided hardware, the WM-OAP8251AG can be attached to a wall or pole. |
| 8   | Optional M12 Connector                                                                                  |

## Hardware Installation

This chapter provides information on how to use external I/O and the installation of the WM-OAP8251AG hardware.



## Chapter 2: Hardware Installation

This chapter provides information on how to install the WM-OAP8251AG Outdoor Access Point hardware.

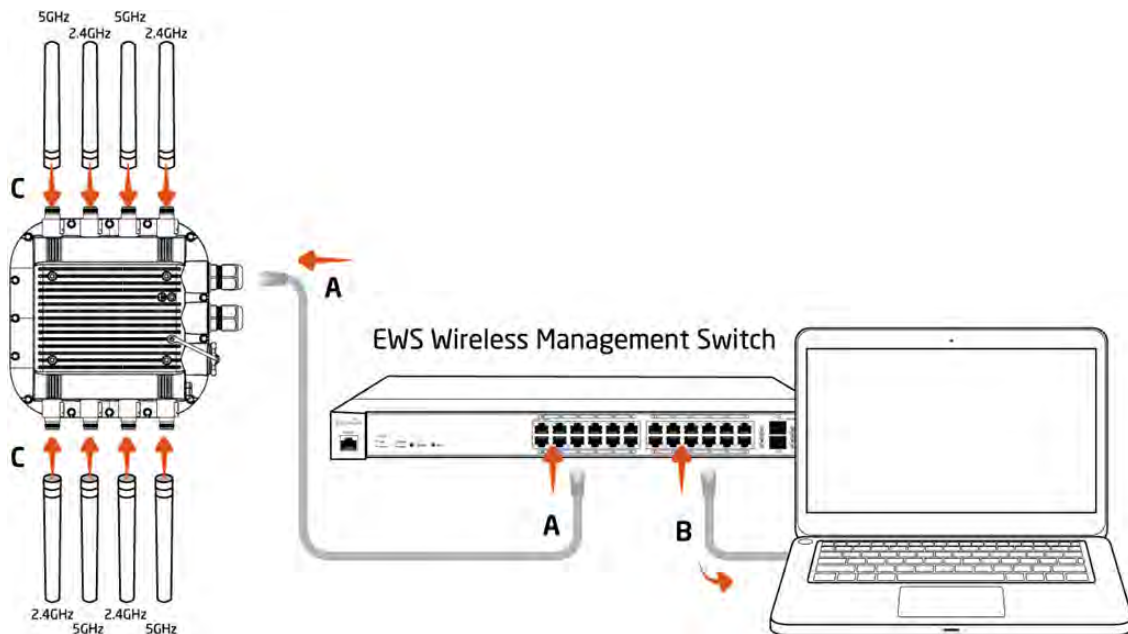
### 2.1 Connecting the Access Point

#### 2.1.1 Managed Access Point with Wireless Management Switch

This diagram depicts the hardware configuration.

Follow the instructions below to establish the connection to the Access Point.

1. Connect one end of the Ethernet Cable into the main LAN Port (PoE) of Managed Access Point and the other end to the Ethernet Port on the Wireless Management Switch.
2. Connect another Ethernet Cable into an Ethernet Port on the front panel of the WM-OAP8251AG and the other end to the Ethernet Port on the computer.
3. Screw the provided antennas to the device as shown on the illustration below.

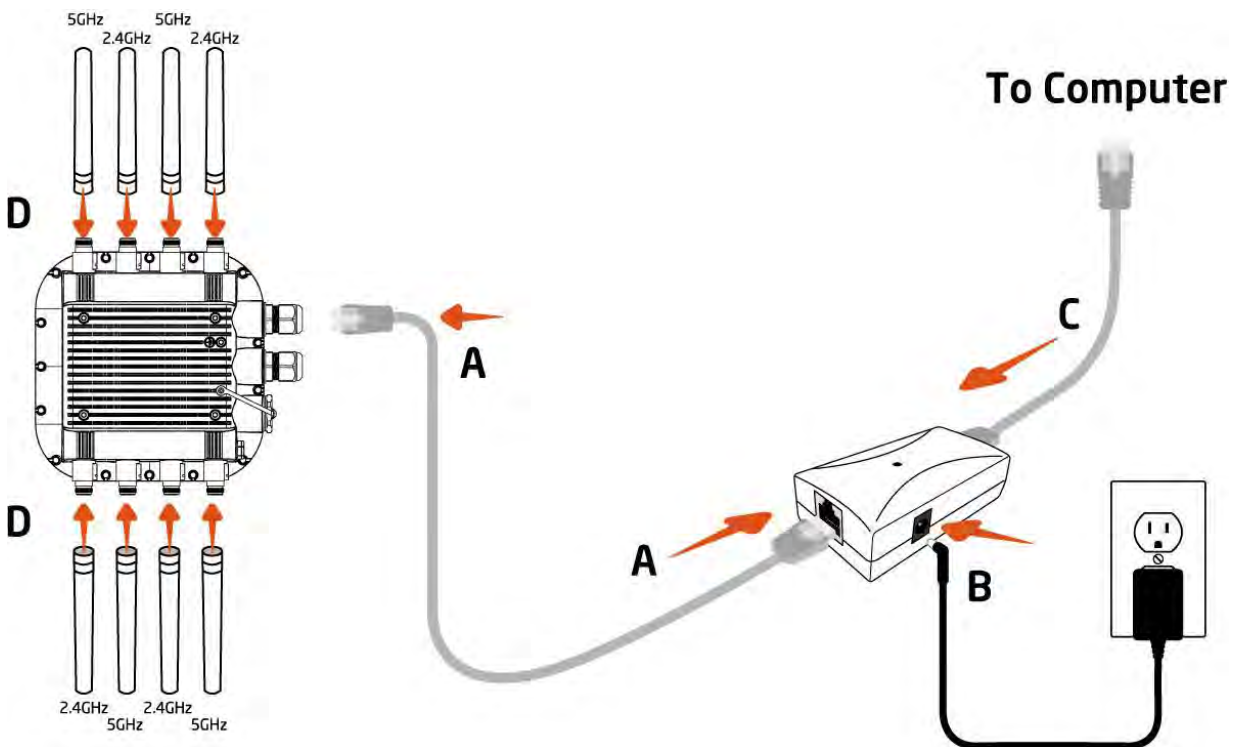
**IMPORTANT:**

The Access Point supports both IEEE 802.3at PoE (Power over Ethernet) and the included power injector. You may use either one as the power source. Do NOT use both at the same time.

## 2.1.2 Stand-alone Access point Installation

Follow the instructions below to establish the connection to the Access Point.

- A. Connect one end of the Ethernet Cable into the **main LAN Port (PoE)** of the Access Point and the other end to the **AP Ethernet Port**.
- B. Connect the **Power Adapter** to the **DC-IN port** of the PoE injector and plug the other end into an electric outlet.
- C. Connect the second Ethernet cable into the **LAN port** of the PoE injector and the other end to the Ethernet port on the computer.
- D. Screw on the provided antennas to the device as shown on the illustration below.

**IMPORTANT:**

The Access Point supports both IEEE 802.3at PoE (Power over Ethernet) and the included power injector. You may use either one as the power source.

**Do NOT use both at the same time.**

## Mounting

This chapter describes how to mount EAC-PRO Embedded Computer.



## Chapter 3: Mounting

This chapter describes how to mount the Outdoor Enterprise Access Point WM-OAP8251AG.

Outdoor Enterprise Access Point WM-OAP8251AG supports two types of mounting:

- Wall Mount
- Pole Mount

**NOTE:**

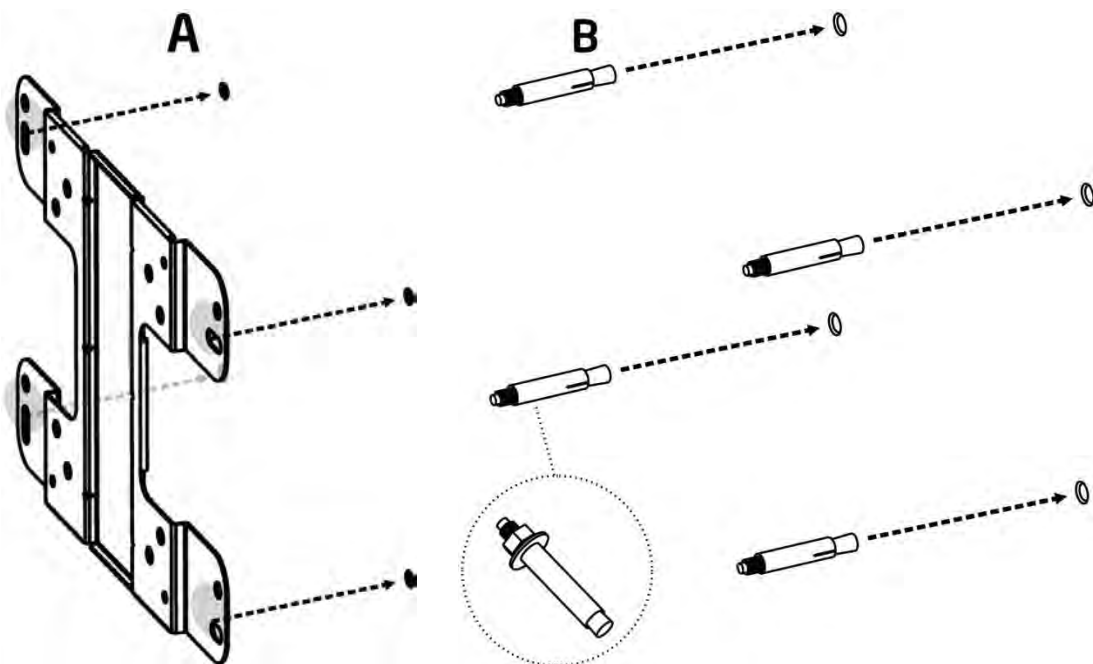
Wall and pole mounting kits are included in the package of Outdoor Enterprise Access Point WM-OAP8251AG.

---

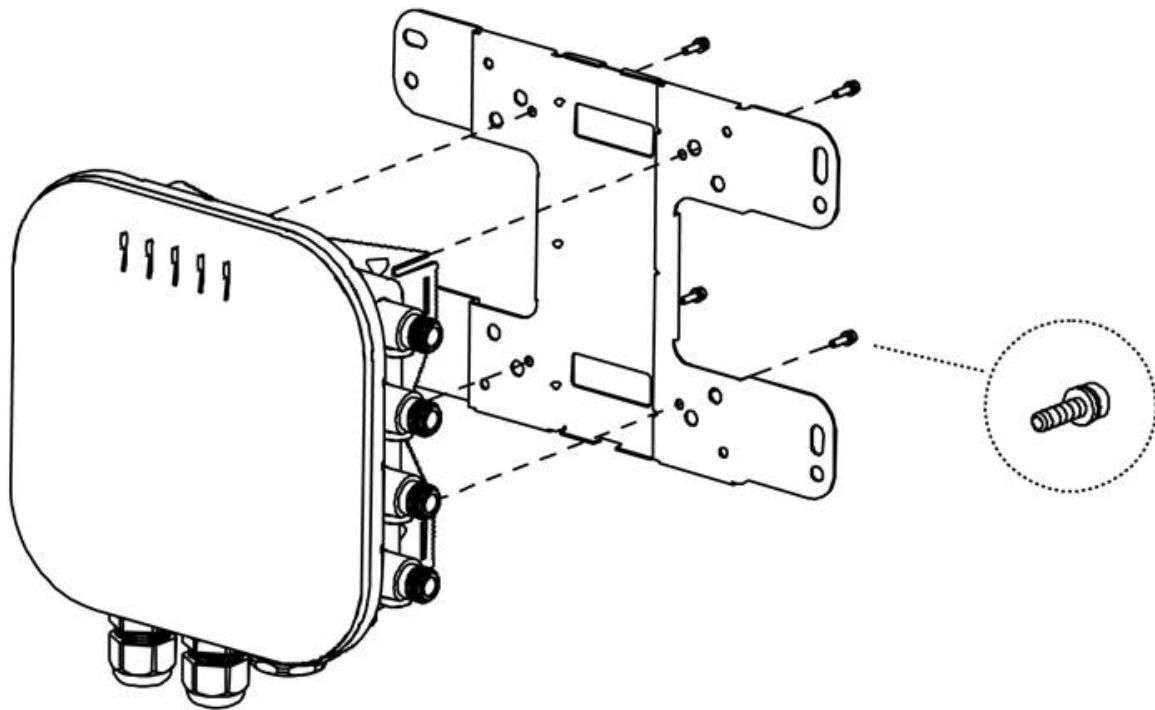
### 3.1 Wall Mounting the AP

To attach the WM-OAP8251AG to a wall using wall mounting kit:

- A. Mark the four locations of the mounting holes on the flat mounting surface.
- B. Drill a 37mm deep 8mm hole in the markings and hammer the bolts into the openings.



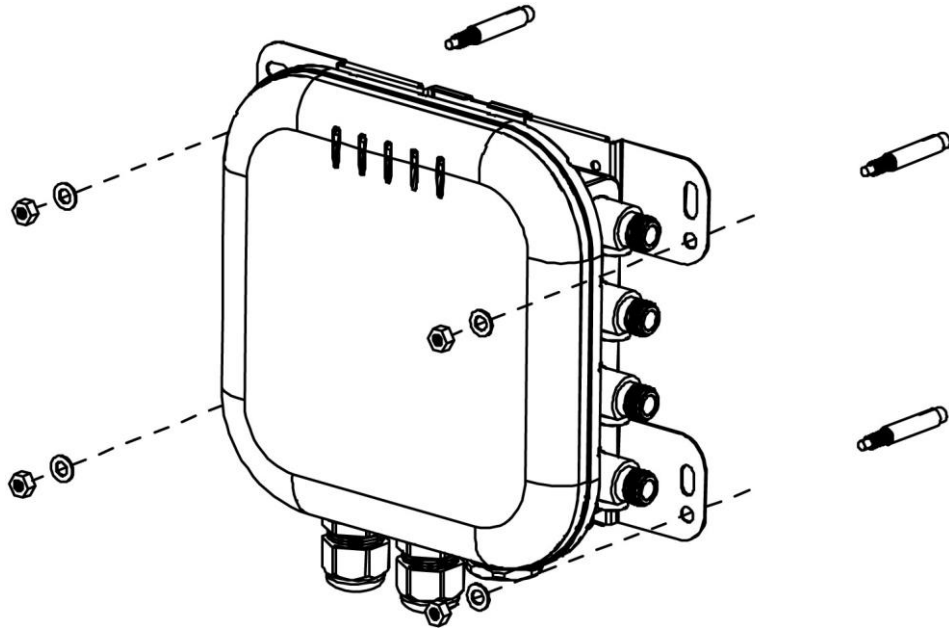
- C. Place the lock and flat washers on the four hex cap screws and drive the screws to attach the bracket to the back of the Access Point.



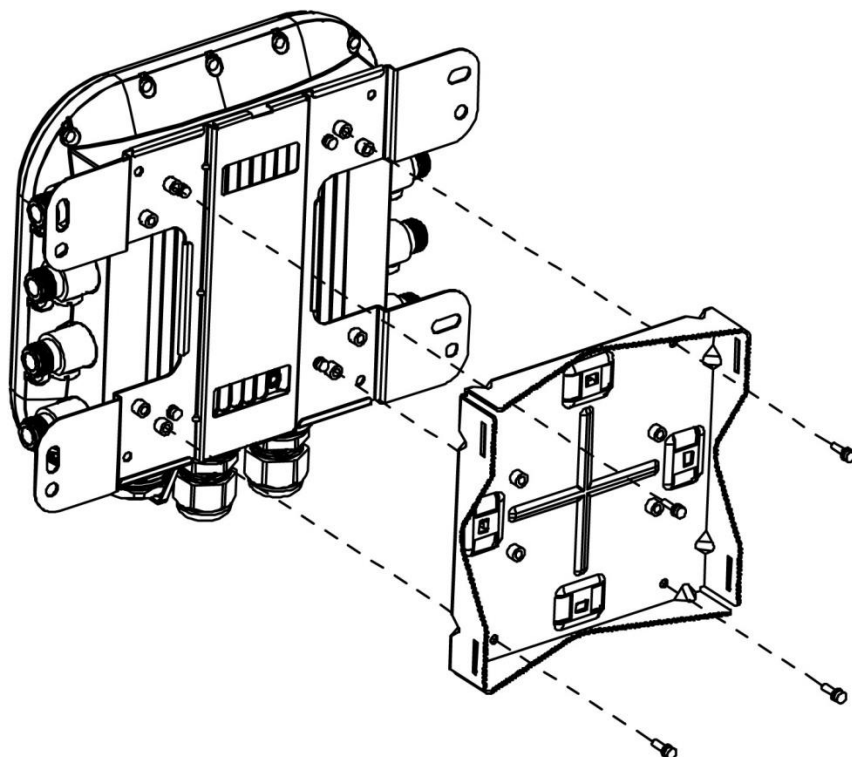
## **3.2 Pole Mount the AP**

**To attach the WM-OAP8251AG to a wall using provided pole mounting kit:**

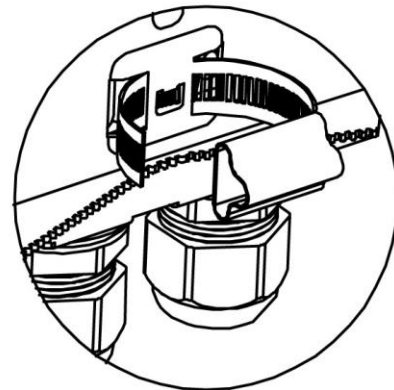
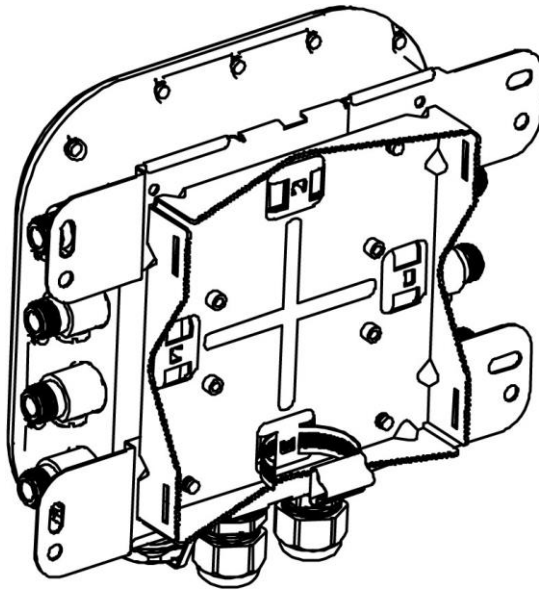
1. Attach the device onto the wall by tightening the bolt's flat washers and nuts to secure the mounting base to the mounting surface.



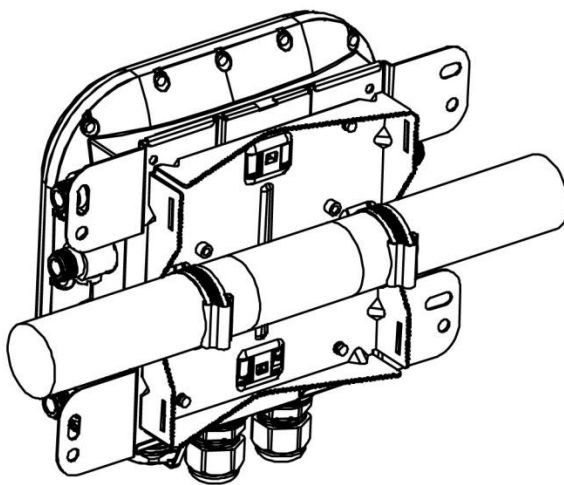
2. Drive the four round head screws to attach the Pole Mount Bracket to a Wall Mount bracket.



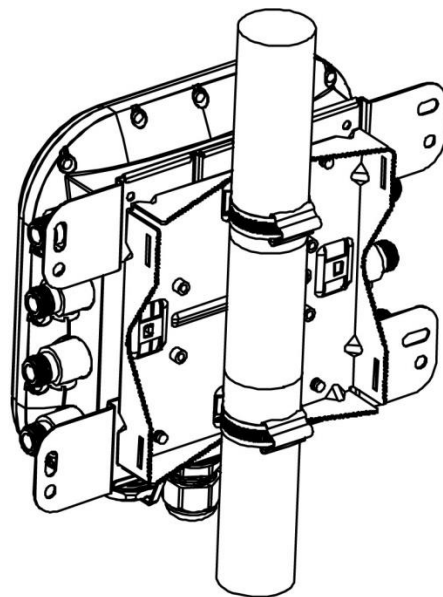
3. Thread the open end of the Pole Strap through the two tabs on the Pole Mount Bracket.



4. Lock and tighten the Pole Strap to secure the Pole Mount Bracket to the pole.



**Horizontal Placement**



**Vertical Placement**

## Configuring Your Access Point

This chapter describes how to configure Access Point using the web-based configuration interface.



## Chapter 4: Configuring Your Access Point

This chapter describes how to configure Access Point using the web-based configuration interface.

Before you begin, the device must be able to communicate with the ezMaster server for ezMaster to manage an AP or switch. Make sure that the ezMaster server, EWS AP and EWS switch can all be reachable via HTTP/HTTPS from outside your internal network.

For more information about ezMaster server settings, refer to the user manual “Distributed Network Management Solution”.

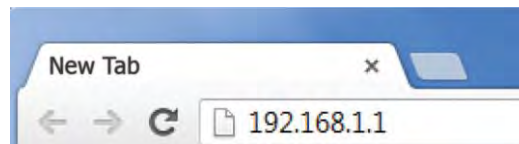
### 4.1 Default Settings

Please use your Ethernet port or wireless network adapter to connect the Access Point.

|                     |              |
|---------------------|--------------|
| IP Address          | 192.168.1.1  |
| User name/ password | Admin/ admin |

### 4.2 Web Configuration

- Open a web browser (Internet Explorer/Firefox/Safari/Chrome) and enter the IP Address <http://192.168.1.1>.



#### NOTE:

If you have changed the default LAN IP Address of the Access Point, ensure you enter the correct IP Address.

- The default username and password are **admin**. Once you have entered the correct username and password, click the **Login** button to open the web-based configuration page.



- If successful, you will be logged in and see the WM-OAP8251AG User Menu.

Dual Radio Outdoor AP , 3T3R , 450Mbps + 450Mbps
Changes : 0
Reset
Logout

- Overview
- Device Status
- Connections
- Network
- Basic
- Wireless
- Management
- Advanced
- Time Zone
- WiFi Scheduler
- Tools
- System Manager
- Account
- Firmware
- Log

Device Information

|                         |                              |
|-------------------------|------------------------------|
| Device Name             | ENH900EXT                    |
| MAC Address             |                              |
| - LAN                   | 88 DC 96 06 3C 94            |
| - Wireless LAN - 2.4GHz | 88 DC 96 06 3C 96            |
| - Wireless LAN - 5GHz   | 88 DC 96 06 3C 97            |
| Country                 | Default                      |
| Current Local Time      | Wed Sep 25 03:04:37 UTC 2013 |
| Firmware Version        | 2.0.0                        |
| Management VLAN ID      | 4096                         |

LAN Information - IPv4

|               |               |
|---------------|---------------|
| IP Address    | 192.168.1.1   |
| Subnet Mask   | 255.255.255.0 |
| Gateway       | 192.168.1.1   |
| Primary DNS   | 0.0.0.0       |
| Secondary DNS | 0.0.0.0       |
| DHCP Client   | Disable       |

## **Building a Wireless Network**

This chapter describes the operating modes of the WM-OAP8251AG.

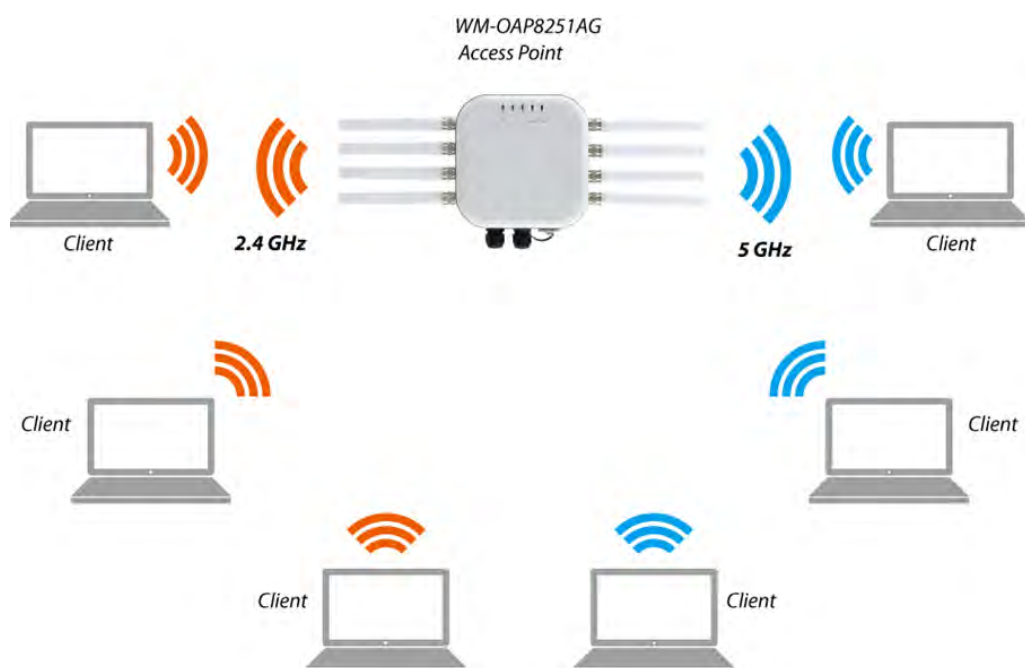
# 5

## Chapter 5: Building a Wireless Network

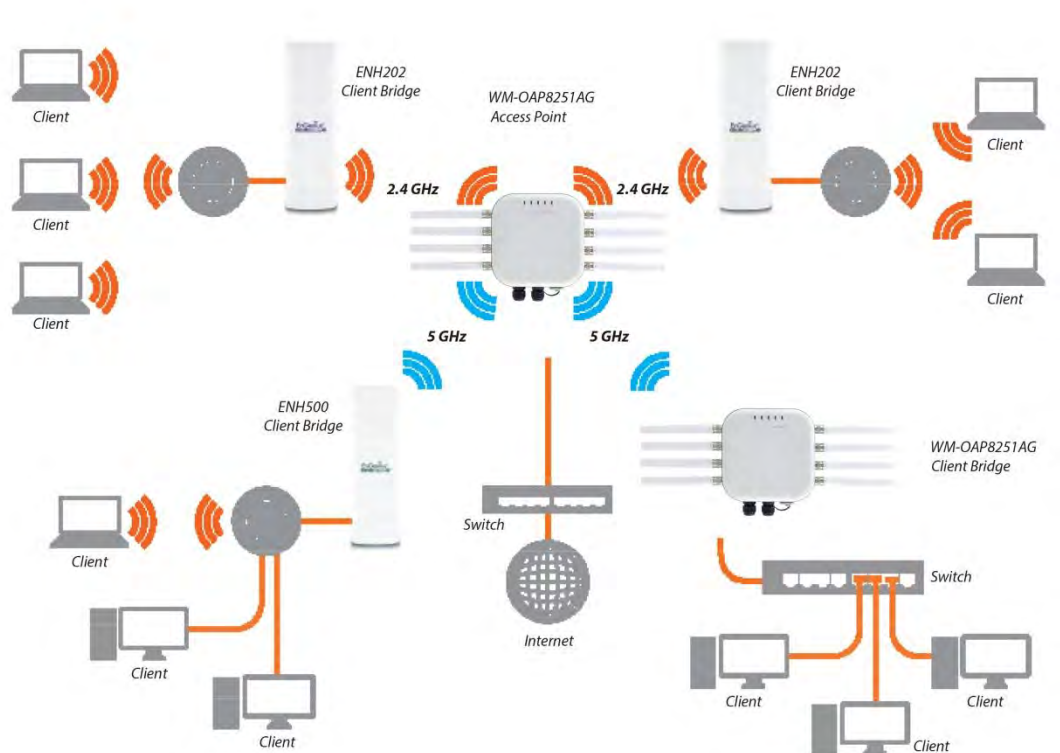
This chapter describes the operating modes of the WM-OAP8251AG.

### 5.1 Access Point Mode

In Access Point Mode, WM-OAP8251AG behaves like a central connection for stations or clients that support IEEE 802.11ac/a/b/g/n networks. The stations and clients must be configured to use the same SSID (Service Set Identifier) and security password to associate with the WM-OAP8251AG. The WM-OAP8251AG supports up to eight (8) SSIDs per band at the same time for secure access.

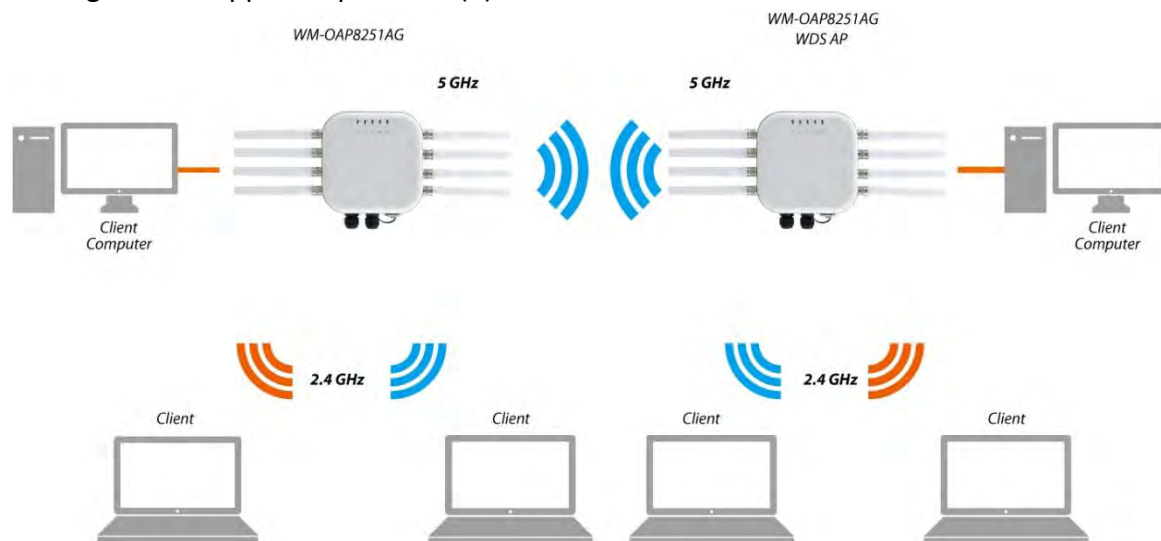


The WM-OAP8251AG can be used as a centralized Outdoor Access Point with which other EnGenius Wireless N 2.4 or 5 GHz Outdoor Client Bridges can associate; leveraging the long-range capability of their internal high-gain directional antennas, resulting in a very cost-effective solution to expand a company network over a multiple building campus.



## 5.2 WDS AP Mode

The WM-OAP8251AG also supports WDS AP mode. This operating mode allows wireless connections to the WM-OAP8251AG using WDS technology. In this mode, configure the MAC addresses in both Access Points to enlarge the wireless area by enabling WDS Link settings. WDS supports up to four (4) AP MAC addresses.



## 5.3 WDS Bridge Mode

In WDS Bridge Mode, the WM-OAP8251AG can wirelessly connect different LANs by configuring the MAC address and security settings of each WM-OAP8251AG device. Use this mode when two wired LANs located a small distance apart want to communicate with each other. The best solution is to use the WM-OAP8251AG to wirelessly connect two wired LANs, as shown in the following diagram. WDS Bridge Mode can establish up to four (4) WDS links, creating a star-like network.

**NOTE:**

WDS Bridge Mode does not act as an Access Point. Access Points linked by WDS are using the same frequency channel. More Access Points connected together may lower throughput. This configuration can be susceptible to generate endless network loops in your network, so it is recommended to enable the Spanning Tree feature to prevent this from happening.

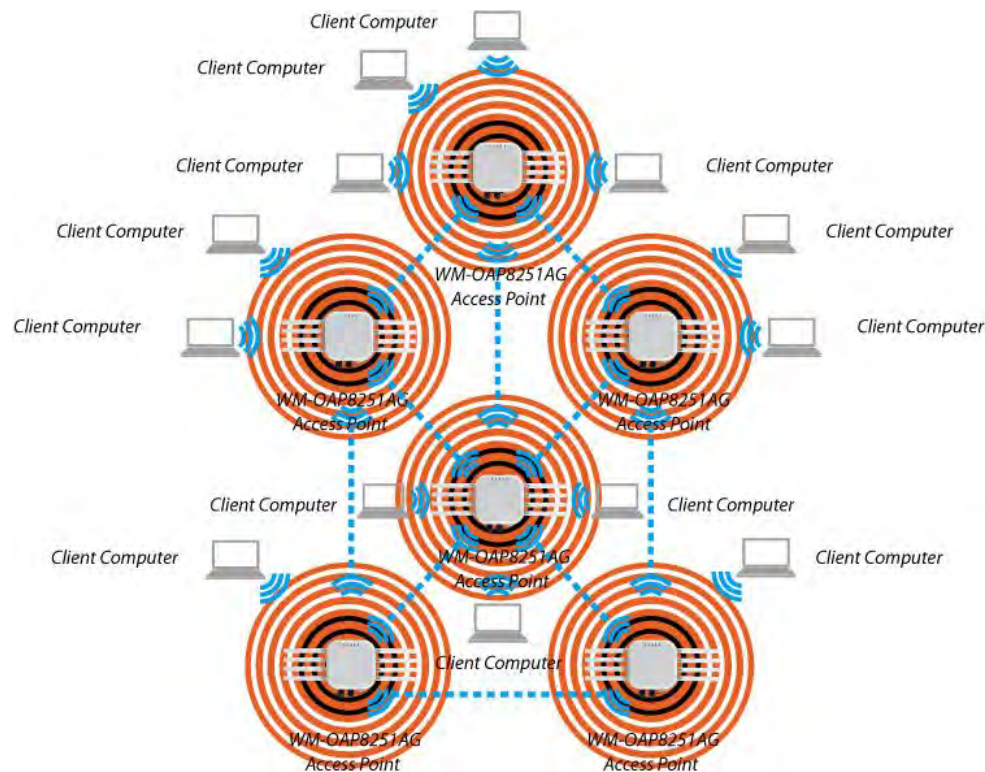
## **5.4 WDS Station Mode**

Station mode expands the WDS by receiving a wireless signal/service and sharing it through the Ethernet port.



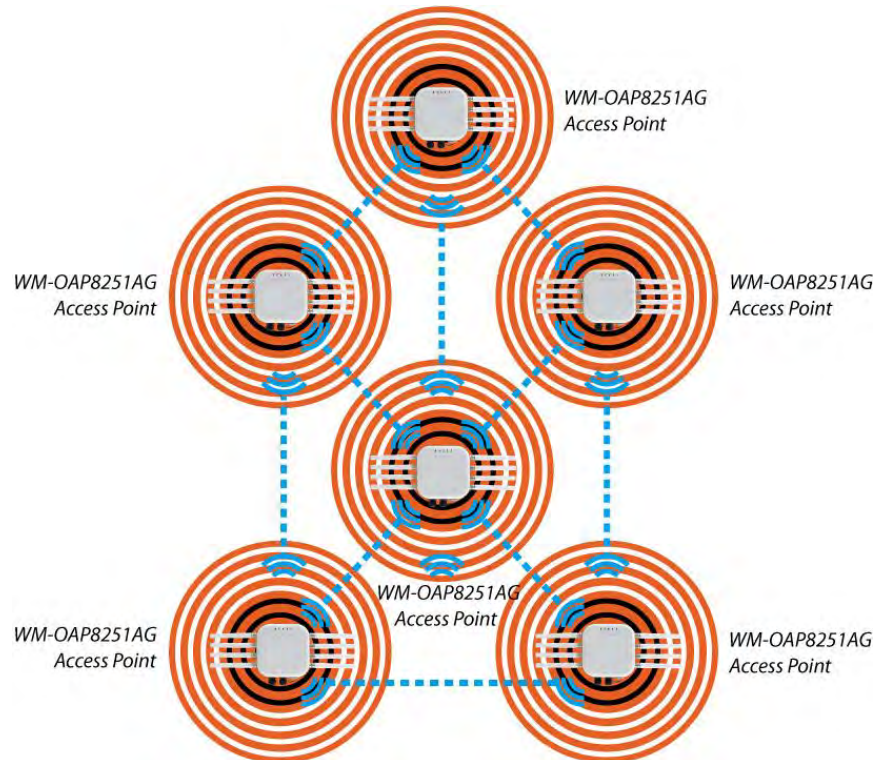
## 5.5 AP Mesh Mode

Under the AP Mesh mode, the WM-OAP8251AG can be used as the central connection hub for station or clients that support IEEE 802.11 b/g/n network. Under this mode, the WM-OAP8251AG can be configured with the same Mesh SSID and security password in order to associate with other WM-OAP8251AGs, as well as connect with clients under the same SSID and encryption signatures. For example, you would use one band to connect Access Points in range with Mesh mode and the other band to broadcast traffic on the network.



## **5.6 Mesh Only Mode**

Under the Mesh-only mode, the WM-OAP8251AG can be configured with the same Mesh SSID and security password in order to associate with other Mesh enabled WM-OAP8251AGs, instead of connecting with clients.



## Software Settings

This chapter describes how to set up the system.



## Chapter 6: Software Settings

This chapter describes how to set up the system.

### 6.1 Main Status

#### 6.1.1 Save Changes

This page lets you save and apply the settings shown under **Unsaved changes list**, or cancel the unsaved changes and revert to the previous settings that were in effect.

ual Radio AP , 3T3R , 450Mbps + 450Mbps

Changes : 3

Unsaved

Unsaved changes list

network.lan.dns=0.0.0.0 0.0.0.0  
network.lan.ipaddr=192.168.1.2  
network.lan.accept\_ra=0

Apply Save

Revert

#### 6.1.2 Device Status

Clicking the **Device Status** link under the **Overview** menu shows the status information about the current operating mode.

- The Device Information section shows general system information such as Device Name, MAC Address, Current Time, Firmware Version, and Management VLAN ID.

**Note:** VLAN ID is only applicable in Access Point or WDS AP mode.

| Device Information      |                              |
|-------------------------|------------------------------|
| Device Name             | ENH900EXT                    |
| MAC Address             |                              |
| - LAN                   | 88:DC:96:06:3C:94            |
| - Wireless LAN - 2.4GHz | 88:DC:96:06:3C:96            |
| - Wireless LAN - 5GHz   | 88:DC:96:06:3C:97            |
| Country                 | Default                      |
| Current Local Time      | Wed Sep 25 03:04:37 UTC 2013 |
| Firmware Version        | 2.0.0                        |
| Management VLAN ID      | 4096                         |

- The **LAN Information** section shows the Local Area Network settings such as the LAN IP Address, Subnet mask, and DNS Address.

| LAN Information - IPv4       |               |
|------------------------------|---------------|
| IP Address                   | 192.168.1.1   |
| Subnet Mask                  | 255.255.255.0 |
| Gateway                      | 192.168.1.1   |
| Primary DNS                  | 0.0.0.0       |
| Secondary DNS                | 0.0.0.0       |
| DHCP Client                  | Disable       |
| Spanning Tree Protocol (STP) | Disable       |

- The **Wireless LAN Information 2.4 GHz/5 GHz** section shows wireless information such as Operating Mode, Frequency, and Channel. Since the ENH1750EXT supports multiple-SSIDs, information about each SSID, the ESSID, and security settings, are displayed.

**Note:** Profile Settings are only applicable in Access Point and WDS AP modes.

| Wireless LAN Information - 2.4GHz |                         |          |     |         |  |
|-----------------------------------|-------------------------|----------|-----|---------|--|
| Operation Mode                    | AP                      |          |     |         |  |
| Wireless Mode                     | 802.11 B/G/N            |          |     |         |  |
| Channel Bandwidth                 | 20-40 MHz               |          |     |         |  |
| Channel                           | 2.437 GHz (Channel 6)   |          |     |         |  |
| Distance                          | 1000 M                  |          |     |         |  |
| Profile                           | SSID                    | Security | VID | 802.1Q  |  |
| #1                                | EnGenius063C96_1-2.4GHz | None     | 1   | Disable |  |
| #2                                | EnGenius063C96_2-2.4GHz | None     | 2   | Disable |  |
| #3                                | EnGenius063C96_3-2.4GHz | None     | 3   | Disable |  |
| #4                                | EnGenius063C96_4-2.4GHz | None     | 4   | Disable |  |
| #5                                | EnGenius063C96_5-2.4GHz | None     | 5   | Disable |  |
| #6                                | EnGenius063C96_6-2.4GHz | None     | 6   | Disable |  |

| Wireless LAN Information - 5GHz |                       |                        |     |         |
|---------------------------------|-----------------------|------------------------|-----|---------|
| Operation Mode                  |                       | AP                     |     |         |
| Wireless Mode                   |                       | 802.11 A/N             |     |         |
| Channel Bandwidth               |                       | 40 MHz                 |     |         |
| Channel                         |                       | 5.66 GHz (Channel 132) |     |         |
| Distance                        |                       | 1000 M                 |     |         |
| Profile                         | SSID                  | Security               | VID | 802.1Q  |
| #1                              | EnGenius063C97_1-5GHz | None                   | 51  | Disable |
| #2                              | EnGenius063C97_2-5GHz | None                   | 52  | Disable |
| #3                              | EnGenius063C97_3-5GHz | None                   | 53  | Disable |
| #4                              | EnGenius063C97_4-5GHz | None                   | 54  | Disable |
| #5                              | EnGenius063C97_5-5GHz | None                   | 55  | Disable |
| #6                              | EnGenius063C97_6-5GHz | None                   | 56  | Disable |
| #7                              | EnGenius063C97_7-5GHz | None                   | 57  | Disable |
| #8                              | EnGenius063C97_8-5GHz | None                   | 58  | Disable |

- The **Statistics** section shows Mac information such as SSID, MAC address, RX and TX.

| Statistics              |                   |                    |                      |
|-------------------------|-------------------|--------------------|----------------------|
| SSID                    | MAC               | RX(Packets)        | TX(Packets)          |
| Ethernet                | 00:02:6F:FF:FF:FF | 75.57KB(856 PKts.) | 455.926KB(399 PKts.) |
| EnGenius063C96_1-2.4GHz | 88:DC:96:06:3C:96 | 0KB(0 PKts.)       | 0.792KB(4 PKts.)     |
| EnGenius063C97_1-5GHz   | 88:DC:96:06:3C:97 | 0KB(0 PKts.)       | 0KB(0 PKts.)         |

- The **Wireless Mesh Information - 2.4 GHz** section shows wireless information such as Operation Mode, Wireless Mode, Channel Bandwidth, Frequency/Channel, Mesh SSID and Mesh Security.

## 6.2 Connection

### 6.2.1 Connection List 2.4 GHz/5 GHz

Click the **Connection** link under the Overview tab to display the connection list of clients associated to the ENH1750EXT's 2.4 GHz/5 GHz bands, along with the MAC addresses and signal strength for each client. Clicking **Refresh** updates the client list.

**Note:** Only applicable in Access Point and WDS AP modes.

### 6.2.2 WDS Link List 2.4 GHz/5 GHz

Click the connection link under the Overview menu. This page displays the current status of the WDS link, including WDS Link ID, MAC Address, Link Status and RSSI.

**Note:** Only applicable in WDS AP and WDS Bridge modes.

### 6.2.3 The Mesh Link List

You can monitor the 2.4GHz Mesh Link List under the Status menu. The page will display the current status of the Mesh Links under Mesh AP mode and the Mesh nodes under Mesh Only mode.

**Note:** Only applicable in the Mesh AP and Mesh Only modes.

## 6.3 Network

### 6.3.1 Basic IP Settings

#### 6.3.1.1 IPv4/IPv6 Settings

This page allows you to modify the device's IP settings.

| IPv4 Settings                                                        |               |
|----------------------------------------------------------------------|---------------|
| IP Network Setting                                                   | Static IP ▾   |
| IP Address                                                           | 192.168.1.1   |
| Subnet Mask                                                          | 255.255.255.0 |
| Gateway                                                              | 192.168.1.1   |
| Primary DNS                                                          | 0.0.0.0       |
| Secondary DNS                                                        | 0.0.0.0       |
|                                                                      |               |
| IPv6 Settings <input checked="" type="checkbox"/> Link-local Address |               |
| IP Address                                                           |               |
| Subnet Prefix Length                                                 |               |
| Gateway                                                              |               |
| Primary DNS                                                          |               |
| Secondary DNS                                                        |               |

**IP Network Settings:** Select whether the device IP address will use a static IP address specified in the IP address field or be obtained automatically when the device connects to a DHCP server.

**IP Address:** Displays the IP address of this device.

**Subnet Mask:** Displays the IP Subnet mask of this device.

**Gateway:** Displays the Default Gateway of this device. Leave it blank if you are unsure of this setting.

**Primary/Secondary DNS:** Displays the primary/secondary DNS address for this device.

**Save:** Click Save to confirm the changes.

### 6.3.1.2 Spanning Tree Protocol (STP) Settings

This page allows you to modify the Spanning Tree settings. Enabling the Spanning Tree protocol will prevent network loops in your LAN network.

Spanning Tree Protocol (STP) Settings

|               |           |                |
|---------------|-----------|----------------|
| Status        | Disable ▾ |                |
| Hello Time    | 2         | seconds (1-10) |
| Max Age       | 20        | seconds (6-40) |
| Forward Delay | 4         | seconds (4-30) |
| Priority      | 32768     | (0-65535)      |

**Spanning Tree Status:** Enables or disables the Spanning Tree feature.

**Hello Time:** Specifies Bridge Hello Time in seconds. This value determines how often the device sends handshake packets to communicate information about the topology throughout the entire Bridged Local Area Network.

**Max Age:** Specifies Bridge Max Age in seconds. If another bridge in the spanning tree does not send a hello packet for a long period of time, it is assumed to be inactive.

**Forward Delay:** Specifies Bridge Forward Delay in seconds. Forwarding delay time is the time spent in each of the Listening and Learning states before the Forwarding state is entered. This delay is provided so that when a new bridge comes onto a busy network, it analyzes data traffic before participating in the network.

**Priority:** Specifies the Priority Number. A smaller number has a greater priority than a larger number.

**Save:** Click **Save** to confirm the changes.

## 6.4 Wireless Settings

### 6.4.1 Wireless Settings

**Wireless Settings**

|                  |               |
|------------------|---------------|
| Device Name      | ENH1750EXT    |
| Country / Region | United States |
| Band Steering    | Disable ▾     |

**NOTE:** In order for Band Steering function to work properly, both 2.4GHz and 5GHz SSID and security settings must be the same.

**Device Name:** Enter a name for the device. The name you type appears in SNMP management. This name is not the SSID and is not broadcasted to other devices.

**Band Steering:** Enable Band Steering to send 802.11n clients to the 5 GHz band, where 802.11b/g clients cannot go, and leave 802.11b/g clients in 2.4 GHz band to maintain optimal data traffic flow. Band Steering works within the Access Point by directing 5 GHz-capable clients to that band.

**Save:** Click **Save** to confirm the changes.

### 6.4.2 Wireless Network 2.4 GHz/5 GHz

This page displays the current status of the Wireless settings of the WM-OAP8251AG.

|                                | 2.4GHz                                          | 5GHz                                            |
|--------------------------------|-------------------------------------------------|-------------------------------------------------|
| Operation Mode                 | Access Point ▾ <input type="checkbox"/> Green ⓘ | Access Point ▾ <input type="checkbox"/> Green ⓘ |
| Wireless Mode                  | 802.11 B/G/N ▾                                  | 802.11 A/N ▾                                    |
| Channel HT Mode                | 20/40 MHz ▾                                     | 40 MHz ▾                                        |
| Extension Channel              | Upper Channel ▾                                 | Lower Channel ▾                                 |
| Channel                        | Auto ▾                                          | Auto ▾                                          |
| Transmit Power                 | 20 dBm ▾                                        | 20 dBm ▾                                        |
| Data Rate                      | Auto ▾                                          | Auto ▾                                          |
| RTS / CTS Threshold (1 - 2346) | 2346                                            | 2346                                            |
| Client Limits                  | 127 <input type="checkbox"/> Enable ▾           | 127 <input type="checkbox"/> Enable ▾           |
| Aggregation                    | Enable ▾<br>32 Frames<br>50000 Bytes(Max)       | Enable ▾<br>32 Frames<br>50000 Bytes(Max)       |
| AP Detection                   | Scan                                            | Scan                                            |
| Distance (1-30km)              | 1                                               | 1                                               |

**Operation Mode:** Select **Operation Mode**. The WM-OAP8251AG supports two different operation modes: Access Point, or WDS (WDS AP, WDS Bridge, and WDS Station).

**Wireless Mode:** Supports 802.11b/g/n mixed mode in 2.4 GHz and 802.11ac/a/n mixed mode in 5 GHz.

**Channel HT Mode:** The default channel bandwidth is 20 MHz/40 MHz. The larger the channel, the greater the transmission quality and speed.

**Extension Channel:** Select the upper or lower channel. Your selection may affect the Auto channel feature.

**Transmit Power:** Sets the power output of the wireless signal.

**Data Rate:** Select a data rate from the drop-down list. The data rate affects throughput of data in the WM-OAP8251AG. Select the best balance for you and your network but note that the lower the data rate, the lower the throughput, though transmission distance is also lowered.

**RTS/CTS Threshold:** Specifies the threshold package size for RTC/CTS. A smaller number causes RTS/CTS packets to be sent more often and consumes more bandwidth.

**Client Limits:** Limits the total number of clients.

**Aggregation:** Merges data packets into one packet. This option reduces the number of packets, but also increases packet sizes.

**AP Detection:** The AP Detection feature can select the best channel to use by scanning nearby areas for Access Points.

**Distance:** Specifies the distance between Access Points and clients. Note that longer distances may drop higher- speed connections.

**Save:** Click **Save** to confirm the changes or **Cancel** to cancel and return to previous settings.

### 6.4.3 SSID Profiles 2.4 GHz/5 GHz

| Wireless Settings - 2.4GHz |                                     |                         |      |          |                          |                          |                          |     |
|----------------------------|-------------------------------------|-------------------------|------|----------|--------------------------|--------------------------|--------------------------|-----|
| No.                        | Enable                              | SSID                    | Edit | Security | Suppressed SSID          | Station Separation       | Isolation                | VID |
| 1                          | <input checked="" type="checkbox"/> | EnGenius063C96_1-2.4GHz | Edit | None     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1   |
| 2                          | <input type="checkbox"/>            | EnGenius063C96_2-2.4GHz | Edit | None     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2   |
| 3                          | <input type="checkbox"/>            | EnGenius063C96_3-2.4GHz | Edit | None     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 3   |
| 4                          | <input type="checkbox"/>            | EnGenius063C96_4-2.4GHz | Edit | None     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 4   |
| 5                          | <input type="checkbox"/>            | EnGenius063C96_5-2.4GHz | Edit | None     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 5   |
| 6                          | <input type="checkbox"/>            | EnGenius063C96_6-2.4GHz | Edit | None     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 6   |
| 7                          | <input type="checkbox"/>            | EnGenius063C96_7-2.4GHz | Edit | None     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 7   |
| 8                          | <input type="checkbox"/>            | EnGenius063C96_8-2.4GHz | Edit | None     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 8   |

| Wireless Settings - 5GHz |                                     |                       |      |          |                          |                          |                          |     |
|--------------------------|-------------------------------------|-----------------------|------|----------|--------------------------|--------------------------|--------------------------|-----|
| No.                      | Enable                              | SSID                  | Edit | Security | Suppressed SSID          | Station Separation       | Isolation                | VID |
| 1                        | <input checked="" type="checkbox"/> | EnGenius063C97_1-5GHz | Edit | None     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 51  |
| 2                        | <input type="checkbox"/>            | EnGenius063C97_2-5GHz | Edit | None     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 52  |
| 3                        | <input type="checkbox"/>            | EnGenius063C97_3-5GHz | Edit | None     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 53  |
| 4                        | <input type="checkbox"/>            | EnGenius063C97_4-5GHz | Edit | None     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 54  |
| 5                        | <input type="checkbox"/>            | EnGenius063C97_5-5GHz | Edit | None     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 55  |
| 6                        | <input type="checkbox"/>            | EnGenius063C97_6-5GHz | Edit | None     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 56  |
| 7                        | <input type="checkbox"/>            | EnGenius063C97_7-5GHz | Edit | None     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 57  |
| 8                        | <input type="checkbox"/>            | EnGenius063C97_8-5GHz | Edit | None     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 58  |

**Current Profile:** You can configure up to sixteen (16) different SSIDs (eight (8) per band). If multiple client devices will be accessing the network, you can arrange the devices into SSID groups. Click **Edit** to configure the profile and check whether you wish to enable extra SSIDs.

**SSID:** Specifies the SSID for the current profile.

**Suppressed SSID:** Check this option to hide a SSID from clients. If checked, the SSID will not appear in the site survey.

**Station Separation:** Check the box to allow or prevent communication between client devices.

**VID:** Specifies the VLAN tag for each profile. If your network includes VLANs, you can specify a VLAN ID for packets to pass through the Access Point with a tag.

**Wireless Security:** See the [Wireless Security](#) section.

**Isolation:** Check the box to restrict clients from communicating with different VIDs.

**Save:** Click **Save** to accept the changes.

### 6.4.4 Wireless Security

The Wireless Security section lets you configure the WM-OAP8251AG's security modes: WEP, WPA-PSK, WPA2-PSK, WPA-PSK Mixed, WPA, WPA2, and WPA Mixed. It is strongly recommend that you use WPA2-PSK.

| Wireless Security - 2.4G |                                             |
|--------------------------|---------------------------------------------|
| Security Mode            | WEP ▼                                       |
| Auth Type                | Open System ▼                               |
| Input Type               | Hex ▼                                       |
| Key Length               | 40/64-bit (10 hex digits or 5 ASCII char) ▼ |
| Default Key              | 1 ▼                                         |
| Key1                     | <input type="text"/>                        |
| Key2                     | <input type="text"/>                        |
| Key3                     | <input type="text"/>                        |
| Key4                     | <input type="text"/>                        |

**Auth Type:** Select **Open System** or **Shared Key**.

**Input Type:**

- ASCII: Regular Text (recommended)
- Hexadecimal Numbers (For advanced users)

**Key Length:** Select the desired option and ensure that wireless clients use the same setting. Your choices are 64, 128, and 152-bit password lengths.

**Default Key:** Select the Key you wish to be the default value. Transmitted data is **ALWAYS** encrypted using the Default Key; the other Keys are for decryption only. You must enter a Key Value for the Default Key.

**Encryption Key Number:** Enter the Key Value or values you wish to use. Only the Key selected as Default is required. The others are optional.

### 6.4.5 Wireless MAC Filtering

Wireless MAC Filtering is used to allow or deny network access to wireless clients (computers, tablet PCs, NAS, smartphones, etc.) according to their MAC addresses. You can manually add a MAC address to restrict permission to access the ENH1750EXT. The default setting is: Disable Wireless MAC Filter.

**Note:** Only applicable in Access Point and WDS AP modes.

| Wireless MAC Filter                                                                                                                                                 |             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| ACL Mode                                                                                                                                                            | Disabled ▼  |
| <div> <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> </div> <div>Add</div> |             |
| #                                                                                                                                                                   | MAC Address |

**ACL Mode:** Determines whether network access is granted or denied to clients whose MAC addresses appear in the MAC address table on this page. Your choices are: Disabled, Deny MAC in the list, or Allow MAC in the list.

**MAC Address:** Enter the MAC address of the wireless client.

**Add:** Click **Add** to add the MAC address to the MAC address table.

**Delete:** Deletes the selected entries.

**Save:** Click **Save** to apply the changes.

## 6.5 Wireless Advanced

### 6.5.1 Wireless Traffic Shaping

Traffic shaping regulates the flow of packets leaving an interface to deliver improved Quality of Service.

| Wireless Traffic Shaping |           |              |
|--------------------------|-----------|--------------|
| Enable Traffic Shaping   | Disable ▾ |              |
| Download Limit           | 100       | Mbps (1-999) |
| Upload Limit             | 100       | Mbps (1-999) |

**Enable Traffic Shaping:** Check this option to enable Wireless Traffic Shaping.

**Download Limit:** Specifies the wireless transmission speed used for downloading.

**Upload Limit:** Specifies the wireless transmission speed used for uploading.

**Save:** Click Save to confirm the changes.

### 6.5.2 WPA-PSK (WPA Pre-Shared Key) Encryption

| Wireless Security - 2.4G  |                           |
|---------------------------|---------------------------|
| Security Mode             | WPA2-PSK ▾                |
| Encryption                | Both(TKIP+AES) ▾          |
| Passphrase                | <input type="text"/>      |
| Group Key Update Interval | 3600 <input type="text"/> |

**Encryption:** Select the WPA encryption type you would like to use. Please ensure that your wireless clients use the same settings.

**Passphrase:** Wireless clients must use the same Key to associate the device. If using ASCII format, the Key must be from 8~63 characters in length. If using HEX format, the Key must be 64 HEX characters in length.

**Group Key Update Interval:** Specifies how often, in seconds, the Group Key changes.

### 6.5.3 WPA Mixed-Enterprise: Access Point / WDS AP Mode

| Wireless Security - 2.4G    |                        |
|-----------------------------|------------------------|
| Security Mode               | WPA Mixed-Enterprise ▾ |
| Encryption                  | Both(TKIP+AES) ▾       |
| Group Key Update Interval   | 3600                   |
| Radius Server               |                        |
| Radius Port                 | 1812                   |
| Radius Secret               |                        |
| Radius Accounting           | Disable ▾              |
| Radius Accounting Server    |                        |
| Radius Accounting Port      | 1813                   |
| Radius Accounting Secret    |                        |
| Interim Accounting Interval | 600                    |

**Encryption:** Select the WPA encryption type you would like to use. Please ensure that your wireless clients use the same settings.

**Radius Server:** Enter the IP address of the Radius server.

**Radius Port:** Enter the port number used for connections to the Radius server.

**Radius Secret:** Enter the secret required to connect to the Radius server.

**Group Key Update Interval:** Specifies how often, in seconds, the Group Key changes.

**Radius Accounting:** Enables or disables the accounting feature.

**Radius Accounting Server:** Enter the IP address of the Radius accounting server. Radius Accounting Port Enter the port number used for connections to the Radius accounting server.

**Radius Accounting Secret:** Enter the secret required to connect to the Radius accounting server.

**Interim Accounting Interval:** Specifies how often, in seconds, the accounting data sends.

**Note:** 802.11n does not allow WEP/WPA-PSK TKIP/WPA2-PSK TKIP security mode. The connection mode will automatically change from 802.11n to 802.11g.

### 6.5.4 Fast Roaming

Enable this feature to serve mobile client devices that roam from Access Point to Access Point. Some applications running on client devices require fast re-association when they roam to a different Access Point

Please enter the settings of the SSID and initialize the Security mode to WPA Enterprise, as well as setting the Radius Server. Users can then enable Fast Roaming and implement the advanced search feature.

Next, set the same Enterprise Encryption with the same SSID on other Access Points in

the network and enable Fast Roaming. When the configuration is set on all the Access Points on the network, mobile client devices can run voice services that require fast roaming to prevent delay in conversation from Access Point to Access Point.

| Fast Roaming        |          |
|---------------------|----------|
| Enable Fast Roaming | Enable ▾ |
| Advanced Search     | Enable ▾ |

**Enable Fast Roaming:** Enables or disables the Fast Roaming feature.

**Enable Advanced Search:** Enables or disables the Advanced Search feature.

## 6.5.5 WDS Link Settings

Using the WDS (Wireless Distribution System) feature will allow a network administrator or installer to connect to Access Points wirelessly. Doing so will extend the wired infrastructure to locations where cabling is not possible or inefficient to implement.

**Note:** Compatibility between different brands and models of Access Points is not guaranteed. It is recommended that the WDS network be created using the same models for maximum compatibility.

**Also note:** All Access Points in the WDS network need to use the same Channel and Security settings.

To create a WDS network, please enter the MAC addresses of the Access Points that you want included in the WDS. There can be a maximum of four (4) Access Points.

**Note:** Only applicable in WDS AP and WDS Bridge modes.

### 6.5.5.1 WDS Link Settings 2.4 GHz/5 GHz

| WDS Link Settings - 2.4GHz |                                                                                                                                                                                                              |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Security                   | None ▾                                                                                                                                                                                                       |
| AES Passphrase             | <input type="text"/><br>(8-63 ASCII characters or 64 hexadecimal digits)                                                                                                                                     |
| ID                         | MAC Address                                                                                                                                                                                                  |
| 1                          | <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> <span>Disable ▾</span> |
| 2                          | <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> <span>Disable ▾</span> |
| 3                          | <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> <span>Disable ▾</span> |
| 4                          | <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> <span>Disable ▾</span> |

| WDS Link Settings - 5GHz |                                                                                                                                                                                                              |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Security                 | None ▾                                                                                                                                                                                                       |
| AES Passphrase           | <input type="text"/><br>(8-63 ASCII characters or 64 hexadecimal digits)                                                                                                                                     |
| ID                       | MAC Address                                                                                                                                                                                                  |
| 1                        | <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> <span>Disable ▾</span> |
| 2                        | <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> <span>Disable ▾</span> |
| 3                        | <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> <span>Disable ▾</span> |
| 4                        | <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> <span>Disable ▾</span> |

**Security:** Select **None** or **AES** from the drop-down list.

**AES Passphrase:** Enter the Key Values you wish to use. Other Access Points must use the same Key to establish a WDS link.

**MAC Address:** Enter the Access Point's MAC address to where you want to extend the wireless area.

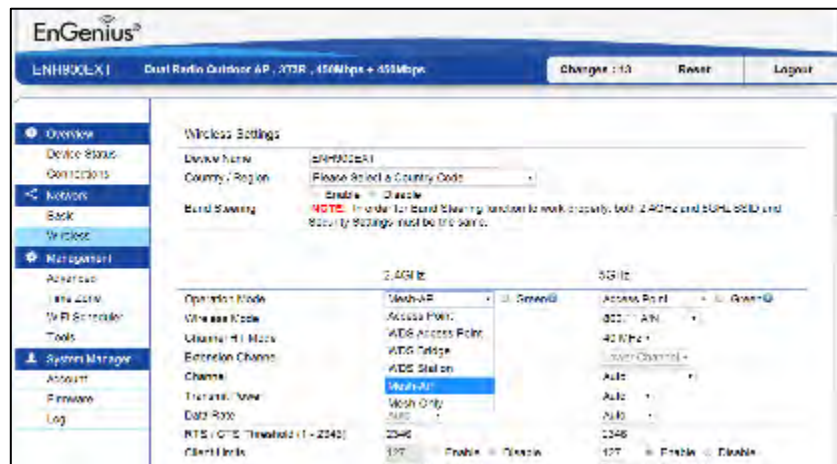
**Mode:** Select to disable or enable from the drop-down list.

**Save:** Click **Save** to confirm the changes.

### 6.5.5.2 Mesh Link Settings 2.4 GHz

Users can choose the 2.4 GHz band for Mesh Mode.

#### Mesh Settings



**Mesh SSID:** To create a Mesh network, please enter the Mesh SSID of the Access Point that you wish to include in the Mesh network.

**Security:** Select **None** or **WPA2-PSK AES** from drop-down list.

**AES Passphrase:** Enter the Key Values you wish to use. Other Access Points must use the same Key to establish a Mesh Link.

#### Guest Network Settings

Adding a guest network allows visitors to use the Internet without giving out your office or company wireless security key. You can add a guest network to each wireless network for both the 2.4 GHz and 5 GHz frequency bands.

| Guest Network Settings         |                          |                                     |          |                          |                                     |
|--------------------------------|--------------------------|-------------------------------------|----------|--------------------------|-------------------------------------|
| Enable                         | SSID                     | Edit                                | Security | Suppressed SSID          | Station Separation                  |
| <input type="checkbox"/>       | EnGenius-2.4GHz_GuestNet | <input type="button" value="Edit"/> | None     | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| <input type="checkbox"/>       | EnGenius-5GHz_GuestNetw  | <input type="button" value="Edit"/> | None     | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Manual IP Settings             |                          |                                     |          |                          |                                     |
| - IP Address                   |                          | 192.168.200.1                       |          |                          |                                     |
| - Subnet Mask                  |                          | 255.255.255.0                       |          |                          |                                     |
| Automatic DHCP Server Settings |                          |                                     |          |                          |                                     |
| - Starting IP Address          |                          | 192.168.200.100                     |          |                          |                                     |
| - Ending IP Address            |                          | 192.168.200.200                     |          |                          |                                     |
| - WINS Server IP               |                          | 0.0.0.0                             |          |                          |                                     |

**SSID:** Specifies the SSID for the current profile.

**Suppressed SSID:** Check this option to hide the selected SSID from clients. If checked, the SSID will not appear in the site survey.

**Station Separation:** Check the box to allow or prevent communication between client devices.

**IP Address:** Displays the IP address of this device.

**Subnet Mask:** Displays the IP Subnet mask of this device.

**Starting IP Address:** The first IP Address in the range of the addresses used by the DHCP server.

**Ending IP Address:** The last IP Address in the range of addresses assigned by the DHCP server.

### Fast Handover

|               |        |                        |
|---------------|--------|------------------------|
| Fast Handover |        |                        |
| Fast Handover | Enable | ▼                      |
| RSSI          | -70    | RSSI(Range: -60 ~ -90) |

**Fast Handover:** Enable the Fast Handover feature by ensuring that each client is served by at least one Access Point at any time. Access Points continuously monitor the connectivity quality of any client in their range and efficiently share this information with other Access Points in the vicinity of that client to coordinate which of them should serve the client best.

**RSSI:** Enter the RSSI (Received Signal Strength Index) in order to determine the handover procedure which the current wireless link will terminate. RSSI is an indication of the power level being received by the antenna. Therefore, the higher the RSSI number, the stronger the signal.

## Management

This chapter describes how to manage Access Point settings.



## Chapter 7: Management

This chapter describes how to manage Access Point settings.

### 7.1 Management VLAN Settings

This page allows you to assign a VLAN tag to packets sent over the network. A VLAN is a group of computers on a network whose software has been configured so that they behave as if they were on a separate Local Area Network (LAN). Computers on VLAN do not have to be physically located next to one another on the LAN.

**Note:** Only applicable in Access Point and WDS AP modes.

| Management VLAN Settings                                                                                                                                                                                                          |                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| <b>CAUTION:</b> If you reconfigure the Management VLAN ID, you may lose connectivity to the access point. Verify that the switch and DHCP server can support the reconfigured VLAN ID, and then re-connect to the new IP address. |                                      |
| Management VLAN                                                                                                                                                                                                                   | Enable <input type="checkbox"/> 4096 |

**Management VLAN:** If your network includes VLANs, you can enable the **Management VLAN ID** setting for packets passing through the Access Point with a tag.

Save: Click **Save** to confirm the changes or **Cancel** to cancel and return to previous settings.

**Note:** If you reconfigure the Management VLAN ID, you may lose your connection to the WM-OAP8251AG. Verify that the DHCP server supports the reconfigured VLAN ID and then reconnect to the WM-OAP8251AG using the new IP address.

### 7.2 Advanced Settings

#### 7.2.1 SNMP Settings

This page allows you to assign the Contact Details, Location, Community Name, and Trap Settings for a Simple Network Management Protocol (SNMP). SNMP is a networking management protocol used to monitor network attached devices. SNMP allows messages (called protocol data units) to be sent to various parts of the network. Upon receiving these messages, SNMP compatible devices (called agents) return the data stored in their Management Information Bases.

| SNMP Settings               |                                       |                   |
|-----------------------------|---------------------------------------|-------------------|
| Status                      | Enable ▾                              |                   |
| Contact                     | <input type="text"/>                  |                   |
| Location                    | <input type="text"/>                  |                   |
| Port                        | <input type="text" value="161"/>      |                   |
| Community Name (Read Only)  | <input type="text" value="public"/>   |                   |
| Community Name (Read Write) | <input type="text" value="private"/>  |                   |
| Trap Destination            |                                       |                   |
| - Port                      | <input type="text" value="162"/>      |                   |
| - IP Address                | <input type="text"/>                  |                   |
| - Community Name            | <input type="text" value="public"/>   |                   |
| SNMPv3 Settings             |                                       |                   |
| - Status                    | Enable ▾                              |                   |
| - Username                  | <input type="text" value="admin"/>    | (1-31 Characters) |
| - Authorized Protocol       | MD5 ▾                                 |                   |
| - Authorized Key            | <input type="text" value="12345678"/> | (8-32 Characters) |
| - Private Protocol          | DES ▾                                 |                   |
| - Private Key               | <input type="text" value="12345678"/> | (8-32 Characters) |
| - Engine ID                 | <input type="text"/>                  |                   |

**SNMP Enable/Disable:** Enables or disables the SNMP feature.

**Contact:** Specifies the contact details of the device.

**Location:** Specifies the location of the device.

**Community Name (Read Only):** Specifies the password for the SNMP community for read only access.

**Community Name (Read/Write):** Specifies the password for the SNMP community with read/write access.

**Trap Destination Address:** Specifies the IP address of the computer that will receive the SNMP traps.

**Trap Destination Community Name:** Specifies the password for the SNMP trap community.

**SNMPv3:** Enables or disables the SNMPv3 feature.

**User Name:** Specifies the username for SNMPv3.

**Auth Protocol:** Selects the authentication protocol type: MD5 or SHA.

**Auth Key:** Specifies the authentication key.

**Priv Protocol:** Selects the privacy protocol type: **DES**.

**Priv Key:** Specifies the privacy key.

**Engine ID:** Specifies the engine ID for SNMPv3.

**Apply Save:** Click **Apply Save** to apply the changes.

## 7.2.2 CLI Settings

|               |           |
|---------------|-----------|
| CLI Setting   |           |
| CLI           | Enable ▾  |
| SSH Setting   |           |
| SSH           | Disable ▾ |
| HTTPS Setting |           |
| HTTPS         | Enable ▾  |
| HTTPS forward | Disable ▾ |

**CLI:** The Command Line Interface (CLI) allows you to type commands instead of choosing them from a menu or selecting an icon to perform an action.

**SSH:** Enable Secure Shell (SSH) to make secure, encrypted connections in the network. Secure Shell is a network protocol that allows data to be exchanged using a secure channel between two network devices.

**HTTPS:** Enable HTTPS to transfer and display web content securely. The Hypertext Transfer Protocol over SSL (Secure Socket Layer) is a TCP/IP protocol used by web servers to transfer and display web content securely.

## 7.2.3 Email Alerts

You can use the Email Alert feature to send messages to the configured email address when particular system events occur.

**Note:** Do **NOT** use your personal email address as it can unnecessarily expose your personal email login credentials. Use a separate email account made for this feature instead.

|                 |                                                    |
|-----------------|----------------------------------------------------|
| Email Alert     |                                                    |
| Status          | <input checked="" type="checkbox"/> Enable         |
| - From          | <input type="text"/>                               |
| - To            | <input type="text"/>                               |
| - Subject       | [Email-Alert][ENH900EXT][00:02:6F:FF:FF:FF] Config |
| Email Account   |                                                    |
| - Username      | <input type="text"/>                               |
| - Password      | <input type="text"/>                               |
| - SMTP Server   | <input type="text"/> Port: 25                      |
| - Security Mode | None ▾                                             |
| Send Test Mail  |                                                    |

**From:** Enter the email address to show the sender of the email.

**To:** Enter the address to receive email alerts.

**Subject:** Enter the text to appear in the email subject line.

**Username:** Enter the username for the email account that will be used to send emails.

**Password:** Enter the password for the email account that will be used to send emails.

**SMTP Server:** Enter the IP address or hostname of the outgoing SMTP server.

**Port:** Enter the SMTP port number to use for outbound emails.

## 7.3 Time Zone

### 7.3.1 Time Setting

This page allows you to set the internal clock of the WM-OAP8251AG.

| Date and Time Settings                                           |                                    |
|------------------------------------------------------------------|------------------------------------|
| <input type="radio"/> Manually Set Date and Time                 |                                    |
| Date:                                                            | 2013 / 09 / 25                     |
| Time:                                                            | 08 : 10 (24-Hour)                  |
| <input type="button" value="Synchronize with PC"/>               |                                    |
| <input checked="" type="radio"/> Automatically Get Date and Time |                                    |
| NTP Server:                                                      | 209.81.9.7                         |
|                                                                  |                                    |
| Time Zone                                                        |                                    |
| Time Zone:                                                       | UTC+00:00 Gambia, Liberia, Morocco |
| <input type="checkbox"/> Enable Daylight Saving                  |                                    |
| Start:                                                           | January 1st Sun 12 am              |
| End:                                                             | January 1st Mon 12 am              |

**Manually Set Date and Time:** Manually specify the date and time.

**Automatically Get Date and Time:** Select this option and enter the IP address of an NTP server or use the default NTP server to have the internal clock synch automatically.

**Enable Daylight Saving:** Check whether daylight savings applies to your area. If you select this option, you will need to enter start and stop times.

**Start:** Select the day, month, and time when daylight savings time starts in your region.

**End:** Select the day, month, and time when daylight savings times ends in your region.

## 7.4 Auto Reboot Settings

You can specify how often you wish to reboot the WM-OAP8251AG.

| Auto Reboot Setting |                                                                                                                                                                                                                                                  |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Auto Reboot Status  | Disable                                                                                                                                                                                                                                          |
| Timer               | <input type="checkbox"/> Sunday <input type="checkbox"/> Monday <input type="checkbox"/> Tuesday <input type="checkbox"/> Wednesday <input type="checkbox"/> Thursday <input type="checkbox"/> Friday <input type="checkbox"/> Saturday<br>0 : 0 |

**Auto Reboot Setting:** Enables or disables the Auto Reboot feature.

**Frequency of Auto Reboot:** Specifies how often you wish to reboot the ENH1750EXT by Min, Hour, Day or Week.

**Timer:** Select the day and enter the time you would like to reboot automatically.

**Save:** Click **Save** to apply the changes.

## 7.5 Wi-Fi Scheduler

The Wi-Fi Scheduler can be created for use in enforcing rules. For example, if you wish to restrict web access to Mon-Fri from 3pm to 8pm, you could create a schedule selecting Mon, Tue, Wed, Thu and Fri while entering a Start time of 3pm and an End Time of 8pm to limit access to these times.

| Wi-Fi Scheduler    |                                                                                                                                                                                        |                                            |          |   |    |   |    |   |    |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------|---|----|---|----|---|----|
| Status             | <div>Enable <input type="button" value="v"/></div> <div><b>NOTE:</b> Please assure that the Time Zone Settings is synced with your local time when enabling the Wi-Fi Scheduler.</div> |                                            |          |   |    |   |    |   |    |
| Wireless Radio     | 2.4GHz <input type="button" value="v"/>                                                                                                                                                |                                            |          |   |    |   |    |   |    |
| SSID Selection     | EnGenius063C96_1-2.4GHz <input type="button" value="v"/>                                                                                                                               |                                            |          |   |    |   |    |   |    |
| Schedule Templates | Choose a template <input type="button" value="v"/>                                                                                                                                     |                                            |          |   |    |   |    |   |    |
| Schedule Table     | Day                                                                                                                                                                                    | Availability                               | Duration |   |    |   |    |   |    |
|                    | Sunday                                                                                                                                                                                 | available <input type="button" value="v"/> | 00       | : | 00 | ~ | 24 | : | 00 |
|                    | Monday                                                                                                                                                                                 | available <input type="button" value="v"/> | 00       | : | 00 | ~ | 24 | : | 00 |
|                    | Tuesday                                                                                                                                                                                | available <input type="button" value="v"/> | 00       | : | 00 | ~ | 24 | : | 00 |
|                    | Wednesday                                                                                                                                                                              | available <input type="button" value="v"/> | 00       | : | 00 | ~ | 24 | : | 00 |
|                    | Thursday                                                                                                                                                                               | available <input type="button" value="v"/> | 00       | : | 00 | ~ | 24 | : | 00 |
|                    | Friday                                                                                                                                                                                 | available <input type="button" value="v"/> | 00       | : | 00 | ~ | 24 | : | 00 |
|                    | Saturday                                                                                                                                                                               | available <input type="button" value="v"/> | 00       | : | 00 | ~ | 24 | : | 00 |

**Status:** Enables or disables the Wi-Fi scheduler feature.

**Wireless Radio:** Select 2.4 GHz or 5 GHz from the drop- down list for the preferred band type that you wish to be regulated.

**SSID Selection:** Select a SSID from the drop-down list to be regulated.

**Schedule Templates:** Select a schedule template from the drop-down list.

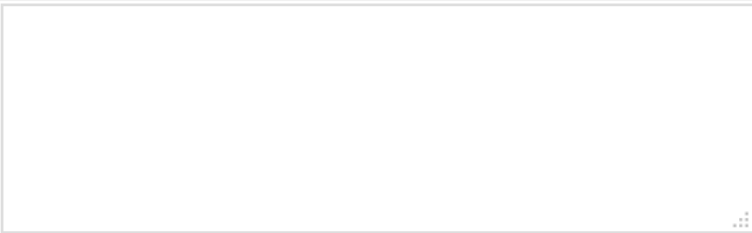
**Day(s):** Place a checkmark in the boxes for the desired days or select the **All Week** from the drop-down list to select all seven days of the week.

**Duration:** The Start Time is entered in two fields. The first box is for hours and the second box is for minutes. The End Time is entered in the same format as the Start time.

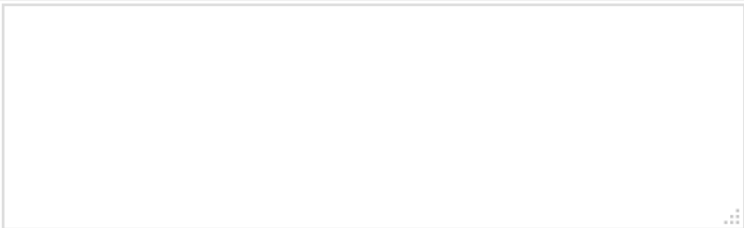
## 7.6 Tools

### 7.6.1 Ping Test Parameters

This page allows you to analyze the connection quality of the WM-OAP8251AG and trace the routing table to a target in the network in the event of an issue.

| Ping Test Parameters                 |                                 |                                                                                    |
|--------------------------------------|---------------------------------|------------------------------------------------------------------------------------|
| Target IP / Domain Name              | <input type="text"/>            |                                                                                    |
| Ping Packet Size                     | <input type="text" value="64"/> | Bytes                                                                              |
| Number of Pings                      | <input type="text" value="4"/>  |                                                                                    |
| <input type="button" value="Start"/> |                                 |  |
|                                      |                                 |                                                                                    |

| Traceroute Test Parameters                                               |                      |                                                                                     |
|--------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------|
| Target IP / Domain Name                                                  | <input type="text"/> |                                                                                     |
| <input type="button" value="Start"/> <input type="button" value="Stop"/> |                      |  |
|                                                                          |                      |                                                                                     |

**Target IP:** Enter the IP address you would like to test.

**Ping Packet Size:** Enter the packet size of each ping.

**Number of Pings:** Enter the number of times you wish to ping.

**Start Ping:** Click **Start Ping** to begin the ping test.

**Traceroute Target:** Enter the IP address or domain name you wish to trace.

**Start Traceroute:** Click **Start Traceroute** to begin the trace route operation.

## 7.6.2 Speed Test Parameters/LED Control

This page allows you to power on/off the LEDs for Power, LAN interface, or 2.4 GHz/5 GHz WLAN interface for the WM-OAP8251AG.

| Speed Test Parameters                |                                 |     |
|--------------------------------------|---------------------------------|-----|
| Target IP / Domain Name              | <input type="text"/>            |     |
| Time Period                          | <input type="text" value="20"/> | sec |
| Check Interval                       | <input type="text" value="5"/>  | sec |
| <input type="button" value="Start"/> | <div></div>                     |     |
| IPv4 Port                            | 5001                            |     |
| IPv6 Port                            | 5002                            |     |

| LED Control                          |                                       |
|--------------------------------------|---------------------------------------|
| Power                                | <input type="button" value="Enable"/> |
| LAN                                  | <input type="button" value="Enable"/> |
| WLAN-2.4GHz                          | <input type="button" value="Enable"/> |
| WLAN-5GHz                            | <input type="button" value="Enable"/> |
| <input type="button" value="Apply"/> | Apply saved settings to take effect   |

## 7.6.3 LED Control

**Power:** Enables or disables the Power LED indicator.

**LAN:** Enables or disables the LAN LED indicator.

**WLAN-2.4 GHz:** Enables or disables the WLAN 2.4 GHz LED indicator.

**WLAN-5 GHz:** Enables or disables the WLAN 5 GHz LED indicator.

Device Discovery

## 7.6.4 Device Discovery

This page allows you to discover devices on the network and displays their: Operation Mode, IP Address, System MAC Address and Firmware version.

| Device Discovery                    |                |            |                    |                  |
|-------------------------------------|----------------|------------|--------------------|------------------|
| Device Name                         | Operation Mode | IP Address | System MAC Address | Firmware Version |
| <input type="button" value="Scan"/> |                |            |                    |                  |

## 7.7 Account

This page allows you to change the WM-OAP8251AG username and password. By default, the username is: **admin** and the password is: **admin**. The password can contain from 0~12 alphanumeric characters and is case sensitive.

### 7.7.1 Account Settings

| Account Settings       |                                        |
|------------------------|----------------------------------------|
| Administrator Username | <input type="text" value="admin"/>     |
| Current Password       | <input type="password" value="•••••"/> |
| New Password           | <input type="password"/>               |
| Verify Password        | <input type="password"/>               |

**Administrator Username:** Enter a new username for logging in into the New Name entry field.

**Current Password:** Enter the old password for logging in into the Old Password entry field.

**New Password:** Enter the new password for logging in into the New Password entry field.

**Verify Password:** Re-enter the new password in the Confirm Password entry field for confirmation.

**Apply:** Click **Apply** to apply the changes.

## 7.8 Firmware

### 7.8.1 Firmware Upgrade

This page allows you to upgrade the firmware of the WM-OAP8251AG. Download the latest firmware from [engeniustech.com](http://engeniustech.com) and save it to your computer.

| Firmware Upgrade                             |                   |
|----------------------------------------------|-------------------|
| Current Firmware Version: 2.0.0              |                   |
| Select the new firmware from your hard disk. |                   |
| <input type="button" value="Browse..."/>     | No file selected. |
| <input type="button" value="Upload"/>        |                   |

#### To Perform the Firmware Upgrade:

1. Click the Choose File button and find the firmware file you downloaded from [engeniustech.com](http://engeniustech.com).
2. Select the upgrade file. The name of the file will appear in the Upgrade File field.
3. Click the Upload button to commence the firmware upgrade.

**Note:** The device is unavailable during the Firmware upgrade process and must restart when the upgrade is completed. Any connections to or through the device will be lost.

## 7.9 Backup/Restore

This page allows you to save the current device configurations. When you save your configurations, you also can reload the saved configurations into the device through the Restore Saved Settings from a file saved on your computer. If extreme problems occur, or if you have set the WM-OAP8251AG incorrectly, you can use the **Reset** button in the Revert to Factory Default Settings section to restore all the configurations of the WM-OAP8251AG to the original default settings.

| Backup/Restore Settings      |                                                                                                  |
|------------------------------|--------------------------------------------------------------------------------------------------|
| Factory Setting              |                                                                                                  |
| - Backup Setting             | <input type="button" value="Export"/>                                                            |
| - Restore New Setting        | <input type="button" value="Browse..."/> No file selected. <input type="button" value="Import"/> |
| - Reset to Default           | <input type="button" value="Reset"/>                                                             |
| User Setting                 |                                                                                                  |
| - Back Up Setting as Default | <input type="button" value="Backup"/>                                                            |
| - Restore to User Default    | <input type="button" value="Restore"/>                                                           |

**Backup Setting:** Click **Export** to save the current configured settings.

**Restore New Setting:** To restore settings that have been previously backed up, click **Browse**, select the file, and click **Restore**.

**Restore to User Default:** Click **Reset** button to restore the WM-OAP8251AG to its factory default settings.

## 7.10 Log

### 7.10.1 System Log

The WM-OAP8251AG automatically logs (records) events of possible interest in its internal memory. To view the logged information, click the **Log** under the System Manager menu. If there is not enough internal memory to log all events, older events are deleted from the log. When powered down or rebooted, the log will be cleared.

**System Log**

Status:

Log type:

```

Sep 25 08:26:01 ENH900EXT cron.info crond[2539]: crond: USER root pid 3924 cmd s
Sep 25 08:25:01 ENH900EXT user.notice root: starting ntpd
Sep 25 08:25:01 ENH900EXT cron.info crond[2539]: crond: USER root pid 3909 cmd .
Sep 25 08:24:01 ENH900EXT cron.info crond[2539]: crond: USER root pid 3902 cmd s
Sep 25 08:22:01 ENH900EXT cron.info crond[2539]: crond: USER root pid 3895 cmd s
Sep 25 08:20:01 ENH900EXT user.notice root: starting ntpd
Sep 25 08:20:01 ENH900EXT cron.info crond[2539]: crond: USER root pid 3865 cmd s
Sep 25 08:20:01 ENH900EXT cron.info crond[2539]: crond: USER root pid 3862 cmd .
Sep 25 08:18:01 ENH900EXT cron.info crond[2539]: crond: USER root pid 3846 cmd s
Sep 25 08:16:01 ENH900EXT cron.info crond[2539]: crond: USER root pid 3839 cmd s
  
```

### 7.10.2 Remote Log

This page allows you to setup the Remote Log service for the WM-OAP8251AG.

Remote Log:

Log Server IP Address:

**Syslog:** Enables or disables the syslog function.

**Log Server IP Address:** Enter the IP address of the log server.

**Remote Log:** Enables or disables the Remote Log service.

**Apply:** Click Apply to apply the changes.

### 7.10.3 Logout

Click **Logout** in the Management menu to logout. Confirm by clicking **OK**.

EnGenius®

ENH900EXT Dual Radio Outdoor AP, 3TDR, 450Mbps + 450Mbps

Changes: 0

**System Manager**

Account:  Password:

Firmware:  Log:

Device Information

Device Name: ENH900EXT

MAC Address: 88 DC 96 06 3C 94

- LAN: 88 DC 96 06 3C 96

- Wireless LAN - 2.4GHz: 88 DC 96 06 3C 97

- Wireless LAN - 5GHz: Default

Country: Default

Current Local Time: Wed Sep 25 08:30:55 UTC 2013

Firmware Version: 2.0.0

Management VLAN ID: 4096

LAN Information - IPv4

IP Address: 192.168.1.1

Subnet Mask: 255.255.255.0

Gateway: 192.168.1.1

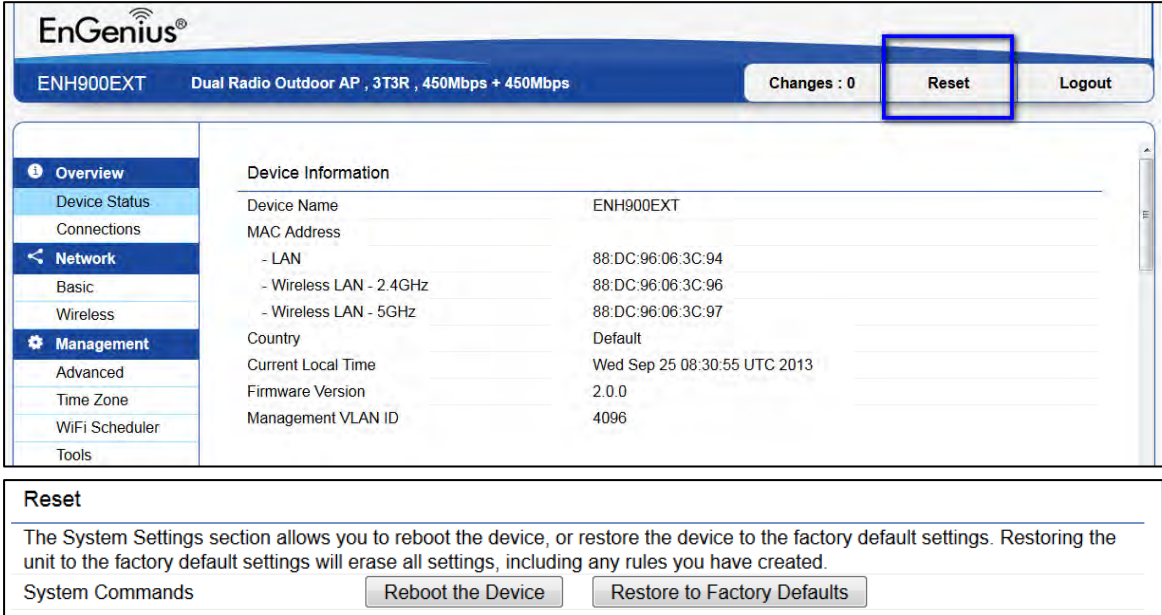
Primary DNS: 0.0.0.0

Secondary DNS: 0.0.0.0

Are you sure you want to logout?

## 7.10.4 Reset

In some circumstances, it may be required to force the device to reboot. Click on **Reset** to reboot the WM-OAP8251AG. Note that this will delete any configurations to their default settings. Please refer to [Backup/Restore](#) section of this User Manual to learn how to backup and save your customized configuration settings in the event of a Restore. Click Reboot the Device to confirm a reset or Restore to Factory Defaults to completely restore the device to its initial factory settings.



The screenshot displays the EnGenius web management interface for an ENH900EXT Dual Radio Outdoor AP. The top navigation bar includes a 'Reset' button, which is highlighted with a blue rectangle. Below the navigation bar, the 'Management' section is selected in the left sidebar. The main content area shows 'Device Information' for the ENH900EXT, including MAC addresses for LAN, 2.4GHz, and 5GHz, and other system details. At the bottom, a 'Reset' section provides instructions and two buttons: 'Reboot the Device' and 'Restore to Factory Defaults'.

| Device Information      |                              |
|-------------------------|------------------------------|
| Device Name             | ENH900EXT                    |
| MAC Address             |                              |
| - LAN                   | 88:DC:96:06:3C:94            |
| - Wireless LAN - 2.4GHz | 88:DC:96:06:3C:96            |
| - Wireless LAN - 5GHz   | 88:DC:96:06:3C:97            |
| Country                 | Default                      |
| Current Local Time      | Wed Sep 25 08:30:55 UTC 2013 |
| Firmware Version        | 2.0.0                        |
| Management VLAN ID      | 4096                         |

**Reset**

The System Settings section allows you to reboot the device, or restore the device to the factory default settings. Restoring the unit to the factory default settings will erase all settings, including any rules you have created.

System Commands



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