IMPORTANT

To install this Access Point please refer to the Quick Installation Guide included in the product packaging.
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Chapter 1
Product Overview
Introduction

Key Features-ENH1750EXT

• Up to 29 dBm transmit power enabling long range connectivity
• Supports IEEE802.11ac/a/b/g/n wireless standards with up to 450 Mbps data rate on 2.4GHz band and 1300Mbps on 5GHz band
• Three detachable 5 dBi 2.4 GHz Omni-directional antennas
• Three detachable 7 dBi 5 GHz Omni-directional antennas
• Can be monitored after deployment with EnGenius EZ Controller™ software for Windows (Free online download)
• Mesh Supported
• Can be used with included power adapter or via PoE with PoE 802.3at - capable switches or injectors
• Dual Band/Three Stream
• Band Steering shifts dual band clients to 5 GHz for better throughput performance
• Secured Guest Network option available

Introduction

The ENH1750EXT is a high-powered, long-range 3x3 Dual-Band Wireless 802.11 ac/a/b/g/n Outdoor Access Point with speeds up to 450 Mbps on 2.4GHz and 1300Mbps on 5GHz band. It can be configure as an: Access Point, Client Bridge, or WDS (AP, Station & Bridge). The ENH1750EXT is designed to operate in a variety of outdoor environments. Its high-powered, long-range characteristics make it a cost-effective alternative to ordinary Access Points that don’t have the range and reach to connect to a growing number of wireless users who wish to connect to a business network. The ENH1750EXT supports the 2.4GHz frequency band under 802.11 b/g/n mode while at the same time providing 5GHz band under 802.11 ac/a/n mode for communicating...

Maximum data rates are based on IEEE 802.11 standards. Actual throughput and range may vary depending on many factors including environmental conditions, distance between devices, radio interference in the operating environment, and mix of devices in the network. Features and specifications subject to change without notice. Trademarks and registered trademarks are the property of their respective owners. For United States of America: Copyright © 2014 EnGenius Technologies, Inc. All rights reserved.
to and from 5GHz capable computers, tablets or smartphones or transferring files. Several ENH1750EXTs can be deployed in a campus setting using the 5GHz band as a backhaul to provide multiple 2.4GHz wireless cells for computers or mobile devices in common outdoor areas.

The ENH1750EXT is easy to install in virtually any location with its included PoE (Power over Ethernet) injector for quick outdoor installation. The ENH1750EXT enables network administrators to control its transmit power and feature settings for selecting narrow bandwidth and traffic shaping. The ENH1750EXT also supports wireless encryption including Wi-Fi Protected Access (WPA-PSK/WPA2-PSK) Encryption, and IEEE 802.1x with RADIUS.

System Requirements
The following are the Minimum System Requirements in order to configure the device.

- Computer with an Ethernet interface or wireless network capability
- Windows OS (XP, Vista, 7), Mac OS, or Linux-based operating systems
- Web-Browsing Application (i.e.: Internet Explorer, Firefox, Safari, or another similar browser application)
Package Contents

The ENH1750EXT package contains the following items:*

- ENH1750EXT Access Point
- 3 detachable 5 dBi 2.4 GHz Omni-directional Antenna
- 3 detachable 7 dBi 5 GHz Omni-directional Antenna
- Power Adapter (48V/0.8A)
- PoE Injector (EPE-48GR)
- Grounding Cable
- Pole Mount Bracket
- Wall Mount Base
- Mounting Screw Set
- Quick Installation Guide
- Technical Support Card

*(all items must be in package to issue a refund):
**Introduction**

**Key Features-ENH1350EXT**

- Up to 28 dBm transmit power enabling long range connectivity
- Supports IEEE802.11ac/a/b/g/n wireless standards with up to 450 Mbps data rate on 2.4GHz band and 1300Mbps on 5GHz band
- Two detachable 5.17 dBi 2.4 GHz Omni-directional antennas
- Two detachable 5.17 dBi 5 GHz Omni-directional antennas
- Can be monitored after deployment with EnGenius EZ ControllerTM software for Windows (Free online download)
- Can be used with included power adapter or via PoE with Proprietary 48V.
- Fast Transition and Handover between Access Points
- Band Steering shifts client devices to a proper frequency band for getting more bandwidth and speed under an Access Point.
- Secured Guest Network option available

**Introduction**

ENH1350EXT equips with two powerful RF interfaces that support up to 867 Mbps in 5GHz frequency band and 400 Mbps in 2.4GHz frequency band (with 2ss/VHT40 clients). It can be configured as an: Access Point, Client Bridge, or WDS (AP, Station & Bridge). The ENH1350EXT is designed to withstand harsh environment conditions including serve and prolonged exposure to sunlight, extreme cold, frost, snow, rainfall, hail and humidity. The ENH1350EXT supports the 2.4GHz frequency band under 802.11 b/g/n mode while at the same time providing 5GHz band under 802.11 ac/a/n mode for communicating to and from 5GHz capable computers, tablets or smart phones or transferring files. Several ENH1350EXTs can be deployed in a campus setting using the 5GHz band as a backhaul to provide multiple 2.4GHz wireless cells for computers or mobile devices. Radio interference in the operating environment, and mix of devices in the network. Features and specifications subject to change without notice. Trademarks and registered trademarks are the property of their respective owners. For United States of America: Copyright © 2014 EnGenius Technologies, Inc. All rights reserved.
devices in common outdoor areas.

The ENH1350EXT is easy to install in virtually any location with its included PoE (Power over Ethernet) adapter for quick outdoor installation. The ENH1350EXT enables network administrators to control its transmit power and feature settings for selecting narrow bandwidth and traffic shaping. The ENH1350EXT also supports wireless encryption including Wi-Fi Protected Access (WPA2-PSK) Encryption, and IEEE 802.1x with RADIUS.

**System Requirements**

The following are the Minimum System Requirements in order to configure the device.

- Computer with an Ethernet interface or wireless network capability
- Windows OS(XP, Vista, 7, 8, 10), Mac OS, or Linux-based operating systems
- Web-Browsing Application (i.e.: Internet Explorer, Firefox, Safari, or another similar browser application)

**Package Contents**

The ENH1350EXT package contains the following items:*  
- ENH1350EXT Access Point  
- 2 detachable 5 dBi 2.4 GHz Omni-directional Antenna  
- 2 detachable 5 dBi 5 GHz Omni-directional Antenna  
- PoE Adapter (48V/0.6A)  
- Power Cord  
- Pole Mount Strap  
- Wall Mount Screw set  
- Quick Installation Guide  

*(all items must be in package to issue a refund)
Technical Specifications
ENH1750EXT

Standard:
IEEE802.11ac/a/n on 5 GHz
IEEE802.11b/g/n on 2.4 GHz
IEEE802.3at

Antenna
6 External N-type Antenna
   3 x detachable 5 dBi 2.4 GHz Omni-directional Antennas
   3 x detachable 7 dBi 5 GHz Omni-directional Antennas

Physical Interface
2 x 10/100/1000 Gigabit Ethernet Port with PoE support
   LAN1 Port: IEEE802.3at PoE Input
   LAN2 Port: IEEE802.3af PoE Output
   Both Ethernet Ports support Surge Protection to 6KV

LED Indicator
Power
LAN 1
LAN 2
2.4 GHz
5 GHz

Power Requirements
External Power Adapter, DC IN, 48V/0.8A
IEEE802.3at support

Operation Modes
Access Point
WDS
Mesh

WDS Detail
WDS AP
WDS Bridge
WDS Station

Mesh Detail
Mesh AP
Mesh Only

Management
Auto Channel Selection
Multiple SSID: 16 SSIDs, 8 SSIDs per Radio
BSSID
SNMP V1/V2c/V3
MIB I/II, Private MIB
VLAN Tag/VLAN Pass-through
Clients Statistics
Save Configuration as User Default
Fast Roaming
E-Mail Alert
RADIUS Accounting
Guest Network

Control
CLI Supported
Distance Control (Ack Timeout)
802.1X Supplicant (CB Mode)
Multicast Supported
Auto Reboot
Obey Regulatory Power
**Security**
WEP Encryption - 64/128/152 bit
WPA/WPA2 Personal (WPA-PSK using TKIP or AES)
WPA/WPA2 Enterprise (WPA-PSK using TKIP or AES)
Hides SSID in beacons
MAC address filtering, up to 50 MACs
Wireless STA (Client) connection list
Https Support
SSH Support

**QoS (Quality of Service)**
Complaint with IEEE 802.11e standard

**Physical/Environment Conditions**
Operating:
- Temperature: -4 °F to 158 °F (-20 °C to 70 °C)
- Humidity (non-condensing): 90% or less

Storage:
- Temperature: -22 °F to 176 °F (-30 °C to 80 °C)
- Humidity (non-condensing): 90% or less
ENH1350EXT

Standard:
IEEE802.11ac/a/n on 5 GHz
IEEE802.11b/g/n on 2.4 GHz
IEEE802.3at

Antenna
4 External N-type Antenna
   2 x detachable 5.17 dBi 2.4 GHz Omni-directional Antennas
   2 x detachable 5.17 dBi 5 GHz Omni-directional Antennas

Physical Interface
1 x 10/100/1000 Gigabit Ethernet Port with PoE support
   LAN Port: IEEE802.3af and Proprietary 48V POE input.
   Ethernet Ports support Surge Protection to 1KV

LED Indicator
Power
LAN
2.4 GHz
5 GHz

Power Requirements
External Power Adapter, DC IN, 48V/0.6A

Operation Modes
Access Point
Client Bridge
WDS

WDS Detail
WDS AP
WDS Bridge
WDS Station

Management
Auto Channel Selection
Multiple SSID: 8 SSIDs per Radio
BSSID
SNMP V1/V2c/V3
MIB I/II, Private MIB
VLAN Tag/VLAN Pass-through
Clients Statistics
Save Configuration as User Default
Fast Roaming
E-Mail Alert
RADIUS Accounting
Guest Network

Control
CLI Supported
Distance Control (Ack Timeout)
802.1X Supplicant (CB Mode)
Multicast Supported
Auto Reboot
Obey Regulatory Power

Security
WPA2 Personal
WPA2 Enterprise
Hides SSID in beacons
MAC address filtering, up to 32 MACs
Wireless STA (Client) connection list
Https Support
SSH Support
QoS (Quality of Service)
Compliant with IEEE 802.11e standard

Physical/Environment Conditions
Operating:
  Temperature: -4 °F to 140 °F (-20 °C to 60 °C)
  Humidity (non-condensing): 0%~90% typical
Storage:
  Temperature: -40 °F to 176 °F (-40 °C to 80 °C)
  Humidity (non-condensing): 0%~90% typical

Power Setting
ENH1350EXT follow below power table to do power setting.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>CH</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>2412</td>
<td>CH01</td>
<td>16</td>
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<tr>
<td>2437</td>
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<td>2462</td>
<td>CH11</td>
<td>19</td>
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<tr>
<td>2412</td>
<td>CH01</td>
<td>13.5</td>
</tr>
<tr>
<td>2437</td>
<td>CH06</td>
<td>20.5</td>
</tr>
<tr>
<td>2462</td>
<td>CH11</td>
<td>14</td>
</tr>
<tr>
<td>2422</td>
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<td>10</td>
</tr>
<tr>
<td>2437</td>
<td>CH06</td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequency</th>
<th>CH</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>5180</td>
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<td>13</td>
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<td>5200</td>
<td>CH40</td>
<td>13</td>
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<td>5240</td>
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<td>13</td>
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<td>13</td>
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<td>5230</td>
<td>CH46</td>
<td>13</td>
</tr>
<tr>
<td>5210</td>
<td>CH42</td>
<td>12.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequency</th>
<th>CH</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>5745</td>
<td>CH149</td>
<td>20.5</td>
</tr>
<tr>
<td>5755</td>
<td>CH151</td>
<td>20.5</td>
</tr>
<tr>
<td>5795</td>
<td>CH159</td>
<td>20.5</td>
</tr>
<tr>
<td>5775</td>
<td>CH135</td>
<td>18.5</td>
</tr>
</tbody>
</table>
Physical Interface (ENH1750EXT)

Dimensions and Weights
Length: 11.22”
Width: 8.58”
Depth: 2.1”
Weight: 4.17 lbs

1 2.4 GHz Antennas: Detachable 5 dBi 2.4 GHz Omni-directional
2 5 GHz Antennas: Detachable 7 dBi 5 GHz Omni-directional
3 LAN Port 1 (802.3at PoE Input): Ethernet port for RJ-45 cable.
4 LAN Port 2 (802.3af PSE Output): Ethernet port for RJ-45 cable.
5 LED Indicators: LED lights for Power, LAN Port 1, LAN Port 2, 2.4 GHz Connection and 5 GHz Connection.
6 Ground
7 Mounting Holes: Using the provided hardware, the ENH1750EXT can be attached to a wall or pole.
Physical Interface (ENH1350EXT)

Dimensions and Weights
Length: 6.83”
Width: 4.38”
Depth: 1.19”
Weight: TBD

1 2.4 GHz Antennas: Detachable 5.17 dBi 2.4 GHz Omni-directional
2 5 GHz Antennas: Detachable 5.17 dBi 5 GHz Omni-directional
3 LAN Port (802.3af and Proprietary 48V PoE Input): Ethernet port for RJ-45 cable.
4 LED Indicators: LED lights for Power, LAN Port, 2.4 GHz Connection and 5 GHz Connection.
5 Mounting Holes: Using the provided hardware, the ENH1350EXT can be attached to a wall or pole.
Chapter 2
Before You Begin
Computer Settings

Windows XP/Windows 7/Windows 8/Windows 10

In order to use the Access Point, you must first configure the TCP/IPv4 connection of your Windows OS computer system.

1a. Click the Start button and open the Control Panel

1b. Move your mouse to the lower right hot corner to display the Charms Bar and select the Control Panel in Windows 8 OS.

1c. In Windows 10, click Start to select All APPs to enter the folder of Windows system for selecting Control Panel.
2a. In Windows XP, click **Network Connections**.

2b. In Windows 7/Windows 8/Windows 10, click **View Network Status and Tasks** in the Network and Internet section, then select **Change adapter settings**.

3. Right click on **Local Area Connection** and select **Properties**.

4. Select **Internet Protocol Version 4 (TCP/IPv4)** and then select **Properties**.

5. Select **Use the following IP address** and enter an IP address that is different from the Access Point and Subnet mask, then click **OK**.
**Note:** Ensure that the IP address and Subnet mask are on the same subnet as the device.

For example: ENH220EXT IP address: 192.168.1.1

PC IP address: 192.168.1.2 - 192.168.1.255

PC Subnet mask: 255.255.255.0
Apple Mac OS X

1. Go to System Preferences (Which can be opened in the Applications folder or selecting it in the Apple Menu).

2. Select Network in the Internet & Network section.

3. Highlight Ethernet.


5. Enter an IP address that is different from the Access Point and Subnet mask then press OK.

   **Note:** Ensure that the IP address and Subnet mask are on the same subnet as the device.

   For example: ENH900EXT IP address: 192.168.1.1
   PC IP address: 192.168.1.2 – 192.168.1.255
   PC Subnet mask: 255.255.255.0

6. Click Apply when done.
Hardware Installation
ENH1750EXT

1. 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 on the PoE injector.

2. Connect the **Power Adapter** to the **DC-IN** port of the PoE injector and plug the other end in to an electrical outlet.

3. Connect the second Ethernet cable into the **LAN port** of the PoE injector and the other end to the Ethernet port on the computer.

4. Screw on the provided antennas to the device. Once both connections are secure, verify the following:
   a) Ensure that the **POWER** light is on (it will be green).
   b) Ensure that the 2.4 GHz/5 GHz WLAN light is on (it will be green for both 5 GHz and 2.4 GHz).
   c) Ensure that the LAN (Computer/ENH1750EXT Connection) light is on (it will be green).
   d) Once all three lights are on, proceed to set up the Access Point using the computer.

   **Note:** The Access Point supports both IEEE 802.3at PoE (Power over Ethernet) or the included power injector. You may use either one as the power source. **Do NOT use both at the same time.**
Mounting the ENH1750EXT

Using the provided hardware, the ENH1750EXT can be attached to a wall or a pole.

1. Wall Mount Kit  260x180x7 (mm)

2. Pole Mount Kit 140x112x33 (mm)

3. Pipe 63.5 (D) x 12.7 (mm)

4. Tool 20(D) x 6 (mm)

5. Screws: 6.5(D) x 9.95 (mm)
To attach the ENH1750EXT to a wall using wall mounting kit.

1. Mark the four locations of the mounting holes on the flat mounting surface.

2. Drill a 37 mm deep 8 mm hole in the markings and hammer the bolts into the openings.

3. 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.

4. Tighten the flat washers to secure the bracket to the mounting surface.
To attach the ENH1750EXT to a pole using the provided pole mounting kit:

1. 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.

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

**Note:** See diagram below for vertical and horizontal placements.
Hardware Installation
ENH1350EXT
1. Connect one end of the Ethernet cable into the LAN port (PoE) of the AP/Bridge and the other end to the PoE port on the PoE adapter.

2. Connect the Power cord with the PoE Adapter and plug the other end into an electrical outlet.

3. Connect the second Ethernet cable into the LAN port of the PoE adapter and the other end to the Ethernet port on the computer.

4. Screw on the provided antennas to the top of this device.

Note: The AP/Bridge should ONLY be powered via Ethernet cable connected to the included PoE Adapter.

This diagram depicts the hardware configuration.

Note: The AP/Bridge should ONLY be powered via Ethernet cable connected to the included PoE Adapter.
Mounting the ENH1350EXT

Using the provided hardware, the ENH1350EXT can be attached to a wall or a pole.

1. Wall Mounting Kit
(Anchors: Φ5.5*18 mm & Bolts: Φ8*25 mm)

2. Pole Mounting Strap
(Φ66*12.6 mm)
To attach the ENH1350EXT to a wall using wall mounting kit:

A. Determine where the Access Point to be placed and stick the Adhesive label on the surface.

B. Use the appropriate drill bit to drill two 8.1mm diagram and 26mm depth holes on the markings of the label.

C. Remove the label and screw the anchors unto the holes until they are flush with the wall.

D. Screw the included screws into the anchors. Place the Access Point against wall with the mounting screw heads.

To attach the ENH1350EXT to a pole using the provided pole mounting kit:

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

B. Lock and tighten Pole Strap to secure Pole Mount Bracket to the pole.
Chapter 3

Configuring Your Access Point
Configuring Your Access Point

This section will show you how to configure the device using the web-based configuration interface.

Default Settings

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

<table>
<thead>
<tr>
<th>IP Address</th>
<th>192.168.1.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Username / Password</td>
<td>admin / admin</td>
</tr>
</tbody>
</table>

Web Configuration

1. Open a web browser (Internet Explorer/Firefox/Safari/Chrome) and enter the IP Address [http://192.168.1.1](http://192.168.1.1)

   ![New Tab](image)

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

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

   ![EnGenius](image)

   *The model name will be varied by different models.*

3. If successful, you will be logged in and see the User Menu of this Access Point.
Chapter 4
Building a Wireless Network
Before starting to configure this Access Point, you may realize the used scenario under varied operating modes. The AP has the ability to operate in various modes. This chapter describes purpose of different operating modes and lists down the operating modes for outdoor Access Points.

**Access Point Mode**

In Access Point Mode, AP behaves like a central connection for stations or clients that support IEEE 802.11 ac/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 AP. The AP supports up to eight SSIDs at the same time for secure access.
Client Bridge Mode

The AP 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.
WDS AP Mode

The AP also supports WDS AP mode. This operating mode allows wireless stations to connect with Access Point via using WDS technology. In this mode, configure the MAC addresses or SSIDs in both Access Points to enlarge the wireless area by enabling WDS Link settings. WDS supports up to four (4) AP MAC addresses and four (4) SSIDs at the same time.
WDS Bridge Mode

In WDS Bridge Mode, the Access Point can wirelessly connect different LANs by configuring the MAC address and security settings of each Access Point. Use this operating mode when two wired LANs located a small distance apart want to communicate with each other. The best solution is to use the Access Point to wirelessly connect two wired LANs, as shown in the following diagram.

WDS Bridge Mode can establish up to four (4) to eight (8) 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 function to prevent this from happening.
WDS Station Mode
WDS station (WDS STA) mode expands the WDS by receiving a wireless signal/service and sharing it through the Ethernet port. With WDS STA mode.
AP Mesh Mode-ENH1750EXT

Under the AP Mesh mode, the ENH1750EXT 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 ENH1750EXT can be configured with the same Mesh SSID and security password in order to associate with other ENH1750EXTs, 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

![Diagram of AP Mesh Mode](image-url)
Mesh Only Mode-ENH1750EXT

Under the Mesh-only mode, the ENH1750EXT can be configured with the same Mesh SSID and security password in order to associate with other Mesh enabled ENH1750EXTs, instead of connecting with clients.
Chapter 5
Status
Overview

Save Changes

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

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, WDS AP or WDS BR mode.

![Device Information Table]

- The **Memory Information** section shows usage of
memory such as Total Available, Free, Cached, Buffered

• The **LAN Information** section shows the Local Area Network settings such as the LAN IP Address, Subnet mask, Primary DNS Address, Secondary DNS Address, status of DHCP client, and status of Spanning Tree protocol (STP).

<table>
<thead>
<tr>
<th>LAN Information - IPv4</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Address</td>
<td>192.168.1.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subnet Mask</td>
<td>255.255.255.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gateway</td>
<td>192.168.1.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary DNS</td>
<td>0.0.0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary DNS</td>
<td>0.0.0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DHCP Client</td>
<td>Disable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spanning Tree Protocol (STP)</td>
<td>Disable</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Wireless LAN Information - 2.4GHz</th>
<th>Operation Mode</th>
<th>Wireless Mode</th>
<th>Channel Bandwidth</th>
<th>Channel</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AP</td>
<td>802.11 B/G/N</td>
<td>20-40 MHz</td>
<td>2.437 GHz (Channel 6)</td>
<td>1000 M</td>
</tr>
<tr>
<td>Profile</td>
<td>SSID</td>
<td>Security</td>
<td>VID</td>
<td>802.11Q</td>
<td></td>
</tr>
<tr>
<td>#1</td>
<td>EnGenius003C96_1-2.4GHz</td>
<td>None</td>
<td>1</td>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>#2</td>
<td>EnGenius003C96_2-2.4GHz</td>
<td>None</td>
<td>2</td>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>#3</td>
<td>EnGenius003C96_3-2.4GHz</td>
<td>None</td>
<td>3</td>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>#4</td>
<td>EnGenius003C96_4-2.4GHz</td>
<td>None</td>
<td>4</td>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>#5</td>
<td>EnGenius003C96_5-2.4GHz</td>
<td>None</td>
<td>5</td>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>#6</td>
<td>EnGenius003C96_6-2.4GHz</td>
<td>None</td>
<td>6</td>
<td>Disable</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wireless LAN Information - 5GHz</th>
<th>Operation Mode</th>
<th>Wireless Mode</th>
<th>Channel Bandwidth</th>
<th>Channel</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AP</td>
<td>802.11 A/N</td>
<td>40 MHz</td>
<td>5.66 GHz (Channel 132)</td>
<td>1000 M</td>
</tr>
<tr>
<td>Profile</td>
<td>SSID</td>
<td>Security</td>
<td>VID</td>
<td>802.11Q</td>
<td></td>
</tr>
<tr>
<td>#1</td>
<td>EnGenius003C97_1-5GHz</td>
<td>None</td>
<td>51</td>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>#2</td>
<td>EnGenius003C97_2-5GHz</td>
<td>None</td>
<td>52</td>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>#3</td>
<td>EnGenius003C97_3-5GHz</td>
<td>None</td>
<td>53</td>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>#4</td>
<td>EnGenius003C97_4-5GHz</td>
<td>None</td>
<td>54</td>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>#5</td>
<td>EnGenius003C97_5-5GHz</td>
<td>None</td>
<td>55</td>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>#6</td>
<td>EnGenius003C97_6-5GHz</td>
<td>None</td>
<td>56</td>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>#7</td>
<td>EnGenius003C97_7-5GHz</td>
<td>None</td>
<td>57</td>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>#8</td>
<td>EnGenius003C97_8-5GHz</td>
<td>None</td>
<td>58</td>
<td>Disable</td>
<td></td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th><strong>Wireless Mesh Information - 2.4GHz</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operation Mode</strong></td>
</tr>
<tr>
<td><strong>Wireless Mode</strong></td>
</tr>
<tr>
<td><strong>Channel Bandwidth</strong></td>
</tr>
<tr>
<td><strong>Frequency/Channel</strong></td>
</tr>
<tr>
<td><strong>Mesh SSID</strong></td>
</tr>
<tr>
<td><strong>Mesh Security</strong></td>
</tr>
</tbody>
</table>
Connection

2.4 GHz/5 GHz Connection List

Click the connection link under the Overview menu displays the connection list of clients associated to the ENH1750EXT’s 2.4 GHz/5 GHz, 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.

2.4 GHz/5 GHz WDS Link List

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.

Realtime

Realtime

The Realtime section contains the following options:

CPU Loading: 3 minutes CPU loading percentage information, it displays current loading, average loading and peak loading status. Left bar is loading percentage; button is time tracing. Interval is every 3 seconds.
Traffic Loading: 2.4GHz and 5GHz and Ethernet port inbound and outbound traffic by current, average and peak time.

Realtime Connection (Pkts): Overview on current active network connections. It displays UDP and TCP packets information and other connection status. UDP connections curve is in blue; TCP connection curve is in green; others curve is in red. Below of chart shows connections source and destination.

The Mesh Link List

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

Note: Only Applicable in the Mesh AP and Mesh Only mode.
Chapter 6
Network
Basic IP Settings
IPv4/IPv6 Settings

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

<table>
<thead>
<tr>
<th>IPv4 Settings</th>
<th>IPv6 Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Network Setting</td>
<td>Static IP*</td>
</tr>
<tr>
<td>IP Address</td>
<td>192.168.1.1</td>
</tr>
<tr>
<td>Subnet Mask</td>
<td>255.255.255.0</td>
</tr>
<tr>
<td>Gateway</td>
<td>192.168.1.1</td>
</tr>
<tr>
<td>Primary DNS</td>
<td>0.0.0.0</td>
</tr>
<tr>
<td>Secondary DNS</td>
<td>0.0.0.0</td>
</tr>
</tbody>
</table>

**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:** The IP address of this device.

**Subnet Mask:** The IP Subnet mask of this device.

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

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

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

<table>
<thead>
<tr>
<th><strong>Spanning Tree Protocol (STP) Settings</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Status</strong></td>
</tr>
<tr>
<td><strong>Hello Time</strong></td>
</tr>
<tr>
<td><strong>Max Age</strong></td>
</tr>
<tr>
<td><strong>Forward Delay</strong></td>
</tr>
<tr>
<td><strong>Priority</strong></td>
</tr>
</tbody>
</table>

**Spanning Tree Status:** Enables or disables the Spanning Tree function. Default is Disable.

**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.
Chapter 7
2.4 GHz & 5 GHz Wireless
Wireless

Wireless Settings

**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 broadcast 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 2.4GHz to operate at their slower rates. Before implementing this feature, we suggest you to assure the both 2.4GHz and 5GHz SSID, as well as security settings must be the same. EnGenius Band Steering supports following advanced settings,

**Force 5GHz:** When band steering is configured to Force 5GHz mode, the AP will not dual band capable client devices to network to the 2.4GHz band only if the client devices are not currently associated on 2.4GHz radio in this AP.

**Prefer 5GHz:** When band steering is configured to Prefer 5GHz mode, the AP will steer dual band capable client devices to 5GHz radio when the RSSI value of these client devices on 5GHz radio is more than set one. The allowed RSSI value for default setting is -75dBm.

*Band Balance:* When band steering is configured to Band Balance mode, the AP will steer dual band capable client devices to 5GHz when the RSSI value of these client devices on 5GHz radio is more than set one. To evenly allocate RF resource on the both 2.4GHz and 5GHz radios, users also can set the portion of client devices on 5GHz radio to assure smoothly connection. The default value of the 5GHz radio is 75%.

**Save:** Click **Save** to confirm the changes
This page displays the current status of the Wireless settings of the AP.

**2.4 GHz/5 GHz Wireless Network**

```
<table>
<thead>
<tr>
<th>Operation Mode</th>
<th>2.4GHz</th>
<th>5GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireless Mode</td>
<td>Access Point</td>
<td>Access Point</td>
</tr>
<tr>
<td>Channel HT Mode</td>
<td>602.11 B/SN</td>
<td>602.11 A/N</td>
</tr>
<tr>
<td>Extension Channel</td>
<td>Upper Channel</td>
<td>Lower Channel</td>
</tr>
<tr>
<td>Channel</td>
<td>Auto</td>
<td>Auto</td>
</tr>
<tr>
<td>Transmit Power</td>
<td>20 dBm</td>
<td>20 dBm</td>
</tr>
<tr>
<td>Data Rate</td>
<td>Auto</td>
<td>Auto</td>
</tr>
<tr>
<td>RTS / CTS Threshold (1 - 2346)</td>
<td>2346</td>
<td>2346</td>
</tr>
<tr>
<td>Client Limits</td>
<td>127 Enable</td>
<td>127 Enable</td>
</tr>
<tr>
<td>Aggregation</td>
<td>32 Frames</td>
<td>32 Frames</td>
</tr>
<tr>
<td>AP Detection</td>
<td>Scan</td>
<td>Scan</td>
</tr>
<tr>
<td>Distance (1-30km)</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
```

**Operation Mode:** Scrow down this list to select operation modes for implementing on this radio. The default operation mode is **Access Point** on base stations and Access Points and is **Client Bridge** on Client Premise Equipements (CPE). Meanwhile, EnGenius outdoor devices also support WDS modes for peer to peer or peer to multi-peer connections.

**Wireless Mode:** Scrow down this list to select wireless broadcasting standard on 2.4GHz and 5GHz frequency bands.

**Channel HT Mode:** Scrow down this list to select bandwidth for operating under a frequency band. The default channel bandwidth is 20 MHz on 2.4GHz frequency radio and 40 MHz on 5GHz frequency radio. Considering the different applications, users can decide to implement a channel bandwidth to fulfill real applications. The larger the channel, the greater the transmission quality and speed.

**Transmit Power (Tx Power):** Default Tx power is Auto to obey regulartory power of each country.

**Channel:** Click Configuration button to open a new windows to configure channels for performing wireless service.
**Wireless Security**

The Wireless Security section lets you configure the AP’s security modes

<table>
<thead>
<tr>
<th>Wireless Security - 2.4G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security Mode</td>
</tr>
<tr>
<td>Auth Type</td>
</tr>
<tr>
<td>Input Type</td>
</tr>
<tr>
<td>Key Length</td>
</tr>
<tr>
<td>Default Key</td>
</tr>
</tbody>
</table>

**Security Mode:** Including WEP, WPA2-PSK, WPA2. We strongly recommend you to use WPA2-PSK mode.

* Setting of WEP mode:

**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. 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.
**Setting of WPA2-PSK:**

**Encryption:** You may select AES, TKIP or Both (TKIP+AES) to be the encryption type you would like. 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 to 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. The default value is 3600.

---

**Setting of WPA2-Enterprise (Pre-Shared Key):**

**Encryption:** Select the WPA2 Enterprise. 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.

**Radius Accounting:** Enable or disable 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 WPA2-PSK TKIP security mode. The connection mode will automatically change from 802.11n to 802.11g.
Wireless Traffic Shaping

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

<table>
<thead>
<tr>
<th>Wireless Traffic Shaping</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enable Traffic Shaping</strong></td>
</tr>
<tr>
<td><strong>Download Limit</strong></td>
</tr>
<tr>
<td><strong>Upload Limit</strong></td>
</tr>
</tbody>
</table>

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

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

**Per User**: Check this option to enable wireless traffic shaping per user function. This function allow users to limit the maximum download / upload bandwidth for each client devices on this SSID.

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

Enable the function 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 to set the Radius Server firstly. Users can enable the Fast Roaming and implement the advanced search.

Please also set the same enterprise Encryption under the same SSID on other Access Points and enable the Fast Roaming. When the configuration is realized on different Access Point, the mobile client devices can run the voice service and require seamless roaming to prevent delay in conversation from Access Point to Access Point.

---

**Enable Fast Roaming:** Enable or disable fast roaming feature.

**Enable Advanced Search:** Enable or disable advanced search feature.
Mesh Settings- ENH1750EXT

AES Passphrase: Enter the key values you wish to use. Other Access Points must use the same key to establish a mesh link.

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

Security: Select None or WPA2-PSK AES from drop-down list.
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 in the 2.4 GHz b/g/n and 5 GHz a/n frequencies.

**SSID:** Specified the SSID for the current profile. Choices given are: Disabled, Deny MAC in the list, or Allow MAC in the list.

**Hidden SSID:** Check this option to hide SSID from clients. If checked, this SSID will not appear in the AP detect.

**Client Isolation:** Click the appropriate radio button to allow or prevent communication between client devices.

**IP address:** The IP Address of this device.

**Subnet Mask:** The IP Subnet mask of this device.

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

**Ending IP Address:** The last IP Address in the range of addresses assigned by the DHCP server.
Enable: 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.
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 EAP1750H. The default setting is: Disable Wireless MAC Filter.

Note: Only applicable in Access Point and WDS AP mode.

ACL (Access Control List) Mode: Determines whether network access is granted or denied to clients whose MAC addresses appear in the MAC address table on this page. Choices given are: Disabled, Deny MAC in the list, or Allow MAC in the list.

MAC Address: Enter the MAC address of the wireless client you wish to configure for.

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.
**Wireless Advanced**

This page allows you to configure advanced wireless settings for the EWS550AP/EWS510AP/EWS511AP. It is recommended that the default settings are used unless the user has experience with more advanced networking features.

### 2.4 GHz/5 GHz Wireless Advanced

**Data Rate:** Select a data rate from the drop-down list. The data rate affects throughput of data in the EAP1750H. The lower the data rate, the lower the throughput, though transmission distance will be lowered as well.

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

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

**Distance:** Specifies the distance between Access Points and clients. Longer distances may drop high-speed connections.

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

**Save:** Click Save to confirm the changes.
Chapter 8
Management
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**: If your network includes VLANs, you can enable Management VLAN ID 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 this AP. Verify that the DHCP server supports the reconfigured VLAN ID and then reconnect to this AP using the new IP address.
Advanced Settings

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) returns the data stored in their Management Information Bases.

<table>
<thead>
<tr>
<th>SNMP Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
</tr>
<tr>
<td>Contact</td>
</tr>
<tr>
<td>Location</td>
</tr>
<tr>
<td>Community Name (Read Only)</td>
</tr>
<tr>
<td>Community Name (Read/Write)</td>
</tr>
<tr>
<td>Trap Destination</td>
</tr>
<tr>
<td>- Port</td>
</tr>
<tr>
<td>- IP Address</td>
</tr>
<tr>
<td>- Community Name</td>
</tr>
<tr>
<td>SNMPv3 Settings</td>
</tr>
<tr>
<td>- Status</td>
</tr>
<tr>
<td>- Username</td>
</tr>
<tr>
<td>- Authorized Protocol</td>
</tr>
<tr>
<td>- Authorized Key</td>
</tr>
<tr>
<td>- Private Protocol</td>
</tr>
<tr>
<td>- Private Key</td>
</tr>
<tr>
<td>- Engine ID</td>
</tr>
</tbody>
</table>

**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: MDS or SHA.

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

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

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

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

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

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

**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.

Email Alert

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.

**Status**: Enable this function for further settings.

**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.
Time Zone

Time Setting

This page allows you to set the internal clock of the AP.

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

Synchronize with PC: Click this button to synchronize Date and time of this AP with the PC.

Automatically Get Date and Time: Select Automatically Get Date and Time and check whether you wish to enter the IP address of an NTP server or use the default NTP server to have the internal clock set automatically.

Time Zone: Choose a time zone to implement the service for this AP.

Enable Daylight Saving: Check whether daylight savings applies to your area.

Start: Select the day, month, and time when daylight savings time starts.

Enable Daylight Saving: Select the day, month, and time when daylight savings times ends.
Auto Reboot Settings

You can specify how often you wish to reboot the AP.

<table>
<thead>
<tr>
<th>Auto Reboot Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
</tr>
<tr>
<td>Timer</td>
</tr>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

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

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

**Save**: Click Save to apply the changes.
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 End Time of 8pm to limit access to these times.

Status: Enables or disables the Wi-Fi scheduler function.

Wireless Radio: Select 2.4 GHz or 5 GHz from the drop-down list for the preferred band type.

SSID Selection: Select a SSID from the drop-down list.

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 radio button 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.
Tools

Ping Test Parameters

This page allows you to analyze the connection quality of the AP and trace the routing table to a target in the network.

<table>
<thead>
<tr>
<th>Target IP / Domain Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ping Packet Size</td>
<td>64</td>
</tr>
<tr>
<td>Number of Pings</td>
<td>4</td>
</tr>
</tbody>
</table>

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

**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 pinging the target device (via IP).

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

**Start Traceroute:** Click **Start Traceroute** to begin the trace route operation.
Speed Test Parameters / LED Control

This page allows you to analyze the connection quality of the AP and trace the routing table to a target in the network.

**Target IP / Domain Name:** Enter an IP address or domain name you wish to implement a speed test for realizing the variance on wireless speed.

**Time Period:** Enter the time in seconds that you would like the test to implement for and in how many intervals.

**IPv4/IPv6 Port:** This Access Points uses IPv4 5001 and IPv6 5002 port for the speed test.

**Start:** Click start to implement speed test.

LED Control

Control LED on/off for Power, LAN interface, or 2.4 GHz/5 GHz WLAN interface.

**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

This page allows you to discover devices from network for Operation Mode, IP Address, System MAC Address and Firmware version.
Account

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

Account Settings

<table>
<thead>
<tr>
<th>Account Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator Username</td>
</tr>
<tr>
<td>Current Password</td>
</tr>
<tr>
<td>New Password</td>
</tr>
<tr>
<td>Verify Password</td>
</tr>
</tbody>
</table>

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

**Current Password:** Enter the old password for logging in to the Old Password entry box.

**New Password:** Enter the new password for logging in to the New Password entry box.

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

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

Firmware

**Firmware Upgrade**

This page allows you to upgrade the firmware of the AP.

To Perform the Firmware Upgrade:

1. Click the Choose File button and navigate the OS file system to the location of the upgrade file.
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.
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 section. If extreme problems occur, or if you have set the AP incorrectly, you can use the Reset button in the Revert to Factory Default Settings section to restore all the configurations of the AP to the original default settings.

**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 Default:** Click Reset button to restore the ENH1750EXT to its factory default settings.

---

**Backup/Restore Settings**

<table>
<thead>
<tr>
<th>Factory Setting</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Backup Setting</td>
<td>Export</td>
</tr>
<tr>
<td>- Restore New Setting</td>
<td>Import</td>
</tr>
<tr>
<td>- Reset to Default</td>
<td>Reset</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>User Setting</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Back Up Setting as Default</td>
<td>Backup</td>
</tr>
<tr>
<td>- Restore to User Default</td>
<td>Restore</td>
</tr>
</tbody>
</table>

- **Caution:** Please write down your account number and password before saving. The user settings will now become the new default settings at the next successful login.
User Setting
The function allows you to backup the current device configurations into the AP as the default value. If extreme problems occur, or if you have set the AP incorrectly, you can push the Reset button to revert all the configurations of the AP to the user default.

Back Up Setting as Default: Click Backup to backup the user settings you would like to the device’s memory for the default settings.

Restore to User Default: Click Restore to restore user settings to the factory standard settings.

Note1: After setting the current settings as the default, you should click the Restore to Default on the web interface for reverting the settings into the factory default instead of pushing the reset button.

Note2: Please write down your account and password before saving. The user settings will now become the new default settings at the next successful login.
Log

System Log

The AP automatically logs (records) events of possible interest are in its internal memory. To view the logged information, click the Log link 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.

Remote Log

This page allows you to setup the Remote Log functions for the AP.

Remote Log: Enable/disable this function.

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

Apply: Click Apply to apply the changes.

Status: Enable/Disable this function.

Log type: You may choose one of log types to display logs in the following window. The default log types is All.
Logout

Logout: Click Logout in Management menu to logout.

Please confirm again to logout the system or not.

Reset

In some circumstances, it may be required to force the device to reboot. Click on Reset to reboot the AP.

Once you click reset button, you will see the options for reboot or restore this AP.

Reboot the device: Click it to reboot this device.

Restore to Factory Default: Click it to reset this device to factory default setting.

Restore to User Default: Click it to reset this device to user default settings. For realizing the setting method, you may refer page 74 and page 75.
Appendix
Appendix A

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

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

FCC Caution:

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

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

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 a minimum distance of 20 cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. Operation of this device is restricted to indoor use only.
Appendix B - IC Interference Statement

Industry Canada statement

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

Ce dispositif est conforme à la norme CNR-247 d’Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Caution:

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

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

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

Avertissement:

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

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

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

Radiation Exposure Statement

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator & your body.

Pour l’utilisation de dispositifs mobiles)

Déclaration d’exposition aux radiations:

Cet équipement est conforme aux limites d’exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20cm de distance entre la source de rayonnement et votre corps.
Appendix C - CE Interference Statement

Europe - EU Declaration of Conformity

This device complies with Directive 2014/53/EU issued by the Commission of the European Community.

- Declaration of Conformity

Please added certification standard in your user manual which depended on the test standards your device performed. or

- If the DoC should be a simplified version, please take below as reference –

Hereby, EnGenius Networks declares that the EWS550AP/EWS510AP/EWS511AP are in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address:

Importer: EnGenius Networks Europe B.V.
Importer Address: ESP 240, 5633 AC Eindhoven, The Netherlands
Manufacturer: EnGenius Networks Inc.
Manufacturer Address: No.500, Fusing 3rd Rd., Hwa-Ya Technology Park Kuei-Shan Dist., Taoyuan City, Taiwan (R.O.C.)
CE DoC Link: https://www.engeniusnetworks.eu/ens500ext-ac-ens500-ac-enstation5-accedoc
Appendix D - Professional installation instruction

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

2. Installation location
The product shall be installed at a location where the radiating antenna can be kept 20cm from nearby person in normal operation condition to meet regulatory RF exposure requirement.

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

4. Installation procedure
Please refer to user’s manual for the detail.

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