EnGenius®

Business Solutions

User Manual

EnStationACv2/EnStation5-ACv2/ENS500-ACv2/ENS500EXT-ACv2

version 1.0

AC867 5GHz
Outdoor Long Range Wireless Access Point

IMPORTANT

To install this Access Point please refer to the Quick Installation Guide included in the product packaging.

Table of Contents

Chapter 1
Product Overview

Introduction

Key Features

- Supports IEEE802.11ac/a/n wireless standards with up to 867 Mbps data rate.
- Internal 15.5dBi high gain directional antenna(EnStation5-ACv2/EnStationACv2);Internal 13.42dBi high gain directional antenna(ENS500-ACv2);
- External 5.17dBi dipole antenna(ENS500EXT-ACv2)
- ENS500EXT-ACv2/ENS500-ACv2/EnStation5-ACv2 Can be used with included 24V PoE adapter
- EnStationACv2 Can be used with included 54V PoE adapter
- Secured Guest Network option available
- Advanced 256-QAM technology to achieve optimal performance throughout ultra-long distance

EnStation5-ACv2/ EnStationACv2

ENS500-ACv2/ETD500EXT

Introduction

The EnStation5-ACv2/EnStationACv2/ENS500-ACv2/ ENS500EXT-ACv2 is a high-powered, ultra long-range 2x2 Wireless 802.11ac/a/n Outdoor Access Point with speeds up to 867 Mbps on both its high-powered 5 GHz radios. Builded in EnGenius EnJet solution, AP can transmit data more efficiently, avoid collisions,and reduce latency and packet losses. It can be configured as an: Access Point, Client Bridge or WDS (AP & Station) when EnJet enable, or Access Point, Client Bridge or WDS (AP, Station & Bridge) when EnJet disable. The EnStation5-ACv2/EnStationACv2/ ENS500-ACv2/ENS500EXT-ACv2 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 CPEs who wish to connect to a business network. The EnStation5-

ACv2/EnStationACv2/ENS500-ACv2/ENS500EXT-ACv2 supports the 5 GHz frequency band for communicating to other 5GHz frequency bands Access Points concurrently. Several EnStation5-ACv2/EnStationACv2/ENS500-ACv2/ ENS500EXT-ACv2s can be networked in a campus setting using the 5 GHz band between countries, which is easy to be installed in virtually any location with its included PoE (Power over Ethernet) Adapter for quick outdoor installation. The EnStation5-ACv2/EnStationACv2/ ENS500-ACv2/ENS500EXT-ACv2 enables network administrators to control its transmit power and features settings for selecting VHT80 bandwidth to perform ture AC transmission. When EnJet enable, administrators can adjust the AP time slot and Station Priority to maximize transmission efficiency. It 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 EnStation5-ACv2/EnStationACv2 package contains the following items:*

- EnStation5-ACv2/EnStationACv2 Customer Premises Equipment
- EnStation5-ACv2 with PoE Adapter EPA2406GR/EnStationACv2 with PoE Adapter EPA5006GR
- Power Cord
- Pole Mount Strap
- Wall Mount Bracket Base
- Screw Sets Kit
- Rubber
- Sealing Nut
- Dynamic Stick
- Quick Installation Guide

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

The ENS500-ACv2/ENS500EXT-ACv2 package contains the following items:*

- ENS500-ACv2/ENS500EXT-ACv2
- 5GHz Detachable Antennas*2 (ENS500EXT-ACv2)
- PoE Adapter (EPA2406GR)
- Power Cord
- Pole Mount Strap
- Wall Mount Screw Set
- Quick Installation Guide

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

Technical Specifications

Standard:
IEEE802.11ac wave2/a/n on 5 GHz

Antenna
Internal 15.5dBi high gain directional antenna (EnStation5-ACv2/ EnStationACv2)
Internal 13.42dBi high gain directional antenna (ENS500-ACv2)
External 2*5.17dBi detachable antenna (ENS500EXT-ACv2)

Physical Interface
2 x 10/100/1000 Gigabit Ethernet Port with PoE support
EnStation5-ACv2/EnStationACv2 LAN(PoE) Port supports 24V/54V PoE Input

LED Indicator
Power
LAN 1
LAN 2
WLAN
WLAN LED (Weak, Medium, Strong)

Power Requirements
EnStation5-ACv2/EnStationACv2 Include PoE Adapter, 24V 0.6A/54V 0.6A

Operation Modes-EnJet enable

Access Point
Client Bridge
WDS AP
WDS Station

Operation Modes-EnJet disable

Access Point
Client Bridge
WDS AP
WDS Bridge
WDS Station

Optimal Performance
Distance Control (Ack Timeout)
Multicast Supported
Data Rate Selection
Auto Channel Selection
BSSID Support
AP Time Slot
Station Priority

Easily Management
VLAN Tag / VLAN Pass-through
Guest Network
QoS: Complaint with IEEE 802.11e/WMM
RADIUS Accounting
Wireless STA (Client) connection list
Traffic Shaping (Per SSID)

Intuitive Tools
SNMP v1/v2c/v3 support
MIB I/II, Private MIB
Save Configuration as Default
CLI Support
WiFi-Scheduler/Auto Reboot
E-mail Alert

Reinforcement Security
WPA2 Enterprise
Hide SSID in beacons
MAC address filtering, up to 32 MACs per SSID
Wireless STA (Client) connection list

Https Support
SSH Support

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

Physical/Environment Conditions
Operating:
- Temperature: -20 ℃ to 60 ℃ (-4 ℉ to 140 ℉)
- Humidity (non-condensing): 90% or less

Storage:
- Temperature: -30 ℃ to 80 ℃ (-22 ℉ to 176 ℉)
- Humidity (non-condensing): 90% or less

Physical Interface-EnStation5-ACv2/EnStationACv2

Dimensions and Weights

EnStation5-ACv2/EnStationACv2
Dimension: 190mm (7.48")
Height: 38mm (1.9")
Weight: 527g (1.16 lbs)

1 WLAN Signal LED: Applied on Client Bridge/WDS
  (1) Red: Weak Signal: Connecting quality is bad.
  (2) Yellow: Connecting quality is Normal.
  (3) Green: Connection quality is Good.
2 LAN(PoE) Signal LED
3 LAN Signal LED of the 2nd Port
4 Power Signal:
5 LAN Port 1: Gigabit Ethernet port for RJ-45 cable.
6 LAN Port 2: Gigabit Ethernet port for RJ-45 cable.

Physical Interface -ENS500-ACv2/ENS500EXT-ACv2

Dimensions
Length: 186 mm(7.32")
Width: 100 (3.94")
Depth: 29mm (1.14")

1 5 GHz Antennas Detachable 5 dBi 5 GHz Omni-directional Antennas (ENS500EXT-ACv2 Only)

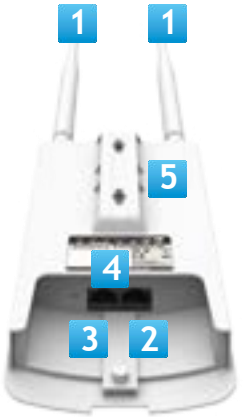
2 LAN Port 1 (Proprietary24V PoE): Ethernet port for RJ-45 cable.

3 LAN Port 2 : Ethernet port for RJ-45 cable.

4 LED Indicators: LED lights for Power, LAN Port 1, LAN Port 2, 2.4 GHz Connection and 5 GHz Connection.

5 Mounting Holes: Using the provided hardware, the AP can be attached to a wall or pole.

*The installation angle of antenna must be vertical to the ground.



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

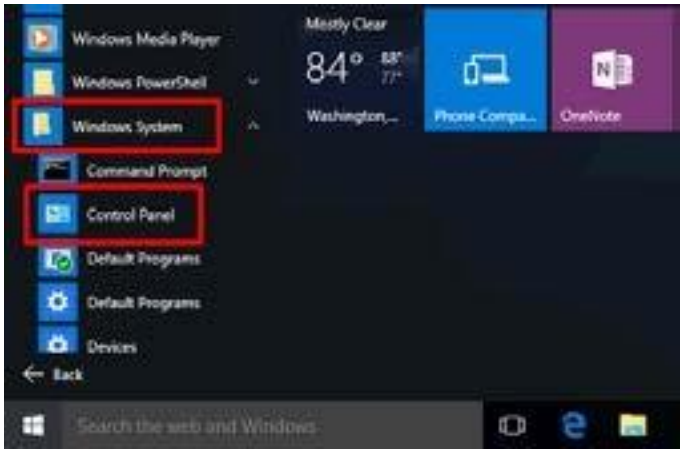
Windows XP

Windows 7

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

Windows 8

1c. In Windows 10, click Start to select All APPs to enter the folder of Windows system for selecting Control Panel.



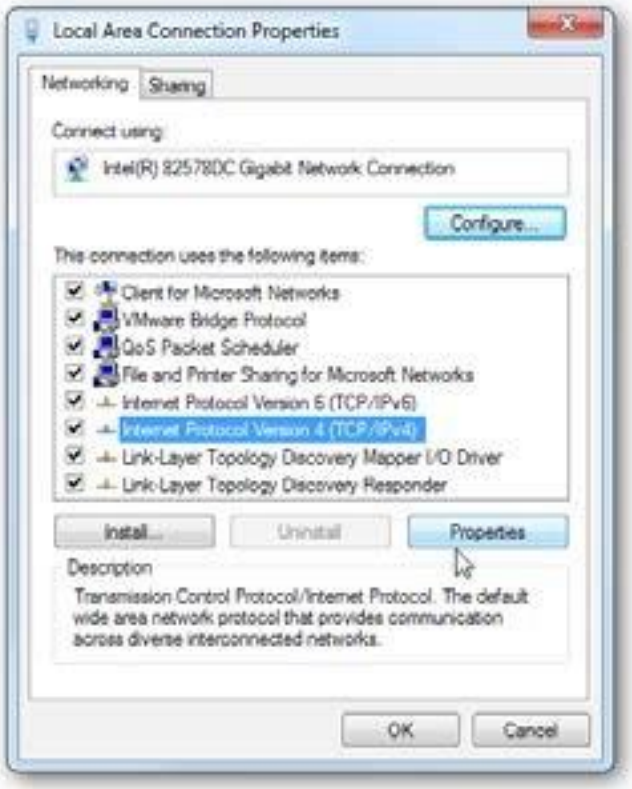
Windows 10

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.



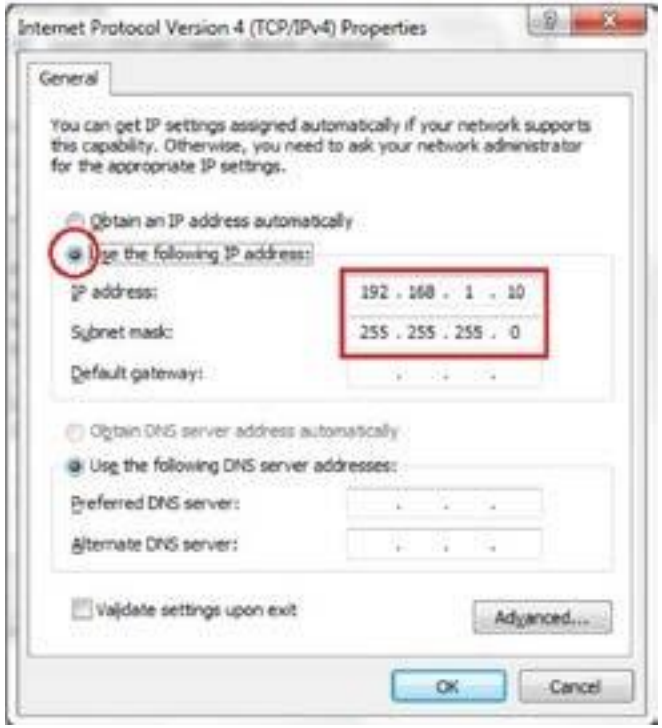
5. Select Use the following IP address and enter an IP address that is different from the Access Point and Subnet mask, then click OK.

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

PCIPaddress: 192.168.1.2–192.168.1.255

PC Subnet mask: 255.255.255.0



Apple Mac OSX

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.
4. In Configure IPv4, select Manually.
5. Enter an IP address that is different from the Access Point and Subnet mask then press OK.

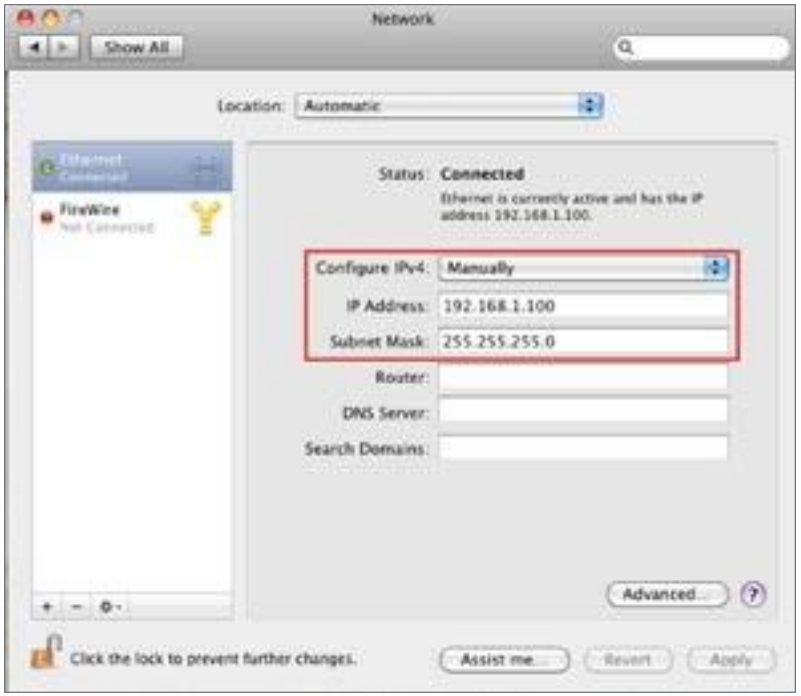
   Note: Ensure that the IP address and Subnet mask are on the same subnet as the device.

   For example: ENH900EXT IP address: 192.168.1.1

   PC IP address: 192.168.1.2–192.168.1.255

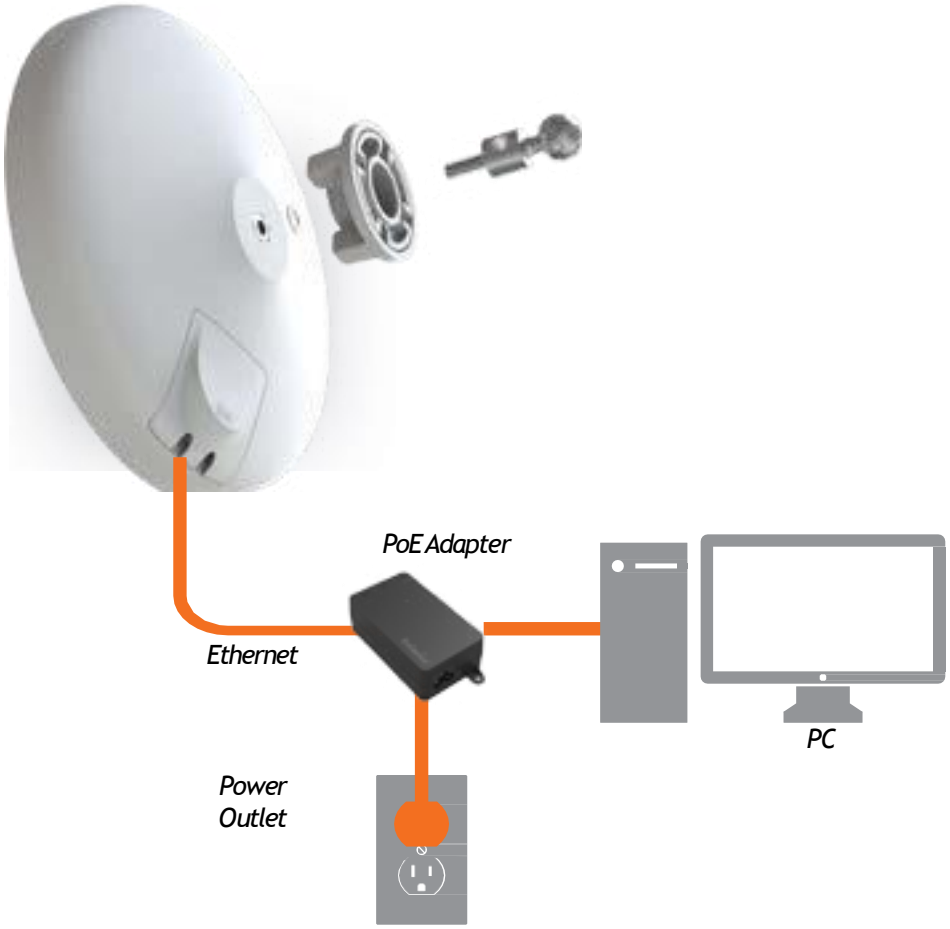
   PC Subnet mask: 255.255.255.0

6. Click Apply when done.



Hardware Installation
EnStation5-ACv2/EnStationACv2

1. Remove the rear bottom panel.
2. 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 Adapter.
3. Connect the Power cord to the PoE Adapter and plug the other end in to an electrical outlet.
4. Connect the second Ethernet cable into the LAN port of the PoE Adapter and the other end to the Ethernet port on the computer.
5. Place the panel back into device



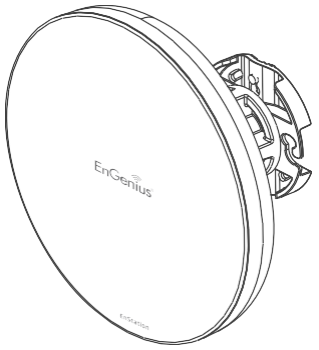
Note: The EnStationACv2 should ONLY be powered via Ethernet cable connected to included supports both IEEE 802.3at PoE (Power over Ethernet) or the included PoE Adapter. You may use either one as the power source. Do NOT use both at the same time.

Note: The EnStationACv2 can supply the 802.3af power source when used with included PoE Adapter.

Mounting the EnStation5-ACv2/EnStationACv2

Using the provided hardware, the EnStation5-ACv2 can be attached to a wall or a pole.

1. ETD

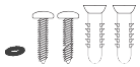


2. PoE Adapter& Power Cord

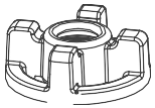
3. Bracket

4. Pole Mounting Strap

5. Screw Set Kit



6. Sealing Nut

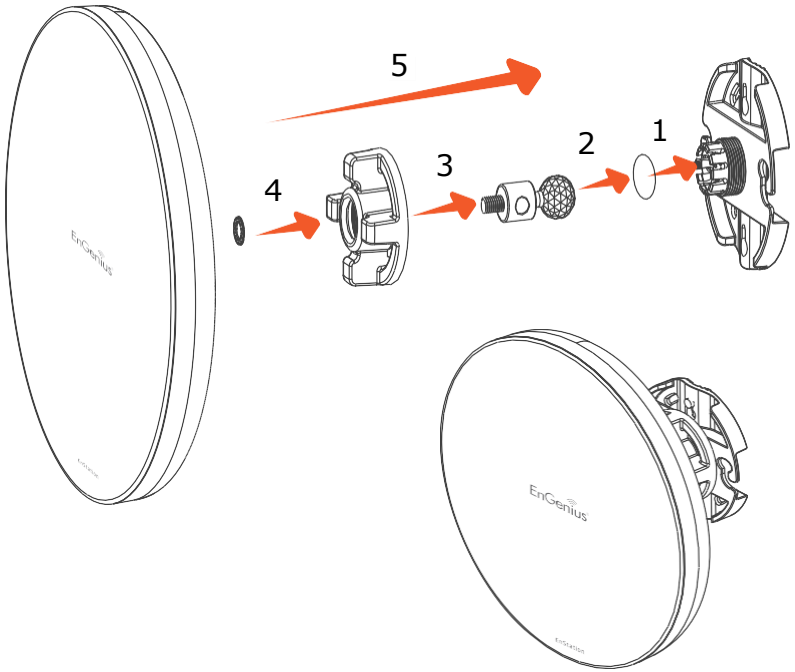


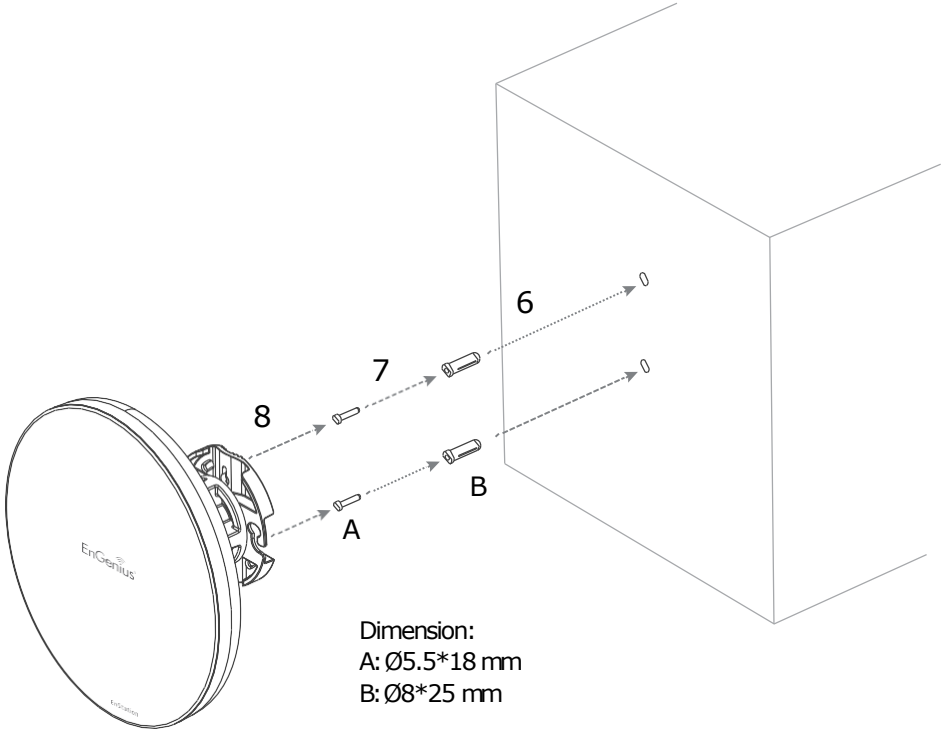
7. Dynamic Stick

8. Rubber

Wall mounting the EnStation5-ACv2/ EnStationACv2

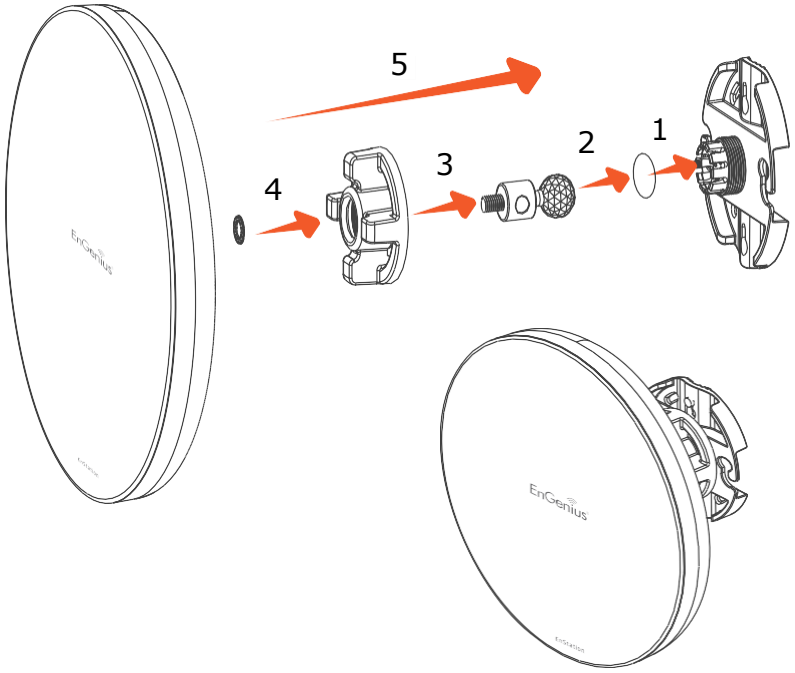
1. Put the included rubber into the bracket.
2. Plug the dynamic stick into the bracket.
3. Screw the sealing nut and assembled parts, as well as tighten it.
4. Put the nock washer on the dynamic stick.
5. Assemble t he mounting parts to the EnStation. .
6. Determine the mounting location. Mark and drill two pilot holes aligning to the screw holes of the bracket
7. Put wall anchors into the holes and insert screw into the wall anchor.
8. Screw and secrue the bracket in the place.

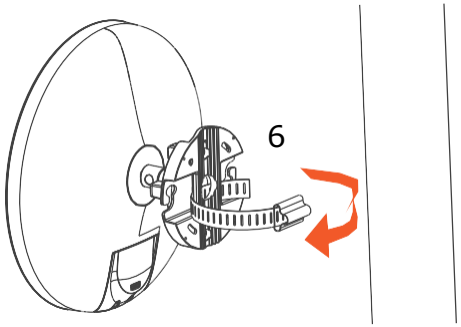


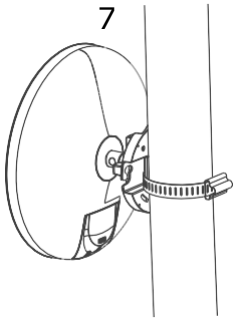


Pole mounting the EnStation5-ACv2/ EnStationACv2

1. Put the included rubber into the bracket.
2. Plug the dynamic stick into the bracket.
3. Screw the sealing nut and assembled parts, as well as tighten it.
4. Put the nock washer on the dynamic stick.
5. Assemble t he mounting parts to the EnStation. .
6. Thread the open end of the pole strap through the two tabs on the bracket.
7. Lock and tighten pole strap to secure bracket to the pole





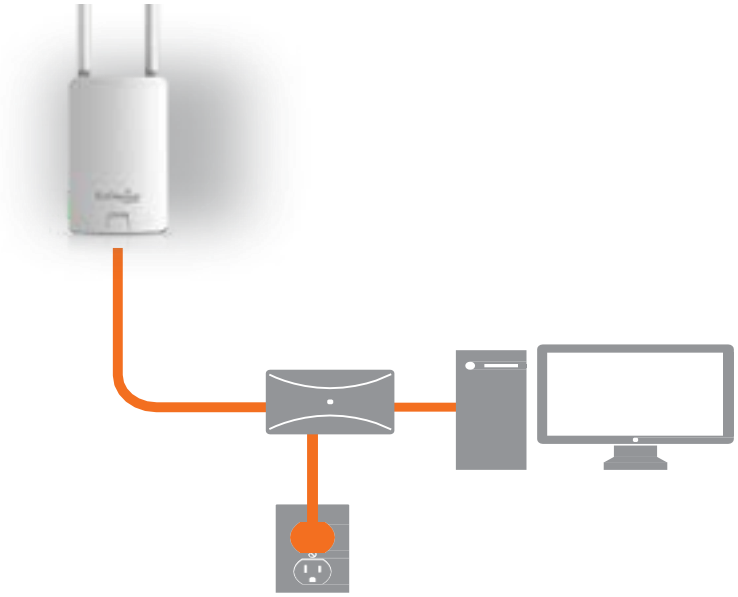


Hardware Installation
ENS500-ACv2/ENS500EXT-ACv2

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.



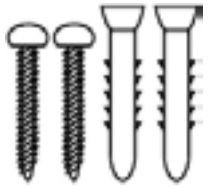
Note: The AP/Bridge should ONLY be powered via Ethernet cable connected to the included PoE Adapter.

Mounting the ENS500-ACv2/ENS500EXT-ACv2

Using the provided hardware, the ENS202EXT can be attached to a wall or a pole. The height should not exceed 2 meter.

1. Wall Mounting Kit

(Anchors: Φ5.5*18 mm & Bolts: Φ8*25mm)

Anchors  Bolts

2. Pole Mounting Strap

(Φ66*12.6 mm)

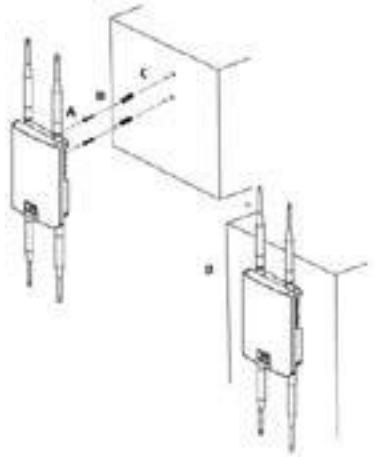
To attach the ENS500-ACv2/ENS500EXT-ACv2 to a wall using wall mounting kit.

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.

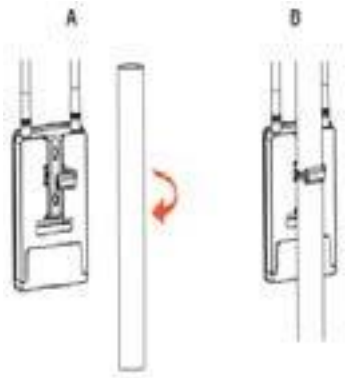
D. Screw the included screws into the anchors. Place the Access Point against wall with the mounting screw heads.



To attach the ENS500EXT-ACv2 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.

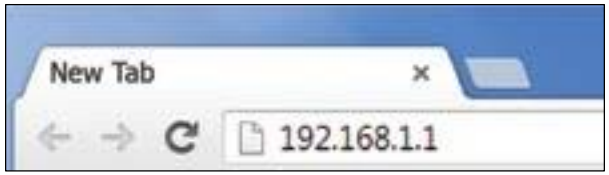
Default Settings

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

IP Address	192.168.1.1
Username / Password	admin / admin

Web Configuration

1. 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.

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.

*The model name will be varied by different models

3. If successful, you will be logged in and see the EnStationAC User Interface.

Chapter 4
Building a Wireless Network

Before starting to configure this Access Point, you may realize the used scenario under varied operating modes. The EnStation5-ACv2/EnStationACv2/ENS500-ACv2/ENS500EXT-ACv2 is built in EnGenius EnJet solution, AP can transmit data more efficiently, avoid collisions,and reduce latency and packet losses. When EnJet enable, it can be configured as an: Access Point, Client Bridge or WDS (AP & Station) or Access Point, Client Bridge or WDS (AP, Station & Bridge) when EnJet disable. This chapter describes purpose of different operating modes and lists down the operating modes for outdoor Access Points or Client Premise Equipments (CPE).

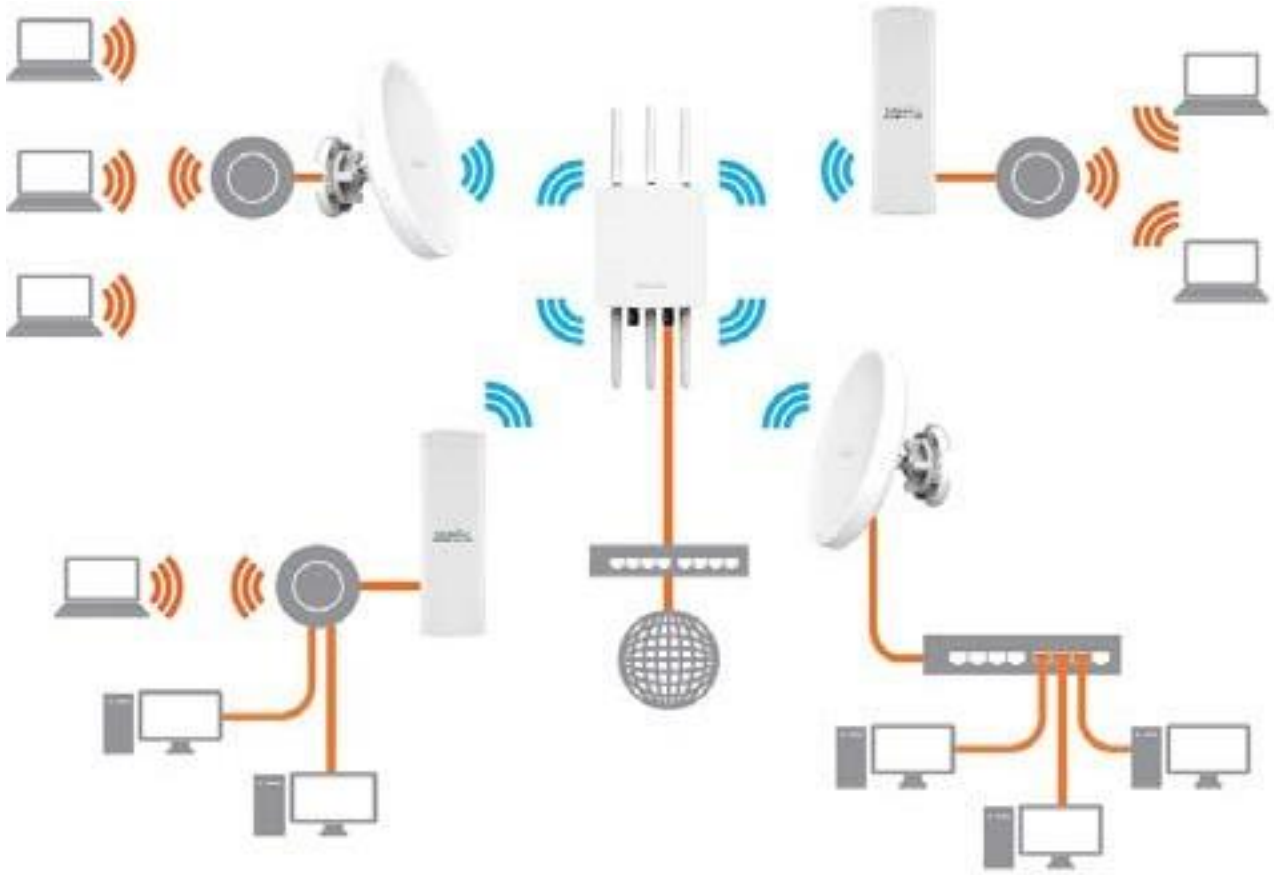
Access Point Mode

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

Client Bridge Mode

The AP/CPE essentially acts as a wireless adapter that connects to an access point to allow a system of wireless access to the network in the Client Bridge mode. Since the computers are on the same subnet, the AP/CPE can broadcast to reach all end-devices.

If you use the client bridge mode in the AP/CPE, you can use the AP Detection feature to scan for Access Points within range. When you find an Access Point, configure the AP/CPE to use the same SSID and Security Password as the Access Point to associate with it.



WDS AP Mode

The AP/CPE also supports WDS AP mode. This operating mode allows wireless connections to the AP/CPE 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.

WDS Bridge Mode

In WDS Bridge Mode, the AP/CPE can wirelessly connect different LANs by configuring the MAC address and security settings of each AP/CPE 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 AP/CPE to wirelessly connect two wired LANs, as shown in the following diagram.

WDS Bridge Mode can establish up to four 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.

WDS Station Mode

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

Chapter 5
Status

Main Status

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.

*The model name will be varied by different models.

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 information is only applicable in Access Point or WDS AP mode.

Device Information

Device Name	ENS620EXT
MAC Address	
- LAN1	88:DC:96:00:00:10
- LAN2	88:DC:96:00:00:11
- Wireless LAN - 2.4GHz	88:DC:96:00:00:12
- Wireless LAN - 5GHz	88:DC:96:00:00:13
Country	USA
Current Local Time	Tue Jul 12 11:45:00 2016
Uptime	0h 4m 57s
Firmware Version	1.0.0
Management VLAN ID	Untagged

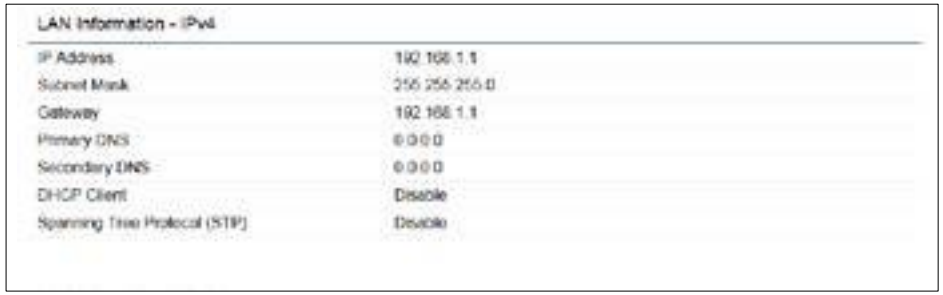
*The model name will be varied by different models.

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

Memory Information

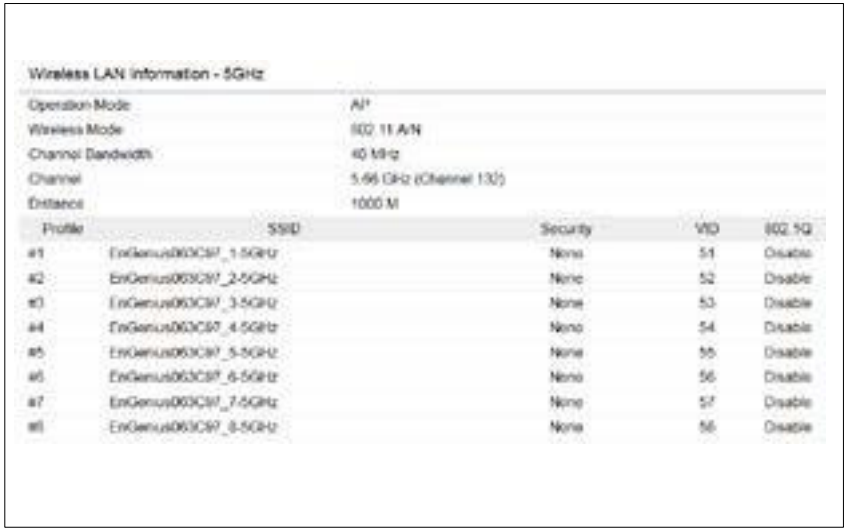
Total Available	
Free	
Cached	
Buffered	

- The LAN Information section shows the Local Area Network settings such as the LAN IP Address, Subnet

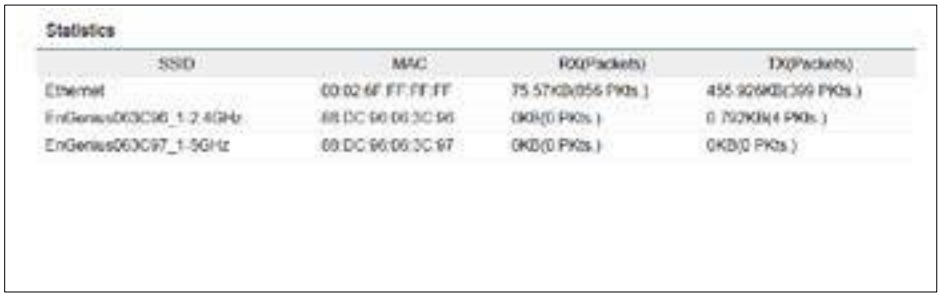


- The Wireless LAN Information 5 GHz section shows wireless information such as Operating Mode, Frequency, and Channel. Since the AP/CPE supports multiple-SSIDs, information about each SSID, the ESSID, and security settings, are displayed

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



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



Connection

5 GHz Connection List

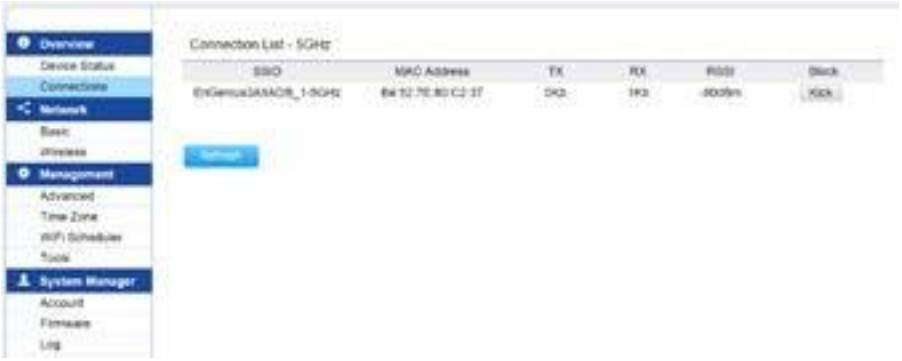
Click the connection link under the Overview menu displays the connection list of clients associated to the AP/CPE's 5 GHz, along with the MAC addresses and signal strength for each client. Clicking Refresh updates the client list.

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

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.

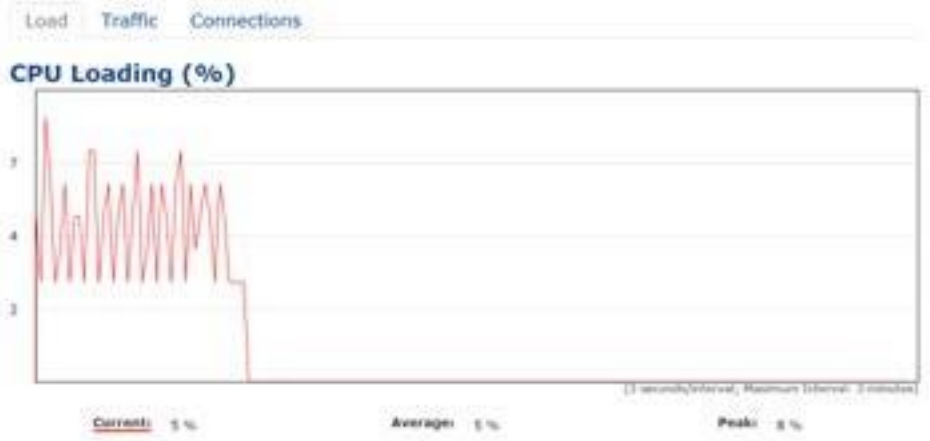
Note: Only applicable in WDS AP and WDS Bridge modes.



Realtime

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: 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.

Chapter 6
Network

Basic IPSettings

IPv4/IPv6 Settings

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

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.

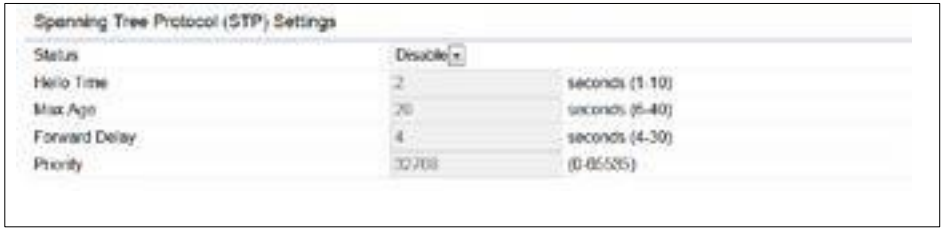
Gateway: The Default Gateway of this device. Leave it blank if you are unsure of this setting.

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.



Spanning Tree Status: Enables or disables the Spanning Tree function.

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
Wireless

Wireless

Wireless Settings

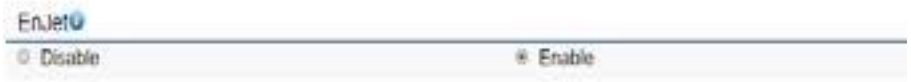
*The model name will be varied by different models.

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.

Save: Click Save to confirm the changes.

EnJet

The AP/CPE is default EnJet enable. When enable the EnGenius EnJet system, the AP/CPE can then transmit data more efficiently, avoid collisions, and reduce latency and packet losses. (If you do not enable EnJet, data will be sent via traditional CSMA.)



This page displays the current status of the Wireless settings ofthe AP/CPE.

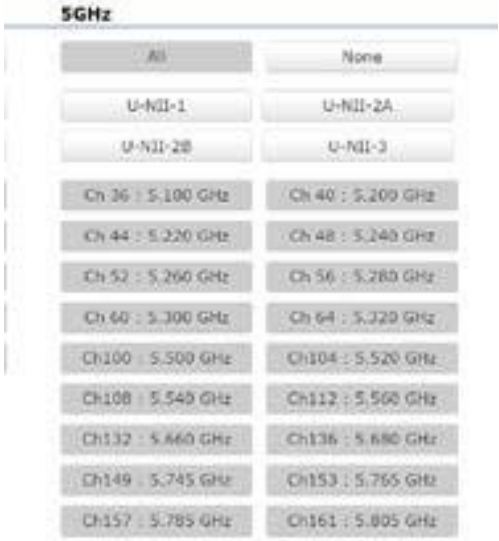
Wireless Network

EnStation5-ACv2/EnStationACv2/ENS500-ACv2/ ENS500EXT-ACv2 Wireless: The AP/CPE supports 802.11ac/n mixed mode in 5 GHz.

Operation Mode: Select Operation Mode. When EnJet enable, The AP/CPE can be seted as Access Point, Client Bridge or WDS (AP & Station) or Access Point, Client Bridge or WDS (AP, Station & Bridge) when EnJet disable.

Channel HT Mode: The default channel bandwidth is 20 MHz/ 40 /80 MHz. The larger the channel, the greater the transmission quality and speed.

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



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

Bit Rate: 5GHz is default 6 Mbps, the range can control by BAR via scroll from 6Mbps to 54Mbps.

Client Limits: When EnJet enable, limits the total number of clients. Once setting the ceiling of client numbers, the maximum assocaited client devices will be restricted at this number.

AP Detection: AP Detection can select the best channel to

use by scanning nearby areas for Access Points.

Distance: Specifies the distance between Access Points and client devices. The proper setting for this parameter may assist Access Points to avoid the improper operation when transmitting data under a filed application.

AP Time Slot:In EnJet mode, the AP will assign time slots for each client's data transmission. The larger the slot, the faster the datatransmission.

Station Priority:In EnJet mode, the client bridge/WDS station's data transmission is prioritized by data. High level meansa longertransmissiontime. (Thetimeratio is10:5:1.)

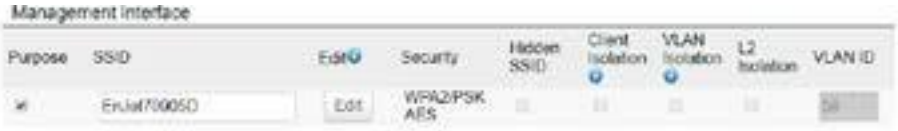
Wireless Setting-5GHz

Current Profile: You can configure up to seven(7)different SSIDs when EnJet disable or 1 SSID when EnJet enable. 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 want to enable extra SSID.

SSID Profile when EnJet disable

SSID Profile when EnJet enable

Management Interface: This Management interface make you can to get on and change the configuration of the device from remote instead of using the GUI.



Enable: Click this check box to enable this SSID interface. The default SSIDs are enable on the first 5GHz SSID.

SSID: Specifies the SSID for the current profile.

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

Client Isolation: Click the appropriate radio button to enable this function for allowing or preventing communication between client devices.

VLAN Isolation: Restrict clients communicating with different VIDs by selecting the radio button.

L2 Isolation: Enable this function prevenet client devices to communicate on the both WLAN and LAN.

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

Wireless Security: See the Wireless Security section.

Save: Click Save to accept the changes.

Wireless Security

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

Secuirty Mode: Including WPA2-PSK, WPA2-Enterprise. We strongly recommend you to use WPA2-PSK mode.

Encryption: Default is AES.Please ensure that your wireless clients use thesame settings.

Group Key Update Interval: Specifies how often, in seconds, the Group Key changes. The default value is 3600

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

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

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

Radius Settings

NAS-ID: Enable or disable accounting feature.

NAS-Port: Enable or disable accounting feature.

NAS-IP: Enable or disable accounting feature.

Radius Accounting

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.

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

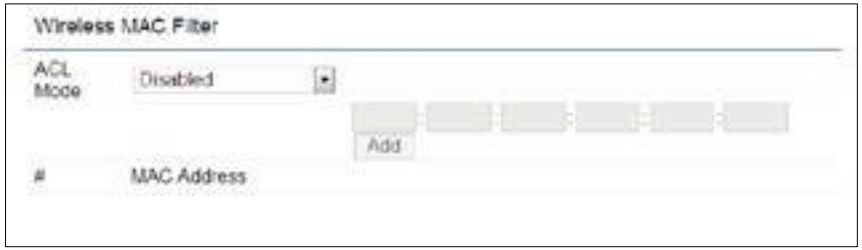
Please enter the settings of the SSID and initialize the Security mode to WPA2 enterprise, as well as to set the Radius Server firstly. Users can enable the Fast Roaming and implement the advanced search.

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.

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 AP/CPE. The default setting is: Disable Wireless MAC Filter.

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



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: Delete the selected entries.

Save: Click Save to apply the changes.

Wireless Traffic Shaping

Traffic shaping regulates the flow of packets leaving an interface to deliver improved Quality of Service. The function will allow administrators to restrict the wireless bandwidth per SSID.

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

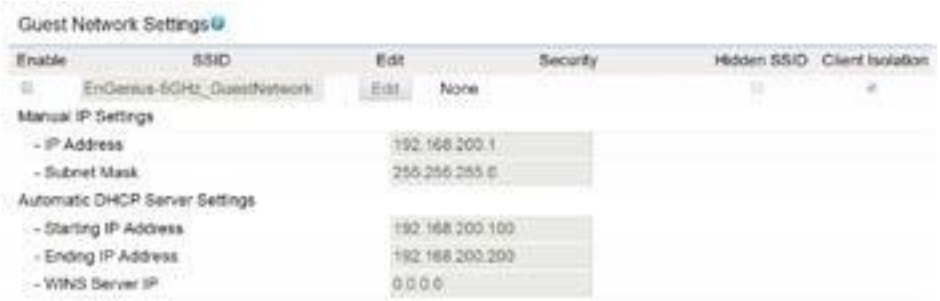
Download Limit: Specifies the wireless transmission bandwidth used for downloading.

Upload Limit: Specifies the wireless transmission bandwidth used for uploading.

Save: Click Save to confirm the changes.

Guest Network Settings

Adding a guest network when EnJet disable 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 5 GHz ac/a/n



SSID: Specifies the SSID for the current profile.

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

Station Separation: 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.

RSSI Threshold: Enable the Fast Handover feature when EnJet disable 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 vincinity 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 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 the EnStationAC. Verify that the DHCP server supports the reconfigured VLAN ID and then reconnect to the EnStationAC using the new IP address.

Chapter 8
Management

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.

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

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

To: Enter the address that you wish to send emails to.

Subject: Enter the text that you wish to appear in the email's 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.

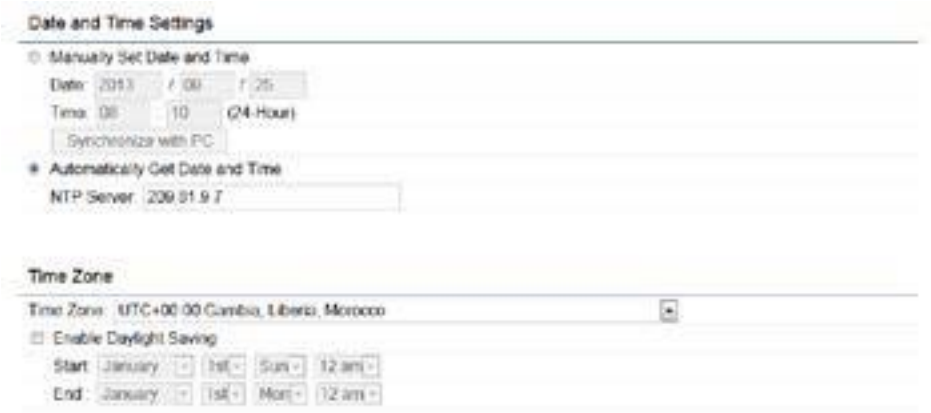
Security Mode: Selects the security mode: SSL/TLS or STARTTLS or None.

Apply: To save setting and take effect.

Time Zone

Time Setting

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



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

Automatically Get Date and Time: Select 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.

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

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

End: Select the day, month, and time when daylight savings times ends.

Auto RebootSettings

You can specify how often you wish toreboot the EnStationAC.

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

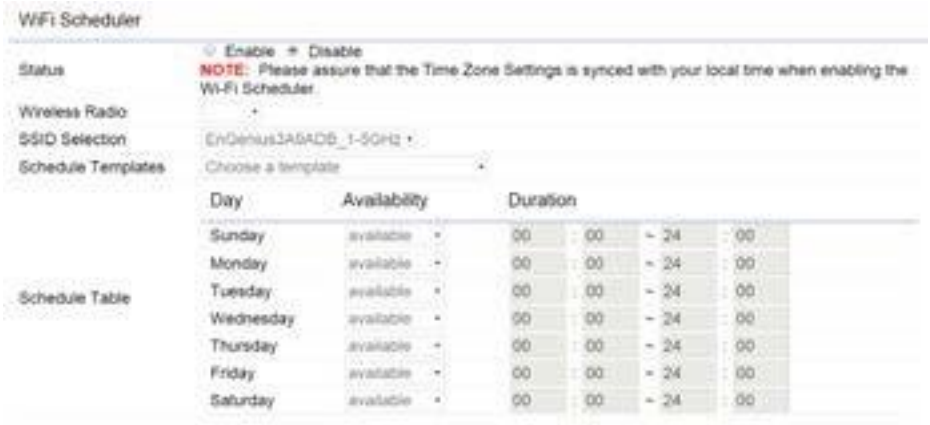
Frequency of Auto Reboot: Specifies how often you wish to reboot the EnStationAC by Min, Hour, Day or Week.

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

Save: Click Save to apply the changes.

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.

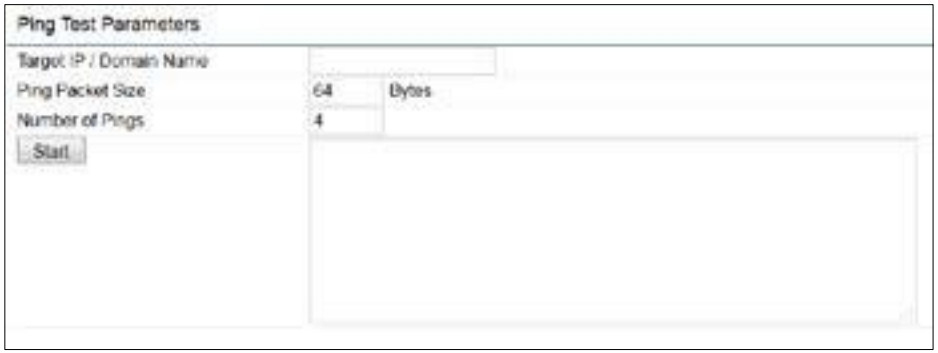
Day(s): Place a checkmark in the boxes for the desired days or select the All Week radio button to select all seven days of the week.

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 EnStationAC and trace the routing table to a target in the network.



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.

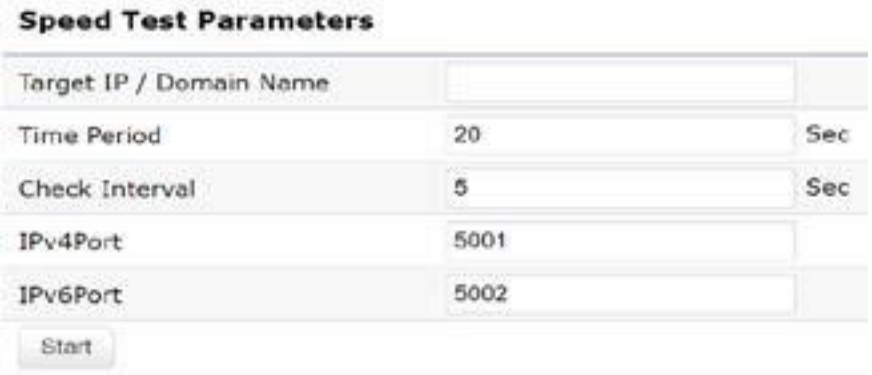
Traceroute Test Parameter

Target IP: Enter the IP address you would like to trace

Nslookup Test Parameter

Target IP/Domain Name:Enter the IP address or domain name you wish to do Nslookup test.

Speed Test Parameters



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

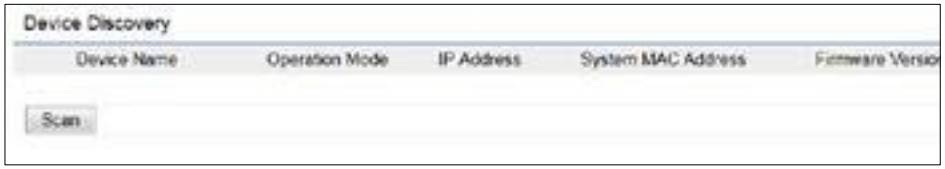
Time Period: Enter the time in seconds that you would like the test to implement for and in how many intervals.

IPv4/IPv6 Port: This Access Points uses IPv4 5001 and IPv6 60001 port for the speed test.

Start: Click start to implement speed test.

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 EnStationAC 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

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 EnStationAC.

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

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 AP to its factory defaultsettings.

User Setting

The function allows you to backup the current device configurations into the EnStationAC as the default value. If extreme problems occur, or if you have set the EnStationAC incorrectly, you can push the Reset button to revert all the configurations of the EnStationAC 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

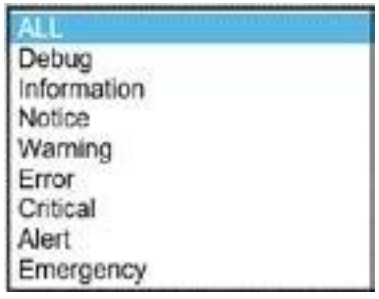
System Log

The EnStationAC automatically logs (records) events of possible interest 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.

Status: Enable/Disable this function.

TraficLog: 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.



Remote Log

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

Syslog: Enables or disables the syslog function.

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

Remote Log: Enable or disable the remote log service.

Apply: Click Apply to apply the changes.

Logout

Click Logout in Management menu to logout.

*The model name will be varied by different models.

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 or to reset the AP/CPE.

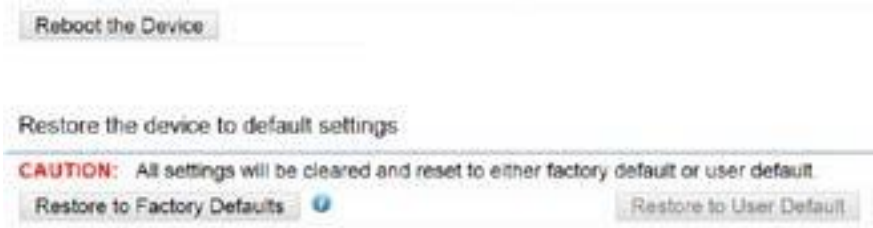
*The model name will be varied by different models.

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 62.



Appendix

Appendix A - FCC Interference Statement

Federal Communication Commission Interference Statement

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

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

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.

Appendix B - Professional Installation Instruction (FCC)

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.

Installation Location

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

Ex ternal Antenna

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

Installation Procedure

Please refer to user's manual for the detail.

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.

Appendix C - 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.

Cedispositifestconformeàlanorme CNR-247 d'Industrie Canadaapplicableauxappareilsradioexemptsdelicence. Sonfonctionnement 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:

where applicable, antenna type(s), antenna models(s), and worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in section 6.2.2.3 shall be clearly indicated.

Avertissement:

lorsqu'il y a lieu, les types d'antennes (s'il y en a plusieurs), les numéros de modèle de l'antenne et les pires angles d'inclinaison nécessaires pour rester conforme à l'exigence de la p.i.r.e. applicable au masque d'élévation, énoncée à la section 6.2.2.3, doivent être clairement indiqués.

IMPORTANT NOTE:

Radiation Exposure Statement

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

Déclaration d'exposition aux radiations

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

Radiation Exposure Statement:

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

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

DETACHABLE ANTENNA USAGE

This radio transmitter (IC: 10103A-ENSTA5-ACV2 / Model: EnStation5-ACv2, ENS500EXT-ACv2, ENS500-ACv2, EAS100- 14, EAS100EXT, EAS100-19) has been approved by ISED to operate with the antenna type listed below with maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio (IC: 10103A-ENSTA5-ACV2/ Model: EnStation5-ACv2, ENS500EXT-ACv2, ENS500-ACv2, EAS100-14, EAS100EXT, EAS100-19) a été approuvé par ISED pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Approved antenna(s) list

EnStation5-ACv2, ENS500EXT-ACv2, ENS500-ACv2

EAS100-14, EAS100EXT, EAS100-19

No.	Type	Connector	Gain (dBi)			Remark
1	Patch	I-PEX	Ant. 1 (5150-5850MHz)	Ant. 2 (5150-5850MHz)		For Model: ENS500-ACv2 and EAS100-14 use only
			13.35	13.42		
2	Dipole	RSMA	5150MHz	5550MHz	5850MHz	For Model: ENS500EXT-ACv2 and EAS100EXT use only
			5.12	5.09	5.17	
3	Patch	I-PEX	Ant. 1 (5150-5925MHz)	Ant. 2 (5150-5925MHz)		For Model: EnStation5-ACv2 and EAS100-19 use only
			15.5	15.5		

Appendix D
Professional installation instruction (IC)

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 ISED 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.

Instructions d’installation professionnelle

1.Installation

Ce produit est destine a un usage specifique et doit etre installe par un personnel qualifie maitrisant les radiofrequences et les regles s’y rapportant. L’installation et les reglages ne doivent pas etre modifies par l’utilisateur final.

2.Emplacement d’installation

En usage normal, afin de respecter les exigences reglementaires concernant l’exposition aux radiofrequences, ce produit doit etre installe de facon a respecter une distance de 20cm entre l’antenne emettrice et les personnes.

3.Antenn externe.

Utiliser uniiquement les antennes approuvees par le fabricant. L’utilisation d’autres antennes peut conduire a un niveau de rayonnement essentiel ou non essentiel depassant les niveaux limites definis par ISED, ce qui est interdit.

4.Procedure d’installation

Consulter le manuel d’utilisation.

5.Avertissement

Choisir avec soin la position d’installation et s’assurer que la puissance de sortie ne depasse pas les limites en vigueur. La violation de cette regle peut conduire a de serieuses penalites federales.