ENS500EXT-ACv2/ENS500-ACv2

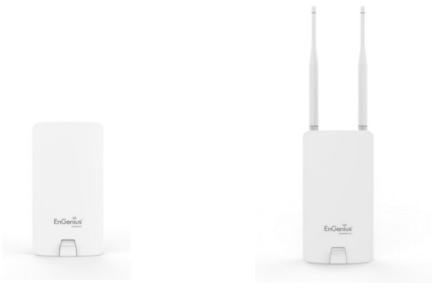
5GHz AC867 Wave2

Outdoor Long Range EnJet Wireless Customers Premise Equipment

The edge 802.11ac built-in high performance CPE with EnJet technology lets client device use predesignated time slots to maximize airtime efficiency

EnGenius Wireless Long Customers Premise Equipment (CPE) solution is designed for deploying under the pervasive outdoor application. To meet today's requirement on varied networking environment, EnGenius would like to provide the solution as flexible, robust and effective as the organization they desire.

The built-in powerful CPU combines with the state-of-the-art 802.11ac and EnGenius EnJet technology, which supports up to 867 Mbps in 5GHz frequency band and lets client device use predesignated time slots to maximize airtime efficiency on multimedia applications under a pervasive environment. In addition, ENS500-ACV2 and ENS500EXT-ACV2 are designed to withstand harsh environment conditions including serve and prolonged exposure to sunlight, extreme cold, frost, snow, rainfall, hail and humidity.



Features

- Engineered with powerful CPU. 2x2 802.11ac wave 2 Access Point features in multi-user MIMO (MU-MIMO) and able to enhance overall bandwidth and speed to bridge devices.
- EnJet technology eliminates hidden node collisions to keep throughput more consistently when clients increase.
- Boost speed up to 867 Mbps air performance in 5GHz frequency band.
- Engine with 802.11ac Wave2 technology to enhance overall bandwidth and speed to bridge devices.
- Built-in high gain directional antenna to deliver content to the long-range distance site. (ENS500-ACV2)
- External antennas interface for connecting with high directional antennas to deliver signal to long-range distance. (ENS500EXT-ACV2)
- Compliance with Proprietary 24V PoE Input for flexible installation over 100 meters (328 feet).
- Access Points can be reset by PoE Adapter from 100 meters or 328 feet distance.
- Robust housing with IP55 enclosure rated to deploy at extremely weather .
- Deliver High resolution content or multiple IP surveillance over wireless transmission
- In conjunction with EnGenius EnWiFi can help device configuration and monitoring more easily on smartphone or tablet.

Wireless Management solution is ideal for deployment in these venues:

- Airport Terminals
- Warehouse Operations
- College Campuses
- Corporate Campuses
- Hospital Buildings
- Construction Sites
- Building Sites
- Shopping Malls
- Resort Properties
- Parks & Campgrounds
- Stadiums & Arena
- Public Lightings

Enterprise Robust Solution

ENS500-ACv2 and ENS500EXT-ACv2 is easily to install anywhere and its internal electronics have been mounted in an **IP55-rated** enclosure, one of the better waterproof and dustproof rating available, designed to withstand harsh environment conditions including serve and prolonged exposure to sunlight, extreme cold, frost, snow, rainfall, hail and humidity .

Scalable and Flexible deployment for Outdoor Installation

With included mounting accessories, ENS500-ACv2 and ENS500EXT-ACv2 provides reliable kits to fix this device on anywhere for delivering wireless signal under outdoor environment. To save the maintenance cost and labors fee on deploying Access Points, these products had been built in two Gigabit Ethernet ports with power over Ethernet (PoE) functions for receiving power source from the included PoE adapter. With scalable extension over PoE mechanism, Access Points can receive power and signal source easily from **100 meters or 328 feet distance**.

Meanwhile, EnGenius ENS500EXT-ACv2 also built in external SMA interfaces for users to connect with other high-gain directional antennas for delivering the wireless signal to long-range distance.

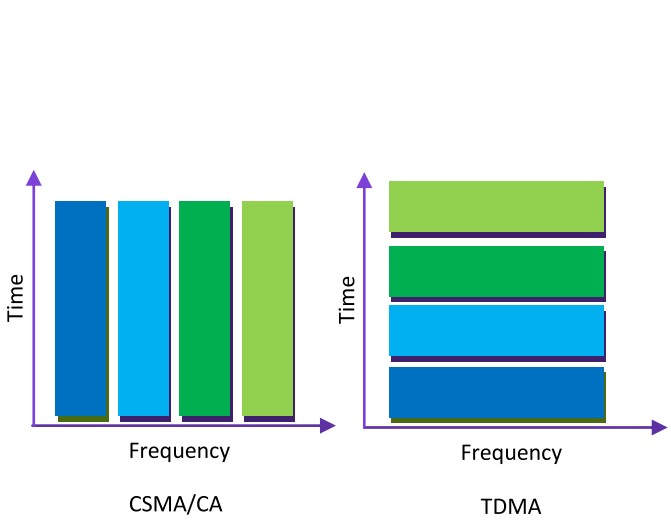
Carry multimedia content over EnJet technology.

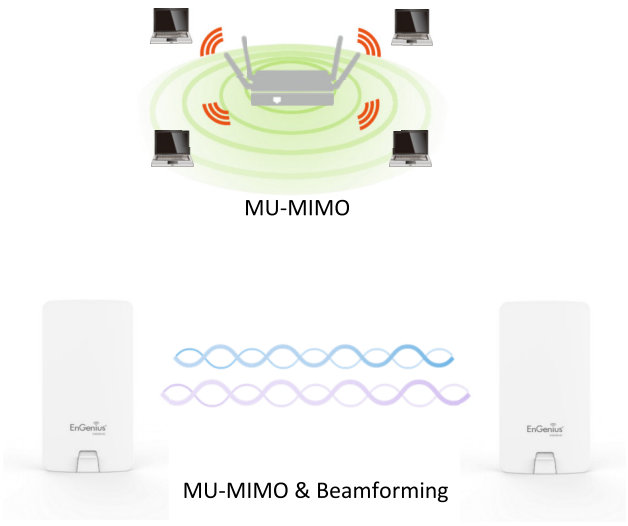
The ENS500-ACv2 and ENS500EXT-ACv2 is engineered with a breakthrough EnGenius EnJet technology, which lets an Access Point to arrange each Customers Premise Equipement (CPE) to send and receive data using pre-designated time slots scheduled. EnGenius EnJet eliminates hidden node collisions and optimizes airtime efficiency under a pervasive environment. The magnitude of EnGenius EnJet is improvement in latency, throughput, and scalability compared to traditionally CSMA outdoor Wireless point to point or point to multi-points systems in its class.

In addition, with MU-MIMO and Beamforming technology, ENS500-ACv2 and ENS500EXT-ACv2 outdoor long-range Access Point can bring more traffic to wireless client devices simultaneously. The higher signal-to-noise ratio, the greater throughput of client devices.

EnWiFi

EnGenius EnWifi is a new Wi-Fi management tool that is designed for EnGenius outdoor and indoor WiFi device. Users can enjoy easily configuration and monitoring EnGenius AP/CPE on smartphone or tablet The EnWifi app helps you set up single or a group of WiFi devices from your smartphone and keep update with the latest Wi-Fi connection status. WiFi manager can access to device anytime and anywhere.





Securable Portals for different purpose

Administrators can also use **Virtual LAN (VLAN)** with **Guest Network** to isolate each client for avoiding an unnecessary touch, leaking sensitive data, and enhancing Internet security and reliability for internal network.

With **VLAN per SSID**, the Integrate VLAN ID with a WLAN service set identifier (SSID) interface will deliver packets to the defined path. The built-in QoS mechanism could allow the specific VLAN SSID to get more bandwidth and deliver video streaming content to the destination first.

Restrain Wireless Traffic under a Pervasive Environment

To effective manage the usage of each client devices at a LAN topology, **Traffic Shaping** controls the bottle of bandwidth to offer the limited bandwidth for an individual **SSID** or **each client** per Access Point. This constraint offers the constant bandwidth to perform specific applications like VOIP and video streaming fluently and smoothly without air congestion on each client devices.

Comprehensive Network Protection

With EnGenius EnJet featured Access Points, your network is protected from attacks at multiple level through advanced wireless encryption standards such as Wi-Fi Protected Access (WPA2) which uses authentication database and IEEE 802.1X with Radius server. EnGenius also offers the advanced encryption standard (AES) to encrypt traffic between Access Points and client devices. To isolate the internal client devices and guest devices, client isolation can avoid each client device to see each other under the same WLAN. Once threats or events are detected, built-in **E-mail Alerts** systems will automatically deliver an e-mail notification for administrators to trigger immediate actions on these networks threats.

Technical Specifications Wireless outdoor long-range Access Point

Wireless Radio Specification

Access Point Type:
Outdoor, IP55, dual radios concurrent, 5GHz 802.11 ac 2x2 MIMO is backwards compatible with 802.11 ac/a/n mode

SU-MIMO:
Two(2) spatial stream SU-MIMO for up to 867 Mbps wireless data rate to a single wireless client device.

MU-MIMO
Two(2) spatial stream MU-MIMO for up to 867 Mbps wireless data rate to transmit to two(2) wireless client devices simultaneously.

Frequency Radios
5GHz: 5150MHz~5250MHz, 5250MHz~5350MHz, 5470~5725MHz, 5725MHz~5850MHz
Support radios and channels will be varied on the configured regulatory domain.

Supported Radio Technology
802.11n/ac: 2x2 MIMO with 2 streams
802.11ac supports very high throughput (VHT) — VHT 20/40/80 MHz
802.11n supports high throughput (HT) — HT 20/40 MHz
802.11n/ac packet aggregation: AMPDU, ASPDU
Orthogonal frequency-division multiplexing (OFDM) under 802.11ac/a/n
EnJet technology with Time Division Multiple Access (TDMA) under 802.11ac/n

Supported Modulation Type
802.11a/n: BPSK, QPSK, 16-QAM, 64-QAM
802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM

Transmit Power (Maximum Value)
26dBm
Maximum power is limited by regulatory domain

Tx Beamforming (TxBF)
Increasing signal reliability and transmitting distance.

Supported data rates (Mbps)
802.11a: 6, 9, 12, 18, 24, 36, 48, 54
802.11n: 6.5 to 300 (MCS0 to MCS15)
802.11ac: 6.5 to 867 (MCS0 to MCS9, NSS=1 to 2)

Power

Maximum Power Consumption
Maximum 8.93W

Power Source
Proprietary 24V PoE (Power: 4, 5; Return: 7, 8)
Active Ethernet (Power Over Ethernet, PoE)

Antenna

Antenna Types
ENS500-ACv2: High-gain directional 14 dBi Antenna
ENS500EXT-ACv2: Two(2) detachable 5.0dBi SMA antennas
Widely frequency supported from 5150MHz to 5925MHz
Optional Solutions
Alternative solution to compatible with SA5219 sector Antennas.
(ENS500EXT-ACv2 Only)

Interfaces

Networking Interface
Two (2) 10/100/1000 BASE-T RJ-45 Ethernet Ports

LED Indicators
Display system and wireless transmission status

Reset Button
Convert Access Point to the Factory default or the Users Default

Mounting

Pole Mounting
Assemble a mounting bracket to fix this Access Point on a pole.

Wall Mounting
Mount this Access Point on a flat wall

Mechanical & Environment

Dimensions (Device only)
186mm (L) x 100mm (W) x 29mm (H) (7.54" x 4.49" x 1.88")

Weight
504g (1.11lbs)

Operating
Temperature: -20°C~60°C (-4°F~140°F)
Humidity: 0% ~ 90% typical

Storage
Temperature: -40°C~80°C (-22°F~176°F)
Humidity: 0% ~ 90% typical

Environment Protection Level
IP55

Surge Protection
Line to Line: 1.0KV
Line to Ground: 2.0KV

ESD Protection
Contact: 4KV
Air: 8KV

Compliance Regulatory

FCC
Subpart 15 B
Subpart E 15.407

CE
EN 301 893
EN 301 489-1/-17
EN 50385
EN 55032
EN 55024
EN 60950-1/-22
IEC 60529

Electromagnetic Compatibility (2014/30/EU)

Technical Specifications Wireless outdoor long-range Access Point

Operating Mode

Access Point Mode (AP Mode)
Be an Access Point behaves like a central connection for station or clients that support IEEE 802.11 ac/a/n network.

Client Bridge Mode (CB Mode)
The Access Point 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.

WDS Modes (WDS AP, WDS Station)
WDS modes uses WDS technology to establish the wireless connection via filling MAC address in both Access Points to enlarge the wireless area.

Exquisite RF Management

ACK timeout (Distance Control)
Set the ACK timeout to assure the proper distance to deliver wireless signal properly

Site Survey
Scan signal level of an environment to provide parameters for performing Auto Transmit power and auto channel.

Auto Transmit Power
Automatically adjust power level

Auto Channel
Automatically assign a clearly channel to perform RF transmission under a pervasive environment.

RSSI Threshold
Kick client devices that the signal (RSSI) is above the set value from the AP for reducing the interference and optimize the connecting quality.

Optimize Performance

Quality of Service
Compliance with IEEE 802.11e standard
Prioritizes voice over data for both tagged and untagged traffic
Transmit video, voice and data at the same SSID

Power Save Mode
Support U-APSD

Pre-Authentication
Compliance with 802.11i &11x

PMK Caching
Compliance with 802.11i
If wireless client devices has authenticated to an access point, it does not perform a full authentication exchange when client devices roaming between access points.

Fast Roaming (802.11r)
Use a Fast Transition key to handover between Access Points (ENS500EXT-ACV2)

Multicast to Unicast Conversion
Using the IGMP protocol, an access Point delivers high definition content to a large number of clients simultaneously.

Easy to Management

Multiple SSIDs
BSSID support
EnJet Enable: Support 1 SSID for EnJet linkage and 1 SSID for CSMA client to configure EnJet AP
EnJet Disable: Support 8 SSIDs for CSMA client

Guest Network
Isolate each client for avoiding an unnecessary touch, leaking sensitive data, and enhancing Internet security and reliability.

VLAN Tag
Independent VLAN setting can be enable or disable. Any packets that enter the Device without a VLAN tag will have a VLAN tag inserted with a PVID (Ethernet Port VID).

VLAN Pass-through
Broadcast VLAN-tag packets to find the destination and deliver packets over the defined path. The functions allows network topology scalable and flexible.

VLAN Per SSID
Integrate VLAN ID with a SSID interface to forward packets over the defined path. The functions isolate client devices to get more security.

Management VLAN
Feature is enabled with specified VLAN ID, the device will only allow management access with the same specified VLAN ID from remotely location by using protocols such as telnet, SSH, snmp, syslog etc.

Traffic Shaping
Controls the bottle of bandwidth to offer the limited bandwidth for an individual **SSID** or **each client** per Access Point.

MAC Address Filtering
Filter up to 32 sets MAC addresses per SSID

E-Mail Alert
Provides a network monitoring tool for administrators to stay informed the configuration change.

Save Configuration as Users Default
Save the customized configuration as default value for different customer demands.

Wi-Fi Scheduler
Perform a regular reboot on access point at assigned schedule
Perform it to enable or disable 2.4GHz or 5GHz interface from a period time.

SNMP &MIB&CLI
v1/v2c/v3 support
MIB I/II, Private MIB
CLI Supported

RADIUS Accounting
Help operators to offload 3G to Wi-Fi seamlessly

Wireless Clients list
Provide the list to display real status of wireless client devices on this Access Point.

Comprehensive Protection

Wireless Encryption Standard
WPA2-AES PSK
WPA2 Enterprise

Hide SSID in beacons

Client Isolation
Block/Isolate the communication between the associated clients under the same WLAN.

HTTPS
A secure communication protocol can be enabled to allow secure management web access over a computer network.

SSH Tunnel
A secure communication protocol can be enabled to allow secure remote shell access or command execution.

RF Performance Specification(ENS500-ACv2/ENS500EXT-ACv2)

Wireless outdoor long-range Access Point

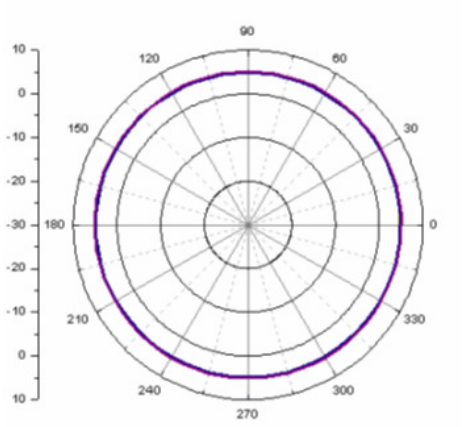
Channel	Data Rate	Transmit Power (Aggregated, dBm)	Receive Sensitivity (Aggregated, dBm)
802.11b 2.4 GHz	1 Mbps	-	-
	2 Mbps	-	-
	5.5 Mbps	-	-
	11 Mbps	-	-
802.11g 2.4 GHz	6 Mbps	-	-
	54 Mbps	-	-
802.11a 5 GHz	6 Mbps	26.0	-93.0
	54 Mbps	24.0	-76.0
802.11n HT20 2.4 GHz	MCS 0 / 8	-	-
	MCS 7 / 15	-	-
802.11n HT40 2.4 GHz	MCS 0 / 8	-	-
	MCS 7 / 15	-	-
802.11n HT20 5GHz	MCS 0 / 8	26.0	-92.0
	MCS 7 / 15	22.0	-73.0
802.11n HT40 5GHz	MCS 0 / 8	25.0	-90.0
	MCS 7 / 15	22.0	-71.0
802.11ac VHT20 5GHz	MCS0	25.0	-92.0
	MCS9	22.0	-69.0
802.11ac VHT40 5GHz	MCS0	25.0	-89.0
	MCS9	22.0	-64.0
802.11ac VHT80 5GHz	MCS0	25.0	-86.0
	MCS9	21.0	-61.0

*Maximum RF performance of the hardware provided. Maximum transmit power is limited by local regulatory.
*The supported frequency bands are restricted by local regulatory requirements.
*Transmit power is configured in 1.0dBm increments.

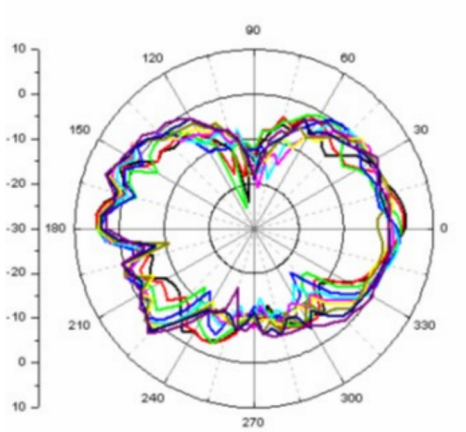
Antennas Patterns Wireless outdoor long-range Access Point

ENS500EXT-ACv2

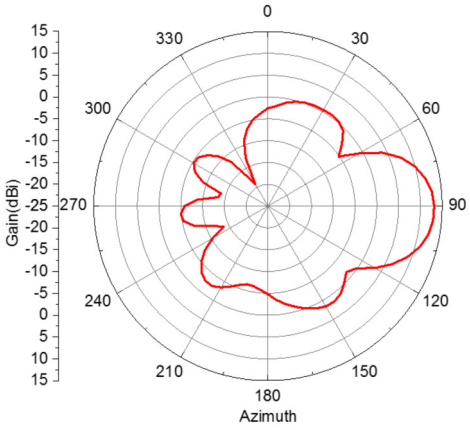
5GHz H-Plane

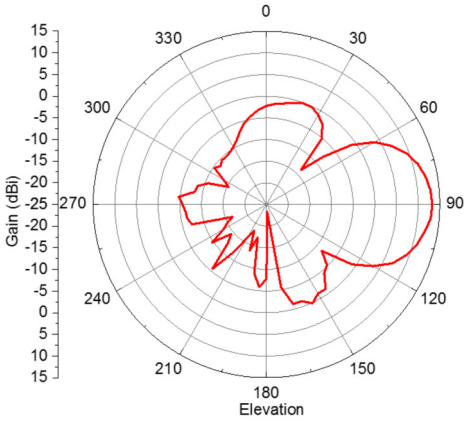


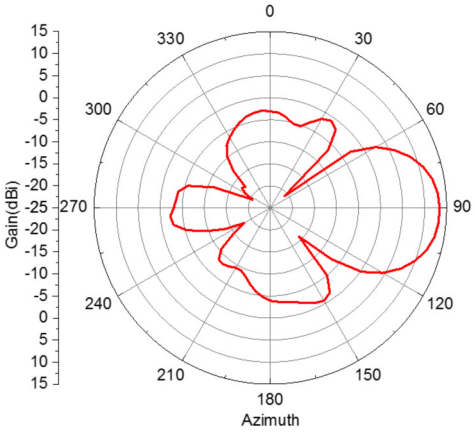
5GHz E-Plane

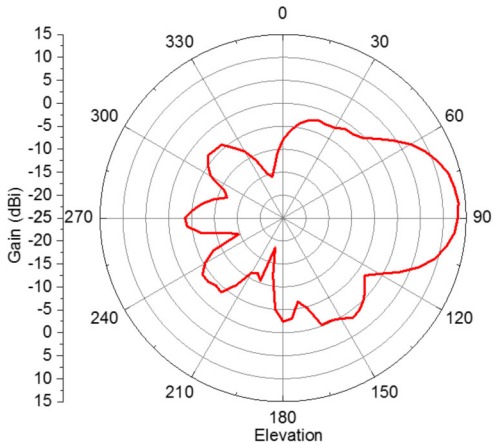


ENS500-ACv2

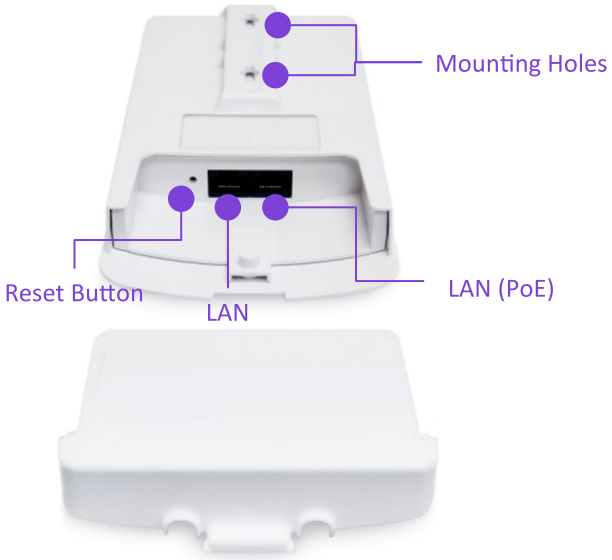


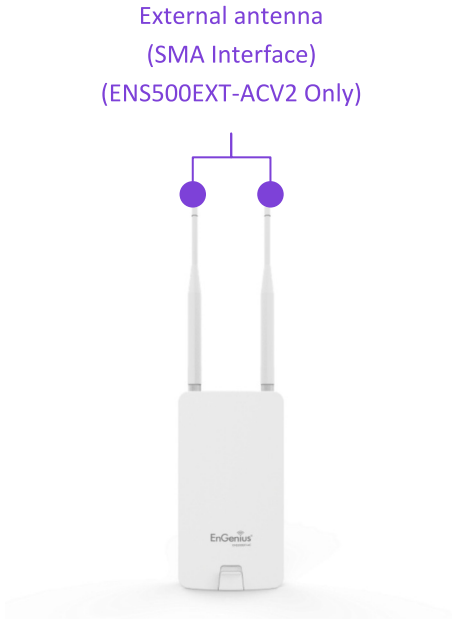






Physical Interfaces





	ENS500-ACv2	ENS500EXT-ACv2
		
Standards	802.11ac/a/n	802.11ac/a/n
Frequency	5150MHz~5850MHz	5150MHz~5850MHz
Data Rates	867 Mbps	867 Mbps
Antennas	Directional 14dBi	External SMA 5dBi
Physical Interface	2 x Gigabit LAN	2 x Gigabit LAN
Radio Chains/Streams	2x2: 2	2x2: 2

* The supported frequency and maximum Tx power will be varied by the local regulatory.

HQ , Taiwan
www.engeniusnetworks.com

Costa Mesa, California, USA | (+1) 714 432 8668
www.engeniustech.com

Markham, Ontario, Canada | (+1) 905 940 8181
www.engeniuscanada.com

Dubai, UAE | (+971) 4 357 5599
www.engenius-me.com

Singapore | (+65) 6227 1088
www.engeniustech.com.sg

Eindhoven, Netherlands | (+31) 40 8200 888
www.engeniusnetworks.eu