



## EnStation5-AC / EnStationAC

5GHz AC867

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, EnStation5-AC/EnStationAC 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.
- > Boost speed up to 867 Mbps air performance in 5GHz frequency band.
- > EnJet technology eliminates hidden node collisions to keep throughput more consistently when clients increase.
- > Built-in high gain 19dBi directional antenna to deliver content to the long-range distance site.
- > EnStation5-AC is in conjunction with proprietary 24V POE.
- > EnStationAC is in conjunction with proprietary 54V POE and also supports 802.3af PSE output.
- > Access Points can be reset by PoE Adapter from 100 meters or 328 feet distance.
- > Robust housing with IP55 enclosure rated to resist 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    | > Hospital Buildings | > Resort Properties   |
| > Warehouse Operations | > Construction Sites | > Parks & Campgrounds |
| > College Campuses     | > Building Sites     | > Stadiums & Arena    |
| > Corporate Campuses   | > Shopping Malls     | > Public Lightings    |

## Enterprise Robust Solution

EnStation5-AC/EnStationAC is easily to be installed 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 .

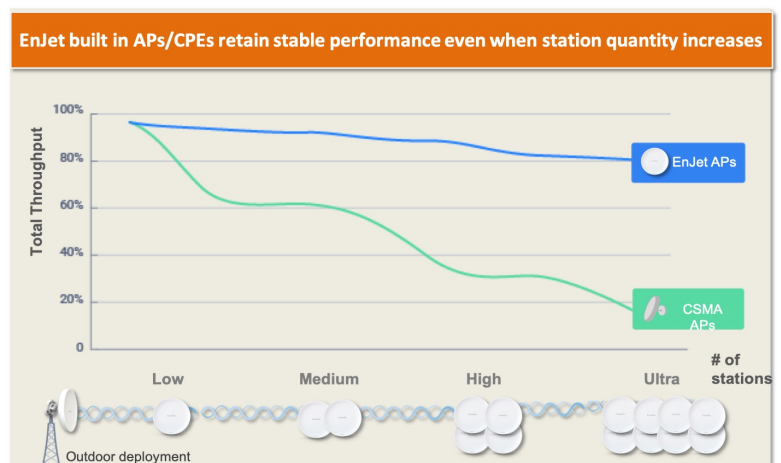
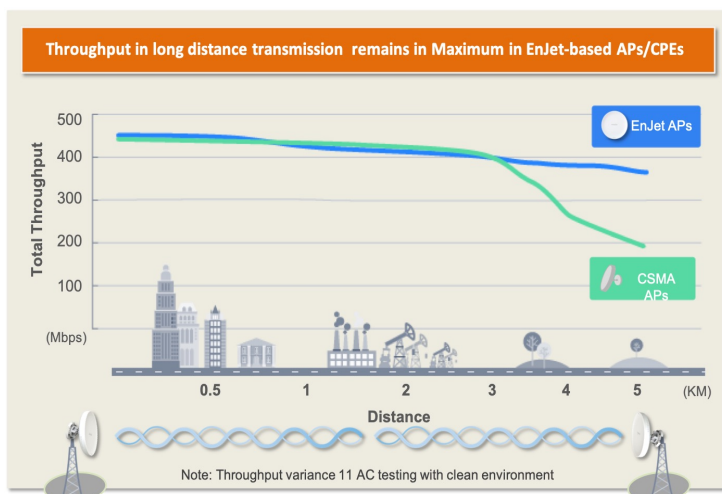
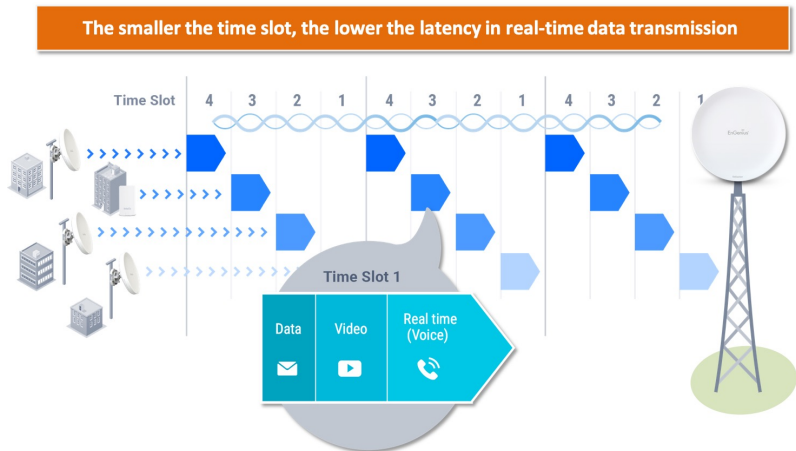
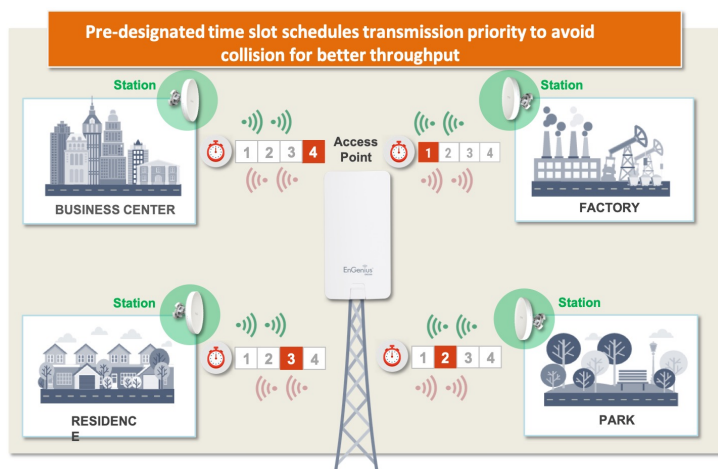
## Scalable and Flexible deployment for Outdoor Installation

With included mounting accessories, EnStation5-AC /EnStationAC 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. EnStationAC also can support 802.3af PSE output to other device. With scalable extension over PoE mechanism, Access Points can receive power and signal source easily from **100 meters or 328 feet distance**.

## Carry multimedia content over EnJet technology.

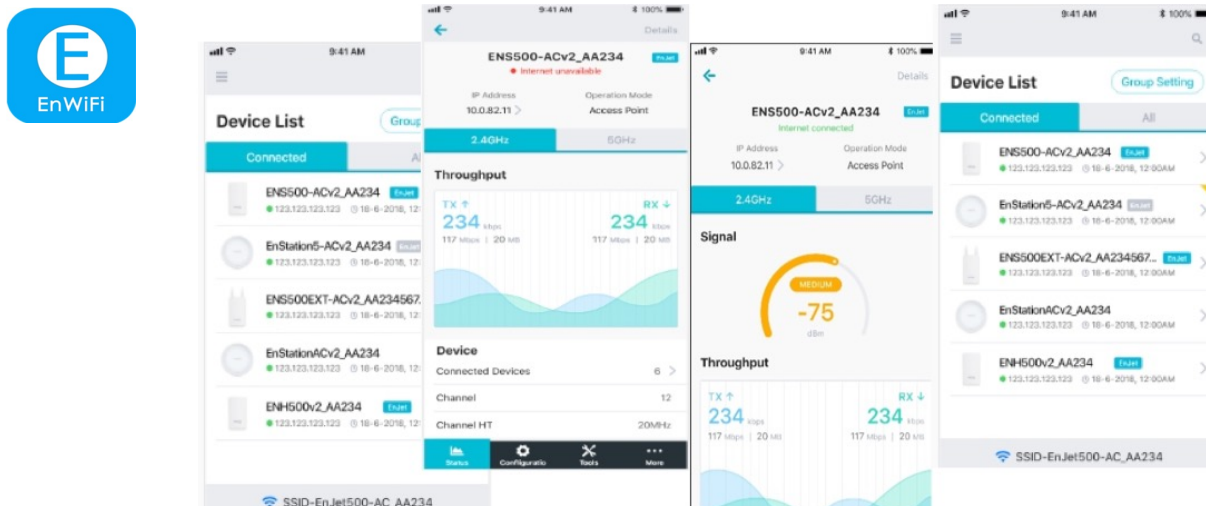
The EnStation5-AC/EnStationAC is engineered with a breakthrough EnGenius EnJet technology, which lets an Access Point to arrange each Customers Premise Equipment (CPE) to send and receive data using pre-designated time slots scheduled . EnGenius EnJet eliminates hidden node collisions and optimizes airtime 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, EnStation5-ACv2/EnStationACv2 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 App

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 Integrated VLAN ID with a WLAN service identifier (SSID) interface will deliver packets to the defined path. The built-in QoS mechanism can 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 effectively manage the usage of each client device 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:

EnStation5-ACv2: Outdoor, IP55, 5GHz 802.11ac 2x2 MU-MIMO is backwards compatible with 802.11 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 Radio

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  
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

EnStation5-ACv2: Proprietary 24V PoE (Power: 4, 5; Return: 7, 8)  
EnStationACv2: 802.3at PoE, 802.3af PSE output  
Active Ethernet (Power Over Ethernet, PoE)

### Antenna

#### Antenna Types

Directional high gain 19dBi antenna  
Widely frequency supported from 5150MHz to 5925MHz

### 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)

190mm (D) x 38mm (H)

#### Weight

460g

#### Operating

Temperature: -20°C~60°C (-4°F~140°F)

Humidity: 0% ~ 90% typical

#### Storage

Temperature: -30°C~80°C (-22°F~176°F)

Humidity: 0% ~ 90% typical

#### Environment Protection Level

IP55

#### Surge Protection

Line to Line: 1KV

Line to Ground: 2KV

#### 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.

#### 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 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 (EnStation5-AC/EnStationAC)

### 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	15.0	-93.0
	54 Mbps	15.0	-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	15.0	-92.0
	MCS 7 / 15	15.0	-73.0
802.11n HT40 5GHz	MCS 0 / 8	14.0	-90.0
	MCS 7 / 15	13.0	-71.0
802.11ac VHT20 5GHz	MCS0	14.0	-92.0
	MCS8	12.0	-69.0
802.11ac VHT40 5GHz	MCS0	14.0	-89.0
	MCS9	12.0	-64.0
802.11ac VHT80 5GHz	MCS0	14.0	-86.0
	MCS9	12.0	-61.0

\*Maximum RF performance of the hardware provided. Maximum transmit power is limited by local regulatory.

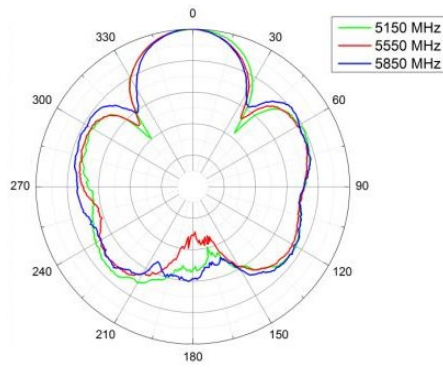
\*The supported frequency bands are restricted by local regulatory requirements.

\*Transmit power is configured in 1.0dBm increments.

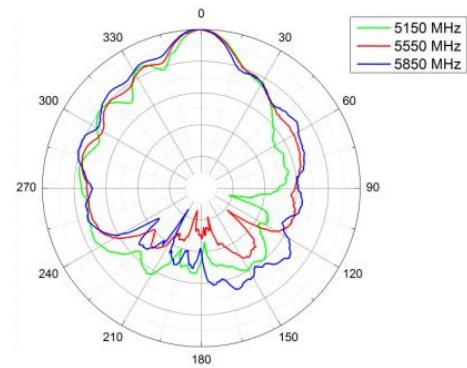
## Antennas Patterns Wireless outdoor long-range Access Point

### EnStation5-ACv2/EnStationACv2

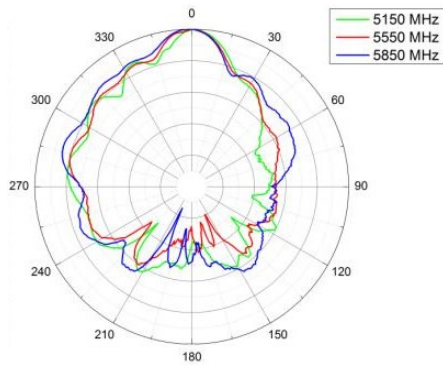
Port1: E-Plane



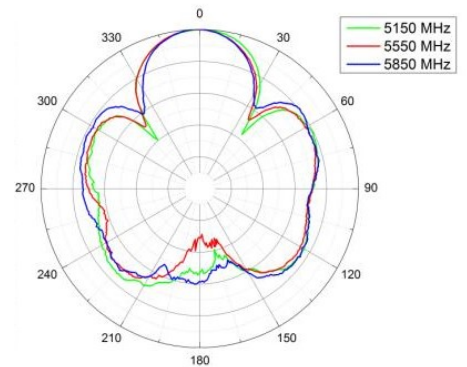
Port1: H-Plane



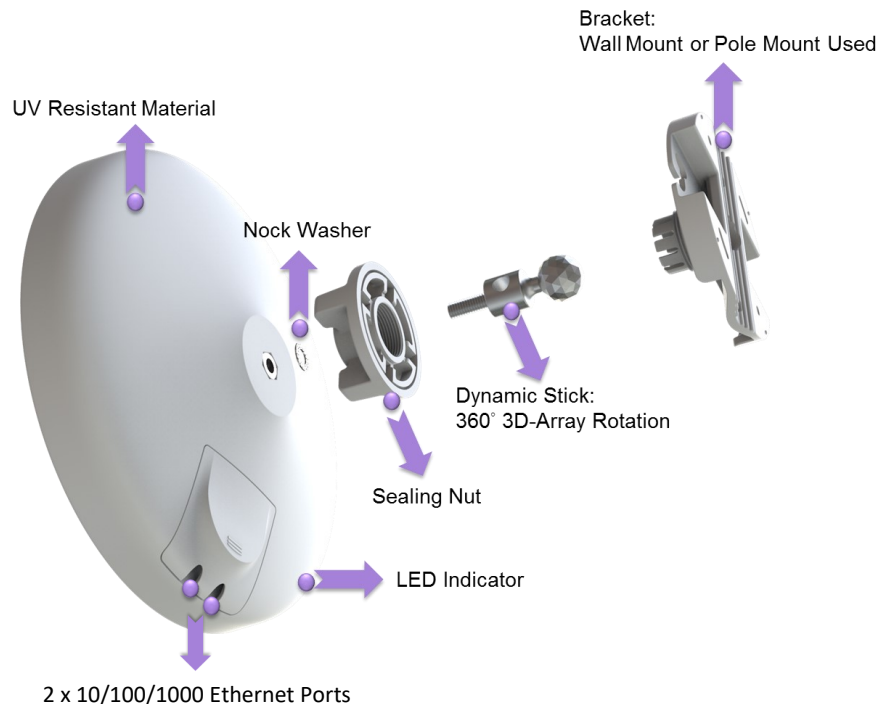
Port2: E-Plane



Port2: H-Plane



# Physical Interfaces



EnStation5-ACv2/EnStationACv2



Standards	802.11ac Wave2 and a/n
Frequency	5150MHz~5850MHz*
Tx Power	26dBm
Data Rates	867 Mbps
Antennas	Directional 19dBi
Physical Interface	EnStation5-ACv2: 1 x Gigabit 24V PoE Input LAN Port 1 x Gigabit Data LAN Port EnStationACv2: 1 x Gigabit 802.3at PoE Input 1 x 802.3af output LAN Port
Radio Chains/Streams	2x2: 2

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

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