EnGenius

Datasheet

EnStationAC
EnStation5
EnStation2

EnStation – The Solution for High-Speed, Long-Distance, Wireless Connectivity

2.4 GHz and 5 GHz Extreme Long-Range Outdoor Wireless Access Point/Client Bridge

The EnGenius EnStation is a family of Outdoor Access Point/Bridges designed to extend the wireless network over short and long distances and to substantially broaden wireless transmission ranges, delivering high bandwidth and wireless speeds in challenging, hard to reach point-to-point and point-to-multipoint installations.

EnStation is available in three models designed to meet various deployment needs: **EnStationAC** 11ac 5 GHz, **EnStation5** N300 5 GHz and **EnStation2** N300 2.4 GHz.

Features

- High-Gain Antennas Extend Wireless Networks Up-to 5-miles Point-to-Point
- 802.11ac Wireless Speeds to 867 Mbps; to 400 Mbps at ½ Mile (EnStationAC)
- 802.11n Wireless Speeds to 300 Mbps; to 90 Mbps at ½ Mile (EnStation5 & EnStation2)
- Optimal Bandwidth Supports Heavy Video Application Delivery Over Long Distances
- Point-to-Point & Point-to-Multipoint Connectivity Over Large Distances
- EnStationAC Features a Secondary 802.3af-Compliant PoE Port to Power Remote IP Cameras or APs
- 360-Degree 3-Axis Pivoting Arm Locks for Precise Alignment
- Focused Narrow Wireless Beam Reduces Frequency Interference for Long-Range Transmissions
- PoE Support & Included Injector Extends Power to Unwired Areas up to 328-ft./100m
- IP55-Rated Waterproof & Dustproof Casing Withstands Harsh Environments
- Flexible Deployment Modes Include: AP, Client Bridge or WDS Bridge

EnStationAC

Boasting 802.11ac wireless speeds to 867 Mbps, the 5 GHz EnStationAC offers dual-PoE Gigabit ports and a high-gain directional antenna that emits a narrow signal beam for limited interference, ensuring stable connectivity over extremely long distances, extending the network up to 5 miles point-to-point.

Optimal Bandwidth, Wider Channel Range for Fast File Transfers & Smooth HD Video Streaming

EnStationAC is engineered with a powerful independent RF interface that allows it to accommodate 4k Ultra High Definition (UHD) video and heavy multi-application traffic services, extending bandwidth over a wider channel range (20MHz, 40MHz and/or 80MHz), allowing network managers to fine tune channel usage based on their application needs.

Connect and Power A Second Network Device for Greater Deployment Flexibility

Offering greater flexibility in deployment, the EnStationAC features two Power-over-Ethernet (PoE) 802.3at-compliant Gigabit ports. Connect and power a second device such as a remote IP surveillance camera or Access Point and power both via the included passive 54v Gigabit PoE Adapter up to 328 feet.

These enhanced power options allow the AP/CB and a secondary device to be deployed where power outlets are scarce or unavailable, such as under the eaves of roofs, high atop light poles or in other remote locations.

EnStation5 & EnStation2

The 5 GHz EnStation5 and the 2.4 GHz EnStation2 both reaching 802.11n wireless speeds up to 300 Mbps, and 90 Mbps speeds at ½ mile; creating a dependable wireless network over long distances.

Going the Distance

All EnStation models feature 26 dBm output power and high receive sensitivity, coupled with embedded high-gain directional antennas that emit a narrow signal beam to deliver stable robust connectivity, optimal bandwidth and high speed data rates over extremely long distances — up to 5 miles in clear line-of-sight point-to-point deployments.

EnStation extends the wireless network across large campus environments, over vast acreage in parks and recreational facilities, industrial, farming and ranching properties; in sizable indoor structures like arenas, shopping malls, warehouses and convention centers and in other challenging settings.

EnStation is ideal for deployment in these venues:

- College Campuses
- Corporate Campuses
- Shopping Malls
- Resort Properties
- Parks & Campgrounds
- Military Bases
- Warehouse Operations
- Stadiums & Arenas
- Medical Centers
- Luxury Homes & Estates
- Farms & Ranches
- Docks & Marinas

Flexibility in Deployment

Configure EnStation to accommodate specific operation modes including **Access Point**, **Client Bridge** and **WDS Bridge** for Point-to-Point or Point-to-Multipoint deployments.

Point-to-Point

Connect two EnStations up to 5 miles

Point-to-Point & Point-to-Multipoint Deployments

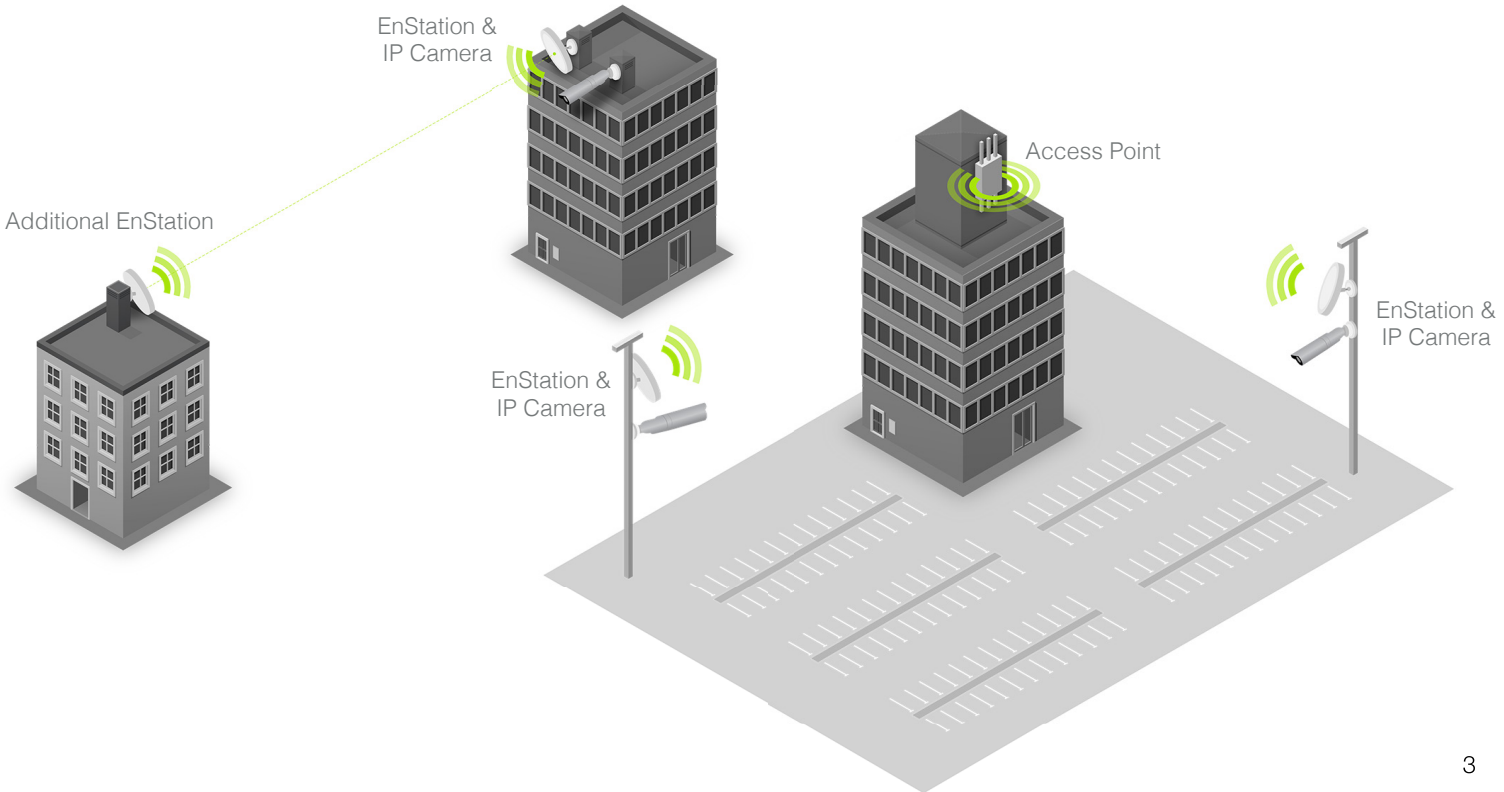
Extended connectivity distances can be achieved when two EnStation units, of the same frequency band, are paired together in a Point-to-Point (PtP) or grouped with multiple units in a Point-to-Multipoint deployment. Aligning their respective dish-shaped antennas to directly face each other ensures each gets the full impact of the focused narrow wireless single beam, further reducing frequency interference over long-ranges.

Point-to-Multipoint

Add on to an existing network using Client Bridge Mode

Wireless Surveillance Scenario

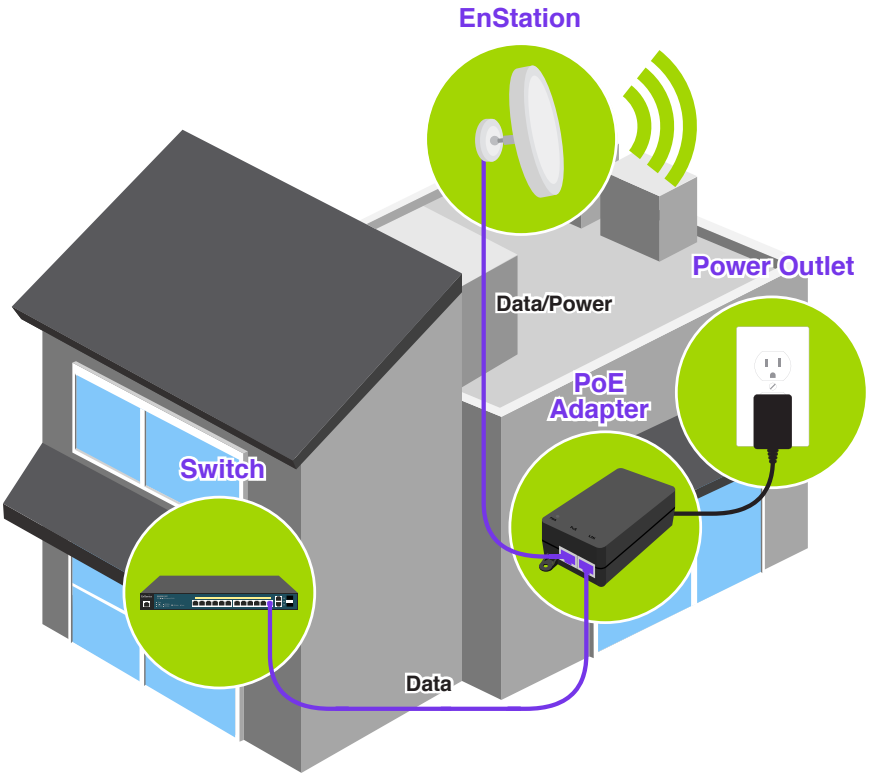
Connect an EnGenius IP Surveillance Camera to EnStation's secondary Gigabit (EnStationAC) or Fast (EnStation5/2) Ethernet port and utilize its long-range connectivity to send surveillance video back through the wireless network for extended surveillance coverage. Tethering a series of EnGenius IP Cameras to the EnStation gives you "eyes on" places you might not otherwise see – no matter how far away, with significantly better results than traditional non-tethered wireless surveillance setups.

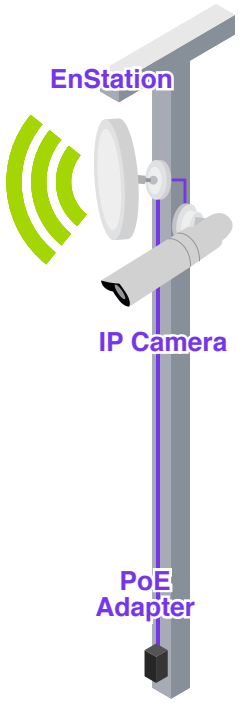


Install Virtually Anywhere

With enhanced power options, EnStation supports Power-over-Ethernet extending power up to 328 feet (100 m) away from a power outlet to EnStation's mounting location, such as high atop rooftops, poles, rafters or other remote locations via its PoE Adapter or a compatible PoE Switch.

All EnStation units include a PoE-compatible Power-over-Ethernet (PoE) adapter. EnStationAC is able to power PoE-compliant devices such as an IP Camera or Access Point directly via its secondary Gigabit PoE pass through port.



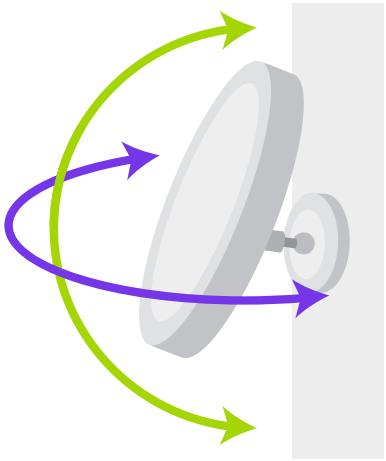


Extreme Distances Even in Extreme Weather

EnStation is designed to perform, even in harsh environments. Its IP55-rated waterproof and dustproof casing ensures it can withstand harsh outdoor climates and indoor industrial environments. This includes prolonged exposure outdoors to sunlight, extreme cold, frost, snow, rain, hail, heat and humidity, and indoors where temperature may be a factor.

Position for Maximum Connectivity

A 360-degree, 3-axis pivoting arm locks in place for precise alignment with a matching EnStation unit in point-to-point scenarios. EnStation is easily mounted to a variety of surfaces or poles with the included mounting kits.



Control, Monitor & Configure

With EnGenius' **EZ Controller™** Software, EnStation units that are deployed on rooftops or in other difficult to access locations can be reconfigured to different operational modes and upgraded remotely without manually connecting to them onsite.

EnGenius EnStation



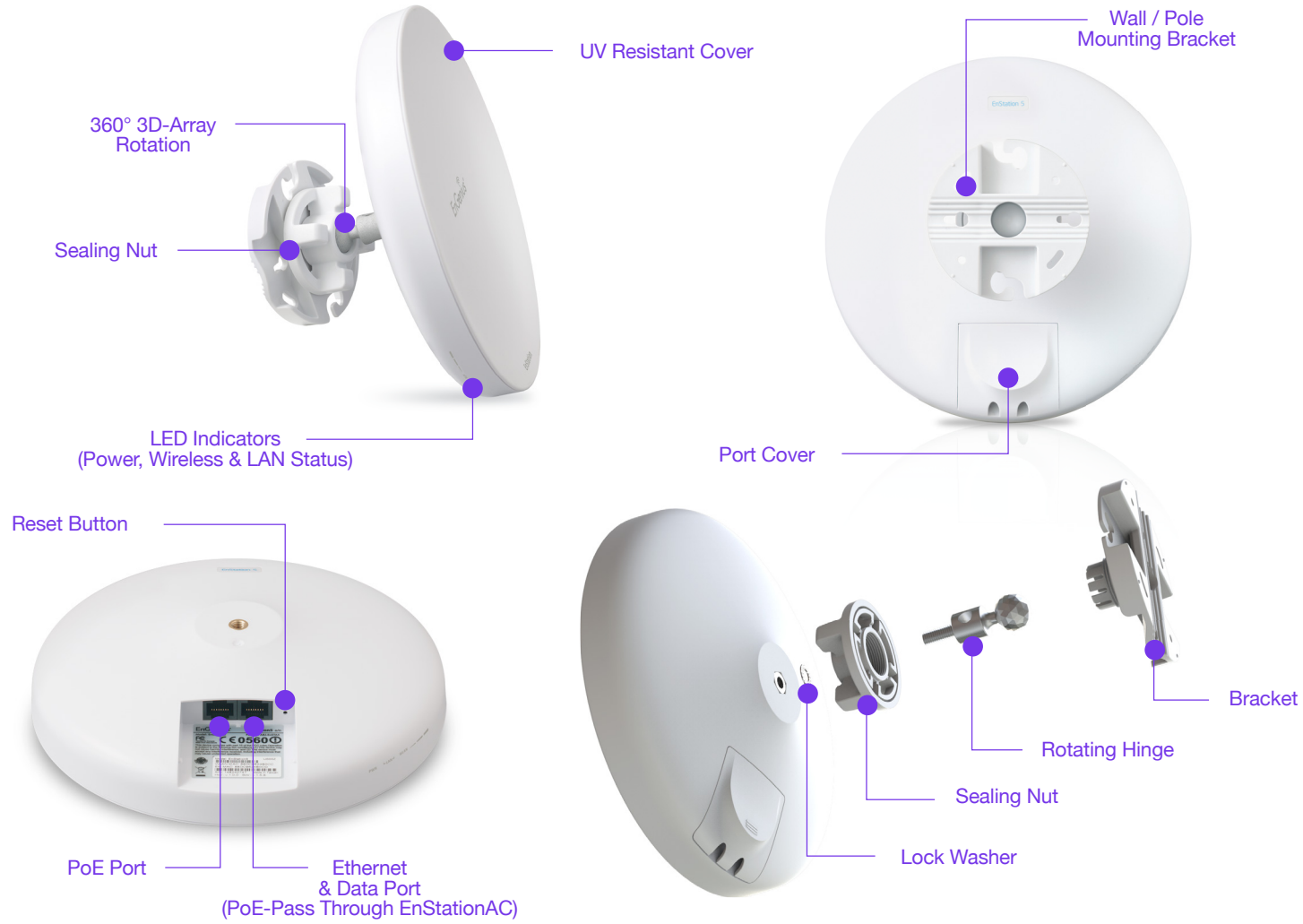
Models	EnStationAC	EnStation5	EnStation2
Standards	802.11a/n/ac	802.11a/n	802.11b/g/n
Frequency	5 GHz	5 GHz	2.4 GHz
Max. Data Rate	Up to 867 Mbps	Up to 300 Mbps	Up to 300 Mbps
Radio Chains/Streams	2 x 2:2	2 x 2:2	2 x 2:2
RF Output Power	26 dBm	26 dBm	26 dBm
Primary Ethernet Port	1 x Gigabit Port (PoE Input)	1 x Fast Ethernet Port	1 x Fast Ethernet Port
Secondary Gigabit Port	1 x Gigabit Port (PoE Output)	1 x Fast Ethernet Port	1 x Fast Ethernet Port
Power-over-Ethernet	802.3at (in)/802.3af (out)	Proprietary	Proprietary
Power Consumption (Peak)	23.4W	7W	7.2W
Integrated Antenna	19 dBi	19 dBi	13 dBi
Ingress Protection Rating	55	55	55

Internal Antenna Specifications

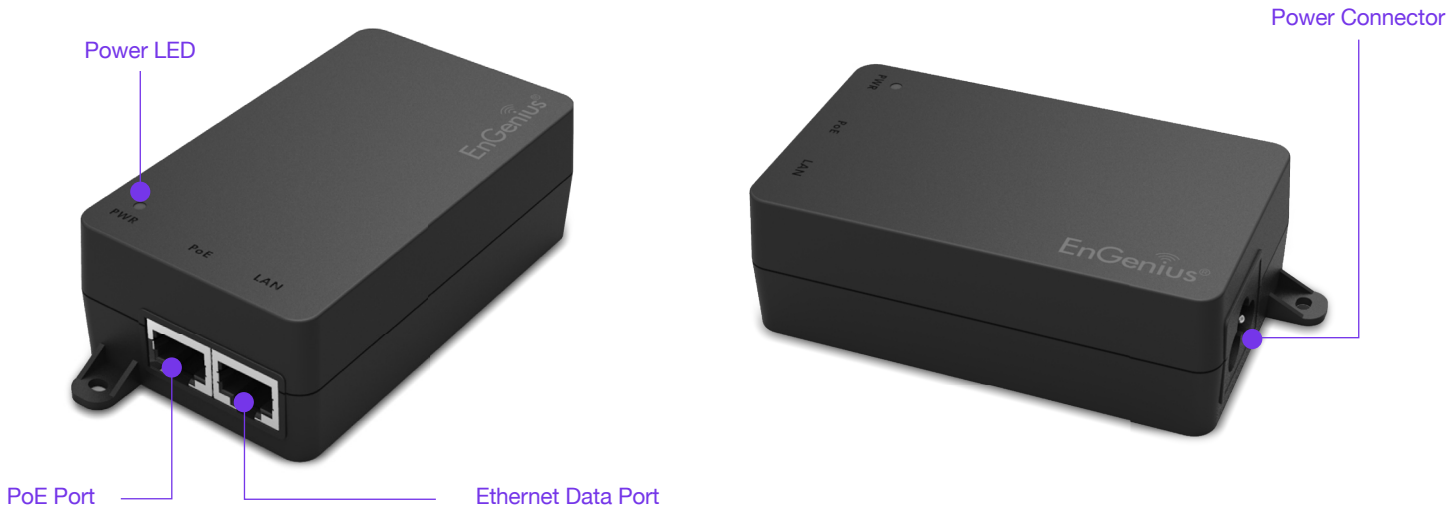


Models	EnStationAC		EnStation5		EnStation2	
Antenna	5 GHz (P1)	5 GHz (P1)	5 GHz (P1)	5 GHz (P2)	2.4 GHz (P1)	2.4 GHz (P2)
Antenna Gain	19 dBi	19 dBi	19 dBi	19 dBi	13 dBi	13 dBi
Polarization	Linear	Linear	Linear	Linear	Linear	Linear
Azimuth Beam-Width	30°	18°	30°	18°	67°	67°
Elevation Beam-Width	18°	30°	18°	30°	33°	35°
VSWR	1 :2.0	1 :2.0	1 :2.0	1 :2.0	1 :2.0	1 :2.0
Dimension	7.38″x7.38″x1.50″		7.38″x7.38″x1.50″		7.38″x7.38″x1.50″	

Outdoor AP/Bridge



EPA5006GP Gigabit PoE Adapter



Technical Specifications

Standards

EnStationAC IEEE 802.11a/n/ac

EnStation5 IEEE 802.11a/n

EnStation2 IEEE 802.11b/g/n

Data Rates

EnStationAC Up to 867 Mbps on 5 GHz

EnStation5 Up to 300 Mbps on 5 GHz

EnStation2 Up to 300 Mbps on 2.4 GHz

Internal Antennas

EnStationAC / EnStation5

(1) 19 dBi 5 GHz High-Gain Directional

EnStation2

(1) 13 dBi 2.4 GHz High-Gain Directional

Physical Interface

EnStationAC

(1) 10/100/1000 Mbps Port supports 802.3at/Proprietary 48V-54V PoE Input

(1) 10/100/1000 Mbps Port supports 802.3af PSE Output

EnStation5 / EnStation2

(1) 10/100 Mbps Port supports Proprietary 24V PoE Input

(1) 10/100 Mbps Port supports extension of an Internet signal

LED Indicators

1 x Power

1 x LAN 1

1 x LAN 2

1 x WLAN

Reset Button

Power

Power Source (PoE Adapter):

EnStationAC

802.3at/48V-54V Proprietary Compliant Source

Active Ethernet (Power-over-Ethernet, PoE+)

EnStation5 / EnStation2

24V/.6A Proprietary Compliant Source

Active Ethernet (Power-over-Ethernet, PoE)

Power Consumption

EnStationAC 23.4W

EnStation5 7W

EnStation2 7.2W

Wireless & Radio Specifications

Operating Frequency

EnStationAC / EnStation5 5 GHz

EnStation2 2.4 GHz

Operation Modes

Access Point

Client Bridge

WDS Mode

Transmit Power

Up to 26 dBm

Up to 400 mW

Max Power is limited by regulatory power

Radio I

EnStationAC 11a/n/ac: 5.180-5.825 GHz

EnStation5 11a/n: 5.180-5.825 GHz

EnStation2 11b/g/n: 2.412-2.472 GHz

Radio Chains/Spatial Streams

2x2:2 MIMO

Supported Data Rates (Mbps)

EnStationAC

802.11a: 6, 9, 12, 18, 36, 48, 54

802.11n: 6.5~300 (MCS0 to MCS15)

802.11ac: 6.5~866 (MCS0 to MCS9)

EnStation5

802.11a: 6, 9, 12, 18, 36, 48, 54

802.11n: 6.5~300 (MCS0 to MCS15)

EnStation2

802.11b: 1, 2, 5.5, 11

802.11g: 6, 9, 12, 18, 36, 48, 54

802.11n: 6.5~300 (MCS0 to MCS15)

Supported Radio Technologies

EnStationAC

802.11a/n/ac: Orthological Frequency-Division Multiplexing (OFDM)

EnStation5

802.11a/n: Orthological Frequency-Division Multiplexing (OFDM)

EnStation2

802.11b: Direct-Sequence Spread-Spectrum (DSSS)

802.11n: Orthological Frequency-Division Multiplexing (OFDM)

Channelization

EnStationAC

802.11ac with 20/40/80 MHz Channel Width

802.11n with 20/40 MHz Channel Width

802.11a with 20 MHz Channel Width

EnStation5

802.11n with 5/10/20/40 MHz Channel Width

802.11a with 5/10/20 MHz Channel Width

EnStation2

802.11n with 5/10/20/40 MHz Channel Width

802.11b/g with 5/10/20 MHz Channel Width

Supported Modulation

EnStationAC

802.11a/n/ac: BPSK, QPSK, 16-QAM, 64-QAM, OFDM & 256-QAM

EnStation5

802.11a/n: BPSK, QPSK, 16-QAM, 64-QAM

EnStation2

802.11b: BPSK QPSK, CCK

802.11n: BPSK, QPSK, 16-QAM, 64-QAM

Management

Auto Channel Selection

Multiple SSIDs: 8 SSIDS

BSSID Support

VLAN Tagging - Independent VLAN settings can be enabled/disabled

VLAN Pass-through - Over WDS Bridge Mode

VLAN Per SSID - Isolate each SSID with Individual VLAN

Wireless STA (Client) Connection List

Email Alert

Client Traffic Status

Configuration

Web Interface (HTTPS)

SSH

SNMP V1/v2c/v3 Support

MIB I/II, Private MIB

CLI Support

Save Configurations as Default

Control Features

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

CLI Comments Support

Distance Control (Ack Timeout)

Multicast Supported

RSSI Threshold

Wi-Fi Scheduler

Security

WEP Encryption: 64/128/152 bit

WPA/WPA2 Personal (WPA-EAP using TKIP AES)

WPA/WPA2 Enterprise (WPA-EAP using TKIP AES)

Hide SSID in Beacons

MAC Address Filtering (Up to 32 MAC addresses per SSID)

802.1x Authenticator

QoS

Compliant with IEEE 802.11e Standard

Environmental & Physical

Temperature Range

Operating: -4 °F to 140 °F (-20 °C to 60 °C)

Storage: -22 °F to 176 °F (-30 °C to 80 °C)

Technical Specifications continued

Humidity (non-condensing)
Operating: 90% or less
Storage: 90% or less

Waterproof
IP55-Rated Enclosure

Dimensions & Weights:
EnStation Device (Without Mounting Kit)
Weight: 1.01 lbs. (460 g)
Depth: 7.48" (190 mm)
Height: 1.50" (38 mm)

Packaging
Weight: 2.29 lbs. (1.04 kg)
Width: 9.72" (247 mm)
Length: 12.63" (321 mm)
Height: 3.46" (88 mm)

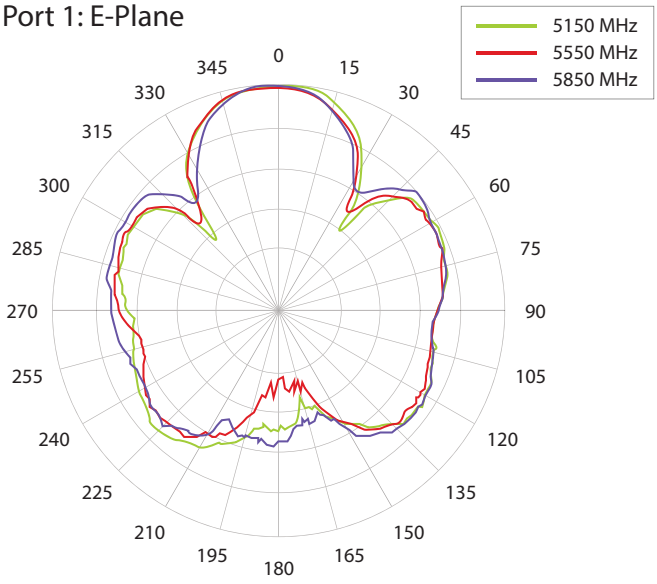
Package Contents
• EnStation Outdoor CPE
• Pole/Wall Mounting Kit
• Mounting Screw Set
• Quick Installation Guide
• PoE Adapter (EPA5006GP)

Certifications
FCC, CE

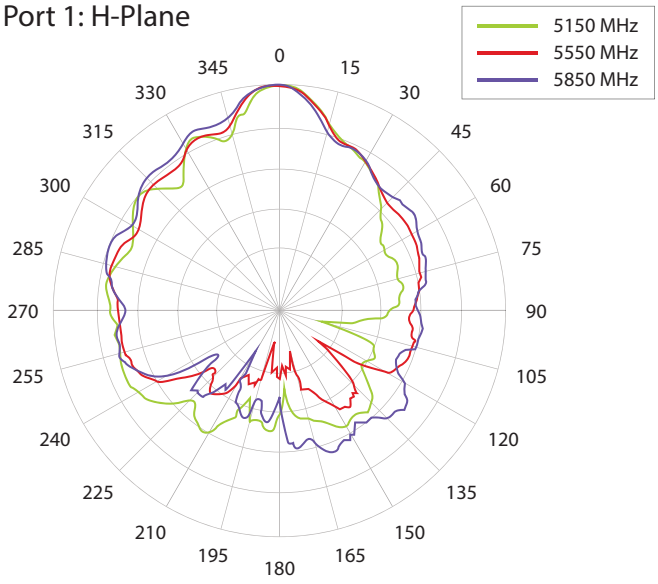
Warranty:
1 Year

EnStationAC Antenna Radiation Patterns

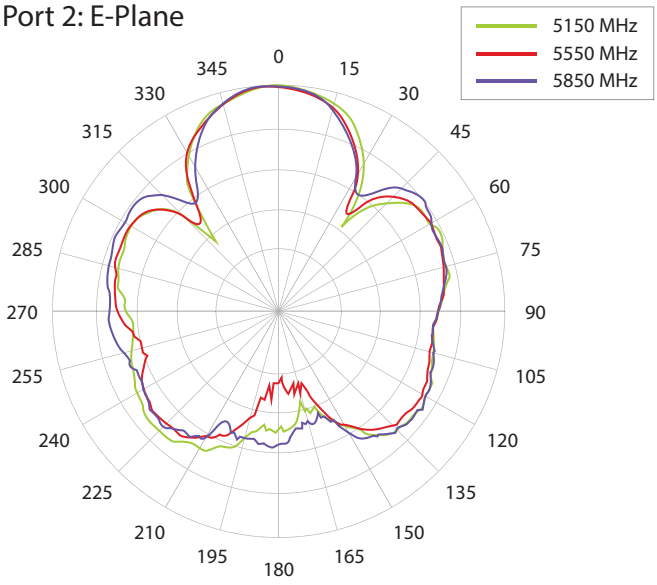
Port 1: E-Plane



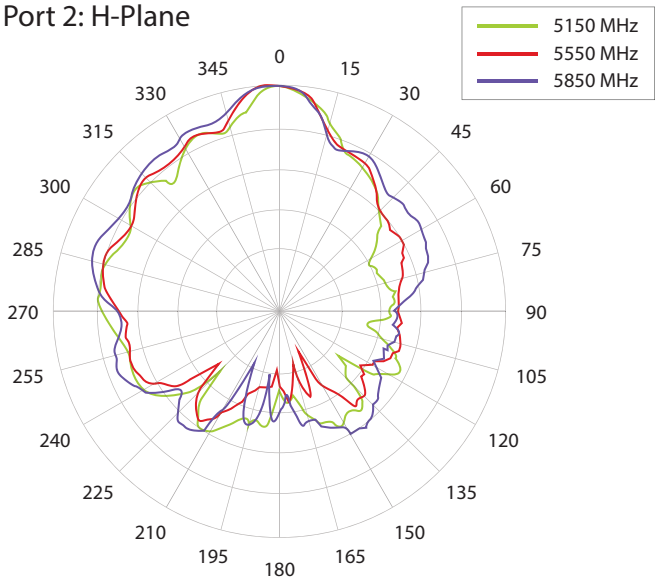
Port 1: H-Plane



Port 2: E-Plane

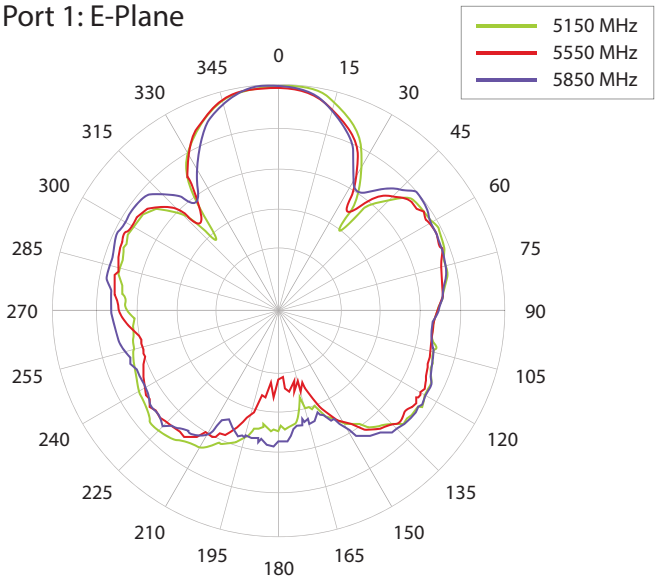


Port 2: H-Plane



EnStation5 Antenna Radiation Patterns

Port 1: E-Plane



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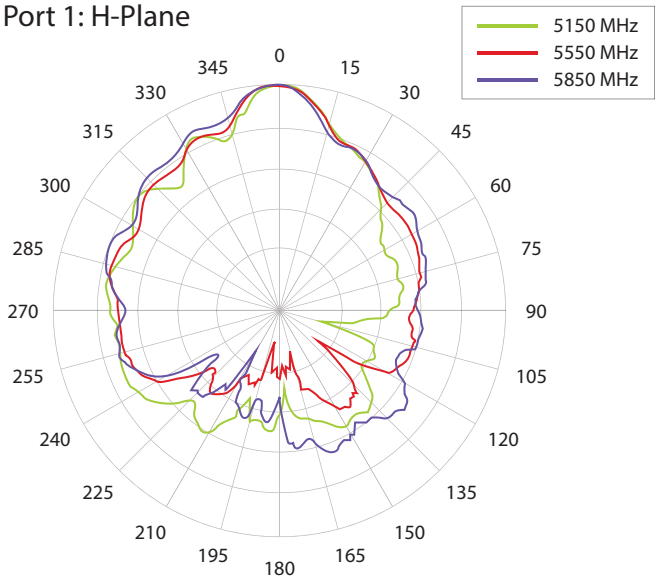
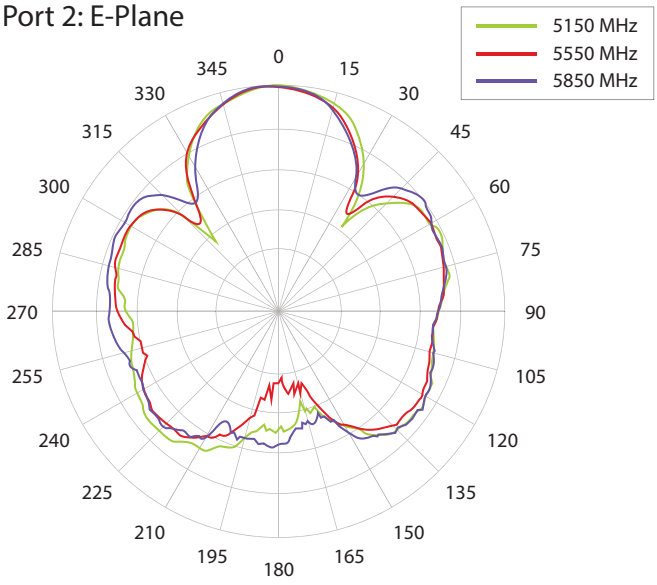
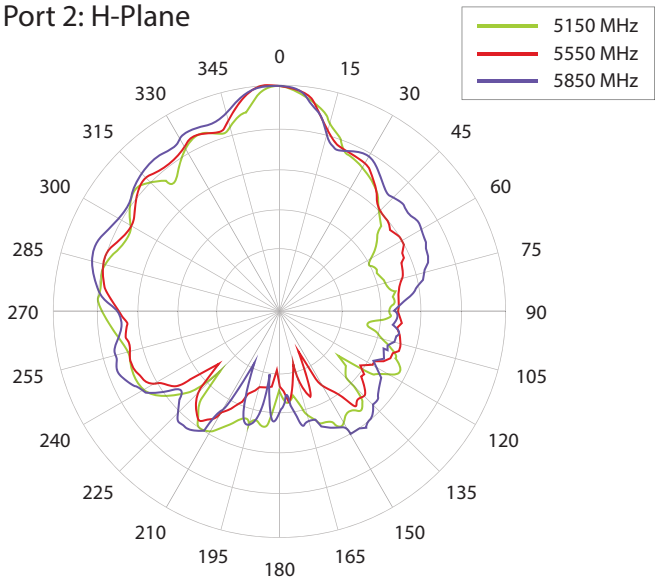


Port 2: E-Plane

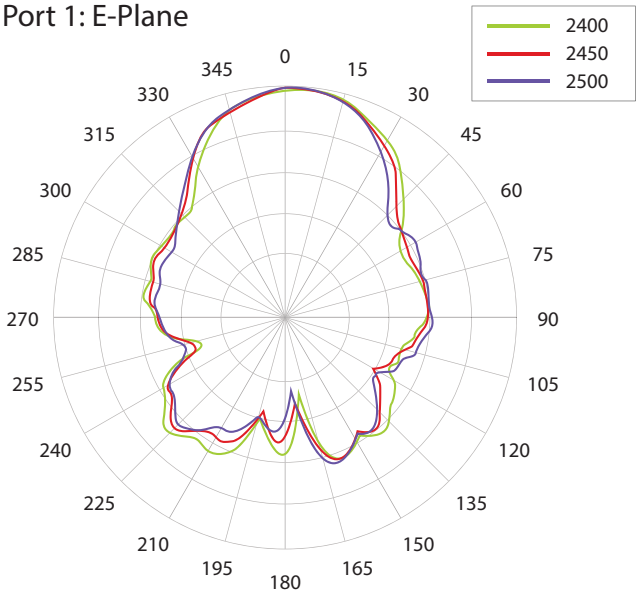


Port 2: H-Plane

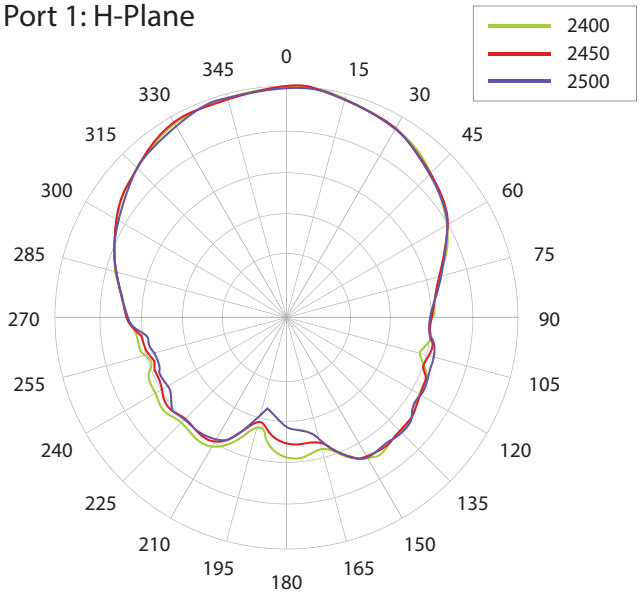


EnStation2 Antenna Radiation Patterns

Port 1: E-Plane



Port 1: H-Plane



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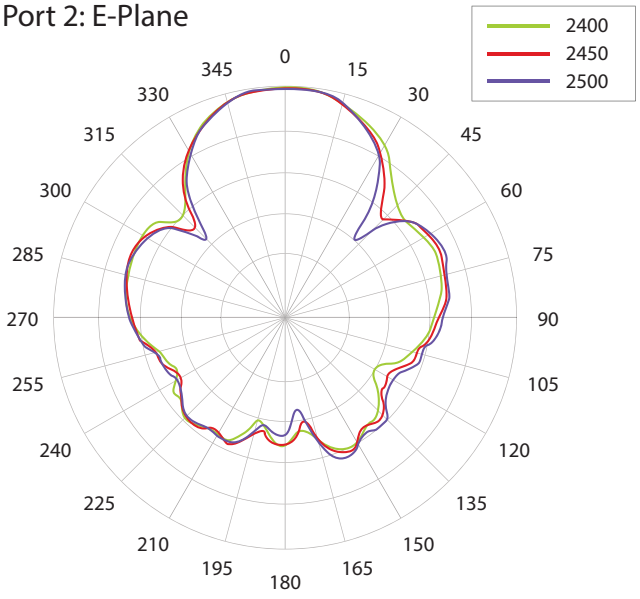

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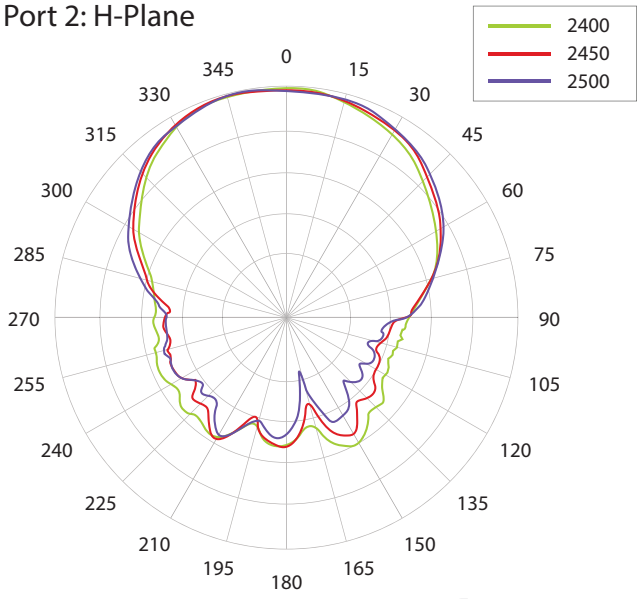

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Version 2.0 - 10/30/15

Maximum data rates are based on IEEE 802.11 standards. Actual throughput and range may vary depending on distance between devices or traffic and bandwidth load in the network. Compliant with FCC - This equipment has been tested and found to comply with the limits for a Class A 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. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.