



## Key Features

- Integrated WLAN management solution with Neutron Series Switches
- IEEE 802.11ac and IEEE802.11b/g/n compliant with max transfer rates of up to 1750 Mbps<sup>1</sup>
- Compliant with IEEE802.3at for PoE support
- Secondary LAN port for additional connectivity
- Ruggedized, waterproof housing
- PoE injector included
- IPv4/IPv6 support
- SNMP v1/v2c/v3, MIB I/II supported
- WEP/WPA/WPA2 wireless encryption
- Effective and flexible bandwidth management
- Client limiting and fast handover supported
- Secure Guest Network option available
- Ideal for audio, video and voice application

# Neutron Outdoor Managed Access Points

High power, high sensitivity and high reliability solution designed to operate under harsh environments

EnGenius Neutron Outdoor Access Points are ideal for any IT manager to create or to expand the capacity of their current wireless network. Utilizing the latest 802.11ac standards with maximum transfer rates of up to 450 Mbps on the 2.4GHz band and 1300 Mbps on the 5GHz band<sup>1</sup>, users are able to enjoy faster wireless connections for bandwidth hungry applications such as audio, video and voice streaming. Built to withstand harsh environments, EnGenius Neutron Outdoor Access Points are engineered with the reliability and simplicity that are beyond your expectations!

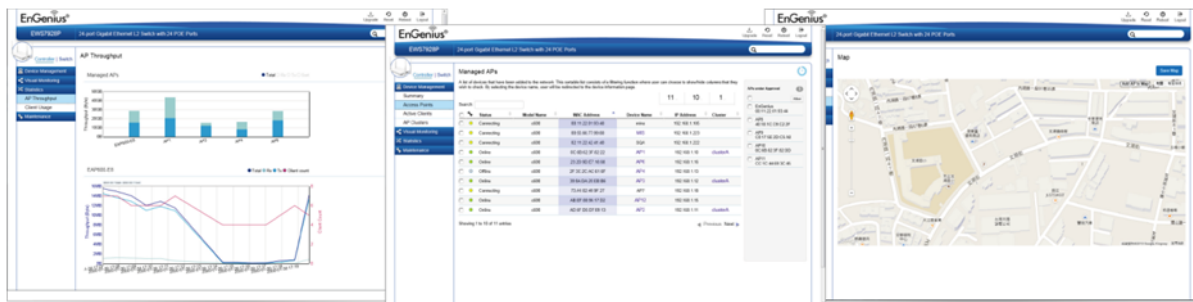
### Enhanced signal strength to further extend WLAN coverage

Equipped with antennas designed for high power radio, Neutron Access Points has been enhanced to provide higher signal strength and sensitivity; this will assist to reduce dead spots in your deployed WLAN and boost received signal quality on both ends of AP and wireless client devices.

### Configuration and management with ease

Neutron Series Access Points can be flexibly deployed either as a standalone wireless access point or as a managed access point controlled by a Neutron Wireless Management Switch; a part of EnGenius' integrated WLAN management solution, providing intuitive web-based configuration, management, and monitoring features. The AP is automatically discovered and provisioned by the Neutron Wireless Management Switch within your network, and once added into the managed device list, IT managers can effortlessly use individual or cluster settings to rapidly deploy numerous AP with the desired settings, saving repetitive configuration tasks.

<sup>1</sup>Except for EWS650AP which supports maximum transfer rates of 1200Mbps



## 802.3at-compliant Power-over-Ethernet (PoE) for alternative power sourcing

Neutron APs can be either powered by the enclosed power adapter or any off-the-shelf 802.3at-compliant PoE switches, solving common power sourcing issue in the field where devices are usually placed at drop-ceiling or mounted on walls. With PoE power management from the Neutron Switch, AP device power budget and consumption can be instantly configured and monitored.

## Flexible bandwidth management and enterprise-class WLAN security for versatile applications

Neutron Access Points supports the latest standards in Wi-Fi security, including WEP, WPA and WPA2. In addition, Neutron APs supports up to 8 SSIDs per radio, which allows IT managers to assign different access privileges to different groups of users. In terms of user mobility, PMKSA caching will facilitate fast roaming upon handoff so that the remaining 4-way handshake can complete the key exchange within the association process to reduce time interval. In addition, Guest Network feature also allocates a separate network segment for guest access within the deployed WLAN so access attempts on internal networks can be restricted.

## High Power, Long-Range and Multiple Floor Penetration

Designed for long range with high antenna sensitivity, both 2.4GHz and 5 GHz RF transmit power enable the wireless signal to penetrate floors, ceilings, and walls for greater device connectivity.

## Dual Band Operation

- The 2.4 GHz and the 5 GHz frequency bands for expanded user capacity.
- Greater number of channels available on the 5 GHz frequency spectrum to support higher bandwidth applications like HD video streaming.

## Band Steering

When wireless networks experience congested traffic, users may suffer slower file transfers and frequent video buffering especially on the 2.4 GHz band. Neutron AP dual-band models include a Band Steering option which can be enabled to automatically shifts the connection of Dual-Band client computers, tablets, smart phones and other devices to the 5 GHz band where there is less traffic and more available RF channels, leaving single-band 2.4 GHz (802.11b/g/n) clients to operate on the 2.4 GHz band that greatly optimizes overall bandwidth traffic on the network.

## Fast Roaming

Multiple Neutron APs can also be configured for Fast Roaming. This feature uses protocols defined in 802.11r to allow continuous connectivity for wireless devices in motion, with fast and secure roaming from one AP to another. Coupled with 802.11k, wireless devices are able to quickly identify nearby APs that are available for roaming; once the signal strength of the current AP weakens and your device starts to search for a new AP, it will identify which AP is the best to connect with. This means that employees can be constantly connected to the network – whether they are warehouse workers scanning and capturing barcode information, employees on Wi-Fi phone calls while walking to meetings on another part of a building or healthcare professionals capturing patient information on mobile devices.

## SSID-to-VLAN Tagging

Can be configured to broadcast up to eight (8) SSIDs per frequency band. Each SSID can be tagged to a specified company network VLAN for different user access based on established access rights.

## Mesh Mode (Available soon)

Under the AP Mesh mode, the Neutron Series Access Points can be used as the central connection hub for station or clients that support IEEE 802.11 a/b/g/n network. Under this mode, the Neutron Series APs can be configured with the same Mesh SSID and security password in order to associate with other Neutron Series APs. For example, you would use one band to connect Neutron Series Access Points in range with Mesh mode and the other band to broadcast traffic on the network. Acting as a node within a web framework, each Neutron Series Access Point only needs to connect to the nearest node using the best path to transmit data, working collaboratively with other Access Points in the network infrastructure to function.

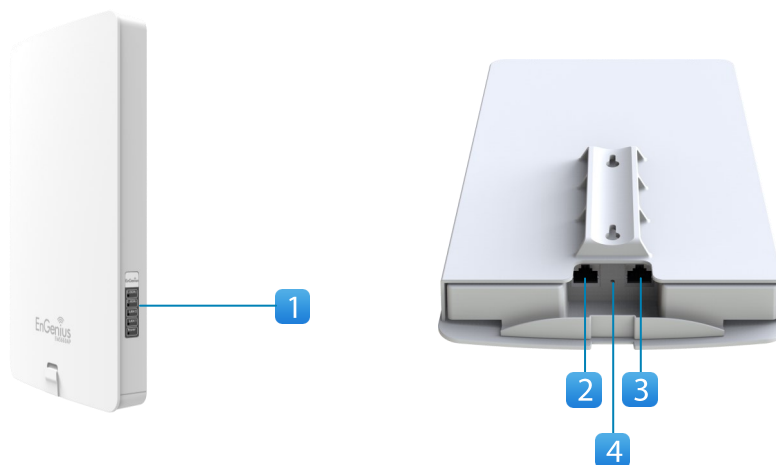
## Guest Network

The Guest Network feature allows administrators to grant Internet connectivity to visitors or guests while keeping other networking devices and sensitive personal or company information private and secure.

## Physical Interface

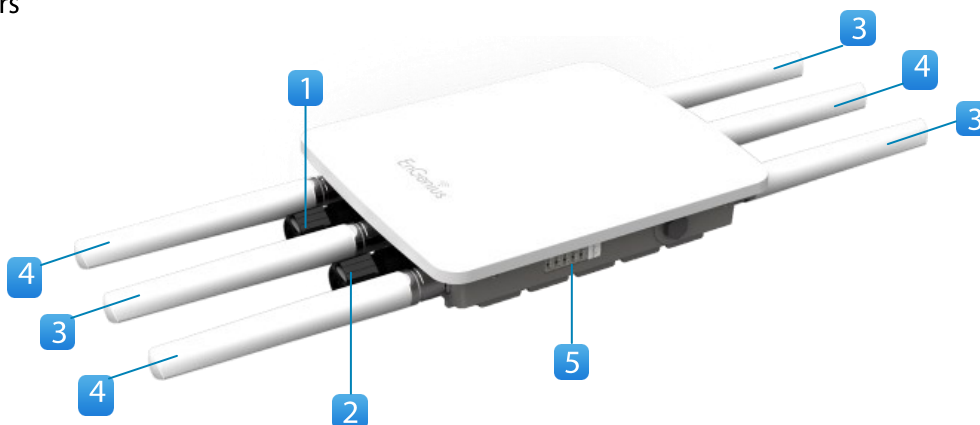
### EWS650AP/EWS660AP

1. LED Indicators
2. LAN2 (Data)
3. LAN1 (PoE IN)
4. Reset Button

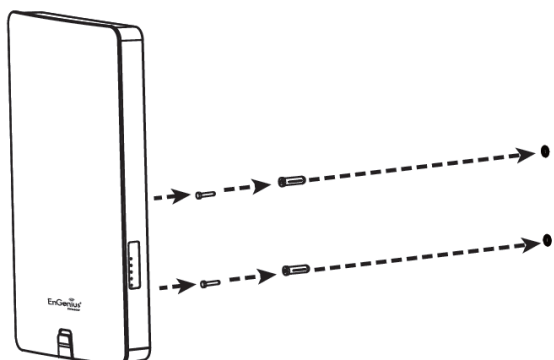


### EWS860AP

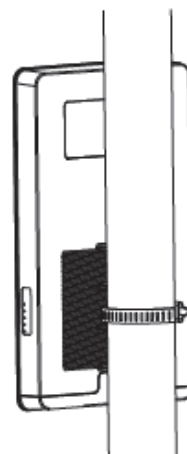
1. LAN1, IEEE802.3at PoE Input
2. LAN2, IEEE802.3af PoE Output
3. Detachable 5dBi 2.4GHz Omni-directional Antennas
4. Detachable 7dBi 5GHz Omni-directional Antennas
5. LED Indicators



## Mounting Reference for EWS650AP/EWS660AP

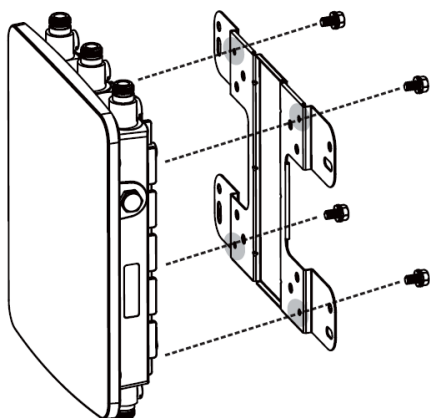


Mounting the AP to a flat surface

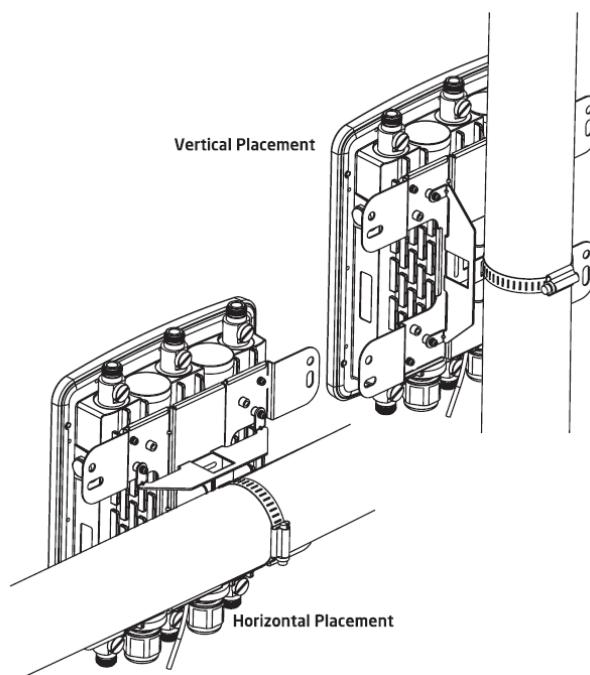


Mounting the AP onto a pole

## Mounting Reference for EWS860AP



Mounting the AP to a flat surface



Mounting the AP onto a pole

## Model Comparison Chart



	EWS650AP	EWS660AP	EWS860AP
Wi-Fi Standards	802.11a/b/g/n/ac	802.11a/b/g/n/ac	802.11a/b/g/n/ac
2.4GHz	✓	✓	✓
5GHz	✓	✓	✓
Radio Chains/Streams	2 x 2:2	3 x 3:3	3 x 3:3
2.4GHz Max Data Rate	300 Mbps	450 Mbps	450 Mbps
5GHz Max Data Rate	867 Mbps	1300 Mbps	1300 Mbps
RF Output Power 2.4GHz	27 dBm	29 dBm	29 dBm
RF Output Power 5GHz	26 dBm	27 dBm	29 dBm
Antenna	Internal	Internal	External
Gigabit Ethernet	1 x GbE	1 x GbE	1 x GbE
Secondary Ethernet Port	1 x GbE	1 x GbE	1 x GbE (PoE out)
PoE Compliant	802.3at	802.3at	802.3at
IP Rating	IP55	IP55	IP68

## EWS650AP Technical Specifications

### Radio Specification

Dual Concurrent Radio:

- 2.4GHz: 802.11b/g/n with max data rate up to 300Mbps
- 5GHz: 802.11a/n/ac with max data rate up to 867Mbps

Transmit Power (combined):

- 2.4GHz: max 27dBm
- 5GHz: max 26dBm
- Max transmit power is limited by regulatory power

Radio Chains / Spatial Streams:

- 2 x 2 / 2

Supported Radio Technology:

- 802.11b: direct-sequence spread-spectrum (DSSS)
- 802.11a/g/n/ac: orthogonal frequency-division multiplexing (OFDM)

Channelization:

- 802.11ac with 20/40/80 MHz channel width
- 802.11n with 20/40 MHz channel width
- 802.11a/b/g with 20 MHz channel width

Supported Modulation:

- 802.11b: BPSK, QPSK, CCK
- 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM
- 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM

Supported data rates (Mbps):

- 802.11b: 1, 2, 5.5, 11
- 802.11a/g: 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 ~ 3)

### Physical & Environment

Power Source:

- 802.3at compliant source
- Active Ethernet (Power over Ethernet, PoE)

Internal High Gain Antenna:

- 2T2R 5dBi dual concurrent omni antenna

Interface:

- 2 x 10/100/1000Mbps Ethernet Port
- LAN 1 supports 802.3at PoE input
- LAN 2 for extending Internal connectivity
- 1 x reset button

Dimensions (W x D x H):

- 181 x 304 x 46mm

Mounting:

- Pole mount or wall mount

Environment:

- Operating temperature: -20°C~60°C
- Operating humidity: 0%~90% typical
- Storage temperature: -30°C~80°C

Waterproof Rating:

- IP55 rated

### Wireless

Operating Mode:

- AP Mode

Auto Channel Selection:

- Setting varies by regulatory domains

SSIDs:

- Supports up to 8 SSIDs per frequency band

VLAN Tag / VLAN Pass-through

Wireless Client List

Guest Network:

- Allocates a separate network segment for guest access within the same WLAN

QoS:

- Supports 802.11e/WMM

Band Steering

Mobility:

- PMKSA support for fast roaming

Security:

- WEP encryption: 64/128/152-bit
- WPA/WPA2 Enterprise/PSK
- Hidden SSID
- MAC address filtering (up to 50 MAC)
- Client isolation

### Management

Deployment Options

- Standalone Mode
- Managed Mode (by Neutron Switch)

Configuration

- Web interface (HTTP)
- SNMP v1/v2c/v3 with MIB I/II and private MIB
- CLI (Telnet)

Firmware Upgrade

- Web interface or CLI (FTP/HTTP)

Backup / Restore Settings

- Revert to factory default settings

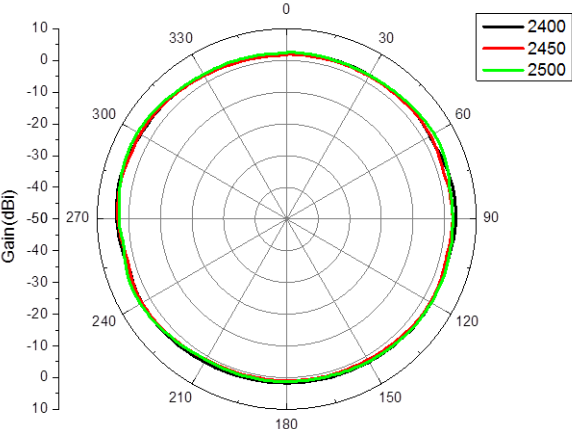
Schedule Reboot:

- Specifies interval to reboot system periodically

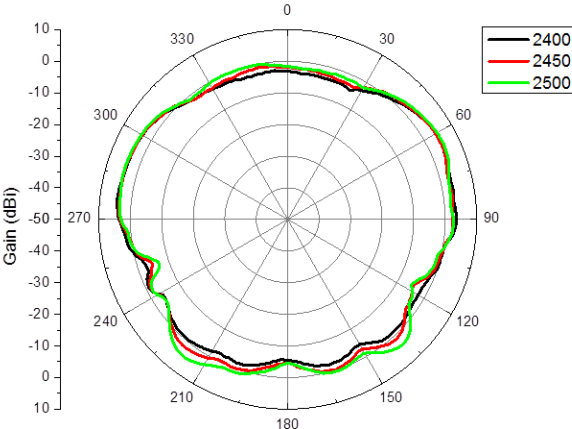
E-mail Alert / Syslog Notification



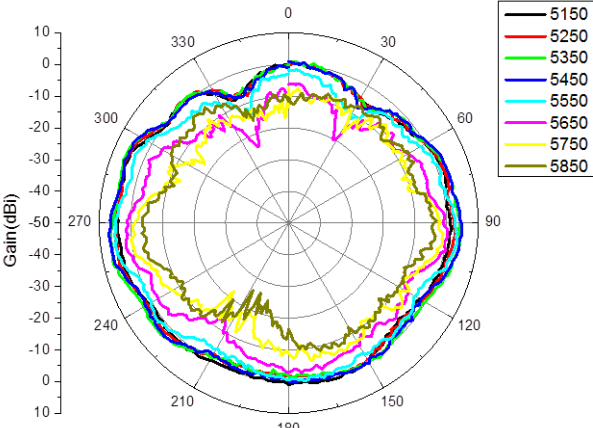
## EWS650AP Antenna Radiation Patterns



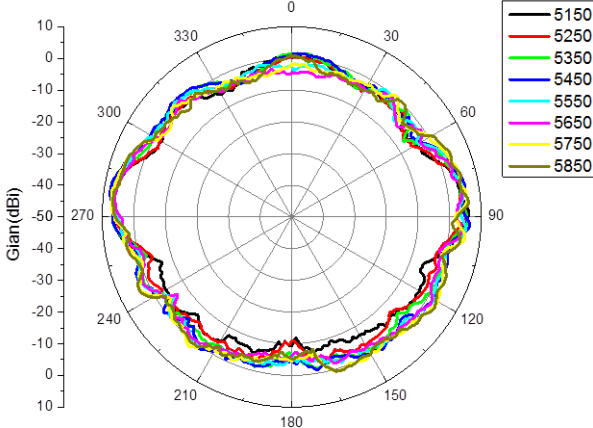
2.4GHz Azimuth-Plane



2.4GHz Elevation-Plane



5GHz Azimuth-Plane



5GHz Elevation-Plane

## EWS660AP Technical Specifications

### Radio Specification

Dual Concurrent Radio:

- 2.4GHz: 802.11b/g/n with max data rate up to 450Mbps
- 5GHz: 802.11a/n/ac with max data rate up to 1300Mbps

Transmit Power (combined):

- 2.4GHz: max 29dBm
- 5GHz: max 27dBm
- Max transmit power is limited by regulatory power

Radio Chains / Spatial Streams:

- 3 x 3 / 3

Supported Radio Technology:

- 802.11b: direct-sequence spread-spectrum (DSSS)
- 802.11a/g/n/ac: orthogonal frequency-division multiplexing (OFDM)

Channelization:

- 802.11ac with 20/40/80 MHz channel width
- 802.11n with 20/40 MHz channel width
- 802.11a/b/g with 20 MHz channel width

Supported Modulation:

- 802.11b: BPSK, QPSK, CCK
- 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM
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Supported data rates (Mbps):

- 802.11b: 1, 2, 5.5, 11
- 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
- 802.11n: 6.5 to 450 (MCS0 to MCS23)
- 802.11ac: 6.5 to 1300 (MCS0 to MCS9, NSS = 1 ~ 3)

### Physical & Environment

Power Source:

- 802.3at compliant source
- Active Ethernet (Power over Ethernet, PoE)

Internal High Gain Antenna:

- 3T3R 5dBi dual concurrent omni antenna

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- 2 x 10/100/1000Mbps Ethernet Port
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- 1 x reset button

Dimensions (W x D x H):

- 181 x 304 x 46mm

Mounting:

- Pole mount or wall mount

Environment:

- Operating temperature: -20°C~60°C
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- Storage temperature: -30°C~80°C

Waterproof Rating:

- IP55 rated

### Wireless

Operating Mode:

- AP Mode

Auto Channel Selection:

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SSIDs:

- Supports up to 8 SSIDs per frequency band

VLAN Tag / VLAN Pass-through

Wireless Client List

Guest Network:

- Allocates a separate network segment for guest access within the same WLAN

QoS:

- Supports 802.11e/WMM

Band Steering

Mobility:

- PMKSA support for fast roaming

Security:

- WEP encryption: 64/128/152-bit
- WPA/WPA2 Enterprise/PSK
- Hidden SSID
- MAC address filtering (up to 50 MAC)
- Client isolation

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Deployment Options

- Standalone Mode
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Configuration

- Web interface (HTTP)
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- CLI (Telnet)

Firmware Upgrade

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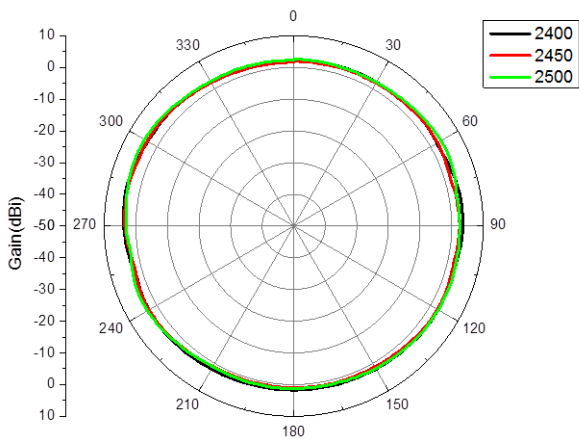
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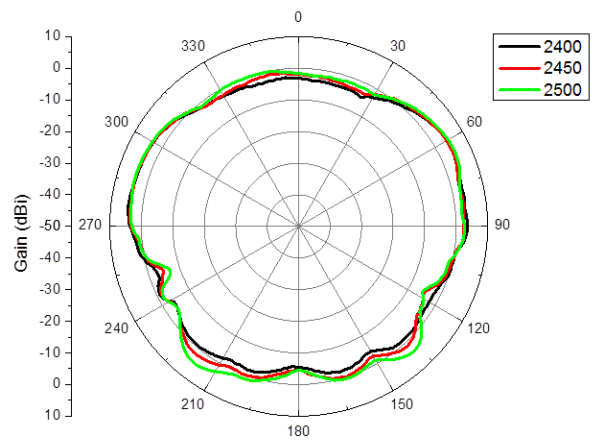
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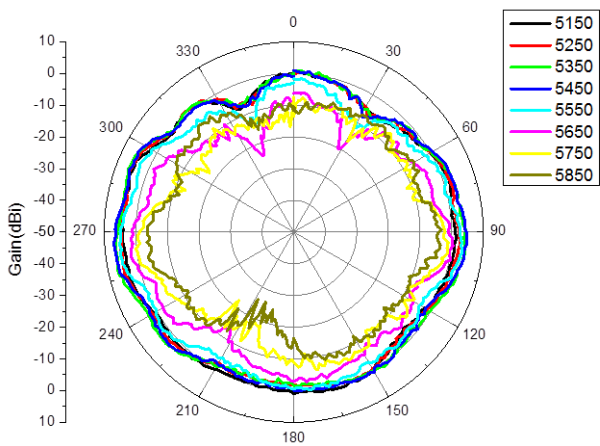
## EWS660AP Antenna Radiation Patterns



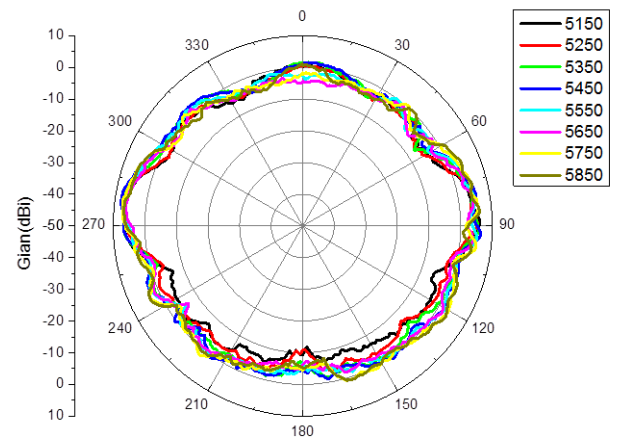
2.4GHz Azimuth-Plane



2.4GHz Elevation-Plane



5GHz Azimuth-Plane



5GHz Elevation-Plane

## EWS860AP Technical Specifications

### Radio Specification

Dual Concurrent Radio:

- 2.4GHz: 802.11b/g/n with max data rate up to 450Mbps
- 5GHz: 802.11a/n/ac with max data rate up to 1300Mbps

Transmit Power (combined):

- 2.4GHz: max 29dBm
- 5GHz: max 29dBm
- Max transmit power is limited by regulatory power

Radio Chains / Spatial Streams:

- 3 x 3 / 3

Supported Radio Technology:

- 802.11b: direct-sequence spread-spectrum (DSSS)
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Channelization:

- 802.11ac with 20/40/80 MHz channel width
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Supported Modulation:

- 802.11b: BPSK, QPSK, CCK
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- 802.11n: 6.5 to 450 (MCS0 to MCS23)
- 802.11ac: 6.5 to 1300 (MCS0 to MCS9, NSS = 1 ~ 3)

### Physical & Environment

Power Source:

- 802.3at compliant source
- Active Ethernet (Power over Ethernet, PoE)

Antenna:

- Six detachable high gain antennas:
  - 3 detachable 5dBi 2.4GHz antennas
  - 3 detachable 7dBi 5GHz antennas
- Omni-Directional: provides optimal coverage
- Compliant with N type connector

Interface:

- 2 x 10/100/1000Mbps Ethernet Port
- LAN 1 supports 802.3at PoE input
- LAN 2 supports 802.3af PoE output (when using 802.3at PoE input instead of proprietary input)
- Reset button on the PoE injector (EPE-48GR)

Dimensions (W x D x H):

- 285 x 218 x 55.5mm

Weight:

- 1890g (without mounting kit and antennas)

Mounting:

- Pole mount or wall mount

Environment:

- Operating temperature: -20°C~70°C
- Operating humidity: 0%~90% typical
- Storage temperature: -30°C~80°C

Surge Protection: 20KV (Certificated standard is 8KV)

ESD Protection: 6KV (Certificated standard is 1KV)

Waterproof Rating: IP68 rated

### Wireless

Operating Mode:

- AP Mode

Auto Channel Selection:

- Setting varies by regulatory domains

SSIDs:

- Supports up to 8 SSIDs per frequency band

VLAN Tag / VLAN Pass-through

Wireless Client List

Guest Network:

- Allocates a separate network segment for guest access within the same WLAN

QoS:

- Supports 802.11e/WMM

Band Steering

Mobility:

- PMKSA support for fast roaming

Security:

- WEP encryption: 64/128/152-bit
- WPA/WPA2 Enterprise/PSK
- Hidden SSID
- MAC address filtering (up to 50 MAC)
- Client isolation

### Management

Deployment Options

- Standalone Mode
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Configuration

- Web interface (HTTP)
- SNMP v1/v2c/v3 with MIB I/II and private MIB
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Firmware Upgrade

- Web interface or CLI (FTP/HTTP)

Backup / Restore Settings

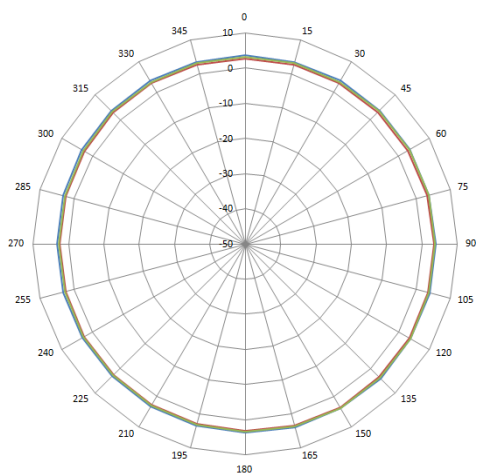
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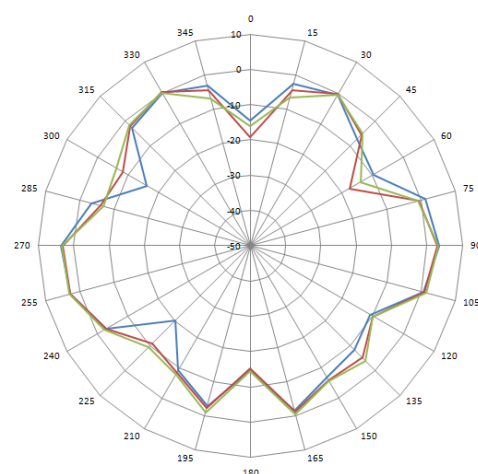
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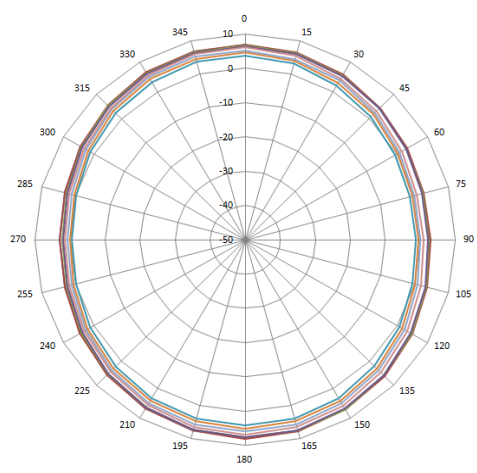
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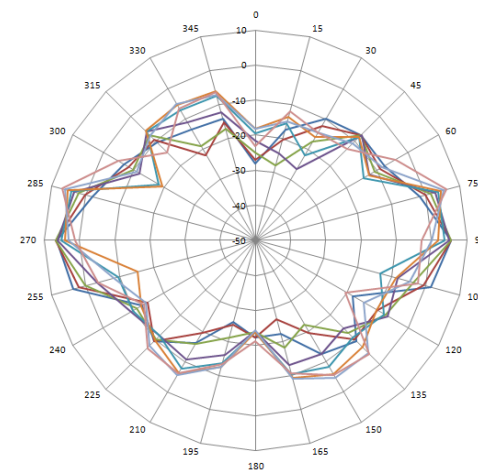
2.4GHz Azimuth-Plane



2.4GHz Elevation-Plane



5GHz Azimuth-Plane



5GHz Elevation-Plane



## Ordering Information

<b>Product No.</b>	<b>Product Description</b>
<b><i>Wireless Management Switch</i></b>	
EWS2910P	8-Port Gigabit PoE L2 Wireless Management Switch with 2 Dual-Speed SFP; 61.6w
EWS5912FP	8-Port Gigabit PoE+ L2 Wireless Management Switch with 2 GbE Ports and 2 Dual-Speed SFP; 130w
EWS7928P	24-Port Gigabit PoE+ L2 Wireless Management Switch with 4 Dual-Speed SFP; 185w
EWS7928P	24-Port Gigabit PoE+ L2 Wireless Management Switch with 4 Dual-Speed SFP; 370w
EWS7952FP	48-Port Gigabit PoE+ L2 Wireless Management Switch with 4 Dual-Speed SFP; 740w
<b><i>Wireless Managed Access Point</i></b>	
EWS300AP	Single Band Wireless N300 Managed Indoor Access Point
EWS310AP	Dual Band Wireless N600 Managed Indoor Access Point
EWS320AP	Dual Band Wireless N900 Managed Indoor Access Point
EWS350AP	Dual Band Wireless AC1200 Managed Indoor Access Point
EWS360AP	Dual Band Wireless AC1750 Managed Indoor Access Point
EWS500AP	Single Band Wireless N300 Managed Wall Plate Access Point
EWS510AP	Dual Band Wireless N600 Managed Wall Plate Access Point
EWS650AP	Dual Band Wireless AC1200 Managed Outdoor Access Point; IP55
EWS660AP	Dual Band Wireless AC1750 Managed Outdoor Access Point; IP55
EWS860AP	Dual Band Wireless AC1750 Managed Outdoor Access Point; IP68
<b><i>PoE+ Layer 2 Managed Switch</i></b>	
EGS5212FP	8-Port Gigabit PoE+ L2 Managed Switch with 2 GbE Ports and 2 Gigabit SFP; 130w
EGS7228P	24-Port Gigabit PoE+ L2 Managed Switch with 4 Dual-Speed SFP; 185w
EGS7228FP	24-Port Gigabit PoE+ L2 Managed Switch with 4 Dual-Speed SFP; 370w
EGS7252FP	48-Port Gigabit PoE+ L2 Managed Switch with 4 Dual-Speed SFP; 740w

Maximum data rates are based on IEEE 802.11 standards. Actual throughput and range can vary depending on many factors including environmental conditions, distance between devices, radio interference in the operating environment, and mix of devices in the network. Features and specifications subject to change without notice. Trademarks and registered trademarks are the property of their respective owners.  
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