



# EnSky Series Wi-Fi 6 Outdoor Dual Band Wireless Access Points

## Future Proof, Crowd Proof Networks

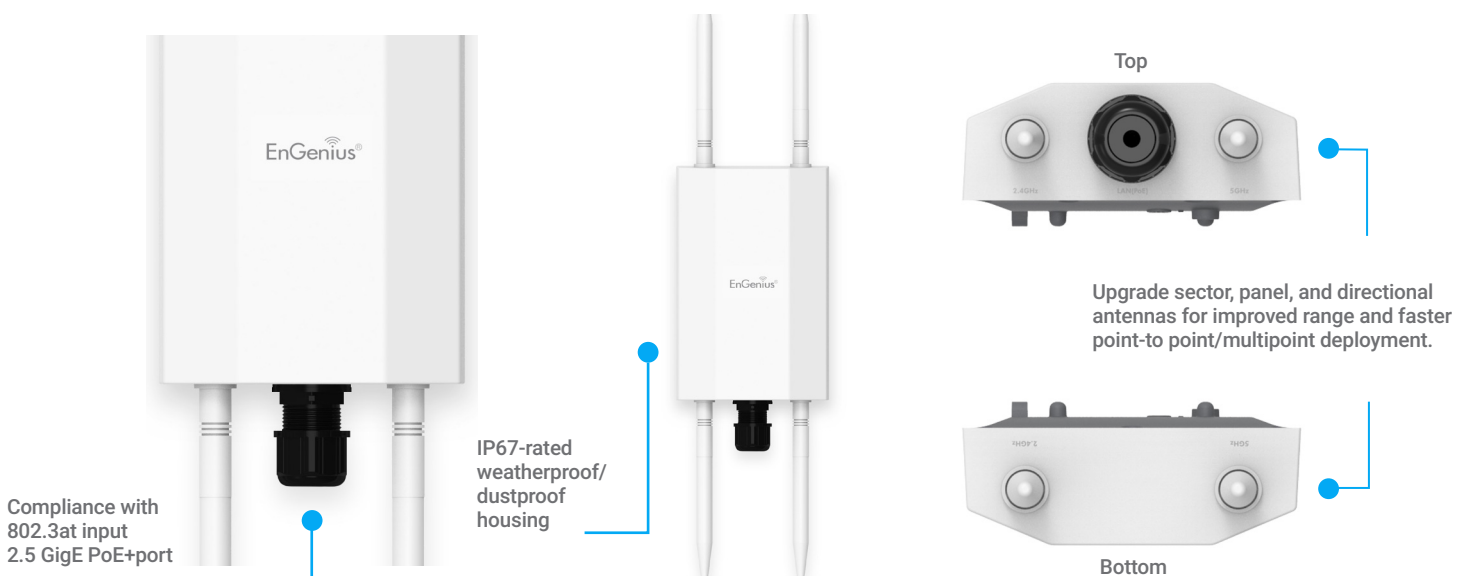
EnGenius EWS850AP 2x2 Outdoor Wireless AP features Wi-Fi 6 technology able to meet the high bandwidth demands of densely populated areas like stadiums, airports, smart cities, farms, parks, and massive industrial sites—with greater speed and efficiency. The AP handles crowded outdoor environments through two spatial streams and beamforming technology, which focuses the antenna signal directly toward client devices, providing optimal signal and reception for users.

## Faster, More Efficient Connections

Dual-band speeds of 574 Mbps/2.4 GHz and 1,200 Mbps/5 GHz make networks fast, while bi-directional (downlink/uplink) OFDMA enables more efficient channel use to reduce latency between APs and client devices. Uplink and downlink of MU-MIMO provides optimal signal and reception for up to eight devices. The 1024 QAM boosts throughput by 25% and provides greater reliability over short distances. Furthermore, longer OFDM symbols tolerate more noise and guarantee shorter wait times between data transmissions, allowing greater coverage.

## Features & Benefits

- Dual concurrent 802.11ax architecture and backward compatible with 802.11a/b/g/n/ac client devices.
- Advanced 1024-QAM allows 25% data throughput increase from legacy 11ac access points.
- Bi-directional (downlink / uplink) OFDMA enables more efficient channel use to reduce latency between APs & client devices in dense environments.
- Bi-directional (downlink / uplink) MU-MIMO will reduce usage of airtime for each transmission between APs & client devices delivering higher speeds & increased capacity
- Target Wake Time (TWT) for Power-Saving Wake Times
- 360° omni-directional antennas to achieve comprehensive coverage for networking client devices under pervasive environments.
- Compliance with proprietary 48V PoE input for flexible installation and implementing remote reset/reboot for APs over 100 meters (328 feet) away.
- Robust housing with IP67 enclosure to deploy in extreme weather conditions.
- Deliver high resolution content or multiple IP surveillance streams over wireless transmission.
- Systematic and distributed management with EnGenius ezMaster, SkyKey Controller or EnSky Managed Switches with no licensing or subscription fees.



# 11ax

## Next-Generation Wi-Fi

The EnSky Series Wi-Fi 6 outdoor access points take advantage of 11ax technology, which enables more efficient channel use, reduces latency between APs and client devices, and provides ground-breaking features such as uplink and downlink of OFDMA, 1024 QAM, BSS coloring, spatial reuse, uplink and downlink of MU-MIMO, Target Wake Time, and Longer OFDMA symbols.

- OFDMA (uplink and downlink) enables more efficient channel use, reduces latency between AP and client devices, and provides backward-compatibility with 2.4 GHz and 5 GHz.
- 1024 QAM boosts throughput by 25% and provides greater reliability in short distances.
- BSS coloring tags packets with a “color” to differentiate between adjacent basic service sets to potentially help minimize co-channel interference (CCI).
- Spatial reuse identifies the different BSS “colors” and simultaneously transmits on the same channel, which reduces wait times, lessens contention, and determines whether the transmission will be deferred or reused on the channel.
- MU-MIMO (uplink and downlink) supports up to eight client devices and provides greater network efficiency, focuses radio energy on specific users, and ensures optimal signal and reception.
- Target Wake Time (TWT) reduces power consumption, schedules wake times, and extends client battery life of mobile and IoT devices.
- Longer OFDM symbols enable shorter wait times between data transmissions and tolerate more noise, which allows greater coverage.

## Greater Security

For enhanced wireless security, ESW850 access points support wireless encryption standards such as Wi-Fi Protected Access (WPA3/WPA2 Enterprise/PSK) encryption and IEEE 802.1X with RADIUS. MAC address filtering permits network administrators to allow or deny network access to client devices computers, tablet PCs, NAS, & smartphones according to their MAC addresses. Organizations that offer access to patrons or visitors—notably hotels, retail shops and restaurants—can establish a secure guest

network that blocks access to main corporate computers. The ESW850 allows businesses to create separate virtual LANs for increased security, network reliability, and bandwidth conservation.

## Rugged Durability in the Outdoors

Designed for peak performance in harsh climates, the EWS850AP features an IP67-rated waterproof and dustproof enclosure ensuring it can withstand harsh outdoor environments. This includes prolonged exposure outdoors to sunlight, extreme cold, frost, snow, rain, hail, heat, and humidity.

## Reduced Power Consumption and Network Interference

The ESW850 features Target Wake Time (TWT) which reduces power consumption, schedules wake times, and extends the battery life of mobile and IoT devices. Its spatial reuse color set identification through BSS coloring simultaneously transmits on the same channel, reducing transmission wait time and contention.

## Power-over-Ethernet Convenience

EnGenius EWS850AP Wi-Fi 6 (11ax) outdoor access points support 1 Gigabit PoE ports, enabling placement in discreet locations where power outlets are scarce or unavailable. Users can power the access points through a connected Ethernet cable directly to an EnSky Managed Gigabit PoE+ switch or with a PoE adapter up to 328 feet from the power source.

## Simplified Deployment & Provisioning

In combination with EnSky managed switches, ezMaster and SkyKey network management software, EnSky Wi-Fi 6 APs are automatically discovered and provisioned. One-click individual or bulk configurations and upgrades save time. In addition, access points are quickly and easily deployed and operated by users with limited networking experience. The EnSky solution enables users to manage up to 50 APs per EnSky managed switch and 100 devices per SkyKey controller and ezMaster software to control 1,000+ APs and switches.

## Flexibility and Compatibility

In addition, while the ESW850 features the latest in 802.11ax technology, it remains backward compatible with all 11ac/a/b/g/n legacy devices. The ESW850's compliance with 802.3at input ensures flexible installation over 100 meters (328 feet).

The network can extend over short or long distances with robust 25dBm output power coupled with four (4) detachable, SMA-type, omni-directional, 5 dBi MU-MIMO antennas that deliver network connectivity 360° to stadiums, resort properties and large outdoor areas.

## EnGenius EnSky Series Outdoor Managed Access Point



11ax	Outdoor Pole-Mount
Models	EWS850AP
Standards	802.11 a/b/g/n/ac/ax
Frequency	2.4 GHz & 5 GHz
2.4 GHz Max. Data Rate	574 Mbps
5 GHz Max. Data Rate	1,200 Mbps
Radio Chains/Streams	2 X 2: 2
RF Output Power (2.4 GHz)	23 dBm
RF Output Power (5 GHz)	25 dBm
Ethernet Ports	1 x Port (PoE) 2.5 Gigabit Ethernet Port
Power-over-Ethernet	802.3at
Power Consumption (Peak)	15.9W
External Antenna	2 - 2.4GHz 5dBi SMA Antennas 2 - 5GHz 5dBi SMA Antennas

## Technical Specifications

### Standards

#### EWS850AP

IEEE 802.11ax on 2.4 GHz

IEEE 802.11ax on 5 GHz

Backward compatible with 802.11a/b/g/n/ac

### Processor

#### EWS850AP

Qualcomm® Quad-Core CPU ARM Cortex A53s @ 1.8GHz

### Antenna

External Omni-Directional Antenna

#### EWS850AP (SMA Type)

2 x 2.4 GHz: 5 dBi

2 x 5 GHz: 5 dBi

Detachable External Omni-Directional Antenna

### Physical Interface

#### EWS850AP

1 x 10/100/1000/2500 BASE-T, RJ-45 Ethernet Port

1 x Reset Button (on the PoE Injector EPA5006GR)

### LED Indicators

#### EWS850AP

1 x Power

1 x LAN

1 x 2.4 GHz

1 x 5 GHz

### Power Source

#### EWS850AP

Power-over-Ethernet: 802.3at Input

Proprietary 48V-54V

### Maximum Power Consumption

#### EWS850AP

15.9 W

### Wireless & Radio Specifications Operating Frequency

#### EWS850AP

Dual-Radio Concurrent 2.4 GHz & 5 GHz

### Operation Modes

#### EWS850AP

Managed mode: Access Point, Mesh

Stand Alone Mode: Access Point, Mesh, WDSs

### Frequency Radio

#### EWS850AP

2.4 GHz: 2400 MHz ~ 2482 MHz

5 GHz: 5150 MHz ~ 5250 MHz, 5250 MHz ~ 5350 MHz, 5470 MHz ~ 5725 MHz, 5725 MHz ~ 5850 MHz

### Transmit Power

#### EWS850AP

Up to 23 dBm on 2.4 GHz

Up to 25 dBm on 5 GHz

## Technical Specifications continued

### Tx Beamforming (TxBF)

#### EWS850AP

### Radio Chains/Spatial Stream

#### EWS850AP 2x2:2

### SU-MIMO

#### EWS850AP

Two(2) spatial streams SU-MIMO for 2.4GHz and two(2) spatial streams SU-MIMO for 5GHz up to totally 1,774Mbps wireless data rate to a single 11ax wireless client device under both 2.4GHz and 5GHz radio.

### MU-MIMO

#### EWS850AP

Two(2) spatial streams multi-user (MU)-MIMO for up to 1201 Mbps wireless data rate to transmit to one(1) two streams MU-MIMO 11ax capable wireless client devices under 5GHz simultaneously.

Two(2) spatial streams multi-user (MU)-MIMO for up to 574 Mbps wireless data rate to transmit to one(1) two streams MU-MIMO 11ax capable wireless client devices under 2.4GHz simultaneously.

### Supported Data Rates (Mbps)

#### EWS850AP

802.11ax:  
2.4 GHz: 9 to 574 (MCS0 to MCS11, NSS = 1 to 2)  
5 GHz: 18 to 1201 (MCS0 to MSC11, NSS = 1 to 2)  
802.11b: 1, 2, 5.5, 11  
802.11a/g: 6, 9, 12, 18, 36, 48, 54  
802.11n: 6.5 to 300 Mbps (MCS0 to MCS15)  
802.11ac: 6.5 to 867 Mbps (MCS0 to MCS9, NSS = 1 to 2)

### Supported Radio Technologies

#### EWS850AP

802.11ax: Orthogonal Frequency Division Multiple Access (OFDMA)  
802.11b: Direct-sequence spread-spectrum (DSSS)  
802.11ac/a/g/n: Orthogonal Frequency Division Multiple (OFDM)

### Channelization

#### EWS850AP

802.11ax supports high efficiency (HE)  
–HE20/HE40/HE80 MHz  
802.11ac supports very high throughput (VHT)  
–VHT 20/40/80 MHz  
802.11n supports high throughput (HT)  
–HT 20/40 MHz  
802.11n supports very high throughput under the 2.4GHz radio –VHT40 MHz (256-QAM)  
802.11n/ac/ax packet aggregation: A-MPDU, A-SPDU

### Supported Modulation

#### EWS850AP

2.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM  
802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM

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

### Management Multiple BSSID

#### EWS850AP

8 SSIDs for both 2.4GHz and 5GHz radios

### VLAN Tagging

#### EWS850AP

Supports 802.1q SSID-to-VLAN Tagging  
Cross-Band VLAN Pass-Through  
Management VLAN  
VLAN Per SSID

### Spanning Tree

#### EWS850AP

Supports 802.1d Spanning Tree Protocol

### QoS (Quality of Service)

#### EWS850AP

Complaint With IEEE 802.11e Standard  
WMM

### SNMP

#### EWS850AP

v1, v2c, v3

### MIB

#### EWS850AP

MIB I/II, Private MIB

### Management Features Deployment Options

#### EWS850AP

Stand-Alone (Individually Managed)  
Managed Mode  
(with EnSky Series Switch/ezMaster)

### Stand-Alone Management Features

#### EWS850AP

Auto Channel Selection  
Auto Transmit Power  
Wireless STA (Client)  
Connected List Auto Channel Selection  
Captive Portal Per SSID  
Fast Roaming (802.11k & 802.11r)  
Pre-Authentication (802.11i, 802.11x)  
PMK Caching (802.11i)  
Band Steering per SSID  
Traffic Shaping per SSID/per user  
VLAN Per SSID  
Backup/Restore Settings  
Auto Reboot  
E-Mail Alert  
Site Survey  
Save Configuration as Users' Default

### RSSI Threshold

### Wireless Management Features (With ezMaster & EnSky Switch)

#### EWS850AP

AP Auto Discovery & Provisioning  
AP Auto IP Assignment  
AP Group Management  
Auto AP Rebooting  
AP Device Name Editing  
Band Steering Per SSID  
Traffic Shaping Per SSID and Per User  
Fast Roaming (802.11k & 802.11r)  
Pre-Authentication (802.11i, 802.11x)  
PMK Caching (802.11i)  
AP Client Limiting  
Client Fingerprinting  
AP VLAN Management  
VLAN Per SSID  
Captive Portal Per SSID  
Multi-Tenant Account  
AP Traffic Log  
Access Point Status Monitoring  
Wireless Client Monitoring  
Email Alert  
Wireless Traffic & Usage Statistics  
Real-Time Throughput Monitoring  
Visual Topology View  
Floor Plan View  
Map View  
Wireless Coverage Display  
Secure Control Messaging (SSL Certificate)  
Local MAC Address Database  
Remote MAC Address Database (RADIUS)  
Unified Configuration Import/Export  
Bulk Firmware Upgrade Capability  
One-Click Update  
Intelligent Diagnostics  
Kick/Ban Clients  
Wi-Fi Scheduler  
Schedule reboot  
Hotspot 2.0

## Technical Specifications continued

### Wireless Security

#### EWS850AP

WPA3  
WPA2 Enterprise (AES)  
Hide SSID in Beacons  
MAC Address Filtering, Up to 32 MACs per SSID  
Wireless STA (Client) Connected List  
SSH Tunnel  
Client Isolation

### Environment Protection Level

#### EWS850AP

IP67

### Surge Protection

#### EWS850AP

1KV

### EDS Protection

#### EWS850AP

Contact = 4KV  
Air = 8KV

### Environment & Physical Temperature Range

#### EWS850AP

Operating: -4F to 140F (-20C to 60C)  
Storage: -22°F to 176°F (-30°C to 80°C)

### Humidity (non-condensing)

#### EWS850AP

Operating: 90% or less  
Storage: 90% or less

### Dimensions & Weights EWS850AP Device

#### EWS850AP

Weight: 1.54 lbs. (0.7 kg)  
Width: 4.07" (124 mm)  
Length: 7.48" (190 mm)  
Height: 2.07" (52.5 mm)

### Packaging

#### EWS850AP

Weight: 3.96 lbs. (1.8kg)  
Width: 9.21" (234 mm)  
Length: 11.18" (284 mm)  
Height: 5.67" (144 mm)

### Master Carton

#### EWS850AP

Weight: 26.24 lbs. (11.9 Kg)  
Width: 17.71" (450 mm)  
Length: 19.29" (490 mm)  
Height: 12.2" (310 mm)

No. of boxes per carton: 6

### Package Contents

#### EWS850AP Dual-Band AX1800 Outdoor Access Point

1 – EWS850AP Dual-Band AX1800 Outdoor Access Point  
1 - PoE Adapter (EPA5006GR)  
1 - Pole-Mounting Brackets  
1 - Wall-Mount Screw Set  
2 - 2.4GHz 5dBi SMA Antennas  
2 - 5GHz 5dBi SMA Antennas  
1 - Power Cord  
1 - Quick Installation Guide

### Certifications

#### EWS850AP

FCC, CE, CB, IC

### Warranty:

#### EWS850AP

1 Year

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. Features and specifications subject to change without notice. Trademarks and registered trademarks are the property of their respective owners. For United States of America: Copyright ©2018 EnGenius Technologies, Inc. All rights reserved.

## Do you have any outdoor Wi-Fi 6 questions?

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.

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