



## Wireless Management **Solution**

### The **Neutron Series**

The EnGenius Neutron Series of wireless management products can be mixed and matched to create ideal wireless connectivity solutions for hotels, resorts, high schools, universities, corporate campuses, sports stadiums and arenas and for other companies and organizations.

This is a scalable solution for operations that occupy large properties and that need to deploy, monitor, and manage numerous EnGenius Neutron Series Wireless Access Points from one simple and accessible browser-based software platform. Neutron Series Switches can support any small number of Neutron Series Wireless Access Points to several hundred depending on the number of Neutron Series Switches in the network.



## Ideal for deploying for these venues:



College Campuses



Corporate Campuses



Shopping Malls



Resort Properties



Parks and Campgrounds



Military Bases



Warehouse Operations



Stadiums & Arenas



Medical Centers



Luxury Homes and Estates



## Configure and Manage Multiple Access Points, and Switches from the Convenience of Your Desktop

- Each Neutron Series Wireless Management Switch is a Wireless Network Controller.
- The Controller interface of the switch discovers and gives IT managers visibility to all of the Neutron Series Access Points or supported EnGenius IP Cameras that are connected to it and enables APs to be grouped into clusters with the same settings and policies.
- Each Neutron Switch also indicates when new Access Point firmware is available from the EnGenius server that can be upgraded to them with just one click.
- The embedded Controller interface lets IT managers monitor wireless network traffic per Access Point, optimize coverage, apply SSID-to-VLAN tagging and much more.



## ...Or Manage Multiple Network Sites from One Central Location

- EnGenius **NAVIGATOR** (a free download for Windows OS computers) lets IT managers manage multiple sites no matter where you are - ideal for Managed Service Providers, VARs, and System Integrators.
- Instantly see, access, and manage every Neutron Wireless Management Switch and Access Point in your entire network - even multiple sites with EnGenius Navigator.
- Makes scaling each network incredibly easy.



Users can choose to view information page.

4 MANAGED 4 ACTIVE 0 OFFLINE 1 Under Approval

Device Name	IP Address	MAC
EWS310AP	192.168.10.127	00:02:6F:D7:AC:44
EWS310AP	192.168.10.122	1
EWS310AP	192.168.10.123	
EWS310AP	192.168.10.183	

Controller | Switch

Device Management

- Summary
- Access Points
- Active Clients
- AP Clusters
- Visual Monitoring
- Statistics
- Maintenance

### Cluster Setting

General Settings

Name: Test Cluster (1-32 characters)

Description: (0-255 characters)

Managed APs: EWS310AP (00:06:2F:E8:BA:2E)

Cluster Member: EWS310AP (00:02:6F:ED:5B:8E), EWS310AP (88:DC:96:0C:95:98)

Member Setting: Add >> << Del

Show MAC



### Automatically Discovers APs For Quick Configurations and Creation of Access Point Clusters

- As soon as they are connected to a Neutron Series Switch, Neutron Series Access Points are instantly discoverable on the network and are displayed as "Discovered" in the Switch's Controller interface.
- IT managers or network administrators have the option to configure discovered Neutron Access Points in clusters with identical settings and change those settings or upgrade firmware simultaneously after deployment.



Upload Floor Plan Image

File format should be PNG, GIF or JPG. (File size limit is 512 KB)

Name: (1-32 characters)

Image: Choose File (No file chosen)

Apply Cancel

Map

### Easy-to-Find and Manage Specific Access Points with Floor Plan & Map Views

- The Controller interface includes two easy-to-use tools to view a Neutron Wireless Management deployment.
- Map View lets IT managers drag and drop a marker representing a Neutron Series Access Point registered to a Neutron Series Switch onto a building within a campus topology.
- In Floor Plan View an office or facility floor plan can be uploaded to the Controller interface so that IT managers can drag and drop Access Point markers to their approximate locations.
- Then an AP can quickly be selected to monitor traffic, to review historical data, reconfigure its settings, upload its firmware and more.

EWS7928P 24-Port Gigabit PoE+ L2 Wireless Management switch with 4 Dual-Speed SFP

Controller | Switch

Device Management

- Visual Monitoring
- Topology View
- Map View
- Floor Plan Image
- Floorplan View
- Statistics
- Maintenance

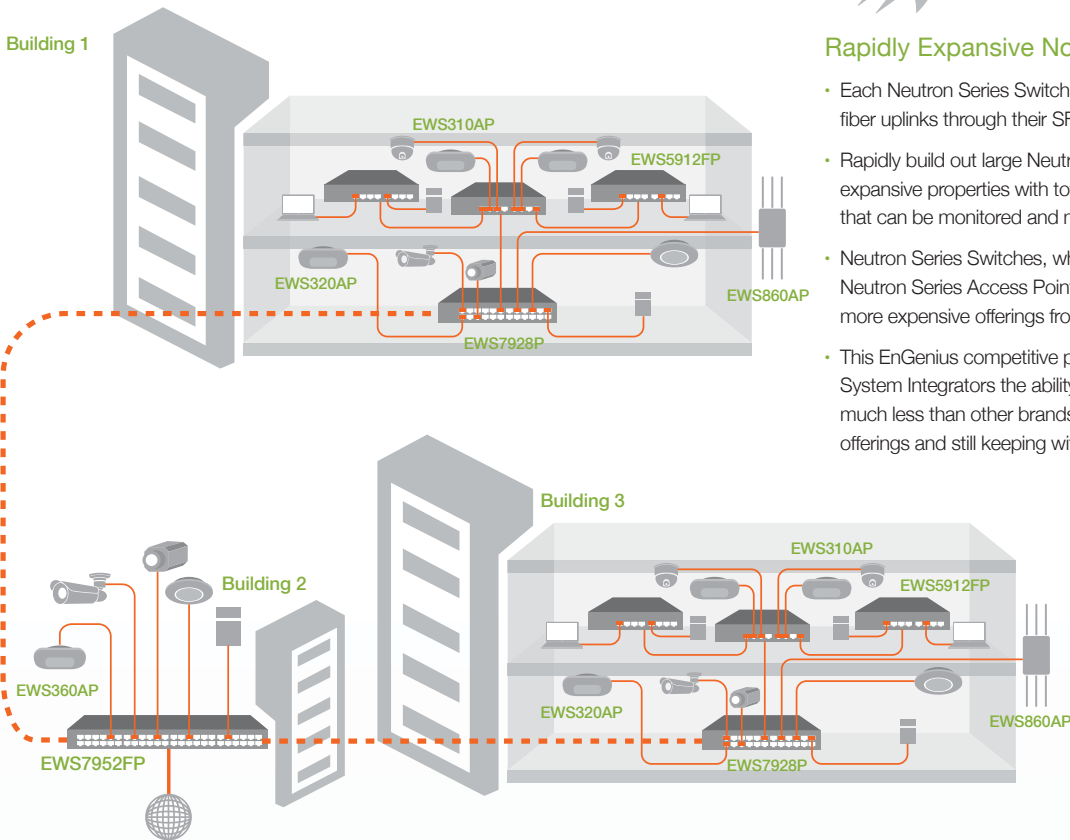
### Floor View

1st Floor





## Multi-Building / Campus Scenario



### Rapidly Expansive Not Enterprise Expensive

- Each Neutron Series Switch can connect to another via Gigabit Ethernet or fiber uplinks through their SFP ports.
- Rapidly build out large Neutron Series wireless device deployments over expansive properties with total visibility of the Neutron Series APs and Switches that can be monitored and managed.
- Neutron Series Switches, when used together, can support hundreds of Neutron Series Access Points making it an economical alternative to many more expensive offerings from enterprise networking brands.
- This EnGenius competitive price/performance alternative gives VARs and System Integrators the ability to provide a scalable and expansive network for much less than other brands while providing to their customers more service offerings and still keeping within a client's total budget.

**24- and 48-port Neutron Series Switches can support up to 50 Neutron Series Access Points. 8-Port Neutron Series Switches can support up to 20 Neutron Series Access Points.**

## You Have the Power. You're In Total Control

- Neutron Series Switches are Layer 2 Managed PoE+ Switches
- Ideal for Access Points and IP Surveillance Cameras that need to be positioned where power outlets may not be readily available.
- Available in 8-port, 24-port and 48-port models each Neutron Series Switch offers Gigabit Ethernet ports with IEEE802.3at/af PoE+ support, as well as SFP slots for longer fiber uplinks.
- Can deliver up to 30 watts per port over connected Ethernet cables to power devices like Wireless Access Points, IP Cameras, and VoIP (Voice-over-IP) Phone Systems.
- Since many PoE client devices don't require a full 30 watts of power, each Switch's management interface lets network administrators allocate just the amount of wattage they need per port to power specific PoE client devices to conserve as much of total PoE budget as possible.
- Adding more Neutron Series Switches to the network gives administrators the ability and versatility to substantially and rapidly scale their networks and to provide just the right Neutron Series Switch necessary to provide wireless connectivity or surveillance in a part of the network previously unserved.



## 1-Click Access Point Firmware Updates

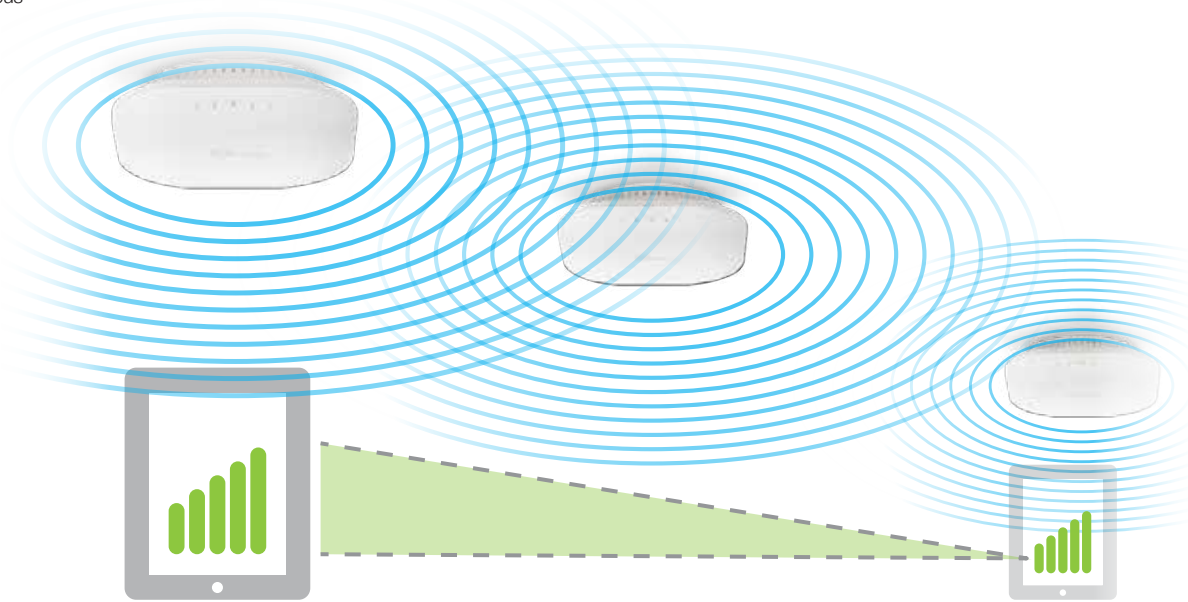
Each Neutron Switch's Controller interface also posts a list of newly released Access Point firmware versions by AP model that it discovers from the EnGenius server to upload to deployed Neutron APs. This helps to streamline the upgrade process and ensure that Neutron Access Points are always up-to-date.



## Fast Roaming – Because Staying Connected Can Be A Moving Experience

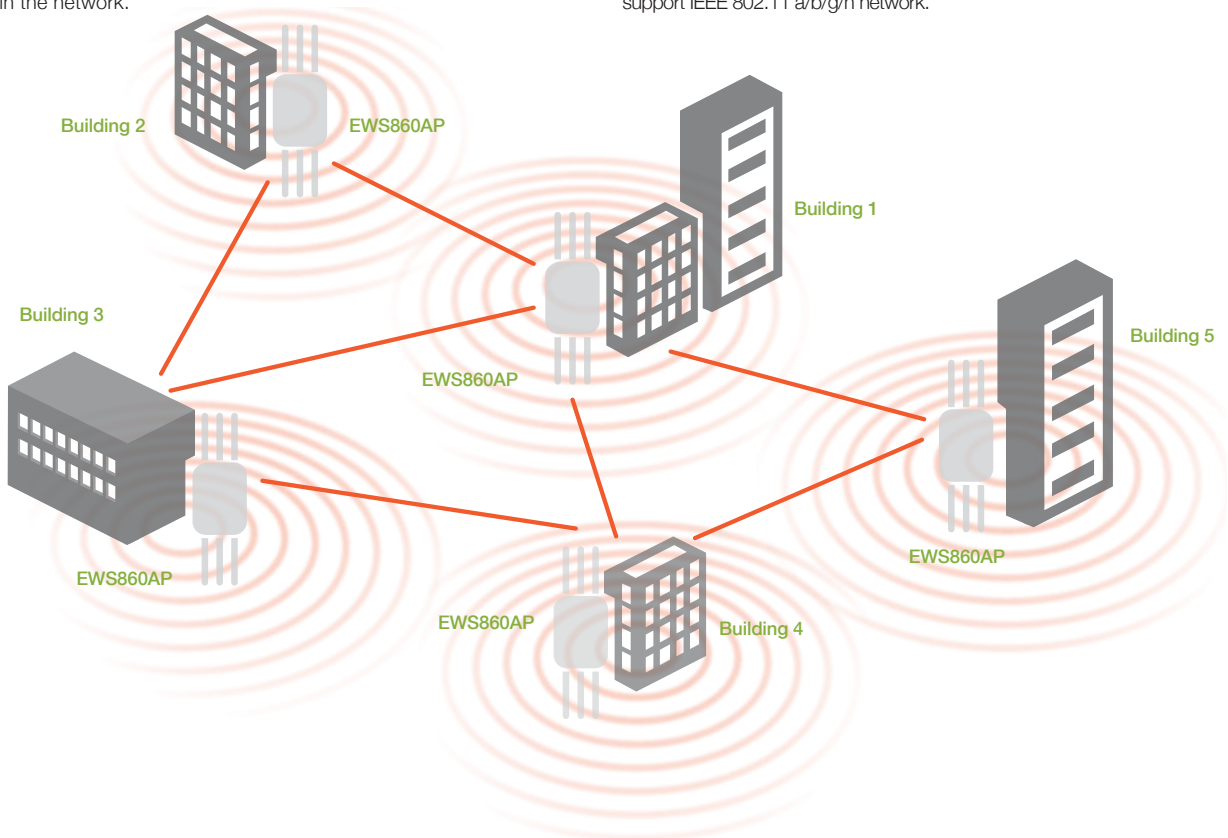
Neutron Series Access Points support Fast Roaming for clients authenticated to a RADIUS server. Ideal for:

- Warehouse workers scanning and capturing barcode information
- Employees on Wi-Fi phone calls while walking to meetings on another part of a corporate campus
- Healthcare professionals capturing patient information on mobile devices
- Security personnel who need uninterrupted video surveillance on a mobile device when making their way to the location of an incident.



## Mesh Mode\* (available soon)

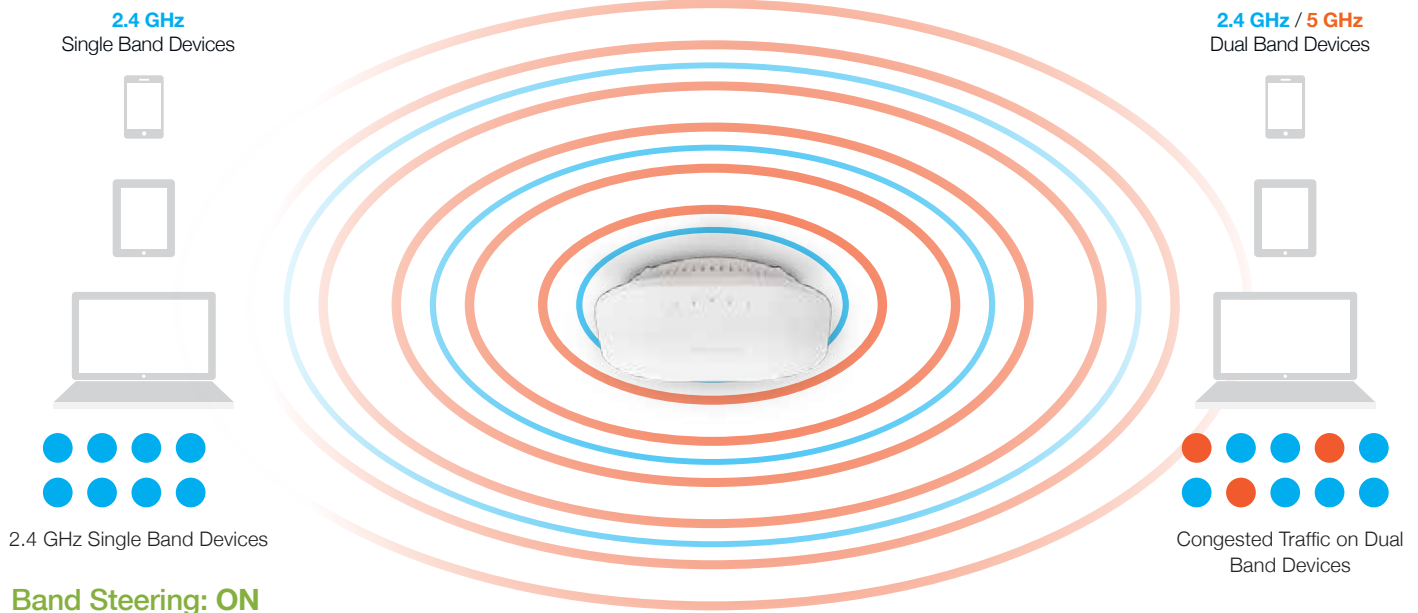
- Neutron Series Managed Wireless Access Points support mesh networking in the 2.4 GHz frequency band
- Provides self-organizing, self-healing, redundant and robust connectivity for wireless clients in the network.
- Activating mesh can help to lower deployment costs when running Ethernet cabling is not practical.
- Access Points can be used as the central connection hub for station or clients that support IEEE 802.11 a/b/g/n network.



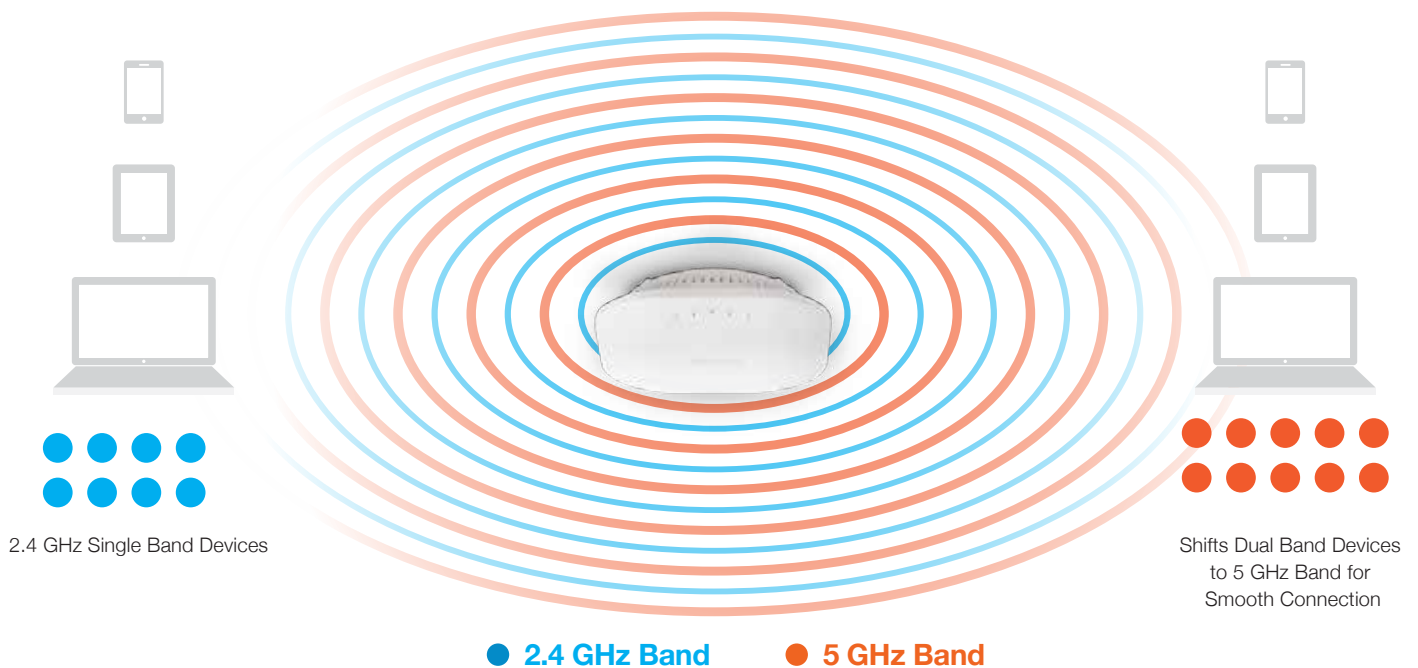
## How Band Steering Optimizes Network Traffic Load

- When wireless networks experience excessive traffic, users may be inconvenienced by slower file transfers and frequent video buffering especially on the 2.4 GHz band.
- Neutron Series Access Points include a Band Steering option which when applied in the browser-based interface, 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.
- This leaves Single-Band 2.4 GHz (802.11b/g/n) clients to operate in the 2.4 GHz band that with Band Steering activated becomes less congested.

### Band Steering: OFF



### Band Steering: ON



## Access Point Radio Frequency Management



## Establishing Separate SSIDs

Each Dual Band Neutron Series Access Point is capable of providing 8 separate SSIDs per frequency band and (16 total) each SSID can be tagged to an established VLAN on the network.

ID	Status	SSID	Security	Encryption	Hidden SSID	Client Isolation	VLAN Isolation	VLAN ID
1	Enable	EnGeniusE8BA1D_1-2.4GHz	None	None	No	No	No	1
2	Disabled	EnGeniusE8BA1D_2-2.4GHz	None	None	No	No	No	2
3	Disabled	EnGeniusE8BA1D_3-2.4GHz	None	None	No	No	No	3
4	Disabled	EnGeniusE8BA1D_4-2.4GHz	None	None	No	No	No	
5	Disabled	EnGeniusE8BA1D_5-2.4GHz	None	None	No	No	No	
6	Disabled	EnGeniusE8BA1D_6-2.4GHz	None	None	No	No	No	
7	Disabled	EnGeniusE8BA1D_7-2.4GHz	None	None	No	No	No	
8	Disabled	EnGeniusE8BA1D_8-2.4GHz	None	None	No	No	No	





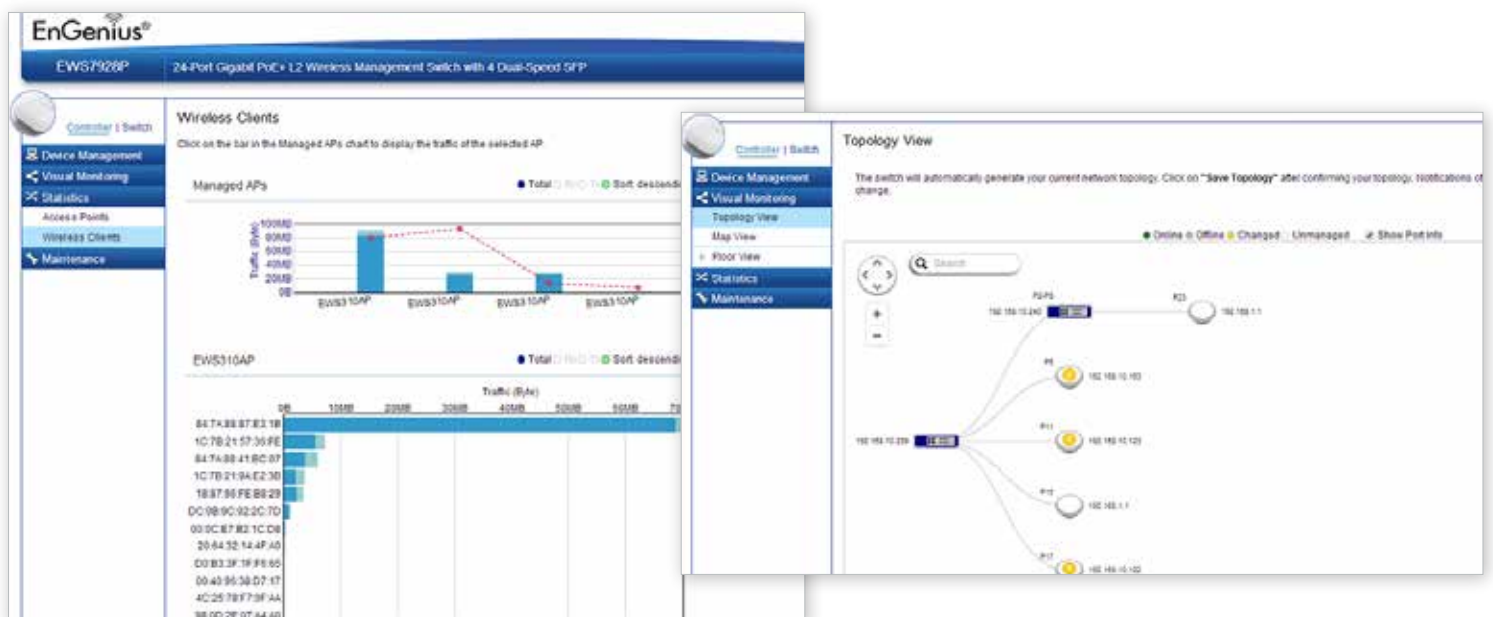
## Easy To Access Wired and Wireless Network Management Reporting

- Controller interface includes a Topology View that quickly identifies each connected Neutron AP and the number of clients associated to it.
- Can serve up real time traffic load and historical traffic reporting over both wired and wireless portions of the network.

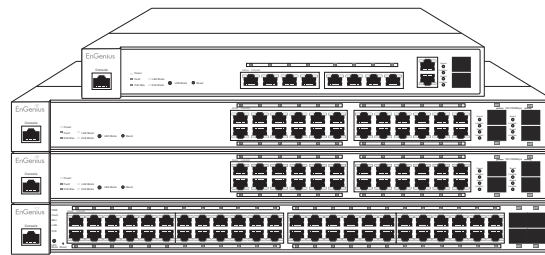


## Statistics View for Access Points or Wireless Clients

Gives IT managers, Managed Service Providers and other network administrators realtime or historical visibility of the traffic being handled by the deployed Neutron Series Access Points, so they can identify any breaches in security, or any abnormalities in the wireless network or any particular client device that may be using an inordinate amount of bandwidth – so they can modify device or cluster policies or make necessary changes to the network topologies to serve clients better.

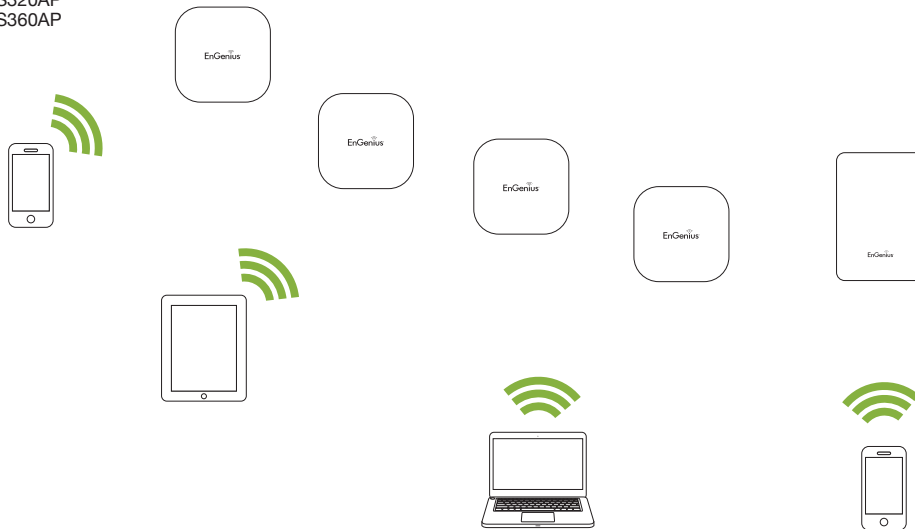




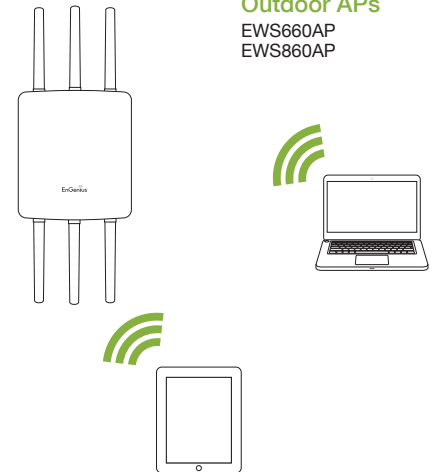


**PoE+ L2 Wireless Management Switch**  
EWS5912FP | EWS7928P | EWS7928FP | EWS7952FP

**Indoor APs**  
EWS210AP  
EWS310AP  
EWS320AP  
EWS360AP



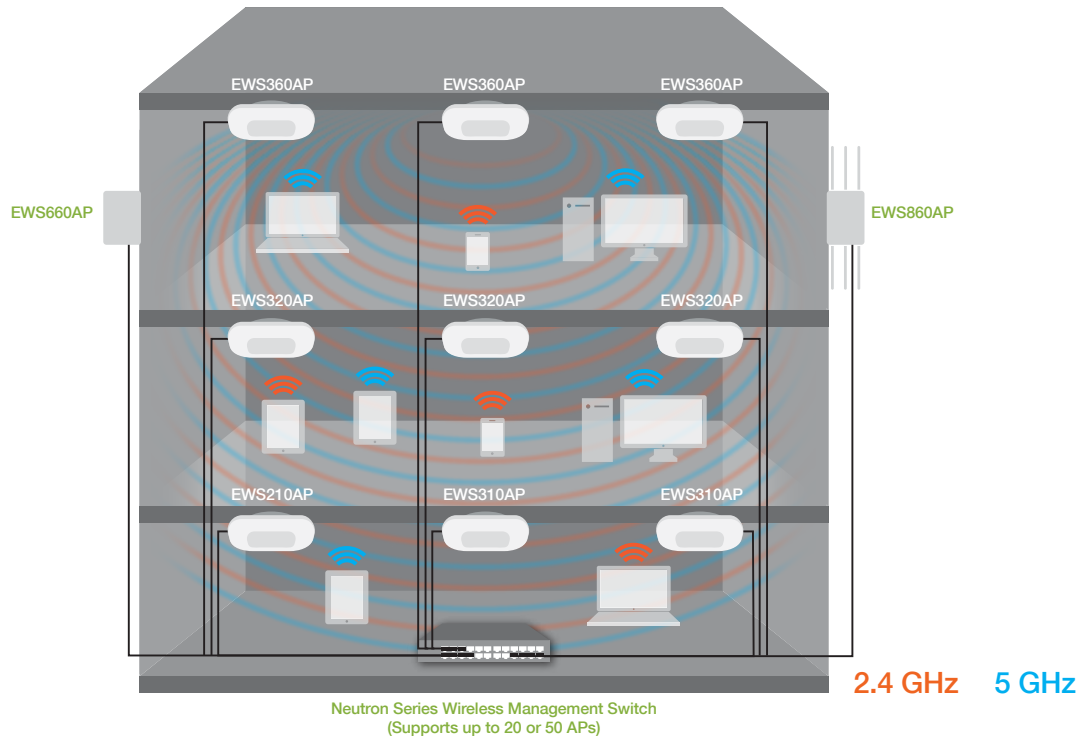
**Outdoor APs**  
EWS660AP  
EWS860AP



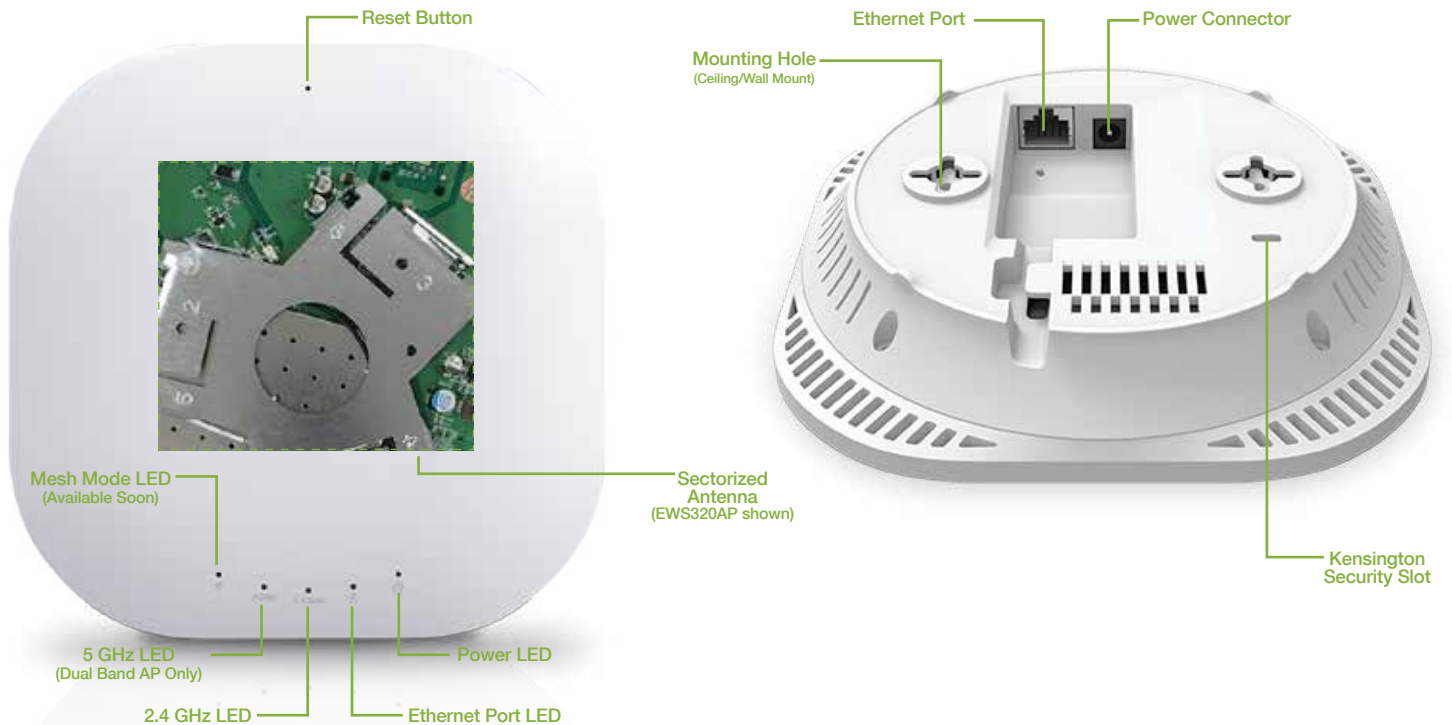
# Neutron Series Managed Access Points in Multi-Floor Building Scenario

## Applications:

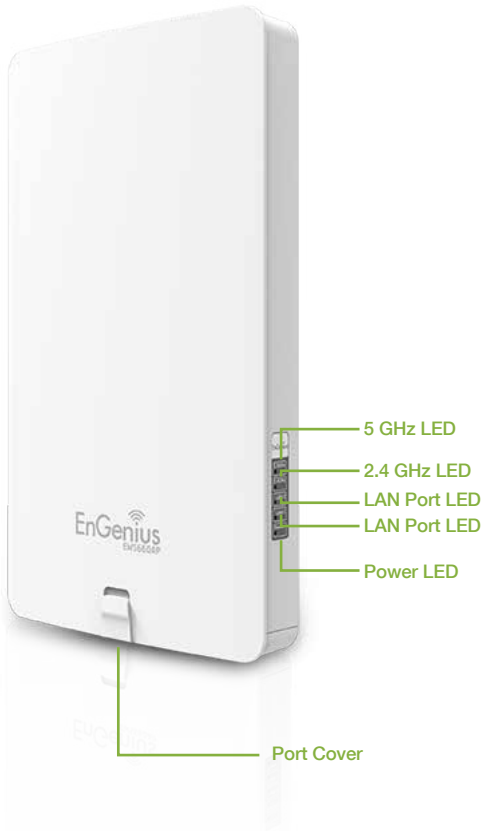
- Education
- Government
- Hospitality



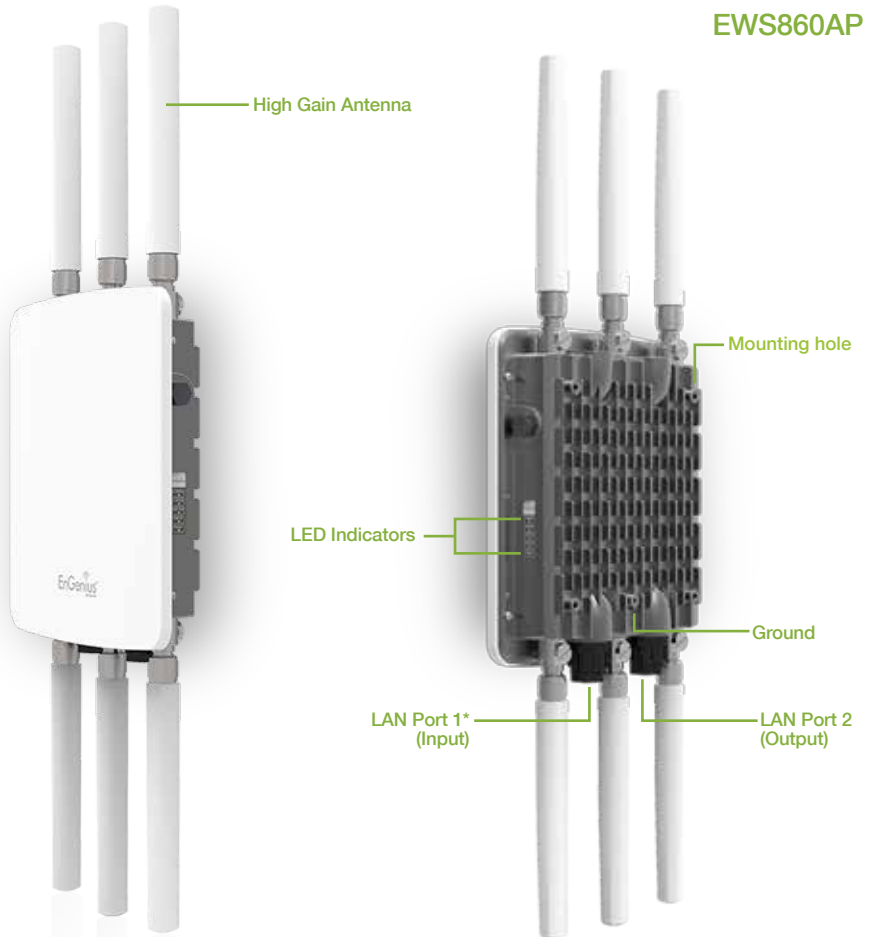
- EWS210AP
- EWS310AP
- EWS320AP
- EWS360AP



## EWS660AP

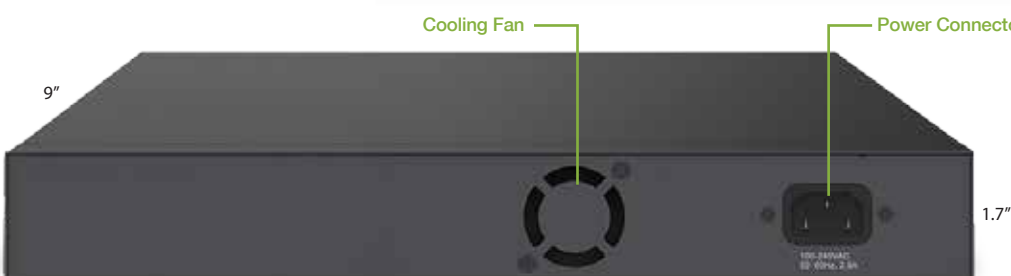
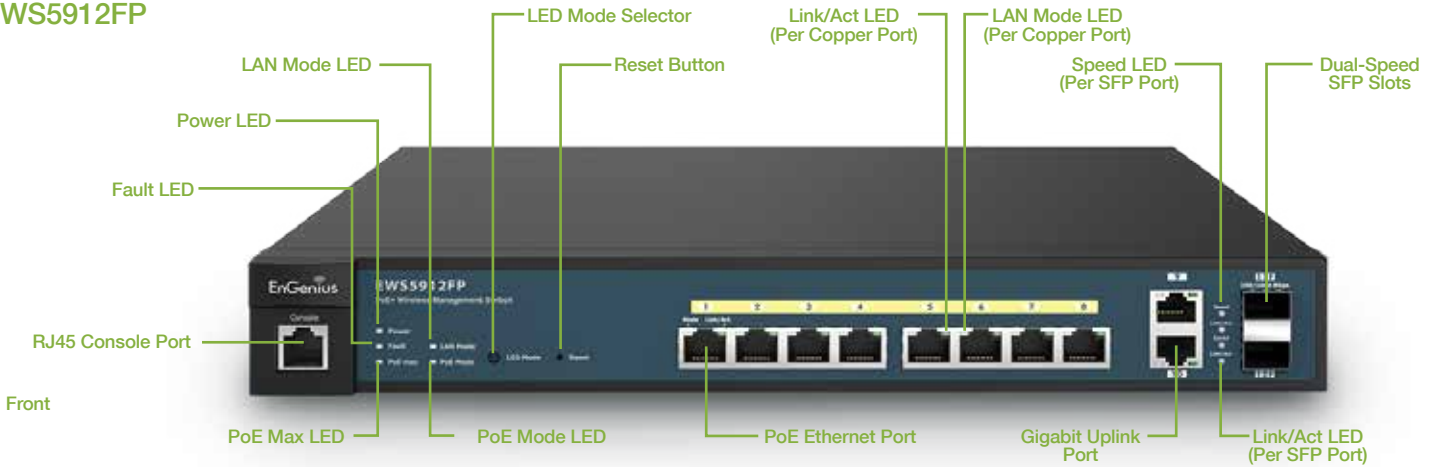


## EWS860AP



\* Use with included PoE Injector (EPE-48GR) with 48V/0.8A Power Adapter

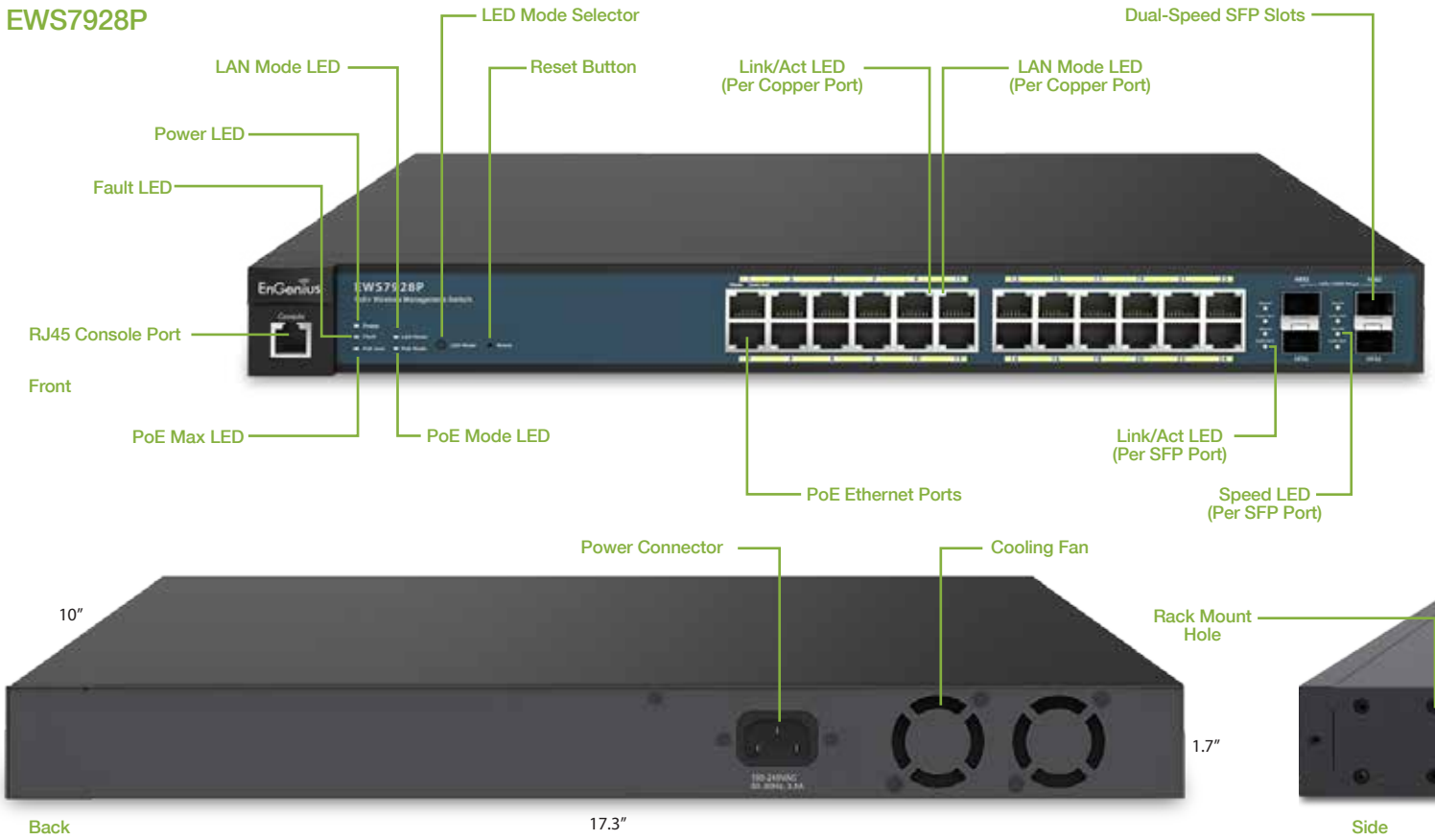
## EWS5912FP



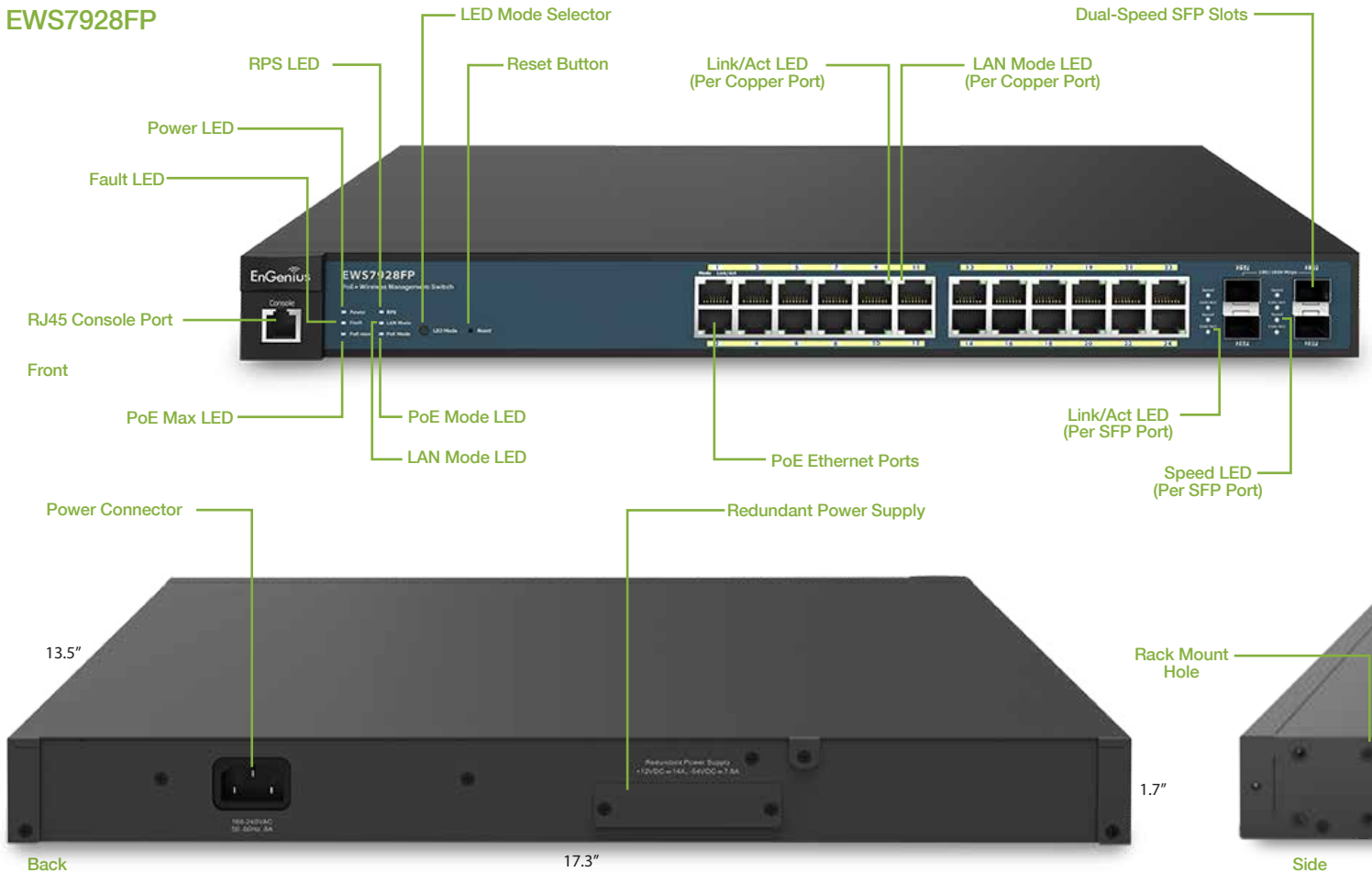
Back

Side

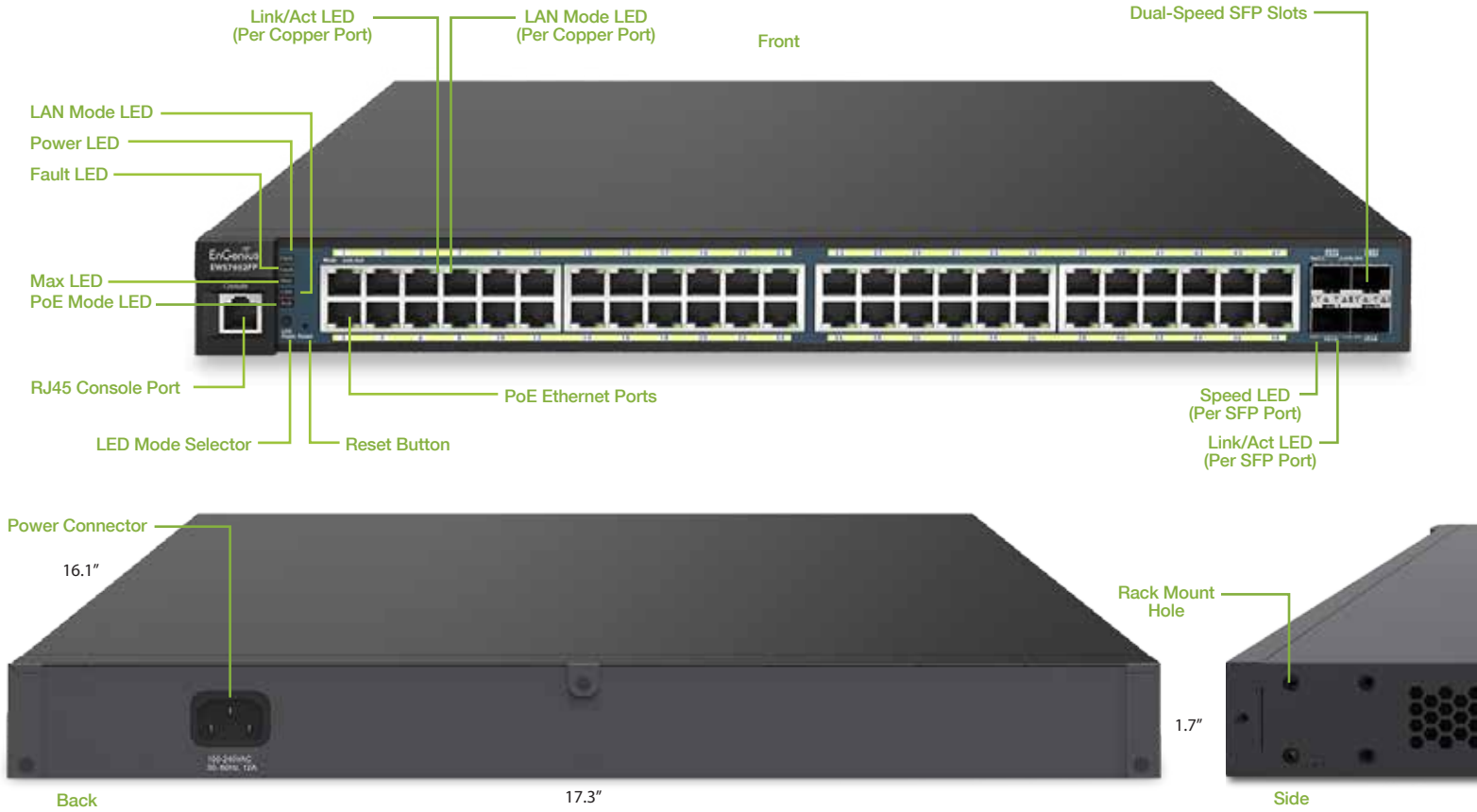
## EWS7928P







## EWS7928FP



# EWS7952FP



## Compare

Indoor Managed Access Points				
	EWS360AP	EWS320AP	EWS310AP	EWS210AP
Standards	802.11a/b/g/n/ac	802.11a/b/g/n	802.11a/b/g/n	802.11b/g/n
Frequency	2.4 & 5 GHz	2.4 & 5 GHz	2.4 & 5 GHz	2.4 GHz
2.4 GHz Max. Data Rate	450 Mbps	450 Mbps	300 Mbps	300 Mbps
5 GHz Max. Data Rate	1300 Mbps	450 Mbps	300 Mbps	N/A
Radio Chains/Streams	3 x 3:3	3 x 3:3	2 x 2:2	2 x 2
RF Output Power (2.4 GHz)	28 dBm	28 dBm	29 dBm	29 dBm
RF Output Power (5 GHz)	28 dBm	28 dBm	26 dBm	N/A
Gigabit Ethernet	●	●	●	●
Power over Ethernet	802.3at	802.3at	802.3af/at	802.3af/at
Power Consumption (Peak)	22 W	22 W	15.6 W	9 W
Integrated Antenna	6 x 5 dBi	6 x 5 dBi	4 x 5 dBi	2 x 5 dBi

## Common Key Features

### Managed AP Mode Features

- Access Point Mode / Mesh AP Mode\* (with Controller Interface)
- Sectorized 3D Antenna (select models)
- Dynamic Channel Optimization
- Guest Network
- Band Steering
- Fast Handover
- Fast Roaming
- Supports connectivity of up to 100+ users\*\*
- WEP, WPA-PSK, WPA2-PSK, WPA-PSK Mixed, WPA-Enterprise, WPA2- Enterprise, WPA-Mixed Enterprise
- 16 SSIDs (8 SSIDS per frequency band)
- Wireless Traffic Shaping
- 802.1q VLAN
- QoS
- IPv6
- Spanning Tree Protocol (STP)
- SSID to VLAN Mapping
- SNMP
- CLI/SSH/Https
- VLAN Isolation
- Client Isolation
- Ping Test/Traceroute Test/Speed Test

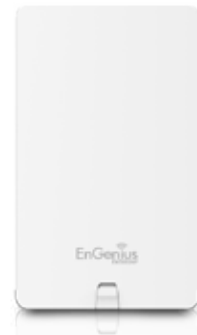
### Other Features for Stand-alone Mode

- Email Alert
- WiFi Scheduler
- Auto Reboot
- Date and Time Settings
- LED Control
- SYSLOG
- SNMP v1/v2c/v3
- Wireless MAC Filter
- AP Detection

\* Available soon. Mesh AP mode is only available through configuration with a Neutron Series Switch.

\*\*User capacity performance results may vary based on topology configuration, structural and architectural elements, environmental factors, type of data traffic, RF capabilities of client devices, distance, RF interference in the operating environment and other factors.

## Compare



### Outdoor Managed Access Points

	EWS860AP	EWS660AP
Standards	802.11a/b/g/n/ac	802.11a/b/g/n/ac
Frequency	2.4 & 5 GHz	2.4 & 5 GHz
Data Rates	Up to 450 Mbps (2.4 GHz) Up to 1300 Mbps (5 GHz)	Up to 450 Mbps (2.4 GHz) Up to 1300 Mbps (5 GHz)
Radio Chains/Streams	3 x 3:3	3 x 3:3
RF Output Power	29 dBm	29 dBm
Ingress Protection Rating	68	55
Gigabit Ethernet (PoE)	●	●
Secondary Gigabit port	PoE Output	●
PoE Compliant	802.3at (PoE+)	802.3at (PoE+)
Power Consumption (Peak)	34 W	23 W
Integrated Antennas	-	6 x 5 dBi
External Antennas	2.4 GHz: 3 x 5 dBi 5 GHz: 3 x 7 dBi	-

## Common Key Features

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- Dynamic Channel Optimization
- Guest Network
- Band Steering
- Fast Handover
- Fast Roaming
- Supports connectivity of up to 100+ users\*\*
- WEP, WPA-PSK, WPA2-PSK, WPA-PSK Mixed, WPA-Enterprise, WPA2- Enterprise, WPA-Mixed Enterprise
- 16 SSIDs (8 SSIDS per frequency band)

- Wireless Traffic Shaping
- 802.1q VLAN
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## Compare

Management Switches				
	EWS7952FP	EWS7928FP	EWS7928P	EWS5912FP
Supported EWS AP	50	50	50	20
10/100/1000 BASE-T, PoE+	48	24	24	8
Total PoE Budget	740W	370W (Up to 740W with RPS)	185W	130W
PoE+ Capable Port	1~48	1~24	1~24	1~8
Rackmount	19" 1U	19" 1U	19" 1U	13" 1U
SFP Ports	4	4	4	2
Auto Uplink Gigabit Ports	-	-	-	●
RJ45 Console Port	●	●	●	●
Annual License Fees Per AP	\$0	\$0	\$0	\$0

## Common Key Features

### L2 Features

- VLAN Group
- Voice VLAN
- 802.3ad Link Aggregation
- 802.1D Spanning Tree (STP)
- 802.1w Rapid Spanning Tree (RSTP)
- 802.1s Multiple Spanning Tree (MSTP)
- Port Mirroring
- Port Trunking
- IGMP Snooping v1/v2/v3
- IGMP Fast Leave
- Power Class Configuration
- MLD Snooping
- Bandwidth Control
- IEEE 802.1X Guest VLAN
- CoS based on 802.1p Priority
- CoS based on Physical Port
- CoS based on TOS
- CoS based on DSCP
- 802.1X Port Based Access Control
- Port Security
- Storm Control
- Port Isolation
- Attack Prevention
- Access Control List (ACL)
- SNMP v1/v2c/v3
- Power Feeding with Priority
- User Defined Power Limit
- Telnet Server
- IEEE802.3az Energy Efficient Ethernet
- BootP/DHCP Client
- Web-based Support,
- SNMP v1/v2/v3 Support
- TFTP Client
- TFTP Upgrade
- Command Line Interface (CLI)
- SNMP
- Web UI, Supports Non IE Browser (Chrome, Firefox, Safari)
- SYSLOG
- Cable Diagnostics
- MIB Support (RFC1213, RFC1493, RFC1757, RFC2674)
- RMONv1
- SSH Server

### Wireless Management Features

- Access Point Auto Discovery and Provisioning
- Access Point Auto IP-Assignment
- Access Point Cluster Management
- Mesh Network\*
- Visual Topology View
- Floor Plan View
- Map View
- Access Point Status Monitoring
- Wireless Client Monitoring
- Wireless Traffic & Usage Statistics
- Real-time Throughput Monitoring
- Bulk Firmware Upgrade Capability
- Remote Access Point Rebooting
- Fast Roaming
- Band Steering
- Traffic Shaping
- Intelligent Diagnostics
- Access Point Device Name Editing
- Access Point Radio Settings
- Fast Handover
- Access Point Client Limiting
- Wireless Security (WEP, WPA/WPA2 Enterprise, WPA/WPA2 PSK)
- VLANs for Access Point- Multiple SSIDs
- Guest Network
- Secure Control Messaging
- SSL Certificate
- Local MAC Address Database
- Remote MAC Address Database (RADIUS)
- Unified Configuration Import / Export

\* Available soon. Mesh AP mode is only available through configuration with a Neutron Series Switch.



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