



# The Neutron Series

## Distributed Network Management Solution

### Flexible, Scalable, Enterprise-Class Management for Networks Both Large and Small

Today's networks must be flexible, robust and as effective as the organizations they serve. Often comprised of different sizes, infrastructures and locations, these distributed networks can place an enormous burden on in-house IT personnel or managed service providers looking to manage, monitor and upgrade a potentially vast number of Access Points and Switches.

Fortunately, EnGenius has the answer: the **Neutron Series Distributed Network Management Solution**.

This highly flexible, scalable, fully integrated solution offers simplified configuration and management with enterprise-class performance, feature-rich Managed Access Points, WLAN Controller Switches and ezMaster™ Centralized Network Management, at an incredible price point – **with NO AP licensing, subscription or tech support fees**.

### The Neutron Series is ideal for deploying into:

- > Managed Service Providers (MSPs)
- > The Public Sector
- > School Districts
- > Large, Geographically Diverse Organizations
- > Healthcare Facilities
- > Hotels & Resorts

### Features and Benefits

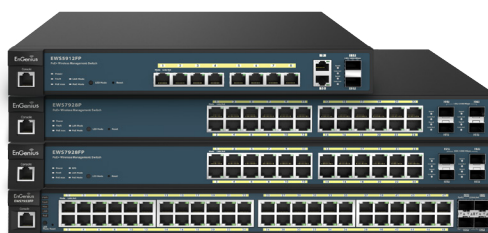
- > Complete Scalability
  - Manage 1 – 1,000+ APs & Switches
  - 10,000+ Concurrent Users
  - Unlimited Number of Distributed Networks
- > Unlimited Flexibility
  - Operate Neutron APs Alone or
  - Locally Manage up to 50 APs per Switch
  - Manage Unlimited APs & Switches with ezMaster™
  - Deploy ezMaster via Cloud-Based\* Service, on a Remote or Local Server
- > Greater Affordability
  - NO AP Licensing, NO Annual Subscriptions, NO Technical Support Fees
  - Affordable Hardware
  - Save Time & Resources
  - Lower TCO per Deployment
- > Neutron Series Distributed Network Management
  - Centralized Management with ezMaster
  - Full Featured WLAN Controller Switches
  - Versatile Access Point Portfolio
- > Optimize Wireless Performance
- > Create Secure, Branded Captive Portals
- > Simplified Deployment & Provisioning
- > Comprehensive Network Protection
- > Rich Reporting & Analytics
- > Enterprise-Class Performance
- > Comprehensive Pre/Post Sales & Customer Support

\*Feature available Q1 2015

### The EnGenius® Neutron™ Series Distributed Network Management Solution includes:



Neutron Managed Access Points



Neutron WLAN Controller Switches

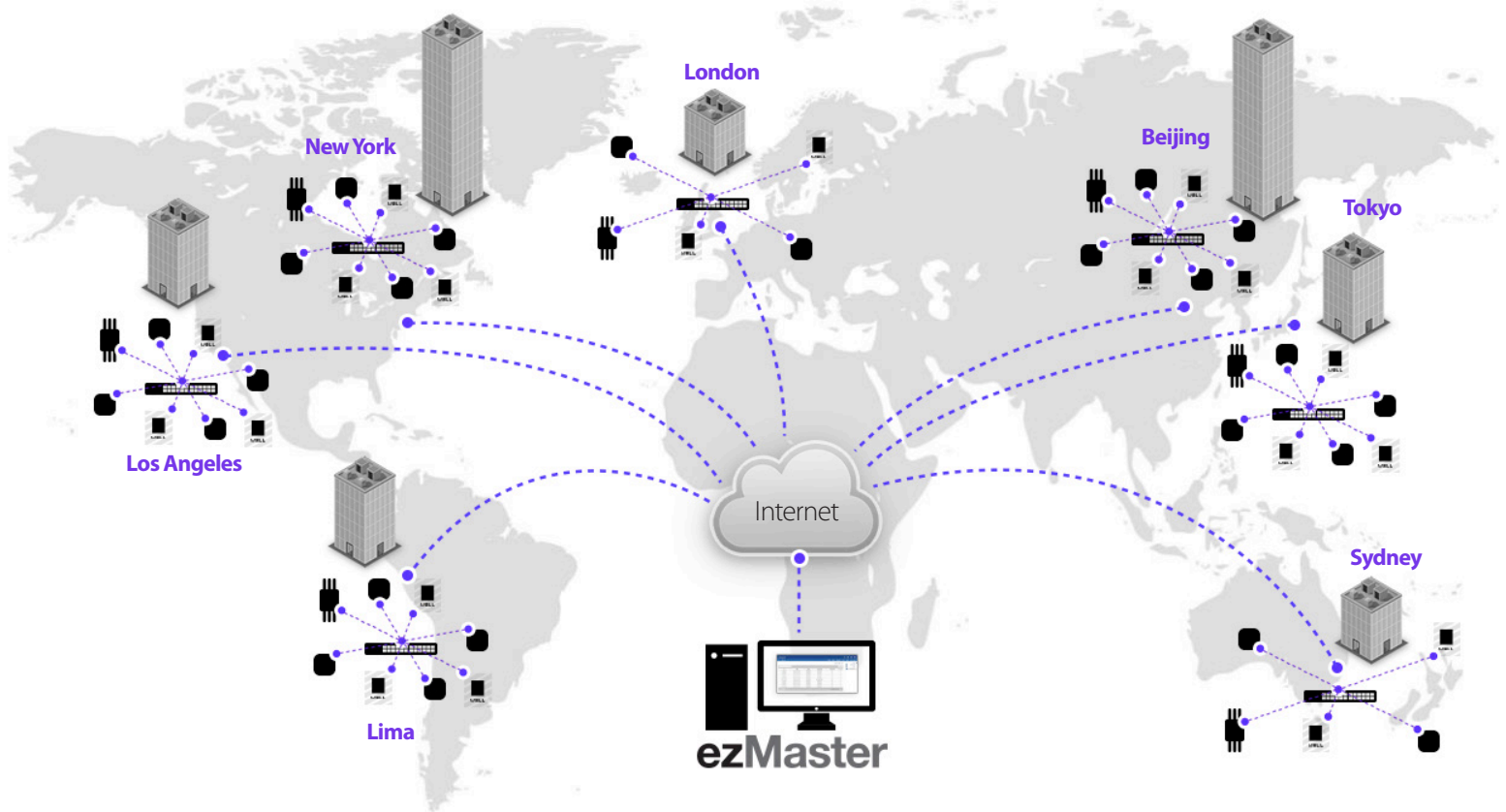


ezMaster™ Network Management Software

## Complete Scalability Regardless of Size

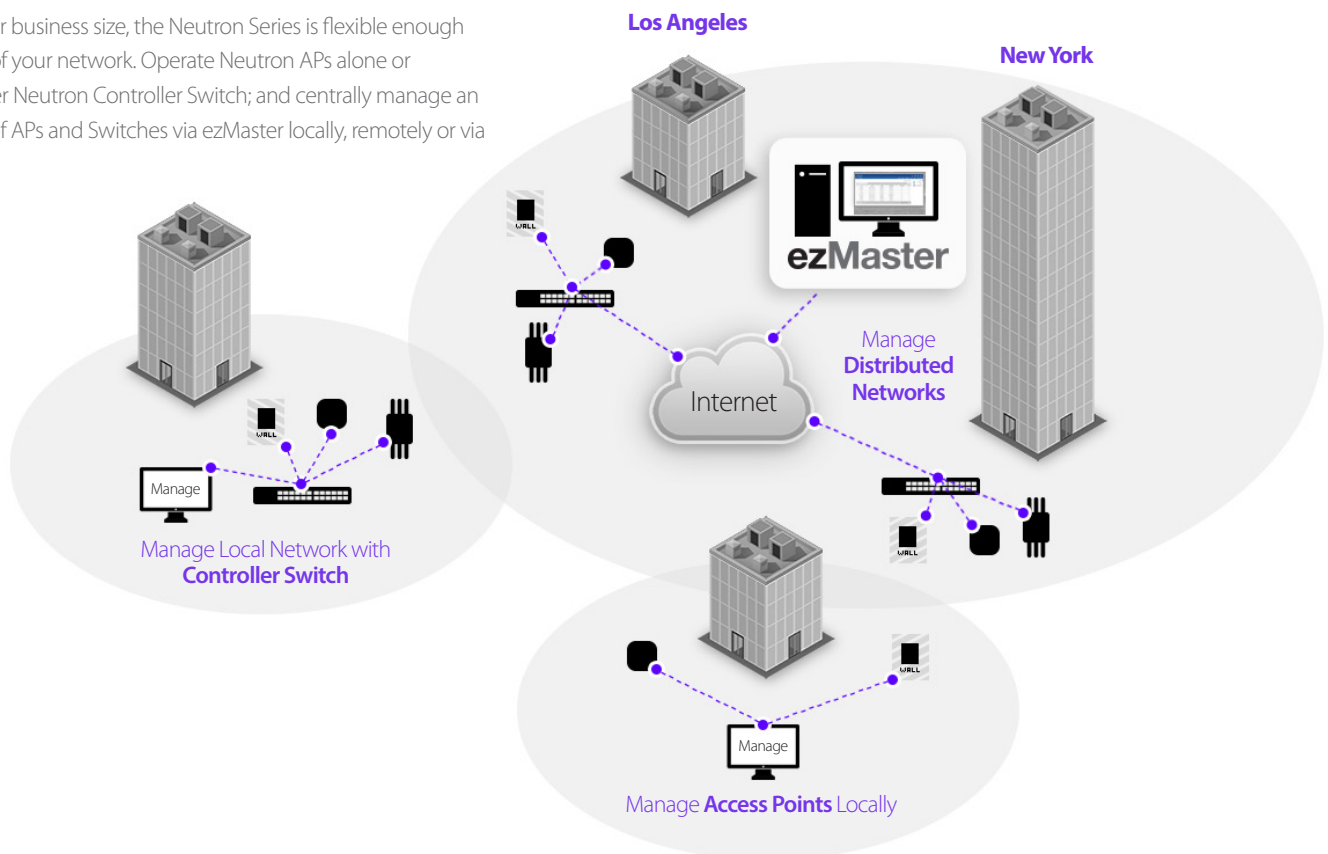
Want to start small or go big? You can do both with the Neutron Series. The Solution makes it easy to deploy and manage a few or 1,000+ APs, and

Switches and 10,000+ concurrent users on an unlimited number of networks distributed across various cities, regions or countries, regardless of their size and infrastructure.



## Unlimited Flexibility

No matter what your business size, the Neutron Series is flexible enough to meet the needs of your network. Operate Neutron APs alone or manage up to 50 per Neutron Controller Switch; and centrally manage an unlimited number of APs and Switches via ezMaster locally, remotely or via the Cloud.



## Enjoy Lower Capital & Operating Expenses

Many competing solutions require costly hardware, per AP licensing, and annual subscription and tech support fees. Not with the Neutron Series.

Since it's also easy to deploy, manage and operate, you'll save valuable time and resources, all translating to affordable, predictable costs – and a lower TCO per deployment.

Compare	EnGenius Hybrid Solution	Controller-based Vendor	Cloud-based Vendor
Access Points	11ac 3x3 : 3 Streams EWS360AP \$599	11ac 3x3 : 3 Streams \$795	11ac 3x3 : 3 Streams \$1,399
HW Controller	0	1	0
Subscription	0	0	\$3,750 per year
License	0	\$4,000	0
Firmware Upgrade	0	\$3,600	0
Total Cost (USD)	\$14,975	\$27,475	\$38,725

## Features & Benefits

The Neutron Series delivers enterprise-class features that simplify deployment and management, maximizing wireless performance for any size network, no matter where it's located.

### Optimized Wireless Performance

Continuously monitor the RF environment, including neighboring APs, with **Background Scanning**, and enable **automatic** control of AP **transmission power** and **channel allocation** ensuring optimized RF coverage and wireless performance. Configure multiple APs for **Fast Roaming**, securing seamless connectivity as mobile users move between Access Points.

Provide for maximum client performance as **Band Steering** automatically directs clients to the appropriate RF channel, while **Band Balancing** intelligently works to maintain a balanced number of clients per AP.

## Distributed Control, Centralized Management with ezMaster™

Centrally manage an **unlimited number** of independent **distributed networks** from a single, at-a-glance dashboard, no matter where they're located. **Manage 1,000+** Neutron APs and Controller Switches and **10,000+** concurrent users.

EzMaster makes centralized network management easy through bulk configuration, provisioning and monitoring; rich analytics, reporting, and much more. Monitor APs with or without an onsite Controller Switch, and have the flexibility to **deploy** ezMaster on a **local** or **remote** server or via a **Cloud**-based service.

### Simplified Deployment & Provisioning

Save time and resources with Neutron Series' easy-to-use **web interface**, **simplified management** and **one-click updates**. **Automated AP provisioning** and **intuitive configuration tools** help streamline mass AP deployments. And since the Neutron Series is easy to deploy, manage and operate, with **no extensive learning curve**, you'll spend less on administrative overhead, travel costs and training.

## Neutron Controller Switches, A Full-Featured WLAN Platform

A powerful, **full-featured platform** capable of **managing up to 50 Neutron APs** each, Neutron Controller Switches offer redundant management between APs and ezMaster with **SmartSync Redundancy\***; and **future expandability** for broader device connectivity and management. Neutron Switches also act as a **wireless controller**, giving IT administrators visibility into all connected Neutron devices and a full array of **Layer 2 management tools**.

## Versatile AP Portfolio Features High-Capacity 11ac

Neutron's versatile line of high-performance, managed, **indoor ceiling-mount** and **outdoor ruggedized APs** range from **Single-Band 11n** models to **high-capacity 3x3 Dual-Band 11ac** versions, all featuring **Power-over-Ethernet (PoE)** convenience. For added versatility, Neutron APs can **operate as a standalone device**, be **managed** through a Neutron Controller Switch or centrally managed via ezMaster software.

## Create Secure, Branded Captive Portals

Organizations that offer Internet access to patrons or visitors – notably hotels, retail shops and restaurants – will appreciate Neutron's **Captive Portal** and Guest Network capabilities.

Establish a secure **Guest Network** that blocks access to main corporate computers and create separate Virtual LANs for increased security, network reliability and bandwidth conservation.



## Comprehensive Network Protection

With the Neutron Series, your network is protected from attacks at multiple levels through advanced wireless encryption standards such as Wi-Fi **Protected Access Encryption** and authentication database, **802.1X** with **RADIUS** server. Network threats are quickly detected and avoided through **rogue AP detection**, **email alerts** and **real-time wireless invasion monitoring**, allowing for immediate action to divert network hacks and other security threats.

\*Feature available 12/2015

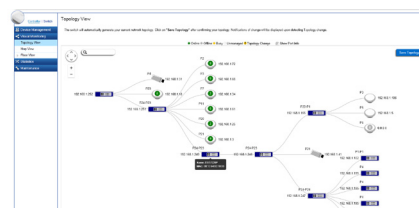
## Rich Reporting & Analytics

A wealth of invaluable reporting, analytics and real-time monitoring tools, with email alerts, give IT management instant insight into system efficiencies and issues. With tools like **wireless client monitoring**, and **traffic** and **usage statistics**, potential problems can be pinpointed and addressed before they effect users. Neutron provides **centralized network visibility** in areas such as **traffic flow**, **demand**, **network topology** and more.

- > **Statistics View** provides real-time and historical visibility of traffic flow.



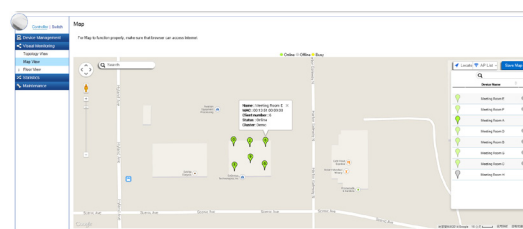
- > **Topology View** automatically maps network deployment and displays device relationships.



- > **Floor View** allows administrators to upload floor plans and drop AP markers for a visual representation of any network on the system.



- > With **Google® Map View** you can quickly drop AP markers and locate deployed APs across cities, regions or countries.



## Perfect Flexibility for Managed Service Providers

If you're a managed service provider (MSP) the EnGenius Neutron Series is ideal for you. Easily provision, configure, manage and update network devices for all of your customers – from a single console and login, regardless of network size, location, infrastructure or ISP. Saving you a tremendous amount of time, travel and cost.

## Flexible Distributed Network Management

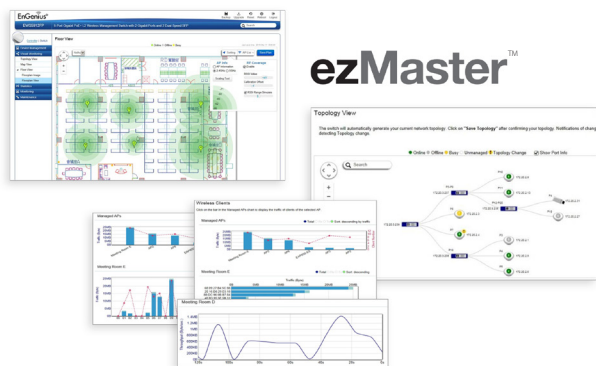
EzMaster Network Management Software expands the flexibility and scalability of Neutron Series Managed Access Points and WLAN Controller Switches.

EzMaster allows organizations, such as branch offices and managed service providers, to easily and affordably deploy, monitor and manage a large number of Neutron APs and Controller Switches across geographically diverse properties. Centrally manage an unlimited number of independent distributed networks in the same subnet or cross-subnet from a single, at-a-glance network dashboard, no matter where they're located.

Deploy ezMaster locally, remotely or via a Cloud-based service with or without an onsite WLAN Controller Switch.

## Powerful, Scalable Options

EzMaster scales with your growing business needs. Manage 1,000+ Neutron Access Points and Controller Switches and 10,000+ concurrent users. Together, Neutron APs, Switches and ezMaster provide a flexible, fully integrated solution with redundancy support and future expandability for broader device connectivity.



## System Requirements

### Recommended environment for managing up to 500 APs

**CPU:** Intel® Core™ i3 3.6 GHz dual-core or above

**RAM:** 4 GB minimum

**HDD:** 500 GB (actual requirement dependent on log size)

**OS:** Microsoft® Windows® 7 or later + VMware® Player 7.0 or compatible virtualization software

### Recommended environment for managing up to 1,000 APs

**CPU:** Intel® Core™ i5 3.2 GHz quad-core or above

**RAM:** 4 GB minimum

**HDD:** 500 GB (actual requirement dependent on log size)

**OS:** Microsoft® Windows® 7 or later + VMware® Player 7.0 or compatible virtualization software

### Browser Requirements

Internet Explorer 10 or better

Firefox 34.0 or better

Chrome 31.0 or better

Safari 8.0 or better

### Network Topology Requirements

At sites where APs are deployed: A DHCP-enabled network for APs to obtain an IP address

## Simplified Device Management

EzMaster Network Management Software makes centralized device management easy. How? Through centralized bulk configuration, provisioning and monitoring, a comprehensive at-a-glance network dashboard, rich analytics and reporting, and much more.

## ezMaster™ Software Features

### > Centralized Management

- Configure, Managed & Monitor 1,000+ Neutron Devices
- Cross-Network AP Management
- AP Group Configuration

### > Access Point Configuration & Management

- Auto Channel Selection
- Auto Tx Power
- Background Scanning
- Band Steering (Auto Band Steering & Band Balancing)
- Client Isolation
- Client Limiting
- Fast Roaming
- L2 Isolation
- LED On/Off Control
- Multiple SSID
- RSSI Threshold
- Secure Guest Network
- Traffic Shaping
- VLAN Isolation
- VLAN Tag

### > Comprehensive Monitoring

- Device Status Monitoring
- Floor Plan View
- Map View
- Rogue AP Detection
- System Status Monitoring
- Visual Topology View
- Wireless Client Monitoring
- Wireless Coverage View
- Wireless Traffic & Usage Statistics

### > Management & Maintenance

- Bulk Firmware Upgrade
- Captive Portal
- Email Alert
- ezRedundancy (coming 2016)
- Kick/Ban Clients
- One-Click Update
- Remote Logging
- Seamless Migration
- SmartSync Redundancy (coming 12/2015)
- Syslog

## Complete Line of the Neutron Series Products

### Managed Access Points



Model	Description
<b>EWS300AP</b>	Single-Band 11n 2x2:2 2.4 GHz Ceiling-Mount Wireless Managed Indoor Access Point
<b>EWS310AP</b>	Dual-Band 11n 2x2:2 Ceiling-Mount Wireless Managed Indoor Access Point
<b>EWS320AP</b>	Dual-Band 11n 3x3:3 Ceiling-Mount Wireless Managed Indoor Access Point
<b>EWS350AP</b>	Dual-Band 11ac 2x2:2 Ceiling-Mount Wireless Managed Indoor Access Point
<b>EWS360AP</b>	Dual-Band 11ac 3x3:3 Ceiling-Mount Wireless Managed Indoor Access Point
<b>EWS500AP</b>	Single-Band 11n 2x2:2 Wall Plate Wireless Managed Indoor Access Point
<b>EWS510AP</b>	Dual-Band 11n 2x2:2 Wall Plate Wireless Managed Indoor Access Point
<b>EWS650AP</b>	Dual-Band 11ac 2x2:2 Wireless Managed Outdoor Access Point
<b>EWS660AP</b>	Dual-Band 11ac 3x3:3 Wireless Managed Outdoor Access Point
<b>EWS860AP</b>	Dual-Band 11ac 3x3:3 Wireless Ruggedized Managed Outdoor Access Point

### WLAN Controller Switches

Model	Description
<b>EWS2910P</b>	8-Port GigE 61W PoE WLAN Controller/Switch – Manage up to 20 Access Points
<b>EWS2910P-KIT-300</b>	WLAN Starter Kit (1) 8-Port GigE 61W PoE WLAN Controller/Switch – Manage up to 20 APs; (2) EWS300AP Single-Band 11n 2x2:2, 2.4 GHz Ceiling-Mount Wireless Access Points
<b>EWS5912FP</b>	8-Port GigE 130W PoE+ WLAN Management Controller / Switch - Manage up to 20 Access Points
<b>EWS7928P</b>	24-Port GigE 185W PoE+ WLAN Management Controller / Switch - Manage up to 50 Access Points
<b>EWS7928FP</b>	24-Port GigE 370W PoE+ WLAN Management Controller / Switch - Manage up to 50 Access Points
<b>EWS7952FP</b>	48-Port GigE 740W PoE+ WLAN Management Controller / Switch - Manage up to 50 Access Points



## EnGenius Neutron Series WLAN Controller Switches

					
Models	EWS7952FP	EWS7928FP	EWS7928P	EWS5912FP	EWS2910P
Supported EWS AP	50	50	50	20	20
10/100/1000 Base-T, PoE+	48	24	24	8	8
Total PoE Budget	740W	370W	185W	130W	61.6W
PoE+ Capable Port	1-48	1-24	1-24	1-8	1-8 (802.3af only)
Rackmount	19" 1U	19" 1U	19" 1U	13" 1U	9.45" (desktop)
SFP Ports	4	4	4	2	2
Auto Uplink Gigabit Ports	-	-	-	●	-
RJ45 Console Port	●	●	●	●	-
Annual License Fee Per AP	\$0	\$0	\$0	\$0	\$0

### Key Features

- > Access Point Auto Discovery & Provisioning
- > Access Point Auto IP-Assignment
- > Access Point Cluster Management
- > Visual Topology View
- > Floor Plan & Map View
- > Wireless Coverage Display
- > 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
- > Fast Handover
- > Band Steering
- > Traffic Shaping
- > Intelligent Diagnostics
- > Access Point Device Name Editing
- > Access Point Radio Settings
- > Access Point Client Limiting
- > Wireless Security (WEP, WPA/WPA2 Enterprise, WPA/WPA2 PSK)

### Neutron Series WLAN Controller Switches

#### A Full-Featured Platform

EnGenius Neutron Series Controller Switches are a powerful, full-feature platform capable of managing up to 50 Neutron Managed Access Points per Switch, while providing future expandability for broader device connectivity and redundant management between Neutron APs and ezMaster with SmartSync Redundancy.

Acting as a **wireless network controller**, Neutron Controller Switches give IT administrators visibility into all Neutron Series connected devices. This allows them to be grouped into clusters with the same settings and policies applied automatically.

Available in 8-, 24- and 48-port models, each Neutron Series Controller Switch supports **Power-over-Ethernet** (PoE), delivering up to 30 watts per port for powering devices like APs, IP Cameras, and VoIP (Voice-over-IP) phone systems. Neutron Controller Switches also provide improved network efficiency, security, and AP management through **full Layer 2 management** tools.

When combined with ezMaster, Neutron Controller Switches support **SmartSync Redundancy**, which stores network analytic data even when Internet connectivity is not available. Once connectivity is restored, the Controller Switch will automatically re-synch and send analytics to ezMaster, meanwhile, the network itself would remain running the entire time.

## Technical Specifications

<b>Switching Capacity</b>
EWS2910P: 20 Gbps
EWS5912FP: 24 Gbps
EWS7928P: 56 Gbps
EWS7928FP: 56 Gbps
EWS7952FP: 104 Gbps
<b>Forwarding Mode</b>
Store and Forward
<b>SDRAM</b>
256MB
<b>Flash Memory</b>
32MB
<b>Port Functions</b>
<b>EWS2910P</b>
8 x 10/100/1000 Mbps Ports in the front panel
2 x 100/1000 Mbps SFP Slot
<b>EWS5912FP</b>
8 x 10/100/1000 Mbps Ports in the front panel
2 x 100/1000 Mbps SFP Slot
2 x Gigabit Uplink Ports
1 x RJ45 Console Port
<b>EWS7928FP / EWS7928P</b>
24 x 10/100/1000 Mbps Ports in the front panel
4 x 100/1000 Mbps SFP Slot
1 x RJ45 Console Port
<b>EWS7952FP</b>
48 x 10/100/1000 Mbps Ports in the front panel
4 x 100/1000 Mbps SFP Slot
1 x RJ45 Console Port
<b>PoE Capability</b>
<b>EWS2910P</b>
PoE Standard: Ports 1~8 Support IEEE 802.3af
<b>EWS5912FP</b>
PoE Standard: Ports 1~8 Support IEEE 802.3at/af
<b>EWS7928FP / EWS7928P</b>
PoE Standard: Ports 1~24 Support IEEE 802.3at/af
<b>EWS7952FP</b>
PoE Standard: Ports 1~48 Support IEEE802.3at/af
<b>PoE Capable Ports</b>
<b>EWS2910P</b> Ports 1~8 Can Output Up to 15W
<b>EWS5912FP</b> Ports 1~8 Can Output Up to 30W
<b>EWS7928P</b> All Gigabit Ethernet Ports / Up to 30W
<b>EWS7928FP</b> All Gigabit Ethernet Ports / Up to 30W
<b>EWS7952FP</b> All Gigabit Ethernet Ports / Up to 30W

<b>LED Indicators</b>
1 x Power LED
1 x Fault LED
1 x PoE Max LED
1 x LAN Mode LED
1 x PoE Mode LED
Copper Ports: LAN/PoE Mode, Link/Act
SFP Ports: Link/Act, Speed (EWS2910P & EWS7952FP only)
<b>Wireless Management Features</b> (with Neutron Series Access Points & ezMaster)
<b>EWS2910P / EWS5912FP:</b> Manages up to 20 Neutron Series APs
<b>EWS7952FP / EWS7928P / EWS7928FP:</b> Manages up to 50 Neutron Series APs
Access Point Auto Discovery and Provisioning
Access Point Auto IP Assignment
Access Point Cluster Management
Remote Access Point Rebooting
Access Point Device Name Editing
Access Point Radio Settings
Band Steering
Traffic Shaping
Fast Handover
Fast Roaming
Access Point Client Limiting
Client Fingerprinting
Wireless Security (WEP, WPA/WPA2 Enterprise, WPA/WPA2 PSK)
AP VLAN Management
VLANs for Access Point- Multiple SSIDs
Secured Guest Network
Captive Portal
Access Point Status Monitoring
Rogue AP Detection
Wireless Client Monitoring
Background Scanning
Email Alert
Wireless Traffic & Usage Statistics
Real-time Throughput Monitoring
SmartSync Redundancy
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

<b>L2 Features</b>
802.3ad Link Aggregation
Port Mirroring
Port Trunking
Spanning Tree Protocol
> 802.1D Spanning Tree (STP)
> 802.1w Rapid Spanning Tree (RSTP)
> 802.1s Multiple Spanning Tree (MSTP)
IGMP Snooping v1/v2/v3
IGMP Fast Leave
VLAN Group
Voice VLAN
MLD Snooping
Bandwidth Control
Queue
> 802.1w Rapid Spanning Tree (RSTP)
> CoS-based on 802.1p Priority
> CoS-based on TOS
> CoS-based on DSCP
> CoS-based on Physical Port
802.1X Port-based Access Control
802.1X Guest VLAN
Port Security
Storm Control
Port Isolation
Attack Prevention
Access Control List (ACL)
PoE Management
> Power On/Off Per Port
> Power Class Configuration
> Power Feeding with Priority
> User Defined Power Limit
IEEE 802.3az (Energy Efficient Ethernet)
SSH Server
Telnet Server
TFTP Client
TFTP Upgrade
BootP/DHCP Client
Web-based Support
SNMP v1 / v2c / v3 Support
Command Line Interface (CLI)
SNTP
RMONv1
SYSLOG
Cable Diagnostics
MIB Support
> RFC1213 / RFC1493 / RFC1757 / RFC2674



Technical Specifications continued

Temperature Range
EWS2910P
Operating: 32°F to 104°F / 0°C to 40°C
Storage Temperature: -40°F to 158°F / -40°C to 70°C
EWS5912FP / EWS7928P / EWS7928FP / EWS7952FP
Operating: 32°F to 122°F / 0°C to 50°C
Storage Temperature: -40°F to 158°F / -40°C to 70°C
Humidity (non-condensing)
Operating: 5% - 95%
Certifications
FCC, IC, CE

Device Dimensions and Weights
EWS2910P
Weight: 1.36 lbs. (620 g)
Width: 9.45" (240 mm)
Length: 4.13" (105 mm)
Height: 1.06" (27 mm)
EWS5912FP
Weight: 4.4 lbs (1.9 kg)
Width: 13.00" (330.20 mm)
Length: 9" (228.60 mm)
Height: 1.73" (43.94 mm)
EWS7928P / EWS7928FP
Weight: 7.82 lb (3.5 kg)
Width: 17.3" (439 mm)
Length: 10.24" (260 mm)
Height: 1.73" (44 mm)

Device Dimensions and Weights continued
EWS7952FP
Weight: 14.15 lbs. (6.4 kg)
Width: 17.32" (439.9 mm)
Length: 16.14" (409.9 mm)
Height: 1.73" (43.9 mm)
Warranty
1-Year Standard

## EnGenius Neutron Series Indoor Managed Access Points

							
	CEILING MOUNT					WALL PLATE	
Models	EWS360AP	EWS350AP	EWS320AP	EWS310AP	EWS300AP	EWS510AP	EWS500AP
Standards	802.11a/b/g/n/ac	802.11a/b/g/n/ac	802.11a/b/g/n	802.11a/b/g/n	802.11b/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 & 5 GHz	2.4 GHz	2.4 & 5 GHz	2.4 GHz
2.4 GHz Max. Data Rate	450 Mbps	300 Mbps	450 Mbps	300 Mbps	300 Mbps	300 Mbps	300 Mbps
5 GHz Max. Data Rate	1,300 Mbps	867 Mbps	450 Mbps	300 Mbps	N/A	300 Mbps	300 Mbps
Radio Chains/Streams	3 x 3:3	2 x 2:2	3 x 3:3	2 x 2:2	2 x 2:2	2 x 2:2	2 x 2:2
RF Output Power (2.4 GHz)	28 dBm	26 dBm	28 dBm	29 dBm	29 dBm	20 dBm	20 dBm
RF Output Power (5 GHz)	28 dBm	26 dBm	28 dBm	26 dBm	N/A	20 dBm	N/A
Ethernet Ports	1 x Gig Port (PoE+)	1 x Gig Port (PoE+)	1 x Gig Port (PoE+)	1 x Gig Port (PoE+)	1 x Gig Port (PoE+)	<ul style="list-style-type: none"> <li>- 1 x 10/100 Mbps Access Port (PoE+)</li> <li>- 3 x 10/100 Mbps Access Ports</li> <li>- 1 x Gig Uplink Port (PoE)</li> <li>- 1 x RJ45 Pass Through Ports</li> </ul>	<ul style="list-style-type: none"> <li>- 1 x 10/100 Mbps Access Port (PoE+)</li> <li>- 3 x 10/100 Mbps Access Ports</li> <li>- 1 x Gig Uplink Port (PoE)</li> <li>- 2 x RJ45 Pass Through Ports</li> </ul>
110 Punch Down Block	-	-	-	-	-	1	1
Power-over-Ethernet	802.3at	802.3at	802.3at	802.3af/at	802.3af	802.3af/at	802.3af/at
Power Consumption (Peak)	22.8W	18W	18.2W	15.6W	9.6W	10.8W	7.5W
Integrated Antenna	6 x 5 dBi	4 x 5 dBi	6 x 5 dBi	4 x 5 dBi	2 x 5 dBi	2 x 4 dBi (2.4 GHz) 2 x 5 dBi (5 GHz)	2 x 4 dBi

### Key Features

- > Sectorized 3D Antenna (select models)
- > Dynamic Channel Optimization
- > Dual-Band (select models)
- > Band Steering (Dual-Band models)
- > Seamless Roaming, Fast Handover
- > Supports Connectivity of 100+ Users
- > 16 SSIDs (8 SSIDs per frequency band)
- > Wireless Traffic Shaping
- > QoS
- > SSID-to-VLAN Mapping
- > Email Alert
- > Wi-Fi Scheduler
- > Auto-Reboot
- > AP Detection

### Neutron Series Managed Access Points

#### Versatile Portfolio of Managed Access Points

EnGenius offers one of the broadest Access Point portfolios available. The Neutron Series' versatile line of high-performance, managed indoor and outdoor APs range from **affordable, Single-Band 11n models** to **high-capacity 3x3 Dual-Band 11ac versions**, all with Power-over-Ethernet (PoE) convenience.

Neutron Access Points include sleek, low profile **Indoor Ceiling-Mount APs** and **Wall Plate AP/ Switches** that provide an all-in-one communications hub for hotel guest rooms, and multi-tenant dwellings to powerful, slim line, **IP-rated Outdoor** and **industrial, ruggedized APs** that extend the network beyond. Neutron Managed APs are sure to meet a variety of application needs for both large and small networks alike.

For added versatility, **deploy as a standalone Access Point** or **part of a scalable Neutron Solution** managed via a Neutron Controller Switch or centrally managed with ezMaster software.

## Technical Specifications

<b>Frequency</b> <p><b>EWS310AP / EWS320AP / EWS350AP / EWS360AP / EWS510AP</b> 2.4 and 5 GHz Frequency Bands</p> <p><b>EWS300AP / EWS500AP</b> 2.4 GHz Frequency Band</p>	<b>Antennas</b> <p><b>EWS300AP</b> 2 x 5 dBi Internal High Gain Antennas</p> <p><b>EWS310AP / EWS350AP</b> 2 x 5 dBi 2.4 GHz Internal Antennas 2 x 5 dBi 5 GHz Internal Antennas</p> <p><b>EWS320AP</b> 3 x 3 dBi 2.4 GHz Internal Antennas 3 x 5 dBi 5 GHz Internal Antennas</p> <p><b>EWS360AP</b> 3 x 5 dBi 2.4 GHz Internal Antennas 3 x 5 dBi 5 GHz Internal Antennas</p> <p><b>EWS500AP</b> 2 x 4 dBi Internal Antennas</p> <p><b>EWS510AP</b> 2 x 4 dBi 2.4 GHz Internal Antennas 2 x 5 dBi 5 GHz Internal Antennas</p>	<b>Power Requirements</b> <p>Power Supply: 100 to 240 VDC <math>\pm</math> 10%, 50/60 Hz (depends on different countries)</p> <p>Active Ethernet (Power-over-Ethernet, IEEE 802.3at) <b>EWS300AP</b> Power-over-Ethernet, IEEE 802.3af</p> <p>Power Adapter (United States) 48VDC/0.375A</p> <p>Device: 12VDC/2A</p> <p><b>EWS500AP / EWS510AP</b> 48VDC/0.8A</p> <p><b>EWS300AP</b> Device: 12VDC/1A</p>
<b>Standards</b> <p><b>EWS300AP / EWS310AP / EWS320AP</b> IEEE 802.11a/b/g/n</p> <p><b>EWS350AP / EWS360AP</b> IEEE 802.11a/b/g/n/ac</p> <p><b>EWS500AP / EWS510AP</b> IEEE 802.11b/g/n</p>	<b>Physical Interface</b> <p>1 x RJ45 Gigabit Ethernet 10/100/1000 — PoE Capable</p> <p>1 x Reset Button, 1 x Power Connector</p> <p><b>EWS500AP / EWS510AP</b> 1 x 10/100/1000 Mbps Uplink Port with 802.3af/at PoE 3 x 10/100 Mbps Access Ports</p> <p>1 x 10/100 Mbps Access Port with PoE Output (support 802.3af output when PoE input is 802.3at)</p> <p>2 x RJ45 Pass Through Ports</p> <p>1 x 110 Punch Down Block</p> <p>1 x DC Power Connector</p> <p>1 x Reset Button</p>	<b>Modulations</b> <p>OFDM: BPSK, QPSK, 26-QAM (EWS210AP / EWS300AP 16-QAM, 64-QAM, DBPSK, DQPSK, CCK</p>
<b>Radio I</b> <p><b>11b/g/n</b>: 2.412~2.484 GHz</p>		<b>Operating Channels</b> <p><b>2.4 GHz</b> US/Canada 1-11</p> <p><b>5 GHz</b> (Dual-Band models only): Country dependent for the following ranges: 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149, 153, 157, 161, 165</p>
<b>Radio II</b> (Dual-Band models only) <b>11a/n</b> : 5.18-5.24 & 5.26-5.32 & 5.5-5.7 & 5.745-5.825 GHz		<b>Operation Modes</b> <p>Access Point</p>
<b>Data Rates</b> <p><b>EWS300AP / EWS500AP</b> Up to 300 Mbps in 2.4 GHz frequency band</p> <p><b>EWS310AP / EWS510AP</b> Up to 300 Mbps in both frequency bands</p> <p><b>EWS320AP</b> Up to 450 Mbps in both frequency bands</p> <p><b>EWS350AP</b> Up to 300 Mbps in the 2.4 GHz frequency band; Up to 867 Mbps in the 5 GHz band</p> <p><b>EWS360AP</b> Up to 450 Mbps in the 2.4 GHz frequency band; Up to 1300 Mbps in the 5 GHz band</p>		<b>Multiple BSSID</b> <p>Supports up to 8 SSIDs Per Radio</p>
<b>Memory</b> <p><b>EWS300AP</b> 64MB</p> <p><b>EWS310AP / EWS320AP / EWS350AP / EWS360AP / EWS500AP / EWS510AP</b> 128MB</p>		<b>SSID-to-VLAN Tagging</b> <p>Supports 802.1q SSID-to-VLAN Tagging</p>
<b>Flash Memory</b> <p>16MB</p>		<b>Spanning Tree</b> <p>Supports 802.1d Spanning Tree Protocol</p>
<b>Power Consumption</b> <p><b>EWS300AP</b> Up to 9.6W</p> <p><b>EWS310AP</b> Up to 15.6W</p> <p><b>EWS320AP</b> Up to 18.2W</p> <p><b>EWS350AP</b> Up to 18W</p> <p><b>EWS360AP</b> Up to 22.8W</p> <p><b>EWS500AP</b> Up to 7.5W</p> <p><b>EWS510AP</b> Up to 10.8W</p>	<b>LED Indicators</b> <p><b>EWS300AP</b> 1 x Power 1 x WLAN 1 x LAN</p> <p><b>EWS310AP / EWS320AP / EWS350AP / EWS360AP</b> 1 x Power 1 x WLAN (Wireless Connection) 1 x LAN</p> <p><b>EWS500AP / EWS510AP</b> 1 x Power 1 x WAN 1 x 2.4 GHz 1 x 5 GHz 1 x LAN 1-4</p>	<b>Wireless</b> <p><b>EWS300AP / EWS500AP</b> Wireless Mode: 11b/11g/11n</p> <p><b>EWS310AP / EWS320AP / EWS510AP</b> Wireless Mode: 11a/11b/11g/11n</p> <p><b>EWS350AP / EWS360AP</b> Wireless Mode: 11a/11b/11g/11n/11ac</p> <p>Channel Selection (settings vary by country)</p> <p>Channel Bandwidth (Auto, 20 MHz, 40 MHz, 80 MHz)</p>
		<b>Transmission Rate</b> <p><b>2.4 GHz</b> 11n only, 11b/b/n mix, 11b only, 11b/g, 11g only</p> <p><b>5 GHz</b> (Dual-Band models only): 11ac only, 11n only, 11a/n mix, 11a only</p>

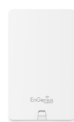
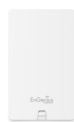
## Technical Specifications continued

<b>QoS</b>
WMM (Wireless Multimedia)
<b>Wireless Management Features</b> (with ezMaster & Neutron Switch)
Access Point Auto Discovery and Provisioning
Access Point Auto IP Assignment
Access Point Cluster Management
Remote Access Point Rebooting
Access Point Device Name Editing
Access Point Radio Settings
Band Steering (Dual Band models only)
Traffic Shaping
Fast Handover
Fast Roaming
RSSI Threshold
Access Point Client Limiting
Client Fingerprinting
Wireless Security (WEP, WPA/WPA2 Enterprise, WPA/WPA2 PSK)
AP VLAN Management
VLANs for Access Point- Multiple SSIDs
Secured Guest Network
Captive Portal
Access Point Status Monitoring
Rogue AP Detection
Wireless Client Monitoring
Background Scanning
Email Alert
Wireless Traffic & Usage Statistics
Real-time Throughput Monitoring
SmartSync Redundancy
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
<b>Tx Power Control</b>
Adjust Transmit Power by dBm
<b>Configuration</b>
Web-based Configuration (http)
<b>Firmware Upgrade</b>
Via Web Browser, Settings are Reserved After Upgrade

<b>Administrator Setting</b>
Administrator Username and Password Change
<b>MIB</b>
MIB I, MIB II (RFC1213) and private MIB
<b>System Monitoring</b>
Status Statistic and Event Log
<b>SNMP</b>
V1, V2c, V3
<b>Traffic Shaping</b>
Incoming and Outgoing Wireless Traffic Shaping
<b>Reset Setting</b>
Reboot (press and hold for 2 seconds). Reset to Factory Default (press and hold for 10 seconds)
<b>Auto-Channel Selection</b>
Automatically Selecting Least Congested Channel
<b>Bandwidth Measurement</b>
IP Range and Bandwidth Management
<b>Schedule Reboot</b>
Reboot Access Point by Minute, Hour, Day, or Week
<b>Backup and Restore</b>
Save and Restore Settings via Web Interface
<b>CLI</b>
Supports Command Line Interface
<b>Diagnosis</b>
IP Pinging Statistics
<b>Log</b>
SysLog and Local Log Support
<b>LED Control</b>
On/Off
<b>AP Detection</b>
Scanning for Available EnGenius APs
<b>Wireless Security</b>
WPA/WPA2 Personal (WPA-PSK using TKIP or AES)
WPA/WPA2 Enterprise (WPA-EAP using TKIP)
802.1X RADIUS Authenticator: MD5/TLS/TTLS, PEAP
SSID Broadcast Enable/Disable
MAC Address Filtering, Up to 50 Fields
L2 Isolation (Access Point mode)

<b>QoS (Quality of Service)</b>
WMM (Wireless Multimedia)
<b>Temperature Range</b>
Operating: 0 to 50°C (32° to 122°F)
Storage temperature: -20°C to 60°C (-4°F to 140°F)
<b>Humidity</b> (non-condensing)
Operating: 90% or less
Operating: 90% or less
<b>Physical Security</b>
Kensington Security Slot (N/A for EWS500AP/EWS510AP)
<b>Certifications</b>
FCC, IC
<b>Device Dimensions and Weights</b>
<b>EWS300AP</b>
Weight: .45 lbs. (204.1 g)
Length: 5.07" (128.7 mm)
Width: 5.07" (128.7 mm)
Height: 1.73" (43.9 mm)
<b>EWS310AP</b>
Weight: 0.80 lbs. (362.8 g)
Length: 6.36" (161.5 mm)
Width: 6.36" (161.5 mm)
Height: 1.64" (41.6 mm)
<b>EWS320AP</b>
Weight: 0.80 lbs. (362.8 g)
Length: 6.5" (165.1 mm)
Width: 6.5" (165.1 mm)
Height: 1.64" (41.6 mm)
<b>EWS350AP / EWS360AP</b>
Weight: 0.80 lbs. (362.8 g)
Length: 6.5" (165.1 mm)
Width: 6.5" (165.1 mm)
Height: 1.64" (41.6 mm)
<b>EWS500AP / EWS510AP</b>
Weight: .65 lbs. (296 g)
Length: 1.45" (37 mm)
Width: 4.33" (110 mm)
Height: 5.19" (130 mm)
<b>Warranty</b>
1-Year Standard

## EnGenius Neutron Series Outdoor Managed Access Points



Models	EWS860AP	EWS660AP	EWS650AP
Standards	802.11a/b/g/n/ac	802.11a/b/g/n/ac	802.11b/g/n/ac
Frequency	2.4 & 5 GHz	2.4 & 5 GHz	2.4 & 5 GHz
2.4 GHz Max. Data Rate	450 Mbps	450 Mbps	300 Mbps
5 GHz Max. Data Rate	1,300 Mbps	1,300 Mbps	867 Mbps
Radio Chains/Streams	3 x 3:3	3 x 3:3	2 x 2:2
RF Output Power	29 dBm	29 dBm	27 dBm
Ingress Protection Rating	68	55	55
Primary Ethernet Port	1 x Gigabit Port	1 x Gigabit Port	1 x Gigabit Port
Secondary Ethernet Port	1 x Gigabit Port (PoE Output)	1 x Gigabit Port	1 x Gigabit Port
PoE Compliant	802.3at (PoE+)	802.3at (PoE+)	802.3at (PoE+)
Power Consumption (Peak)	35.7W	23W	23W
Integrated Antennas	N/A	6 x 5 dBi	2 x 5 dBi
External Antennas	2.4 GHz: 3 x 5 dBi 5 GHz: 3 x 7 dBi	N/A	N/A

### Key Features

- > Tough IP68- and IP55-Rated Housings
- > 802.11ac Wireless Speeds
- > Dynamic Channel Optimization
- > Dual-Band
- > Band Steering
- > Seamless Roaming, Fast Handover
- > Supports Connectivity of 100+ Users
- > 16 SSIDs (8 SSIDS per frequency band)
- > Wireless Traffic Shaping
- > QoS
- > SSID-to-VLAN Mapping
- > Email Alert
- > Wi-Fi Scheduler
- > Auto-Reboot
- > AP Detection

## Technical Specifications

### Frequency

RF: 2.4 and 5 GHz Frequency Bands

### Standards

IEEE 802.11a/b/g/n/ac

### Radio I

11b/g/n: 2.412~2.484 GHz

### Radio II

11a/n/ac: 5.18-5.24 and 5.26-5.32 and 5.5-5.7 and 5.745-5.825 GHz

### Data Rates

#### EWS650AP

Up to 300 Mbps in 2.4 GHz; up to 867 Mbps in 5 GHz

#### EWS660AP / EWS860AP

Up to 450 Mbps in 2.4 GHz; up to 1300 Mbps in 5 GHz

### Memory

256MB

### Flash Memory

16MB

### Power Consumption

**EWS650AP** Up to 23W

**EWS660AP** Up to 23W

**EWS860AP** Up to 34W

### Antenna Array

**EWS650AP / EWS660AP**

Internal High Gain Antenna Array supporting both 2.4 GHz and 5 GHz

#### EWS860AP

External High Gain Antennas 3 x 5 dBi for 2.4 GHz

External High Gain Antennas 3 x 7 dBi for 5 GHz

### Physical Interface

2 x RJ45 Gigabit Ethernet (10/100/1000 Mbps) - PoE Capable 802.3at

1 x Reset Button

1 x Power Connector

### LED Indicators

1 x Power

1 x 2.4 GHz

1 x 5 GHz

1 x WLAN (Wireless Connection)

1 x LAN

### Power Requirements

Power Supply: 100 to 240V DC +/-10% 50/60 Hz

Active Ethernet (Power-over-Ethernet IEEE 802.3at)

PoE Injector DC IN, 48V/0.8A

### Modulations

OFDM: BPSK, QPSK, 26-QAM, 64-QAM, DBPSK, DQPSK, CCK

### Operating Channels

**2.4 GHz** US/Canada 1-11

**5 GHz** Country dependent for the following ranges: 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149, 153, 157, 161, 165

### Operation Modes

Access Point

### Multiple BSSID

Supports Up to 8 SSIDs Per Radio

### SSID-to-VLAN Tagging

Supports 802.1q SSID-to-VLAN Tagging

## Technical Specifications continued

<b>Spanning Tree</b>
Supports 802.1d Spanning Tree Protocol
<b>Wireless</b>
Wireless Mode: 11a/11b/11g/11n/11ac
Channel Selection (settings vary by country)
Channel Bandwidth (Auto, 20 MHz, 40 MHz, 80 MHz)
<b>Transmission Rate</b>
<b>2.4 GHz</b> 11n only, 11b/b/n mix, 11b only, 11b/g, 11g only
<b>5 GHz</b> 11ac only, 11n only, 11a/n mix, 11a only
<b>QoS</b>
WMM (Wireless Multimedia)
<b>Wireless Management Features</b> (with ezMaster & Neutron Switch)
Access Point Auto Discovery and Provisioning
Access Point Auto IP Assignment
Access Point Cluster Management
Remote Access Point Rebooting
Access Point Device Name Editing
Access Point Radio Settings
Band Steering
Traffic Shaping
Fast Handover
Fast Roaming
Access Point Client Limiting
Client Fingerprinting
Wireless Security (WEP, WPA/WPA2 Enterprise, WPA/WPA2 PSK)
AP VLAN Management
VLANs for Access Point- Multiple SSIDs
Secured Guest Network
Captive Portal
Access Point Status Monitoring
Rogue AP Detection
Wireless Client Monitoring
Background Scanning
Email Alert
Wireless Traffic & Usage Statistics
Real-time Throughput Monitoring
SmartSync Redundancy
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

<b>Wireless Management Features</b> (with ezMaster & Neutron Switch) continued
Intelligent Diagnostics
Kick/Ban Clients
<b>Tx Power Control</b>
Adjust Transmit Power by dBm
<b>Configuration</b>
Web-Based Configuration (http)
<b>Firmware Upgrade</b>
Via Web Browser, Settings are Reserved after Upgrade
<b>Administrator Settings</b>
Administrator Username and Password Change
<b>MIB</b>
MIB I, MIB II (RFC1213) and private MIB
<b>System Monitoring</b>
Status Statistic and Event Log
<b>SNMP</b>
V1 / V2c / V3
<b>Traffic Shaping</b>
Incoming and Outgoing Wireless Traffic Shaping
<b>Reset Settings</b>
Reboot (press & hold for 2 seconds). Reset to Factory Default (press & hold for 10 seconds)
<b>Auto-Channel Selection</b>
Automatically Selecting Least Congested Channel
<b>Bandwidth Measurement</b>
IP Range and Bandwidth Management
<b>Schedule Reboot</b>
Reboot Access Point by Minute, Hour, Day, or Week
<b>Backup and Restore</b>
Save and Restore Settings via Web Interface
<b>CLI</b>
Supports Command Line Interface
<b>Diagnosis</b>
IP Pinging Statistics
<b>Log</b>
SysLog and Local Log Support

<b>LED Control</b>
On/Off
<b>AP Detection</b>
Scanning for Available EnGenius APs
<b>Wireless Security</b>
WPA/WPA2 Personal (WPA-PSK using TKIP or AES)
WPA/WPA2 Enterprise (WPA-EAP using TKIP)
802.1X RADIUS Authenticator: MD5/TLS/TTLS, PEAP
SSID Broadcast Enable/Disable
MAC Address Filtering, Up to 50 Fields
Guest Network
L2 Isolation (Access Point mode)
<b>QoS (Quality of Service)</b>
WMM (Wireless Multimedia)
<b>Temperature Range</b>
Operating: -4°F~158°F/-20°C~70°C
Storage: -22°F~176°F/-30°C~80°C
<b>Humidity</b> (non-condensing)
Operating: 90% or less
Storage: 90% or less
<b>Weatherproof</b>
<b>EWS650AP</b> IP55-Rated Enclosure
<b>EWS660AP</b> IP55-Rated Enclosure
<b>EWS860AP</b> IP68-Rated Enclosure
<b>Certifications</b>
FCC, IC, CE
<b>Device Dimensions and Weights</b>
<b>EWS650AP / EWS660AP</b>
Weight: 1.89 lbs. (857.2 g)
Length: 11.97" (304 mm)
Width: 7.13" (181.1 mm)
Height: 1.81" (45.9 mm)
<b>EWS860AP</b>
Weight: 4.17 lbs. (1.8 kg)
Length: 11.22" (284.9 mm)
Width: 8.58" (217.9 mm)
Height: 2.10" (53.3 mm)
<b>Warranty</b>
1-Year Standard





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Version 7.0 - 10/23/15



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.