EnGenius

Datasheet

The Neutron Series

Distributed Network Management Solution

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

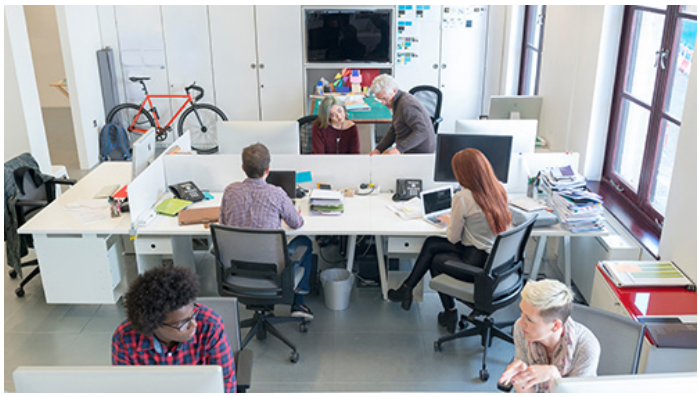
Today's networks must be flexible, robust and as effective as the organizations they serve. Often comprised of different sizes, infrastructures and locations, these distributed networks can place an enormous burden on in-house IT personnel or managed service providers looking to manage, monitor and upgrade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



The EnGenius® Neutron™ Series Distributed Network Management Solution includes

Neutron Managed Access Points

Neutron WLAN Controller Switches

ezMaster™ Network Management Software:

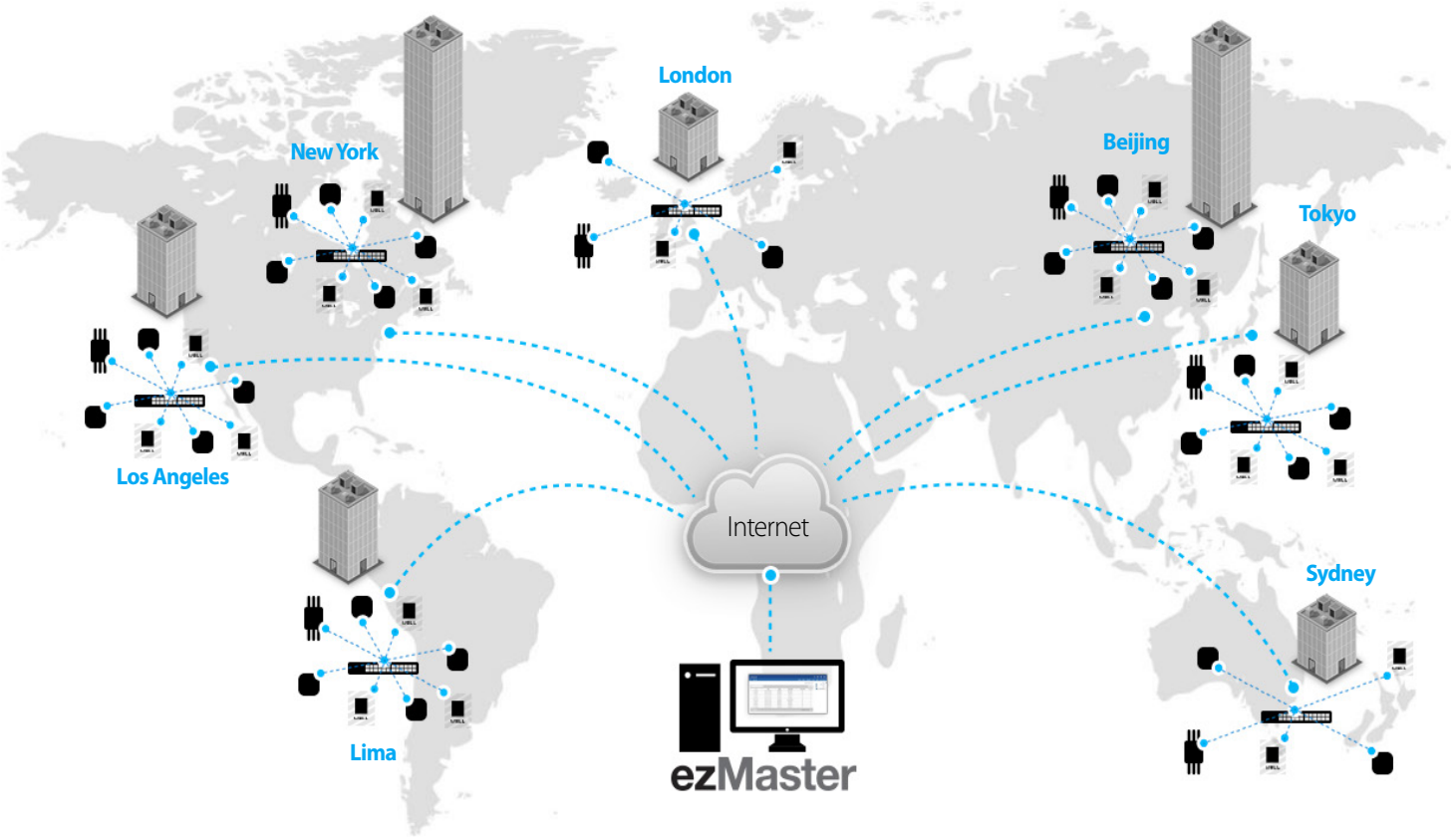
Features and Benefits

- CompleteScalability
  - Manage 1 – 1,000+ APs & Switches
  - 10,000+ Concurrent Users
  - Unlimited Number of Distributed Networks
- UnlimitedFlexibility
  - Operate Neutron APs Standalone or Managed
  - 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
- GreaterAffordability
  - NO AP Licensing, NO Technical Support Fees Affordable Hardware
  - Save Time & Resources
  - Lower TCO per Deployment
- NeutronSeriesDistributedNetworkManagement
  - Centralized Management with ezMaster
  - Full Featured WLAN Controller Switches
  - Versatile Access Point Portfolio
- OptimizeWirelessPerformance
- CreateSecure,BrandedCaptivePortals
- SimplifiedDeployment&Provisioning
- ComprehensiveNetworkProtection
- RichReporting&Analytics
- Enterprise-ClassPerformance
- ComprehensivePre/PostSales&CustomerSupport

*Feature available 2016

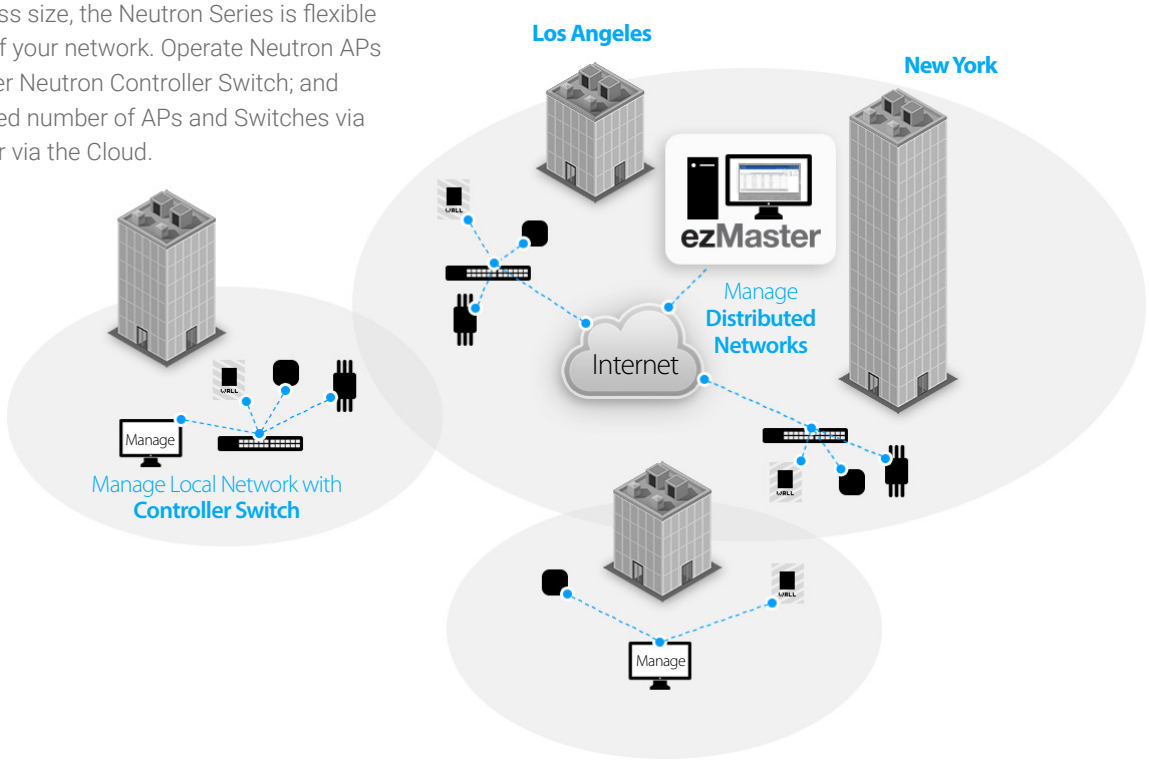
Complete Scalability Regardless of Size

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 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.

The Price Paid Over One Year for 25 APs

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

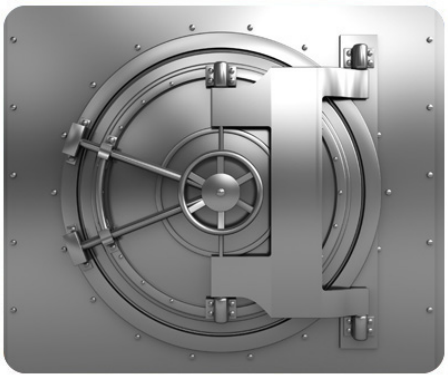
Neutron's versatile line of high-performance, managed, indoor ceiling- mount and outdoor ruggedized APs range from Single-Band 11n models to high-capacity 4x4 Dual-Band 11ac Wave 2 versions,

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

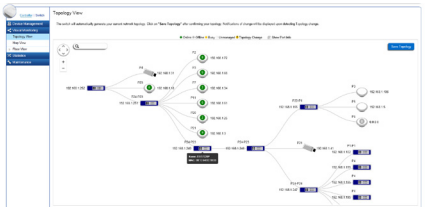
With the Neutron Series, your network is protected from attacks at multiple levels through advanced wireless encryption standards such as Wi-Fi Protected Access Encryption and authentication database, 802.1X with RADIUS server. Network threats are quickly detected and avoided through rogue AP detection,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

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.

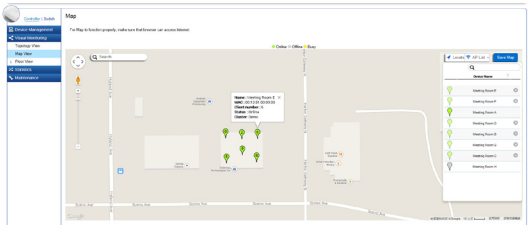
– Statistics View provides real-time and historical visibility of traffic flow.

– 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.

ezMaster

Network Management Software

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.

Simplified Device Management

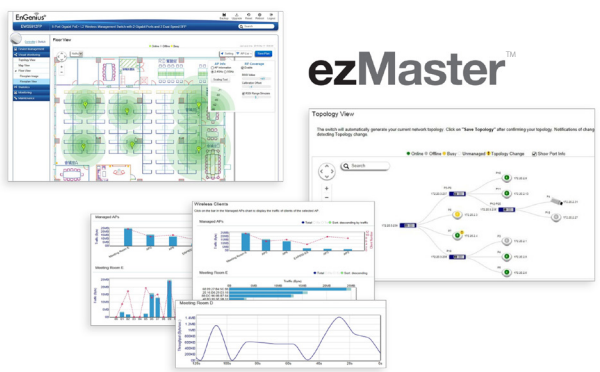
EzMaster Network Management Software makes centralized device management easy. How? Through centralized bulk configuration, provisioning and monitoring, a comprehensive at-a-glance network dashboard, rich analytics and reporting, and much more.

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 (Available 2016)
  - Kick/Ban Clients
  - One-Click Update
  - Remote Logging
  - Seamless Migration
  - SmartSync Redundancy (Available 2016)
  - Syslog

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



Complete Line of the Neutron Series Products

Managed Access Points

Model	Description
EWS300AP	Single-Band 11n 2x2:2 2.4 GHz Ceiling-Mount Wireless Managed Indoor Access Point
EWS310AP	Dual-Band 11n 2x2:2 Ceiling-Mount Wireless Managed Indoor Access Point
EWS320AP	Dual-Band 11n 3x3:3 Ceiling-Mount Wireless Managed Indoor Access Point
EWS350AP	Dual-Band 11ac 2x2:2 Ceiling-Mount Wireless Managed Indoor Access Point
EWS360AP	Dual-Band 11ac 3x3:3 Ceiling-Mount Wireless Managed Indoor Access Point
EWS370AP	Dual-Band 11ac Wave 2 4x4:4 MU-MIMO Ceiling-Mount Wireless Managed Indoor Access Point
EWS371AP	Dual-Band 11ac Wave 2 4x4:4 MU-MIMO Wireless Managed Indoor Access Point – External Antennas
EWS500AP	Single-Band 11n 2x2:2 Wall Plate Wireless Managed Indoor Access Point / Switch
EWS510AP	Dual-Band 11n 2x2:2 Wall Plate Wireless Managed Indoor Access Point / Switch
EWS650AP	Dual-Band 11ac 2x2:2 Wireless Managed Outdoor Access Point
EWS660AP	Dual-Band 11ac 3x3:3 Wireless Managed Outdoor Access Point
EWS860AP	Dual-Band 11ac 3x3:3 Wireless Ruggedized Managed Outdoor Access Point
EWS870AP	Dual-Band 11ac Wave 2 4x4:4 MU-MIMO Wireless Managed Ruggedized Outdoor Access Point
EWS871AP	Dual-Band 11ac Wave 2 4x4:4 MU-MIMO Wireless Managed Ruggedized Outdoor Access Point – External Antennas

WLAN Controller Switches

Model	Description
EWS2910P	8-Port GigE 61W PoE WLAN Controller/Switch – Manage up to 20 Access Points
EWS2910P-KIT-300	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
EWS5912FP	8-Port GigE 130W PoE+ WLAN Management Controller / Switch - Manage up to 50 Access Points
EWS7928P	24-Port GigE 185W PoE+ WLAN Management Controller / Switch - Manage up to 50 Access Points
EWS7928FP	24-Port GigE 370W PoE+ WLAN Management Controller / Switch - Manage up to 50 Access Points
EWS7952FP	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	50	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

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.

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)

Technical Specifications

Switching Capacity

EWS2910P: 20 Gbps

EWS5912FP: 24 Gbps

EWS7928P: 56 Gbps

EWS7928FP: 56 Gbps

EWS7952FP: 104 Gbps

Forwarding Mode

Store and Forward

SDRAM

256MB

Flash Memory

32MB

Port Functions

EWS2910P

8 x 10/100/1000 Mbps Ports in the front panel

2 x 100/1000 Mbps SFP Slot

EWS5912FP

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

EWS7928FP / EWS7928P

24 x 10/100/1000 Mbps Ports in the front panel

4 x 100/1000 Mbps SFP Slot

1 x RJ45 Console Port

EWS7952FP

48 x 10/100/1000 Mbps Ports in the front panel

4 x 100/1000 Mbps SFP Slot

1 x RJ45 Console Port

PoE Capability

EWS2910P

PoE Standard: Ports 1~8 Support IEEE 802.3af

EWS5912FP

PoE Standard: Ports 1~8 Support IEEE 802.3at/af

EWS7928FP / EWS7928P

PoE Standard: Ports 1~24 Support IEEE 802.3at/af

EWS7952FP

PoE Standard: Ports 1~48 Support IEEE802.3at/af

PoE Capable Ports

EWS2910P Ports 1~8 Can Output Up to 15W

EWS5912FP Ports 1~8 Can Output Up to 30W

EWS7928P All Gigabit Ethernet Ports / Up to 30W

EWS7928FP All Gigabit Ethernet Ports / Up to 30W

EWS7952FP All Gigabit Ethernet Ports / Up to 30W

LED Indicators

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)

Wireless Management Features (with Neutron Series Access Points & ezMaster)

EWS2910P: Manages up to 20 Neutron Series APs

EWS5912FP / EWS7952FP / EWS7928P / EWS7928FP: 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 Dislpay

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

L2 Features

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

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)

Device Dimensions and Weights continued

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

Weight: 7.82 lbs. (3.5 kg)

Width: 17.3" (439 mm)

Length: 10.24" (260 mm)

Height: 1.73" (44 mm)

EWS7928FP

Weight: 10.36 lbs. (4.7 kg)

Width: 17.3" (439 mm)

Length: 12.2" (310 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	**EWS371AP**	**EWS370AP**	**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/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 & 5 GHz	2.4 & 5 GHz	2.4 GHz	2.4 & 5 GHz	2.4 GHz
2.4 GHz Max. Data Rate	800 Mbps	800 Mbps	450 Mbps	300 Mbps	450 Mbps	300 Mbps	300 Mbps	300 Mbps	300 Mbps
5 GHz Max. Data Rate	1,733 Mbps	1,733 Mbps	1,300 Mbps	867 Mbps	450 Mbps	300 Mbps	N/A	300 Mbps	N/A
Radio Chains/ Streams	4 x 4:4	4 x 4:4	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)	27 dBm	27 dBm	28 dBm	26 dBm	28 dBm	29 dBm	29 dBm	20 dBm	20 dBm
RF Output Power (5 GHz)	27 dBm	27 dBm	26 dBm	26 dBm	28 dBm	26 dBm	N/A	20 dBm	N/A
Ethernet Ports	2 x Gig Port (PoE+)	2 x Gig Port (PoE+)	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)	- 1 x 10/100 Mbps Access Port (PoE+) - 3 x 10/100 Mbps Access Ports - 1 x Gig Uplink Port (PoE) - 1 x RJ45 Pass Through Ports	- 1 x 10/100 Mbps Access Port (PoE+) - 3 x 10/100 Mbps Access Ports - 1 x Gig Uplink Port (PoE) - 2 x RJ45 Pass Through Ports
110 Punch Down Block	-	-	-	-	-	-	-	1	1
Power-over-Ethernet	802.3at	802.3at	802.3at	802.3at	802.3at	802.3af/at	802.3af/at	802.3af/at	802.3af/at
Power Consumption (Peak)	21W	21W	22.8W	18W	18.2W	15.6W	9.6W	10.8W	7.5W
Integrated Antenna	-	4 x 3 dBi (2.4 GHz) 4 x 3 dBi (5 GHz)	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
External Antenna	8 x 3 dBi (RP-SMA)	-	-	-	-	-	-	-	-

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 4x4 Dual-Band 11ac Wave 2 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.

Key Features

- 11ac Wave 2 4x4 Models
- Beamforming Technology
- Sectorized 3D Antenna (selected models)
- Dynamic Channel Optimization
- Dual-Band (selected 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

Technical Specifications

Frequency

EWS310AP / EWS320AP / EWS350AP / EWS360AP / EWS370AP / EWS371AP / EWS510AP

2.4 and 5 GHz Frequency Bands

EWS300AP / EWS500AP

2.4 GHz Frequency Band

Standards

EWS300AP / EWS500AP

IEEE 802.11b/g/n

EWS310AP / EWS320AP / EWS510AP

IEEE 802.11a/b/g/n

EWS350AP / EWS360AP / EWS370AP / EWS371AP

IEEE 802.11a/b/g/n/ac

Radio I

11b/g/n: 2.412~2.484 GHz

Radio II (Dual-Band models only)

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

Data Rates

EWS300AP / EWS500AP Up to 300 Mbps in 2.4 GHz frequency band

EWS310AP / EWS510AP Up to 300 Mbps in both frequency bands

EWS320AP Up to 450 Mbps in both frequency bands

EWS350AP Up to 300 Mbps in the 2.4 GHz frequency band; Up to 867 Mbps in the 5 GHz band

EWS360AP Up to 450 Mbps in the 2.4 GHz frequency band; Up to 1300 Mbps in the 5 GHz band

EWS370AP / EWS371AP Up to 2.5 GHz; Up to 800 Mbps in the 2.4 GHz band; Up to 1,733 Mbps in the 5 GHz band

Memory

EWS300AP 64MB

EWS310AP / EWS320AP / EWS350AP / EWS360AP / EWS500AP / EWS510AP 128MB

Flash Memory

16MB

Power Consumption

EWS300AP Up to 9.6W

EWS310AP Up to 15.6W

EWS320AP Up to 18.2W

EWS350AP Up to 18W

EWS360AP Up to 22.8W

EWS370AP Up to 21W

EWS371AP Up to 21W

EWS500AP Up to 7.5W

EWS510AP Up to 10.8W

Antennas

EWS300AP

2 x 5 dBi Internal High Gain Antennas

EWS310AP / EWS350AP

2 x 5 dBi 2.4 GHz Internal Antennas

2 x 5 dBi 5 GHz Internal Antennas

EWS320AP

3 x 3 dBi 2.4 GHz Internal Antennas

3 x 5 dBi 5 GHz Internal Antennas

EWS360AP

3 x 5 dBi 2.4 GHz Internal Antennas

3 x 5 dBi 5 GHz Internal Antennas

EWS370AP

8 x 3 dBi (RP-SMA) 2.4 GHz External/Internal Antennas

8 x 3 dBi (RP-SMA) 5 GHz External/Internal Antennas

EWS371AP

8 x 3 dBi 2.4 GHz Internal Antennas

8 x 3 dBi 5 GHz Internal Antennas

EWS500AP

2 x 4 dBi Internal Antennas

EWS510AP

2 x 4 dBi 2.4 GHz Internal Antennas

2 x 5 dBi 5 GHz Internal Antennas

Physical Interface

1 x RJ45 Gigabit Ethernet 10/100/1000 — PoE Capable

1 x Reset Button, 1 x Power Connector

EWS370AP / EWS371AP

1 x Power

Technical Specifications continued

2 x WLAN

1 x LAN 2.4 GHz

1 x LAN 5 GHz

2 x RJ45 10/100/1000 Gigabit Ethernet Ports

(Link Aggregation Achieves 2 Gbps Throughput)

- LAN1: 802.3at PoE Input

- LAN2: Pass Through Port

1 x Reset Button

1 x DC Power Connector

EWS500AP / EWS510AP

1 x 10/100/1000 Mbps Uplink Port with 802.3af/at PoE

3 x 10/100 Mbps Access Ports

1 x 10/100 Mbps Access Port with PoE Output

(support 802.3af output when PoE input is 802.3at)

2 x RJ45 Pass Through Ports

1 x 110 Punch Down Block

1 x DC Power Connector

1 x Reset Button

LED Indicators

EWS300AP

1 x Power

1 x WLAN

1 x LAN

1 x 2.4 GHz

LED Indicators continued

EWS310AP / EWS320AP / EWS350AP / EWS360AP

1 x Power

1 x WLAN (Wireless Connection)

1 x LAN

1 x 2.4 GHz

1 x 5 GHz

EWS500AP / EWS510AP

1 x Power

1 x WAN

1 x 2.4 GHz

1 x 5 GHz (EWS510AP only)

1 x LAN 1-4

Power Requirements

Power Supply: 100 to 240 VDC ± 10%, 50/60 Hz

(depends on different countries)

Active Ethernet (Power-over-Ethernet, IEEE 802.3at/af)

EWS300AP Power-over-Ethernet, IEEE 802.3af

EWS300AP 12V/1A

EWS310AP / EWS320AP / EWS350AP / EWS360AP / EWS370AP / EWS371AP 12V/2A

EWS500AP / EWS510AP 48V/0.8A

Modulations

OFDM: BPSK, QPSK, 26-0AM (EWS300AP) 16-QAM, 64-QAM, 256-QAM (EWS371AP / EWS370AP)
DBPSK, DQPSK, CCK

Operating Channels

2.4 GHz US/Canada 1-11

5 GHz (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

Operation Modes

Access Point

Multiple BSSID

Supports up to 8 SSIDs Per Radio

SSID-to-VLAN Tagging

Supports 802.1q SSID-to-VLAN Tagging

Spanning Tree

Supports 802.1d Spanning Tree Protocol

Wireless

EWS300AP / EWS500AP

Wireless Mode: 11b/11g/11n

EWS310AP / EWS320AP / EWS510AP

Wireless Mode: 11a/11b/11g/11n

Wireless continued

EWS350AP / EWS360AP / EWS370AP / EWS371AP

Wireless Mode: 11a/11b/11g/11n/11ac

Channel Selection (settings vary by country)

Channel Bandwidth (Auto, 20 MHz, 40 MHz, 80 MHz)

Transmission Rate

2.4 GHz 11n only, 11b/b/n mix, 11b only, 11b/g, 11g only

5 GHz (Dual-Band models only): 11ac only, 11n only, 11a/n mix, 11a only

Tx Beamforming (Tx BF)

- EWS370AP / EWS371AP

QoS (Quality of Service)

WMM (Wireless Multimedia)

Wireless Management Features (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)

Wireless Management Features (with ezMaster & Neutron Switch) continued

Unified Configuration Import / Export

Bulk Firmware Upgrade Capability

One-Click Update

Intelligent Diagnostics

Kick/Ban Clients

Technical Specifications continued

Tx Power Control
Adjust Transmit Power by dBm

Configuration
Web-based Configuration (http)

Firmware Upgrade
Via Web Browser

Administrator Setting
Administrator Username and Password Change

MIB
MIB I, MIB II (RFC1213) and private MIB

System Monitoring
Status Statistic and Event Log

SNMP
V1 / V2c / V3

Traffic Shaping
Incoming and Outgoing Wireless Traffic Shaping

Reset Setting
Reboot (press and hold for 2 seconds).

Reset to Factory Default (press and hold for 10 seconds)

Auto-Channel Selection
Automatically Selecting Least Congested Channel

Bandwidth Measurement
IP Range and Bandwidth Management

Schedule Reboot
Reboot Access Point by Minute, Hour, Day, or Week

Backup and Restore
Save and Restore Settings via Web Interface

CLI
Supports Command Line Interface

Diagnosis
IP Pinging Statistics

Log
SysLog and Local Log Support

LED Control
On/Off

AP Detection
Scanning for Available EnGenius APs

Wireless Security
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 Entries

L2 Isolation (Access Point mode)

QoS (Quality of Service)
WMM (Wireless Multimedia)

Temperature Range
Operating: 32º to 104ºF (0 to 40ºC)

Storage temperature: -4ºF to 140ºF (-20ºC to 60ºC)

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

Operating: 90% or less

Physical Security
Kensington Security Slot (N/A for EWS500AP/ EWS510AP)

Certifications
FCC, IC, CE

Device Dimensions and Weights
EWS300AP

Weight: 0.45 lbs. (204.1 g)

Length: 5.07" (128.7 mm)

Width: 5.07" (128.7 mm)

Height: 1.73" (43.9 mm)

EWS310AP

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)

EWS320AP

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)

Device Dimensions and Weights continued
EWS350AP / EWS360AP

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)

EWS370AP / EWS371AP

Weight: 3.7 lbs. (1.67 kg)

Length: 8.46" (215 mm)

Width: 8.46" (215 mm)

Height: 2.2" (55.8 mm)

Device Dimensions and Weights continued
EWS500AP / EWS510AP

Weight: 0.65 lbs. (296 g)

Length: 1.45" (37 mm)

Width: 4.33" (110 mm)

Height: 5.19" (130 mm)

Warranty
1-Year Standard

EnGenius Neutron Series Outdoor Managed Access Points

Models	**EWS871AP**	**EWS870AP**	**EWS860AP**	**EWS660AP**	**EWS650AP**
Standards	802.11b/g/n/ac	802.11b/g/n/ac	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 & 5 GHz	2.4 & 5 GHz
2.4 GHz Max. Data Rate	800 Mbps	800 Mbps	450 Mbps	450 Mbps	300 Mbps
5 GHz Max. Data Rate	1,733 Mbps	1,733 Mbps	1,300 Mbps	1,300 Mbps	867 Mbps
Radio Chains/Streams	4 x 4:4	4 x 4:4	3 x 3:3	3 x 3:3	2 x 2:2
RF Output Power	27 dBm	27 dBm	29 dBm	29 dBm	27 dBm
Ingress Protection Rating	67	67	68	55	55
Primary Ethernet Port	1 x Gig Port	1 x Gig Port	1 x Gig Port	1 x Gig Port	1 x Gig Port
Secondary Ethernet Port	1 x Gig Port	1 x Gig Port	1 x Gig Port (PoE Output)	1 x Gig Port	1 x Gig Port
Console Interface	1 x RJ45	1 x RJ45	N/A	N/A	N/A
PoE Compliant	802.3at (PoE+)	802.3at (PoE+)	802.3at (PoE+)	802.3at (PoE+)	802.3at (PoE+)
Power Consumption (Peak)	21W (w/o PSE) 36W (w/PSE over LAN2)	21W (w/o PSE) 36W (w/PSE over LAN2)	32W	20W	20W
Integrated Antennas	-	4 x 3 dBi (2.4 GHz) 4 x 3 dBi (5 GHz)	N/A	6 x 5 dBi	2 x 5 dBi
External Antenna (N-Type)	4 x 5 dBi (2.4 GHz) 4 x 7 dBi (5 GHz)	N/A	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

E

Standards

IEEE 802.11a/b/g/n/ac

E

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

EWS870AP / EWS871AP

Up to 2.5 GHz; Up to 800 Mbps in 2.4 GHz; up to 1733 Mbps in 5 GHz

Memory

256MB

Flash Memory

16MB

Power Consumption

EWS650AP Up to 23W

EWS660AP Up to 23W

EWS860AP Up to 34W

EWS870AP / EWS871AP Up to 21W (without PSE); Up to 36W (with PSE over LAN 2)

EWS871AP Up to 21W (without PSE)

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

EWS870AP

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

EWS871AP

External High Gain N-Type Antennas 4 x 5 dBi for 2.4 GHz

External High Gain N-Type Antennas 4 x 7 dBi for 5 GHz

Physical Interface

2 x RJ45 10/100/1000 Gigabit Ethernet Ports - PoE Capable 802.3at

1 x Reset Button

1 x Power Connector

Physical Interface continued

EWS870AP / EWS871AP

2 x RJ45 10/100/1000 Gigabit Ethernet Ports

(Link Aggregation achieves 2Gbps Throughput)

- LAN1: Supports 802.3at PoE Input
- LAN2: Data & 802.3af PoE Pass-Through

1 x Console Ethernet Port

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

EWS870AP / EWS871AP

1 x Power

2 x WLAN (Wireless Connection)

2 x LAN (2.4GHz & 5GHz)

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

EWS870AP / EWS871AP

DC IN, 48 V/1.25A

802.3at/48V-54V Input Compliant Source

Active Ethernet (PoE)

PSE Output

LAN2 802.3af power source w/ included power adapter

Surge Protection

4KV

ESD Protection

Contact: 6KV

Air: 8 KV

Modulations

OFDM: BPSK, QPSK, 16-QAM, 26-OAM, 64-QAM, 256-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

Spanning Tree

Supports 802.1d Spanning Tree Protocol

Wireless

Wireless Mode: 11a/11b/11g/11n/11ac

Channel Selection (settings vary by country)

Channel Bandwidth (Auto, 20 MHz, 40 MHz, 80 MHz)

Transmission Rate

2.4 GHz 11n only, 11b/b/n mix, 11b only, 11b/g, 11g only

5 GHz 11ac only, 11n only, 11a/n mix, 11a only

Technical Specifications continued

Tx Beamforming (Tx BF)

- EWS870AP / EWS871AP

QoS

WMM (Wireless Multimedia)

Wireless Management Features (with ezMaster & Neutron Switch)

Access Point Auto Discovery and Provisioning

Access Point Auto IP Assignment

Access Point Cluster Management

Wireless Management Features (with ezMaster & Neutron Switch) continued

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

Tx Power Control

Adjust Transmit Power by dBm

Configuration

Web-Based Configuration (http)

Firmware Upgrade

Administrator Settings

Administrator Username and Password Change

MIB

MIB I, MIB II (RFC1213) and private MIB

System Monitoring

Status Statistic and Event Log

SNMP

V1 / V2c / V3

Traffic Shaping

Incoming and Outgoing Wireless Traffic Shaping

Reset Settings

Reboot (press & hold for 2 seconds).

Reset to Factory Default (press & hold for 10 seconds)

Auto-Channel Selection

Automatically Selecting Least Congested Channel

Bandwidth Measurement

IP Range and Bandwidth Management

Schedule Reboot

Reboot Access Point by Minute, Hour, Day, or Week

Backup and Restore

Save and Restore Settings via Web Interface

CLI

Supports Command Line Interface

Diagnosis

IP Pinging Statistics

Log

SysLog and Local Log Support

LED Control

On/Off

AP Detection

Scanning for Available EnGenius APs

Wireless Security

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 Entries

Guest Network

L2 Isolation (Access Point mode)

QoS (Quality of Service)

WMM (Wireless Multimedia)

Temperature Range

EWS650AP / EWS660AP

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

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

Temperature Range continued

EWS860AP / EWS870AP / EWS871AP

Operating: -4°F to 158°F (-20°C to 70°C)

Humidity (non-condensing)

Operating: 90% or less

Storage: 90% or less

Weatherproof

EWS650AP IP55-Rated Enclosure

EWS660AP IP55-Rated Enclosure

EWS860AP IP68-Rated Enclosure

EWS870AP / EWS871AP IP67-Rated Enclosure

Certifications

FCC, IC, CE

Device Dimensions and Weights

EWS650AP / EWS660AP

Weight: 1.89 lbs. (857.2 g)

Length: 11.97" (304 mm)

Width: 7.13" (181.1 mm)

Height: 1.81" (45.9 mm)

EWS860AP

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)

EWS870AP / EWS871AP

Weight: 6.61 lbs. (2.99 kg)

Length: 9.5" (241.2 mm)

Width: 8.23" (209 mm)

Height: 2.36" (59.9 mm)

Warranty

1-Year Standard

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. 10/14/16

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