



# EdgeSwitch®

Managed PoE+ Gigabit Switches with SFP

Models: ES-8-150W, ES-16-150W, ES-24-250W,  
ES-24-500W, ES-48-500W, ES-48-750W

Non-Blocking Throughput Switching Performance

Gigabit Ethernet RJ45 and SFP+/SFP Ports

Auto-Sensing IEEE 802.3af/at PoE





## Advanced Switching Technology for the Masses

Build and expand your network with Ubiquiti Networks® EdgeSwitch®, part of the EdgeMAX® line of products. The EdgeSwitch is a fully managed, PoE+ Gigabit switch, delivering robust performance and intelligent switching for growing networks.

The EdgeSwitch offers an extensive suite of advanced Layer-2 switching features and protocols, and also provides Layer-3 routing capability.

## Switching Performance

The EdgeSwitch offers the forwarding capacity to simultaneously process traffic on all ports at line rate without any packet loss.

The EdgeSwitch provides total, non-blocking throughput:

- **8-Port Model** Up to 10 Gbps
- **16-Port Model** Up to 18 Gbps
- **24-Port Models** Up to 26 Gbps
- **48-Port Models** Up to 70 Gbps

## PoE+ Flexibility

The EdgeSwitch models are available with 8, 16, 24, or 48 PoE Gigabit Ethernet ports of auto-sensing IEEE 802.3af/at or configurable 24V Passive PoE to simplify your infrastructure.

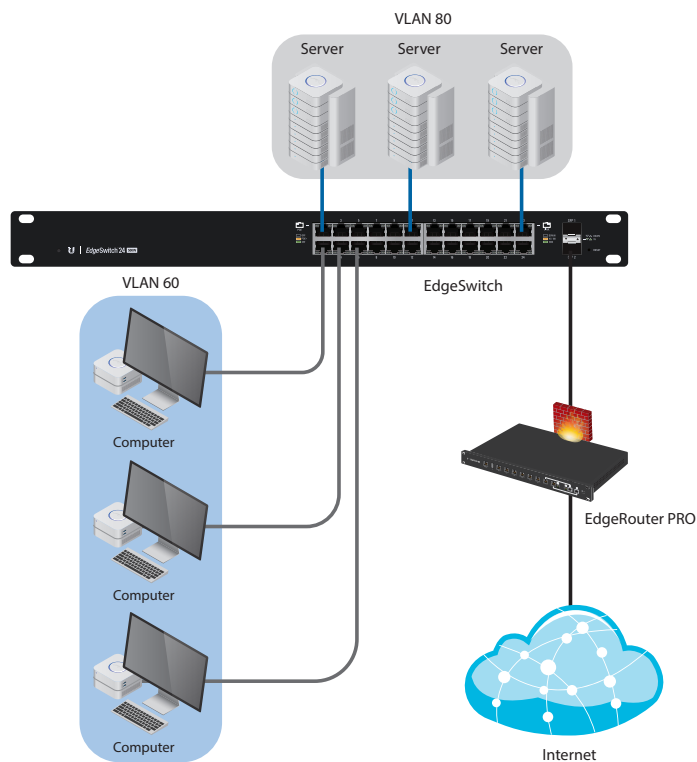
By default, the EdgeSwitch automatically detects 802.3af/at devices so they automatically receive PoE. For 24V Passive PoE devices, manually enable 24V passive PoE using the EdgeSwitch Configuration Interface.

## Fiber Connectivity

The EdgeSwitch provides fiber connectivity options for your growing networks. The 8, 16, and 24-port models include two SFP ports, providing up to 1 Gbps uplinks.

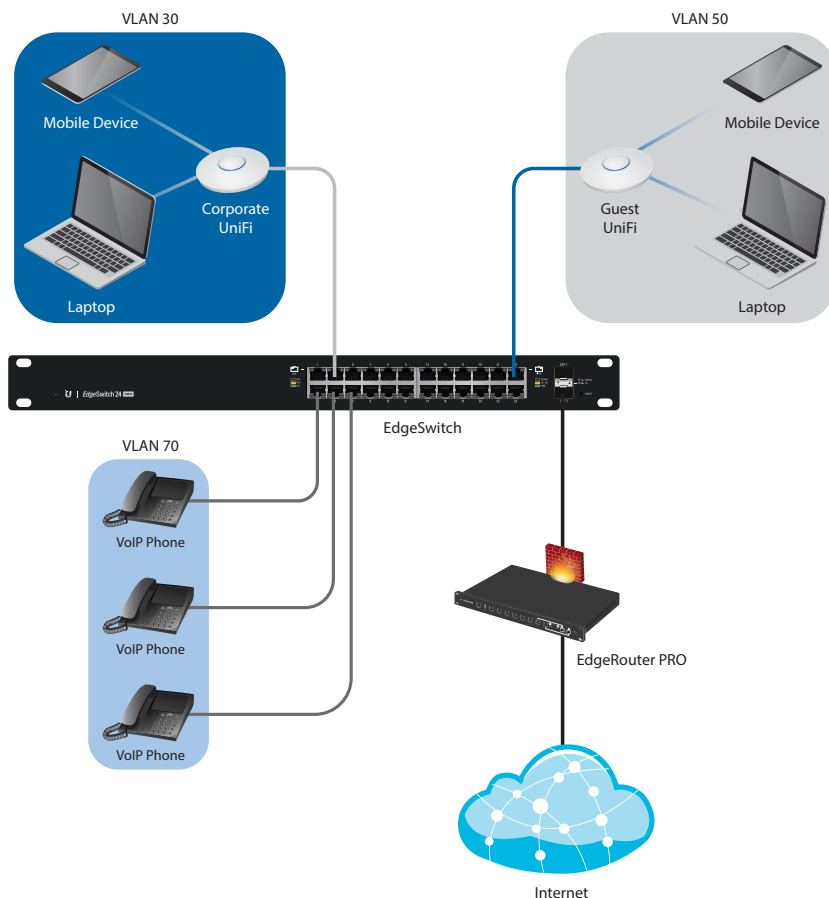
For high-capacity uplinks, the 48-port models include two SFP and two SFP+ ports, providing uplinks of up to 10 Gbps.

## Deployment Examples



VLANs for Servers and Computers

The EdgeSwitch connects to the Ubiquiti EdgeRouter™ PRO via an SFP uplink.



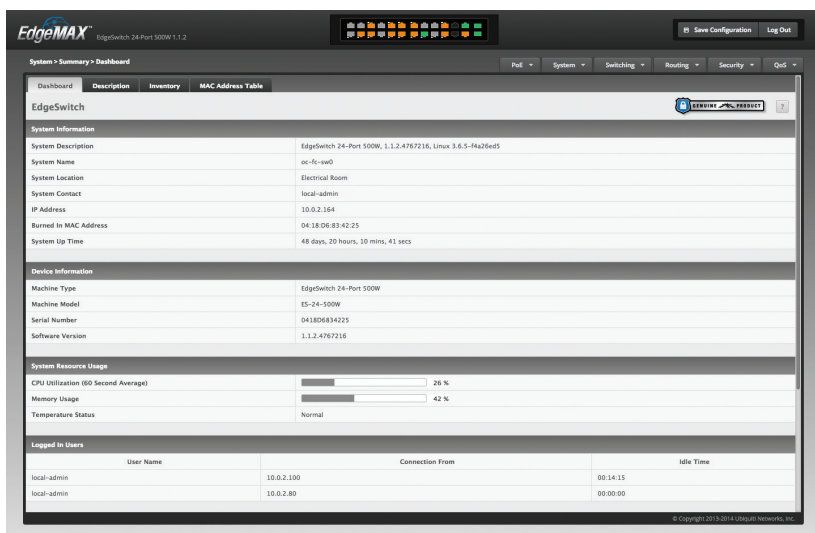
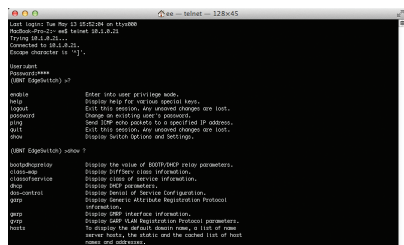
VLANs for Corporate Wireless, Guest Wireless, and VoIP

For wireless access, two Ubiquiti UniFi® Access Points connect to the EdgeSwitch.

## Comprehensive User Interface

Designed for convenient management, the EdgeSwitch Configuration Interface allows administrators to configure and monitor switch features in a graphical user interface.

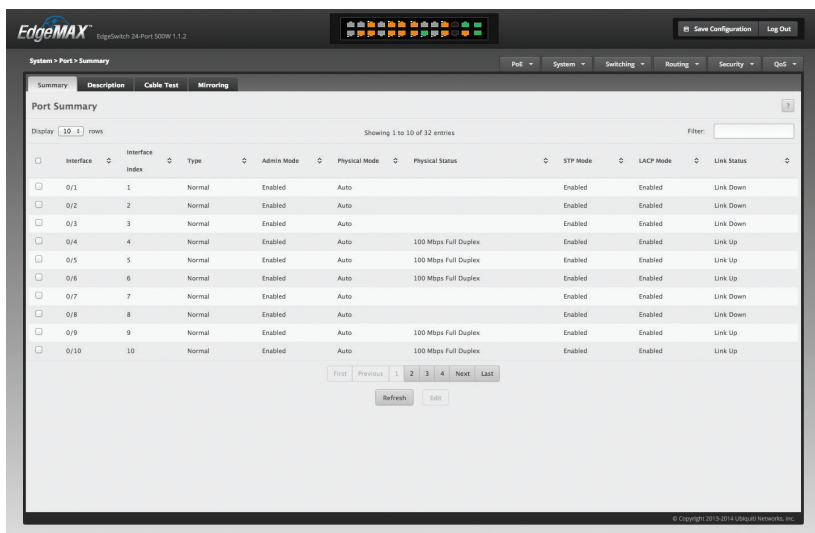
For advanced users, an industry-standard command-line interface (CLI) is available through the serial console port, telnet, and SSH.



## Powerful Functionality

The EdgeSwitch uses a sophisticated operating system that provides basic switching features, PoE configuration per port, and a variety of advanced features including:

- MSTP/RSTP/STP
- VLAN, Private VLAN, Voice VLAN
- Link Aggregation
- DHCP Snooping, IGMP Snooping
- TACACS+, RADIUS, 802.1X, MAC Filtering, ACL
- DiffServ, CoS
- Static Routing, Policy-Based Routing
- DHCP Server Functionality



# Models

## EdgeSwitch® 8 150W

Model: ES-8-150W

- (8) Gigabit RJ45 Ports
- (2) SFP Ports
- (1) Serial Console Port
- Non-Blocking Throughput: 10 Gbps
- Switching Capacity: 20 Gbps
- Forwarding Rate: 14.88 Mpps
- Maximum Power Consumption: 150W
- Supports POE+ IEEE 802.3at/af and 24V Passive PoE
- Wallmountable with Mount Brackets (Included)
- Desktop-Mountable (Do not physically stack the ES-8-150W.)
- DC Input Option (Redundant or Stand-Alone)



## EdgeSwitch® 16 150W

Model: ES-16-150W

- (16) Gigabit RJ45 Ports
- (2) SFP Ports
- (1) Serial Console Port
- Non-Blocking Throughput: 18 Gbps
- Switching Capacity: 36 Gbps
- Forwarding Rate: 26.78 Mpps
- Maximum Power Consumption: 150W
- Supports POE+ IEEE 802.3at/af and 24V Passive PoE
- Rackmountable with Rack-Mount Brackets (Included)



## EdgeSwitch® 24 250W

Model: ES-24-250W

- (24) Gigabit RJ45 Ports
- (2) SFP Ports
- (1) Serial Console Port
- Non-Blocking Throughput: 26 Gbps
- Switching Capacity: 52 Gbps
- Forwarding Rate: 38.69 Mpps
- Maximum Power Consumption: 250W
- Supports POE+ IEEE 802.3at/af and 24V Passive PoE
- Rackmountable





## EdgeSwitch® 24 500W

Model: ES-24-500W

- (24) Gigabit RJ45 Ports
- (2) SFP Ports
- (1) Serial Console Port
- Non-Blocking Throughput: 26 Gbps
- Switching Capacity: 52 Gbps
- Forwarding Rate: 38.69 Mpps
- Maximum Power Consumption: 500W
- Supports POE+ IEEE 802.3at/af and 24V Passive PoE
- Rackmountable



## EdgeSwitch® 48 500W

Model: ES-48-500W

- (48) Gigabit RJ45 Ports
- (2) SFP+ Ports
- (2) SFP Ports
- (1) Serial Console Port
- Non-Blocking Throughput: 70 Gbps
- Switching Capacity: 140 Gbps
- Forwarding Rate: 104.16 Mpps
- Maximum Power Consumption: 500W
- Supports POE+ IEEE 802.3at/af and 24V Passive PoE
- Rackmountable



## EdgeSwitch® 48 750W

Model: ES-48-750W

- (48) Gigabit RJ45 Ports
- (2) SFP+ Ports
- (2) SFP Ports
- (1) Serial Console Port
- Non-Blocking Throughput: 70 Gbps
- Switching Capacity: 140 Gbps
- Forwarding Rate: 104.16 Mpps
- Maximum Power Consumption: 750W
- Supports POE+ IEEE 802.3at/af and 24V Passive PoE
- Rackmountable



# EdgeSwitch® 8 150W

## Hardware Specifications

| ES-8-150W                     |                                                                           |                                                                                  |                              |
|-------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------|
| Dimensions                    | 204 x 43 x 235 mm (8.03 x 1.69 x 9.25")                                   |                                                                                  |                              |
| Weight                        | Without Mount Brackets                                                    | With Mount Brackets                                                              |                              |
|                               | 1.72 kg (3.79 lb)                                                         | 1.8 kg (3.96 lb)                                                                 |                              |
| Total Non-Blocking Throughput | 10 Gbps                                                                   |                                                                                  |                              |
| Switching Capacity            | 20 Gbps                                                                   |                                                                                  |                              |
| Forwarding Rate               | 14.88 Mpps                                                                |                                                                                  |                              |
| Max. Power Consumption        | Includes PoE Output                                                       | Excludes PoE Output                                                              |                              |
|                               | 150W                                                                      | 20W                                                                              |                              |
| Power Method                  | AC                                                                        | DC                                                                               |                              |
|                               | 100-240VAC/50-60 Hz, AC/DC Integrated PSU, Universal Input                | 42 to 56VDC External, (Self-Correcting Polarity Protection) Terminal Block Input |                              |
| Power Supply                  | AC/DC, Internal, 150W DC                                                  |                                                                                  |                              |
| LEDs Per Port                 | RJ45 Data Ports                                                           | SFP Data Ports                                                                   |                              |
|                               | PoE, Speed/Link/Activity                                                  | Speed/Link/Activity                                                              |                              |
| Networking Interfaces         | (8) 10/100/1000 Mbps RJ45 Ethernet Ports<br>(2) 1 Gbps SFP Ethernet Ports |                                                                                  |                              |
| Management Interface          | (1) RJ45 Serial Port, Ethernet In/Out Band                                |                                                                                  |                              |
| Certifications                | CE, FCC, IC                                                               |                                                                                  |                              |
| Wallmount                     | Yes                                                                       |                                                                                  |                              |
| ESD/EMP Protection            | Air: ±24 kV, Contact: ±24 kV                                              |                                                                                  |                              |
| Operating Temperature         | Internal AC/DC @ 150W                                                     | Internal AC/DC @ 100W                                                            | External DC                  |
|                               | -25 to 45° C (-13 to 113° F)                                              | -25 to 55° C (-13 to 131° F)                                                     | -25 to 60° C (-13 to 140° F) |
| Operating Humidity            | 5 to 95% Noncondensing                                                    |                                                                                  |                              |
| Shock and Vibration           | ETSI300-019-1.4 Standard                                                  |                                                                                  |                              |

| PoE Per Port                      |                                                                                   |
|-----------------------------------|-----------------------------------------------------------------------------------|
| PoE Interfaces                    | POE+ IEEE 802.3af/at (Pins 1, 2+; 3, 6-)<br>24VDC Passive PoE (Pins 4, 5+; 7, 8-) |
| Max. PoE+ Wattage per Port by PSE | 34.2W                                                                             |
| Voltage Range 802.3at Mode        | 50–57V                                                                            |
| Max. Passive PoE Wattage per Port | 17W                                                                               |
| 24V Passive PoE Voltage Range     | 20-27V                                                                            |

# EdgeSwitch® 16 150W

## Hardware Specifications

| ES-16-150W                    |                                                                            |                     |
|-------------------------------|----------------------------------------------------------------------------|---------------------|
| Dimensions                    | 443 x 43 x 221 mm (17.44 x 1.69 x 8.70")                                   |                     |
| Weight                        | Without Mount Brackets                                                     | With Mount Brackets |
|                               | 2.80 kg (6.17 lb)                                                          | 2.89 kg (6.37 lb)   |
| Total Non-Blocking Throughput | 18 Gbps                                                                    |                     |
| Switching Capacity            | 36 Gbps                                                                    |                     |
| Forwarding Rate               | 26.78 Mpps                                                                 |                     |
| Max. Power Consumption        | Includes PoE Output                                                        | Excludes PoE Output |
|                               | 150W                                                                       | 28W                 |
| Power Method                  | 100-240VAC/50-60 Hz, Universal Input                                       |                     |
| Power Supply                  | AC/DC, Internal, 150W DC                                                   |                     |
| LEDs Per Port                 | RJ45 Data Ports                                                            | SFP Data Ports      |
|                               | PoE, Speed/Link/Activity                                                   | Speed/Link/Activity |
| Networking Interfaces         | (16) 10/100/1000 Mbps RJ45 Ethernet Ports<br>(2) 1 Gbps SFP Ethernet Ports |                     |
| Management Interface          | (1) RJ45 Serial Port, Ethernet In/Out Band                                 |                     |
| Certifications                | CE, FCC, IC                                                                |                     |
| Rackmount                     | Yes, 1U High                                                               |                     |
| ESD/EMP Protection            | Air: ±24 kV, Contact: ±24 kV                                               |                     |
| Operating Temperature         | -5 to 40° C (23 to 104° F)                                                 |                     |
| Operating Humidity            | 5 to 95% Noncondensing                                                     |                     |
| Shock and Vibration           | ETSI300-019-1.4 Standard                                                   |                     |

| PoE Per Port                      |                                                                                   |
|-----------------------------------|-----------------------------------------------------------------------------------|
| PoE Interfaces                    | POE+ IEEE 802.3af/at (Pins 1, 2+; 3, 6-)<br>24VDC Passive PoE (Pins 4, 5+; 7, 8-) |
| Max. PoE+ Wattage per Port by PSE | 34.2W                                                                             |
| Voltage Range 802.3at Mode        | 50–57V                                                                            |
| Max. Passive PoE Wattage per Port | 17W                                                                               |
| 24V Passive PoE Voltage Range     | 20-27V                                                                            |

# EdgeSwitch® 24

## Hardware Specifications

| ES-24-250W, ES-24-500W        |                                                                            |                     |                          |                     |
|-------------------------------|----------------------------------------------------------------------------|---------------------|--------------------------|---------------------|
| Dimensions                    | 485 x 43.7 x 285.4 mm (19.09 x 1.72 x 11.24")                              |                     |                          |                     |
| Weight                        | ES-24-250W                                                                 |                     | ES-24-500W               |                     |
|                               | 4.7 kg (10.4 lb)                                                           |                     | 4.8 kg (10.6 lb)         |                     |
| Total Non-Blocking Throughput | 26 Gbps                                                                    |                     |                          |                     |
| Switching Capacity            | 52 Gbps                                                                    |                     |                          |                     |
| Forwarding Rate               | 38.69 Mpps                                                                 |                     |                          |                     |
| Max. Power Consumption        | ES-24-250W                                                                 |                     | ES-24-500W               |                     |
|                               | Includes PoE Output                                                        | Excludes PoE Output | Includes PoE Output      | Excludes PoE Output |
|                               | 250W                                                                       | 30W                 | 500W                     | 30W                 |
| Power Method                  | 100-240VAC/50-60 Hz, Universal Input                                       |                     |                          |                     |
| Power Supply                  | ES-24-250W                                                                 |                     | ES-24-500W               |                     |
|                               | AC/DC, Internal, 250W DC                                                   |                     | AC/DC, Internal, 500W DC |                     |
| LEDs Per Port                 | RJ45 Data Ports                                                            |                     | SFP Data Ports           |                     |
|                               | PoE, Speed/Link/Activity                                                   |                     | Speed/Link/Activity      |                     |
| Networking Interfaces         | (24) 10/100/1000 Mbps RJ45 Ethernet Ports<br>(2) 1 Gbps SFP Ethernet Ports |                     |                          |                     |
| Management Interface          | (1) RJ45 Serial Port, Ethernet In/Out Band                                 |                     |                          |                     |
| Certifications                | CE, FCC, IC                                                                |                     |                          |                     |
| Rackmount                     | Yes, 1U High                                                               |                     |                          |                     |
| ESD/EMP Protection            | Air: ±24 kV, Contact: ±24 kV                                               |                     |                          |                     |
| Operating Temperature         | -5 to 40° C (23 to 104° F)                                                 |                     |                          |                     |
| Operating Humidity            | 5 to 95% Noncondensing                                                     |                     |                          |                     |
| Shock and Vibration           | ETSI300-019-1.4 Standard                                                   |                     |                          |                     |

| PoE Per Port                      |                                                                                   |
|-----------------------------------|-----------------------------------------------------------------------------------|
| PoE Interfaces                    | POE+ IEEE 802.3af/at (Pins 1, 2+; 3, 6-)<br>24VDC Passive PoE (Pins 4, 5+; 7, 8-) |
| Max. PoE+ Wattage per Port by PSE | 34.2W                                                                             |
| Voltage Range 802.3at Mode        | 50–57V                                                                            |
| Max. Passive PoE Wattage per Port | 17W                                                                               |
| 24V Passive PoE Voltage Range     | 20-27V                                                                            |



# EdgeSwitch® 48

## Hardware Specifications

| ES-48-500W, ES-48-750W        |                                                                                                                 |                     |                          |                     |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------|--------------------------|---------------------|
| Dimensions                    | 485 x 43.7 x 374.6 mm (19.09 x 1.72 x 14.75")                                                                   |                     |                          |                     |
| Weight                        | ES-48-500W                                                                                                      |                     | ES-48-750W               |                     |
|                               | 6.1 kg (13.5 lb)                                                                                                |                     | 6.5 kg (14.3 lb)         |                     |
| Total Non-Blocking Throughput | 70 Gbps                                                                                                         |                     |                          |                     |
| Switching Capacity            | 140 Gbps                                                                                                        |                     |                          |                     |
| Forwarding Rate               | 104.16 Mpps                                                                                                     |                     |                          |                     |
| Max. Power Consumption        | ES-48-500W                                                                                                      |                     | ES-48-750W               |                     |
|                               | Includes PoE Output                                                                                             | Excludes PoE Output | Includes PoE Output      | Excludes PoE Output |
|                               | 500W                                                                                                            | 64W                 | 750W                     | 64W                 |
| Power Method                  | 100-240VAC/50-60 Hz, Universal Input                                                                            |                     |                          |                     |
| Power Supply                  | ES-48-500W                                                                                                      |                     | ES-48-750W               |                     |
|                               | AC/DC, Internal, 500W DC                                                                                        |                     | AC/DC, Internal, 750W DC |                     |
| LEDs Per Port                 | RJ45 Data Ports                                                                                                 |                     | SFP+/SFP Data Ports      |                     |
|                               | PoE, Speed/Link/Activity                                                                                        |                     | Speed/Link/Activity      |                     |
| Networking Interfaces         | (48) 10/100/1000 Mbps RJ45 Ethernet Ports<br>(2) 1/10 Gbps SFP+ Ethernet Ports<br>(2) 1 Gbps SFP Ethernet Ports |                     |                          |                     |
| Management Interface          | (1) RJ45 Serial Port, Ethernet In/Out Band                                                                      |                     |                          |                     |
| Certifications                | CE, FCC, IC                                                                                                     |                     |                          |                     |
| Rackmount                     | Yes, 1U High                                                                                                    |                     |                          |                     |
| ESD/EMP Protection            | Air: ±24 kV, Contact: ±24 kV                                                                                    |                     |                          |                     |
| Operating Temperature         | -5 to 40° C (23 to 104° F)                                                                                      |                     |                          |                     |
| Operating Humidity            | 5 to 95% Noncondensing                                                                                          |                     |                          |                     |
| Shock and Vibration           | ETSI300-019-1.4 Standard                                                                                        |                     |                          |                     |

| PoE Per Port                      |                                                                                   |
|-----------------------------------|-----------------------------------------------------------------------------------|
| PoE Interfaces                    | POE+ IEEE 802.3af/at (Pins 1, 2+; 3, 6-)<br>24VDC Passive PoE (Pins 4, 5+; 7, 8-) |
| Max. PoE+ Wattage per Port by PSE | 34.2W                                                                             |
| Voltage Range 802.3at Mode        | 50–57V                                                                            |
| Max. Passive PoE Wattage per Port | 17W                                                                               |
| 24V Passive PoE Voltage Range     | 20-27V                                                                            |

# Software Specifications

| Software Information      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Core Switching Features   | <ul style="list-style-type: none"> <li>• ANSI/TIA-1057: LLDP-Media Endpoint Discovery (MED)</li> <li>• IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)</li> <li>• IEEE 802.1D: Spanning Tree Compatibility</li> <li>• IEEE 802.1S: Multiple Spanning Tree Compatibility</li> <li>• IEEE 802.1W: Rapid Spanning Tree Compatibility</li> <li>• IEEE 802.1Q: Virtual LANs with Port-Based VLANs</li> <li>• IEEE 802.1p: Ethernet Priority with User Provisioning and Mapping</li> <li>• IEEE 802.1X: Port-Based Authentication with Guest VLAN Support</li> <li>• IEEE 802.3: 10BASE-T</li> <li>• IEEE 802.3u: 100BASE-T</li> <li>• IEEE 802.3ab: 1000BASE-T</li> <li>• IEEE 802.1ak: Virtual Bridged Local Area Networks - Amendment 07: Multiple Registration Protocol</li> <li>• IEEE 802.3ac: VLAN Tagging</li> <li>• IEEE 802.3ad: Link Aggregation</li> <li>• IEEE 802.3x: Flow Control</li> <li>• IEEE 802.1D-2004: Generic Attribute Registration Protocol: Clause 12 (G)</li> <li>• IEEE 802.1D-2004: Dynamic L2 multicast registration: Clause 10 (GMRP)</li> <li>• IEEE 802.1Q-2003: Dynamic VLAN registration: Clause 11.2 (GVRP)</li> <li>• RFC 4541: Considerations for Internet Group Management Protocol (IGMP) Snooping Switches</li> <li>• RFC 5171: Unidirectional Link Detection (UDLD) Protocol</li> </ul> |
| Advanced Layer 2 Features | <ul style="list-style-type: none"> <li>• Broadcast Storm Recovery</li> <li>• Broadcast/Multicast/Unknown Unicast Storm Recovery</li> <li>• DHCP Snooping</li> <li>• IGMP Snooping Querier</li> <li>• Independent VLAN Learning (IVL) Support</li> <li>• Jumbo Ethernet Frame Support</li> <li>• Port MAC Locking</li> <li>• Port Mirroring</li> <li>• Protected Ports</li> <li>• Static MAC Filtering</li> <li>• TACACS+</li> <li>• Voice VLANs</li> <li>• Unauthenticated VLAN</li> <li>• Internal 802.1X Authentication Server</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Software Information    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Platform Specifications | <ul style="list-style-type: none"> <li>• DHCP Server <ul style="list-style-type: none"> <li>• Maximum Number of Pools: 128</li> <li>• Maximum Number of Leases (Total): 2048</li> </ul> </li> <li>• Routing <ul style="list-style-type: none"> <li>• Number of Routes: 16</li> <li>• Number of Routing Interfaces: 15</li> </ul> </li> <li>• VLANs: 4093</li> <li>• MAC Addresses: 8k</li> <li>• ARP Cache Size: 493</li> <li>• MSTP Instances: 4</li> <li>• LAGs: 6</li> <li>• ACLs: 100 with 10 Rules per Port</li> <li>• Traffic Classes (Queues): 8</li> </ul>                                                                                                                                                                                                                                                                          |
| System Facilities       | <ul style="list-style-type: none"> <li>• Event and Error Logging Facility</li> <li>• Run-Time and Configuration Download Capability</li> <li>• PING Utility</li> <li>• FTP/TFTP Transfers via IPv4/IPv6</li> <li>• Malicious Code Detection</li> <li>• BootP and DHCP</li> <li>• RFC 2021: Remote Network Monitoring Management Information Base Version 2</li> <li>• RFC 2030: Simple Network Time Protocol (SNTP)</li> <li>• RFC 2819: Remote Network Monitoring Management Information Base</li> <li>• RFC 2865: RADIUS Client</li> <li>• RFC 2866: RADIUS Accounting</li> <li>• RFC 2868: RADIUS Attributes for Tunnel Protocol Support</li> <li>• RFC 2869: RADIUS Extensions</li> <li>• RFC 3579: RADIUS Support for EAP</li> <li>• RFC 3580: IEEE 802.1X RADIUS Usage Guidelines</li> <li>• RFC 3164: BSD Syslog Protocol</li> </ul> |
| Management              | <ul style="list-style-type: none"> <li>• Web UI</li> <li>• Industry-Standard CLI</li> <li>• IPv6 Management</li> <li>• Password Management</li> <li>• Autoinstall Support for Firmware Images and Configuration Files</li> <li>• SNMP v1, v2, and v3</li> <li>• SSH 1.5 and 2.0</li> <li>• SSL 3.0 and TLS 1.0</li> <li>• Secure Copy (SCP)</li> <li>• Telnet (Multi-Session Support)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Layer 3 Routing         | <ul style="list-style-type: none"> <li>• Static Routing</li> <li>• Policy Based Routing</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## Software Information

### QoS

- Access Control Lists (ACLs), Permit/Deny Actions for Inbound IP and Layer 2 Traffic Classification Based on:
  - Time-Based ACL
  - Source/Destination IP Address
  - TCP/UDP Source/Destination Port
  - IP Protocol Type
  - Type of Service (ToS) or Differentiated Services (DSCP) Field
  - Source/Destination MAC Address
  - EtherType
  - IEEE 802.1p User Priority
  - VLAN ID
  - RFC 1858: Security Considerations for IP Fragment Filtering
- Optional ACL Rule Attributes
  - Assign Flow to a Specific Class of Service (CoS) Queue
  - Redirect Matching Traffic Flows
- Differentiated Services (DiffServ)
  - Classify Traffic Based on Same Criteria as ACLs
  - Mark the IP DSCP or Precedence Header Fields, Optional
  - Police the Flow to a Specific Rate with Two-Color Aware Support
  - RFC 2474: Definition of the Differentiated Services Field (DS field) in the IPv4 and IPv6 Headers
  - RFC 2475: An Architecture for Differentiated Services
  - RFC 2597: Assured Forwarding Per-Hop Behavior (PHB) Group
  - RFC 3246: An Expedited Forwarding PHB
  - RFC 3260: New Terminology and Clarifications for DiffServ
- Class of Service (CoS) Queue Mapping Configuration
  - AutoVoIP: Automatic CoS Settings for VoIP
  - IP DSCP-to-Queue Mapping
  - Configurable Interface Trust Mode (IEEE 802.1p, DSCP, or Untrusted)
  - Interface Egress Shaping Rate
  - Strict Priority versus Weighted Scheduling per Queue

