

# EAS Series



## Highlights

The Extreme Networks® EAS family of switches provides consistent, secure, cost-effective network access to support exploding mobility of users, applications and devices. These switches complement an intelligent and high-performance core and edge, providing IT managers with an enterprise-class access layer to build out their network infrastructure.

- Dense connectivity for growing enterprise access requirements.
- Cost-effective enterprise access.
- Simple and flexible management.

## Overview

Growing numbers of users, applications and devices are demanding access to the network. This is pushing the limits of the typical campus network access layer and driving up costs. What is needed is dense network access connectivity supported by an enterprise-class vendor with a holistic network approach, helping to control costs.

The EAS family of Gigabit switches deliver the connectivity and cost effectiveness needed at the network access layer. These purpose-built switches, available in both PoE plus (Power over Ethernet) and non-PoE 24-port models, feature standards-based, Quality of Service (QoS) to support devices such as VoIP phones and security cameras. Traffic from the EAS family of switches is forwarded to the more advanced ExtremeXOS® edge, extending the benefits of sophisticated identity management and complementing Extreme Networks end-to-end intelligence and automation portfolio as depicted in Figure 1 below.

### EAS 200-24p

The EAS 200-24p is a Layer 3-Lite Gigabit Ethernet access switch designed for the access layer of the mobile network. It provides 24 ports of 10/100/1000BASE-TX PoE plus RJ-45 connectivity. Four of these 24 ports can be optionally used for 1000BASE-X SFP. Each 10/100/1000 Mbps port supports 802.3af and 802.3at PoE standard with a power budget of 370 watts.

### EAS 100-24t

The EAS 100-24t is a Layer 2+ Gigabit switch designed for simple Ethernet access connectivity for up to 24 devices using 10/100/1000BASE-TX RJ-45. Four of these 24 ports can be optionally use for 1000BASE-X SFP. In addition to being an easy fit into a standard rack with its one rack unit height, the fan-less design and short depth of the EAS 100-24t enables access to a broad range of deployments with space and noise-level constraints.

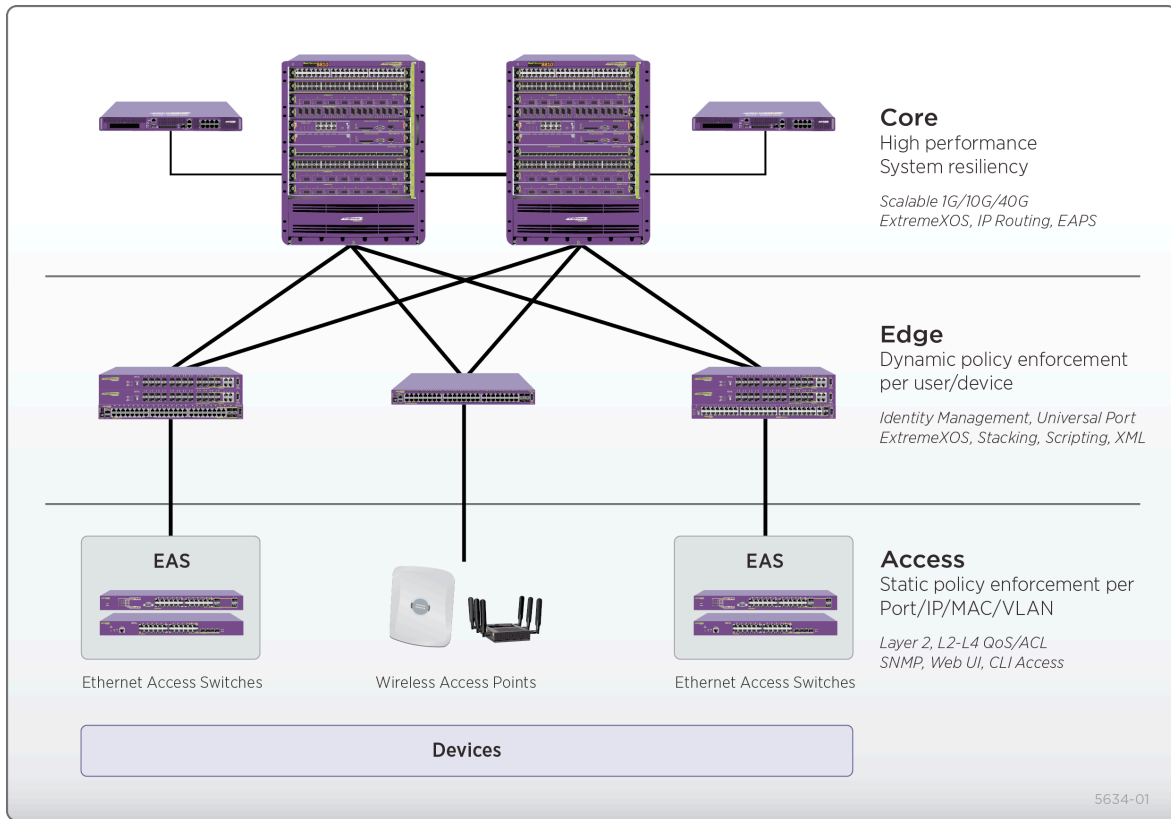


Figure 1: Enterprise Campus Network Architecture

### Layer 3-Lite 24-port Gigabit PoE+ Ethernet Switch for Enterprise Access

#### EAS 200-24p Highlights

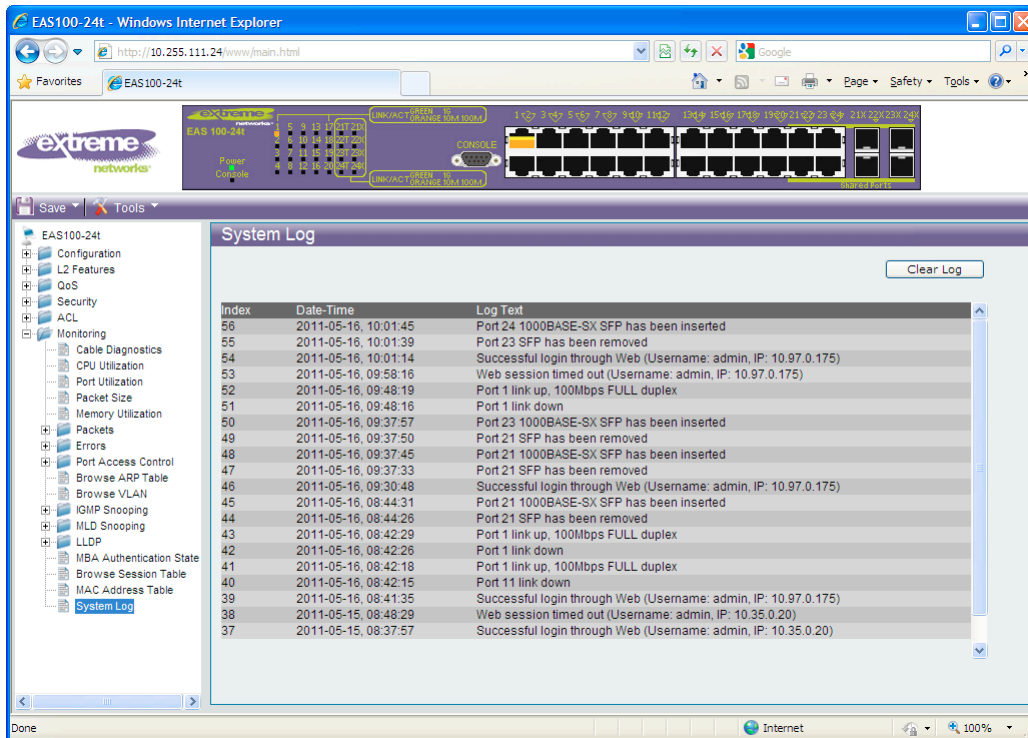
- 802.1D/802.1w/802.1s Spanning Tree Protocol (STP)
- User-friendly web-based GUI
- Loopback Detection (LBD)
- Bridge Protocol Data Unit (BPDU) filtering
- Internet Group Management Protocol/Multicast Listener Discovery (IGMP/MLD) snooping
- Port/Flow- based bandwidth control
- Granular bandwidth control down to 64Kbps
- POE plus
- Multi-Layer Access Control List (ACL)
- Dynamic Host Configuration Protocol (DHCP) Server Screening
- Address Resolution Protocol (ARP) Spoofing Prevention
- IPv6 Neighbor Discovery (ND)
- IPv6 Management

### Layer 2+ 24-port Gigabit Ethernet Switch for Enterprise Access

#### EAS 100-24t Highlights

- 802.1D/802.1w/802.1s Spanning Tree Protocol (STP)
- User-friendly web-based GUI
- Loopback Detection (LBD)
- Bridge Protocol Data Unit (BPDU) attack protection
- Internet Group Management Protocol/Multicast Listener Discovery (IGMP/MLD) snooping
- Port/Flow- based bandwidth control
- Granular bandwidth control down to 64Kbps
- Fan-less design





## Switch Management

The EAS family of switches can be managed using a command line interface (CLI), Simple Network Management Protocol (SNMP) and with a user-friendly web-based Graphical User Interface (GUI).

## Technical Specifications

### EAS 200-24p

#### General Specifications

##### Interface

- 24 ports of 10/100/1000BASE-TX PoE+ RJ-45 with 4 ports shared 1000BASE-X SFP

##### Console Port

- RJ-45

##### Performance

##### Switching Capacity

- 48 Gbps

##### CPU

- MIPS
- 400 MHz

##### Packet Forwarding Rate

- 64-Byte
- 65.48 Mpps

##### Packet Buffer Memory

- 2 MB

##### Flash Memory

- 32 MB

#### PoE

##### PoE Standard

- IEEE 802.3af
- IEEE 802.3at

##### PoE Power Budget

- 370 watts

##### MTBF (Hours)

- >282k

##### Acoustics Max

- TBD

##### Heat Dissipation

- 1382 BTU/h (with 370W PoE load)

##### Power Input

- 100 to 240VAC, 50 to 60 Hz Internal Universal Power Supply

##### Max Power Consumption

- 404.9 Watts

##### Dimensions (W x D x H)

- 440 x 310 x 44 mm / 17.3 x 12.2 x 1.7 inches

##### Weight

- 5.3 kg / 11.7 lbs

#### Ventilation

- Smart Fan (> 40° C; High Speed; < 35°; Low Speed)

#### Operating Temperature

- 0 to 50° C

#### Storage Temperature

- -40 to 70° C

#### Operating Humidity

- 10% to 90% RH

#### Storage Humidity

- 10% to 90% RH

#### Layer 2 Features

- MAC Address Table: 16K
- Flow Control
  - 802.3x Flow Control
  - HOL Blocking Prevention
- Jumbo Frame up to 13K Bytes
- Spanning Tree Protocols
  - 802.1D STP
  - 802.1w RSTP
  - 802.1s MSTP
  - BPDU Filtering
  - Root Restriction
- Loopback Detection

## Technical Specifications

### Layer 2 Features (cont.)

- 802.3ad Link Aggregation
  - Max. 12 groups per device/ 8 Gigabit ports per group
  - LACP
  - Port Mirroring
  - One-to-One
  - Many-to-One
  - Flow-based
  - RSPAN Mirroring

### Layer 2 Multicasting

- IGMP Snooping
  - IGMP v1/v2 Snooping
  - IGMP v3 Awareness
  - Supports 1024 IGMP groups
  - Host-based IGMP Snooping Fast Leave
- Up to 24 IGMP filtering profiles, 32 ranges per profile
- MLD Snooping
  - MLD v1 Snooping, MLD v2 Aware
  - Support 1024 MLD Groups
  - Host-based MLD Snooping Fast Leave

### VLAN

- VLAN IDs
  - Max. 4K VLAN IDs
- GVRP
  - Max. 255 Dynamic VLAN Groups
- 802.1Q Tagged VLAN
- Port-based VLAN
- 802.1v Protocol VLAN
- Voice VLAN
- MAC-based VLAN
- Asymmetric VLAN
- Private VLAN
- VLAN Trunking

### Layer 3 Routing

- Static route
  - Support 16 IP interfaces
  - Support 512 static routes

### QoS (Quality of Service)

- 802.1p
- 8 queues per port
- Queue Handling
  - Strict Priority
  - Weighted Round Robin (WRR)
  - Strict + WRR
- CoS (Class of Service)
  - VLAN ID
  - 802.1p Priority Queues
  - MAC Address
  - IPv4 Address
  - DSCP
  - Protocol Type
  - TCP/UDP Port
  - User-Defined Packet Content
  - IPv6 Address
  - IPv6 Traffic Class
  - IPv6 Flow Label
- Bandwidth Control
  - Port-based (Ingress/Egress, Min. Granularity 64 Kbps)
  - Flow-based (Ingress/Egress, Min. Granularity 64 Kbps)

### Access Control List (ACL)

- Ingress ACL: support 6 profiles and 256 rules
- Egress ACL: support 4 profiles and 128 rules

- Each rule can be associated to a single port, multiple ports, or all ports
- ACL Keys
  - 802.1p Priority
  - VLAN ID
  - MAC Address
  - Ether Type
  - IPv4 Address
  - DSCP
  - Protocol Type
  - TCP/UDP Port Number
  - User-Defined Packet Content
  - IPv6 Address
  - IPv6 Flow Label
  - IPv6 Traffic Class
- Time-based ACL

### Security

- SSH v2
- SSL v1/v2/v3
- Port Security
  - Support max 3k MAC's per system
- Broadcast/Multicast/Unicast Storm Control
- Traffic Segmentation
- Password Recovery
- Password Encryption
- Trusted Host

### AAA

- 802.1X:
  - Port-based Access Control
  - Host-based Access Control: max 448 MAC's per port per system
  - Be able to configure 802.1X packet transparency / filtering when 802.1X is disabled
  - Support EAD, OTP, TLS, TTLS and PEAP
  - Support MD5 authentication
  - Be able to force the 802.1X client to be off-line
  - Support 802.1X session timeout attribute
  - VLAN assignment
- Web Authentication Support:
  - Local/RADIUS database
  - Port-based authentication
  - Host-based authentication
  - Dynamic VLAN assignment
  - Logout and logout timer function
  - HTTPS: detailed description for port's auth\_state
- MAC Authentication Support:
  - Local/RADIUS database
  - Port-based authentication
  - Host-based authentication
  - Dynamic VLAN assignment
- Guest VLAN
- Database Failover
- RADIUS Accounting
- RADIUS/TACACS/TACACS+/Local authentication
- Support 3 Level User Account
  - User (Read only)
  - Operator (Read/write, without user account modification)
  - Admin

### Green Features

- Compliant with RoHS
- Power Saving by Link Status
- Power Saving by Cable Length
- Time-based PoE

### Operation, Administration & Management (OAM)

- Cable Diagnostics

### Management

- Web-based GUI (Supports IPv4/v6)
- Command Line Interface (CLI)
- Telnet Server (Supports IPv4/v6)
- Telnet Client (Supports IPv4/v6)
- TFTP Client (Supports IPv4/v6) ZModem
- SNMP v1/v2c/v3
- SNMP Traps
- System Log (Supports IPv4/v6 Log Server)
- RMON v1:
  - Supports 1,2,3,9 groups
- RMON v2:
  - Supports Probe
- BootP/DHCP Client
- DHCP Auto-Configuration
- DHCP Relay
  - DHCP Relay Option 82
- Multiple Images

### RFC Standard Compliance

- RFC 1213 MIB II
- RFC 1493, 4188 Bridge MIB
- RFC 1157, 2571-2576 SNMP MIB
- RFC 1907 SNMPv2 MIB
- RFC 1757, 2819 RMON MIB
- RFC 2021 RMONv2 MIB
- RFC 1398, 1643, 1650, 2358, 2665 Ether-like MIB
- RFC 2233, 2863 IF MIB
- RFC 2618 RADIUS Authentication Client MIB
- RFC 2620 RADIUS Accounting Client MIB
- RFC 2925 PING & TRACEROUTE MIB
- RFC 4363 802.1p MIB
- RFC 1215 MIB Traps Convention
- RFC 783 TFTP
- RFC 854 Telnet
- RFC 951, 1542 BootP
- RFC 2068 HTTP
- RFC 3164, 3195 SYSLOG
- RFC 4293 IP MIB
- RFC 4022 TCP MIB
- RFC 2866 RADIUS Accounting
- RFC 1157, 1901, 1908, 2570, 2571, 2572, 2573, 2574, 2575 SNMP
- RFC 768 UDP
- RFC 791 IP
- RFC 792, 2463, 4443 ICMP
- RFC 793 TCP RFC 826 ARP
- RFC 3513, 4291, IPv6 Addressing Architecture
- RFC 2893, 4213 IPv4/IPv6 dual stack function
- RFC 2463, 4443 ICMPv6
- RFC 2462, 4862 IPv6 Stateless Address Auto Configuration
- RFC 2464 IPv6 Ethernet and definition
- RFC 1981 Path MTU Discovery for IPv6
- RFC 2460 IPv6
- RFC 2461, 4861 Neighbor Discovery for IPv6
- RFC 1492 TACACS
- RFC 2474, 3260 DiffServ
- RFC 1321, 2284, 2865, 3580, 3748 Extensible Authentication Protocol (EAP)

# Technical Specifications

## EAS 100-24t

### General Specifications

#### Interface

- 24 ports of 10/100/1000BASE-TX RJ-45 with 4 ports shared 1000BASE-X SFP

#### Console Port

- Female DCE RS-232 DB-9

### Performance

#### Switching Capacity

- 48 Gbps

#### CPU

- Integrated 32-bit MIPS processor

#### Packet Forwarding Rate

- 64-Byte
- 35.7 Mpps

#### Packet Buffer Memory

- 512 kB

#### Flash Memory

- 16 MB

#### MTBF (Hours)

- >756k

#### Acoustics Max

- N/A (Fan-less)

#### Heat Dissipation

- 83 BTU/h

#### Power Input

- 100 to 240 VAC, 50 to 60 Hz Internal Universal Power Supply

#### Max Power Consumption

- 45.74 Watts

#### Dimensions (W x D x H)

- 441 x 207 x 44 mm / 17.4 x 8.2 x 1.7 inches

#### Weight

- 2.61 kg

#### Ventilation

- Air (Fan-less)

#### Operating Temperature

- 0 to 40° C

#### Storage Temperature

- -40 to 70° C

#### Operating Humidity

- 10% to 90% RH

#### Storage Humidity

- 10% to 90% RH

### Layer 2 Features

- MAC Address Table: 8K
- Flow Control
  - 802.3x Flow Control
- Jumbo Frame up to 9K Bytes
- Spanning Tree Protocols
  - 802.1D STP

- 802.1w RSTP
- 802.1s MSTP
- BPDU Filtering
- Root Restriction
- Loopback Detection
- 802.3ad Link Aggregation
  - Max. 8 groups per device/ 8 Gigabit ports per group
- Port Mirroring
  - One-to-One
  - Many-to-One
  - Flow-based

### Layer 2 Multicasting

- IGMP Snooping
  - IGMP v1/v2 Snooping
  - IGMP v3 Awareness
  - Supports 128 IGMP groups
  - Port/Host-based IGMP Snooping Fast Leave
- MLD Snooping
  - MLD v1 Snooping, MLD v2 Aware
  - Support 128 MLD Groups
  - Host-based MLD Snooping Fast Leave

### VLAN

- VLAN IDs
  - Max. 4K VLAN IDs
- GVRP
  - Max. 255 Dynamic VLAN Groups
- 802.1Q Tagged VLAN
- Port-based VLAN
- MAC-based VLAN
- Asymmetric VLAN

### QoS (Quality of Service)

- 802.1p
- 4 queues per port
- Queue Handling
  - Strict Priority
  - Weighted Round Robin (WRR)
  - Strict + WRR
- CoS (Class of Service)
  - VLAN ID
  - 802.1p Priority Queues
  - MAC Address
  - IPv4 Address
  - DSCP
  - Protocol Type
  - TCP/UDP Port
  - User-Defined Packet Content

### Operation, Administration & Management (OAM)

- Cable Diagnostics

### Access Control List (ACL)

- Access Profiles/Rules
  - Max 256 profiles, 256 rules
  - Support 256 rules per port
- ACL Keys
  - 802.1p Priority
  - VLAN ID
  - MAC Address
  - Ether Type
  - IPv4 Address
  - DSCP
  - Protocol Type
  - TCP/UDP Port Number

- User-Defined Packet Content

### Security

- SSH v2
- SSL v1/v2/v3
- Port Security
  - Up to 64 MAC addresses per port/VLAN
- Broadcast Storm Control

### AAA

- 802.1X:
  - Port-based Access Control
  - Host-based Access Control
  - Identity-driven Policy (VLAN, ACL or QoS Assignment)
- MAC-based Access Control (MAC):
  - Port-based Access Control
  - Host-based Access Control
  - Identity-driven Policy (VLAN, ACL or QoS Assignment)
- RADIUS Accounting
- RADIUS and TACACS authentication for switch access

### Management

- Web-based GUI (Supports IPv4/v6)
- Command Line Interface (CLI)
- Telnet Server (Supports IPv4/v6)
- Telnet Client (Supports IPv4)
- TFTP Client (Supports IPv4/v6) ZModem
- SNMP v1/v2c/v3
- SNMP Traps
- System Log (Supports IPv4 Log Server)
- RMON v1:
  - Supports 1,2,3,9 groups
- RMON v2:
  - Supports Probe
- BootP/DHCP Client
- DHCP Auto-Configuration
- Dual Image
- DHCP Relay (no Option 82)
- RFC 1769 SNTp
- RFC 1213 MIB II
- RFC 1493 Bridge MIB
- RFC 2571-2576 SNMP MIB
- RFC 1907 SNMPv2 MIB
- RFC 2819 RMON MIB
- RFC 2021 RMONv2 MIB
- RFC 1643, 2358, 2665 Ether-like MIB
- RFC 4363 802.1p MIB
- RFC 2233 IF MIB
- RFC 2620 RADIUS Accounting Client MIB
- RFC 2925 PING & TRACEROUTE MIB
- RFC 4363 802.1p MIB
- RFC 4293 MIB
- LLDP MIB
- LLDP-DOT1 MIB
- LLDP-DOT3 MIB

# Technical Specifications

## Safety Standards

### North American Safety of ITE

- UL 60950-1 2nd Ed., Listed Device (U.S.)
- CSA 22.2 #60950-1-03 2nd Ed. (Canada)
- Complies with FCC 21CFR 1040.10 (U.S. Laser Safety)
- CDRH Letter of Approval (US FDA Approval)

### European Safety of ITE

- EN 60950-1:2007 2nd Ed.
- EN 60825-1+A2:2001 (Lasers Safety)
- TUV-R GS Mark by German Notified Body
- 2006/95/EC Low Voltage Directive

### International Safety of ITE

- CB Report & Certificate per IEC 60950-1 2nd Ed. + National Differences
- AS/NZX 60950-1 (Australia /New Zealand)

## EMI/EMC Standards

### North America EMC for ITE

- FCC CFR 47 part 15 Class A (USA)
- ICES-003 Class A (Canada)

### European EMC Standards

- EN 55022:2006+A1:2007 Class A
- EN 55024:A2-2003 Class A includes IEC 61000-4-2, 3, 4, 5, 6, 11
- EN 61000-3-2,8-2006 (Harmonics)

- EN 61000-3-3 2008 (Flicker)
- ETSI EN 300 386 v1.4.1, 2008-04 (EMC Telecommunications)
- 2004/108/EC EMC Directive

### International EMC Certifications

- CISPR 22: 2006 Ed 5.2, Class A (International Emissions)
- CISPR 24:A2:2003 Class A (International Immunity)
- EC 61000-4-2:2008/EN 61000-4-2:2009 Electrostatic Discharge, 8kV Contact, 15 kV Air, Criteria A
- IEC 61000-4-3:2008/EN 61000-4-3:2006+A1:2008 Radiated Immunity 10V/m, Criteria A
- IEC 61000-4-4:2004 am1 ed.2./EN 61000-4-4:2004/A1:2010 Transient Burst, 1 kV, Criteria A
- IEC 61000-4-5:2005 /EN 61000-4-5:2006 Surge, 2 kV L-L, 2 kV L-G, Level 3, Criteria A
- EC 61000-4-6:2008/EN 61000-4-6:2009 Conducted Immunity, 0.15-80 MHz, 10V/m unmod. RMS, Criteria A
- IEC/EN 61000-4-11:2004 Power Dips & Interruptions, >30%, 25 periods, Criteria C

## Country Specific

- VCCI Class A (Japan Emissions)
- ACMA (C-Tick) (Australia Emissions)
- CCC Mark
- KCC Mark, EMC Approval (Korea)

## Telecom Standards

- ETSI EN 300 386:2001 (EMC Telecommunications)
- ETSI EN 300 019 (Environmental for Telecommunications)
- IEEE 802.3 Media Access Standards
- IEEE 802.3ab 1000BASE-T
- IEEE 802.3z 1000BASE-X
- IEEE 802.3at PoE Plus

## Environmental Data

### Environmental Standards

- EN/ETSI 300 019-2-1 v2.1.2 - Class 1.2 Storage
- EN/ETSI 300 019-2-2 v2.1.2 - Class 2.3 Transportation
- EN/ETSI 300 019-2-3 v2.1.2 - Class 3.1e Operational
- EN/ETSI 300 753 (1997-10) - Acoustic Noise
- ASTM D3580 Random Vibration Unpackaged 1.5 G

## Ordering Information

| Part Number | Description  |
|-------------|--|
| 16602       | EAS 200-24p 24-port 10/100/1000BASE-TX PoE+ switch with 4-port shared 1000BASE-X SFP |
| 16601       | EAS 100-24t 24-port 10/100/1000BASE-TX switch with 4-port shared 1000BASE-X SFP      |



**Corporate and North America**  
 Extreme Networks, Inc.  
 3585 Monroe Street  
 Santa Clara, CA 95051 USA  
 Phone +1 408 579 2800

**Europe, Middle East, Africa and South America**  
 Phone +31 30 800 5100

**Asia Pacific**  
 Phone +65 6836 5437

**Japan**  
 Phone +81 3 5842 4011

[extremenetworks.com](http://extremenetworks.com)