

# Summit X440 Series

## The Intelligent, Affordable Edge



### Highlights

Powered by the same robust, modular operating system as our BlackDiamond® X8 and other Summit switches, the Summit X440 utilizes the benefits of the ExtremeXOS operating system in an intelligent, affordable access edge. The Summit X440 series switches provide redundant power supplies, SummitStack capability, comprehensive security features and high performance switching in a cost effective, small access switch.

### Key Features

- PoE/PoE+ for wireless access points, cameras and IP phones
- Extending Intelligent 10/100/1000
- BASE-T connectivity to the desktop
- Line rate on all ports including 2 x 10GBASE-X SFP+ uplinks
- Stack using SummitStack ports or SummitStack-V over 10GBASE-X SFP+ ports
- Stack up to 8 members (Using L3 models)
- Stack with other Summit products from Extreme Networks
- Fan can switch to low speed or off for minimal noise

### Overview

The Extreme Networks® Summit® X440 series switches extend the intelligence and resiliency of the ExtremeXOS® network operating system to the converged access edge, enabling fine grained Quality of Service (QoS), stacking, high availability features and identity aware security in a compact, cost effective switch.

Standards-based PoE/PoE+ support (802.3af / 802.3at) allows the Summit X440 series to support the large-scale rollout of converged network devices such as IP telephones, wireless access points as well as physical security devices such as video cameras.

With high density, low latency, line rate 10/100/1000 Ethernet, dedicated 10 Gbps stacking ports, available redundant power supplies, hardware-based IP support (IPv4 and IPv6) and rich Layer 2 to Layer 4 functionality in a compact, 1RU form factor, the Summit X440 also provides effective enterprise class network access.

### High Availability

- Modular ExtremeXOS operating system
- Ethernet Automatic Protection Switching (EAPS) resiliency protocol
- SummitStack™ - highly available, high-speed stacking support
- External power supply for redundant power

## High Performance

- High bandwidth, non-blocking architecture
- Quality of Service (QoS) with advanced traffic management capabilities
- Automatic provisioning via Universal Port capability
- Comprehensive network management functionality
- 8, 24, or 48-port Gigabit Ethernet (GbE) connectivity in a 1RU form factor
- SummitStack 40 Gbps
- 10 Gigabit Ethernet (10GbE) uplinks

## Comprehensive Security Features

- Identity aware policy and host integrity enforcement
- Extensive MAC and IP security functionality to help prevent man-in-the-middle attacks
- Universal Port dynamic security profile to provide fine granular security policy in the network
- Multiple network edge authentication support with multiple endpoints per port

## Software Defined Networking (SDN)

ExtremeXOS implementations of OpenFlow APIs allow an external OpenFlow-based SDN controller to access and control the forwarding plane of ExtremeXOS network devices. ExtremeXOS-based switches offer a programming interface through OpenFlow to enable high degree of automation in provisioning network services for many upper layer business critical applications running the OpenFlow-based SDN controller.

ExtremeXOS-based switches also allow for integration with the OpenStack open source cloud computing platform for public and private clouds through the Extreme Networks Quantum plugin. The plugin provides a scalable, automated, rich API-driven system that enables networking-as-a-service model managing data center interconnect solutions and large multi-tenant networks.

## Audio Video Bridging (AVB)

ExtremeXOS supports IEEE Audio Video Bridging (AVB) standards to enable reliable real-time audio and video transmissions over Ethernet, for high-definition and time-sensitive multimedia streams with assigned Quality of Service (QoS). ExtremeXOS leverages AVB to identify and reserve network resources for A/V traffic streams and supports synchronous streaming capabilities to ensure reliable and high-quality A/V transmissions over Ethernet. AVB also enables time sensitive multimedia streams to be sent over the Ethernet network with low latency and provides service quality for high definition information and entertainment applications.

## IEEE 802.3at PoE-plus

Summit X440 PoE+ models support both IEEE 802.3at PoE-plus and IEEE 802.3af PoE. Summit X440 models that support PoE-plus provide a cumulative total 190 watt or 380 watt power budget, which can be allocated across all of the RJ45 ports on that particular switch.

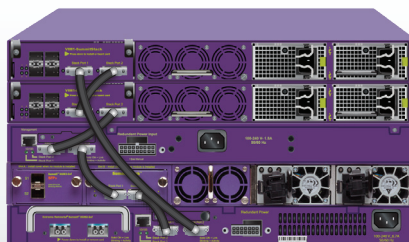
## Stacking

Each of the Summit X440 models with two SummitStack stacking ports, provide a 40 Gigabit stacking solution. This stacking capability offers compatibility with other Extreme Networks stackable switches, including the Summit X250e, Summit X450a/e, Summit X460 with SummitStack module, Summit X480 with VIM2-SummitStack, and Summit X650 with VIM1-SummitStack or VIM1-10G8X – allowing up to eight units in a stack.

The Summit X440 models with two 10 Gigabit Ethernet (10GbE) links can also stack using SummitStack-V alternative stacking. This stacking method also offers compatibility with other Extreme Networks stackable switches that use 10GbE ports for SummitStack-V including Summit X450e, X450a, X460, X480, X650, X670 and X670V.

The SummitStack stacking architecture is designed for rapid failover capability with n-1 master redundancy, distributed Layer 2 and Layer 3 switching, link aggregation across the stack, and 50 millisecond failover in most cases for path failure and hitless master/backup failover.

- Single management point for up to eight units
- High-speed 40 Gbps stacking
- Rapid Failover for converged applications
- Can mix Summit X250e, Summit X440 Series, Summit X450a/e,- Series, Summit X460, Summit X480, Summit X650 and Summit X670 Series switches for SummitStack™ 40 Gbps stacking



\*Future availability.



## Technical Specifications

### Performance

Switch Model	Aggregated Switch Bandwidth	Frame Forwarding Rate
Summit X440-8t	64 Gbps	48 Mpps
Summit X440-8p	64 Gbps	48 Mpps
Summit X440-L2-24t	48 Gbps	36 Mpps
Summit X440-24t	88 Gbps	65 Mpps
Summit X440-24p	88 Gbps	65 Mpps
Summit X440-L2-48t	96 Gbps	72 Mpps
Summit X440-48t	136 Gbps	101 Mpps
Summit X440-48p	136 Gbps	101 Mpps
Summit X440-24t-10G	88 Gbps	65 Mpps
Summit X440-24p-10G	88 Gbps	65 Mpps
Summit X440-48t-10G	136 Gbps	101 Mpps
Summit X440-48p-10G	136 Gbps	101 Mpps

### Weight and Physical Dimensions

Switch Model	Weight	Physical Dimension
Summit X440-8t	5.8 lb (2.640 kg)	Height: 1RU, 1.73 inches (4.4 cm) Width: 12.0 inches (30.5 cm) Depth: 10.3 inches (26.1 cm)
Summit X440-8p	6.7 lb (3.035 kg)	
Summit X440-L2-24t	8.4 lb (3.825 kg)	Height: 1RU, 1.73 inches (4.4 cm) Width: 17.4 inches (44.1 cm) Depth: 10.0 inches (25.4 cm)
Summit X440-24t	8.4 lb (3.825 kg)	
Summit X440-24p	9.8 lb (4.465 kg)	
Summit X440-L2-48t	9.1 lb (4.125 kg)	Height: 1RU, 1.73 inches (4.4 cm) Width: 17.4 inches (44.1 cm) Depth: 10.0 inches (25.4 cm)
Summit X440-48t	9.1 lb (4.125 kg)	
Summit X440-48p	10.7 lb (4.845 kg)	
Summit X440-24t-10G	8.5 lb (3.865 kg)	Height: 1RU, 1.73 inches (4.4 cm) Width: 17.4 inches (44.1 cm) Depth: 10.0 inches (25.4 cm)
Summit X440-24p-10G	9.8 lb (4.475 kg)	
Summit X440-48t-10G	9.1 lb (4.130 kg)	Height: 1RU, 1.73 inches (4.4 cm) Width: 17.4 inches (44.1 cm) Depth: 10.0 inches (25.4 cm)
Summit X440-48p-10G	10.6 lb (4.830 kg)	

### Additional Performance Specifications

- Latency: <5  $\mu$ s (64-byte)
- Max Packet Size: 9KB (Jumbo Frame Support)
- Total Trunks: 128 load sharing, members per trunk: 8
- VLANs: 4,094
- Ingress ACLs: 1,024

### Forwarding Tables

- Layer 2/MAC Addresses: 16K
- Layer 2/Multicast Groups: 1K
- IPv4 LPM Entries: 32
- IPv6 LPM Entries: 16
- IPv4 Host Addresses: 509
- IPv6 Host Addresses: 256
- Layer 3 Interfaces: 256
- IP Multicast Groups: 64

### CPU, Memory

- Single Core CPU, 500 MHz clock
- 512MB ECC DRAM
- 512MB Compact Flash

### QoS, Rate Limiting

- Ingress bandwidth meters: 1,024
- Ingress metering granularity: 8 Kbps
- Ingress bandwidth policing/rate limiting per flow/ACL
- Egress QoS queues/port: 8
- Egress bandwidth rate shaping per egress queue and per port
- Egress rate granularity: 64 Kbps

### LED Indicators

- Per port status LED including power status
- System Status LEDs: management, fan and power

### Operating Conditions Temperature Range

- 0° C to 45° C (32° F to 113° F)
- Humidity: 10% to 95% relative humidity, non-condensing
- Altitude: 0 to 3,000 meters (9,850 feet)
- Shock (half sine): 30 m/s<sup>2</sup> (3 G), 11 ms, 60 shocks
- Random vibration: 3 to 500 Hz
- at 1.5 G rms

### Storage & Transportation Conditions (Packaged)

- Transportation Temperature: -40° C to 70° C (-40° F to 158° F)
- Storage and Transportation Humidity: 10% to 95% RH, non-condensing
- Packaged Shock (Half Sine): 180 m/s<sup>2</sup> (18 G), 6ms, 600 shocks
- Packaged Sine Vibration: 5-62 Hz @ Velocity 5mm/s, 62-500 Hz @ 0.2G
- Packaged Random Vibration: 5-20 Hz @ 1.0 ASD w/-3dB/oct. from 20-200 Hz
- 14 drops min on sides & corners @ 42" (<15kg box)

### EMI/EMC Standards

- FCC CFR 47 part 15 Class A (USA)
- ICES-003 Class A (Canada)
  - 2004/108/EC EMC Directive
- EN 55022:2010 Class A (Emissions for ITE Equipment)
- EN 55024:2010 Class A includes EN 61000-4-2, 3, 4, 5, 6, 11
- EN 55011 :2009+A1:2010 (Emissions for Industrial, Scientific & Medical Radio Frequency Equipment)



- EN 61000-3-2: 2006+A2 2009 (Harmonics)
- EN 61000-3-3:2008 (Flicker)
- EN 61000-6-4: 2007+A1: 2011 (General Emissions for Industrial, Scientific & Medical)
- EN 61000-6-2:2005 (General Immunity for Industrial, Scientific & Medical)
- EN 50121-4:2006 (Emission and immunity of the signaling and telecommunications apparatus)

## International EMC Standards

- CISPR 22:2008 Class A (International Emissions for ITE Equipment)
- CISPR 24:2010 Class A (International Immunity for ITE Equipment)
- IEC 61000-4-2:2008/EN 61000-4-2:2009 (Electrostatic Discharge, 8kV Contact, 15kV Air, Criteria A)
- IEC 61000-4-3:2010/EN 61000-4-3:2006+A12008 +A2:2010
  - Radiated Immunity 20V/m, 80-960MHz, Criteria A
  - Radiated Immunity 10V/m, 960-2100MHz, Criteria A
  - Radiated Immunity 5V/m, 2100-2700MHz, Criteria A
- IEC 61000-4-4:2011/EN 61000-4-4: 2004+A1: 2010 Transient Burst,
  - Power AC,  $\pm 2.0$ kV, Criteria A
  - Power DC,  $\pm 2.0$ kV CM, 1kV DM, Criteria A
  - I/O Cables,  $\pm 2.0$ kV for all I/O longer than 3m
- IEC 61000-4-5:2005/EN 61000-4-5:2006 Surge, Test to 2/4kV, Level 3
  - AC Power, 1/2kV, Criteria A
  - DC Power 1kV DM, 2kV CM, Criteria A
  - I/O 1kV L-G, Criteria A
- IEC 61000-4-6:2008/EN 61000-4-6:2009 Conducted Immunity, 0.15-80 MHz, 10V/m unmod. RMS, Criteria A
- IEC 61000-4-8:2009/EN 61000-4-8:2010 Magnetic Immunity, Not applicable to Extreme's equipment
- IEC 61000-4-11:2004/EN 61000-4-11:2004 Power Dips & Interruptions, >30%, 25 periods, Criteria C
- VCCI Class A (Japan Emissions)
- ACMA (C-Tick) (Australia Emissions)
- CCC Mark
- KCC Mark, EMC Approval (Korea)

## Telecom Standards

- ETSI EN 300 386: V1.5.1 (2010-10) EMC Telecommunications
- ETSI EN 300 019 (Environmental for Telecommunications)
- MEF 9 compliant
- MEF 14 compliant

## IEEE 802.3 Media Access Standards

- IEEE 802.3ab 1000BASE-T
- IEEE 802.3z 1000BASE-X
- IEEE 802.3at PoE Plus

## 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 1.5G

## Warranty

- Ltd. Lifetime with express Advanced Hardware Replacement
- For warranty details, visit <http://www.extremenetworks.com/go/warranty>

## Safety Standards

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



## External Ports

Switch Model	Ports
<b>Summit X440-8t</b>	<ul style="list-style-type: none"> <li>• 8 x 10/100/1000BASE-T (RJ45) ports</li> <li>• 4 x 100/1000BASE-X (SFP) unpopulated ports</li> <li>• 2 x SummitStack</li> <li>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port</li> </ul>
<b>Summit X440-8p</b>	<ul style="list-style-type: none"> <li>• 8 x 10/100/1000BASE-T PoE-plus(RJ45) ports</li> <li>• 4 x 100/1000BASE-X (SFP) unpopulated ports</li> <li>• 2 x SummitStack</li> <li>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port</li> </ul>
<b>Summit X440-L2-24t</b>	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000BASE-T (RJ45) – 4 ports are combo ports</li> <li>• 4 x 100/1000BASE-X (SFP) unpopulated combo ports</li> <li>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port</li> <li>• 1 x Redundant Power Supply connector</li> </ul>
<b>Summit X440-24t</b>	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000BASE-T (RJ45) – 4 ports are combo ports</li> <li>• 4 x 100/1000BASE-X (SFP) unpopulated combo ports</li> <li>• 2 x SummitStack</li> <li>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port</li> <li>• 1 x Redundant Power Supply connector</li> </ul>
<b>Summit X440-24p</b>	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000BASE-T PoE-plus(RJ45) – 4 ports are combo ports</li> <li>• 4 x 100/1000BASE-X (SFP) combo ports</li> <li>• 2 x SummitStack</li> <li>• 1 x Serial (console port ) and 1 x 10/100BASE-T out-of-band management port</li> <li>• 1 x Redundant Power Supply connector</li> </ul>
<b>Summit X440-48t</b>	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000BASE-T (RJ45) – 4 ports are combo ports</li> <li>• 4 x 100/1000BASE-X (SFP) unpopulated combo ports</li> <li>• 2 x SummitStack</li> <li>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port</li> <li>• 1 x Redundant Power Supply connector</li> </ul>
<b>Summit X440-L2-48t</b>	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000BASE-T (RJ45) – 4 ports are combo ports</li> <li>• 4 x 100/1000BASE-X (SFP) unpopulated combo ports</li> <li>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port</li> <li>• 1 x Redundant Power Supply connector</li> </ul>
<b>Summit X440-48p</b>	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000BASE-T PoE-plus(RJ45) – 4 ports are combo ports</li> <li>• 4 x 100/1000BASE-X (SFP) combo ports</li> <li>• 2 x SummitStack</li> <li>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port</li> <li>• 1 x Redundant Power Supply connector</li> </ul>
<b>Summit X440-24t-10G</b>	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000BASE-T (RJ45) – 4 ports are combo ports</li> <li>• 4 x 100/1000BASE-X (SFP) unpopulated combo ports</li> <li>• 2 x 10GBASE-X SFP+ (1G/10G dual speed) unpopulated</li> <li>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port</li> <li>• 1 x Redundant Power Supply connector</li> </ul>
<b>Summit X440-24p-10G</b>	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000BASE-T PoE-plus(RJ45) – 4 ports are combo ports</li> <li>• 4 x 100/1000BASE-X (SFP) combo ports</li> <li>• 2 x 10GBASE-X SFP+ (1G/10G dual speed) unpopulated</li> <li>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port</li> <li>• 1 x Redundant Power Supply connector</li> </ul>
<b>Summit X440-48t-10G</b>	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000BASE-T (RJ45) – 2 ports are combo ports</li> <li>• 2 x 100/1000BASE-X (SFP) unpopulated combo ports</li> <li>• 2 x 10GBASE-X SFP+ (1G/10G dual speed) unpopulated</li> <li>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port</li> <li>• 1 x Redundant Power Supply connector</li> </ul>
<b>Summit X440-48p-10G</b>	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000BASE-T PoE-plus(RJ45) – 2 ports are combo ports</li> <li>• 2 x 100/1000BASE-X (SFP) combo ports</li> <li>• 2 x 10GBASE-X SFP+ (1G/10G dual speed) unpopulated</li> <li>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port</li> <li>• 1 x Redundant Power Supply connector</li> </ul>



## Fan Speed and Acoustic Noise

Switch Model	Low Speed		High Speed	
	RPM	dB(A)	RPM	dB(A)
Summit X440-8t	0 (no fan)	0 (no fan)	0 (no fan)	0 (no fan)
Summit X440-8p	6800	44	11000	55
Summit X440-24t	0 (fan not on)	0 (fan not on)	11000	55
Summit X440-L2-24t	0 (fan not on)	0 (fan not on)	11000	55
Summit X440-24p	5900	42	11000	57
Summit X440-48t	5900	39	11000	55
Summit X440-L2-48t	5900	39	11000	55
Summit X440-48p	5900	42	11000	57
Summit X440-24t-10G	0 (fan not on)	0 (fan not on)	11000	55
Summit X440-24p-10G	5900	42	11000	57
Summit X440-48t-10G	5900	39	11000	55
Summit X440-48p-10G	5900	42	11000	57

## Power Specifications

Switch Model	Input Power at Full Load	Efficiency
Summit X440-8t	39W	70%
Summit X440-8p	240W	70%
Summit X440-L2-24t	44W	70%
Summit X440-24t	44W	70%
Summit X440-24p	585W	70%
Summit X440-48t	60W	70%
Summit X440-L2-48t	60W	70%
Summit X440-48p	600W	69%
Summit X440-24t-10G	44W	75%
Summit X440-24p-10G	585W	75%
Summit X440-48t-10G	95W	66%
Summit X440-48p-10G	600W	66%



### Accessories

#### External Power Supply

#### EPS-C2

The EPS-C2 is an external power supply that supplies redundant power to Summit X440 switches. The EPS-C2 is a standalone unit that can be rack mounted in a regular 19-inch rack system. The EPS-C2 can be populated with up to three Summit 750W PoE AC PSU to provide a total redundant power budget of up to 2250W. The EPS-C2 can connect up to five Summit X440 switches, actively providing power to all five if needed.



Front View of the EPS-C2 Populated with 3 750W Power Supplies



Rear View of the EPS-C2



EPS-C2 Connected to a Summit X440

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#### EPS-500

EPS-500 is a redundant AC Power Supply for X440 switches including Power-over-Ethernet enabled models. EPS-500 is one rack unit height and works in standalone. EPS-500 can be rack mounted in a regular 19 inch rack system. EPS-500 comes with a DC output cable to connect between the Summit X440 and EPS-500.



Front View



Rear View

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EPS Model	Redundant Power Supply Output Blocks
<b>EPS-C2</b>	1 terminal block of 2x5 pins - used for other Summit switches 5 terminal blocks of 2x7 pins - used by Summit X440s
<b>EPS-500</b>	1 terminal block of 2x7 pins - used by Summit X440s

EPS Model	Allowable PSU	Power Supply Input Socket	Power Cord Input Plug/Input Socket	Power Supply Cord Gauge
<b>EPS-C2</b>	Summit 750W PoE AC PSU	IEC 320 C14	IEC 320 C13/C14	Min 18AWG
<b>EPS-500</b>	Built-in so not applicable	IEC320 C14	IEC320 C13/C14	Min 18AWG

EPS Model	Weight	Physical Dimension
<b>EPS-C2</b>	2.27 lb (5.0 kg)	Height: 1RU, 1.73 inches (4.4 cm) Width: 17.4 inches (44.1 cm) Depth: 15.1 inches (38.4 cm)
<b>EPS-500</b>	10.8 Lbs (4.9 Kg )	Height: 1.73 Inches (4.4 cm) Width: 17.4 Inches (44 cm) Depth: 7.6 Inches (19.3 cm)

### Power Connections

Switch Model	Power Supply Input Socket	Power Cord Input Plug/Input Socket	Power Supply Cord Gauge	Redundant Power Supply Input Socket
<b>Summit X440-8t</b>	IEC 320 C14	IEC 320 C13/C14	Min 18AWG	n/a
<b>Summit X440-8p</b>	IEC 320 C14	IEC 320 C13/C14	Min 18AWG	n/a
<b>Summit X440-L2-24t</b>	IEC 320 C14	IEC 320 C13/C14	Min 18AWG	2x7 pin terminal block
<b>Summit X440-24t</b>	IEC 320 C14	IEC 320 C13/C14	Min 18AWG	2x7 pin terminal block
<b>Summit X440-24p</b>	IEC 320 C14	IEC 320 C13/C14	Min 18AWG	2x7 pin terminal block
<b>Summit X440-L2-48t</b>	IEC 320 C14	IEC 320 C13/C14	Min 18AWG	2x7 pin terminal block
<b>Summit X440-48t</b>	IEC 320 C14	IEC 320 C13/C14	Min 18AWG	2x7 pin terminal block
<b>Summit X440-48p</b>	IEC 320 C14	IEC 320 C13/C14	Min 18AWG	2x7 pin terminal block
<b>Summit X440-24t-10G</b>	IEC 320 C14	IEC 320 C13/C14	Min 18AWG	2x7 pin terminal block
<b>Summit X440-24p-10G</b>	IEC 320 C14	IEC 320 C13/C14	Min 18AWG	2x7 pin terminal block
<b>Summit X440-48t-10G</b>	IEC 320 C14	IEC 320 C13/C14	Min 18AWG	2x7 pin terminal block
<b>Summit X440-48p-10G</b>	IEC 320 C14	IEC 320 C13/C14	Min 18AWG	2x7 pin terminal block





**750W AC PSU (Model 10931) for PoE switches**

Physical Specifications	
<b>Dimensions</b>	Height 40 mm (1.57 inches) Width 80 mm (3.15 inches) Depth 241.5 mm (9.5 inches)
<b>Weight</b>	2.25 lb
Power Specifications	
<b>Voltage input range</b>	85-264 VAC
<b>Nominal input ratings</b>	100 to 240 VAC, 50 to 60 Hz, 10 A
<b>Nominal input current at full load</b>	10 A at 90 VAC (low-line) 3.7 A at 230 VAC (high-line)
<b>Line frequency range</b>	47 to 63 Hz
<b>Maximum inrush current</b>	35 A
<b>Output</b>	12 VDC, 25 A maximum, 300 Watts 55 VDC, 8.18 A maximum, 450 Watts 3.3 VDC, 3.03 A maximum, 10 Watts
<b>Power Supply input socket</b>	IEC 320 C14
<b>Power cord input plug</b>	IEC 320 C13
<b>Efficiency</b>	Low Line: 88% at 50% load and 86% at 100% load High Line: 90% at 50% and 100% loads
Environmental Specifications	
<b>Operating Temperature</b>	0 deg C to 45 deg C normal operation
<b>Storage Temperature</b>	-40 deg C to 70 deg C
<b>Operating Humidity</b>	20% to 90% relative humidity, non-condensing
<b>Operational Shock</b>	30 m/s <sup>2</sup> (3g)

**Ordering Information**

Part Number	Name	Description
16501	Summit X440-8t	8 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP, SummitStack Stacking ports, 1 AC PSU, ExtremeXOS Edge license
16502	Summit X440-8p	8 10/100/1000BASE-T PoE-plus, 4 1000BASE-X unpopulated SFP, SummitStack Stacking ports, 1 AC PSU, ExtremeXOS Edge license
16503L	Summit X440-L2-24t	24 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), 1 AC PSU, ExtremeXOS L2 Edge license, connector for external power supply
16503	Summit X440-24t	24 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), SummitStack Stacking ports, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply
16504	Summit X440-24p	24 10/100/1000BASE-T PoE-plus, 4 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), SummitStack Stacking ports, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply
16505L	Summit X440-L2-48t	48 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), 1 AC PSU, ExtremeXOS L2 Edge license, connector for external power supply
16505	Summit X440-48t	48 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), SummitStack Stacking ports, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply



16506	Summit X440-48p	48 10/100/1000BASE-T PoE-plus, 4 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), SummitStack Stacking ports, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply
16507	Summit X440-24t-10G	24 10/100/1000BASE-T, 2 1000BASE-X unpopulated SFP (2 SFP ports shared with 10/100/1000BASE-T ports), 2 10GBASE-X SFP+, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply
16508	Summit X440-24p-10G	24 10/100/1000BASE-T PoE-plus, 2 1000BASE-X unpopulated SFP (2 SFP ports shared with 10/100/1000BASE-T ports), 2 10GBASE-X SFP+, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply
16509	Summit X440-48t-10G	48 10/100/1000BASE-T, 2 1000BASE-X unpopulated SFP (2 SFP ports shared with 10/100/1000BASE-T ports), 2 10GBASE-X SFP+, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply
16510	Summit X440-48p-10G	48 10/100/1000BASE-T PoE-plus, 2 1000BASE-X unpopulated SFP (2 SFP ports shared with 10/100/1000BASE-T ports), 2 10GBASE-X SFP+, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply
16521	Summit X440 Adv. Edge License	ExtremeXOS Advanced Edge License for Summit X440 Series Switches
16522	Summit X440 OpenFlow FeaturePack	ExtremeXOS SDN - OpenFlow Feature Pack for Summit X440 series switches
16523	X440 Multimedia(AVB) Feature Pack	ExtremeXOS Audio Video Bridging Feature Pack for Summit X440 series switches
10936	EPS-C2	External Power System Chassis 2. Accepts up to three Summit 750W AC PoE PSU 48V power supplies. Accepts up to 3 EPS-CBL-2x7 or up to 1 EPS-CBL-2x9 cables.
10939	EPS-CBL-2x7	External Power System Cable (1M) that connects EPS to any Summit X440 for providing redundant DC power.
10931	Summit 750W PoE AC PSU	PoE AC Power Supply module for EPS-C2 Chassis Redundant Power Supply
10911	EPS-500	External Power Supply Unit 500 Watts, Power cord ordered separately
10301	10GBASE-SR SFP+	10GBASE-SR SFP+, 850nm, LC Connector, transmission length of up to 300m on MMF
10302	10GBASE-LR SFP+	10GBASE-LR SFP+, 1310nm, LC Connector, transmission length of up to 10km on SMF
10309	10GBASE-ER SFP+	10GBASE-ER SFP+, 1550nm, LC connector, transmission length of up to 40km on SMF
10303	SFP+ LRM Module	10 Gigabit Ethernet SFP+ module, 1310nm, legacy MMF 220m link, LC connector
10304	10GBASE-CR SFP+ 1m	10GBASE-CR SFP+ pre-terminated twin-ax copper cable with link lengths of 1m
10305	10GBASE-CR SFP+ 3m	10GBASE-CR SFP+ pre-terminated twin-ax copper cable with link lengths of 3m
10306	10GBASE-CR SFP+ 5m	10GBASE-CR SFP+ pre-terminated twin-ax copper cable with link lengths of 5m
10307	10GBASE-CR SFP+ 10m	10GBASE-CR SFP+ pre-terminated twin-ax copper cable with link lengths of 10m
10051	1000BASE-SX SFP	1000BASE-SX SFP, LC Connector
10052	1000BASE-LX SFP	1000BASE-LX SFP, LC Connector
10053	1000BASE-ZX SFP	1000BASE-ZX SFP, Extra Long Distance SMF 70 km/21 dB Budget, LC Connector
10056	1000BASE-BX-D SFP	1000BASE-BX-D SFP, SMF (1490nm TX/1310nm RX Wavelength)
10057	1000BASE-BX-U SFP	1000BASE-BX-U SFP, SMF (1310nm TX/1490nm RX Wavelength)
10060	100FX/1000LX SFP	100FX/1000LX SFP, SMF, LC Connector (Requires MCP and 6dB Attenuator for 100FX-MMF Operation)
10063	100FX SFP	100FX SFP, MMF, LC Connector



10064	1000BASE-LX100 SFP	1000BASE-LX100 SFP, Extra Long Distance SMF 100 km/30dB Budget, LC Connector
10065	10/100/1000Base-T SFP	10/100/1000BASE-T SFP module, Category 5 cable 100m link, RJ45-Connector
10067	100BASE-FX SFP	100M SFP, 100FX MMF, (1310nm, 2km multimode transmission) LC connector
10066	100BASE-LX10 SFP	100M SFP, 100LX10 SMF, (1310nm 10km single mode transmission) LC connector
10058	100BASE-BX-D SFP	100M SFP, 100BASE-BX-D, SMF (1550nm TX/1310nm RX wavelength), 100 Mbps bidirectional
10059	100BASE-BX-U SFP	100M SFP, 100BASE-BX-U, SMF (1310nm TX/1550nm RX wavelength), 100 Mbps bidirectional
10071	SX SFP 10 Pack	SX-SFP 10 Pack
10072	LX SFP 10 Pack	LX-SFP 10 Pack
10051H	1000BASE-SX SFP, Hi	1000BASE-SX SFP, MMF 220 & 550 meters, LC connector, Industrial Temp
10053H	1000BASE-ZX SFP, Hi	1000BASE-ZX SFP, SMF 70km, LC connector, Industrial Temp
10071H	1000BASE-SX SFP 10 Pack, Hi	1000BASE-SX SFP 10 Pack, Industrial Temp
10072H	1000BASE-LX SFP 10 Pack, Hi	1000BASE-LX SFP 10 Pack, Industrial Temp
16106	Stacking Cable, 0.5M	SummitStack/UniStack™ Stacking Cable, 0.5M
16107	Stacking Cable, 1.5M	SummitStack/UniStack Stacking Cable, 1.5M
16108	Stacking Cable, 3.0M	SummitStack/UniStack Stacking Cable, 3.0M
16105	Stacking Cable, 5.0M	SummitStack Stacking Cable, 5.0M

## Supported Optics

10067	100BASE-FX SFP	100M SFP, 100FX MMF, (1310nm, 2km multimode transmission) LC connector
10066	100BASE-LX10 SFP	100M SFP, 100LX10 SMF, (1310nm 10km single mode transmission) LC connector
10058	100BASE-BX-D SFP	100M SFP, 100BASE-BX-D, SMF (1550nm TX/1310nm RX wavelength), 100 Mbps bidirectional
10059	100BASE-BX-U SFP	100M SFP, 100BASE-BX-U, SMF (1310nm TX/1550nm RX wavelength), 100 Mbps bidirectional

## Protocols and Standards

A list of supported protocols and standards is available on the Extreme Networks website at:  
<http://www.extremenetworks.com/products/extreme-xos.aspx>



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