# 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 10/100/1000BASE-T connectivity to the desktop

- Line rate on all ports including 2 x 10GBASE-X SFP+ uplinks

- BASE-X SFP based fiber switches, for long distance links.

- 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

- Edge switching for both AC and DC powered environments

- Energy Efficient Ethernet - IEEE 802.3az

## 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.

Extreme XOS-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 170 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 X450-G2, X460, X460-G2, X480, X650, X670, X670V, X670-G2 and X770.

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

# 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 X440-24t | 88 Gbps | 65 Mpps |
| Summit X440-24tDC | 88 Gbps | 65 Mpps |
| Summit X440-24p | 88 Gbps | 65 Mpps |
| Summit X440-24x | 88 Gbps | 65 Mpps |
| Summit X440-48t | 136 Gbps | 101 Mpps |
| Summit X440-48tDC | 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 X440-24x-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 X440-24t | 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 X440-24p | 9.8 lb (4.465 kg) | |
| Summit X440-24x | 8.4 lb (3.825 kg) | |
| Summit X440-24tDC | 8.5 lb (3.869 kg) | |
| Summit X440-48t | 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 X440-24x | 9.1 lb (4.130 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 X440-24x-10G | 8.5 lb (3.865 kg) | |

## Additional Performance Specifications

- Latency: <5 µs (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/s2 (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/s2 (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, ± 2.0kV, Criteria A
- Power DC, ± 2.0kV CM, 1kV DM, Criteria A
- I/O Cables, ± 2.0kV 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
- IEEE 802.3az (EEE)

## 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.)

## External Ports

| SWITCH MODEL | PORTS |
|---|---|
| Summit X440-8t | • 8 x 10/100/1000BASE-T (RJ45) ports<br>• 4 x 100/1000BASE-X (SFP) unpopulated ports<br>• 2 x SummitStack<br>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port |
| Summit X440-8p | • 8 x 10/100/1000BASE-T PoE-plus(RJ45) ports<br>• 4 x 100/1000BASE-X (SFP) unpopulated ports<br>• 2 x SummitStack<br>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port |
| Summit X440-24t | • 24 x 10/100/1000BASE-T (RJ45) – 4 ports are combo ports<br>• 4 x 100/1000BASE-X (SFP) unpopulated combo ports<br>• 2 x SummitStack<br>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port<br>• 1 x Redundant Power Supply connector |
| Summit X440-24tDC | • 2 x SummitStack<br>• 24 x 10/100/1000BASE-T (RJ45) – 4 ports are combo ports<br>• 4 x 100/1000BASE-X (SFP) unpopulated combo ports<br>• 2 x SummitStack<br>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port<br>• 1 x DC PSU<br>• 1 x Redundant Power Supply connector |
| Summit X440-24p | • 24 x 10/100/1000BASE-T PoE-plus(RJ45) – 4 ports are combo ports<br>• 4 x 100/1000BASE-X (SFP) combo ports<br>• 2 x SummitStack<br>• 1 x Serial (console port ) and 1 x 10/100BASE-T out-of-band management port<br>• 1 x Redundant Power Supply connector |
| Summit X440-24x | • 24 x 100/1000BASE-X (SFP) unpopulated ports – 4 ports are combo ports<br>• 4 x 10/100/1000BASE-T (RJ45) combo ports<br>• 2 x SummitStack<br>• 1 x Serial (console port ) and 1 x 10/100BASE-T out-of-band management port<br>• 1 x Redundant Power Supply connector |
| Summit X440-48t | • 48 x 10/100/1000BASE-T (RJ45) – 4 ports are combo ports<br>• 4 x 100/1000BASE-X (SFP) unpopulated combo ports<br>• 2 x SummitStack<br>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port<br>• 1 x Redundant Power Supply connector |
| Summit X440-48tDC | • 48 x 10/100/1000BASE-T (RJ45) – 4 ports are combo ports<br>• 4 x 100/1000BASE-X (SFP) unpopulated combo ports<br>• 2 x SummitStack<br>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port<br>• 1 x DC PSU<br>• 1 x Redundant Power Supply connector |
| Summit X440-48p | • 48 x 10/100/1000BASE-T PoE-plus(RJ45) – 4 ports are combo ports<br>• 4 x 100/1000BASE-X (SFP) combo ports<br>• 2 x SummitStack<br>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port<br>• 1 x Redundant Power Supply connector |
| Summit X440-24t-10G | 24 x 10/100/1000BASE-T (RJ45) – 4 ports are combo ports<br>4 x 100/1000BASE-X (SFP) unpopulated combo ports<br>2 x 10GBASE-X SFP+ (1G/10G dual speed) unpopulated<br>1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port<br>1 x Redundant Power Supply connector |
| Summit X440-24p-10G | 24 x 10/100/1000BASE-T PoE-plus(RJ45) – 4 ports are combo ports<br>4 x 100/1000BASE-X (SFP) combo ports<br>2 x 10GBASE-X SFP+ (1G/10G dual speed) unpopulated<br>1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port<br>1 x Redundant Power Supply connector |

# External Ports (cont.)

| SWITCH MODEL | PORTS |
|---|---|
| Summit X440-24x-10G | • 24 x 100/1000BASE-X (SFP) unpopulated ports – 4 ports are combo ports<br>• 4 x 10/100/1000BASE-T (RJ45) combo ports<br>• 2 x 10GBASE-X SFP+ (1G/10G dual speed) unpopulated<br>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port<br>• 1 x Redundant Power Supply connector |
| Summit X440-48t-10G | • 48 x 10/100/1000BASE-T (RJ45) – 2 ports are combo ports<br>• 2 x 100/1000BASE-X (SFP) unpopulated combo ports<br>• 2 x 10GBASE-X SFP+ (1G/10G dual speed) unpopulated<br>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port<br>• 1 x Redundant Power Supply connector |
| Summit X440-48p-10G | • 48 x 10/100/1000BASE-T PoE-plus(RJ45) – 2 ports are combo ports<br>• 2 x 100/1000BASE-X (SFP) combo ports<br>• 2 x 10GBASE-X SFP+ (1G/10G dual speed) unpopulated<br>• 1 x Serial (console port) and 1 x 10/100BASE-T out-of-band management port<br>• 1 x Redundant Power Supply connector |

# Fan Speed and Acoustic Noise

| SWITCH MODEL | LOW SPEED | | HIGH SPEED | |
|---|---|---|---|---|
| | RPM | dB(A) Sound Pressure (LpA) | RPM | dB(A) Sound Pressure (LpA) |
| 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 X440-24tDC | 0 (fan not on) | 15 | 10500 | 51 |
| Summit X440-24p | 5900 | 42 | 11000 | 57 |
| Summit X440-24x | 5900 | 42 | 11000 | 52 |
| Summit X440-48t | 5900 | 39 | 11000 | 55 |
| Summit X440-48tDC | 5900 | 39 | 10500 | 52 |
| Summit X440-48p | 5900 | 42 | 11000 | 57 |
| Summit X440-24t-10G | 0 (fan not on) | 0 (fan not on) | 11000 | 55 |
| Summit X440-24x-10G | 5900 | 42 | 11000 | 57 |
| Summit X440-24x-10G | 5900 | 42 | 11000 | 53 |
| Summit X440-48t-10G | 5900 | 39 | 11000 | 55 |
| Summit X440-48p-10G | 5900 | 42 | 11000 | 57 |

*Note: Sound pressure is measured in accordance with ISO 7779:2010(E).*

# Power Specifications

| SWITCH MODEL | EFFICIENCY | POE BUDGET | EFFICIENCY |
|---|---|---|---|
| Summit X440-8t | 39W | | 70% |
| Summit X440-8p | 240W | 170W | 70% |
| Summit X440-24t | 44W | | 70% |
| Summit X440-24tDC | 38W | | 79% |
| Summit X440-24p | 585W | 380W | 70% |
| Summit X440-24x | 46W | | 70% |
| Summit X440-48t | 60W | | 70% |
| Summit X440-48tDC | 57W | | 82% |
| Summit X440-48p | 600W | 380W | 69% |
| Summit X440-24t-10G | 44W | | 75% |
| Summit X440-24p-10G | 585W | 380W | 75% |
| Summit X440-24x-10G | 46W | | 75% |
| Summit X440-48t-10G | 95W | | 66% |

# Accessories

## EXTERNAL POWER SUPPLIES

### STK-RPS-150PS

The STK-RPS-150PS is a small form-factor extrenal 150 watt redundant power supply for X440 non-PoE switches. It can be rackmounted horizontally in a two slot shelf (STK-RPS-150CH2) or vertically in an eight slot shelf (STK-RPS-150CH8.)

### STK-RPS-500PS

The STK-RPS-500PS is a 1RU 500 watt IEEE802.3at redundant power supply that ships with rack mount ears.

### EPS-500

The EPS-500 is a 1RU 500 watt IEEE802.3af redundant power supply that ships with rack mount ears that can be used to power non-PoE X440 switches.

*Note: The EPS-500 is an IEEE802.3af RPS and should NOT be used with the IEEE802.3at X440 PoE switches.*

### 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.

### RPS-500p

This new standalone IEEE802.3at PoE+ RPS can be used as an external redundant power supply for a single X440, A4, B5 or 800-Series PoE+ switch.

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

| RPS USE TABLE | STK-RPS-150PS | STK-RPS-500PS | RPS-500P | EPS-500 | EPS-C2 |
|---|---|---|---|---|---|
| Non-PoE X440 | X | | X | X | X |
| PoE X440 | | X | X | | X |

| EPS MODEL | REDUNDANT POWER SUPPLY OUTPUT BLOCKS |
|---|---|
| STK-RPS-150PS | 1 terminal block of 2x7 pins - provides 150 watts of system power |
| STK-RPS-500PS | 1 terminal block of 2x7 pins - provides system power and up to 380 watts of IEEE802.3at power |
| EPS-500 | 1 terminal block of 2x7 pins - provides 150 watts of system power |
| RPS-500p | 1 terminal block of 2x7 pins - provides system power and up to 380 watts of IEEE802.3at power |
| EPS-C2 | 1 terminal block of 2x9 pins - used for other Summit switches<br>5 terminal blocks of 2x7 pins - used for Summit X440's |

| EPS MODEL | ALLOWABLE PSU | POWER CORD INPUT PLUG/SOCKET | POWER CORD GAUGE |
|---|---|---|---|
| STK-RPS-150PS | Not Applicable | IEC 320 C13/C14 | Min 18AWG |
| STK-RPS-500PS | Not Applicable | IEC 320 C13/C14 | Min 18AWG |
| EPS-500 | Not Applicable | IEC 320 C13/C14 | Min 18AWG |
| RPS-500p | Not Applicable | IEC 320 C13/C14 | Min 18AWG |
| EPS-C2 | Summit 750W PoE AC PSU | IEC 320 C13/C14 | Min 18AWG |

| EPS MODEL | WEIGHT | ALLOWABLE PSU |
|-----------|--------|---------------|
| STK-RPS-150PS | 3.85 lb (1.75 kg) | Height: 2.04 inches (5.2 cm)<br>Width: 7.7 inches (19.6 cm)<br>Depth: 10.1 inches (25.7 cm) |
| STK-RPS-150CH2 | 2.09 lb (0.95 kg) | Height: 2.2 inches (5.5 cm)<br>Width: 17.3 inches (44.0 cm)<br>Depth: 7.0 inches (18.0 cm) |
| STK-RPS-150CH8 | 11.6 lb (5.27 kg) | Height: 8.77 inches (22.26 cm)<br>Width: 17.3 inches (44.0 cm)<br>Depth: 10.4 inches (26.4 cm) |
| STK-RPS-500PS | 7.63 lb (3.47 kg) | Height: 1.75 inches (4.5 cm)<br>Width: 17.5 inches (44.5 cm)<br>Depth: 6.5 inches (16.5 cm) |
| EPS-500 | 10.8 lb (4.9 kg) | Height: 1RU, 1.73 inches (4.4 cm)<br>Width: 17.4 inches (44.1 cm)<br>Depth: 7.6 inches (19.3 cm) |
| RPS-500p | 8.06 lb (3.66 kg) | Height: 1RU, 1.73 inches (4.4 cm)<br>Width: 17.4 inches (44.1 cm)<br>Depth: 7.9 inches (20.1 cm) |
| EPS-C2 | 2.27 lb (1.03 kg) | Height: 1RU, 1.73 inches (4.4 cm)<br>Width: 17.4 inches (44.1 cm)<br>Depth: 15.1 inches (38.4 cm) |

| SWITCH MODEL | POWER SUPPLY INPUT SOCKET | POWER CORD INPUT PLUG/ INPUT SOCKET | POWER SUPPLY CORD GAUGE | REDUNDANT POWER SUPPLY INPUT SOCKET |
|--------------|---------------------------|-------------------------------------|-------------------------|--------------------------------------|
| Summit X440-8t | IEC 320 C14 | IEC 320 C13/C14 | Min 18AWG | n/a |
| Summit X440-8p | IEC 320 C14 | IEC 320 C13/C14 | Min 18AWG | n/a |
| Summit X440-24t | IEC 320 C14 | IEC 320 C13/C14 | Min 18AWG | 2x7 pin terminal block |
| Summit X440-24tDC | #6 Terminal Block | #6, Crimp lugs, 16/14 AWG | Min 14 AWG | 2x7 pin terminal block |
| Summit X440-24p | IEC 320 C14 | IEC 320 C13/C14 | Min 18AWG | 2x7 pin terminal block |
| Summit X440-24x | IEC 320 C14 | IEC 320 C13/C14 | Min 18AWG | 2x7 pin terminal block |
| Summit X440-48t | IEC 320 C14 | IEC 320 C13/C14 | Min 18AWG | 2x7 pin terminal block |
| Summit X440-24tDC | #6 Terminal Block | #6, Crimp lugs, 16/14 AWG | Min 14 AWG | 2x7 pin terminal block |
| Summit X440-48p | IEC 320 C14 | IEC 320 C13/C14 | Min 18AWG | 2x7 pin terminal block |
| Summit X440-24t-10G | IEC 320 C14 | IEC 320 C13/C14 | Min 18AWG | 2x7 pin terminal block |
| Summit X440-24p-10G | IEC 320 C14 | IEC 320 C13/C14 | Min 18AWG | 2x7 pin terminal block |
| Summit X440-24x-10G | IEC 320 C14 | IEC 320 C13/C14 | Min 18AWG | 2x7 pin terminal block |

## 750W AC PSU (Model 10931) for PoE Switches

| PHYSICAL SPECIFICATIONS | |
|-------------------------|---|
| Dimensions | Height 40 mm (1.57 inches)<br>Width 80 mm (3.15 inches)<br>Depth 241.5 mm (9.5 inches) |
| Weight | 2.25 lb (1.02kg) |
| **POWER SPECIFICATIONS** | |
| Voltage input range | 85-264 VAC |
| Nominal input ratings | 100 to 240 VAC, 50 to 60 Hz, 10 A |
| Nominal input current at full load | 10 A at 90 VAC (low-line)<br>3.7 A at 230 VAC (high-line) |
| Line frequency range | 47 to 63 Hz |
| Maximum inrush current | 35 A |
| Output | 12 VDC, 25 A maximum, 300 Watts<br>55 VDC, 8.18 A maximum, 450 Watts<br>3.3 VDC, 3.03 A maximum, 10 Watts |
| Power Supply input socket | IEC 320 C14 |

# 750W AC PSU (Model 10931) for PoE Switches (cont.)

| PHYSICAL SPECIFICATIONS | |
|---|---|
| Power cord input plug | IEC 320 C13 |
| Efficiency | Low Line: 88% at 50% load and 86% at 100% load<br>High Line: 90% at 50% and 100% loads |
| **ENVIRONMENTAL SPECIFICATIONS** | |
| Operating Temperature | 0 deg C to 45 deg C normal operation |
| Storage Temperature | -40 deg C to 70 deg C |
| Operating Humidity | 20% to 90% relative humidity, non-condensing |
| Operational Shock | 30 m/s2 (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 |
| 16501T | Summit X440-8t-TAA | 8 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP, SummitStack Stacking ports, 1 AC PSU, ExtremeXOS Edge license, TAA model |
| 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 |
| 16502T | Summit X440-8p-TAA | 8 10/100/1000BASE-T PoE-plus, 4 1000BASE-X unpopulated SFP, SummitStack Stacking ports, 1 AC PSU, ExtremeXOS Edge license, TAA model |
| 16503 | Summit X440-24t | 24 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP (4 SFP ports shared with10/100/1000BASE-T ports), SummitStack Stacking ports, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply |
| 16503T | Summit X440-24t-TAA | 24 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), Summit Stack Stacking ports, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply, TAA model |
| 16519 | Summit X440-24tDC | 24 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), Summit Stack Stacking ports, 1 DC 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 with10/100/1000BASE-T ports), SummitStack Stacking ports, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply |
| 16504T | Summit X440-24p-TAA | 24 10/100/1000BASE-T PoE-plus, 4 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), Summit Stack Stacking ports, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply, TAA model |
| 16513 | Summit X440-24x | 24 100/1000BASE-X SFP ports, 4 gigabit combo ports (4 RJ45 ports shared with 100/1000BASE-X ports), SummitStack Stacking ports, 1 AC PSU, ExtremeXOS 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 |
| 16520 | Summit X440-48tDC | 48 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), Summit Stack Stacking ports, 1 DC PSU, ExtremeXOS Edge license, connector for external power supply. |
| 16505T | Summit X440-48t-TAA | 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, TAA model |
| 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 |
| 16506T | Summit X440-48p-TAA | 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, TAA model |
| 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 |
| 16507T | Summit X440-24t-10G-TAA | 24 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP (2 4 SFP ports shared with 10/100/1000BASE-T ports), 2 10GBASE-X SFP+, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply, TAA model |
| 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 |

| PART NUMBER | NAME | DESCRIPTION |
|---|---|---|
| 16508T | Summit X440-24p-10G-TAA | 24 10/100/1000BASE-T PoE-plus, 4 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), 2 10GBASE-X SFP+, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply, TAA model |
| 16514 | Summit X440-24x-10G | 24 100/1000BASE-X SFP ports, 4 gigabit combo ports (4 RJ45 ports shared with 100/1000BASE-X 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 |
| 16509T | Summit X440-48t-10G-TAA | 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, TAA model |
| 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 |
| 16510T | Summit X440-48p-10G-TAA | 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, TAA model |
| 16513 | Summit X440-24x | 24 100/1000BASE-X SFP ports, 4 gigabit combo ports (4 RJ45 ports shared with 100/1000BASE-X ports), SummitStack Stacking ports, 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 |
| STK-RPS-150PS | 150W Non-PoE RPS | 150 watt non-PoE redundant power supply for A, B, C, X440 and X450-G2 switches |
| STK-RPS-150CH2 | 2-Slot Modular Shelf for 150W RPS | 2 slot modular shelf for rack-mounting STK-RPS-150PS external redundant power supplies horizontally |
| STK-RPS-150CH8 | 8-Slot Modular Shelf for 150W RPS | 8 slot modular shelf for rack-mounting STK-RPS-150PS external redundant power supplies vertically |
| STK-RPS-500PS | 500W PoE RPS | 500 watt IEEE802.3at PoE Redundant Power Supply |
| 10911 | EPS-500 | External Power System 500 Watts, with cable |
| 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 |
| 10923 | RPS-500p | External PoE+ Redundant Power Supply Unit 500 Watts with RPS cable, 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 |
| 10310 | 10GBASE-ZR SFP+ | 10GBASE-ZR SFP+ 1550nm, LC connector, transmission length up to 80km 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 |
| 10051H | 1000BASE-SX SFP, Hi | 1000BASE-SX SFP,, MMF 220 & 550 meters, LC Connector, Industrial Temp |
| 10052H | 1000BASE-LX SFP, Hi | 1000BASE-LX SFP, LC Connector, Industrial Temp |
| 10053 H | 1000BASE-ZX SFP | 1000BASE-ZX SFP, SMF 70 km, LC Connector, Industrial Temp |
| 10056H | 1000BASE-BX-D SFP, Hi | 1000BASE-BX-D SFP, SMF (1490nm TX/1310nm RX Wavelength), Industrial Temp |
| 10057H | 1000BASE-BX-U SFP, Hi | 1000BASE-BX-U SFP, SMF (1310nm TX/1490nm RX Wavelength), Industrial Temp |
| 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 |

| PART NUMBER | NAME | DESCRIPTION |
|---|---|---|
| 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 |
| 10059 | 100BASE-BX-U SFP | 100M SFP, 100BASE-BX-U, SMF (1310nm TX/1550nm RX wavelength), 100 Mbps bidirectional |
| 10070H* | 10/100/1000BASE-T SFP, Hi | 10/100/1000BASE-T SFP module, CAT5 cable 100m link, RJ45-connector for Gigabit Ethernet SFP Port, 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 |

*Not supported on combo ports*

## Protocols and Standards

A list of supported protocols and standards is available on the Extreme Networks website at:
http://www.extremenetworks.com/product/extremexos-network-operating-system

| POWER CORDS |
|---|
| In support of the Extreme Networks Green initiatives, power cords can be ordered separately but need to be specified at the time order. Please refer to www.extremenetworks.com/product/powercords/ for details on power cord availability for this product.. |

http://www.extremenetworks.com/contact  /  Phone +1-408-579-2800