

Highlights

Performance

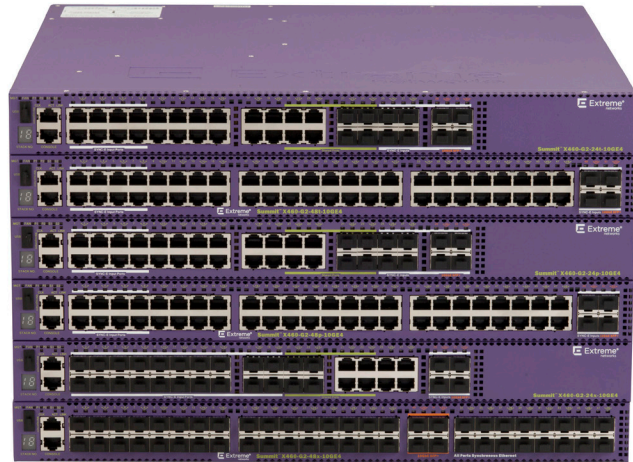
- 48-port or 28-port GbE models
- 4 ports of SFP+ 10GbE or 4 ports of SFP 1GbE on front faceplate
- 16 port multi-rate (100Mb/1/2.5Gb) PoE+ switch with 32 10/100/1000 PoE+ ports
- All configurations Non-blocking full duplex
- Two new 48 port switches with 10GbE uplinks that support 24 ports with half/full-duplex operation
- Copper, Fiber, and PoE-Plus models
- Optional two-port 10 GbE fiber and copper options to provide additional 10Gbps streams of uplink bandwidth
- Optional two-port 40 GbE to provide 80 Gbps uplinks or SummitStack-V160 stacking
- 40 Gbps stacking via front-panel 10Gb Ethernet ports or optional SummitStack

Form Factor

- 1 RU w/ 1 expansion slot for additional interface ports and 1 expansion slot for timing options

Features

- Secure Network Access through role based policy or Identity Management
- Front-to-Back or Back-to-Front airflow
- SyncE G.8232 and IEEE 1588 PTP Timing
- 850W of PoE-Plus budget with 1 PSU
- 1440W of PoE-Plus budget with 2 PSUs
- Multi-rate Ethernet (100Mb/1/2.5Gb) support
- Y.1731 OAM Measurements in hardware for accuracy
- Energy Efficient Ethernet - IEEE 802.3az on 10/100/1000 ports
- Hot-Swappable Power Supplies and Fan Tray



ExtremeSwitching[™] X460-G2 Series

Scalable advanced aggregation switch with ExtremeXOS[®] modular operating system.

The X460-G2 series is based on Extreme Networks revolutionary ExtremeXOS, a highly resilient OS that provides continuous uptime, manageability and operational efficiency. Each switch offers the same high-performance, non-blocking hardware technology, in the Extreme Networks tradition of simplifying network deployments through the use of common hardware and software throughout the network.

The X460-G2 switches are effective campus edge switches that support Energy Efficient Ethernet (EEE - IEEE 802.3az) with IEEE 802.3at PoE-plus and can also serve as aggregation switches for traditional enterprise networks. The X460-G2 series is also an option for DSLAM or CMTS aggregation, or for active Ethernet access.

The X460-G2 can also be used as a top-of-rack switch for many data center environments with features such as high-density Gigabit Ethernet for concentrated data center environments; XNV[™] (ExtremeXOS Network Virtualization) for centralized network-based Virtual Machine (VM) inventory, VM location history and VM provisioning; Direct Attach[™] to offload VM switching from servers, thereby improving performance; high-capacity Layer 2/Layer 3 scalability for highly virtualized data centers; and intra-rack and cross-rack stacking with industry leading flexibility.

Comprehensive Security Management

- User policy and host integrity enforcement, and identity management
- Universal Port Dynamic Security Profiles to provide fine granular security policies in the network

- Threat detection and response instrumentation to react to network intrusion with CLEAR-Flow Security Rules Engine
- Denial of Service (DoS) protection and IP security against man-in-the-middle and DoS attacks to harden the network infrastructure
- Role Based Policy enables support for policy profiles to secure and provision network resources based upon the role the user or device plays within the network

Flexible Port Configuration

The X460-G2 offers flexible port configurations. X460-G2 24 port copper models with 10G uplinks can have up to 8 fiber GbE ports (four dedicated ports + four shared ports) and 20 GbE copper ports (PoE-plus or non-PoE). The X460-G2 24 port copper models with 1Gb uplinks can provide up to 12 SFP ports with 20 Gigabit Ethernet ports or eight SFP ports with 24 copper GbE ports.

All models come equipped with either 4 ports of SFP+ 10 GbE or 4 ports of SFP 1GbE resident on the faceplate of each model. Through an optional VIM slot, X460-G2 switches can be equipped with an additional 2 ports of 10 GbE for a total of six 10 Gigabit Ethernet ports on the 10Gb uplink models.

As another option, each unit can be equipped with 2 ports of QSFP+ 40 Gigabit Ethernet for uplinks or stacking.

High-Performance Stacking

Up to eight X460-G2 switches can be stacked using three different methods of stacking: SummitStack, SummitStack-V, and SummitStack-V160.

SummitStack — Stacking Using Copper CX4 Connections

The X460-G2 supports SummitStack by using the X460-G2-VIM-2ss module, which offers high-speed 40 Gbps stacking performance and provides compatibility with the X440, X460, X460-G2 and X480 stackable switches running the same version of ExtremeXOS.

SummitStack-V — Flexible Stacking Over 10GbE

ExtremeXOS supports the SummitStack-V capability using 2 of the native 10 GbE ports on the faceplate as stacking ports, enabling the use of standard cabling and optics technologies used for 10 GbE SFP+, SummitStack-V

provides long-distance 40 Gbps stacking connectivity of up to 40 km while reducing the cable complexity of implementing a stacking solution. SummitStack-V is compatible with X440, X440-G2, X450, X450-G2, X460, X460-G2, X480, X670, X670V, X670-G2 and X770 switches running the same version of ExtremeXOS. SummitStack-V enabled 10 GbE ports must be physically direct-connected.

Note: SummitStack-V is NOT supported on the 1GbE (SFP) front panel faceplate ports of non-10Gb X460-G2 models but SummitStack-V is supported on the 10GbE VIM cards (VIM-2x or VIM-2t) when used in the non-10GbE switches.

SummitStack-V160 — Flexible Stacking Over 40GbE

The X460-G2 also supports high-speed 160 Gbps stacking, which is ideal for demanding applications where a high volume of traffic traverses through the stacking links, yet bandwidth is not compromised through stacking.

SummitStack-V160 can support passive copper cable (up to 3m), active multi-mode fiber cable (up to 100m), and QSFP+ optical transceivers for 40 GbE up to 10km. With SummitStack-V160, the X460-G2 provides a flexible stacking solution inside the data center or central office to create a virtualized switching infrastructure across rows of racks. SummitStack-V160 is compatible with X460-G2, X480, X670V, X670-G2 and X770 switches running the same version of ExtremeXOS.

Note: The 40Gb Ethernet ports CANNOT be fanned out into four 10Gb ports.

Intelligent Switching and MPLS/H-VPLS Support

The X460-G2 supports sophisticated and intelligent Layer 2 switching, as well as Layer 3 IPv4/IPv6 routing including policy-based switching/routing, Provider Bridges, bidirectional ingress and egress Access Control Lists, and bandwidth control by 8 Kbps granularity both for ingress and egress.

To provide scalable network architectures used mainly for Carrier Ethernet network deployment, the X460-G2 supports MPLS LSP-based Layer 3 forwarding and Hierarchical VPLS (H-VPLS) for transparent LAN services. With H-VPLS, transparent Layer 3 networks can be extended throughout the Layer 3 network cloud by using a VPLS tunnel between the regional transparent LAN services typically built by Provider Bridges (IEEE 802.1ad) technology.

IEEE 802.3at PoE-plus

IEEE 802.3af Power over Ethernet has been widely used in the campus enterprise edge network for Ethernet-powered devices such as wireless access points, Voice over IP phones, and security cameras. Ethernet port extenders such as Extreme Networks ReachNXT™ 100-8t can also utilize PoE, making installation and management easier and reducing maintenance costs. The newer IEEE 802.3at PoEplus standard expands upon Power over Ethernet by increasing the power limit up to 30 watts, and by standardizing power negotiation by using LLDP. The X460-G2 supports IEEE 802.3at PoE-plus and supports standards-compliant PoE devices today and into the future.

1588 Precision Time Protocol (PTP)

The X460-G2 offers Boundary Clock (BC), Transparent Clock (TC), and Ordinary Clock (OC) for synchronizing phase and frequency and allowing the network and the connected devices to be synchronized down to microseconds of accuracy over Ethernet connection.

Audio Video Bridging (AVB)

The X460-G2 series supports IEEE 802.1 Audio Video Bridging to enable reliable, real-time audio/video transmission over Ethernet. AVB technology delivers the quality of service required for today's high-definition and time-sensitive multimedia streams.

Role-based Policy

Utilizing NetSight Policy Management, the role-based policy framework empowers a network administrator to define distinct roles or profiles that represent industry specific operational groups that may exist in an education or a business environment (e.g., administrator, teacher, student, guest). Each defined role is granted individualized access to specific network services and applications and these access privileges remain associated with users as they move across both wired and wireless network access points.

Users can be authenticated via IEEE 802.1X, MAC address, or web authentication, and then assigned a pre-defined operational role. Network operations can be seamlessly tailored to meet business-oriented requirements by providing each role with individualized access to network services and applications, thus aligning network resource utilization with business goals and priorities.

In addition, administrators can easily transition from basic VLAN and complex ACL deployments to the Extreme Networks role based policy framework in a seamless fashion, without the need to make changes to their RADIUS infrastructure.

Ordering Notes

The X460-G2 base switches do not ship with fan trays or power supplies. The fan tray, power supplies, and any optional VIM cards must be ordered separately. There is only one optional VIM slot on each X460-G2 switch. The optional Timing Module has a separate dedicated slot on the back of the X460-G2 switch. Beginning with EXOS 22.1, all X460-G2 base systems will include an Advanced Edge license -- an upgrade over the Edge License bundled with earlier EXOS releases.

Specifications

Performance/Scale

| Switch ModelWW | Maximum Active 10/100/1000 Ports | Maximum Active 100/1/2.5GbE Ports | Maximum Active 10GbE Ports | Maximum Active 40GbE Ports | Aggregated Switch Bandwidth | Frame Forwarding Rate |
|------------------------|----------------------------------|-----------------------------------|----------------------------|----------------------------|-----------------------------|-----------------------|
| X460-G2-24t-10GE4 | 28 | - | 6 | 2 | 296 Gbps | 220.2 Mpps |
| X460-G2-48t-10GE4 | 48 | - | 6 | 2 | 336 Gbps | 250 Mpps |
| X460-G2-24x-10GE4 | 28 | - | 6 | 2 | 296 Gbps | 220.2 Mpps |
| X460-G2-48x-10GE4 | 48 | - | 6 | 2 | 336 Gbps | 250 Mpps |
| X460-G2-24p-10GE4 | 28 | - | 6 | 2 | 296 Gbps | 220.2 Mpps |
| X460-G2-48p-10GE4 | 48 | - | 6 | 2 | 336 Gbps | 250 Mpps |
| X460-G2-24p-24hp-10GE4 | 48 | - | 6 | 2 | 336 Gbps | 250 Mpps |
| X460-G2-24t-24ht-10GE4 | 48 | - | 6 | 2 | 336 Gbps | 250 Mpps |
| X460-G2-16mp-32p-10GE4 | 32 | 16 | 6 | 2 | 384 Gbps | 285.7 Mpps |
| X460-G2-24t-GE4 | 32 | - | 2 | 2 | 224 Gbps | 166.7 Mpps |
| X460-G2-48t-GE4 | 52 | - | 2 | 2 | 264 Gbps | 196.4 Mpps |
| X460-G2-24p-GE4 | 32 | - | 2 | 2 | 224 Gbps | 166.7 Mpps |
| X460-G2-48p-GE4 | 52 | - | 2 | 2 | 264 Gbps | 196.4 Mpps |

- Less than 4 microsecond latency (64-byte)
- Layer 2/MAC Addresses: 96K (98,304)
- IPv4 Host Addresses: 62K
- IPv4 LPM Entries: 12K, 16K on X460-G2-16mp-32p-10GE4
- IPv6 Host Addresses: 24K
- IPv6 LPM Entries: 6K, 8K on X460-G2-16mp-32p-10GE4
- 4096 VLAN/VMANs
- 9216 Byte Max Packet Size (Jumbo Frame)
- 128 load sharing trunks, up to 32 members per trunk
- 4,096 ingress bandwidth meters
- Ingress and egress bandwidth policing/rate limiting per flow/ACL
- 8 QoS egress queues/port
- Egress bandwidth rate shaping per egress queue and per port
- Rate Limiting Granularity: 8 Kbps
- All ports Full Duplex - half duplex operation is not supported except for 24 ports on X460-G2-24p-24hp-10GE4 and X460-G2-24t-24ht-10GE4
- Policy Capabilities
 - Rules per Profile: Up to 1464
 - Authenticated Policy Users per Switch: Up to 12,288
 - Authenticated Policy Users per Port: Up to 12,288
- Unique Permit/Deny Rules per switch: 1464
- The following number of rules listed below can be affected by the switch configuration options in EXOS 22.4 or greater
 - MAC Rules: up to 512
 - IPv4 Rules: up to 1280
 - IPv6 Rules: up to 256
 - L2 Rules: up to 184
- Rate Limiting: Per Class of Service

NOTE: Policy and rule limits here reflect support available in EXOS 22.4 or greater

Front-Panel Ports

| Switch Hardware | Ports |
|------------------------|--|
| X460-G2-24t-10GE4 | <ul style="list-style-type: none"> • 24 x 10/100/1000BASE-T (RJ-45) - 4 ports are combo ports • 8 x 100/1000BASE-X (SFP) unpopulated ports - 4 ports are combo ports • 4 x 10GBASE-X SFP+ (unpopulated ports) • 1 x Serial (console port RJ-45) • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB port for external USB flash |
| X460-G2-48t-10GE4 | <ul style="list-style-type: none"> • 48 x 10/100/1000BASE-T (RJ-45) • 4 x 10GBASE-X SFP+ (unpopulated ports) • 1 x Serial (console port RJ-45) • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB port for external USB flash |
| X460-G2-24t-24ht-10GE4 | <ul style="list-style-type: none"> • 24 x 10/100/1000BASE-T Full-Duplex (RJ-45) • 24 x 10/100/1000BASE-T Full/Half-Duplex (RJ-45) • 4 x 10GBASE-X SFP+ (unpopulated ports) • 1 x Serial (console port RJ-45) • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB port for external USB flash |
| X460-G2-24x-10GE4 | <ul style="list-style-type: none"> • 24 x 100/1000BASE-X (SFP) unpopulated ports - 4 ports are combo ports • 8 x 10/100/1000BASE-T (RJ-45) - 4 ports are combo ports • 4 x 10GBASE-X SFP+ (unpopulated ports) • 1 x Serial (console port RJ-45) • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB port for external USB flash |
| X460-G2-48x-10GE4 | <ul style="list-style-type: none"> • 48 x 100/1000BASE-X (SFP) unpopulated ports • 4 x 10GBASE-X SFP+ (unpopulated ports) • 1 x Serial (console port RJ-45) • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB port for external USB flash |
| X460-G2-24p-10GE4 | <ul style="list-style-type: none"> • 24 x 10/100/1000BASE-T PoE-Plus - 4 ports are combo ports • 8 x 100/1000BASE-X (SFP) unpopulated ports - 4 ports are combo ports • 4 x 10GBASE-X SFP+ (unpopulated ports) • 1 x Serial (console port RJ-45) • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB port for external USB flash |
| X460-G2-48p-10GE4 | <ul style="list-style-type: none"> • 48 x 10/100/1000BASE-T PoE-Plus • 4 x 10GBASE-X SFP+ (unpopulated ports) • 1 x Serial (console port RJ-45) • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB port for external USB flash |
| X460-G2-24p-24hp-10GE4 | <ul style="list-style-type: none"> • 24 x 10/100/1000BASE-T Full-Duplex PoE-Plus • 24 x 10/100/1000BASE-T Full/Half-Duplex PoE-Plus • 4 x 10GBASE-X SFP+ (unpopulated ports) • 1 x Serial (console port RJ-45) • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB port for external USB flash |
| X460-G2-24t-GE4 | <ul style="list-style-type: none"> • 24 x 10/100/1000BASE-T (RJ-45) - 4 ports are combo ports • 8 x 100/1000BASE-X (SFP) unpopulated ports - 4 ports are combo ports • 4 1GBASE-X SFP (unpopulated ports) • 1 x Serial (console port RJ-45) • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB port for external USB flash |

Front-Panel Ports (cont.)

| Switch Hardware | Ports |
|------------------------|--|
| X460-G2-24p-GE4 | <ul style="list-style-type: none"> • 24 x 10/100/1000BASE-T PoE-Plus - 4 ports are combo ports • 8 x 100/1000BASE-X (SFP) unpopulated ports - 4 ports are combo ports • 4 1GBASE-X SFP (unpopulated ports) • 1 x Serial (console port RJ-45) • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB port for external USB flash |
| X460-G2-48p-GE4 | <ul style="list-style-type: none"> • 48 x 10/100/1000BASE-T PoE-Plus • 4 x 1GBASE-X SFP (unpopulated ports) • 1 x Serial (console port RJ-45) • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB port for external USB flash |
| X460-G2-16mp-32p-10GE4 | <ul style="list-style-type: none"> • 16 x 100Mb/1/2.5GbE PoE-Plus • 32 x 10/100/1000BASE-T PoE-Plus • 4 x 10GBASE-X SFP+ (unpopulated ports) • 1 x Serial (console port RJ-45) • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB port for external USB flash |
| X460-G2 VIM-2x | 2 x 10GBASE-X SFP+ (unpopulated ports) |
| X460-G2 VIM-2t | 2 x 10GBASE-T Ports |
| X460-G2 VIM-2ss | 2 x SummitStack (CX4) Ports |
| X460-G2 VIM-2q | 2 x 40GBASE-X QSFP+ (unpopulated ports) |
| X460-G2 TM-CLK | Clock Module for SyncE and 1588 with 2 mini-BNC connectors for 10MHz and 1PPS signals |

NOTE: All X460-G2 switches have a USB 2.0 port that is supported as a port to a storage device with all EXOS versions of 22.1 or higher
 NOTE: The multi-rate ports do NOT support SyncE

Physical

| Switch Model | Weight | Physical Dimension |
|------------------------|-------------------|---|
| X460-G2-24t-10GE4 | 12.9 lb (5.85 kg) | Height: 1 RU / 1.73 inches (4.4 cm) Width: 17.4 inches (44.1 cm) Depth: 16.94 inches (43.03 cm) |
| X460-G2-48t-10GE4 | 13.3 lb (6.03 kg) | |
| X460-G2-24t-24ht-10GE4 | 13.3 lb (6.03 kg) | |
| X460-G2-24x-10GE4 | 13.1 lb (5.94 kg) | |
| X460-G2-48x-10GE4 | 14.1 lb (6.4 kg) | |
| X460-G2-24t-GE4 | 12.9 lb (5.85 kg) | |
| X460-G2-48t-GE4 | 13.3 lb (6.03 kg) | Height: 1 RU / 1.73 inches (4.4 cm) Width: 17.4 inches (44.1 cm) Depth: 19.2 inches (48.8 cm) |
| X460-G2-24p-10GE4 | 14.6 lb (6.62 kg) | |
| X460-G2-48p-10GE4 | 15.2 lb (6.9 kg) | |
| X460-G2-24p-24hp-10GE4 | 15.2 lb (6.9 kg) | |
| X460-G2-16mp-32p-10GE4 | 15.2 lb (6.9 kg) | |
| X460-G2-24p-GE4 | 14.6 lb (6.62 kg) | |
| X460-G2-48p-GE4 | 15.2 lb (6.9 kg) | Height: 1.4 inches (3.55 cm) Width: 3.4 inches (8.6 cm) Depth: 5.5 inches (13.9 cm) |
| X460-G2 VIM-2x | 0.57 lb (0.26 kg) | |
| X460-G2 VIM-2t | 0.57 lb (0.26 kg) | |
| X460-G2 VIM-2ss | 0.57 lb (0.26 kg) | Height: 1.4 inches (3.55 cm) Width: 3.4 inches (8.6 cm) Depth: 5.5 inches (13.9 cm) |

Physical (cont.)

| Switch Model | Weight | Physical Dimension |
|----------------------------------|-------------------|--|
| X460-G2 VIM-2q | 0.57 lb (0.26 kg) | Height: 1.4 inches (3.55 cm) Width: 3.4 inches (8.6 cm) Depth: 5.5 inches (13.9 cm) |
| X460-G2 TM-CLK | 0.19 lb (0.08 kg) | Height: 1.4 inches (3.55 cm) Width: 0.9 inches (2.29 cm) Depth: 6.3 inches (16.0 cm) |
| X460-G2 Front-to-Back fan module | 1.0 lb (0.46 kg) | Height: 1.59 inches (4.04 cm) Width: 4.8 inches (12.2 cm) Depth: 6.2 inches (15.75 cm) |
| X460-G2 Back-to-Front fan module | 1.0 lb (0.46 kg) | Height: 1.59 inches (4.04 cm) Width: 4.8 inches (12.2 cm) Depth: 6.2 inches (15.75 cm) |

NOTE: Switch weights include installed fan module. They do not include installed VIM2 modules or PSUs.

* Please refer to the Summit Family Switches Hardware Installation Guide for packaged weight and dimensions.

CPU/Memory

- 64-bit MIPS Processor, 1 GHz clock
- 1GB ECC DDR3 DRAM
- 4GB eMMC Flash
- 5MB packet buffer on X460-G2-16mp-32p-10GE4, 4MB packet buffer on other X460-G2 switches

LED Indicators

- Per port status LED including power status
- System Status LEDs: management, fan and power
- 7 segment display of stack number

Power Supply Units (Each Has Front-to-Back and Back-to-Front Models)

| | 300W AC PSU | 300 DC PSU | 350W AC PSU | 715W AC PSU | 1100W AC PSU |
|---------------------------|---|---|---|---|---|
| Dimensions | Height 27 mm (1.06 inches) Width 78 mm (3.09 inches) Depth 277 mm (10.9 inches) | Height 27 mm (1.06 inches) Width 78 mm (3.09 inches) Depth 277 mm (10.9 inches) | Height 40 mm (1.56 inches) Width 82.5 mm (3.25 inches) Depth 287 mm (11.3 inches) | Height 40 mm (1.56 inches) Width 82.5 mm (3.25 inches) Depth 287 mm (11.3 inches) | Height 40 mm (1.56 inches) Width 82.5 mm (3.25 inches) Depth 287 mm (11.3 inches) |
| Weight | 1.02 kg (2.25 lbs) | 0.83 kg (1.83 lbs) | 1.08 kg (2.38lbs) | 1.16 kg (2.55 lbs) | 1.16 kg (2.55 lbs) |
| Voltage Input Range | 85-264 VAC | -18 to -72 VDC | 100-127/200-240 VAC | 100-127/200-240 VAC | 100-127/200-240 VAC |
| Line Frequency Range | 47 to 63 Hz | N/A | 47 to 63 Hz | 47 to 63 Hz | 47 to 63 Hz |
| Power Supply Input Socket | IEC 320 C14 | N/A | IEC 320 C14 | IEC 320 C16 | IEC 320 C16 |
| Power Cord Input Plug | IEC 320 C13 | N/A | IEC 320 C13 | IEC 320 C15 | IEC 320 C15 |
| Operating Temperature | 0°C to 50°C normal operation | 0°C to 50°C normal operation | 0°C to 50°C normal operation | 0°C to 50°C normal operation | 0°C to 50°C normal operation |

PoE Power Budget

| Switch Model | 1 PSU of 350W | 1 PSU of 715W | 1 PSU of 1100W | 2 PSUs of 350W | 2 PSUs of 715W | 1 PSU of 715W and 1 PSU of 1100W | 2 PSUs of 1100W |
|------------------------|----------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| X460-G2-24p-10GE4 | 150W | 500W | 720W | 300W | 720W | 720W | 720W |
| X460-G2-48p-10GE4 | 150W | 500W | 850W | 300W | 1031W | 1350W | 1440W |
| X460-G2-24p-24hp-10GE4 | 150W | 500W | 850W | 300W | 1031W | 1350W | 1440W |
| X460-G2-16mp-32p-10GE4 | 150W | 500W | 850W | 300W | 1031W | 1350W | 1440W |
| X460-G2-24p-GE4 | 150W | 500W | 720W | 300W | 720W | 720W | 720W |
| X460-G2-48p-GE4 | 150W | 500W | 850W | 300W | 1031W | 1350W | 1440W |
| X460-G2-24p-10GE4 | 5 ports @ 30W 9 ports @ 15.4W | 16 ports @ 30W 24 ports @ 15.4W | 24 ports @ 30W 24 ports @ 15.4W | 10 ports @ 30W 19 ports @ 15.4W | 24 ports @ 30W 24 ports @ 15.4W | 24 ports @ 30W 24 ports @ 15.4W | 24 ports @ 30W 24 ports @ 15.4W |
| X460-G2-16mp-32p-10GE4 | 5 ports @ 30W 9 ports @ 15.4W | 16 ports @ 30W 32 ports @ 15.4W | 28 ports @ 30W 48 ports @ 15.4W | 10 ports @ 30W 19 ports @ 15.4W | 34 ports @ 30W 48 ports @ 15.4W | 45 ports @ 30W 48 ports @ 15.4W | 48 ports @ 30W 48 ports @ 15.4W |
| X460-G2-16mp-32p-10GE4 | 5 ports @ 30W 9 ports @ 15.4W | 16 ports @ 30W 24 ports @ 15.4W | 24 ports @ 30W 24 ports @ 15.4W | 10 ports @ 30W 19 ports @ 15.4W | 24 ports @ 30W 24 ports @ 15.4W | 24 ports @ 30W 24 ports @ 15.4W | 24 ports @ 30W 24 ports @ 15.4W |
| X460-G2-16mp-32p-10GE4 | 5 ports @ 30W 9 ports @ 15.4W | 16 ports @ 30W 32 ports @ 15.4W | 28 ports @ 30W 48 ports @ 15.4W | 10 ports @ 30W 19 ports @ 15.4W | 34 ports @ 30W 48 ports @ 15.4W | 45 ports @ 30W 48 ports @ 15.4W | 48 ports @ 30W 48 ports @ 15.4W |
| X460-G2-24p-GE4 | 5 ports @ 30W 9 ports @ 15.4W | 16 ports @ 30W 24 ports @ 15.4W | 24 ports @ 30W 24 ports @ 15.4W | 10 ports @ 30W 19 ports @ 15.4W | 24 ports @ 30W 24 ports @ 15.4W | 24 ports @ 30W 24 ports @ 15.4W | 24 ports @ 30W 24 ports @ 15.4W |
| X460-G2-48p-GE4 | 5 ports @ 30W 9 ports @ 15.4W | 16 ports @ 30W 32 ports @ 15.4W | 28 ports @ 30W 48 ports @ 15.4W | 10 ports @ 30W 19 ports @ 15.4W | 34 ports @ 30W 48 ports @ 15.4W | 45 ports @ 30W 48 ports @ 15.4W | 48 ports @ 30W 48 ports @ 15.4W |

Power Supply Units (Each Has Front-to-Back and Back-to-Front Models)

| Switch Model | Minimum Heat Dissipation | Minimum Power Consumption | Maximum Heat Dissipation* | Maximum Power Consumption* |
|------------------------|--------------------------|---------------------------|---------------------------|----------------------------|
| X460-G2-24t-10GE4 | 229 BTU/hr | 67 W | 427 BTU/hr | 125 W |
| X460-G2-24p-10GE4 | 260 BTU/hr | 76 W | 761 BTU/hr | 223 W |
| X460-G2-48t-10GE4 | 250 BTU/hr | 73 W | 427 BTU/hr | 125 W |
| X460-G2-48p-10GE4 | 287 BTU/hr | 84 W | 1116 BTU/hr | 327 W |
| X460-G2-24t-24ht-10GE4 | 250 BTU/hr | 73 W | 427 BTU/hr | 125 W |
| X460-G2-24p-24hp-10GE4 | 287 BTU/hr | 84 W | 1116 BTU/hr | 327 W |
| X460-G2-16mp-32p-10GE4 | 287 BTU/hr | 84 W | 1116 BTU/hr | 327 W |
| X460-G2-24x-10GE4 | 209 BTU/hr | 61 W | 443 BTU/hr | 130 W |
| X460-G2-48x-10GE4 | 202 BTU/hr | 59 W | 485 BTU/hr | 143 W |
| X460-G2-24t-GE4 | 215 BTU/hr | 63 W | 427 BTU/hr | 125 W |
| X460-G2-24p-GE4 | 250 BTU/hr | 73 W | 761 BTU/hr | 223 W |
| X460-G2-48t-GE4 | 243 BTU/hr | 71 W | 427 BTU/hr | 127 W |
| X460-G2-48p-GE4 | 284 BTU/hr | 83 W | 1116 BTU/hr | 327 W |

* Based on a peak of 720 watts PoE for 24 port PoE switches and 1440 watts PoE for 48 port PoE switches. All switches at 50C.

Environmental Specifications

- 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

Operating Conditions

- Temp: 0° C to 50° C (32° F to 122° 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

Environmental Compliance

- EU RoHS 2011/65/EU
- EU WEEE 2012/19/EU
- China RoHS SJ/T 11363-2006
- Taiwan RoHS CNS 15663(2013.7)

Packaging and Storage Specifications

- Temp: -40° C to 70° C (-40° F to 158° F)
- Humidity: 10% to 95% relative humidity, non-condensing
- Packaged Shock (half sine): 180 m/s² (18 G), 6 ms, 600 shocks
- Packaged Vibration: 5 to 62 Hz at velocity 5 mm/s, 62 to 500 Hz at 0.2 G
- Packaged Random Vibration: 5 to 20 Hz at 1.0 ASD w/-3 dB/oct. from 20 to 200 Hz
- Packaged Drop Height: 14 drops minimum on sides and corners at 42 inches (<15 kg box)

Regulatory and Safety

- North American ITE
 - UL 60950-1 2nd edition A2:2014, Listed Device (U.S.)
 - CSA 22.2 No. 60950-1 2nd edition 2014 (Canada)
 - Complies with FCC 21CFR 1040.10 (U.S. Laser Safety)
 - CDRH Letter of Approval (US FDA Approval)
- European ITE
 - EN 60950-1:2006+A11:2009+A1:2010+A12:2011 +A2:2013 2nd Ed.
 - EN 60825-1:2007 / IEC 60825-1:2007 Class 1 (Lasers Safety)
 - 2014 / 35/ EU Low Voltage Directive
- International ITE
 - CB Report & Certificate per IEC 60950-1 : 2005+A1:2009+A2:2013 + National Differences
 - AS/NZX 60950-1 (Australia /New Zealand)

EMI/EMC Standards

- North American EMC for ITE
 - FCC CFR 47 part 15 Class A (USA)
 - ICES-003 Class A (Canada)

- European EMC Standards
 - EN 55032:2015 Class A
 - EN 55024:2010
 - EN 61000-3-2: 2014 (Harmonics)
 - EN 61000-3-3: 2013 (Flicker)
 - EN 300 386 v1.6.1 (EMC Telecommunications)
 - 2014/30/EU EMC Directive
- International EMC Certifications
 - CISPR 32:2015, Class A (International Emissions)
 - AS/NZS CISPR32:2015
 - CISPR 24:2010 Class A (International Immunity)
 - IEC 61000-4-2:2008/EN 61000-4-2:2009 Electrostatic Discharge, 8kV Contact, 15 kV Air, Criteria B
 - IEC 61000-4-3:2010/EN 61000-4-3:2006 +A1:2008 +A2:2010 Radiated Immunity 10V/m, Criteria A
 - IEC 61000-4-4:2012. / EN 61000-4-4:2012 Transient Burst, 1 kV, Criteria A
 - IEC 61000-4-5:2014 /EN 61000-4-5:2014 Surge, 1 kV L-L, 2 kV L-G, Level 3, Criteria B
 - IEC 61000-4-6:2013/EN 61000-4-6:2014 Conducted Immunity, 0.15-80 MHz, 10Vrms, 80%AM (1kHz) Criteria A
 - IEC/EN 61000-4-11:2004 Power Dips & Interruptions, >30%, 25 periods, Criteria C

Country Specific

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

TELECOM STANDARDS

- CE 2.0 Compliant

IEEE 802.3 Media Access Standards

- IEEE 802.3ab 1000BASE-T
- IEEE 802.3z 1000BASE-X
- IEEE 802.3ae 10GBASE-X
- IEEE 802.3at PoE Plus
- IEEE 802.3az (EEE) - EEE is not supported on the multi-rate 100Mb/1.0Gb/2.5Gb ports
- IEEE 802.3bz 2.5G/5GBASE-T
- 2.5Gb Ethernet implemented via NBase-T Alliance

Fan and Acoustic Noise

| Switch Model | Acoustic Information | |
|--|---|---|
| X460-G2-24t-10GE4 X460-G2-24t-GE4 | Dual 300W AC or DC PS with Front to Back (FB) Air Flow | |
| | Bystander Sound Pressure* | Declared Sound Power (LWAd)** |
| | <ul style="list-style-type: none"> • 49.1 dB(A), 0C to 45C • 54.9 dB(A), 50C | <ul style="list-style-type: none"> • 6.0 bels, 0C to 45C • 6.6 bels @ 50C |
| | Dual 300W AC or DC PS with Back to Front (BF) Air Flow | |
| X460-G2-48t-10GE4 X460-G2-48t-GE4 X460-G2-24t-24ht-10GE4 | Dual 300W AC or DC PS with Front to Back (FB) Air Flow | |
| | Bystander Sound Pressure* | Declared Sound Power (LWAd)** |
| | <ul style="list-style-type: none"> • 47.6 dB(A), 0C to 45C • 64.5 dB(A), 50C | <ul style="list-style-type: none"> • 5.9 bels, 0C to 45C • 7.7 bels, 50C |
| | Dual 300W AC or DC PS with Back to Front (BF) Air Flow | |
| X460-G2-48p-10GE4 X460-G2-48p-GE4 X460-G2-24p-24hp-10GE4 X460-G2-16mp-32p-10GE4 | Dual 715W or 1100W AC PS with Front to Back (FB) Air Flow | |
| | Bystander Sound Pressure* | Declared Sound Power (LWAd)** |
| | <ul style="list-style-type: none"> • 52.2 dB(A), 0C to 45C • 64.3 dB(A), 50C | <ul style="list-style-type: none"> • 6.9 bels, 0C to 45C • 7.6 bels, 50C |
| | Dual 715W or 1100W AC PS with Back to Front (BF) Air Flow | |
| X460-G2-24p-10GE4 X460-G2-24p-GE4 | Dual 715W or 1100W AC PS with Front to Back (FB) Air Flow | |
| | Bystander Sound Pressure* | Declared Sound Power (LWAd)** |
| | <ul style="list-style-type: none"> • 52.2 dB(A), 0C to 45C • 61.8 dB(A), 50C | <ul style="list-style-type: none"> • 7.3 bels, 0C to 35C • 8.1 bels, 50C |
| | Dual 715W or 1100W AC PS with Back to Front (BF) Air Flow | |
| X460-G2-24x-10GE4 | Dual 300W AC or DC PS with Front to Back (FB) Air Flow | |
| | Bystander Sound Pressure* | Declared Sound Power (LWAd)** |
| | <ul style="list-style-type: none"> • 48.8 dB(A), 0C to 45C • 61.9 dB(A), 50C | <ul style="list-style-type: none"> • 6.0 bels, 0C to 45C • 7.5 bels, 50C |
| | Dual 300W AC or DC PS with Front to Back (FB) Air Flow | |
| X460-G2-24x-10GE4 | Dual 300W AC or DC PS with Front to Back (FB) Air Flow | |
| | Bystander Sound Pressure* | Declared Sound Power (LWAd)** |
| | <ul style="list-style-type: none"> • 48.8 dB(A), 0C to 35C • 58.7 dB(A), 45C • 66.7 dB(A), 50C | <ul style="list-style-type: none"> • 6.0 bels, 0C to 35C • 6.9 bels, 45C • 7.8 bels, 50C |
| | Dual 300W AC or DC PS with Front to Back (FB) Air Flow | |

Fan Acoustics (cont.)

| Switch Model | Acoustic Information | |
|---|---|--|
| X460-G2-48x-10GE4 | Dual 300W AC or DC PS with Front to Back (FB) Air Flow | |
| | Bystander Sound Pressure* | Declared Sound Power (LWAd)** |
| | <ul style="list-style-type: none"> • 48.9 dB(A), 0C to 45C • 60.5 dB(A) @ 50C | <ul style="list-style-type: none"> • 6.0 bels, 0C to 45C • 7.4 bels, 50C |
| | Dual 300W AC or DC PS with Back to Front (BF) Air Flow | |
| Bystander Sound Pressure* | Declared Sound Power (LWAd)** | |
| <ul style="list-style-type: none"> • 48.8 dB(A), 0C to 35C • 57.5 dB(A), 45C • 66.1 dB(A), 50C | <ul style="list-style-type: none"> • 6.0 bels, 0C to 35C • 6.9 bels, 45C • 7.8 bels, 50C | |

* Bystander Sound Pressure is presented for comparison to other products measured using Bystander Sound Pressure.

**Declared Sound Power is presented in accordance with ISO-7779:2010(E), ISO 9296:2010 per ETSI/EN 300 753:2012-01

Accessories

X460-G2 POWER SUPPLIES

All X460-G2 series switches are sold a la carte so power supplies and fans must be ordered separately. If redundancy or higher power Power-over-Ethernet plus capability is required, an additional power supply can be installed in the system. Each power supply has a front-to-back model and an equivalent back-to-front model for air flow control.

- 300W AC PSU
 - 300W AC PSU is compatible with X460-G2-24t/48t/24x/48x switches.
- 300W DC PSU
 - 300W DC PSU is compatible with X460-G2-24t/48t/24x/48x switches.
- 350W PoE AC PSU
 - 350W PoE AC PSU is compatible with all X460-G2 PoE switches and provides 150 watts of PoE-plus power budget per one supply. When two PSUs are installed, the total PoE-plus power budget becomes 300 watts.
- 715W PoE AC PSU
 - 715W PoE AC PSU is compatible with all X460-G2 PoE switches and provides 500 watts of PoE-plus power budget per one supply. When two PSUs are installed, the total PoE-plus power budget becomes 1031 watts.
- 1100W PoE AC PSU
 - 1100W PoE AC PSU is compatible with all X460-G2 PoE switches and provides 850 watts of PoE-plus power budget per one supply. When two PSUs are installed, the total PoE-plus power budget becomes 1440 watts.

- Optional Rear Rail Mounting Kit
 - The Rear Rail Kit (order code 16776) is an optional accessory for certain X460-G2 non-PoE and SFP models. It enables four post mounting for non-PoE and SFP X460-G2 models when needed. Please note that "deeper" X460-G2 PoE models already ship with this mounting option included.

X460-G2 Optional Modules

X460-G2 series switches have two slots, VIM and Timing, to support optional modules that support 10 Gigabit Ethernet, 40Gigabit Ethernet, stacking and timing modules. The VIM slot supports a two-port SFP+ 10 Gigabit Ethernet module, a two-port 10GBase-T Gigabit Ethernet module, a two-port SummitStack module, or a two-port QSFP+ 40 Gigabit Ethernet module. The Timing slot supports a timing module for SyncE and 1588PTP.

- VIM Modules
 - X460-G2 VIM-2x
 - X460-G2 VIM-2t
 - X460-G2 VIM-2ss
 - X460-G2 VIM-2q
- Timing Modules
 - X460-G2 TM-CLK

X460-G2 VIM-2X

2-port 10 Gigabit Ethernet module - provides two SFP+ ports. These two SFP+ ports can support both 10 Gigabit Ethernet SFP+ transceivers and Gigabit Ethernet transceivers.

X460-G2 VIM-2T

2-port 10 Gigabit Ethernet module, provides two 10GBase-T copper ports.

X460-G2 VIM-2SS

SummitStack module has two SummitStack stacking ports, and provides a 40 Gigabit stacking solution. This stacking module offers compatibility with other Extreme Networks stackable switches, which are Summit X440, Summit X460, and Summit X480.

X460-G2 VIM-2Q

2-port 40 Gigabit Ethernet module - provides 2 fully functional QSFP+ ports for uplinks or can be used for SummitStack-V160 providing a 160 Gigabit stacking solution.

X460-G2 TM-CLK

Module required for supporting G.8232 Synchronous Ethernet (SyncE) and ITU 1588 Precision Time Protocol (PTP) - available on all X460-G2.

Warranty

Ltd. Lifetime with eAHR-2

For warranty details, visit <http://www.extremenetworks.com/go/warranty>

Power Supplies, Fan Tray, Timing Modules and VIMS Are Ordered Separately

Ordered Empty



Shipped Empty with blank panels for 1 PSU slot, VIM slot & Timing Module slot



Optional: Timing Module for SyncE and 1588 PTP ordered separately



Required: Fan Tray with Air Flow Direction ordered separately

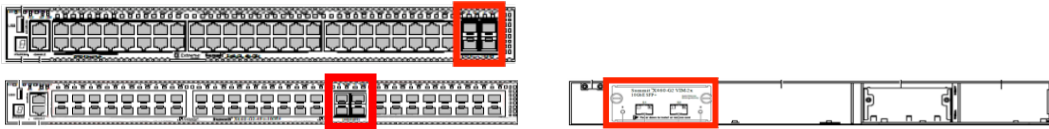


Optional: VIM Cards ordered separately

Optional: Redundant/ Additive Power Supply with Air Flow Direction ordered separately

Required: First Power Supply with Air Flow Direction ordered separately

Transceiver Support Matrix

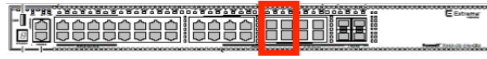
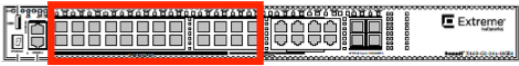


| | Part Numbers | 16701, 16702, 16703, 16704, 16705, 16706, 16720, 16756, 16757 | 16711 |
|-------------------------------------|------------------|---|----------------------|
| 10GB Transceivers and Cables | | 10Gb Front Panel | 10Gb SFP+ VIM |
| 10301 | 10GBASE-SR SFP+ | Y | Y |
| 10302 | 10GBASE-LR SFP+ | Y | Y |
| 10309 | 10GBASE-ER SFP+ | Y | Y |
| 10310 | ZR SFP+ module | Y | Y |
| 10303 | 10GBASE-LRM SFP+ | N | Y |
| 10304 | 10GBASE-CR4 1m | Y | Y |
| 10305 | 10GBASE-CR4 3m | Y | Y |
| 10306 | 10GBASE-CR4 5m | N | Y |
| 10307 | 10GBASE-CR4 10m | N | Y |

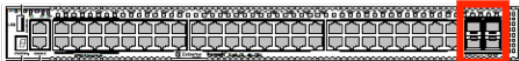


| | Part Numbers | 16701, 16702, 16703, 16704, 16705, 16706, 16720, 16756, 16757 | 16711 |
|----------------------------------|--------------------------------|---|----------------------|
| 1GB and 100MB Transceiver | | 10Gb Front Panel | 10Gb SFP+ VIM |
| 10051H, 10071H | 1000BASE-SX SFP | Y | Y |
| 10052H, 10072H | 1000BASE-LX SFP | Y | Y |
| 10053H | 1000BASE-ZX SFP | Y | Y |
| 10056H, 10057H | 1000BASE-BX-D SFP and BX-U SFP | Y | Y |
| 10064 | 1000BASE-LX100 SFP | Y | Y |
| 10063 | 100FX SFP | N | N |
| 10060 | 100FX/1000LX SFP | N | N |
| 10070H, 10065 | 10/100/1000BASE-T SFP | 1Gb Mode Only | 1Gb Mode Only |
| 10067 | 100BASE-FX SFP | N | N |
| 10066 | 100BASE-LX10 SFP | N | N |
| 10058, 10059 | 100BASE-BX-D SFP and BX-U SFP | N | N |

Transceiver Support Matrix (cont.)



| | Part Numbers | 16705, 16706 | 16701, 16703, 16716, 16718 |
|---------------------------|--------------------------------|-------------------------|----------------------------|
| 1GB and 100MB Transceiver | | 24/48 Port SFP Switches | SFP Combo Ports |
| 10051H, 10071H | 1000BASE-SX SFP | Y | Y |
| 10052H, 10072H | 1000BASE-LX SFP | Y | Y |
| 10053H | 1000BASE-ZX SFP | Y | Y |
| 10056H, 10057H | 1000BASE-BX-D SFP and BX-U SFP | Y | Y |
| 10064 | 1000BASE-LX100 SFP | Y | Y |
| 10063 | 100FX SFP | Y | N |
| 10060 | 100FX/1000LX SFP | Y | N |
| 10070H, 10065 | 10/100/1000BASE-T SFP | Y | N |
| 10067 | 100BASE-FX SFP | Y | Y |
| 10066 | 100BASE-LX10 SFP | Y | Y |
| 10058, 10059 | 100BASE-BX-D SFP and BX-U SFP | Y | Y |



| | Part Numbers | 16716, 16717, 16718, 16719 |
|---------------------------|--------------------------------|----------------------------|
| 1GB and 100MB Transceiver | | 1Gb Front Panel |
| 10051H, 10071H | 1000BASE-SX SFP | Y |
| 10052H, 10072H | 1000BASE-LX SFP | Y |
| 10053H | 1000BASE-ZX SFP | Y |
| 10056H, 10057H | 1000BASE-BX-D SFP and BX-U SFP | Y |
| 10064 | 1000BASE-LX100 SFP | Y |
| 10063 | 100FX SFP | Y |
| 10060 | 100FX/1000LX SFP | Y |
| 10070H, 10065 | 10/100/1000BASE-T SFP | 1Gb Mode Only |
| 10067 | 100BASE-FX SFP | N |
| 10066 | 100BASE-LX10 SFP | N |
| 10058, 10059 | 100BASE-BX-D SFP and BX-U SFP | N |

Ordering Information

| Part Number | Name | Description |
|-------------|-----------------------------|--|
| 16701 | X460-G2-24t-10GE4-Base-Unit | 24 10/100/1000BASE-T, 8 100/1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), 4 1000/10GBaseX unpopulated SFP+ ports, Rear VIM Slot (unpopulated), Rear Timing Slot (unpopulated), 2 unpopulated PSU slots, fan module slot (unpopulated), ExtremeXOS Advanced Edge license with EXOS Release 22.1 or greater (earlier releases include an Edge license only) |
| 16702 | X460-G2-48t-10GE4-Base-Unit | 48 10/100/1000BASE-T, 4 1000/10GBaseX unpopulated SFP+ ports, Rear VIM Slot (unpopulated), Rear Timing Slot (unpopulated), 2 unpopulated PSU slots, fan module slot (unpopulated), ExtremeXOS Advanced Edge license with EXOS Release 22.1 or greater (earlier releases include an Edge license only) |
| 16703 | X460-G2-24p-10GE4-Base-Unit | 24 10/100/1000BASE-T PoE-plus, 8 100/1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), 4 1000/10GBaseX unpopulated SFP+ ports, Rear VIM Slot (unpopulated), Rear Timing Slot (unpopulated), 2 unpopulated PSU slots, fan module slot (unpopulated), ExtremeXOS Advanced Edge license with EXOS Release 22.1 or greater (earlier releases include an Edge license only) |
| 16704 | X460-G2-48p-10GE4-Base-Unit | 48 10/100/1000BASE-T PoE-plus, 4 1000/10GBaseX unpopulated SFP+ ports, Rear VIM Slot (unpopulated), Rear Timing Slot (unpopulated), 2 unpopulated PSU slots, fan module slot (unpopulated), ExtremeXOS Advanced Edge license with EXOS Release 22.1 or greater (earlier releases include an Edge license only) |
| 16705 | X460-G2-24x-10GE4-Base-Unit | 24 100/1000BASE-X unpopulated SFP, 8 10/100/1000BASE-T (4 10/100/1000BASE-T ports shared with SFP ports), 4 1000/10GBaseX unpopulated SFP+ ports, Rear VIM Slot (unpopulated), Rear Timing Slot (unpopulated), 2 unpopulated PSU slots, fan module slot (unpopulated), ExtremeXOS Advanced Edge license with EXOS Release 22.1 or greater (earlier releases include an Edge license only) |
| 16706 | X460-G2-48x-10GE4-Base-Unit | 48 100/1000BASE-X unpopulated SFP, 4 1000/10GBaseX unpopulated SFP+ ports, Rear VIM Slot (unpopulated), Rear Timing Slot (unpopulated), 2 unpopulated PSU slots, fan module slot (unpopulated), ExtremeXOS Advanced Edge license with EXOS Release 22.1 or greater (earlier releases include an Edge license only) |
| 16716 | X460-G2-24t-GE4-Base-Unit | 24 10/100/1000BASE-T, 8 100/1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), 4 1GBase-X unpopulated SFP ports, Rear VIM Slot (unpopulated), Rear Timing Slot (unpopulated), 2 unpopulated PSU slots, fan module slot (unpopulated), ExtremeXOS Advanced Edge license with EXOS Release 22.1 or greater (earlier releases include an Edge license only) |
| 16717 | X460-G2-48t-GE4-Base-Unit | 48 10/100/1000BASE-T, 4 1GBaseX unpopulated SFP ports, Rear VIM Slot (unpopulated), Rear Timing Slot (unpopulated), 2 unpopulated PSU slots, fan module slot (unpopulated), ExtremeXOS Advanced Edge license with EXOS Release 22.1 or greater (earlier releases include an Edge license only) |
| 16718 | X460-G2-24p-GE4-Base-Unit | 24 10/100/1000BASE-T PoE-plus, 8 100/1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), 4 1GBaseX unpopulated SFP ports, Rear VIM Slot (unpopulated), Rear Timing Slot (unpopulated), 2 unpopulated PSU slots, fan module slot (unpopulated), ExtremeXOS Advanced Edge license with EXOS Release 22.1 or greater (earlier releases include an Edge license only) |
| 16719 | X460-G2-48p-GE4-Base-Unit | 48 10/100/1000BASE-T PoE-plus, 4 1GBaseX, Rear VIM Slot (unpopulated), Rear Timing Slot (unpopulated), 2 unpopulated PSU slots, fan module slot (unpopulated), ExtremeXOS Advanced Edge license with EXOS Release 22.1 or greater (earlier releases include an Edge license only) |
| 16710 | X460-G2 VIM-2q | Optional Virtual Interface Module for the rear of the X460-G2 providing 2 40GBASE-X ports unpopulated QSFP+ |
| 16711 | X460-G2 VIM-2x | Optional Virtual Interface Module for the rear of the X460-G2 providing 2 1000/10GBASE-X ports unpopulated SFP+ |
| 16712 | X460-G2 VIM-2t | Optional Virtual Interface Module for the rear of the X460-G2 providing 2 10GBASE-T ports |
| 16713 | X460-G2 VIM-2ss | Optional Virtual Interface Module for the rear of the X460-G2 providing 2 ports of Extreme's SummitStack |
| 16715 | X460-G2 TM-CLK | Optional Timing Module for the rear of the X460-G2 providing the hardware for SyncE and 1588 PTP clocking with 2 ports of mini-BNC connectors for clocking outputs |
| 16720 | X460-G2-16mp-32p-10GE4 | 16 100Mb/1.0/2.5GbE PoE+, 32 10/100/1000BASE-T PoE+, 4 1000/10GBaseX unpop'd SFP+ ports, Rear VIM Slot (unpop'd), Rear Timing Slot (unpop'd), 2 unpopulated PSU slots, fan module slot (unpop'd), EXOS Advanced Edge license with policy |
| 16756 | X460-G2-24p-24hp-10GE4-Base | X460-G2 24 10/100/1000BASE-T full duplex PoE+, 24 10/100/1000BASE-T full/half duplex PoE+, 4 1000/10GBaseX unpop'd SFP+ ports, Rear VIM Slot (unpop'd), Rear Timing Slot (unpop'd), 2 unpop'd PSU slots, fan module slot (unpop'd), ExtremeXOS Advanced Edge |

Ordering Information (cont.)

| Part Number | Name | Description |
|-------------|--------------------------------------|--|
| 16757 | X460-G2-24t-24ht-10GE4-Base | X460-G2 24 10/100/1000BASE-T full duplex, 24 10/100/1000BASE-T full/half duplex, 4 1000/10GBaseX unpop'd SFP+ ports, Rear VIM Slot (unpop'd), Rear Timing Slot (unpop'd), 2 unpop'd PSU slots, fan module slot (unpop'd), ExtremeXOS Advanced Edge |
| 16716T | X460-G2-24t-GE4-FB-AC-TAA | TAA 24 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP, Rear VIM Slot (unpop'd), Rear Timing Slot (unpop'd), 2 power supply slots populated with 300W PS, fan module Front-to-Back, ExtremeXOS Advanced Edge license with Policy |
| 16703T | X460-G2-24p-10GE4-FB-715-TAA | TAA 24 10/100/1000BASE-T POE+, 4 10GBASE-X unpopulated SFP+, Rear VIM Slot (unpop'd), Rear Timing Slot (unpop'd), 2 power supply slots populated with 715W PS, fan module Front-to-Back, ExtremeXOS Advanced Edge license with Policy |
| 16704T | X460-G2-48p-10GE4-FB-1100-TAA | TAA 48 10/100/1000BASE-T POE+, 4 10GBASE-X unpopulated SFP+, Rear VIM Slot (unpop'd), Rear Timing Slot (unpop'd), 2 power supply slots populated with 1100W PS, fan module Front-to-Back, ExtremeXOS Advanced Edge license with Policy |
| 16705T | X460-G2-48p-10GE4-FB-1100-TAA | TAA 24 SFP, 4 10GBASE-X unpopulated SFP+, Rear VIM Slot (unpop'd), Rear Timing Slot (unpop'd), 2 power supply slots populated with 300W PS, fan module Front-to-Back, ExtremeXOS Advanced Edge license with Policy |
| 16706T | X460-G2-48x-10GE4-FB-AC-TAA | TAA 48 SFP, 4 10GBASE-X unpopulated SFP+, Rear VIM Slot (unpop'd), Rear Timing Slot (unpop'd), 2 power supply slots populated with 300W PS, fan module Front-to-Back, ExtremeXOS Edge license with Policy |
| 16718T | X460-G2-24p-GE4-FB-715-TAA | TAA 24 10/100/1000BASE-T POE+, 4 1000BASE-X unpopulated SFP, Rear VIM Slot (unpop'd), Rear Timing Slot (unpop'd), 2 power supply slots populated with 715W PS, fan module Front-to-Back, ExtremeXOS Advanced Edge license with Policy |
| 16719T | X460-G2-48p-GE4-FB-1100-TAA | TAA 48 10/100/1000BASE-T POE+, 4 1000BASE-X unpopulated SFP, Rear VIM Slot (unpop'd), Rear Timing Slot (unpop'd), 2 power supply slots populated with 1100W PS, fan module Front-to-Back, ExtremeXOS Advanced Edge license with Policy |
| 16710T | X460-G2 VIM-2q-TAA | TAA-compliant Optional Virtual Interface Module for the rear of the X460-G2 providing 2 40GBASE-X ports unpopulated QSFP+ |
| 16711T | X460-G2 VIM-2x-TAA | TAA-compliant Optional Virtual Interface Module for the rear of the X460-G2 providing 2 10GBASE-X ports unpopulated SFP+ |
| 16712T | X460-G2 VIM-2t-TAA | TAA-compliant Optional Virtual Interface Module for the rear of the X460-G2 providing 2 10GBASE-T ports |
| 16713T | X460-G2 VIM-2ss-TAA | TAA-compliant Optional Virtual Interface Module for the rear of the X460-G2 providing 2 ports of Extreme's SummitStack |
| 16715T | X460-G2 -TM-CLK-TAA | TAA-compliant Optional Timing Module for the rear of the X460-G2 providing the hardware for SyncE and 1588 PTP clocking with 2 ports of mini-BNC connectors for clocking outputs |
| 16720T | X460-G2-16mp-32p-10GE4-FB-TAA | 16 100Mb/1.0/2.5GbE PoE+, 32 10/100/1000BASE-T PoE+, 4 1000/10GBaseX unpop'd SFP+ ports, Rear VIM Slot (unpop'd), Rear Timing Slot (unpop'd), 2 1100 watt power supplies, fan module Front-to-Back, EXOS Advanced Edge license w Policy, Trade Agreement Act |
| 16756T | X460-G2-24p-24hp-10GE4-FB-TAA | X460-G2 24 10/100/1000 full duplex PoE+, 24 10/100/1000 full/half duplex PoE+, 4 1000/10G SFP+ ports, Rear VIM Slot, Rear Timing Slot, 2 1100W AC power supplies, fan module, Front-to-Back airflow, ExtremeXOS Advanced Edge w Policy, Trade Agreement Act |
| 16757T | X460-G2-24t-24ht-10GE4-FB-TAA | X460-G2 24 10/100/1000 full duplex, 24 10/100/1000 full/half duplex, 4 1000/10G SFP+ ports, Rear VIM Slot, Rear Timing Slot, two 300W AC power supplies, fan module, Front-to-Back airflow, ExtremeXOS Advanced Edge w Policy, Trade Agreement Act model |
| 16776 | Rear Rail Kit-4 Post Mounting | Adapter kit for adding rear rails to enable four post mounting of X460-G2 17" or deeper switches |
| 16421 | X460 Advanced Edge Lic | ExtremeXOS Advanced Edge License for X460 series switches. For those upgrading a X460-G2 switch already installed with an Edge License. |
| 16422 | X460 Core License from Edge Lic | ExtremeXOS Advanced Core License upgrade from Edge License for X460 series switches. For those upgrading a X460-G2 switch already installed with an Edge License. |
| 16423 | X460 Core License from Advanced Edge | ExtremeXOS Advanced Core License upgrade from Advanced Edge License for X460 series switches |
| 16424 | X460 MPLS Feature Pack | ExtremeXOS MPLS Feature Pack for X460 series switches |
| 11011 | Direct Attach Feature Pack | Direct Attach Feature Pack |
| 16755 | X460-G2 Network Timing Feature Pack | X460-G2 Network Timing Feature Pack |
| 16425 | X460 OpenFlow Feature Pack | ExtremeXOS SDN - OpenFlow Feature Pack for X460 series switches |

Ordering Information (cont.)

| Part Number | Name | Description |
|-------------|---------------------------------------|---|
| 16426 | X460 Multimedia (AVB) Feature Pack | |
| 10941 | 1100W AC PSU FB | 1100 Watt AC PoE Power Supply module for X460-G2 and X450-G2 series switches with Front-to-Back airflow |
| 10942 | 1100W AC PSU BF | 1 100 Watt AC PoE Power Supply module for X460-G2 series switches with Back-to-Front airflow |
| 10951 | 715W AC PSU FB | 715W AC PoE Power Supply Module for X460-G2 and X450-G2 series switches with Front-to-Back airflow |
| 10952 | 715W AC PSU BF | 715W AC PoE Power Supply Module for X460-G2 series switches with Back-to-Front airflow |
| 10930A | 300W AC PSU XT | 300W AC Power Supply module for X460 & E4G-400 Series Switches - Extended Temperature Range from -10 to +50 degrees Celsius - Front-to-Back airflow |
| 10953 | 350W AC PSU FB | 350W AC Power Supply Module - front to back airflow |
| 10954 | 350W AC PSU BF | 350W AC Power Supply Module - back to front airflow |
| 10943 | 300W AC PSU BF | 300W AC Power Supply Module - Back-to-Front airflow |
| 10933 | 300W +24V/-48V DC PSU | 300W +24V / -48V DC Power Supply Module for the X460 and the E4G-400 platforms - Front-to-Back airflow |
| 10944 | 300W DC PSU BF | 300W DC Power Supply Module - Back-to-Front airflow |
| 10945 | X460-G2 Fan Module FB | Front-to-back airflow fan module for X460-G2 series switches |
| 10946 | X460-G2 Fan Module BF | Back-to-front airflow fan module for X460-G2 series switches |
| 10319 | QSFP+ SR4 Module ¹ | 40 Gigabit Ethernet QSFP+ SR4 optical module, MPO connector, 100m link length ¹ |
| 10320 | QSFP+ 40GBASE-LR4 ¹ | 40 Gigabit Ethernet QSFP+ LR4 optical module, LC connectors, 10km SMF link length ¹ |
| 10326 | QSFP+ PSM Optical Module ¹ | QSFP+ (4X10GBASE) breakout optical module, MPO connector, 10km SMF link length ¹ |
| 10335 | 40Gb ER4 QSFP+ ¹ | 40Gb ER4, 40Km SMF, QSFP+, LC ¹ |
| 10334 | 40Gb LM4 QSFP+ ¹ | 40Gb LM4 140m OM3 MMF, 1Km SMF, QSFP+, LC ¹ |
| 10301 | 10GBASE-SR SFP+ | 10GBASE-SR SFP+, 850nm, LC Connector, transmission length of up to 300m on MMF |
| 10302 | 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 |
| 10310 | SFP+ ZR Module | 10GBASE-ZR SFP+, 1550nm, LC connector, transmission length up to 80km on SMF |
| 10325 | Tunable DWDM SFP+ | 10 Gigabit Ethernet SFP+ Tunable DWDM module, SMF 80km, LC connector 10052H 1000BASE-LX SFP, Hi 1000BASE-LX SFP, MMF 220 & 550 meters, SMF 10km, LC connector, Industrial |
| 10052H | 1000BASE-LX SFP, Hi | 1000BASE-LX SFP, MMF 220 & 550 meters, SMF 10km, LC connector, Industrial Temp |
| 10056H | 1000BASE-BX-D BiDi SFP, Hi | 1000BASE-BX-D SFP, 1490-nm TX/1310-nm RX wavelength, Industrial Temp |
| 10057H | 1000BASE-BX-U BiDi SFP, Hi | 1000BASE-BX-U SFP, 1310-nm TX/1490-nm RX wavelength, Industrial Temp |
| 10060 | 100FX/1000LX SFP | Dual-speed 100 FX / 1000 LX SFP, LC connector |
| 10063 | 100BASE-FX SFP (1G elec) | 100BASE-FX SFP module, MMF 2km link, LC-connector for Fast Ethernet SFP Port, 1G electrical data rate |
| 10067 | 100Base-FX SFP | 100BASE-FX SFP module, MMF 2km link, LC-connector for Fast Ethernet SFP Port |
| 10070H | 10/100/1000BASE-T SFP, Hi | 10/100/1000BASE-T SFP module, CAT5 cable 100m link, RJ45-connector for Giga Bit Ethernet SFP Port, Industrial Temp |
| 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 |
| 10072H | 1000BASE-LX SFP 10 Pack, Hi | 1000BASE-LX SFP 10 Pack, Industrial Temp |
| 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 |
| 10066 | 100BASE-LX10 SFP | 100BASE-LX10 SFP module, SMF 10km link, LC-connector for Fast Ethernet SFP Port |
| 10071H | 1000BASE-SX SFP 10 Pack, Hi | 1000BASE-SX SFP 10 Pack, Industrial Temp |

Ordering Information (cont.)

| Part Number | Name | Description |
|---------------|---|--|
| 10311 | QSFP+ passive copper cable, 0.5M | QSFP+ passive copper cable, 0.5M |
| 10312 | QSFP+ passive copper cable, 1.0M | QSFP+ passive copper cable, 1.0M |
| 10313 | QSFP+ Passive Copper Cable, 3.0M | QSFP+ passive copper cable, 3.0M |
| 10323 | QSFP+ Passive Copper Cable, 5.0M ² | QSFP+ passive copper cable, 5.0M ² |
| 10315 | QSFP+ active fiber cable, 10M | QSFP+ active fiber cable, 10M |
| 10316 | 20m QSFP+ Active Optical Cable | QSFP+ active fiber cable, 20M |
| 10318 | QSFP+ active fiber cable, 100M | QSFP+ active fiber cable, 100M |
| 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 |
| 10329 | 40Gb BiDi MMF QSFP+ | 40Gb Bidirectional MMF, 100m OM3, QSFP+, LC |
| 10336 | 3m QSFP+ Active Optical Cable | 40 Gigabit Ethernet QSFP+ active optical cable assembly, 3m length |
| 10337 | 5m QSFP+ Active Optical Cable | 40 Gigabit Ethernet QSFP+ active optical cable assembly, 5m length |
| 10338 | 10Gb SFP+ 10GBASE-T ³ | 10Gb SFP+, 10GBASE-T RJ45, 30m with Cat6a ³ |
| 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 |
| 10GB-F10-SFPP | 10 GB, ACTIVE OPTICAL DAC, 10 M | 10Gb, Active optical direct attach cable with 2 integrated SFP+ transceivers, 10m |
| 10GB-F20-SFPP | 10 GB, ACTIVE OPTICAL DAC, 20 M | 10Gb, Active optical direct attach cable with 2 integrated SFP+ transceivers, 20m |
| 10GB-BX10-D | 10 GB, SINGLE FIBER SM, -D 10 KM | 10Gb, Single Fiber SM, Bidirectional, 1330nm Tx / 1330nm RX, 10Km, Simplex LC SFP+ (must be paired with 10GB-BX10-U) |
| 10GB-BX10-U | 10 GB, SINGLE FIBER SM, -U 10 KM | 10Gb, Single Fiber SM, Bidirectional, 1330nm Tx / 1330nm RX, 10Km, Simplex LC SFP+ (must be paired with 10GB-BX10-D) |
| 10GB-BX40-D | 10 GB, SINGLE FIBER SM, -D 40 KM | 10Gb, Single Fiber SM, Bidirectional, 1330nm Tx / 1330nm RX, 40Km, Simplex LC SFP+ (must be paired with 10GB-BX40-U) |
| 10GB-BX40-U | 10 GB, SINGLE FIBER SM, -U 40 KM | 10Gb, Single Fiber SM, Bidirectional, 1330nm Tx / 1330nm RX, 40Km, Simplex LC SFP+ (must be paired with 10GB-BX40-D) |

¹ 1x40Gb Mode Only

² Data networking, not stacking

³ Supported configuration is to populate every other SFP+ port in system, with a maximum of half the 10Gb SFP+ ports configured with 10GBASE-T transceivers. An adjacent SFP+ port should remain unused for every 10GBASE-T SFP+ installed

NOTE: Power supplies and fan tray MUST be ordered separately. They are NOT INCLUDED in the base switch model.



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