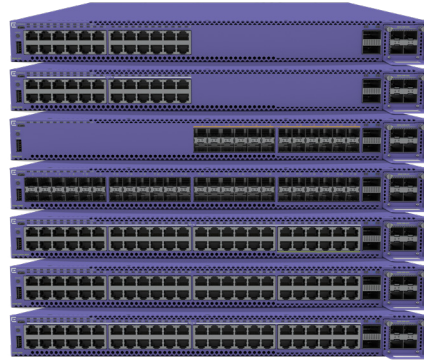


## Highlights

- High-performance feature-rich fixed-form switches for enterprise edge and aggregation deployments
- Range of 24 and 48-port models with Gigabit, Multi-Gigabit and 10 Gigabit Ethernet connectivity
- Universal hardware platform providing end-to-end network segmentation and advanced policy with a choice of ExtremeSwitching operating systems
- 10Gb and 25Gb modular uplink options
- 30W, 60W and 90W PoE support (IEEE 802.3at/IEEE 802.3bt)
- Up to 8-unit 200Gb stacking
- Hot-swappable, redundant power supplies and fans
- MACsec on access and modular uplink ports for secure link encryption
- Layer 2/Layer 3 Fabric services for secure network segmentation and automation
- Extended Edge Switching controlling bridge in support of V300/V400 edge devices
- Non-blocking, wire-speed design

## Smart Management Choices

- ExtremeCloud™ IQ for powerful, simple and secure public or private cloud management
- ExtremeCloud IQ - Site Engine for centralized, on-premises management capabilities
- 1-year ExtremeCloud IQ Pilot subscription included with each 5520 switch



# 5520 Series

Universal Edge/Aggregation Switch Platform

## Product Overview

The 5520 Series is a family of high-performance, feature-rich edge and aggregation switches designed for the next-generation digital enterprise. The 5520 Series universal hardware provides end-to-end secure network segmentation, in addition to advanced policy capabilities, and offers a user-selectable choice of Extreme's flagship switch operating systems. This makes the 5520 a uniquely flexible platform that can be deployed across a range of edge, aggregation and wiring-closet environments.

The 5520 Series includes 24- and 48-port 1 Gigabit models, 1/2.5/5 Gigabit multi-rate models, as well as a 24-port 10 Gigabit model. The family also offers 30/60/90W PoE making it an ideal wired backend for wireless APs or in support of next-gen powered Ethernet devices, such as digital signage, pan-tilt-zoom cameras, smart lighting or point-of-sale terminals. The 5520 further supports 10Gb and 25Gb modular uplinks for flexible linkage to other switches or devices over a range of media.



## Universal Hardware Platform

The 5520 Series as a universal hardware platform comes with a dual-persona capability allowing user choice of the switch operating system (OS). Either the Switch Engine<sup>1</sup> or Fabric Engine<sup>2</sup> persona can be enabled on 5520 hardware models. The desired persona can be selected at start-up or changed at a later stage. Once selected, the 5520 assumes the features/capabilities of the selected OS.

The 5520 persona activation can be done manually at boot-up, including via the system CLI. Or, it can be automated by pre-provisioning the 5520 persona in ExtremeCloud IQ. When first booted, the 5520 automatically connects to ExtremeCloud IQ to find its persona. The pre-provisioned OS persona is then remotely enabled on the 5520 system - eliminating the need for manual selection.



## Ethernet Fabric Services

The 5520 supports a variety of Ethernet Fabric services, including Extreme's Fabric Connect when running Fabric Engine and Extreme's IP Fabric when running Switch Engine. It also supports Fabric Attach for automated connection to either Layer 2 or Layer 3 fabric services. Extreme's Fabric Connect and IP Fabric on the 5520 enable the creation of virtualized networks that automate network operations, simplify network provisioning and enhance security, all while reducing the strain on network and IT personnel.



## Extended Edge Switching

The 5520 models support Extended Edge Switching, an innovative solution that simplifies the deployment and operation of edge switches. As the controlling bridge of an Extended Edge Switching solution, the 5520, when running Switch Engine, can be combined with Extreme's V300 and V400 Series access devices to create a single logical switch architecture. The result is a simplified operational model that reduces costs.

<sup>1</sup> Switch Engine is the new name for ExtremeXOS on all universal switch platforms, starting with Version 31.6

<sup>2</sup> Fabric Engine is the new name for the VSP Operating System on all universal switch platforms, starting with Version 8.6.



## Power over Ethernet (PoE)

The 5520 Series includes Power over Ethernet (PoE) models with standards-based IEEE 802.3bt (30/60/90W) PoE support. This enables the 5520 to address the needs of powered edge devices, while eliminating the need for additional electrical cabling and circuits. 5520 PoE models also support perpetual and fast PoE for even more efficient and reliable powered edge device operation.



## VIM Options for Flexible Uplinks

Versatile Interface Modules (VIMs) on the 5520 provide flexible uplink capabilities - with 5520 models offering a single VIM slot for this purpose. VIM options include 4-port 10Gb or 25Gb modules that include LRM and 256-bit MACsec support.



## High-Performance Stacking

The 5520 also supports high-speed 200Gb<sup>\*</sup> stacking when running Switch Engine via its two built-in QSFP28 ports. Up to eight systems can be stacked using qualified QSFP+ direct attach cables and optical transceivers.

<sup>\*</sup>200Gb stacking available with Switch Engine 31.6



## Management

The 5520 can be managed by ExtremeCloud IQ or ExtremeCloud IQ - Site Engine for comprehensive unified management with a consolidated view of users, devices and applications across wired and wireless networks. (NOTE: Each 5520 unit also includes a 1-year ExtremeCloud IQ Pilot subscription.)

Zero-touch provisioning from ExtremeCloud IQ lets one quickly bring new 5520 switches online as well as enable the selection of the operating system (OS) persona. Alternatively, 5520 on-box management can be done manually via a web-based GUI or generic CLI.

# Product Specifications

## External Interfaces

Switch Model	Interfaces
5520-24T	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000Base-T ports               <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> </li> <li>• 2 x Stacking/QSFP28 ports* (unpopulated)</li> <li>• 1 x Serial console port (RJ-45)</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x USB A ports for management or external USB flash</li> <li>• 1 x USB Micro-B console port</li> <li>• 1 x VIM slot</li> </ul>
5520-24W	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000Base-T 802.3bt (90W) ports               <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> </li> <li>• 2 x Stacking/QSFP28 ports* (unpopulated)</li> <li>• 1 x Serial console port (RJ-45)</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x USB A ports for management or external USB flash</li> <li>• 1 x USB Micro-B console port</li> <li>• 1 x VIM slot</li> </ul>
5520-48T	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000Base-T ports               <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> </li> <li>• 2 x Stacking/QSFP28 ports* (unpopulated)</li> <li>• 1 x Serial console port (RJ-45)</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x USB A ports for management or external USB flash</li> <li>• 1 x USB Micro-B console port</li> <li>• 1 x VIM slot</li> </ul>
5520-48W	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000Base-T 802.3bt (90W) ports               <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> </li> <li>• 2 x Stacking/QSFP28 ports* (unpopulated)</li> <li>• 1 x Serial console port (RJ-45)</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x USB A ports for management or external USB flash</li> <li>• 1 x USB Micro-B console port</li> <li>• 1 x VIM slot</li> </ul>
5520-12MW-36W	<ul style="list-style-type: none"> <li>• 12 x 100M/1/2.5/5GBase-T 802.3bt (90W) PoE ports               <ul style="list-style-type: none"> <li>• Full-Duplex</li> <li>• MACsec-capable</li> </ul> </li> <li>• 36 x 10/100/1000Base-T 802.3bt (90W) PoE ports               <ul style="list-style-type: none"> <li>• Full/Half-Duplex</li> <li>• MACsec-capable</li> </ul> </li> <li>• 2 x Stacking/QSFP28 ports* (unpopulated)</li> <li>• 1 x Serial console port (RJ-45)</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x USB A ports for management or external USB flash</li> <li>• 1 x USB Micro-B console port</li> <li>• 1 x VIM slot</li> </ul>
5520-48SE	<ul style="list-style-type: none"> <li>• 48 x 100/1000Base-X (SFP) ports (unpopulated)               <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> </li> <li>• 2 x Stacking/QSFP28 ports* (unpopulated)</li> <li>• 1 x Serial console port (RJ-45)</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x USB A ports for management or external USB flash</li> <li>• 1 x USB Micro-B console port</li> <li>• 1 x VIM slot</li> </ul>

# Product Specifications (cont.)

## External Interfaces (cont.)

Switch Model	Interfaces
5520-24X	<ul style="list-style-type: none"> <li>• 24 x 100M/1G/10GBase-X (SFP+) ports** (unpopulated)</li> <li>• 2 x Stacking/QSFP28 ports* (unpopulated)</li> <li>• 1 x Serial console port (RJ-45)</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x USB A ports for management or external USB flash</li> <li>• 1 x USB Micro-B console port</li> <li>• 1 x VIM slot</li> </ul>
5520-VIM-4X	<ul style="list-style-type: none"> <li>• 4 x 1/10GBase-X SFP+ ports (unpopulated)</li> </ul>
5520-VIM-4XE	<ul style="list-style-type: none"> <li>• 4 x 1/10Gbase-X SFP+ ports (unpopulated) <ul style="list-style-type: none"> <li>• LRM-capable</li> <li>• MACsec-capable</li> </ul> </li> </ul>
5520-VIM-4YE	<ul style="list-style-type: none"> <li>• 4 x 10/25Gbase-X SFP28 ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> </li> </ul>

\* Notes on use of the 2 x Stacking/QSFP28 ports

1. With Switch Engine, the 2 x QSFP28 ports can be used for stacking or as Ethernet uplink ports (when not stacking); stacking data rate is 40Gb or 50 Gb per port
2. With Fabric Engine, the 2 x QSFP28 ports can be used as Ethernet uplink ports if in non-Fabric mode or if no VIM is present as of the VOSS 8.4.2 release.
3. Ethernet uplink QSFP28 data rate options per port, with channelization: 4 x 10Gb SFP+, 4 x 25Gb SFP28, 1 x 40Gb QSFP+ (supported with Switch Engine and Fabric Engine); 2 x 50Gb (Switch Engine only)

\*\* 100M on 5520-24X access ports supported with Switch Engine and with Fabric Engine (minimum Release 8.6).

## Performance and Scale

Switch Model	Max Active 10/100/1000Mb ports	Max Active 100Mb/1Gb/2.5Gb/5Gb ports	Max Active 100Mb/1Gb SFP ports	Max Active 1/10Gb SFP+ ports*	Max Active 25Gb SFP28 ports*	Max Active 40Gb QSFP+ ports**	Max Active 50Gb ports**	Max Active 40Gb/50Gb Stacking ports***	Aggregated Switch Bandwidth	Frame Forwarding Rate
5520-24T	24	0	0	12	12	2	4	2	648 Gbps	482.1 mpps
5520-24W	24	0	0	12	12	2	4	2	648 Gbps	482.1 mpps
5520-48T	48	0	0	12	12	2	4	2	696 Gbps	517.8 mpps
5520-48W	48	0	0	12	12	2	4	2	696 Gbps	517.8 mpps
5520-12MW-36W	36	12	0	12	12	2	4	2	792 Gbps	589.3 mpps
5520-48SE	0	0	48	12	12	2	4	2	696 Gbps	517.8 mpps
5520-24X	0	0	0	36	12	2	4	2	1080 Gbps	803.5 mpps

\* Includes 8 ports available through channelization of the 2 x QSFP28 ports when not used for stacking with Switch Engine, or with VOSS 8.4.2 or later

\*\* Available through channelization of the 2 x QSFP28 ports when these ports are not used for stacking in Switch Engine, or with VOSS 8.4.2 or later

\*\*\* 50Gb stacking with Switch Engine mode only 31.6 or later

## Software Scaling Values

### 5520 with Switch Engine

- MAC Table: 114,688/65,536
- IPv4 ARP Table: 60,000/41,000\*
- IPv4 Route Table: 81,000/16,000\*
- IP Multicast Entries (S,G,V): 43,000/24,000\*
- IPv6 ND Table: 18,000
- IPv6 Route Table: 40,000/8,000\*
- ACL (Ingress/Egress): 9,216/1,024
- QoS Egress Queues/Port: 8
- VLANs: 4,094
- Routed VLANs: 2,048

### One Policy Scaling

- Policy Profiles: 63
- Unique permit/deny rules per switch: 8,120
- Authenticated policy users/switch: 9,216

\* First value is the maximum; second is the default. Scaling limits are configurable.

See the Switch Engine Release Notes for additional details

### 5520 with Fabric Engine

- MAC Table: 40,960 (81,920 non-Fabric)
- IPv4 ARP/ARP/IP Host Table: 16,000/48,000
- IPv4 Route Table: 15,500
- IP Multicast Routes: 4,000
- IPv6 ND Table: 16,000
- IPv6 Route Table: 7,500
- IPv4 ACL (Ingress/Egress): 1,024/336
- QoS Egress Queues/Port: 8
- VLANs: 4,059
- Routed VLANs: 500

### Fabric Connect Scaling

- Fabric Adjacencies per switch: 128
- Fabric nodes per area (BEB + BCB): 800
- BEB Nodes per VSN: 500
- L2 VSN: 3500
- L3 VSN: 256

# Product Specifications (cont.)

## Weights and Dimensions

Switch Model	Weight*	Physical Dimensions	
<b>Switches</b>			
		Chassis Only	With PSU
5520-24T	12.2 lb / 5.54 kg	17.4 in W / 1.7 in H / 17.4 in D 441 mm x 44 mm x 442 mm	17.4 in W / 1.7 in H / 18.1 in D 441 mm x 44 mm x 449 mm
5520-24W	13.8 lb / 6.25 kg		
5520-48T	12.7 lb / 5.76 kg		
5520-48W	13.4 lb / 6.06 kg		
5520-12MW-36W	14.0 lb / 6.33 kg		
5520-48SE	12.6 lb / 5.7 kg		
5520-24X	13.8 lb / 6.25 kg		
<b>VIM Modules</b>			
5520-VIM-4X	0.37 lb / 0.17 kg	1.92 in W / 1.61 in H / 5.76 in D 48.8mm / 40.8mm / 146.3 mm	
5520-VIM-4XE	0.44 lb / 0.20 kg		
5520-VIM-4YE	0.46 lb / 0.21 kg		
<b>Power Supplies</b>			
10953 (350W AC)	2.38 lb / 1.08 kg	3.25 in W / 1.56 in H / 11.3 in D 40mm / 82.5mm / 287mm	
10951 (715W AC)	2.55 lb / 1.16 kg		
10941 (1100W AC)	2.55 lb / 1.16 kg		
"XN-ACPWR-2000W-F (2000W AC)"	2.56 lb / 1.16kg	3.25 in W / 1.56 in H / 11.5 in D 40mm / 75mm / 292mm	

\*Switch weights include fans but no PSUs

## Power Supply Unit Specifications

	10953	10951	10941	XN-ACPWR-2000-F*
Voltage Input Range (Nominal)	100-127/200-240 VAC	100-127/200-240 VAC	100-127/200-240 VAC	100-127/200-240 VAC
Line Frequency Range	50 to 60 Hz	50 to 60 Hz	50 to 60 Hz	50 to 60 Hz
Power Supply Input Socket	IEC/EN 60320 C14	IEC/EN 60320 C16	IEC/EN 60320 C16	IEC/EN 60320 C16
Power Cord Input Plug	IEC/EN 60320 C15	IEC/EN 60320 C15	IEC/EN 60320 C15	IEC/EN 60320 C15
Operating Temperature	0° C to 55° C Normal Operation	0° C to 50° C Normal Operation	0° C to 50° C Normal Operation	0° C to 55° C Normal Operation

\*200-240 VAC is required to achieve full 2000W output. If run at 100-120VAC, output is limited to 1100W.

	XN-ACPWR-350W-FB	XN-ACPWR-715W-FB	XN-ACPWR-1100W-FB	XN-ACPWR-2000W-FB*
Voltage Input Range (Nominal)	100-240 VAC	100-240 VAC	100-240 VAC	100-240 VAC
Line Frequency Range	50 to 60 Hz	50 to 60 Hz	50 to 60 Hz	50 to 60 Hz
Power Supply Input Socket	IEC/EN 60320 C14	IEC/EN 60320 C16	IEC/EN 60320 C16	IEC/EN 60320 C16
Power Cord Input Plug	IEC/EN 60320 C15	IEC/EN 60320 C15	IEC/EN 60320 C15	IEC/EN 60320 C15
Operating Temperature	0° C to 55° C Normal Operation	0° C to 50° C Normal Operation	0° C to 50° C Normal Operation	0° C to 50° C Normal Operation

\*200-240 VAC is required to achieve full 2000W output. If run at 100-120VAC, output is limited to 1100W.

## PoE Power Budget

Switch Model	1 x 715W	2 x 715W	1 x 1100W	2 x 1100W	1 x 2000W @ 100-120VAC	1 x 2000W @ 200-240VAC	2 x 2000W @ 100-120VAC	2 x 2000W @ 200-240VAC
5520-24W	494W	1079W	879W	1781W	879W	1779W	1869W	2160W
5520-48W	483W	1068W	868W	1770W	868W	1768W	1858W	3568W
5520-12MW-36W	464W	1049W	849W	1751W	849W	1749W	1839W	3549W

Note: It is recommended that primary and secondary power supply units (PSUs) be of the same type to support optimal PoE operation.

## Product Specifications (cont.)

### Minimum/Maximum Power Consumption and Heat Dissipation

Switch Model	Minimum Power Consumption (Watts)	Minimum Heat Dissipation (BTU/hr)	Maximum Power Consumption (Watts)*	Maximum Heat Dissipation (BTU/hr)**
5520-24T	52	176	142	483
5520-24W	54	182	2480	1092
5520-48T	60	205	171	584
5520-48W	59	203	4100	1817
5520-12MW-36W	66	224	4095	1862
5520-48SE	61	209	255	872
5520-24X	48	165	171	585

\*Includes maximum PoE load (W) through the switch

\*\*Does not include PoE load heat dissipated through external electronic load

### Fan and Acoustic Noise

Switch Model	Acoustic information	
5520-24T	Typical: Single 350W AC PSU, no VIM Maximum: Dual 350W AC PSU, 5520-VIM-4YE	
	Bystander Sound Pressure <ul style="list-style-type: none"> <li>• 39.6dB(A), 0°C to 35°C (Typical)</li> <li>• 77.5 dB(A), 50°C (Maximum)</li> </ul>	Sound Power <ul style="list-style-type: none"> <li>• 5.1 B, 0°C to 35°C (Typical)</li> <li>• 8.46 B, 50°C (Maximum)</li> </ul>
5520-24W	Typical: Single 715W AC PSU, no VIM Maximum: Dual 1100W AC PSU, 5520-VIM-4YE	
	Bystander Sound Pressure <ul style="list-style-type: none"> <li>• 50.4dB(A), 0°C to 35°C (Typical)</li> <li>• 67.1 dB(A), 25°C (Maximum)</li> <li>• 78.9 dB(A), 50°C (Maximum)</li> </ul>	Sound Power <ul style="list-style-type: none"> <li>• 6 B, 0°C to 35°C (Typical)</li> <li>• 7.61 B, 25°C (Maximum)</li> <li>• 8.6 B, 50°C (Maximum)</li> </ul>
5520-48T	Typical: Single 350W AC PSU, no VIM Maximum: Dual 350W AC PSU, 5520-VIM-4YE	
	Bystander Sound Pressure <ul style="list-style-type: none"> <li>• 39.0dB(A), 0°C to 35°C (Typical)</li> <li>• 79.0 dB(A), 50°C (Maximum)</li> </ul>	Sound Power <ul style="list-style-type: none"> <li>• 4.9 B, 0°C to 35°C (Typical)</li> <li>• 8.52 B, 50°C (Maximum)</li> </ul>
5520-48W	Typical: Single 1100W AC PSU, no VIM Maximum: Dual 2000W AC PSU (240VAC), 5520-VIM-4YE	
	Bystander Sound Pressure <ul style="list-style-type: none"> <li>• 64.3dB(A), 0°C to 35°C (Typical)</li> <li>• 69.1 dB(A), 25°C (Maximum)</li> <li>• 79.4 dB(A), 50°C (Maximum)</li> </ul>	Sound Power <ul style="list-style-type: none"> <li>• 7.24 B, 0°C to 35°C (Typical)</li> <li>• 7.65 B, 25°C (Maximum)</li> <li>• 8.6 B, 50°C (Maximum)</li> </ul>
5520-12MW-36W	Typical: Single 1100W AC PSU, no VIM Maximum: Dual 2000W AC PSU (240VAC), 5520-VIM-4YE	
	Bystander Sound Pressure <ul style="list-style-type: none"> <li>• 62.7dB(A), 0°C to 35°C (Typical)</li> <li>• 69.2 dB(A), 25°C (Maximum)</li> <li>• 78.8 dB(A), 50°C (Maximum)</li> </ul>	Sound Power <ul style="list-style-type: none"> <li>• 7.25 B, 0°C to 35°C (Typical)</li> <li>• 7.64 B, 25°C (Maximum)</li> <li>• 8.6 B, 50°C (Maximum)</li> </ul>
5520-48SE	Typical: Single 350W AC PSU, no VIM Maximum: Dual 350W AC PSU, 5520-VIM-4YE	
	Bystander Sound Pressure <ul style="list-style-type: none"> <li>• 41.4dB(A), 0°C to 35°C (Typical)</li> <li>• 77.9 dB(A), 50°C (Maximum)</li> </ul>	Sound Power <ul style="list-style-type: none"> <li>• 5.14 B, 0°C to 35°C (Typical)</li> <li>• 8.53 B, 50°C (Maximum)</li> </ul>
5520-24X	Typical: Single 350W AC PSU, no VIM Maximum: Dual 350W AC PSU, 5520-VIM-4YE	
	Bystander Sound Pressure <ul style="list-style-type: none"> <li>• 40.6dB(A), 0°C to 35°C (Typical)</li> <li>• 76.9 dB(A), 50°C (Maximum)</li> </ul>	Sound Power <ul style="list-style-type: none"> <li>• 5.05 B, 0°C to 35°C (Typical)</li> <li>• 8.52 B, 50°C (Maximum)</li> </ul>

# Environmental and Regulatory

## Environmental

### 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

### Environmental Compliance

- EU RoHS - 2011/65/EU
- EU WEEE - 2012/19/EU
- EU REACH - Regulation (EC) No 1907/2006 - Reporting
- China RoHS - SJ/T 11363-2006
- Taiwan RoHS - CNS 15663(2013.7)

### Environmental 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) 30m/s<sup>2</sup> (3G), 11ms, 60 shocks
- Random vibration: 3 to 500 Hz at 1.5 G rms

### 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/s<sup>2</sup> (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
- UL/CuL 62368-1 Listed
- Complies with FCC 21CFR 1040.10 (U.S. Laser Safety)
- CDRH Letter of Approval (US FDA Approval)
- CAN/CSA 22.2 No. 60950-1

### European ITE

- EN 60950-1, EN 62368-1
- EN 60825-1 Class 1 (Lasers Safety)
- 2014/35/EU Low Voltage Directive

### International ITE

- CB Report and Certificate per IEC 60950-1
- IEC 62368-1

## EMI/EMC Standards

### North American EMC for ITE

- FCC CFR 47 Part 15 Class A (USA)
- CB Report and Certificate IEC 62368-1
- RoHS Directive 2011/65/EU
- AS/NZS 60950-1 (Australia /New Zealand)

### European EMC Standards

- EN 55035
- EN 55032 Class A
- EN 55024
- EN 55011
- EN 61000-3-2,2014 (Harmonics)
- EN 61000-3-3 2013 (Flicker)
- EN 300 386 (EMC Telecommunications)
- 2014/30/EU EMC Directive

### International EMC Certifications

- CISPR 32, Class A (International Emissions)
- AS/NZS CISPR32
- CISPR 24 Class A (International Immunity)
- IEC 61000-4-2/EN 61000-4-2 Electrostatic Discharge, 8kV Contact, 15 kV Air, Criteria B
- IEC 61000-4-3 /EN 61000-4-3 Radiated Immunity 10V/m, Criteria A
- IEC 61000-4-4/EN 61000-4-4 Transient Burst, 1 kV, Criteria AB
- IEC 61000-4-5 /EN 61000-4-5 Surge, 2 kV L-L, 2 kV L-G, Level 3, Criteria B
- IEC 61000-4-6 Conducted Immunity, 0.15-80 MHz, 10V/m unmod. RMS, Criteria A
- IEC/EN 61000-4-11 Power Dips & Interruptions, >30%, 25 periods, Criteria C

### Country Specific

- VCCI Class A (Japan Emissions)
- ACMA RCM (Australia Emissions)
- CCC Mark (China)
- KCC Mark, EMC Approval (Korea)
- EAC Mark (Custom Union)
- NRCS (South Africa)
- BSMI Mark (Taiwan)
- Anatel (Brazil)
- NoM (Mexico)

## IEEE 802.3 Media Access Standards

- IEEE 802.3ab 1000BASE-T
- IEEE 802.3bz 2.5G/5GBASE-T
- IEEE 802.3bt Type4 PoE
- IEEE 802.3ae 10GBASE-X
- IEEE 802.3aq 10GBASE-LRM
- IEEE 802.3by 25GBASE-X
- IEEE 802.3ba/802.3bm 40GBASE-X and 100GBASE-X
- IEEE 802.3az Energy Efficient Ethernet

## Ordering Notes

Customers ordering a 5520 switch receive the base switch along with Base software license, fan modules and rack-mount kit. **In addition, each 5520 switch comes with a free 1-year ExtremeCloud IQ Pilot subscription.**

Versatile Interface Modules (VIMs), power supplies, transceiver/optics, power cords, as well as Premier and/or MACsec licenses must be ordered separately. At least one Power Supply Unit (PSU) is required for 5520 operation; a second PSU is required for redundancy and/or additional power.

## Base Software and Optional Premier License

The Base software included with each 5520 unit supports most available switch features. Certain features, however, require a Premier license to operate.

For Switch Engine, a Premier License is required for:

- 5 or more OSPF interfaces
- PIM DM / PM SSM
- Anycast RP (Rendezvous Point)
- Multi-Source Discovery Protocol (MSDP)
- IS-IS/BGP4/MBGP\*
- GRE Tunneling
- Ethernet VPN (EVPN)
- Multi-Protocol Label Switching (MPLS)\*\*

For Fabric Engine, a Premier license is required for:

- 5 or more OSFP or RIP interfaces
- 3 or more BGP peers
- 25 or more VRFs\*\*
- Layer 3 Virtual Service Networks (L3 VSNs)
- Distributed Virtual Routing (DvR) Controller

\* Up to 2 BGP interfaces included in Base software with the EXOS 31.4 Release

\*\* VRFs included in Base software with the VOSS 8.4 Release

\*\*\* MPLS available with Switch Engine 31.6 release

## Ordering Information

Part Number	Product Name	Product Description
<b>5520 Systems</b>		
5520-24T	5520 24-port Switch	5520 Universal Switch with 24 x 10/100/1000BASE-T full/half duplex MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 2 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license, includes 1-year XIQ Pilot subscription
5520-24W	5520 24-port 90w PoE Switch	5520 Universal Switch with 24 x 10/100/1000BASE-T full/half duplex 802.3bt 90W PoE MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 3 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license, includes 1-year XIQ Pilot subscription
5520-48T	5520 48-port Switch	5520 Universal Switch with 48 x 10/100/1000BASE-T full/half duplex MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 3 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license, includes 1-year XIQ Pilot subscription
5520-48W	5520 48-port 90w PoE Switch	5520 Universal Switch with 48 x 10/100/1000BASE-T full/half duplex 802.3bt 90W PoE MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 3 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license, includes 1-year XIQ Pilot subscription
5520-12MW-36W	5520 48-port 90w PoE with 12 ports multi-rate Switch	5520 Universal Switch with 12 x 100Mb/1Gb/2.5Gb/5Gb 802.3bt 90W PoE MACsec-capable ports plus 36 x 10/100/1000BASE-T 802.3bt 90W PoE full/half duplex MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 3 fan modules, 1VIM slot, 2 unpopulated modular PSU slots, Base software license, includes 1-year XIQ Pilot subscription
5520-48SE	5520 48-port SFP Switch	5520 Universal Switch with 48 x 100M/1Gb SFP MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 3 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license, includes 1-year XIQ Pilot subscription
5520-24X	5520 24-port SFP+ Switch	5520 Universal Switch with 24 x 100Mb/1Gb/10Gb SFP+ ports, includes 2 Stacking/QSFP28 ports, 2 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license, includes 1-year XIQ Pilot subscription
5520-VIM-4X	4-port SFP+ module	5520 Versatile Interface Module with 4 x 1/10Gb SFP+ ports
5520-VIM-4XE	4-port SFP+ module LRM/MACsec capable	5520 Versatile Interface Module with 4 x 1/10Gb SFP+ LRM and MACsec-capable ports
5520-VIM-4YE	4-port SFP28 module MACsec capable	5520 Versatile Interface Module with 4 x 10/25Gb SFP28 MACsec-capable ports

## Ordering Information (cont.)

Part Number	Product Name	Product Description
<b>Accessories</b>		
10953	350W AC PSU FB	350W AC PSU supported on 5520
10951	715W AC PSU FB	715W AC PSU supported on 5520
10941	1100W AC PSU FB	1100W AC PSU supported on 5520
XN-ACPWR-2000W-F	2000W AC PSU FB	2000W AC PSU supported on 5520
XN-ACPWR-350W-FB*	350W AC PSU FB	350 Watt AC Power Supply Module - Front to Back airflow, also used on X465 and VSP 4900
XN-ACPWR-715W-FB*	715W AC PSU FB	715 Watt AC PoE Power Supply Module - Front to Back airflow, also used on X465 and VSP 4900
XN-ACPWR-1100W-FB*	1100W AC PSU FB	1100 Watt AC PoE Power Supply Module - Front to Back airflow, also used on X465 and VSP 4900
XN-ACPWR-2000W-FB*	2000W AC PSU FB	2000 Watt AC PoE Power Supply Module - Front to Back airflow, also used on X465 and VSP 4900
17115	Spare Fan Module FB	Fan module for 5520, Front to Back airflow
XN-4P-RMKIT-005	4-Post Rack Mount Kit	Spare 4-Post Rack Mount Kit for 5520
XN-2P-RMKIT-005**	2-Post Rack Mount Kit	Optional 2-Post Rack Mount Kit for 5520
<b>Software Licenses</b>		
5000-PRMR-LIC-P	Premier License for 5000 Series	Perpetual Premier License for 5000 Series switches
5000-MACSEC-LIC-P	MACsec License for the 5000 Series	Perpetual MACsec license for the 5000 Series switches

\* XN-ACPWR-xxx-FB power supply units cannot be used with the 10941, 10951, 10953, or XN-ACPWR-2000W-F PSUs on the same switch.

Not available for Mexico, Russia, Brazil, China, Korea, South Africa, India at present, pending certification.

\*\* The optional 2-post rack mount kit can be used with 5520 chassis HW rev AD or higher.

## Warranty

All 5520 Series models are covered under Extreme's Universal LLW policy. For warranty details, please visit: [www.extremenetworks.com/support/policies](http://www.extremenetworks.com/support/policies).

## Power Cords

In support of Extreme Networks Green initiatives, power cords are not included with the 5520, but can be ordered separately. They should be specified at time of ordering.

## Optics/Transceivers

For a list of the optics/transceivers supported on the 5520 Series hardware, refer to our Extreme Optics Compatibility Tool at <https://optics.extremenetworks.com>.

## Maintenance Services

Extreme's maintenance and support services with 100% in-sourced engineering experts and over 90% first-person resolution ensure efficient operation of your business-essential network. 24x7x365 phone support, advanced parts replacement, and on-site support augment your staff with experienced resources that help you mitigate critical network issues fast. Visit [Extreme Maintenance Services](#) for more information.



<http://www.extremenetworks.com/contact>

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