

S54 Series Switches

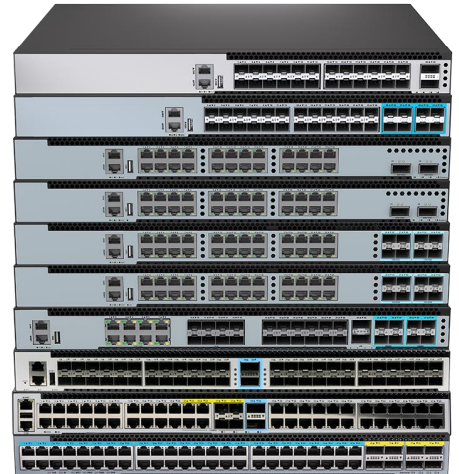
Datasheet

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Release Date: 2026/3

Product Overview

The S54 Series features high-performance Layer 3 Access / Aggregation switches powered by a next-generation MAC SoC. Leveraging advanced hardware processes, the series provides full Layer 3 networking capabilities for high-speed enterprise and operator environments



Highlight features

- High-Power PoE: Support for 802.3bt (PoE++) delivering up to 90W per port for high-draw IoT and Wi-Fi 7 devices.
- Unified Converged Core: Full MPLS (L2/L3 VPN) stack to support multi-tenant, converged network architectures.
- Carrier-Grade Reliability: MLAG support for Active-Active redundancy, providing device-level failover and hitless upgrades.
- Data Center Fabric: Hardware-accelerated VXLAN with BGP-EVPN control plane for scalable overlay networks.
- Line-Rate Security: MACsec (AES-CMAC) encryption for secure, hardware-based switch-to-switch link protection.
- Nanosecond Precision: IEEE 1588 PTP (Precision Timing Protocol) for time-sensitive synchronization.
- Advanced Routing: Comprehensive L2/IPv4/IPv6 stack including OSPF, BGP, and PIM (Multicast).

The S5-54 Series ensures high availability through redundant, hot-swappable power supplies—supporting both AC and DC—and four field-replaceable fan modules. While the standard configuration features front-to-rear (AFO) airflow, rear-to-front (AFI) customization is available to meet specific cooling requirements.

Feasible PSU and airflow

Items	AC	DC	PoE Ports	AFO	AFI	Power Input	FAN
S5448T-4X2C-EI	○	○	X	○	○	2	4
S5448T-4X2C-SI	○	X	X	○	X	1	4
S5448X-2C-SI	○	X	X	○	X	1	4
S5424T-2C-EI	○	○	X	○	○	2	2
S5424T-2C-SI	○	X	X	○	X	1	4
S5424TP-2C-EI	○	○	24	○	X	2	2
S5424T-8N-EI	○	○	X	○	○	2	2
S5424TP-8N-EI	○	○	24	○	X	2	2
S5424X-2C-EI	○	○	X	○	○	2	2
S5424X-2C-SI	○	X	X	○	X	1	4
S5424X-8N-EI	○	○	X	○	○	2	2
S5412X-8G8S8N2Q-EI	○	○	X	○	○	2	2
S5412X-8G8S8N2Q-SI	○	X	X	○	X	1	4
S5424XH-2C-EI	○	○	X	○	○	1	1
S5424XH-2C-SI	○	X	X	○	X	1	2
S5412X12TH-2C-EI	○	○	X	○	○	1	1
S5412X12TH-2C-SI	○	X	X	○	X	1	3
S5424TH-2C-EI	○	○	X	○	○	1	1
S5424TH-2C-SI	○	X	X	○	X	1	3

Family of the S54-Series switches

Models	Ethernet Ports	Management	PSU 1/PSU 2	Cooling
S5448T-4X2C-EI	48 x100M/1G/2.5G/5G/10G Base-T + 4 x 10G SFP+ +2 x 100G QSFP 28	Console: RJ45 to RS232 Ethernet: 1G Port Storage: USB	350W / 350W CRPS	4 x Fan Modules (front-to-back airflow)
S5448T-4X2C-SI	48 x100M/1G/2.5G/5G/10G Base-T + 4 x 10G SFP+ +2 x 100G QSFP 28	Console: RJ45 to RS232 Ethernet: 1G Port Storage: USB	Fixed single power supply	4 x fixed fans (front-to-back airflow)
S5448X-2C-SI	48 x 10G SFP+ + 2 x 100G QSFP 28	Console: RJ45 to RS232 Ethernet: 1G Port Storage: USB	Fixed single power supply	4 x fixed fans (front-to-back airflow)
S5424T-2C-EI	24 x100M/1G/2.5G/5G/10G Base-T+2 x 100G QSFP28	Console: RJ45 to RS232 Ethernet: 1G Port Storage: USB	350W / 350W CRPS	2 x Fan Modules (front-to-back airflow)
S5424T-2C-SI	24*100M/1G/2.5G/5G/10G Base-T+2 x 100G QSFP28	Console: RJ45 to RS232 Ethernet: 1G Port Storage: USB	Fixed single power supply	4 x fixed fans (front-to-back airflow)
S5424TP-2C-EI	24*100M/1G/2.5G/5G/10G Base-T(PoE++ 90W) + 2 x 100G QSFP 28	Console: RJ45 to RS232 Ethernet: 1G Port Storage: USB	600W / 600W (by default)	2 x Fan Modules (front-to-back airflow)
S5424T-8N-EI	24 x100M/1G/2.5G/5G/10G Base-T+8 x 25G SFP28	Console: RJ45 to RS232 Ethernet: 1G Port Storage: USB	350W /350W CRPS	2 x Fan Modules (front-to-back airflow)
S5424TP-8N-EI	24*100M/1G/2.5G/5G/10G Base-T(PoE++ 90W) + 8 x 25G SFP 28	Console: RJ45 to RS232 Ethernet: 1G Port Storage: USB	600W / 600W (by default)	2 x Fan Modules (front-to-back airflow)
S5424X-2C-EI	24 x 10G SFP+ + 2 x 100G QSFP 28	Console: RJ45 to RS232 Ethernet: 1G Port Storage: USB	350W / 350W CRPS	2 x Fan Modules (front-to-back airflow)

Models	Ethernet Ports	Management	PSU 1/PSU 2	Cooling
S5424X-2C-SI	24 x 10G SFP+ + 2 x 100G QSFP 28	Console: RJ45 to RS232 Ethernet: 1G Port Storage: USB	Fixed single power supply	4 x fixed fans (front-to-back airflow)
S5424X-8N-EI	24 x 10G SFP+ + 8 x 25G SFP 28	Console: RJ45 to RS232 Ethernet: 1G Port Storage: USB	350W / 350W CRPS	2 x Fan Modules (front-to-back airflow)
S5412X-8G8S8N2Q-EI	12 x 10G SFP+ + 8 x 1G Base-T + 8 x 1G SFP + 8 x 25G SFP28 + 2 x 40G QSFP+	Console: RJ45 to RS232 Ethernet: 1G Port Storage: USB	350W / 350W CRPS	2 x Fan Modules (front-to-back airflow)
S5412X-8G8S8N2Q-SI	12 x 10G SFP+ + 8 x 1G Base-T + 8 x 1G SFP + 8 x 25G SFP28 + 2 x 40G QSFP+	Console: RJ45 to RS232 Ethernet: 1G Port Storage: USB	Fixed single power supply	4 x fixed fans (front-to-back airflow)
S5424XH-2C-EI	24 x 10G SFP+ + 2 x 100G QSFP28	Console: RJ45 RS232 Ethernet: 1G Port	550W CRPS	1 x Fan Module (front-to-back airflow)
S5424XH-2C-SI	24 x 10G SFP+ + 2 x 100G QSFP28	Console: RJ45 RS232 Ethernet: 1G Port	150W Fixed single power supply	2 x fixed fans (front-to-back airflow)
S5412X12TH-2C-EI	12 x 10G SFP+ + 12 x 10G Base-T + 2 x 100G QSFP28	Console: RJ45 RS232 Ethernet: 1G Port	350W CRPS	1 x Fan Module (front-to-back airflow)
S5412X12TH-2C-SI	12 x 10G SFP+ + 12 x 10G Base-T + 2 x 100G QSFP28	Console: RJ45 RS232 Ethernet: 1G Port	Fixed single power supply	3 x fixed fans (front-to-back airflow)
S5424TH-2C-EI	24 x 10G Base-T + 2 x 100G QSFP28	Console: RJ45 RS232 Ethernet: 1G Port	350W CRPS	1 x Fan Module (front-to-back airflow)
S5424TH-2C-SI	24 x 10G Base-T + 2 x 100G QSFP28	Console: RJ45 RS232 Ethernet: 1G Port	300W Fixed single power supply	3 x fixed fans (front-to-back airflow)

Product Specifications

Model	Switch capacity (bidirectional)	Throughput	Dimensions (W x H x D) cm	Consumption (W)	Weight(kg) (Net/Gross)
S5448T-4X2C-EI	1440Gbps	2142.72Mpps	44.2 x 4.4 x 38	TBD	TBD
S5448T-4X2C-SI	1440Gbps	2142.72Mpps	44.2 x 4.4 x 37.1	TBD	TBD
S5448X-2C-SI	1360Gbps	2023.68Mpps	44.2 x 4.4 x 29	87	4.03/6.5
S5424T-2C-EI	880Gbps	1309.44Mpps	44.2 x 4.4 x 35.7	106	5kg/9kg
S5424T-2C-SI	880Gbps	1309.44Mpps	44.2 x 4.4 x 35.7	112	5kg/9kg
S5424TP-2C-EI	880Gbps	1309.44Mpps	44.2 x 4.4 x 35.7	112	6.69kg/8.8kg
S5424T-8N-EI	880Gbps	1309.44Mpps	44.2 x 4.4 x 35.6	76	6.96kg/10kg
S5424TP-8N-EI	880Gbps	1309.44Mpps	44.2 x 4.4 x 35.6	116	6.96kg/10kg
S5424X-2C-EI	880Gbps	1309.44Mpps	44.2 x 4.4 x 35.7	64	5kg/9kg
S5424X-2C-SI	880Gbps	1309.44Mpps	44.2 x 4.4 x 29	55	5kg/8.5kg
S5424X-8N-EI	880Gbps	1309.44Mpps	44.2 x 4.4 x 35.7	76	6.96kg/10kg
S5412X-8G8S8N2Q-EI	832Gbps	1238.02Mpps	44.2 x 4.4 x 35.7	72	6.96kg/9kg
S5412X-8G8S8N2Q-SI	832Gbps	1238.02Mpps	44.2 x 4.4 x 29.1	TBD	6.96kg/9kg
S5424XH-2C-EI	880Gbps	1309.44Mpps	21.5x4.4x35.5	64	3.5kg/7.5kg
S5424XH-2C-SI	880Gbps	1309.44Mpps	21.5x4.4x35.5	38	2.7kg/5kg
S5412X12TH-2C-EI	880Gbps	1309.44Mpps	21.5x4.4x35.6	81	3.5kg/5kg
S5412X12TH-2C-SI	880Gbps	1309.44Mpps	21.5x4.4x35.6	TBD	3kg/5kg
S5424TH-2C-EI	880Gbps	1309.44Mpps	21.5x4.4x35.6	101	3.5kg/4.4kg
S5424TH-2C-SI	880Gbps	1309.44Mpps	21.5x4.4x35.6	98	3kg/4kg

Product Specifications

CPU

- Dual-core processor, ARM A53

Memory

- eMMC: 8GB on all models
- DRAM: 2GB on all models

MTBF

- EI \geq 90000H
- SI \geq 70000H

Environmental ranges

- Operating temperature: 0°C to 45°C
- Storage temperature: -40°C to 70°C
- Running Humidity: 10% to 90% (No condensation)
- Store Humidity: 5 to 95% (No condensation)

Temperature alarm

- Alarm threshold: 50°C

The S54 Series supports a comprehensive range of management options, including CLI, Web-based, and Cloud-managed platforms. Administrators can utilize SNMP v1/v2/v3, Telnet, and FTP, while security is bolstered by SSH2.0. Additionally, integrated OAM support ensures streamlined operations and more convenient network maintenance.

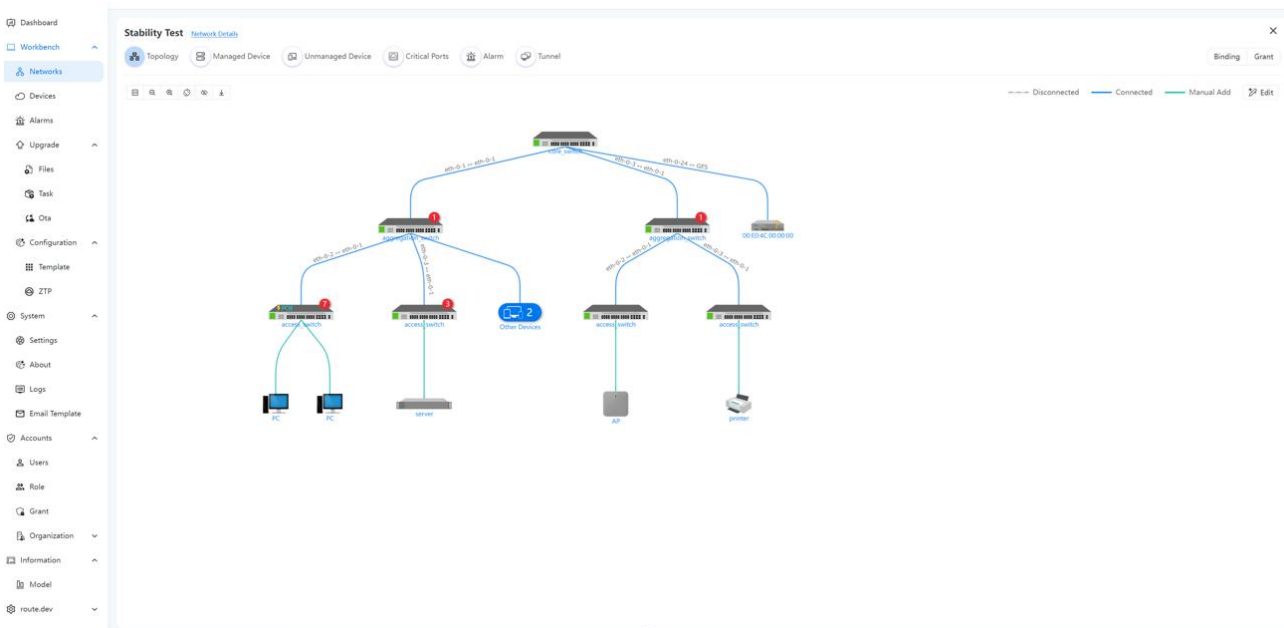
Cloud management

Leveraging deep expertise in campus and enterprise networking, ETHERNEXION introduces the UniCloud Management System. By integrating intelligent automation, UniCloud streamlines network maintenance, reduces operational costs, and ensures a secure, high-performance environment tailored to evolving user demands.

The platform designed to provide digital solutions for the entire lifecycle of network elements, including switches, routers, and wireless APs:

- **Unified Device Management:** Provides a centralized platform for managing configuration policies, firmware upgrades, and statistical analysis of device operating data.
- **Remote O&M Capabilities:** Utilizing a lightweight reverse proxy (FRP) and an integrated WebTerminal (SSH/Telnet), the system enables secure, cross-network access to intranet devices with latency under 200ms.
- **Automated Deployment & Topology:** Supports Zero-Touch Deployment for large-scale automation. It also uses LLDP to automatically discover and draw intuitive, real-time network topology maps.
- **Advanced Monitoring:** Includes a distributed MQTT engine for real-time status reporting (latency <50ms) and a multimodal database architecture (MySQL, InfluxDB, Redis, Elasticsearch) for efficient data analysis and logging.
- **Security & Access Control:** Features a multi-level RBAC permission system, high-risk command interception, and WAF protection to block network attacks.

The following is a diagram illustrating cloud-managed ETHERNEXION switches. For more detailed information, please refer to "ETHERNEXION Cloud Controller specification".



Visual WEB GUI

ENOS allows you to quickly configure common configuration items using a visual WEB GUI, which lowers the application threshold for users.

Monitor [Save] [admin] [Logout]

Device Information

Product ID:	Software:	Hardware Version: 1.1	Uptime: 0 days, 6 hours, 42 minutes
Location: --	Image Name: ulmage.lis1023a.e680.d	EPLD Version: 0.2	Device Name: 5648X
WebImage Name:	Serial Number:	Contact: --	BootRom Version: v1.0.2
MAC Address: D8-5B-22-00-02-02			

Interface Panel [Active] [Inactive] [Shutdown]

Port	Status	Media
1A	Active	Copper
1B	Active	Copper
1C	Active	Copper
1D	Active	Copper
1E	Active	Copper
1F	Active	Copper
1G	Active	Copper
1H	Active	Copper
1I	Active	Copper
1J	Active	Copper
1K	Active	Copper
1L	Active	Copper
1M	Active	Copper
1N	Active	Copper
1O	Active	Copper
1P	Active	Copper
1Q	Active	Copper
1R	Active	Copper
1S	Active	Copper
1T	Active	Copper
1U	Active	Copper
1V	Active	Copper
1W	Active	Copper
1X	Active	Copper
1Y	Active	Copper
1Z	Active	Copper
2A	Active	Copper
2B	Active	Copper
2C	Active	Copper
2D	Active	Copper
2E	Active	Copper
2F	Active	Copper
2G	Active	Copper
2H	Active	Copper
2I	Active	Copper
2J	Active	Copper
2K	Active	Copper
2L	Active	Copper
2M	Active	Copper
2N	Active	Copper
2O	Active	Copper
2P	Active	Copper
2Q	Active	Copper
2R	Active	Copper
2S	Active	Copper
2T	Active	Copper
2U	Active	Copper
2V	Active	Copper
2W	Active	Copper
2X	Active	Copper
2Y	Active	Copper
2Z	Active	Copper
3A	Active	Copper
3B	Active	Copper
3C	Active	Copper
3D	Active	Copper
3E	Active	Copper
3F	Active	Copper
3G	Active	Copper
3H	Active	Copper
3I	Active	Copper
3J	Active	Copper
3K	Active	Copper
3L	Active	Copper
3M	Active	Copper
3N	Active	Copper
3O	Active	Copper
3P	Active	Copper
3Q	Active	Copper
3R	Active	Copper
3S	Active	Copper
3T	Active	Copper
3U	Active	Copper
3V	Active	Copper
3W	Active	Copper
3X	Active	Copper
3Y	Active	Copper
3Z	Active	Copper
4A	Active	Copper
4B	Active	Copper
4C	Active	Copper
4D	Active	Copper
4E	Active	Copper
4F	Active	Copper
4G	Active	Copper
4H	Active	Copper
4I	Active	Copper
4J	Active	Copper
4K	Active	Copper
4L	Active	Copper
4M	Active	Copper
4N	Active	Copper
4O	Active	Copper
4P	Active	Copper
4Q	Active	Copper
4R	Active	Copper
4S	Active	Copper
4T	Active	Copper
4U	Active	Copper
4V	Active	Copper
4W	Active	Copper
4X	Active	Copper
4Y	Active	Copper
4Z	Active	Copper

Usage

- CPU Usage: 7.53%
- Memory Usage: 36.94%

Temperature

Component	Temperature (°C)
AROUND_CHIP0	~40
SWITCH_CHIP	~50

Fan

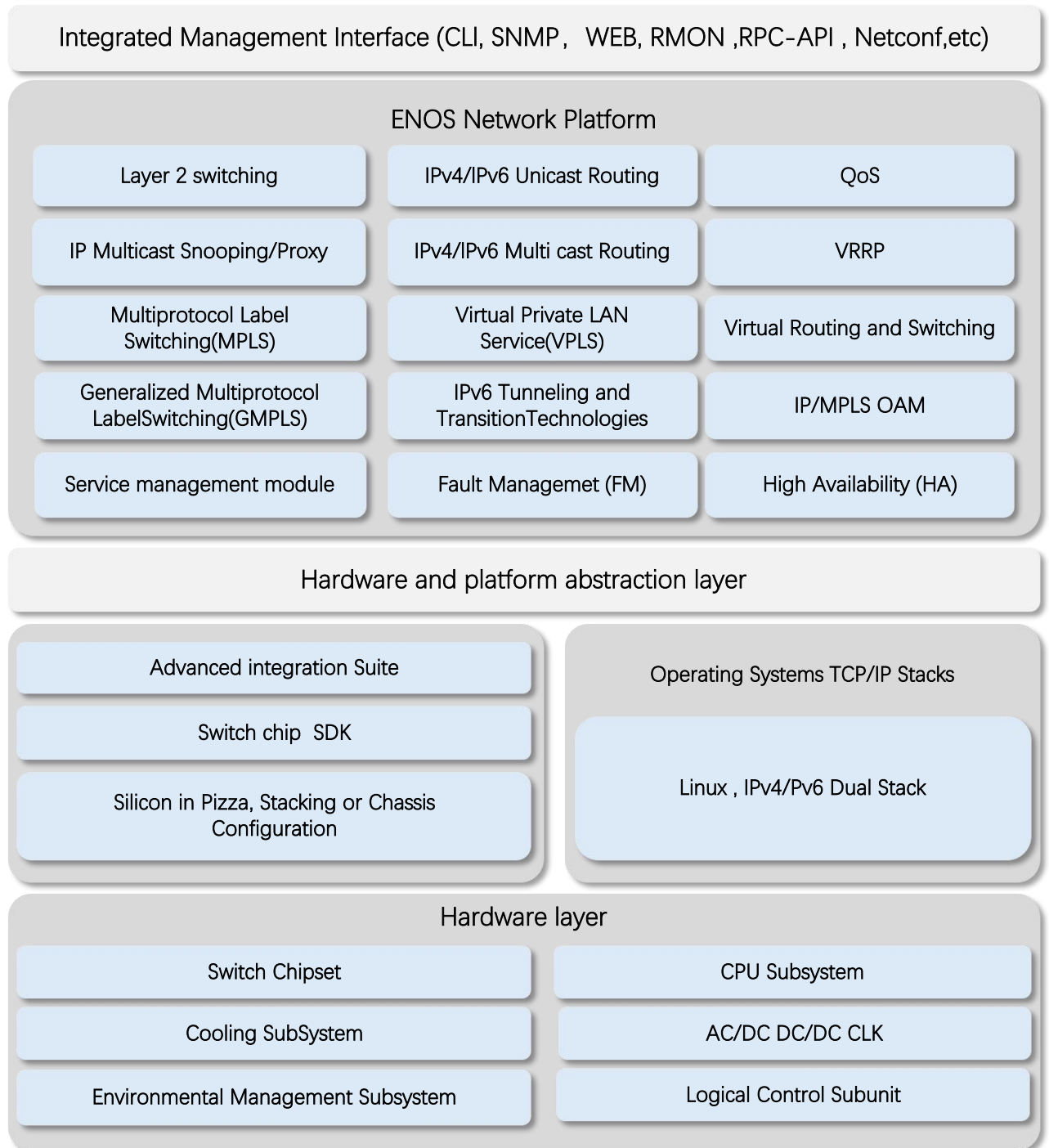
Fan ID	Status
1-1	OK
1-2	OK
1-3	OK
1-4	OK

Auto refresh: [Manual] [Refresh]

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Software Specifications

ETHERNEXION implements a unified software platform, and the software capabilities supported by the devices are listed in the document ['ENOS Software features'](#) .



- * All ETHERNEXION switches use a normalized software platform and image package file
- * Unified software version iteration plan
- * Unified user experience

Ordering Information

Items	Description
S5448T-4X2C-EI	10G Data Center Switch with 48*10G Base-T, 4*10G SFP+, 2*100G QSFP28, Dual power supply modules, 4 Intelligent fan modules
S5448T-4X2C-SI	10G Enterprise and Campus Network Switch with 48*10G Base-T, 4*10G SFP+, 2*100G QSFP28, Fixed single power supply , 4 Fixed Fans
S5448X-2C-SI	10G Enterprise and Campus Network Switch with 48*10G SFP+, 2*100G QSFP28, Fixed single power supply , 4 Fixed Fans
S5424T-2C-EI	10G Data Center Switch with 24*10G Base-T, 2*100G QSFP28, Dual power supply modules, 2 Intelligent Fan modules
S5424T-2C-SI	10G Enterprise and Campus Network Switch with 24*10G Base-T, 2*100G QSFP28, Fixed single power supply, 4 Fixed Fans
S5424TP-2C-EI	10G Enterprise and Campus Network Switch with 24*10G Base-T (PoE++90W), 2*100G QSFP28, Dual power supply modules, 2 Intelligent fan modules
S5424T-8N-EI	10G Enterprise and Campus Network Switch with 24*10G Base-T, 8*25G QSFP28, Dual power supply modules, 2 Intelligent fan modules
S5424TP-8N-EI	10G Enterprise and Campus Network Switch with 24*10G Base-T (PoE++90W), 8*25G QSFP28, Dual power supply modules, 2 Intelligent fan modules
S5424X-2C-EI	10G Data Center Switch with 24*10G SFP+, 2*100G QSFP28, Dual power supply modules , 2 Intelligent fan modules
S5424X-2C-SI	10G Enterprise and Campus Network Switch with 24*10G SFP+, 2*100G QSFP28, Single Fixed power supply, 4 Fixed Fans
S5424X-8N-EI	10G Data Center Switch with 24*10G SFP+, 8*25G SFP28, Dual power supply modules, 2 Intelligent Fan modules
S5412X-8G8S8N2Q-EI	10G Enterprise and Campus Network Switch with 12*10G SFP+ , 8*1G Base-T, 8*1G SFP, 8*25G SFP28, 2*40G QSFP+ , Dual power supply modules, 2 Intelligent fan modules
S5412X-8G8S8N2Q-SI	10G Enterprise and Campus Network Switch with 12*10G SFP+ , 8*1G Base-T, 8*1G SFP, 8*25G SFP28, 2*40G QSFP+ , Single Fixed power supply, 4 Fixed Fans

Items	Description
S5424XH-2C-EI	10G enterprise switch, with 24*10G SFP+ , 2*100G QSFP28, One power supply module(C13), 2 Intelligent fan modules.
S5424XH-2C-SI	10G enterprise switch, with 24*10G SFP+ , 2*100G QSFP28, One fixed Single power supply(C13), 2 fixed Fans.
S5412X12TH-2C-EI	10G enterprise switch, with 12*10G SFP+ , 12*10G Base-T, 2*100G QSFP28, One power supply module(C13), 1 Intelligent fan module
S5412X12TH-2C-SI	10G enterprise switch, with 12*10G SFP+ , 12*10G Base-T, 2*100G QSFP28, One fixed Single power supply(C13), 3 fixed Fans.
S5424TH-2C-EI	10G enterprise switch, with 24*10G Base-T, 2*100G QSFP28, One power supply module(C13), 2 Intelligent fan modules.
S5424TH-2C-SI	10G enterprise switch, with 24*10G Base-T, 2*100G QSFP28, One fixed Single power supply(C13), 2 fixed Fans.

AC/DC Power Supplies use for all models

Items	Description
PSU-350-AC-AFO	S54 Series 350 W AC power supply (front-to-back airflow)
PSU-550-AC-AFO	S54 Series 550 W AC power supply (front-to-back airflow)
PSU-550-AC-AFO	S54 Series 550 W AC power supply (front-to-back airflow)
PSU-600-AC-AFO	S54 Series 600 W AC POE power supply (front-to-back airflow)
PSU-600-DC-AFO	S54 Series 600 W DC POE power supply (front-to-back airflow)

Items	Description
PSU-900-AC-AFO	S54 Series 900 W AC POE power supply (front-to-back airflow)
PSU-900-DC-AFO	S54 Series 900 W DC POE power supply (front-to-back airflow)
PSU-1200-AC-AFO	S54 Series 1200 W AC POE power supply (front-to-back airflow)
PSU-1200-DC-AFO	S54 Series 1200 W DC POE power supply (front-to-back airflow)

Software Licenses

Items	Description
Software License	EB, Basic L3 software features, Preinstalled
Software License	MS, L3 enhance features software license key
Software License	MA, MPLS features software license key

Accessory

- Mounting components pack
- Power Cord
- Serial Console cable

About ETHERNEXION:

ETHERNEXION is an innovation-driven technology enterprise specializing in high-performance networking and communication solutions. Dedicated to creating tangible value for global clients, the company delivers a comprehensive portfolio of enterprise-grade, carrier-class hardware and intelligent, cloud-managed software. Ethernexion empowers enterprises, data centers, and small-to-medium service providers by providing high-performance, ultra-reliable, and highly cost-effective solutions that optimize operational efficiency and maximize return on investment. Driven by technical excellence, Ethernexion is committed to being a trusted partner in building scalable, secure, and future-ready network infrastructures.

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