S5720-SI Datasheet (Detailed Version)

HUAWEI TECHNOLOGIES CO., LTD.

HUAWEI

S5720-SI Datasheet (Detailed Version)

1 Introduction

Huawei S5700 series Ethernet switches (S5700 for short) are next-generation energy-saving Gigabit Ethernet switches that function as the access devices to deliver high bandwidth or aggregation device for Ethernet multi-service networks. Built on next-generation high-performance processors and Huawei Versatile Routing Platform (VRP), the S5700 is available in four series: LI, SI, EI, and HI.

As a model of SI series, S5720-SI is the standard Gigabit Ethernet switch. This Layer 3 switch delivers flexible gigabit ports for access and cost-effective gigabit and 10 gigabit upstream ports.

The S5720-SI provides enhanced Layer 3 features, simplified operation and maintenance, intelligent stack (iStack), flexible Ethernet networking, and mature IPv6 features. It will be widely deployed at the access and aggregation layers of enterprise campus networks and the access layers of data center networks.

2 Product Overview

2.1 Product Models

Figure 2-1 S5700-SI series switches

S5720-28P-SI-AC (dual-power)
S5720-52P-SI-AC (dual-power)

S5720-28X-SI-AC (dual-power)
S5720-52X-SI-AC(dual-power)

S5720-28X-PWR-SI-AC (PoE)
S5720-52X-PWR-SI-AC (PoE)

S5720-52X-PWR-SI-ACF (PoE)

S5720S-28P-SI-AC (single-power)
S5720S-52P-SI-AC (single-power)

S5720S-28X-SI-AC(single-power)
S5720S-52X-SI-AC(single-power)

Table 2-1 S5720-SI models and description

Series	Model	Description
S5720-P-SI (gigabit upstream)	S5720-28P-SI-AC	• Twenty-four 10/100/1000Base-T Ethernet ports (four combo 1000Base-X SFP ports) and four 1000Base-X SFP ports • Dual pluggable AC or DC power supplies, one 150 W AC power supply equipped by default
	S5720-52P-SI-AC	• Forty-eight 10/100/1000Base-T Ethernet ports and four 1000Base-X SFP ports • Dual pluggable AC or DC power supplies, one 150 W AC power supply equipped by default
S5720-X-SI (10 gigabit upstream)	S5720-28X-SI-AC	• Twenty-four 10/100/1000Base-T Ethernet ports (four combo 1000Base-X SFP ports) and four 1000Base-X SFP+ ports • Dual pluggable AC or DC power supplies, one 150 W AC power supply equipped by default
	S5720-52X-SI-AC	• Forty-eight 10/100/1000Base-T Ethernet ports and four 10 gigabit SFP+ ports • Dual pluggable AC or DC power supplies, one 150 W AC power supply equipped by default
S5720-X-PWR-SI (10 gigabit upstream)	S5720-28X-PWR-SI-AC	• Twenty-four 10/100/1000Base-T Ethernet ports (four combo 1000Base-X SFP ports) and four 1000Base-X SFP+ ports • Dual pluggable AC or DC power supplies, one 500 W AC power supply equipped by default • PoE+
	S5720-52X-PWR-SI-AC	• Forty-eight 10/100/1000Base-T Ethernet ports and four 10 gigabit SFP+ ports • Dual pluggable AC or DC power supplies, one 500 W AC power supply equipped by default • PoE+
	S5720-52X-PWR-SI-ACF	• Forty-eight 10/100/1000Base-T Ethernet ports and four 10 gigabit SFP+ ports • Dual pluggable AC power supplies, one 1150 W AC power supply equipped by default • PoE+
S5720S-P-SI (10 gigabit upstream)	S5720S-28P-SI-AC	• Twenty-four 10/100/1000Base-T Ethernet ports and four 1000Base-X SFP ports • AC power supply, RPS supported
	S5720S-52P-SI-AC	• Forty-eight 10/100/1000Base-T Ethernet ports and four 1000Base-X SFP ports • AC power supply, RPS supported
S5720S-X-SI (10 gigabit upstream)	S5720S-28X-SI-AC	• Twenty-four 10/100/1000Base-T Ethernet ports and four 10 gigabit SFP+ ports • AC power supply, RPS supported
	S5720S-52X-SI-AC	• Forty-eight 10/100/1000Base-T Ethernet ports and four 10 gigabit SFP+ ports • AC power supply, RPS supported

2.2 Subcard Types

The S5720-SI provides four 10GE SFP+ ports (X series) or four 1000BASE-X ports (P series) for upstream connections. No extra upstream subcard is required.

2.3 Fan Tray

The S5720-SI has a built-in heat dissipation system. Customers do not need to purchase fan trays.

3 Power Supply

Table 3-1 S5720-SI power supplies

Power Model	Name	Applied Switch Model (S5720-SI)
ES0W2PSA0150	150 W AC	S5720-28P-SI-AC, S5720-28X-SI-AC, S5720-52P-SI-AC, S5720-52X-SI-AC
ES0W2PSD0150	150 W DC	S5720-28P-SI-AC, S5720-28X-SI-AC, S5720-52P-SI-AC, S5720-52X-SI-AC
PAC-500WA-BE	500 W AC PoE	S5720-28X-PWR-SI-AC, S5720-52X-PWR-SI-AC
PDC-650WA-BE	650 W DC PoE	S5720-28X-PWR-SI-AC, S5720-52X-PWR-SI-AC
W2PSA1150	1150 W AC PoE	S5720-52X-PWR-SI-ACF
RPS1800	RPS1800	S5720S-28P-SI-AC, S5720S-28X-SI-AC, S5720S-52P-SI-AC, S5720S-52X-SI-AC

The S5720-SI uses built-in power supplies by default. If the switch supports pluggable power supplies, the customer can purchase the power supplies when or after purchasing the switch.

The S5720-SI supports multiple power supply options, including dual-power, PoE, and single-power.

Dual-Power (Non-PoE)

The dual-power model (non-PoE) uses pluggable power supplies and provides two power slots. By default, one AC power supply (ES0W2PSA0150) is equipped. When a switch has two power supplies installed, the power supplies work in 1+1 backup mode to power the switch itself. The switch supports dual AC, dual DC, as well as AC and DC mixing.

Table 3-2 lists the power supply options supported by S5720-SI.

Table 3-2 S5720-SI dual-power (non-PoE)

Model	Power 1	Power 2
S5720-28P-SI-AC	ES0W2PSA0150 (150W-AC) or ES0W2PSD0150 (150W-DC)	ES0W2PSA0150 (150W-AC) or ES0W2PSD0150 (150W-DC)
S5720-28X-SI-AC	ES0W2PSA0150 (150W-AC) or ES0W2PSD0150 (150W-DC)	ES0W2PSA0150 (150W-AC) or ES0W2PSD0150 (150W-DC)

Model	Power 1	Power 2
S5720-52P-SI-AC	ES0W2PSA0150 (150W-AC) or ES0W2PSD0150 (150W-DC)	ES0W2PSA0150 (150W-AC) or ES0W2PSD0150 (150W-DC)
S5720-52X-SI-AC	ES0W2PSA0150 (150W-AC) or ES0W2PSD0150 (150W-DC)	ES0W2PSA0150 (150W-AC) or ES0W2PSD0150 (150W-DC)

PoE/PoE+

PWR in the model name indicates a PoE-capable switch, which supports IEEE 802.3af-compliant PoE and 802.3at-compliant PoE+. Each port delivers 15.4 W PoE or 30 W PoE+ power capacity.

Each PoE-capable S5720-SI switch has two power slots for pluggable PoE power modules. Table 3-3 lists the power supply options supported by PoE-capable S5720-SI.

Table 3-3 S5720-SI dual-power (PoE)

Model	Power 1	Power 2	PoE Power	Number of PoE Ports
S5720-28X-PWR-SI-AC	PAC-500WA-BE or PDC-650WA-BE	-	40 W	POE (15.4W): 24 POE+ (30W): 12
	PAC-500WA-BE or PDC-650WA-BE	PAC-500WA-BE or PDC-650WA-BE	740 W	POE (15.4W): 24 POE+ (30W): 24
S5720-52X-PWR-SI-AC	PAC-500WA-BE or PDC-650WA-BE	-	40 W	POE (15.4W): 24 POE+ (30W): 12
	PAC-500WA-BE or PDC-650WA-BE	PAC-500WA-BE or PDC-650WA-BE	740 W	POE (15.4W): 48 POE+ (30W): 24
S5720-52X-PWR-SI-ACF	W2PSA1150	-	786W	POE (15.4W): 48 POE+ (30W): 26
	W2PSA1150	W2PSA1150	1440 W	POE (15.4W): 48 POE+ (30W): 48

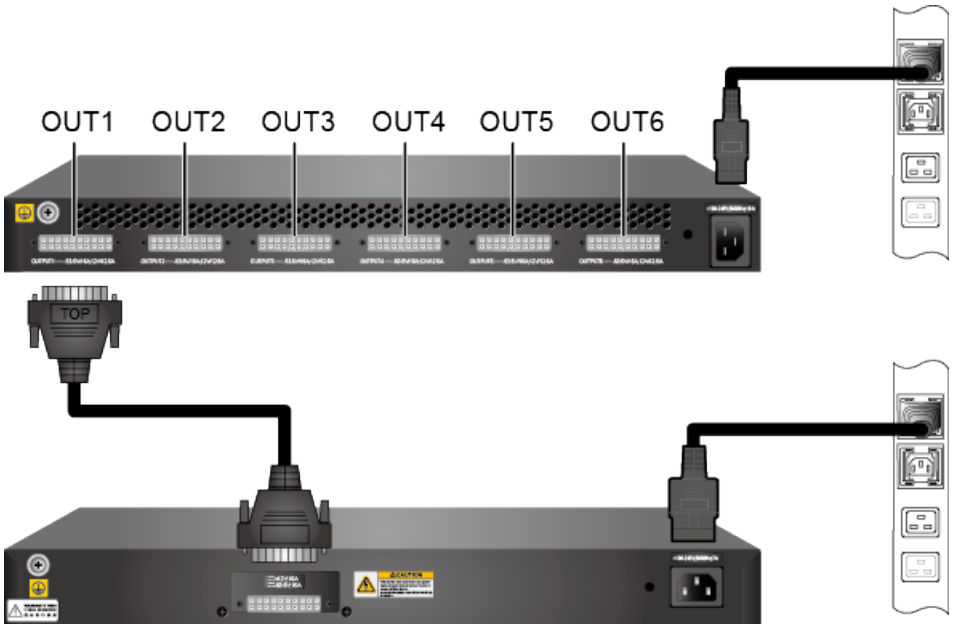
NOTE: When a switch has two power supplies installed, the two power supplies work in redundancy mode to provide power for the switch itself and in load balancing mode to provide power for powered devices (PDs).

Single-Power

The single-power model uses a built-in AC power supply and supports RPS1800. The single-power models include S5720S-28P-SI-AC, S5720S-28X-SI-AC, S5720S-52P-SI-AC, and S5720S-52X-SI-AC.

An RPS1800 is a redundant power supply system that provides power redundancy for the connected switches to ensure uninterrupted services. When the internal power supply of a switch fails, the RPS1800 provides power to the switch immediately, which improves system reliability. Figure 3-2 shows how to connect an RPS1800 to a switch.

Figure 3-2 Connecting an RPS1800 to an S5720S-S



The RPS1800 provides 1+6 cold backup for the switch:

- The RPS1800 can connect to a maximum of six switches and ensures seamless failover for at most one switch when the internal power supply of the switch fails.
- When the internal power supply of the switch powered by the RPS1800 recovers, the RPS1800 immediately restores to backup state.
- Among the 6 DC output ports, OUT1 has the highest priority, and the other 5 ports have the same priority. When the RPS1800 connects to six switches, the switch connected to OUT1 preferentially receives power from the RPS1800.

4 Product Characteristics and Advantages

Huawei S5720-SI series have the following characteristics.

Powerful Service Processing Capacity

The switch supports comprehensive Layer 2 and Layer 3 multicast protocols, including Protocol Independent Multicast Sparse Mode (PIM SM), PIM Dense Mode (DM), PIM Source-Specific Multicast (SSM), Multicast Listener Discovery (MLD), and Internet Group Management Protocol (IGMP) snooping, to ensure high-quality HD video surveillance and video conferencing services.

In addition, the switch supports Layer 3 protocols such as OSPF, IS-IS, BGP, and VRRP to meet access and aggregation requirements of enterprises, and plenty of voice, video, and data applications.

Flexible Ethernet Networking

In addition to traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), the switch supports Huawei-developed Smart Ethernet Protection (SEP) technology and the latest Ethernet Ring Protection Switching (ERPS) standard. SEP is a ring protection protocol specific to the Ethernet link layer, and applies to various ring network topologies, such as open ring topology, closed ring topology, and cascading ring topology. This protocol is reliable, easy to maintain,

and implements fast protection switching within 50 ms. ERPS is defined in ITU-T G.8032. It implements millisecond-level protection switching based on traditional Ethernet MAC and bridging functions.

The switch supports SmartLink, which implements uplink backup. One switch can connect to multiple aggregation switches through multiple links, significantly improving access-side reliability.

The switch supports Ethernet OAM (IEEE 802.3ah/802.1ag) to fast detect link faults.

Various Reliability Protection Measures

The switch supports iStack that combines multiple switches into a logical switch. Member switches in a stack implement redundancy backup to improve device reliability and use inter-device link aggregation to improve link reliability. iStack provides high network scalability. Ports, bandwidth, and processing capacity of a stack can be increased by simply adding member switches to the stack. iStack also simplifies device configuration and management. Users can log in to any member switch to configure and manage all the member switches in the stack.

The switch supports two pluggable power supplies that work in 1+1 redundancy backup mode. Mixed installation of AC and DC power supplies are supported, allowing for flexible power configurations.

Easy Operation and Maintenance

The switch supports the Super Virtual Fabric (SVF) feature, which changes the "Core/Aggregation + Access switch + AP" structure into a logical device. The switch provides the simplest network management solution in the industry to simplify device management. It allows plug-and-play access switches and APs. In addition, the switch supports service configuration templates. The templates are configured on core devices, and automatically delivered to access devices, to implement centralized control, simplify service configuration, and allows flexible configuration modification. The S5720-SI functions as a client in the SVF system.

The switch supports Easy Operation, a solution that provides zero-touch deployment, replacement of faulty devices without manual configuration, USB-based deployment, batch configuration, and batch remote upgrade. The Easy Operation solution facilitates device deployment, upgrade, service provisioning, and other management and maintenance operations, and also greatly reduces O&M costs. The switch can be managed using Simple Network Management Protocol (SNMP) v1, v2c, and v3, command line interface (CLI), web-based network management system, or Secure Shell (SSH) v2.0. Additionally, it supports remote network monitoring (RMON), multiple log hosts, port traffic statistics collection, and network quality analysis, which help in network consolidation and reconstruction.

In addition, the switch uses the sFlow function to sample traffic that passes through and send sampled traffic to the collector in real time. The collected traffic statistics are the basis for generating statistical reports, helping enterprises maintain their networks.

Security Control

The switch supports MAC address authentication, 802.1x authentication, as well as Portal authentication, and implements dynamic delivery of policies (VLAN, QoS, and ACL) to users.

The switch provides a series of mechanisms to defend against DoS attacks and user-targeted attacks. DoS attacks are targeted at switches and include SYN flood, Land, Smurf, and ICMP flood attacks. User-targeted attacks include bogus DHCP server attacks, IP/MAC address spoofing, DHCP request flood, and change of the DHCP CHADDR value.

The switch sets up and maintains a DHCP snooping binding table, and discards the packets that do not match the binding entries. Users can manually specify DHCP snooping trusted and untrusted ports to ensure that users connect only to the authorized DHCP server.

In addition, the switch supports strict ARP learning, which protects a network against ARP spoofing attacks to ensure normal network access.

Mature IPv6 Features

The switch uses the mature, stable VRP software platform and supports IPv4/IPv6 dual stacks, IPv6 routing protocol RIPng, and IPv6 over IPv4 tunnels (manual, 6-to-4, and Intra-Site Automatic Tunnel Addressing Protocol (ISATAP) tunnels). With these IPv6 features, the switch can be deployed on a pure IPv4 network, a pure IPv6 network, or a shared IPv4/IPv6 network, helping realize IPv4-to-IPv6 transition.

5 Product Specifications

5.1 Functions and Features

Table 5-1 lists the functions and features available on the S5720-SI.

Table 5-1 Functions and features available on the S5720-SI

Feature	Description
MAC address table	In compliance with IEEE 802.1d MAC address learning and aging Static, dynamic, and blackhole MAC address entries Packet filtering based on source MAC addresses
VLAN	Guest VLAN and voice VLAN GVRP Selective QinQ MUX VLAN VLAN assignment based on MAC addresses, protocols, IP subnets, policies, and ports 1:1 and N:1 VLAN mapping
Reliability	RRPP ring topology and RRPP multi-instance SmartLink tree topology and SmartLink multi-instance, providing millisecond-level protection switchover Smart Ethernet Protection (SEP) STP (IEEE 802.1d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s) G.8032 Ethernet Ring Protection Switching (ERPS) BPDU protection, root protection, and loop protection
IP routing	Static route, RIPv1/2, RIPng, OSPF, OSPFv3, ECMP, IS-IS, IS-ISv6, BGP, BGP4+, VRRP, and VRRP6
IPv6	Neighbor Discovery (ND) Path maximum transmission unit (PMTU) IPv6 Ping, IPv6 Tracert, and IPv6 Telnet 6 to4 tunnel, ISATAP tunnel, and manually configured tunnel ACLs based on source IPv6 addresses, destination IPv6 addresses, Layer 4 ports, or protocol types Multicast Listener Discovery (MLD) v1/v2 snooping

Feature	Description
Multicast	PIM-DM, PIM-SM, and PIM-SSM IGMP v1/v2/v3 snooping and IGMP fast leave Multicast forwarding in a VLAN and multicast replication between VLANs Multicast load splitting among trunk member ports Controllable multicast Port-based multicast traffic statistics collection
QoS/ACL	Inbound and outbound traffic rate limiting on a port Packet redirection Port-based traffic policing and two-rate and three-color CAR Eight queues per port WRR, DRR, SP, WRR+SP, and DRR+SP queue scheduling algorithms Remarking of the 802.1p priority and DSCP value of packets Packet filtering based on Layer 2 to Layer 4 information, including source MAC addresses, destination MAC addresses, source IP addresses, destination IP addresses, TCP/UDP source/destination ports, protocol types, and VLAN IDs Queue-based rate limitation and shaping on ports
Security	Hierarchical user management and password protection DoS attack defense, ARP attack defense, ICMP attack defense Binding of the IP address, MAC address, interface number, and VLAN ID of a user Port isolation, port security, sticky MAC MAC Forced Forwarding (MFF) Blackhole MAC address entries Limitation on the number of learned MAC addresses IEEE 802.1x authentication and the limitation on the number of users on an interface AAA authentication, RADIUS authentication, HWTACACS authentication, and NAC SSH v2.0 Hypertext Transfer Protocol Secure (HTTPS) CPU defense Blacklist and whitelist 802.1x, MAC, and Portal authentication DHCPv4/v6 client, relay, server, snooping
SVF	SVF client, zero-touch deployment Automatic software and patch loading on client One-key service deployment Independent running of client
Management and maintenance	iStack Virtual cable test (VCT) SNMPv1/v2c/v3 Remote Network Monitoring (RMON) Web-based network management system System logs and multi-level alarms sFlow
Interoperability	VLAN-based Spanning Tree (working with PVST/PVST+/RPVST)
	Link-type Negotiation Protocol (LNP), similar to the Dynamic Trunking Protocol (DTP)
	VLAN Central Management Protocol (VCMP), similar to the VLAN Trunk Protocol (VTP)

Table 5-2 lists the specifications of key features.

Table 5-2 S5720-SI feature specifications

Feature	Specification
VLAN	4K
MAC Address Entry	16K
ARP Entry	4K
ND Entry	2K
FIB Entry(IPv4)	8K
FIB Entry(IPv6)	2K
IGMP Entry	1K
MLD Entry	1K
Multicast Entry(IPv4)	1K
Multicast Entry(IPv6)	1K
ACL(IPv4)	1.25K
ACL(IPv6)	1.25K
iStack	A maximum of nine member switches, 80 Gbps bidirectional bandwidth
MTU	The value ranges from 128 to 9216, in bytes. The default value is 1500.
Jumbo frame	The value ranges from 1536 to 10240, in bytes. The default value is 9216.

5.2 Hardware Specifications

Table 5-3 lists the S5720-SI hardware specifications.

Table 5-3 S5720-SI hardware specifications

Item	Specification
Cabinet	Standard 19-inch cabinet/rack, such as N66E and N68E
Memory (RAM)	512 MB
Flash memory	240 MB
Switching capacity	336 Gbps
Forwarding performance	S5720-28P-SI-AC: 41.664 Mpps S5720-52P-SI-AC: 77.376 Mpps S5720-28X-SI-AC: 95.232 Mpps S5720-52X-SI-AC: 130.944 Mpps S5720-28X-PWR-SI-AC: 95.232 Mpps S5720-52X-PWR-SI-AC: 130.944 Mpps S5720-52X-PWR-SI-ACF: 130.944 Mpps

Item		Specification
Forwarding performance		S5720S-28P-SI-AC: 41.664 Mpps S5720S-52P-SI-AC: 77.376 Mpps S5720S-28X-SI-AC: 95.232 Mpps S5720S-52X-SI-AC: 130.944 Mpps
Mean Time Between Failures (MTBF), years		S5720-28P-SI-AC: 85.48 S5720-52P-SI-AC: 75.66 S5720-28X-SI-AC: 82.4 S5720-52X-SI-AC: 73.23 S5720-28X-PWR-SI-AC: 66.78 S5720-52X-PWR-SI-AC: 50.86 S5720-52X-PWR-SI-ACF: 50.86 S5720S-28P-SI-AC: 104.92 S5720S-52P-SI-AC: 90.07 S5720S-28X-SI-AC: 100.31 S5720S-52X-SI-AC: 86.64
Mean Time To Repair (MTTR), hours		2
Availability		> 0.99999
Surge protection	Service port protection	± 6kV in common mode
	Power supply port protection	• Non-PoE switches: DC: ± 1 kV in differential mode; ± 2 kV in common mode AC: ± 6kV in differential mode; ± 6kV in common mode • PoE switches: S5720-28X-PWR-SI-AC (500 W AC): ± 6kV in differential mode; ± 6kV in common mode S5720-28X-PWR-SI-AC (650 W DC): ± 2kV in differential mode; ± 4kV in common mode S5720-52X-PWR-SI-AC (500 W AC): ± 6kV in differential mode; ± 6kV in common mode S5720-52X-PWR-SI-AC (650 W DC): ± 2kV in differential mode; ± 4kV in common mode S5720-52X-PWR-SI-ACF (1150 W AC): ± 2kV in differential mode; ± 4kV in common mode
Dimensions (W x D x H)		S5720-28P-SI-AC: 442.0mm × 420.0mm × 43.6mm S5720-52P-SI-AC: 442.0mm × 420.0mm × 43.6mm S5720-28X-SI-AC: 442.0mm × 420.0mm × 43.6mm S5720-52X-SI-AC: 442.0mm × 420.0mm × 43.6mm S5720-28X-PWR-SI-AC: 442.0mm × 420.0mm × 43.6mm S5720-52X-PWR-SI-AC: 442.0mm × 420.0mm × 43.6mm S5720-52X-PWR-SI-ACF: 442.0mm × 420.0mm × 43.6mm (A 1150 W power supply will extrude out from the chassis, increasing the chassis depth to 507.3 mm.) S5720S-28P-SI-AC: 442.0mm × 420.0mm × 43.6mm S5720S-52P-SI-AC: 442.0mm × 420.0mm × 43.6mm S5720S-28X-SI-AC: 442.0mm × 420.0mm × 43.6mm S5720S-52X-SI-AC: 442.0mm × 420.0mm × 43.6mm

Item		Specification
Weight (full configuration)		S5720-28P-SI-AC: 9.1 kg S5720-52P-SI-AC: 9.5 kg S5720-28X-SI-AC: 9.1 kg S5720-52X-SI-AC: 9.5 kg S5720-28X-PWR-SI-AC: 9.3 kg S5720-52X-PWR-SI-AC: 9.6 kg S5720-52X-PWR-SI-ACF: 10.0 kg S5720S-28P-SI-AC: 4.75 kg S5720S-52P-SI-AC: 4.94 kg S5720S-28X-SI-AC: 4.75 kg S5720S-52X-SI-AC: 4.94 kg
Stack port		S5720-P-SI: GE electrical and GE SFP optical ports on the front panel, except combo ports S5720-X-SI: GE electrical and 10GE SFP+ optical ports on the front panel, except combo ports S5720S-P-SI: GE electrical and GE SFP optical ports on the front panel S5720S-X-SI: GE electrical and 10GE SFP+ optical ports on the front panel
RPS		Not supported by S5720-SI, and supported by S5720S-SI
PoE		Supported by PWR series
DC input voltage	Rated voltage range	-48V DC to -60V DC
	Maximum voltage range	-36V DC to -72V DC
AC input voltage	Rated voltage range	100V AC to 240V AC; 50/60 Hz
	Maximum voltage range	90V AC to 264V AC; 47 Hz to 63 Hz
Maximum power consumption (100% throughput, full speed of fans)		S5720-28P-SI-AC: 34.6 W S5720-52P-SI-AC: 53.6 W S5720-28X-SI-AC: 37.5 W S5720-52X-SI-AC: 56.8 W S5720-28X-PWR-SI-AC: - No PoE: 56.1 W - Full PoE load: 913 W (switch power consumption: 173 W, PoE: 740 W) S5720-52X-PWR-SI-AC: - No PoE: 93.1 W - Full PoE load: 943.2 W (switch power consumption: 203.2 W, PoE: 740 W) S5720-52X-PWR-SI-ACF: - No PoE: 94.8 W - Full PoE load: 1631.5 W (switch power consumption: 191.5 W, PoE 1440 W) S5720S-28P-SI-AC: 29.1 W S5720S-52P-SI-AC: 51.5 W S5720S-28X-SI-AC: 32 W S5720S-52X-SI-AC: 54.7 W

Item		Specification
Temperature	Operating temperature	0°C to 45°C (0 m-1800 m altitude) Note: When the altitude is between 1800 m and 5000 m, the operating temperature reduces by 1°C every time the altitude increases by 220 m.
	Storage temperature	-40°C to +70°C
Noise under normal temperature (sound power)		S5720-28P-SI-AC: < 52 dBA S5720-52P-SI-AC: < 52 dBA S5720-28X-SI-AC: < 52 dBA S5720-52X-SI-AC: < 52 dBA S5720-28X-PWR-SI-AC: < 56.5 dBA S5720-52X-PWR-SI-AC: < 56.5 dBA S5720-52X-PWR-SI-ACF: < 56.5 dBA S5720S-28P-SI-AC: < 52 dBA S5720S-52P-SI-AC: < 52 dBA S5720S-28X-SI-AC: < 52 dBA S5720S-52X-SI-AC: < 52 dBA
Noise under normal temperature (sound voltage)		S5720-28P-SI-AC: < 38.7 dBA S5720-52P-SI-AC: < 38.7 dBA S5720-28X-SI-AC: < 38.7 dBA S5720-52X-SI-AC: < 38.7 dBA S5720-28X-PWR-SI-AC: < 38.7 dBA S5720-52X-PWR-SI-AC: < 41.1 dBA S5720-52X-PWR-SI-ACF: < 38.7 dBA S5720S-28P-SI-AC: < 36.7 dBA S5720S-52P-SI-AC: < 36.7 dBA S5720S-28X-SI-AC: < 36.7 dBA S5720S-52X-SI-AC: < 36.7 dBA
Relative humidity		5%RH to 95%RH, noncondensing
Operating altitude		Non-PoE: - DC power equipped: 0 m to 2000 m - AC power equipped: 0 m to 5000 m PoE: 0 m to 5000 m

NOTE:

Switching capacity: also called switching bandwidth. It refers to the maximum volume of bidirectional traffic that can be transferred between the switching chip and data bus. This index indicates the data transferring capability of a switch.

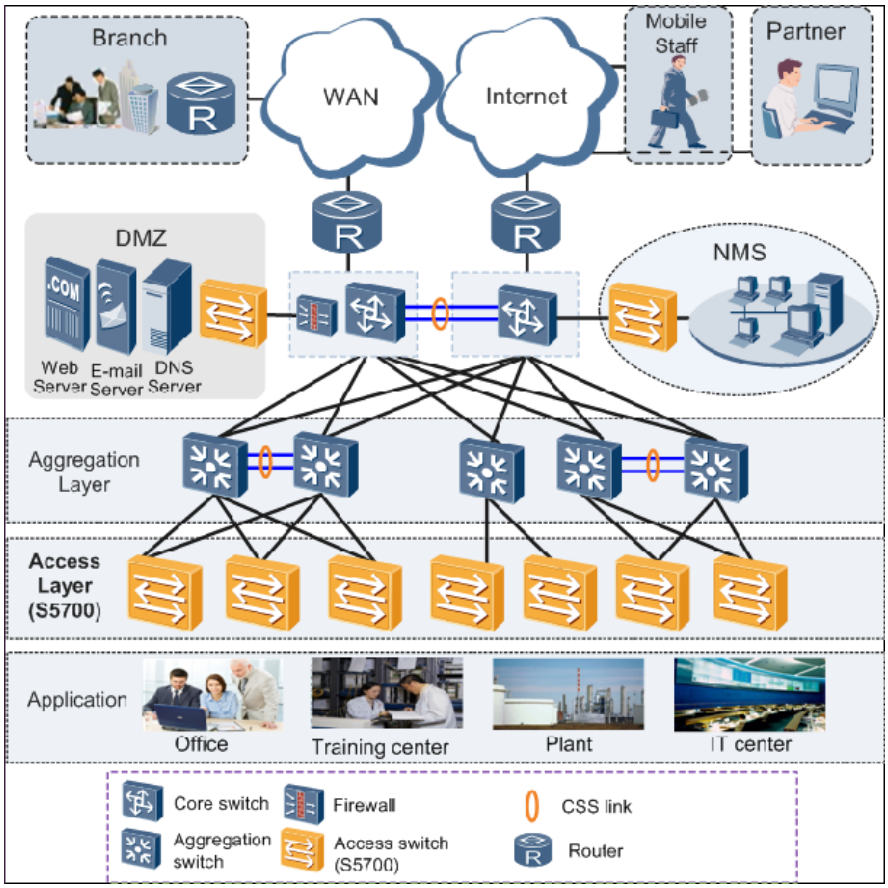
Forwarding performance: This index indicates the wire-speed forwarding capability of a switch when the switch processes 64-byte packets (plus an 8-byte preamble and a 12-byte IFG). It represents the packet header processing capability.

6 Networking and Applications

6.1 Large-Sized Enterprise Campus Network

As shown in Figure 6-1, the S5720-SI switches are located at the access layer to build a high-performance, reliable enterprise campus network.

Figure 6-1 Position of the S5720-SI on a large-sized enterprise campus network



The S5720-SI provides various terminal security management features, and supports functions such as PoE, voice VLAN, and QoS. The switch can be used for desktop access and provides gigabit access speed.

The S5720-SI provides various security features including ARP security, IP security, IP source guard, and user access control policies such as NAC and ACLs, to control access of user terminals.

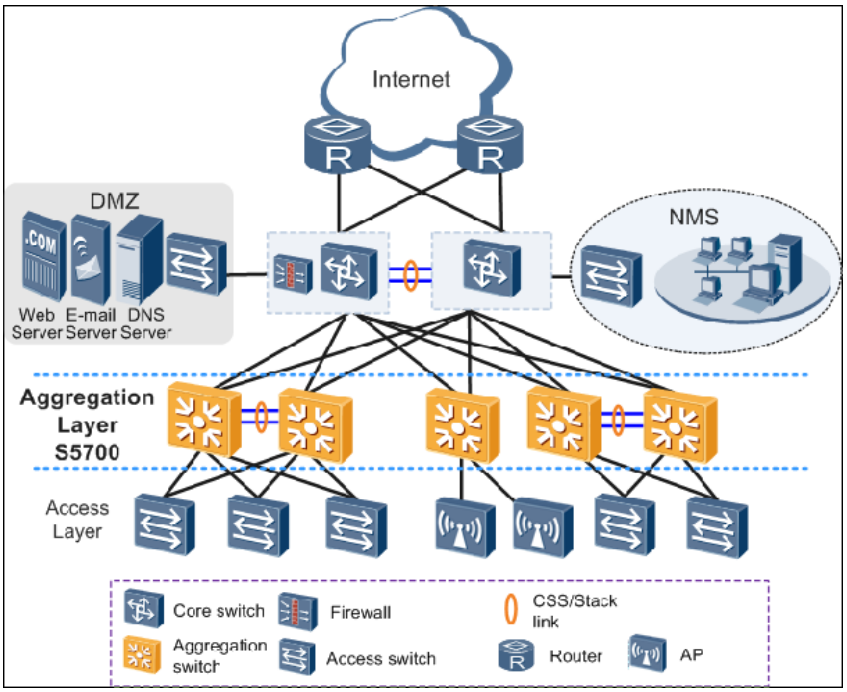
In addition, the switch supports the Link Aggregation Control Protocol (LACP) to provide multi-link access for servers, improving link bandwidth and reliability.

In terms of device management, the S5720-SI provides EasyOperation and USB-based deployment, which facilitates device deployment and management.

6.2 Small- and Middle-Sized Enterprise Campus Network

As shown in Figure 6-2, the S5720-SI switches are located at the aggregation layer to build a high-performance, reliable enterprise campus network.

Figure 6-2 Position of the S5720-SI on a small- and middle-sized enterprise campus network



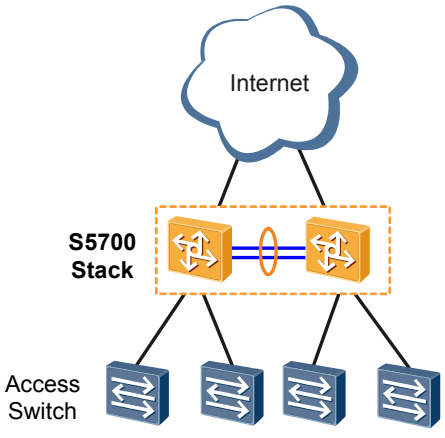
On an enterprise network or campus network, the S5720-SI switches connect to access switches through gigabit or 10 gigabit interfaces, provide high performance and large switching capacity, and connect to core switches through 10 gigabit optical interfaces. The network provides 10 Gbit/s rate for the backbone layer and 100 Mbit/s access rate for terminals, meeting requirements for high bandwidth and multi-service.

The S5720-SI provides SEP and RRPP to implement millisecond-level protection switchover. The switches form a stack system by using iStack technology to implement the distributed forwarding structure and fast fault recovery. The stack system increases the number of user interfaces and improves packet processing capability. The member switches can be managed in a uniform manner to facilitate network management and maintenance.

6.3 Small-Sized Enterprise Campus Network

As shown in Figure 6-3, the S5720-SI switches are the core switches of a small-sized enterprise campus network, which have powerful aggregation and routing capabilities. The S5720-SI switches use iStack to ensure high reliability. The switches provide various access control policies to achieve centralized user management and simplify configuration.

Figure 6-3 Position of the S5720-SI on a small-sized enterprise campus network



7 Product Accessories

7.1 Optical Modules and Fibers

The S5720-SI supports the following GE and 10GE optical modules:

- GE: 100 m electrical, 500 m optical multimode, 10/40/80/100 km optical single-mode, two pairs of bidirectional optical modules (10/40 km)
- 10GE: 100/220/300 m SFP+ multi-mode, 1.4/10/40/80 km optical SFP+

Optical fibers fall into single-mode and multimode fibers. Single-mode optical modules use single-mode fibers, and multi-mode optical modules use multi-mode fibers. For a non-BIDI optical module, each optical interface must be configured with a Tx optical fiber and an Rx optical fiber of the same type. For a BIDI optical module, only one optical fiber needs to be configured.

The fibers and optical modules supported by Huawei switches are updating. For the latest information, visit http://enterprise.huawei.com or contact your local Huawei sales office.

7.2 Stack Cables

The S5720-SI switches support service port stacking. The applicable stack cables are as follows:

- AOC cable

An active optical network (AOC) cable integrates an optical module and fiber. The AOC cables are available in SFP-10G-AOC3M and SFP-10G-AOC10M.

- SFP+ high-speed cable

The SFP+ high-speed cable also integrates an optical module and cable. The SFP+ high-speed cables are available in SFP-10G-CU1M, SFP-10G-CU3M, SFP-10G-CU5M, and SFP-10G-CU10M.

Table 7-1 lists the stack cable types and connectors.

Table 7-1 Stack cables and connectors

Stack Cable	Model	Description
AOC	SFP-10G-AOC3M	Cable length: 3 m; connector: SFP+
	SFP-10G-AOC10M	Cable length: 5 m; connector: SFP+
SFP+ high-speed	SFP-10G-CU1M	Cable length: 1 m; connector: SFP+
	SFP-10G-CU3M	Cable length: 3 m; connector: SFP+
	SFP-10G-CU5M	Cable length: 5 m; connector: SFP+
	SFP-10G-CU10M	Cable length: 10 m; connector: SFP+

NOTE: The SFP-10G-CU5M cable will be available in V2R9.

8 Safety and Regulatory Compliance

Table 8-1 lists the safety and regulatory compliance of S5720-SI.

Table 8-1 S5720-SI safety and regulatory compliance

Certification Category	Description	
Safety	IEC 60950-1 EN 60950-1/A11/A12 UL 60950-1 CSA C22.2 No 60950-1 AS/NZS 60950.1	CNS 14336-1 IEC60825-1 IEC60825-2 EN60825-1 EN60825-2
Electromagnetic Compatibility (EMC)	CISPR22 Class A CISPR24 EN55022 Class A EN55024 ETSI EN 300 386 Class A CFR 47 FCC Part 15 Class A ICES 003 Class A	AS/NZS CISPR22 Class A VCCI Class A IEC61000-4-2 ITU-T K 20 ITU-T K 21 ITU-T K 44 CNS13438
Environment	RoHS REACH WEEE	

NOTE:

EMC: electromagnetic compatibility

CISPR: International Special Committee on Radio Interference

EN: European Standard

ETSI: European Telecommunications Standards Institute

CFR: Code of Federal Regulations

FCC: Federal Communication Commission

IEC: International Electrotechnical Commission

AS/NZS: Australian/New Zealand Standard

VCCI: Voluntary Control Council for Interference

UL: Underwriters Laboratories

CSA: Canadian Standards Association

IEEE: Institute of Electrical and Electronics Engineers

RoHS: restriction of the use of certain hazardous substances

REACH: Registration Evaluation Authorization and Restriction of Chemicals

WEEE: Waste Electrical and Electronic Equipment

9 MIB and Standards Compliance

9.1 Supported MIBs

Table 9-1 lists the MIBs supported by S5720-SI.

Table 9-1 S5720-SI MIBs

Category	MIB	
Public MIB	BRIDGE-MIB	P-BRIDGE-MIB
	DISMAN-NSLOOKUP-MIB	Q-BRIDGE-MIB
	DISMAN-PING-MIB	RFC1213-MIB
	DISMAN-TRACEROUTE-MIB	RIPv2-MIB
	ENTITY-MIB	RMON2-MIB
	EtherLike-MIB	RMON-MIB
	IF-MIB	SAVI-MIB
	IP-FORWARD-MIB	SNMP-FRAMEWORK-MIB
	IPv6-MIB	SNMP-MPD-MIB
	LAG-MIB	SNMP-NOTIFICATION-MIB
	LLDP-EXT-DOT1-MIB	SNMP-TARGET-MIB
	LLDP-EXT-DOT3-MIB	SNMP-USER-BASED-SM-MIB
	LLDP-MIB	SNMPv2-MIB
	NOTIFICATION-LOG-MIB	TCP-MIB
	NQA-MIB	UDP-MIB
	OSPF-TRAP-MIB	
Huawei-proprietary MIB	HUAWEI-AAA-MIB	HUAWEI-IF-EXT-MIB
	HUAWEI-ACL-MIB	HUAWEI-INFOCENTER-MIB
	HUAWEI-ALARM-MIB	HUAWEI-IPPOOL-MIB
	HUAWEI-ALARM-RELIABILITY-MIB	HUAWEI-IPV6-MIB
	HUAWEI-BASE-TRAP-MIB	HUAWEI-ISOLATE-MIB
	HUAWEI-BRAS-RADIUS-MIB	HUAWEI-L2IF-MIB
	HUAWEI-BRAS-SRVCFG-EAP-MIB	HUAWEI-L2MAM-MIB
	HUAWEI-BRAS-SRVCFG-STATICUSER-MIB	HUAWEI-L2VLAN-MIB
	HUAWEI-CBQOS-MIB	HUAWEI_LDT-MIB
	HUAWEI-CDP-COMPLIANCE-MIB	HUAWEI-LLDP-MIB
	HUAWEI-CONFIG-MAN-MIB	HUAWEI-MAC-AUTHEN-MIB
	HUAWEI-CPU-MIB	HUAWEI-MEMORY-MIB
	HUAWEI-DAD-TRAP-MIB	HUAWEI-MFF-MIB
	HUAWEI-DC-MIB	HUAWEI-MFLP-MIB
	HUAWEI-DATASYNC-MIB	HUAWEI-MSTP-MIB
	HUAWEI-DEVICE-MIB	HUAWEI-MULTICAST-MIB
	HUAWEI-DHCPR-MIB	HUAWEI-NAP-MIB
	HUAWEI-DHCPS-MIB	HUAWEI-NTPV3-MIB
	HUAWEI-DHCP-SNOOPING-MIB	HUAWEI-PERFORMANCE-MIB
	HUAWEI-DIE-MIB	HUAWEI-PORT-MIB
	HUAWEI-DNS-MIB	HUAWEI-PORTAL-MIB
	HUAWEI-DLDP-MIB	HUAWEI-QINQ-MIB
	HUAWEI-ELMI-MIB	HUAWEI-RIPv2-EXT-MIB
	HUAWEI-ERPS-MIB	HUAWEI-RM-EXT-MIB
	HUAWEI-ERRORDOWN-MIB	HUAWEI-RRPP-MIB
	HUAWEI-ENERGYMNGT-MIB	HUAWEI-SECURITY-MIB
	HUAWEI-EASY-OPERATION-MIB	HUAWEI-SEP-MIB
	HUAWEI-ENTITY-EXTENT-MIB	HUAWEI-SNMP-EXT-MIB
	HUAWEI-ENTITY-TRAP-MIB	HUAWEI-SSH-MIB
	HUAWEI-ETHARP-MIB	HUAWEI-STACK-MIB
	HUAWEI-ETHOAM-MIB	HUAWEI-SWITCH-L2MAM-EXT-MIB
	HUAWEI-FLASH-MAN-MIB	HUAWEI-SWITCH-SRV-TRAP-MIB
	HUAWEI-FWD-RES-TRAP-MIB	HUAWEI-SYS-MAN-MIB
	HUAWEI-GARP-APP-MIB	HUAWEI-TCP-MIB
	HUAWEI-GTSM-MIB	HUAWEI-TFTPC-MIB
	HUAWEI-HGMP-MIB	HUAWEI-TRNG-MIB
	HUAWEI-HWTACACS-MIB	HUAWEI-XQOS-MIB

9.2 Standard Compliance

Table 9-2 lists the standards the S5720-SI complies with.

Table 9-2 S5720-SI standards compliance

Standard Organization	Standard or Protocol
IETF	RFC 768 User Datagram Protocol (UDP) RFC 792 Internet Control Message Protocol (ICMP) RFC 793 Transmission Control Protocol (TCP) RFC 826 Ethernet Address Resolution Protocol (ARP) RFC 854 Telnet Protocol Specification RFC 951 Bootstrap Protocol (BOOTP) RFC 959 File Transfer Protocol (FTP) RFC 1058 Routing Information Protocol (RIP) RFC 1112 Host extensions for IP multicasting RFC 1157 A Simple Network Management Protocol (SNMP) RFC 1256 ICMP Router Discovery RFC 1305 Network Time Protocol Version 3 (NTP) RFC 1349 Internet Protocol (IP) RFC 1493 Definitions of Managed Objects for Bridges RFC 1542 Clarifications and Extensions for the Bootstrap Protocol RFC 1643 Ethernet Interface MIB RFC 1757 Remote Network Monitoring (RMON) RFC 1901 Introduction to Community-based SNMPv2 RFC 1902-1907 SNMP v2 RFC 1981 Path MTU Discovery for IP version 6 RFC 2131 Dynamic Host Configuration Protocol (DHCP) RFC 2328 OSPF Version 2 RFC 2453 RIP Version 2 RFC 2460 Internet Protocol, Version 6 Specification (IPv6) RFC 2461 Neighbor Discovery for IP Version 6 (IPv6) RFC 2462 IPv6 Stateless Address Auto configuration RFC 2463 Internet Control Message Protocol for IPv6 (ICMPv6) RFC 2474 Differentiated Services Field (DS Field) RFC 2740 OSPF for IPv6 (OSPFv3) RFC 2863 The Interfaces Group MIB RFC 2597 Assured Forwarding PHB Group RFC 2598 An Expedited Forwarding PHB RFC 2571 SNMP Management Frameworks RFC 2865 Remote Authentication Dial In User Service (RADIUS) RFC 3046 DHCP Option82 RFC 3376 Internet Group Management Protocol, Version 3 (IGMPv3) RFC 3513 IP Version 6 Addressing Architecture RFC 3579 RADIUS Support For EAP RFC 4271 A Border Gateway Protocol 4 (BGP-4) RFC 4760 Multiprotocol Extensions for BGP-4 draft-grant-tacacs-02 TACACS+

Standard Organization	Standard or Protocol
IEEE	IEEE 802.1D Media Access Control (MAC) Bridges IEEE 802.1p Virtual Bridged Local Area Networks IEEE 802.1Q Virtual Bridged Local Area Networks IEEE 802.1ad Provider Bridges IEEE 802.2 Logical Link Control IEEE Std 802.3 CSMA/CD IEEE Std 802.3ab 1000BASE-T specification IEEE Std 802.3ad Aggregation of Multiple Link Segments IEEE Std 802.3ae 10GE WEN/LAN Standard IEEE Std 802.3x Full Duplex and flow control IEEE Std 802.3z Gigabit Ethernet Standard IEEE802.1ax/IEEE802.3ad Link Aggregation IEEE 802.3ah Ethernet in the First Mile. IEEE 802.1ag Connectivity Fault Management IEEE 802.1ab Link Layer Discovery Protocol IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE802.1x Port based network access control protocol IEEE802.3af DTE Power via MIDI IEEE802.3at DTE Power via the MDI Enhancements
ITU	ITU SG13 Y.17ethoam ITU SG13 QoS control Ethernet-Based IP Access ITU-T Y.1731 ETH OAM performance monitor
ISO	ISO 10589 IS-IS Routing Protocol
MEF	MEF 2 Requirements and Framework for Ethernet Service Protection MEF 9 Abstract Test Suite for Ethernet Services at the UNI MEF 10.2 Ethernet Services Attributes Phase 2 MEF 11 UNI Requirements and Framework MEF 13 UNI Type 1 Implementation Agreement MEF 15 Requirements for Management of Metro Ethernet Phase 1 Network Elements MEF 17 Service OAM Framework and Requirements MEF 20 UNI Type 2 Implementation Agreement MEF 23 Class of Service Phase 1 Implementation Agreement Xmodem XMODEM/YMODEM Protocol Reference

NOTE: The listed standards and protocols are fully or partially supported by Huawei switches. For details, visit http://enterprise.huawei.com or contact your local Huawei sales office.

10 Ordering Information

Table 10-1 Ordering list of S5720-SI series Ethernet switches

Product Description
S5720-28P-SI Bundle(24 Ethernet 10/100/1000 ports,4 of which are dual-purpose 10/100/1000 or SFP,4 Gig SFP,with 150W AC power supply)
S5720-28X-SI Bundle(24 Ethernet 10/100/1000 ports,4 of which are dual-purpose 10/100/1000 or SFP,4 10 Gig SFP+,with 150W AC power supply)
S5720-52P-SI Bundle(48 Ethernet 10/100/1000 ports,4 Gig SFP,with 150W AC power supply)
S5720-52X-SI Bundle(48 Ethernet 10/100/1000 ports,4 10 Gig SFP+,with 150W AC power supply)
S5720-28X-PWR-SI Bundle(24 Ethernet 10/100/1000 PoE+ ports,4 of which are dual-purpose 10/100/1000 or SFP,4 10 Gig SFP+,with 500W AC power)
S5720-52X-PWR-SI Bundle(48 Ethernet 10/100/1000 PoE+ ports,4 10 Gig SFP+,with 500W AC power)
S5720-52X-PWR-SI Bundle(48 Ethernet 10/100/1000 PoE+ ports,4 10 Gig SFP+,with 1150W AC power supply)
S5720S-28P-SI-AC(24 Ethernet 10/100/1000 ports,4 Gig SFP,AC 110/220V)
S5720S-28X-SI-AC(24 Ethernet 10/100/1000 ports,4 10 Gig SFP+,AC 110/220V)
S5720S-52P-SI-AC(48 Ethernet 10/100/1000 ports,4 Gig SFP,AC 110/220V)
S5720S-52X-SI-AC(48 Ethernet 10/100/1000 ports,4 10 Gig SFP+,AC 110/220V)
150W AC power supply
150W DC power supply
500W AC PoE power supply
650W DC PoE power supply
1150W AC PoE power supply
RPS1800

For more information, visit http://enterprise.huawei.com or contact your local Huawei sales office.

11 Others

The latest version of S5720-SI is V2R8.

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