

S5700-LI Switch Datasheet (Detailed Version)



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1 Introduction

The S5700-LI is a next-generation energy-saving gigabit Ethernet switch that provides flexible GE access ports and 10GE uplink ports. Building on next-generation, high-performance hardware and the Huawei Versatile Routing Platform (VRP), the S5700-LI supports Advanced Hibernation Management (AHM), intelligent stack (iStack), flexible Ethernet networking, and diversified security control. It provides customers with a green, easy-to-manage, easy-to-expand, and cost-effective gigabit to the desktop solution. In addition, Huawei customizes specialized models to meet customer requirements to suit special scenarios.

Huawei S5700-LI-BAT series battery LAN switches (S5700-LI-BAT for short) are the industry's first switch series to support built-in batteries and provide visualized battery status management. The S5700-LI-BAT can ensure uninterrupted services in environments facing frequent mains power failures at the access layer. Access switches are usually distributed; therefore, it is costly and space-consuming to deploy high-performance Uninterruptible Power Supplies (UPSs) for the access switches. Low-end UPSs or external lead-acid batteries can provide power redundancy at lower costs, but have low reliability and security, short lifespan, and also occupy significant space. Huawei battery LAN switches solve this problem. The use of internal batteries ensures stable operation of the access layer in the event of mains power failures.

CSFP switches support downlink CSFP ports, and each downlink CSFP port provides 2 Gbit/s bandwidth bidirectionally. CSFP switches apply to scenarios where users increase continuously and demand higher bandwidth, and scenarios where deploying fibers is costly and difficult and construction timeframes are long. The switches with front power sockets can be installed in the 300 mm deep cabinet.

The S5701-LI series with front power sockets can be installed in the 300 mm deep cabinet. They can be maintained through the front panel, saving space in small equipment rooms.

2 Product Overview

S5700-10P-LI-AC



- 8x10/100/1000Base-T Ethernet ports, 2xGE SFP ports
- AC power supply

S5700-10P-PWR-LI-AC



- 8x10/100/1000Base-T Ethernet ports, 2xGE SFP ports
- AC power supply
- PoE+

S5700-28P-LI-AC



- 24x10/100/1000Base-T Ethernet ports, 4xGE SFP ports
- AC power supply, supporting Redundant Power Supply (RPS)

S5700-28X-LI-AC



S5700-28X-LI-DC



- 24x10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports
- Two models: AC model and DC model, supporting RPS

S5700-28X-LI-24S-AC



S5700-28X-LI-24S-DC



- 24xGE SFP ports, 4xCombo 10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports
- Two models: AC model and DC model, supporting RPS

S5700-28P-PWR-LI-AC



- 24x10/100/1000Base-T Ethernet ports, 4xGE SFP ports
- AC power supply, supporting RPS
- PoE+

S5700-28X-PWR-LI-AC



- 24x10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports
- AC power supply, supporting RPS
- PoE+

S5700-52P-LI-AC



- 48x10/100/1000Base-T Ethernet ports, 4xGE SFP ports
- AC power supply, supporting RPS

S5700-52X-LI-AC



- 48x10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports
- AC power supply, supporting RPS

S5700-52X-PWR-LI-AC



- 48x10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports
- AC power supply, supporting RPS
- PoE+

S5700-52P-PWR-LI-AC



- 48x10/100/1000Base-T Ethernet ports, 4xGE SFP ports
- AC power supply, supporting RPS
- PoE+

S5700-52X-LI-48CS-AC



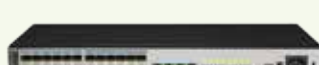
- 48xGE CSFP ports or 24xGE SFP ports, 4xCombo 10/100/1000Base-T Ethernet ports, 4 x 10GE SFP+ ports
- AC power supply, front power sockets, front access

S5701-28X-LI-AC



- 24x10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports
- AC power supply, front power sockets, front access

S5701-28X-LI-24S-AC



- 24xGE SFP ports, 4xCombo 10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports
- AC power supply, front power sockets, front access

S5700-28TP-LI-AC



- 24x10/100/1000Base-T Ethernet ports, 2 Gig SFP and 2 dual-purpose 10/100/1000 or SFP
- AC power supply, supporting RPS

S5700-28TP-PWR-LI-AC



- 24x10/100/1000Base-T Ethernet ports, 2 Gig SFP and 2 dual-purpose 10/100/1000 or SFP
- AC power supply, supporting RPS
- PoE+

S5701-28TP-PWR-LI-AC



- 12x10/100/1000Base-T Ethernet PoE+ ports, 12x10/100/1000Base-T Ethernet ports
- 2 Gig SFP and 2 dual-purpose 10/100/1000 or SFP
- AC power supply, supporting RPS

S5700-28P-LI-BAT



- 24x10/100/1000Base-T Ethernet ports, 4xGE SFP ports
- AC power supply
- One battery slot for an internal 4AH lithium battery or external lead-acid battery used in the event of a mains power failure or a 150 W AC or DC power module used as the redundant power source

S5700-28P-LI-24S-BAT



- 28xGE SFP ports, 4xCombo 10/100/1000Base-T Ethernet ports
- AC power supply
- One battery slot for an internal 4AH lithium battery or external lead-acid battery used in the event of a mains power failure or a 150 W AC or DC power module used as the redundant power source

3 Power Supply

3.1 S5700-LI

PoE Power Supply Configuration

The S5700-LI series PoE switches, including S5700-10P-PWR-LI-AC, S5700-28P-PWR-LI-AC, S5700-52P-PWR-LI-AC, S5700-28TP-PWR-LI-AC, S5701-28TP-PWR-LI-AC, S5700-28X-PWR-LI-AC, and S5700-52X-PWR-LI-AC, have built-in PoE power modules.

The S5700-10P-PWR-LI-AC has an internal power module and does not support the use of an RPS. The internal power module provides 124 W PoE power. The switch supports a maximum of eight ports in compliance with 802.3af or a maximum of four ports in compliance with 802.3at.

The S5700-28P-PWR-LI-AC, S5700-52P-PWR-LI-AC, S5700-28TP-PWR-LI-AC, S5701-28TP-PWR-LI-AC, S5700-28X-PWR-LI-AC, and S5700-52X-PWR-LI-AC have a built-in PoE power module and can connect to the RPS1800. The power supply configurations are shown in Table 3-1.

Table 3-1 Power supply configurations

Power Model	PoE Power	Device	Maximum Number of Ports (Fully Loaded)
Not connected to an RPS	369.6 W	S5700-28P-PWR-LI-AC S5700-52P-PWR-LI-AC S5700-28X-PWR-LI-AC S5700-52X-PWR-LI-AC S5700-28TP-PWR-LI-AC	PoE(15.4 W per port): 24 PoE+ (30 W per port): 12
	184.8 W	S5701-28TP-PWR-LI-AC	PoE (15.4 W per port): 12 PoE+ (30 W per port): 6
Connected to an RPS	800 W	S5700-28P-PWR-LI-AC S5700-28X-PWR-LI-AC S5700-28TP-PWR-LI-AC	PoE (15.4 W per port): 24 PoE+ (30 W per port): 24
		S5700-52P-PWR-LI-AC S5700-52X-PWR-LI-AC	PoE (15.4 W per port): 48 PoE+ (30 W per port): 26
	184.8 W	S5701-28TP-PWR-LI-AC	PoE (15.4 W per port): 12 PoE+ (30 W per port): 6

Non-PoE Power Supply Configuration

The S5700-LI series non-PoE switches have a single internal power module and do not support pluggable power modules.

The S5700-LI series non-PoE switches except the S5700-10P-LI-AC support the RPS1800 and use the RPS1800 as the backup power supply.

3.2 S5700-LI-BAT

The S5700-LI-BAT series switches have a built-in AC power supply unit and can use a pluggable power module or battery for power redundancy. Power modules and batteries for the S5700-LI-BAT series switches are hot swappable.

Battery and Battery Charger Module

The battery installed on an S5700-LI-BAT switch can automatically supply power to the switch in case of a mains power outage, ensuring uninterrupted services. When the AC power supply recovers, the battery turns to the charging state.

The S5700-LI-BAT series switches support the following batteries and battery charger module:

- BAT-4AHA (chargeable lithium battery)
- PBB-12AHA (12AH lead-acid battery charger module)

NOTE:

The PBB-12AHA module must connect to a lead-acid battery with 12AH of rated capacity.

The S5700-LI-BAT series switches can be configured with a battery to prevent service interruption caused by mains power outages. Table 3-2 lists the power supply time of the batteries.

Table 3-2 Battery configuration

Device Model	Battery	Power Supply Time
S5700-28P-LI-BAT	BAT-4AHA	The switch works with the maximum power consumption and the battery is fully charged: 2.4 hours The switch has 70% of ports in Up state, each port transmits 10% of maximum traffic and has the EEE function enabled, and the battery is fully charged: 4.1 hours The switch works with the minimum power consumption (no port is working) and the battery is fully charged: 5.6 hours
S5700-28P-LI-24S-BAT	BAT-4AHA	The switch works with the maximum power consumption and the battery is fully charged: 1.2 hours The switch has 70% of ports in Up state, each port transmits 10% of maximum traffic, and the battery is fully charged: 2.1 hours The switch works with the minimum power consumption (no port is working) and the battery is fully charged: 4.1 hours

NOTE:

The power supply time shortens when a battery has been used for a long time.

Power Module

The S5700-LI-BAT series switches can be configured with a power module as a backup of the built-in power supply unit to improve power reliability.

The S5700-LI-BAT series switches support the following power modules:

- 150 W AC power module
- 150 W DC power module

4 Product Characteristics and Advantages

Innovative Energy Saving Design

The S5700-LI series smart energy-saving switches reduce power consumption without degrading system performance or user experience. The S5700-LI series uses innovative energy-saving technologies including energy efficient Ethernet (EEE), port power detection, dynamic CPU frequency adjustment, and device sleep mode. These technologies help reduce power consumption by adjusting power depending on the Up/Down states of links, presence/absence of optical modules, shutdown and undo shutdown operations on ports, and peak and off-peak hours. The S5700-LI series is the industry's first switch series that supports device sleep mode, and provides three energy saving modes to adapt to different usage scenarios: standard, basic, and deep modes.

Flexible Ethernet Networking

In addition to traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), the S5700-LI 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 S5700-LI supports SmartLink, which implements backup of uplinks. One S5700-LI switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices.

The S5700-LI supports Ethernet OAM (IEEE 802.3ah/802.1ag) to fast-detect link faults.

S5700-10P-LI supports IPv4 static routing and Layer3 hardware forwarding.

Diversified security control

The S5700-LI supports 802.1x authentication, MAC address authentication, and combined authentication on a per port basis, as well as Portal authentication on a per VLANIF interface basis, and implements dynamic policy delivery (VLAN, QoS, and ACL) to users.

The S5700-LI 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 changing of the DHCP CHADDR value.

The S5700-LI collects and maintains information about access users, such as IP addresses, MAC addresses, IP address leases, VLAN IDs, and interface numbers in a DHCP snooping binding table. In this way, IP addresses and access interfaces of DHCP users can be tracked. You can specify DHCP snooping trusted and untrusted ports to ensure that users connect only to the authorized DHCP server.

The S5700-LI supports strict ARP learning. This feature prevents ARP spoofing attackers from exhausting ARP entries so that users can connect to the Internet normally.

Easy operation and maintenance

The S5700-LI supports Huawei Easy Operation, a solution that provides zero-touch deployment, replacement of faulty devices without additional 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 costs of operation and maintenance. The S5700-LI can be managed and maintained using Simple Network Management Protocol (SNMP) V1, V2, 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 that helps with network consolidation and reconstruction.

EasyDeploy: The Commander collects information about the topology of the client connecting to the Commander and saves client startup information based on the topology. The client can be replaced without configuration. Configuration and scripts can be delivered to the client in batches. In addition, the configuration delivery result can be queried.

The Commander can collect and display power consumption on the entire network.

The S5700-LI can use the GARP VLAN Registration Protocol (GVRP) to implement dynamic distribution, registration, and propagation of VLAN attributes. GVRP reduces manual configuration workload and ensures correct configuration. Additionally, the S5700-LI supports MUX VLAN, which involves a principal VLAN and multiple subordinate VLANs. Subordinate VLANs are classified into group VLANs and separate VLANs. Ports in the principal VLAN can communicate with ports in subordinate VLANs. Ports in a subordinate group VLAN can communicate with each other, whereas ports in a subordinate separate VLAN can communicate only with ports in the principal VLAN. The S5700-LI also supports VLAN Central Management Protocol (VCMP) and VLAN-Based Spanning Tree (VBST) protocol.

iStack

The S5700-LI supports intelligent stack (iStack). This technology 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. You can increase ports, bandwidth, and processing capacity of a stack by simply adding member switches to the stack. iStack also simplifies device configuration and management. After a stack is set up, multiple physical switches are virtualized into one logical device. You can log in to any member switch in the stack to manage all the member switches in the stack.

Excellent network traffic analysis

The S5700-LI supports the sFlow function. It uses a method defined in the sFlow standard to sample traffic passing through it and sends sampled traffic to the collector in real time. The collected traffic statistics are used to generate statistical reports, helping enterprises maintain their networks.

Innovative built-in battery

The S5700-LI-BAT is the industry's first switch model that supports internal lithium batteries as a backup power supply. It ensures uninterrupted services in situations where power failures frequently occur at the access layer. The S5700-LI-BAT has the following advantages:

- In the event of a mains power failure the battery can power the switch, so services will not be interrupted.
- Compared with switches using external power supply units, the S5700-LI-BAT occupies less space and is easier to install.
- Intelligent power management, long standby time
- Battery LAN switches on the entire network can be managed centrally using a web system, facilitating network operation and maintenance. As the battery lifetime is predictable, you do not need to replace batteries periodically, reducing hardware costs.
- The internal battery provides alarm and voltage/current protection functions as well as overtemperature protection, which enhance reliability.

CSFP providing high-density access and increased bandwidth

CSFP switches support downlink CSFP ports. Each downlink CSFP port equipped with a CSFP GE optical module and one pair of fibers can provide 2 Gbit/s bandwidth bidirectionally, which is two times the bandwidth of standard SFP optical modules. The 24 downlink CSFP ports can provide 48 Gbit/s bandwidth bidirectionally, implementing high-density access (equal to access of 48 standard SFP ports) and saving the cost of deploying fibers and adding optical modules.

Easy O&M with front panel

The models with front power sockets can be installed in a 300 mm deep cabinet, and can be maintained through the front panel. This simplifies operation and maintenance. The cabinets can be placed against the wall or back to back, and is well-suited for shallow cabinets and limited equipment room space.

5 Product Specifications

5.1 Functions and Features

Table 5-1 lists the functions and features available on the S5700-LI.

Table 5-1 Functions and features available on the S5700-LI

Feature	Description
MAC address table	16K MAC address entries MAC address learning and aging Static, dynamic, and blackhole MAC address entries Packet filtering based on source MAC addresses Interface-based MAC learning limiting
VLAN	4K active VLANs Guest VLAN and voice VLAN GVRP MUX VLAN VLAN assignment based on MAC addresses, protocols, IP subnets, policies, and interfaces 1:1 and N:1 VLAN mapping
Jumbo frame	10K
Reliability	RRPP ring topology and RRPP multi-instance Smart Link tree topology and Smart Link multi-instance, providing millisecond-level protection switchover SEP ERPS (G.8032) STP(IEEE 802.1d), RSTP(IEEE 802.1w), and MSTP(IEEE 802.1s) BPDU protection, root protection, and loop protection BPDU tunnel
IP routing	Static route, RIP, RIPvng(5700-10P-LI-AC/S5700-10P-PWR-LI-AC do not support RIPvng)
IPv6	Neighbor Discovery (ND) Path MTU (PMTU) IPv6 ping, IPv6 tracert, and IPv6 Telnet ACLs based on the source IPv6 address, destination IPv6 address, Layer 4 ports, and protocol type MLDv1/v2 snooping
Multicast	IGMPv1/v2/v3 snooping and IGMP fast leave Multicast forwarding in a VLAN and multicast replication between VLANs Multicast load balancing among member ports of a trunk Controllable multicast Interface-based multicast traffic statistics
QoS/ACL	Rate limiting on packets sent and received by an interface Packet redirection Interface-based traffic policing and two-rate and three-color CAR Eight queues on each interface WRR, DRR, SP, WRR+SP, and DRR+SP queue scheduling algorithms Re-marking of the 802.1p priority and DSCP priority Packet filtering at Layer 2 to Layer 4, filtering out invalid frames based on the source MAC address, destination MAC address, source IP address, destination IP address, TCP/UDP port number, protocol type, and VLAN ID Rate limiting in each queue and traffic shaping on interfaces

Feature	Description
Security	<p>Hierarchical user management and password protection</p> <p>DoS attack defense, ARP attack defense, and ICMP attack defense</p> <p>Binding of the IP address, MAC address, interface number, and VLAN ID</p> <p>Port isolation, port security, and sticky MAC</p> <p>MFF</p> <p>Blackhole MAC address entries</p> <p>Limit on the number of learned MAC addresses</p> <p>IEEE 802.1x authentication and limit on the number of users on an interface</p> <p>AAA authentication, RADIUS authentication, HWTACACS+ authentication, and NAC</p> <p>SSH V2.0</p> <p>Hypertext Transfer Protocol Secure (HTTPS)</p> <p>CPU defense</p> <p>Blacklist and whitelist</p>
Access Security	DHCP relay, DHCP server, DHCP snooping, and DHCP security
Super Virtual Fabric (SVF)	<p>Working as an SVF client that is plug-and-play with zero configuration</p> <p>Automatically loading the system software package and patches of clients One-click and automatic delivery of service configurations</p> <p>Supports independent running client</p>
Management and maintenance	<p>iStack (excluding S5700-10P-LI-AC, S5700-10P-PWR-LI-AC, S5700S-28P-LI-AC, S5700S-52P-LI-AC and battery LAN switches)</p> <p>Virtual Cable Test (VCT)</p> <p>Remote configuration and maintenance using Telnet</p> <p>SNMPv1/v2c/v3</p> <p>CLI configuration</p> <p>RMON</p> <p>eSight and web-based NMS</p> <p>HTTPS</p> <p>LLDP/LLDP-MED</p> <p>System logs and multi-level alarms</p> <p>802.3az EEE</p> <p>Dying Gasp (excluding battery LAN switches)</p> <p>Device hibernation mode (excluding PWR serials switches, battery LAN switches, S5700-10P-LI, S5700-28X-LI-24S, S5701-28X-LI-24S-AC and S5700-52X-LI-48CS-AC)</p>
Battery management	Web-based management system used to check the battery status and manage the battery (supported by battery LAN switches)
Interoperability	<p>Supports VBST (Compatible with PVST/PVST+/RPVST)</p> <p>Supports LNP (Similar to DTP)</p> <p>Supports VCMP (Similar to VTP)</p>

5.2 Hardware Specifications

Table 5-2 lists the S5700-LI hardware specifications.

Table 5-2 S5700-LI hardware specifications

Item	Specification
Memory (RAM)	256 MB
Flash memory	200 MB
Switching capacity	256 Gbps
Forwarding performance	S5700-10P-LI-AC: 15 Mpps S5700-10P-PWR-LI-AC: 15 Mpps S5700-28P-LI-AC: 42 Mpps S5700-28X-LI-AC: 96 Mpps S5700-28X-LI-DC: 96 Mpps S5700-28X-LI-24S-AC: 96 Mpps S5700-28X-LI-24S-DC: 96 Mpps S5700-28P-PWR-LI-AC: 42 Mpps S5700-28X-PWR-LI-AC: 96 Mpps S5700-52P-LI-AC: 78 Mpps S5700-52X-LI-AC: 132 Mpps S5700-52X-PWR-LI-AC: 132 Mpps S5700-52P-PWR-LI-AC: 78 Mpps S5700-52X-LI-48CS-AC: 132 Mpps S5701-28X-LI-AC: 96 Mpps S5701-28X-LI-24S-AC: 96 Mpps S5700-28TP-LI-AC: 42 Mpps S5700-28TP-PWR-LI-AC: 42 Mpps S5701-28TP-PWR-LI-AC: 42 Mpps S5700-28P-LI-BAT: 42 Mpps S5700-28P-LI-24S-BAT: 42 Mpps
Mean Time Between Failures (MTBF), years	S5700-10P-LI-AC: 44.41 years S5700-10P-PWR-LI-AC: 36.89 years S5700-28P-LI-AC: 49.69 years S5700-28X-LI-AC: 68.95 years S5700-28X-LI-DC: 68.95 years S5700-28X-LI-24S-AC: 89.91 years S5700-28X-LI-24S-DC: 89.91 years S5700-28P-PWR-LI-AC: 44.24 years S5700-28X-PWR-LI-AC: 61.53 years S5700-52P-LI-AC: 39.26 years

Item		Specification
Mean Time Between Failures (MTBF), years		S5700-52X-LI-AC: 61.86 years S5700-52P-PWR-LI-AC: 35.70 years S5700-52X-PWR-LI-AC: 40.72 years S5700-52X-LI-48CS-AC: 92.57 years S5701-28X-LI-AC: 70.32 years S5701-28X-LI-24S-AC: 89.91 years S5700-28TP-LI-AC: 65.66 years S5700-28TP-PWR-LI-AC: 46.2 years S5701-28TP-PWR-LI-AC: 45.91 years S5700-28P-LI-BAT: 57.9 years S5700-28P-LI-24S-BAT: 45 years
Mean Time To Repair (MTTR), hours		2
Availability		> 0.99999
Surge protection	Service port protection	Combo electrical ports on the CSFP switch: ± 2 kV in common mode; electrical ports on the other models: ± 6 kV in common mode;
	Power supply port protection	DC: ± 1 kV in differential mode; ± 2 kV in common mode AC: ± 6 kV in differential mode; ± 6 kV in common mode
Dimensions (W x D x H)		S5700-10P-LI-AC: 250.0 mm x 180.0 mm x 43.6 mm S5700-10P-PWR-LI-AC: 320.0 mm x 220.0 mm x 43.6 mm S5700-28P-LI-AC: 442.0 mm x 220.0 mm x 43.6 mm S5700-28X-LI-AC: 442.0 mm x 220.0 mm x 43.6 mm S5700-28X-LI-DC: 442.0 mm x 220.0 mm x 43.6 mm S5700-28X-LI-24S-AC: 442.0 mm x 220.0 mm x 43.6 mm S5700-28X-LI-24S-DC: 442.0 mm x 220.0 mm x 43.6 mm S5700-28P-PWR-LI-AC: 442.0 mm x 310.0 mm x 43.6 mm S5700-28X-PWR-LI-AC: 442.0 mm x 310.0 mm x 43.6 mm S5700-52P-LI-AC: 442.0 mm x 310.0 mm x 43.6 mm S5700-52X-LI-AC: 442.0 mm x 310.0 mm x 43.6 mm S5700-52X-PWR-LI-AC: 442.0 mm x 310.0 mm x 43.6 mm S5700-52P-PWR-LI-AC: 442.0 mm x 310.0 mm x 43.6 mm S5700-52X-LI-48CS-AC: 442.0 mm x 220.0 mm x 43.6 mm S5701-28X-LI-AC: 442.0 mm x 220.0 mm x 43.6 mm S5701-28X-LI-24S-AC: 442.0 mm x 220.0 mm x 43.6 mm S5700-28TP-LI-AC: 442.0 mm x 220.0 mm x 43.6 mm S5700-28TP-PWR-LI-AC: 442.0 mm x 310.0 mm x 43.6 mm S5701-28TP-PWR-LI-AC: 442.0 mm x 310.0 mm x 43.6 mm S5700-28P-LI-BAT: 442.0 mm x 310.0 mm x 43.6 mm S5700-28P-LI-24S-BAT: 442.0 mm x 310.0 mm x 43.6 mm
Weight		≤ 5 kg

Item		Specification
Stack port		<p>S5700-P-LI (with GE uplink ports): The four uplink 1000Base-X optical ports can be used as stack ports.</p> <p>S5700-TP-LI (with GE uplink ports): The two uplink 1000Base-X optical ports (not combo) can be used as stack ports.</p> <p>S5700-X-LI (with 10GE uplink ports): The four uplink 10GE SFP+ optical ports can be used as stack ports.</p> <p>NOTE: The S5700-10P-PWR-LI-AC, S5700-10P-LI-AC and battery LAN switches do not support stacking.</p>
RPS		All S5700-LI series switches except the S5700-10P-PWR-LI-AC, S5700-10P-LI-AC and battery LAN switches support RPS
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)		<p>S5700-28P-LI-AC: 24 W</p> <p>S5700-52P-LI-AC: 48.4 W</p> <p>S5700-28P-PWR-LI-AC: 436.5 W (system power consumption: 66.5 W, PoE: 370 W)</p> <p>S5700-52P-PWR-LI-AC: 464.5 W (system power consumption: 94.5 W, PoE: 370 W)</p> <p>S5700-28X-LI-AC: 41 W</p> <p>S5700-28X-LI-DC: 42 W</p> <p>S5700-52X-LI-AC: 61 W</p> <p>S5700-28X-PWR-LI-AC: 448.8 W (system power consumption: 78.8 W, PoE: 370 W)</p> <p>S5700-52X-PWR-LI-AC: 479.3 W (system power consumption: 109.3 W, PoE: 370 W)</p> <p>S5700-10P-PWR-LI-AC: 142.4 W (system power consumption: 18.4 W, PoE: 124 W)</p> <p>S5700-10P-LI-AC: 11.5 W</p> <p>S5700-28X-LI-24S-AC: 60 W</p> <p>S5700-28X-LI-24S-DC: 57 W</p> <p>S5701-28X-LI-AC: 39.5 W</p> <p>S5701-28X-LI-24S-AC: 60 W</p> <p>S5700-52X-LI-48CS-AC: 79.93 W</p> <p>S5700-28TP-LI-AC: 26.4 W</p> <p>S5700-28TP-PWR-LI-AC: 469.7 W (system power consumption: 99.7 W, PoE: 370 W)</p> <p>S5701-28TP-PWR-LI-AC: 238.7 W (system power consumption: 53.9 W, PoE: 184.8 W)</p>

Item		Specification
Maximum power consumption (100% throughput, full speed of fans)		S5700-28P-LI-BAT: 23 W S5700-28P-LI-24S-BAT: 34.1 W
Temperature	Operating temperature	The operating temperature of the S5700-10P-PWR-LI-AC, S5700-28X-LI-24S-AC, S5700-28X-LI-24S-DC, S5701-28X-LI-24S-AC, S5700-52X-LI-48CS-AC, S5700-10P-LI-AC, S5700-28P-LI-BAT and S5700-28P-LI-24S-BAT is 0°C to 45°C at an altitude between 0 m and 1800 m. The operating temperature of the other S5700-LI models is 0°C to 50°C at an altitude between 0 m and 1800 m.
	Storage temperature	S5700-LI: -40°C to +70°C S5700-LI-BAT: Without pluggable module: -40°C to +70°C With a power module: -40°C to +70°C With a lithium battery: -20°C to +60°C With a lead-acid battery: depending on the storage temperature range required by the lead-acid battery
Noise under normal temperature (sound power)		S5700-28P-LI-AC: 0 (The device has no fans.) S5700-52P-LI-AC: < 43.8 dBA S5700-28P-PWR-LI-AC: < 49.2 dBA S5700-52P-PWR-LI-AC: < 49.2 dBA S5700-28X-LI-AC: < 44.9 dBA S5700-28X-LI-DC: < 44.9 dBA S5700-52X-LI-AC: < 47.9 dBA S5700-28X-PWR-LI-AC: < 49.5 dBA S5700-52X-PWR-LI-AC: < 50.2 dBA S5700-10P-PWR-LI-AC: 0 (The device has no fans.) S5700-10P-LI-AC: 0 (The device has no fans.) S5700-28X-LI-24S-AC: < 49.6 dBA S5700-28X-LI-24S-DC: < 49.6 dBA S5701-28X-LI-AC: < 45.8 dBA S5701-28X-LI-24S-AC: < 49.6 dBA S5700-52X-LI-48CS-AC: < 67.3 dBA S5700-28TP-LI-AC: < 39.5 dBA S5700-28TP-PWR-LI-AC: < 48 dBA S5701-28TP-PWR-LI-AC: < 45 dBA S5700-28P-LI-BAT: < 43.2 dBA S5700-28P-LI-24S-BAT: < 46.1 dBA

Item	Specification
Noise under normal temperature (sound pressure)	S5700-28P-LI-AC: 0 (The device has no fans.) S5700-52P-LI-AC: < 27 dBA S5700-28P-PWR-LI-AC: < 32 dBA S5700-52P-PWR-LI-AC: < 32 dBA S5700-28X-LI-AC: < 28.6 dBA S5700-28X-LI-DC: < 28.6 dBA S5700-52X-LI-AC: < 31.5 dBA S5700-28X-PWR-LI-AC: < 33.1 dBA S5700-52X-PWR-LI-AC: < 33.7 dBA S5700-10P-PWR-LI-AC: 0 (The device has no fans.) S5700-10P-LI-AC: 0 (The device has no fans.) S5700-28X-LI-24S-AC: < 32.64 dBA S5700-28X-LI-24S-DC: < 32.64 dBA S5701-28X-LI-AC: < 28.77 dBA S5701-28X-LI-24S-AC: < 32.64 dBA S5700-52X-LI-48CS-AC: < 37.1 dBA S5700-28TP-LI-AC: < 35.9 dBA S5700-28TP-PWR-LI-AC: < 45.6 dBA S5701-28TP-PWR-LI-AC: < 42.7 dBA S5700-28P-LI-BAT: < 30.6 dBA S5700-28P-LI-24S-BAT: < 35.1 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

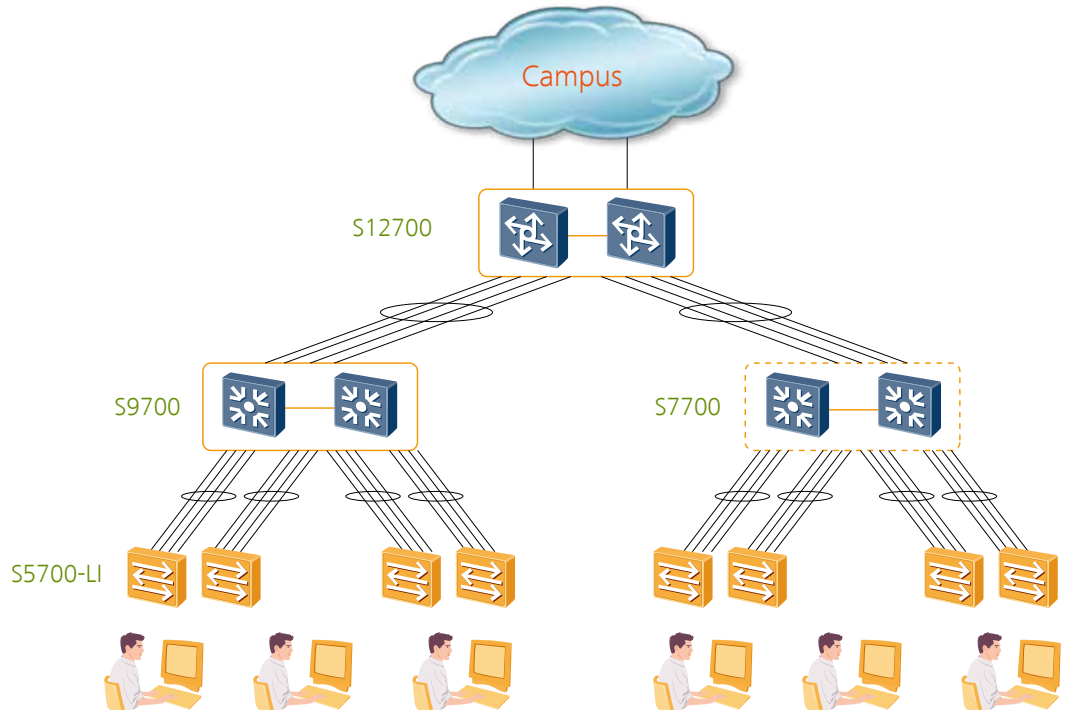
NOTE:

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.

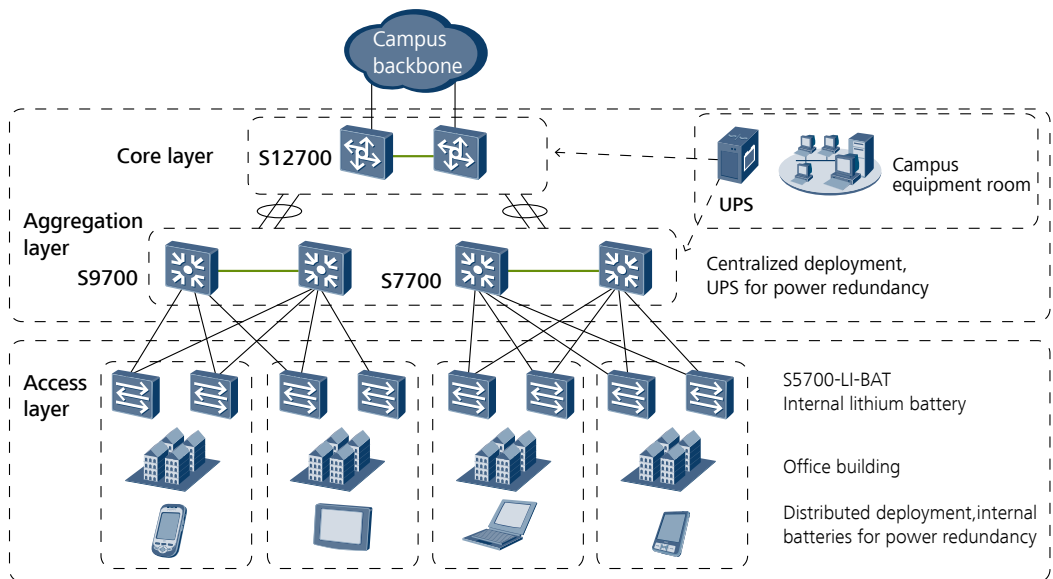
Forwarding performance: This index indicates the wire-speed forwarding capability of a switch when the switch processes 64-byte packets (plus an 8-byte preamble and a 12-byte IFG). It represents the packet header processing capability.

6 Networking and Applications

The S5700-LI provides 1000M desktop access functions for a high performance network, such as voice VLAN, NAC and so on.



The S5700-LI-BAT uses an internal lithium battery as the backup power supply. When a mains power failure occurs, the lithium battery begins powering the switch. When the mains power supply recovers, the switch automatically charges the lithium battery. The use of internal batteries ensures high reliability at the access layer in the case of frequent mains power failures.



7 Product Accessories

7.1 Optical Modules and Fibers

The S5700-LI 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://e.huawei.com/en> or contact your local Huawei sales office.

7.2 Stack Cables

The S5700-LI 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: 10 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+

8 Safety and Regulatory Compliance

Table 8-1 lists the safety and regulatory compliance of S5700-LI.

Table 8-1 S5700-LI 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
Laser safety	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 EN61000-3-2 EN61000-3-3 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 S5700-LI.

Table 9-1 S5700-LI MIBs

Category	MIB
Public MIB	BRIDGE-MIB
	DISMAN-NSLOOKUP-MIB
	DISMAN-PING-MIB
	DISMAN-TRACEROUTE-MIB
	ENTITY-MIB
	EtherLike-MIB
	IF-MIB
	IP-FORWARD-MIB
	IPv6-MIB
	LAG-MIB
	LLDP-EXT-DOT1-MIB
	LLDP-EXT-DOT3-MIB
	LLDP-MIB
	NOTIFICATION-LOG-MIB
	NQA-MIB
	P-BRIDGE-MIB
	Q-BRIDGE-MIB
	RFC1213-MIB
	RMON-MIB
	SAVI-MIB
SNMP-FRAMEWORK-MIB	
SNMP-MPD-MIB	
SNMP-NOTIFICATION-MIB	

Category	MIB
Public MIB	SNMP-TARGET-MIB SNMP-USER-BASED-SM-MIB SNMPv2-MIB SNMP-VIEW-BASED-ACM-MIB TCP-MIB UDP-MIB
Huawei-proprietary MIB	HUAWEI-AAA-MIB HUAWEI-ACL-MIB HUAWEI-ALARM-MIB HUAWEI-ALARM-RELIABILITY-MIB HUAWEI-BASE-TRAP-MIB HUAWEI-BRAS-RADIUS-MIB HUAWEI-BRAS-SRVCFG-EAP-MIB HUAWEI-BRAS-SRVCFG-STATICUSER-MIB HUAWEI-CBQOS-MIB HUAWEI-CDP-COMPLIANCE-MIB HUAWEI-CONFIG-MAN-MIB HUAWEI-CPU-MIB HUAWEI-DAD-TRAP-MIB HUAWEI-DATASYNC-MIB HUAWEI-DEVICE-MIB HUAWEI-DHCPR-MIB HUAWEI-DHCPS-MIB HUAWEI-DHCP-SNOOPING-MIB HUAWEI-DIE-MIB HUAWEI-DNS-MIB HUAWEI-DLDP-MIB HUAWEI-ERPS-MIB HUAWEI-ERRORDOWN-MIB HUAWEI-ENERGYMNGT-MIB HUAWEI-EASY-OPERATION-MIB HUAWEI-ENTITY-EXTENT-MIB HUAWEI-ENTITY-TRAP-MIB HUAWEI-ETHARP-MIB HUAWEI-ETHOAM-MIB HUAWEI-FLASH-MAN-MIB HUAWEI-FWD-RES-TRAP-MIB HUAWEI-GARP-APP-MIB HUAWEI-GTL-MIB HUAWEI-HGMP-MIB HUAWEI-HWTACACS-MIB

Category	MIB
Huawei-proprietary MIB	HUAWEI-IF-EXT-MIB
	HUAWEI-INFOCENTER-MIB
	HUAWEI-IPPOOL-MIB
	HUAWEI-IPV6-MIB
	HUAWEI-ISOLATE-MIB
	HUAWEI-L2IF-MIB
	HUAWEI-L2MAM-MIB
	HUAWEI-L2VLAN-MIB
	HUAWEI_LDT-MIB
	HUAWEI-LLDP-MIB
	HUAWEI-MAC-AUTHEN-MIB
	HUAWEI-MEMORY-MIB
	HUAWEI-MFF-MIB
	HUAWEI-MFLP-MIB
	HUAWEI-MSTP-MIB
	HUAWEI-MULTICAST-MIB
	HUAWEI-NTPV3-MIB
	HUAWEI-PERFORMANCE-MIB
	HUAWEI-PERFMGMT-MIB
	HUAWEI-PORT-MIB
	HUAWEI-PORTAL-MIB
	HUAWEI-QINQ-MIB
	HUAWEI-RM-EXT-MIB
	HUAWEI-RRPP-MIB
	HUAWEI-SECURITY-MIB
	HUAWEI-SEP-MIB
	HUAWEI-SNMP-EXT-MIB
	HUAWEI-SSH-MIB
	HUAWEI-STACK-MIB
	HUAWEI-SWITCH-L2MAM-EXT-MIB
	HUAWEI-SWITCH-SRV-TRAP-MIB
	HUAWEI-SYS-MAN-MIB
	HUAWEI-TCP-MIB
	HUAWEI-TFTPC-MIB
	HUAWEI-TRNG-MIB
	HUAWEI-UNIMNG-MIB
HUAWEI-USA-MIB	
HUAWEI-XQOS-MIB	

9.2 Standard Compliance

Table 9-2 lists the standards the S5700-LI complies with.

Table 9-2 S5700-LI 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 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 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 3513 IP Version 6 Addressing Architecture	
RFC 3579 RADIUS Support For EAP	
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
MEF	MEF 2 Requirements and Framework for Ethernet Service Protection MEF 9 Abstract Test Suite for Ethernet Services at the UNI MEF 11 UNI Requirements and Framework 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://e.huawei.com/en> or contact your local Huawei sales office.

10 Ordering Information

Table 10-1 Ordering list of S5700-LI series Ethernet switches

Product Description
S5700-10P-LI-AC (8x10/100/1000Base-T Ethernet ports, 2xGE SFP ports, AC power supply)
S5700-28P-LI-AC (24x10/100/1000Base-T Ethernet ports, 4xGE SFP ports, AC power supply)
S5700-28X-LI-AC (24x10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports, AC power supply)
S5700-28X-LI-DC (24x10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports, DC power supply)
S5700-52P-LI-AC (48x10/100/1000Base-T Ethernet ports, 4xGE SFP ports, AC power supply)
S5700-52X-LI-AC (48x10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports, AC power supply)
S5700-10P-PWR-LI-AC (8x10/100/1000Base-T Ethernet ports, 2xGE SFP ports, PoE+, AC power supply)
S5700-28P-PWR-LI-AC (24x10/100/1000Base-T Ethernet ports, 4xGE SFP ports, PoE+, AC power supply)
S5700-28X-PWR-LI-AC (24x10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports, PoE+, AC power supply)
S5700-52P-PWR-LI-AC (48x10/100/1000Base-T Ethernet ports, 4xGE SFP ports, PoE+, AC power supply)
S5700-52X-PWR-LI-AC (48x10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports, PoE+, AC power supply)
S5700-28X-LI-24S-AC (24xGE SFP ports, 4xCombo 10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports, AC power supply)
S5700-28X-LI-24S-DC (24xGE SFP ports, 4xCombo 10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports, DC power supply)
S5700-28P-LI-BAT (24x10/100/1000Base-T Ethernet ports, 4xGE SFP ports, 1 battery slot, AC power supply)
S5700-28P-LI-24S-BAT (28xGE SFP ports, 4xCombo 10/100/1000Base-T Ethernet ports, 1 battery slot, AC power supply)
S5700-52X-LI-48CS-AC (48xGE CSFP ports or 24xGE SFP ports, 4xCombo 10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports, AC power supply, front power sockets, front access)
S5701-28X-LI-AC (24x10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports, AC power supply, front power sockets, front access)
S5701-28X-LI-24S-AC (24xGE SFP ports, four Combo 10/100/1000Base-T Ethernet ports, 4x10GE SFP+ ports, AC power supply, front power sockets, front access)
S5700-28TP-LI-AC(24 Ethernet 10/100/1000ports,2 Gig SFP and 2 dual-purpose 10/100/1000 or SFP,AC 110/220V)
S5700-28TP-PWR-LI-AC(24 Ethernet 10/100/1000 PoE+ ports,2 Gig SFP and 2 dual-purpose 10/100/1000 or SFP,AC 110/220V)
S5701-28TP-PWR-LI-AC(12 Ethernet 10/100/1000 PoE+ ports,12 Ethernet 10/100/1000 ports,2 Gig SFP and 2 dual-purpose 10/100/1000 or SFP,AC)
100/1000BASE-BIDI CSFP single-fiber bidirectional optical module-CSFP-GE/FE-single-mode optical module (Tx1490/Rx1310 nm, 10 km, LC)
RPS1800 Redundant Power System
BAT-4AHA (chargeable lithium battery)

Product Description

PBB-12AHA (12AH lead-acid battery charger module)

CBTS3400 (temperature sensor, used for temperature compensation when the lead-acid battery is charged)

150 W AC power module (optional for battery LAN switches, used as the redundancy for the internal power module)

150 W DC power module (optional for battery LAN switches, used as the redundancy for the internal power module)

For more information, visit <http://e.huawei.com/en> or contact your local Huawei sales office.

11 Others

The latest version of S5700-LI is V2R9.



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