S5700-LI Series Simplified Gigabit Switches

Huawei S5700-LI series switches are simplified energy-saving Gigabit Ethernet switches that provide flexible GE access ports and 10GE uplink ports.

Product Overview

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 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. Huawei battery LAN switches solve this problem. The use of 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.

Models and Appearances

Models and Appearances	Description
S5700-28P-LI-BAT	- 24x10/100/1000Base-T Ethernet ports, 4xGE SFP ports - AC power supply - One battery slot for an 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 - Forwarding performance: 42 Mpps - Switching Capacity: 256 Gbps
S5700-28P-LI-24S-BAT	- 28 xGE SFP ports, 4 xCombo 10/100/1000Base-T Ethernet ports - AC power supply - One battery slot for an 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 - Forwarding performance: 42 Mpps - Switching Capacity: 256 Gbps

Models and Appearances	Description
S5700-52X-LI-48CS-AC	• 48 xGE CSFP ports or 24 x GE SFP ports, 4 xCombo 10/100/1000Base-T Ethernet ports, 4 x 10GE SFP+ ports • AC power supply, front power sockets, front access • Forwarding performance: 132 Mpps • Switching Capacity: 256 Gbps

Features and Highlights

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.

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.

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.

Product Specifications

| Item	S5700-28P-LI-BAT S5700-28P-LI-24S-BAT	S5700-52X-LI-48CS-AC
Fixed ports	- S5700-28P-LI-BAT: 24 10/100/1000Base-T Ethernet ports, 4 GE SFP ports - S5700-28P-LI-24S-BAT: 28 GE SFP ports, 4 Combo 10/100/1000Base-T Ethernet ports	48 GE CSFP ports or 24 GE SFP ports, 4 Combo 10/100/1000Base-T Ethernet ports, 4 10GE SFP+ ports
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 features	4K VLANs	

Item	S5700-28P-LI-BAT S5700-28P-LI-24S-BAT	S5700-52X-LI-48CS-AC
	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, RIPng	
IPv6 features	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	
Security	Hierarchical user management and password protection DoS attack defense, ARP attack defense, and ICMP attack defense Binding of the IP address, MAC address, interface number, and VLAN ID Port isolation, port security, and sticky MAC MFF Blackhole MAC address entries Limit on the number of learned MAC addresses	

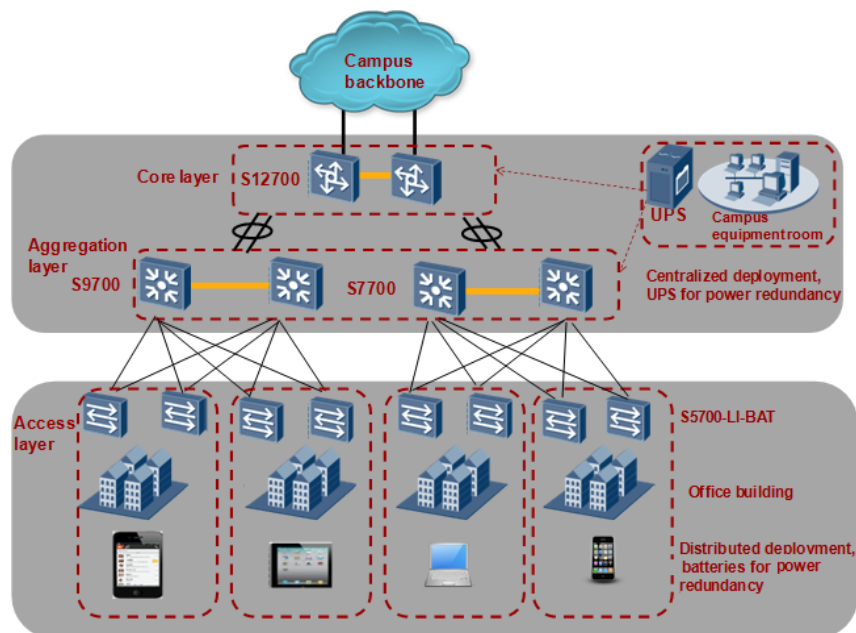| Item	S5700-28P-LI-BAT S5700-28P-LI-24S-BAT	S5700-52X-LI-48CS-AC
	IEEE 802.1x authentication and limit on the number of users on an interface AAA authentication, RADIUS authentication, HWTACACS authentication, and NAC SSH V2.0 Hypertext Transfer Protocol Secure (HTTPS) CPU defense Blacklist and whitelist	
Access Security	DHCP relay, DHCP server, DHCP snooping, and DHCP security	
Lightning protection	Service interface: 6 kV	Service interface: 2 kV
Super Virtual Fabric (SVF)	Working as an SVF client that is plug-and-play with zero configuration Automatically loading the system software package and patches of clients One-click and automatic delivery of service configurations Supports independent running client	
Management and maintenance	iStack (excluding battery LAN switches) Virtual Cable Test (VCT) Remote configuration and maintenance using Telnet SNMPv1/v2c/v3 RMON eSight and web-based NMS HTTPS LLDP/LLDP-MED System logs and multi-level alarms 802.3az EEE Dying Gasp (excluding battery LAN switches)	
Interoperability	Supports VBST (Compatible with PVST/PVST+/RPVST) Supports LNP (Similar to DTP) Supports VCMP (Similar to VTP)	
Operating environment	• Long-term operating temperature: 0°C to 45°C • Relative humidity: 5% to 95% (non-condensing)	• Long-term operating temperature: 0°C to 45°C • Relative humidity: 5% to 95% (non-condensing)
Input voltage	AC: • Rated voltage range: 100 V to 240 V AC, 50/60 Hz • Maximum voltage range: 90 V to 264 V AC, 47/63 Hz DC: • Rated voltage range: –48 V to –60 V, DC • Maximum voltage range: –36 V to –72 V, DC	AC: • Rated voltage range: 100 V to 240 V AC, 50/60 Hz • Maximum voltage range: 90 V to 264 V AC, 47/63 Hz DC: • Rated voltage range: –48 V to –60 V, DC • Maximum voltage range: –36 V to –72 V, DC
Power socket position	Rear power sockets	Front power sockets
Battery	One slot for lead-acid battery charger module	NA

Item	S5700-28P-LI-BAT S5700-28P-LI-24S-BAT	S5700-52X-LI-48CS-AC
Dimensions (W x D x H)	442 mm x 310 mm x 43.6 mm	442 mm x 220 mm x 43.6 mm
Power consumption	• S5700-28P-LI-BAT: <23 W • S5700-28P-LI-24S-BAT: <34.1 W	<79.9 W

Networking and Applications

The S5700-LI provides 1000M desktop access functions for a high performance network, such as voice VLAN, NAC and so on.
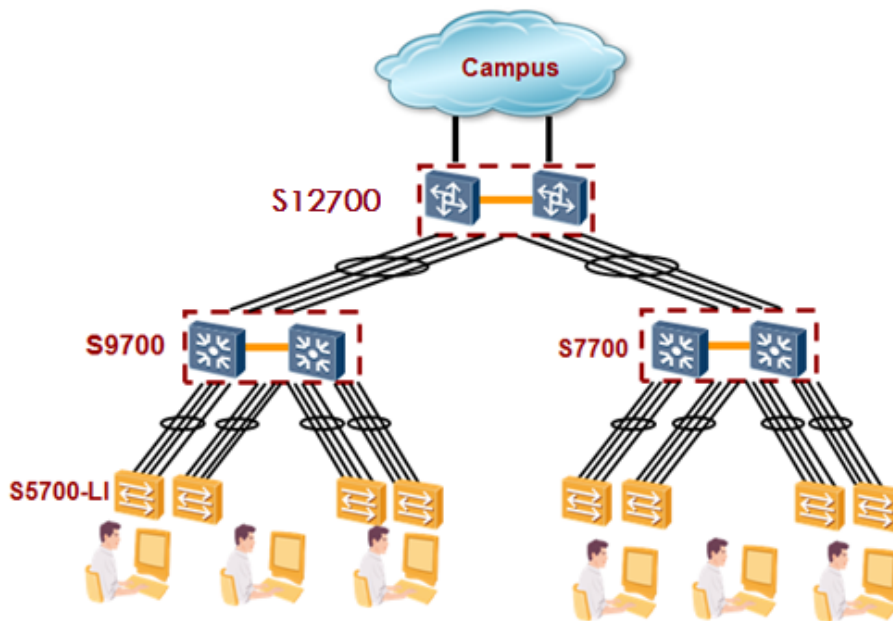
The S5700-LI-BAT uses a battery as the backup power supply. When a mains power failure occurs, the battery begins powering the switch. When the mains power supply recovers, the switch automatically charges the battery. The use of batteries ensures high reliability at the access layer in the case of frequent mains power failures.

Ordering Information

Part Number	Description
98010509	S5700-28P-LI-BAT (24x10/100/1000Base-T Ethernet ports, 4xGE SFP ports, 1 battery slot, AC power supply)
98010511	S5700-28P-LI-24S-BAT (28xGE SFP ports, 4xCombo 10/100/1000Base-T Ethernet ports, 1 battery slot, AC power supply)
02357823	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)
02310TEE	100/1000BASE-BIDI CSFP single-fiber bidirectional optical module-CSFP-GE/FE-single-mode optical module (Tx1490/Rx1310 nm, 10 km, LC)
02353857	RPS1800 Redundant Power System
98010517	PBB-12AHA (12AH lead-acid battery charger module)
02310JFA	150 W AC power module (optional for battery LAN switches, used as the redundancy for the internal power module)
02310JFD	150 W DC power module (optional for battery LAN switches, used as the redundancy for the internal power module)

More Information

For more information about Huawei Campus Switches, visit http://e.huawei.com or contact us in the following ways:

- Global service hotline: http://e.huawei.com/en/service-hotline
- Logging in to the Huawei Enterprise technical support website: http://support.huawei.com/enterprise/
- Sending an email to the customer service mailbox: support_e@huawei.com

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