S5700-LI Series Gigabit Enterprise Switches

HUAWEI TECHNOLOGIES CO., LTD.

HUAWEI

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Product Overview

The S5700-LI is a next-generation energy-saving gigabit Layer 2 Ethernet switch that provides flexible GE access ports and extensive services. It supports EEE and device sleeping, providing customers with a green, easy-to-manage, easy-to-expand, and cost-effective gigabit to the desktop solution.

Product Appearance

S5700-28P-LI-AC

S5700-28P-LI-DC

- Twenty-four 10/100/1000Base-T ports and four 100/1000Base-X SFP ports
- Two models: AC model and DC model, supporting RPS (redundant power supply)
- Forwarding performance: 42 Mpps

S5700-28P-PWR-LI-AC

- Twenty-four 10/100/1000 Base-T ports and four 100/1000Base-X ports
- AC power supply , supporting RPS (redundant power supply)
- PoE+
- Forwarding performance: 42Mpps

S5700-52P-LI-AC

S5700-52P-LI-DC

- Forty-eight 10/100/1000 Base-T ports and four 100/1000Base-X ports
- Two models: AC model and DC model, supporting RPS (redundant power supply)
- Forwarding performance: 78Mpps

S5700-52P-PWR-LI-AC

- Forty-eight 10/100/1000 Base-T ports and four 100/1000Base-X ports
- AC power supply , supporting RPS (redundant power supply)
- PoE+
- Forwarding performance: 78Mpps

S5710-28C-LI

- Twenty 10/100/1000 Base-T ports and four GE combo ports
- Subcards supported: 4×1000Base-X SFP, 2×10GE SFP+, 4×10GE SFP+ subcard
- Double hot swappable power supplies
- Forwarding performance: 96Mpps

S5710-28PC-PWR-LI-AC

- Twenty 10/100/1000 Base-T ports and four GE combo ports
- Subcards supported: 4×1000Base-X SFP, 2×10GE SFP+, 4×10GE SFP+ subcard
- Double hot swappable AC power supplies
- PoE+
- Forwarding performance: 96Mpps

S5710-52C-LI

- Forty-eight 10/100/1000 Base-T ports
- Subcards supported: 4×1000Base-X SFP, 2×10GE SFP+, 4×10GE SFP+ subcard
- Double hot swappable power supplies
- Forwarding performance: 132Mpps

S5710-52C-PWR-LI

- Forty-eight 10/100/1000 Base-T ports,
- Subcards supported: 4×1000Base-X SFP, 2×10GE SFP+, 4×10GE SFP+ subcard
- Double hot swappable AC power supplies
- PoE+
- Forwarding performance: 132Mpps

Product Features

Innovative Energy Saving Design

- The S5700-LI offer customers extensive selection of energy-saving with standard mode, basic mode and advanced mode that accommodates most needs. By matching port link down/up, optical-module in-place/out of place, port shut down/undo shutdown, idle period, busy period to increase the proportion of the dynamic energy-saving to reduce the power consumption.
- The S5700-LI series reduces energy consumption without compromising system performance, ensuring good user experience. The S5700-LI adopts multiple cutting-edge energy-saving designs, including Energy Efficient Ethernet (EEE), port energy detection, dynamic CPU frequency adjustment, and device sleeping.

Comprehensive reliability mechanisms

- Besides STP, RSTP, and MSTP, the S5700-LI supports enhanced Ethernet reliability technologies, such as Smart Link and RRPP (Rapid Ring Protection Protocol), which implement millisecond-level protection switchover and ensure network reliability. The S5700 also provides Smart Link multi-instance and RRPP multi-instance to implement load balancing among links, optimizing bandwidth usage.
- The S5700-LI supports the Smart Ethernet Protection (SEP) protocol, a ring network protocol applied to the link layer on an Ethernet network. SEP can be used on open ring networks and can be deployed on upper-layer aggregation devices to provide fast switchover (within 50 ms), ensuring continuous transmission of services. SEP features simplicity, high reliability, fast switchover, easy maintenance, and flexible topology, facilitating network planning and management.

- The S5700-LI supports Ethernet Ring Protection Switching (ERPS), also referred to as G.8032. As the latest ring network protocol, ERPS was developed based on traditional Ethernet MAC and bridging functions and uses mature Ethernet OAM function and a ring automatic protection switching (R-APS) mechanism to implement millisecond-level protection switching. ERPS supports various services and allows flexible networking, helping customers build a network with lower OPEX and CAPEX.
- Complying with IEEE 802.3ah and 802.1ag, the S5700-LI supports point-to-point Ethernet fault management and can detect faults in the last mile of an Ethernet link to users.

Well-designed QoS policies and security mechanisms

- The S5700-LI implements complex traffic classification based on packet information, such as the 5-tuple, IP preference, ToS, DSCP, IP protocol type, ICMP type, TCP source port, VLAN ID, Ethernet protocol type, and CoS. ACLs can be applied to inbound or outbound directions on an interface. The S5700 supports a flow-based two-rate three-color CAR. Each port supports eight priority queues and multiple queue scheduling algorithms, such as WRR, DRR, SP, WRR+SP, and DRR+SP. All of these ensure the quality of voice, video, and data services.
- The S5700-LI provides multiple security measures to defend against Denial of Service (DoS) attacks, as well as attacks against networks or users. DoS attack types include SYN Flood attacks, Land attacks, Smurf attacks, and ICMP Flood attacks. Attacks to networks refer to STP BPDU/root attacks. Attacks to users include bogus DHCP server attacks, man-in-the-middle attacks, IP/MAC spoofing attacks, and DHCP request flood attacks. DoS attacks that change the CHADDR field in DHCP packets are also attacks against users.
- The S5700-LI supports DHCP snooping, which generates user binding entries based on MAC addresses, IP addresses, IP address leases, VLAN IDs, and user access interfaces. DHCP snooping discards invalid packets that do not match any binding entries, such as ARP spoofing packets and IP spoofing packets. This prevents hackers from using ARP packets to initiate man-in-the-middle attacks on campus networks. The interface connected to a DHCP server can be configured as a trusted interface to protect the system against bogus DHCP server attacks.
- The S5700-LI supports strict ARP learning, which prevents ARP spoofing attacks that exhaust ARP entries. It also provides IP source checks to prevent DoS attacks caused by MAC address spoofing, IP address spoofing, and MAC/IP spoofing.
- The S5700-LI supports centralized MAC address authentication, 802.1x authentication, and NAC. It authenticates users based on statically or dynamically bound user information, such as the user name, IP address, MAC address, VLAN ID, access interface, and flag indicating whether antivirus software is installed. VLANs, QoS policies, and ACLs can be dynamically applied to users.
- The S5700-LI can limit the number of MAC addresses learned on an interface to prevent attackers from exhausting MAC address entries by using bogus source MAC addresses. This function minimizes the packet flooding that occurs when users' MAC addresses cannot be found in the MAC address table.

Maintenance-free design and manageability

- The S5700-LI supports automatic configuration, plug-and-play features, and batch remote upgrades. These capabilities simplify device management and maintenance and reduce maintenance costs. The S5700 supports SNMP v1/v2/v3 and provides flexible methods for managing devices. Users can manage the S5700 using the CLI, Web NMS, Telnet, and HGMP. The NQA function assists users with network planning and upgrades. In addition, the S5700 supports NTP, SSH v2, HWTACACS, RMON, log hosts, and port-based traffic statistics.
- The S5700-LI supports GARP VLAN Registration Protocol (GVRP), which dynamically distributes, registers, and propagates VLAN attributes to reduce manual configuration workloads of network administrators and ensure

correct VLAN configuration. In a complex network topology, GVRP simplifies VLAN configuration and reduces network communication faults caused by incorrect VLAN configuration.

- The S5700-LI supports MUX VLAN. MUX VLAN isolates the Layer 2 traffic between interfaces in a VLAN. Interfaces in a subordinate separate VLAN can communicate with ports in the principal VLAN, but cannot communicate with each other. MUX VLAN is typically used on an enterprise intranet to isolate user interfaces from each other while still allowing them to communicate with server interfaces. This function prevents communication between network devices connected to certain interfaces or interface groups, but allows these devices to communicate with the default gateway.

PoE function

- The S5700-LI PWR provides improved PoE solutions. It can use PoE power supplies with different power levels to provide -48 V DC power for powered devices (PDs), such as IP Phones, WLAN APs, and Bluetooth APs. As a power sourcing equipment (PSE), the S5700-LI PWR complies with IEEE 802.3af and 802.3at (PoE+) and can work with PDs that are incompatible with 802.3af or 802.3at. Each port provides a maximum of 30 W of power, complying with IEEE 802.3at. The PoE+ function increases the maximum power available on each port and implements intelligent power management for high-power consumption applications. This facilitates the ease of PD use. PoE ports continue to work while in power-saving mode. Users can configure whether and when a PoE port supplies power.

High scalability

- The S5700-LI supports intelligent stacking (iStack). Multiple S5700s can be connected with stack cables to set up a stack, which functions as a virtual switch. A stack consists of a master switch, a backup switch, and several slave switches. The backup switch takes over services when the master switch fails, reducing service interruption time. Stacks support intelligent upgrades so that users do not need to change the software version of a switch when adding it to a stack. The iStack function allows users to connect multiple switches with stack cables to expand the system capacity. These switches can be managed using a single IP address, which greatly reduces the costs of system expansion, operation, and maintenance. Compared with traditional networking technologies, iStack has distinct advantages regarding scalability, reliability, and system architecture.

Product Specifications

Item	S5700-LI		S5710-LI	
	S5700-28P-LI* S5700-28P-PWR-LI	S5700-52P-LI S5700-52P-PWR-LI	S5710-28C-LI S5710-28C-PWR-LI	S5710-52C-LI S5710-52C-PWR-LI
1000M port	24*10/100/1000Base-T, 4*100/1000 Base-X SFP	48*10/100/1000Base-T, 4*100/1000 Base-X SFP	20*10/100/1000Base-T, 4*GE Combo	48*10/100/1000Base-T
Extended slot	The S57C provide two extended slots: one for an uplink subcard and the other for a stack card			
MAC address table	16K MAC address entries IEEE 802.1d compliance MAC address learning and aging Static, dynamic, and blackhole MAC address entries Packet filtering based on source MAC addresses			
VLAN	4K VLANs Guest VLAN and voice VLAN VLAN assignment based on MAC addresses, protocols, IP subnets, policies, and ports 1:1 and N:1 VLAN Mapping SuperVLAN (supported by the S5710-LI)			
Reliability	RRPP ring topology and RRPP multi-instance Smart Link tree topology and Smart Link multi-instance, providing the 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 E-Trunk (supported by the S5710-LI)			
IP routing	Static routing, ECMP (supported by the S5710-LI)			
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, or protocol type MLD v1/v2 snooping 6to4 tunnel, ISATAP tunnel, and manually configured tunnel (supported by the S5710-LI)			

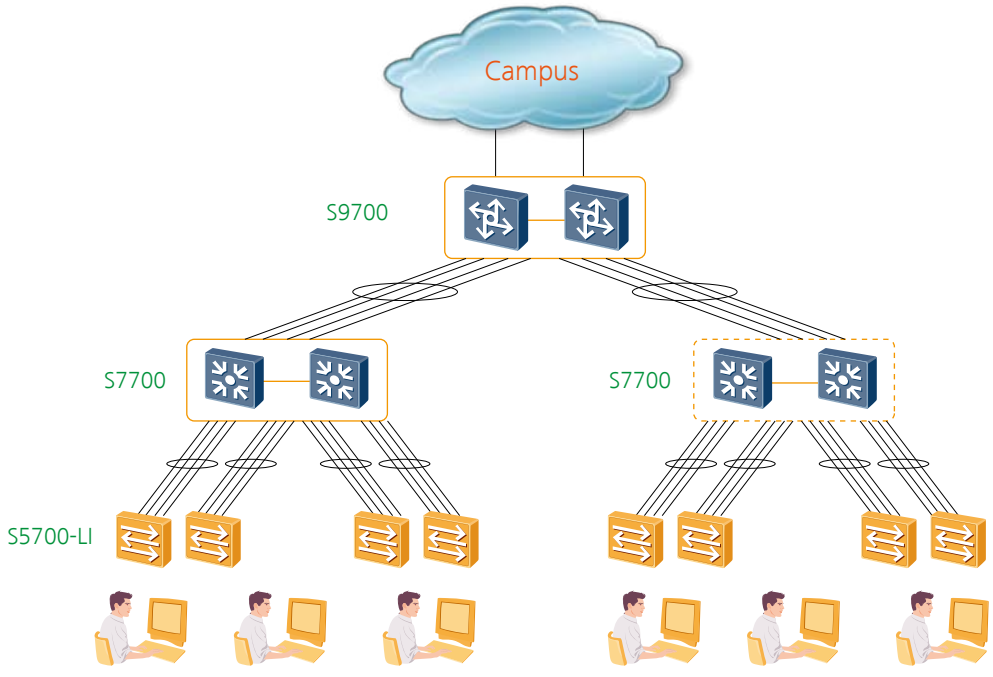
Item	S5700-LI		S5710-LI	
	S5700-28P-LI* S5700-28P-PWR-LI	S5700-52P-LI S5700-52P-PWR-LI	S5710-28C-LI S5710-28C-PWR-LI	S5710-52C-LI S5710-52C-PWR-LI
multicast	IGMP v1/v2/v3 snooping and IGMP fast leave Multicast forwarding in a VLAN and multicast replication between VLANs Multicast load balancing among member ports of a trunk Controllable multicast Port-based multicast traffic statistics			
QoS/ACL	Rate limiting on packets sent and received by an interface Packet redirection Port-based traffic policing and two-rate three-color CAR Eight queues on each port WRR, DRR, SP, WRR+SP, and DRR+SP queue scheduling algorithms Re-marking of the 802.1p priority and DSCP priority Rate limiting in each queue and traffic shaping on ports			
Security	User privilege management and password protection DoS attack defense, ARP attack defense, and ICMP attack defense Binding of the IP address, MAC address, interface, and VLAN Port isolation, port security, and sticky MAC Blackhole MAC address entries Limit on the number of learned MAC addresses 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			
Management and maintenance	Stacking MAC Forced Forwarding (MFF) Virtual cable test Port mirroring and RSPAN (remote port mirroring) Remote configuration and maintenance using Telnet SNMP v1/v2/v3 RMON Web NMS HGMP System logs and alarms of different levels GVRP MUX VLAN 802.3az EEE (supported by the S5700-LI) Dying gasp (supported by the S5700-LI)			
Operating environment	Operating temperature: 0°C–50°C (long term); -5°C–55°C (short term) Relative humidity: 10%–90% (non-condensing)			

Item	S5700-LI		S5710-LI	
	S5700-28P-LI* S5700-28P-PWR-LI	S5700-52P-LI S5700-52P-PWR-LI	S5710-28C-LI S5710-28C-PWR-LI	S5710-52C-LI S5710-52C-PWR-LI
Input voltage	AC: Rated voltage range: 100 V to 240 V AC, 50/60 Hz Maximum voltage range: 90 V to 264 V AC, 50/60 Hz DC: Rated voltage range: –48 V to –60 V, DC Maximum voltage range: –36 V to –72 V , DC Note: PoE-support switches do not use DC power supplies.			
Dimensions (W x D x H)	S5700-28P-LI: 442 mm x 220 mm x 43.6 mm S5700-28P-PWR-LI/S5700-52P-LI/S5700-52P-PWR-LI: 442 mm x 310 mm x 43.6 mm Others: 442 mm x 420 mm x 43.6 mm			
Power consumption	S5700-28P-LI<25W S5700-28P-PWR-LI<765W (PoE: 740W)	S5700-52P-LI<52W S5700-52P-PWR-LI<792W (PoE: 740W)	S5710-28C-LI<56W S5710-28C-PWR-LI<836W (PoE: 740W)	S5710-52C-LI<78W S5710-52C-PWR-LI<917W (PoE: 740W)

*:S5700-28P-LI is short for S5700-28P-LI-AC and S5700-28P-LI-DC. As product versions are irrelevant to the power supply mode, the product names mentioned in product specifications do not contain AC or DC. This rule also applies to other product models.

Applications

1000 Mbit/s Access Rate for Terminals



Product List

Product Description
S5700-28P-LI-AC Mainframe(24 GE RJ45,4 GE SFP,AC 110/220V)
S5700-28P-LI-DC Mainframe(24 GE RJ45,4 GE SFP,DC -48V)
S5710-28C-LI Mainframe(20 GE RJ45,4 GE Combo,Dual Slots of Power and Flexible Card,Including Single 150W AC Power)
S5700-52P-LI-AC Mainframe(48 GE RJ45,4 GE SFP,AC 110/220V)
S5700-52P-LI-DC Mainframe(48 GE RJ45,4 GE SFP,DC -48V)
S5710-52C-LI Mainframe(48 GE RJ45,Dual Slots of Power and Flexible Card,Including Single 150W AC Power)
S5700-28P-PWR-LI-AC Mainframe(24 GE RJ45,4 GE SFP,PoE,AC 110/220V)
S5710-28C-PWR-LI Mainframe(20 GE RJ45,4 GE Combo,PoE,Dual Slots of Power and Flexible Card,Including Single 500W AC Power)
S5700-52P-PWR-LI-AC Mainframe(48 GE RJ45,4 GE SFP,PoE,AC 110/220V)
S5710-52C-PWR-LI Mainframe(48 GE RJ45,PoE,Dual Slots of Power and Flexible Card,Including Single 500W AC Power)
RPS1800 Redundant Power System
4-Port GE SFP Optical Interface Card(Used In S5700-SI&S5710-LI Series)(Including 4-Port GE SFP Optical Interface Card,Extend Channel Card)
2-Port 10GE SFP+ Optical Interface Card
4-Port 10GE SFP+ Optical Interface Card (Including 4-Port 10GE SFP+ Optical Interface Card,Extend Channel Card)
Ethernet Stack Interface Card(Including Stack Card,100cm Stack Cable)

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

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