Huawei S6720-SI Series Switches
Product Brochure

HUAWEI TECHNOLOGIES CO., LTD.

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S6720-SI Series Switches

Product Overview

Huawei S6720-SI series switches are Huawei-developed next-generation multigigabit 10GE fixed switches. The S6720-SI can provide high-speed wireless access, and access for 10GE servers in data centers or function as access/aggregation switches on a campus network.

The S6720-SI is one of the multigigabit fixed switches with the highest performance in the industry, providing line-rate multigigabit 100M/1G/2.5G/5G/10G access ports and 40GE uplink ports. It can be used to provide high-speed access for APs and 10 Gbit/s access to high-density servers or function as a core/aggregation switch on a campus network to provide 40 Gbit/s rate. In addition, S6720-SI provides a wide variety of services, comprehensive security policies, and various QoS features to help customers build scalable, manageable, reliable, and secure campus and data center networks.

Models and Appearances

The S6720-SI series provides the following models.

S6720-26Q-SI-24S-AC
S6720S-26Q-SI-24S-AC

- 24 × 10GE SFP+, uplink 2 × 40GE QSFP+
- Double pluggable power supplies, AC power supply
- USB
- Forwarding performance: 240Mpps
- Switching capacity: 2.56Tbps

S6720-32X-SI-32S-AC

- 32 × 10GE SFP+
- Double pluggable power supplies, AC power supply
- USB
- Forwarding performance: 240 Mpps
- Switching capacity: 2.56Tbps

S6720-32C-SI-AC
S6720-32C-SI-DC

- 24 × 100M/1G/2.5G/5G/10G Base-T Ethernet ports, 4 × 10GE SFP+
- One extended slot
- Double pluggable power supplies, AC/DC power supply
- USB
- Forwarding performance: 240 Mpps
- Switching capacity: 2.56Tbps

S6720-32C-PWH-SI-AC
S6720-32C-PWH-SI

- 24 × 100M/1G/2.5G/5G/10G Base-T Ethernet ports, 4 × 10GE SFP+
- One extended slot
- Double pluggable power supplies, AC/DC power supply
- Long distance PoE++
- USB
- Forwarding performance: 240 Mpps
- Switching capacity: 2.56Tbps

S6720-56C-PWH-SI-AC
S6720-56C-PWH-SI

- 32 × 10/100/1000Base-T Ethernet ports,
  16 × 100M/1G/2.5G/5G/10GBase-T Ethernet ports，4 × 10GE SFP+
- One extended slot
- Double pluggable power supplies, AC/DC power supply
- POE++
- USB
- Forwarding performance:240Mpps
- Switching capacity: 2.56 Tbps

S6720-52X-PWH-SI

- 48 × 100M/1G/2.5G/5G/10GBase-T Ethernet ports，4 × 10GE SFP+
- Double pluggable power supplies, AC/DC power supply
- POE++
- USB
- Forwarding performance:480Mpps
- Switching capacity:2.56 Tbps

Product Features and Highlights

High-Density Multigigabit Access and 40 Gbit/s Uplink

- As the 802.11ac standard and related products are released, the wireless access rate has reached 2.5 Gbit/s. The S6720-SI multigigabit fixed switches match perfectly with high-speed APs, and provide the long distance PoE++ function and 60 W PoE on a port. The S6720-SI can provide Ethernet power supply for APs and surveillance cameras.
- The S6720-SI fixed switch has the highest density of multigigabit ports and largest switching capacity among counterpart switches. Each S6720-SI provides up to two line-rate QSFP+ ports and 24 100M/1G/2.5G/5G/10G Base-T ports.
- Ports of the S6720-SI support 100M/1G/2.5G/5G/10G Base-T access and auto

Comprehensive Security Policies

- The S6720-SI provides multiple security measures to defend against Denial of Service (DoS) attacks and other attacks to networks or users. DoS attacks include SYN flood, Land, Smurf, 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, DHCP request flood attacks, and DoS attacks by changing the CHADDR field of packets.
- The S6720-SI supports DHCP snooping, which generates user binding entries. 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. DHCP snooping trusted and untrusted ports can be specified to ensure that users connect only to the authorized DHCP server.
- The S6720-SI supports strict ARP learning. This feature prevents ARP spoofing attackers from exhausting ARP entries so that users can connect to the Internet normally. It also provides IP source check to prevent DoS attacks caused by MAC address spoofing, IP address spoofing, and MAC/IP spoofing. URPF provided by the S6720-SI reversely checks packet transmission path to authenticate packets, which can protect the network against source address spoofing attacks.
- The S6720-SI supports centralized MAC address authentication and 802.1X authentication. It authenticates users based on statically or dynamically bound user information such as the user name, IP address, MAC address, VLAN ID, port number, and flag indicating whether antivirus software is installed. VLANs, QoS policies, and ACLs can be delivered to users dynamically.
- The S6720-SI can limit the number of MAC addresses learned on a port to prevent MAC address entries from being exhausted by source MAC address spoofing packets. This function minimizes packet flooding that occurs when MAC addresses of users cannot be found in the MAC address table.

Comprehensive Reliability Mechanisms

- The S6720-SI supports redundant power supplies. Users can choose a single power supply or use two power supplies to ensure device reliability. With two pluggable fan modules, the S6720-SI has a longer MTBF time than counterpart switches.

- The S6720-SI supports MSTP multi-process that enhances the existing STP, RSTP, and MSTP implementation. This function increases the number of MSTIs supported on a network. It also supports enhanced Ethernet reliability technologies such as Smart Link and RRPP, which implement millisecond-level link protection switchover and ensure network reliability. Smart Link and RRPP both support multi-instance to implement load balancing among links, further improving bandwidth usage.
- The S6720-SI supports enhanced trunk (E-trunk). A CE can be dual-homed to two PEs through Eth-Trunk links. This implements inter-device link aggregation and link load balancing, and greatly improves reliability of access devices.
- The S6720-SI supports the Smart Ethernet Protection (SEP) protocol, a ring network protocol applied to the link layer of an Ethernet network. SEP can be used on open ring networks and provides millisecond-level switchover to ensure uninterrupted services. This protocol is simple, reliable, easy to maintain, and supports fast switchover and flexible topology, enabling users to manage and plan networks conveniently.
- The S6720-SI supports G.8032, also called Ethernet Ring Protection Switching (ERPS). ERPS is based on traditional Ethernet MAC and bridging functions. It uses the mature Ethernet OAM and Ring Automatic Protection Switching (Ring APS or R-APS) technologies to implement millisecond-level protection switching on Ethernet. ERPS supports multiple services and provides flexible networking, reducing the OPEX and CAPEX.
- The S6720-SI supports VRRP. Two S6720-SI switches can form a VRRP group to ensure nonstop and reliable communication. Multiple equal-cost routes to an upstream device can be configured on the S6720-SI to provide route redundancy. When an active route is unreachable, traffic is switched to a backup route.

Various QoS Control Mechanisms

- The S6720-SI implements complex traffic classification based on packet information such as the 5-tuple, IP precedence, 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 direction to filter packets. The S6720-SI supports the flow-based two-rate and three-color CAR. Each port supports eight priority queues and multiple queue scheduling algorithms such as WRR, DRR, PQ, WRR+PQ, and DRR+PQ, which ensures the quality of network services such as voice, video and data services.

High Scalability

- The S6720-SI supports iStack and virtualizes multiple switches into one logical switch. A port of the S6720-SI can be configured as a stack port using a command for flexible stack deployment. The distance between stacked switches is further increased when the switches are connected with optical fibers. Compared with a single device, iStack features powerful scalability, reliability, performance, and architecture. New member switches can join a stack to increase the system capacity or replace a faulty member switch without interrupting services. Compared with stacking of modular switches, the iStack function can increase system capacity and port density with no restriction of the hardware structure. Multiple devices in a stack can be considered as one logical device. These switches can be managed using a single IP address, which greatly reduces costs for system expansion and O&M.

Convenient Management

- The S6720-SI supports automatic configuration, plug-and-play, deployment using a USB flash drive, and batch remote upgrade. These capabilities facilitate deployment, upgrade, and service provisioning, and simplify device management and maintenance. The maintenance costs are greatly reduced.
- The S6720-SI supports SNMPv1/v2/v3 and provides flexible methods for managing devices. Users can manage the S6720-SI using the CLI and Web NMS. The NQA function helps users with network planning and upgrades. In addition, the S6720-SI supports NTP, SSH v2, HWTACACS, RMON, log hosts, and port-based traffic statistics.
- The S6720-SI supports GVRP, which dynamically distributes, registers, and propagates VLAN attributes to reduce the manual configuration workloads of network administrators and ensure correct VLAN configuration.
- The S6720-SI supports MUX VLAN, a mechanism that isolates Layer 2 traffic between ports in a VLAN. MUX VLAN defines principal VLANs and subordinate VLANs. Subordinate VLANs can communicate with the MUX VLAN but cannot communicate with each other. This function prevents communication between network devices connected to certain ports or port groups but allows the devices to communicate with the default gateway. MUX VLAN is usually used on an enterprise intranet to isolate

user ports from each other but allow them to communicate with server ports.

- The S6720-SI supports BFD, which provides millisecond-level fault detection for protocols such as OSPF, IS-IS, VRRP, and PIM to improve network reliability. The S6720-SI supports IEEE 802.1ag and IEEE 802.3ah. 802.1ag allows for point-to-point Ethernet fault management, and IEEE 802.3ah can detect faults in the last mile of an Ethernet link. Ethernet OAM improves the Ethernet network management and maintenance capabilities and ensures a stable network.

Various IPv6 Features

- The S6720-SI supports IPv4/IPv6 dual stack and can migrate from an IPv4 network to an IPv6 network. The S6720-SI hardware supports IPv4/IPv6 dual stack and IPv6 over IPv4 tunnels (including manual tunnels, 6to4 tunnels, and ISATAP tunnels). The S6720-SI can be deployed on IPv4 networks, IPv6 networks, or networks that run both IPv4 and IPv6. This makes networking flexible and enables a network to migrate from IPv4 to IPv6.
- The S6720-SI supports various IPv6 routing protocols including RIPng and OSPFv3. The S6720-SI supports the Neighbor Discovery Protocol (NDP) of IPv6, and manages packets exchanged between neighbors. It also provides the Path MTU Discovery (PMTU) mechanism to select a proper MTU on the path from the source to the destination, optimizing network resources and obtaining the maximum throughput.

Cloud management

- The Huawei cloud management platform allows users to configure, monitor, and inspect switches on the cloud, reducing on-site deployment and O&M manpower costs and decreasing network OPEX. Huawei switches support both cloud management and on-premise management modes. These two management modes can be flexibly switched as required to achieve smooth evolution while maximizing return on investment (ROI).

OPS

- Open Programmability System (OPS) is an open programmable system based on the Python language. IT administrators can program the O&M functions of a switch through Python scripts to quickly innovate functions and implement intelligent O&M.

Long-Distance PoE++ Power Supply

- When some PoE++ ports on Huawei S6720-32C-PWH-SI-AC and S6720-32C-PWH-SI work at 2.5 Gbit/s and Category 5E shielded network cables are used, these switches can provide 200-meter PoE power supply to Huawei specific APs, such as AP7052DN, AP7152DN, AP6052DN, AP8082DN, AP8182DN, and AP7052DE.

Perpetual PoE

- When a PoE switch is rebooted by running the reboot command or the software version is upgraded, the power supply to PDs is not interrupted. This capability ensures that PDs are not powered off during the switch reboot.

Fast PoE

- PoE switches can supply power to PDs within 4.5s after they are powered on. This is different from common switches that generally take 1 to 3 minutes to start to supply power to PDs. When a PoE switch reboots due to a power failure, the PoE switch continues to supply power to the PDs immediately after being powered on without waiting until it finishes reboot. This greatly shortens the power failure time of PDs.

Product Specifications

Item	S6720-26Q-SI-24S-AC S6720S-26Q-SI-24S-AC	S6720-32X-SI-32S-AC	S6720-32C-SI-AC S6720-32C-SI-DC	S6720-32C-PWH-SI-AC S6720-32C-PWH-SI	S6720-56C-PWH-SI-AC S6720-56C-PWH-SI	S6720-52X-PWH-SI
Fixed ports	24 × 10GE SFP+ 2 × 40GE QSFP+	32 × 10GE SFP+	24 × 100M/ 1G/2.5G /5G/ 10G Base-T Ethernet ports 4 × 10GE SFP+	24 × 100M/ 1G/ 2.5G / 5G / 10GBase-T Ethernet ports 4 × 10GE SFP+	32 × 10/ 100/ 1000 Base-T Ethernet ports, 16 × 100M/ 1G/ 2.5G/ 5G/ 10G Base-T Ethernet ports, 4 × 10GE SFP+	48 × 100M/ 1G/ 2.5G/ 5G/ 10G Base-T Ethernet ports, 4 × 10GE SFP+
Extended slots	Not supported	Not supported	One extended slot	One extended slot	One extended slot	Not supported
MAC address table	32K MAC address learning and aging Static, dynamic, and blackhole MAC address entries Packet filtering based on source MAC addresses					
VLAN features	4K VLANs Guest VLAN and voice VLAN VLAN assignment based on MAC addresses, protocols, IP subnets, policies, and ports VLAN mapping Super VLAN Basic QinQ and selective QinQ					
IPv4 routing	Static routing, RIPv1, RIPv2, ECMP, URPF, OSPF, IS-IS, and BGP VRRP Policy-based routing Routing policies					
IPv6 routing	Static routing RIPng OSPFv3 BGP4+ ISISv6					
IPv6 features	Neighbor Discovery (ND) and ND snooping IPv6 Ping VRRP6 DHCPv6 snooping, DHCPv6 server, and DHCPv6 relay MLDv1 and MLDv2 PIM-DM for IPv6 PIM-SM for IPv6 6 Over 4 tunnels					

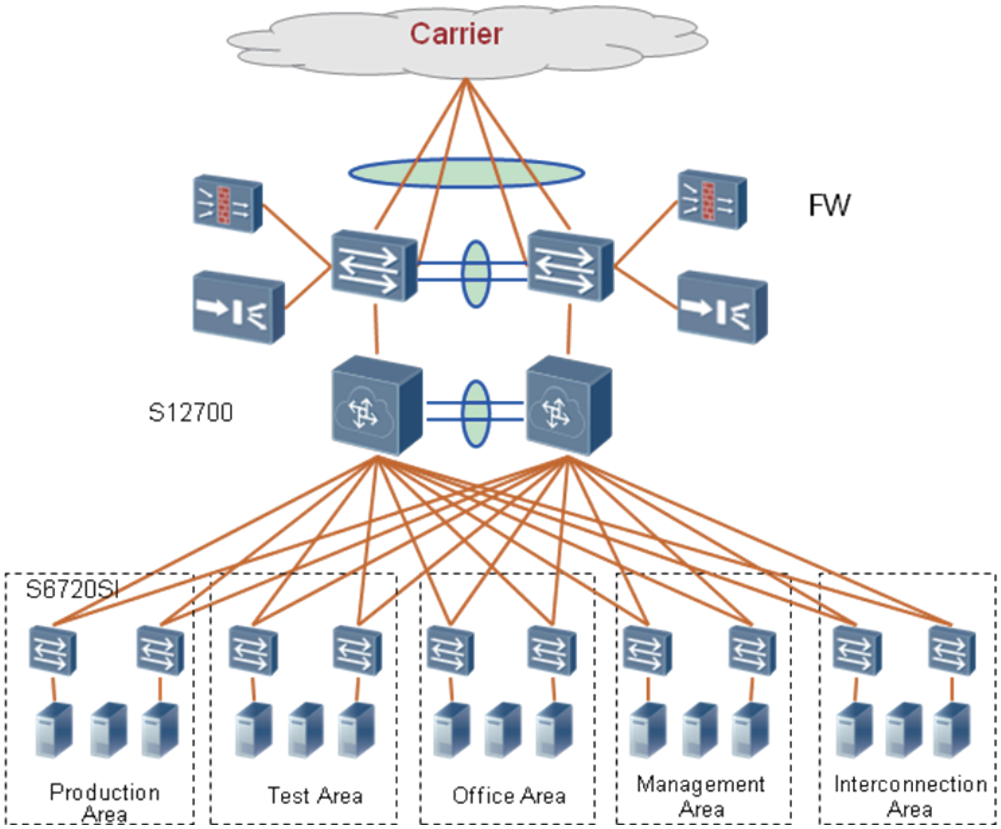
Item	S6720-26Q-SI-24S-AC S6720S-26Q-SI-24S-AC	S6720-32X-SI-32S-AC	S6720-32C-SI-AC S6720-32C-SI-DC	S6720-32C-PWH-SI-AC S6720-32C-PWH-SI	S6720-56C-PWH-SI-AC S6720-56C-PWH-SI	S6720-52X-PWH-SI
Multicast	IGMP V1/V2/V3 snooping Fast leave IGMP snooping proxy MLD snooping Port-based multicast traffic suppression Inter-VLAN multicast replication Controllable multicast IGMP v1/v2/v3 PIM-SM and PIM-DM Multicast Source Discovery Protocol (MSDP) Multicast routing policies					
QoS/ACL	Traffic classification based on ACLs Traffic classification based on outer 802.1p fields, inner VLAN IDs, outer VLAN IDs, source MAC addresses, and Ethernet types Access control after traffic classification Traffic policing based on traffic classifiers Re-marking based on traffic classifiers Class-based packet queuing Associating traffic classifiers with traffic behaviors Rate limiting on inbound and outbound ports Traffic shaping based on ports and queues Tail drop Priority Queuing (PQ) Deficit Round Robin (DRR) PQ + DRR scheduling Weighted Round Robin (WRR) PQ + WRR scheduling					
Reliability	STP (IEEE 802.1d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s) BPDU protection, root protection, and loop protection RRPP ring topology and RRPP multi-instance Smart Link tree topology and Smart Link multi-instance, providing millisecond-level protection switchover Smart Ethernet Protection (SEP) G.8032 Ethernet Ring Protection Switching (ERPS) BFD for OSPF, IS-IS, VRRP, and PIM protocols Enhanced trunk (E-trunk)					
Security features	Defense against DoS, ARP, and ICMP attacks Binding of the IP address, MAC address, port number, and VLAN ID of a user Port isolation, port security, and sticky MAC MAC-Forced Forwarding (MACFF) Limit on the number of learned MAC addresses IEEE 802.1X authentication, MAC address authentication, Portal authentication, and hybrid authentication Authentication methods, including AAA, RADIUS, and HWTACACS CPU defense					
Super Virtual Fabric (SVF)	SVF Parent and Client					

Item	S6720-26Q-SI-24S-AC S6720S-26Q-SI-24S-AC	S6720-32X-SI-32S-AC	S6720-32C-SI-AC S6720-32C-SI-DC	S6720-32C-PWH-SI-AC S6720-32C-PWH-SI	S6720-56C-PWH-SI-AC S6720-56C-PWH-SI	S6720-52X-PWH-SI
Management and maintenance	iStack (using service ports as stack ports) Virtual Cable Test (VCT) Ethernet OAM (IEEE 802.3ah and 802.1ag) SNMPv1/v2c/v3 RMON Web-based network management system and relevant features System logs and multi-level alarms GVRP MUX VLAN sFlow Hypertext Transfer Protocol Secure (HTTPS) SSH1.5/SSH2					
Operating environment	Working temperature: 0–1800 m, 0–45° C; 1800–5000 m, the highest operating temperature reduces by 1° C every time the altitude increases by 220 m. Relative humidity: 5%–95% (noncondensing)					
Input voltage	AC: Rated voltage range: 100 V to 240 V AC, 50/60 Hz Maximum voltage range: 90 V to 264 V AC, 47/63Hz DC: Rated voltage range: –48 V to –60 V DC Maximum voltage range: –36 V to –72 V DC					
Dimensions (W x D x H, mm)	442 × 420 × 44.4	442 × 420 × 44.4	442 × 420 × 44.4	442 × 420 × 44.4	442 × 420 × 44.4	442 × 507 × 44.4
Typical power consumption	68.4W	72.6W	93W(without card)	580W AC: without PD:106.9W; 1150W ACwithout PD: 121.6W	Without card and PD:91.01W	159.5W
Maximum power consumption (W)	97W	104.6W	117.62W (without card)	650W DC/580W AC(without card and PD):125.6W; 1150W AC（without card and pd）:125.6W	650W DC/580W AC（without card and PD）:120.5W 1150W AC（without card and PD）:120.5W	650W DC without PD:207.36W; 1150W AC without PD:236.8W

Networking and Applications

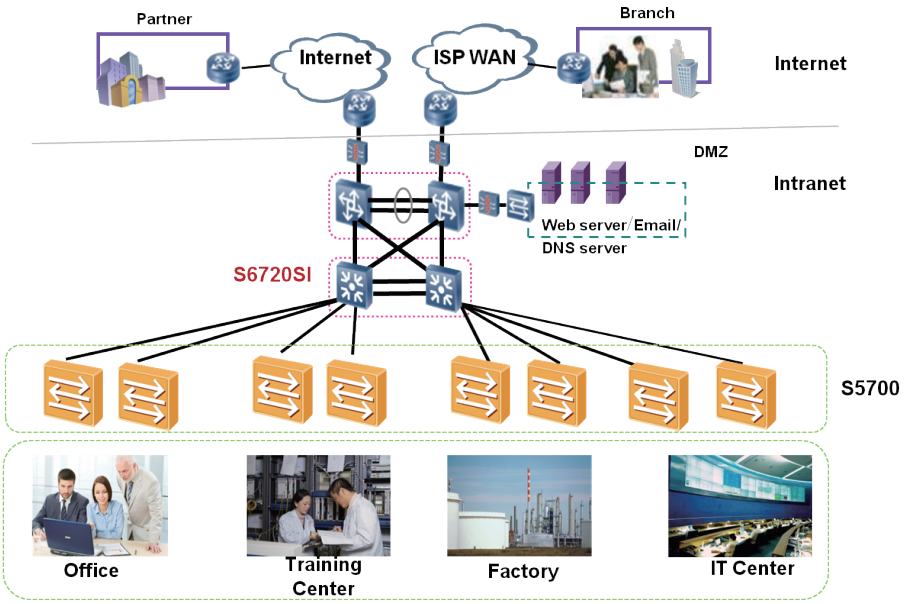
Data Center Network

As shown in the following figure, the S12700 agile switches function as core switches in a data center and use firewall and load balancer cards to ensure security and perform load balancing. The S6720-SIs function as access switches and provide high-density 10GE ports to connect to 10G servers.



Campus Networks

The S6720-SI series switches can be used as access or aggregation switches on small- and medium-sized campus networks and provide 2.5G ports for high-speed AP access, meeting the requirement for increasing bandwidth. The rich service features and comprehensive security mechanisms make the S6720-SI cost effective on campus networks.



Ordering Information

Product Description
S6720-26Q-SI-24S bundle (24 10GE SFP+, 2 40GE QSFP+, with 1 150W AC power supply)
S6720S-26Q-SI-24S bundle (24 10GE SFP+, 2 40GE QSFP+, with 1 150W AC power supply)
S6720-32X-SI-32S bundle (32 10GE SFP+, with 1 150W AC power supply)
S6720-32C-SI-AC bundle (24 100M/1G/2.5G/5G/10G Base-T Ethernet ports, 4 10GE SFP+, with 1 interface slot, with 1 150W AC power supply)
S6720-32C-SI-DC bundle (24 100M/1G/2.5G/5G/10G Base-T Ethernet ports, 4 10GE SFP+, with 1 interface slot, with 1 150W DC power supply)
S6720-32C-PWH-SI-AC bundle (24 100M/1G/2.5G/5G/10G Base-T Ethernet ports, 4 10GE SFP+, PoE++, with 1 interface slot, with 1 580W AC power supply)
S6720-32C-PWH-SI (24 100M/1G/2.5G/5G/10G Base-T Ethernet ports, 4 10GE SFP+, PoE++, with 1 interface slot, without power supply)
S6720-56C-PWH-SI-AC Bundle(32 Ethernet 10/100/1000 ports,16 Ethernet 100M/1/2.5/5/10G ports,4 10 Gig SFP+,PoE++,with 1 slot,with 580W power)
S6720-56C-PWH-SI(32 Ethernet 10/100/1000 ports,16 Ethernet 100M/1/2.5/5/10G ports,4 10 Gig SFP+,PoE++,with 1 slot,without power module)
S6720-52X-PWH-SI(48 Ethernet 100M/1/2.5/5/10G ports,4 10 Gig SFP+,PoE++,without power module)
2-port 40GE QSFP+ interface card
4-port 10GE SFP+ interface card
150W AC Power Module
150W DC Power Module
580W AC Power Module
650W DC Power Module
1150W AC Power Module

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

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