# Ruijie RG-S5750-H
Switch Series Datasheet

Ruijie RG-S5750-H Switch Series is a collection of next-gen multiservice switches, offering remarkable performance and enhanced security. Implementing an industry-leading hardware design and Ruijie's latest RGOS11.X modular operating system, the switches offer better table capacity, improved hardware processing performance, and easier user operation.

The RG-S5750-H series supports flexible Gigabit access and high-density 10G port scalability. All models offer fixed 4 10G fiber ports and dual expansion slots, supporting high-density, high-performance port uplink performance. These leading features fully meet requirements of high-density access and demanding aggregation.

The RG-S5750-H switches, with the outstanding performance-to-price ratio, are ideal acting as aggregation of large-scaled networks, core of small to medium-sized networks, and data center server access. With the end-to-end service performance, and a wide range of security settings available, the RG-S5750-H switch series fully satisfies high-speed, secure and intelligent demands of enterprise networks.

HIGHLIGHTS

- Customized for Large Campus Network: up to 64K MAC Address

- Exceptional Performance & Scalability: up to 598G Switching Capacity and 8 10GE Ports (48GT Model)

- Network Virtualization (VSU) Support (up to 9 Stack Members)

- Out-of-box with Advanced Layer 3 Routing, MPLS and SDN Features

- High Reliability: Hot Patches, 1+1 Power Module Redundancy, Hot Swappable Components

RG-S5750C-48GT4XS-H   RG-S5750C-28GT4XS-H   RG-S5750C-28SFP4XS-H
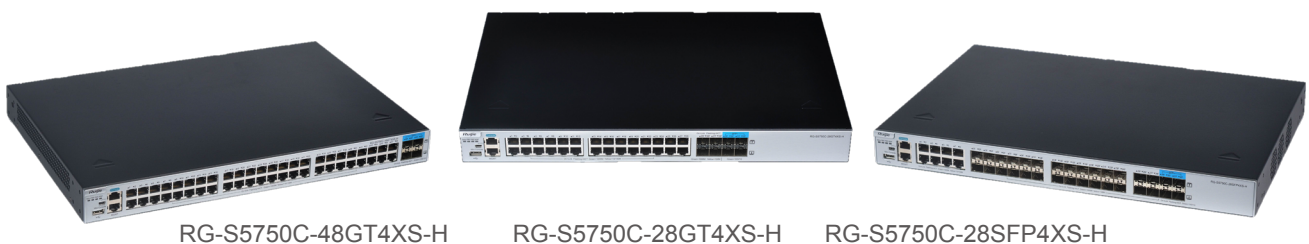
PRODUCT FEATURES

Exceptional Performance & Scalability

The RG-S5750-H switch series offers fixed 4 10G fiber ports. Users can flexibly choose 10G fiber or copper ports in various quantities to meet their actual deployment needs. The unparalleled scalability totally supports campus network aggregation of large-sized enterprises, or core deployment of small to medium-sized networks. The series supports MAC address capacity of up to 64K.

Hardware Highlights

RG-S5750C-48GT4XS-H
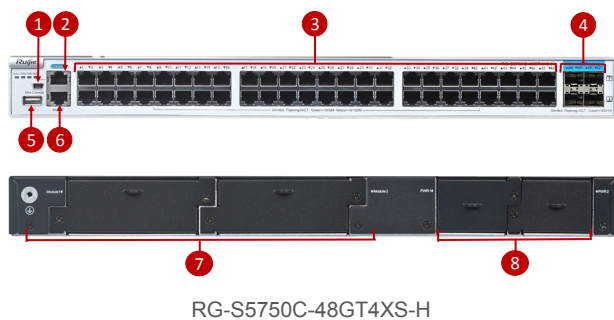
Interfaces

1. Mini USB Console Port
2. Console Port
3. 48 10/100/1000BASE-T Ports
4. 4 1G/10GBASE-X SFP+ Ports
5. USB 2.0 Port
6. MGMT Port
7. 2 Expansion Slots
8. 2 Modular Power Slots

IPv4/IPv6 Dual Stack Multilayer Switching

The RG-S5750-H series provides hardware support for IPv4/IPv6 multilayer switching at line rates, supports distinction and processing of IPv4 and IPv6 packets by hardware, and provides flexible IPv6 network communication schemes for network implementation planning or maintaining the present network status. The switches also support rich IPv4 routing protocols, including static routing protocols, RIP, OSPF, IS-IS, and BGP4, enabling users to select appropriate protocols for network building in different environments. A wide array of IPv6 routing protocols is also available. Such include static routing protocols, RIPng, OSPFv3, and BGP4+, enabling users to select appropriate protocols for upgrading an existing network to IPv6 or building a new IPv6 network.

Virtual Switch Unit (VSU)

The Virtual Switch Unit technology, or VSU in short, enables interconnection of several physical devices by virtualizing them into one logical device. The logical device uses one single IP address, Telnet process, command-line interface (CLI), and

enables auto version inspection and configuration. From the user perspective, the benefits are multiplied work efficiency and enhanced user experience of several devices operating at the same. And they only have to manage one device. The VSU technology also offers multiple benefits below:

- **Easy management:** Administrators can centrally manage all the devices at the same time. It is no longer necessary to configure and manage the switches one by one.

- **Simplified typology:** The VSU is regarded as one switch in the network. By connection of aggregation link and peripheral network devices, MSTP protocol is unnecessary as there is no Layer 2 loop network. All protocols operate as one switch.

- **Millisecond failover:** The VSU and peripheral devices are connected via the aggregation link. Upon failure event of any device or link, failover to another member link requires only 50 to 200ms.

- **Exceptional scalability:** The network is hot swappable, any devices leaving or joining the virtualized network cause zero impact on other devices.

Comprehensive Security Policies

The RG-S5750-H series effectively prevents and controls virus spread and hacker attacks with various inherent mechanisms such as anti-DoS attacks, hacker IP scanning, illegal ARP packets checking and multiple hardware ACL policies.

- **Hardware-based IPv6 ACL:** Allow coexistence of IPv4/IPv6 users and controls the resources access by IPv6 users (e.g. restrict access to sensitive network resources).

- **Industry-leading CPU protection mechanism:** The CPU protection policy (CPP) distinguishes the data flows sent to the CPU, which are processed according to their priorities, and implements limitations on the bandwidth rate as needed. In this manner, users can prevent the CPU from being occupied by illegal traffic and protect against malicious attacks to guarantee normal operation of the CPU and switch.

- **IP/MAC binding:** Implement flexible binding of a port or the system to the IP address and MAC address of users, strictly limiting user access on a port or in the entire system.

- **DHCP snooping:** Allow DHCP responses from trusted ports only; based on DHCP listening and by monitoring ARP dynamically and checking the user IP address, directly discard illegal packets inconsistent with binding entries to effectively prevents ARP frauds and source IP address frauds.

- **IP-based Telnet access control:** Prevent attacks from illegal personnel or hacker and strengthen the device security.

- **Secure Shell and SNMPv3:** Secure Shell (SSH) and Simple Network Management Protocol v3 (SNMPv3) cryptographic network protocol ensure the security of management information. Provides services such as multi-element binding, port security, time-based ACL and bandwidth rate limiting to block unauthorized users.

- **NFPP:** The NFPP (Network Foundation Protection Policy) enhances switch security. It protects switch processor and bandwidth by totally isolating the attacking sources. Normal packet forwarding and protocol are hence guaranteed.

High Reliability

The RG-S5750-H series supports spanning tree protocols of 802.1d, 802.1w, and 802.1s to ensure rapid convergence, improves fault tolerance capabilities, ensures stable running of networks and load balancing of links, and provides redundant links.

- **Virtual Router Redundant Protocol (VRRP):** Effectively ensure network stability.

- **Rapid Link Detection Protocol (RLDP):** Detect the connectivity of links and whether an optical fiber link is normal from both ends, and supports the loop detection function based on the port to prevent network faults caused by loops generated by the connection of devices such as hubs to ports.

- **Ethernet Ring Protection Switching (ERPS) (G.8032):** Implements loop blocking and link recovery on the master device. Other devices directly report link status to the master device. Without passing through other standby devices, the failover time of loop interruption and recovery is hence faster than STP. The ERSP's link failover rate can be completed within milliseconds under ideal conditions.

- **Rapid Ethernet Uplink Protection Protocol (REUP):** When Spanning Tree Protocol (STP) is disabled, the Rapid Ethernet Uplink Protection Protocol (REUP) can provide basic link redundancy through the rapid uplink protection function and provide faster subsecond-level fault recovery than STP.

- **Bidirectional Forwarding Detection (BFD):** Provide a method for upper-layer protocols such as routing protocols and MPLS to rapidly detect the connectivity of forwarding paths between routing devices, reducing the convergence time of upper-layer protocols greatly in the case of changes in link status.

- **Exceptional business support performance:** Support IPv4 and IPv6 multicast with abundant multicast protocols, e.g. IGMP Snooping, IGMP, MLD, PIM, PIM for IPv6, MSDP, etc. The switches offer multicast service for IPv4 network, IPv6 network, and IPv4/IPv6 co-existing network. IGMP source port and source IP inspection is also enabled to crack down on rouge multicast sources. The series offers rich Layer 3 features (e.g. ECMP) to meet various link planning needs. All products of the RG-S5750-H Switch Series support lightning protection of above 6KV.

Abundant QoS Policies

The RG-S5750-H series offers outstanding multilayer traffic categorization and control for MAC traffic, IP traffic, application layer traffic and so on. The feature achieves traffic policies such as refined bandwidth control and forwarding priority. The series also supports customized QoS features for various applications. The QoS system, with DiffServ as the core, supports a complete set of policies covering 802.1P, IP TOS, Layer 2 to 7 filtering, SP, and WRR.

Software-Defined Networking (SDN)

The RG-S5750-H series fully supports OpenFlow 1.3. In collaboration with Ruijie's SDN controller, it forms a large-scale Layer 2 networking architecture with ease. Smooth upgrade of the whole network to a SDN one is also enabled. The switch series hence greatly simplifies the network management and minimizes network deployment savings.

Energy Efficiency

The RG-S5750-H series adopts next-gen hardware architecture with a highly energy-saving circuit design and component selection. The device achieves a marked reduction in energy consumption. In addition to maximized energy saving, the RG-S5750-H series also significantly lowers noise pollution. All models in the series deploy variable-speed axial fans, which support intelligent speed adjustment based on the current ambient temperature. All the features enable the switches to work smoothly and reduce power consumption and noise pollution at the same time.

The RG-S5750-H series also supports auto-power-down mode. When an interface is down for a certain period of time, the system will automatically power it down for extra energy efficiency. EEE energy-saving mode is another feature highlight. The system will automatically turn an idle port into energy-saving mode. When there is a new packet, the system will issue listening streams to the port to resume service.

Easy Network Maintenance

The RG-S5750-H series supports abundant features such as SNMP V1/V2/V3, RMON, Syslog, and logs and configuration backup using USB for routine diagnosis and maintenance. Administrators can use a wide variety of methods for easier management and such include CLI, web management, Telnet, etc.

TECHNICAL SPECIFICATIONS

Model	RG-S5750C-28GT4XS-H	RG-S5750C-48GT4XS-H	RG-S5750C-28SFP4XS-H
Ports	28 10/100/1000BASE-T ports 4 100/1000BASE-X SFP ports (combo) 4 1G/10GBASE-X SFP+ ports	48 10/100/1000BASE-T ports 4 1G/10GBASE-X SFP+ ports	28 100/1000BASE-X SFP ports 8 10/100/1000BASE-T ports (combo) 4 1G/10GBASE-X SFP+ ports
Expansion Slots	2		
Modular Power Slots	2		
Fan Slots	Fixed		
Expansion Modules	M5000H-01QXS M5000H-04XS		
Management Ports	1 console port 1 MGMT port 1 Mini USB console port 1 USB 2.0 port		
Switching Capacity	598Gbps/5.98Tbps		
Packet Forwarding Rate	222Mpps/342Mpps	252Mpps/372Mpps	222Mpps/342Mpps
Max. Number of 10GE Ports	4	8	4
Max. Number of 40GE Ports	1		
Port Buffer	4MB		
ARP Table	Up to 20K		
MAC Address	Up to 64K		
IP Host Entries (IPv4/IPv6)	12K/6K		
ACL Entries	Up to 3,000		
VLAN	4K 802.1q VLANs, Port-based VLAN, MAC-based VLAN, Protocol-based VLAN, Private VLAN, Voice VLAN, QinQ, IP subnet-based VLAN, GVRP		
QinQ	Basic QinQ, Flexible QinQ, N:1 VLAN switching, 1:1 VLAN switching		
Link Aggregation	Support LACP (802.3ad)		
Port Mirroring	Many-to-one mirroring, One-to-many mirroring, Flow-based mirroring, Over devices mirroring, VLAN-based mirroring, VLAN-filtering mirroring, AP-port mirroring, RSPAN, ERSPAN		
Spanning Tree Protocols	IEEE802.1d STP, IEEE802.1w RSTP, Standard 802.3s MSTP, Port fast, BPDU filter, BPDU guard, TC guard, TC protection, ROOT guard		
DHCP	DHCP server, DHCP client, DHCP snooping, DHCP relay, IPv6 DHCP snooping, IPv6 DHCP client, IPv6 DHCP relay		
Multiple Spanning Tree (MST) Instances	64		

Model	RG-S5750C-28GT4XS-H	RG-S5750C-48GT4XS-H	RG-S5750C-28SFP4XS-H
Maximum Aggregation Port (AP)	Up to 2,048		
SDN	OpenFlow 1.0&1.3		
VSU (Virtual Switch Unit)	Up to 9 stack members[1]		
Zero Configuration	CWMP(TR069)		
L2 Features	MAC, EEE, ARP, VLAN, Basic QinQ, Felix QinQ, Link aggregation, Mirroring, STP, RSTP, MSTP, Broadcast storm control, IGMP v1/v2/v3 snooping, IGMP filter, IGMP fast leave, MLD snooping, DHCP, Jumbo frame, RLDP, LLDP, REUP, G.8032 ERPS, Layer 2 protocol tunnel		
Layer 2 Protocols	IEEE802.3, IEEE802.3u, IEEE802.3z, IEEE802.3x, IEEE802.3ad, IEEE802.1p, IEEE802.1x, IEEE802.3ab, IEEE802.1Q (GVRP), IEEE802.1d, IEEE802.1w, IEEE802.1s		
Layer 3 Features	Static routing, Equal-Cost Multi-Path Routing (ECMP), OSPF, OSPF v3, BGP, BGP4+, RIP, RIPng, IS-IS, IS-IS v6, MCE		
Layer 3 Protocols (IPv4)	Static routing, RIP, OSPF, IS-IS, BGP, ECMP		
IPv4 Features	Ping, Traceroute, ECMP, URPF, IP-IP, GRE tunnel (4 over 6), GRE tunnel (6 over 4), IPv4 VRF		
IPv6 Features	ICMPv6, IPv6 Ping, IPv6 Tracert, Manually configure local address, Automatically create local address, Neighbor Discovery, 0-64 bit mask, 65-128 bit mask, 6 over 4 manual tunnel, 6 to 4 auto tunnel, ISATAP, IPv4 over IPv6 tunnel, IPv6 over IPv6 tunnel, GRE tunnel (4 over 6), GRE tunnel (6 over 6), IPv6 VRF, IPv6 extender option head		
Basic IPv6 Protocols	IPv6 addressing, Neighbor Discovery (ND), ND-snooping, ICMPv6, stateless automatic configuration, and Path MTU Discovery		
IPv6 Routing Protocols	Static routing, Equal-Cost Multi-Path Routing (ECMP), OSPF, OSPF v3, BGP, BGP4+, RIP, RIPng, IS-IS, IS-IS v6, MCE; Packet–based load balancing and flow-based load balancing		
IPv6 Tunnel Features	Manual tunnel, auto tunnel, ISATAP, IPv4 over IPv6, IPv6 over IPv6, GRE tunnel		
Multicast	IGMP v1/v2/v3, IGMP v1/v2/v3 snooping, IGMP proxy, IGMP filter, IGMP fast leave, Multicast routing protocols (PIM-DM, PIM-SM, PIM-SSM), MLD snooping, MLD, PIM for IPv6, MSDP, Multicast static routing		
MPLS	MPLS L3 VPN[2]		
G.8032	Support		
ACL	Standard IP ACL (Based on IP address); Extended IP ACL (Based on IP addresses and TCP/UDP port number); MAC-extended ACL (Based on source and destination MAC addresses and optional Ethernet type); Time-based ACL; Expert ACL (Based on the flexible combination of VLAN number, Ethernet type, MAC address, IP address, TCP/UDP port, protocol type, and time); ACL80; IPv6 ACL		
QoS	802.1p/DSCP/TOS traffic classification; Multiple queue scheduling mechanisms, such as SP, WRR, DRR, SP+WRR, SP+DRR; RED / WRED; Input / output port-based speed limit; Port-based traffic recognition; Each port supports 8 queue priorities		
IPv6 ACL	Support		
Reliability	VSU (virtualization technology for virtualizing multiple devices into 1); GR for RIP/OSPF/BGP; BFD detection; ERPS (G.8032); REUP dual-link fast switching technology; RLDP (Rapid Link Detection Protocol); 1+1 power redundancy; Hot-swappable power module		

Note:

[1] Future release support, latest models support up to 4 stack members.

[2] Future release support

Model	RG-S5750C-28GT4XS-H	RG-S5750C-48GT4XS-H	RG-S5750C-28SFP4XS-H
EEE Format	Support IEEE 802.3az standard		
Security	Binding of the IP address, MAC address, and port address; Binding of the IPv6, MAC address, and port address; Filter illegal MAC addresses; Port-based and MAC-based 802.1x; MAB; Portal and Portal 2.0 authentication; ARP-check; DAI; Restriction on the rate of ARP packets; Gateway anti-ARP spoofing; Broadcast suppression; Hierarchical management by administrators and password protection; RADIUS and TACACS+; AAA security authentication (IPv4/IPv6) in device login management; SSH and SSH V2.0; BPDU guard; IP source guard; CPP, NFPP; Port protection		
Manageability	SNMP v1/v2/v3; CLI (Telnet/Console); RMON (1, 2, 4, 9); SSH; FTP / TFTv6; Syslog; SPAN / RSPAN, NTP / SNTP, SNMP over IPv6; IPv6 MIB support for SNMP, SSHv6, Telnetv6, DNS v6; NTP for v6; Traceroute v6; Support sFlow, traffic sampling of the switch can be performed via data stream random sampling technology		
Hot Patch	Support (the restart process does not affect the existing service forwarding)		
Smart Temperature Control	Auto fan speed adjustment; Fan malfunction alerts; Fan status check		
Smart Power Supply	Support power control and management		
Other Protocols	FTP, TFTP, DNS client, DNS static		
Dimensions (W x D x H) (mm)	440 × 280 × 44	440 × 300 × 44	440 × 300 × 44
Rack Height	1RU		
Weight	3.9kg	4.2kg	4.2kg
MTBF	>200K hours		
Power Supply	AC input: Rated voltage range: 100V to 240V AC Maximum voltage range: 90V to 264V AC Frequency: 50Hz to 60Hz DC input: Rated voltage range: 120V to 340V DC Maximum voltage range: 110V to 380V DC		
Power Consumption	45W	45W	55W
Temperature	Operating temperature: 0°C to 50°C		
	Storage temperature: -40°C to 70°C		
Humidity	Operating humidity: 10% to 90%RH		
	Storage humidity: 5% to 95%RH		
Operating Altitude	-500m to 5,000m		

TYPICAL APPLICATION

- Aggregation layer of a large network, core layer of medium-sized network, access of a server cluster, and full Gigabit Layer 3 access of buildings in large enterprise or campus networks.
- The 4 fixed 10G BASE-X ports upgrade the network to a 10G uplink backbone to protect user investment.
- Strong security management mechanisms provide network security defense, high-security access control, and effective network access control.
- Superior management policies facilitate bandwidth management and ensure the performance of key applications such as voice/video conference, music and video streaming and Video on Demand (VoD).

Typical Application 1

As the aggregation layer switch of large campus network, RG-S5750-H Series Switches offers high-performance bandwidth link with 10G aggregation to core and higher bandwidth for the access device to meet the growing demand of user traffic.
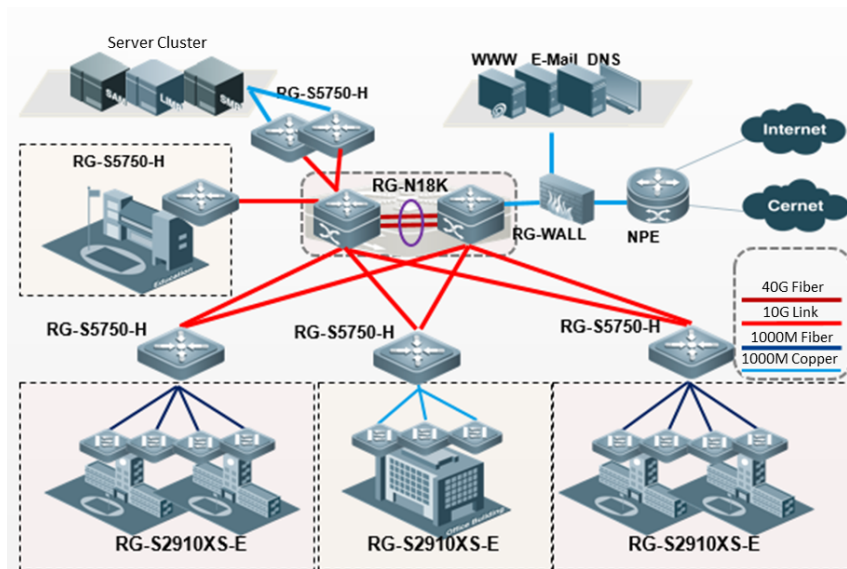
Typical Application 2

The RG-S5750-H Series Switches can be deployed as core switches in small and medium enterprises. The VSU technology not only simplifies the network architecture, but also significantly improves the reliability and efficiency of the network system.
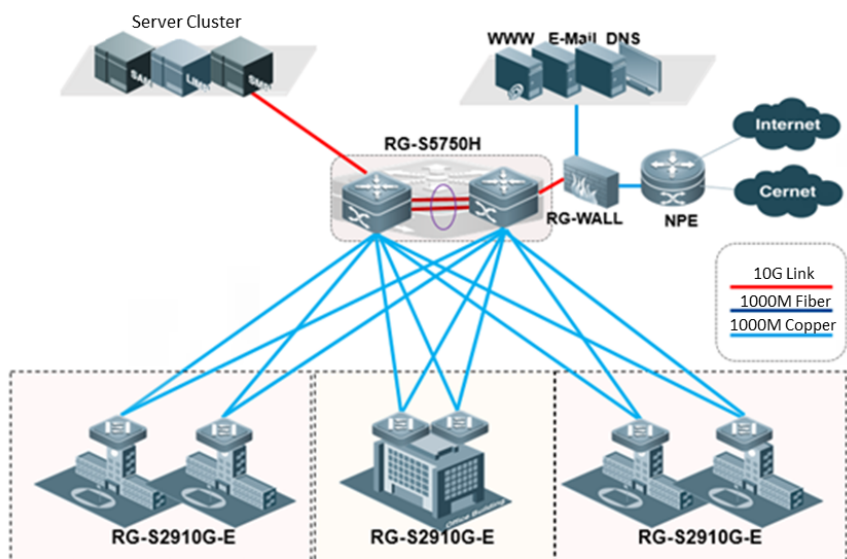
ORDERING INFORMATION

Model	Description
RG-S5750C-28GT4XS-H	28 10/100/1000BASE-T Ports, 4 100/1000BASE-X SFP Ports (combo), 4 1G/10GBASE-X SFP+ Ports, 2 Extension Slots, 2 Modular Power Slots, required to purchase at least 1 power module
RG-S5750C-48GT4XS-H	48 10/100/1000BASE-T Ports, 4 1G/10GBASE-X SFP+ Ports, 2 Extension Slots, 2 Modular Power Slots, required to purchase at least 1 power module
RG-S5750C-28SFP4XS-H	28 100/1000BASE-X SFP Ports, 8 10/100/1000BASE-T Ports (combo), 4 1G/10GBASE-X SFP+ Ports, 2 Extension Slots, 2 Modular Power Slots, required to purchase at least 1 power module
M5000H-01QXS	1-port QSFP+ Stacking Module (Stacking module for QSFP+ BASE-X ports, only for stacking between S5750C-H devices)
M5000H-04XS	4-port 10GE SFP+ Interface Module (Only for RG-S5750C-48GT4XS-H model; Only extension slot 1 of RG-S5750C-48GT4XS-H support the module, the extension slot 2 cannot be used.)
RG-PA70I	AC Power Module for S5750H Switches
FE-SFP-LX-MM1310	100M Multimode Interface Module (2km)
FE-SFP-LH15-SM1310	100M Single-mode Interface Module (15km)
Mini-GBIC-GT	1000BASE-GT mini GBIC Transceiver
Mini-GBIC-SX	Single-port 1000BASE-SX mini GBIC Transceiver (LC)
Mini-GBIC-LX	Single-port 1000BASE-LX mini GBIC Transceiver (LC)
Mini-GBIC-LH40	Single-port 1000BASE-LH mini GBIC Transceiver (LC), 40km
Mini-GBIC-ZX50	Single-port 1000BASE-ZX mini GBIC Transceiver (LC), 50km
Mini-GBIC-ZX80	Single-port 1000BASE-ZX mini GBIC Transceiver (LC), 80km
Mini-GBIC-ZX100	1000BASE-ZX mini GBIC Transceiver, 100km
XG-SFP-SR-MM850	10GBASE-SR, SFP+ Transceiver, MM (850nm, 300m, LC)
XG-SFP-LR-SM1310	10GBASE-SR, SFP+ Transceiver (1310nm, 10km, LC)
XG-SFP-ER-SM1550	10GBASE-SR, SFP+ Transceiver (1550nm, 40km, LC)
XG-SFP-AOC1M	10GBASE SFP+ Optical Stack Cable (included both side transceivers) for S2910 and S5750-H Series Switches, 1 Meter
XG-SFP-AOC3M	10GBASE SFP+ Optical Stack Cable (included both side transceivers) for S2910 and S5750-H Series Switches, 3 Meters
XG-SFP-AOC5M	10GBASE SFP+ Optical Stack Cable (included both side transceivers) for S2910 and S5750-H Series Switches, 5 Meters
40G-QSFP-SR-MM850	40G SR Fiber Module for QSFP+ interface (OM3/OM4 MPO fiber, 8-core, wavelength 850nm, transmission distance is 100m for OM3 fiber and 150m for OM4 fiber)
40G-QSFP-LR4 SM1310	40G LR Single-mode Fiber Module for QSFP+ interface, transmission distance up to 10km (LC fiber is required, 2-core, wavelength 1310nm)
40G-QSFP-STACK3M	40G Copper Cable for QSFP+ interface, 3m

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