S5810 Series 10G L3 Aggregation Switch Datasheet

Product Overview

S5810 series switch is a high-performance stackable L3 aggregation routing switch developed by Maipu. It is applied in enterprise campus network and easy to deploy Layer3 switching solution that offers enhanced security and 1G/10G/25GE/40GE/100GE uplinks, RIP/OSPF/BGP/IS-IS, L2&L3 Multicast and flexible management.

S5810 series switch can be used as L3 aggregation devices on large-sized campus networks. They can also be used as core devices on small and medium-sized campus networks. The switches help build highly reliable enterprise campus networks that are easy to expand and manage.

S5810 series switch includes S5810-28XQS, S5810-52XQS two models.

Model Name	Specification
 **S5810-28XQS(V1)**	● 8*25G SFP28 + 16*10G SFP+ ● 4*100G QSFP28 ● Dual Power Slots ● Dual FAN Slots ● RJ45 Console/RJ45 Management/USB2.0 Port ● Switching Capacity: 1.12Tbps
 **S5810-52XQS(V1)**	● 16*25G SFP28 + 32*10G SFP+ ● 4*100G QSFP28 ● Dual Power Slots ● Four FAN Slots ● RJ45 Console/RJ45 Management/USB2.0 Port ● Switching Capacity: 1.12Tbps

Key Features

- **Intelligent Stacking Technology**

The S5810 series switch is equipped with Maipu VST stacking function. VST (Virtual Switching Technology) stacking combines multiple switches to form a logical virtual switch via the 10G/25G/40G/100G ports, improving device and link reliability, network expansion, and simplifying configuration and management.

The S5810 series switch also support M-LAG, aggregating links of multiple switches to ensure link backup and uninterrupted services during upgrade.

- **Zero Touch Provisioning**

The S5810 series switch features advanced Zero Touch Provisioning (ZTP) capabilities, streamlining the deployment process for network administrators. With ZTP, the switch can automatically discover and load necessary version files from a file server via a DHCP server or a USB flash disk, eliminating the need for manual intervention during initial setup. This automation reduces configuration errors, accelerates the deployment process, and enhances overall network efficiency, making the S5810 series switch an ideal choice for scalable and dynamic network environments.

- **High Availability**

The S5810 series switch offers advanced redundancy and reliability features, catering to diverse networking requirements. In addition to supporting traditional spanning tree protocols such as STP, RSTP, and MSTP, the switch also complies with the ITU-T G.8032 international standard. This Ethernet Ring Protection Switching (ERPS) protocol enables rapid 50ms failover within Ethernet ring network topologies, ensuring seamless connectivity and minimal downtime.

Furthermore, the S5810 series switch incorporates the Virtual Router Redundancy Protocol (VRRP), facilitating uplink backup capabilities. By connecting to multiple aggregation switches via multiple links, the switch significantly enhances access device reliability, promoting network stability and resilience.

- **Perfect Security Policy**

The S5810 series switch offers a comprehensive suite of security features, including user authentication, port security, ACLs, loopback detection, and 802.1X authentication. It also incorporates IP Source Guard, DHCP/ND Snooping, Host Guard, Dynamic ARP Inspection. These robust security functions ensure user access and network protection.

Additionally, the switch supports MAC+IP+VLAN binding, 802.1X authentication, and countermeasures against network storm, DOS/DDOS, ARP, and protocol packet attacks. This makes the S5810 series ideal for large-scale, multi-service, and complex-traffic networks.

- **Advanced QoS**

The S5810 series switch offers sophisticated QoS capabilities for optimal network performance. Supporting eight queues per port and advanced scheduling algorithms such as SP, RR, WRR, and WDRR, the switch effectively manages traffic prioritization and resource allocation.

The switch accommodates diverse priority mapping techniques, including 802.1p, CoS, and DSCP, enabling fine-grained control over traffic classification and prioritization. With granular port traffic rate limiting and time-based controls, network administrators can regulate bandwidth usage as needed.

To optimize network performance and minimize congestion, the S5810 series switch employs advanced congestion management techniques, such as Tail Drop and RED packet loss algorithms. These mechanisms help maintain seamless network operation while ensuring efficient delivery of critical data.

- **IPv4&IPv6 Dual-stack Ability**

The S5810 series switch is built on an IPv4/IPv6 dual-stack platform, delivering hardware-based, wire-speed forwarding for both IPv4 and IPv6 traffic. The switch supports IPv4/IPv6 Layer 3 routing protocols, including

RIPng, OSPFv3, BGP4+, and IS-IS for IPv6. These IPv6 capabilities enable seamless deployment on pure IPv4, pure IPv6, or dual-stack networks, facilitating a smooth transition from IPv4 to IPv6 infrastructure.

- **Rich Network Management**

The S5810 series switch offers a comprehensive set of management options. These options encompass network management protocols like SNMP and TR-069, configuration and control options like Netconf/Yang and CLI, monitoring and diagnostic tools such as SYSLOG. These versatile features enable network administrators to effectively manage, monitor, and maintain optimal network performance locally

- **Free Licensing Policy**

Maipu consistently adheres to a "One-time investment" free license policy, ensuring that standard and advanced features are not differentiated across versions. This approach guarantees that customers receive new firmware updates without incurring additional charges. In comparison to other manufacturers, Maipu's free license policy safeguards both short-term and long-term user investments, providing an unparalleled value proposition.

Technical Specifications

Product Model	S5810-28XQS	S5810-52XQS
Hardware Specification		
Hardware Version	V1	V1
Physical Service Port	16*10G SFP+ interfaces 8*25G SFP28 interfaces 4*100G QSFP28 interfaces	32*10G SFP+ interfaces 16*25G SFP28 interfaces 4*100G QSFP28 interfaces
Power Slot	Dual	Dual
Fan Slot	Dual	Four
Power Consumption	≤90W	≤193W
Dimension (W*D*H) mm	442*380*44.2	
Physical Management Port	1* RJ45 Console Port 1* DC0 Port 1* USB2.0 Port	
Input Voltage	AC: 100V ~ 240V/50Hz ~ 60Hz	
Temperature	Work Temperature: -5°C to 55°C Storage Temperature: -40°C to 70°C	
Humidity	Work Humidity:10%～90%, non-condensing Storage Humidity:5%～95%, non-condensing	
Anti-Lightning	6KV	
Anti-Static	6KV	
MTBF	>100000 hours	
Performance Parameters		
Switching Capacity	1.12Tbps	
Forwarding Performance(128-byte)	473Mpps	
CPU	2-Core, 1.2GHz	
Flash	8GB	
RAM	2GB	
Max MAC Address Entry	65K/114K	
Jumbo Frame	12K	
ARP Entry	32K	
Max ND Entry	32K	
VLAN Entry	4K	
LACP Group	128	
LACP Member in Group	8	
MSTP Instance	64	
Max IPv4 Routing Entry	32K	
Max IPv6 Routing Entry	16K	
L2 Multicast Entry	8K	

L3 Multicast Entry		8K
VRF Entry		1K
VRRP Group		255
Software Specification		
Interface	Basic Port Configuration	Auto MDI/MDIX, Port Type UNI/NNI, Port Speed, Port MTU, Switch Port, Routed Port, Port Loopback, Port Energy Control
	Logic Interface	Loopback Interface, Tunnel Interface, Null Interface, L2/L3 VLAN Interface, L3 Ethernet Interface
	MAC Address Management	Storm Control, Flood Control, MAC Address Aging Time, Mac Address Learning on|off, Mac Address Learning Limitation, Mac Address VLAN Bunding, MAC Debug, MAC Flapping, MAC Blackhole
VLAN	VLAN Management	VLAN, VLAN PVID, VLAN Tag/Untag, VLAN Trunk, MAC VLAN, Protocol VLAN, Subnet VLAN, Voice VLAN, Guest VLAN, VLAN Debug, VLAN Isolation
Ring Protection	Spanning Tree Protocols	STP/RSTP/MSTP, BPDU Guard, Flap Guard, Loop Guard, Root Guard, TC Guard, Edge Port
	Other Ring Protocols	VIST/VIST+, G.8032(ERPSv1&v2)
Link Aggregation	LACP Configuration	Static LACP, Dynamic LACP, LACP Port Priority, LACP Load Balance, LACP Rate Failover, LACP Debug
Error Handling	Error-disable Configuration	Error-disable Based on bpduguard|DAI|DHCP Snooping|Link-Flap|Loopback-detect|Port Security|Storm Control|Transceiver Power, Error-disable Recovery
Fault Detection	Fault Detection Features	Track, Loop-back Detection, CFM (802.1ag), EFM (802.3ah)
IP Services	IP Protocol	ARP, ND, IPv6 Auto-Config, DNS, ICMPv4/v6
	Routing Protocol	Static Routing v4/v6, RIP/RIPng, OSPF v2/v3, BGP/BGP+, ISIS/ISIS v6, VRRP/VRRP v3, PBR v4/v6, ECMP, IRMP, VRF
	DHCP Service	DHCP v4/v6 Server, DHCP v4/v6 Client, DHCP v4/v6 Relay, DHCP v4/v6 Snooping, DHCP Option 82, DHCPv6 Option 18/37
Multicast Protocols	L2 Multicast Protocols	IGMPv1/v2/v3 Snooping, IGMP Snooping Proxy, MLD Snooping
	L3 Multicast Protocols	IGMPv1/v2/v3, MLD, PIM-SM, PIM-SSM, PIM-DM, PIM-SDM, MSDPv4
QoS	Priority Mapping	802.1P Priority, DSCP priority
	Traffic Classification	Three Color Marker, Priority Remark, Traffic Redirect, Traffic Meter, Traffic Mirror
	Traffic Control	Rate Limit, Traffic Shaping
	Scheduling Algorithm	SP, RR, WRR, WDRR, SP+WRR, SP+WDRR
	Congestion Management	Tail-drop, RED, WRED
Security	Port Security	Port Security On aging|deny|permit|violation|ACL, Sticky MAC
	Network Access Control	IPv4/v6 Source Guard (ISG), DHCPv4/v6 Snooping, ND Snooping, ARP Snooping, Host Guard, MAC Authentication
	Threat Prevention	Dynamic ARP Inspection (DAI), ARP Check, ARP Speed Limit, ARP Source Suppression
	Access Control List	Standard IP ACL, Extended IP ACL, Standard MAC ACL, Extended MAC ACL, Standard Hybrid ACL, Extended Hybrid ACL, Standard IPv6 ACL, Extended IPv6 ACL, Time-based ACL
	Anti-Attack	Anti-Attack Detect|Drop|Flood|Log, URPF, CPU Protection, White List, Black List

	AAA	AAA, Radius, TACACS+, 802.1x, Portal
High Availability	Device Virtualization	VST, M-LAG
	Multi-Active Detection	MAD LACP, MAD BFD, MAD Fast-Hello
	High availability Protocols	UDLD, MTLK, ULPP, EEP, VRRP, VRRPv3
	BFD	BFD for Static Routev4|RIP|OSPF|BGP|ISIS BFD for Static Routev6|RIPng|OSPFv3|BGP4+|ISISv6 LACP BFD, BFD for VRRP/VRRPv3, BFD for PIMv4-SM
Configuration and Maintenance	Monitoring and Diagnostics	SPAN, sFlow, Telemetry, LLDP, IP-SLA, BSM, Keepalive Gateway
	Device Management	TR069, SNMP v1/v2/v3, MIB, SYSLOG, WEB(HTTP/HTTPS), RBAC, CLI, Telnet, SSHv1/v2, FTP/SFTP/TFTP, SCP, NTP Server/Client, Debug, ISSU, Hot Patch, Configuration Rollback, Cloud Management
	Zero Touch Provisioning	ZTP Provisioning Through DHCP Server, ZTP Provisioning Through USB Flash Disk
Network Virtualization	Software Defined Networking (SDN)	Netconf, RESTConf, Ansible
IEEE Standard	IEEE 802.3 (10BASE-T) IEEE 802.3u (100BASE-T) IEEE 802.3z (1000BASE-X) IEEE 802.3ab (1000BASE-T) IEEE 802.3ae (10GBASE-X) IEEE 802.3an (10GBASE-T) IEEE 802.3by (25GBASE-X) IEEE 802.3ba (40GBASE-X and 100GBASE-X) IEEE 802.3ah (Ethernet in the First Mile Operations, Administration, and Maintenance) IEEE 802.1x (Port-Based Network Access Control) IEEE 802.3ad (Link Aggregation) IEEE 802.3x (Flow Control) IEEE 802.1d (Spanning Tree Protocol) IEEE 802.1ab (Link Layer Discovery Protocol) IEEE 802.1Q (Virtual LAN) IEEE 802.1w (Rapid Spanning Tree Protocol) IEEE 802.1s (Multiple Spanning Tree Protocol) IEEE 802.1p (Class of Service Priority) IEEE 802.1ag (Connectivity Fault Management)	

Order Information

Model	Description
S5810 Series	
S5810-28XQS	V1 Version: 16*10G SFP+ interfaces, 8*25G SFP28 interfaces, 4*100G QSFP interfaces, Dual Power Slots, Dual FAN Slots
S5810-52XQS	V1 Version: 32*10G SFP+ interfaces, 16*25G SFP28 interfaces, 4*100G QSFP interfaces, Dual Power Slots, Four FAN Slots
FAN Module	
FAN-01F-01B	V2 Version: FAN-01F-01B Fan Module
Power Module	
AD150M-HS0N	V1 Version: 150W AC Power Supply Module for S5810-28XQS
AD250-1S005E-B	V1 Version: 250W AC Power Supply Module for S5810-52XQS

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Maipu Communication Technology Co., Ltd
No.16, Jiuxing avenue
Hi-Tech Zone
Chengdu, Sichuan Province
P. R. China
610041
Tel: (86) 28-65544850,
Fax: (86) 28-65544948,
URL: http:// www.maipu.com
Email: overseas@maipu.com

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