



S6800A Series 10G Core Routing Switch

Datasheet

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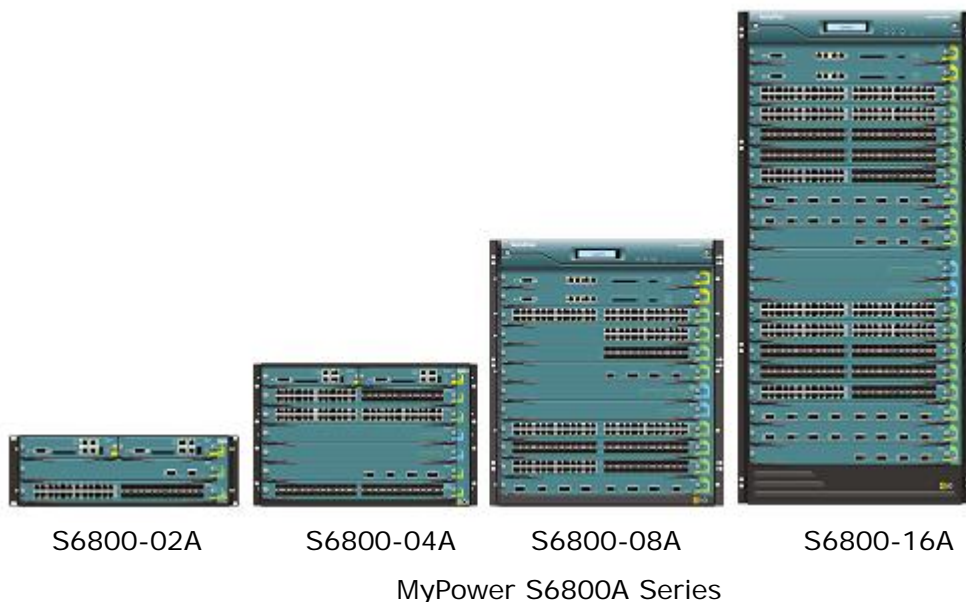
Overview

MyPower S6800A series 10G MPLS core routing switch developed by Maipu is a new multi-service high-end core switch. It adopts the ASIC+NP architecture design, provides the stable, reliable, and secure high-performance L2/L3 switching services for the next generation network, owns the support of the advanced 10G Ethernet, supports the high-density 10G interface board, and meets the high-density and high-throughput requirements of the devices at the core layer. S6800A is for the core backbone switching devices in the next generation operators' MAN. It provides the shelves with two slots, four slots, eight slots, and 16 slots respectively for customers to choose.

S6800A supports the passive backplane, control redundancy, switching engine redundancy, and power redundancy. Its board card, fan, and power supply support the carriers-level hot-swap. Besides, it supports the STP/RSTP/MSTP/VRRP/EIPS protocols to realize the link redundancy and ensure the service sustainability. Its hardware adopts the fifth generation distributed structure to support the IPv6/MPLS/OAM technologies.

S6800A adopts the new generation switch software. It has excellent security functions, and provides rich routing functions and L2/L3 MPLS functions. Besides, it provides various flow classification technologies, QoS technologies, multicast supporting technologies, and L2 switching ring network technologies so that it is suitable for the large-scale, multi-service, and complicated-flow networks. With the many years' experiences of Maipu in developing the IP network technology and based on traditional 10G switch, S6800A adopts the advanced NP technology and multi-core processor technology to realize the NAT, firewall, VPN, IPFIX, flow analysis, and PWE3 functions and expand the application range of the core switch.

As the network core platform, S6800A can cooperate with the other series switches of Maipu to provide a full range of MAN, LAN, and WAN solutions for the sectors of operators, financial services, government, energy, transportation, education, military, large and medium-sized enterprises. It is widely used in the data center, production network core, district network core, and IP MAN core of the foregoing sectors.



Key Features

- **Advanced hardware structure to ensure Tbps-level backplane and switching capacity**

S6800A switch adopts the ASIC+NP structure, provides passive copper backplane, realizes the intra-board and inter-board L2/L3 wire-speed distributed forwarding via Crossbar switching matrix, and performs high-speed route searching via powerful ASIC chip, thereby improving the forwarding performance and expanding capability greatly, reaching the Tbps-level backplane bandwidth and switching capacity, and providing advanced 10G Ethernet supporting, as well as high-density interface board to meet the high-density and high-throughput requirements of the devices at the core layer.

- **Perfect OAM**

Currently, S6800A is a core equipment for Metro-E network with perfect OAM. It can help operators to manage the network more efficiently. In this way, the operation cost of customers is reduced. The supported OAM standards include 802.1ag, 802.3ah and E-LMI.

- **Redundancy for key components to ensure the operator-level reliability and stability**

All key components of the S6800A system provide the dual-redundancy or multi-redundancy, and supports power redundancy, management module redundancy, switching matrix redundancy, and link redundancy. The power module, fan module, and all service cards of S6800A support hot-swap. Besides, S6800A supports the graceful restarting technology and online upgrade function to ensure that the services are not interrupted forever. The special dual-engine is the backup design to ensure the operator-level reliability of the core switching platform.

- **50ms service protection**

S6800A adopts Ethernet ring protection technology of Maipu, which can realize 50ms network protection in single-ring, dual-ring/multi-ring, tangent-ring and crossover-ring networking environments. In this way, the service continuity of carriers is ensured and customer satisfaction is improved.

- **New generation switching structure to realize distributed wire-speed processing IPv6/MPLS function**

S6800A switch supports rich IPv6/MPLS features and distributed full wire-speed hardware IPv6/MPLS forwarding mode to realize the intra-board and inter-board wire-speed processing of IPv6/MPLS packets, avoid the bottleneck and delay problems of the centralized forwarding, and provide the strong guarantee for the large-scale commercial applications of IPv6/MPLS.

- **Perfect combination of software and hardware security mechanisms to protect the network and service systems from being attacked**

S6800A switch adopts excellent security design; supports SNMP V3 based on user security policy, MAC+IP+VLAN binding, and 802.1X authentication; supports the security policies such as anti network storm attack, anti DOS/DDOS attack, anti ARP attack, anti-scan pry attack, anti freaky packet attack, and anti network protocol packet attack to prevent attacks and virus efficiently. It is suitable for large-scale, multi-service, and complicated-flow networks.

- **Rich multi-service cards and adopting private NP hardware to realize L2—L7 value-added applications and service speedup**

With the many years' experiences of Maipu in developing the IP network technology and based on traditional 10G switch, S6800A adopts the advanced NP technology and multi-core processor technology, realizes the NAT, firewall, VPN, IPFIX, flow analysis, and PWE3 functions via the full hardware processing, and expands the application range of the core switch. By strengthening the function integration, one S6800A switch processes the functions that are realized by several devices in a centralized manner, thereby reducing the network complexity and the maintenance workload of users.

- **Carriers-level UNI/NNI**

Considering carriers, S6800A defines all downstream interfaces as UNI interfaces. By default, UNI interfaces are in close state and have no local switching function. And the data on UNI interface is not sent to CPU, which ensures the device security. By default, NNI interfaces are enabled, which is convenient for carriers operate remotely.

- **Advanced QoS**

Each port of S6800A supports eight queues and the queue scheduling policies such as SP, RR, WRR, and WDRR; rich priority mappings including 802.1p→802.1p, 802.1p→COS, DSCP→802.1p, and DSCP→DSCP; 64Kbps-based port traffic rate restriction and carriers can limit the rate according to time segment; Tail Drop and sRED packet loss arithmetic. S6800A supports single-rate three-color mode (srTCM) and dual-rate three-color mode (trTCM) to meet the SLA requirements of carriers, including CIR, CBS and PIR.

- **Low-power consumption and lead-free ROHS design**

According to 10°C rule, the reliability and life of semiconductor chip are related with working temperature. The working temperature increases 10 °C and the reliability of semiconductor reduces a half, while the working temperature and power consumption are in direct proportion. The maximum power consumption of MyPower S6800A series 10G core routing switch is lower than 1800W, while the lower-power consumption design of S6800A makes the temperature of the board card semiconductor chip lower. Therefore, the low-power consumption design improves the use life and stable running of high-end devices, saves the running energy consumption of devices, and meets the green environmental protection requirements.

- **Advanced and practical structure**

S6800A switch adopts 19" standard chassis, which can be installed on standard rack. The optimized structure design has the features of anti shake, anti high temperature, anti electromagnetic radiation and easy to install/uninstall, which makes the device more stable and reliable. According to the low-power consumption design, it needs to adopt the design of vertical and horizontal slots flexibly.

Technical Specifications

Product	MyPower S6800 Series			
Shelf	SM6800-02A	SM6800-04A	SM6800-08A	SM6800-16A
Shelf configuration				
Structure	Rack/modular distributed structure design			
Slots of the device	4	8	12	20
Control slots	2	2	2	2
Service slots	2	4	8	16
Switching slots	Integrated	2	2	2
Console port	1			
Out-band electric interface	1			
Hot swap	The power supply, fan and board cards support hot-swap.			
Power supply redundancy	Supports power supply redundancy (N+M)			
Switching Card redundancy	Supports dual switching card redundancy			
Control Card redundancy	Supports dual control card redundancy			
Performance				
Switch capacity	512Gbps	1Tbps	2Tbps	3.2Tbps
IPv4 throughput	238Mbps	476Mpps	953Mpps	1905Mpps
IPv6 throughput	238Mbps	476Mpps	953Mpps	1905Mpps
Average non-fault time	>200,000 hours			
Standards & protocols				
L2 protocol	802.1X, VLAN, PVLAN, STP, RSTP, MSTP, port mirroring, IGMP Snooping, GVRP, Broadcast Storm Control, QINQ, VLAN Translation, AAA function, port binding, address filter, supports cross-board port/flow mirroring, supports RSPAN, IP-based ACL, MAC-based ACL, MAC+IP-based ACL, and Jumbo Frame			
50ms ring protection	Ethernet Intelligent Protection Switching(EIPS)			

IPv4 L3 protocol	Static route, RIPv1/v2, OSPF, BGP4, IGMP, PIM-SM, PIM-DM, MBGP, VRRP, equivalent route, policy route, Graceful Restart			
IPv6 L3 protocol	Supports ICMPv6, ICMPv6 redirection, DHCPv6, ACLv6, OSPFv3, RIPng, BGP4+, IS-ISv6, manual tunnel, ISATAP, 6to4 tunnel, IPv6 and IPv4 dual stack			
QoS	Supports Diff-serv/QoS, flow monitoring (CAR), SP, WRR, SP+WRR queue scheduling algorithm, 802.1P/DSCP/TOS, queue scheduling mechanism, Two rate Three color (trTcm)			
Upper layer application	DHCP/DHCP Option82/DHCP Relay/DHCP Snooping, IGMPv1/v2/v3, IGMPv1/v2/v3 Snooping, PIM-SM/PIM-DM/PIM-SSM, PIM-SMv6, PIM-DMv6, PIM-SSMv6			
MPLS deployment	MPLS L3 VPN, MPLS L2 VPN, MPLS TE, VPLS, H-VPLS			
Security mechanism	SSH, ACL flow filtering mechanism, ACL, ARP, SNMPv3, Radius user-graded login authentication, accesstable host access control, data log, IP address/VLAN ID/MAC address/port binding, packet filtering, packet filtering of application layer			
Multi-service application	NAT, firewall, VPN, IPFIX, flow analysis, content filtering			
System management	SHELL, WEB, TELNET, FTP, SNMP V1/V2/V3, network management software, third-party software, IPFIX (Netflow), NTP clock			
IEEE standards	IEEE 802.3 (10BASE-T) IEEE 802.3u (100BASE-T) IEEE 802.3z (1000BASE-X) IEEE 802.3ab (1000BASE-T) IEEE 802.3ae (10G BASE) IEEE 802.1ad (Q in Q) IEEE 802.3ad (Link Aggregation) IEEE 802.3x (Flow Control) IEEE 802.1d (STP) IEEE 802.1Q (Virtual LAN) IEEE 802.1w (RSTP) IEEE 802.1s (MSTP) IEEE 802.1p (COS priority) IEEE 802.1x (port authentication)			
Physical index				
Dimension (W×D×H)	444x600x110	444x600x310	444x600x577	444x600x977
Power supply				
Input voltage (AC)	100-240V, 50-60Hz			
Input voltage (DC)	-40~-60V			
Power consumption (MAX)	300W	1050W	1800W	3000W
Environment parameters				
Working temperature	0~55℃			
Working humidity	5-90% no-condensing			

Order Information

Model	Description
MyPower S6800A	
Shelf and power supply	
SM6800-02A-MF	SM6800-02A chassis, 4 slots, 2 service slots (including backplane and fan slots)
SM6800-04A-MF	SM6800-04A chassis, 8 slots, 4 service slots (including backplane and fan slots)
SM6800-08A-MF	SM6800-08A chassis, 12 slots, 8 service slots (including backplane and fan slots)
SM6800-16A-MF	SM6800-16A chassis, 20 slots, 16 service slots (including backplane and fan slots)
SM68A-MPUAH	Control module, supporting active/standby backup function (one is mandatory, 1+1 redundancy is optional) (for slot 2/4)
SM68A-MPUBH	Control module, supporting active/standby backup function (one is mandatory, 1+1 redundancy is optional) (for slot 8/16)
SM68A-SFUAH	Switching module; one is optional; 1+1 redundancy is optional (for slot 4/8)
SM68A-SFUBH	Switching module; one is optional; 1+1 redundancy is optional (for slot 16)
FAN-3B-01	2-slot chassis fan nodule
FAN-7A-01	4-slot chassis fan nodule
FAN-13A-01	8-slot chassis fan nodule
FAN-22A-01	16-slot chassis fan nodule (need 2 fans for SM6800-16A chassis)
AD600-1S007Z	600W AC power module
DD600-1S007Z	600W DC power module
SM6800A-SIUH	Liquid crystal display card
Ethernet service module for SM6800A	
SM68A-24GEFH	24-port 1000M optical interface module (SFP optical module needs to be configured)
SM68A-24GETH	24-port 1000M electric interface module
SM68A-24GET24GEFH	24-port 1000M electric interface module and 24-port 1000M optical interface module
SM68A-48GETH	48-port 1000M electric interface module
SM68A-48GEFH	48-port 1000M optical interface module (SFP optical module needs to be configured)
SM68A-2XGEFH	2-port 10G Ethernet interface board (XFP optical module needs to be configured)
SM68A-4XGEFH	4-port 10G Ethernet interface board (XFP optical module needs to be configured)
SM68A-8XGEFH	8-port 10G Ethernet interface board (XFP optical module needs to be configured)
Multi-service module for SM6800A	
SM68A-FWH	The firewall module, integrating the firewall, VPN, content filtering and NAT address converting functions
SM68A-NATH	The NAT processing card, providing multi-GE interface; supports NAT hardware converting function and flexible policy-routing function
SM68A-IPSH	IPS (Intrusion Prevention System) module
SM68A-NTAH	Network flow analysis module

Common service module	
SFP-M1-L24P8	1.25G multi-mode optical module (550m transmission distance, LC interface, PECL level, 850nm wavelength)
SFP-S2-L24P3	1.25G single-mode optical module (20km transmission distance, LC interface, PECL level, 1310nm wavelength)
SFP-S4-L24P5	1.25G single-mode optical module (40km transmission distance, LC interface, PECL level, 1550nm wavelength)
SFP-GET-I001	1000M SFP interface card module, RJ-45 interface
XFP-M1-L192P8-I001	10G XFP multi-mode fiber interface card module (850nm, MMF 32/85m, 2000MHz/km MMF 300m), LC interface
XFP-S1-L192P3-I001	10G XFP single-mode fiber interface card module (1310nm, SMF, 10km), LC interface
XFP-S4-L192P5-I001	10G XFP single-mode fiber interface card module (1550nm, SMF, 40km), LC interface
XFP-S7-L192P5-I001	10G XFP single-mode fiber interface card module (1550nm, SMF, 70km), LC interface