

HAN Networks

S7140 Series

New generation of Aggregation 10GE Switches



Product Description

S7140 is a new generation of aggregation 10GE switches introduced by HAN Networks Co., Ltd. It is designed for the IP MAN (metropolitan area network), large-scale campus and enterprise networks. This product adopts an advanced hardware architecture and provides high-performance L2/L3/L4 line-speed switching services. It further integrates multiple network services such as IPv6, MPLS VPN, and network security. With features like uninterrupted upgrades, uninterrupted forwarding, graceful restart, and redundant protection, it ensures the longest network's uninterrupted communication capability.

Product Characteristics

Innovative Virtual Cluster Switching Technique

- Innovative Virtual Switch System: The virtualization cluster switching technology can virtualize multiple

Datasheet

HAN S1000 Series

physical devices into a logical device, and its virtual system performance, reliability, and management have unparalleled advantages compared to independent physical devices.

- **High Performance:** VSS makes full use of each link in the physical devices, avoiding the blocking of links by spanning tree protocol in the traditional networking model, which makes best performance and investment protection.
- **High Reliability:** Based on the advanced distribution technology and efficient cross-physical device link aggregation function, the logic control plane, service control plane and service data plane are separated managed. Thus, the device can provide uninterrupted layer3 routing forwarding, avoiding service interruption due to a single point of failure. It highly improves the reliability of the virtual system.
- **Easy Management:** Single IP unique management of VSS, which greatly simplifies the management of devices and topology, and greatly improves the network management efficiency and reduces the operation cost.

Carrier-level High Reliability

- The key components of S7140 such as the power module support dual back-up, hot-swap, seamless switching in the downtime without manual intervention.
- Supports STP/RSTP/MSTP, VRRP protocol, Ethernet ring protection, dual master-slave uplink protection and LACP link aggregation.
- Supports ISSU (In-Service Software Upgrade).
- Supports BFD mechanism.
- Supports Ethernet OAM mechanism, 802.3ah and 802.1ag.
- High reliability (99.999%): MTTR of S7140 Series is 50ms, meeting the requirement of the carrier-level service.

Varied Service Characteristics

- Supports layer2 and layer3 multicast routing protocol, which enable the device can access to IPTV, HD video surveillance and HD video conference.
- Supports layer3 routing protocol and super-large routing table capacity, which enables the device is available in large campus networks, enterprise networks and industry networks.

Versatile IPv6 Solution

- Supports the IPv6 protocol suite, IPv6 neighbor discovery, ICMPv6, path MTU discovery, DHCPv6, etc.
- Supports Ping, Traceroute, Telnet, SSH, ACL based on IPv6.
- Supports MLD, MLD Snooping, IPv6 static routing, RIPng, OSPFv3 and BGP4+, etc.
- Supports IPv6 tunnel: manual tunnel, automatic tunnel, GRE tunnel, 6to4 tunnel, ISATAP.
- Supports IPv4 transiting to IPv6: IPv6 manual tunnel, automatic tunnel, 6 to 4 tunnel, ISATAP tunnel.

Complete Security Mechanism

- **Equipment-Level Security:** The advanced hardware infrastructure design realizes the level-based packet schedule and packet protection, prevents DoS-/TCP-related SYN Flood, UDP Flood, Broadcast Storm or large traffic attacks, and supports level-based command line protection, endowing different levels of users with different management permissions.
- **Security Authentication Mechanism:** IEEE 802.1x, Radius and BDTacacs+.
- **Enhanced Service Security Mechanism:** S3900 Series supports the plain-text or MD5 authentication of relevant routing protocol, URPF, deep inspection of hardware packet, control packet and data packet and

filtering technology.

Innovative Energy-saving Design

- Intelligent power management: Advanced power system architecture is designed for efficient power conversion. Dedicate power monitoring and slow-start functions could be helpful for real-time monitoring of the operating status of the whole machine, and intelligent adjustment of power consumption.
- Intelligent fan management system: The fan system supports automatic speed regulation, which efficiently slow the fan speed and mitigate the noise;
- Comply with IEEE 802.3az.

Product Specifications

Models	S7140-24S8G6X
Backplane	216Gbps
Forwarding	138Mpps
MAC Table	32K
Ports	24GE SFP, 8 GE RJ45, 6 10GE SFP+
Indicator	Power, System, Link/Active
Dimensions mm (W*D*H)	440*350*44
Power Supply	AC: 100V-240V, 50Hz/60Hz DC: 36V~72V
Environment	Operating: Temperature/Humidity: 0°C-50°C; 10%-90% non-condensing Storage: Temperature/Humidity: -20°C-70°C; 5%-95% non-condensing
Standards	IEEE 802.1 Working Group IEEE 802.3 Working Group IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3z Gigabit 1000BASE-SX/LX IEEE 802.3ab Gigabit 1000BASE-T IEEE 802.3ae 10Gb/s Ethernet IEEE 802.3x flow control and back pressure IEEE 802.3ad port trunk with LACP IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1p Class of Service IEEE 802.1Q VLAN tagging IEEE 802.1ad Q-in-Q IEEE 802.1X port authentication network control IEEE 802.1ab LLDP IEEE 802.3ah OAM IEEE 802.3af POE IEEE 802.3at POE+ IEEE 802.3az EEE(Energy Efficient Ethernet) RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP v1

Models	S7140-24S8G6X
	RFC 2236 IGMP v2 RFC 3376 IGMP v3 RFC 2710 MLD v1 RFC 2328 OSPF v2 RFC 1058 RIP v1 RFC 2453 RIP v2
MAC switching	Static configuration and dynamic MAC learning(32K) MAC browsing and removal Configurable aging time of the MAC address Limited number of learnable MAC addresses MAC filtration Black-hole MAC list
Jumbo frame	9K
VLAN	4K VLAN IDs, 4094 active VLAN, 1K SVI GVRP 1:1 and N:1 VLAN Mapping QinQ and selective QinQ Private VLAN Voice-VLAN
STP	802.1d STP, 802.1w RSTP, 802.1s MSTP BPDU protection, root protection and ring protection L2PT for BPDU
Multicast	IGMP v1/v2c/v3(1024 groups) IGMP Snooping IGMP Fast Leave Multicast group policy and multicast number limit Multicast filtering MVR Support for transparent passing of multicast traffic without IGMP snooping in certain port and VLAN PIM-DM/SM/SSM
IPv4	Static routing, RIP v1/v2, OSPF, BGP Policy Based Routing(PBR) ECMP BFD for static routing, RIP, OSPF, BGP
IPv6	IPv4/v6 dual stack ICMPv6, DHCPv6, ACLv6 and IPv6 Telnet IPv6 neighbor discovery Path MTU discovery MLD V1 MLD snooping

Models	S7140-24S8G6X
	IPv6 Static Routing, RIPng, OSPFv3, BGP4+ Manual tunnel, ISATAP tunnel, 6-to-4 tunnel
DHCP	DHCP Server DHCP Client DHCP Relay DHCP Snooping
MPLS VPN	MCE
QoS	Traffic classification of port/L2~4 protocol headers/VLAN/CoS/DSCP CAR traffic control 802.1P/DSCP priority mapping and remark Multiple queuing algorithms such as SP, WRR or SP+WRR Tail-Drop, WRED Traffic supervision and traffic shaping 8 queues per port
Security features	DDoS attack prevention, TCP-SYN/UDP/ARP Flood attack prevention IEEE 802.1x authentication, multiple-user authentication, guest vlan URPF L2~L4 ACL(2300 IPv4 FP, 1100 IPv6 FP) Anti-DOS/IP spoofing/TCP/ping/SYN/ICMP flood attacks Broadcast/multicast/unknown-unicast storm-control Port isolation Port Security, IP+MAC+port binding DHCP Snooping, DHCP Option 82 DAI(Dynamic ARP Inspection) IPSG(IP Source Guard) IEEE 802.1x certification AAA Radius, TACACS+ Multiple user privileges
Reliability	Power 1+1 backup 802.3ad Static/LACP link aggregation, 128 groups, ups to 8 ports in one group EAPS G.8032 ERPS VRRP GR for OSPF and BGP BFD for OSPF and BGP ISSU BVSS virtual stacking system
Management	CLI: Console, Telnet, SSHv1/2 Web-GUI: HTTP, HTTPS SNMP v1/v2/v3, RMON, SNMP alarm/inform/traps

Models	S7140-24S8G6X
	Upload and download of FTP/TFTP/SFTP files Debugging Syslog for alarm/notification/command/debug NTP SPAN, RSPAN (1:1 and N:1 mirror) LLDP, LLDP-MED sFLOW ZTP (Zero Touch Provisioning) Optical DDM Ethernet cable diagnosis 802.3ah, 802.1ag
Energy saving	IEEE 802.3az

Commercial references

Model	Description
S7140-24S8G6X	Ethernet routing switch with 32 GE and 6 10GE ports (1 RJ45 console port, 24 100/1000M SFP ports, 8 GE RJ45 ports, 6 10GE/GE SFP+ ports; 2 power slots with 1 hot-swap AC220V power supply; the cooling fan, 1U, standard 19-inch rack-mounted installation)
PWR-75-AC	Hot-swap AC Power (Max Power 75W, AC 100~240V input)
PWR-75-DC	Hot-swap DC Power (Max Power 75W, DC 36~72V input)

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