



SNS-MRS3350-S4C Switch

Gigabit Ethernet Virtual IP Stackable Layer 3 Switch 50 ports; 44 ports 10/100/1000BASE-T (RJ-45), 4 Combo Gigabit - 1000FX SFP or built-in RJ45 10/100/1000BASE-T and 2 optional modules for 10G XFP uplink with IPv6 Routing features.



SNS-MRS3350-S4C Product Overview

SNS-MRS3350-S4C switch is intelligent, multilayer and high performance Enterprise switch, designed for widespread applications such as education, government and large/medium enterprise networks. The SNS-MRS3350-S4C switch provides solid structure of enhanced security, quality of service (QoS), high availability and exceptional performance. The robust Layer 3 foundation, with enhanced security and rich features enabling high performance, high reliability and high availability for optical L3 Ethernet communications. 1G & 10G Ethernet L3 Gigabit Ethernet, interface flexibility with hardware forwarding, wire-speed performance and ASIC based ACL policy, ensure Enterprise and Internet Service Provider requirements.

SNS-MRS3350-S4C switch meet the requirements of 1G & 10G wire-speed forwarding and looking up table items. The embedded table items have strong scalability and can be deployed to simultaneously look up ACL, QoS and IPv6 items and realize multiple looking-up chains among user, service and specific protocol stacks. Through fast table-lookup technology, FPGA logic analysis and ASIC-based high-speed forwarding, SNS-MRS3350-S4C switch router is able to finish learning and converging of thousand BGP routes in seconds.

With hardware based IP routing, SNS-MRS3350-S4C switch delivers flexibility routing protocol features along with practical propriety extensions allow easier deployment of network services.

Routing protocol such and RIP and OSPF provides dynamic routing by exchanging routing information with other L3 switches or routers. SNS-MRS3350-S4C switch is a safe investment when future protocols and features need to be deployed. SNS-MRS3350-S4C switch embody advanced networking solutions and provide high availability and multiple services over IP backbone networks. Using advanced IP stacking of up to 24 switches into a single manageable unit. SNS-MRS3350-S4C provides widespread L2/3 features such as Private VLAN, IEEE 802.3ad (LACP) Link aggregation, L2/4 QoS features include 802.1p and DiffServ, port-based 802.1x, Access Control Lists, SSH security features, rate-limiting, WRR, strict scheduling, Unique SMTP function to send alerts to the administrator's email box. The SNS-MRS3350-S4C offers multiple security algorithms such as TACACS+, 802.1x, Port Security, Web management Encryption, RADIUS, Web management Encryption. The SNS-MRS3350-S4C offers variety of IPv6 features include IPv6 ACLs, IPv6 QoS, IPv6 Policy-maps, IPv6 Management and L3 protocols such as RIP, Static routing protocol, OSPF and BGP



Key Feature Highlights:

- Wire-speed and line-rate performance on all ports.
- Auto MDI/MDIX and Auto-sensing on all ports
- Four Combo ports -1000FX SFP or RJ45 10/100/1000T
- Two expansion optional module for 10G XFP and two 10G stacking ports.
- Enhanced Management features include WEB Management, Standard CLI, interface, SNMP, RMON, Telnet, Access control list, Standard CLI interface, SNMP, Syslog, SMTP (Logging to eMail) and IPv6 Management
- Full Layer 3 features including:
 - Border Gateway Protocol (BGP),
 - OSPF routing
 - RIP I and RIP II
 - IP Multicast Routing: IGMPv1/v2/v3, DVMRP, PIM-DM/SM
 - IP Redundancy - VRRP supported
 - IPv4/6 routing at wire speed
 - IPv4/6 routing/multicast/neighbor discovery/ICMPv6
 - ARP
 - Supernetting (CIDR)
 - Up to 7K IP address entries
 - DHCP/BOOTP relay
 - DHCP server /client
 - Multi-netting
- Full Layer 2 features including:
 - Eight hardware queues per port to enable comprehensive L2/4 QOS: Rate Limiting TCP/UDP, Priority Queue Scheduling, Priority Queue Scheduling,
 - Port-base VLAN, Protocol-based VLAN (802.1v), Q-in-Q,
 - Internet Group Management Protocol (IGMP) Snooping
 - Spanning Tree IEEE 802.1d and 802.1s Multiple Spanning Tree Protocol.
- Link aggregation 802.3ad, Traffic Load Balancing and 802.1x for port security.
- Enhanced Security - Port Security, IEEE 802.1x port-based, powerful, ACL, Security Shell and Secure Sockets Layer encrypt network management information via Telnet and web.
- Support for jumbo frames of up to 9,000 bytes ideal for high-end server connectivity and network attached file servers.

High Performance and architecture

The SNS-MRS3350-S4C switch provides wire-speed switching fabric capacity of 192 Gbps, on all gigabit ports, allowing users to take full advantage of existing high-performance, gigabit integrated Servers, by significantly improving the responsiveness of applications and file transfer times. The SNS-MRS3350-S4C is providing two 10 Gigabit Ethernet ports with flexible uplink, interface. The SNS-MRS3350-S4C offers variety of IPv6 features include IPv6 ACLs, IPv6 QoS, IPv6 Policy-maps, IPv6 Management and L3 protocols such as RIP, Static routing protocol, OSPF and BGP. The robust Layer 3 foundation, with enhanced security and rich features enabling high performance, high reliability and high availability for optical L3 Ethernet communications. 1G & 10G Ethernet L3 Gigabit Ethernet, interface flexibility with hardware forwarding, wire-speed performance and ASIC based ACL policy, ensure Enterprise and Internet Service Provider requirements. Through fast table-lookup technology, FPGA logic analysis and ASIC-based high-speed forwarding, SNS-MRS3350-S4C switch router is able to finish learning and converging of thousand BGP routes in seconds.



Enhanced Security Features

The SNS-MRS3350-S4C switch provides enhanced security by using multiple mechanisms to protect network. Port Security ensures access to switch ports based on MAC address limits the total number of devices from using a switch port and protects against attacks. Security Shell (SSH) encrypt network management information via Telnet and web, providing secure network management. Terminal Access Controller Access Control System (TACACS+) or Remote Access Dial-In User Service (RADIUS) Authentication enables centralized control of the switch and restricts unauthorized users from altering the configuration of the switch. IEEE 802.1x port-based ensures all users are authorized before being granted access to the network. User authentication is carried out using any standard-based RADIUS server. The SNS-MRS3350-S4C switch offers Private VLAN isolated edge ports to ensure user privacy.

Comprehensive QOS and Rate Limiting

Eight hardware queues per port to enable comprehensive L2/4 QOS: Rate Limiting TCP/UDP, Priority Queue Scheduling and Priority Queue Scheduling of up to eight traffic types. Traffic is prioritized according to 802.1p and DSCP, giving optimal performance to real-time applications such as voice and video. Asymmetric bidirectional rate-limiting, per port or per traffic class, preserves network bandwidth and allowing maximum control of network resources.

Network Availability

With IEEE 802.1s Multiple Spanning Tree Protocol and IEEE 802.1d Spanning Tree Protocol provides a loop-free network and redundant links to the core network with rapid convergence, to ensure faster recovery from failed links, enhancing overall network stability and reliability. IEEE 802.3ad Link Aggregation Control Protocol (LACP) increases bandwidth by automatically aggregating several physical links together as a logical trunk and providing load balancing and fault tolerance for uplink connections. IGMP snooping prevents flooding of IP multicast traffic and limits bandwidth intensive video traffic to only the subscribers. Broadcast Storm Control prevents faulty end stations from degrading overall system performance.

Complete variety of optical links Using SFP/XFP

The SNS-MRS3350-S4C switch provides complete variety of optical links using 1000FX SFP and 10G XFP for both single mode and multi mode SFP. The SNS-MRS3350-S4C is ideally for applications where security and reliability required. Using the 10G XFP expansions the SNS-MRS3350-S4C offers flexibility and unlimited connectivity to the backbone.

The switch uses SFP/XFP transceivers for connections, providing the flexibility of running any mix of 100BASE-FX /1000BASE-FX and 10G multimode fiber up to 1.2 miles or single-mode fiber up to 120Km, respectively for cost-effective enterprise network solutions.

10G expansion interface SNS-MR10G-XFP





Comprehensive Management

The SNS-MRS3350-S4C switch with Industry standard Command Line Interface (CLI) via Telnet or console port provides a common user interface and command set for users to manipulate the switch. Embedded user friendly web interface helps users quickly and simply configure switches. The switch can be managed and monitored using SNMP and Four groups of RMON for traffic and analysis. When upgrading firmware or fine tuning configuration, the dual software images and multiple configuration files can be used for backup. TFTP can be used to backup or restore firmware and configuration files.

Virtual IP Stacking Architecture

The new generation virtual IP stacking allows connecting up to 24 units of SNS-MRS3350-S4C or up to 1248 ports into a single entity with single IP address. By using IP clustering and communicate directly with the commander switch, you could manage the remote side from the management station via single IP address.

Feature Summary

20 10/100/1000BASE-T (RJ-45)
4 Combo 1000FX SFP or RJ45 10/100/1000BASE-T
2 10GBASE expansion module slots for XFP transceivers
Two 10G slots for stacking
1 RJ-45 console port

L2 Features

Auto- MDI/MDIX on all 10/100Base-TX ports

8K MAC address entries

Flow Control:

- IEEE 802.3x for full duplex mode
- Back-Pressure for half duplex mode

Spanning Tree Protocol:

- IEEE 802.1D Spanning Tree Protocol (STP)
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)

VLANs:

- Supports 4k IEEE 802.1Q VLANs
- Port-based VLANs
- IEEE 802.1v Protocol-based VLANs
- Private VLAN
- Voice VLAN
- Q-in-Q

Link Aggregation:

- Static Trunk
- IEEE 802.3ad Link Aggregation Control Protocol
- Trunk groups: 8, Trunk links: 2~8

IGMP Snooping:

- IGMP v1/v2 snooping
- IGMP Queried
- IGMP Filtering

DHCP Dynamic provision

Supports jumbo frames up to 9KB



Basic L3 protocols

- 2K IP Address entries
- 512 entries
- Multi-netting, Super-netting (CIDR)
- Arp
- Policy based routing
- DHCP/BootP relay, DHCP server
- IPv6 hardware IP routing
- DVMRP, PIM-DM , PIM-SM
- VRRP
- OSPF
- BGP routing up to 64K entries
- 64 static routes
- RIPv1, RIPv2, RIPv6
- Up to 256 IP interface
- Provides Multi-netting

QoS Features

Priority Queues: 8 per port
Traffic classification based on IEEE 802.1p CoS, IP Precedence, DSCP,
TCP/UDP port number, Access Control List, Marking
DiffServ
Port Rate Limiting

Security

Supports IEEE 802.1X port based
port security
RADIUS authentication
TACACS+
Access Control List
SSH/Secure Telnet

Management

Switch Management:

- CLI via console port or Telnet
- WEB management
- SNMP v1, v2c, v3

Firmware & Configuration:

- Dual firmware images
- Firmware upgrade via TFTP server
- Multiple configuration files
- DHCP Snooping
- DHCP Option 82
- Configuration file upload/download via TFTP server

Supports RMON (groups 1, 2, 3 and 9)
Supports SNMP
Event/Error Log/Syslog
sFlow
Supports BOOTP, DHCP for IP address assignment
SNMP/HTTP/Telnet/SNTP/RADIUS/TFTP/R emote Ping



IEEE Standards

IEEE 802.3

Ethernet, Fast Ethernet, Gigabit Ethernet

Full duplex flow control

IEEE 802.3ae 10 Gigabit Ethernet

IEEE 802.1D Spanning Tree Protocol

IEEE 802.1s Multiple Spanning Tree Protocol

IEEE 802.1Q Virtual LAN

IPv6 Features

- IPv6 address type
 - Uncast
 - Multicast
- ICMPv6
- ICMP Path MTU discovery
- SNMP over IPv6
- Datasheet
- HTTP over IPv6
- SSH over IPv6
- IPv6 Telnet
- IPv6 DNS resolver
- IPv6 Radius+ support
- IPv6 syslog support
- IPv6 SNTP support
- IPv6 SMTP support
- IPv6 TFTP support
- Remote IPv6 Ping
- IPv6 DSCP remapping CoS

Mechanical

Dimensions (H x W x D): 4.3 x 44 x 33 cm (1RU)

LED Indicators: Port, Uplink, System, Diagnostic

Safety

CSA/NRTL (UL1950, CSA 22.2.9.50)

TUV/GS (EN60950)

Electromagnetic Compatibility

CE Mark

FCC Class A

VCCI Class A

Environmental Specifications

Temperature:

- IEC 68-2-14
- 0c to 50c (Standard Operating)
- -40c to 70c (Non-Operating)

Humidity: 10% to 90% (Non-condensing)

Vibration: IEC 68-2-36, IEC 68-2-6

Shock: IEC 68-2-29

Drop: IEC 68-2-32



Ordering Information

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* Future specification

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