DATASHEET

SNR-S300X-24FQ

L3 Managed Switch

SNR-S300X-24FQ is a stackable next-generation 10/40G switch. The switch has an advanced hardware architecture and software, wide L2 and L3 functionality and a unique combination of interfaces. SNR-S300X-24FQ is perfect for building high-load networks based on it.

Main features:

- Dynamic routing OSPF, BGP, PIM
- 16K IPv4 routes
- 16K ARP
- 24x 1/10GE SFP+
- 2x 40GbE QSFP+
- 32K MAC
- Power supply backup
- Powerful features for managing quality of service (QoS)
- Stacking support

Interfaces

The SNR-S300X-24FQ switch is equipped with 10GbE SFP+, 40GbE QSFP+ interfaces, and 10/100/1000Base-T ports. The combination of interfaces makes it possible to use SNR-S300X-24FQ for a wide range of applications.

Model	10/100/1000 Base-T	1/10G SFP+	40G QSFP+
SNR-S300X-24FQ	8	24	2

High performance

The SNR-S2990X-24FQ series switch supports commutation and routing simultaneously at full speed at all ports.

Model	Switching Capacity	Forwarding Rate	MAC
SNR-S300X-24FQ	656 Gbps	488 Mpps	32K

L3 features

The SNR-S300X-24FQ switch supports IPv4/IPv6 hardware routing. Support for dynamic routing protocols (RIP, OSPF, BGP), multicast packet routing (PIM, MSDP), Policy-Based routing (PBR) and ECMP functionality allows building high performance multiservice L3 networks based on the SNR-S300X-24FQ switch.

Model	L3 Interfaces	Routing Table	ARP Table
SNR-S300X-24FQ	1K	16K	16K

Multicast management

The SNR-S300X-24FQ Switch has all the necessary functionality for multicast control on Layer 2: IGMP Snooping, MVR, IGMP packets filtering. On Layer 3 - routing of multicast traffic using the PIM-SM, PIM-DM, MSDP protocols. This allows building scalable networks to provide high-quality Triple Play services.

Quality of Service (QoS)

The Support for 8 hardware queues per port allows to create flexible service policies for different types of traffic, thus ensuring high quality of sensitive services under high load conditions. Traffic can be classified by field values in L2-L4 headers, including CoS, DSCP, VLAN ID, IP/MAC addresses, and TCP/UDP ports.

Security

The SNR-S300X-24FQ switch provides a wide range of security features for both service providers and enterprise networks. Hardware Access Control Lists (ACLs) can filter traffic by L2-L4 header fields without loss of performance.

Model	Multicast Group	Queues per Port	ACL
SNR-S300X-24FQ	4K	8	1K

Resilience

For organizing resilient networks, support for standard protocols STP/RSTP/MSTP as well as ERPS (G.8032) including ERPS + CFM is implemented. Link aggregation functionality using LACP or static aggregation allows combining up to 8 ports into one logical interface, increasing the bandwidth ability and resilience at the data link level.

Stacking support

VSF protocol allows stacking up to 4 physical SNR-S300X-24FQ switches into a single logical device, thereby simplifying configurating and increasing network reliability. Stacking is performed through standard interfaces and does not require the purchase of additional cards.

Dimensions and power supply

The SNR-S300X-24FQ switch is equipped with an RPS-slot for DC power supply connection in the wide voltage range that allows to organize power supply backup. The SNR-S300X-24FQ-2AC modification has 2 build-in AC power units.

Model	Dimension	Weight (brutto)	Power Consumption	Cooling	Power Supply
SNR-S300X-24FQ	440 x 44 x 320 mm	5,65 kg	85 Watt	Active	100-240AC, 36-72V DC+
SNR-S300X-24FQ-2AC	440 x 44 x 320 mm	5,85 kg	85 Watt	Active	100-240AC, 100-240AC

Operational convenience

The SNR-S300X-24FQ switch work under the control SNR system NOS (Networking Operating System) with the typical syntax CLI and SNMP MIB for all SNR switches. The system supports all the necessary functionality of the Enterprise/ISP level for building modern data networks and has extensive management and monitoring capabilities via CLI, Web and SNMP.

Technical Brief:

Switching type
- Store-and-Forward

MAC address table
- 32K entries

MAC address table features
- Limiting max number MAC addresses on a port, VLAN
- Static MAC addresses
- MAC-notification
- Disabling MAC address learning on a port, VLAN
- Blackhole MAC

Flow Control
- 802.3x Flow Control
- HOL

Jumbo frame
- 16 Kbytes

Flash memory size
- 32 + 128 Mbytes

RAM size
- 512 Mbytes

QinQ
- Port-Based / Selective QinQ

Ring Protection
- ERPS ITU-T G.8032
- MRPP
- Fast Link
- ULPP
- ULSM

Spanning Tree
- 802.1D STP
- 802.1W RSTP
- 802.1S MSTP (32 Instances)
- Root/BPDU Guard
- BPDU Tunnel

Loopback Detection
- Per-port
- Per-port-per-vlan
- Action shutdown/block

Port Aggregation
- LACP 802.3ad / 802.1ax
- Up to 128 groups per switch / up to 8 ports in group
- Load balance src/dst MAC, src/dst IP, dst-src-MAC/IP, dst-src-MAC-IP, enhance-profile

Traffic Mirroring
- SPAN, RSPAN, ERSPAN
- 4 groups
- One-to-one / Many-to-one
- Flow-based (ACL)
- Remote VLAN
- Reflector Port

VLAN
- IEEE 802.1Q , 4094 VLAN
- Port-based VLAN
- Private VLAN
- Protocol VLAN
- Voice/MAC VLAN
- Multicast VLAN
- Super VLAN
- VLAN Trunking
- VLAN Translation
- GVRP

Multicast
- 4K IGMP groups
- IGMP v1/v2/v3 Snooping
- IGMP Fast Leave
- IGMP Snooping Immediately Leave
- IGMP Snooping Querier
- Multicast VLAN Registration
- Multicast Src/Dst Control
- Limiting the maximum number of subscriptions
- Illegal source detection
- Multicast policy
- Multicast Filter
- IGMP Snooping RADIUS Authentication
- MLD v1/v2 Snooping, MLD Snooping Immediately Leave
- MLD Snooping Querier

Security

- SSH v1/v2
- SSL v1/v2/v3
- MAC binding
- MAC filter
- Limiting the number of MAC addresses on a port
- Limiting Broadcast/Multicast/ Unicast packets on a port by Kbps
- Access Management (IP-MAC-Port Binding)
- Port Security
- Port Isolation
- ARP Guard
- ARP Binding
- ARP Limit
- Anti-ARP-Scan
- Dynamic ARP inspection (DAI)
- RA Snooping
- ND Snooping
- SAVI
- CPU protection
- IEEE 802.3az (Energy Efficient Ethernet),
- CE, RoHS
- CB, cUL, LVD

DHCP

- IPv4/IPv6 DHCP Client/Relay
- Option 82, Option 37/38
- IPv4/IPv6 DHCP Snooping/ Server
- DHCP User Control

QoS

- 8 queues per port
- Strict Priority, WDRR, Strict+WDRR
- Bandwidth Control
- Flow Redirect
- Traffic classification per port, ACL (L2-L4), VLAN ID, CoS, ToS, DSCP, IPv6 Flow Label
- Per port / VLAN policing
- Remarking DSCP, CoS/802.1p, Precedence, ToS

Stacking

- Stacking via standard interfaces
- Up to 4 switches in the stack

ACL

- 1K ACL
- Per port / VLAN
- Filtering based on: switch port, VLAN ID, 802.1p priority, MAC address, EtherType, IPv4 / IPv6 address, IPv6 traffic class, IPv6 flow label, ToS, DSCP, protocol type, TCP / UDP port number, CPU Interface Filtering
- Time Range ACL
- Userdefined ACL
- ACL statistics

Management and monitoring

- RADIUS, TACACS+
- 802.1x (host/port based access control, Dynamic VLAN, Guest VLAN, Auto VLAN)
- MAC Authentication Bypass
- Up to 15 levels of user privileges
- Passing privilege levels via RADIUS/TACACS+
- Xmodem/TFTP/FTP, CLI, Telnet, Console
- Web/SSL, SSH (IPv4/IPv6)
- SNMPv1/v2c/v3, SNMP Traps, Public & Private MIB interface
- RMON 1,2,3,9
- Bootp/DHCP Client
- Autoprovisioning
- SNTP/NTP (IPv4/IPv6)
- PPPoE Intermediate agent
- Debug comands
- Password recovery
- Password encryption
- Backup and restore settings
- Ping, Traceroute
- Syslog (IPv4/IPv6)
- Dual IMG, Multiple Configuration Files
- Port/CPU Mirror, RSPAN, ERSPAN
- OAM, Dying GASP, VCT, DDM
- Multiple IP Interface
- ULDP (like Cisco UDLD), LLDP/ LLDP MED
- Management of indication

ECMP

- Up to 32 equal routes

Redundancy Protocols

- VRRP

Multicast Routing

- IGMP proxy
- DVMRP
- PIM-DM / PIM-SM / PIM-SSM
- Anycast RP
- MSDP

Routing

- 16K routes
- Static routing
- Policy-Based routing (PBR)
- RIPv1/v2
- OSPFv2/v3
- BGPv4+

Signaling Protocols

- BFD

Tunneling

- GRE

Routing IPv6

- Static
- IPv6 PBR
- RIPng
- OSPFv3
- BGPv4+

IPv6

- ICMPv6; ND

IPv6 Tunneling

- GRE
- 6to4
- ISATAP

Logging

- RAM logging
- Flash logging
- Logging to Syslog server
- Configuring the logging level
- Logging executed command

USB Support

- USB 2.0 - port

Humidity

- 5%-95%, no condensation

Operating temperature

- 0C ~ 50C

Storage temperature

- -40C ~ 70C

Surge protection

- Up to 4 kV

MBTF

- >800000 hours

Ordering information

Model	Description
SNR-S300X-24FQ	L3 Managed Switch, 8 ports 10/100/1000Base-T, 24 ports 1/10GE SFP+, 2 ports 40GE SFP+. Power 100-240V AC, 36-72V DC RPS.
SNR-S300X-24FQ-2AC	L3 Managed Switch, 8 ports 10/100/1000Base-T, 24 ports 1/10GE SFP+, 2 ports 40GE SFP+. Power 100-240V AC, 100-240V AC.

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