

# SNR-S2990X-24FQ

L2 Managed Switch



The SNR-S2990X-24FQ series is a new generation of 10/40G SNR switches with stacking support and power backup capability. This switch is a good decision for 10G channels aggregation at internet service providers networks and for switching between servers / storage systems in the data center.

## Main features:

- Nonblocking architecture
- 24x 1/10GE SFP+
- 2x 40GbE QSFP+
- 32K MAC
- Power supply backup
- Wide range of security features
- Powerful features for managing quality of service (QoS)
- Stacking via standard interfaces

## Interfaces

The SNR-S2990X-24FQ is equipped with 10GbE SFP+ and 40GbE QSFP+ interfaces.

Model	1/10G SFP+	40G QSFP+
SNR-S2990X-24FQ	24	2

## High performance

The SNR-S2990X-24FQ series switch supports commutation and routing simultaneously at full speed at all ports. The modern chipset allows to transfer traffic to the network core without any loss and with minimal network latency.

Model	Switching Capacity	Forwarding Rate	MAC
SNR-S2990X-24FQ	640 Gbps	488 Mpps	32K

## Multicast management

The SNR-S2990X-24FQ Switch have all the necessary functionality for multicast control on Layer 2: IGMP Snooping, MVR, IGMP packets filtering.

## 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-S2990X-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-S2990X-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-S2990X-24FQ switches into a single logical device, thereby simplifying configuring 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-S2990X-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-S2990X-24FQ-2AC modification has 2 build-in AC power units.

Model	Dimension	Weight (brutto)	Power Consumption	Cooling	Power Supply
SNR-S2990X-24FQ	440 x 44 x 320 mm	5,85 kg	85 Watt	Active	100-240AC, 36-72V DC+
SNR-S2990X-24FQ-2AC	440 x 44 x 320 mm	6,05 kg	85 Watt	Active	100-240AC, 100-240AC

## Operational convenience

The SNR-S2990X-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
- 4 groups
- One-to-one / Many-to-one
- Flow-based (ACL)
- Remote VLAN

### 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

- 4096 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 commands
- 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



### 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-S2990X-24FQ	L2 Managed Switch, 24 ports 1/10GE SFP+, 2 ports 40GE SFP+. Power 100-240V AC, 36-72V DC RPS.
SNR-S2990X-24FQ-2AC	L2 Managed Switch, 24 ports 1/10GE SFP+, 2 ports 40GE SFP+. Power 100-240V AC, 100-240V AC

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