

# SNR-S4650X-48FQ

L3 Managed Switch



L3/MPLS switch SNR-S4650X-48FQ - it is the latest generation of high-performance device designed for application at the level of aggregation and the core of the network or in the data center.

## Main features:

- Dynamic routing OSPF, BGP, PIM
- MPLS support, include L2 and L3 VPN
- VXLAN support
- 128K IPv4 routes
- 288K MAC
- 48x 1/10GE SFP+
- 6x 40GbE QSFP+
- Hot-swap PSU 1+1

## Switch Models

The SNR-S4650X-48FQ switch is equipped with 1/10GbE SFP+ and 40GbE QSFP+ interfaces.

Model	1/10G SFP+	40G QSFP+
SNR-S4650X-48FQ	48	6

## High performance

The SNR-S4650X-48FQ switch supports commutation and routing simultaneously at full speed at all ports. The switch has multiple hardware profiles for optimal resource allocation.

Model	Switching Capacity	Forwarding Rate	MAC *
SNR-S4650X-48FQ	1440 Gbps	1071 Mpps	96K (Standard)/ 32K (Route)/ 288K (Bridge)

## L3 features

The SNR-S4650X-48FQ 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-S4650X-48FQ switch.

Model	L3 Interfaces	Routing Table *	ARP Table *
SNR-S4650X-48FQ	1K	8K (Standard)/ 128K (Route)/ 8K (Bridge)	208K (Standard)/ 16K (Route)/ 16K (Bridge)

## MPLS

The SNR-S4650X-48FQ switch supports MPLS L3 VPN/MPLS L2 VPN(VPLS) and helps customer to construct more secure/extendable network. With max.255 VRF instances, SNR-S4650X-48FQ series could be deployed as P & PE devices, guarantees the variety of services.

Model	MPLS label	VRF Instance
SNR-S4650X-48FQ	96K	255

\* the number of entries depends on the mode (Unified Forwarding Table)

## Multicast management

The 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.

Model	Multicast Group	Queues per Port	ACL
SNR-S4650X-48FQ	8K	8	1024

## 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 two SNR-S4650X-48FQ switches into a single logical device, thereby simplifying configuration and increasing network reliability. Stacking does not require the purchase of additional cards.

## Dimensions and power supply

The SNR-S4650X-48FQ switch support modular 1+1 redundant power supplies and 4+1 redundant fans. Business won't be interrupted in case replacing power supplies and fans.

Model	Dimension	Power Consumption	Cooling	Power Supply
SNR-S4650X-48FQ	433 x 44 x 550 mm	305 Watt	Active	Modular PSU



## Operational convenience

S4650X series SNR switches 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

- 96K (Standard)/32K (Route) /288K (Bridge)

#### Switching Capacity

- 1440 Gbps

#### Jumbo frame

- 12K Kbytes

#### Flash memory size

- 8 Gbytes

#### RAM size

- 4 Gbytes

#### VLAN

- 4094 VLAN
- Port-based VLAN
- IEEE 802.1Q
- Private VLAN, Protocol VLAN
- Voice VLAN, MAC VLAN
- Port-Based, Selective QinQ
- N:1 Vlan Translation

#### Multicast

- IGMP v1/v2/v3 Snooping - 8K IGMP groups
- IGMP Fast Leave
- MVR
- MLD v1/v2 Snooping

#### Multicast Routing

- 4K routes
- IGMP proxy
- PIM-DM / PIM-SM / PIM-SSM
- Anycast RP
- MSDP

#### Spanning Tree

- 802.1D STP
- 802.1W RSTP
- 802.1S MSTP
- Root Guard
- BPDU Guard
- BPDU Forwarding

#### Port Aggregation

- 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

#### Ring Protection

- ERPS ITU-T G.8032
- Loopback Detection
- Fast Link

#### Arp table

- 208K (Standard) /16K (Route)/ 16K (Bridge)

#### Routing

- 8K (Standard)/128K (Route)/ 8K (Bridge) routes
- Static routing
- Policy-Based routing (PBR)
- RIPv1/v2
- OSPFv2/v3
- BGPv4+

#### Signaling Protocols

- BFD

#### Tunneling

- GRE

#### Redundancy Protocols

- VRRPv2

## ECMP

- Up to 32 equal routes

## MPLS

- MPLS, VRF, signaling LDP
- MPLS L3 VPN, MPLS L2 VPN, VPWS
- 96K MPLS labels
- 255 VRF

## Datacenter

- VXLAN

## Humidity

- 5%-95%, no condensation

## Operating temperature

- 0C ~ 50C

## Storage temperature

- -40C ~ 75C

## MTBF

- >800000 hours

## Power consumption

- 305 Watt

## ACL

- 1024 ACL
- IP ACL
- MAC ACL
- MAC-IP ACL
- User-Defined ACL
- Time Range ACL
- ACL for VLAN

## Security

- Storm Control
- Port Security
- Limiting the number of MAC addresses on a port
- Anti-ARP-Spoofing, Anti-ARP-Scan, ARP Binding
- IP+MAC+Port binding
- ND Snooping, RA Snooping
- SAVI
- DAI
- IEEE 802.1x
- IPv4/IPv6 RADIUS, TACACS+ AAA

## QoS

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

## Management and monitoring

- Xmodem/TFTP/FTP, CLI, Telnet, Console
- Web/SSL (IPv4/IPv6), SSH (IPv4/IPv6)
- SNMPv1/v2c/v3, SNMP Trap, Public & Private MIB interface
- RMON 1,2,3,9
- Ping, Trace Route
- Syslog (IPv4/IPv6)
- SNT/NT/PT (IPv4/IPv6)
- Dual IMG, Multiple Configuration Files
- Port Mirror, CPU Mirror, RSPAN, ERSPAN
- OAM, Dying GASP, VCT, DDM
- ULDP (like Cisco UDLD), LLDP/LLDP MED

## DHCP

- IPv4/IPv6 DHCP client
- IPv4/IPv6 DHCP Relay
- Option 82, Option 37/38
- IPv4/IPv6 DHCP Snooping
- IPv4/IPv6 DHCP server

## Stacking

- Stacking via QSFP+
- Stack link bandwidth up to 80 Gbps
- Up to 2 switches in a stack

## Ordering information

Model	Description
SNR-S4650X-48FQ	L3 Managed Ethernet switch, 48 x 1/10GE SFP+, 6 x QSFP+. Power: 2 slots for modular power supplies (pre-installed two PSU)

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SNR switch community  
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portal

Firmware and  
Documentation

