

Innovative Datacenter Switch

48 x 10GE SFP+ & 6 x 40GE QSFP+ Ports



High-density, datacenter optimized server switching.

The demand for bandwidth is ever increasing, requiring datacenters to continually enhance the density of their networking environments. The S7810-54QS switch is a datacenter-class 10GE/40GE switch product designed to meet customers' large capacity data switching needs with superior performance and unsurpassed reliability. By providing a high number of 10GE and 40GE ports in a single compact switch, the S7810-54QS makes automation and orchestration easier than ever, simplifying datacenter network infrastructure through its innovative architecture and extensive datacenter-ready features. With its low-latency, high-density ports, the S7810-54QS makes scale-out easy, giving datacenters unmatched flexibility to meet whatever demands the future may bring. Flexible, reliable, powerful – maximize your return on investment with the next-generation S7810-54QS.

Key applications

- High-density 10/40GE ToR server aggregation for high-performance datacenter environments.
- Enables cost-effective application of 10/40GE uplinks through small-scale implementation in Spine-Leaf networks.
- VXLAN/NVGRE capable hardware supporting virtual machine mobility.
- Extensive transition technologies for IPv4, IPv6, and dual stack management functions.
- Superior management and security through console and out-of-band interface options.
- High-speed Layer 2 deployment support to connect nonvirtualized infrastructure with hyper visor-based overlay networks.

Key features

- 48 x 10GE SFP+ & 6 x 40GE QSFP+ ports for downlinking and uplinking capability.
- Modular dual power supply and fan assembly with overcurrent, overvoltage, and overheating protection.
- Next-generation spine-leaf network architecture, enhancing capacity and optimizing scaling.
- CPU: Intel® Rangeley C2558 2.4G 4-Core.
- Specifically designed for utilization in high-performance datacenter environments.
- Hot and cold backup switching without system reboot or reconfiguration ensuring uninterrupted data processing and operation.

Specifications

Physical

- Compact full featured modular 10GE/40GE datacenter switch
- 1 Mini USB serial console port with mini-USB to RJ45 converter cable
- 1 10/100/1000 Base-T Ethernet for Out-of-Band management
- 1 USB 2.0 Type-A port

Processor Intel® Rangeley C2558 2.4G 4-Core

Memory DDR3 8GB w/ ECC SODIMM

Storage M.2 SSD 64GB

ASIC Broadcom BCM56854 (Trident 2)

Built-in Interfaces Total 10GE: 48

Total 40GE: 6

LED Power, system, link & activity, fan & PSU status

Chassis 1 RU, 440w x 44h x 406d mm
(17.32" x 1.73" x 15.98")

Weight (including 2 x PSUs & 4 x fans):
9.68 kg (21.34 lb)

Redundancy Two hot swappable power supplies with integrated fans and trays

Environmental

- Fresh air compliant to 45°C (113°F)
- Rack mounting kit

Power supply AC input: 100V-240V, 7-3.5A 60/50Hz
DC input: 240V, 2.75A (240Vdc China only)
Typical/Max power draw: 285/370 Watts

Max. operating Specs. Operating temperature: 0°C to 45°C (32°F to 113°F)
Operating humidity: 10% to 90% (RH), noncondensing

Max. non-operating Specs. Storage temperature: -40°C to 70°C (-40°F to 158°F)
Storage humidity: 5% to 95% (RH), non-condensing

Performance

Switching Capacity 1440Gbps

Packet throughput 1070Mpps

Regulatory compliance

EMC EN55032 Class A
EN61000-3-2/EN61000-3-3
EN55024
FCC P15B Class A
BSMI (CNS 13438) Class A
CCC (GB9254) Class A
RoHS: RoHS 6
UL

Safety IEC/EN 60950-1/A2
BSMI (CNS 14336-1)
CCC (GB4943)

S7810-54QS Views



S7810-54QS front view



S7810-54QS rear view

Supported Accessories

Transceiver 10GE, SR SFP+ | 10GE, LR SFP+
40GE, SR4 QSFP+ | 40GE, LR4 QSFP+

Cable types 10GE, SFP+ to SFP+, AOC | 10GE, SFP+ to SFP+, DAC
40GE, QSFP+ to QSFP+, AOC | 40GE, QSFP+ to QSFP+, DAC
40GE, MTP to 4 x LC optical breakout | 40GE, 4 x 10GE, QSFP+ to 4 x SFP+, DAC

Power supply types CRPS550W-AC-FTB, 550W AC/DC PSU, airflow from panel to rear side (front to rear)
CRPS550W-AC-BTF, 550W AC/DC PSU, airflow from rear to panel side (rear to front)

Fan types Fan normal airflow from panel to rear side
Fan reverse airflow from rear side to panel
Fan spare supports normal and reverse airflow operations

Software Specification

Aggregation Features

- 802.3ad with LACP
- Cisco EtherChannel
- Max number of groups: 64
- Max number of members per group: 32
- Unicast/Multicast traffic balance

VLAN

- IEEE 802.1Q
- Port-Based
- Private VLAN

Spanning Tree Protocol

- IEEE 802.1D
- IEEE 802.1w
- IEEE 802.1s
- Edge port
- Auto Edge
- BPDU Filter/Guard
- Loop Guard
- TCN Guard
- Root Guard

IGMP Snooping

- IGMP Snooping v1/v2/v3
- IGMP v1/v2 querier support
- IGMP Immediate Leave
- MLD Snooping

QoS Features

- 8 priority queues
- Scheduling
- WRR
- Strict priority
- Hybrid (WRR+Strict Priority)
- Port rate limit
- DiffServ
- COS 802.1p based COS
IP Precedence
IP DSCP base COS

Security

- HTTPS & SSL
- SSH 1.5/2.0
- DoS Control, MAC filter
- IP Source Guard
- Dynamic ARP inspection
- Control Plane Policy (CoPP)
- Static/Dynamic Port Security (MAC-based)
- DHCP snooping
- 802.1x
- ACL
- RADIUS
- TACACS+

Storm Control

- Broadcast
- Unknown Multicast
- DLF (unknown unicast)

IP Multicast

- Multicast groups
- IGMP v1/v2/v3
- MLD v1/v2
- DVMRP
- PIM-DM v4/v6
- PIM-SM v4/v6
- IGMP proxy

IPv6

- v4/v6 dual stack
- ICMPv6
- ICMPv6 redirect
- IPv6 Path MTU Discovery
- IPv6 Neighbor Discovery
- Stateless Auto-configuration
- DHCPv6
- SNMP
- SSH
- Telnet
- DNS Resolver
- RADIUS
- TACACS+
- Syslog
- SNMP
- TFTP
- Remote IPv6 Ping

Layer 3 Features

- Number of IP interface: 128
- Multi-netting / CIDR / 31 subnet support
- IP ARP
- Proxy ARP
- Local Proxy ARP
- IRDP
- Static route
- 48-way ECMP
- OSPF v2/v3
- BGP v4/v6
- VRRP
- Loopback
- Source IP Configuration
- Policy-based Routing (PBR)
- IPv6 Tunneling
- IPv6 Loopback
- DHCPv6 relay
- DHCPv6 server

Management

- CLI
- CLI filtering
- TELNET/SSH
- TFTP/XMODEM/FTP/SCP/SFTP
- software & configuration download/upload
- SNMP v1/v2c/v3
- RMON 1,2,3,9 groups
- BOOTP client/relay
- Event log
- DNS client
- Utility: Remote ping, traceroute
- SNMPv4
- LLDP
- 802.1AB
- 802.MED
- CDP
- UDLD
- sFlow v5
- Cable test
- Email alerting
- DHCP
- Port mirroring

SDN

- OpEn API
- OpenFlow v1.0/v1.3.1⁽¹⁾

Datacenter Features

- FIP Snooping
- Congestion Notification (CN)
- PFC
- DCBX for PFC (CIN/CEE v1.06/IEEE)
- Puppet/Chef
- MLAG
- VXLAN/NVGRE
- Neutron plug-ins for OpenStack

(1) It is supported in the feature firmware upgrade.