



SB7780

36-port Non-blocking Managed EDR 100Gb/s InfiniBand Router

SB7780 InfiniBand router enables a new level of scalability and isolation that is critical for the next generation of data-centers.

Scaling-Out Data Centers with Extended Data Rate (EDR) InfiniBand

Faster servers based on PCIe 3.0, combined with high-performance storage and applications that use increasingly complex computations, are causing data bandwidth requirements to spiral upward. As servers are deployed with next generation processors, High-Performance Computing (HPC) environments and Enterprise Data Centers (EDC) will need every last bit of bandwidth delivered with Mellanox's next generation of EDR InfiniBand high-speed smart systems.

Sustained Network Performance

SB7780 InfiniBand router is based on the Switch-IB™ switch ASIC and offers fully flexible 36 EDR 100Gb/s ports, which can be split among six different subnets. The InfiniBand router brings two major enhancements to the Mellanox switch portfolio:

1. Increases resiliency by segregating the data center's network into several subnets, with each subnet running its own subnet manager, effectively isolating each subnet from the others' availability or instability
2. Enables scaling of the fabric up to a virtually unlimited number of nodes

World-Class Design

The SB7780 is an elegant router design, created for performance, serviceability, energy savings and high-availability.

The SB7780 comes with two highly efficient, 80 gold+ and energy star certified, power supplies.

SB7780 router has best in class design to support low power consumption. ATIS weighted power consumption is 136W for a fully populated system with more power reduction if not all ports are used or fully utilized.

SB7780 has redundant power supplies (1+1) and fan draws (N+1) both with air shutters for achieving maximal thermal protection.

Management

SB7780's dual-core x86 CPU runs the same MLNX-OS® software package as Mellanox EDR/FDR products to deliver complete chassis management, to manage the firmware, power supplies, fans and ports.

SB7780 router can also be coupled with Mellanox's Unified Fabric Manager™ (UFM™) software for managing scale-out InfiniBand computing environments. UFM enables data center operators to efficiently provision, monitor and operate the modern data center fabric. UFM boosts application performance and ensures that the fabric is up and running at all times.

SwitchIB™



HIGHLIGHTS

BENEFITS

- Industry-leading switch platform in performance, power, and density
- Designed for next level of scale and resiliency
- Quick and easy setup and management
- Maximizes performance by removing fabric congestions
- Flexible port allocation to support up to six different InfiniBand subnets

KEY FEATURES

Performance

- 36 X EDR 100Gb/s ports in a 1U system
- 7Tb/s aggregate switch throughput
- Ultra-low switch latency
- 136W typical power consumption

Optimized Design

- 1+1 redundant & hot-swappable power
- N+1 redundant & hot-swappable fans
- 80 gold+ and energy star certified power supplies
- Dual-core x86 CPU

Advanced Design

- Compliant with IBTA 1.2.1 and 1.3

FEATURES

MELLANOX SB7780

- 19" rack mountable 1U chassis
- 36 QSFP28 non-blocking ports with aggregate data throughput up to 7 Tb/s (EDR)

ROUTER SPECIFICATIONS

- Compliant with IBTA 1.21 and 1.3
- 9 virtual lanes: 8 data + 1 management
- 256 to 4Kbyte MTU
- 4X48K entry linear forwarding database

MANAGEMENT PORTS

- 100/1000 Ethernet ports
- RS232 port over DB9
- USB port
- DHCP
- Familiar Industry Standard CLI
- Management over IPv6
- Management IP
- SNMP v1,v2,v3
- Web UI

FABRIC MANAGEMENT

- Unified Fabric Manager™ (UFM™) Agent

CONNECTORS AND CABLING

- QSFP28 connectors
- Passive copper or active fiber cables
- Optical modules

INDICATORS

- Per port status LED Link, Activity
- System status LEDs: System, fans, power supplies
- Port Error LED
- Unit ID LED

PHYSICAL CHARACTERISTICS

- Dimensions: 1.7" (43.6 mm) H x 16.85" (428mm) W x 27" (685.8mm) D
- Weight: 11kg (24.2 Lb)

POWER SUPPLY

- Dual redundant slots
- Hot plug operation
- Input range: 100 - 127 VAC, 200-240VAC
- Frequency: 50-60Hz, single phase AC, 4.5A, 2.9A

COOLING

- Front-to-rear or rear-to-front cooling option
- Hot-swappable fan unit

POWER CONSUMPTION

- Typical Power with Passive Cables (ATIS): 136W

COMPLIANCE

SAFETY

- CB
- cTUVus
- CE
- CU

EMC (EMISSIONS)

- CE
- FCC
- VCCI
- ICES
- RCM

OPERATING CONDITIONS

- Temperature:
 - Operating 0°C to 45°C
 - Non-Operating -40°C to 70°C
- Humidity:
 - Operating 10% to 85% non-condensing
 - Non-Operating 10% to 90% non-condensing
- Altitude: Operating -60 to 3200m

ACOUSTIC

- ISO 7779
- ETS 300 753

OTHERS

- RoHS-6 compliant
- Rack-mountable, 1U
- 1-year warranty

Ordering Part Number	Description
MSB7780-ES2F	SwitchIB™-based 36-port QSFP28 EDR 1U Managed InfiniBand router system with a non-blocking switching capacity of 7Tb/s. 2PS, Standard depth, P2C airflow, RoHS-6
MTEF-PSF-AC-A	460W AC Power Supply w/ P2C air flow
MTEF-PSR-AC-A	460W AC Power Supply w/ C2P air flow
MTEF-FANF-A	FAN MODULE W/ P2C air flow
MTEF-FANR-A	FAN MODULE W/ C2P air flow
LIC-Fabric-Inspector	Enhanced InfiniBand Diagnostics license

*P2C is connector side outlet, C2P is connector side inlet.



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