

# 1U DDR InfiniBand Switch



## The Ultimate InfiniBand Switch

The Flextronics 1U InfiniBand DDR Switch is based on Mellanox's InfiniScale III third generation InfiniBand DDR switch device. In a single chip, this device delivers an unmatched 960 Gb/sec of switching bandwidth, the highest performance in the industry. The switch supports multiple configurations including:

- Twenty-four 4X (20Gb/sec) InfiniBand ports
- Twelve 4X (20Gb/sec) InfiniBand ports with four 12X (60Gb/sec) InfiniBand ports

All configurations support non-blocking switching performance running at wire-speed with ultra-low latencies. The 1U DDR switch is optimized for building flexible, scalable, robust and reliable InfiniBand fabrics for the server, storage, embedded, enterprise data center and high performance computing (HPC) markets. Boasting industry-leading price/performance the 1U DDR switch is designed to create low cost, high performance clusters. Reliability and intelligent manageability features are included along with built-in Quality of Service (QoS), virtual lanes, and comprehensive redundancy that result in enterprise levels of operational performance and fault tolerance.

## Scalability

The 24-port 4X InfiniBand switch configuration can easily connect many nodes, or multiple switches together enabling virtually any cluster size. Whether the cluster is a few nodes or significantly larger, the switch meets growing cluster needs of the market today. In addition, the configuration using 12X InfiniBand ports supports 60Gb/s switch-to-switch links for easy expansion capabilities allowing database compute clusters to scale larger and run applications faster by just adding additional nodes. This switch architecture also has the ability to scale to meet the needs of the HPC computing market. When combined with larger switch systems the architecture supports low latency 2-stage clusters of over 1,500 nodes and 3-stage clusters well beyond 5,000 nodes.

### KEY FEATURES

- Modular 24-Port 4X or 12-Port 4X plus 4-ports 12X 1U InfiniBand Switch
- Non-Blocking Full-Wire-Speed
- Ultra Low Latency
- 960 Gigabits of Total Bandwidth
- Flexible InfiniBand Switch Supports Both 24 Ports at 20Gb/sec and 12 ports at 20Gb/sec plus 4 Ports at 60Gb/sec





## Management

The 1U DDR InfiniBand Switch features built-in Subnet Management Agent (SMA) and Performance Management Agents (PMA). These intelligent agents support sophisticated subnet management, fabric discovery and initialization, and quality of service. In addition, the performance management agent monitors fabric health and link and packet errors. Providing intelligence in every switch means that sophisticated management packages can detect and isolate potential problems before they occur. The 1U DDR InfiniBand Switch also fully supports multi-pathing and automatic path migration, which enables fault tolerance and failover, and provides for notification that a self-healing fabric event has occurred and maintenance may be required.

## Unprecedented Affordability

Thanks to the highly integrated InfiniScale III device, the 1U DDR InfiniBand Switch is designed and built from a single semiconductor device in a compact 1U form factor. Existing switches do not match this solution in price or performance. The switch is projected to cost less than existing 2 Gb/sec Fibre Channel and even some non-blocking 1 Gb/sec Ethernet switches in the market today. Other 10Gb/sec technologies, like 10GigE, do not even come close as they average more than 20 times the cost of InfiniBand switch ports.

## Enterprise Class Switch

The compact 1U chassis features port density, low power consumption and robustness that enterprise data centers demand. In addition to 24-20Gb/sec ports in just 1U, the switch includes the robustness of dual redundant hot swappable power supply modules and fan tray module. The switch also enables all the key RAS (Reliability, Availability and Serviceability) features of the InfiniBand architecture including: QoS, multi-cast, automatic node recognition, multipathing, automatic fail-over, virtual lanes, and more. Benefiting from the highly integrated single chip implementation and redundant sub-system components, this product offers a high reliability for improved up-time. With power requirement of less than 50 watts (with a single supply), the 1U DDR InfiniBand Switch delivers the lowest power per Gb/sec in the market.

## Applications

The 1U DDR InfiniBand Switch is ideal for the following markets:

- Enterprise Data Center Clusters - Clustered Databases, Application Servers, Storage, etc.
- High Performance Computing Clusters (HPCC) for Scientific, Automotive, Seismic, Medical Imaging, and other Numerically Intensive Applications.
- Embedded Applications - Communications, Telemetry, Avionics, Medical, Video, etc.

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## Key Features

- Support for both 20 and 60 Gb/sec Ports in Flexible Configurations
- 24-Ports at 20Gb/sec
- 12-Ports at 20Gb/sec plus 4-Port at 60Gb/sec
- 960 Gigabit of total bandwidth
- Ultra Low Latency Cut-Through Switching (less than 200 nanoseconds)
- Hot Swap Redundant Power Supplies and Fan Tray Module
- Mellanox InfiniScale III 3rd Generation Switching Device (single chip implementation)
- Chassis Management Software
- LED Status Indicators for InfiniBand Ports and Major Components

## Power Supply Features

- 120/220V 50/60 Hz input with hot swap controller
- Second power supply unit enables N+1 redundancy
- Dual AC power inputs

## Mechanical and Environmental Specifications

- Standard 19-Inch Rack Mount Chassis
- 1U (1.75 Inch) Height
- 15 Inches Deep
- Approximately 16 lbs
- Operating Temperature: 0°C to 55°C
- Air Flow Front to Rear (port side)
- Average power consumption ~ 50 Watts (per PSU)

## Advanced Management Configuration

- Advanced Management feature installed as factory option includes:
  - Embedded CPU with RS-232 console
  - RJ-45 10/100 Ethernet Port
  - Consult Factory for more details

## Ordering Part Numbers

- F-X430044: 24-Port 4X at 20Gb/sec
- F-X430048: 12-Port 4X at 20Gb/sec and 4-Port 12X at 60Gb/sec

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