

# Voltaire® Grid Switch™ ISR 9024

## High Performance, Low Latency InfiniBand Switching for Small-to-Medium-Sized Clusters and Grids

### Overview

The Voltaire Grid Switch ISR 9024 is a high performance, low latency, fully non-blocking switch for high performance computing (HPC) clusters and grids. Offering available bandwidth of up to 960 Gbps, the Grid Switch ISR 9024 is a cost-effective alternative to proprietary interconnect technologies. With twenty-four 20 or 10 Gbps ports in a 1U chassis, the standards-based Grid Switch ISR 9024 delivers high bandwidth and low latency at affordable pricing. Using the Grid Switch ISR 9024, you can build high performance clusters and grids that scale from several to tens of nodes.

### Leverage the Performance of InfiniBand

InfiniBand is an industry standard high performance interconnect for high performance computing clusters and enterprise grids. InfiniBand offers high speed 10-60 Gbps bandwidth and low latency capabilities that deliver impressive price/performance. It is the first high speed networking technology to enable low cost server clusters and grids to accomplish complex computing tasks at the same or greater speeds than expensive high-end servers.

### Flexible for Multiple Applications

To meet varying application needs, the Grid Switch ISR 9024 offers several options of port mixes including SDR 4X ports or DDR ports, with either copper or optical interfaces.

### High Performance Computing Clusters & Grids

The Grid Switch ISR 9024 is a fully non-blocking switch for configurations of up to 24 ports and serves as a cost-effective building block for FAT Tree topologies of tens of nodes for scientific, commercial HPC and enterprise grid applications. When combined with the Voltaire Grid Director ISR 9288 high port density switch, the Grid Switch ISR 9024 enables the formation of clusters scaling to thousand of nodes.

### High Availability

The Grid Switch ISR 9024 is built for mission-critical application deployment, featuring redundant, hot-swappable power supplies, as well as an optional hot-swappable fan unit. Benefiting from robust InfiniBand architecture, the Grid Switch ISR 9024 offers a true plug-and-play environment, allowing servers to be added without taking down the fabric.

### Comprehensive Management

The Grid Switch ISR 9024 provides comprehensive and powerful management capabilities through GridVision™ InfiniBand Fabric Management Software. The management capabilities are enabled in the switch independent of any external management platform and can be accessed via CLI, GUI or SNMP managers. GridVision delivers real-time proactive management by providing: aggregated fabric and resource views, access to a suite of fabric and switch diagnostics, the ability to manage fail-over on all levels, and provisioning of InfiniBand fabrics and the attached server, networking and storage resources.

### Voltaire Grid Backbone™ Family

Voltaire is the worldwide leader in grid backbone solutions for networked computing in the next generation data center. Voltaire's integrated Grid Backbone Family of multi-service switching solutions and network virtualization software delivers the highest performance, intelligent backbone for grid computing architectures. Leveraging the InfiniBand standard, Voltaire solutions offer improved performance, utilization and scalability across compute clusters, storage and IP networks.

- ▶ **10-20 Gbps performance for clusters and grids**
- ▶ **Ultra-low latency: under 140 nanoseconds**
- ▶ **Available bandwidth of up to 960 Gbps**
- ▶ **Built-in high availability**
- ▶ **Ideal for scientific, commercial HPC and enterprise applications**
- ▶ **Architected to provide high MTBF**
- ▶ **Powerful CPU to allow management of fabrics, as well as device management capabilities**



# TECHNICAL SPECIFICATIONS

## Voltaire Grid Switch ISR 9024

- 19-inch rack mountable chassis, 1U height

## InfiniBand Ports

- 24 DDR ports  
or
- 24 4X SDR ports
- Interconnect options: copper and/or fibre-optic, supporting media converter
- Indicators: physical and logical status
- All ports are located on the back panel

## Switch Specifications

- Aggregate Data Throughput: 960 Gbps (DDR) or 480 Gbps (SDR)
- Port-to-port Latency: 140 nanoseconds (max.)
- Linear Forwarding Table: 48K entries
- Multicast Table Size: 1K entries
- Data Virtual Lanes: 8
- Management Virtual Lanes: 1
- MTU: 4096 Bytes (max)

## Management

- Remote InfiniBand baseboard management
- Optional onboard processor runs GridVision™ fabric and device management software with GUI, CLI and SNMP.
- Connectors: EIA/TIA-232 console and RJ-45 Ethernet

## Available Configurations

- ISR 9024 - Externally managed 24 4X ports
- ISR 9024M - Internally managed 24 4X ports
- ISR 9024D - Externally managed 24 DDR ports
- ISR 9024D-M - Internally managed 24 DDR ports

## Power Requirements

- One or two factory installed Power Supplies
- Power entry: 100 to 240 VAC, 50/60 Hz, auto-sensing
- Power consumption\*:
  - ISR 9024 - 30W - 70W, max.
  - ISR 9024M - 44W - 70W, max.
  - ISR 9024D - 58W - 85W, max.
  - ISR 9024D-M - 69W - 96W, max.

\* Depends on number of connected optic MediaConverters

## Cooling

- ISR 9024 - Passive cooling
- ISR 9024M - Passive cooling
- ISR 9024D - Optional active cooling
- ISR 9024D-M - Optional active cooling

## Reliability

- MTBF: over 220,000 hours

## Physical Characteristics

- 19-inch rack-mountable chassis
- Dimensions (H x W x D): 1.69 in. (43 mm) x 17.56 in. (446 mm) x 20.59 in. (523 mm)
- Secure stacking with optional feet
- Optional front or rear rack mounting
- Weight: 17 lb (7.7 Kg), excluding rack mounting

## Environmental

### Operating

- Ambient temperature: 32° to 113° F (0° to 45° C)
- Humidity: 15 to 80%, non-condensing
- Altitude: 0 to 9843 ft (3000m)

### Storage

- Temperature: -13° to 185° F (-25° to 85° C)
- Humidity: 5 to 90% non-condensing
- Altitude: 0 to 15,000 ft (4570m)

## Certifications

### Safety

- UL60950
- CB IEC60950
- CSA-C22.2 No.60950-00



Contact Voltaire to Learn More

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