

# Broadcom 9460-16i Datasheet



Broadcom LSI 9460-16i 05-50011-00 PCIe 3.1 x8 SAS3516 16 Internal Ports MegaRAID Tri-Mode Storage Adapter

9460-16i

Industry's First Hardware RAID adapter with Tri-Mode SerDes Technology

Broadcom enables high performance storage connectivity and flexible system designs that support any combination of NVMe, SAS and SATA devices with the industry's first hardware RAID adapter with Tri-Mode SerDes. The MegaRAID 9400 series of adapters expands on the industry-leading family of 12Gb/s storage adapters from Broadcom with 8 and 16 port internal, external and combination Tri-Mode port options.

## NVMe Performance Gains for Storage

The MegaRAID Tri-Mode storage adapters bring NVMe performance benefits to the storage tier by providing connectivity and data protection that MegaRAID technology has offered for over 20 years for SAS/SATA interfaces. Based on the dual-core SAS3516 or SAS3508 RAID on Chip (ROC) and 72-bit DDR4-2133 SDRAM, these controllers provide bandwidth and IOPS performance increases compared to the previous generation and are ideal for high-end servers utilizing internal storage or connecting to large-scale external storage enclosures.

## Endless design flexibility using Tri-Mode Controllers

Broadcom's Tri-Mode SerDes Technology enables operation of NVMe, SAS, or SATA storage devices in a single drive bay.

A single controller can operate in all three modes concurrently servicing NVMe, SAS, or SATA drives. The controller negotiates between the speeds and protocols to seamlessly work with any of the three types of storage devices. Tri-Mode support provides a non-disruptive way to evolve existing data center infrastructure. By upgrading to a Tri-Mode controller, users can expand beyond SAS/SATA and use NVMe without major changes to other system configurations.

## Applications

- High-port count SAS/SATA/NVMe controllers for direct attached high connectivity applications
- Tri-Mode connectivity enabling maximum data center flexibility
- Flexible solutions for cloud computing
- External storage requiring high connectivity SAS/SATA interface for host or drive side connect

## Key Features

- Tri-Mode Storage Interface Ports
  - SFF-8680 Bay
    - x1 SAS
    - x1 SATA
    - x2 SAS (Multi Link)
    - Two x1 SAS (Dual port using MPIO)
  - SFF-8639 (U.2) Bay
    - x2, x4 NVMe
- Supports 12, 6, and 3Gb/s SAS and 6, 3Gb/s SATA data transfer rates
- Up to 8 storage interface PCIe links. Each link supporting x4 or x2\* link widths up to 8.0 GT/s (PCIe Gen3) per lane
- SFF-9402 Compliant, Connector Pin-out
- SFF-8485 Compliant, SGPIO
- RAID levels 0, 1, 5, 6, 10, 50 and 60
- CacheVault flash back-up at power fail
  - Supports bad block management
- PCIe 3.1 Host Interface

- Supports x8, x4, x2, x1 PCIe lanes at a transfer rate up to 8.0 GT/s per lane, full duplex
- Lane and polarity reversal
- Variable PCIe bandwidth negotiation

## Specifications

- Product: 9460-16i
- Manufacturer Part #: 05-50011-00
- Ports: 16 internal
- Connectors: Four (x4) SFF-8643
- Storage Interface Support: SAS, SATA, PCIe (NVMe)
- Max PCIe (NVMe) Direct Attach Devices: Four x4, Eight x2
- Max Devices Per Controller: SAS/SATA: 240; NVMe: 24
- Cache Memory: 4 GB 2133MHz DDR4 SDRAM
- I/O Processor / SAS Controller: SAS3516
- Host Bus Type: PCIe 3.1 x8
- Cache Protection: CacheVault CVPM05
- Physical Dimensions: 6.127" x 2.712"(155.65 mm x 68.90 mm)
- Typical Power: 17.02W
- Airflow: 250LFM at 55°C
- Operating Conditions
  - Operating: 0°C to 55°C 20 to 80% non-condensing
  - Storage: -45°C to 105°C 5 to 95% non-condensing
- MTBF (Calculated): >3,000,000 hours at 40°C
- Operating Voltage: +12V +/-8%; 3.3V +/-9%
- Hardware Warranty: 3 years; with advanced replacement option
- Management Software: LSI Storage Authority (LSA) StorCLI (command-line interface), HII (UEFI Human Interface Infrastructure)
- Regulatory Certifications: USA (FCC 47 CFR part 15 Subpart B, class B); Canada (ICES -003, Class B); Taiwan (CNS 13438); Japan (VCCI V-3); Australia/New Zealand (AS/NZS CISPR 22); Korea (RRA no 2013-24 & 25); Europe (EN55022/EN55024); Safety: EN/IEC/ UL 60950; RoHS; WEEE
- OS Support: Microsoft Windows. Contact Oracle support for Oracle Solaris driver or software support. See [www.broadcom.com/support/download-search](http://www.broadcom.com/support/download-search) for details on versions.

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