



SSD7749M2

16x M.2 to PCIe 4.0 x16 NVMe RAID AIC

The Industry's First 16x M.2 Port Single-Sided NVMe RAID AIC

Featuring an unprecedented 16 independent M.2 device channels, and armed with HighPoint's proven PCIe Gen4 Switch Architecture and NVMe cooling technology, SSD7749M2 RAID AICs are capable of delivering 28GB/s of transfer throughput while supporting an astounding 128TB of client-class NVMe storage; attributes that are particularly beneficial for AI driven workflows that require high-speed storage solutions capable of rapidly processing vast quantities of data.

The compact, professional-grade PCIe AIC storage solution can be easily integrated into any x86 workstation or server platform capable of supporting modern dual-width GPUs, and is equipped with a comprehensive suite of management and monitoring tools designed to optimize and streamline the platform's NVMe storage ecosystem.

Advanced Architecture Maximizes Capacity and Performance

Innovative, dual-sided, vertically aligned M.2 loading trays can directly host up to sixteen 2280 form factor M.2 SSDs using only one side of the PCB. This unique architecture results in an impressively slim hardware footprint, with a form factor similar to that of a high-end dual-width GPU. The sixteen device channels can operate independently or concurrently, and enable the SSD7749M2 to support an astonishing 128TB of M.2 storage, with the potential to scale up to 256TB in the near future, all from a single PCIe slot!

To ensure each SSDs operates and perform optimally, the AIC incorporates HighPoint's proven x48 lane PCIe Switching Technology, which allocates a dedicated x16 lanes of upstream bandwidth (connection to the host platform), and x2 lanes of dedicated downstream bandwidth to each SSD. This enables the SSD7749M2 to optimize signal integrity, reduce latency and deliver an astonishing level of data throughput; upwards of 28GB/s of real-world transfer performance! All of this results in a truly one-of-a-kind, feature-rich NVMe Storage solution, perfectly suited for data-intensive applications such as Healthcare Diagnostics, Scientific Research and Simulation, Deep Learning Model Training, AI-Powered Video and Image Processing, and AI-Powered Cybersecurity.

State-of-the-Art Three-Pronged Cooling Solution Enhances NVMe Reliability and Prevents Thermal Throttling

One of the driving forces behind the SSD7749M2 industry-leading storage capacity and performance capability is HighPoint's advanced, three-pronged, dual-width NVMe cooling system, which leverages a full-length aluminum casing and heat sink, powerful low-decibel cooling fans, and a unique SSD mounting system to enhance reliability and stave off the threat of thermal throttling. The aluminum casing fully encloses the M.2 media and sensitive controller componentry, effectively sealing it away from the surrounding hardware environment. The innovative, tool less SSD loading system arranges M.2 media vertically to optimize airflow within the AIC. Three cooling fans; one mounted directly atop the integrated heatsink, and a pair installed into the side-mounted access hatch, work in unison to condense and circulate cool air throughout the casing, and eject waste heat through the ventilated PCIe bracket.

To compliment the hardware side of the equation, HighPoint has developed an intelligent temperature monitoring and alert system, which is integrated directly into the NVMe storage management & monitoring suite. Administrators can track the temperature and endurance (TBW/DWPD rating) of each hosted NVMe storage device in real-time via HighPoint's innovative SHI (storage health inspector) service, which can be used to configure warning thresholds based on each SSDs specifications and adjust the AIC's triple cooling fans to ensure hosted M.2 media perform optimally, even under the most demanding workflow. The service can be instructed to activate an audible warning alarm or contact one or more administrators via email if temperature thresholds are crossed.

Comprehensive NVMe Storage Management and Monitoring Suite

The SSD7749M2's comprehensive NVMe storage management and monitoring suite enables administrators to easily configure and maintain the platform's NVMe storage ecosystem with a few simple clicks and commands, from within and outside of the OS. RAID arrays will be recognized as single, physical disks, and can be configured and tailored for a variety of roles, such an application drive or virtual scratch disk, data archiving or even for hosting bootable OS's or virtualization platforms.

In addition, a simple and easy 1-click Log Collection solution has been integrated into our WebGUI and CLI management utilities to streamline the troubleshooting process and expedite the service/support process.

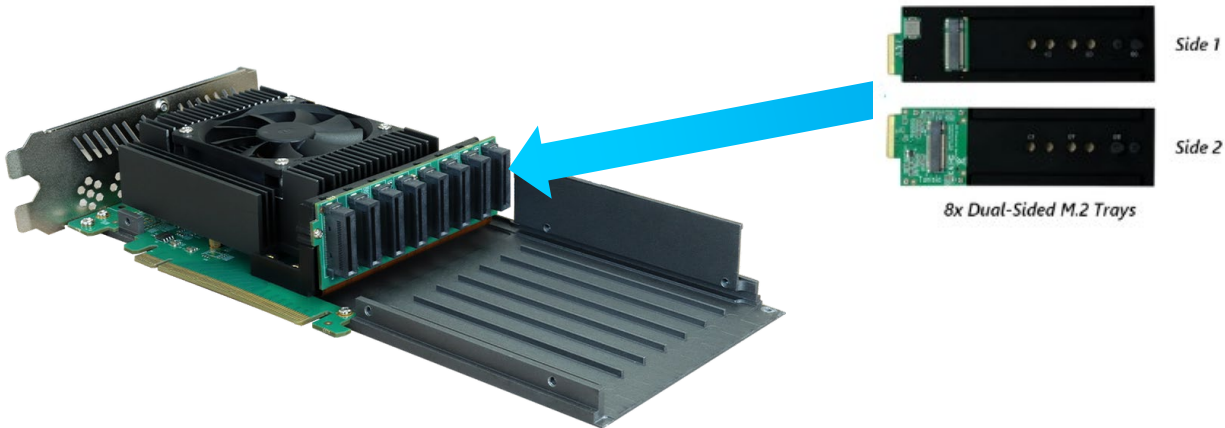
Feature Highlights

- Compact, Single-Sided High-Density Storage Solution: Directly hosts up to 16x M.2 SSDs and 128TB of storage
- High-Performance PCIe Gen4 Switch Architecture: x16 lanes of dedicated upstream and x4 lanes of downstream bandwidth for each device port
- Sustained transfer speeds up to 28,000MB/s
- Advanced, Three-Pronged Cooling Solution Enhances Reliability & Prevents Thermal Throttling
- Comprehensive Management & Monitoring Suite
- Supports up to four RAID 0, 1 or 10 arrays
- Boot-RAID Capability for Linux & Windows
- SafeStorage SED Solution

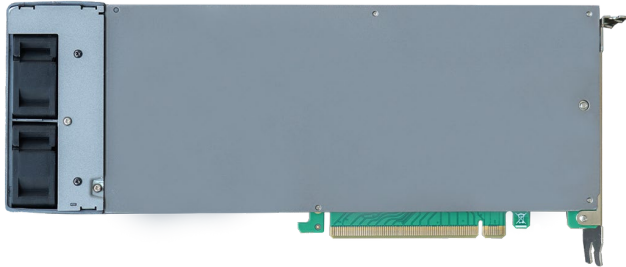
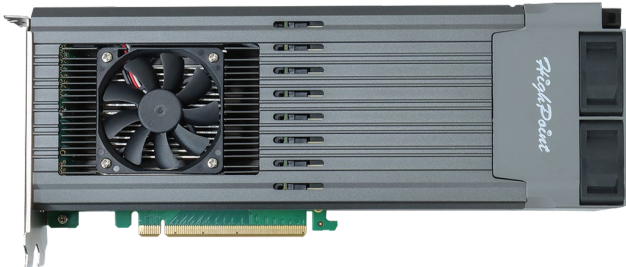
Hardware Features	
Bus Interface	PCI-Express 4.0 x16
Number of Channels / Port	16x M.2 NVMe port (Dedicated PCIe 4.0 x2 per port)
Number of Devices	16x M.2 NVMe
Data Transfer Rate	Up to 28GB/s
SSD Form Factor	2242/2260/2280
External Power Support	Yes (Uses 6-pin PCIe Power Connector)
LED Indication	Yes
Audible Alarm	Yes
Storage Security Suite	
SED Support	SafeStorage SED Solution
Mechanical Specifications	
Form Factor	Full-Height, Full-Length, Dual-Width
Dimensions	11.18"W x 4.92"H x 1.53"D
Weight	3.24 lbs.
Warranty	2 Years
Cooling Solution	PCIe Gen4 Dual-Width NVMe Hyper-Cooling Solution Full-Length aluminum casing and heatsink with three integrated Low-Decibel Cooling Fans & Thermal Padding
Fan Control	Yes
Toolless SSD mounting system	Yes
Supported Systems <i>(Only Supports 64-bit operating systems)</i>	
Supported Operating Systems	Windows 11, 10 Windows Server 2022, 2019, 2016 Microsoft Hyper-V
	RHEL/Debian/Ubuntu/Fedora/Proxmox/Rocky Linux (Linux kernel 3.10 and later)
	PC Platforms: Any PC System or Motherboard with an industry standard PCIe x16 physical Slot (Bifurcation is not required)
Platform Support	PC Platforms: Any PC System or Motherboard with an industry standard PCIe x16 physical Slot (Bifurcation is not required)
Secure Boot (PC platforms)	Windows OS
NVMe Configuration	
RAID Support	Single, RAID 0, 1, 10
TRIM RAID Support	Single, RAID 0, 1, 10

Storage Mode - NVMe	
Data RAID (Non-Bootable)	Windows, Linux
Boot RAID	Windows: Windows 10, Windows server 2016 and later
	Linux: RHEL/Debian/Ubuntu/Rocky Linux
Storage Health Inspector	Yes
NVMe SMART status	Yes
Automatic and configurable RAID Rebuilding Priority	Yes
Auto resume rebuild session after powering on or rebooting system	Yes
Single-RAID or Multi-RAID Arrays per Controller	Yes
Cross-Sync RAID Solution Across Controllers	Yes
Advanced RAID Features	
Flash ROM for Upgradeable UEFI	Yes
Bootable RAID Array	Yes
Multiple RAID Partitions supported	Yes
Online Array Roaming	Yes
RAID Quick Initialization for fast array setup	Yes
Global Hot Spare Disk support	Yes
Operating Environment	
Work Temp	+5°C ~ + 55°C
Storage Temp	-20°C ~ +80°C
Operating Voltage	PCI-e: 12V, 3.3V
Power	Typical: 17.28W
MTBF (Mean Time Before Failure)	920,585 Hours
Certification / Approval	CE, FCC, RoHS, REACH, WEEE
Kit Contents	
Kit Contents	1x SSD7749M2
	1x Quick Installation Guide
	16x M.2 rubber twist-pins

16x M.2 Loading System



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