NVMe Solution

SSD7140A 8-Channel High Port Count Series
M.2 NVMe RAID Controller

Doubles Capacity and Performance Potential of PCIe 3.0 Gen3 M.2 NVMe SSDs

Double Capacity and Transfer Performance for M.2 Configurations

HighPoint SSD7140A is our second generation high port count (HPC) M.2 NVMe RAID controller, and was designed for professional applications that require a small-footprint, mass-storage NVMe solution that can take full advantage of PCIe 3.0 x16 transfer bandwidth. Our performance-focused NVMe RAID architecture ensures that up to x4 lanes can be assigned to each device channel to ensure maximum transfer throughput – ideal for professional media workstation and server environments designed to support a wide range of editing, rendering, capture and streaming applications.

The SSD7140A allows customers to saturate x16 lanes of PCIe 3.0 bus-bandwidth with sustained transfer performance over 14,000MB/s while supporting up to 64TB of storage.

Massive Storage Capacity

Like its predecessor, the SSD7140, SSD7140A RAID controllers features eight independent M.2 channels, and can support RAID, non-RAID, and mixed NVMe storage configurations. No other M.2 NVMe controller in today's marketplace can match the SSD7140A's storage capability, transfer performance, or flexibility.

Platform Independent NVMe RAID Solution

HighPoint high port count series NVMe RAID controllers are truly independent NVMe storage solutions. Unlike most NVMe devices in today's marketplace, which are tied to a specific hardware platform or brand of SSD or motherboard, SSD7000 series controllers do not require a hardware environment with Bifurcation

support, or any specialized software released by SSD manufacturers; any AMD or Intel motherboard with a dedicated PCIe 3.0 x16 slot can now support up to 8 M.2 NVMe SSDs, and experience sustained transfer performance in excess of 14GB/s via a single compact PCIe device.

Comprehensive RAID Storage Solution

RAID 10 (Security & Speed) - RAID 10 requires a minimum of 4 NVMe SSD's and is comprised of a stripe between two RAID 1 arrays. RAID 10 capable of delivering read performance on par with RAID 0, and is superior to RAID 5 for NVMe applications. Unlike RAID 5, RAID 10 doesn't necessitate additional parity related write operations, which reduce the TBW life span of NVMe SSD's.

RAID 0 (Speed) - Also known as a "stripe" array, this mode delivers Maximum Performance, and requires a minimum of 2 NVMe SSD's.

RAID 1 (Security) - This mode creates a hidden duplicate of the target SSD, and requires 2 NVMe SSD's to configure.

Ultra-Efficient, Multi-Stage Cooling Solution

The SSD7140A employs an ultra-efficient, multi-stage cooling solution that combines a high-conductivity thermal pad with an anodized aluminum heatsink equipped with dual built-in, low noise fans. This design ensures the M.2 SSDs, NVMe chipset and RAID componentry remain cool, even under heavy load, while minimizing the risk of distraction in the work environment.

Comprehensive NVMe RAID Management Suite

When it comes to maintaining critical storage configurations, each customer has specific needs and preferences.

The Web RAID Management Interface (WebGUI) is a simple, intuitive web-based

Key Benefits

- 8x M.2 Ports Double Storage Capacity – up to 64TB

- Dedicated PCIe 3.0 x16 Bandwidth

- Truly Platform Independent NVMe RAID Solution for AMD & Intel motherboards with PCIe 3.0/4.0 x16 slots

- Comprehensive RAID Storage Solution: RAID 0, 1, 10 and single-disk

- Supports all major operating system platforms: Windows, macOS, Linux

- Ultra-Efficient, Multi-Stage Cooling Solution

management tool and is ideal for customers who are new to RAID technology.

The CLI (command line interface) is a powerful, text-only management interface designed for advanced users and professional administrators. Comprehensive user guides are available for both interfaces are available from each controller's Software Updates webpage.

Both interfaces were designed to streamline NVMe Storage Management. Customers can easily track TBW (Terabytes Written) and the temperature of each individual NVMe SSD, ensure the SSD7000 controller is using the fastest available PCIe slot, configure an event log with email notification, and monitor the status of critical RAID configurations in person or remotely via an internet connection.

SHI – Storage Health Inspector: SHI can help you track and monitor the status of drives hosted by the controller – it can report useful information about each NVMe SSD such as temperature, SMART status, and TBW (Total Bytes Written).

Key Features	
Bus Interface	PCI-Express 3.0 x16
Number of Channels & Port Type	8x M.2 NVMe
Data Transfer Rate	8GT per lane / 8Gbps per lane
Number of devices	8x M.2 NVMe SSDs
SSD Form Factor	2242/2260/2280
Form Factor	Full-Height
Card Dimensions	11.22"(W) x 4.37"(H) x 0.83"(D)
Card Weight	1.70 lbs.
System Requirements	• Mac Platforms: Apple Mac Pro Systems: 2012 and later Mac Pro systems; 5.1, 7.1 (2019) • PC Platforms: Any PC Systems or Motherboard with an industry standard PCIe x16 physical Slot (Bifurcation is not required)
Supported Operating Systems	• Windows 11 & 10, Windows Server 2022/2019/2016/2012 R2, Microsoft Hyper-V • Linux Kernel 3.10 or later (Note: Proxmox is not supported; if required, we recommend using the SSD6200 series.) • macOS 12 Monterey/macOS 11 Big sur/macOS 10.15 Catalina/macOS 1014 Mojave/macOS 10.13 High Sierra
Cooling System	Full-length anodized aluminum heat sink with built-in low-noise fans
NVMe Configuration	
RAID Support	Single, RAID 0, 1, 10
TRIM RAID Support	Single, RAID 0, 1, 10
Storage Mode - NVMe	Data RAID: Windows, Linux, macOS
NVMe RAID Management	
Management Suites	Browser-Based management tool
	CLI (Command Line Interface- scriptable configuration tool)
	API package
SMTP Email Alert Notification	Yes
Alarm Buzzer	Yes
Storage Health Inspector	Yes
NVMe SMART status	Yes
Automatic and configurable RAID Rebuilding Priority	Yes
Auto resume incomplete rebuilding after	Yes
Single-RAID or Multi-RAID Arrays per Controller	Yes
Operating Environment	
Work Temp	+5°C ~ + 55°C
Storage Temp	-20°C ~ +80°C
Operating Voltage	PCI-e: 12V, 3.3V
Power	Typical: 7.16W
MTBF (Mean Time Before Failure)	920,585 Hours
Certification / Approval	CE, FCC, RoHS, REACH, WEEE
Kit Contents	
Kit Contents	SSD7140A
	QIG