HighPoint
Technologies, Inc.

SSD7580A PCIe Gen4 x16 8-Port U.2
NVMe RAID Controller

HPT NVMe Solution

Massive NVMe Storage & Performance: Over 120TB @ 28,000MB/s!

SSD7580A U.2 NVMe RAID controllers are built for professional media & industrial applications that require truly uncompromised, blisteringly fast transfer speeds and massive-storage capability. A single controller is capable of supporting over 120TB of storage capacity, while delivering real-world transfer performance exceeding 28,000MB/s!

Independent, Cutting-Edge PCIe Gen4 x16 NVMe RAID Storage Performance for AMD & Intel Platforms

The SSD7580 is a fully independent NVMe RAID controller and is not tied to a specific motherboard or chipset, requires no specialized PCIe related settings such as Bifurcation or VROC, and is fully backwards compatible with both AMD and Intel-based PCIe 3.0 host platforms.
The SSD7580A RAID is powered by our next-gen NVMe RAID architecture, which incorporates Broadcom's Gen4 NVMe Switch chipset to deliver uncompromised PCIe 4.0 x16 RAID and connectivity performance.
The SSD7580A is an ideal bandwidth upgrade for Gen3 U.2 SSDs and applications that require transfer speeds between 15,000 and 24,000 MB/s. Gen3 SSDs offer as much as 25% savings over equivalent Gen4 models, and superior PCIe 4.0 bandwidth ensures maximum performance for both RAID and non-RAID storage configurations.

Hyper Cooling Solution Ensures Sustained Gen4 Transfer Performance

Maximizing Gen4 NVMe storage performance without the proper implementation of modern cooling apparatus is a risky proposition.
PCIe 4.0 devices and NVMe SSD's generate considerable heat under heavy load. To combat the threat of overheating, the SSD7580A employs a completely new, ground-up redesign of our proven NVMe cooling system.
HighPoint's Low-Noise Hyper-Cooling solution enables the SSD7580A to function optimally within the recommended temperature ranges, even under sustained I/O, by combining an anodized aluminum heat sink with an ultra-durable, near-silent fan, and high-conductivity thermal pad. This innovative, ultra- efficient cooling system rapidly transfers waste- heat away from critical controller componentry, without introducing unwanted distraction into your work environment.

Comprehensive NVMe RAID Support

HighPoint 7500 Series NVMe RAID controllers will automatically recognize new NVMe SSDS's as single drives- no configuration necessary. In addition, our comprehensive NVMe RAID stack enables each controller to support multiple RAID 0, 1 or 10 arrays, or mixed configurations of arrays and single disks.

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.

Comprehensive NVMe RAID Management

When it comes to maintaining critical storage configurations, each customer has specific needs and preferences.
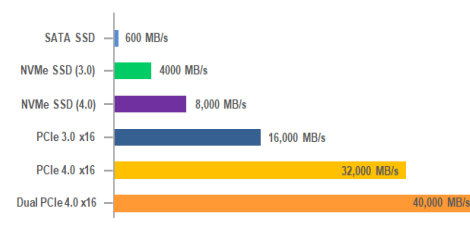
The Web RAID Management Interface (WebGUI) is a simple, intuitive web-based management tool and is ideal for customers who are new to RAID technology.

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 SSD7500 series 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.

Key Benefits

- Dedicated PCIe 4.0 x16 direct to CPU NVMe RAID Solutions
- Truly Platform Independent
- 8x U.2 NVMe PCIe 4.0 SSD's
- Over 120TB capacity per controller
- Low-Noise Hyper-Cooling Solution
- Integrated SSD TBW and temperature monitoring capability
- SRIS/SNRS/Common Clock Topology support

SATA SSD	600 MB/s
NVMe SSD (3.0)	4000 MB/s
NVMe SSD (4.0)	8,000 MB/s
PCIe 3.0 x16	16,000 MB/s
PCIe 4.0 x16	32,000 MB/s
Dual PCIe 4.0 x16	40,000 MB/s

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)

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Product feature	SSD7580A
Bus Interface	PCI-Express 4.0 x16
Number of Channel / Port	8x Internal U.2 NVMe ports
Data Transfer Rates	16GT per lane / 16Gbps per lane
Number of Devices	8x U.2 NVMe SSD
SSD Form Factor	2.5" U.2
Form Factor	Half-Height (Low-Profile)
Card Dimensions	6.50" x 2.27" x 0.80"
Card Weight	0.64 lbs.
Windows Support	Windows 11 and 10, Windows Server 2022/Server 2019/Server 2016/Server 2012 R2, Microsoft Hyper-V
Linux Support	Linux Kernel 3.10 or later
macOS Support	n/a
PC Platform Support	Any PC or Motherboard with an industry standard PCIe x16 physical Slot (Bifurcation is not required). *Note: PCIe 4.0 required for maximum performance.*
Mac Platform Support	n/a
Cooling System	Anodized Aluminum Heat sink with built-in Low-Noise fan
NVMe Configuration	
RAID Support	Single, 0, 1, 10
TRIM RAID Support	Single, 0, 1, 10
Storage Mode - NVMe	Data RAID, Boot RAID (Windows, Linux only)
Hot-Plug Support	n/a
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: 13.72W
MTBF (Mean Time Before Failure)	920,585 Hours
Certification / Approval	CE, FCC, RoHS, REACH, WEEE
Kit Contents	1x SSD7580A
	QIG

HighPoint Certified Cable & Enclosure Accessories

We manufacture a selection of certified data cables and for our NVMe RAID solutions. The following HighPoint Certified Cable accessories are fully compliant with all current technology standards and have been rigorously tested with the SSD7580A controller card to ensure maximum transfer performance, secure connectivity, and ease of integration.

As we cannot guarantee secure connectivity, stability or compatibility with unqualified third-party devices or accessories, only HighPoint Certified cables and enclosures can be used with our storage products and solutions.

Certified Cable Accessories

TS8i-8639-060

SFF-8654
SFF-8639

SFF-8654 to U.2 SFF-8639 cable with a 15-pin SATA power connector. Each cable supports two U.2 NVMe SSDs.

Length: 0.6M (60cm) / 23.62"

This cable has been certified with the HighPoint SSD7580A NVMe RAID controller and a wide range of NVMe SSD's. For more information, please consult the SSD7580A compatibility list.

8654-8643-210

SFF-8643
SFF-8654

SFF-8654 (host) to SFF-8643 (device) PCIe 4.0 x8 NVMe cable. Each cable can host up to 2x NVMe SSDs.

Length: 1M (100cm) / 39.37"

The SFF-8654-8643-210 has been thoroughly tested with industry standard SFF-8643 NVMe backplanes and NVMe SSDs from all major manufacturers, to verify maximum transfer throughput, secure connectivity, and ease of integration.

8654-8611-205

SFF-8611
SFF-8654

SFF-8654 (host) to SFF-8611 Oculink (device) PCIe 4.0 x8 NVMe cable. Each cable can host up to 2x NVMe SSDs.

Length: 0.5M (50cm) / 19"

The SFF-8654-8611-205 has been thoroughly tested with industry standard SFF-8611 NVMe backplanes and enclosures, to verify maximum transfer throughput, secure connectivity, and ease of integration.