



## SSD7580B PCIe Gen4 x16 8-Port U.2 /M.2 Hot-Swap Capable NVMe RAID Controller



### True NVMe Surprise Add and Remove Capability!

#### The SSD7580B Incorporates True NVMe Surprise Add & Remove Capability

Hot-Swap capability a true boon for NVMe-based storage solutions, and is especially useful for servicing NVMe storage solutions and appliances in the field. Hot-swap can significantly reduce or even eliminate the need for downtime. The SSD7580B allows administrators to add remove or replace NVMe SSDs without powering down the host platform, on the fly.

NVMe drives, though considerably more reliable than their platter counterparts, still must be replaced on a regular basis when employed by many datacenter or industrial applications, where storage devices are expected to remain active for extended periods of time, including truly grueling 24/7/365 workflows. NVMe media's one weakness is the finite write cycle; M.2 SSDs in particular can rapidly reach their TBW limitations in such environments. TBW expiration requires disk replacement, which results in downtime – this is the advantage of hot-swap capability.

#### True Hot-Swap: Not just Hot-Plug or Hot Replaceable

In the past, replacing an NVMe SSD meant powering down the entire system. More recent solutions may employ Hot-Plug capability; the ability to recognize drives added for specific tasks- such as rebuilding an array, or support Hot-Replaceable drives; an unused SSD that is already connected to the controller can be used to rebuild an array). However, both of these methods still require a restart in order for the operating system to recognize the hardware changes.

However, the SSD7580B's hot-swap capability works exactly like you expect it to. The SSD7580B allows customers to add or remove drives on the fly, as necessity demands. This includes RAID and single-drive configurations. The controller will notify the system of any changes in real time – no reboot is required. The host system can remain active throughout the procedure.

#### Versatile Cabling Options: Hot-Swap Enabled

The SSD7580B's Hot-Plug capability works with a variety of industry standard connectors – not just SFF-8639, which is employed directly by U.2 media. We offer a selection of PCIe Gen4 capable cabling accessories capable of supporting hot-swappable storage configurations, including SFF-8643 connections and SFF-8611 Oculink backplanes. This allows the SSD7580B to support any industry standard U.2 or M.2 NVMe SSD.

#### Industry Proven NVMe RAID Technology

HighPoint 7500 Series NVMe RAID controllers will automatically recognize new NVMe SSDs' 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 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 management tool and is ideal for customers who are new to RAID technology.

#### Key Benefits

- Dedicated PCIe 4.0 x16 direct to CPU NVMe RAID Solutions
- True NVMe Hot-Swap Capability (Surprise Add or Remove)
- 8x U.2 NVMe PCIe 4.0 SSDs
- M.2 compatible (host platform must have compatible backplane)
- Versatile Cabling Solutions: SFF-8639, SFF-8643 & SFF-8611 (Oculink)
- Low-Noise Active, Hyper-Cooling Solution
- SRIS/SNRS/Common Clock Architecture support

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.

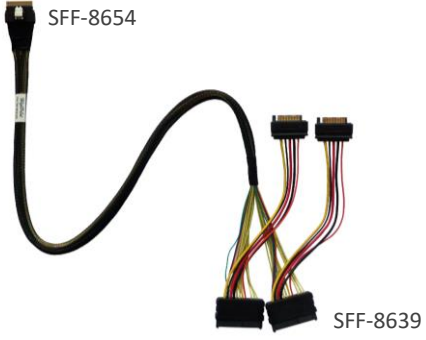
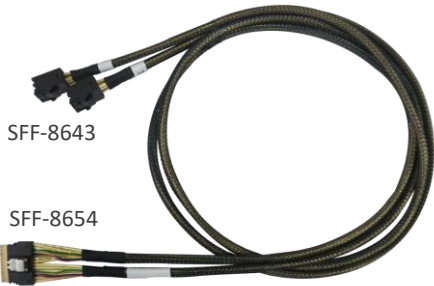

**SHI – Storage Health Inspector:** SHI can help you track and monitor the status of drives hosted by the controller – it can report useful information about each NVMe SSD such as temperature, SMART status, and TBW (Total Bytes Written).



Product feature	SSD7580B
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	RHEL/Debian/Ubuntu/Fedora/Proxmox/Rocky Linux (kernel 3.10 and later)
PC Platform Support	Any PC or Motherboard with an industry standard PCIe x16 physical Slot (Bifurcation is not required). <i>Note: PCIe 4.0 required for maximum performance.</i>
Cooling System	Anodized Aluminum Heat sink with built-in Low-Noise fan
<b>NVMe Configuration</b>	
RAID Support	0, 1, 10, Single Disk
TRIM RAID Support	0, 1, 10, Single Disk
Storage Mode - NVMe	Data RAID, Boot RAID (Windows, Linux only)
Hot-Swap Support	Yes (NVMe Surprise Add and Remove is supported)
<b>NVMe RAID Management</b>	
Management Suites	Browser-Based management tool , CLI (Command Line Interface- scriptable configuration tool) , API package
Management Features	<ul style="list-style-type: none"> <li>• SMTP Email Alert Notification</li> <li>• Alarm Buzzer</li> <li>• Storage Health Inspector</li> <li>• NVMe SMART status</li> <li>• Automatic and configurable RAID Rebuilding Priority</li> <li>• Auto resume incomplete rebuilding after power on or reboot system</li> <li>• Single-RAID or Multi-RAID Arrays per Controller</li> <li>• Cross-Sync RAID Solution Across Controllers</li> </ul>
Advanced RAID Features	<ul style="list-style-type: none"> <li>• Multiple RAID Partitions supported</li> <li>• Online Array Roaming</li> <li>• RAID Quick Initialization for fast array setup</li> <li>• Global Hot Spare Disk support</li> </ul>
<b>Operating Environment</b>	
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 SSD7580B
	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 SSD7580 series controller cards 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 – Hot-Swap Compatible	
<p><b>TS8i-8639-060</b></p> 	<p>SFF-8654 to U.2 SFF-8639 cable with a 15-pin SATA power connector. Each cable supports two U.2 NVMe SSDs.</p> <p>Length: 0.6M (60cm) / 23.62"</p> <p>This cable has been certified with the HighPoint SSD7580B NVMe RAID controller and a wide range of industry standard U.2 SSDs (<i>please refer to the latest release of the SSD7580 series compatibility list</i>).</p>
<p><b>8654-8643-210</b></p> 	<p>SFF-8654 (host) to SFF-8643 (device) PCIe 4.0 x8 NVMe cable. Each cable can host up to 2x NVMe SSDs.</p> <p>Length: 1M (100cm) / 39.37"</p> <p>The SFF-8654-8643-210 has been thoroughly tested with industry standard SFF-8643 NVMe backplanes and NVMe SSDs from all major manufacturers.</p>
<p><b>8654-8611-205</b></p> 	<p>SFF-8654 (host) to SFF-8611 Oculink (device) PCIe 4.0 x8 NVMe cable. Each cable can host up to 2x NVMe SSDs.</p> <p>Length: 0.5M (50cm) / 19"</p> <p>The SFF-8654-8611-205 has been thoroughly tested with industry standard SFF-8611 NVMe backplanes and enclosures.</p>

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