HighPoint's is now Shipping SSD7749 Series 8-Port E1.S/22110 NVMe RAID Controllers for Industrial, Edge Server & AI Applications

January 2023 - HighPoint's SSD7749 series of PCIe 4.0 x16 8-Channel E1.s and 22110 NVMe RAID controllers were designed for demanding Industrial and AI applications that require an easily integrated high-density RAID storage solution with blistering PCIe Gen4 x16 performance and enterprise class 24/7 reliability.
Roughly the same size as modern high-performance PCIe graphics adapter, SSD7749 series' HBAs are capable of directly hosting up to eight DC (datacenter) class E1.S or 22110 NVMe SSDs. Unusual for a RAID controller, the unique dual-width HBA architecture was developed to maximize the performance potential of NVMe storage configurations. The larger form-factor proved essential for a solution of this class, and enabled HighPoint to design and implement a robust cooling solution to combat the threat of thermal throttling, shield critical NVMe hardware from a multitude of high-stress working environments, and implement a unique toolless SSD loading system to enhance serviceability.

Precision Engineered to unveil the true performance potential of Gen 4 NVMe Storge

SSD7749 HBAs represents the epitome of PCIe Gen4 Storage Technology. Armed with HighPoint's advanced NVMe RAID stack and NVMe Hardware Architecture, the SSD7749 series HBAs are capable of supporting RAID 0, 1, 10 arrays and single-drives, including mixed configurations of single-disks and arrays, multiple arrays, multiple bootable volumes, and boot + storage configurations at speeds up to 28GB/s! State of the art PCIe switch technology enables the controller to allocate x4 lanes of PCIe 4.0 transfer bandwidth to each NVMe SSD.

HPT-Optimize - Multi-CPU/Core Performance Optimizer: The vast majority of Edge and Industrial Computing platforms utilize multi-core CPU motherboards. While resources are readily available, they may not be properly allocated to the target application and NVMe media. HighPoint's HPT-Optimize utility simplifies the tuning process for all Multi-Core platforms by intelligently allocating system resources to ensure the target application utilizes the full potential of the NVMe media. The utility intuitively maps the most Efficient I/O processing route to minimize the risk of latency and eliminate performance bottlenecks.

Cross-Sync RAID Technology delivers near PCIe Gen5 Performance in a Gen4 Package: SSD7749 series HBAs enable administrators to optimize RAID performance by scaling available bus bandwidth up to 32 lanes, and deliver up to 55,000MB/s of transfer performance; numbers that can compete directly with a dedicated PCIe Gen5 solution.

Purpose-Built Dual-Width Cooling Solution Eliminates Performance Throttling
Configurable Temperature Thresholds & 24/7 Monitoring with Email notification & Event Logging

PCIe Gen4 NVMe SSDs generate a considerable amount of waste heat under load, especially when compared to PCIe 3.0 media. To address this threat, many Gen4 NVMe SSDs will limit throughput when faced with the threat of overheating; a technique known as "thermal throttling". While thermal throttling is an ideal failsafe, it can severely bottleneck transfer performance, especially for RAID configurations.
The SSD7749E was designed to actively combat the risk of thermal throttling and ensure E1.S media is always operating at peak performance. The unique, dual-width controller architecture incorporates a purpose-built NVMe cooling system that combines a full-length anodized aluminum casing and integrated heat sink with a pair of ultra-durable, low-decibel cooling fans. The fans are integrated directly into a latch "door' like mechanism, that effectively shields the NVMe media from the outside world. The fans draw in cool air and channel it toward the SSDs and central heat sink, which then eject waste heat through the ventilated PCe bracket. This novel cooling system was designed to work in conjunction with HighPoint's SHI (Storage Health Inspector) management interface, which allows administrators to instantly check the operating status and temperature of NVMe media in real-time via S.M.A.R.T. technology, and configure thresholds for each SSD to ensure the system is perfectly in sync with the hosted media.

Universal Software Suite Easily Manages & Monitors RAID Storage

SSD7749 series controllers include a comprehensive suite of pre-OS and OS-Level RAID Management and Storage Health monitoring tools designed to streamline installation, service and upgrade workflows.

***Pre-OS Level Management*:** The UEFI Tool is a command line utility designed for use at the pre-OS level to configure arrays prior to OS installation.

***BIOS Level Management*:** The UEFI HII utility will add HighPoint RAID creation menus to the motherboard's BIOS interface for systems that support third-party HII capable devices.

***OS-Level Management*:** The *WebGUI* is an intuitive graphical user interface designed to work with all modern Web Browsers. It is equipped with Wizard-like quick configuration menus as well as a suite of advanced tools for expert administrators. The HighPoint CLI(Command Line Interface) is ideal for seasoned administrators and platforms that do not utilize graphical operating systems.

***1-Click Self Diagnostic Logging Service*:** The WebGUI includes an automated diagnostic tool designed to streamline the troubleshooting process, even for novice administrators. The Diagnostic tab enables the interface to gather all necessary hardware, software and storage configuration data and compile it into a single file.
Your Personal/Business Data is Safe: "1-Click" only collects information related to the hardware/software environment. It does not, and cannot, collect, transfer or analyze any data written to storage media.

Toolless Loading System Streamlines Service & Upgrade Workflows

SSD7749 features a unique SSD loading system designed to simplify installation, upgrade and maintenance procedures. Administrators will no longer need to remove the PCIe device from the host system in order to access the storage media; the dual-fan cooling system features a unique latch-lock mechanism that enables the module to swing up and away from the PCB to reveal the SSD slots.
Each SSD7749E houses up to eight 9.5mm or four 15mm E1.S SSDs, while the SSD7749M is capable of supporting up to 8 22110 M.2 SSDs. Each slot features a quick-release latch which enables administrators to quickly install or remove SSDs without the need for hand tools or fasteners.

Engineering & Design Services for Solution Providers

HighPoint understands that a one-size-fits-all storage solution isn't a perfect fit for many industrial servers, which may require a customized storage controller board designed to comply with a specialized chassis. To address these concerns, we offer design and engineering services for integration specialists looking to incorporate our E1.s NVMe RAID technology into a unique electronic board or storage appliance.

Pricing and Availability

SSD7749 series NVMe RAID HBAs are set to launch in the 2nd quarter of 2023, and will be available direct from our E-Store and our Certified Global Resale and Distribution partners.

SSD7749E-311R1C 8-Channel PCIe 4.0 x16 E1.S NVMe RAID Controller: USD$1,499.00/ shipping in May 2023

SSD7749E-311R1A 8-Channel PCIe 4.0 x16 E1.S NVMe RAID Controller: USD$1,649.00 (TAA Compliant)/ shipping in May 2023

SSD7749M 8-Channel PCIe 4.0 22110 NVMe RAID Controller: Contact HighPoint Sales / Shipping in June, 2023