

HighPoint Launches the Industry 1st NVMe AICs with Precision Engineered Dual-Width Cooling Solutions

May 2023 - HighPoint's launches two new series of 8-Channel NVMe AICs for Datacenter class E1.S and M.2 media; Rocket 1700 series NVMe AICs, and SSD7749 series NVMe RAID AICs.

These new product families are the first to utilize HighPoint's revolutionary Dual-Wide hardware architecture, and are designed to accommodate performance-hungry Industrial and AI applications that require an easily integrated high-density storage solution with blistering PCIe Gen4 x16 performance.

The innovative dual-wide architecture enabled HighPoint product engineers to take a no holds barred approach to controller board design. Similar to a high-end GPU, Rocket 1700 and SSD7749 series AICs are enclosed by a full-length aluminum casing, which serves three primary purposes; to shield critical componentry from the working environment, provide ready access to the NVMe media via a tool-less loading system, and most importantly, host a robust purpose-built cooling system designed to accommodate today's fastest high-density storage media, and eliminate thermal throttling.

Incorporates Industry leading PCIe Switching Technology

HighPoint NVMe AICs incorporate state-of-the-art PCIe switch technology to deliver class leading performance, reliability, and storage capacity, and can be easily integrated into any x86 AMD and Intel, or ARM platform with a single free PCIe 4.0 x16 slot.

Rocket 1700 and SSD7749 series AICs leverage Broadcom's 48-lane PCIe Gen4 PEX88048 switch chipset to allocate a dedicated x16 lanes of Upstream bandwidth, and x4 lanes of downstream bandwidth to each of the 8 NVMe device ports. This innovative, performance-focused architecture guarantees that maximum bandwidth is available to each SSD at all times. Rocket series NVMe AICs fully optimize x16 lanes of PCIe 4.0 bus bandwidth and deliver up to 28GB/s of transfer speed – the maximum possible for a single-card application!

High-Density NVMe Storage Solutions

Rocket 1700 and SSD7749 series AICs are capable of supporting up to eight of the largest E1.S and M.2 NVMe SSDs in today's marketplace.

Current E1.S roadmaps strongly suggests that E1.S SSDs will eventually replace 2.5" NVMe devices, and be available with up to 30TB of storage capacity! HighPoint dual-wide NVMe AICs can be used to future-proof modern workstations and server platforms, and enable customers to take full advantage of evolving E1.S technology.

Unique Precision Engineered Double-Width Cooling Solution

NVMe storage configurations can generate a considerable amount of waste heat under load, especially those that employ high-density/high-performance PCIe Gen4 DC-class NVMe SSDs. In an effort to protect sensitive hardware, most SSDs will limit throughput when a temperature threshold has been crossed; a technique known as "thermal throttling". While thermal throttling is an ideal failsafe, it can severely bottleneck transfer performance.

HighPoint engineers developed an entirely new double-width cooling system for Rocket 1700 and SSD7749 series NVMe AICs, in order to eliminate the threat of thermal throttling and ensure high-capacity DC class E1.S and M.2 media consistently deliver maximum throughput for extended I/O sessions.

The full-length aluminum casing was designed to optimize airflow. A pair of powerful, low-decibel cooling fans have been integrated directly into the SSD loading bay's "door" mechanism, which draw in cool air and channel it toward a centrally mounted heat sink. The loading system's unique socket design enables NVMe media to be arranged vertically, similar to how memory is installed into a conventional motherboard. This ensures both sides, of the SSD, are exposed to the cool air circulated by the dual fans. Waste heat is then drawn away from the SSDs and critical componentry and rapidly expelled through the AICs ventilated PCIe bracket.

The novel hardware cooling solution was designed to work in conjunction with HighPoint's SHI (Storage Health Inspector) software interface, which allows administrators to instantly check the operating status and temperature of NVMe devices 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.

All New Tool-less SSD Loading System

Supports any E1.S or M.2 Form-Factor including SSDs with Heatsinks

Rocket 1700 and SSD7749 series AICs feature a unique SSD loading system capable of supporting E1.S media of any form-factor and thickness, including those equipped with heat sinks or heat spreaders. The full-length aluminum casing features a unique latch-lock mechanism that enables the dual-fan module to swing up and away from the PCB to reveal the SSD slots.

Each slot features a quick-release latch which enables administrators to quickly install or remove SSDs without the need for hand tools or fasteners.

Introducing the Rocket 1700 Series

8-Channel PCIe Gen4 x16 NVMe Connectivity AIC Host-Bus Adapters

HighPoint's Rocket 1700 series are the industry's fastest NVMe AIC HBAs, and represent the most efficient way to add PCIe Gen4 storage performance to any modern computing platform, and are ideal for workflows that employ Software Defined Storage suites, or rely on the operating system's native storage management interface. Such applications require a robust hardware connectivity solution to optimize storage performance.

Rocket series NVMe AICs are natively supported by all major operating systems including Windows 11 and Server 2022, VMware ESXi, macOS Ventura, and popular Linux distributions such as RHEL and Ubuntu, and FreeBSD/FreeNAS platforms. The cards can be installed and used right out of the box, and require no additional device drivers or a dedicated software application.

1-Click Self Diagnostic Logging Service: The HighPoint Web-based storage management interface (WebGUI) is can be used to monitor SSDs hosted by Rocket 1700 series AICs, and includes an automated diagnostic tool designed to streamline the troubleshooting process, even for novice administrators. The Diagnostic tab enables the interface to gather information about the corresponding hardware, software and storage configurations and compile it into a single file which can be submitted to our Support Department.

Introducing the SSD7749 Series

8-Channel PCIe Gen4 x16 NVMe RAID AIC Adapters

HighPoint's SSD7749 series represents the epitome of NVMe RAID Storage Technology. Armed with HighPoint's advanced NVMe RAID stack, SSD7749 series AICs are capable of supporting RAID 0, 1, 10 arrays and individual-drives, including mixed configurations of single-disks and arrays, including bootable volumes.

SSD7749 series AICs include a comprehensive suite of pre-OS and OS-Level NVMe Storage and RAID Management and 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.

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.

SHI (Storage Health Inspector): SHI provides wealth of information about NVMe SSDs, and enables administrators to instantly assess the temperature, TBW/DWPD rating, and operational status of each hosted drive, and configure temperature thresholds to correspond with the target SSD's official specifications.

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 information about the corresponding hardware, software and storage configurations and compile it into a single file which can be submitted to our Support Department.

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: SSD7749 series AICs 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.

Pricing and Availability

HighPoint's series of Dual-Wide NVMe AICs are set to launch in the second quarter of 2023, and will be available direct from our E-Store and our Certified Global Resale and Distribution partners.

Rocket 1708E 8-Channel PCIe 4.0 x16 E1.S NVMe AIC: MSRP USD\$ TBA

Rocket 1708M 8-Channel PCIe 4.0 M.2 NVMe AIC: MSRP USD\$ TBA

SSD7749E 8-Channel PCIe 4.0 x16 E1.S NVMe RAID AIC: MSRP USD \$1,499.00

SSD7749M 8-Channel PCIe 4.0 M.2 NVMe RAID AIC: MSRP USD \$1,549.00