HighPoint
Technologies, Inc.

Rocket 7608A

PCIe 5.0 x16 to 8-M.2x4 NVMe RAID AIC

Revolutionize NVMe Storage Performance with Highpoint PCIe Gen5 Switch Technology

Rocket 7600 PCIe Gen5 NVMe RAID Series AICs & Adapters

HighPoint RocketRAID 7600 PCIe Gen5 NVMe RAID AICs and Adapters are engineered to enhance the capabilities of Linux and Windows-based Edge Server and High-End workstation platforms. Built on the foundation of our Rocket 1600 Switch series product lines, each RAID AICs/Adapter is armed with industry proven RAID technology and an unparalleled storage health monitoring and management suite designed to maximize the performance, reliability and serviceability of NVMe arrays.

Rocket 7608A PCIe Gen5 x16 to 8-M.2x4 NVMe RAID AIC

The Rocket 7608 8-Channel NVMe RAID AIC is an ultra-compact high-density, RAID storage solution designed to address professional workflows that require uncompromised PCIe Gen5 NVMe Storage Performance and flexibility of proven RAID technology. Rocket 7608A AICs can directly host up to eight 2280 form factor M.2 SSDs which can be configured into as many as 4 separate RAID 0, 1 or 10 arrays, including bootable volumes or mixed configurations of single SSDs and arrays.

Rocket 7608A AICs intelligent PCIe Gen5 cooling solution employs a Full-Length Aluminum Heatsink with copper SSD contacts, two layers of thermal padding and a powerful low-decibel cooling to ensure hosted M.2 media always operate within their recommended temperature threshold to maximize lifespan and transfer performance.

48 Lanes of Dedicated PCIe Gen5 Bandwidth

HighPoint's high-performance PCIe Gen5 switching architecture integrates Broadcom's 48-Channel PEX89048 switch IC to provide x16 lanes of dedicated PCIe Gen5 upstream bandwidth and x4 lanes of dedicated downstream bandwidth to each device channel. The innovative architecture enables the Rocket 7608A to deliver up to 64GB/s of transfer bandwidth, minimize latency, and facilitate consistent, robust I/O throughput.

The Architecture employs a technique known as a "Synthetic Hierarchy" to isolate the host system's OS from any PCIe topology changes. This enables the Rocket 7608A to directly manage resource allocation to the downstream PCIe channels by facilitating a more efficient interaction between the host CPU and PCIe switch.

Engineered to Enhance the Efficiency & Serviceability of Datacenter & Server Applications

The Rocket 7608A incorporates a wide range of features designed to enhance the efficiency of day-to-day operations of datacenter and Edge Server platforms. First and foremost, the adapter has been built to the highest standards of quality and reliability, and is fully compliant with PCIe Card Electromechanical (CEM) specifications. The Rocket 7608A is a field replaceable unit (FRU); the VPD (vital product data) stored on each adapter enables customers and service providers to easily procure replacements with the correct firmware/driver combination.

Intelligent, Pro-Active PCIe Gen5 Cooling Solution

HighPoint's intelligent PCIe Gen5 cooling solutions combine the industry's most advanced hardware cooling systems with a suite of pro-active monitoring and management tools designed to keep temperatures in check under the most grueling working conditions. Though designed to ensure NVMe media runs optimally without user intervention, administrators can configure temperature thresholds for each SSD to match published specifications, or for compliance with unique computing environments and workflows.

Comprehensive Storage Health Monitoring, Management & Analysis Suite

HighPoint's proven NVMe RAID technology incorporates UEFI-HII features to provide RAID functions both inside and outside of the OS environment, and provide secondary functions such as Boot-RAID (bootable RAID array) capability. The Rocket 7628A is equipped with HighPoint's intuitive yet comprehensive monitoring, management and analysis suite, which enables administrators to easily configure and maintain the platform's NVMe storage ecosystem with a few simple clicks and commands. RAID arrays created using these interfaces will be recognized as single, physical disks, and can be used to install a bootable OS. The graphical interfaces now incorporate a real-time NVMe Sensor logging system which tracks and records the temperature, fan-speed and electrical characteristics of the adapter and each hosted SSD over time, and presents the data via a series of simple plotted curves and line charts. These records can be exported as needed, and can help administrators narrow the scope of troubleshooting tasks by identifying potential faults and at-risk storage media, and implement preventative measures to maximize the lifespan of the RAID array and maintain optimal performance.

SafeStorage - OPAL SED Solution

Developed to accommodate large-scale RAID arrays as well as individual SSDs, SafeStorage is a comprehensive OPAL SSC TCG based NVMe Hardware Encryption Solution designed to safeguard critical assets by preventing access to stored data when physical disks are misplaced or stolen.

Feature Highlights

- 8-Dedicated PCIe 5.0 device channels
- Directly Supports up to 8x M.2 NVMe SSDs (up to 2280 FF)
- High-Performance 48-Lane Gen5 Switch Architecture: x16 lanes of dedicated upstream & x4 lanes of downstream bandwidth for each device channel
- Delivers 64GB/s of Bandwidth & Real-world Sustained transfer speeds up to 56,000MB/s
- Advanced, Intelligent Gen5 Cooling Solution
- Comprehensive Storage Health Monitoring, Management & Analysis Suite
- Industry-proven NVMe RAID Technology supports up to four RAID 0, 1 or 10 configurations
- Optional Boot-RAID Capability for Linux & Windows
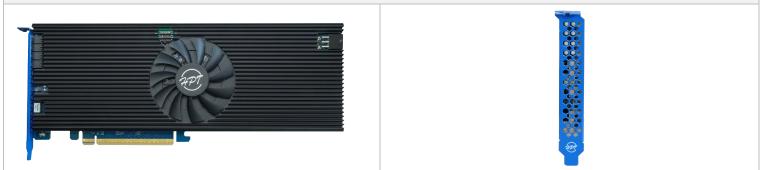- SafeStorage TCG SSD Solution
- Hardware Secure Boot

HighPoint Technologies, Inc.

Product Model	Rocket 7608A (R7608A)
Hardware Features	
Bus Interface	PCIe 5.0 x16
Number of Channel / Port	8x Device Channels / 8x NVMe Ports (Dedicated PCIe 5.0 x4 per port)
Connector Type	M.2
Number of devices	8
SSD Form Factor	M.2 (2242, 2260, 2280)
External Power Support	Yes (uses PCIe Standard 2x3 Power Connector)
SRIS and REFCLK Support	TBA; please contact Sales for more information
Downstream port containment	Yes
Read tracking	Yes
Synthetic Hierarchy	Yes
LED Indication	Intelligent, Self-Diagnostic LEDs
Audible Alarm	Yes
Power Measurement	Real Time Power Measurement
FRU Support	Yes
Storage Security Suite	
SED Support	SafeStorage OPAL SED Solution *(Windows & Linux)*
Hardware Secure Boot	Yes
Mechanical Specifications	
Form Factor	Full-Height, Single-Width
Card Dimensions	284mm x 110mm
Card Weight	2.25 lbs.
PCIe Bracket	Full-Height Ventilated Bracket
Cooling Solution	Intelligent, Pro-Active PCIe Gen5 Cooling Solution • Full-Length Aluminum Heatsink with Low-Decibel Cooling Fan & 2 layers of thermal padding • Copper contact for SSDs accelerates heat dissipation • Compliant with PCIe Specifications
Toolless SSD mounting system	Yes
Supported Systems	
OS	***Only Supports 64-bit operating systems*** Windows 11, 10 / Windows Server 2022, 2019, 2016 / Microsoft Hyper-V RHEL, Debian, Ubuntu, Fedora, Proxmox & Rocky Linux (Linux kernel 3.10 and later)
Secure Boot	Yes (Windows Only)

NVMe Configuration	
RAID Support	Single, RAID 0, 1, 10
TRIM RAID Support	Single, RAID 0, 1, 10
Storage Mode - NVMe	
Data-RAID	Yes
Boot-RAID	Yes
NVMe RAID Management	
Management Suites	WebGUI (Browser-Based management tool), CLI (Command Line Interface - scriptable configuration tool), API package, UEFI HII
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 power on or reboot system	Yes
Single-RAID or Multi-RAID Arrays per Controller	Yes
Cross-Sync RAID Solution Across Controllers	Yes
Advanced RAID features	
Online Array Roaming	Yes
RAID Quick Initialization for fast array setup	Yes
Global Hot Spare Disk support	Yes
Operating Environment	
Working Temp.	0°C ~ + 55°C
Storage Temp.	-20°C ~ +80°C
Operating Voltage	PCIe: 12V(+/- 8%), 3.3V (+/- 8%)
Power	82.64W
MTBF	920,585 Hours
Kit Contents	• R7608A NVMe RAID AIC • QIG • 0.75mm thickness Thermal PAD (K=8, Grey) • 8x additional rubber twist-pins for M.2 SSDs

Rocket 7608A

HighPoint Headquarters
Phone: 1-408-942-5800
Fax: 1-408-942-5801
E-mail: sales@highpoint-tech.com
Website: www.highpoint-tech.com
Address: 41650 Christy St. Fremont, CA, 94538

PCIe 5.0 Switch