HighPoint
Technologies, Inc.

Rocket 7628A
PCIe Gen5 x16 to 4-MCIOx8 NVMe RAID Adapter

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 7628A PCIe Gen5 x16 to 4-MCIOx8 NVMe RAID Adapter

The Rocket 7628 8-Channel PCIe Gen5 NVMe RAID Adapter was designed for professional applications that require uncompromised Storage Performance with the flexibility of proven RAID technology and the industry's most comprehensive storage health Monitoring & Management suite. It can directly support up to 8 U.2/U.3 or E3.S NVMe SSDs via four MCIO ports and cable-to-backplane connectivity. Hosted media 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. In addition, RocketStor 7628A Adapters are Hot-Plug & Hot-Swap capable; administrators can easily add or remove RAID arrays and individual NVMe SSDs without rebooting the OS or powering down the host platform.

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 7628A to deliver up to 64GB/s of transfer bandwidth, minimize latency, facilitate consistent, robust I/O throughput, and support as many as 32 NVMe devices via backplane connectivity.

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 7628A to directly manage resource allocation to the downstream PCIe channels and provide true Hot-Swap/Hot-Plug capability 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 7628A 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 7628A 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.

The Rocket 7628A's OOB (out-of-band) management capability is an essential component of professional server infrastructure. MBC & MCTP over PCIe enables an administrator to securely interface with the adapter without the need for internet access. The service is scalable and can be used to administrate multiple servers via Linux command prompts to manage storage in both Pre-OS and OS-level environments.

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. The Rocket 7628A employs a full-Length Aluminum heat exchanger with copper piping to rapidly whisk waste heat away from the Gen5 switch IC and controller componentry.
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.
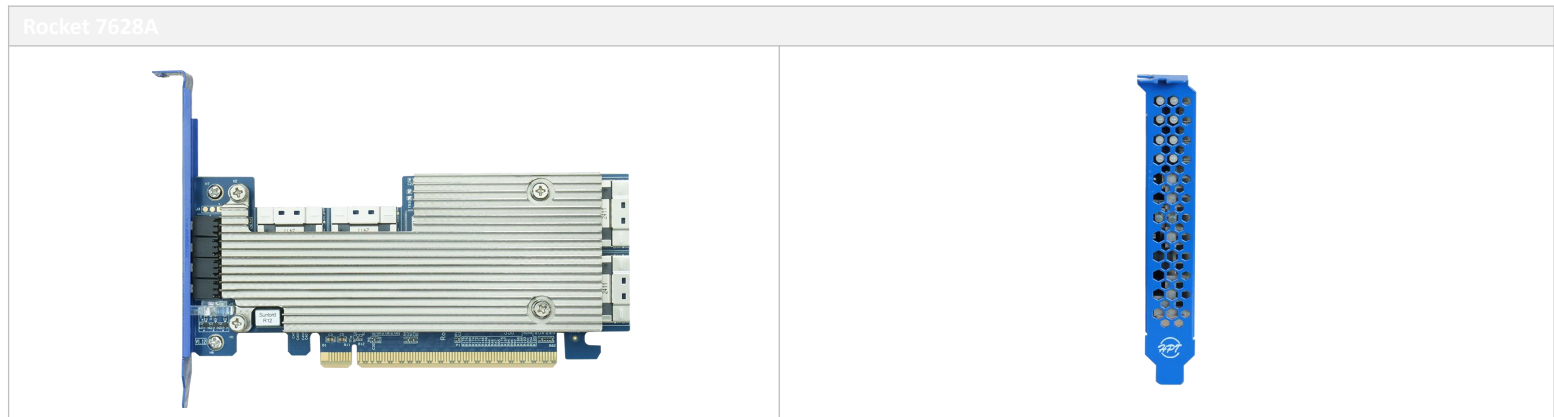
SafeStorage - OPAL SED Solution

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 U.2/U.3 or E3.S NVMe SSDs via 4x MCIO Ports & industry standard backplane connectivity
- 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
- Integrated NVMe Hot-Plug & Hot-Swap Capability
- Intelligent, Pro-Active 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

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	16.26W
MTBF (Mean Time Before Failure)	> 5,000,000 hours at 40° C

Kit Contents

	R7628A NVMe RAID AIC
Kit Contents	Low-Profile Ventilated Bracket
	QIG

Optional Accessories

	CIO8-8639-110
Cabling	CIO8-CIO8-110
	CIO8-1002-110
	8654-CIO8-110

Rocket 7628A

nvm EXPRESS

PCIe 5.0 Switch