



Rocket 1604A

PCIe Gen5 x16 to 4x M.2 NVMe Switch AIC

Revolutionize NVMe Storage Performance with Highpoint PCIe Gen5 Switch Technology

Rocket 1600 PCIe Gen5 NVMe Switch Series AICs & Adapters

HighPoint Rocket 1600 series switch AICs & Adapters provide enterprise-class NVMe storage connectivity and administrative capability and are suitable for use with a wide range of industry-standard x86 server and workstation platforms. These versatile, high-performance AICs and Adapters are equipped with our revolutionary PCIe Gen5 Switch Architecture and are capable of directly supporting up to eight NVMe SSDs, or as many as 32 NVMe devices via backplane connectivity.

NVMe media hosted by Rocket 1600 Switch AIC/Adapters will be automatically recognized by any OS platform with Native NVMe driver support. This makes them an ideal for businesses and organizations seeking to enhance critical workflows with flexible, robust and easily managed Gen5 NVMe storage performance.

Rocket 1604A PCIe Gen5 x16 to 4-M.2 NVMe Switch AIC

HighPoint's Rocket 1604A 4-Channel NVMe Switch AIC is an ultra-compact high-speed 4-port M.2 NVMe storage connectivity solution capable of delivering up to 56GB/s of transfer bandwidth for industry-standard x86 workstation and server platforms via a single PCIe x16 slot. The AIC can directly host up to four M.2 SSDs, removing the need for internal drive bays and cabling accessories. The half-length, single-width form factor is ideal for space-constrained computing environments such as industrial workstations, edge platforms and rackmount servers.

Powered by Industry Proven PCIe Switching Technology

Rocket 1604A AICs are powered by HighPoint's revolutionary PCIe Gen5 Switching Architecture, which leverages Broadcom's industry leading PEX89048 PCIe Switch IC to optimize signal integrity, minimize latency, maximize data transfer speed, and enable the AIC to provide x48 lanes of internal PCIe Gen5 bandwidth; x16 lanes to the upstream connection and 32 to the downstream ports. This guarantees that maximum bandwidth is available to each M.2 SSD at all times, enabling the AIC to deliver a class-leading 56GB/s of real-world transfer performance.

Native, Driverless Mainstream OS Support delivers Seamless Deployment Experience

Rocket 1600 series AICs are natively supported by all modern Linux and Windows based operating systems, and utilize Broadcom's embedded MPT driver, and the OS's native NVMe drivers. Administrators need only physically install the AIC – no software installation or unique management suite is required.

HighPoint PCIe/NVMe Switch storage solutions are universally compatible with all modern operating systems, including Microsoft Windows/Windows Server, Azure and Hyper-V, and Linux distributions such as RHEL, Debian, Ubuntu, & Rocky Linux.

M.2 media hosted by the AIC will be automatically recognized by these platforms, and can be formatted and partitioned using the default storage interface or SDS (software defined storage) application of choice.

In addition, native OS compatibility significantly streamlines service and maintenance sessions as support for the hardware is already embedded directly into each OS.

Feature Highlights

- 4 Independent M.2 Ports
- Wide-range of M.2 Form factor Support (2242, 2260, 2280)
- Leverages Broadcom's 48-lane PCIe Gen5 PEX89048 PCIe Switch IC:
 - Ensures the fastest, densest downstream connectivity possible
 - Optimizes signal integrity & stability, and minimizes latency
- Designed to maximize performance & connectivity density per PCIe 5.0 x16 slot: Up to 56GB/s and 12 Million IOPs using just four NVMe SSDs!
- Customizable Firmware Solutions for Gen5 AICs
- Natively supported by Mainstream Operating systems; delivers driverless deployment experience
- Robust, flexible & scalable; Tailor speed & capacity for the deployment & infrastructure requirements of each Application/Workflow
- Supports x86 Intel/AMD & ARM Platforms
- Firmware-based Diagnostics Capability

Advanced Field Service Feature Suite

Intelligent Self-Diagnostic LEDs & Alarms: The Rocket 1604A features Built-In Early Warning LED Indicators and Audible Alarms. Simple color coding and light/sound patterns enable administrators to instantly assess the status of hosted NVMe media, the strength of the PCIe connection, and temperature of the PCIe switch hardware.

FRU (Field Replaceable Unit) Support: Rocket 1604A AICs are field replaceable units (FRU); the VPD stored on each adapter enables customers and service providers to easily procure replacements with the correct firmware/driver combination.

HighPoint MPT Utility: HighPoint's MPT Utility offers advanced real-time monitoring and diagnostic services for each Switch AIC.

Advanced Cooling Solution

Rocket 1604A AICs are equipped with a powerful, ultra-efficient hardware cooling solution comprised of an anodized aluminum heatsink with an integrated low-decibel cooling fan, multiple layers of high-efficiency thermal padding, and a ventilated PCIe bracket. The solution rapidly transfers waste heat away from the hosted M.2 media and Switch chipset, and keep the performance-sapping threat of thermal throttling at bay.

Flexible Multi-AIC Configurations

Provided there are two or more free PCIe x16 slots, as many as four NVMe Switch AICs can coexist within a single platform. Operating systems will recognize each AIC as a distinct device, and is capable of operating independently. Configurable in single or multi-AIC/Adapter deployments, HighPoint NVMe Switch solutions offer unmatched flexibility in design and performance optimization.

Applications and Use Cases

The compact half-length Rocket 1604A NVMe Switch AIC's revolutionary PCIe Gen5 Switch Architecture and four independent M.2 ports can support up to 32TB of storage capacity at speeds up to 56GB/s; ideal for high-speed data-intensive applications hosted by Industrial and Edge computing environments.

Simple plug-and-play installation and embedded driver support with all major OS platforms streamlines deployment and service workflows, enabling customers to seamlessly integrate Gen5 storage performance into any AMD/Intel x86 and ARM platform with a free PCIe 5.0 x16 slot.

This versatility makes the Rocket 1604A an ideal choice for IT environments that require a powerful, small-footprint high-density storage expansion solution.

Product Model	Rocket 1604A
Hardware Features	
Bus Interface	PCIe 5.0 x16
Number of Channel / Port	4 x NVMe Ports (Dedicated PCIe 5.0 x4 per port)
Port Type	M.2
Data Transfer Rate	64GB/s
Number of devices	4
SSD Form Factor	M.2 (2242, 2260, 2280)
Synthetic Hierarchy	Yes
Diagnostic LED Support	Disk Active, Disk Fail, Disk Present
External Power Connector	N/A
Toolless SSD Installation	Yes
FRU Support	Yes Store VPD Data
Host CPU Architect Support	
CPU Architect Support	X86 / ARM
Mechanical Features	
Form Factor	Full-Height, Half-Length
Card Dimensions	167mm x 110mm
Width	Single Width
Card Weight	0.80 lbs.
PCIe Bracket	Full-Height ventilated bracket
Heatsink	1. One Big heatsink to cover all the board area 2. One 8010 Fan inside the Heatsink 3. the Adapter with Heatsink installed will not violate the PCIe Spec
Cooling System	Heatsink with a 8010 Fan inside
Supported Systems	
OS	All the Operating Systems with Native NVMe Driver
Software Secure Boot	Yes
NVMe RAID Management	
Management Suites	MPT Utility
Operating Environment	
Working Temp	+5°C ~ + 55°C
Storage Temp	-20°C ~ +80°C
Operating Voltage	PCIe: 12V, 3.3V
MTBF	920,585 Hours
Kit Contents	
Kit Contents	Rocket 1604A Switch AIC
	QIG
	Thermal pad: 70*90*0.75mm, K=8, Gray; V100; x1 Thermal pad: 70*90*1.5mm, K=3, Blue; V100; x1 Thermal pad: 70*90*1mm, K=8, Gray; V100; x1
	4 x additional M.2 Rubber

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