

Rocket 1600 Adapter Series

HighPoint PCIe Gen5 Switch Adapters

Ultra-Fast, Scalable PCIe Expansion for NVMe, GPU & AI Compute

HighPoint's Rocket 1600 Series PCIe Gen5 x16 NVMe Switch Adapters are engineered to deliver class-leading NVMe storage connectivity and PCIe expansion capability for Enterprise and Edge computing environments.

Each MCIO (SFF-TA-1016) port provides a dedicated PCIe Gen 5 x8 link, delivering high-speed, hot-pluggable connectivity for up to 32 U.2/U.3 or E3.S NVMe SSDs or 4x industry standard PCIe devices, including today's fastest Gen4 GPUs and NICs. Native NVMe driver support ensures plug-and-play installation for Linux and Windows platforms across Intel/AMD x86 and ARM platforms.

Powered by Proven PCIe Switching Technology

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 1600 series adapters to deliver up to 64GB/s of transfer bandwidth with minimal latency to facilitate consistent, robust I/O throughput, and support as many as 32 NVMe devices via UBM/VPP backplane connectivity, or up to 4x PCIe devices.

The Ultimate PCIe Expansion Solution

For data intensive AI/ML training workloads and high-performance computing (HPC), the limited number of PCI Express (PCIe) lanes provided by the host CPU has long been a source of performance bottlenecks. Once a system's PCIe slots are fully utilized, performance scaling typically comes to a standstill. HighPoint Technologies groundbreaking PCIe Switch Adapters are engineered to eliminate such bottlenecks, and can transform a single PCIe x16 slot into a powerful high-speed expansion platform capable of hosting multiple GPUs, FPGAs, NVMe SSDs, and high-bandwidth networking devices.

Compatible with Industry standard PCIe devices: Rocket 1600A series adapters are capable of hosting multiple PCIe devices when paired with the MCIO-PCIEX16-G5 Dual MCIOx8 Port to PCIe x16 expansion board.

MPT Tool: The intuitive command line interface works directly with the Adapter's PCIe Switch firmware to provide comprehensive real-time monitoring and diagnostics for host PCIe devices and NVMe media.

Configurable PCIe Lane Counts enable customers to optimize data flow and/or transfer performance to facilitate seamless integration of NVMe storage and PCIe devices into various storage architectures and workloads.

Compliant with Industry Backplane Specifications: The adapters support UBM (Universal Backplane Management), VPP (Virtual Pin Port) and real-time storage health and connectivity monitoring to ensure full compliance with industry standard backplane specifications for superior reliability.

Comprehensive Storage Communication Interfaces: With support for SMBus, I2C, and advanced Out-of-Band protocols like MCTP and SMC, HighPoint NVMe Switch Adapters provide extensive communication options to enhance storage administration across a diverse range of hardware environments.

Intelligent Self-Diagnostic LEDs: HighPoint PCIe Gen5 AICs and Adapters feature Built-In Early Warning LED Indicators. Simple color coding and flash-patterns enable administrators to instantly assess the operational status and condition of hosted SSDs and RAID arrays, the strength of the PCIe connection, and temperature of the PCIe switch hardware.

Versatile Cabling Solutions

The flexible MCIO 8i ports enable each adapter to interface with a variety of industry standard storage chassis, including internal 2.5" drive bays, Mobile Racks, storage backplanes and PCIe expansion boards via a selection of cabling solutions. These include direct to SSD connections such as MCIO to SFF-8639 (U.2/U.3 SSD), and MCIO to SFF-TA-1002 (E3.S SSDs). Options for backplane/mobile rack connectivity include MCIO to MCIO, MCIO to SFF-8654, MCIO to SFF-8643, and MCIO to SFF-TA-1002 (for E3.S media).

Feature Highlights

- High-Performance 48-Lane Gen5 Switch Architecture: x16 lanes of dedicated upstream & x4 lanes of downstream bandwidth for each device channel
- Delivers up to 64GB/s of Bandwidth & Real-world Sustained transfer up to 56,000MB/s
- Unmatched Expansion Capability:
 - 4x MCIOx8 Expansion: up to 4x GPU or industry Standard PCIe devices
 - NVMe Storage Expansion:
 - i. 4x Direct cabling or
 - ii. 16 via UBM Backplane
- Hot-Plug & Hot-Swap Capability
- Hardware Secure Boot
- Advanced PCIe Gen5 Cooling Solution

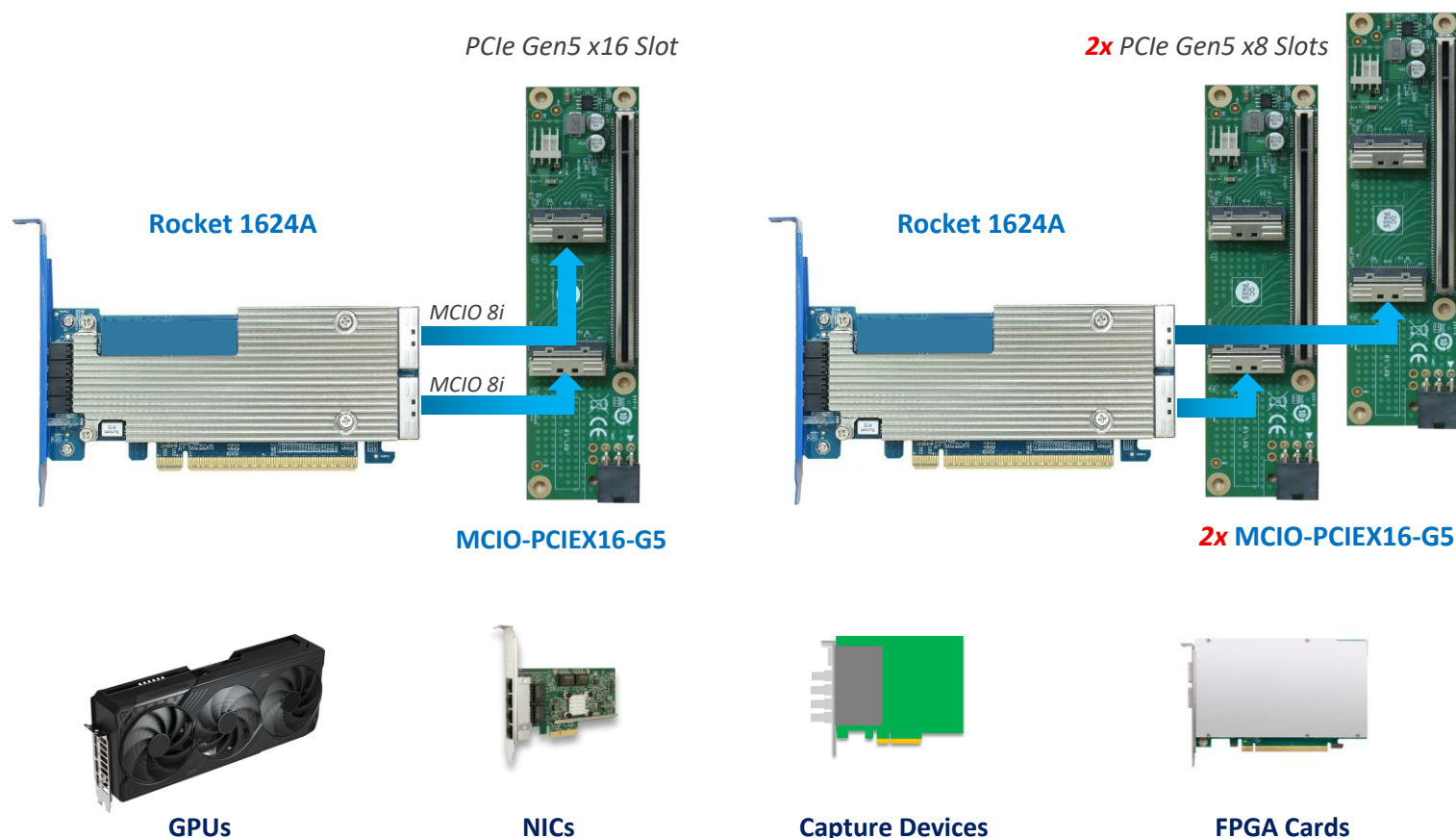
Unmatched Expansion Capability

Up to Four MCIO 8i Ports: PCIe Expansion + NVMe Storage

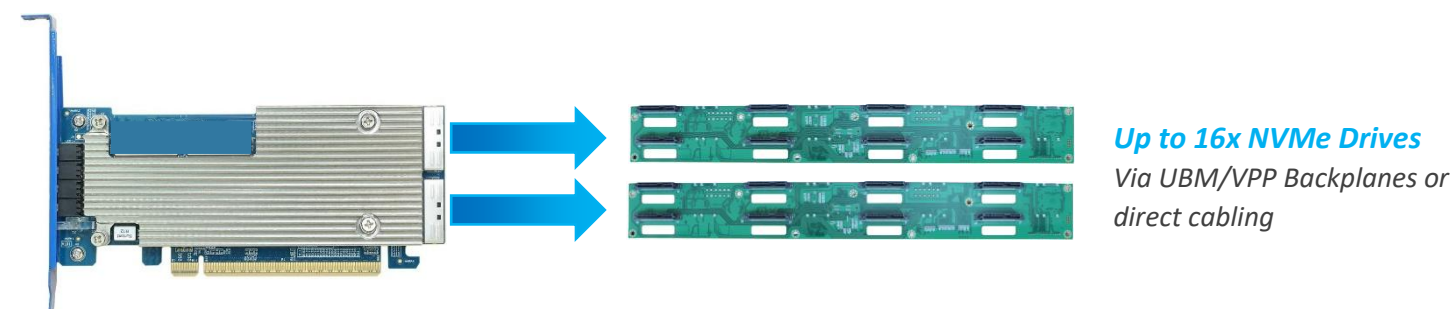
The Ultimate PCIe Expansion Solution

Two MCIO ports can be connected to the **MCIO-PCIEX16-G5** Dual MCIOx8 Port to PCIe x16 expansion board in order to add a PCIe Gen5 x16/x8 slot to the host system.

This capability significantly boosts system connectivity, effectively overcoming the PCIe limitations of conventional motherboard designs. The x16 mechanical slot accepts industry standard PXIe devices, and can provide up to x16 dedicated lanes of Gen5 bandwidth.

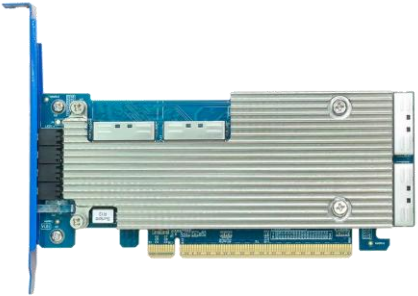
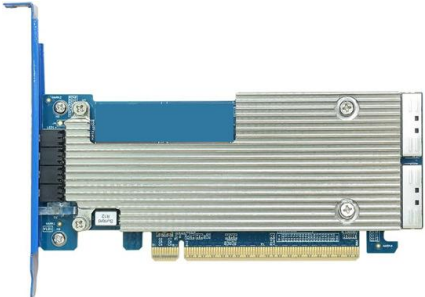


Flexible, Scalable NVMe Storage Expansion



Product Model	Rocket 1624A (R1624A)	Rocket 1628A (R1628A)
Hardware Features		
Bus Interface	PCI-Express 5.0 x16	
Number of Channel / Port	4 x NVMe Ports (Dedicated PCIe 5.0 x4 per port)	8 x NVMe Ports (Dedicated PCIe 5.0 x4 per port)
Connector Type	2x MCIO (SFF-TA-1016 8x)	4x MCIO (SFF-TA-1016 8x)
Connector Pinout Definition	SFF-9402 Compliant	SFF-9402 Compliant
Number of NVMe devices	4 (up to 16 via UBM Backplane)	8 (up to 32 via UBM Backplane)
Number of PCIe devices	2 (x8)	4 (x8)
Data Port Reconfiguration (Downstream Configuration: 1x16 /2x8 /4x4 /8x2 /16x1)	Please contact Sales for more information	
SSD Form Factor	U.2, U.3, E3.S (via cabling accessories)	
SRIS and REFCLK Support	Please contact Sales for more information	
Downstream port containment	Yes	
Read tracking	Yes	
Synthetic Hierarchy	Yes	
LED Indication	Intelligent, Self-Diagnostic LEDs	
FRU Support	Yes	
SSD HotPlug Support	Yes	
OOB Management	Yes: please contact Sales for more information	Yes: please contact Sales for more information
Backplane Support	UBM, VPP	
Storage Security Suite		
Hardware Secure Boot	Yes	
Mechanical Specifications		
Form Factor	LP-MD2	
Card Dimensions	155mm x 68.9mm	
Card Weight	340g	340g
Bracket	Full Height and Low Profile Ventilate Bracket	
Cooling Solution	Advanced PCIe Gen5 Passive Cooling Solution	
	• Full-Length Aluminum Heatsink (Passive) • Copper piping • Compliant with PCIe Specifications	
Supported Systems		
OS	Any OS with native NVMe Driver support	
Secure Boot	Yes	
Operating Environment		
Working Temp.	0°C ~ + 55°C	0°C ~ + 55°C
Storage Temp.	-20°C ~ +80°C	-20°C ~ +80°C
Operating Voltage	PCIe: 12V (+/- 8%), 3.3V (+/- 8%)	PCIe: 12V (+/- 8%), 3.3V (+/- 8%)
Power	16.26W	16.26W
MTBF (Mean Time Before Failure)	> 5,000,000 hours at 40° C	> 5,000,000 hours at 40° C
Kit Contents		
Kit Contents	R1624A NVMe Switch Adapter	R1628A NVMe Switch Adapter
	Low Profile Ventilated Bracket	Low Profile Ventilated Bracket
	QIG	QIG

Optional Accessories	
Cabling	CIO8-8639-110
	CIO8-CIO8-110
	CIO8-1002-110
	8654-CIO8-110
PCIe Expansion	MCIO-PCIEX16-G5

Rocket 1628A	
	
Rocket 1624A	
	

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