



Rocket 1528D

PCIe Gen4 x16 to 4x SlimSAS NVMe Switch Adapter

Robust, High-Density PCIe Gen4 2.5" NVMe Storage Solution for Server & Datacenter Applications

The Rocket 1528D 2nd Generation PCIe Gen4 NVMe Switch Adapter delivers up to 32GB/s of transfer bandwidth and can support up to eight U.2 or U.3 NVMe SSDs via four SlimSAS (SFF-8654) ports and cable connections to SFF-8639 or SFF-8654/SFF-1016 UBM and VPP compliant backplanes.

The compact, robust form-factor complies with the LP-MD2 specification, and is broadly compatible with industry-standard server and workstation chassis. Integrated Surprise NVMe Add-and-Remove technology provides true Hot-Plug/Hot-Swap support, and enables administrators to install or unplug SSDs while the host platform remains active. The integrated OOB (out-of-band) Management capability can significantly streamline service and maintenance workflows.

48 Lanes of Dedicated PCIe Gen4 Bandwidth

HighPoint's High-Performance PCIe Gen4 switching architecture integrates Broadcom's 48-Channel PEX88048 switch IC to provide x16 lanes of dedicated PCIe Gen4 upstream bandwidth and x4 lanes of dedicated downstream bandwidth to each device channel. The innovative architecture enables the Rocket 1528D to deliver up to 32GB/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 1528D 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.

Integrated NVMe Hot-Plug & Hot-Swap Capability

The Rocket 1528D features incorporates Surprise NVMe Add and Remove technology to deliver true Hot-Plug/Hot-Swap support; an essential feature for any professional server and datacenter platform. Administrators can safely add or remove SSDs while the host platform remains active.

The Rocket 1528D employs a technique known as Synthetic Hierarchy to isolate the host operating system from any PCIe topology changes (physical changes) and any events associated with the sudden addition or removal of an NVMe device.

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

The Rocket 1528D 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 1528D 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 1528D'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.

PCIe Gen4 Hyper Cooling Solution

The Rocket 1528D AICs advanced PCIe Gen4 Hyper-Cooling solution employs a Full-Length Aluminum heat exchanger with copper piping to rapidly whisk waste heat away from the Switch IC and controller componentry to ensure reliability and promote longevity of the adapter hardware. The design is ideal for server and datacenter applications as it utilizes no moving parts and requires no maintenance.

Intelligent Self-Diagnostic LEDs

The Rocket 1528D adapter features Built-In Early Warning LED Indicators, which are integrated into the ventilated PCIe mounting bracket. Simple color coding and flash-patterns enable administrators to instantly assess the operational status and condition of hosted SSDs, the strength of the PCIe connection, and temperature of the PCIe switch hardware.

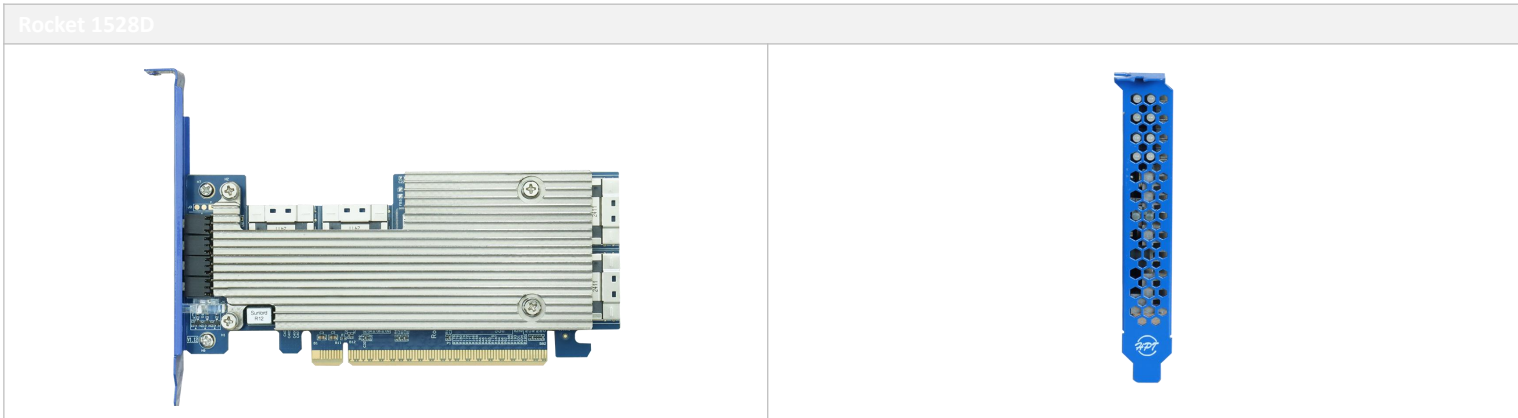
Feature Highlights

- 8-Dedicated PCIe 4.0 device channels
- Directly Supports up to 8x U.2/U.3 NVMe SSDs via 4x SlimSAS SFF-8654 Ports & industry standard backplane connectivity
- High-Performance 48-Lane Gen4 Switch Architecture: x16 lanes of dedicated upstream & x4 lanes of downstream bandwidth for each device channel
- Delivers 32GB/s of Bandwidth & Real-world Sustained transfer speeds up to 27,000MB/s
- Integrated NVMe Hot-Plug & Hot-Swap Capability
- PCIe Gen4 Hyper-Cooling Solution

Product Model	Rocket 1528D (R1528D)
Hardware Features	
Bus Interface	PCIe 4.0 x16
Number of Channel / Port	8x Device Channels / 4x SlimSAS Ports (Dedicated PCIe 4.0 x8 per port)
Connector Type	SlimSAS (SFF-8654 8x)
Connector Pinout Definition	SFF-9402 Compliant
Number of devices	8
Data Port Reconfiguration (Downstream Configuration: 1x16 /2x8 /4x4 /8x2 /16x1)	Yes
SSD Form Factor	U.2, U.3
External Power Support	No
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	N/A
Power Measurement	N/A
FRU Support	Yes
SSD Hot-Plug/Hot-Swap Support	Yes
OOB Management	Yes (BMC and MCTP over PCIe)

Mechanical Specifications	
Form Factor	LP-MD2
Card Dimensions	155mm x 68.9mm
Card Weight	0.75 lbs.
PCIe Bracket	Full-Height Ventilated Bracket
Cooling Solution	Advanced PCIe Gen4 Cooling Solution
	<ul style="list-style-type: none"> • Full-Length Aluminum Heatsink (Passive) • Copper piping • Compliant with PCIe Specifications
Supported Systems	
OS	Compatible with all operating systems that have native NVMe driver support
Secure Boot	Yes

Operating Environment	
Working Temp.	+5°C ~ + 55°C
Storage Temp.	-20°C ~ +80°C
Operating Voltage	PCIe: 12V, 3.3V
Power	29.58W
MTBF	> 5,000,000 hours at 40° C
Kit Contents	
Kit Contents	R1528D NVMe Switch Adapter
	Low-Profile Ventilated Bracket
	QIG
Optional Accessories	
Cabling	CIO8-8639-110
	CIO8-CIO8-110
	CIO8-1002-110
	8654-CIO8-110



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