HighPoint Technologies, Inc.

SSD7104F

PCIe 3.0 x16 4-Port M.2 NVMe RAID HBA

Cost-Effective, High-Performance 4-Channel M.2 NVMe RAID Solution

Unbeatable Gen3 Storage Performance

The SSD7104F is our second generation PCIe 3.0 Ge4 4-Port M.2 NVMe RAID controller, and is capable of delivering up to 14,000MB/s of transfer performance The compact controller card is no larger than your average GPU, and directly hosts up to four M.2 NVMe SSDs of any form factor(2242/2260/2280/22110).

Truly Platform Independent NVMe RAID Solution

HighPoint NVMe RAID controllers are truly independent NVMe storage solutions. Unlike most NVMe devices in today's marketplace, which are tied to a specific hardware platform or brand of SSD or motherboard, SSD7000 series controllers do not require a hardware environment with Bifurcation support, or any specialized software released by SSD manufacturers; they can be easily integrated into an AMD or Intel motherboard with a dedicated PCIe 3.0 or 4.0 x16 slot

Performance-Focused NVMe Architecture

The SSD7104F benefits from the latest generation of our industry proven, performance-focused NVMe hardware architecture. Designed to deliver uncompromised end to end PCIe 3.0 x16 bandwidth, the integrated Smart-Switching technology allocates 4x dedicated lanes for each SSD to ensure maximum transfer speed and immediate response time.

Multi-CPU/Core Performance Optimizer: multi-core/Multi-CPU platforms have plentiful resources, but these may not be properly allocated to the target application and NVMe media. HighPoint's HPT-Optimize utility Simplifies the Complicated Tuning Process for all Multi-Core platforms.

Cross-Sync RAID Technology: The SSD104 enables administrators to optimize RAID performance by scaling available bus bandwidth up to 32 lanes, and deliver up to 28,000MB/s of transfer performance.

Advanced NVMe Cooling Solution

The SSD7104F's advanced NVMe cooling solution mitigates the risk of thermal throttling by ensuring NVMe SSDs consistently operate within their recommended temperature thresholds, even under sustained heavy I/O.
The full-length anodized aluminum heat sink is equipped with an ultra-durable, low-decibel fan and high-conductivity thermal padding. This innovative, ultra- efficient cooling system rapidly transfers waste heat away from critical NVMe and controller componentry, without introducing unwanted distraction into your work environment.

Industry Proven NVMe RAID Technology

HighPoint 7000 Series NVMe RAID controllers will automatically recognize new NVMe SSDS's as single drives; no configuration necessary. In addition, our proven NVMe RAID stack enables each controller to support multiple RAID arrays or mixed configurations of single disks and RAID storage.

RAID 10 (Security & Speed) - RAID 10 requires a minimum of 4 NVMe SSD's and is comprised of a stripe between two RAID 1 arrays. RAID 10 capable of delivering read performance on par with RAID 0, and is superior to RAID 5 for NVMe applications. Unlike RAID 5, RAID 10 doesn't necessitate additional parity related write operations, which reduce the TBW life span of NVMe SSDs.

RAID 0 (Speed) - Also known as a "stripe" array, this mode delivers Maximum Performance, and requires a minimum of 2 NVMe SSDs.

RAID 1 (Security) - This mode creates a hidden duplicate of the target SSD, and requires 2 NVMe SSD to configure.

Key Benefits

- 4x M.2 Ports (242/2260/2280/22110)
- Dedicated PCIe 3.0 x16 bus bandwidth
- Works with any PC & Mac Platform with a dedicated PCIe 3.0 or 4.0 x16 slot
- Cross-Sync Technology: double capacity & performance up to 28,000MB/s!
- RAID 0, 1, 10 & JBOD
- Integrated TRIM & S.M.A.R.T. Monitoring with TBW Tracking
- For Windows, macOS & Linux

Universal Software Suite Easily Manages & Monitors RAID Storage

HighPoint's comprehensive NVMe management suite streamlines installation, service and upgrade workflows.

***OS-Level Management*:** The WebGUI is an intuitive graphical user interface designed to work with all modern Web Browsers.

The CLI(Command Line Interface) is ideal for seasoned administrators and platforms that do not utilize graphical operating systems.

***1-Click Self Diagnostic & Logging Service*:** The WebGUI's Diagnostic tab enables the interface to gather all necessary hardware, software and storage configuration data and compile it into a single file.

Product feature	SSD7104F
Product Image	
Bus Interface	PCI-Express 3.0 x16
Number of Channel / Port	4x M.2 NVMe port (Dedicated PCIe 3.0 x4 per port)
Port Type	4x M.2 NVMe
Data Transfer Rate	8GT/s
Number of device	4x M.2 NVMe SSD
SSD Form Factor	2242/2260/2280/22110 (supports single & double sided)
Form Factor	Full-Height
Card Dimensions	7.68" (W) x 4.38"(H) x 0.82"(D)
Card Weight	1.34 lbs.
Warranty	2 Years
Windows (only supports 64-bit operating system)	Windows 11, 10 Windows Server 2022, 2019, 2016 Microsoft Hyper-V
Linux (only supports 64-bit operating system)	RHEL/Debian/Ubuntu/Fedora/Proxmox/Rocky Linux(Linux kernel 3.10 and later)
macOS	macOS 10.13 ~ macOS Ventura 13.x
ARM Platform Support(NVIDIA model)	Yes (Linux)
System Requirements	**Mac Platforms:** • Apple Mac Pro Systems: 2012 and later Mac Pro systems; 5.1, 7.1 (2019) • Intel & Apple M1 Platform compatible • Thunderbolt™ 3 Connectivity via Thunderbolt™ Expansion chassis: RocketStor6661A
	PC Platforms: • Any PC Systems or Motherboard with an industry standard PCIe x16 physical Slot (Bifurcation is not required) • Thunderbolt™ 3 Connectivity (requires a PC platform with a Thunderbolt 3 port) & Thunderbolt™ Expansion chassis: RocketStor6661A
Secure Boot(PC platforms)	Windows: Supports Secure Boot enable or disabled Linux: Supports Secure Boot disabled
Cooling System	Full-length anodized aluminum heat sink with integrated cooling fan & thermal padding
Fan Control	Yes (Windows, Mac)

NVMe Configuration	
RAID Support	Single, RAID 0, 1, 10
TRIM RAID Support	Single, RAID 0, 1, 10
Data RAID(Non-Bootable)	Windows, Linux, Mac
Boot RAID	Windows: Not supported
	Linux: Not supported
	Mac: Bootable using one (non-RAID) M.2 SSD as the boot drive. Only supports up to macOS 10.15.
NVMe RAID Management	
Management Suites	WebGUI (Browser-Based management tool)
	CLI (Command Line Interface- scriptable configuration tool)
	API package
SMTP Email Alert Notification	Yes
Alarm Buzzer	Yes
Storage Health Inspector	Yes
NVMe SMART status	Yes
Automatic & 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 (Windows, Linux, Mac)
Advanced RAID features	
Flash ROM for Upgradeable UEFI	No
Bootable RAID Array	No
Multiple RAID Partitions supported	Yes
Online Array Roaming	Yes
RAID Quick Initialization for fast array setup	Yes
Global Hot Spare Disk support	Yes
Operating Environment	
Work Temp	+5°C ~ + 55°C
Storage Temp	-20°C ~ +80°C
Operating Voltage	PCI-e: 12V, 3.3V
Power	Typical: 7.29W
MTBF (Mean Time Before Failure)	920,585 Hours
Certification / Approval	CE, FCC, RoHS, REACH, WEEE
Kit Contents	1x SSD7104F
	1x Quick Installation Guide
Optional Accessories	
HS8004	Optional fan-less cooling system (included with SSD7104)
HS8004F	Replacement cooling system for the SSD7104F

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