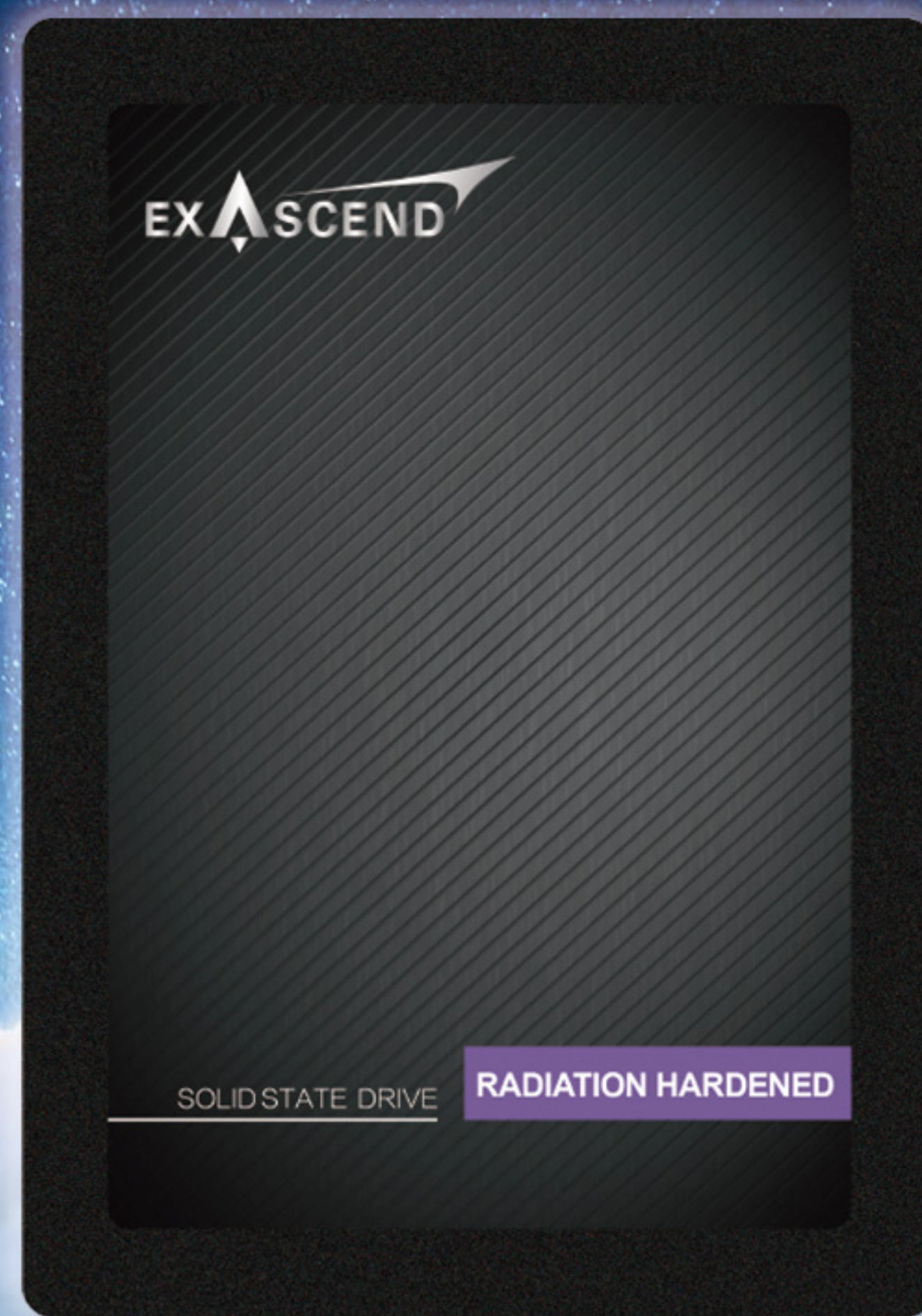


PR4 Series NVMe SSDs

Unmatched Storage Solutions for Radiation-Intense Environments



PCIe 4.0 NVMe 1.4
Interface

176-layer 3D TLC
NAND Flash

Rad-Hard
Design

Up to **15.36 TB**
Capacity

Up to **3,500 MB/s**
Sustained performance

Radiation-Hardened Reliability
PR4 SSD integrates Exascend’s Neutron Shield 2.0 technology, ensuring radiation-induced bit flip correction and dual-copy firmware. Seamless transition to safe mode for uninterrupted operations in critical situations.

Low Power Consumption
PR4 U.2 and E1.S models consume <7.5W at 3GB/s, <1W at idle, over 50% less power than competitors.

Optimized Thermal Management
Enhanced thermal management ensures component reliability in extreme conditions, vital for prolonged space exploration.

Withstanding Humidity, Shock and Vibration
PR4 SSD features conformal coating for moisture and particle protection, plus underfill technology to reinforce BGA connections against vibration failures.

Data Security and Encryption
PR4 SSD offers robust data protection with TCG Opal 2.0, AES-256 encryption, secure erase, PBA, and tamper-proof firmware options.

Customizable Flash Storage Solutions
Engineered with bespoke firmware architecture by collaborating with top-tier NAND flash manufacturers and SSD controller creators. Provides tailored solutions for success.

Product Specifications

Edition	PR4 Series		
Interface	PCIe 4.0 (NVMe 1.4)		
Flash type	176-layer 3D TLC		
Form factor	M.2 (2280, 2242)	E1.S	U.2
Capacity	960GB to 7.68TB	960GB to 7.68TB	960GB to 15.36TB
Input voltage	3.3V ±5%	12V ±10%	
Power consumption	Active <8W; Idle <1W		
Sequential read/write up to	3,200/3,000 MB/s	3,500/3,000 MB/s	
4K random read/write up to	400,000/50,000 IOPS	500,000/55,000 IOPS	
Operational temperature	-40°C to 85°C		
Storage temperature	-50°C to 95°C		
Humidity (non-condensing)	5–95% (Operating)		
Vibration	10 G (peak, 10–2000 Hz)		
Shock	Operating: 50 G (11 ms duration, half sine wave) Non-operating: 1500 G (0.5 ms duration, half sine wave)		
Features	<ul style="list-style-type: none"> •Radiation-hardened. •Advanced LDPC error correction. •Firmware power loss protection. •Conformal coating. Underfill. •TCG Opal 2.0 / AES-256 (optional). 	<ul style="list-style-type: none"> •Radiation-hardened. •Advanced LDPC error correction. •Firmware & hardware power loss protection. •Conformal coating. Underfill. •Hot-plug capable. •TCG Opal 2.0 / AES-256 (optional). 	
TBW up to	4,800TB	4,800TB	9,600TB
DWPD (JESD218)	0.6 @ 3 years		
MTBF	2,000,000 hours		
Warranty	3 years		

Ordering Information

Form Factor	Part Number	Capacity	Flash Type	Op. Temp
M.2 2242	EXPR4Q960GB	960GB	3D TLC	-40°C to 85°C
M.2 2242	EXPR4Q1920GB	1920GB		
M.2 2280	EXPR4M960GB	960GB		
M.2 2280	EXPR4M1920GB	1920GB		
M.2 2280	EXPR4M3840GB	3840GB		
M.2 2280	EXPR4M7680GB	7680GB		
U.2	EXPR4U960GB	960GB		
U.2	EXPR4U1920GB	1920GB		
U.2	EXPR4U3840GB	3840GB		
U.2	EXPR4U7680GB	7680GB		
U.2	EXPR4U15360GB	15360GB		
E1.S	EXPR4E960GB	960GB		
E1.S	EXPR4E1920GB	1920GB		
E1.S	EXPR4E3840GB	3840GB		
E1.S	EXPR4E7680GB	7680GB		