



DuraFlash™

S1800 | M.2 2280 & U.2 PCIe NVMe

SMART's DuraFlash S1800 products are best in-class PCIe NVMe SSDs with the functionality, performance and reliability for mission-critical applications. These drives target server, storage cache/accelerators, networking, and data communications applications requiring reliable internal storage with a small footprint. They are also a natural fit for enterprise applications, including computing, medical, transportation, video surveillance and other industrial applications.

The S1800 products feature a PCIe Gen3 x4 interface and are compliant to NVMe 1.3 specification. Both S1800 M.2 2280 and U.2 modules support TCG Opal 2.0 as standard, and are easily integrated into a host system without any BIOS modifications or additional drivers. The S1800 products incorporate on-board error detection and correction, and static wear-leveling algorithms to provide reliable operation over the product life cycle.



Features & Benefits

- PCIe Gen3 x4 NVMe 1.3 Compliant
- TCG Opal 2.0 Compliant
- Advanced Flash Management
- End-to-End Data Path Protection
- LDPC Error Detection and Correction with Internal Data Redundancy Coding
- Supports Power Saving Modes of APST, APSM, and L1.2

Applications

- Data Communications
- Industrial Control
- Networking
- Other Applications Requiring Internal Storage with a Small Footprint
- Server, Storage Cache/Accelerators
- Single-Board Computers for Medical, and Industrial Control Applications

Product Family Overview

	Capacity	Sequential Performance
M.2 PCIe NVMe		
M.2 2280	240GB to 1920GB	Up to 3200MB/s Read; Up to 1000MB/s Write
U.2 PCIe NVMe		
U.2	240GB to 3840GB	Up to 3200MB/s Read; Up to 1000MB/s Write

Specifications

	S1800 M.2 PCIe NVMe	S1800 U.2 PCIe NVMe
NAND Type	TLC	
Performance		
Host Interface Rate (maximum)	Gen 3x4 8.0Gbps	
Number of Flash Channels	8	
Capacities	240GB to 1920GB	240GB to 3840GB
Sequential Read (maximum)	Up to 3200MB/s	
Sequential Write (maximum)	Up to 1000MB/s (1920GB, 3840GB) Up to 580MB/s (480GB) Up to 330MB/s (240GB)	
Random Read (maximum)	140K	
Random Write (maximum)	220K	
Reliability		
Data Reliability	< 1 Non-Recoverable Error in 10 ¹⁷ bits read	
Data Retention	10 years >90% life remaining, 1 year at the end of life	
Endurance	3840GB: 2905 TBW 1920GB: 1210 TBW 960GB: 595 TBW 480GB: 295 TBW 240GB: 140 TBW	
Error Correction	LDPC (Equivalent to 130 bits/2KB)	
Environmental		
Shock – Non-Operating	1500 g half-sine, 0.5 msec, 1 shock along each axis, X, Y, Z in each direction	
Shock – Operating	50 g half sine, 11 msec, 3 shocks along each axis, X, Y, Z in each direction	
Vibration – Operating	20G rms 80-2000Hz, 1.52mm 20-80Hz, 3 axis	
Operating Temperature	Commercial: 0°C to +70°C Industrial: -40°C to +85°C	
Storage Temperature	-40°C to +85°C	
Humidity	10% to 90%, non-condensing, relative humidity	
Physical		
Length	80.0 mm	100 mm
Width	22.0 mm	69.8 mm
Height	3.5 mm	9.5 mm

Ordering Information

Part Number	Density
M.2 2280	
Commercial Operating Temperature (0°C to +70°C)	
SVM2P8B1920ST51	1920GB
SVM2P8B960GST51	960GB
SVM2P8B480GST51	480GB
SVM2P8B240GST51	240GB
M.2 2280	
Industrial Operating Temperature (-40°C to +85°C)	
SVM2P8B960GSTI51	960GB
SVM2P8B480GSTI51	480GB
SVM2P8B240GSTI51	240GB
U.2	
Commercial Operating Temperature (0°C to +70°C)	
SVU2PB3840ST51	3840GB
SVU2PB1920ST51	1920GB
SVU2PB960GST51	960GB
SVU2PB480GST51	480GB
SVU2PB240GST51	240GB
U.2	
Industrial Operating Temperature (-40°C to +85°C)	
SVU2PB1920STI51	1920GB
SVU2PB960GSTI51	960GB
SVU2PB480GSTI51	480GB
SVU2PB240GSTI51	240GB



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