SMART®
Modular Technologies

R800, 2.5″ & M.2 2280 SATA

SMART Modular Technologies' R800 2.5" SATA and M.2 2280 solid state drives bring the advantages of non-volatile memory to embedded computing applications. The R800 are enterprise feature rich and reliable mass storage in a 2.5" and M.2 2280 form factor available in both commercial and industrial temperature ranges. The capacities range from 240GB to 7680GB for the 2.5" and 240GB to 1920GB for the M.2 2280.

The 2.5" SATA and M.2 2280 product line offer excellent sustained random read/write and sustained sequential read/write performance. The R800 is suitable for applications that cannot tolerate variations in performance.

SMART's 2.5" SATA and M.2 2280 drives are offered with Triple Level Cell (TLC) 3D NAND. They provide enhanced reliability by incorporating on-board error detection and correction and static wear leveling algorithms to provide reliable operation over the product life.

Features & Benefits

- Advanced wear leveling – static and dynamic wear leveling
- Advanced Error Detection/Correction circuitry for superior data reliability
- Self-Monitoring Analysis and Reporting Technology (S.M.A.R.T.) support
- Supports for 48bit LBA addressing with larger maximum transfer size

R800v Product Family Overview

Capacity	Performance Sequential
2.5″ SATA TLC	
240GB to 7680GB	Up to 550MB/s
M.2 SATA 2280 TLC	
240GB to 1920GB	Up to 550MB/s Max.

Applications

- Enterprise
- NAS / SAN storage systems
- x86 server-storage appliances
- Distributed scale-out cloud servers
- Telecom and networking routers and switches
- ATCA compute blades
- Industrial control
- Single board computers for defense, gaming and industrial control applications

R800, 2.5″ & M.2

Specifications

	2.5" SATA TLC	M.2 2280 TLC
Performance		
Host Interface Rate	6Gb/s (Backwards compatible to 3Gb/s & 1.5Gb/s)	
Capacities	240GB to 7680GB	240GB to 1920GB
Sequential Read (maximum)	Up to 550MB/s (240GB to 7680GB)	
Sequential Write (maximum)	Up to 530MB/s (480GB to 7680GB) Up to 340MB/s (240GB)	
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 (JEDEC Enterprise Workload)[1]	240GB: 140 TBW 480GB: 295 TBW 960GB: 595 TBW 1920GB: 1210 TBW 3840GB: 2905 TBW 7680GB: 5810 TBW	
Error Correction	LDPC (Equivalent to 130 bits/2KB)	
Environmental		
Shock	1500 g half-sine, 0.5 msec, 1 shock along each axis, X,Y,Z in each direction	
Vibration	20G 80-2000Hz, 1.52mm 20-80Hz, 3 axis	
Operating Temperature	Commercial: 0° to 70°C Industrial: -40° to 85°C	
Storage Temperature	-40°C to 85°C	
Humidity	40°C, Operation: 90% RH, Storage: 93% RH	
Altitude	24,384 m [80,000 ft]	
Physical		
Length	100 mm	80.0 mm
Width	69.85 mm	22.0 mm
Height	7.0 mm	3.8 mm

[1]Endurance is directly related to the User Specific Workload

Ordering Information

Part Number	Density
2.5" SATA **Commercial Operating Temperature**	
SVSAT67680RT51	7680GB
SVSAT63840RT51	3840GB
SVSAT61920RT51	1920GB
SVSAT6960GRT51	960GB
SVSAT6480GRT51	480GB
SVSAT6240GRT51	240GB
2.5" SATA **Industrial Operating Temperature**	
SVSAT63840RTI51	3840GB
SVSAT61920RTI51	1920GB
SVSAT6960GRTI51	960GB
SVSAT6480GRTI51	480GB
SVSAT6240GRTI51	240GB
M.2 2280 **Commercial Operating Temperature**	
SVM2S861920RT51	1920GB
SVM2S86960GRT51	960GB
SVM2S86480GRT51	480GB
SVM2S86240GRT51	240GB
M.2 2280 **Industrial Operating Temperature**	
SVM2S86960GRTI51	960GB
SVM2S86480GRTI51	480GB
SVM2S86240GRTI51	240GB

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