Xceed iSATA Embedded SSD

SMART Modular Technologies' Xceed iSATA embedded SSD is an industrial-grade 1.5 Gb/s serial-ATA (SATA-II), embedded, single-level cell (SLC) solid-state drive (SSD). This device specifically targets the needs of OEM customers in the server, storage cache /accelerators, networking, and data communications markets requiring reliable internal storage with an extremely small footprint. SMART's Xceed iSATA embedded SSD is also a natural fit for mobile and embedded computing, medical, automotive, and industrial applications. The small form factor, reduced weight, low power consumption, and fast data throughput are major advantages of the iSATA over traditional rotating hard disk drives (HDDs) and other embedded solid state products.

Designed with an industry-standard SATA interface and connector, iSATA easily integrates into a host system without the need of special BIOS modifications or additional device drivers. SMART's Xceed iSATA embedded SSD products offer leading edge read performance of up to 86 MB/s (maximum) and write performance up to 55 MB/s (maximum) and are available in various capacities, ranging from 2GB to 32GB. The iSATA provides support for lower density applications not readily available from HDD manufacturers.

SMART Xceed products address the need for enhanced reliability by incorporating on-board error detection and correction and static wear leveling algorithms to provide reliable operation over the product life cycle.

Product Family At-A-Glance

	Capacity (GB)	Performance Sequential
iSATA		
4-Channel	2, 4, 8, 16, 32	86 MB/s Read (maximum) 55 MB/s Write (maximum)

Features

- Whole Drive Static Wear Leveling
- Advanced Error Detection/Correction Circuitry for superior data reliability
- Self-Monitoring Analysis and Reporting Technology (S.M.A.R.T.) support
- Supports 48bit LBA Addressing with larger Max Transfer size
- Improved shock and vibration resistance over rotating media
- Indicator LED to indicate drive accesses
- External LED Activity Signaling (through the SATA connector) (Pin 11)
- Provides Health Status Monitor
- Zero seek time
- Noiseless operation

Specifications

	Xceed iSATA Embedded SSD
Performance	
Read (maximum)	86 MB/s
Write (maximum)	55 MB/s
Host Interface Rate (maximum)	1.5 Gb/s
Access Time (typical)	600 μs
Reliability	
Data Reliability	< 1in 10^{14}bits read
Data Retention	10 years @ 25°C
Endurance	> 260 years @ 200GBytes/day write cycles (16GByte drive) Unlimited reads
Error Correction / Error Detection (BCH)	Up to 6 random bits for every 512-byte sector

Power

	Typical	Maximum	
Vcc	5.0 ± 5%	5.25 ± 5%	V
Read	165	280	mA
Write	173	400	mA
Idle	117	175	mA

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	16.4 g rms 10-2000Hz, 3 axes
Operating Temperature - Commercial	0°C to 70°C
Operating Temperature - Industrial	-40°C to 85°C
Storage Temperature	-55°C to 95°C
Humidity	5% to 95%, non-condensing, relative humidity[4]
Altitude	24,384m [80,000 ft]

Physical

	Standard	2.5" Compatible
Length	55.88 mm	69.9 mm
Width	30.48 mm	39.4 mm
Height	11.38 mm (non-stacked) or 12.01 mm (stacked)	6.4 mm

Ordering Information

Part Number	Form Factor	Capacity	Unformatted Capacity
SG9STL4A2G4L03	Standard	2GB	2,007,040 KBytes
SG9STL4A4GDL03	Standard	4GB	4,014,080 KBytes
SGPSTL4A8GCL03	Standard	8GB	8,028,160 KBytes
SG9STL4A16GBL03	Standard	16GB	16,056,320 KBytes
SG9STL4A32GBL03	Standard	32GB	32,112,640 KBytes
SG9STL5A2G4L03	2.5" Compatible	2GB	2,007,040 KBytes
SG9STL5A4GDL03	2.5" Compatible	4GB	4,014,080 KBytes
SG9STL5A8GCL03	2.5" Compatible	8GB	8,028,160 KBytes
SG9STL5A16GBL03	2.5" Compatible	16GB	16,056,320 KBytes
SG9STL5A32GBL03	2.5" Compatible	32GB	32,112,640 KBytes

RoHS COMPLIANT 2002/95/EC

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