



PRELIMINARY

## Optimus™ SAS SSD

SMART Storage Systems™ newest generation of SSDs feature a wide port native SAS 6Gb/s interface, blistering performance metrics, and a comprehensive set of high-end features making them ideal for a wide variety of enterprise applications.

OEMs and IT managers no longer have to compromise on performance, endurance and reliability to obtain affordability. Optimus offers all four in a single package through a combination of unique and innovative IP, and the use of Multi-Level Cell (MLC) flash.

With random read/write speeds of 100K/50K IOPS and sequential read/write speeds of 500/500MB/s, the Optimus SSD also includes support for wide-port SAS capability providing up to 1GB/s sustained read performance in applications that support this advanced feature.

### Guardian™ Technology

Optimus SSD is powered by SMART's proprietary Guardian Technology, a comprehensive suite of innovative features comprised of FlashGuard, DataGuard, and EverGuard technologies.

### FlashGuard™

FlashGuard extends the native endurance of commercial-grade MLC flash based SSDs from less than 1 drive write per day to 10 full capacity writes per day for a period of five years.

FlashGuard combines Aggregated Flash Management, which treats all flash elements as a single system, and Advanced Signal Processing, which dynamically adjusts flash parameters throughout the life of the SSD, to reliably extract significantly more life from commercial-grade MLC flash. Using these features in combination with proprietary enhanced error-correction techniques, FlashGuard technology provides the endurance enhancements required to enable the use of MLC flash in mission-critical enterprise applications.

### DataGuard™

DataGuard features full data path protection, safeguarding user data from corruption along all data paths in the SSD. DataGuard also protects the SSD against loss of data at the page and block levels using a unique feature called F.R.A.M.E. (Flexible Redundant Array of Memory Elements). F.R.A.M.E. acts as a data recovery feature that enables the recovery of user data even after catastrophic events such as flash page or block failures.

### EverGuard™

EverGuard protects against loss of user data in the event of unexpected power interruptions using a 3rd generation backup power circuit design and high-reliability discrete capacitors.

### Features

- **6Gb/s Native SAS**
- **High Endurance**
  - 10 Full Random Drive Writes/Day for Five Years
- **Data integrity – BER 10<sup>17</sup>**
- **AES 256-bit Encryption**
  - TCG Enterprise Compliant
- **T-10 DIF Support**
- **FlashGuard**
  - Extends the Native Endurance of MLC Flash
  - Aggregated Flash Management
  - Advanced Signal Processing
  - Enhanced Error Correction
- **DataGuard**
  - Protects Against Data Corruption and Loss
  - Full Data Path Protection
  - F.R.A.M.E. Technology
- **EverGuard**
  - Protects Data in the Event of Unanticipated Power Outages
  - High-Reliability Backup Power Circuitry

### Optimus SAS Product Family

	Capacity	Sustained Performance	Random Performance
MLC	200GB, 400GB, 800GB, 1.6TB	500/500MB/s sustained 1GB/s wide-port	100K/50K IOPS



## Optimus SAS Specifications

2.5" Form Factor	
<b>Performance</b>	
Interface	SAS 6Gb/s
Interface Ports	Dual/Wide
Sustained Read/Write	500/500MB/s MB/s sustained 1GB/s wide-Port
Random Read/Write	100K/50K IOPS
<b>Capacity</b>	
MLC	200GB, 400GB, 800GB, 1.6TB
<b>Reliability</b>	
Sector Sizes	512, 520, 528 byte
Data Reliability	1 unrecoverable error in 10 <sup>17</sup> bits read
Endurance	FlashGuard: 10 full drive writes/day
Data Fail Recovery	F.R.A.M.E. (Flexible Redundant Array of Memory Elements)
Power Fail Recovery	EverGuard: Backup Power Circuitry
Data Path Protection	DataGuard, T-10 DIF
Warranty	5 years
Security	TCG Enterprise Compliant
Encryption	AES 256-bit
<b>Power</b>	
Vcc	5V, - 5%/+10%
Active (Typ)	7W
<b>Environmental</b>	
Shock	15 g half-sine, 11 msec, 3 shocks along each axis, X, Y, Z, in each direction
Vibration	0.67 g rms 5-500 Hz, 3 axes
Operating Temperature	0 to 60°C
Storage Temperature	-40°C to 90°C
Humidity	5% to 95%, non-condensing, relative humidity
Altitude	18,000 ft
<b>Dimensions</b>	
Length	100.20 mm [3.94 in]
Width	69.85 mm [2.75 in]
Height	9.50 mm [0.37 in]

## Optimus SAS Ordering Information

Part Number	Capacity
<b>Optimus SAS</b>	
TXA2D20200GA6001	200GB
TXA2D20400GA6001	400GB
TXA2D20800GA6001	800GB
TXA2D21600GA6001	1.6TB

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