

HRS-X3 SSD

SMART High Reliability Solutions™ HRS-X3 2.5" SATA solid state drives (SSDs) deliver high performance, high capacity storage solutions optimized for defense, aerospace and other applications requiring durable, rugged and secure storage.

Powered by a flexible, custom flash controller, HRS-X3 SSDs provide sustained read write performance to meet the needs of high throughput applications such as flight data recorders and sensor data capture. HRS-X3 SSDs are also well suited for high-reliability telemetry, surveillance, and mission-critical applications.

HRS-X3 SSDs offer nearly a full terabyte of storage using highly reliable single-level cell (SLC) NAND flash. HRS-X3 SSDs are more reliable, offer superior performance, and require less power and cooling than traditional hard disk drives (HDDs). Conforming to SMART's "true" industrial grade standards, the HRS-X3 SSDs are superior to typical SSDs and HDDs in terms of ruggedness, vibration and shock resistance, and environmental resilience – critical factors in no-compromise applications.

HRS-X3

Features

- **AES-XTS 256-bit encryption automatically protects all data written to the drive**
- **Erase command deletes the encryption key first and then erases all the NAND flash**
- **Passes MIL-STD-810G**
- **Powered by flexible, custom flash controller**
- **True industrial grade storage solution for "no-compromise" applications**
- **Advanced flash management for enhanced reliability and durability**
- **Self Monitoring Analysis and Reporting Technology (S.M.A.R.T.) support**
- **100% 8 hour burn-in over Temperature (-40°C to +85°C)**
- **Designed, Built, and Tested in the USA**

HRS-X3 SATA Product Family

Capacity	Sustained Performance	Random Performance
120GB to 960GB	380MB/s Read 360MB/s Write	23,000 IOPS Read 10,000 IOPS Write

One gigabyte, or GB, equals one billion bytes when referring to drive capacity. Accessible capacity may vary based on the operating environment and drive formatting.



HRS-X3 Specifications

2.5" SATA	
Performance	
Burst	600MB/s
Sustained	380MB/s Read 360MB/s Write
Random	23,000 IOPs Read 10,000 IOPs Write
Capacity	
SLC	120, 240, 480, 960GB ¹
Reliability	
MTBF	3.1M hours, Telcordia 25°C ²
Data Reliability	1 in 10 ¹⁸ bits read
Data Retention	> 10 years @ 25°C
Endurance	10,000 Total Drive Writes ³
Warranty	3 Years
Power	
Input Voltage	5 V +/- 5%
Idle (typical)	5 W
Operational (typical)	6 W
Environmental	
Operating Shock	50 g half-sine, 11 ms, 3 shocks along each axis, X, Y, Z, in each direction ^{4,5}
Vibration	16.4 g rms ^{4,5,6}
Altitude	24,384m [80,000 ft.] ⁴
Relative Humidity	5% to 95% non-condensing ⁴
Conformal Coating	Optional
Operating Temp	Industrial (-40° C to 85° C)
Storage Temp	-55° C to 95° C
Mechanical	
Length	100.2mm
Width	69.85mm
Height	9.0mm
Connector	6 Gb/s SATA

(1) One gigabyte, or GB, equals one billion bytes when referring to drive capacity. Accessible capacity may vary based on the operating environment and drive formatting

(2) Based on 120GB drive

(3) Under typical conditions

(4) Based on MIL-STD-810G

(5) Tested on 120GB Drive

(6) 10-2000 Hz random, 3-axes

HRS-X3 Data Security Features

2.5" SATA	
Encryption	AES-XTS 256-bit (FIPS 197)
Erase	Delete key and erase NAND
Protection	Write-protect feature

HRS-X3 Ordering Information

Part Number	Capacity (GB)
Without conformal coating	
HR4A2X0120AI001	120
HR4A2X0240AI001	240
HR4A2X0480AI001	480
HR4A2X0960AI001	960
With conformal coating	
HR4A2X0120AICC1	120
HR4A2X0240AICC1	240
HR4A2X0480AICC1	480
HR4A2X0960AICC1	960

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