

# HRS-S3 SSD

SMART High Reliability Solutions™ HRS-S3 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-S3 SSDs provide sustained read write performance to meet the needs of high throughput applications such as flight data recorders and sensor data capture. HRS-S3 SSDs are also well suited for high-reliability telemetry, surveillance, and mission-critical applications.

HRS-S3 SSDs offer nearly a full terabyte of storage using highly reliable single-level cell (SLC) NAND flash. HRS-S3 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-S3 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.

## Secure Your Data

Designed to meet the needs of defense applications, Secure Data Elimination Technology (SDET) complies with current military data elimination standards, providing multiple levels of secure erase techniques.

- The first step of any SDET operation is the deletion of the encryption key which takes less than 1 second and secures all user data since it can no longer be decrypted.
- SDET Clear provides a fast data elimination function that enables erasing of data in seconds.
- SDET Sanitize uses US Government agency defined or unique customer defined sanitization procedures, allowing full media declassification.
- SDET complies with IRIG 106-09, addressing the specific needs of flash architectures and data structures. It allows for bad block handling, and for reviewing the secure erase results to verify that all classified data has been eliminated.

In addition, access control features include write protection for added data security.

## Features

- SDET technology meets current military and IRIG 106-15 data declassification standards
- AES-XTS 256-bit encryption automatically protects all data written to the drive
- 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-S3 SATA Product Family

Capacity	Sustained Performance	Random Performance
120, 240, 480, 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-S3

## HRS-S3 Specifications

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

(3) Under typical conditions

(4) Based on MIL-STD-810G

(5) Tested on 120GB Drive

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

## HRS-S3 Data Security Features

2.5" SATA	
Encryption	AES-XTS 256-bit (FIPS 197)
Protection	Write-protect feature
Elimination	ATA-8 Security Erase ATA-8 Sanitize Device Feature Set Clear (less than 10 seconds) DoD NISPOM 5220.22-M DoD NISPOM 5220.22-M-Sup 1 NSA/CSS Manual 130-2
	NSA/CSS Manual 9-12 Army AR 380-19 Navy NAVSO P-5239-26 Air Force AFSSI-5020 RCC-TG IRIG 106-15 Custom sequences and Two external triggers

## HRS-S3 Ordering Information

Part Number	Capacity (GB)
<b>Without conformal coating</b>	
HR4A2S0120AI001	120
HR4A2S0240AI001	240
HR4A2S0480AI001	480
HR4A2S0960AI001	960
<b>With conformal coating</b>	
HR4A2S0120AICC1	120
HR4A2S0240AICC1	240
HR4A2S0480AICC1	480
HR4A2S0960AICC1	960

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.

**Headquarters:** T: (+1) 800.956.7627 • T: (+1) 510.623.1231 • F: (+1) 510.623.1434 • E: info@smarth.com

**Customer Service:** T: (+1) 510.624.5379 • F: (+1) 480.926.5579 • E: info@smarth.com

**Europe:** T: (+44) (0)1592.760426 • E: info@smarth.com

**Asia/Pacific:** T: (+65) 6232.2858 • F: (+65) 6232.2300 • E: info@smarth.com

**SMART**<sup>™</sup>  
HIGH RELIABILITY SOLUTIONS  
[www.smarth.com](http://www.smarth.com)