

# HRS-T5E SSD

SMART High Reliability Solutions™ HRS-T5E 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-T5E SSDs provide sustained read/write performance to meet the needs of high throughput applications such as flight data recorders and sensor data capture. HRS-T5E SSDs are also well suited for high-reliability telemetry, surveillance, and mission-critical applications.

HRS-T5E SSDs offer up to 4TB of storage using 3D TLC Nand Flash. They 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, they are superior to typical SSDs and HDDs in terms of ruggedness, vibration and shock resistance, and environmental resilience.

The HRS-T5E also supports pSLC mode up to 1280GB in capacity. This provides increased write endurance for those applications that require it.

## Secure Your Data (Optional)

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.

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

## Features

- **SDET technology meets current military data declassification standards (Optional)**
- **AES-XTS 256-bit encryption automatically protects all data written to the drive**
- **Passes MIL-STD-810G**
- **OPAL 2.0 compliant (Optional)**
- **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, I-Temp Version)**
- **Pfail Protection Feature (a.k.a Power Loss Protection) combines unique power loss detection and hold-up circuitries that protects data in case of accidental power failure.**

## HRS-T5E SATA Product Family

Capacity	Sustained Performance	Random Performance
120, 240, 480, 960, 1920, 3840GB	550MB/s Read 535MB/s Write	80,000 IOPS Read 50,000 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.



**SMART RUGGED**<sup>™</sup>  
 EXTREME MEMORY

HRS-T5E

## HRS-T5E Specifications

2.5" SATA	
<b>Performance</b>	
Burst	600MB/s
Sustained	550MB/s Read 535MB/s Write
Random	80,000 IOPs Read 50,000 IOPs Write
<b>Capacity</b>	
3D-TLC	120, 240, 480, 960, 1920, 3840GB <sup>1</sup>
pSLC	40, 80, 160, 320, 640, 1280GB <sup>1</sup>
<b>Reliability</b>	
MTBF	> 2M hours, Telcordia 25°C <sup>2</sup>
Data Reliability	1 in 10 <sup>17</sup> bits read
Data Retention	> 10 years @ 25°C
Endurance	1,000 Total Drive Writes <sup>3</sup>
Warranty	1 Year
<b>Power</b>	
Input Voltage	5 V +/- 5%
Idle (typical)	1 W
Operational (typical)	5 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) Commercial (0° C to 70° C)
Storage Temp	-55° C to 95° C
<b>Mechanical</b>	
Length	100.2mm
Width	69.85mm
Height	7.0mm
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-T5E Data Security Features

2.5" SATA	
Encryption	AES-XTS 256-bit (FIPS 197 compliant)
Protection	Write-protect feature
Elimination (Optional)	ATA-8 Security Erase ATA-8 Sanitize Device Feature Set Clear 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 Two external triggers

## HRS-T5E Ordering Information

### Part Number

#### 3D-TLC

#### I-Temp

HRCA2XccccHI001

#### Secure (+OPAL) I-Temp

HRCA2PccccHI001

#### C-Temp

HRCA2XccccHC001

#### Secure (+OPAL) C-Temp

HRCA2PccccHC001

#### cccc = Capacity

0120 = 120GB

0240 = 240GB

0480 = 480GB

0960 = 960GB

1920 = 1920GB

3840 = 3840GB

#### Conformal Coat Option

Replace "001" with "CC1"

### Part Number

#### pSLC

#### I-Temp

HRCA2XccccJI001

#### Secure (+OPAL) I-Temp

HRCA2PccccJI001

#### C-Temp

HRCA2XccccJC001

#### Secure (+OPAL) C-Temp

HRCA2PccccJC001

#### cccc = Capacity

0040 = 40GB

0080 = 80GB

0160 = 160GB

0320 = 320GB

0640 = 640GB

1280 = 1280GB

#### Conformal Coat Option

Replace "001" with "CC1"

## Contact information

**Corporate Headquarters/North America:** T: (+1) 800-956-7627 • T: (+1) 510-623-1231 • F: (+1) 510-623-1434 • E: info@smartm.com

**Customer Service:** T: (+1) 978-303-8500 • E: customers@smartm.com

**Latin America:** T: (+55) 11 4417-7200 • E: sales.br@smartm.com

**EMEA:** T: (+44) 0 7826-064-745 • E: sales.euro@smartm.com

**Asia/Pacific:** T: (+65) 6678-7670 • E: sales.asia@smartm.com

For more information, please visit: [www.smartm.com](http://www.smartm.com)

