



SMART RUGGED™

T5E | 2.5" SATA

SMART's RUGGED 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. T5E 2.5" SATA SSDs provide sustained read/write performance to meet the needs of high throughput applications, such as flight data recorders and sensor data capture. They are also well suited for high-reliability telemetry, surveillance, and mission-critical applications.

Conforming to SMART's "true" industrial grade standards, T5E 2.5" SATA SSDs are superior to typical SSDs and HDDs in terms of ruggedness, vibration and shock resistance, and environmental resilience. The T5E also supports TLC and pSLC modes, providing increased write endurance for those applications that require it.

Features & Benefits

- AES-XTS 256-Bit Encryption Automatically Protects Data Written to The Drive
- Passes MIL-STD-810G
- 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 (I-Temp -40°C to +85°C)
- SafeDATATM Technology Combines Unique Power Loss Detection and Hold-Up Circuitries That Protects Data in Case of Sudden Power Failure
- Secure Data Elimination Technology (SDET) Meets Current Military Data Declassification Standards (Optional)
- TCG OPAL 2.0 Compliant (Optional)

Product Family Overview

Capacity	Sequential Performance	Random Performance
120GB to 3840GB	Up to 520 MB/s TLC	81,000 IOPS TLC
	Up to 510 MB/s pSLC	90,000 IOPS pSLC
	Up to 500 MB/s TLC/pSLC	70,000 IOPS TLC/pSLC

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



Applications

- Military
- Defense
- Aerospace
- Telemetry
- Surveillance

Specifications

T5E 2.5" SATA	
NAND Type	TLC, pSLC
Performance	
Host Interface Rate (maximum)	6Gb/s (Backwards compatible to 3Gb/s & 1.5Gb/s)
Capacities	120GB to 3840GB (3D TLC) 40GB to 1280GB (pSLC)
Burst	600MB/S
Sequential Read (maximum)	Up to 520 MB/s TLC Up to 510 MB/s pSLC
Sequential Write (maximum)	Up to 500 MB/s TLC/pSLC
Random Read (maximum)	81,000 IOPS TLC 90,000 IOPS pSLC
Random Write (maximum)	70,000 IOPS TLC/pSLC
Reliability	
MTBF	> 2M hours, Telcordia 25°C ¹
Data Reliability	1 in 10 ¹⁷ bits read
Data Retention	> 10 years @ 25°C
Endurance	Up to 2100 Total Drive Writes (3D TLC) Up to 10,000 Total Drive Writes (pSLC)
Warranty	1 Year
Power	
Input Voltage	5 V +/- 5%
Idle (typical)	1 W
Operational (typical)	5 W
Environmental	
Shock	1500G half-sine, 0.5 msec, 1 shock along each axis, X, Y, Z in each direction ^{2,3}
Vibration	16.4 g rms 10-2000 Hz random, 3-axes
Relative Humidity	5% to 95% non-condensing
Conformal Coating	Optional
Operating Temperature	Commercial: 0°C to +70°C Industrial: -40°C to +85°C
Storage Temperature	-55°C to +95°C
Altitude	24,384 m [80,000 ft]
Mechanical	
Length	100.2 mm
Width	69.85 mm
Height	7.0 mm

¹Based on 120GB Drive
²Based on MIL-STD-810G
³Tested on 120GB Drive

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

Ordering Information

Part Number	Density
I-Temp TLC	
HRCA2X3840HI001*	3840GB
HRCA2X1920HI001*	1920GB
HRCA2X0960HI001*	960GB
HRCA2X0480HI001*	480GB
HRCA2X0240HI001*	240GB
HRCA2X0120HI001*	120GB
C-Temp TLC	
HRCA2X3840HC001*	3840GB
HRCA2X1920HC001*	1920GB
HRCA2X0960HC001*	960GB
HRCA2X0480HC001*	480GB
HRCA2X0240HC001*	240GB
HRCA2X0120HC001*	120GB
I-Temp pSLC	
HRCA2X1280JI001*	1280GB
HRCA2X0640JI001*	640GB
HRCA2X0320JI001*	320GB
HRCA2X0160JI001*	160GB
HRCA2X0080JI001*	80GB
HRCA2X0040JI001*	40GB
C-Temp pSLC	
HRCA2X1280JC001*	1280GB
HRCA2X0640JC001*	640GB
HRCA2X0320JC001*	320GB
HRCA2X0160JC001*	160GB
HRCA2X0080JC001*	80GB
HRCA2X0040JC001*	40GB
I-Temp TLC	
Application Compatibility Enhancements	
HRCA2P0960HILM1	960GB
HRCA2P0480HILM1	480GB

*Conformal Coat Option Replace "001" with "CC1"

For more information, please visit: www.smartm.com

*Product images are for promotional purposes only. Labels may not be representative of the actual product.



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

Customer Service:
T: (+1) 510-623-1231 • E: customers@smartm.com