SMART**RUGGED**™

T5PF | 2.5″ SATA

SMART Modular Technologies' T5PF 2.5" SATA solid state drives (SSDs) with FIPS 140-2 compliance deliver high performance, high capacity storage solutions optimized for defense, aerospace and other applications requiring durable, rugged and secure storage. Powered by a flexible, flash controller, T5PF SSDs provide sustained read\write performance to meet the needs of high throughput applications such as flight data recorders and sensor data capture. T5PF SSDs are also well suited for high-reliability telemetry, surveillance, and mission-critical applications.

T5PF 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.

Features & Benefits

- AES-XTS 256-bit encryption automatically protects all data written to the drive
- FIPS 140-2 compliant
- 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 over temperature (-40°C to +85°C, I-Temp Version)
- Hardware erase triggers and hardware write protection

Applications

- Military
- Defense
- Aerospace
- Telemetry
- Surveillance

Product Family Overview

Capacity	Sequential Performance	Random Performance
480GB to 3480GB	Up to 500MB/s Read	50,000 IOPS Read
	Up to 470MB/s Write	48,000 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

Specifications

	T5PF 2.5" SATA
NAND Type	TLC
Performance	
Host Interface Rate (maximum)	6Gb/s (Backwards compatible to 3Gb/s & 1.5Gb/s)
Capacities	480 to 3840GB[1]
Burst	600MB/S
Sequential Read (maximum)	Up to 500MB/s
Sequential Write (maximum)	Up to 470MB/s
Random Read (maximum)	50,000 IOPS
Random Write (maximum)	48,000 IOPS
Reliability	
MTBF	> 2M hours, Telcordia 25°C[2]
Data Reliability	1 in 10^{17} bits read
Data Retention	> 10 years @ 25°C
Endurance	2100 Total Drive Writes[3]
Warranty	1 Year
Power	
Input Voltage	5 V +/- 5%
Idle (typical)	1 W
Operational (typical)	5 W
Environmental	
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]
Conformal Coating	Optional
Relative Humidity[4]	5% to 95% non-condensing[4]
Conformal Coating	Optional
Operating Temperature	Industrial (-40° C to 85° C) Commercial (0° C to 70° C)
Storage Temperature	-55°C to +95°C
Altitude	24,384 m [80,000 ft][4]
Mechanical	
Length	100 mm
Width	69.85 mm
Height	7.0 mm
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 480GB drive
(3) Under typical conditions
(4) Based on MIL-STD-810G
(5) Tested on 480GB Drive
(6) 10-2000 Hz random, 3-axes

Data Security Features

	2.5″ SATA
Encryption	AES-XTS 256-bit (FIPS 197 compliant) FIPS 140-2 compliant
Protection	Write-protect feature

Ordering Information

Part Number	Capacity (GB)
C-Temp	
HRHA2F0480HC001	480
HRHA2F0960HC001	960
HRHA2F1920HC001	1920
HRHA2F3840HC001	3840
I-temp	
HRHA2F0480HI001	480
HRHA2F0960HI001	960
HRHA2F1920HI001	1920
HRHA2F3840HI001	3840

SMART Modular Technologies

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

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