



SMART RUGGED

M1HC | 2.5" SATA

SMART's RUGGED M1HC 2.5" SATA solid state drives (SSDs) are one of the most data-protected and secure SSDs available. Designed for high capacity and high security, military applications will want to consider the M1HC as part of their project. The M1HC SSD provides some of the most comprehensive security features available. It automatically protects all user data written with an AES 256-bit encryption that is FIPS 197 certified.

It implements military security procedures such as NSA 9-12, AR 380-19, NAVSO P-5239-26, and AFFSI-5020 for ground forces, naval and air protection needs. Also included are TCG OPAL 2.0 Compliance, Sanitize Device feature set, and the Security feature set per the ATA-8 specification, including deleting the encryption key in less than 10 milliseconds.

Features & Benefits

- High Capacity from 1TB to 8TB
- MLC NAND Flash
- Ruggedized Enclosure for Shock and Vibration
- Adaptive Thermal Protection
- Static and Dynamic Wear-Leveling
- Firmware Updatable
- Low Power Management
- Ideal for High and Low Temperature Applications
- S.M.A.R.T. Attributes to Monitor Drive Health
- AES 256-Bit Encryption to Automatically Protect All Data Written to the Drive
- TCG Opal 2.0 Compliant

Product Family Overview

Capacity	Sequential Performance	Random Performance
M1HC 2.5" SATA		
1TB to 8TB	Up to 520MB/s Read Up to 500MB/s Write	60,000 IOPS Read 55,000 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



Applications

- Military
- Defense
- Aerospace
- Telemetry
- Surveillance

Specifications

M1HC 2.5" SATA	
NAND Type	MLC
Performance	
Host Interface Rate (maximum)	6Gb/s (Backwards compatible to 3Gb/s & 1.5Gb/s)
Capacities	1TB to 8TB
Burst	600MB/s
Sequential Read (maximum)	Up to 520MB/s
Sequential Write (maximum)	Up to 500MB/s
Random Read (maximum)	60,000 IOPS
Random Write (maximum)	55,000 IOPS
Reliability	
MTBF	1.5M hours
Power Loss Protection	Fast Flush of Cached Data
Data Retention	10 years at 40°C
Endurance	Up to 250 Total Drive Writes
Warranty	1 Year
Data Security	
Encryption	AES 256-bit
Elimination	ATA-8 Security Erase and Military Procedures
Power	
Input Voltage	5 V +/- 10%
Idle (typical)	1.8W
Operational (typical)	3.1 / 5.2 W
Environmental	
Operating Shock	50 g half-sine, 11 ms, 3 shocks along each axis, X, Y, Z, in each direction ^{4,5}
Operating Vibration	16.4 g rms 15-2000 Hz random, 3-axes
Operating Temperature	Industrial: -40°C to +85°C
Storage Temperature	-55°C to +95°C
Humidity	5% to 95% non-condensing
Altitude	30,480m (100,000 ft)
Mechanical	
Length	100.45 mm
Width	69.85 mm
Height	7.0 mm for 1TB, 2TB, 4TB / 9.00 mm for 8TB

Ordering Information

Part Number	Density
M1HC 2.5" SATA (Secure TCG OPAL) Industrial Operating Temperature (-40°C to +85°C)	
HR8A2P008TDI001	8TB
HR8A2P004TDI001	4TB
HR8A2P002TDI001	2TB
HR8A2P001TDI001	1TB
M1HC 2.5" SATA (Secure TCG OPAL + Coating) Industrial Operating Temperature (-40°C to +85°C)	
HR8A2P008TDICC1	8TB
HR8A2P004TDICC1	4TB
HR8A2P002TDICC1	2TB
HR8A2P001TDICC1	1TB



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