1TB TRRUST-Stor® SATA SLC Self Encrypting Solid State Drive

Model: MSD1TB

Microsemi's continuing development in the TRRUST-Stor® family of solid state drives provides secure non-volatile storage using reliable long life SLC NAND flash. This SSD is designed for outstanding reliability, performance and security for applications in rugged environments.

General Description

- Host accessible capacity: 900 GB

  (1GB = 1,000,000,000 bytes)
- Commands: ATA–7, ATA–8
- Media: SLC NAND flash
- Form factor: 2.5" (100.45 × 69.85 × 15.3 mm)
- Power: 5V +/- 10%; 1.8W standby
- Operating temperature: −40° C to +85° C
- SATA at 1.5 Gb/s or 3 Gb/s

Performance

- Sustained sequential reads and writes:
  - 200 MB/s
- Reset-to-ready time: 1.5s

Data Management and Protection

- Superior ECC
- Uncorrectable bit error rate:
  - 1 sector per 10^{-18} bits read
- Protection from silent data corruption
  - 32-bit CRC per sector
- No forced EOL from firmware/controller availability issues
- Mean time between failures: >2,000,000 hours
- Write endurance:
  - 16 petabytes for the MSD1TB drive
- Power loss protection
  - Operational stability during power interruptions
  - No super caps or batteries that degrade over time and temperature
- Read and write wear leveling
- SMART attributes (self-monitoring, analysis, and reporting technology)
- Built-in self-test

Security

- Hardware authentication
- Self Encrypting Drive (SED)
  - AES encryption with a 256-bit key with XTS CBM
- **TRRUST-Purge™** destroys key in less than 30 ms
- Hardware based erase in less than 12 seconds
- Compliant sanitization protocols
- US-made with full BOM and assembly control

Environmental and Mechanical

- Operating temperature: -40° C to +85° C
- Storage temperature: -55° C to +105° C
- Humidity: 5%–95%, non-condensing
- Weight: est. 158 g
- Operating shock:
  - 3,000 G, 0.5 ms, 1/2 sine, 6 shocks per axis
  - 100 G, 11 ms, 1/2 sine, 6 shocks per axis
- Vibration:
  - 30 Grms, Mil-STD-810F, method 514.5C–8, 15–2000 Hz, 3 axes (1 hr each axis)
- Enhanced mechanical construction:
  - Component staking and underfill is standard
- 100% dynamic factory burn-in

Additional Options

- Extended burn-in
- OEM customization
- Ruggedized interface connectors
- Custom labeling

* This product is under development, is not qualified or characterized and is subject to change or cancellation without notice.

DESCRIPTION

■ The **TRRUST-Stor** SSD realizes solid state technology's true potential with features that meet the stringent requirements of critical applications. **TRRUST-Stor** addresses rugged small form factor, security options, sanitization protocols, obsolescence management, and high reliability in extended environments.

Microsemi's proprietary design provides unparalleled data integrity and endurance by focusing processing power on error correction, wear leveling, and eliminating drive corruption and unscheduled down time. This failure prevention methodology protects data from catastrophic failures in critical applications and provides a much needed layer of protection.

Keeping sensitive data from getting in the wrong hands is also a big concern and is accomplished with features including AES-256 encryption, sanitization protocols, and Microsemi's **TRRUST-Purge™** technology that renders data forensically unrecoverable in less than 30ms.

The Armor™ management processor provides the **TRRUST-Stor** with these feature-rich capabilities and the flexibility required to serve the many operating requirements in today's critical applications. By having control and ownership of the **Armor™** management processor, Microsemi eliminates any dependence on a third party manufacturers' controller, thus protecting our customers from those all too often costly changes and/or end-of-life problems.
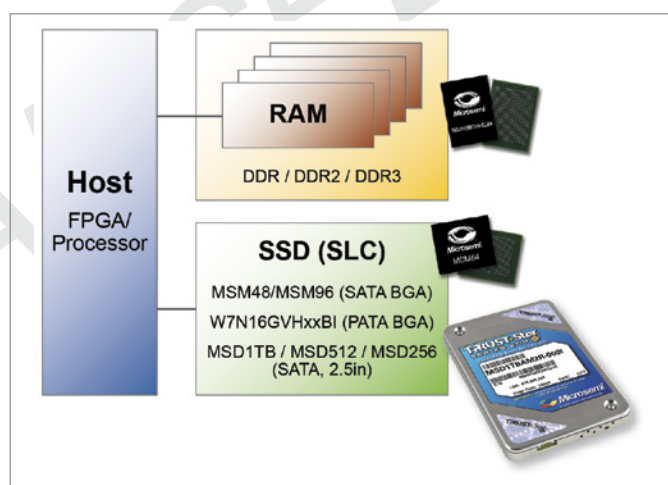
By developing a robust power interruption solution that does not depend on super caps or batteries, problems of data loss or corruption during power loss events are avoided.

The Microsemi **TRRUST-Stor** is ideal for critical applications, including:

▪ Storage Area Networks
▪ Surveillance
▪ Data recorders
▪ Field computers
▪ Digital map storage
▪ Communications systems

■ All design and manufacturing for the **TRRUST-Stor** is done in the U.S. in a trusted facility. Microsemi has a long history as an industry-leading manufacturer of innovative, high-reliability memory solutions.

TYPICAL APPLICATION

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Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor and system solutions for communications, defense & security, aerospace and industrial markets. Products include high-performance and radiation-hardened analog mixed-signal integrated circuits, FPGAs, SoCs and ASICs; power management products; timing and synchronization devices and precise time solutions, setting the world's standard for time; voice processing devices; RF solutions; discrete components; security technologies and scalable anti-tamper products; Power-over-Ethernet ICs and midspans; as well as custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, Calif., and has approximately 3,400 employees globally. Learn more at www.microsemi.com.