

TRRUST-Stor™ MSD256/MSD512 SATA SLC Solid State Drive

Microsemi's next generation in the TRRUST-Stor™ family of solid state drives provides 200 GB and 450 GB host accessible non-volatile removable media. These SSD's are designed for outstanding reliability, performance and security in defense applications and rugged environments.

General Description

- Host accessible capacity: 200 GB or 450 GB
(1GB = 1,000,000,000 bytes)
- Commands: ATA-7, ATA-8
- Media: SLC NAND flash
- Form factor: 2.5" (100.45 × 69.85 × 9.5 mm)
- Power: 5V +/- 10%; 1.2W standby
- Operating temperature: -40° C to +85° C
- SATA at 1.5 Gb/s or 3 Gb/s

Performance

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

Data Management and Protection

- Superior ECC
- Uncorrectable bit error rate:
 - 1 sector per 10³⁰ 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:
 - 8 petabytes for the MSM256 drive
 - 4 petabytes for the MSM512 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 4 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
- Leaded BGAs
- Extended temperature screening
- Ruggedized interface connectors
- Custom labeling
- Capacity de-stroking

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



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DESCRIPTION

- The **TRRUST-Stor** SSD realizes solid state technology's true potential with features that meet the stringent requirements of sensitive military applications. Defense market needs that the **TRRUST-Stor** addresses include a 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, military sanitization protocols, and Microsemi's TRRUST-Purge™ technology that renders data forensically unrecoverable in less than 30ms.

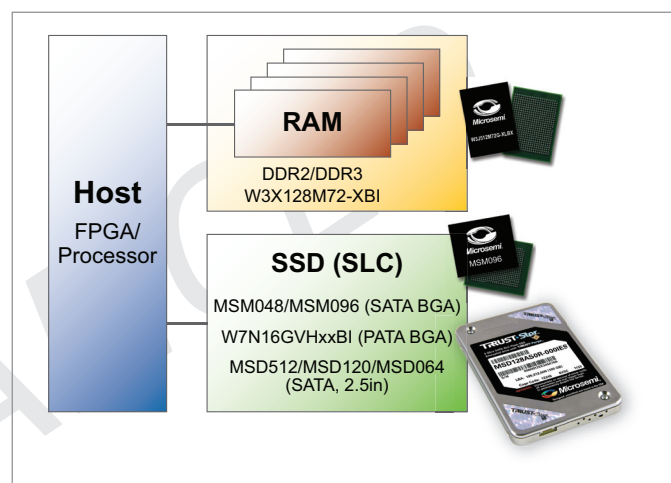
The **Armor™** management processor provides the **TRRUST-Stor** with these feature-rich capabilities and the flexibility required to serve the many operating requirements in today's defense and aerospace applications. By having control and ownership of the **Armor™** management processor, Microsemi 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 mission critical defense applications, including:

- Surveillance
 - Mission data recorders
 - Field computers
 - Digital map storage
 - GPS and communications systems
- All design and manufacturing for the **TRRUST-Stor** is done in the U.S. in our DOD trusted facility. Microsemi has a long history as an industry-leading manufacturer of innovative, high-reliability memory solutions for the defense market.

TYPICAL APPLICATION



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