

# TRRUST-Stor<sup>®</sup> VPX RT

## Radiation-Tolerant Large Geometry SLC NAND SSD

Models *RH3440NM2S-000100-01 (EDU)*  
*RH3440NM2S-000100-02 (FLT)*



- Innovative Mercury NAND processor technology
- OpenVPX form-factor
- Radiation-tolerant solid state drive
- 440 GB large geometry SLC NAND
- ECC and spare mitigation for bit errors and failing devices



IN DEVELOPMENT\*

Mercury's new TRRUST-Stor VPX RT radiation-tolerant secure solid-state drives (SSD) featuring BuiltSECURE™ technology is the first commercial SSD precision-engineered for the harshest possible operating environments leveraging OpenVPX™ standards. Although designed for commercial satellite applications, the new device can also be adapted for other applications where radiation exposure may occur, including high-altitude aircraft, airborne weapons, and mission-critical ground computing systems.

TRRUST-Stor VPX RT SSD includes advanced BuiltSECURE error correction algorithms paired with large geometry industrial-grade Single-Level Cell (SLC) NAND flash memory. Designed for fault-tolerance with up to six failed NAND devices, the new device offers long-term data integrity for applications where device repair or replacement is cost-prohibitive. Recognizing that no two mission requirements are identical, customers can tailor power consumption against performance requirements for each unique mission. Mercury's new storage product is designed for seamless integration with the OpenVPX ecosystem of processing boards and chassis.

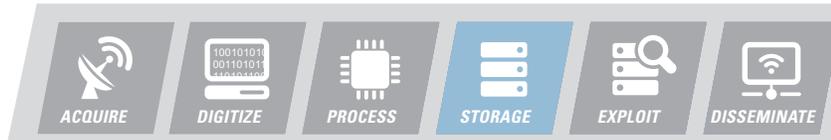
### Standard Features

- Robust Large Geometry SLC NAND
- OpenVPX 3U form factor
  - 1, 4 lane SERDES Channel 3.125 Gb/s per lane
  - Simplified SRIO interface protocol
  - Options for lower power, lower speed operation
- User capacity: 440 GB

- Read/Write performance: 1 GByte/sec sustained
- Data Recorder operating mode
  - Write, Read, Erase, Repeat
  - Sequential writes only
  - Random Reads, any time
  - Optional log file support
  - Options for file storage and data over-write
- Error Correction:
  - Strong Horizontal Reed Solomon ECC algorithm
  - Corrects bit errors, defects, and several failing devices
  - Extends NAND endurance
  - Automatically replaces worn out blocks
  - Bad block table supports field upgrades
- Multi-device defect mitigation
- Rad-Tolerant Design (RTG4 Based):
  - Configuration upsets immunity to LET > 103 MeV.cm<sup>2</sup>/mg
  - Single-event latch-up (SEL) immunity to LET > 103 MeV.cm<sup>2</sup>/mg
  - Registers SEU rate < 10<sup>-12</sup> errors/bit-day (GEO Solar Min)
  - Single-event transient (SET) upset rate < 10<sup>-8</sup> errors/bit-day (GEO Solar Min)
  - Total ionizing dose (TID) > 100 Krad
- Endurance:
  - 15 drive over-writes/day for 10 years
  - 26 PB minimum
  - Minimum 90 day retention at EOL
- Erase operation: < 45 seconds
- UBER: Better than 1E-19
- Corruption free, abrupt power interruption protection
- Ruggedized construction and assembly.
- 100% dynamic burn-in.
- Operating Temperature: -40 °C to +85 °C
- Storage Temperature: -55 °C to +105 °C

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

Mercury Systems is a leading commercial provider of secure sensor and safety-critical processing subsystems. Optimized for customer and mission success, Mercury's solutions power a wide variety of critical defense and intelligence programs.



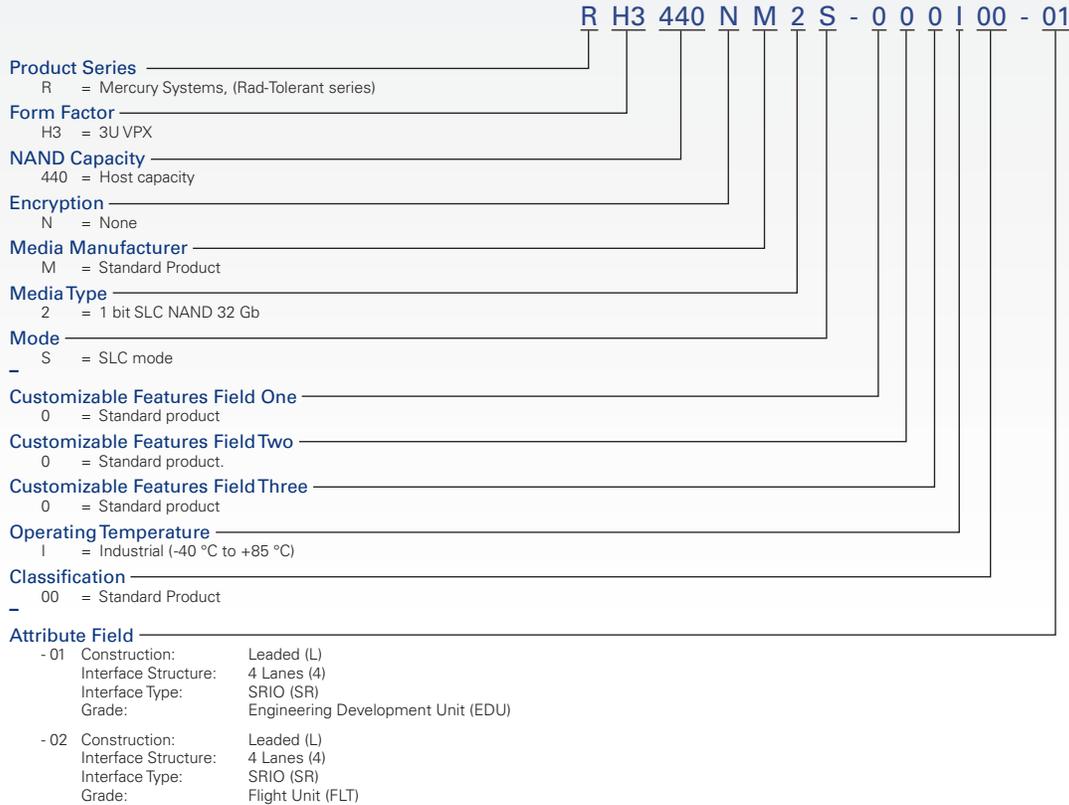
## Applications include

- Low Earth Orbit Satellites (LEO); Contact Mercury for other orbit solutions
- Missiles
- Launch vehicles
- Scientific payloads
- Terrestrial applications with radiation exposure

## Product Specifications

- Shock:
  - 40 G, 11 ms, sawtooth
  - 3 Impacts/direction, 3 axis, 18 shocks total, per MIL-STD-810F Method 516.5 Procedure I
- Random Vibration:
  - 0.1 g<sup>2</sup>/Hz – 1 hour per axis from 20 to 2000 Hz, per MIL-STD-810F Method 514.5 Procedure I
- Weight: <500 grams

## Part Numbering *(dashes in the part number are required)*



Example part Number: RH3440NM2S-000I00-01 (EDU)

## Need More Help? Need a Variant of This Product?

Contact Mercury's Secure SSD application engineering team at [secure.ssd@mrchy.com](mailto:secure.ssd@mrchy.com)



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