

Secure Solid State Drives (SSD)

TRRUST-Stor® BGA

MBA160AM6S-000Ixx-aa

- Engineered to CSfC, FIPS 140-2, and Common Criteria (CC) requirements (Planned)
- SATA and NVMe models
- Supports all popular military sanitized protocols plus non-thermal self-destruct
- AES-256 XTS encryption with user fillable keys



ADVANCED*

Mercury Systems TRRUST-Stor BGA SSD modules allow integration of high capacity secure storage directly onto printed circuit boards. Directly attaching the storage to the PCB eliminates the cost and reliability issues associated with cumbersome high-speed cabling. It also removes the potential for tampering by hot-swapping the data cable or probing plaintext data running from the host to the SSD. Featuring all the security capabilities of the popular ASURRE-Stor SSD, the Mercury TRRUST-Stor BGA SSD product line incorporates Mercury's Sixth Generation Armor® NAND Processor and 3D TLC NAND running in SLC mode. The TRRUST-Stor BGA is available with a 6 Gb/s SATA interface or a blazingly fast, 4-lane, NVMe interface.

Features

- Designed, manufactured in a secure DMEA-accredited facility
- Size: 32mm x 22mm x 3.5mm (BGA) (Preliminary)
- Mercury proprietary Armor 4 NAND processor
- 3D TLC NAND running in SLC mode
- Certified AES-256 XTS encryption
- Customer controllable boot partition for authentication
- SATA and NVMe models (NVMe planned)
- Host accessible capacity: 160 GB¹
- Total Bytes Written: 1.6 PB (160 GB model)
- FIPS 140-2 and CSfC certified models F and C suffix (planned)
 - Compliant to the NIAP EE and AA protection profiles
 - Multiple key management modes including secure boot image
 - User and Crypto Officer Roles
- AES Key-Flipper technology eliminates key burn-in
- Fast Clear: Less than 10 seconds
- Self-Destruct capability.

- Supports all popular military sanitization protocols
- DS-101 support for SKL and CYZ-10 compatibility
- Sequential performance²
 - Up to 540 MB/s (SATA, 160 GB model)
 - Up to 1000 MB/s (4 Lane NVMe, 160 GB model)
- Ultra-strong LDPC Hard/Soft Error Correction
- UBER (Uncorrectable Bit Error Rate): 10⁻¹⁸
- Leaded BGA balls
- Hot Swap capable
- MTBF: 2 million hours @ 25 °C, Telcordia
- Shock/Vibration: Dependent on mounted environment
- Operating Temperature: -40 °C to +85 °C³
- Storage Temperature: -55 °C to +105 °C³
- CL Moisture Sensitivity Level (MSL) 3
- Weight: 8 grams
- Voltages: 3.3V, 1.8V, 1.2V, 0.85V
- Power: 7W (TBD)

Optional Features

- Extended temperature and burn-in screening
- Capacity de-stroking
- Custom Identification text for re-branding

NOTES:

1. One Gigabyte (GB) = 1,000,000,000 bytes.
100 MB/s = 100,000,000 bytes per second.
2. Performance values based on 128 KiB sequential transfers and largest capacity model.
3. Data retention can diminish with extended storage at temperatures above 70 °C. Operation at 85 °C requires maintaining BGA surface at 85 °C or less.

* This product is under development, is 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.



ACQUIRE



DIGITIZE



PROCESS



STORAGE



EXPLOIT



DISSEMINATE

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

x BA xxx x M 6 S - xxx I xx - aa

Product Series

- M = TRRUST-Stor® series, standard model
- A = ASURRE-Stor® series, certified model (Planned)

Form Factor

- BA = 32mm x 22mm x 5.5mm BGA

NAND Capacity available to Host

- 160 = 160 GB host accessible capacity

Encryption

- A = AES-256 XTS
- N = No Encryption
- Q = Quantum Encryption (When available)

Media Manufacturer

- M = Standard Product

Media Type

- 6 = 3-bit TLC 3D NAND

Mode

- S = SLC mode.

Customizable Features

- 000 = Standard product

Operating Temperature

- I = Industrial (-40 °C to +85 °C)
- C = Commercial (0 °C to 70 °C)

Classification

- ES = Engineering Sample
- 00 = Standard product
- C = CSfC certified; FIPS 140-2 and CC (EE and AA profiles)*
- F = FIPS certified; FIPS 140-2*

Attributes

- 01 Construction: Leaded (L)**
Interface Structure: 1 Lane (1)
Interface Type: SATA 6 Gb/s (SA)
- 02 Construction: Leaded (L)**
Interface Structure: 1 Lane (1)
Interface Type: NVME (NV)
- 03 Construction: Leaded (L)**
Interface Structure: 2 Lane (2)
Interface Type: NVME (NV)
- 04 Construction: Leaded (L)**
Interface Structure: 4 Lane (4)
Interface Type: NVME (NV)

NOTE:
* Frozen Bill of Materials (BOM) and Firmware
** Termination finish of BGA in eutectic Sn/Pb (63/37)

Example part Number: MBA160AM6S-000I00-01,
MBA160AM6S-000IES,
ABA160AM6S-000IC-01

Need More Help? Need a Variant of This Product?

Contact Mercury's Secure SSD application engineering team at secure.ssd@mrchy.com



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