



The Micron 5400 SATA SSD Self-Encrypting Drive: Solid and Secure

The Micron 5400 SSD boasts the world's most advanced NAND, along with 50% higher reliability (mean time to failure [MTTF]) and endurance ratings than the other leading data center SATA SSD.¹ It also offers optional 256-bit hardware encryption to enhance its security posture.² The encrypted models, known as self-encrypting drives (SEDs), follow the Trusted Computing Group's³ (TCG) Security Subsystem Class (SSC) Enterprise or Opal⁴ specification for storage devices.

The Micron 5400 SSD SEDs are available in three security configurations:



Standard ATA security (default): Provides basic protection by locking access to the drive using the ATA password; often set and managed by the host system BIOS or UEFI.⁵

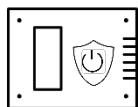


TCG Opal (option): Supports pre-boot authentication (must supply a password for system to boot). TCG Opal SSDs are often used as boot drive for data center platforms.

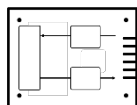


TCG Enterprise (option): Advanced security management with multiple, self-generated keys corresponding to LBA ranges. A master key manages the entire SSD with corresponding host-generated passwords.

All Micron 5400 SSDs offer these data protection features:⁶



Power-loss protection: Helps protect data-at-rest (physically saved to NAND) and data-in-flight (sent to the SSD, not yet committed to the media) against sudden power loss.



Data path protection: An SSD internal method of protecting host data and metadata against bit errors inside the SSD's DRAM and controller.

Fast Facts

Secure Firmware

The Micron 5400 SSD incorporates secure, digital firmware signatures and boot-time attestation. These help to protect storage devices against low-level attacks.

Advanced Encryption

Its Advanced Encryption Standard (AES) 256-bit hardware encryption engine (XTS mode) allows encryption of data-at-rest with no performance loss.⁷

Standards-Based Security

Support for TCG SSC Enterprise, TCG Opal and basic ATA security enables tailored SSD security in the data center.

Instant Scramble Erase

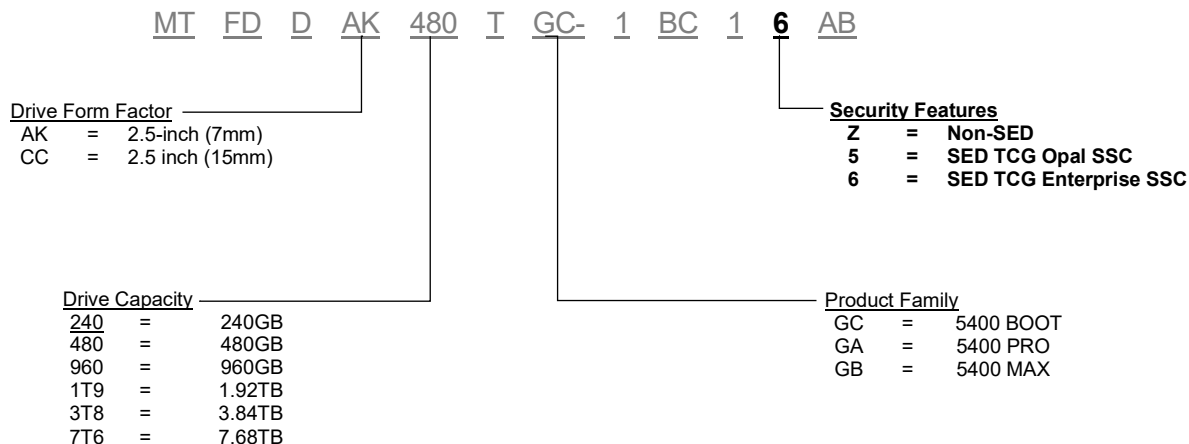
Complete sanitization of data on the SSD, capable of completion in under two seconds, simplifies device retirement or redeployment.⁸

1. Other leading data center SATA SSD supplier as noted in Forward Insights, SSD Supplier Status Q1/22 report; 50% higher ratings based on public information available at the time of publication.
2. No hardware, software or system can provide absolute security under all conditions. Micron assumes no liability for lost, stolen or corrupted data arising from the use of any Micron products, including those products that incorporate any of the mentioned security features.
3. Micron is a contributor member of the Trusted Computing Group (<https://trustedcomputinggroup.org/membership/member-companies/>).
4. For more information, see: <https://trustedcomputinggroup.org/resource/storage-work-group-storage-security-subsystem-class-enterprise-specification/> and <https://trustedcomputinggroup.org/resource/storage-work-group-storage-security-subsystem-class-opal/>
5. For more information, see: https://www.flashmemorysummit.com/English/Collaterals/Proceedings/2007/20070808_VA1_Stevens.pdf, <https://www.snia.org/educational-library/seven-myths-about-storage-encryption-2010>, and https://nvmexpress.org/wp-content/uploads/TCGandNVMe_Joint_White_Paper-TCG_Storage_Opal_and_NVMe_FINAL.pdf
6. For additional details on Micron's implementations, see: <https://www.datacenterknowledge.com/archives/2014/07/30/addressing-ssd-problems-of-data-integrity-and-responsiveness>
7. Standard IOPS and throughput testing shows similar performance with AES enabled and disabled.
8. Sanitization duration. Additional tasks may take additional time.

Micron 5400 SSD Self-Encrypting Drives: Security Option Part Numbers

Micron 5400 SSD security feature options are reflected in the SSD part numbers. Micron's power-loss protection and data path protection are in all Micron 5400 SSDs.

Below is a sample Micron 5400 SSD part number. Security options are shown in bold. Other part number values in this example relate to other features. See the part catalog at www.micron.com/5400 for more information on Micron 5400 SSD part numbers.



Learn More

Solid, secure firmware-based security includes SED firmware options for TCG Enterprise or TCG Opal, as well as ATA security configurations. The Micron 5400 SSD also includes power-loss protection for data-at-rest and data-in-flight, as well as data center-class data path protection for host data and metadata.



micron.com/5400

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