

# swissbit®

## Product Fact Sheet

### Industrial mSATA SSD (M0-300 Full size)

### X-600m Series

SATA Gen3 – 6.0 Gbits/s, SLC

Commercial and Industrial  
Temperature Grade

Date: November 09, 2021  
Revision: 1.09



  
Made in Germany

## Product Summary

- **Capacities:** 4 GBytes, 8 GBytes, 16 GBytes, 32 GBytes, 64 GBytes, 128GBytes
- **Form Factor:** JEDEC M0-300 Full Size mSATA SSD (50.8 mm x 29.85 mm x 3.5 mm)
- **Compliance<sup>1</sup>:** SATA Gen3 – 6 Gbit/s (Gen2 – 3 Gbit/s and Gen1 – 1.5 Gbit/s backward compatible)
- **Command Sets:** Supports ATA/ATAPI-8 and ACS-2 (2011/06/22)
- **Performance:**
  - Read Performance: Sequential Read up to 520 MBytes/s, Random Read 4K up to 76,000 IOPS
  - Write Performance: Sequential Write up to 405 MBytes/s, Random Write 4K up to 73,000 IOPS
- **Operating Temperature Range<sup>2</sup>:**
  - Commercial: 0 °C to 70 °C
  - Industrial: -40 °C to 85 °C
- **Storage Temperature Range:** -40 °C to 85 °C
- **Operating Voltage:** 3.3 V ± 5%
- **Power (Max Capacity):** Read (Active): 1.7 W; Write (Active): 2.5 W; Idle: 380 mW; Slumber: 115 mW
- **Data Retention:** 10 Years @ Life Begin; 1 Year @ Life End
- **Endurance in TeraBytes Written (TBW) Max Capacity<sup>3</sup>:** Client ≥ 7,715; Embedded ≥ 2,500; Enterprise > 1,115
- **Shock/Vibration:** 1,500 g / 50 g
- **Hardware BCH Code ECC:** up to 66 bit correction per 1 KByte page
- **Mean Time Between Failure (MTBF):** > 2,000,000 hours
- **Data Reliability:** < 1 non-recoverable error per 10<sup>16</sup> bits read

## Product Features

- Dynamic and Static Wear Leveling
- Subpage Mode Flash Translation Layer (FTL)
- Active and Passive Data Care Management
- Lifetime Enhancements
  - Dynamic Bad Block Remapping
  - Write Amplification Reduction
- On-Board Power Fail Protection
- AHCI, TRIM, and NCQ Support
- ATA Security Feature Set Support
- DEVSLP Compatible
- In-Field Firmware Update<sup>4</sup>
- Enterprise-Grade Self-Monitoring, Analysis, and Reporting Technology (S.M.A.R.T.)
- 30 µinch Gold-Plated Connector (IPC-6012B Class 2 Compliant)
- AES256 Encryption (on request)
- Swissbit Life Time Monitoring (SBLTM) Tool and SDK for SBLTM (on request)

### Why Swissbit?

Swissbit is focused on the design, development, manufacture, and support of leading edge memory and storage solutions for the worldwide OEM/ODM marketplace. As a global supplier, Swissbit recognizes and addresses the higher level of application requirements of today's industrial, Netcom, and automotive customers by providing best-in-class products and services, with uncompromised attention to driving overall value and quality.

<sup>1</sup> The verification of host system and storage device compatibility is in customer's responsibility. Swissbit can provide guidance and support on request.

<sup>2</sup> Adequate airflow is required to ensure the temperature, as reported in the S.M.A.R.T. data, does not exceed 115°C (industrial temperature drive) and 100°C (commercial temperature drive) respectively.

<sup>3</sup> According to JEDEC (JESD471), the time to write the full TBW is a minimum of 18 months. Higher average daily data volume reduces the specified TBW. The values listed are estimates and are subject to change without notice.

<sup>4</sup> The support of In-Field FW update capabilities on host systems is recommended.