

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



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)
- **Compliance¹:** 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 Range²:**
 - 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 Capacity³:** 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 10¹⁶ 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 Update⁴
- 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.

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

² 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.

³ 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.

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