



**THE DATASHEET OF  
SFSA128GM1AA4TO-C-NC-616-STD**



# swissbit®

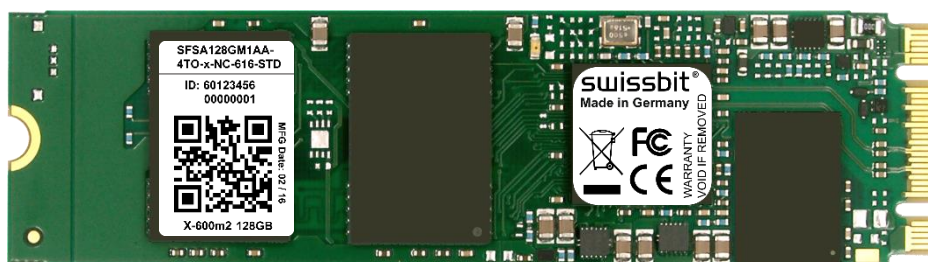
## Product Fact Sheet

### Industrial M.2 SATA SSD

### X-600m2 2280 Series SATA Gen3 – 6.0 Gbit/s, SLC

Commercial and Industrial  
Temperature Grade

Date: August 30, 2019  
Revision: 1.09



# Product Fact Sheet X-600m2 2280 Series



## Product Summary

- **Capacities:** 16 GBytes, 32 GBytes, 64 GBytes, 128 GBytes
- **Form Factor:** PCI Express™ M.2 (2280) (80 mm x 22 mm x 3.58 mm)
- **Compliance:** 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
- **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\*:**
  - 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†:** Client ≥ 7,715; Embedded ≥ 2,500; Enterprise ≥ 1,120
- **Shock/Vibration:** 1,500 g / 50 g
- **Hardware BCH Code ECC:** up to 66 bit correction per 1 KByte page
- **Mean Time Between Failure:** > 2,000,000 hours
- **Data Reliability:** < 1 non-recoverable error per 10<sup>16</sup> bits read

## Product Features

- Dynamic and Static Wear Leveling
- Data Care Management
  - Active: Adaptive Read Refresh
  - Passive: Background Media Scan
- 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
- 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.

\* 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.




† 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.

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