swissbit®

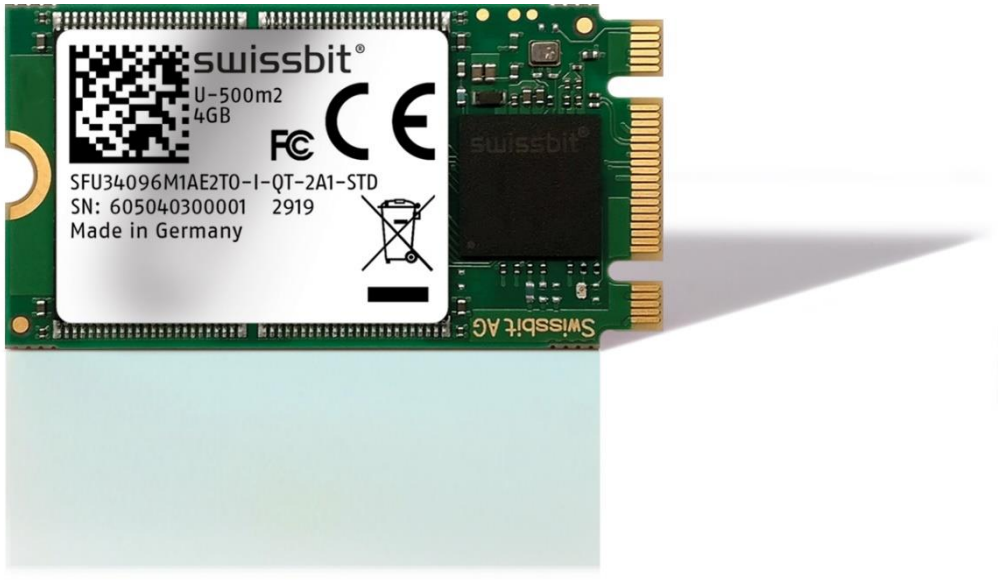
Preliminary
Product Fact Sheet

Industrial
USB Flash Drive Module

U-500m2 Series
USB 3.1 SuperSpeed, M.2 2242, SLC

Commercial and Industrial
Temperature Grade

Date: September 26, 2019
Revision: 0.91



made in germany

Product Fact Sheet
U-500m2 Series

Product Summary

- **Capacities:** 2 GBytes, 4 GBytes
- **Form Factor:** PCI Express™ M.2 (2242), Socket 2 pinout with B+M keys conn. (42 mm x 22 mm x 2.3 mm)
- **Compliance:** USB 3.1 Gen 1 SuperSpeed specification compatible (backward compliance with USB 2.0/1.1)
- **Performance:**
  - Read Performance: Sequential Read up to 57 MBytes/s, Random Read IOPS up to 2,260
  - Write Performance: Sequential Write up to 35 MBytes/s, Random Write IOPS up to 1,130
- **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:** 3.3V ±5%
- **Data Retention:** 10 Years @ Life Begin; 1 Year @ Life End
- **Endurance in TeraBytes Written (TBW) @ 4GBytes:** 422 (seq. write 128KB); 28 (random write 4KB)
- **Shock/Vibration:** 1,500 *g* / 20 *g*
- **High-Performance 32-Bit Processor with Integrated, Parallel Flash Interface Engines:**
  - Single-Level Cell (SLC) NAND Flash
  - Hardware BCH Code ECC (up to 24bit correction per 1 KByte page)
- **High Reliability:**
  - Mean Time Between Failure (MTBF): > 3,000,000 hours
  - Data Reliability: < 1 non-recoverable error per 10^{17} bits read

Product Features

- Page based Flash management for increased endurance & random performance
- Optimized FW algorithms especially for high read access and long data retention applications
  - Proven power fail management for highest reliability
  - Near Miss ECC technology
  - Read Disturb Management
  - Wear Leveling technology
  - Data Care Management
- Detailed S.M.A.R.T. support and extended vendor information
- LED for operation indication
- In-field firmware update
- Swissbit Life Time Monitoring (SBLTM) tool and SDK for SBLTM (on request)
- Controlled BOM & PCN process
- Customized options like registers, removable device, densities, uploads, label, etc.
- Optional security features like access protection, encryption, read only or hidden partitions 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 addressees 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 drive temperature, as reported in the S.M.A.R.T. data, does not exceed the specified maximum operating temperature.