

swissbit®

Product Fact Sheet

Industrial USB Flash Drive Module

U-450 Series
USB 2.0 High-Speed, SLC

Commercial and Industrial
Temperature Grade

Date: January 13, 2021
Revision: 1.01



Product Summary

- **Capacities:** 1 GByte, 2 GBytes, 4 Gbytes, 8 GBytes, 16 GBytes
- **Form Factor:**
 - USB 2.0 solid state flash drive for internal 10-pin USB connector terminal (26.65mm x 36.8mm)
 - 2.54mm or 2.00mm connector with keyed pin
- **Compliance:** USB 2.0 High-Speed specification compatible (backward compliance with USB 1.1)
- **Performance:**
 - Read Performance: Sequential Read up to 36 MBytes/s, Random Read IOPS up to 1,900
 - Write Performance: Sequential Write up to 26 MBytes/s, Random Write IOPS up to 1,400
- **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 $\pm 5\%$ or 5V $\pm 10\%$
- **Data Retention:** 10 Years @ Life Begin; 1 Year @ Life End
- **Endurance in TeraBytes Written (TBW):**
 - Enterprise Workload: up to 101
- **Shock/Vibration:** 1,500 g / 50 g
- **High-Performance 32-Bit Processor with Integrated, Parallel Flash Interface Engine:**
 - Single-Level Cell (SLC) NAND Flash
 - Hardware BCH Code ECC (up to 60bit correction per 1024 Bytes)
- **High Reliability:**
 - Mean Time Between Failure (MTBF): > 3,000,000 hours @ 25°C
 - Data Reliability: < 1 non-recoverable error per 10^{17} bits read

Product Features

- Subpage 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, connector options, write protect switch, grounded mounting hole, densities, uploads, label, etc.

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.