

# swissbit®

Product Fact Sheet

## Industrial USB Flash Drive Module

**U-58 Series**  
USB 3.1 SuperSpeed, pSLC

Commercial and Industrial  
Temperature Grade

Date: January 26, 2023  
Revision: 1.01



  
Made in Germany

## Product Summary

- **Capacities:** 8 GBytes, 16 GBytes
- **Form Factor:**
  - USB3.1 solid state flash drive for internal 9(10)-pin USB connector terminal (26.65mm x 36.8mm)
  - 2.54mm or 2.00mm connector with keyed pin
- **Compliance:** USB 3.1 Gen 1 SuperSpeed specification compatible (backward compliance with USB 2.0/1.1)
- **Performance:**
  - Read Performance: Sequential Read up to 180 MBytes/s, Random Read IOPS up to 4,100
  - Write Performance: Sequential Write up to 76 MBytes/s, Random Write IOPS up to 1,680
- **Operating Temperature Range<sup>1</sup>:**
  - 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% or 5V ± 10%
- **Data Retention:** 10 Years @ Life Begin; 1 Year @ Life End
- **Endurance in TeraBytes Written (TBW) @ Max Capacity<sup>2</sup>:**
  - Enterprise Workload ≥ 67.2
- **Shock/Vibration:** 1,500 g / 50 g
- **High-Performance 32-Bit Processor with Integrated, Parallel Flash Interface Engines:**
  - Triple-Level Cell (TLC) 3D NAND Flash in pSLC mode
  - Hardware BCH Code ECC (up to 6obit correction per 1 KByte page)
- **High Reliability:**
  - Mean Time Between Failure (MTBF): > 3,000,000 hours
  - Data Reliability: < 1 non-recoverable error per 10<sup>16</sup> 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, 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.

<sup>1</sup> 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.

<sup>2</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.