

# swissbit®

Product Fact Sheet

## Industrial USB Flash Drive

**U-56n Series**  
USB 3.1 SuperSpeed, pSLC

Commercial and Industrial  
Temperature Grade

Date: January 12, 2023  
Revision: 1.03

everbit™



## Product Summary

- **Capacities:** 4 GBytes, 8 GBytes, 16 GBytes, 32 GBytes
- **Form Factor:** USB 3.1 solid state flash drive with USB Type-A connector (24.0 mm x 12.1 mm x 4.5 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 197 MBytes/s, Random Read IOPS up to 3,850
  - Write Performance: Sequential Write up to 126 MBytes/s, Random Write IOPS up to 2,600
- **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:** 5.0 V ± 10%
- **Data Retention:** 10 Years @ Life Begin; 1 Year @ Life End
- **Endurance in TeraBytes Written (TBW) @ Max Capacity:** 697 (seq. write 128KB); 42 (random write 4KB)
- **Shock/Vibration:** 1,500 g / 50 g
- **High-Performance 32-Bit Processor with Integrated, Parallel Flash Interface Engines:**
  - Multi-Level Cell (MLC) NAND Flash
  - Hardware BCH Code ECC (up to 40bit 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<sup>16</sup> bits read

## Product Features

- Page based Flash management with **everbit™** technology 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  
Minimize the risk of uncorrectable bit failure over the product life time. Each read command analyzes the ECC margin level and refreshes data if necessary.
  - Read Disturb Management  
The read commands are monitored and the content is refreshed when critical levels have occurred.
  - Wear Leveling technology
  - Data Care Management  
The interruptible background process controls the user data for read disturb effects or high temperature related retention degradation and refreshes data if necessary.
- Detailed S.M.A.R.T. support and extended vendor information
- LED for operation indication
- In-field firmware update
- 30 µinch gold-plated USB 3.0 Type-A connector contacts
- Swissbit Life Time Monitoring (SBLTM) tool and SDK for SBLTM (on request)
- Customized options like removable or fixed drive configuration, customer specified strings and IDs, FAT16, FAT32 or customer file system, preload service or customized logo 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.