

SWISSBIT PRODUCT FEATURES



WIDE TEMPERATURE SUPPORT

Swissbit's embedded memory and storage solutions are designed and approved for reliable operation over a wide temperature range. The products are verified at temperature corners and pre-stressed with a burn-in operating functional test (Test During Burn In-TDBI).



ESD AND EMI SAFE

The product designs are in line with the latest regulations for electrostatic discharge and electromagnetic interference. Swissbit strives to exceed these limits with our own in-house technology and production capabilities, for example with System-in-Package (SiP) competence.



SHOCK AND VIBRATION

Robustness is one of our key specification targets. The design, assembly, and use of selected materials guarantee an extremely solid design, which has been validated by extensive testing.



LIFE TIME MONITORING (LTM)

The Swissbit Life Time Monitoring feature enables users to access the memory device's detailed Life Time Status and allows imminent failure prediction thereby avoiding unexpected data loss. This feature uses an extended S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) interface or vendor specific commands to retrieve flash product information.



ZONE PROTECTION

The device allows the configuration of multiple zones with either no protection, write protection, or access protected settings. Each zone is secured with a separate password. A Windows tool and a programming library are available.



CONFORMAL COATING

Swissbit offers a special protective coating on selected products. This coating is a thin polyurethane film, which protects against aggressive environmental conditions such as dust, moisture, or corrosive gas.



SECURE ERASE (SANITIZE/PURGE)/FAST ERASE

This feature uses an uninterruptable sequence of data erase commands. Even a power-off can't stop the process, which will continue upon restoration of power. The optional enhanced feature allows the customer to sanitize the data according to different standards like DoD, NSA, IREC, etc. The purge algorithm can be started by a software command or through a hardware pin.



TEMPERATURE SENSOR

The sensor allows the host hardware or software to monitor memory device temperature to improve data reliability in the target application environment.



HEAT SPREADER

Heat spreader for DRAM modules allow temperature hot spots to be dissipated over a larger surface area and improve the module's reliability.



POWER FAIL PROTECTION AND RECOVERY

Intelligent power fail protection and recovery protects data from unexpected power loss. During an unintentional shutdown, firmware routines and an intelligent hardware architecture ensure that no corruption of user or system data will occur.



WEAR LEVELING

Sophisticated wear leveling and bad block management ensure that flash cells are sparingly and equally used to prolong the device's life.



READ-ONLY OPTIMIZED

In many industrial applications, content is written to the NAND flash once and is only read afterwards. For such cases, the firmware can be optimized to guarantee the highest possible data retention and less read disturb.



TRIM SUPPORT

The TRIM command allows the operating system to inform the SSD about which blocks of data are no longer considered in use and can be wiped internally, which increases system performance during subsequent write accesses. With TRIM support, data scrap, which would otherwise slow down future write operations to the involved blocks, can be deleted in advance.



LOW POWER CONSUMPTION

Electronic devices with lower power consumption increase the value of the product, because they decrease energy cost, prolong battery life, and reduce heat generation in the device and hence require less cooling.



DATA CARE MANAGEMENT

Various effects like data retention, read disturb limits, or temperature can impact data reliability. The latest generation of Swissbit products uses special methods to maintain and refresh the data for greater data integrity.



HIGH PERFORMANCE

Optimized for high sequential data rates and IOPS by use of SLC technology.



IN FIELD FW UPDATE

The storage product can be upgraded with new FW in the field. The upgrade process is protected against power loss.



LONGEVITY

The longevity product lines use special components with a long-term supply commitment of up to ten years. These products offer the lowest TCO in demanding applications with high requalification cost.



WAF REDUCTION

The WAF (write amplification factor) for MLC based products is reduced by combining a paged based FW block management with a powerful card architecture and configuration settings.

SECURITY FEATURES



TRUE HARDWARE RNG

True random numbers are generated inside the secure element. True randomness is the key prerequisite for secure systems to prevent brute force attacks.



DIGITAL SIGNATURE AND VERIFICATION

Digital signatures are very popular and inevitable to protect against data or code manipulation.



HARDWARE BASED DATA ENCRYPTION

Hardware based security is key when it comes to replaceability, simple workflows, and trusted runtime environments.



MOBILE BANKING AND EPURSE

Swissbit Security products for mobile banking and payment offer strong authentication and offline security.



DEVICE PROTECTION BY DUAL FACTOR AUTHENTICATION

The user needs to have the card and know the PIN.



SECURE VOICE

Secure Voice calls are a requirement for confidential communication. Swissbit Security products are optimal for fast, encrypted, and user friendly secure voice solutions.



ELLIPTIC CURVE CRYPTOGRAPHY SUPPORT

Elliptic curves are faster and more efficient than RSA cryptography.



SECURE CD-ROM

The flash memory can be partially or totally switched to read-only. This function ensures that e.g., important data can be modified only after PIN authentication.



DATA PROTECTION AND ENCRYPTION

Various data protection modes ensure privacy of stored data. The card offers a data safe function with strong AES encryption and PIN access protection.



SECURE LOGGING

In large, hidden storage, any system event log, tax data, consumption data, or audit trails can be stored securely in write-once mode, queue mode, or random access mode.