

PRESS RELEASE

Advanced Power Loss Protection for Industrial SSDs: Swissbit introduces powersafe™

Guaranteed maximum data protection against power outages thanks to intelligent power management features and tantalum capacitors

Bronschhofen, Switzerland. April 07, 2022 – Effective protection against loss of data in the event of sudden power outages (Power Loss Protection - PLP) is an essential and established safety feature of industrial SSDs. All Swissbit storage solutions are therefore equipped with optimized PLP technology as standard to safeguard against the loss of user data and ensure device and firmware integrity. For maximum protection, especially in mission-critical applications, Swissbit has now introduced "powersafe", an additional PLP level that also secures data as it transfers from host to controller (Dynamic Data) or from DRAM to NAND (Cached Data). The new feature provides industry leading PLP protection for SSDs that are designed for highest reliability and long product lifecycles. "powersafe" is available immediately as an optional feature for selected Swissbit SSD series.

The secret to the high performance of the "powersafe" feature is the combination of sophisticated firmware and hardware features. Highly reliable tantalum capacitors that store energy while the SSD is in operation form the basis. In the event of a sudden power outage, the stored charge is used to safely write both dynamic data and data in the DRAM cache to the NAND flash array. Intelligent power management within the firmware ensures that the power supply disconnects from the host upon reaching a critical threshold and connects to the regulated voltage of the capacitors instead. This provides the SSD with sufficient power to safely execute write commands and flush cached data.

"Power outages can permanently damage data and consequently be costly. Particularly in an industrial environment, where SSDs are often in operation for more than ten years, we can now offer one of the most advanced PLP features with 'powersafe'," explains Roger Griesemer, General Manager Memory Solutions at Swissbit. "Especially for mission-critical applications where data loss is not an option, we have raised the reliability of our SSDs to a new level."

Validation: way above average

For the development of "powersafe", Swissbit applied extensive tests that go far beyond the industry standard. With 10,000 test cycles, during which only write

processes are carried out during a power outage, Swissbit has ensured a high level of repeatability and reliability. In addition, short idle times between the individual test cycles put even more pressure on the design to ensure that "powersafe" can handle even the most demanding workloads.

SATA III SSD X-75 with powersafe™ now available

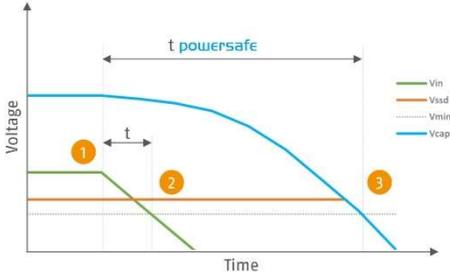
For selected SSD series, Swissbit offers "powersafe" as an optional feature, identified by the suffix (P) within the product name. The first in line is the X-75 product series, which is available immediately with the extended PLP protection option both for the 2.5" variant and the M.2 form factor. The 3D NAND (TLC) based SSDs with SATA III interface offer the highest endurance and reliability across the full industrial temperature range with capacities from 240 to 1,920 GB.

In addition, Swissbit will present the N-30, a new PCIe SSD module series as a "powersafe" variant, in the third quarter 2022. The N-30m2P (TLC) will be available with capacities from 240 GB to 4 TB and corresponding pSLC variants (N-36m2P).

Available images

The following images are available for download in printable format at:

<https://kk.htcm.de/press-releases/swissbit/>

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|  <p>Image Source: Swissbit</p> <p>New PLP feature for maximum protection against power outages: powersafe™ from Swissbit</p> |  <p>Indicative diagram – not to scale!</p> |
|  <p>Image Source: Swissbit</p> <p>The 2.5" SATA SSD X-75 is now available with powersafe™ under the name "X-75 P".</p> | <p>Image Source: Swissbit</p> <p>The operating principle of Swissbit powersafe™:</p> <ol style="list-style-type: none"> 1. During a sudden power outage, the input voltage V_{in} begins to drop 2. as soon as V_{ssd} reaches a critical voltage threshold, the power management disconnects V_{ssd} from the host and connects to the regulated voltage of V_{cap} (capacitors, in blue) 3. powersafe™ supplies the SSD with power ($t_{powersafe}$) long enough to execute write commands and empty cached data. |

About Swissbit

Swissbit AG is the leading European manufacturer of storage, security and embedded IoT solutions for demanding applications. Swissbit combines its unique competences in storage and embedded IoT technology with its advanced packaging know how. This expertise allows our customers to reliably store and protect data in industrial, NetCom, automotive, medical and fiscal applications as well as across the Internet of Things (IoT).

Swissbit develops and manufactures industrial-grade storage and security products “Made in Germany” with high reliability, long-term availability, and custom optimization.

Swissbit’s storage range includes SSDs with PCIe and SATA interface such as mSATA, Slim SATA, CFast™, M.2 and 2.5” as well as CompactFlash, USB flash drives, SD Memory Cards, micro SD Memory Cards and managed NAND BGAs like eMMC. Security products are available in various application specific editions as USB flash drives, SD Memory Cards, and micro SD Memory Cards.

Swissbit was founded in 2001 and has offices in Switzerland, Germany, USA, Japan and Taiwan. Swissbit owns the registered trademarks Swissbit® and Hyperstone®. Since 2020, the independent investment firm Ardian is holding a majority stake in the company to support its growth.

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