

PRESS RELEASE
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Low Power SSD Controller: X1 for Reliable 3D Flash Support

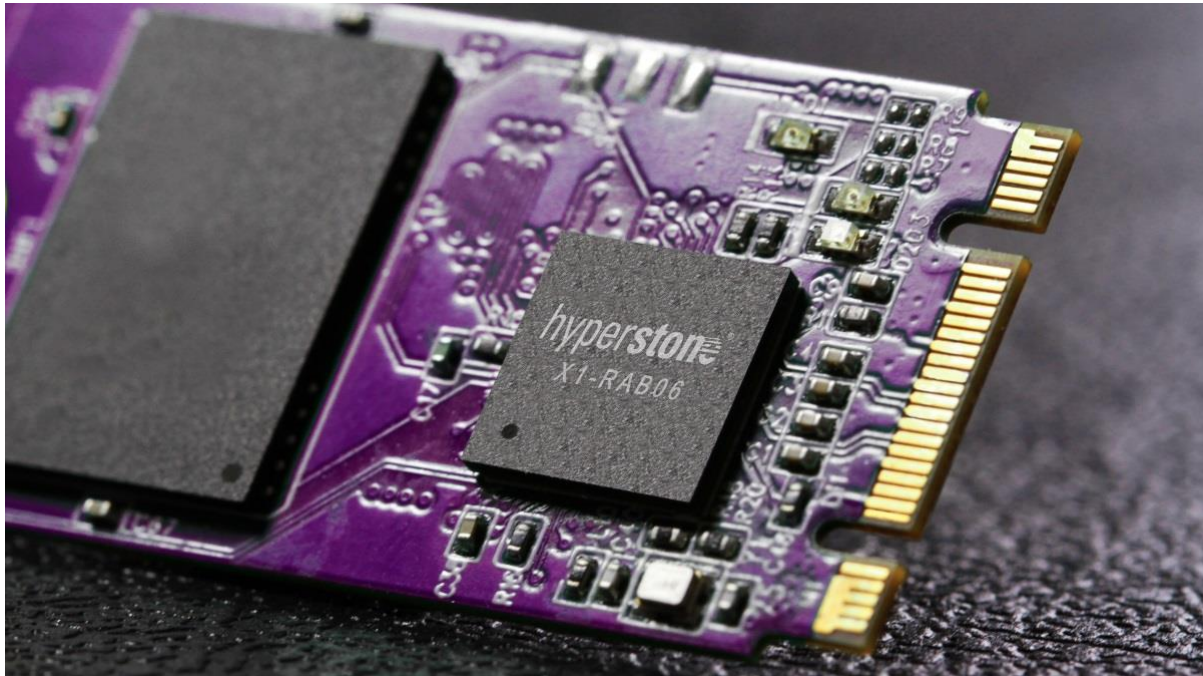
New X1 SATA NAND flash controller offers lowest power consumption and security for industrial solid state drives (SSDs), M.2, U.2, CFast and embedded flash drives (eSSDs).

Konstanz, Germany, 12 February 2019 – Today, Hyperstone introduces its new X1 – SATA III SSD controller. The X1 is designed to fully satisfy industrial requirements and targets high-reliability SSDs, M.2 and U.2 modules, CFast cards and system-in-package eSSDs or discrete on-board flash drive integration. With its state-of-the-art **hyMap®** sub-page-based flash translation layer, the X1 achieves unparalleled random write performance, minimal write amplification and high endurance without external DRAM. The newly introduced **FlashXE®** (eXtended Endurance) read-channel includes calibration, error correction with soft-decoding and error prevention mechanisms for a wide range of flash technology including SLC, pSLC, 3D MLC, 3D TLC and the next generation of NAND flashes.

Adherence to the highest industrial requirements is guaranteed by **hyReliability™** flash management, which features superior wear leveling, read-disturb management and best-in-class power-fail robustness. Furthermore, advanced protection against radiation and soft errors including end-to-end datapath protection, SRAM ECC and a low-alpha package ensure operation even under the most demanding conditions. The controller achieves transfer speeds of up to 550 MB/s. Exhaustive health-monitoring data exceeding the usual S.M.A.R.T. scope is provided together with lifetime estimation tools.

X1 is the latest addition to Hyperstone's portfolio of NAND flash controllers, enabling industrial customers to benefit from the most reliable and most energy-efficient SSD solution. "The powerful dual-core processor along with end-to-end datapath protection, FlashXE® and advanced security features are vital in guaranteeing an industrial reliable system with today's 3D flashes," said Sandro-Diego Wölfle, Product Manager of Hyperstone. "Furthermore, the X1 provides extremely low power consumption, and as the silicon is designed for 125°C junction temperature, it can be used in 105 °C environments."

The X1 will initially be available in 144-ball TFBGA (10.4 x 10.4 x 1.1 mm) and 124-ball TFBGA (9 x 9 x 1.2 mm) packages, qualified for the industrial temperature range (-40 to +85 °C). Mass-production samples and firmware are available now. For more information download the product flyer available on the website today.



About Hyperstone

Hyperstone is a fabless semiconductor company based in Konstanz, Germany with a strong focus on world-class flash memory controllers for industrial embedded markets. Its products set the standard for high-reliability flash management providing confidence for NAND flash performance in mission critical situations. Hyperstone's products include microcontrollers for various host interfaces and performance points, e.g. SATA, USB, CF/PATA, SD/microSD and eMMC. Flash controller firmware is supplied as complementary to the controllers and customized for each flash and application. Hyperstone is a member of the CML Microsystems Plc group, traded on the London Stock Exchange.

To learn more about Hyperstone, please visit www.hyperstone.com

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