PRESS RELEASE

Hyperstone GmbH
Line-Eid-Strasse 3, 78467 Konstanz, Germany
Web: www.hyperstone.com, Email: info@hyperstone.com

New Flash Management drastically reduces NAND Flash wear-out

Konstanz, Germany, February 11th, 2015 – Released today, Hyperstone's new hyMap® technology significantly improves endurance and random write performance for flash memory systems, thus for the first time enabling MLC for reliable industrial embedded storage systems.

hyMap® reduces Write Amplification (WAF) by a factor of more than 100 in fragmented usage pattern and for small file random writes. Thereby, the reduction in effectively used write-erase-cycles results in higher performance, longer life and shorter random access response times. As a result, in many applications hyMap® together with Hyperstone controllers and MLC flash enables higher reliability and data retention than other controllers using SLC. hyMap® does not require any external DRAM or SRAM.

Together with Hyperstone's proprietary hyReliability™ feature set, hyMap® provides enhanced endurance, data retention management, as well as rigorous fail-safe features mandatory for industrial applications.
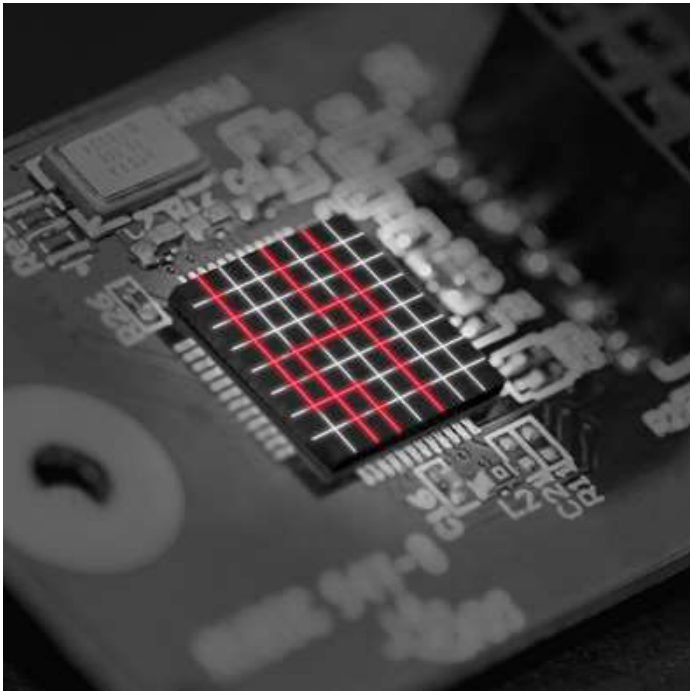
Advantages:
- **Extended device life-time/endurance for embedded systems**
  Significantly decreased Write Amplification Factor (WAF) resulting in dramatically reduced flash wear-out
- **High-speed performance for small data by minimizing data transfer time**
  Fastest response time and reduced write latency
- **Enabling MLC flashes for industrial storage applications**
  MLC-aware Power Fail Management (PFM)
  Reliable-Write for MLC Flashes
- **Optimized Data Reliability and Power Fail Safety**
  Extended Wear Levelling concept for optimal flash usage
  Dynamic Data Refresh to maximize data retention and refresh data subject to read disturbance
  Intelligent Garbage Collection

"Our hyMap® FTL architecture reliably enables lower-cost MLC for embedded Flash systems, achieving better reliability and endurance than other controllers. But also SLC and pseudo SLC reliability is increased dramatically." said Axel Mehnert, VP Marketing of Hyperstone. "hyMap® together with our proven hyReliability™ feature set is optimally suited to maximize system integrators' flexibility, choosing the best Flash technology for specific application requirements."

"Evaluating SSDs for enterprise applications, write amplification has been discussed intensively for several years. Controllers used in these high-performance applications use external DRAM and multi-core processors. For removable SD cards or USB modules in embedded systems, write amplification has not been in focus yet. Low-cost consumer controllers do not provide sufficient SRAM and CPU-power to provide such sophisticated mapping and FTL algorithms." said Dr. Jan Peter Berns, Managing Director of Hyperstone. "With hyMap® we are now offering a truly efficient high-performance solution for embedded systems."

Initially, hyMap® will be available for Hyperstone's S8 - SD/MMC and U8 - USB Flash Memory Controllers. The new architecture will be used for all future Hyperstone products.

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 complementary to the controllers and customized for each flash and application.

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

Ends.

Contact Information:

Hyperstone GmbH
Line-Eid-Strasse 3, 78467 Konstanz, Germany
Phone: +49 7531 98030

Media Contact:

Susan Heidrich
Sales and Marketing Coordinator
SHeidrich@hyperstone.com