

PRESS RELEASE
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Hyperstone introduces F4 Flash Memory Controller offering highest endurance and reliability for high performance CompactFlash™ cards (CFC) and Solid State Disks (SSD)

Konstanz, Germany, February 19, 2009 – Today, Hyperstone introduced its F4 family of Flash Memory Controllers. Targeting applications such as CompactFlash™ Cards (CFC), Solid State Disks (SSD), IDE Disk-on-Modules (DoM), Multi-Chip-Package (MCP), and embedded Flash or Disk-on-Board, the F4 together with firmware provides highest reliability, endurance, and rigorous fail-safe features for all Single Level Cell (SLC) and many Multi Level Cell (MLC) based Flash Memory solutions.

Based on the Hyperstone 32-Bit RISC core including instruction set extensions optimized for Flash handling, the F4 Flash Memory Controller offers among others:

- Fully compliant to CompactFlash™ 3.0 and compatible to 4.1 specifications
- Fast ATA supporting PIO mode 6, MDMA mode 4, UDMA mode 4 in True-IDE mode, (UDMA 5 possible in fixed board implementations)
- Sustained read up to 50 MB/s and random read up to 40 MB/s
- Sustained write exceeding 40 MB/s with interleaving and random write up to 9 MB/s
- Two Direct Flash Access (DFA) channels including Sector Buffers and interleaving capability
- Supporting direct connection of up to 16 flash memory chip enables (CE) - eight per channel
- Error Correcting Code (ECC) capable of correcting 4 symbols in a 512 bytes sector with additional CRC
- Data transfer rate to flash memories: up to 80 MB/s
- Host data transfer rate in UDMA mode 4 up to 66 MB/s in PIO mode 6 or MDMA mode 4 up to 25 MB/s
- Custom optimizations for specified file sizes possible
- As firmware is stored in Flash Memory, all future Flashes can be supported by simple firmware upgrades
- Built-in voltage regulator, and detector, reducing the BoM to a few additional capacitors and resistors
- Automatic power-down during wait periods, power saving including automatic wake-up and sleep mode with $I_{cc} < 250\mu A$

The F4 provides safe power-fail handling, proven error detection and correction and superior static wear leveling, satisfying the most demanding requirements regarding data traffic and power fail situations. Hyperstone offers the ASSP including firmware, manufacturing kit, test and development hardware, as well as reference schematics.

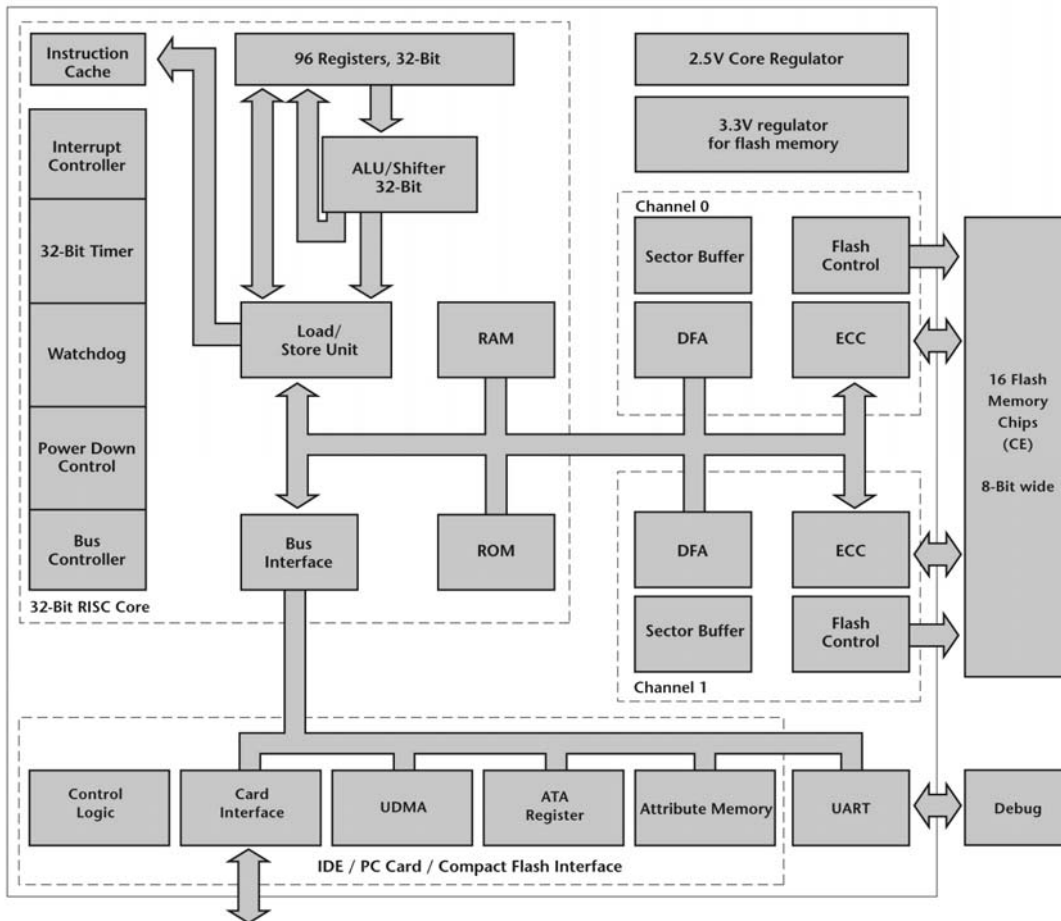
“F4 is our highest performing SSD and CF controller to date. Especially we focus on high-reliable SLC Flashes with caching features such the new line of Toshiba SLC. First performance benchmarks have already achieved sequential read and write performances in excess of 40MB/s,” said Axel Mehnert, Vice President Marketing and Customer Support of Hyperstone, “while at the same time we have not compromised any of the reliability or endurance features that our long term customers expect from us.”

“Easily adding a SATA bridge or RAID controller, our F4 products can also be used for Industrial SSD applications where reliability and data integrity is key.” said Steffen Allert, Vice President Sales and Field Application Support of Hyperstone. With our firmware concepts and patented algorithms refined over many years, customers don’t need to compromise data integrity or endurance when moving to SATA.”

The F4 will be available in different package and temperature range options:

- F4 LAT05 --- TQFP 100, 8 CEs, RoHS, 0 to +85 °C
- F4-ILAT05 --- TQFP 100, 8 CEs, RoHS, -40 to +85 °C
- F4-LAT06 --- TQFP 128, 16 CEs, RoHS, 0 to +85 °C
- F4-ILAT06 --- TQFP 128, 16 CEs, RoHS, -40 to +85 °C
- F4-0ABD0 --- KGD / Wafer, 16 CEs

Block Diagram F4 Flash Memory Controller



Please meet us at the



March 3 – 5, 2009, Nuremberg, Germany,
at the Toshiba booth:
Hall 12.0 Stand 460



March 30 – April 3, Silicon Valley, USA
Booth 1825

About Hyperstone

Hyperstone, a fabless semiconductor and microprocessor design company, was founded in 1990 and is based in Konstanz, Germany. Together with subsidiaries in Taiwan, USA and with other worldwide partners, Hyperstone serves a global customer base. Hyperstone is a member of CML Microsystems Plc group, traded on the London Stock Exchange. The group currently consists of eight subsidiaries and has over 250 employees. Hyperstone research and development is based in Germany and Taiwan. Industry-leading partners provide world-class wafer subcontracting, packaging, and testing services. Hyperstone's success is based on the unique design of a unified RISC/DSP processor architecture that provides both a fast RISC processor for data and control functions together with a powerful DSP unit for efficient algorithm execution. Hyperstone designs require less silicon, are more power efficient and require lower software complexity when compared to conventional dual-core designs.

Hyperstone's products include the hyNet SoC for IP-Cameras and Real-Time Ethernet as well as microcontrollers for Solid State Disks (SSD), Disk-on-Module (DoM), Disk-on-Board (DoB), embedded Flash solutions such as eMMC, and Flash cards such as CF, SD, microSD.

More information is available at www.hyperstone.com.

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