

CAST Releases Improved IP Core for Controlling Large NAND-Flash SSD Memories

Third-generation IP core improves capacities, performance, and features to handle new 64GB solid state device NAND Flash memories

DesignCon Conference, Santa Clara, California, February 5, 2008 — Silicon Intellectual Property (IP) provider CAST, Inc. today announced a new version of its memory controller core that adds features and capabilities needed for managing the latest NAND Flash memory devices.

Representing the third generation of the company's proven memory controller IP technology, the new NANDFLASH-CTRL core adds support for the newer high-capacity Multi-Level Cell (MLC) architecture while retaining support for traditional Single-Level Cell (SLC) memories. It can also process a bigger page size (4KB) for faster memory operations, and handle larger memory devices (up to 64Gb). These new features plus the technology's proven reliability and ease of use make the new controller core an excellent choice for system-on-chip (SOC) designers developing products with large solid-state drive (SSD) memories.

"Designers creating memory sticks, digital cameras, music players, smart routers, and even laptops are rapidly migrating to big SSD storage with higher-capacity MLC and SLC NAND Flash memories," said Hal Barbour, president. "Our new controller core gives them a quick, easy way to take advantage of these advanced memory devices, and even prepares them to use 64GB drives like those coming out now in the latest light-weight laptops."

Additional new features of the NANDFLASH-CTRL core include sophisticated multiple-bit error correction using the Bose-Chaudhuri-Hocquenghem (BCH) algorithm, freeing the

designer from concern for this MCL necessity. The core includes a direct memory access (DMA) manager, uses a comprehensive command set for easy NAND Flash memory access, automatically remaps corrupted memory blocks to improve reliability, can protect memory areas against writes with a block lock mode, has built-in power-saving features, and can boot software directly from Flash memory. The controller works with any suitable memory device that supports the Open NAND Flash Interface Working Group (ONFI) standard.

CAST also offers a custom NAND Flash Controller Driver for use with the NANDFLASH-CTRL core, further simplifying system integration. This allows users to develop their system software without detailed knowledge of the NAND Flash controller hardware. A complete set of driver functions was tested in the eCos and Windows CE environments.

The Driver and a version of the controller for the AMBA® AHB standard system bus are available now. A version supporting the OCP standard bus will be available by April. Custom bus adaptations or extra technical design support are also available.

A demo application that illustrates the operation of the memory controller core is available upon request. It uses the controller and driver together with a block device emulator controlled by a FAT32 file system running under the eCos real-time operating system. The NANDFLASH-CTRL core, driver, and demo were developed by CAST's expert development partners Evatronix SA in Poland (www.evatronix.pl).

About CAST, Inc.

CAST provides over 100 popular and standards-based IP cores for ASICs and FPGAs. Privately owned and operating since 1993, CAST has established a reputation for high-quality IP products, simple licensing, and responsive technical support. The company is headquartered near New York City, partners with IP developers around the world, and works with select sales consultants and distributors throughout Europe and Asia.

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