

The Feature-Rich Hard Disk Drive SOC Designed for Use in Consumer Electronics is First to Support the New CE-ATA Specs

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Marvell®, a technology leader in the development of extreme broadband communications and storage solutions, today announced the first System On Chip ([SOC](#)) device supporting the new CE-ATA specification, a new storage interface tailored to the needs of the handheld and consumer electronics (CE) market. The Marvell 88i6310 SOC and its accompanying reference firmware is the first device designed specifically to enable next generation small form factor disk drives. By using the 88i6310 hard disk drive OEMs can target a variety of CE applications, such as handheld music players, mobile phones, personal media players, digital cameras, personal digital assistants, auto navigation and portable GPS systems, and also target new uses for small form factor drives.

These rapidly changing portable and handheld CE applications, with ever increasing processing power and growing feature sets, place new requirements on hard disk drives. In addition to the smaller physical size of these drives, which today incorporate 1.8”, 1.0”, and 0.85” media, new requirements include low pin count, battery-optimized low voltage operation, power efficiency, cost effectiveness and ease of integration. Marvell’s 88i6310 SOC was designed from the ground up to meet these unique requirements.

“For many years Marvell has maintained the vision that small form factor hard disk storage will be integrated into a wide variety of

handheld and portable CE applications,” said Dr. Alan J. Armstrong, VP Marketing for Marvell’s Storage Division. “The recent surge in popularity of such devices, as evident in the growth of hard drive based music players, shows this vision is beginning to take hold. The 88i6310 is the result of a dedicated, four-year development effort producing the industry’s only SOC solution designed specifically for small form factor drives.”

"Trend Focus predicts the rapid adoption of small form factor hard disk drives, with shipments increasing at a CAGR of over 70% from 3.6 million units in 2003 to nearly 30 million units in 2007," said John Donovan, Vice President of Research, at industry analyst Trend Focus. "The introduction of single-chip SOCs such as Marvell’s 88i6310, which is designed specifically for small form factor drives, will be a key catalyst of this astounding growth."

To date, hard disk drive OEMs have designed small form factor disk drives to meet PC class requirements and re-purposed those drives for CE applications. Now, with the emergence of a new class of small drives designed specifically for CE applications, OEMs face a substantial resource and development cost challenge as they grapple with this new class of drives in addition to their traditional drive products. Marvell envisioned this challenge and developed a solution for its customers - an SOC architecture, utilizing Marvell’s production proven hard disk controller (HDC) and an ARM processor, which could be used across all product lines. This common architecture is the basis for the 88i6310 and other Marvell SOC products spanning the 3.5” desktop, 2.5” notebook and small form factor drive segments. The architecture enables customers to leverage firmware investment across multiple product platforms, saving valuable development resources. To further decrease development cost and to shorten design cycles for its customers, Marvell is the first hard disk drive semiconductor vendor to provide a complete firmware reference to accompany many of its SOC solutions including

the 88i6310.

The 88i6310 SOC combines, on a single chip, Marvell's production-proven hard disk controller (HDC) with Marvell's 88C6300 low-power read channel core, highly advanced ECC technology, and an ARM966E-S microprocessor core. The 88i6310 offers multiple CE oriented host interfaces including USB 2.0, compact flash, Infrared (IrDA) and the CE-ATA interface, which is currently in specification development. The 88i6310 offers a flexible host interface engine that can be configured to support the CE-ATA interface once the specification is finalized. An additional feature of the Marvell 88i6310 is the battery-powered optimized 88C6300 read channel core, which offers a variety of power saving modes, including a deep sleep mode that can be utilized during different phases of device activity. A first in the market, the 88C6300 read channel was designed to operate in handheld battery operated environments where low voltage operation is critical to extend battery life.

The CE-ATA initiative was announced today at the Intel Developer Forum. Key industry players including Marvell Semiconductor, Inc., Hitachi Global Storage Technologies, Intel Corporation, Seagate Technology and Toshiba America Information Systems lead this new industry initiative.

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