Marvell ARMADA 610 Application Processor

1Ghz, 1080p Encode/Decode, 16MP ISP, 45 MTPS 3D, Integrated EPD Controller, 4x Displays, Security Enabled, POP/Discrete and Consumer Package

PRODUCT OVERVIEW

The ARMADA™ 610 processor is Marvell®'s next generation application processor that is designed for mainstream Mobile Internet Devices (MIDs), connected consumer products, eReaders, eBooks, tablets, media players and new personal information appliances. Featuring a gigahertz-class CPU, integrated full HD 1080p encode and decode, an integrated ISP capable of 16MP image captures, an integrated audio processing engine for extremely low power audio playback and exceptional high quality sound, an integrated EPD display controller and advanced 3D graphics, the ARMADA 610 delivers the best combination of fast, PC-caliber processing, an uncompromised Internet experience — all in the lightweight form factors with extended battery life consumers are looking for.

The ARMADA 610 is based on a 1GHz Marvell-designed ARM v7-compatible CPU offering best-in-class performance for the most demanding software applications. An integrated 3D engine renders 45M triangles-per-second via a complete floating point pipeline and unified vertex and fragment/pixel shading for an immersive gameplay experience with the ability to drive the latest in 3D enabled user interfaces. The ARMADA 610 supports industry standard APIs – ensuring complete compatibility with the most hotly anticipated mobile game titles and easy porting of 3D enabled applications and user interfaces.

The ARMADA 610 features Marvell's award-winning Qdeo™ technology with an integrated video accelerator that can seamlessly encode and decode 1080p video at 30fps. In addition, the ARMADA 610 incorporates a complete Image Signal Processor which can capture high resolution color pictures up to 16MP as well as stream 1080p video at 30fps. The ARMADA 610 integrates a high performance, low power EPD display controller. By integrating the controller, the ARMADA 610 can drive EPD displays at up to 5x the speed of software based or external EPD display controllers. This enables applications, such as HD IP cameras, full HD camcorders and HD video playback, and high performance eReaders which do not suffer from page turn lag, that were previously impossible for this class of device.

The ARMADA 610 offers the flexibility to use any standard memory (LPDDR and standard DDR), a highly flexible display controller capable of five simultaneous displays up to 2k x 2k resolution and a robust security subsystem that includes a secure execution processor. The ARMADA 610 also features support for the next generation of peripheral interfaces, through support for MIPI DSI display, MIPI CSI camera, MIPI HSI and MIPI SLIMbus. Additional peripheral interfaces supported include USB 2.0 HSIC, SD/SDIO/MMC, eMMC, HDMI v1.3a w/PHY and a standard set of lower bandwidth peripherals. Legacy peripherals such as Parallel LCD and Parallel Camera interfaces with integrated laser scanner support are also supported. The ARMADA 610 offers optimized OS support for Linux, Android™, Windows® Mobile 6.5, Windows 7 and Flash® 10. The ARMADA 610 comes in a 12x12mm POP package, 12x12mm Discrete and a cost saving 21x21mm 0.65mm ball pitch consumer package. ARMADA 610 customers will have one of the broadest, most flexible choices of platform in the industry to create truly innovative and marketable products.

BLOCK DIAGRAM

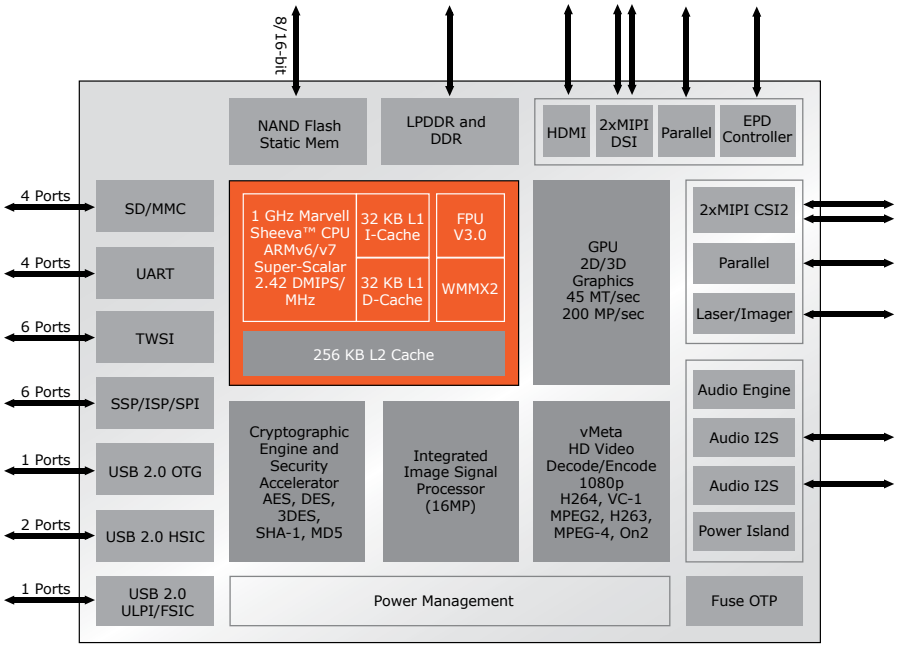

Fig 1. Marvell ARMADA 610 Application Processor

Marvell ARMADA 610 Application Processor

APPLICATIONS

The Marvell ARMADA 610 platform offers a compact development platform for creating ARMADA 610 based mainstream Mobile Internet Devices (MIDs), connected consumer products, eReaders, eBooks, tablets, media players and new personal information appliances. The platform demonstrates the ARMADA 610's high performance, low power operation in a compact form factor that is easy for developers to use with powerful expansion options for adding more platform capabilities.

Fig 2. ARMADA 610 Platform Reference Design

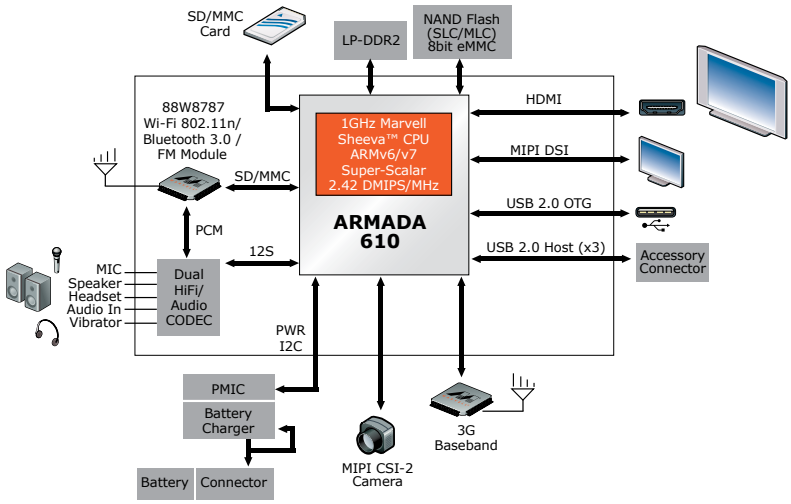

Fig 3. System Development Board Block Diagram

THE MARVELL ADVANTAGE: Marvell chipsets come with complete reference designs which include board layout designs, software, manufacturing diagnostic tools, documentation, and other items to assist customers with product evaluation and production. Marvell's worldwide field application engineers collaborate closely with end customers to develop and deliver new leading-edge products for quick time-to-market. Marvell utilizes world-leading semiconductor foundry and packaging services to reliably deliver high-volume and low-cost total solutions.

ABOUT MARVELL: Marvell is a leader in storage, communications, and consumer silicon solutions. Marvell's diverse product portfolio includes switching, transceiver, communications controller, processor, wireless, power management, and storage solutions that power the entire communications infrastructure, including enterprise, metro, home, storage, and digital entertainment solutions. For more information, visit our Web site at www.marvell.com.

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