Marvell PXA986 WCDMA HSPA+ R7 Communication Platform Solution

Dual-Cortex A9, High-Performance, Low-Power, Low-Cost

PRODUCT OVERVIEW

The Marvell® PXA986 platform is an advanced, highly integrated WCDMA HSPA+ Release 7 solution that provides high-performance on multimedia to enable global smartphone and tablet designs. The platform combines dual ARM® Cortex A9 application processors with low-power optimization and Marvell's mature, proven 3G technology to enable low-cost Linux, Android™ handset platforms. The PXA986 platform supports Wideband Code Division Multiple Access High Speed Packet Access Plus (WCDMA HSPA+)/Enhanced Data for GSM Environment (EDGE) communication for next-generation cellular services that deliver breakthrough end-use experience for imaging, HD video, music, social networking, games, and other popular handset applications. The PXA986 is pin-to-pin compatible with the PXA988, the correspondent platform on TD-SCDMA, effectively reducing the costs for OEM design cycles, minimizes design resources and decreases time to market (TTM).

With Marvell's cutting-edge cellular technology and seamless wireless connectivity, PXA986-powered mobile terminals provide high mobile connectivity and offer ultimate performance for browsing, HD live video, music, 3D gaming, and other bandwidth-intensive mobile applications at an attractive price.

BLOCK DIAGRAM

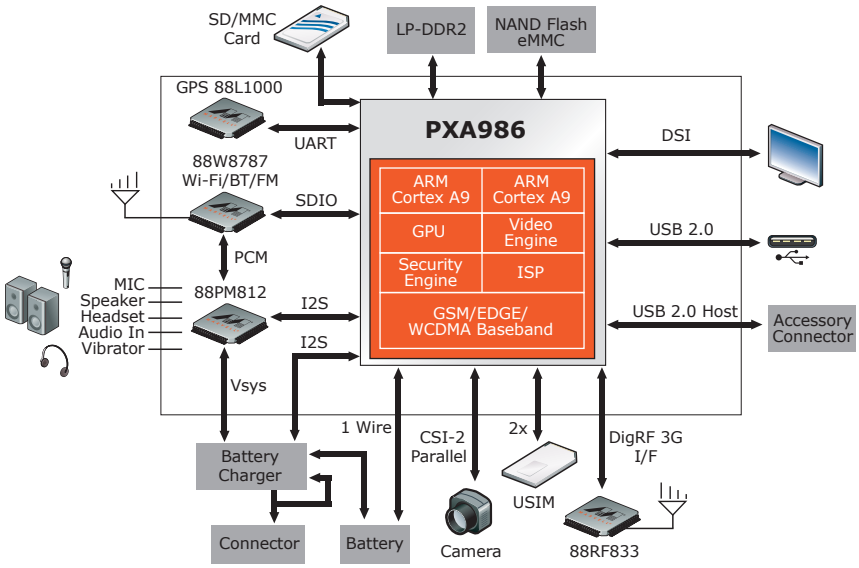

Fig 1. Marvell PXA986 WCDMA HSPA+ Smartphone Platform

FEATURES	BENEFITS
• Cellular Modem Solution	• Evolution of proven Marvell WCDMA HSPA+ solutions, integrated on leading carrier products, shipping in high volume • Marvell PXA986 high-performance HSPA+ platform features: – UMTS Release 7 supported – HSDPA 21.1Mbps (Cat 14) – HSUPA 5.76Mbps (Cat 6) – Class 12 EDGE supported • Fully integrated cellular platform solution with extensive IOT, GCF, and carrier field trial testing
• Dedicated Modem and Application Processor Cores – Shared Memory Hardware Architecture – Shared External Memory Interface	• Enables reuse of a common application processor software stack across multiple air interfaces and cellular networks • Prevents unwanted performance interactions/dependencies between AP and modem subsystems • Protects cellular network from application processor security threats • High-performance internal memory architecture enables sharing of external memory without the cost and space burden for independent flash and DDR • High-performance, efficient inter-processor communication interface between AP and modem, using shared external DDR

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FEATURES (continued)	BENEFITS
• Modem Processors – Modem RISC Core – Modem DSP Core	• Marvell-designed ARM9 with packet processing accelerators and L1/L2 caches • Micro-Signal Architecture VLIW DSP core with L1/L2 caches
• Application Processor	• A high-performance dual-core ARM Cortex A9 up to 1.2GHz each for low-power applications, with high-performance for browsing and Java applets • High-performance memory support for LPDDR2-SDRAM, NAND and eMMC • Mobile security through secure boot and root key protection; supports multiple lifecycle states that protect processor secrets at chip manufacturing, device manufacturing, device deployment and failure analysis stages
• Multimedia – Video – 3D graphics – Audio – Imaging – Display	• Video decoding: 1080p, with support for H.263, H.264 BP, MPEG-4, MPEG 2, DivX and WMV 9.0 • Video capture: 1080p, with support for H.263, H.264 BP and MPEG-4 SP • 3D graphics capability up to 96Mtriangles/s peak rate and 1.56Gpixels/s fill rate; integrated 2D accelerator; supports industry standard APIs • Music and ringtone formats: AMR-NB,AMR-WB, MP3, AAC, AAC+, eAAC+, WMA and MIDI • Imaging sensor support with one CSI-4 port for 2 MIPI CSI sensors, up to 4 data lanes (1Gb/s per lane, up to 2.5Gb/s total) • LCD controller supports 1 MIPI DSI port (4 lanes) with up to 720p resolution • Integrated ISP can support up to 16Mpixel sensor

APPLICATIONS

This highly integrated handset platform features the Marvell PXA986 single-chip application and communication processors, with a Marvell integrated power management and audio companion chip, 3G RF transceiver and Marvell 802.11n WLAN/BT/FM TX/RX.

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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