Marvell ARMADA 1500 PRO 4K

Ultra High-Definition Media Processor System-on-Chip (SoC) with Quad-core CPU

PRODUCT OVERVIEW

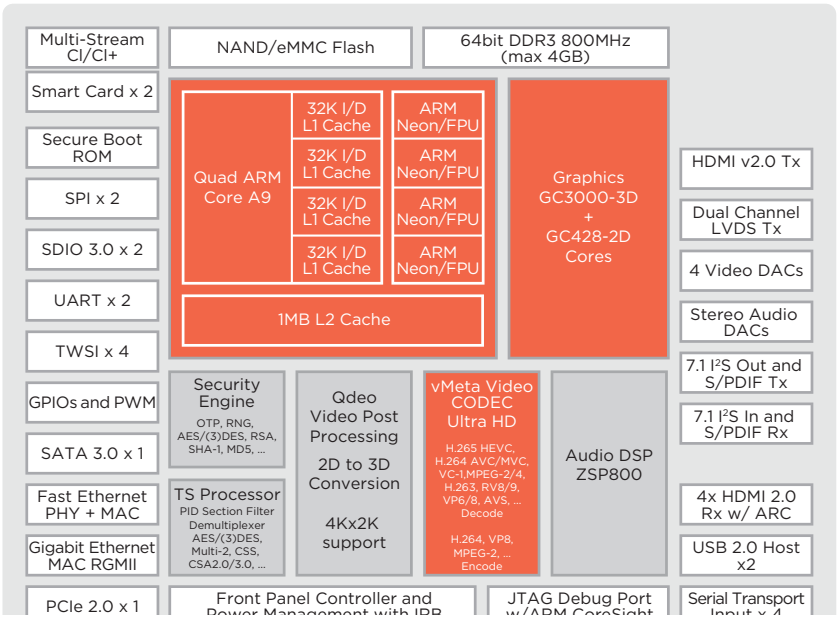
The Marvell® ARMADA® 1500 PRO 4K (88DE3214) ultra high-definition secure media processor is a SoC delivering multi-core CPU/GPU performance, industry leading Ultra HD video, and robust security to PayTV set-top box (STB), and over-the-top (OTT) box markets.

The ARM-based ARMADA 1500 PRO 4K features an enhanced Qdeo® Video Processor capable of 2160p60 10bit HEVC decoding to address the Ultra HD content services that PayTV operators deliver for an enhanced TV entertainment experience. In addition, this SoC integrates 12K DMIPs Quad Core ARM Cortex A9 CPU for supporting the wide range of Smart TV services that give consumers the ultimate multi-screen experience with the highest quality video.

The ARMADA 1500 PRO 4K includes a powerful multi-core 3D GPU (Vivante GC3000) further underscoring Marvell's value proposition of enabling operators to deliver a compelling UI and applications in cost effective, small form factor, elegant consumer devices. This innovative architecture brings impressive processing power to the digital entertainment market, unifying the user experience between the small screens in our homes (mobile, tablet) and the large ones (TV, cable boxes). The video/audio codec subsystem supports decode of up to 2160p60 H.265, H.264, VC-1, MPEG2, AVS, VP8 and several other formats, and allows for decode/encode of HE-AACv2, Dolby HD®, DTS-HD®, SRS® and other high-end audio formats. Other features include:

- Marvell's award-winning Qdeo video post-processing pipeline providing picture quality (PQ) enhancements that meet the standards of top TV manufacturers worldwide.
- Integration of both HDMI v2.0 output as well as multiple transport stream inputs, dual-channel LVDS output and CVBS analog video output with I2S and S/PDIF input/output to minimize the video/audio components required in the system and save on bill-of-materials (BOM).
- Peripheral connectivity including Gigabit Ethernet (RGMII), Fast Ethernet with integrated PHY, 1 x SATA 3.0 host port, 2 x USB 2.0 host ports, 2 x SDIO 3.0 controllers, and PCIe. Coupled with NAND Flash and DRAM, this is the ideal SoC platform for the next generation STBs that service operators (Telco, Cable, Satellite) are deploying enabling new Ultra HD & Smart TV services.

BLOCK DIAGRAM

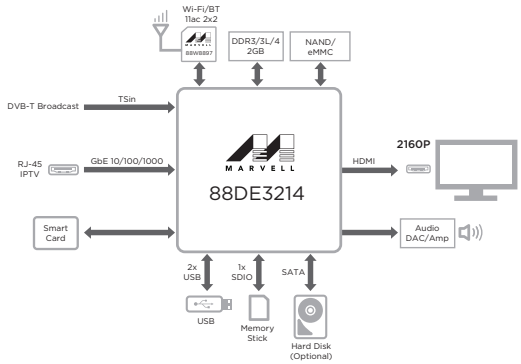


KEY FEATURES

FEATURES	BENEFITS
Up to 12000 DMIPs Quad Core ARM CA9 CPU with 1MB L2 Cache	• Enabling rich media/web based TV applications and Android TV services in single SoC
3840x2160 (UHD) at 60 frames per second 10-bit HEVC Decode	• Decodes highest resolution video, a critical feature that consumers will demand with the mass installation of 4K TVs over the next several years
Multi-core GPU, 8 shader Vivante GC3000	• OpenGL ES 1.1/2.0/3.0, OpenCL 1.2, and DirectFB for gaming applications and enabling ultimate UI
Dedicated Robust Security Engine including secure boot, Trusted Rendering Path, and full TrustZone®.	• Offers premium content support with multiple DRM/CAS options: Verimatrix®, Widevine®, Playready®, NDS® VGC, DTCP-IP • Trusted Path certified by Service Operators and Content Owners Worldwide
Hybrid Architecture	• Quad TS inputs supports PayTV Operator STB requiring both broadcast (DVB-T,C,S) and IP content for deployment of a compelling unified OTT and PayTV entertainment experience
Full suite of peripherals	• SATA, SDIO, USB for operator/consumer apps such as DVR • 10/100/1000 Ethernet MAC with RGMII interface for robust IP connectivity • PCIe for additional connectivity options for Wi-Fi, cable modem • Smartcard interfaces
Android TV reference designs for both TV and set-top box	• Full Integration and complete SDK for Fast time to deployment of Unified PayTV and Android based OTT services • Complete platforms with multiple connectivity options including Marvell Wi-Fi (2x2 11ac) and Powerline (G.hn) technologies • Small, cost effective form factors

TARGET APPLICATIONS

- Smart TV services and set-top boxes
- Ultra-HD and HEVC
- Gaming
- Multi-screen experiences



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