Marvell ARMADA 3700 Family

High Performance, Power Efficient, Highly Integrated SoC

FEATURES

CPU
- Dual core ARMv8 Cortex-A53 CPU
- CPU core operating speed of up to 1.2 GHz
- 32 KB-Instruction / Data (4-way) set associative L1 cache with Parity/ECC protection

Coherent Interconnect
- High-bandwidth, low-latency IO Cache Coherency

Memory Interface
- High-speed 8/16-bit DDR3/3L/DDR4 DRAM memory controller
- Enhanced, low-latency memory controller with transaction re-ordering, write gathering, and data prefetch engine

Security
- High-performance security offload engine including IPSec, SSL, DTLS, and IKE
- Hardware compliance with ARM Trustzone® architecture for DRM
- Enhanced Secure-Boot flow using integrated One Time Programmable (OTP) memory
- FIPS-140 certified

Networking Interface
- 2 x Gigabit Ethernet 1Gbps / 2.5Gbps •
- SGMII / HS-SGMII / RGMII
- Compatible with Marvell NBASE-T Transceivers

USB
- USB 3.0 host/device compatible with xHCI v1.0
- USB 2.0 host

PCI Express (PCIe) 2.0 (RC or EP)

SATA 3.0

DMA, 2 x high-bandwidth DMA/XOR/CRC engines

Flash and peripheral I/Os, including: 2 x SDIO 3/0. SPI, UART, GPIOs

Power Management
- Adaptive Voltage / frequency scaling
- Integrated power switches for dynamic shut down of CPU cores and unused functions

MARVELL ARMADA 3700 OVERVIEW

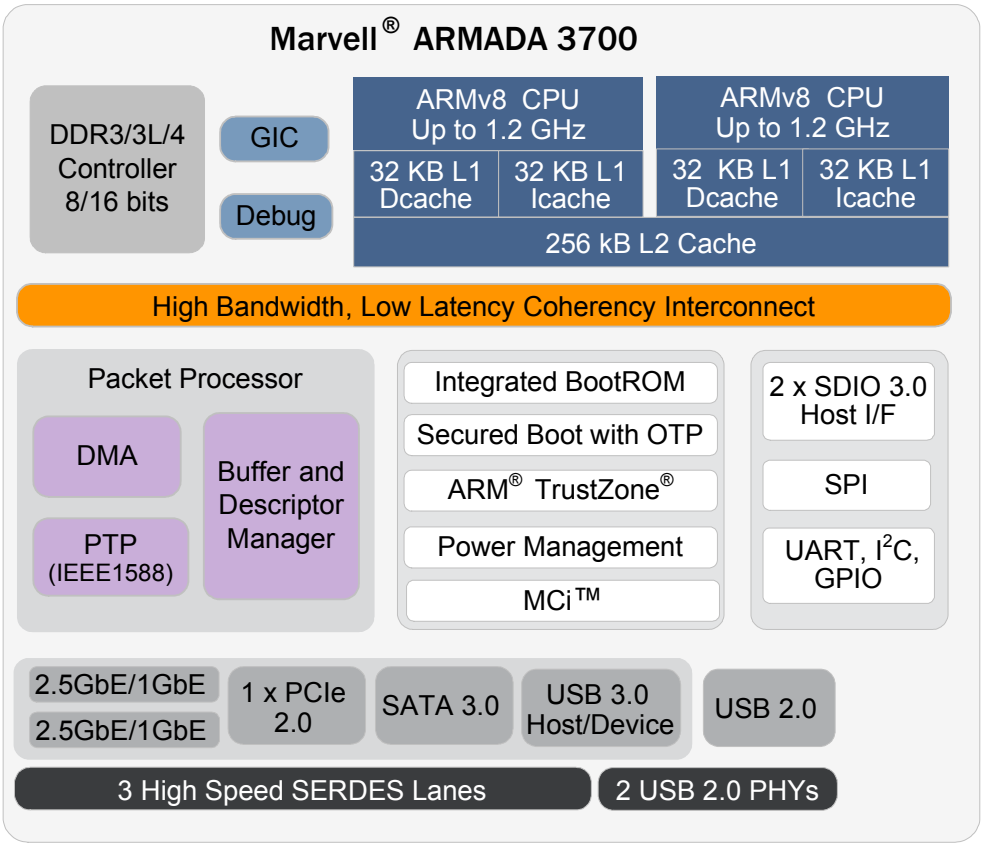
The Marvell® ARMADA® 3700 SoC family incorporates rich high-speed I/Os including USB 3.0, SATA 3.0, Gigabit Ethernet (1 GbE) and 2.5 GbE (NBASE-T). In addition, the devices feature a wide set of security and data acceleration engines suitable for innovative networking, storage, and computing applications. The ARMADA 3700 supports advanced power management technologies for switching on each CPU core, as well as per-core dynamic voltage and frequency scaling. This solution offers a significant reduction in power consumption under different workloads and delivers an unprecedented performance-per-watt and performance-per-dollar in the embedded markets.

APPLICATIONS EXAMPLES

(MOBILE NAS/DAS)

The ARMADA 3700's low-power, high-performance architecture enables a new set of applications such as battery supplied, mobile NAS and DAS, all in one appliance. For example, when directly attached to a USB host, the device can operate on the USB source power and function as an external mass-storage device (DAS). When the device is battery operated, it serves as a wireless Access-Point (AP) capable of streaming media content from the attached.

BLOCK DIAGRAM



KEY FEATURES CONTINUED

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• Marvell Multi-chip Interconnect (MCi) x 1 lanes (Full-Duplex, Low-Power, Short-Reach 8 Gbps SERDES)	• Marvell Multi-chip Interconnect (MCi) x 1 lanes (Full-Duplex, Low-Power, Short-Reach 8 Gbps SERDES)
• Software and Ecosystem:	• Package and Thermals
• Complete SDK including U-Boot, Mainline Linux BSP	• 271L TFBGA 10.5 x 11.5 mm with 0.5 mm ball pitch, green-compliant package
• OpenWrt, Yocto, Linaro Open Data Plane (ODP) Support	• Less than 1W Thermal Dissipation Power (TDP) at 1GHz
• KVM and Containers support	• 28 nm low-power process

TARGET APPLICATIONS

- Enterprise AP routers/repeaters for 802.11ac/n
- Consumer Network-Attached-Storage (NAS)
- Storage Ethernet-Drive (E-Drive)
- Multi-protocol IoT gateways
- Industrial, factory and building automation
- Smart energy
- Management processor

ABOUT MARVELL: Marvell is a global leader in providing complete silicon solutions and Kinoma® software, enabling the "Smart Life and Smart Lifestyle." From storage to cloud infrastructure, Internet of Things (IoT), connectivity and multimedia, Marvell's diverse product portfolio aligns complete platform designs with industry-leading performance, security, reliability and efficiency. For additional information, please visit our website at www.marvell.com for a Marvell sales office or representative in your area.

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.

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