MARVELL® ARMADA® 3700 Family

High Performance, Power Efficient, Highly Integrated SoC

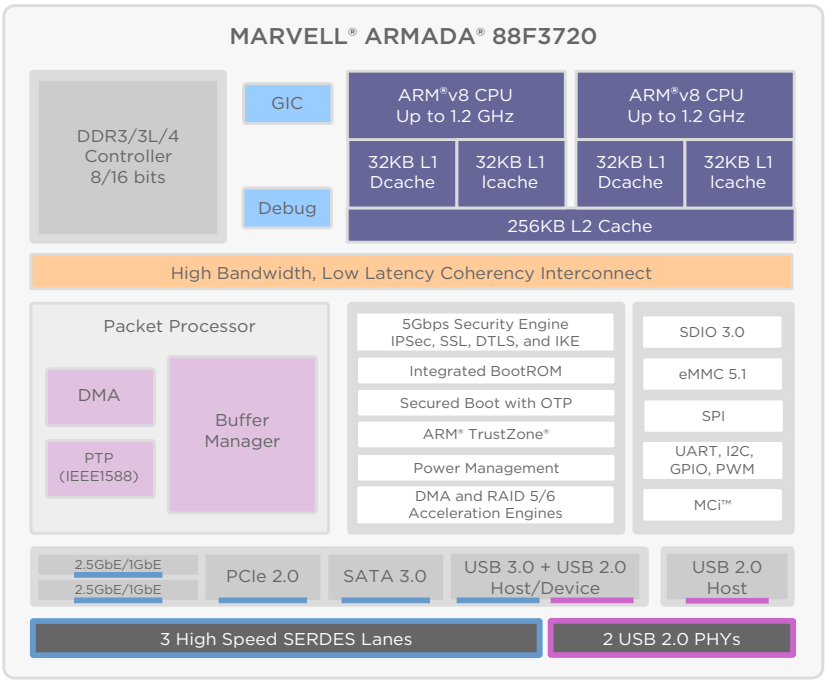
PRODUCT OVERVIEW

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 unprece-dented performance-per-watt and performance-per-dollar in the embedded markets..

APPLICATION 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



Marvell ARMADA 88F3720 Embedded Processor

KEY FEATURES AND BENEFITS

FEATURES	BENEFITS
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 reordering, 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 certified2
Networking Interface	• 2 x Gigabit Ethernet 1Gbps / 2.5Gbps • SGMII / HS-SGMII / RGMII • Compatible with Marvell NBASE-T Transceivers
Peripherals and Accelerators	• 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 • Marvell Multi-chip Interconnect (MCi) x 1 lanes (Full-Duplex, Low-Power, Short-Reach 8 Gbps SERDES)
Power Management	• Adaptive Voltage / frequency scaling • Integrated power switches for dynamic shut down of CPU cores and unused functions
Software and Ecosystem	• Complete SDK including U-Boot, Mainline Linux BSP • OpenWrt, Yocto, Linaro Open Data Plane (ODP) Support • KVM and Containers support
Package and Thermals	• 271L TFBGA 10.5 x 11.5 mm with 0.5 mm ball pitch, green compliant package • Less than 1W Thermal Dissipation Power (TDP) at 1GHz • 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 (NASDAQ: MRVL) is a global leader in providing complete silicon solutions. 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, including Marvell's sales offices and representatives, please visit our website at www.marvell.com.

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