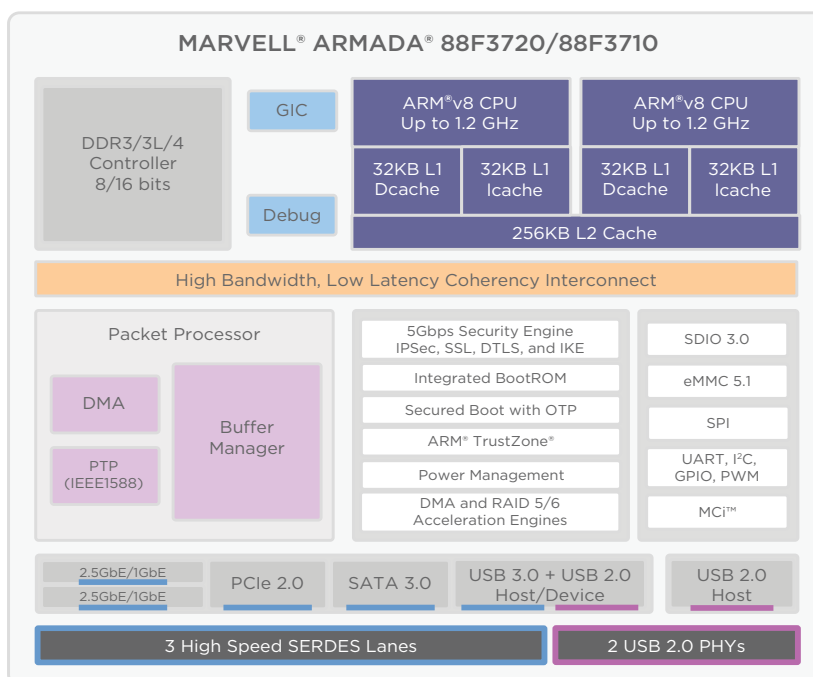# MARVELL® ARMADA® 3700 Family

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) offering two configurations: 88F3720 for dual-core and 88F3710 for single-core, both configurations have industrial temperature grade support. In addition, these 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 the CPU cores, 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 optimal Performance-per-Watt in the embedded markets.

BLOCK DIAGRAM

Marvell ARMADA 88F3720/88F3710 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
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 • Supports industrial temperature grade

TARGET APPLICATIONS

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