

# Marvell ARMADA 370 System-on-Chip (SoC) Family of Integrated Controllers



## PRODUCT OVERVIEW

The Marvell® ARMADA™ 370 is a highly integrated and high-performance ARM V7-based system-on-chip (SoC) suited for a variety of home and enterprise applications. With its on-chip floating point engine, 256K L2 cache, and multiple I/O peripherals, the ARMADA 370 provides new levels of performance, integration, and efficiency, while enabling a simple system design. The ARMADA 370 is suited for a wide range of applications, including SmartHub for Home, networked attached storage (NAS) devices, media servers, and wireless access points, as well as networking and education applications.

The SoCs integrate:

- High-performance, dual-issue, and out-of-order ARMv7 CPU with Floating Point Unit (FPU) operating up to 1.2 GHz (3000 DMIPS)
- Single/double precision FPU (VFP3-16) IEEE 754 compliant
- 32KB-instruction 4-way and 32KB-data 8-way, set-associative L1 cache
- 256KB unified 4-way, set-associative L2 cache/SRAM
- 16-bit DDR3/L-1333 memory interface
- Two Ethernet networking MACs controllers
- Four SERDES lanes with versatile muxing options for SGMII, PCIe2.0, and SATA2.0
- Two x1 PCI Express 2.0 interfaces
- Two SATA Gen2.0 ports
- Two USB 2.0 host/device ports with integrated PHY
- Network security engine with various encryption algorithm support
- Two TDM channels
- SDIO/MMC, NAND flash, two SPI, two TWSI, Device Bus, I2S/SPDIF and two UART interfaces
- Two DMA/XOR engines with two independent channels per each engine
- RTC and thermal sensor
- 286-pin HSBGA 19 x 19 mm, 1 mm ball pitch, green-compliant package

The innovative Coherency Fabric architecture provides a coherent interconnect between the CPU and the I/Os. The bus efficiency also enables a high-frequency, high-bandwidth, and low-latency access time throughout the CPU memory subsystem.

The on-chip Mbus architecture, a Marvell proprietary crossbar interconnect for non-blocking any-to-any connectivity, enables concurrent transactions among multiple units. This design results in high system throughput, enabling system designers to create high-performance products.

## BLOCK DIAGRAM

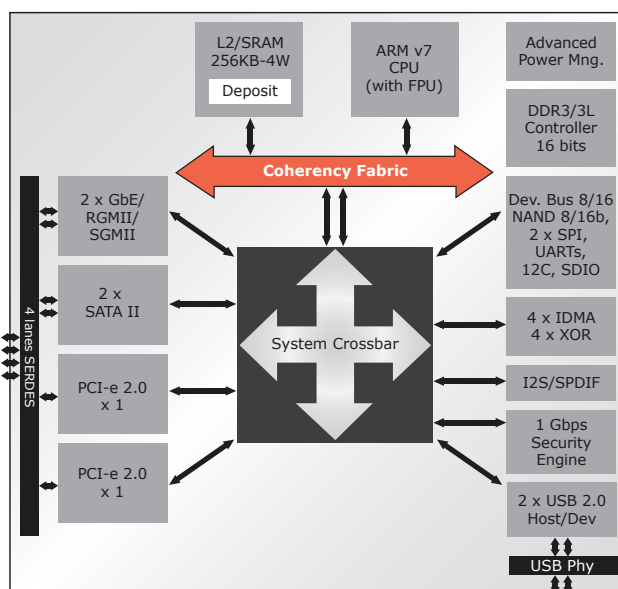


Fig 1. Marvell ARMADA 370 SoC Block Diagram

# Marvell ARMADA 370 System-on-Chip (SoC)

## ▶ COMPREHENSIVE DEVELOPMENT TOOLS

Marvell offers complete development platforms for the ARMADA 370 SoC, enabling customers to begin system development without waiting for their own hardware. Complete reference design platforms, including software drivers and board support packages, accelerate customer product development cycles.

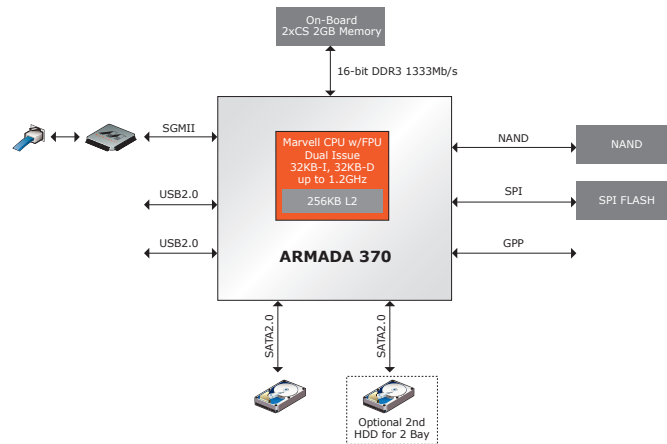


Fig 2. Marvell ARMADA 370— Typical 1/2 Bay NAS Implementation

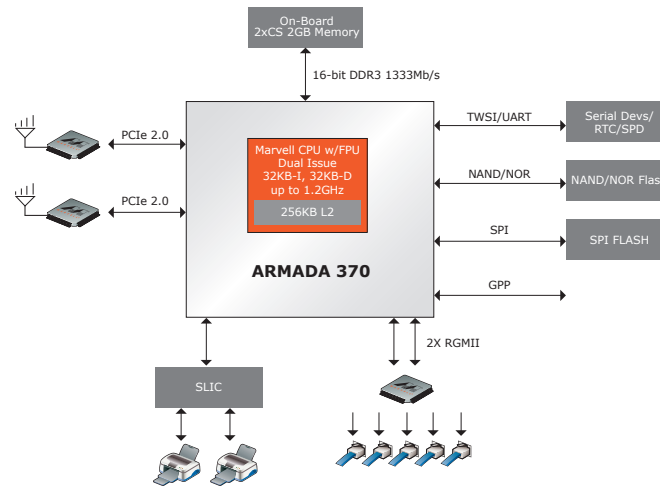


Fig 3. Marvell ARMADA 370— Typical Gateway/Wireless AP Implementation

**THE MARVELL ADVANTAGE:** Marvell products 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 worldleading 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, processors, 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 website at [www.marvell.com](http://www.marvell.com).



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