

# Marvell 88F6323, 88F6322, 88F6321

Dual-Core SoC Family with Sheeva Technology



## PRODUCT OVERVIEW

The Marvell® 88F6323/2/1 is a family of dual-core, high-performance, integrated system-on-chips (SoC) based on Marvell proprietary Sheeva® ARMv5TE-compliant CPU architecture. The 88F6323/2/1 family of devices integrates two dual-issue CPUs supporting double precision IEEE compliant Floating Point Unit (FPU), on-chip 256KB L2 cache per CPU and advance I/O peripherals including DDR2 controller, PCI-Express (PCIe), USB 2.0, SATA controller and Gigabit Ethernet interface. With its innovative architecture, the 88F6323/2/1 is optimized for cost sensitive applications that include multi-service gateways, branch office routers, home media servers, WLAN access points and laser printers.

The 88F6323/2/1 family offers unparalleled integration that makes system design simple and cost efficient. The SoC integrates:

- Dual high-performance dual-issue CPUs with Floating Point Unit (FPU) support
- Operating Speed – 88F6323 up to 1.0 GHz, 88F6322/1 up to 800MHz
- 32KB-Instruction and 32KB-Data 4-way, set-associative L1 cache per CPU core
- 256KB unified 4-way, set-associative L2 cache per CPU core
- 32/40-bit DDR2 memory interface (up to 800 MHz data rate)
- Gigabit Ethernet MAC controllers – 88F6323 (Three), 88F6322/1 (Two)
- PCI-Express ports (x1) with integrated PHY— 88F6323/2 (Two), 88F6321 (One)
- USB 2.0 ports with integrated PHY – 88F6323 (Three), 88F6322 (Two), 88F6321 (One)
- One SATA 2.0 port with integrated PHY (88F6323 only)
- Network security engine with various encryption algorithm support
- Two TDM Channels, NAND flash, SPI, TWSI and two UART interfaces

The innovative, on-chip crossbar architecture with any-to-any connectivity enables concurrent transactions among multiple units that result in high system throughput allowing system designers to create high-performance, scalable systems. The tightly integrated CPU and memory controller significantly improve application performance.

## BLOCK DIAGRAM

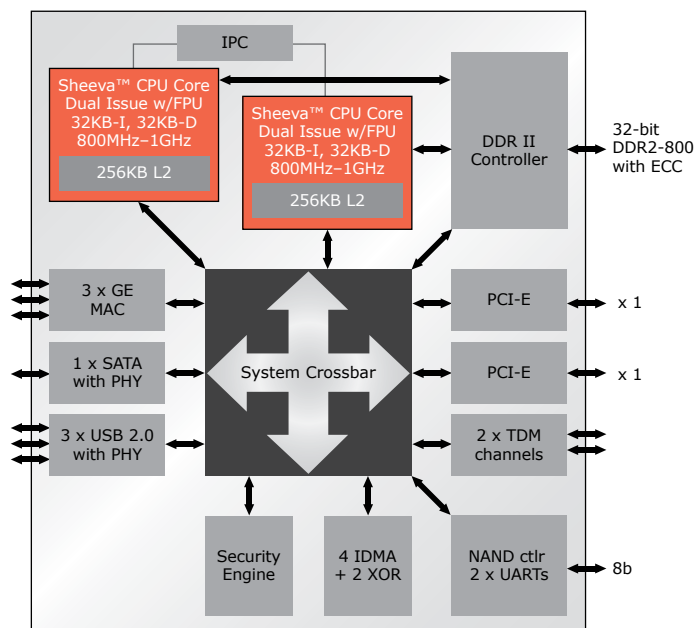


Fig 1. 88F6323 SoC Block Diagram

► **COMPREHENSIVE DEVELOPMENT TOOLS**

Marvell offers complete development platforms for the 88F6323/2/1 family of SoCs, enabling customers to start system development without waiting for their own hardware. Development platforms are available. Complete reference design platforms, including software drivers and board support packages for VxWorks, BSD and Linux, accelerate customer product development cycles.

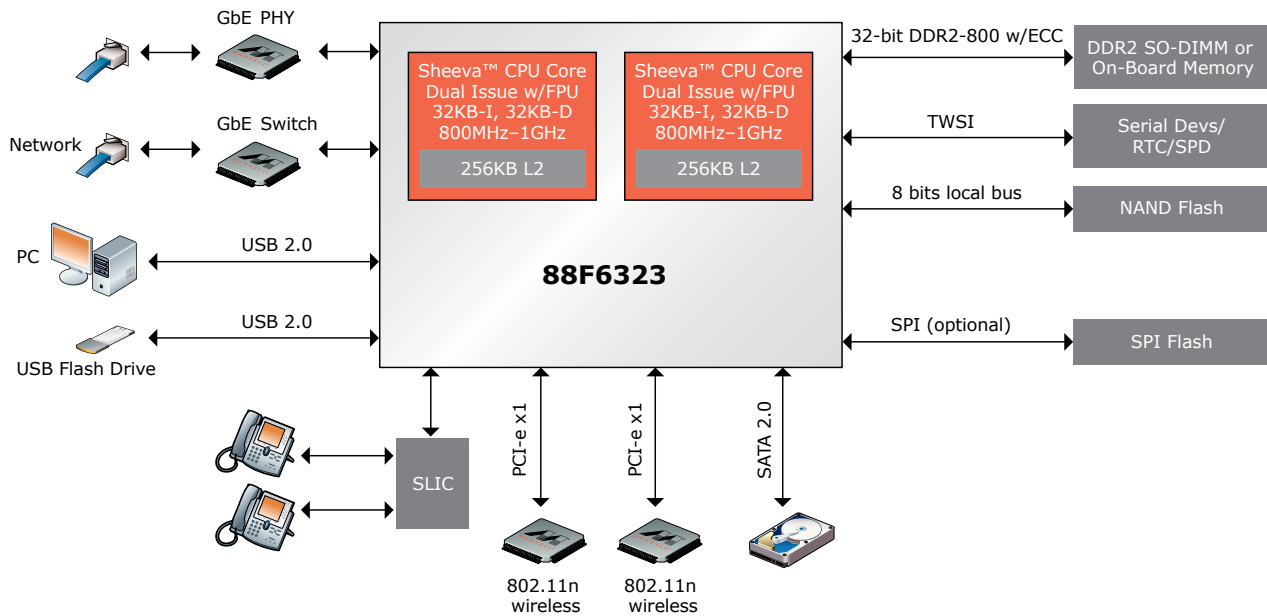


Fig 2. Marvell 88F6323 — Typical System Implementation

**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.

**ABOUT MARVELL:** Marvell is a leader in storage, communications, and consumer silicon solutions. Marvell’s diverse product portfolio includes switching, transceiver, communications controller, processor, 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 Web site at [www.marvell.com](http://www.marvell.com).



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