

MARVELL® 88SS1088 SSD Controller Chipset

PCIe Gen3x4, 16-Channel NAND Controller with NVMe interface supporting up to 16TB capacity

PRODUCT OVERVIEW

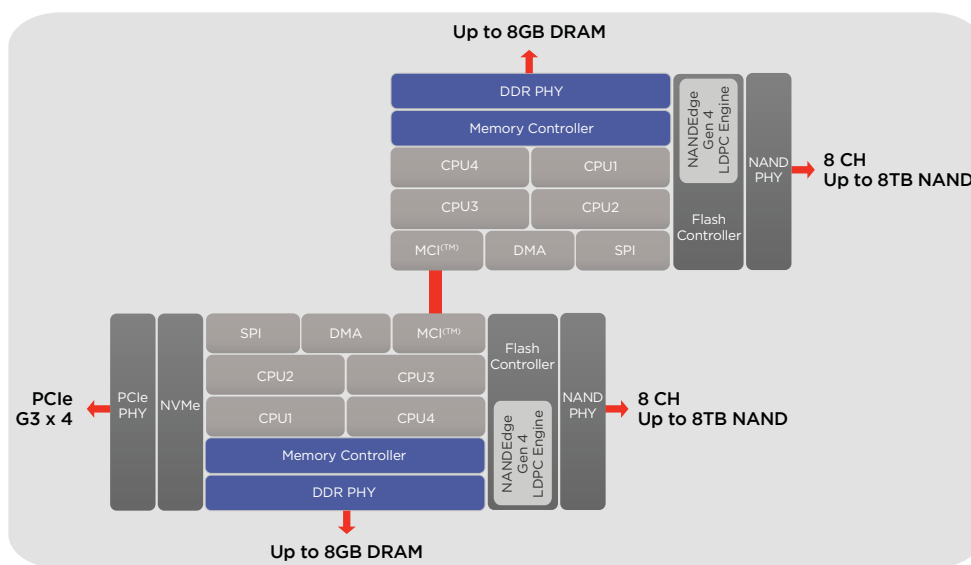
The Marvell® 88SS1088 chipset consists of two controllers connected to each other via high-speed MCI™ serial interface that enables high-performance and high-capacity SSDs for use in enterprise and data center environments. Leveraging a dual quad-core Arm® Cortex®-R5 architecture with support for up to 16GB DRAM, these controllers can enable high-performance SSDs to meet the demands of the most challenging workloads.

For enterprise use cases, the 88SS1088 chipset can also support PCIe Gen3x4 dual port (active/active) to enable high availability systems.

The 88SS1088 chipset leverages the newest Marvell Gen4 NANDEdge™ LDPC engine for extracting the highest performance from MLC and TLC memories while providing the most P/E cycles.

The 88SS1088 chipset also supports TCG standards including an AES engine and OTP storage for secure drive configuration.

BLOCK DIAGRAM



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KEY FEATURES AND BENEFITS

FEATURES	BENEFITS
Processor	<ul style="list-style-type: none"> • Dual-Quad Cortex®-R5 CPUs • Dynamic Branch Prediction • Multiple controllers
PCIe Interface	<ul style="list-style-type: none"> • PCIe Gen3x4 (with dual port support)
DDR Controller	<ul style="list-style-type: none"> • Up to 16GB DDR3, DDR4, LPDDR3, LPDDR4 at speeds up to 2400MT/s with ECC support
Flash Controller	<ul style="list-style-type: none"> • 16 Channels @ 800MT/s • ONFI 2.2/2.3/3.0/4.0, JEDEC mode and Toggle 1.0/2.0 • Hardware RAID • Marvell NANDEdge™ Gen4 LDPC engine
NVMe	<ul style="list-style-type: none"> • NVMe Standard Revision 1.3 compliance • 256 outstanding I/O commands • 132 total queue pairs • 64 Virtual Functions • MSI and MSI-X interrupt mechanisms • T-10 DIF and end-to-end protection
TCG	<ul style="list-style-type: none"> • OTP support for secure drive configuration • AES encryption hardware • Media re-encryption hardware
Package	<ul style="list-style-type: none"> • Available in standard 17mm x 17mm (625 ball) BGA package

TARGET APPLICATIONS

- Enterprise and data center SSDs



ABOUT MARVELL: Marvell first revolutionized the digital storage industry by moving information at speeds never thought possible. Today, that same breakthrough innovation remains at the heart of the company's storage, networking, and connectivity solutions. With leading intellectual property and deep system-level knowledge, Marvell's semiconductor solutions continue to transform the enterprise, cloud, automotive, industrial, and consumer markets. For more information, visit www.marvell.com.