MARVELL® 88SS1088 SSD Controller Chipset

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

PRODUCT OVERVIEW

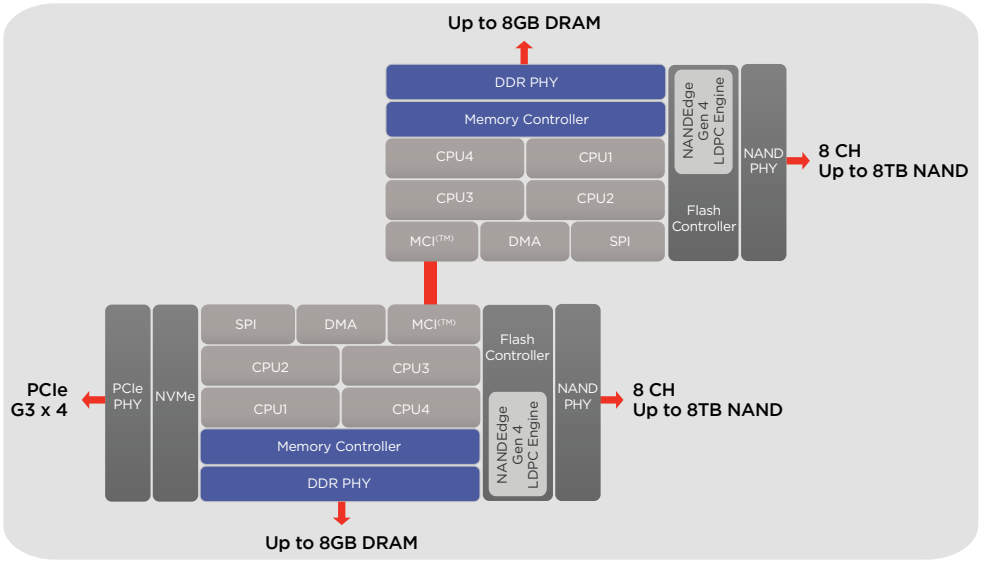
The Marvell® 88SS1088 chipset consists of two controllers connected to each other via high-speed MCI™ serial interface that enables high-performance and high-capacity SSDs for use in enterprise and data center environments. Leveraging a dual quad-core Arm® Cortex®-R5 architecture with support for up 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	• Dual-Quad Cortex®-R5 CPUs • Dynamic Branch Prediction • Multiple controllers
PCIe Interface	• PCIe Gen3x4 (with dual port support)
DDR Controller	• Up to 16GB DDR3, DDR4, LPDDR3, LPDDR4 at speeds up to 2400MT/s with ECC support
Flash Controller	• 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	• 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	• OTP support for secure drive configuration • AES encryption hardware • Media re-encryption hardware
Package	• Available in standard 17mm x 17mm (625 ball) BGA package

TARGET APPLICATIONS

- Enterprise and data center SSDs

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