

# MARVELL® 88SS1088 SSD Controller Chipset

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

## PRODUCT OVERVIEW

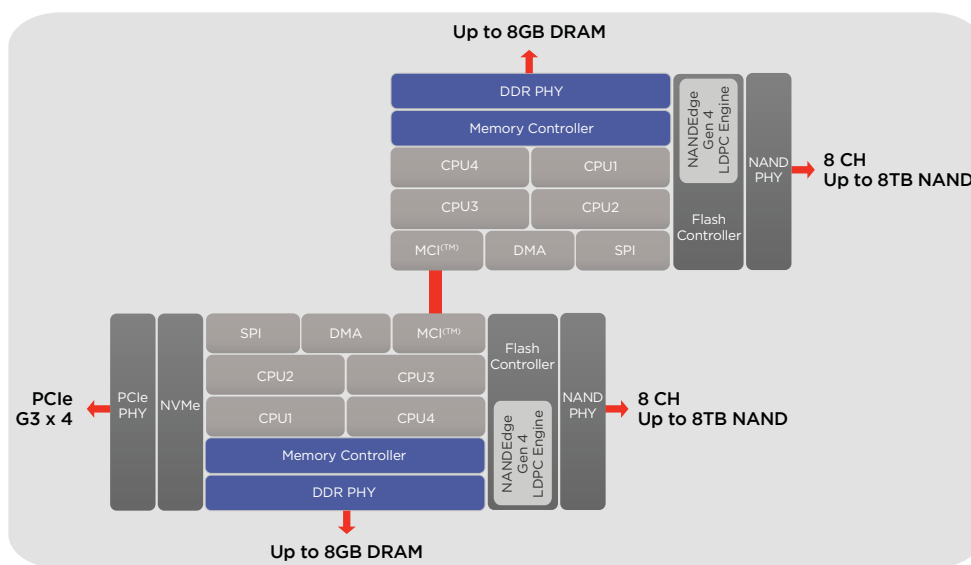
The Marvell® 88SS1088 chipset consists of two controllers connected to each other via high-speed MCI™ serial interface that enables high-performance and high-capacity SSDs for use in enterprise and data center environments. Leveraging a dual quad-core Arm® Cortex®-R5 architecture with support for up 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"> <li>• Dual-Quad Cortex®-R5 CPUs</li> <li>• Dynamic Branch Prediction</li> <li>• Multiple controllers</li> </ul>
PCIe Interface	<ul style="list-style-type: none"> <li>• PCIe Gen3x4 (with dual port support)</li> </ul>
DDR Controller	<ul style="list-style-type: none"> <li>• Up to 16GB DDR3, DDR4, LPDDR3, LPDDR4 at speeds up to 2400MT/s with ECC support</li> </ul>
Flash Controller	<ul style="list-style-type: none"> <li>• 16 Channels @ 800MT/s</li> <li>• ONFI 2.2/2.3/3.0/4.0, JEDEC mode and Toggle 1.0/2.0</li> <li>• Hardware RAID</li> <li>• Marvell NANDEdge™ Gen4 LDPC engine</li> </ul>
NVMe	<ul style="list-style-type: none"> <li>• NVMe Standard Revision 1.3 compliance</li> <li>• 256 outstanding I/O commands</li> <li>• 132 total queue pairs</li> <li>• 64 Virtual Functions</li> <li>• MSI and MSI-X interrupt mechanisms</li> <li>• T-10 DIF and end-to-end protection</li> </ul>
TCG	<ul style="list-style-type: none"> <li>• OTP support for secure drive configuration</li> <li>• AES encryption hardware</li> <li>• Media re-encryption hardware</li> </ul>
Package	<ul style="list-style-type: none"> <li>• Available in standard 17mm x 17mm (625 ball) BGA package</li> </ul>

## TARGET APPLICATIONS

- Enterprise and data center SSDs

