Marvell® 88SS1100 SSD Controller

PCIe Gen 3x4, 8-Channel Ultra High Performance SSD Controller with NVMe 1.3 interface

Overview

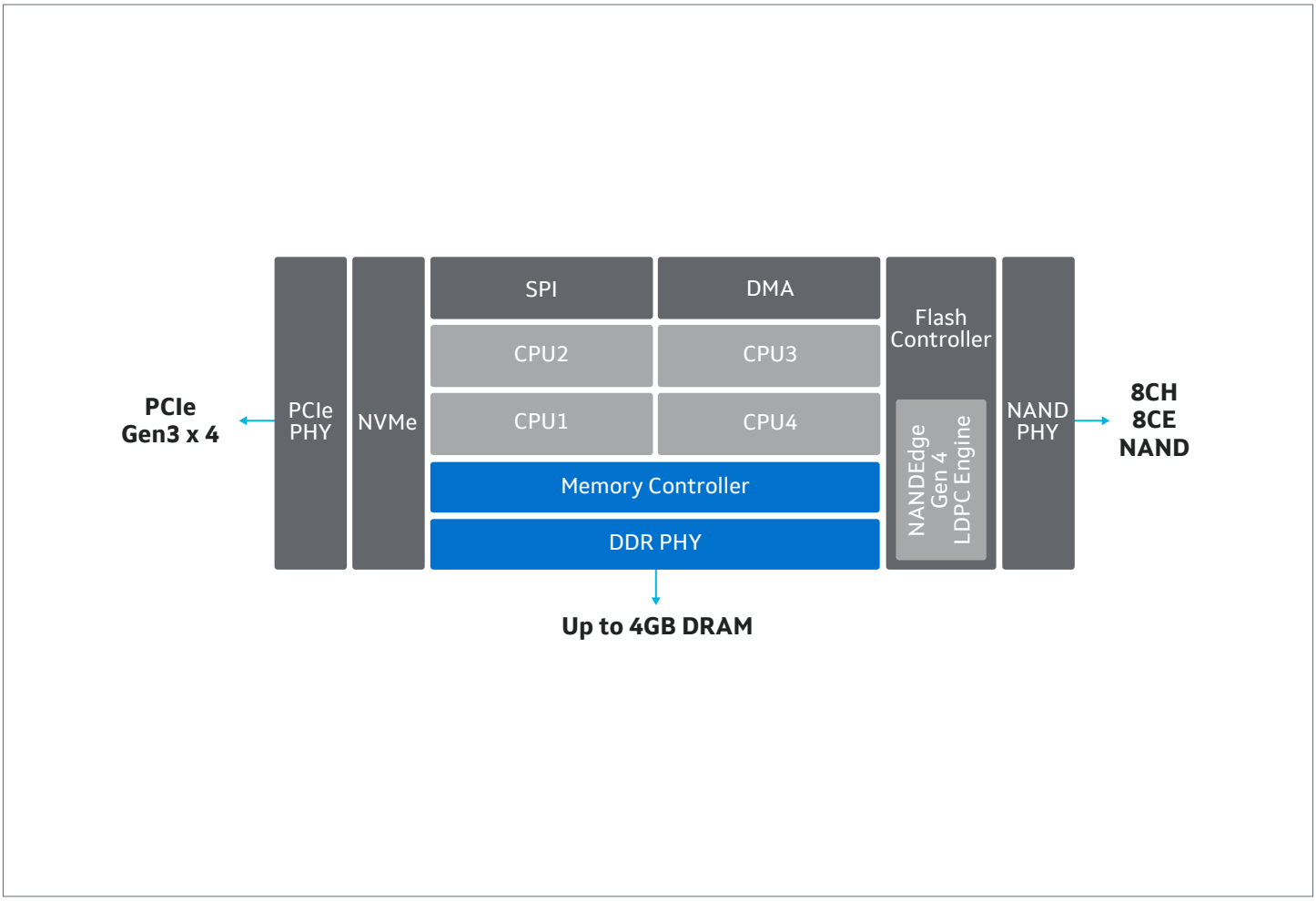
The Marvell® 88SS1100 enables high performance and high capacity SSDs for use in mainstream PC client environments. Leveraging a quad-core ARM® Cortex-R5 architecture with support for up to 4GB DRAM controller can enable high performance SSDs to meet the demands of the most challenging workloads.

88SS1100 use a common hardware and firmware controller architecture with 88SS1084 and our recently announced data center and enterprise NMVe controllers 88S1088 and 88S1098.

Using common architecture enables SSD makers to leverage their development eff orts. SSD makers can re-use the core differentiating elements of their firmware code base between the multiple family of Marvell SSD controllers to produce comprehensive families of SSD solutions optimized for client, data center and enterprise segment requirements.

88SS1100 leverages the 4th generation of the Marvell NANDEdge™ LDPC engine for extracting the highest performance and best in class endurance from TLC and QLC memories.

Block Diagram



Key Features

Features	Benefits
Processor	• Quad Cortex R5 CPUs
PCIe Interface	• PCIe Gen 3x4
DDR Controller	• Upto 4GB DDR3, DDR4, LPDDR3, LPDDR4 at speeds up to 2400MT/s • 32-bit data bus width • 2 chip select pins
Flash Controller	• 8 NAND Channels @ 800MT/s • Compatible with ONFI 2.2/2.3/3.0/4.0, JEDEC mode and Toggle 1.0/2.0/3.0 • Hardware RAID • 4th generation of Marvell NANDEdge™ LDPC engine
NVMe	• NVMe Standard Revision 1.3 compliance • 256 outstanding I/O commands • T-10 DIF and end-to-end protection
Security	• OTP support for secure drive confi guration • AES encryption hardware • Media re-encryption hardware
Temperature Support	• 0 C to 70 C (Operating)
Package	• Available in standard 17mm x 17mm (625 ball) BGA package

Target Applications

- PC Client Ultra-High Performance SSDs

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 semiconductor solutions continue to transform the enterprise, cloud, automotive, industrial, and consumer markets. For more information, visit www.marvell.com.

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