

Marvell® 88SS1098 SSD Controller

PCIe Gen3x4, 8-Channel NAND Controller with NVMe and SATA interfaces supporting up to 8TB capacity

Overview

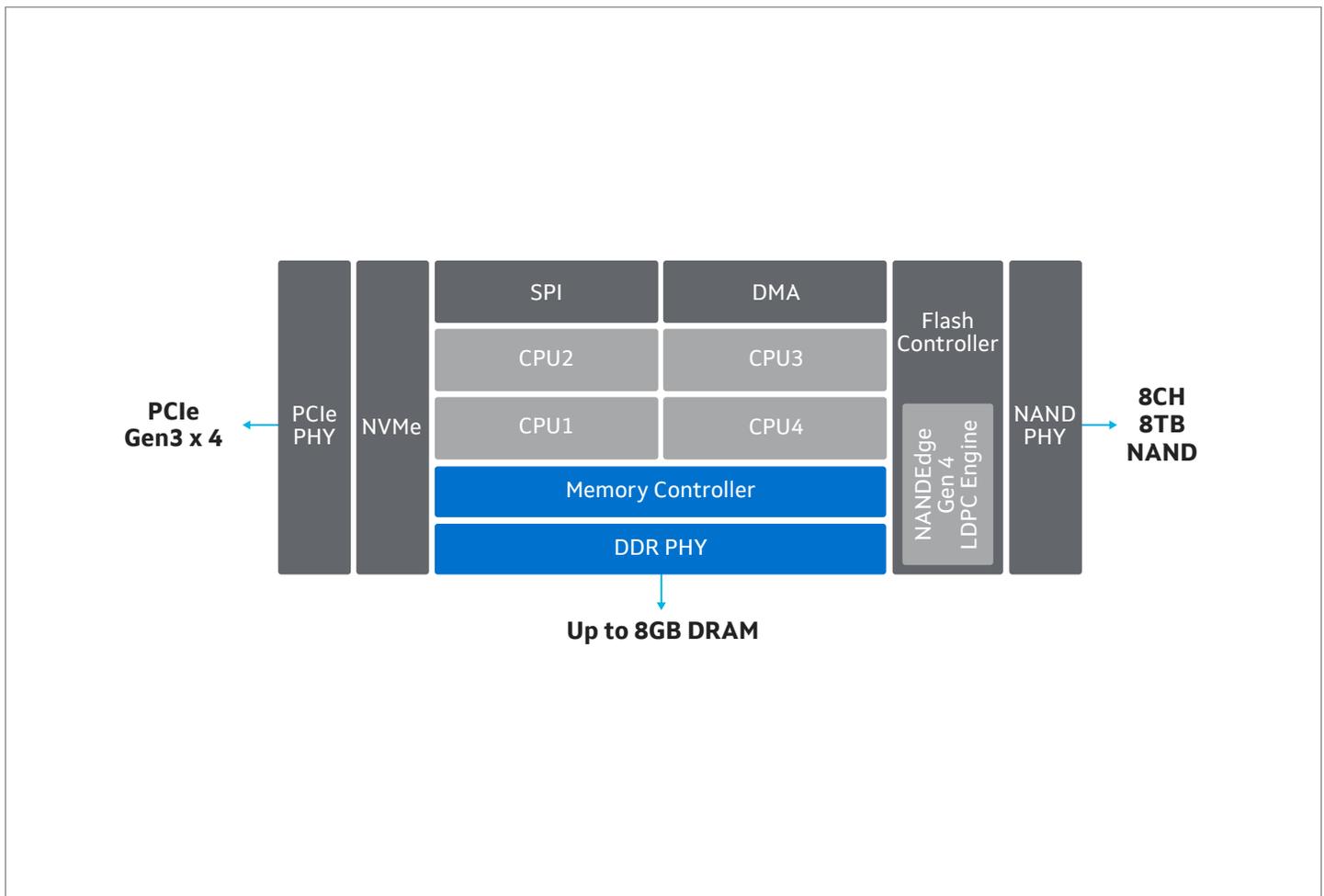
The Marvell® 88SS1098 enables high-performance and high-capacity SSDs for use in enterprise and data center environments. Leveraging a quad-core Arm® Cortex®-R5 architecture with support for up to 8GB DRAM, these controllers can enable high-performance SSDs to meet the demands of the most challenging workloads.

For enterprise use cases, 88SS1098 can also support PCIe Gen3x4 dual port (active/active) to enable high availability systems.

88SS1098 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.

88SS1098 also supports TCG standards including an AES engine and OTP storage for secure drive configuration.

Block Diagram



Key Features

| Features | Benefits |
|------------------|---|
| Processor | <ul style="list-style-type: none">• Quad Cortex®-R5 CPUs• Dynamic Branch Prediction• DMA controller |
| PCIe Interface | <ul style="list-style-type: none">• PCIe Gen 3x4 (with dual port support) |
| DDR Controller | <ul style="list-style-type: none">• Up to 8GB DDR3, DDR4, LPDDR3, LPDDR4 at speeds up to 2400MT/s with ECC support |
| Flash Controller | <ul style="list-style-type: none">• 8 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



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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