

DP800® Series

PCIe5.0 Enterprise SSD Controller

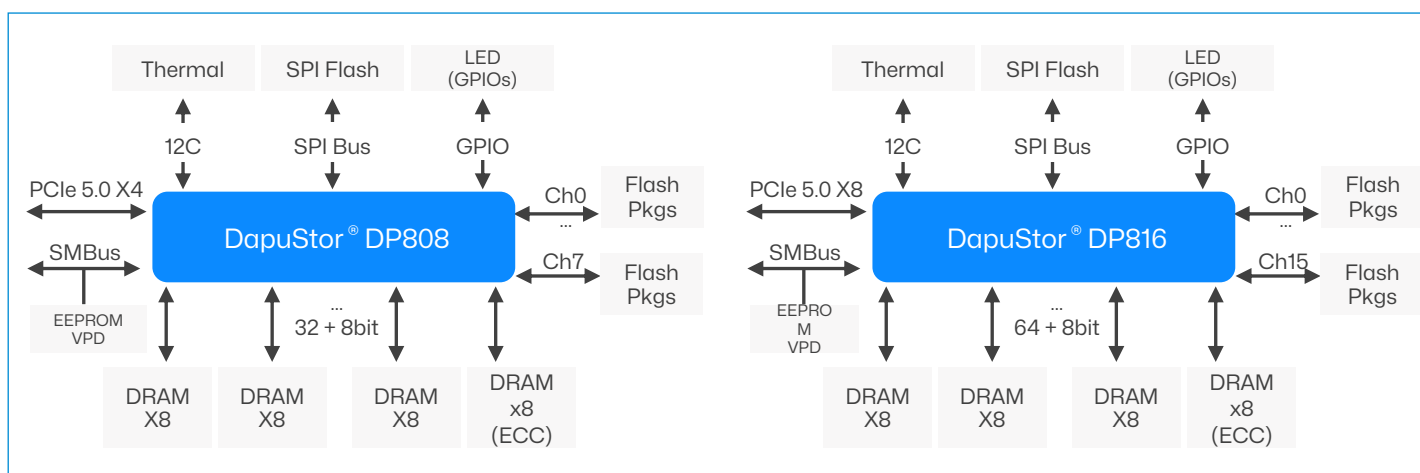
Transforming Next-Generation Storage Architecture

Overview

The DapuStor® DP800® Series PCIe5.0 enterprise SSD controller is designed to empower next-generation NAND technology for high-performance and high-capacity SSD solutions in enterprise and data center applications. Supporting standard NVMe protocols, the DP800® series – including the DP816® and DP808® models – is optimized for 4K random read/write operations and comprehensive on-chip flash management, while minimizing host processing and memory resources. Featuring ultra-high performance, large-capacity scalability, platform flexibility, and enhanced security, the DP800 series is a reliable choice for enterprise SSD controllers.

Description	DP816	DP808
NAND Channels	16	8
Package	20 mm X 22 mm 1120-ball FCBGA	19 mm X 19 mm 784-ball FCBGA

Block Diagram



Applications

With NVMe-enabled PCIe SSD controller capabilities, DapuStor® DP800® series significantly enhances storage performance for enterprises and data centers by accelerating random access and data transfer rates, effectively relieving interface bottlenecks.

As an NVMe-compatible enterprise PCIe flash controller, the DP800® series delivers superior read/write performance with lower latency and power consumption, driving innovation for next-generation storage architecture and creating greater value for users.



| Key Features

Supported Interfaces & Protocols

- PCIe x4 dual-port or PCIe 5.0 x8 single-port
- PCIe Dual-Port
- NVMe2.0, NVMe MI 1.2
- SR-IOV
- ZNS-Zoned Name Space
- FDP-Flexible Data Placement
- Supports Hundreds of NameSpace

Advanced Transparent Compression

- DPZip Hybrid Compression Technology
- Compression/Decompression Performance 16/20 GB/s
- Compression/Decompression Latency 4/2 μ s

Superior Data Integrity

- DDR5/4 DRAM with ECC (1-bit correction per 32/64 bits)
- DIF Protection (External & Internal)
- Full Internal Data Path Protection (DPP)
- SRAM Data Protection (EDCC or CRC)
- Advanced LDPC 4KB Error Correction
- Hardware RAID5/RAID6 Protection
- Enhanced Power Loss Protection
- Enhanced End-to-End Data Protection (MPECC)
- Hardware Real-time Compression Verification
- Built-in Temperature Sensor for Junction Temperature Monitoring

Optimized Storage Management Engine

- Smart IO/ Smart ECC Technology

High-Performance

- Sequential Read/Write 28/22GB/s @GEN5x8, 14/12GB/s @GEN5x4
- Random Read 6.0M IOPS @GEN5x8, 3.5M IOPS@GEN5x4, Random Write 1600K IOPS (OP 20%)
- Random Write Latency 3.5 μ s

High Security

- Hardware RAID5/RAID6
- TCG/AES/RSA/SHA/TRNG Support
- Encryption Drive Support
- Secure Boot
- On-Chip Root of Trust (RoT)

Wide Flash Compatibility

- SLC/MLC/TLC/3D-TLC/QLC
- Supports Hybrid Flash (e.g., QLC & SLC)
- 16 Channels, Single I/O up to 3,200MT/s (ONFI 5.1)

High Capacity & Flexible Scalability

- Up to 61.44TB per DP800
- Scalable Cascade of DP800 Controllers
- 8-core High-performance CPU for Customization

* Differences in hardware, software, or configuration will affect actual test results

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