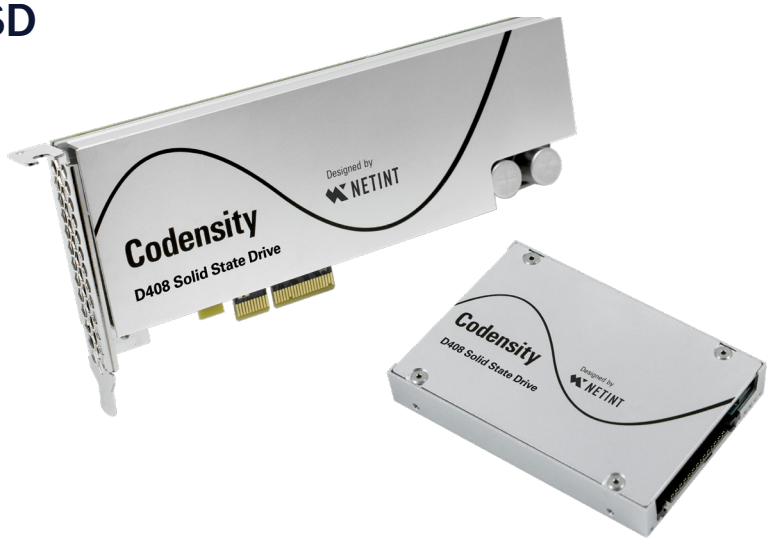
NETINT

PRODUCT BRIEF

Codensity D408 Solid State Drives

Enterprise-class PCIe 4.0 NVMe SSD

Modern data-intensive applications, including analytics, artificial intelligence, and large transactional systems, are driving unprecedented demand to scale storage capacity and improve storage performance. Developers of these large data-intensive applications, along with operators of enterprise and cloud datacenters, need flexible, standards-based Solid-State Drives (SSD) to scale their storage architectures. Codensity™ D408 PCIe NVMe SSDs deliver enterprise-class storage capacities and features, industry-leading throughput, with high performance and reliability to overcome data and video storage scalability challenges.



FEATURES

- **PCIe 4.0** Interface
- **NVMe** Protocol
- **Enterprise-Class**
  Capacity, Performance, and Reliability
- **UHD Video** Compression
- **AIC or U.2** Form Factors
- **Flexible** Architecture

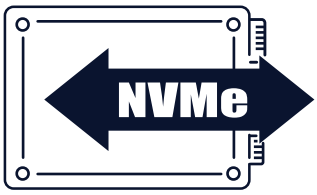
BENEFITS

- **6.4 GB/s Throughput**
  2x more than PCIe 3.0 SSD devices
- **Up to 16TB** Storage
- **Up to 1000K** IOPS

Designed for scalability and high performance

PCIe 4.0 Interface delivers industry-leading throughput

Codensity is delivering tomorrow's Peripheral Component Interconnect (PCI) throughput today, with the industry's first SSD supporting a PCIe 4.0 x4 interface specification. With Codensity D408 SSD, data-intensive applications benefit from 2x the throughput per PCIe lane relative to any PCIe 3.0 SSD product on the market today.



NVMe unleashes the speed of solid state non-volatile memory

Codensity D408 SSDs support the latest NVMe protocol to maximize the I/O performance and speed of solid state non-volatile memory (NVM) technology. NVMe supports multiple long-command queues, with a streamlined interface, to deliver superior performance and lower latencies compared to SATA or SAS data storage solutions.

Enterprise-class capacity and performance

The Codensity D408 supports up to 16TB of raw storage capacity, and up to 1000k random I/O processes per second (IOPS), with less than 100 µs read latency and 20 µs write latency, to deliver SSD storage performance for mission-critical enterprise and cloud applications.

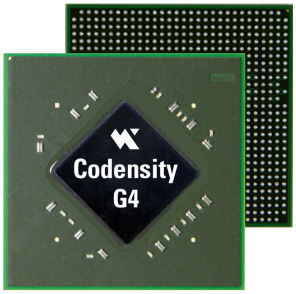
Reliability achieved through comprehensive error correction

A comprehensive Error Correction Code (ECC) implementation, based on Low Density Parity Check (LDPC) algorithms, overcomes some of the inherent bit storage challenges with NAND Flash technology, resulting in a high-reliability SSD solution with mean time to failure (MTTF) of 2 million device hours.

Variety of PCIe Form Factors

Codensity D408 SSDs are available in both Half Height Half Length (HHHL) Add In Card (AIC), as well as the more compact 2.5" U.2 plug-in module form factors. Codensity D408 SSDs are also backwards compatible to function with PCIe Gen3 host servers.

Codensity G4 SSD Controller SoC



The Intelligence Inside

At the heart of all D408 SSDs is the Codensity G4 SSD Controller System on Chip (SoC), designed for flexibility and packed with innovative features to fully leverage modern NAND Flash technologies and deliver scalability for data-intensive processing and applications.

Flexible architecture supports optimizations for unique data access and storage requirements

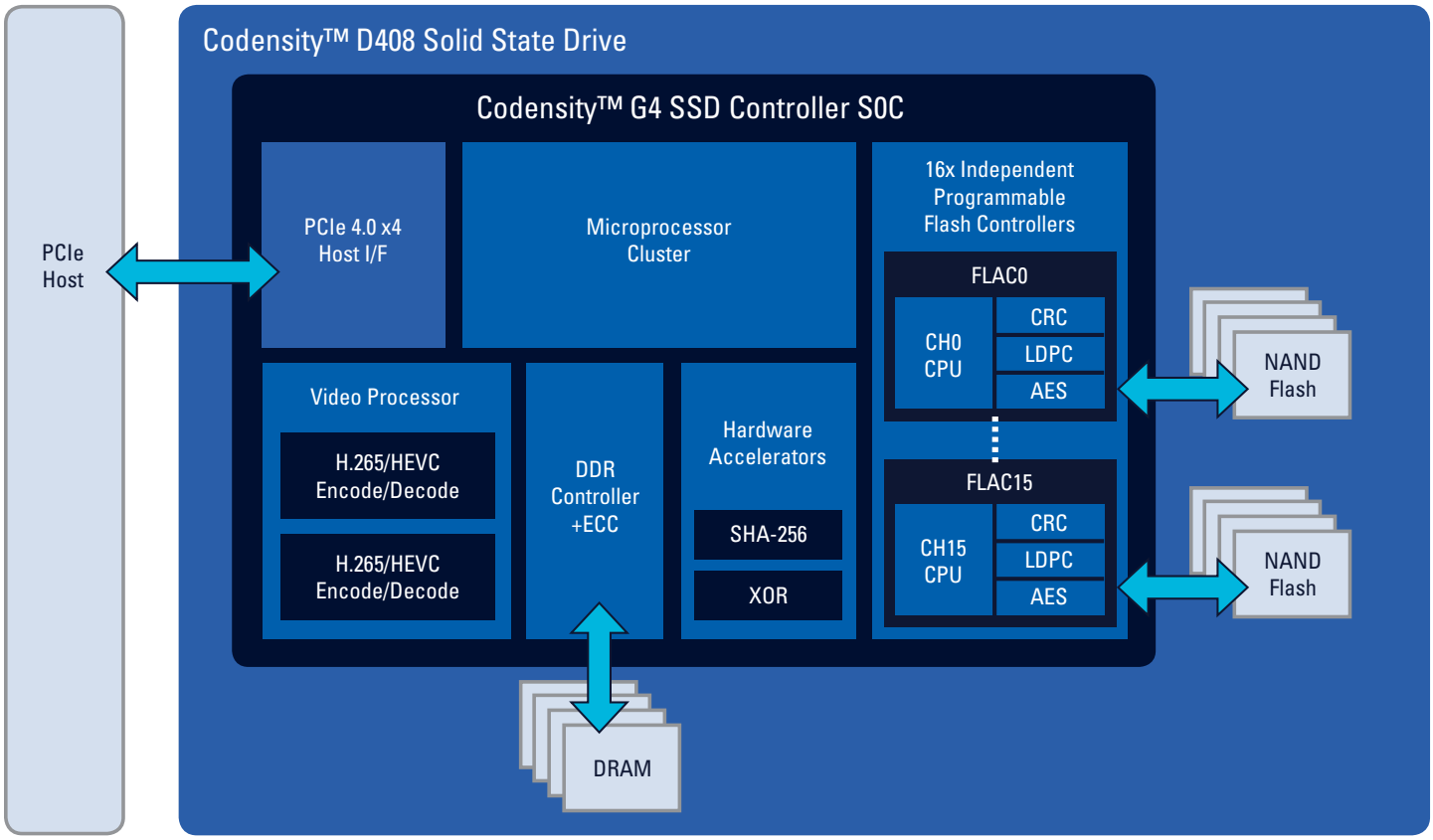
Many high performance applications with I/O-intensive requirements could take advantage of different tradeoffs in terms of read/write performance, endurance, capacity, security, and data integrity than manufacturers commonly provide. The Codensity G4 SSD controller SoC is based on a programmable microprocessor architecture, allowing NETINT engineers to work with our customers to optimize the Flash Translation Layer (FTL) and pipeline processing to your application and system priorities, often leading to large performance increases.

Up to 16 programmable NAND Flash controllers with independent optimization

NAND Flash devices can vary between technologies, vendors, and instruction sets. The Codensity G4 supports up to 16 independent NAND Flash control channels that can be optimized for different Flash devices, data integrity, or reliability requirements.

Supports variety of 3D TLC or QLC NAND Flash components

The flexibility of the Codensity G4 Flash controllers allows NETINT to support 3D TLC NAND Flash for applications requiring high reliability with raw storage capacities up to 16 TB using 512 Gb TLC. It can also support newer QLC NAND for higher capacities.



Codensity SSD Technical Specifications

	D408-AIC	D408-U.2
Form Factor	Add In Card (AIC) Half Height Half Length (HHHL)	SFF-8639 2.5" Width / Height: 15mm
Interface	PCIe 4.0 x4	
Protocol	NVMe	
Raw Capacity Options	4 TB | 8 TB | 16 TB	
NAND Flash Memory	3D TLC NAND Flash (standard) QLC NAND Flash (available)	
	Sustained Sequential Read/Writes	
Read/Write Bandwidth	6.4 GB/s | 2 GB/s	
Read/Write Latency	100 µs | 20 µs	
	4KB Read/Writes	
Random I/O Operations Per Second	16 TB: Up to 1000 / 250 KIOPS	
Power Consumption (Typical)	Max Read: 11W, Max Write: 24W, Idle: 2W	
Advanced Technology	Enhanced Power Loss Protection	
	Temperature Monitoring and Logging	
	End to End Data Protection	
	LDPC (Low-Density Parity Check)	
	High Endurance Technology	
	Video Compression Offload Engine	
Life Expectancy	2 million hours MTBF (Mean Time Between Failure)	
Lifetime Endurance	Enterprise Grade. Detailed number is related to Flash selection and firmware configuration.	
Usage	24/7 Operation	
Operation Temperature	0 degrees C to 70 degrees C	
RoHS Compliance	Meets requirements of European Union (EU) ROHS Compliance Directives	
Product Health Monitoring	Self-Monitoring, Analysis, and Reporting Technology (SMART) commands	

NETINT Technologies is an innovator of SoC solutions intersecting computational storage and video processing. Its Codensity portfolio enables cloud data centers, edge computing companies, and content providers to deploy scalable high-performance applications, while minimizing their data storage and video processing costs. NETINT, founded by an experienced team of storage SoC veterans, is a Canadian venture-funded high-tech company with R&D facilities in Vancouver, Toronto and Shanghai, China.

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For more information, visit **www.netint.ca**

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