Netlist N1952 NVMe™ SSD

High-performance family of NVMe™ drives up to 8 TB based on 96 Layer 3D NAND

Netlist NVMe SSDs excel to support the most demanding Enterprise application workloads. The N1952 family of SSDs are NVM Express v1.2 compliant with DWPD (Drive Writes Per Day) customization capability up to nine DWPD guaranteed for five years. With ultra-high performance up to 6 GB/s read throughput, the Netlist N1952 NVMe drives are optimized to support the performance and feature needs Enterprise applications require.

High Performance Transfer Speeds
Maximum performance up to 6 GB/s throughput and 1 million IOPS.

Data Security & Protection (TCG Opal compatible & AES-256 encryption)
TCG Opal Password Authorities & Authentication are supported which include up to four admin authorities and eight user authorities. The number of active keys can be configured up to 16, with password redundancy capability. These features provide maximum protection for active data and data-at-rest.

Additionally, AES-256 data encryption and T10 (Protection Information) PI End-to-End Data Protection (DIF/DIX) allow for full Data Path Protection for in-transit data, while the Power Loss Protection (PLP) feature protects critical data from being lost during power outages or brown-outs, making Netlist NVMe drives suitable for secure, high-availability applications.

Flexible and Accurate Power Consumption
Over 16 power mode settings, ranging from 10W to 20W, and power mode switching time of < 1ms. Accurate and dynamic power control is achieved for enterprise users and storage systems.

Up to 8 TB/s Enterprise TRIM Function
TRIM functionality is essential and ensures that trimmed old data will not be accessed by new users, while significantly improving performance and endurance. TRIM speeds of up to 8 TB/s results in minimal impact on the business.

Multi-Namespace Support
Up to 32 namespaces are supported. With a variety of workloads (e.g. analytics, database, video, etc.), namespaces help optimize performance & efficiency of these workloads onto a single drive, thereby reducing total cost of ownership.

High-Availability Dual Port
Dual-port function solves the single-path failure problem. The two ports can be accessed simultaneously allowing for data access while providing Quality of Service to meet Enterprise requirements.

Advantages & Benefits

- NVM Express v1.2 Compliant
- High Transfer Speeds up to 6 GB/s and Read IOPs up to 1M
- NVM Express Compliant Form Factor U.2 2.5" & AIC HHHL
- TCG Opal compatible & AES-256 encryption to ensure active data & data-at-rest are not compromised
- T10 PI End-to-End Data Protection (DIF/DIX)
- Enhanced viable sector size (512B, 4KB, 512+8B, 4KB+8B, 4KB+64B)
- Thermal management: temperature setting & monitoring
- TRIM performance up to 8 TB/s ensures faster writing speed when new data is stored
- Multi-namespaces (32) to divide the capacity of the SSD
- Dual port PCIe capability (U.2)

Applications

- Database Management
- Cloud and Hyper-scale Computing
- High Performance Computing & High Frequency Trading
- Deep Learning & Big Data Analytics
- Edge Computing

Key Specifications

	Netlist Enterprise (High Performance) NVMe SSD N1952			
	D2-Series	**E2-Series**	**D3-Series**	**E3-Series**
Form Factor	2.5-inch U.2		AIC HHHL	
Interface	PCIe Gen3 x4		PCIe Gen3 x8	
User Capacity	3.84 TB, 7.68 TB	3.2 TB, 6.4 TB	3.84 TB, 7.68 TB	3.2 TB, 6.4 TB
Sequential Read (128KB)[1]	Up to 3.3 GB/s	Up to 3.5 GB/s	Up to 6.0 GB/s	Up to 6.0 GB/s
Sequential Write (128KB)[1]	Up to 3.0 GB/s	Up to 3.1 GB/s	Up to 3.8 GB/s	Up to 3.8 GB/s
Sustained Random Read (4KB)[1]	Up to 835K IOPS	Up to 840K IOPS	Up to 1000K IOPS	Up to 1000K IOPS
Latency Read/Write[2]	90 / 15 μs	90 / 12 μs	90 / 15 μs	90 / 12 μs
Endurance for 5 years	1 DWPD	3 DWPD	1 DWPD	3 DWPD
Power Consumption	Average: 12 W, Idle: 7 W			
UBER / MTBF	1 sector per 10^{17} read / 2.1 million hours			
Basic Feature Support	Power Loss Protection, TRIM, AES-256 Data Encryption, Enhanced viable sector size (512B, 4KB, 512+8B, 4KB+8B, 4KB+64B), Hot Pluggable			
Advanced Feature Support	TCG Opal, T10 PI End-to-End Data Protection (DIF/DIX), Multi-namespace, Fast Reboot, Crypto Erase, Dual Port (U.2)			
Spec Compliance	PCI Express Gen3 Rev. 3.0, NVM Express Rev. 1.2			
Certification	America: FCC, Europe: CE, RoHS, WEEE, Taiwan: BSMI			

[1]. Performance may vary due to different system configurations and firmware version
[2]. Average latency measured with 4KB random I/O pattern

Ordering Information

Family	Capacity	Part Number
N1952 D2 2.5", U.2 1 DWPD	3.84 TB	NS1952UF13T8-5M1A000
	7.68 TB	NS1952UF17T6-5M1A000
N1952 E2 2.5", U.2 3 DWPD	3.2 TB	NS1952UF33T2-5M1A000
	6.4 TB	NS1952UF36T4-5M1A000
N1952 D3 AIC HHHL 1 DWPD	3.84 TB	NS1952AH13T8-5M1A000
	7.68 TB	NS1952AH17T6-5M1A000
N1952 E3 AIC HHHL 3 DWPD	3.2 TB	NS1952AH33T2-5M1A000
	6.4 TB	NS1952AH36T4-5M1A000