

DigiStor Enterprise PCIe Gen5 U.2 NVMe Opal SED

TAA COMPLIANT

FIPS 140-3 LV2 – IN PROCESS

U.2 15MM

PCIe GEN5

The DigiStor PCIe Gen5 U.2 NVMe SSD delivers enterprise-class performance with a PCIe Gen5 x4 interface in the standard U.2 15mm form factor. Built on 3D TLC NAND with DDR4, it achieves sequential read speeds up to 14,800 MB/s and sequential write speeds up to 8,700 MB/s. Available in single-port and dual-port configurations, it features FIPS 140-3 Level 2 – In Process hardware AES-XTS 256-bit encryption and Power Loss Protection for mission-critical workloads. Conformance testing completed at accredited laboratory; certification pending CMVP review.

Top Features

- PCIe Gen5 x4 — up to 14,800 MB/s sequential read
 - Single Port (x4) & Dual Port (2x2) configurations
 - Hardware AES-XTS 256-bit Encryption
 - FIPS 140-3 Level 2 – In Process
 - In Certification Process
 - Power Loss Protection (PLP)
 - 3D TLC NAND with DDR4
- MTBF: 2.5 million hours
 - UBER: <1 sector per 1018 bits read
 - 128 Namespaces supported
 - DWPD options: 1 or 3 (5-year warranty)
 - Thermal throttling & SMBus support
 - Up to 30.72 TB capacity

Available Models

DigiStor PN (Single Port)	DigiStor PN (Dual Port)	Capacity (TB)	DWPD	Interface
DIG-P5U20G17-1T6	DIG-P5U20G47-1T6	1.6	3	PCIe Gen5 U.2
DIG-P5U20G09-1T9	DIG-P5U20G46-1T9	1.92	1	PCIe Gen5 U.2
DIG-P5U20G17-3T2	DIG-P5U20G47-3T2	3.2	3	PCIe Gen5 U.2
DIG-P5U20G09-3T8	DIG-P5U20G46-3T8	3.84	1	PCIe Gen5 U.2
DIG-P5U20G17-6T4	DIG-P5U20G47-6T4	6.4	3	PCIe Gen5 U.2
DIG-P5U20G09-7T6	DIG-P5U20G46-7T6	7.68	1	PCIe Gen5 U.2
DIG-P5U20G17-12T	DIG-P5U20G47-12T	12.8	3	PCIe Gen5 U.2
DIG-P5U20G09-15T	DIG-P5U20G46-15T	15.36	1	PCIe Gen5 U.2
DIG-P5U20G17-25T	DIG-P5U20G47-25T	25.6	3	PCIe Gen5 U.2
DIG-P5U20G09-30T	DIG-P5U20G46-30T	30.72	1	PCIe Gen5 U.2

Performance Summary

Capacity (TB)	Seq. Read	Seq. Write	Rand. Read	Rand. Write	Flash
1.6 / 1.92 TB	14,800 MB/s	4,300 MB/s	2,400K IOPS	140K / 390K IOPS	3D TLC
3.2 / 3.84 TB	14,800 MB/s	8,600 MB/s	3,300K IOPS	320K / 790K IOPS	3D TLC
6.4 / 7.68 TB	14,800 MB/s	8,700 MB/s	3,200K IOPS	390K / 880K IOPS	3D TLC
12.8 / 15.36 TB	14,800 MB/s	8,500 MB/s	2,800K IOPS	420K / 900K IOPS	3D TLC
25.6 / 30.72 TB	14,000 MB/s	7,400 MB/s	2,300K IOPS	265K / 615K IOPS	3D TLC

Note: Performance measured with FIO on Linux using 512KB sequential and 4KB random read/write on full, unformatted drive. Platform: MS03-CE0-000 motherboard, Intel Xeon Gold 5416S CPU, DDR5 64G, Ubuntu 20.04.2 LTS. Rand. Read/Write IOPS reflect 4KB QD=128, Jobs=8. Write IOPS shown as DWPD-1 / DWPD-3 model respectively where values differ.

This document describes a product that is currently under development. Specifications, features, and performance characteristics are subject to change without notice as the product design is finalized. The information provided herein is for reference and evaluation purposes only and should not be relied upon for final design decisions. Photos in this document are for illustrative purposes only and might not be representative of the exact product described.

Reliability & Environmental

Parameter	Rating
MTBF	2.5 million hours
UBER	<1 sector per 1018 bits read
Op. Temp.	0°C to 70°C (with specified airflow)
Storage Temp.	-40°C to 85°C
Op. Humidity	5% to 95% RH
Shock (op / non-op)	500G, 2ms / 1000G, 0.5ms
Vibration (op)	2.17 Grms (7–800 Hz)
Vibration (non-op)	16.3 Grms (10–2000 Hz)
ESD	±4 kV (EN 61000-4-2 / IEC 61000-4-2)
Typical Power	Active Read: 23W (Avg. RMS); Active Write: 25W (Avg. RMS)
Idle Power	<5W
Inrush Current	2.5A (1.6TB - 15.36TB); 3A (25.6TB - 30.72TB)
Op. Voltage	12V ±10%; 3.3Vaux +5%/–10%
Dimensions	100.10 × 69.85 × 14.70 mm (U.2 15mm)
Weight	168–201 g (varies by capacity)

Compliance

- CE, FCC, RCM, ROHS
- TAA Compliant
- TCG Opal 2.0 Compliant
- FIPS 140-3 Level 2 – In Process (Conformance testing completed at accredited laboratory; certification pending CMVP review)

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Security Capabilities

- Hardware AES-XTS 256-bit Encryption
- FIPS 140-3 Level 2 – In Process (Conformance testing completed at accredited laboratory; certification pending CMVP review)
- TCG Opal (FIPS) – PSID Revert supported
- IEEE 1667 support (activated via vendor tool)
- Crypto Erase via TCG Revert (PSID)
- Instant Security Erase (ISE)
- 128 Namespaces with Reservation support
- Metadata Protection (end-to-end data protection)
- SMBus / I2C management endpoint support
- Vital Product Data (VPD) read/write via SMBus

Flash Management Technology

Power Loss Protection

Capacitor-backed PLP ensures data integrity during unexpected power loss events.

Thermal Throttling

Multi-stage TMT mechanism protects NAND integrity from TMT1 (77°C) through thermal shutdown (≥85°C flash / ≥115°C controller).

IOPS Consistency

95% consistency (99.9th percentile) across all read and write workloads at QD1 and QD8.

LBAF Flexibility

Supports 512B, 512+8, 4K, 4K+8, and 4K+64 byte LBA formats across up to 128 namespaces.

Typical Applications

- Hyperscale cloud storage and data center infrastructure
- High-performance computing (HPC) and AI/ML workloads
- Enterprise database and transactional workloads
- Secure government, defense, and classified environments