

Enterprise PCIe Gen 5 E3.S – 61.44 TB Opal SED

TAA COMPLIANT

AES-XTS 256-BIT

E3.S 1T

PCIe GEN 5 X4

A high-density enterprise PCIe Gen 5 x4 NVMe SSD in the E3.S 1T form factor, delivering up to 14,000 MB/s sequential read and 3,300 MB/s sequential write. Designed for read-intensive data center workloads, it features hardware AES-XTS 256-bit encryption, TCG Opal 2.0, and end-to-end data path protection in a compact, power-efficient package.

Top Features

- PCIe Gen 5 x4
- In Certification Process
- Sequential Read up to 14,000 MB/s
- Sequential Write up to 3,300 MB/s
- Random Read up to 2,625K IOPS (4K)
- Random Write up to 35K IOPS (16K)

- Hardware AES-XTS 256-bit Encryption
- TCG Opal 2.0 & IEEE 1667 support
- Hardware-based Power Loss Data Protection
- End-to-End Data Path Protection (SECDED)
- 128 Namespaces supported
- SMBus & NVMe-MI management interface

Available Models

Part Number	Capacity	Form Factor	Interface	Encryption	DWPD
DIG-P5E3SG43-61T	61.44 TB	E3.S 1T	PCIe Gen 5 x4	AES-XTS 256-bit	0.3

Performance Summary

Capacity	Seq. Read	Seq. Write	Rand. Read	Rand. Write	Flash
61.44 TB	14,000 MB/s	3,300 MB/s	2,625K IOPS (4K)	35K IOPS (16K)	QLC

Note: Sequential performance measured at 512KB block size, steady state after precondition. Random performance measured at QD128, 8 jobs. Platform: Ubuntu 20.04.2 LTS, Linux kernel 5.10.32, Intel Xeon Gold 5416S, 64 GiB RAM. Default power state PS1: 25 W. Performance may differ according to flash configuration and platform.

Specifications, features, and performance characteristics are subject to change without notice. The information provided herein is for reference and evaluation purposes only and should not be relied upon for final design decisions.

Reliability & Environmental

Parameter	Rating
MTBF	2.5 million hours
UBER	<1 sector per 10 ¹⁸ bits read
TBW	33,638 TB
Op. Temp.	0°C to 70°C
Storage Temp.	-40°C to 85°C
Op. Humidity	Up to 90%
Shock (op / non-op)	1000G, 0.5ms / 1500G, 0.5ms
Vibration (op)	3.08 Grms (7–200 Hz)
Vibration (non-op)	20G (20–2000 Hz)
ESD	±4 kV (EN 61000-4-2 / IEC 61000-4-2)
Typical Power (Active)	18.7 W (Seq. Read) / 25 W (Seq. Write)
Idle Power	5 W
Inrush Current	2,000 mA/μs
Op. Voltage	12V ±10%; 3.3Vaux
Dimensions	112.75 mm (L) × 76.00 mm (W) × 7.50 mm (H)

Compliance

- RoHS compliant
- TAA compliant
- TCG Opal 2.0 compliant

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Security Capabilities

- Hardware AES-XTS 256-bit Encryption
- TCG Opal 2.0 – self-encrypting drive support
- IEEE 1667 (activated via vendor tool)
- PSID Revert support
- Crypto Erase & Block Erase (Sanitize)
- End-to-End Data Path Protection
- SECDED error correction
- 128 independent Namespaces
- Namespace Reservation support
- Windows eDrive (BitLocker) compatible

Flash Management Technology

Power Loss Protection

Hardware-based capacitor-backed PLP ensures data integrity during unexpected power events.

Thermal Throttling

Three-stage TMT mechanism monitors flash temp and dynamically reduces performance to prevent thermal shutdown.

SECDED ECC

Single-error correcting, double-error detecting end-to-end data path protection for NAND and DRAM.

IOPS Consistency

90% IOPS consistency on 4K random read and 85% on 16K random write under sustained QD1024 workloads.

Typical Applications

- Read-intensive cloud & hyperscale storage (0.3 DWPD)
- AI/ML dataset storage and inference serving
- Content delivery networks (CDN) and media streaming
- Enterprise data warehousing and analytics