PHISON

First in Class
Best in Performance

Phison E26 is the first ever client-grade PCIe Gen5 SSD controller solution. Taking the lead during the interface generation advancement, the flagship solution will unleash the storage bottleneck on client computing platforms with unprecedented data throughput of up to 14GB/s. The ground-breaking performance is bound to open up new possibilities for gaming and high-end client applications.

Application

High-performance PCs

Gaming PCs

Gaming consoles

High-end workstations

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PS5026-E26

Product Features

Market-leading performance

E26 is optimized for the PCIe Gen5x4 interface, enabling SSDs with maximized bandwidths and link efficiency. Paired with state-of-the-art 3D NAND flash memory chips, E26 handles application payloads immaculately with minimal latency.

Excellent scalability with the latest generation of NAND flash enablement

E26 supports the latest generation of NAND flash interface of ONFI 5.0 and Toggle 5.0 to carry out extreme high-end performance. With 8 flash channels and 32 chip enables (CEs) to reach capacity from 1000 GB to 4000GB.

Phison 5th Generation LDPC ECC engine

Phison's proprietary fifth-generation ECC engine based on the LDPC coding scheme effectively maintains NAND flash data reliability. Relative to the prior generation, the 5th Gen engine now operates fully on 4KB-sized frames at high efficiency while supporting Future Gen NAND flash from industry partners.

Top-notch security for a leading-edge Solution

E26 is equipped with Phison's latest proprietary hardware IPs to realize true end-to-end data protection. Ready with multiple encryption standards compliant to industry standards and above, E26 provides utmost protection with multiple features implemented in combination of hardware and firmware designs.

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Features	Specifications
Host Interface	- PCIe 5.0x4 (Bandwidth: 32GT/s x4) - Backward Compatible with Existing PCIe Generation Transfer Rates - Compliance with PCI Express Base Specification Revision 5.0 - Compliance with NVMe 2.0
Processor	- Dual-CPU architecture with built-in Arm Cortex-R5 - TSMC 12nm process technology
Flash Controller	- Up to 8 Channels with 32 Chips Enable (CE) - Flash transfer rate up to 2,400MT/s - Support 3D TLC and QLC NAND flash memory - Compliance with Toggle 5.0 and ONFi 5.0 - Flash I/O operating voltage supply 1.2V
DRAM Controller	- LPDDR4 and DDR4 both supported, transfer rate up to 3200Mbp/s
Data Reliability	- Phison 5th generation LDPC ECC & RAID ECC - SmartECC (RAID ECC) - End-To-End Data Path Protection
Security	- AES 256 - SHA 512 - RSA 4096 - TCG Opal
Performance	- Sequential Read up to 14,000MB/s - Sequential Write up to 11,800MB/s - 4K Random Read up to 1,500K IOPS - 4K Random Write up to 2,000K IOPS
Power Management	- ASPM + APST Supported
Temperature Range	- Operating range: 0~70 °C - Storage range: -40~85 °C - Operating junction temperature: -40~125 °C
Package	- 576-ball FCCSP, 16 mm x 16 mm
Peripheral	- Built-in internal thermal sensor - GPIO pins - Built-in UART function - I3C and SPI for external ROM

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Find more information and resources at: **phisonblog.com** and **phison.com**

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SSD Solutions	PS5026-E26		
Capacity [1]	1000GB	2000GB	4000GB
Interface	PCIe Gen5.0x4 NVMe 2.0		
Form Factor	M.2 2280-D2	M.2 2280-D2	M.2 2280-D2
NAND Flash	3D TLC	3D TLC	3D TLC
Performance [2] [3]			
Sequential Read	10000 MB/s	12000 MB/s	12000 MB/s
Sequential Write	8500 MB/s	10000 MB/s	10000 MB/s
4K Random Read	1300K IOPS	1400K IOPS	1400K IOPS
4K Random Write	1500K IOPS	1500K IOPS	1500K IOPS
Power [4]			
Supply Voltage	M.2 3.3V ± 5%		
Active (Average)	TBD	TBD	TBD
Idle	TBD	TBD	TBD
Low Power PS4 (L1.2)	TBD	TBD	TBD
Environmental			
Operating Temperature	0°C - 70°C		
Non-Operating Temperature	-40°C - 85°C		
Certification	-RoHS -WHQL		
Reliability & Warranty			
TBW	700	1400	3000
Warranty	5 Years		
MTBF	1.6 Million hours		
UBER	< 1 sector per 1016 bits read		
Advanced Features			
- End-to-End Data Protection - TCG OPAL 2.0 and Crypto Erase - GPIO Pins, Built-in UART function and SMBus feature support			

[1] 1 GB = 1,000,000,000 bytes
[2] Sequential R/W estimation by CrystalDiskMark 7.0.0, 1GB range, QD=8, Thread=1, and test as secondary drive.
[3] Random R/W estimation by CrystalDiskMark 7.0.0, 1GB range, 4K data size, QD=32, Thread=16, and test as secondary drive.
[4] Specific power data will be updated once product tuning phase is finished.

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