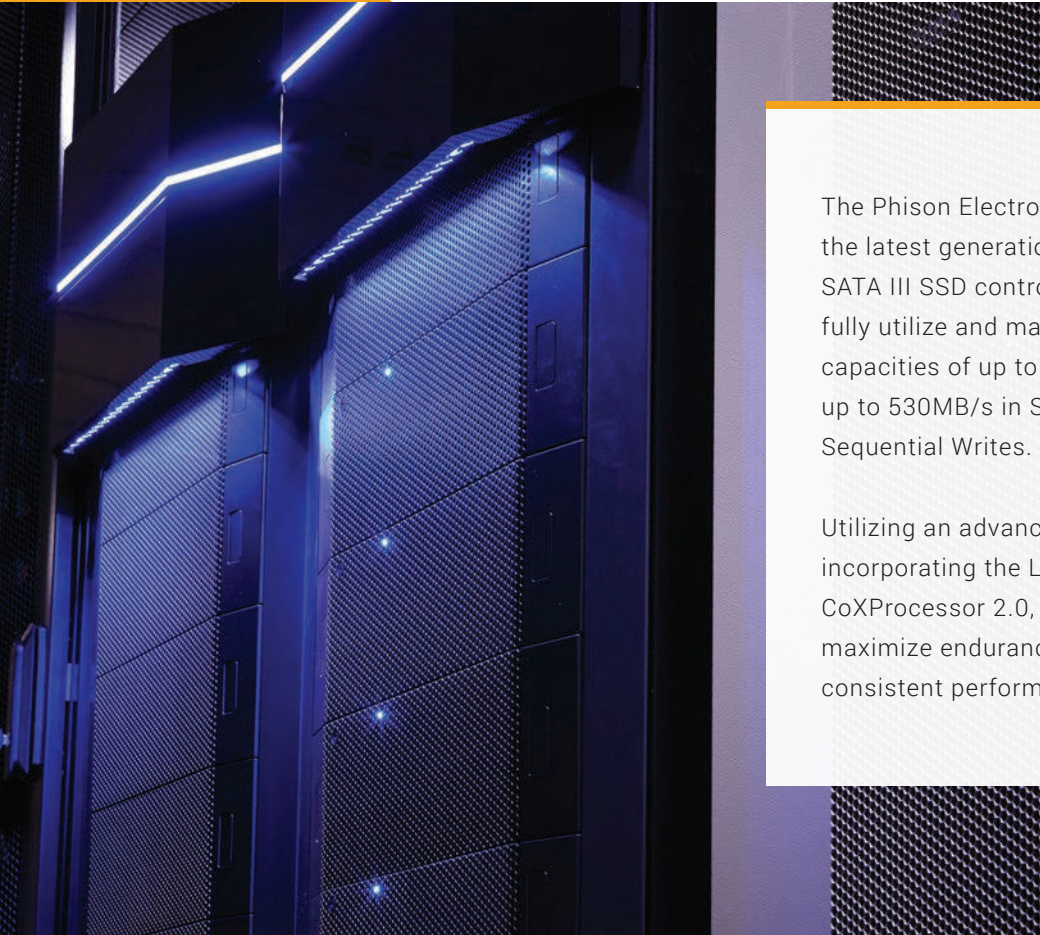PHISON
Knows What You Need

PS3112-S12DC *the Enterprise* **SATA** *SSD*

The Phison Electronic PS3112-S12DC SATA III SSD is the latest generation of our maximum performance SATA III SSD controller. The new S12DC is designed to fully utilize and maximize the SATA III interface. Offering capacities of up to 3840GB and sustained performance of up to 530MB/s in Sequential Reads and 500MB/s in Sequential Writes.

Utilizing an advanced 28nm process technology, incorporating the LDPC 3.0 ECC engine, the CoXProcessor 2.0, and the DSP 2.0, the S12DC will maximize endurance, reduce latencies, and provide consistent performance on various workloads

Advanced Features

LDPC 3.0 ECC Engine
Phison's 3rd generation LDPC ECC Engine can correct up to 160 bits/2k via the hard decoder and up to 400bits/2k via the soft decoder. This will ensure that your data can be protected throughout the life of the SSD.

Power Loss Data Protection
Power loss protection is provided using additional circuitry and capacitors. This gives the S12DC additional power and time to flush the data residing in the DRAM and buffers. This ensures the data integrity of the drive and protects against data corruption in the event of power loss or system failures.

Encryption
For data security, the PS3112-S12DC supports AES 256 bit hardware-based encryption. The S12DC is also fully compliant with Trusted Computing Group (TCG) Opal Specification.

End-to-End Data Protection
From the moment the data enters the SSD, the S12DC generates associated parities to prevent soft errors. The data is safeguarded from corruption at every step of the way from the host device to the NAND flash.

Controller	**PS3112-S12DC**
Capacities	Up to 3840GB
Interface	SATA III 6Gb/s
Form Factor	2.5"(7mm)
NAND Flash	3D TLC
Sustained Performance (Up to)[1, 2]	
Sequential Read	530 MB/s
Sequential Write	500 MB/s
4K Random Read	98K IOPS
4K Random Write	67K IOPS
4K Mixed Read / Write 70/30	80K IOPS
Quality of Service (99.9%)	
4K Random Read QD1 Latency	165µs
4K Random Write QD1 Latency	65µs
Reliability	
UBER	< 1 sector per 10^{17} bits read
Power	
Max	< 6.2W
Idle	< 1.9W
Temperature	
Operating	0°C ~ 70°C
Non-Operating	-40°C ~ 85°C
Advanced Features	• LDPC • Power loss Data Protection • End-to-End Data Protection • Encryption

1) 1MB/s = 1,000,000 bytes / second

2) Performance measured using FIO under Linux on the full LBA span of the test drive.

    • Sequential 128KB queue depth 32 with 1 worker.

    • 4K random queue depth 32 with 1 worker.