

SP509 Enterprise SSD

The BIWIN SP509 enterprise SSD is designed for AI model training and inference, cloud computing, all-flash storage, and high-performance computing. Combining high performance, low power consumption, and enterprise-grade reliability, the SP509 features a PCIe 5.0 x4 interface and standard 2.5-inch U.2 form factor, with support for NVMe 2.0 and NVMe-MI 1.2.

It supports end-to-end data protection, power-loss protection (PLP), and enhanced LDPC error correction to help ensure data integrity and reliability under demanding enterprise workloads.

The SP509 delivers sequential read/write performance of up to 14,700 / 9,000 MB/s and 4K random read/write performance of up to 3,200K/800K IOPS. Available capacities include 3.84 TB, 7.68 TB, and 15.36 TB.



Key Features

High Performance for Demanding Enterprise Workloads

The SP509 takes full advantage of the PCIe 5.0 interface, delivering sequential read/write performance of up to 14,700/9,000 MB/s and 4K random read/write performance of up to 3,200K/800K IOPS. With low latency and strong QoS performance, it helps reduce long-tail latency and delivers consistent performance for demanding enterprise workloads.

Higher Manageability for Lower O&M Cost

The BIWIN SP509 supports in-band online firmware updates for non-disruptive upgrades, and enables out-of-band management via standard protocols to access drive health and telemetry data independently of host I/O. It also provides standard command interfaces for streamlined daily monitoring and maintenance, reducing operational complexity.

Enterprise-Grade Reliability and End-to-End Data Protection

The SP509 integrates an enhanced LDPC error correction engine, delivering advanced error correction capability beyond standard NAND requirements to ensure strong data integrity and reliability. RAID functionality further enhances data protection and system-level fault tolerance, safeguarding data consistency in mission-critical environments.

The SP509's advanced wear leveling intelligently balances program/erase cycles across NAND flash to minimize uneven wear and extend drive endurance. Power-loss protection (PLP) ensures in-flight data is securely committed during unexpected power failures, preventing data loss or corruption in server-level outage scenarios.

In addition, hardware-based encryption compliant with TCG standards provides robust data security, helping protect sensitive information and meet enterprise security requirements across data center deployments.

Technologies

NVMe 2.0

NVME-MI

OCP 2.0+

S.M.A.R.T.

Atomic Write

Internal RAID

Enhanced Read
Retry Technology

Multi-dimensional
Health Inspection

Power Loss Protection
(PLP)

Online Firmware
Upgrade

I/O QoS Control

Applications



AI Training & Inference



Cloud Computing



All-Flash Storage



High-Performance
Computing (HPC)

Specifications

Model Name	SP509
Interface	PCIe Gen 5x4, NVMe 2.0 & NVMe-MI 1.2
Form Factor	2.5" U.2
Flash Type	3D eTLC
Capacity	3.84 TB / 7.68 TB / 15.36 TB
Sequential Read (Up to)	14,700 MB/s
Sequential Write (Up to)	9,000 MB/s
4K Random Read (Up to)	3,200K IOPS
4K Random Write (Up to)	800K IOPS
Random Read / Write Latency	55 µs / 7 µs
99.99% Read / Write Latency	75 µs / 8 µs
Operating Power Consumption (Max.)	< 25 W
Idle Power Consumption (Max.)	5 W
Operating Temperature	0°C to +70°C
Storage Temperature	-40°C to +85°C
UBER	≤ 1 Sector Per 10 ¹⁸ Bits Read
MTBF	2,500,000 Hours
DWPD	≥1 DWPD
Certifications	CE, FCC, RoHS, REACH, WEEE, HF, China RoHS
Warranty	5-Year Limited

Order Information

Capacity	Part Number	Power-Loss Protection
3.84 TB	CEAU2DBH110-3T8	Firmware-Based, Hardware-Based
7.68 TB	CEAU2DBH110-7T6	Firmware-Based, Hardware-Based
15.36 TB	CEAU2DBH110-15T3	Firmware-Based, Hardware-Based

1. Tested by BiWIN labs. Actual performance may vary due to systems, devices, or environment.

2. Maintenance and future updates are required throughout the product lifecycle. Specifications are subject to change without notice.

3. The pictures are for illustration only. Actual products may vary due to product enhancements or changes.

4. Not all products are sold in all regions of the world.

5. As used for storage capacity, one megabyte (MB) = one million bytes, one gigabyte (GB) = one billion bytes, and one terabyte (TB) = one trillion bytes. Total accessible capacity varies depending on the operating environment. As used for buffer or cache, one megabyte (MB) = 1,048,576 bytes. As used for transfer rate or interface, megabyte per second (MB/s) = one million bytes per second, and gigabyte per second (GB/s) = one billion bytes per second.

6. MTBF = Mean Time Between Failures based on internal testing using the Telcordia stress testing standard.

7. Please visit www.biwintech.com for warranty details in your region.

8. For more information, please contact sales@biwintech.com.

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