

SP516 Gen5 SSD

The BIWIN SP516 enterprise PCIe SSD is built on the PCIe 5.0 x4 interface, delivering twice the bandwidth of Gen4 drives. Designed in the U.2 2.5-inch form factor, it seamlessly integrates with next-generation servers, traditional server infrastructures, and workstations. Leveraging an advanced controller architecture with optimized firmware, the SP516 provides consistently low latency, strong throughput, and leading KIOPS-per-Watt performance.

Engineered for 3 DWPD mixed workloads, the SP516 is available in capacities ranging from 1.6 TB to 6.4 TB. It fully supports the NVMe 2.0 specification and NVMe-MI 1.2 management standard, while integrating enterprise data center features such as AES-256 encryption, sanitize, end-to-end data path protection, in-drive RAID, secure boot, and TCG Opal 2.0. These attributes make the SP516 a reliable choice for hyperscale data centers, cloud platforms, compute-intensive servers, and AI workloads.



Key Features

Optimized Power Efficiency

With controller and firmware optimization, the SP516 achieves ultra-low latency while reducing overall power consumption. Its high performance-per-watt ratio helps data centers improve operational efficiency and supports a transition toward greener, more sustainable IT infrastructures.

Exceptional Performance and Endurance

Harnessing PCIe Gen5 bandwidth, the SP516 delivers sequential speeds up to 13600 MB/s read and 10500 MB/s write, with random performance reaching 3200K IOPS read and 910K IOPS write. Rated for 3 DWPD endurance and available in capacities up to 6.4 TB, the SP516 provides consistent quality of service under demanding mixed-workload environments.

Comprehensive Data Protection

The SP516 employs multiple safeguards, including power-loss protection, data scrubbing, and end-to-end path protection. Its built-in in-drive RAID functionality enables recovery from single-die failures, while features such as AES-256 encryption, TCG Opal 2.0, and atomic write provide secure and reliable data integrity across enterprise deployments.

Advanced Features for Data Centers

Developed for scalable and highly manageable data center environments, the SP516 supports advanced enterprise capabilities such as multiple namespaces, S.M.A.R.T. monitoring, latency tracking, health and telemetry logs, and power-loss protection. Its high configurability simplifies system management and helps reduce the total cost of ownership.

Proven Quality and Reliability

The SP516 undergoes stringent quality control under BIWIN's enterprise-grade manufacturing processes. Through ongoing reliability testing (ORT), the drive maintains sustained performance, stability, and reliability throughout its lifecycle.

Technologies

OCP 2.0

TCG Opal 2.0

NVMe-MI 1.2

Multiple Namespaces

Multiple Sector Size

Atomic Write

In-drive RAID

Power Loss Protection

Data-path E2E Protection

Intelligent Thermal Throttling

Intelligent Low-Power Management

S.M.A.R.T.

Health Log

Telemetry Log

Secure Boot

AES

TCG Opal

Applications



Data Center



Cloud Computing



AI Server



General-Purpose Server

Specifications

| | |
|---------------------------------------|---|
| Model Name | SP516 |
| Interface | PCIe Gen5x4, NVMe 2.0 & OCP 2.0 & NVMe-MI 1.2 |
| Form Factor | U.2 2.5" |
| Flash Type | eTLC |
| DWPD (Drive Writes Per Day) | 3 |
| Capacity | 1.6 TB / 3.2 TB / 6.4 TB |
| Sequential Read (Up to) | 13600 MB/s |
| Sequential Write (Up to) | 10500 MB/s |
| Random Read 4K (Up to) | 3200K IOPS |
| Random Write 4K (Up to) | 910K IOPS |
| Random Read/Write Latency (μs) | 67/9 |
| Read Power Consumption (Max.) | 23 W |
| Write Power Consumption (Max.) | 21 W |
| Idle Power Consumption (Max.) | 5 W |
| Operating Temperature | 0°C to + 70°C |
| Storage Temperature | -40°C to + 85°C |
| Data Retention | 3 months at 40°C |
| MTBF | >2,500,000 hours |
| Certifications | CE, FCC, RoHS, REACH, WEEE, HF, China RoHS |
| Warranty | 5-Year Limited |

Order Information

| Capacity | Part Number | Power Loss Protection |
|---------------|-----------------|--------------------------------|
| 1.6 TB | CEAU2W6F510-1T6 | Firmware-Based, Hardware-Based |
| 3.2 TB | CEAU2W6F510-3T2 | Firmware-Based, Hardware-Based |
| 6.4 TB | CEAU2W6F510-6T4 | 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.biwin technology.com for warranty details in your region.
8. For more information, please contact sales@biwintech.com.

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