

BIWIN SS821 Enterprise 2.5" SATA SSD

The BIWIN SS821 Enterprise 2.5" SATA SSD is built on the SATA 3.2 6 Gbps interface specification and integrates an external DDR cache. It delivers sequential read and write speeds of up to 560 MB/s and 520 MB/s, respectively, along with 4K random read/write performance of up to 92K IOPS and 50K IOPS.

The SS821 SSD features 2.5-inch form factor, with capacities of 480 GB, 960 GB, 1.92 TB, 3.84 TB, and 7.68 TB. It supports 1 DWPD endurance for read-intensive enterprise workloads. The SS821 SSD also supports a comprehensive set of enterprise-grade advanced features, including Power Loss Protection (PLP), End-to-End Data Path Protection (E2E), Thermal Throttling, dynamic and static wear leveling, dynamic power management, S.M.A.R.T., TRIM, firmware redundancy, Secure Boot, secure firmware upgrade, Internal RAID, and Sanitize.

Addressing the demanding requirements of enterprise customers, the SS821 SSD delivers reliable storage support for data centers, artificial intelligence (AI), edge computing, cloud services, IoT, and machine learning workloads. It offers broad application potential across industries including internet services, cloud computing, government, telecommunications, finance, and large-scale intelligent computing centers.



Key Features

Low Power Consumption with High Power Efficiency

Through firmware optimization, the SS821 SSD achieves ultra-low operating power consumption and excellent power efficiency, delivering higher performance per watt. This helps optimize energy efficiency, reduce operating costs, and support the development of greener, more energy-efficient data centers.

Exceptional Performance with Ultra-Low Variance

The BIWIN SS821 SSD features 2.5-inch form factor, with capacities of up to 7.68 TB and endurance exceeding 1 DWPD. It delivers sequential read/write speeds of up to 560 MB/s and 520 MB/s, respectively, along with 4K random read/write performance of up to 92K IOPS and 50K IOPS. Under steady-state workloads, performance variance is maintained below 5%, ensuring more highly consistent performance for mission-critical applications.

Comprehensive Data Protection and Reliability

The BIWIN SS821 SSD incorporates multiple firmware and hardware optimizations for data scrubbing, power-loss protection, and end-to-end data protection. The series supports In-Drive RAID to provide recovery protection against single-die failures, while also supporting security features including Secure Boot, secure firmware updates, and ATA Security to comprehensively safeguard data security, stability, and integrity.

Rigorous Quality Control for Proven Reliability

The BIWIN SS821 SSD is built under a comprehensive quality management system, supported by thousands of in-house SSD validation test cases covering full white-box, gray-box, and black-box testing for firmware modules, along with 3 - 4 months of reliability validation to ensure robust product design. In addition, continuous Ongoing Reliability Testing (ORT) is performed throughout mass production for long-term quality monitoring for outstanding performance and stability across the entire product lifecycle.

Technologies

Supports SATA Revision 3.2 and ATA/ATAPI Command Set-4

Supports NCQ, TRIM, S.M.A.R.T. Health Log, Elog, and Sanitize

Supports Internal RAID, PLP, Hot Swap, and End-to-End Data Path Protection

Supports Thermal Throttling, Power Management, OCP, OVP, and Anti-Sulfuration Design

Supports Secure Boot, Secure Firmware Update, Firmware Update Without Reset, and ATA Security

Applications



General-Purpose Servers



Data Centers



Cloud Computing



AI Computing Servers

Model	SS821
Protocol	SATA 3.2
Interface	2.5"
Flash Type	eTLC
DWPD (Drive Writes Per Day)	1 DWPD
Capacity	480 GB / 960 GB / 1.92TB / 3.84 TB / 7.68 TB
Sequential Read (Up to)	560 MB/s
Sequential Write (Up to)	520 MB/s
Random Read 4K (Up to)	92K IOPS
Random Write 4K (Up to)	50K IOPS
Random Read/Write Latency (µs)	115/40
Read Power Consumption (Max.)	2.5 W
Write Power Consumption (Max.)	3.4 W
Idle Power Consumption (Max.)	1.5 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 Options
480 GB	CSE25Y88A10-480G	Firmware-Based, Hardware-Based
960 GB	CSE25Y88A10-960G	Firmware-Based, Hardware-Based
1.92 TB	CSE25Y88A10-1T9	Firmware-Based, Hardware-Based
3.84 TB	CSE25Y88A10-3T8	Firmware-Based, Hardware-Based
7.68 TB	CSE25Y88A10-7T6	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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