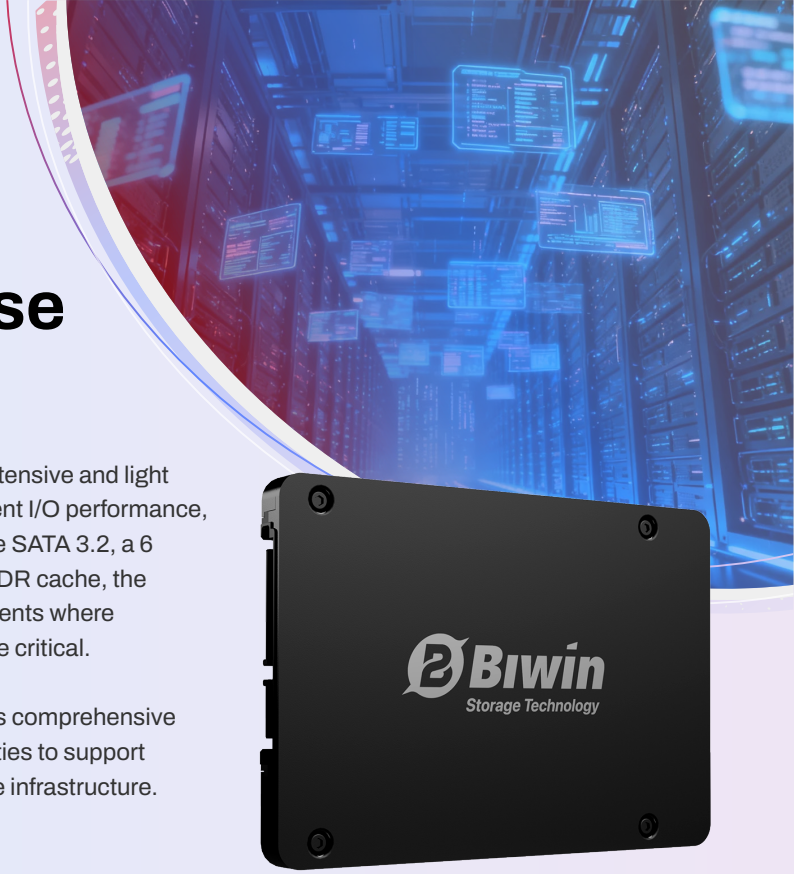
Biwin
Storage Technology

BIWIN SS831 Enterprise 2.5" SATA SSD



The BIWIN SS831 Enterprise 2.5" SATA SSD is designed for read-intensive and light mixed-write workloads, combining 1 DWPD endurance with consistent I/O performance, enterprise-grade reliability, and power-efficient operation. Built on the SATA 3.2, a 6 Gbps interface with enterprise-grade eTLC NAND and an external DDR cache, the SS831 provides a balanced storage solution for enterprise environments where predictable performance, data integrity, and operational efficiency are critical.

Available in capacities from 480 GB to 3.84 TB, the SS831 integrates comprehensive data protection, security, power management, and firmware capabilities to support reliable operation and efficient deployment across enterprise storage infrastructure.

Key Features

Optimized for Read-Intensive Workloads

With enterprise-grade eTLC NAND and rated for 1 DWPD, the BIWIN SS831 SATA SSD is optimized for read-intensive and light mixed-write workloads. Capacities from 480 GB to 3.84 TB provide deployment flexibility, while its balanced endurance profile helps enterprises align storage resources with workload requirements and cost targets.

Consistent and Reliable I/O Performance

The SS831 maintains consistent and responsive I/O under sustained enterprise workloads. It delivers sequential read/write speeds of up to 560/520 MB/s and 4K random read/write performance of up to 92K/38K IOPS. With 95% IOPS consistency and read/write latency as low as 120 µs/40 µs, the SS831 provides predictable storage performance for latency-sensitive and mixed read/write applications.

Enterprise-Grade Endurance and Data Protection

The SS831 integrates Power Loss Protection (PLP), End-to-End Data Protection (E2E), and Internal RAID to help maintain data integrity across the storage path and protect against unexpected power loss. An MTBF of more than 2.5 million hours and an UBER of ≤1 sector per 10^{17} bits read further reinforce the reliability required for continuous enterprise operation.

Power-Efficient with Enterprise Security

With maximum read power consumption of 2.1 W and maximum write power consumption of 2.7 W across capacities, the SS831 is designed for power-efficient operation in large-scale deployments. Power Management and Thermal Throttling help administer power and thermal behavior, while Hot Swap and firmware updates without reset support enterprise maintenance. Secure Boot, secure firmware updates, ATA Security, OCP, OVP, and an anti-sulfuration design provide additional firmware and hardware protection.

Technologies

SATA Revision 3.2	ATA/ATAPI Command Set-4	S.M.A.R.T.	Sanitize	Internal RAID	Power Loss Protection
Hot Swap	End-to-End Data Path Protection	Intelligent Thermal Throttling	Intelligent Power Management	OCP	OVP
Anti-Sulfuration	Secure Boot	Firmware Update	Firmware Update Without Reset	ATA Security	

Applications

Enterprise Data Centers · Cloud Computing · AI & Machine Learning · Edge Computing · Cloud Infrastructure · IoT

Specifications

Model Name	SS831			
Interface	SATA 3.2			
Form Factor	2.5"			
Flash Type	eTLC			
Capacity	480 GB	960 GB	1.92 TB	3.84 TB
Sequential Read (Up to)	560 MB/s	560 MB/s	560 MB/s	560 MB/s
Sequential Write (Up to)	310 MB/s	520 MB/s	520 MB/s	520 MB/s
4K Random Read (Up to)	87K IOPS	88K IOPS	91K IOPS	92K IOPS
4K Random Write (Up to)	17K IOPS	28K IOPS	32K IOPS	38K IOPS
4K Random Read / Write Latency	120µs / 40 µs			
4K Random Read / Write IOPS Consistency	95%			
Read Power Consumption (Max.)	1.9 W	1.9 W	2.0 W	2.1 W
Write Power Consumption (Max.)	2.5 W	2.5 W	2.6 W	2.7 W
Operating Temperature	0°C to +70°C			
Storage Temperature	-40°C to +85°C			
UBER	≤ 1 Sector Per10^17 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 Options
480 GB	CSE25DE8AK0-480G	Firmware-Based, Hardware-Based
960 GB	CSE25DE8AK0-960G	Firmware-Based, Hardware-Based
1.92 TB	CSE25DE8AK0-1T9	Firmware-Based, Hardware-Based
3.84 TB	CSE25DE8AK0-3T8	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.biwintechnology.com for warranty details in your region.
8. For more information, please contact sales@biwintech.com.

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