TDQ203
Industrial PCIe SSD

BIWIN Storage Technology

BIWIN TDQ203 SSD is designed for industrial-grade applications requiring high-speed and long-term stable performance. Built with a high-performance controller, 3D TLC NAND flash, and optimized firmware algorithms, the TDQ203 ensures sustained reliability in demanding industrial environments. It is suitable for a wide range of use cases across lightweight industrial PCs, Internet of Things (IoT) devices, edge computing, AI training platforms, and more.

With the PCIe Gen4x4 interface and NVMe 2.0 protocol, the TDQ203 adopts the M.2 2280 form factor and delivers sequential read speeds up to 7400 MB/s and write speeds up to 6700 MB/s. Paired with proprietary firmware, the drive maximizes bandwidth efficiency and accelerates data throughput for intensive workloads.

Available in capacities from 512 GB to 4 TB, the TDQ203 supports a wide operating temperature range of -20°C to +70°C, providing dependable performance across diverse deployment environments and ensuring efficient data transmission under sustained industrial operation.
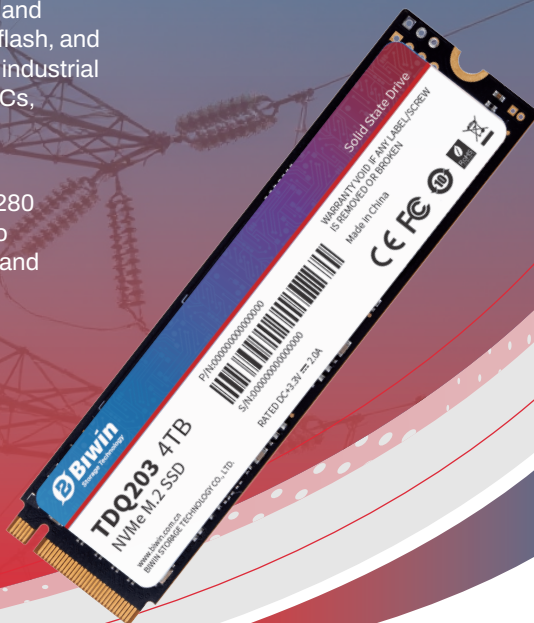
Key Features

PCIe Gen4x4 for High-Speed Performance

The BIWIN TDQ203 uses a high-performance PCIe Gen4x4 interface and NVMe 2.0, delivering sequential read speeds up to 7400 MB/s and write speeds up to 6700 MB/s. With random read/write performance reaching 1000K/1000K IOPS, the TDQ203 offers remarkable speed and data throughput for intensive workloads.

Reliable Operation across Wide-Temperature Range

Engineered with high-quality components, the TDQ203 is built to withstand extreme temperatures. Its reliable design guarantees more stable performance and added durability, making the TDP203 an ideal solution for lightweight industrial control applications.

Capacities Up to 4 TB to Meet Various Storage Needs

With capacities up to 4 TB, BIWIN TDQ203 caters to high-capacity storage needs. Paired with BIWIN's proprietary firmware, the drive provides an optimal solution for large file storage and data-intensive applications, ensuring high performance and long-term reliability.

Advanced Technologies for Enhanced Durability

The TDQ203 incorporates advanced features such as dynamic and static wear leveling, TRIM command, and garbage collection which significantly extend the drive's lifespan. The drive supports S.M.A.R.T., providing real-time monitoring of the SSD's health status to ensure proactive management and reliability.

Optimized Hardware Design for Quality Control

The TDQ203 utilizes a 30μ" gold finger, improving its resistance to oxidation and extending its durability. The drive also benefits from a four-corner dispensing process that enhances structural stability and shock resistance, ensuring reliable performance in industrial applications.

Technologies

RAID	S.M.A.R.T.	Online Firmware Update	End-to-End Data Protection	Garbage Collection
TRIM Command	Bad Block Management	Intelligent Thermal Throttling	30μ" Gold Finger	Dynamic/Static Wear Leveling

Applications

Edge Computing	Industrial Automation	Financial and Retail Device	AIoT (Artificial Intelligence of Things)	Smart Healthcare

Specifications

Model Name	TDQ203
Interface	PCIe Gen4x4, NVMe 2.0
Form Factor	M.2 2280
Flash Type	3D TLC
Firmware	TLC Direct Write
DRAM Cache	DRAM-less
Capacity	512 GB / 1 TB / 2 TB / 4 TB
Sequential Read (Up to)	7400 MB/s
Sequential Write (Up to)	6700 MB/s
Random Read 4K (Up to)	1000K IOPS
Random Write 4K (Up to)	1000K IOPS
Read Power Consumption (Max.)	5.6 W
Write Power Consumption (Max.)	4.6 W
Idle Power Consumption (Max.)	3 mW
Dimensions	22.00 x 80.00 x 2.65 mm
Operating Temperature	-20 °C to +70°C
Storage Temperature	-40 °C to +85°C
Endurance	3000 P/E cycles
MTBF	>2,000,000 hours
Certifications	CE, FCC, RoHS, HF, REACH
TBW (Up to)	3000 TBW
Warranty	3-Year Limited

Order Information

Capacity	Part Number	Power Loss Protection
512 GB	TD80I51223S2T	Firmware-Based
1 TB	TD80I1T223S2T	Firmware-Based
2 TB	TD80I2T223S2T	Firmware-Based
4 TB	TD80I4T223S2T	Firmware-Based

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