

TGC209 microSD Card



The BIWIN TGC209 microSD Card is designed for applications that require high reliability, exceptional read/write performance, and large capacity. It offers excellent speed and capacity, supporting full HD recording standards including 4K and 8K, ideal for high-speed cameras and surveillance systems. The BIWIN TGC209 is compatible with major devices and features industrial-grade 3D TLC NAND flash. With Application Performance Class 1 (A1), it provides stable, high-speed data writing without frame drops and with video recording times of up to 90,000 hours.

Rated Class 10 (C10), UHS Speed Class 3 (U3) and Video Speed Class 30 (V30), the BIWIN TGC209 delivers read speeds up to 158 MB/s and write speeds up to 123 MB/s. It supports 4K RAW video capture and high-speed burst shooting. Available in capacities from 32 GB to 256 GB, the BIWIN TGC209 offers high performance with a wide operating temperature range of -40°C to +85°C. It is waterproof, dustproof, shockproof, magnet-proof, and X-ray-resistant for more reliability even in demanding environments.



Key Features

Stable Wide-Temperature Operation

The BIWIN TGC209 is engineered with high-quality components to ensure long-term, more stable performance. With an operating temperature range of -40°C to +85°C, it performs reliably in industrial-grade environments, even handling the challenges of complex and extreme conditions.

Proprietary Firmware for High-Speed Performance

The BIWIN TGC209 is equipped with BIWIN's own firmware, which has earned multiple core technology patents. With A1 Performance Class, the card delivers exceptional speed for demanding applications. Rated C10, U3, and V30. It offers more stable multi-channel video writing, reducing frame drops even during high-speed data operations.

Industrial-Grade Testing for Exceptional Quality

The BIWIN TGC209 uses BIWIN's proprietary industrial testing benchmarks, undergoing rigorous validation through high and low-temperature performance tests, functional tests, and industrial platform compatibility tests. These comprehensive evaluations ensure that the product meets industrial-grade quality standards, delivering more reliable performance even in demanding environments.

Multiple Advanced Technologies Ensuring Data Integrity

The BIWIN TGC209 is equipped with a comprehensive set of advanced technologies, including dynamic and static wear leveling, bad block management, TRIM command, S.M.A.R.T. health monitoring, firmware-based power loss protection, and ECC (Error Correction Code). These technologies ensure the highest level of data integrity and reliability, providing robust protection for high-performance applications, including high-speed cameras and surveillance systems.

Technologies

S.M.A.R.T.

LDPC Codes

Power Loss Protection

Underfill

Sidfill

A1 Class

Bad Block Management

ECC

Dynamic/Static Wear Leveling

Applications



Industrial Automation



Security Surveillance



Intelligent Transportation



Smart Healthcare



Automotive Electronics



Network Communications



Smart Energy

Specifications

Model Name	TGC209
Interface	UHS-I
Flash Type	3D TLC
Firmware	TLC Direct Write
Capacity	32 GB / 64 GB / 128 GB / 256 GB
Sequential Read (Up to)	158 MB/s
Sequential Write (Up to)	123 MB/s
Random Read 4K (Up to)	8.9 MB/s
Random Write 4K (Up to)	3.4 MB/s
Operation Current (Max.)	183 mA
Operation Current (Average)	169 mA
Standby Current (Max.)	159 μ A
Dimensions	15.00 x 11.00 x 0.70 mm
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
Endurance	3000 P/E cycles
MTBF	>3,000,000 hours
Certifications	CE, FCC, RoHS, REACH, UKCA, RCM, VCCI
TBW (Up to)	512 TBW
Warranty	5-Year Limited

Order Information

Capacity	Part Number	Power Loss Protection
32 GB	TGUDM03211S0A	Firmware-Based
64 GB	TGUDM06411S0A	Firmware-Based
128 GB	TGUDM12811S0A	Firmware-Based
256 GB	TDUDM25611S1A	Firmware-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 life cycle. 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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