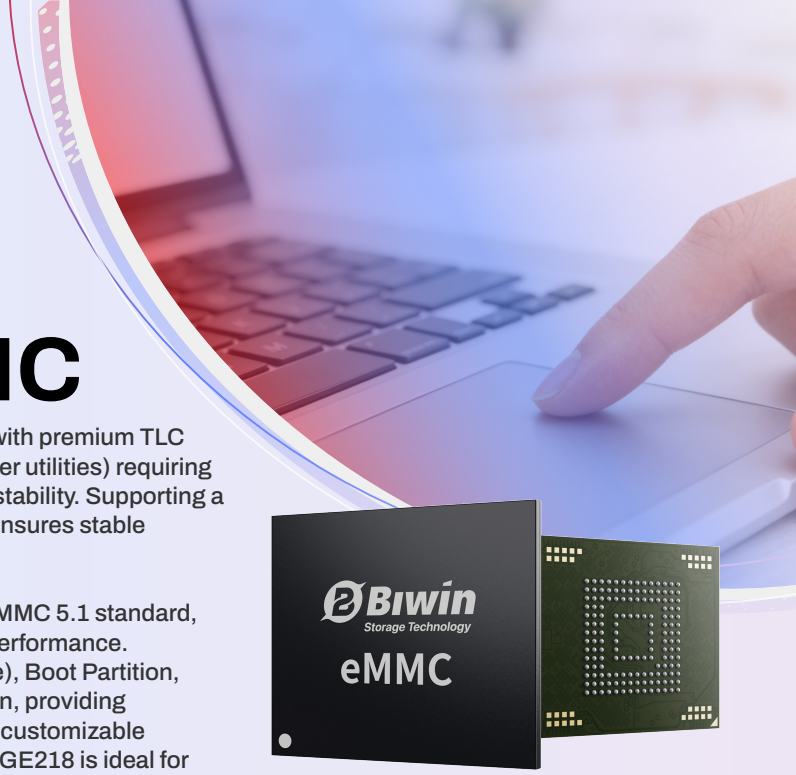
Biwin
Storage Technology

TGE218 Automotive eMMC



BIWIN TGE218 eMMC 5.1 integrates a robust industrial controller with premium TLC NAND for mission-critical applications (for example, power and other utilities) requiring exceptional reliability, high read/write performance, and long-term stability. Supporting a wide industrial temperature range of -40°C to +85°C, the TGE218 ensures stable operation even under extreme environmental conditions.

The TGE218 uses an FBGA 153 ball package and adheres to the eMMC 5.1 standard, supporting HS400 high-speed mode to deliver optimal read/write performance. It includes essential features such as FFU (Field Firmware Upgrade), Boot Partition, RPMB (Replay Protected Memory Block), and idle data acceleration, providing comprehensive functionality for enterprise-level applications. With customizable options, extended product lifecycle and reliable supply chain, the TGE218 is ideal for industrial deployments requiring extended availability and robust support.

The TGE218 offers optional support for pSLC (pseudo-SLC) mode, enabled via BIWIN's proprietary firmware algorithm. The pSLC makes MLC function like SLC, significantly increasing write endurance, reliability, and performance.

Key Features

Optimized Throughput, Low Latency, and Extended Endurance

The BIWIN TGE218 supports optional pSLC (pseudo-SLC) mode, which significantly enhances read/write speeds, minimizes latency, and improves overall data reliability and endurance.

Wide-Temperature Stability for Extreme Conditions

Engineered for harsh industrial environments, the TGE218 operates reliably across a wide temperature range of -40°C to +85°C. It maintains stable functionality under extreme heat or cold, for continuous device operation in demanding field conditions.

Industrial-Grade Reliability for Mission-Critical Systems

Built with a robust industrial-grade controller and qualified MLC NAND flash, the TGE218 is designed to handle high-load operations. It guarantees long-term data integrity and stable throughput, even in complex environments such as the electric power sector.

Flexible Customization for Application-Specific Needs

To meet diverse deployment requirements, the TGE218 offers customizable configurations for industrial use cases such as electric power equipment, video surveillance, and other embedded applications.

Technologies

- Bad Block Management
- Power Loss Protection
- Global Wear Leveling
- RPMB Partition (Replay Protected Memory Block)
- FFU (Fan Filter Unit)
- ECC (Error Correction Code)

Applications

- Industrial Automation
- Industrial Robot
- Security Surveillance
- Intelligent Transportation
- Power Equipment
- IoT
- Financial and Retail Device
- Smart Healthcare

Specifications

Model Name	TGE218
eMMC Standard	eMMC5.1
Flash Type	pSLC / MLC
Capacity	8 GB / 16 GB
Sequential Read (Up to)	250 MB/s
Sequential Write (Up to)	150 MB/s
Operation Current (Max.)	85 mA
Standby Current (Max.)	100 μA
Dimensions	11.50 x 13.00 x 1.10 mm
Packaging	FBGA 153 Ball
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	RoHS, REACH
Warranty	3-Year Limited

Order Information

Capacity	Part Number	Power Loss Protection
8 GB	BWCMAQB11T08GI	Firmware-Based
16 GB	BWCMAQB11T16GI	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 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.

Global Headquarters:
BIWIN STORAGE TECHNOLOGY CO., LTD.
Building #4, South Zone #2, Zhongguan Honghualing Industrial Zone,
Nanshan District, Shenzhen, Guangdong, China
+86 (755) 2671-5701
sales@biwintech.com

Biwin Storage Technology

www.biwintechnology.com