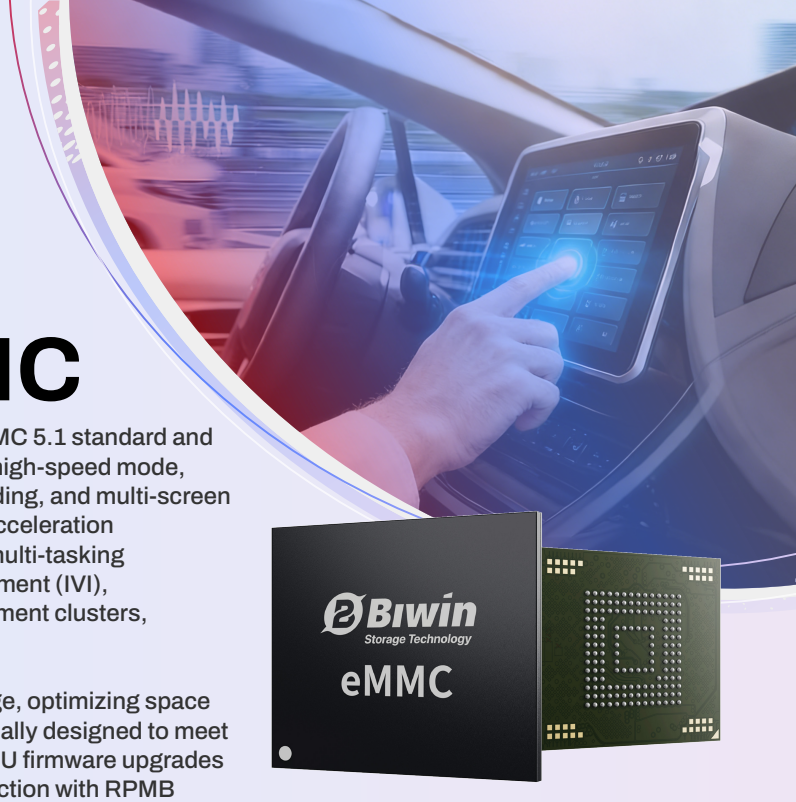
Biwin
Storage Technology

# TAE318 Automotive eMMC




BIWIN TAE318 eMMC 5.1 complies with the automotive-grade eMMC 5.1 standard and uses MLC to improve endurance and reliability. It supports HS400 high-speed mode, ensuring efficient operation for in-vehicle system booting, map loading, and multi-screen interaction with instant responsiveness. Combined with idle data acceleration technology, the TAE318 offers high-speed response in high-load, multi-tasking scenarios, including intelligent cockpit systems, in-vehicle infotainment (IVI), central control units, navigation, autonomous driving, digital instrument clusters, T-BOX modules, and domain controllers.

The BIWIN TAE318 eMMC 5.1 is housed in a compact BGA package, optimizing space efficiency. With capacities ranging from 8 GB to 32 GB, it is specifically designed to meet the storage requirements of various vehicle models. Supporting FFU firmware upgrades and an independent Boot Partition, the TAE318 ensures data protection with RPMB (Replay Protected Memory Block).

Designed to withstand the harsh conditions of vehicle environments, the TAE318 supports an operating temperature range of -40°C to +105°C to AEC-Q100 Grade 2 standards and is AEC-Q100 certified. This makes it the ideal solution for high-performance, low-power, high-bandwidth, and compact automotive applications.

## Key Features

### High Performance with AEC-Q100 Compliance

The BIWIN TAE318 eMMC 5.1 strictly adheres to the eMMC 5.1 standard and is AEC-Q100 qualified. It supports HS400 high-speed mode, delivering faster data transfer rates to meet the demands of complex environments, including smart cockpit features and autonomous driving.

### Large Capacity, Versatile Storage

The BIWIN TAE318 eMMC 5.1 offers a range of capacities from 8 GB to 32 GB, catering to the storage requirements of different vehicles. Using MLC technology, it delivers stable, reliable storage while offering cost efficiency. It is designed to meet the extensive data storage needs of modern automotive systems, including high-definition maps, video recording, and user data.

### Data Integrity and Protection

The BIWIN TAE318 eMMC 5.1 features a Boot Partition to ensure reliable and secure system booting. It incorporates intelligent error correction algorithms (ECC) and dynamic wear leveling technology, automatically detecting and correcting data errors to protect user privacy. The idle data acceleration feature further optimizes system performance, enhancing response speed.

### High Durability, Stable Operation

Compliant with AEC-Q100 automotive standards, the BIWIN TAE318 eMMC 5.1 undergoes over 20 rigorous tests, including vibration, shock, and temperature/humidity cycles. With a wide operating temperature range of -40°C to +105°C, it ensures reliable performance in extreme automotive environments. The TAE318 is the ideal solution for automotive applications requiring high durability and stability, even in harsh conditions.

## Technologies

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

## Applications

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|---|---|---|---|
| Smart Cockpit | IVI (In-Vehicle Infotainment) | Central Control | Navigation |
| Autonomous Driving | Instrument Cluster | T-BOX | Domain Controller |

## Specifications

| | |
|---|---|
| **Model Name** | TAE318 |
| **eMMC Standard** | eMMC 5.1 |
| **Flash Type** | MLC |
| **Capacity** | 8 GB / 16 GB / 32 GB |
| **Sequential Read (Up to)** | 300 MB/s |
| **Sequential Write (Up to)** | 150 MB/s |
| **Operation Current (Max.)** | 120 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 + 105°C |
| **Storage Temperature** | -40°C to + 105°C |
| **Endurance** | 3000 P/E cycles |
| **MTBF** | >3,000,000 hours |
| **Certifications** | RoHS, REACH, AEC-Q100 |
| **Warranty** | 5-Year |

# Order Information

| Capacity | Part Number | Power Loss Protection |
|---|---|---|
| **8 GB** | BWEFMA008GN9RE | Firmware-Based |
| **16 GB** | BWEFMA016GN9RE | Firmware-Based |
| **32 GB** | BWEFMA032GN2RE | 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.

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