swissbit®

Industrial and Automotive Grade 3D NAND e.MMC Series EM-30

Robust, reliable and cost-efficient memory solution for embedded applications

Made in Germany

Key Benefits

- Designed and tested for robustness, reliability and integrity for both device and data
- Latest 3D NAND technology for reduced TCO over an extended product life cycle
- Boot area partitioning, RPMB, general purpose partitioning and user data area
- Extended cross temperature stability range from -40°C to 105 °C
- Compliant to AEC-Q100 Grade 2, IATF 16949 and ISO 27001
- Advanced firmware features to keep data and device safe in critical conditions

EM-30 / EM-36 e.MMC

Swissbit has extended its range of miniaturized storage solutions with the launch of its EM-30 series with an e.MMC 5.1 standard interface. The BGA device uses industrial grade 3D-NAND and is available in capacities from 4 to 256 GB. With the new series, Swissbit has responded to the increasing demands of embedded systems for ultra-small, vibration-resistant designs with escalating memory capacity requirements.

In addition to durability and a temperature range of -40 up to +105 °C, the EM-30 also offers additional features over and above the e.MMC standard. These include a remote secure firmware update option and an extended lifetime expectation, making the EM-30 product series ideal for a wide range of applications.

EM-30 Product Series

Predictable service life, data refresh and reliability

EM-30 devices offer the option to access detailed information on device health such as write cycles and internal resources via standard access to the e.MMC registers without the need for special access methods or drivers.

In addition, similar to large SSDs, the EM-30 firmware supports automatic background data refresh of read-only areas that for instance occur with boot media. This feature coupled with strong error correction, ensures that data availability is always highly reliable, even if the data has not been accessed under prolonged periods of exposure to high temperatures. A further special feature is the increased protection against data corruption in the event of sudden power loss.

Flexible configuration

The EM-30 devices can be partitioned into several TLC and pSLC segments for boot area, RPMB, general purpose partitions and user data area. If the maximum possible endurance of the NAND is required, Swissbit offers an EM-36 variant preconfigured to 100% pSLC. These types are also now available in capacities between 5 and 80 GB.

Key Applications

- Embedded systems and PLCs
- Automotive: Infotainment, ADAS, instrument cluster, video recording
- EV charging
- HMI/POS/POI terminals
- Factory/industrial automation
- Routers and switches
- IoT applications
- Medical systems

	EM-30	EM-36
Form factor	153b BGA, 0.5mm pitch, 11.5 x 13mm 100b BGA, 1.0mm pitch, 14.0 x 18mm	
Interface	JEDEC e.MMC 5.1	
Flash Type	3D TLC	3D pSLC / enhanced mode
Density Range	4 GB to 256 GB	5 GB to 80 GB
Operating temperature	Industrial: -40°C to +85°C Automotive: -40°C to +105°C	
Performance	Sequential Read/Write up to 320/240 MB/s Random Read/Write: up to 46,000/29,000 IOPS	
Endurance	Up to 2,652 TBW (enhanced mode)	
Operating Voltage	V_{CC} 2.7-3.6V V_{CCQ} 1.7-1.95V or 2.7-3.6V	

About Swissbit

Swissbit AG is the leading European manufacturer of storage, security and embedded IoT solutions for demanding applications. As trusted partner Swissbit empowers the digital and connected world by reliably storing and protecting data in industrial, security and IoT applications.

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