



Long-Term Support
World Class Quality



eMMC Memory

Managed NAND Solutions for the
Automotive, Industrial, & Medical markets



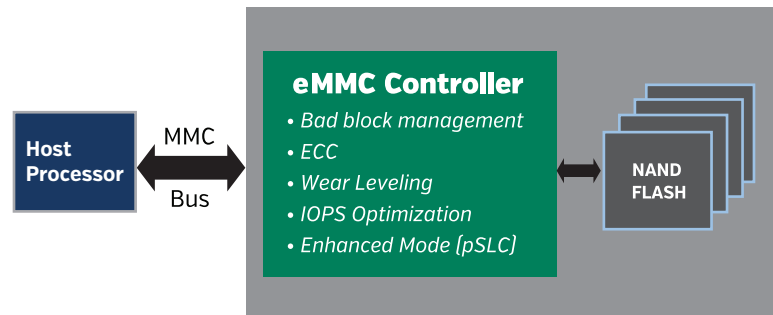
Key Features:

- eMMC 5.0 interface
- Density: 4GB up to 64GB
- Error Free memory access
- Security features
- Simplify system design
- Reduce Time-To-Market
- Improved system performance
- Enhanced Mode (pSLC)
- Cost-effective and higher capacity storage using MLC NAND
- High endurance
- Automotive Grade Qualified
- Multiple packaging options
- Long Term Support

Product Description:

ISSI eMMC product family provides the ideal embedded storage solution for the Automotive, Industrial and Medical applications, which require high performance, endurance across a wide range of operating temperatures, and long-term support. These products are available in Industrial as well as Automotive grade in both 100-ball BGA and 153-ball BGA.

The eMMC integrates MLC NAND Flash memory and an intelligent e.MMC controller inside one JEDEC standard package, providing a standard interface to the host. The controller directly manages the NAND flash, implementing functions like bad block management, error handling (ECC), static and dynamic wear-leveling, IOPS optimization and read sensing. ISSI eMMC devices support Enhanced Mode where the device can be configured as pseudo-SLC (pSLC) for higher read/write performance, endurance and reliability.



Applications:

- Infotainment
- Telematics
- Satellite Radio
- Cluster/Center Stack Displays
- Body Electronics
- Safety Systems (ADAS)
- Industrial Machine
- Medical Imaging
- Test instruments
- Switches & Routers
- Set-top boxes
- Gaming boxes

ISSI eMMC Part Numbers and Specifications:

| Density | Part Number | Package | Temp. Grade | MMC | Seq Rd/Wr [MB/s]* | Ran Rd/Wr [IOPS]* |
|---------|-----------------|---------|-------------|----------|-------------------|-------------------|
| 4GB | IS21ES04G-JQLI | 100 BGA | I-Temp | 5.0 | 269 / 15 | 5340 / 1190 |
| | IS22ES04G-JQLA1 | | Auto Grade | | | |
| | IS21ES04G-JCLI | 153 BGA | I-Temp | | | |
| | IS22ES04G-JCLA1 | | Auto Grade | | | |
| 8GB | IS21ES08G-JQLI | 100 BGA | I-Temp | | 256 / 28 | 5293 / 1563 |
| | IS22ES08G-JQLA1 | | Auto Grade | | | |
| | IS21ES08G-JCLI | 153 BGA | I-Temp | | | |
| | IS22ES08G-JCLA1 | | Auto Grade | | | |
| 16GB | IS21ES16G-JQLI | 100 BGA | I-Temp | | 258 / 49 | 5128 / 1371 |
| | IS22ES16G-JQLA1 | | Auto Grade | | | |
| | IS21ES16G-JCLI | 153 BGA | I-Temp | | | |
| | IS22ES16G-JCLA1 | | Auto Grade | | | |
| 32GB | IS21ES32G-JQLI | 100 BGA | I-Temp | 258 / 49 | 5193 / 1615 | |
| | IS22ES32G-JQLA1 | | Auto Grade | | | |
| | IS21ES32G-JCLI | 153 BGA | I-Temp | | | |
| | IS22ES32G-JCLA1 | | Auto Grade | | | |
| 64GB | IS21ES64G-JQLI | 100 BGA | I-Temp | 256 / 95 | 5117 / 1793 | |
| | IS22ES64G-JQLA1 | | Auto Grade | | | |
| | IS21ES64G-JCLI | 153 BGA | I-Temp | | | |
| | IS22ES64G-JCLA1 | | Auto Grade | | | |

*performance with eMMC_Write_Reliability ON

Feature Summary:

| eMMC Features | eMMC 5.0 |
|---|------------|
| Interface Speed / Max Bandwidth | 400MB/s |
| Clock Frequency | 200MHz |
| Data Rate, Mode | HS400, DDR |
| Bus Width | x4, x8 |
| H/W Reset | Yes |
| Partitioning | Yes |
| Enhanced Mode (pseudo-SLC / SLC + MLC) | Yes |
| Alternative Boot | Yes |
| Security Features [Trim, RPMB, Secure Erase, Secure Trim] | Yes |
| High Priority Interrupt | Yes |
| Back Ground Operation | Yes |
| Packed Command | Yes |
| Cache Handling | Yes |
| Discard | Yes |
| Dynamic Capacity | Yes |
| Sanitize | Yes |
| Power OFF Notification | Yes |
| Smart Reporting | Yes |
| Device Health Report | Yes |
| Field Firmware Update (FFU) | Yes |