



eMMC NANDrive™

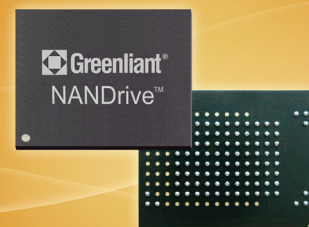
85VM Series

Product Brief

Product Description

The eMMC NANDrive™ family builds on Greenliant's popular portfolio of small form-factor, fully integrated embedded solid state drives (SSDs). These products integrate Greenliant's advanced eMMC controller with one or more NAND flash die in a multi-chip package. eMMC NANDrive is available with 2-bits-per-cell (MLC) or 1-bit-per-cell (SLC) NAND to meet various customer requirements for lifespan, endurance and performance. It is offered in a 100-ball package, with 1mm ball pitch for increased long-term reliability.

A built-in microcontroller and flash file management firmware replace the need for host-side Flash File System (FFS). eMMC NANDrive is compatible with many Freescale, NVIDIA, TI and other popular chipsets. It operates at full industrial temperatures between -40 and +85 degrees Celsius, giving customers data storage that can withstand the most severe conditions. Available in various capacities, these space-saving products are designed with enhanced data integrity and security features.



www.NANDrive.com

Key Features

Industry Standard eMMC Interface

- Supports JEDEC / eMMC 4.4 Standard, JESD84-A44 compliant
- Backward compatible with eMMC 4.3

Wide Range of eMMC Products

- Available with 2-bits-per-cell (MLC) and 1-bit-per-cell (SLC) NAND to meet various endurance (program-erase cycles) and data retention requirements

Multitasking Technology Increases Performance

- Sequential Read Performance up to 60 MB/sec
- Sequential Write Performance up to 35 MB/sec
- Clock Speed up to 52 MHz
- Supports Dual Data Rate (DDR) Mode

Power Management

- Supports eMMC auto-sleep mode to reduce power consumption

Robust Pre-programmed Firmware

- Implements advanced wear leveling to maximize product lifespan
- Configurable algorithms support global and group wear leveling
- Embedded flash file system enables seamless capacity migrations with no change to host software

Built-in ECC

- Uses advanced hardware engine to correct bit errors

Bad Block Management

- Replaces bad blocks with spare blocks in the NAND flash when uncorrected errors occur

Data Security

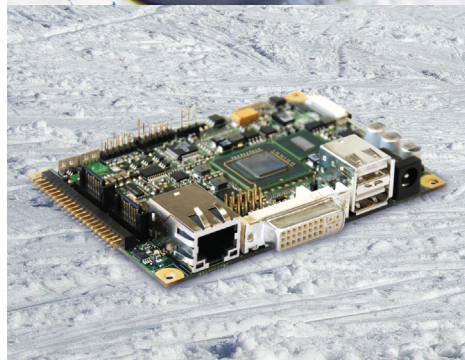
- Permanent, temporary and power-on write protection options for entire device or specific device partitions
- Secure erase and TRIM commands protect sensitive data
- Dedicated pin (WP#) provides write protection for entire device

Multiple Densities with Same Pin-out

- 512 MB, 1 GB, 4 GB, 8 GB, 16 GB, 32 GB, 64 GB, 128 GB
- 100-ball LBGA / BGA package
- 1mm ball spacing increases long-term reliability

Full I-temp Capability

- Industrial operation: -40°C to +85°C



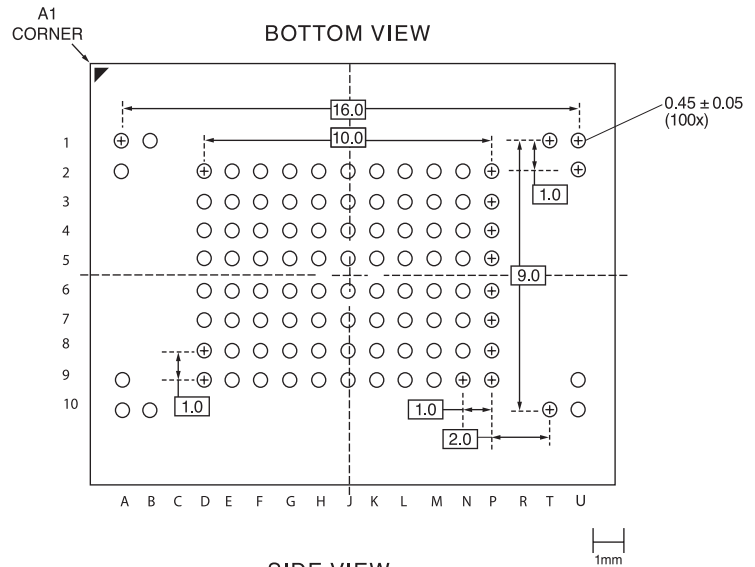
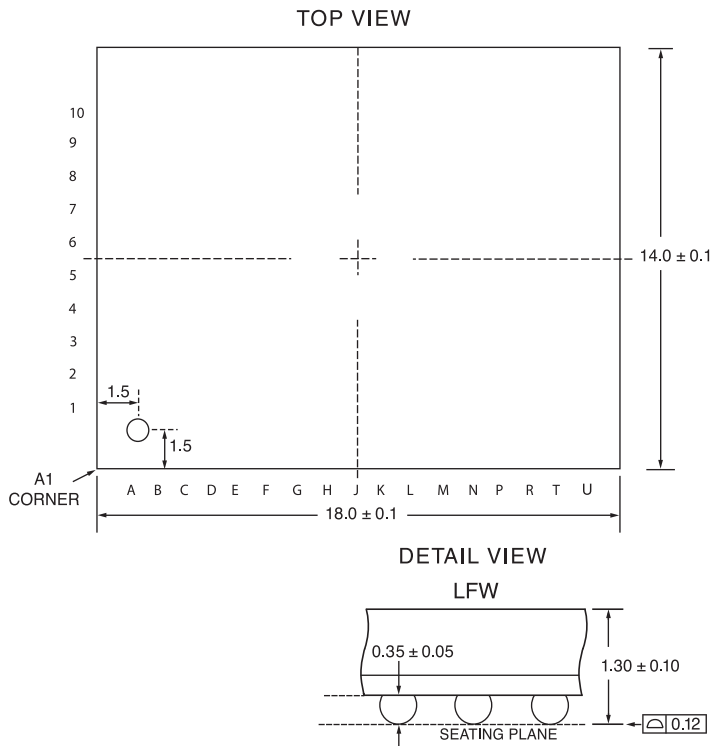
Applications

- In-vehicle infotainment
- GPS and telematics
- Data recorder
- Video conferencing
- Tablet PC / Smartbook / Netbook
- Multi-function printer
- Point-of-Sale terminal
- VoIP system / PBX
- Wireless base station
- Router / Gateway / Switch
- Set-top box / Net-top box
- Industrial PC / Single-board computer
- Ultrasound and medical imaging
- Industrial automation & control
- Test & measurement instrumentation
- Video surveillance / ID terminal

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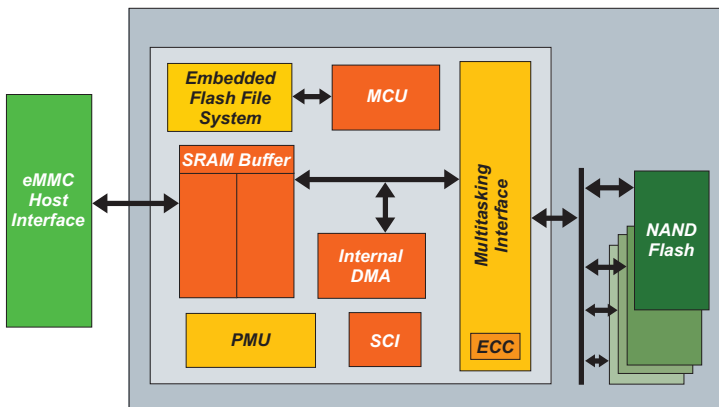
eMMC NANDrive Package Diagrams

100-ball BGA package
14mm x 18mm
Pb-free (RoHS compliant)



- Note: 1. All linear dimensions are in millimeters.
2. Untoleranced dimensions are nominal target values.
3. Coplanarity: 0.12 mm.
4. Ball opening size is 0.38 mm (± 0.05 mm), SMD type

eMMC NANDrive Block Diagram



Product Lineup

85 Series eMMC NANDrive		
Capacity	NAND Configuration	Package Type
512 MB	1 bit per cell (SLC)	14mm x 18mm x 1.4mm LBGA
1 GB		
4 GB	2 bits per cell (MLC)	14mm x 18mm x 1.4mm LBGA
8 GB		
16 GB		
32 GB		
64 GB*		14mm x 18mm x 1.Xmm BGA
128 GB*		

* under development



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For more information please contact your local Greenliant Sales Representative.
See the "Sales" page of www.Greenliant.com for complete listings.

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These specifications are subject to change without notice. 03/2013