



NAND Controllers

55 Series

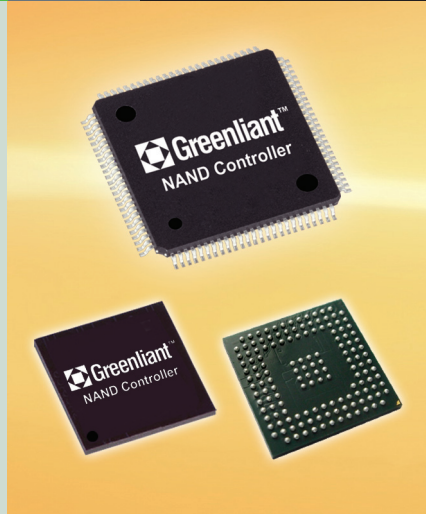
Product Brief

Product Description

Derived from more than 20 years of NAND flash memory controller design expertise, the 55 Series NAND controllers are the key components for building high-performance data storage systems based on NAND flash technology. They are also the foundation for the 85 Series NANDrive™ embedded solid state drive (SSD) family, offering long product life, high reliability and low power consumption. Greenliant NAND flash memory controllers use advanced NAND management technology, which increases performance, improves data integrity and optimizes product endurance.

The 55 Series NAND controllers come with a factory pre-programmed embedded Flash File System (FFS) that allows the devices to automatically recognize any attached NAND devices at power up. Through dual-channel and multitasking features, these controllers achieve high-performance Read and Write operations. They can support up to 16 NAND flash devices directly. For high capacity SSDs, Greenliant NAND controllers can support up to 64 NAND flash devices with external decoding logic and drivers.

Embedded reconfigurable firmware enables easy field updates at any stage of the product life cycle. Further flexibility is achieved by the advanced Error Checking and Correction (ECC) engine that ensures support of current and future NAND flash ECC requirements. With these advanced features, Greenliant NAND controllers help system designers manage the complexities of using NAND flash memory.



Key Features

NAND Defect Management

- Advanced wear leveling
- Bad-block management
- Corrects up to 24 random bit errors per 1-KByte sector

Industry-Standard Interfaces

- ATA-4, ATA-6 and CFA 3.0
- Up to PIO-6, MWDMA-4 and UDMA-6

Flexibility

- Supports SLC and MLC NAND technology
- Supports direct access of up to 16 NAND flash devices for each MIB (Media Interface Block)
- Supports up to 64 NAND flash devices with external decoder (ATA interface only)
- Dual 8-bit channel and dual plane
- 2 KByte, 4 KByte and 8 KByte program page size

Low Power Consumption

- Supports 3.3V and 5V operation

High Performance

- Up to 109 MByte/sec sustained Write
- Up to 109 MByte/sec sustained Read

Small Package

- 12mm x 12mm x 1.17mm, 145-ball TFBGA
- 14mm x 14mm x 1.20mm, 100-pin TQFP



Applications

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

Greenliant Systems
 3970 Freedom Circle, Suite 100
 Santa Clara, CA 95054 USA
 Tel. 1-408-200-8000
 Fax 1-408-200-8099
www.Greenliant.com

55 Series: NAND Flash Controller (ATA / IDE Interface)*

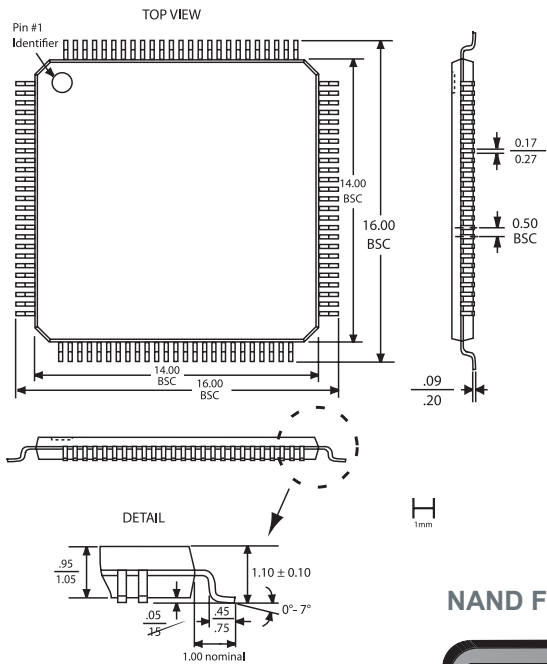
Device	Voltage		NAND Type	ECC Capability	Supported ATA Modes			Sustained Write/Read Performance		NAND Programming Page			NAND Chip Selection	Package Type
	Supply	I/O			PIO	MWDMA	UDMA	Write	Read	1-ch	2-ch	4-ch		
GLS55LD040M	3.3V	3.3V	SLC or MLC	24 bits/1-Kbyte	6	4	6	Up to 109 MByte/sec	Up to 109 MByte/sec	2KB/4KB/8KB	2KB/4KB/8KB	2KB/4KB/8KB	16	TFBGA-145
GLS55VD020	3.3V	3.3V or 5V	SLC or MLC	8 bits/512-Byte	6	4	4	Up to 30 MByte/sec	Up to 30 MByte/sec	2KB/4KB	2KB	-	8	TQFP-100

55 Series: NAND Flash Controller (CompactFlash Interface)*

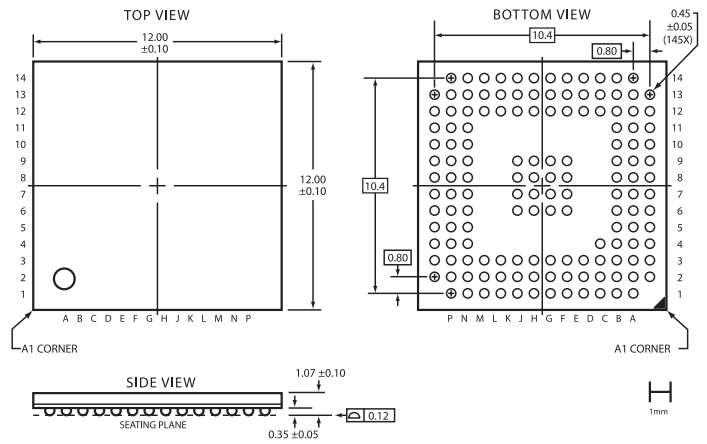
Device	Voltage		NAND Type	ECC Capability	Supported ATA Modes			Sustained Write/Read Performance		NAND Programming Page			NAND Chip Selection	Package Type
	Supply	I/O			PIO	MWDMA	UDMA	Write	Read	1-ch	2-ch	4-ch		
GLS55LC200	3.3V	3.3V or 5V	SLC or MLC	8 bits/512-Byte	6	4	4	Up to 30 MByte/sec	Up to 30 MByte/sec	2 KB/4 KB	2 KB	-	8	TQFP-100

* Minimum volume requirements apply. Contact your local Greenliant sales representative for more information.

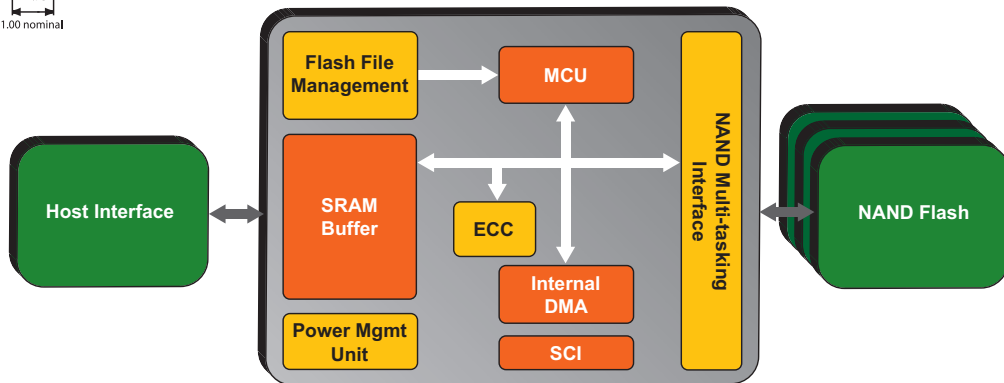
TQFP Package Diagram



TFBGA Package Diagram



NAND Flash Controller Block Diagram



Greenliant Systems
 3970 Freedom Circle, Suite 100
 Santa Clara, CA 95054 USA
 Tel. 1-408-200-8000
 Fax 1-408-200-8099

www.Greenliant.com

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. 12/2013