Greenliant®
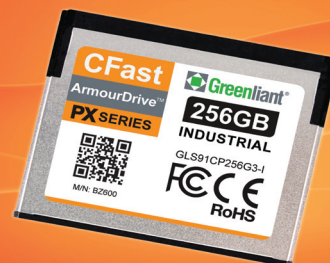
Product Description

The CFast ArmourDrive™ family consists of high-reliability, industrial flash memory cards in a wide selection of capacities and endurance specifications. To better address customer needs, the 91 Series is available with 1-bit-per-cell (SLC), 2-bit-per-cell (MLC) or 3-bit-per-cell (TLC) 3D NAND configurations. ArmourDrive memory cards designed with Greenliant's EnduroSLC™ Technology can reach ultra-high write endurance of 250K+ program/erase (P/E) cycles. Operating at extreme temperatures, CFast ArmourDrive is ideal for applications requiring removable data storage able to withstand the most demanding environments.

The 91 Series implements advanced NAND flash management technology to preserve data integrity and extend memory card lifespan. Built in the standard CFast form factor and backed by Greenliant's technical support, CFast ArmourDrive gives industrial, medical, gaming, video and imaging customers added flexibility when selecting reliable, hot-swappable solid state storage for space-constrained, embedded systems.

Key Features

Form Factor and Interface
- 36.40mm x 42.85mm x 3.60mm
- Supports SATA 6Gb/s, 3Gb/s and 1.5Gb/s
- Compliant with SATA Revision 3.2

High Performance
- Sequential Read / Write performance up to 550MB/s / 490MB/s
- Native Command Queuing up to 32 commands

Energy Efficient
- 3.3V low power supply
- Standby Mode less than 325mW
- Sleep Mode less than 180mW
- DevSleep Mode support

Data Security
- Secure Erase for quick data wipe/factory reset

Pre-programmed Firmware
- Field-upgradeable firmware to add new features and enhance device performance
- Configurable algorithms optimize data retention based on the usage model
- Embedded FFS enables seamless capacity upgrade with no change to host software

Advanced Flash Management
- Dynamic and static wear leveling algorithms maximize product lifespan
- Supports TRIM commands to remove invalid data which is no longer in use

Bad Block Management
- Replaces bad blocks with spare blocks in the NAND flash to prevent uncorrectable errors

Built-in ECC
- Uses advanced bit error detection and correction optimized for 3D NAND

SSD Lifespan Monitoring
- Supports SMART command-based alerts indicating the remaining useful product life

Power Interrupt Data Protection
- Helps prevent data loss during unexpected power failure events

Wide Range of Capacities
- SLC (EX Series): 8 GB - 128 GB
- MLC (MX Series): 16 GB - 64 GB
- TLC (PX Series): 64 GB - 256 GB

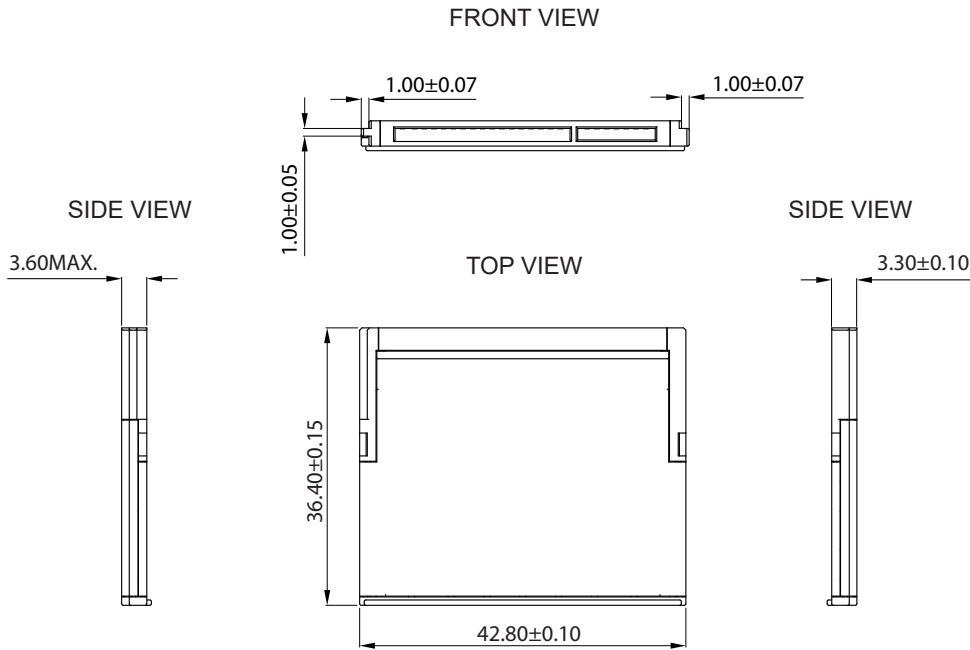### Full I-temp Capability
- Industrial operation: -40°C to +85°C

Applications

- *Transportation*
- *Vending machine*
- *Gaming*
- *Industrial PC*
- *Navigation*
- *Infotainment*
- *Digital signage*
- *Point-of-sales*
- *Security / Surveillance*
- *Industrial automation & control*
- *Data logger*
- *Healthcare*
- *Test & measurement*
- *Video conferencing*
- *Set-top box*
- *Professional video / photo*

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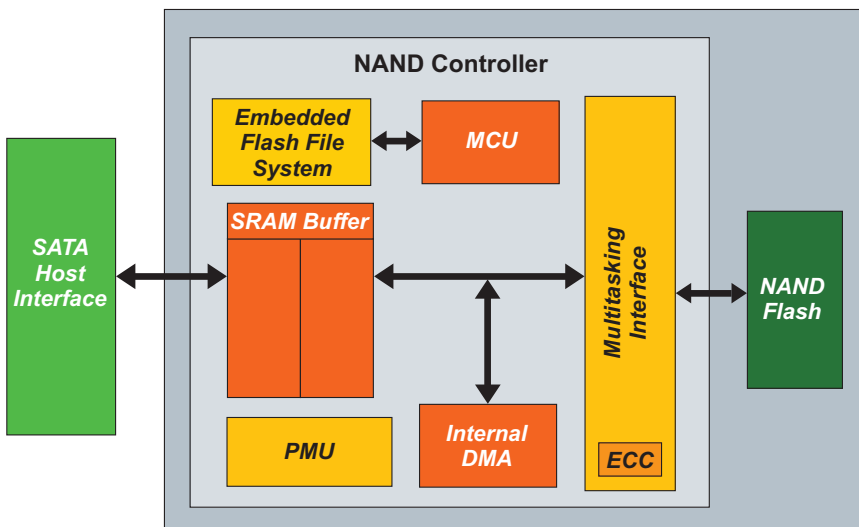Fax: 1-408-200-8099

www.Greenliant.com

CFast ArmourDrive Board Diagrams

36.40mm x 42.80mm x 3.60mm
Pb-free (RoHS compliant)

FRONT VIEW

1.00±0.07   1.00±0.07

1.00±0.05

SIDE VIEW

3.60MAX.

TOP VIEW

36.40±0.15

42.80±0.10

SIDE VIEW

3.30±0.10

Note: All dimensions are in millimeters, unless otherwise specified.

CFast ArmourDrive Block Diagram

NAND Controller

SATA Host Interface

Embedded Flash File System ↔ MCU

SRAM Buffer

Multitasking Interface ↔ NAND Flash

PMU

Internal DMA

ECC

Product Lineup

91 Series CFast ArmourDrive		
Product Series / Capacity	NAND Configuration / Endurance	Temperature Range
EX 8 GB - 128 GB	1 bit per cell (3D SLC) / 50K, 100K, 250K P/E cycles*	
MX 16 GB - 64 GB	2 bits per cell (3D MLC) / 5K P/E cycles	Industrial -40°C to +85°C
PX 64 GB - 256 GB	3 bits per cell (3D TLC) / 3K P/E cycles	

*Designed with Greenliant's advanced EnduroSLC Technology 250K, or higher, endurance offered up to 64GB

EnduroSLC™

EX and MX Series planned for production in 3Q19

twitter.com/Greenliant
linkedin.com/company/Greenliant-Systems
facebook.com/Greenliant

ArmourDrive FAQs: www.greenliant.com/armourdrive-faqs

For more information, contact your Greenliant representative: www.greenliant.com/sales

Greenliant®