



# SATA M.2 ArmourDrive™

87 Series

Product Brief

## Product Description

The SATA M.2 ArmourDrive™ family consists of high-reliability, industrial solid state drives (SSDs) in a wide selection of capacities and endurance specifications. To better address customer needs, the 87 Series is available with 1-bit-per-cell (SLC), 2-bit-per-cell (MLC) or 3-bit-per-cell (TLC) 3D NAND configurations. ArmourDrive SSDs designed with Greenliant's EnduroSLC™ Technology can reach ultra-high write endurance of 250K+ program/erase (P/E) cycles. Operating at extreme temperatures, SATA M.2 ArmourDrive is ideal for applications requiring removable data storage able to withstand the most demanding environments.

The 87 Series implements advanced NAND flash management technology to preserve data integrity and extend SSD lifespan. Built in the standard 2242 and 2280 form factors and backed by Greenliant's technical support, SATA M.2 ArmourDrive gives industrial, computing, security, video and networking customers added flexibility when selecting reliable solid state storage for space-constrained, embedded systems.



## Key Features

### Industrial SATA M.2 SSDs

- 2242 (22mm x 42mm) and 2280 (22mm x 80mm), B+M key
- 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 / 500MB/s
- Native Command Queuing up to 32 commands
- DRAM for better sustained performance (select PX Series SSDs)

### Energy Efficient

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

### 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
- Replaces bad blocks with spare blocks in the NAND flash to prevent uncorrectable errors

### High Reliability

- MTBF more than 2,000,000 hours

### 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 power failures

### Data Security

- Secure Erase for quick data wipe/factory reset
- AES-256 / TCG OPAL hardware encryption (select PX Series SSDs)

### Wide Range of Capacities

- SLC (EX Series): 8 GB - 256 GB
- MLC (MX Series): 16 GB - 64 GB
- TLC (PX Series): 32 GB - 2 TB



## Applications

- Industrial automation & control
- Base station equipment
- Digital signage
- Industrial PC
- Thin client
- Transportation system
- Test & measurement instrumentation
- Network server
- Gateway / Switch
- Banking terminal / ATM
- Security equipment
- Surveillance
- Data recorder
- Video conferencing
- Medical equipment
- Multi-function printer

### Greenliant Systems

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## SATA M.2 ArmourDrive Board Diagrams

Double Sided (DS): 22mm x 42mm x 3.18mm / 22mm x 80mm x 3.18mm (32 GB - 256 GB)  
 Double Sided (DS): 22mm x 42mm x 3.58mm / 22mm x 80mm x 3.58mm (512 GB - 2 TB)  
 Single Sided (SS): 22mm x 42mm x 2.38mm / 22mm x 80mm x 2.38mm (8 GB - 256 GB)  
 Pb-free (RoHS compliant)



L = 42.00mm for M.2 2242; 80.00mm for M.2 2280  
 Note: All dimensions are in millimeters, unless otherwise specified.

## SATA M.2 ArmourDrive Block Diagram

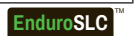


\*DRAM available on select PX Series products

## Product Lineup

87 Series SATA M.2 ArmourDrive			
Product Series / Capacity	Form Factor	NAND Configuration / Endurance	Temperature Range
<b>EX</b> 8 GB - 128 GB	2242 SS	1 bit per cell (3D SLC) /	Industrial -40°C to +85°C
<b>EX</b> 8 GB - 256 GB	2280 SS	50K, 100K, 250K P/E cycles*	
<b>MX</b> 16 GB - 64 GB	2242 SS	2 bits per cell (3D MLC) / 5K P/E cycles	Industrial -40°C to +85°C
<b>PX PX</b> 32 GB - 512 GB	2242 DS	3 bits per cell (3D TLC) / 3K P/E cycles	
<b>PX PX</b> 32 GB - 1 TB	2280 DS		Commercial 0°C to +70°C
<b>PX</b> 128 GB - 2 TB (with DRAM)	2280 DS	Industrial -40°C to +85°C	

\*Designed with Greenliant's advanced EnduroSLC Technology 250K, or higher, endurance offered up to 128GB  
 EX and MX Series planned for production in 3Q19



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**ArmourDrive FAQs:** [www.greenliant.com/armourdrive-faqs](http://www.greenliant.com/armourdrive-faqs)

For more information, contact your Greenliant representative: [www.greenliant.com/sales](http://www.greenliant.com/sales)



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