Product Description

The NVMe M.2 ArmourDrive™ family consists of industrial solid state drives (SSDs) with a high-performance PCIe interface. Supporting the NVMe protocol, the 88 Series provides low latency and fast read/write speeds. To maximize power savings, NVMe M.2 ArmourDrive SSDs support Autonomous Power State Transition (APST) and Active State Power Management (ASPM).* Operating at extreme temperatures, NVMe M.2 ArmourDrive is ideal for high transactional and business critical applications requiring removable data storage able to withstand demanding environments.

The 88 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, NVMe M.2 ArmourDrive gives customers high-speed, high-reliability solid state storage for space-constrained, embedded and enterprise systems. NVMe M.2 2280 ArmourDrive also offers AES-256/TCG OPAL compliant hardware encryption for the highest levels of user data protection.

Key Features

**Industrial NVMe M.2 SSDs**
- 2242 (22mm x 42mm) PCIe Gen3x2 and 2280 (22mm x 80mm) PCIe Gen3x4
- Compliant with NVMe 1.3 and PCIe 3.1

**High Performance**
- Sequential Read / Write performance up to 3,400MB/s / 2,100MB/s
- IO queuing support
- DRAM for better sustained performance*

**Energy Efficient**
- 3.3V low power supply
- APST to implement power savings*
- ASPM to reduce power consumption*
- L1.2 Mode less than 2mW*
*select models

**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

**Data Security**
- Secure Erase for quick data wipe/factory reset
- AES-256 / TCG OPAL hardware encryption (M.2 2280 SSDs)

**Wide Range of Capacities**
- 2242 products: 64 GB - 512 GB
- 2280 products: 128 GB - 2 TB

**Industrial and Commercial Temperatures**
- Industrial operation: -40°C to +85°C
- Commercial operation: 0°C to +70°C

**Applications**
- Cloud computing
- Broadcasting
- Gaming
- Industrial PC
- Endpoint / Thin client
- Enterprise storage
- Industrial automation & control
- Network server
- Gateway / Switch
- Blade server
- Network-attached storage
- Surveillance
- Data recorder
- Video conferencing
- Digital signage
- Base station

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NVMe M.2 ArmourDrive Physical Dimensions

22mm x 80mm x 3.58mm (max), M key
Double Sided (DS)
Pb-free (RoHS compliant)

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

NVMe M.2 ArmourDrive Block Diagram

PCle M.2 Host Interface

Embedded Flash File System

SRAM Buffer

PMU

Internal DMA

ECC

Multitasking Interface

NAND Flash

MCU

NAND Controller

DRAM Cache

*DRAM available on select NVMe M.2 2280 products

Product Lineup

88 Series NVMe M.2 ArmourDrive

<table>
<thead>
<tr>
<th>Product Series / Capacity</th>
<th>Form Factor</th>
<th>NAND Configuration / Endurance</th>
<th>Temperature Range</th>
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</thead>
<tbody>
<tr>
<td>PX</td>
<td>PX</td>
<td>64 GB - 512 GB</td>
<td>Industiral -40°C to +85°C</td>
</tr>
<tr>
<td>PX</td>
<td>PX</td>
<td>240 GB - 1.92 TB (with DRAM)</td>
<td>3 bits per cell (3D TLC) / 3K P/E cycles</td>
</tr>
<tr>
<td>PX</td>
<td>PX</td>
<td>128 GB - 2 TB</td>
<td>Commercial* 0°C to +70°C</td>
</tr>
</tbody>
</table>

*Commercial-temp M.2 2280 PX Series planned release in 2020

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

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

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