



M.2 2280 PCIe SSD



(Photo for reference only.)

Version 1.5
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SM2P32A8

256GB, 512GB, 1TB

Proprietary and Confidential

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General Description

To replace the SATA SSD, look no further than the SM2P32A8 PCIe Gen3x4 M.2 2280 SSD. Supporting NVMe 1.3, equipped with 3D NAND Flash TLC, and coming with up to 1TB capacity, the SM2P32A8 is a great upgrade choice.

Featuring HMB (Host Memory Buffer) and SLC Caching, the SM2P32A8 accelerates read/write speeds up to 3400/2100MB/s and delivers random performance of up to 100K/190K IOPS.

Whether booting, gaming or transferring large files, the SM2P32A8 accomplish them quickly and effectively.

The SM2P32A8 utilizes LDPC (Low-Density Parity-Check) error correcting code technology to detect and fix a wider range of data errors for more reliable data transfers and a longer product lifespan. Also, it is suitable for desktop and notebook PCs. As there's no need for cumbersome installation, you can immediately experience the high speed and smoothness of a PCIe SSD.

Key Features

- **Capacity:**
 - 256GB, 512GB, 1TB
- **NAND Flash:** 3D NAND
- **Class 35 SSD**
- **Form Factor:** M.2 2280 PCIe
- **Host Interface:**
 - PCIe Gen 3 (8Gb/s) x 4 Lane
 - Compliant with NVMe 1.3 register interface and command set
 - Compliant with PCIe Express 3.1
- **Flash Management:**
 - LDPC ECC Engine
 - Wear leveling
 - Bad block Management
 - Garbage collection
 - TRIM Command
 - SLC Cache Technology
- **Security:**
 - AES 256 supported
- **Data Integrity:**
 - Thermal throttling
 - S.M.A.R.T. monitor
- **Performance:**
 - Sequential Read: Up to 3400 MB/s
 - Sequential Write: Up to 2100 MB/s
 - Random 4K Read: Up to 100K IOPS
 - Random 4K Write: Up to 190K IOPS
- **Power Consumption:**
 - L0 : 0.55w
 - L1 : 0.04w
 - L1.2 : 0.0013w
 - SR/SW : 1.61w/2.63w
 - RR/RW: 1.59w/1.77w
- **Temperature:**
 - Standard: 0°C ~ 70°C
 - Non-operation: -40°C ~ 85°C
- **Reliability:**
 - Shock: 1500G/0.5ms
 - Vibration 20G Peak, 10~2000Hz
 - MTBF: 2,000,000 hours
 - Power on/off cycles: 50,000
 - Uncorrectable Bit Error Rate(UBER):
10⁻¹⁵
- **Endurance:**
 - TBW: Up to 960TB

Product Specifications

Interface and Configurations

- Compliant with PCI Express M.2 Specification Revision
- Compliant with NVMe 1.3 register interface and command set.
- Compliant with PCIe Express 3.1

Capacity

User Addressable Sectors

Model	SM2P32A8		
Unformatted Capacity	256GB	512GB	1TB
Total User Addressable Sectors (LBA Mode)	500,118,192	1,000,215,216	2,000,409,264

Total useable capacity may be less (due to formatting, flash management, and other functions).
1GB=1,000,000,000 bytes; 1sector = 512bytes.

Performance

ATTO Performance

Table Read/Write Performance (ATTO)

	256GB	512GB	1TB	Unit
Sequential Read	3100	3300	3300	MB/s
Sequential Write	1500	1900	2000	MB/s

-Seq. Read & Write speed test by ATTO
-The system conditions and test environment may affect test result

CDM Performance

Read/Write Performance (CDM)

	256GB	512GB	1TB	Unit
Sequential Q32 Read	3100	3400	3400	MB/s
Sequential Q32 Write	1500	1900	2100	MB/s
4K-QD64 Read	380	370	390	MB/s
4K-QD64 Write	540	530	540	MB/s

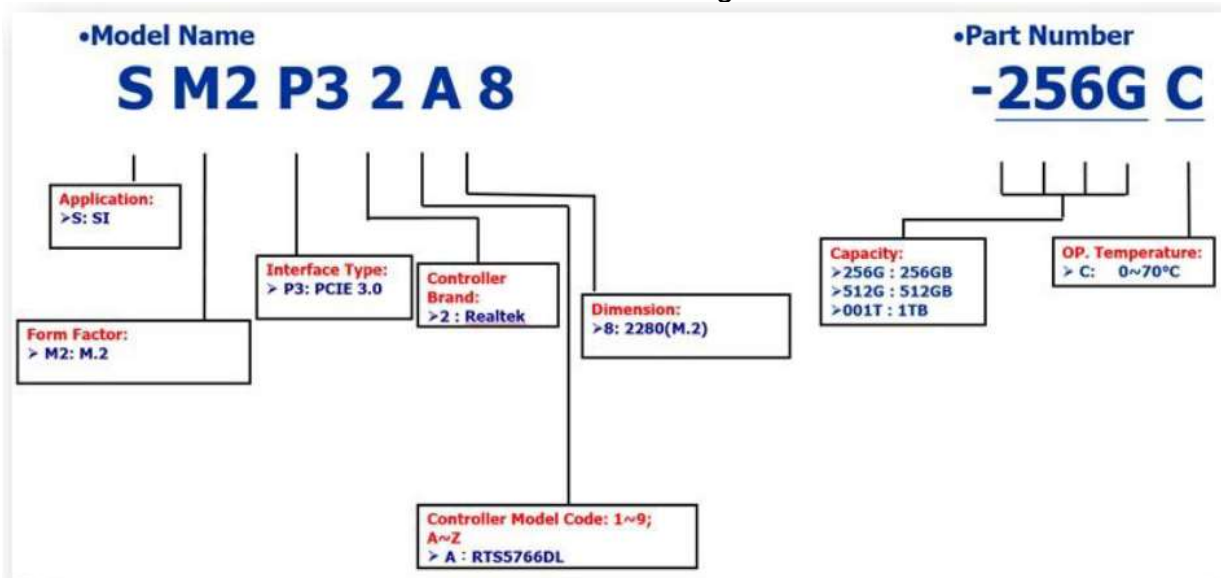
-Seq. Read & Write speed test by Crystal Disk Mark 6.0.2

Product Line up

Product Line up

Model Name	Capacity	Type	Remark
SM2P32A8-256GC	256GB	M.2 PCIe	0°C~70°C
SM2P32A8-512GC	512GB	M.2 PCIe	
SM2P32A8-001TC	1TB	M.2 PCIe	

Model Name Coding Rule



Label Pictures

