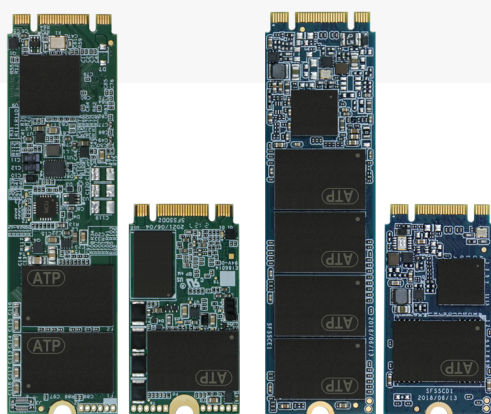




# SATA III M.2 2280 / 2242 SSD

The Global Leader in Specialized Storage and Memory Solutions



## Key Features

- MCU-based Power Loss Protection Design with Level 4 (data-in-flight) protection\*
- Self-Encrypting Drive (SED) with AES 256-bit encryption, TCG Opal 2.0\*\*
- LDPC & RAID Data Recovery
- End-to-End Data Path Protection
- TRIM / Global Wear Leveling support

\* May vary by product and project support

\*\* Customization available on a project basis

ATP's Industrial M.2 Serial ATA (SATA) solid state modules are available in types 2242 and 2280. These lean modules provide higher performance and capacity while minimizing the overall module footprint, making them perfect choices for small systems installed in limited spaces.

Available in both double- and single-sided configurations, M.2 SATA SSDs are packed with high densities and can withstand severe temperature shifts common in industrial environments, thanks to wide operating temperature ratings of  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$ .

ATP M.2 modules are suitable for networking and thin storage systems, point-of-sale systems (POS), and industrial computer applications. Select M.2 SATA SSDs feature a microcontroller unit (MCU) design for enhanced power loss protection (PLP) in various temperatures, power glitches and charge states, thus safeguarding data and storage device for higher levels of integrity and reliability.

# Specifications

| SATA III M.2 2280 SSD                      |                                      |           |                  |               |          |             |                |
|--|--------------------------------------|-----------|------------------|---------------|----------|-------------|----------------|
| Product Line                               | Premium                              |           | Superior         |               |          |             | Value          |
|  | A750Pi                               | A700Pi    | A650Si           | A650Sc        | A600Si   | A600Sc      | A600Vc         |
| Interface                                  | SATA III 6 Gb/s                      |           |                  |               |          |             |                |
| Flash Type                                 | 3D TLC (pSLC mode)                   |           | 3D TLC           |               |          |             | 3D TLC         |
| Form Factor                                | 2280 D2-B-M                          |           |                  |               |          |             |                |
| Operating Temperature (Tcase) <sup>1</sup> | -40°C to 85°C                        |           | 0°C to 70°C      | -40°C to 85°C |          | 0°C to 70°C |                |
| Power Loss Protection Options              | Hardware + Firmware Based            |           |                  |               |          |             | Firmware Based |
| Optional SED Features                      | AES 256-bit Encryption, TCG Opal 2.0 |           |                  |               |          |             | -              |
| Capacity                                   | 80 GB to 320 GB                      |           | 120 GB to 960 GB |               |          |             | 32 GB to 1 TB  |
| Performance                                |                                      |           |                  |               |          |             |                |
| Sequential Read (MB/s) up to               | 560                                  |           | 560              |               | 560      |             | 560            |
| Sequential Write (MB/s) up to              | 520                                  |           | 480              |               | 510      |             | 525            |
| Random Reads IOPS up to                    | 90,000                               |           | 100,000          |               | 100,000  |             | 72,000         |
| Random Writes IOPS up to                   | 88,000                               |           | 90,000           |               | 88,000   |             | 85,000         |
| Endurance and Reliability                  |                                      |           |                  |               |          |             |                |
| Endurance (TBW) <sup>2</sup> up to         | 19,200 TB                            | 12,800 TB | 4,655 TB         |               | 2,792 TB |             | 1,530 TB       |
| Reliability MTBF @ 25°C                    | >2,000,000 hours                     |           |                  |               |          |             |                |
| Others                                     |                                      |           |                  |               |          |             |                |
| Dimensions (mm)                            | 80 x 22 x 3.35                       |           |                  |               |          |             | 80 x 22 x 2.2  |
| Certifications                             | CE, FCC, BSMI, UKCA, RoHS, REACH     |           |                  |               |          |             |                |
| Warranty                                   | 5 years                              |           |                  | 2 years       |          |             |                |

| SATA III M.2 2242 SSD                      |                            |                                      |          |               |                  |               |             |                |
|--|----------------------------|--------------------------------------|----------|---------------|------------------|---------------|-------------|----------------|
| Product Line                               | Premium                    |                                      |          | Superior      |                  |               |             | Value          |
|  | A800Pi                     | A750Pi                               | A700Pi   | A650Si        | A650Sc           | A600Si        | A600Sc      | A600Vc         |
| Interface                                  | SATA III 6 Gb/s            |                                      |          |               |                  |               |             |                |
| Flash Type                                 | SLC                        | 3D TLC (pSLC mode)                   |          |               | 3D TLC           |               |             | 3D TLC         |
| Form Factor                                | 2242 D2-B-M                |                                      |          |               |                  |               |             |                |
| Operating Temperature (Tcase) <sup>1</sup> | -40°C to 85°C              |                                      |          | -40°C to 85°C | 0°C to 70°C      | -40°C to 85°C | 0°C to 70°C | 0°C to 70°C    |
| Power Loss Protection Options              | Hardware + Firmware Based  |                                      |          |               |                  |               |             | Firmware Based |
| Optional SED Features                      | -                          | AES 256-bit Encryption, TCG Opal 2.0 |          |               |                  |               |             | -              |
| Capacity                                   | 8 GB to 64 GB              | 40 GB to 160 GB                      |          |               | 120 GB to 480 GB |               |             | 32 GB to 1 TB  |
| Performance                                |                            |                                      |          |               |                  |               |             |                |
| Sequential Read (MB/s) up to               | 530                        | 560                                  |          | 560           |                  | 560           |             | 560            |
| Sequential Write (MB/s) up to              | 400                        | 520                                  |          | 480           |                  | 510           |             | 525            |
| Random Reads IOPS up to                    | 76,000                     | 68,000                               |          | 100,000       |                  | 100,000       |             | 70,500         |
| Random Writes IOPS up to                   | 76,000                     | 88,000                               |          | 90,000        |                  | 88,000        |             | 81,000         |
| Endurance and Reliability                  |                            |                                      |          |               |                  |               |             |                |
| Endurance (TBW) <sup>2</sup> up to         | 5,333 TB                   | 9,600 TB                             | 6,400 TB | 2,327 TB      |                  |               | 1,396 TB    | 1,530 TB       |
| Reliability MTBF @ 25°C                    | >2,000,000 hours           |                                      |          |               |                  |               |             |                |
| Others                                     |                            |                                      |          |               |                  |               |             |                |
| Dimensions (mm)                            | 42 x 22 x 3.5              |                                      |          |               |                  |               |             |                |
| Certifications                             | CE, FCC, UKCA, RoHS, REACH | CE, FCC, BSMI, UKCA, RoHS, REACH     |          |               |                  |               |             |                |
| Warranty                                   | 5 years                    |                                      |          |               | 2 years          |               |             |                |

| Technologies & Add-On Services | S.M.A.R.T. | Firmware-based Power Loss Protection | Hardware-based Power Loss Protection | AutoRefresh | Advanced Wear Leveling | Dynamic Data Refresh | End-to-End Data Path Protection | Auto-Read Calibration | Secure Erase | TCG Opal 2.0 | Industrial Temperature | Anti-Sulfur Resistors | Conformal Coating |
|--------------------------------|------------|--------------------------------------|--------------------------------------|-------------|------------------------|----------------------|---------------------------------|-----------------------|--------------|--------------|------------------------|-----------------------|-------------------|
| Premium                        | ○          | ○                                    | ○                                    | ○           | ○                      | ○                    | ○                               | ○                     | ▲            | ○            | ○                      | ▲                     | ▲                 |
| Superior                       | ○          | ○                                    | ○                                    | ○           | ○                      | ○                    | ○                               | ○                     | ▲            | ○            | ▲                      | ▲                     | ▲                 |
| Value                          | ○          | ○                                    | —                                    | ○           | ○                      | ○                    | —                               | ○                     | —            | —            | —                      | —                     | —                 |

<sup>1</sup> Case Temperature, the composite temperature as indicated by SMART temperature attributes.

<sup>2</sup> Under highest Sequential write value. May vary by density, configuration and applications.

▲: Customization option available on a project basis.

## Hot Items Ordering Information

| Product Line      | Capacity <sub>1</sub> | Operating Temperature <sub>2</sub> | Power Loss Protection <sub>3</sub> | SED <sub>4</sub> | P/N              |
|-------------------|-----------------------|------------------------------------|------------------------------------|------------------|------------------|
| A650Si (M.2 2280) | 120GB                 | -40°C to 85°C                      | Hardware + Firmware Based          | -                | AF120GSTIC-7BCIP |
| A650Si (M.2 2280) | 240GB                 | -40°C to 85°C                      | Hardware + Firmware Based          | -                | AF240GSTIC-7BCIP |
| A650Si (M.2 2280) | 480GB                 | -40°C to 85°C                      | Hardware + Firmware Based          | -                | AF480GSTIC-7BCIP |
| A650Si (M.2 2280) | 960GB                 | -40°C to 85°C                      | Hardware + Firmware Based          | -                | AF960GSTIC-7BCIP |
| A650Sc (M.2 2280) | 120GB                 | 0°C to 70°C                        | Hardware + Firmware Based          | -                | AF120GSTIC-7BCXP |
| A650Sc (M.2 2280) | 240GB                 | 0°C to 70°C                        | Hardware + Firmware Based          | -                | AF240GSTIC-7BCXP |
| A650Sc (M.2 2280) | 480GB                 | 0°C to 70°C                        | Hardware + Firmware Based          | -                | AF480GSTIC-7BCXP |
| A650Sc (M.2 2280) | 960GB                 | 0°C to 70°C                        | Hardware + Firmware Based          | -                | AF960GSTIC-7BCXP |
| A600Vc (M.2 2280) | 32GB                  | 0°C to 70°C                        | Firmware Based                     | -                | AF32GSTIC-2BAXX  |
| A600Vc (M.2 2280) | 64GB                  | 0°C to 70°C                        | Firmware Based                     | -                | AF64GSTIC-2BAXX  |
| A600Vc (M.2 2280) | 128GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF128GSTIC-2BAXX |
| A600Vc (M.2 2280) | 256GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF256GSTIC-2BAXX |
| A600Vc (M.2 2280) | 512GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF512GSTIC-2BAXX |
| A600Vc (M.2 2280) | 128GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF128GSTIC-2BBXX |
| A600Vc (M.2 2280) | 256GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF256GSTIC-2BBXX |
| A600Vc (M.2 2280) | 512GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF512GSTIC-2BBXX |
| A600Vc (M.2 2280) | 1TB                   | 0°C to 70°C                        | Firmware Based                     | -                | AF1TSTIC-2BBXX   |
| A600Vc (M.2 2242) | 128GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF128GSTIA-2BBXX |
| A600Vc (M.2 2242) | 256GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF256GSTIA-2BBXX |
| A600Vc (M.2 2242) | 512GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF512GSTIA-2BBXX |
| A600Vc (M.2 2242) | 1TB                   | 0°C to 70°C                        | Firmware Based                     | -                | AF1TSTIA-2BBXX   |

1 Amount of actual usable storage that can be utilized.

2 Refers to Case Temperature range during device operation, as indicated by SMART temperature attributes.

3 Hardware + Firmware-based power loss protection design with Level 4 (data-in-flight) protection; Firmware-based power loss protection design with Level 1 (data-at-rest) protection.

4 Allows data written to and read from the SSD to be constantly and automatically encrypted and decrypted. Conforms to TCG Opal 2.0 and uses AES 256-bit HW encryption.

Product spec and its related information are subject to change without advance notice.  
Please refer to [www.atpinc.com](http://www.atpinc.com) for latest information

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