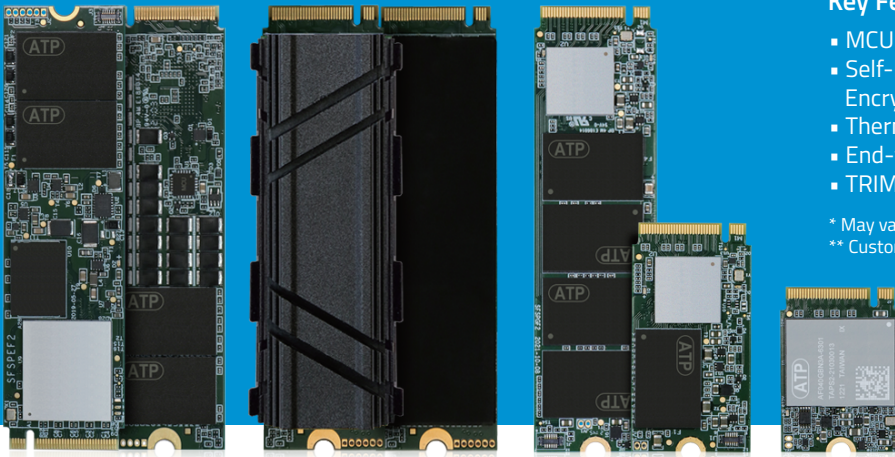




# M.2 NVMe

Targeted Product Portfolio, Engineered Specifically for Your Mission Critical Applications



## Key Features

- MCU-based Power Loss Protection Design \*
- Self-Encrypting Drive (SED) with AES 256-bit Encryption, TCG OPAL 2.0\*
- Thermal Management Solutions\*\*
- End-to-End Data protection
- TRIM function support

\* May vary by product and project support

\*\* Customization available on a project basis.

M.2 solid state modules based on the NVMe™ protocol leverage the blazing-fast PCI Express® (PCIe®) interface to deliver dramatic improvements in speed and performance to fulfill the increasing demand for responsiveness in enterprise storage systems and to support the growing data-hungry needs of today's enterprise. Delivering 32 Gb/s bandwidth on a PCIe 3.1 x4 slot (8 Gb/s per lane), ATP NVMe SSDs outperform Serial ATA 6 Gb/s SSDs with 4-6X faster access, over 3X lower latency, and higher Input/Output per Second (IOPS). ATP NVMe SSDs with industrial operating temperature rating deliver stable performance even in extreme temperatures ranging from -40°C to 85°C, while Dynamic Thermal Throttling automatically adjusts the speed to maintain cooler operation under intense and heavy workloads.

Adopting NVMe 1.3 specifications and integrating 3D NAND TLC technology, ATP's M.2 2280 NVMe modules offer up to 1.92TB of storage capacity and deliver boosted performance with sequential read up to 3,420 MB/s, sequential write up to 3,050 MB/s, and random read/write IOPS up to 225,200/179,200.

Designed to move past the limitations of mechanical drives, NVMe was specifically built from the ground up for faster, more efficient access to storage devices with non-volatile memory such as current NAND flash solutions and future non-volatile memory technologies. These SSDs can deliver fast, reliable and durable performance for any demanding application.












# Specifications

| M.2 NVMe                                   |  |                 |                        |             |  |             |
|--|--|-----------------|------------------------|-------------|--|-------------|
| Product Line                               | Premium  |                 | Superior               |             |  |             |
|  | N750Pi   | N700Pi          | N700Si                 | N700Sc      | N650Si   | N650Sc      |
| Interface                                  | PCIe G3 x4   |                 |                        |             |  |             |
| Flash Type                                 | 3D TLC (pSLC mode)   |                 | 3D TLC (pSLC mode)     |             | 3D TLC   |             |
| Form Factor                                | M.2 2280-D2-M  |                 | M.2 2230-S4-M          |             | M.2 2280-D2-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 |
| Power Loss Protection Options              | Hardware + Firmware Based  |                 | Firmware Based         |             | Hardware + Firmware Based or Firmware Based  |             |
| Optional SED Features                      | AES 256-bit Encryption, TCG Opal 2.0   |                 |                        |             |  |             |
| Capacity                                   | 40 GB to 320 GB  | 40 GB to 640 GB | 40 GB / 80 GB / 160 GB |             | 120 GB to 960 GB   |             |
| Performance                                |  |                 |                        |             |  |             |
| Sequential Read (MB/s) up to               | 3,150  |                 | 2,000                  |             | 3,420  |             |
| Sequential Write (MB/s) up to              | 2,670  | 2,820           | 1,600                  |             | 3,050  |             |
| Random Reads IOPS up to                    | 147,789 (4K, QD32)   |                 | 135,600 (4K, QD32)     |             | 222,700 (4K, QD32)   |             |
| Random Writes IOPS up to                   | 114,227 (4K, QD32)   |                 | 112,000 (4K, QD32)     |             | 176,600 (4K, QD32)   |             |
| Endurance and Reliability                  |  |                 |                        |             |  |             |
| Endurance (TBW) <sup>2</sup> up to         | 16,000 TB  | 21,300 TB       | 4,280 TB               |             | 4,640 TB   |             |
| Reliability MTBF @ 25°C                    | >2,000,000 hours   |                 | >1,500,000 hours       |             | >2,000,000 hours   |             |
| Others                                     |  |                 |                        |             |  |             |
| Dimensions: L x W x H (mm)                 | 80.0 x 22.0 x 3.5 (M.2 2280 Bare PCBA)<br>80.0 x 24.4 x 12.5 (M.2 2280 with 8 mm heatsink) |                 | 30.0 x 22.0 x 2.5      |             | 80.0 x 22.0 x 3.5 (M.2 2280 Bare PCBA)<br>80.0 x 24.4 x 12.5 (M.2 2280 with 8 mm heatsink) |             |
| Certifications                             | CE, FCC, BSMI, UKCA, RoHS, REACH   |                 |                        |             |  |             |
| Warranty                                   | 5 years  |                 | 2 years                |             |  |             |

| M.2 NVMe                                   |  |             |                    |                   |                       |             |
|--|--|-------------|--------------------|-------------------|-----------------------|-------------|
| Product Line                               | Superior   |             | Value              |                   |                       |             |
|  | N600Si   | N600Sc      | N600Vc             | N600Vc            | N600Vi                | N600Vc      |
| Interface                                  | PCIe G3 x4   |             |                    |                   |                       |             |
| Flash Type                                 | 3D TLC   |             | 3D TLC             |                   | 3D TLC (TLC Mode)     |             |
| Form Factor                                | M.2 2280-D2-M  |             | M.2 2280 S2-M      | M.2 2242 D5-M     | M.2 2230-S4-M         |             |
| Operating Temperature (Tcase) <sup>1</sup> | -40°C to 85°C  | 0°C to 70°C | 0°C to 70°C        |                   | -40°C to 85°C         | 0°C to 70°C |
| Power Loss Protection Options              | Hardware + Firmware Based or Firmware Based  |             | Firmware Based     |                   |                       |             |
| Optional SED Features                      | AES 256-bit Encryption, TCG Opal 2.0   |             | -                  |                   |                       |             |
| Capacity                                   | 120 GB to 1,920 GB   |             | 120 GB to 960 GB   |                   | 120GB / 240GB / 480GB |             |
| Performance                                |  |             |                    |                   |                       |             |
| Sequential Read (MB/s) up to               | 3,420  |             | 2,600              |                   | 2,000                 |             |
| Sequential Write (MB/s) up to              | 3,050  |             | 1,870              |                   | 1,570                 |             |
| Random Reads IOPS up to                    | 225,200 (4K, QD32)   |             | 184,300 (4K, QD32) |                   | 135,600 (4K, QD32)    |             |
| Random Writes IOPS up to                   | 179,200 (4K, QD32)   |             | 145,900 (4K, QD32) |                   | 112,000 (4K, QD32)    |             |
| Endurance and Reliability                  |  |             |                    |                   |                       |             |
| Endurance (TBW) <sup>2</sup> up to         | 5,585 TB   |             | 1,536 TB           |                   | 768 TB                |             |
| Reliability MTBF @ 25°C                    | >2,000,000 hours   |             | >2,000,000 hours   |                   | >1,500,000 hours      |             |
| Others                                     |  |             |                    |                   |                       |             |
| Dimensions: L x W x H (mm)                 | 80.0 x 22.0 x 3.5 (M.2 2280 Bare PCBA)<br>80.0 x 24.4 x 12.5 (M.2 2280 with 8 mm heatsink) |             | 80.0 x 22.0 x 2.2  | 42.0 x 22.0 x 3.6 | 30.0 x 22.0 x 2.5     |             |
| Certifications                             | CE, FCC, BSMI, UKCA, RoHS, REACH   |             |                    |                   |                       |             |
| Warranty                                   | 2 years  |             |                    |                   |                       |             |

<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.

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

▲: 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              |
|------------------------|-----------------------|------------------------------------|------------------------------------|------------------|------------------|
| N650Si                 | 120GB                 | -40°C to 85°C                      | Hardware + Firmware Based          | -                | AF120GSTJA-8BCIP |
| N650Si                 | 240GB                 | -40°C to 85°C                      | Hardware + Firmware Based          | -                | AF240GSTJA-8BCIP |
| N650Si                 | 480GB                 | -40°C to 85°C                      | Hardware + Firmware Based          | -                | AF480GSTJA-8BCIP |
| N650Si                 | 960GB                 | -40°C to 85°C                      | Hardware + Firmware Based          | -                | AF960GSTJA-8BCIP |
| N650Sc                 | 120GB                 | 0°C to 70°C                        | Hardware + Firmware Based          | -                | AF120GSTJA-8BCXP |
| N650Sc                 | 240GB                 | 0°C to 70°C                        | Hardware + Firmware Based          | -                | AF240GSTJA-8BCXP |
| N650Sc                 | 480GB                 | 0°C to 70°C                        | Hardware + Firmware Based          | -                | AF480GSTJA-8BCXP |
| N650Sc                 | 960GB                 | 0°C to 70°C                        | Hardware + Firmware Based          | -                | AF960GSTJA-8BCXP |
| N600Sc                 | 120GB                 | 0°C to 70°C                        | Hardware + Firmware Based          | -                | AF120GSTJA-8BAXP |
| N600Sc                 | 240GB                 | 0°C to 70°C                        | Hardware + Firmware Based          | -                | AF240GSTJA-8BAXP |
| N600Sc                 | 480GB                 | 0°C to 70°C                        | Hardware + Firmware Based          | -                | AF480GSTJA-8BAXP |
| N600Sc                 | 960GB                 | 0°C to 70°C                        | Hardware + Firmware Based          | -                | AF960GSTJA-8BAXP |
| N600Sc                 | 1920GB                | 0°C to 70°C                        | Hardware + Firmware Based          | -                | AF1T92STJA-8BAXP |
| N600Sc                 | 120GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF120GSTJA-8BAXX |
| N600Sc                 | 240GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF240GSTJA-8BAXX |
| N600Sc                 | 480GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF480GSTJA-8BAXX |
| N600Sc                 | 960GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF960GSTJA-8BAXX |
| N600Sc                 | 1920GB                | 0°C to 70°C                        | Firmware Based                     | -                | AF1T92STJA-8BAXX |
| N600Vc (M.2 NVMe 2280) | 120GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF120GSTJA-DBCXX |
| N600Vc (M.2 NVMe 2280) | 240GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF240GSTJA-DBCXX |
| N600Vc (M.2 NVMe 2280) | 480GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF480GSTJA-DBCXX |
| N600Vc (M.2 NVMe 2242) | 120GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF120GSTJC-DBBXX |
| N600Vc (M.2 NVMe 2242) | 240GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF240GSTJC-DBBXX |
| N600Vc (M.2 NVMe 2242) | 480GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF480GSTJC-DBBXX |
| N600Vc (M.2 NVMe 2242) | 960GB                 | 0°C to 70°C                        | Firmware Based                     | -                | AF960GSTJC-DBBXX |

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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ATP TAIWAN (HQ)

TEL: +886-2-2659-6368  
sales-apac@atpinc.com

ATP USA

TEL: +1-408-732-5000  
sales@atpinc.com

ATP EUROPE

TEL: +49-89-374-9999-0  
sales-europe@atpinc.com

ATP JAPAN

TEL: +81-3-6260-0797  
sales-japan@atpinc.com

ATP CHINA

TEL: +86-21-5080-2220  
sales@cn.atpinc.com

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