



PCIe® Gen 3 NVMe M.2 2280 / 2242 / 2230 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 *
- Thermal Heatsink Solutions**
- End-to-End Data Path 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

PCIe® Gen 3 NVMe M.2 2280 / 2242 / 2230 SSD									
Product Line	Premium			Superior					
	N750Pi	N700Pi		N700Si	N700Sc	N650Si	N650Sc	N600Si	N600Sc
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) ¹	-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	-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 to 160 GB		120 GB to 960 GB		120 GB to 3.84 TB	
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			135,600		222,700		225,200	
Random Writes IOPS up to	114,227			112,000		176,600		179,200	
Endurance and Reliability									
Endurance (TBW) ² up to	16,000 TB	21,300 TB		4,280 TB		4,640 TB		10,600 TB	
Reliability MTBF @ 25°C	>2,000,000 hours								
Others									
Dimensions (mm)	80.0 x 22.0 x 3.5 (M.2 2280 Bare PCBA) 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) 80.0 x 24.4 x 12.5 (M.2 2280 with 8 mm heatsink)			
Certifications	CE, FCC, BSMI, UKCA, RoHS, REACH					CE, FCC, BSMI, UKCA, RoHS, and REACH are available for SSD models with capacities between 120 GB to 1,920 GB; RoHS/VCCI/CE/FCC are available for the 3.84 TB SSD model.			
Warranty	5 years				2 years				

PCIe® Gen 3 NVMe M.2 2280 / 2242 / 2230 SSD				
Product Line	Value			
	N600Vc	N600Vc	N600Vi	N600Vc
Interface	PCIe G3 x4			
Flash Type	3D TLC			
Form Factor	M.2 2280 S2-M	M.2 2242 D5-M	M.2 2230-S4-M	
Operating Temperature (Tcase) ¹	0°C to 70°C		-40°C to 85°C	0°C to 70°C
Power Loss Protection Options	Firmware Based			
Optional SED Features	-			
Capacity	120 GB to 960 GB		120GB to 480GB	
Performance				
Sequential Read (MB/s) up to	2,600		2,050	
Sequential Write (MB/s) up to	1,870		1,550	
Random Reads IOPS up to	184,300		138,000	
Random Writes IOPS up to	145,900		112,600	
Endurance and Reliability				
Endurance (TBW) ² up to	1,520 TB		768 TB	
Reliability MTBF @ 25°C	>2,000,000 hours			
Others				
Dimensions (mm)	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			

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	Dynamic Thermal Throttling	Industrial Temperature	Anti-Sulfur Resistors	Conformal Coating	Joint Validation
PCIe® Gen3 NVMe M.2 2280 / 2242 / 2230	Premium	○	○	○	○	○	○	○	○	▲	○	—	○	▲	▲	—
	Superior	○	○	○	○	○	○	○	○	▲	○	—	▲	▲	▲	—
PCIe® Gen3 NVMe M.2 2280 SSD (3.84 TB Model)	Value	○	○	—	○	○	○	○	○	—	—	—	—	▲	▲	—
	Superior	○	○	—	○	○	○	○	○	▲	▲	○	○	—	▲	▲

¹ Case Temperature, the composite temperature as indicated by SMART temperature attributes.

² 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 ₁	Operating Temperature ₂	Power Loss Protection ₃	SED ₄	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 for latest information

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