



# 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

ATP's M.2 2280 NVMe solid state modules based on the NVMe™ protocol and leveraging the PCI Express® (PCIe®) Gen3 x4 interface deliver speedy, reliable, and enduring performance to fulfill the increasing data storage demands of today's embedded and industrial applications.

Constructed with 3D triple level cell (TLC) NAND flash, these modules are available in different capacities, ranging from 40 GB to 3.84 TB, to meet diverse data storage needs.















ATP NVMe SSDs with industrial operating temperature rating deliver stable performance even in extreme temperatures ranging from -40°C to 85°C.

Select ATP M.2 2280 NVMe modules adopt a Customizable Thermal Management Solution. This includes firmware and hardware options, such as copper foil and fin-type heatsink, to effectively dissipate heat and ensure optimal levels of sustained performance.

# Specifications

PCIe® Gen3 NVMe M.2 2280 / 2242 / 2230 SSD									
Product Line	Premium				Superior				
	N750Pi	N700Pi	N700Pi	N700Pc	N650Si	N650Sc	N600Si	N600Sc	
Interface	PCIe G3 x4								
Flash Type	3D TLC (pSLC mode)								
Form Factor	M.2 2280-D2-M				M.2 2230-S4-M				
Operating Temperature	-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) <sup>1</sup> 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® Gen3 NVMe M.2 2280 / 2242 / 2230 SSD						
Product Line	Value					
	N600Vi	N600Vc	N600Vi	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	-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	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) <sup>1</sup> up to	2,880 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	Industrial Temperature	Anti-Sulfur Resistors	Conformal Coating
PCIe® Gen3 NVMe M.2 2280 / 2242 / 2230	Premium	○	○	○	○	○	○	○	▲	○	○	▲	▲	▲
	Superior	○	○	○	○	○	○	○	▲	○	▲	▲	▲	▲
	Value	○	○	—	○	○	○	○	○	—	▲	—	▲	▲

<sup>1</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
N650Si	120GB	-40°C to 85°C	Hardware + Firmware Based	-	FT120GP38AG8BPI
N650Si	240GB	-40°C to 85°C	Hardware + Firmware Based	-	FT240GP38AG8BPI
N650Si	480GB	-40°C to 85°C	Hardware + Firmware Based	-	FT480GP38AG8BPI
N650Si	960GB	-40°C to 85°C	Hardware + Firmware Based	-	FT960GP38AG8BPI
N650Sc	120GB	0°C to 70°C	Hardware + Firmware Based	-	FT120GP38AG8BPC
N650Sc	240GB	0°C to 70°C	Hardware + Firmware Based	-	FT240GP38AG8BPC
N650Sc	480GB	0°C to 70°C	Hardware + Firmware Based	-	FT480GP38AG8BPC
N650Sc	960GB	0°C to 70°C	Hardware + Firmware Based	-	FT960GP38AG8BPC
N600Vc (M.2 2280)	120GB	0°C to 70°C	Firmware Based	-	FT120GP38ANDBFC
N600Vc (M.2 2280)	240GB	0°C to 70°C	Firmware Based	-	FT240GP38ANDBFC
N600Vc (M.2 2280)	480GB	0°C to 70°C	Firmware Based	-	FT480GP38ANDBFC
N600Vc (M.2 2242)	120GB	0°C to 70°C	Firmware Based	-	FT120GP34ANDBFC
N600Vc (M.2 2242)	240GB	0°C to 70°C	Firmware Based	-	FT240GP34ANDBFC
N600Vc (M.2 2242)	480GB	0°C to 70°C	Firmware Based	-	FT480GP34ANDBFC
N600Vc (M.2 2242)	960GB	0°C to 70°C	Firmware Based	-	FT960GP34ANDBFC

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