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® Gen 3 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)		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	1,390 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	○	○	▲	○	○	○	○	○	▲	▲	▲	▲	▲	▲	▲
	Value	○	○	–	○	○	○	○	○	–	–	–	–	▲	▲	–

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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