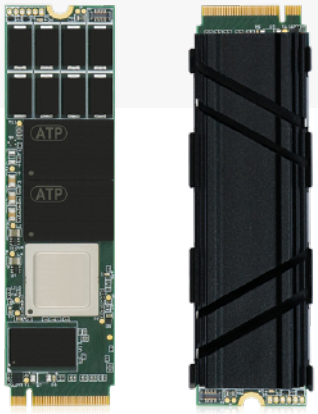
PCIe® Gen 4 NVMe M.2 2280 SSD

The Global Leader in Specialized Storage and Memory Solutions



KEY FEATURES

- Endurance: 1 DWPD (5 years Enterprise workload)
- Sustained Write Performance: Up to 3,000 MB/s
- Data Retention: Up to 10 years at 55°C (pSLC)*
- Power Loss Protection: MCU-based* with data-at-rest and in-flight protection
- PLP Diag* (Self-Diagnosing Capacitor Check)
- Security: Self-Encrypting Drive (SED with AES 256-bit Encryption, TCG Opal 2.0*
- Hardware Secure Erase / Write Protect*
- End-to-End Data Path Protection
- Thermal heatsink solutions**

* May vary by product and project support
** Customization available on a project basis

Featuring PCI Express® (PCIe®) interfaces and supporting Generation 4, ATP NVMe™ M.2 SSD modules deliver versatile high-performance storage solutions across multiple form factors including 2280, 2242, and 2230, catering to diverse system configurations and write-intensive mission-critical application requirements.

Select M.2 SSDs boast the highest endurance with unmatched 100,000 P/E cycles for pSLC mode and 11,000 P/E cycles for native TLC.

ATP SSDs are also thermally engineered for robust cross-temperature operating range for excellent error handling. They offer reliable operation with I-Temp (-40°C to 85°C) and C-Temp (0°C to 70°C) support options. Thermal management options for optimal heat dissipation include a nickel-coated copper heat spreader on the controller and 4 mm or 8 mm fin-type heatsink designs.

To ensure that data is protected from malicious access, selected M.2 SSDs are equipped with Self-Encrypting Drive (SED) features, such as Advanced AES 256-bit encryption, HW Write Protect, HW Secure Erase, and optional TCG Opal 2.0.

Technologies		S.M.A.R.T/ Life Monitor	PLP Diag	Ace Thermal Throttling	AcuCurrent	Industrial Temperature	Firmware-Based Data-At-Rest Power Loss Protection	Hardware-Based In-Flight-Data Power Loss Protection	Advanced Wear Leveling	AutoRefresh	Dynamic Data Refresh	Auto-Read Calibration	ETEDP	SED	Software Secure Erase	Hardware Secure Erase	Hardware Write Protect
Premium	N751Pi	○	○			○	○	○	○	○	○	○	○	○	○	○	○
Superior	N651Si / N651Sc	○	○			○	○	○	○	○	○	○	○	○	○	○	○
	N601Sw / N601Sc	○	▲	○	○	▲	○	▲	○	○	○		○	▲	○	○	○
Value	N601Vi / N601Vc	○				○	○		○	○	○		○		○		
Momentum	N601Mi / N601Mw	○				○	○		○	○	○		○	▲	○		
	N601Mw	○					○		○	○	○	○	○	▲	○		

▲: Customization option available on a project basis.

Specifications

Product Line	Premium	Superior		Value	Momentum
	N751Pi[1]	N651Si / N651Sc	N601Sw / N601Sc [1]	N601Vi / N601Vc	N601Mi / N601Mw
Interface	PCIe G4 x4				
Flash Type	3D TLC (pSLC mode) [2]	3D TLC			
Form Factor	M.2 2280-D6-M / M.2 2280-D2-M [3]		M.2 2280-D2-M	M.2 2280-S3-M	M.2 2280 S3-M
Operating Temperature	-40°C to 85°C	-40°C to 85°C / 0°C to 70°C	-20°C to 75°C / 0°C to 70°C	-40°C to 85°C / 0°C to 70°C	-40°C to 85°C / -20°C to 75°C
Power Loss Protection Options	Hardware + Firmware Based / Firmware Based			Firmware Based	
Optional SED Features	AES 256-bit Encryption, TCG Opal 2.0				AES 256-bit Encryption
Capacity	80 GB to 1.28 TB	240 GB to 7.68 TB [4]	480 GB to 3.84 TB	240 GB to 1.92 TB	256 GB to 4 TB
Performance					
Sequential Read (MB/s) up to	6,450		6,550	5,000	7,200
Sequential Write (MB/s) up to	6,100	6,050	6,050	4,300	6,500
Random Reads IOPS up to	1,090,000	1,091,000	780,000	800,000	1,000,000
Random Writes IOPS up to	1,200,000	1,245,000	1,045,000	1,100,000	1,200,000
Endurance and Reliability					
Endurance (TBW) [5] up to	120,000 TB	76,000 TB	11,480 TB	4,170 TB	6,000 TB
Reliability MTBF @ 25°C	>3,000,000 hours				
Others					
Dimensions (mm)	80 × 22 × 3.85 80 × 22 × 3.6 Optional 8 mm heatsink		80.0 x 22.0 x 3.6	80.0 x 22.0 x 2.4	80.0 x 22.0 x 2.2
Certifications	CE, FCC, BSMI, UKCA, RoHS, REACH	CE, FCC, BSMI, UKCA, RoHS, REACH, UL			CE, FCC, BSMI, UKCA, RoHS, REACH
Warranty	5 years	3 years			2 years

Product Line	Momentum	Superior	Premium	Superior
	N401Mw [1]	N601Sw / N601Sc [1]	N701Pi / N701Pc	N601Si / N601Sc
Interface	PCIe G4 x4		PCIe G4 x2 [6]	
Flash Type	3D TLC		3D TLC (pSLC mode)	3D TLC
Form Factor	M.2 2280 S3-M	M.2 2242-D2-M	M.2 2230-S4-M	M.2 2230-S4-M
Operating Temperature	-20°C to 75°C	-20°C to 75°C / 0°C to 70°C	-40°C to 85°C / 0°C to 70°C	
Power Loss Protection Options	Firmware Based	Hardware + Firmware Based / Firmware Based	Firmware Based	
Optional SED Features	AES 256-bit Encryption	AES 256-bit Encryption, TCG Opal 2.0		
Capacity	256 GB to 4 TB	480 GB to 1.92 TB	80 GB to 320 GB	240 GB to 960 GB
Performance				
Sequential Read (MB/s) up to	7,200	6,525	3,565	3,565
Sequential Write (MB/s) up to	6,500	6,170	3,280	3,280
Random Reads IOPS up to	900,000	820,000	630,000	630,000
Random Writes IOPS up to	1,000,000	1,030,000	755,000	755,000
Endurance and Reliability				
Endurance (TBW) [5] up to	3,200 TB	5,075 TB	29,235 TB	2,810 TB
Reliability MTBF @ 25°C	>3,000,000 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 2.75	
Certifications	CE, FCC, BSMI, UKCA, RoHS, REACH	CE, FCC, BSMI, UKCA, RoHS, REACH		
Warranty	2 years	3 years	5 years	3 years

1 Product specifications may be subject to change.
2 150K P/E cycle configuration drive available on a project basis.
3 M.2 2280-D6-M (max height: 3.85 mm) offers hardware-based power loss protection, while M.2 2280-D2-M (max height: 3.6 mm) provides firmware-based power loss protection.
4 The 7,680 GB capacity is rated for commercial temperature operation only (0°C to 70°C)
5 Under highest Sequential write value. May vary by density, configuration and applications.
6 Gen4 x4 configuration available on a project basis.

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