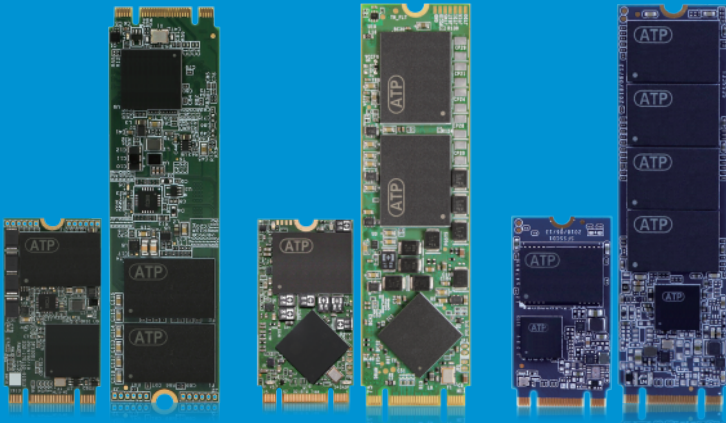




M.2 SATA

Targeted Product Portfolio, Engineered Specifically for Your Mission Critical Applications



Key Features

- MCU-based Power Loss Protection Design*
- LDPC & RAID Data Recovery
- End-to-End Data Protection
- TRIM / Global Wear Leveling support

* Customization available on a project basis

ATP's Industrial M.2 Serial ATA (SATA) solid state modules are available in types 2242 and 2280. These lean modules provide higher performance and capacity while minimizing the overall module footprint, making them perfect choices for small systems installed in limited spaces.

Available in both double- and single-sided configurations, M.2 SATA SSDs are packed with high densities and can withstand severe temperature shifts common in industrial environments, thanks to wide operating temperature ratings of -40°C to 85°C.

ATP M.2 modules are suitable for networking and thin storage systems, point-of-sale systems (POS), and industrial computer applications. Select M.2 SATA SSDs feature a microcontroller unit (MCU) design for enhanced power loss protection (PLP) in various temperatures, power glitches and charge states, thus safeguarding data and storage device for higher levels of integrity and reliability.

Technologies & Add-On Services	S.M.A.R.T.	Hardware-based Power Loss Protection	Advanced Wear Leveling	AutoRefresh	Dynamic Data Refresh	Secure Erase	Industrial Temperature	Anti-Sulfur Resistors	Conformal Coating
Premium	●	●	●	●	●	●	●	Δ	Δ
Superior	●	●	●	●	●	●	Δ	Δ	Δ
Value	●		●	●	●				

Δ: Customization option available on a project basis.

Specifications

M.2 SATA							
Product Line	A800Pi	A750Pi	A700Pi	A650Si	A650Sc	A600Si	A600Sc
Interface	SATA III 6 Gb/s						
Flash Type	SLC	3D TLC (pSLC mode)	Pseudo SLC	3D TLC			
Form Factor	2242 D2-B-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
Power Loss Protection Options	Hardware + Firmware Based						
Optional SED Features	-			AES 256-bit Encryption, TCG Opal 2.0			
Capacity	8 GB to 64 GB	80 GB to 160 GB	16 GB to 160 GB	120 GB to 480 GB			
Performance							
Performance	Sequential Read (MB/s) up to	530	560	560			
	Sequential Write (MB/s) up to	400	520	440			
	Random Read IOPS (4K, QD32) up to	76,000	84,500	100,000			
	Random Writes IOPS (4K, QD32) up to	76,000	84,500	88,000			
Endurance and Reliability							
Endurance (TBW) ² up to	5,333 TB	9,600 TB	6,400 TB	2,327 TB		1,396 TB	
Reliability MTBF @ 25°C	>2,000,000 hours						
Data Retention @ 30°C ³	10 years (with 10% P/E cycle)	5 years (with 10% P/E cycle)		5 years (with 10% P/E cycle)			
Others							
Power Consumption	3.3V Input Power						
Dimensions: L x W x H (mm)	42 x 22 x 3.5						
Certifications	CE, FCC	CE, FCC, BSMI, UKCA, RoHS, REACH	CE, FCC, BSMI, RoHS, REACH	CE, FCC, BSMI, UKCA, RoHS, REACH		CE, FCC, BSMI, RoHS, REACH	
Warranty	5 years			2 years			

M.2 SATA								
Product Line	A600Si	A600Sc	A600Vc	A750Pi	A700Pi	A650Si	A650Sc	
Interface	SATA III 6 Gb/s							
Flash Type	MLC		3D TLC	3D TLC (pSLC mode)	Pseudo SLC	3D TLC		
Form Factor	2242 D2-B-M			2280 D2-B-M				
Operating Temperature (Tcase) ¹	-40°C to 85°C	0°C to 70°C	0°C to 70°C	-40°C to 85°C		-40°C to 85°C	0°C to 70°C	
Power Loss Protection Options	Hardware + Firmware Based							
Optional SED Features	-		-	-		AES 256-bit Encryption, TCG Opal 2.0		
Capacity	16 GB to 64 GB		32 GB to 128 GB	80 GB to 320 GB		120 GB to 960 GB		
Performance								
Performance	Sequential Read (MB/s) up to	440	560	560		560		
	Sequential Write (MB/s) up to	80	420	520		440		
	Random Read IOPS (4K, QD32) up to	38,400	68,000	94,000		100,000		
	Random Writes IOPS (4K, QD32) up to	20,000	81,000	86,000		88,000		
Endurance and Reliability								
Endurance (TBW) ² up to	145.5 TB	174.6 TB	147.7 TB	19,200 TB	12,800 TB	4,655 TB		
Reliability MTBF @ 25°C	>2,000,000 hours							
Data Retention @ 30°C ³	5 years (with 10% P/E cycle)		5 years (with 10% P/E cycle)	5 years (with 10% Life consumed)	5 years (with 10% P/E cycle)			
Others								
Power Consumption	3.3V Input Power							
Dimensions: L x W x H (mm)	42 x 22 x 3.2			80 x 22 x 3.35				
Certifications	CE, FCC			CE, FCC, BSMI, UKCA, RoHS, REACH	CE, FCC, BSMI, RoHS, REACH	CE, FCC, BSMI, UKCA, RoHS, REACH		
Warranty	2 years			5 years		2 years		

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.

³ Data retention value may vary across different temperature ranges. It is based on experimental results and should be used only for reference.

M.2 SATA			
Product Line	A600Si	A600Sc	A600Vc
Interface	SATA III 6 Gb/s		
Flash Type	3D TLC		3D TLC
Form Factor	2280 D2-B-M		2280 S2-B-M
Operating Temperature (Tcase) ¹	-40°C to 85°C	0°C to 70°C	0°C to 70°C
Power Loss Protection Options	Hardware + Firmware Based		Firmware Based
Optional SED Features	AES 256-bit Encryption, TCG Opal 2.0		-
Capacity	120 GB to 960 GB		32 GB to 512 GB
Performance			
Performance	Sequential Read (MB/s) up to	560	560
	Sequential Write (MB/s) up to	440	440
	Random Read IOPS (4K, QD32) up to	100,000	72,000
	Random Writes IOPS (4K, QD32) up to	88,000	85,000
Endurance and Reliability			
Endurance (TBW) ² up to	2,792 TB		590.8 TB
Reliability MTBF @ 25°C	>2,000,000 hours		
Data Retention @ 30°C ³	5 years (with 10% P/E cycle)		
Others			
Power Consumption	3.3V Input Power		
Dimensions: L x W x H (mm)	80 x 22 x 3.35		80 x 22 x 2.2
Certifications	CE, FCC, BSMI, RoHS, REACH		CE, FCC
Warranty	2 years		

M.2 2280 Hot Items Ordering Information					
Product Line	Capacity ₁	Operating Temperature ₂	Power Loss Protection ₃	SED ₄	P/N
A650Si	120GB	-40°C to 85°C	Hardware + Firmware Based	-	AF120GSTIC-7BCIP
A650Si	240GB	-40°C to 85°C	Hardware + Firmware Based	-	AF240GSTIC-7BCIP
A650Si	480GB	-40°C to 85°C	Hardware + Firmware Based	-	AF480GSTIC-7BCIP
A650Si	960GB	-40°C to 85°C	Hardware + Firmware Based	-	AF960GSTIC-7BCIP
A650Sc	120GB	0°C to 70°C	Hardware + Firmware Based	-	AF120GSTIC-7BCXP
A650Sc	240GB	0°C to 70°C	Hardware + Firmware Based	-	AF240GSTIC-7BCXP
A650Sc	480GB	0°C to 70°C	Hardware + Firmware Based	-	AF480GSTIC-7BCXP
A650Sc	960GB	0°C to 70°C	Hardware + Firmware Based	-	AF960GSTIC-7BCXP
A600Vc	32GB	0°C to 70°C	Firmware Based	-	AF32GSTIC-2BAXX
A600Vc	64GB	0°C to 70°C	Firmware Based	-	AF64GSTIC-2BAXX
A600Vc	128GB	0°C to 70°C	Firmware Based	-	AF128GSTIC-2BAXX
A600Vc	256GB	0°C to 70°C	Firmware Based	-	AF256GSTIC-2BAXX
A600Vc	512GB	0°C to 70°C	Firmware Based	-	AF512GSTIC-2BAXX

¹ Amount of actual usable storage that can be utilize.

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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