PCIe® Gen3 NVMe M.2 SSD

The Global Leader in Specialized Storage and Memory Solutions

KEY FEATURES

- Power Loss Protection: MCU-based* with data-at-rest and in-flight protection
- Security: Self-Encrypting Drive (SED) with AES 256-bit encryption, TCG Opal 2.0*

- End-to-End Data Path Protection
- Thermal heatsink solutions**

* 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 1 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

Product Line	Value N650Vi	Momentum N400Mw	Value N650Vi	Premium N700Pi / N700Pc	Value N600Vi / N600Vc
Interface	PCIe G3 x4				
Flash Type	3D TLC			3D TLC (pSLC mode)	3D TLC
Form Factor	M.2 2280 S2-M	M.2 2280 S2-M	M.2 2242 D5-M	M.2 2230-S4-M	
Operating Temperature	-40°C to 85°C	-20°C to 75°C	-40°C to 85°C	-40°C to 85°C / 0°C to 70°C	
Power Loss Protection Options	Firmware Based				
Optional SED Features	-			AES 256-bit Encryption, TCG Opal 2.0	-
Capacity	120 GB to 960 GB	128 GB to 1 TB	120 GB to 960 GB	40 GB to 160 GB	120 GB to 480 GB
Performance					
Sequential Read (MB/s) up to	2,600	2,600	2,600	2,000	2,050
Sequential Write (MB/s) up to	1,880	1,800	1,880	1,600	1,550
Random Reads IOPS up to	250,800	240,000	250,800	135,600	138,000
Random Writes IOPS up to	276,400	300,000	276,400	112,000	112,600
Endurance and Reliability					
Endurance (TBW)[1] up to	4,800 TB	695 TB	4,800 TB	4,280 TB	768 TB
Reliability MTBF @ 25°C	>3,000,000 hours			>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	3 years	2 years	3 years	5 years	3 years

1. Under highest Sequential write value. May vary by density, configuration and applications.

Technologies		S.M.A.R.T/ Life Monitor	Industrial Temperature	Firmware-Based Power Loss Protection	Advanced Wear Leveling	AutoRefresh	Dynamic Data Refresh	Auto-Read Calibration	ETEDP	SED	Software Secure Erase
Value	N650Vi	○	○	○	○	○	○	○	○	▲	○
Momentum	N400Mw	○	▲	○	○	○	○	○	○		○
Premium	N700Pi / N700Pc	○	○	○	○	○	○	○	○	○	○
Value	N600Vi / N600Vc	○	○	○	○	○	○	○	○		○

▲: 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	-	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.