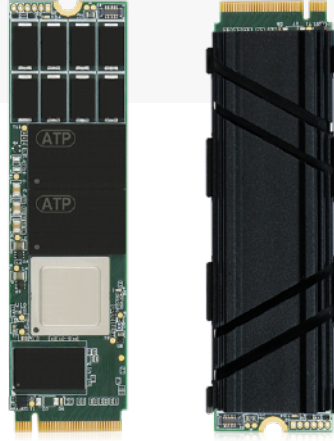




PCIe® Gen 4 NVMe M.2 2280 SSD

The Global Leader in Specialized Storage and Memory Solutions



KEY FEATURES

- Superior Read/Write performance
- 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
- Anti-sulfuric resistor support*

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

ATP NVMe™ M.2 2280 SSDs with the PCI Express® (PCIe®) Gen 4 x4 interface meet the growing need for high-speed data transfer in today's demanding applications.

Up to 3.84 TB capacity, support for I-Temp (40°C to 85°C: N651Si) or C-Temp (0°C to 70°C: N601Sc) operation, plus AES 256-bit encryption and TCG Opal 2.0 security make these SSDs ideal for read/write-intensive mission-critical applications, such as data logging, surveillance, and imaging systems.

With twice the bandwidth of the previous generation (8 GT/s), PCIe Gen 4's 16 GT/s data rate translates to a bandwidth of 2 GB/s for every PCIe lane, enabling these SSDs to transfer data faster. ATP's PCIe Gen 4 SSDs use x4 lanes for a maximum bandwidth of 8 GB/s.

Thermal management options for optimal heat dissipation include a nickel-coated copper heat spreader on controller and a 4 mm or 8 mm fin-type heatsink design.

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	Joint Validation
Superior	○	○	○	○	○	○	○	○	▲	▲	○	▲	▲	▲

▲: Customization option available on a project basis.

Specifications

PCIe® Gen4 NVMe M.2 2280 SSD			
Product Line	Superior		
	N651Si / N651Sc		N601Sc
Interface	PCIe G4 x4		
Flash Type	3D TLC		
Form Factor	M.2 2280-D6-M ¹	M.2 2280-D2-M	M.2 2280-D2-M
Operating Temperature	-40°C to 85°C / 0°C to 70°C		0°C to 70°C
Power Loss Protection Options	Hardware + Firmware Based	Firmware Based	Firmware Based
Optional SED Features	AES 256-bit Encryption, TCG Opal 2.0		
Capacity	240 GB to 1.92 TB	240 GB to 3.84 TB	240 GB to 1.92 TB
Performance			
Sequential Read (MB/s) up to	6,450		
Sequential Write (MB/s) up to	6,050		
Random Reads IOPS up to	1,091,000		1,095,000
Random Writes IOPS up to	1,245,000		1,244,000
Endurance and Reliability			
Endurance (TBW) ² up to	9,230 TB	17,930 TB	5,700 TB
Reliability MTBF @ 25°C	>2,000,000 hours		
Others			
Dimensions (mm)	80.0 x 22.0 x 3.85 80.0 x 24.4 x 12.5 (with 8 mm heatsink)	80.0 x 22.0 x 3.6 80.0 x 24.4 x 12.5 (with 8 mm heatsink)	80.0 x 22.0 x 3.6 80.0 x 24.4 x 12.5 (with 8 mm heatsink)
Certifications	CE, FCC, BSMI, UKCA, RoHS, REACH		
Warranty	2 years		

1. M.2 2280-D6-M form factor (max height: 3.85mm), offers Hardware Based Power Loss Protection. M.2 2280-D2-M form factor (max height: 3.6mm), provides Firmware Based Power Loss Protection.

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

Hot Items Ordering Information					
Product Line	Capacity ₁	Operating Temperature ₂	Power Loss Protection ₃	SED ₄	P/N
N651Si	240GB	-40°C to 85°C	Hardware + Firmware Based	-	FT240GP48APHBPI
N651Si	480GB	-40°C to 85°C	Hardware + Firmware Based	-	FT480GP48APHBPI
N651Si	960GB	-40°C to 85°C	Hardware + Firmware Based	-	FT960GP48APHBPI
N651Si	1920GB	-40°C to 85°C	Hardware + Firmware Based	-	FT1T92P48APHBPI
N651Si	240GB	-40°C to 85°C	Hardware + Firmware Based	√	FT240GP48APHBSI
N651Si	480GB	-40°C to 85°C	Hardware + Firmware Based	√	FT480GP48APHBSI
N651Si	960GB	-40°C to 85°C	Hardware + Firmware Based	√	FT960GP48APHBSI
N651Si	1920GB	-40°C to 85°C	Hardware + Firmware Based	√	FT1T92P48APHBSI
N651Sc	240GB	0°C to 70°C	Hardware + Firmware Based	-	FT240GP48APHBPC
N651Sc	480GB	0°C to 70°C	Hardware + Firmware Based	-	FT480GP48APHBPC
N651Sc	960GB	0°C to 70°C	Hardware + Firmware Based	-	FT960GP48APHBPC
N651Sc	1920GB	0°C to 70°C	Hardware + Firmware Based	-	FT1T92P48APHBPC
N651Sc	240GB	0°C to 70°C	Hardware + Firmware Based	√	FT240GP48APHBSC
N651Sc	480GB	0°C to 70°C	Hardware + Firmware Based	√	FT480GP48APHBSC
N651Sc	960GB	0°C to 70°C	Hardware + Firmware Based	√	FT960GP48APHBSC
N651Sc	1920GB	0°C to 70°C	Hardware + Firmware Based	√	FT1T92P48APHBSC
N651Si	240GB	-40°C to 85°C	Firmware Based	-	FT240GP48APHBFI
N651Si	480GB	-40°C to 85°C	Firmware Based	-	FT480GP48APHBFI
N651Si	960GB	-40°C to 85°C	Firmware Based	-	FT960GP48APHBFI
N651Si	1920GB	-40°C to 85°C	Firmware Based	-	FT1T92P48APHBFI
N651Si	3840GB	-40°C to 85°C	Firmware Based	-	FT3T84P48APHBFI
N651Si	240GB	-40°C to 85°C	Firmware Based	√	FT240GP48APHBYI
N651Si	480GB	-40°C to 85°C	Firmware Based	√	FT480GP48APHBYI
N651Si	960GB	-40°C to 85°C	Firmware Based	√	FT960GP48APHBYI
N651Si	1920GB	-40°C to 85°C	Firmware Based	√	FT1T92P48APHBYI
N651Si	3840GB	-40°C to 85°C	Firmware Based	√	FT3T84P48APHBYI

Hot Items Ordering Information					
Product Line	Capacity ₁	Operating Temperature ₂	Power Loss Protection ₃	SED ₄	P/N
N651Sc	240GB	0°C to 70°C	Firmware Based	-	FT240GP48APHBFC
N651Sc	480GB	0°C to 70°C	Firmware Based	-	FT480GP48APHBFC
N651Sc	960GB	0°C to 70°C	Firmware Based	-	FT960GP48APHBFC
N651Sc	1920GB	0°C to 70°C	Firmware Based	-	FT1T92P48APHBFC
N651Sc	3840GB	0°C to 70°C	Firmware Based	-	FT3T84P48APHBFC
N651Sc	240GB	0°C to 70°C	Firmware Based	√	FT240GP48APHBXC
N651Sc	480GB	0°C to 70°C	Firmware Based	√	FT480GP48APHBXC
N651Sc	960GB	0°C to 70°C	Firmware Based	√	FT960GP48APHBXC
N651Sc	1920GB	0°C to 70°C	Firmware Based	√	FT1T92P48APHBXC
N651Sc	3840GB	0°C to 70°C	Firmware Based	√	FT3T84P48APHBXC
N601Sc	240GB	0°C to 70°C	Firmware Based	-	AF240GSTJA-HBAXX
N601Sc	480GB	0°C to 70°C	Firmware Based	-	AF480GSTJA-HBAXX
N601Sc	960GB	0°C to 70°C	Firmware Based	-	AF960GSTJA-HBAXX
N601Sc	1920GB	0°C to 70°C	Firmware Based	-	AF1T92STJA-HBAXX
N601Sc	240GB	0°C to 70°C	Firmware Based	√	AF240GSTJA-HBBXX
N601Sc	480GB	0°C to 70°C	Firmware Based	√	AF480GSTJA-HBBXX
N601Sc	960GB	0°C to 70°C	Firmware Based	√	AF960GSTJA-HBBXX
N601Sc	1920GB	0°C to 70°C	Firmware Based	√	AF1T92STJA-HBBXX

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

v1 022024

© Copyright 2024 ATP Electronics, Inc. All rights reserved.



The Global Leader in Specialized Storage and Memory Solutions

WE BUILD WITH YOU

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