Western Digital® PC SN520 NVMe™ SSD

Fueling Innovation

Design Flexibility

With future-ready, scalable NVMe architecture, the Western Digital PC SN520 NVMe SSD offers a robust solution to fuel generations of innovative IoT applications. Scalable NVMe offers a significant performance increase over SATA SSDs while further optimizing low power consumption to the low level of 2.5mW.

This NVMe SSD enables greater design flexibility for IoT and embedded customers, who seek a cost effective, small form factor, reliable and rugged storage device with low capacity points from 128GB to 512GB.

Robust Construction Suited for IoT

The Western Digital PC SN520 NVMe SSD, supporting PCIe Gen3 x2, is designed for applications that have a limited number of PCIe lanes available for storage, however, require both high performance and low power. Partners that could benefit from NVMe technology include:

- **Commercial:** Interactive kiosks, ATMs and Point-of-Sales (POS), Multi-Functional Printers (MFP) and industries that require high-volume transaction processing
- **Edge Equipment and IoT Gateway:** Such as network equipment, industrial machinery, medical equipment, or embedded PC that need the high capacities to capture the floor's and sensors' data and the high IOPS to support the system's data analytics
- **Media Content Delivery and Streaming:** In-flight entertainment systems, train control and monitoring systems, data recorder and video surveillance that require high capacity and reliability

WESTERN DIGITAL PC SN520 NVMe SSD KEY BENEFITS & FEATURES

READ SPEEDS UP TO 1,700MB/S AND LOW POWER CONSUMPTION LEVERAGES BOTH THE PCIe GEN3 x2 INTERFACE, AS WELL AS SOPHISTICATED NVMe POWER MANAGEMENT

128GB-512GB CAPACITIES AVAILABLE IN THREE SMALL FORM FACTORS: M.2 2230, M.2 2242, M.2 2280

ENDURANCE OF UP TO 300 TBW

5 YEAR LIMITED WARRANTY

Versatile Options for IoT

Equipped with a fully integrated solution which includes in-house controller, 64-layer 3D NAND, firmware, and testing, Western Digital provides longevity, supply and a robust and reliable design.

Designed with Western Digital's in-house tiered-caching NVMe architecture, the Western Digital PC SN520 NVMe SSD delivers high performance with sequential read and write speeds up to 1,700MB/s and 1,400MB/s respectively and high endurance up to 300 TBW, all of which are available in a variety of small form factors: M.2 2230, M.2 2242, M.2 2280.

Summary

Western Digital PC SN520 NVMe SSD, in variety of small, single-sided form factors such as M.2 2230, M.2 2242 and M.2 2280, enables customers to build ultra-thin, ultra-small boards and systems that address multiple IoT segments, without sacrificing performance and power consumption.

Western Digital PC SN520 NVMe SSD

Specifications are subject to change

Form Factors			M.2 2230, M.2 2242, M.2 2280
Interface			PCIe Gen3 x2 NVMe v1.3
Formatted Capacities[1]			128GB, 256GB, 512GB
Performance[2]	128GB	256GB	512GB
Sequential Read up to (MB/s)	1,500	1,700	1,700
Sequential Write up to (MB/s)	800	1,300	1,400
Random Read up to (IOPS)	95K	220K	270K
Random Write up to (IOPS)	90K	175K	280K
Endurance[3] **(TBW)**	100	200	300
Power	128GB	256GB	512GB
Peak Power (10µs) (A)	1.2	1.4	1.8
Avg. Active Power[4,5] **(mW)**	75	75	75
Low Power (PS3)[5] **(mW)**	25	25	25
Sleep (PS4)[5] **(mW)**	2.5	2.5	2.5
Supply Voltage (V / ±5%)	3.3	3.3	3.3
Reliability			
MTTF[6]			Up to 1.752M hours
Environmental			
Operating Temperature[7]			32°F to 158°F (0°C to 70°C)
Non-operating Temperature[8]			-67°F to 185°F (-55°C to 85°C)
Operating Vibration			5 gRMS, 10–2000 Hz, 3 axes
Non-operating Vibration			4.9 gRMS, 7–800 Hz, 3 axes
Shock			1,500G @0.5 ms half sine
Certifications			FCC, UL, TUV, KCC, BSMI, VCCI, C-Tick
Limited Warranty[9]			5 years
Physical Dimensions			
Width			22mm ±0.15mm
Length		2230: 30mm ±0.15mm; 2242: 42mm ±0.15mm; 2280: 80mm ±0.15mm	
Thickness (max)			2.38mm
Weight		2230: 3.5g ±1g; 2242: 4.0g ±1g; 2280: 6.5g ±1g	

SKU	Form Factor	Capacity
SDAPTUW-128G	M.2 2230 S3-B-M	128GB
SDAPTUW-256G	M.2 2230 S3-B-M	256GB
SDAPTUW-512G	M.2 2230 S3-B-M	512GB
SDAPMUW-128G	M.2 2242 S3-B-M	128GB
SDAPMUW-256G	M.2 2242 S3-B-M	256GB
SDAPMUW-512G	M.2 2242 S3-B-M	512GB
SDAPNUW-128G	M.2 2280 S3-B-M	128GB
SDAPNUW-256G	M.2 2280 S3-B-M	256GB
SDAPNUW-512G	M.2 2280 S3-B-M	512GB

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[1] As used for storage capacity, one gigabyte (GB) = one billion bytes and one terabyte (TB) = one trillion bytes. Total accessible capacity varies depending on operating environment.

[2] Test Conditions: Performance is based on the CrystalDiskMark 5.2.2 benchmark using a 1000MB LBA range ASUS Z170A desktop with Intel® i7-6700K 4.0GHz, 8GB 2133MHz DDR4. Windows 10 Pro 64-bit using Microsoft StorNVMe driver, secondary drive. Performance may vary based on host device. 1 MB = 1,000,000 bytes. IOPS = input/output operations per second.

[3] TBW (terabytes written) values calculated using JEDEC client workload (JESD219) and vary by product capacity.

[4] Measured using MobileMark™ 2014 on HP EliteBook X360 1030 G2 with i7-7600U, 8GB RAM. Windows 10 Pro, 64-bit RS3 using Microsoft StorNVMe driver, primary drive.

[5] Power measurements at 25°C.

[6] MTTF = Mean Time To Failure based on internal testing using Telcordia stress part testing. MTTF is based on a sample population and is estimated by statistical measurements and acceleration algorithms. MTTF does not predict an individual drive's reliability and does not constitute a warranty. (Telecordia SR-332, GB, 40°C)

[7] Operational temperature as reported by device (composite temperature.)

[8] Non-operational storage temperature does not guarantee data retention.

[9] 5 years or Max Endurance (TBW) limit, whichever occurs first. 5 year warranty in regions not recognizing "limited." See http://support.wdc.com for more details.

Product specifications subject to change without notice. Not all products are available in all regions of the world.

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