



SK hynix Platinum P41 SSD

Product Brief



World-Leading Technology

- SK hynix innovations, cell interlayer height reduction and ultra-precise alignment
- Industry-leading 176-layer NAND flash memory consumer SSD



The Ultimate in Performance

- Top-class sequential read and write speeds of 7,000MB/s and 6,500MB/s
- Next-tier power efficiency, running at incredible speeds and cooler than ever



Durability Guaranteed, 5-year Warranty

- SK hynix 5-year warranty
- 1,000 hours of High-Temperature Operating Life (HTOL) testing with Mean Time Between Failures (MTBF) reaching 1.5 million hours

Platinum P41 Series Product Specification

Capacity		2TB	1TB	500GB
Form Factor		M.2 2280 Single Side		
Interface		PCIe Gen4, up to 4 lanes		
Sequential Performance 1) 3) 4)	Read (up to)	7,000 MB/s	7,000 MB/s	7,000 MB/s
	Write (up to)	6,500 MB/s	6,500 MB/s	4,700 MB/s
Random Performance 2) 3) 5)	Read (up to)	1,400K IOPS	1,400K IOPS	960K IOPS
	Write (up to)	1,300K IOPS	1,300K IOPS	1,000K IOPS
Power Consumption ⁷⁾		Active Write ⁸⁾	PS3 (@Idle)	PS4 (@L1.2)
		7.5W	< 50mW	< 5mW
NVMe Driver Support		<ul style="list-style-type: none"> - Windows 8.1 64bit, Windows 10 64bit - Linux 14.04 64bit, Linux 15.04 64bit 		
Queue Support		<ul style="list-style-type: none"> - Support up to 256 queues - Support up to 1,024 queue depth for each queue 		
Operating Temperature Range ⁹⁾		<ul style="list-style-type: none"> - 0°C to 70°C - Temperature Sensor 		
Shock ¹⁰⁾		<ul style="list-style-type: none"> - Operating : 1,500G, duration 0.5ms - Non-Operating : 1,500G, duration 0.5ms 		
Vibration ¹¹⁾		<ul style="list-style-type: none"> - Operating : 20G, 20 ~ 2KHz (Frequency) - Non-Operating : 20G, 20 ~ 2KHz (Frequency) 		
Reliability ¹²⁾	TBW ¹³⁾	1,200 TBW	750 TBW	500 TBW
	MTBF ¹⁴⁾	1.5 Million hours		
	BER ¹⁵⁾	1 error in 10 ¹⁵ bits transferred		
Dimension		(22.00 ± 0.15) X (80.00 ± 0.15) X (Max. 2.38) mm		
Weight		7.0g ± 5%		
Voltage		3.3V ± 5%		

Notes

- Supports TCG/OPAL 2.01 and Pyrite
- For cloning, use USB-PCIe M.2 adapter with JMicron JMS583, ASMedia ASM2362, or Realtek RTL9210.
- May not be compatible with Macbook Pro, Macbook Air

- 1) Measured using IOMeter1.1 with a queue depth (QD) of 32 and set to 128KiB alignment. (1MB/sec = 1,000,000 bytes/sec)
- 2) Measured using IOMeter1.1 with 16 threads, a queue depth (QD) of 32 each and set to 4KiB alignment.
- 3) IOMeter1.1 was used for measuring. Measurements are performed on 1GB of LBA range with a queue depth of 32 and 16 workers. System variations may affect results. (Test Pre-condition : Secure erase and NTFS formatted as a secondary drive)
- 4) Set to 128KiB alignment /1MB/sec = 1,000,000 bytes/sec was used in sequential performances.
- 5) Set to 4KiB alignment, 16 threads condition
- 6) Test System: Intel i9 11900K, DDR4-4400, Gigabyte Z590 Aorus Master, Bios(CPU overclock: Advanced, XMP: profile1)
- 7) All numbers are averaged data, measured more than 3 times.
- 8) Active power is measured during execution of sequential write 128KB with a queue depth of 32.
- 9) Measured w/o condensation. Operating mode is measured by temperature sensor, SMART Attributes Bytes 02:01h.
- 10) Shock specification assumes that the SSD is mounted securely with the input shock applied to the drive mounting screws. Stimulus may be applied in the X, Y or Z axis.
- 11) Vibration specification assumes that the SSD is mounted securely with the input vibration applied to the drive mounting screws. Stimulus may be applied in the X, Y or Z axis. The measured specification is in root mean SQ. form.
- 12) The SSD incorporates advanced technology for defect and error management while using various combinations of hardwarebased error correction algorithms and firmware-based static and dynamic wear-leveling algorithms.
- 13) Terabytes Written: the amount of data that can be written to the SSD over the life of the drive.
- 14) 1.5M Mean Time Between Failures is estimated based on population. These statistics are not relevant to individual units through Reliability Demonstration Test (RDT).
- 15) Bit error rate will not exceed one sector in the specified number of bits read. In the unlikely event of a read error, the SSD will report it as a read failure to the host; the sector in error will be considered corrupt and will not be returned to the host.

Certifications

Certifications	Description
CE Compliant	Indicates conformity with the essential health and safety requirements set out in European Directives
UL Certified	Underwriters Laboratories, Inc. Component Recognition UL60950-1.
FCC Certified	This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference. (2) This device must accept any interference received, including interference that may cause undesired operation.
C-Tick Compliant	Compliance with the Australia/New Zealand Standard AS/NZS3548 and Electromagnetic Compatibility(EMC) Framework requirements of Australian Communication Authority(ACA)
BSMI Compliant	Compliance to the Taiwan EMC standard "Limits and methods of measurement of radio disturbance characteristics of information technology equipment, CNS 13438 ClassB"
KCC	Compliance with paragraph 1 of Article 11 of the Electromagnetic Compatibility Control Regulation and meets the Electromagnetic Compatibility (EMC) Framework requirements of the Radio Research Laboratory (RRL) Ministry of Information and Communication Republic of Korea
RoHS Compliant	Restriction of Hazardous Substance Directive
PCI-SIG	Compliance to PCI-SIG compliance test and got the integrator list
Microsoft WHLK	Compliance to Microsoft Windows Hardware Lab Kit