

Product Presentation

NVMe™ SSD

980 PRO with Heatsink



PR Embargo Date:
12th of October 2021, 4:00pm (MESZ)

RTS:
Beginning of November

NVMe™ SSD | 980 PRO with Heatsink

Product Presentation



Agenda

1. Introduction
2. Value Proposition & Focus USPs
3. Product & Package Information
4. Product Images & Pricing
5. Appendix

Samsung

NVMe™ SSD

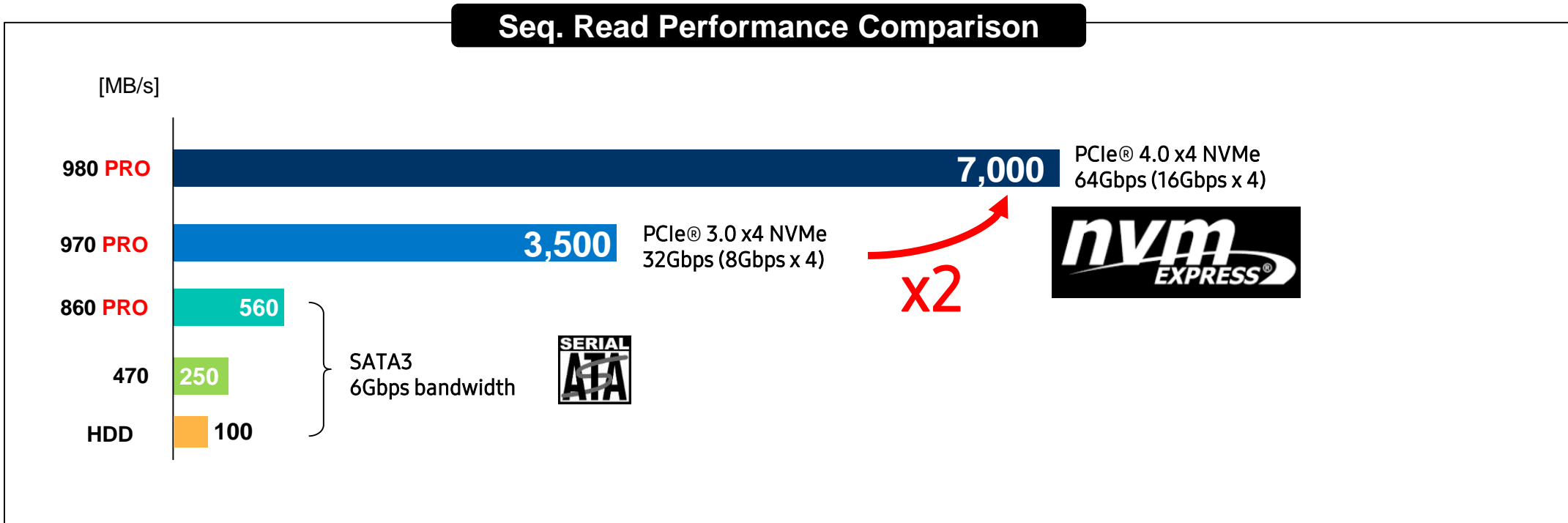
980 PRO with Heatsink

Introduction

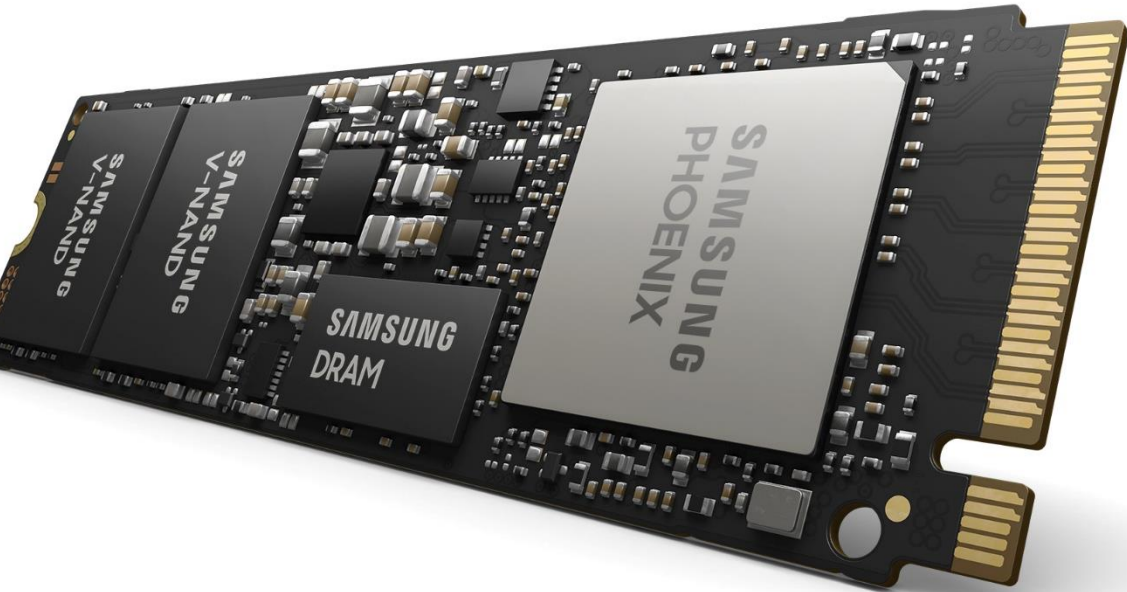
PCIe 4.0 NVMe Interface

PCIe® 4.0 interface has been introduced in 2018, its bandwidth has doubled (16Gbps/lane) compared to the current PCIe® 3.0 (8Gbps/lane).

→ Up to 12.5 times faster than SATA SSDs

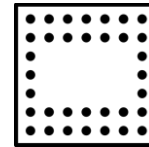


SSD | In-house, seamless integration. For all our SSDs.



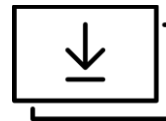
NAND

Samsung's latest V-NAND technology



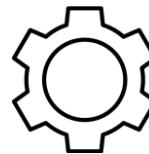
DRAM

World's leading DRAM supplier for over 20 years



Firmware

In-house software algorithm for seamless connectivity and fast troubleshooting



Controller

In-house Samsung controller

Samsung NVMe™ SSD: A success story

950 PRO (2015)



The NVMe™ Effect provides new possibilities

- Samsung's first NVMe™ SSD for end customers
- Market Entry & Brand Awareness

960 Series (2016)



Launching new possibilities

- The world's best-selling NVMe™ SSD on the market
- Third generation V-NAND
- **PRO:** For professionals & enthusiasts looking for next generation performance and endurance
- **EVO:** For customers who want to discover the next generation of PC performance.

Proprietary and confidential

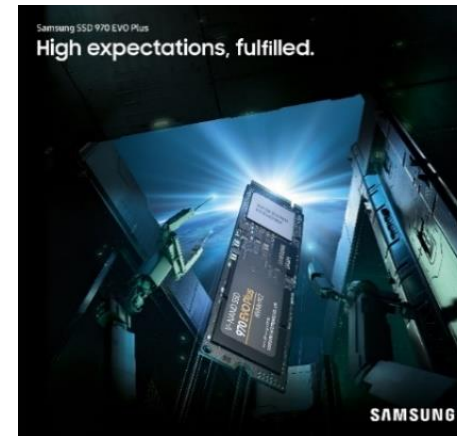
970 Series (2018)



Unreal Performance, Realized.

- A new generation of the world's best-selling NVMe™ SSD series
- Groundbreaking performance
- Outstanding reliability
- Highest capacity in its class

970 EVO Plus (2019)



High expectations, fulfilled.

- The next advancement in NVMe™ SSD with new V-NAND generation
- Maximized potential of NVMe™ bandwidth for unbeatable computing

980 PRO (2020)



Unstoppable speed.

- First Samsung NVMe™ SSD with PCIe® Gen4 interface
- PCIe® 4.0 x4 interface enables up to 7,000 MB/s transfer speed
- Intelligent TurboWrite 2.0 (buffer up to 5x larger)

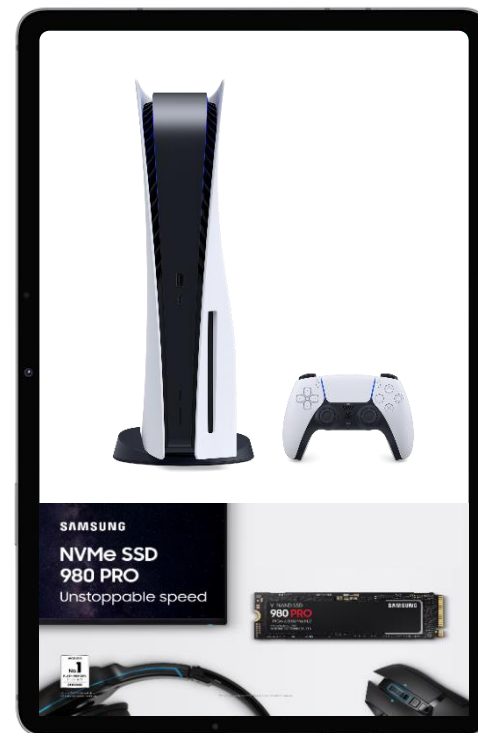
Spotlight on console gamers

NVMe™ SSD | Headline Stories 2021

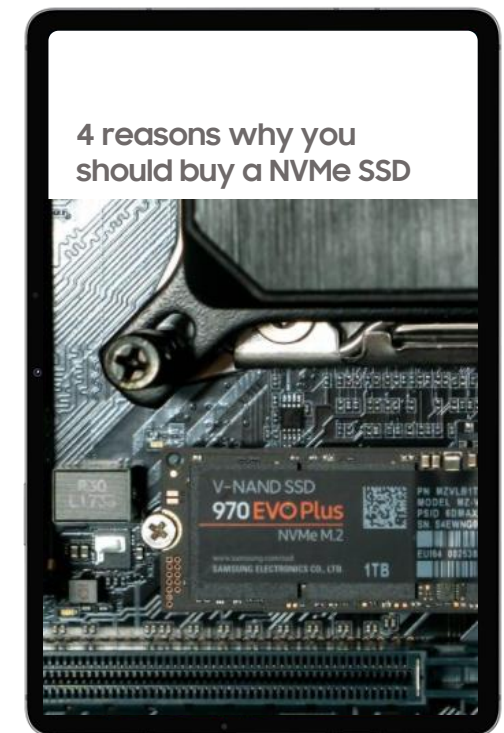
PCIe® Gen4 Story realized by Samsung and partners



Storage Expansion for your next-gen console



Boost your performance and upgrade to NVMe



From Customer Perspective





Storage Capacity is a real pain for the Gaming community.

Black Ops Cold War's file size has now reached the point where it will take up a third of your PlayStation5® SSD if you have all of its elements installed.

↑ Gepostet von [u/switchondem](#) vor 3 Monaten

533 ↓ This game is now 219.8 GB on PS5, which has 667.2 GB of free console storage space to start with. The tech to compress it exists, but the file size just keeps increasing.

Feedback

	STAR WARS Jedi: Fallen Order™	47.20 GB
	It Takes Two	43.78 GB
	Call of Duty®: Black Ops Cold War	219.8 GB
	Subnautica	4.95 GB

163 Kommentare Teilen Merken Ausblenden Melden 99% Upgevoted

https://www.reddit.com/r/blackopscoldwar/comments/o4ehkg/this_game_is_now_2198_gb_on_ps5_which_has_6672_gb

Black Ops Cold War Will Now Take Up More Than A Third Of Your PS5's SSD

Black Ops Cold War with all its bells and whistles has become so bloated it will take up more than 200GB of your PS5's SSD.

BY JOSH COULSON
PUBLISHED JUL 05, 2021



<https://www.thegamer.com/black-ops-cold-war-ps5-ssd>

CALL OF DUTY: BLACK OPS COLD WAR

Players frustrated as Cold War's huge file size continues to grow on PS5

Black Ops Cold War's ever-increasing file size has angered players who are frustrated with how much space it takes up on the PS5.

Published 3 months ago on June 21, 2021
By Andrew Highton

<https://charlieintel.com/players-frustrated-as-cold-wars-huge-file-size-continues-to-grow-on-ps5/110265/>

Customer Reviews

★★★★★ Die perfekte Erweiterung für die PS5

Von K. Gacon am 23. September 2021

Das Teil rennt nur so in der PS5. Ich habe drei Spiele getestet und es war beeindruckend. Horizon zero dawn eine Sekunde schneller, Valhalla PS5 eine Sekunde schneller und Hades PS5 zwei Sekunden schneller (bei 5, etwas im Hauptspeicher) als vom Konsolenspeicher gestartet. Was mich wunder ist, dass die Konsole bei der Formatierung die vollen 1TB formatiert. Bei meiner SSD ext. an der PS5 ist es genauso. 👍👍👍 Weniger anzeigen

★★★★★ Yes PS5 kompatibel 👍

Von RedChilli am 17. September 2021

...Meine PS5 freut sich nen Kullerkeks. Endlich Sony. Danke Sony und Samsung 👍. Weitere Informationen

★★★★★ Passt in PS5

Von Amazon Kunde am 17. September 2021

Läuft in der PS5 super Einbau ging in 5 Minuten

★★★★★ Top für PS5

Von Der Vollstrecker am 18. September 2021

Einbau in die PS5 mit ICY IB-M2HS-701 Heatsink in 10 bis 15 Minuten ohne Probleme erledigt. PS5 formatiert SSD beim ersten Hochfahren innerhalb von wenigen Sekunden. Das Verschieben von Daten erfolgt fix und ebenfalls problemlos.

Samsung 980 PRO 2 TB PCIe 4.0 (bis zu 7.000 MB/s) NVMe M.2 (2280) Internes Solid State Drive (SSD) (MZ-V8P2T0BW)

Besuchen Sie den Samsung-Store

★★★★★ 3.198 Sternebewertungen

Amazon's Choice für "samsung 980 pro"

Kundenrezensionen

★★★★★ 4,8 von 5

3.198 globale Bewertungen

5 Sterne 89%

4 Sterne 6%

3 Sterne 2%

2 Sterne 1%

1 Stern 2%

▼ Wie werden Bewertungen berechnet?

„The perfect Storage expansion for PS5“

„Me and my PS5 are very happy. Thanks to Sony and Samsung“

„Works fine. I upgraded in only 5 minutes“

„I upgraded with 980 PRO and an ICY heatsink in 10-15 minutes without any problem“

980 PRO fits perfectly into the PlayStation5®, but some users are attaching an external Heatsink to the product. Samsung is listening to the voice of the users and launches 980 PRO Heatsink to give the option to choose between 980 PRO with and without Heatsink.

Value Proposition & Focus USPs

SSD 980 PRO with Heatsink – Value Proposition

980 PRO with Heatsink

Unstoppable Speed and advanced cooling

Samsung is listening to the voice of the users and launches the 980 PRO with Heatsink to serve the needs of heavy console gamers, who want to push their performance limits to the next level.

980 PRO with Heatsink comes with next-generation PCIe® Gen4 technology suitable for highly demanding gaming and includes a slim heat sink that **minimizes thermal throttling** and cools your console temperature down. This gives every user the option to choose between 980 PRO with and without Heatsink!

Low Power Consumption
& Low Heat

Advanced and slim
Heatsink

Unstoppable Speed
of the 980 PRO

SSD 980 PRO with Heatsink – Value Proposition

Low Power Consumption & Low Heat

- Low Power Consumption (up to avg. 6.2W) with 8nm Samsung Controller and power efficient design
- No Thermal Throttling, No System Warning/Shutdown³⁾, Silent Play on PS5 systems even in the rack⁴⁾

Advanced Slim Heatsink

- Slim design is compatible for not only PS5 M.2 Heatsink Guide (11.25mm) but also Desktops/Laptops comply PCI-SIG D8 standard spec (8.8mm)
- Proven Samsung's Advanced Heatsink Technology through Datacenter SSDs⁵⁾

Unstoppable Speed

- Sustained Performance during long range activities²⁾
- Industry Leading 1 million IOPS Random Performance, Low Latency for Game Play without lagging

1) Internal Test Condition: Based on PlayStation5@ System Beta 2.0 Software, 518GB data transfer from PS5 Internal SSD to Expansion SSD with a heatsink @ Room ambient temperature 25°C/30°C & in the rack.

2) Total data transfer time (from PS5 Internal SSD) : in case of 980 PRO 460 secs.

3) Thermal throttling of SSD operates if the temperature of SSD exceeds 82°C. PS5 is shutdown if it exceeds 85°C. Max SSD temperature (composite temperature in S.M.A.R.T.) of 980 PRO was 64°C/67.3°C.

4) PS5 Fan speed varies in accordance with SSD temperature. PS5 with 980 PRO maintained low fan speed. Max acoustic noise of PS5 Fan was 28dB (in case of 980 PRO Heatsink,

5) PM1725, PM1735, SZ985, PM9A3 E1.S and ETCs.

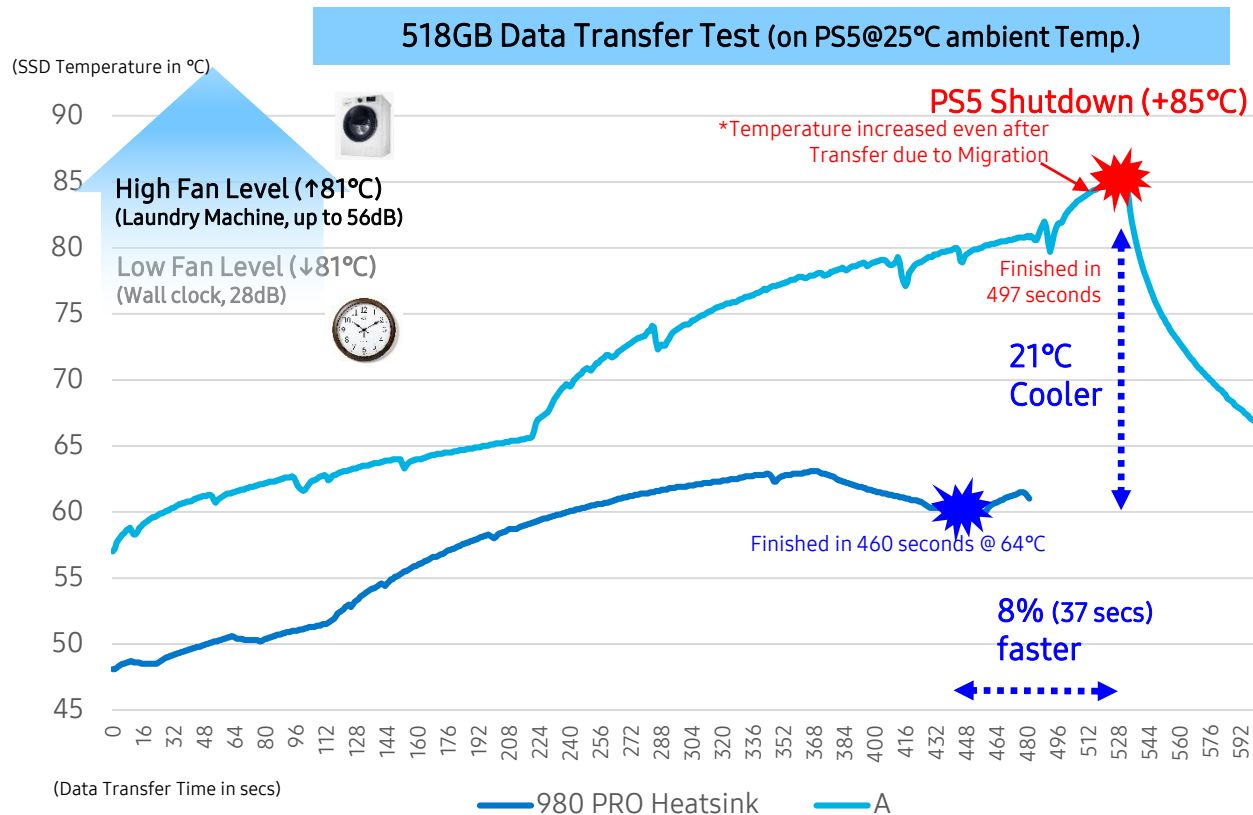
SSD 980 PRO with Heatsink – Low Power & Heat

980 PRO is designed power efficient (low power consumption) with 8nm controller.

980 PRO Heatsink is Never Throttling, Shutdown and **Silent Play*** on PS5 even **in the rack***.

*maintaining PS5 Fan in low speed & noise (28dB)

*closed environment on three sides



Efficient cooling:
 21° cooler than
 Competitor A during
 internal tests

Constantly keeping the
 temperature below
 65°C although heavy
 workload

SSD 980 PRO with Heatsink – Low Power & Heat

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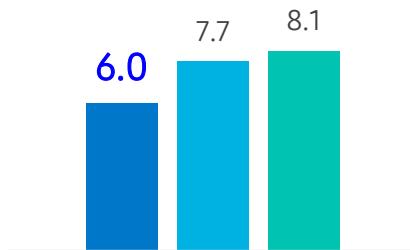
980 PRO Heatsink is Never Throttling, Shutdown and **Silent Play** on PS5 even **in the rack**.

*maintaining PS5 Fan in low speed & noise (28dB)

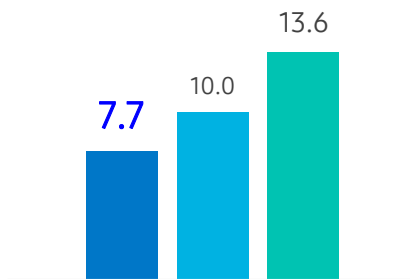
*closed environment on four sides

Power Consumption (1TB) ¹⁾

(Unit: Watt)



Average Power



Peak Power

■ 980 PRO ■ A ■ B

Test Simulated “in the rack”

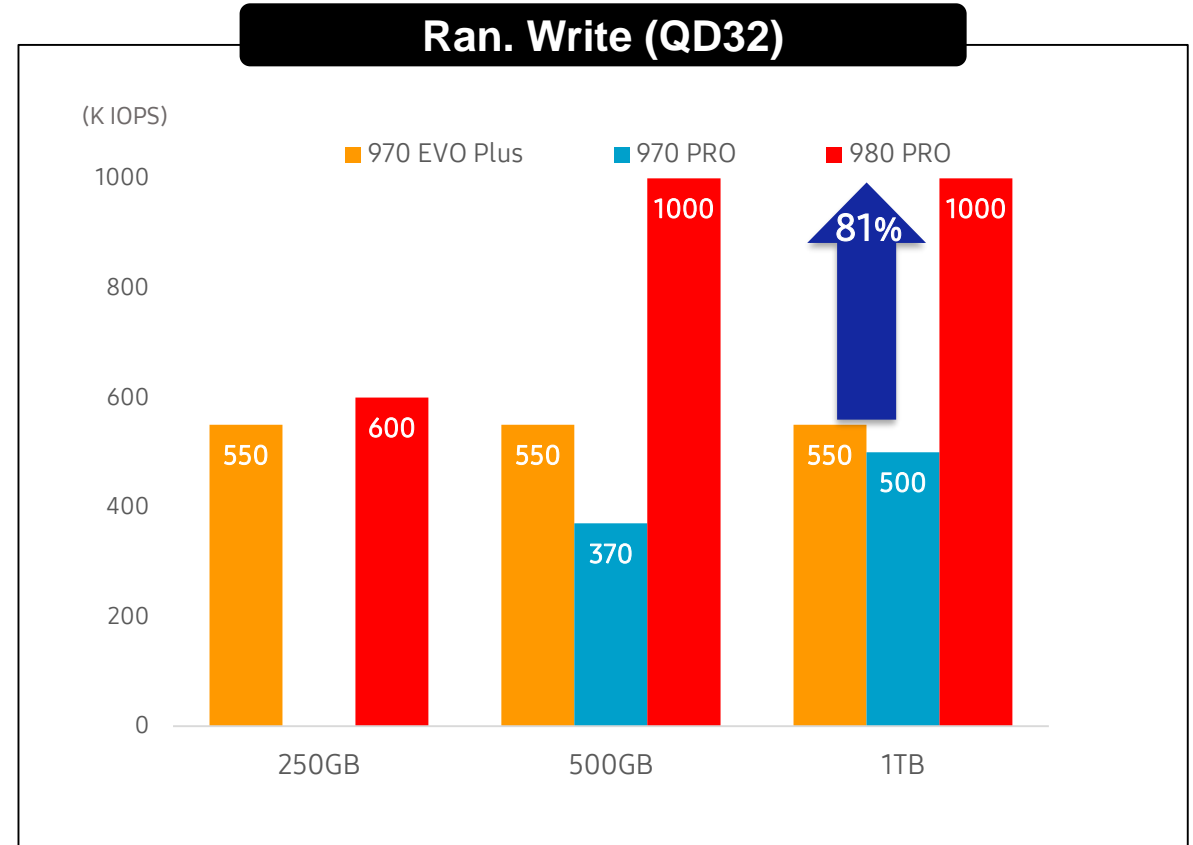
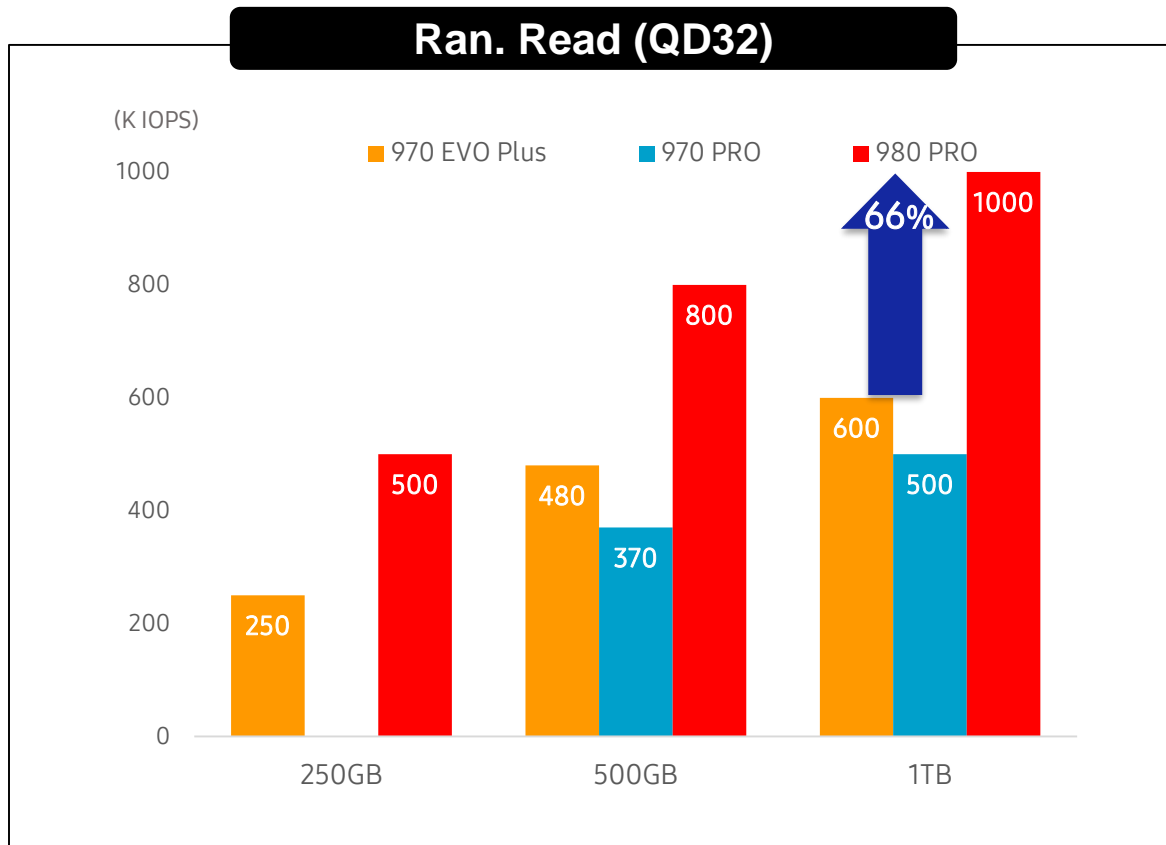


- 1) Power consumption is measured with IOmeter1.1.0 version with AMD Ryzen 7 3700X 8 Core @3.6GHz, DDR4 8GBx2, OS-Windows 10 Pro 64bit, Chipset-GIGABYTE-X570-AORUS MASTER
- 2) Based on PlayStation5® System Beta 2.0 Software, 518GB data transfer from PS5 Internal SSD to Expansion SSD with a heatsink @ Room ambient temperature 25°C & in the rack (40 x 40 cm)

SSD 980 PRO | Next Level Performance - Random (QD32, Thread 16)

Game Play highly consist of many random I/Os.

980 PRO with Heatsink provides 1,000,000 IOPS performance in both read and write.



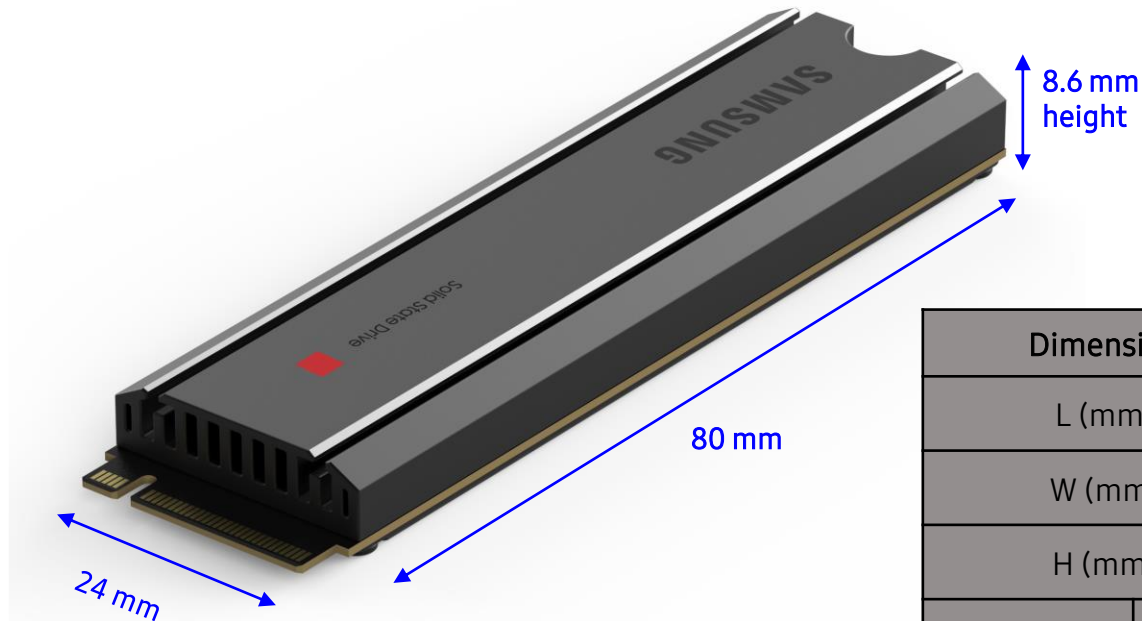
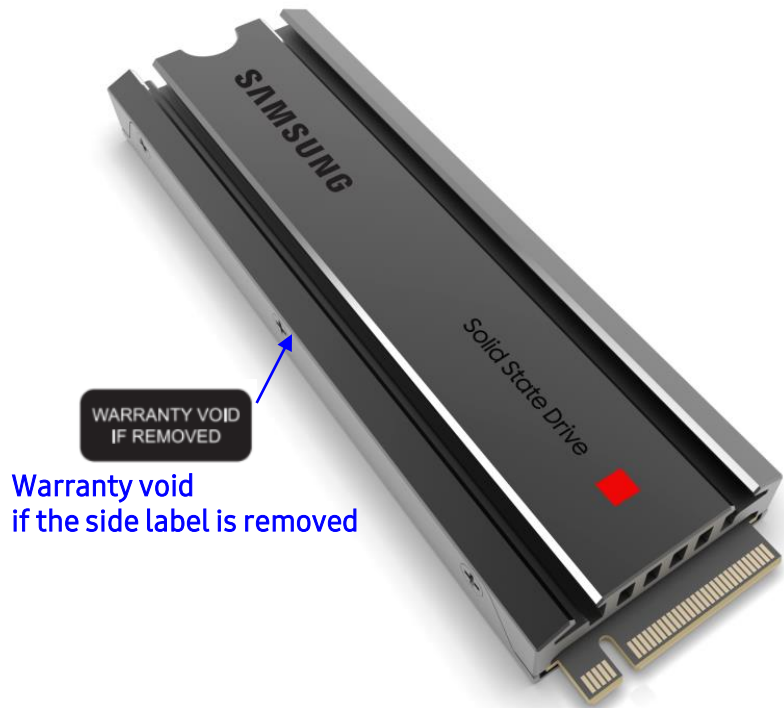
Performance was measured with Intelligent TurboWrite technology being activated

Product & Package Information

SSD 980 PRO with Heatsink – Product Image

980 PRO Heatsink is slim with up to **8.6mm height** which complies PCI-SIG® D8 Spec(8.8mm) and PlayStation5® M.2 SSD Dimension Requirement (11.25mm)

Proven Heatsink Technology by Samsung Datacenter SSDs



Product A	Product B
8.8 mm	11.04 mm

Dimension		Basic Box
L (mm)		80±0.15
W (mm)		24±0.15
H (mm)		8.6
Weight* (g)	1TB	30.5
	2TB	30.5

SSD 980 PRO with Heatsink – Package Information

A package is designed with a hook to hang.
 An internal tray is a pulp tray for environmental friendly with FSC certified.

*Forest Stewardship Council



Dimension		Basic Box
L (mm)		143.4
W (mm)		98.1
H (mm)		22.1
Weight* (g)	1TB	74.7
	2TB	74.7

*MOQ is 60 pcs per outer box

*Weight is measured with all together – basic box, SSD, tray and manual

Product Images & Pricing

SSD 980 PRO with Heatsink – Product Images

The images show the product in different angles and capacities as well as the packaging.



SKU information

980 PRO Heatsink is provided as 1TB and 2TB model

Model	Package	Region	Capacity	Model Code	UPC (12)	EAN/KAN (13)
980 PRO Heatsink	Basic	Worldwide	1TB	MZ-V8P1T0CW	887276598352	8806092837683
			2TB	MZ-V8P2T0CW	887276598369	8806092837690

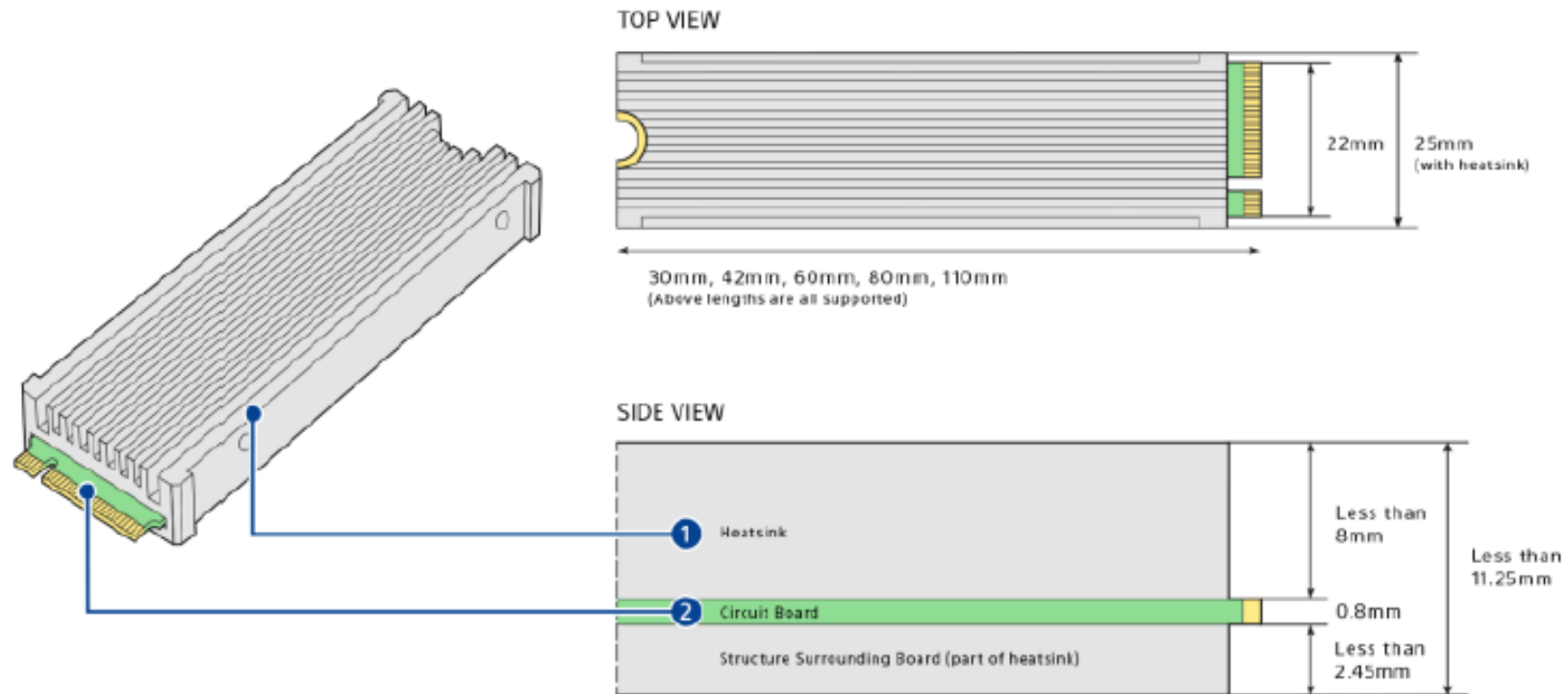
980 PRO Heatsink Pricing

980 PRO Series		UVP
Samsung 980 PRO with Heatsink	1TB	219.90€
	2TB	419.90€

Appendix

Appendix: PlayStation5® M.2 Heatsink Guide

Dimensional Specifications: M.2 SSD Devices for PS5 *(with a built-in heatsink)*



Appendix: PCI-SIG® M.2 Dimension Spec

D8 Spec : Width : 25 ± 0.15 mm, Thickness : 8.8 ± 0.08 mm, Top : 6.5 Max, Btm : 1.5 Max, PCB : 0.8 ± 0.08 mm

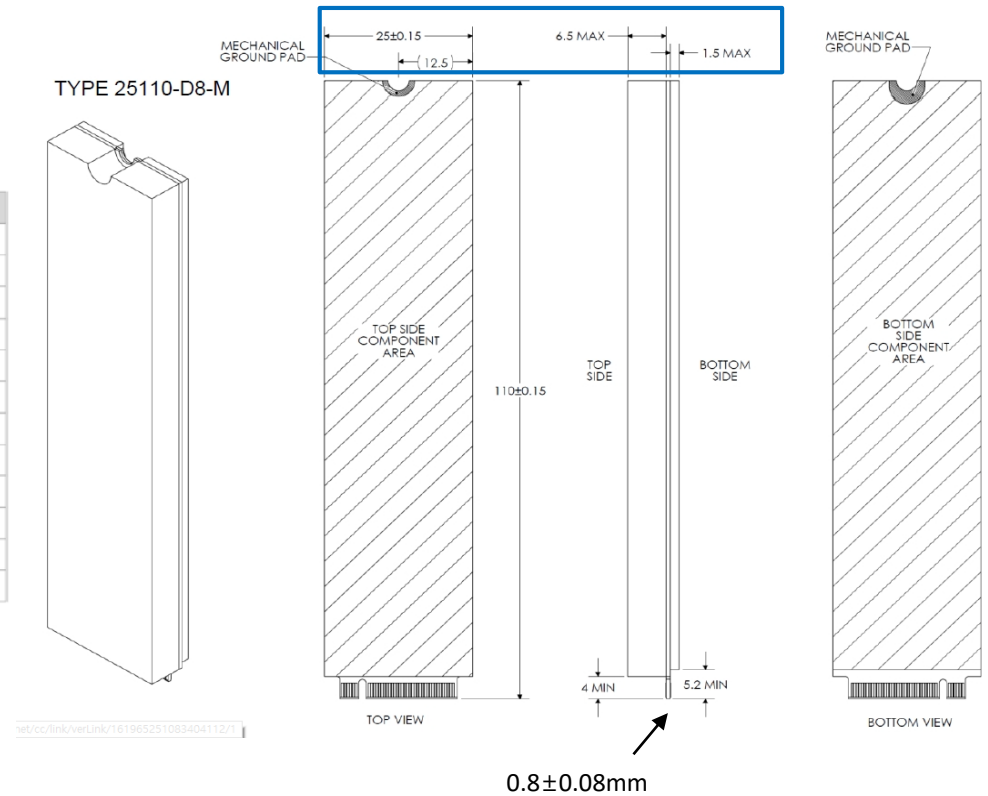
Module Nomenclature
Sample Type 2242-D2-B-M

Type XX XX - XX - X - X⁽¹⁾ - P⁽⁷⁾

Used only when specifying the top surface as planar with dimensional tolerances of +0 / -0.5 mm and flatness of 0.3 mm; see Figures 2-15, 2-16 and 2-17 for details.

Width (mm)	Length (mm)	Label ⁽²⁾	Component Max Ht (mm)	
			Top Max	Bottom Max
12	16	S1	1.2 ⁽⁴⁾	0 ⁽⁵⁾
16	20	S2	1.35 ⁽⁴⁾	0 ⁽⁵⁾
20	24	S3	1.5 ⁽⁴⁾	0 ⁽⁵⁾
22	26	S4	1.75 ⁽⁴⁾	0 ⁽⁵⁾
25	28	S5	2.0 ⁽⁴⁾	0 ⁽⁵⁾
28	30	D1	1.2	1.35
30	42	D2	1.35	1.35
	60	D3	1.5	1.35
	80	D4	1.5	0.7
	110	D5	1.5	1.5
		D6	3.2	1.5
		D7	3.2	2.0
		D8	6.5	1.5

Key ID	Pin	Interface
A	8-15	2x PCIe x1/USB 2.0/I2C/DP x4
B	12-19	PCIe x2/SATA/USB 2.0/USB 3.0/HSIC/SSIC/Audio/UIM/I2C/SMBus
C	16-23	PCIe/M-PCIe/USB 2.0/USB 3.0/SSIC/I2C-SlimBus/UIM/ANTCTL
D	20-27	Reserved for Future Use
E	24-31	2x PCIe x1/USB 2.0/I2C/SDIO/UART/PCM
F	28-35	Future Memory Interface (FMI)
G	39-46	Generic (Not used for M.2) ⁽⁶⁾
H	43-50	Reserved for Future Use
J	47-54	Reserved for Future Use
K	51-58	Reserved for Future Use
L	55-62	Reserved for Future Use
M	59-66	PCIe x4/SATA/SMBus



Thank you

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17th August, 2020

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