

You'll see what performance truly is.



Boost high-end computing even further, with speed, endurance and durability.

Featuring the latest V-NAND technology and a newly enhanced Phoenix controller, the new Samsung 970 PRO NVMe (Non-Volatile Memory Express) SSD delivers unrivaled performance. Designed for high-end professional-level graphics and other data-intensive workflows, they'll deliver up to 30 percent faster sequential read/write speeds and up to 50 percent higher TBW than the previous generation. Upgrade your PCs and workstations, and upgrade everything you do. With Samsung 970 PRO NVMe SSD.

Key Features



The SSD that Goes Beyond

Experience the best. For intensive workloads on PCs and workstations, the 970 PRO delivers ultimate performance in 512 GB and 1 TB capacities.¹ With Samsung's NVMe SSD leadership, the latest V-NAND technology, a Phoenix controller and a compact M.2 form factor,² the Samsung 970 PRO will meet and exceed the most extreme professional demands.



Fearless Performance

Performance that puts you in command. The 970 PRO combines the next-gen PCIe Gen3 x4 NVMe interface with the latest 64-layer V-NAND technology and a Phoenix controller to achieve sequential read/write speeds of up to 3,500/2,700 MB/s,³ approximately 30 percent faster than the previous generation.



Exceptional Endurance

It's the new standard in sustainable performance. The 970 PRO is warranted for up to 5 years or up to 1,200 TBW (depending on drive size), which is 50 percent higher than the previous generation. The 970 PRO provides your business exceptional endurance.



Unparalleled Reliability

Achieve a new level of drive confidence. Samsung's advanced nickel-coated controller and heat spreader enable superior heat dissipation. The Dynamic Thermal Guard automatically monitors and maintains optimal operating temperatures to minimize performance drops.



Samsung Magician

Advanced drive management made simple. The Samsung Magician software will help you keep an eye on your drive. A suite of user-friendly tools helps keep your drive up to date, monitors drive health and speed, and even boosts performance.

Samsung 970 PRO NVMe M.2 Solid State Drives



		MZ-V7P512E	MZ-V7P1TOE
Usage Application		Client PC	Client PC
Capacity ¹		512 GB	1 TB (1,000 GB)
Dimensions (WxHxD)		3.16" x 0.87" x 0.09"	3.16" x 0.87" x 0.09"
Interface		PCIe Gen3 X4, NVMe 1.3	PCIe Gen3 X4, NVMe 1.3
Form Factor ²		M.2 (2280)	M.2 (2280)
Controller		Phoenix	Phoenix
NAND Flash Memory		Samsung 64L V-NAND TLC	Samsung 64L V-NAND TLC
DRAM Cache Memory		512 MB LPDDR4	1 GB LPDDR4
Performance ³	Sequential Read (Max.)	3,500 MB/s	3,500 MB/s
	Sequential Write (Max.)	2,300 MB/s	2,700 MB/s
	4KB Random Read (QD1) (Max.)	15,000 IOPS	15,000 IOPS
	4KB Random Write (QD1) (Max.)	55,000 IOPS	55,000 IOPS
	4KB Random Read (QD32) (Max.)	370,000 IOPS	500,000 IOPS
	4KB Random Write (QD32) (Max.)	500,000 IOPS	500,000 IOPS
Data Security		AES 256-bit Encryption (Class 0), TCG Opal v2.0, IEEE 1667 (Encrypted Drive)	AES 256-bit Encryption (Class 0), TCG Opal v2.0, IEEE 1667 (Encrypted Drive)
Weight (Max.)		8 g.	8 g.
TBW (Terabytes Written)		600 TBW	1,200 TBW
Temperature	Operating	32° ~ 158° F (0° C ~ 70° C)	32° ~ 158° F (0° C ~ 70° C)
	Non-Operating	-49° ~ 185° F (-45° C to 85° C)	-49° ~ 185° F (-45° C to 85° C)
Humidity		5% to 95%, Non-Condensing	5% to 95%, Non-Condensing
Vibration (Non-Operating)		20-2000Hz, 20G	20-2000Hz, 20G
Shock (Non-Operating) ⁴		1500G, Duration 0.5 m/sec, Half-Sine	1500G, Duration 0.5 m/sec, Half-Sine
Management SW		Magician Software	Magician Software
Limited Warranty ⁵		5 Years or 600 TBW	5 Years or 1,200 TBW



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¹1 GB=1,000,000,000 bytes by IDEMA. A certain portion of capacity may be used for system file and maintenance, so the actual capacity may differ from what is indicated on the product label. ²M.2 is a specification of form factor for ultra-thin PCs. The M.2 standard allows widths of 12, 16, 22 and 30 mm and lengths of 16, 26, 30, 38, 42, 69, 80 and 110 mm. Commercially, M.2 is popular with a width of 22 mm and lengths of 30, 42, 60, 80 and 110 mm. Samsung provides the most popular form factor with a 22 mm x 80 mm model (i.e., 2280) for user convenience. ³Sequential and random performance measurements based on Iometer 1.1.0. Performance may vary based on SSD's firmware version, system hardware and configuration. Test system configuration: Intel® Core i7-7700K @ 4.2 GHz, Samsung DDR4 32 GB (16 GB x 2), OS - Windows® 10 Pro x64, ASUS PRIME™ Z270-A. ⁴Internal free fall shock test conducted under controlled conditions. ⁵Warranty 5 years or TBW, whichever comes first. For more information on the warranty, please find the warranty statement enclosed in the package.