

Technical Specifications

		970 PRO		970 EVO			
Model Code		MZ-V7P1T0	MZ-V7P512	MZ-V7E2T0	MZ-V7E1T0	MZ-V7E500	MZ-V7E250
General Feature	Form Factor	M.2 (2280)					
	Application	Client PCs					
	Capacity	1TB	512GB	2TB	1TB	500GB	250GB
	Interface	PCIe Gen 3.0 x4, NVMe 1.3					
	Dimension (WxHxD)	80.15 x 22.15 x 2.38 (mm)					
	Weight	Max 8.0 g					
	Storage Memory	Samsung V-NAND 2-bit MLC		Samsung V-NAND 3-bit MLC			
	Controller	Samsung Phoenix Controller					
	Cache Memory	1GB LPDDR4	512MB LPDDR4	2GB LPDDR4	1GB LPDDR4	512MB LPDDR4	
Performance	Sequential Read	up to 3,500 MB/s		up to 3,500 MB/s	up to 3,400 MB/s		
	Sequential Write	up to 2,700 MB/s	up to 2,300 MB/s	up to 2,500 MB/s		up to 2,300 MB/s	up to 1,500 MB/s
	Random Read (4KB, QD32)	up to 500K IOPS	up to 370K IOPS	up to 500K IOPS		up to 370K IOPS	up to 200K IOPS
	Random Write (4KB, QD32)	up to 500K IOPS		up to 480K IOPS	up to 450K IOPS		up to 350K IOPS
	Random Read (4KB, QD1)	up to 15K IOPS		up to 15K IOPS			
	Random Write (4KB, QD1)	up to 55K IOPS		up to 50K IOPS			
Special Features	TRIM	Supported					
	S.M.A.R.T						
	Device Sleep Mode						
	GC (Garbage Collection)	Auto Carbage Collection Algorithm					
	Data Encryption	Class 0 (AES 256) TCG/Opal v2.0, MS eDrive (IEEE1667)					
Environment	Average Power Consumption (system level)	Average: 5.7 W / Maximum: 8.5 W	Average: 5.2 W / Maximum: 8.5 W	Average: 6 W / Maximum: 10 W		Average: 5.7 W / Maximum: 10 W	Average: 5.4 W / Maximum: 9 W
	Power Consumption (Idle)	Max. 30 mW					
	Allowable Voltage	3.3 V ± 5 % Allowable voltage					
	Reliability (MTBF)	1.5 Million Hours Reliability (MTBF)					
	Operating Temperature	0 - 70 °C Operating Temperature					
	Shock	1,500 G & 0.5 ms (Half sine)					
Software	Management SW	Magician Software for SSD management					
Warranty (Total Bytes Written)		5 Years Limited Warranty or TBW Limited Warranty					
		1,200TB	600TB	1,200TB	600TB	300TB	150TB

· Actual power consumption may vary depending on system hardware & configuration.
· 1GB=1,000,000,000 bytes by IDEMA. A certain portion of capacity may be used for system file and maintenance use, so the actual capacity may differ from what is indicated on the product label.
· 970 PRO and EVO performance may vary based on SSD's firmware version, system hardware and configuration. Performance measurements based on IOMeter 1.1.0.
· Test system configuration: Intel Core i7-7700K CPU @4.2GHz, DDR4 2400MHz 32GB, OS-Windows 10 Built 10240, Chipset-ASUS PRIME Z270-A.
· 970 EVO Intelligent TurboWrite buffer size varies based on the capacity of the SSD: 13GB for 250GB model, 22GB for 500GB model, 42GB for 1TB model and 78GB for 2TB model. For more information on the TurboWrite, please visit: www.samsungssd.com

For more information about the Samsung SSD, visit samsung.com/ssd or samsungssd.com.

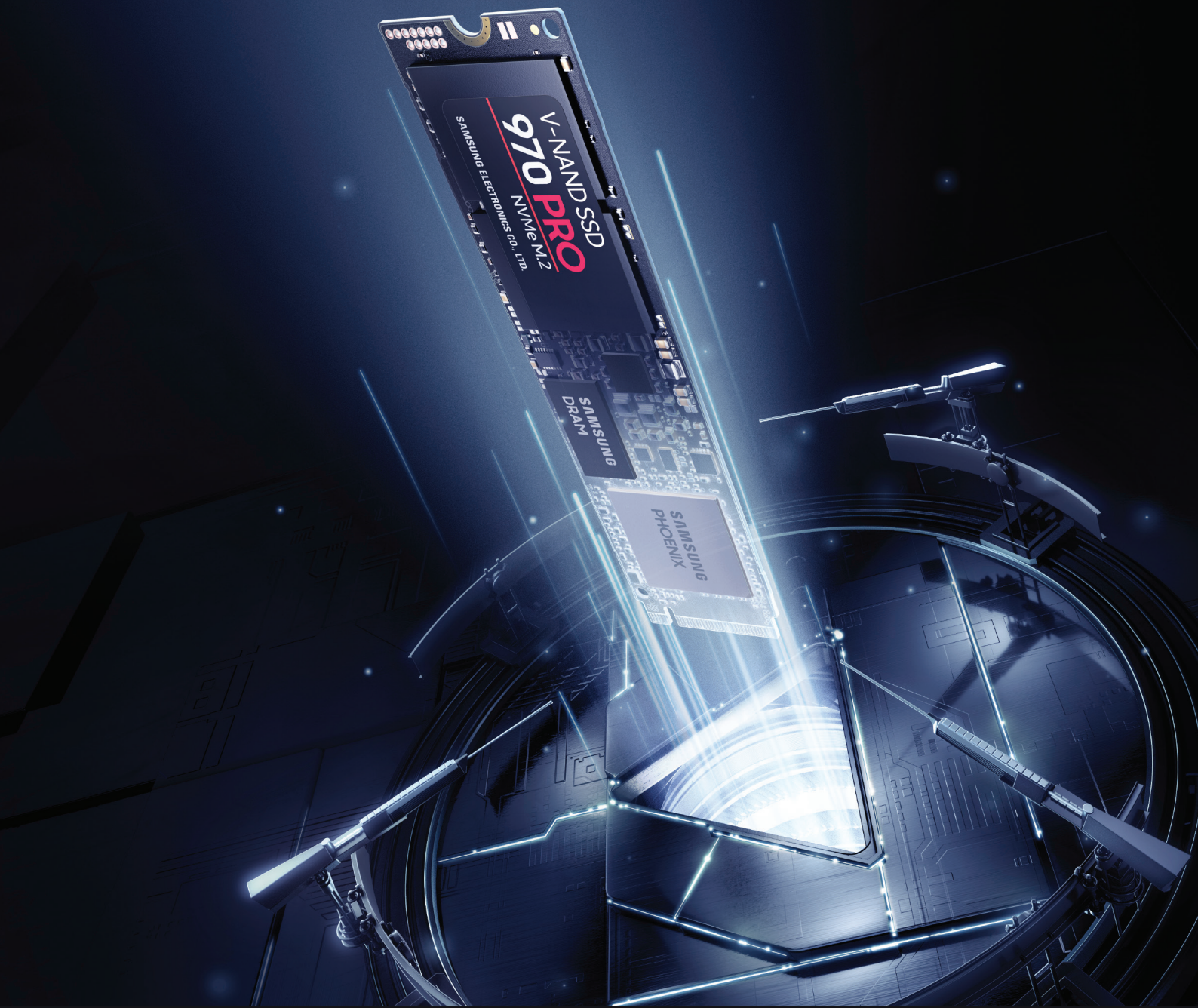
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SAMSUNG

970 PRO | EVO

Unreal Performance, Realized.



V-NAND SSD 970 PRO | EVO

Samsung's latest NVMe M.2 SSD

Groundbreaking performance. Superior reliability. Best-in-class capacity. Introducing the new NVMe SSD series. Powered by the latest V-NAND technology, and a newly enhanced Phoenix controller, to deliver exceptional performance.

The SSDs that go beyond

Reach your peak with the 970 NVMe SSD series

970 PRO

Specially engineered for tech enthusiasts, hardcore gamers, and professionals with intensive PC and workstation workloads

- Top read/write speeds of 3,500/2,700 MB/s respectively
- Industry-leading endurance up to 1,200 TBW
- Available in 512GB, 1TB capacities



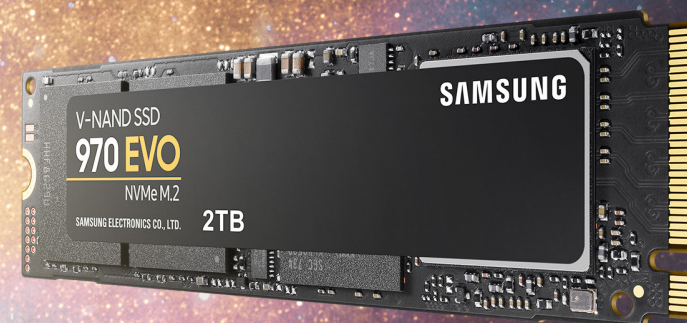
Achieve unmatched performance with the top level 970 PRO | EVO NVMe™ SSDs, specifically engineered to accelerate your computing, with sequential speeds boosted by approximately 30 percent and TBW* increased by 50 percent over the last generation. The latest V-NAND technology and newly enhanced Phoenix controller give you exceptional newfound performance. The pinnacle of SSD performance is here.

* The NVMe Express® design mark is a registered trademark of NVMe Express, Inc.
* Total Bytes Written

970 EVO

Designed for tech savvy users, gamers, and professionals with frequent high workloads such as video production/editing or simulations

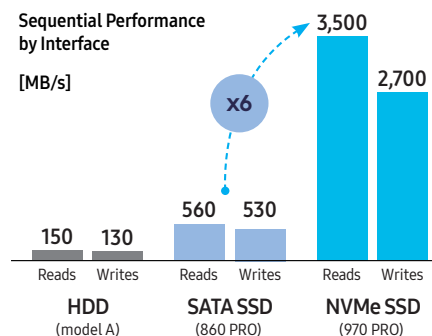
- Top read/write speeds of 3,500/2,500 MB/s respectively
- Industry-leading endurance up to 1,200 TBW
- Available in 250GB, 500GB, 1TB, and 2TB capacities
- Intelligent TurboWrite technology with large buffer size up to 78GB for faster write speeds



The NVMe Difference

The Non-Volatile Memory express (NVMe) interface is specifically engineered to overcome constraints of older interfaces by increasing NAND flash storage transfer speeds. Sequential speeds are approximately 6 times faster than SATA SSDs as NVMe enables your drive to reach its full potential.

* Performance may vary based on SSD's firmware version, system hardware and configuration.



Fearless Performance

The 970 PRO | EVO utilize the new Phoenix controller for astonishing sequential read/write speeds of 3,500/2,700 MB/s, respectively, with the latest V-NAND, approximately 30% percent faster* than the previous generation. For boosted write speed, the 970 EVO's Intelligent TurboWrite technology uses a larger buffer size. Now you can process massive data, streamline 4K and 3D graphic work, and take on 4K/DirectX 12 games with unmatched performance.

Sequential Reads / Writes
up to **3,500 / 2,700 MB/s**

Random Reads / Writes
up to **500K / 500K IOPS**

* Up to 29% and 32% in sequential write speeds, respectively, have increased when compared to Samsung 960 PRO and EVO.

Exceptional Endurance

Gain the advantage of industry-leading sustained performance. With up to 1,200 TBW* and a 5-year limited warranty, the 970 series delivers 50 percent higher endurance than the last generation, all from the latest V-NAND technology.

TBW 1,200TB | 5-year Warranty

* TBW: Terabytes Written

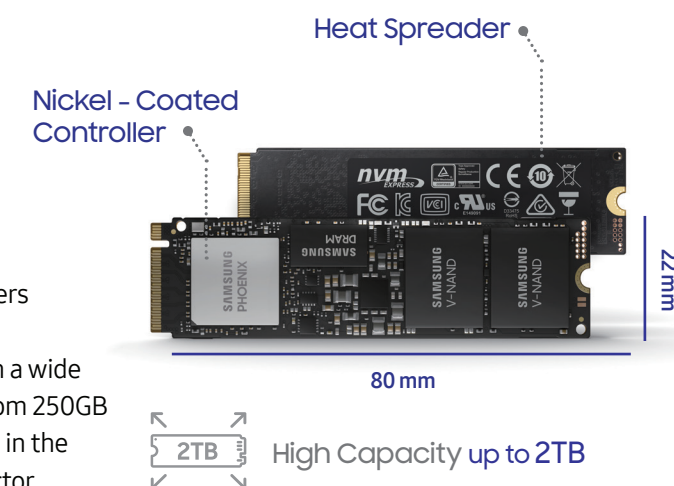
* Samsung's warranty does not cover any costs and expenses related to SSDs' overhaul/assembly and data recovery for repairs or replacements.

Unparalleled Reliability

Minimize performance drops, while maintaining high performance. The Dynamic Thermal Guard effectively manages overheating, while the new nickel-coated controller and thin copper-film layered heat spreader dissipate heat during heavy workloads.

Flexible System Design

Build the ultimate high-end system. The 970 series delivers high power efficiency while maintaining top speeds, with a wide range of capacity options, from 250GB to 2TB on a single-sided SSD in the compact M.2 (2280) form factor.



Manage Your Drive like Magic

The Samsung Magician software equips you with a user-friendly yet powerful suite of tools. Manage your drive with easy firmware updates, drive health and speed monitoring, and accelerate performance with RAPID mode.

Firmware Update | Performance Benchmark | Data Security