Boost computing performance with speed, endurance and worry-free durability.

Featuring the latest V-NAND technology and a newly enhanced Phoenix controller, the new Samsung 970 PRO/970 EVO NVMe (Non-Volatile Memory Express) SSDs deliver unrivaled performance. They'll add extreme power and performance, with approximately 30 percent faster sequential read/write speeds and up to 50 percent higher TBW than the previous generation. Upgrade your PCs, laptops and workstations, and upgrade everything you do. With Samsung 970 PRO/970 EVO NVMe SSDs.

970 PRO NVMe SSD

Fast, enduring performance. The 970 PRO is designed for creators, IT gamers and professionals who use workstations, NAS or high-end computing.

- Built for workstations, NAS and high-end computing
- Meets and exceeds the most extreme professional demands
- Sequential read/write speeds of up to 3,500/2,700 MB/s[1], approximately 30 percent faster than the previous generation
- Up to 1 TB[2] in a compact M.2 form factor[3]

970 EVO NVMe SSD

Gain speed, endurance and reliability. The 970 EVO is ideal for mainstream PCs and laptops used for high workloads such as video production and editing, or simulations.

- Designed for high-performance PCs and laptops
- Ideal for graphic- and video-intensive workflows
- Sequential read/write speeds of up to 3,500/2,500 MB/s[1], up to 32% faster than the previous generation
- Up to 2 TB[2] in a compact M.2 form factor[3]

Exclusive Samsung 3D V-NAND Technology

The 970 PRO/970 EVO NVMe SSDs feature Samsung's 64-layer 3D V-NAND technology, for higher capacities in smaller form factors. Samsung's V-NAND flash memory fundamentally changes the architecture of flash memory. By vertically stacking each cell, more cells can fit within a smaller footprint, for higher capacity. Samsung V-NAND technology also offers faster performance, outstanding endurance and superb power efficiency over 2D planar NAND flash memory.

Next-Level SSD Speed

The 970 PRO/970 EVO NVMe SSDs combine a next-gen PCIe Gen3 x4 NVMe interface with the latest 64-layer V-NAND technology, a Phoenix controller and Intelligent TurboWrite technology (TurboWrite on 970 EVO only) to achieve sequential read/write speeds approximately 30 percent faster than the previous generation.

MB/s	Sequential Reads up to **3,500 MB/s**[A]		Sequential Writes up to **2,700 MB/s**[B]
IOPS	Random Reads up to **500K IOPS**[C]		Random Writes up to **500K IOPS**[D]

[A] 970 PRO 512 GB, 1 TB / EVO 2 TB. [B] 970 PRO 1 TB.
[C] 970 PRO 1 TB / EVO 1 TB, 2 TB. [D] PRO 512, 1 TB.

Exceptional Endurance, Project After Project

The 970 PRO/970 EVO offer up to 1,200 TBW (depending on drive size), which is 50 percent higher than the previous generation. And they're backed by a 5-year limited warranty, for absolute reliability and confidence.[E]

TBW **1,200 TBW**

5 years **5-Year Warranty**

[E] TBW for 970 PRO 1 TB and 970 EVO 2 TB. TBW (Total Bytes Written): The total amount of data that can be written on an SSD before it is likely to fail.

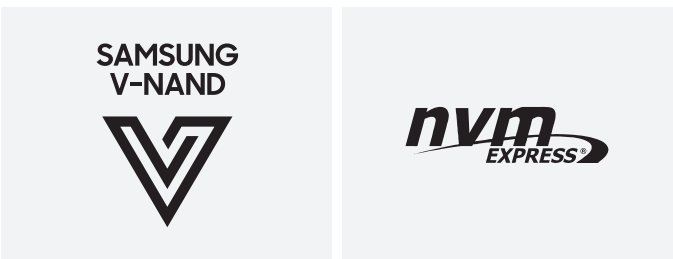## 970 EVO Offers Design Flexibility

The 970 EVO fits up to 2 TB onto the compact M.2 (2280) form factor, greatly expanding storage capacity and saving space for other components. Samsung's innovative technology empowers you with the capacity to do more and accomplish more.

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.

Manage and Maintain with Samsung Magician Software

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 enhances data security with TCG Opal v2.0 and IEEE 1667 compliancy.

Firmware Update

Performance Benchmark

Data Security

SAMSUNG V-NAND

nvm EXPRESS®

V-NAND SSD
970 PRO | 970 EVO

	970 PRO	970 EVO
Form Factor[3]	M.2 (2280)	M.2 (2280)
Application	Client PC	Client PC
Capacity[2]	512 GB, 1 TB	250 GB, 500 GB, 1 TB, 2 TB
Interface	PCIe Gen3 X4, NVMe 1.3	PCIe Gen3 X4, NVMe 1.3
Controller	Phoenix	Phoenix
Dimensions (WxHxD)	3.16" x 0.87" x 0.09"	3.16" x 0.87" x 0.09"
Weight (Max.)	8 g.	8 g.
NAND Flash Memory	Samsung 64L V-NAND TLC	Samsung 64L V-NAND TLC
DRAM Cache Memory	512 GB: 512 MB LPDDR4 / 1 TB: 1 GB LPDDR4	250 GB, 500 GB: 512 MB LPDDR4	1 TB: 1 GB LPDDR4	2 TB: 2 GB LPDDR4
Performance[1] — Sequential Read (Max.)	3,500 MB/s	250 GB, 500 GB, 1 TB: 3,400 MB/s 2 TB: 3,500 MB/s
Performance[1] — Sequential Write (Max.)	512 GB: 2,300 MB/s	1 TB: 2,700 MB/s	250 GB: 1,500 MB/s	500 GB: 2,300 MB/s 1 TB, 2 TB: 2,500 MB/s
Performance[1] — 4KB Random Read (QD1) (Max.)	15,000 IOPS	15,000 IOPS
Performance[1] — 4KB Random Write (QD1) (Max.)	55,000 IOPS	50,000 IOPS
Performance[1] — 4KB Random Read (QD32) (Max.)	512 GB: 370,000 IOPS	1 TB: 500,000 IOPS	250 GB: 200,000 IOPS	500 GB: 370,000 IOPS 1 TB, 2 TB: 500,000 IOPS
Performance[1] — 4KB Random Write (QD32) (Max.)	500,000 IOPS	250 GB: 350,000 IOPS	500 GB, 1 TB: 450,000 IOPS 2 TB: 480,000 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)
Temperature — Operating	32˚ ~ 158˚ F / 0 ~ 70˚C	32˚ ~ 158˚ F / 0 ~ 70˚C
Temperature — Non-Operating	-49˚ ~ 185˚F (-45˚C to 85˚C)	-49˚ ~ 185˚F (-45˚C to 85˚C)
Humidity	5% ~ 95%, Non-Condensing	5% ~ 95%, Non-Condensing
Shock[4]	1500G, Duration 0.5 m/sec, Half-Sine	1500G, Duration 0.5 m/sec, Half-Sine
Management SW	Magician Software	Magician Software
Warranty (TBW)[5]	5 Years Limited Warranty or TBW Limited Warranty 512 GB: 600 TBW	1 TB: 1,200 TBW	5 Years Limited Warranty or TBW Limited Warranty 250 GB: 150 TBW	500 GB: 300 TBW	1 TB: 600 TBW	2 TB: 1,200 TBW

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[1]Sequential 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. For 970 EVO, sequential write performance measurements based on TurboWrite technology. The sequential write performances after TurboWrite region are 300 MB/s (250 GB), 600 MB/s (500 GB), 1,200 MB/s (1 TB) and 1,250 MB/s (2 TB). Random Write performance measurements are based on TurboWrite technology. The random write performances after TurboWrite region are 80,000 IOPS (250 GB), 160,000 IOPS (500 GB) and 300,000 IOPS (1 TB/2 TB). [2]1 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. [3]M.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. [4]Internal free fall shock test conducted under controlled conditions. [5]Warranty 5 years or TBW, whichever comes first. For more information on the warranty, please find the warranty statement enclosed in the package.