

Samsung MZ-V8P1T0BW

Samsung 980 PRO NVMe M.2 SSD User Manual

Model: MZ-V8P1T0BW

1. INTRODUCTION

This manual provides essential information for the installation, operation, maintenance, and troubleshooting of your Samsung 980 PRO NVMe M.2 Solid State Drive. Please read this manual thoroughly before using the product to ensure proper and safe operation.

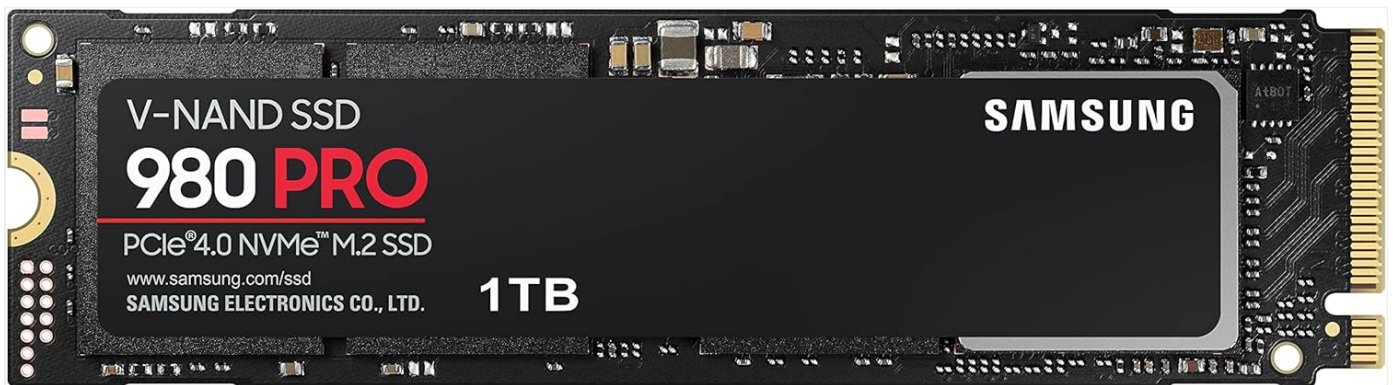


Image 1.1: Front view of the Samsung 980 PRO NVMe M.2 SSD, showing the V-NAND SSD 980 PRO branding, PCIe 4.0 NVMe M.2 SSD designation, and 1TB capacity.

2. SAFETY INFORMATION

Observe the following safety precautions to prevent damage to the product or injury to yourself.

- **Electrostatic Discharge (ESD) Precautions:** Always handle the SSD by its edges. Wear an anti-static wrist strap or frequently touch a grounded metal object before handling the SSD to discharge static electricity.
- **Power Off:** Ensure your computer system is completely powered off and unplugged from the power source before installing or removing the SSD.
- **Compatibility:** Verify that your motherboard has a compatible M.2 slot (M-key, PCIe Gen4 x4 recommended for full performance) before installation.

- **Physical Damage:** Do not bend, drop, or apply excessive force to the SSD. Avoid contact with liquids.
- **Temperature:** Operate the SSD within its specified temperature range. Excessive heat can reduce performance and lifespan.

3. SETUP AND INSTALLATION

3.1. Pre-installation Checklist

- Compatible motherboard with an M.2 slot (M-key).
- Screwdriver (typically Phillips head).
- Motherboard standoff and screw for M.2 SSD (usually included with motherboard).
- Anti-static wrist strap (recommended).

3.2. Physical Installation

1. **Prepare Your System:** Power off your computer completely and unplug the power cable from the wall outlet. Open your computer case.
2. **Locate M.2 Slot:** Identify an available M.2 slot on your motherboard. Refer to your motherboard's manual for exact locations.
3. **Install Standoff:** If not already present, install the appropriate M.2 standoff for a 2280 size SSD into the motherboard.
4. **Insert SSD:** Carefully align the notch on the Samsung 980 PRO SSD with the key in the M.2 slot. Insert the SSD at a slight angle (approximately 30 degrees) into the slot until it is fully seated. Do not force it.
5. **Secure SSD:** Gently push down the end of the SSD until it is parallel with the motherboard. Secure it with the M.2 screw into the standoff.
6. **Close Case:** Close your computer case and reconnect all cables.

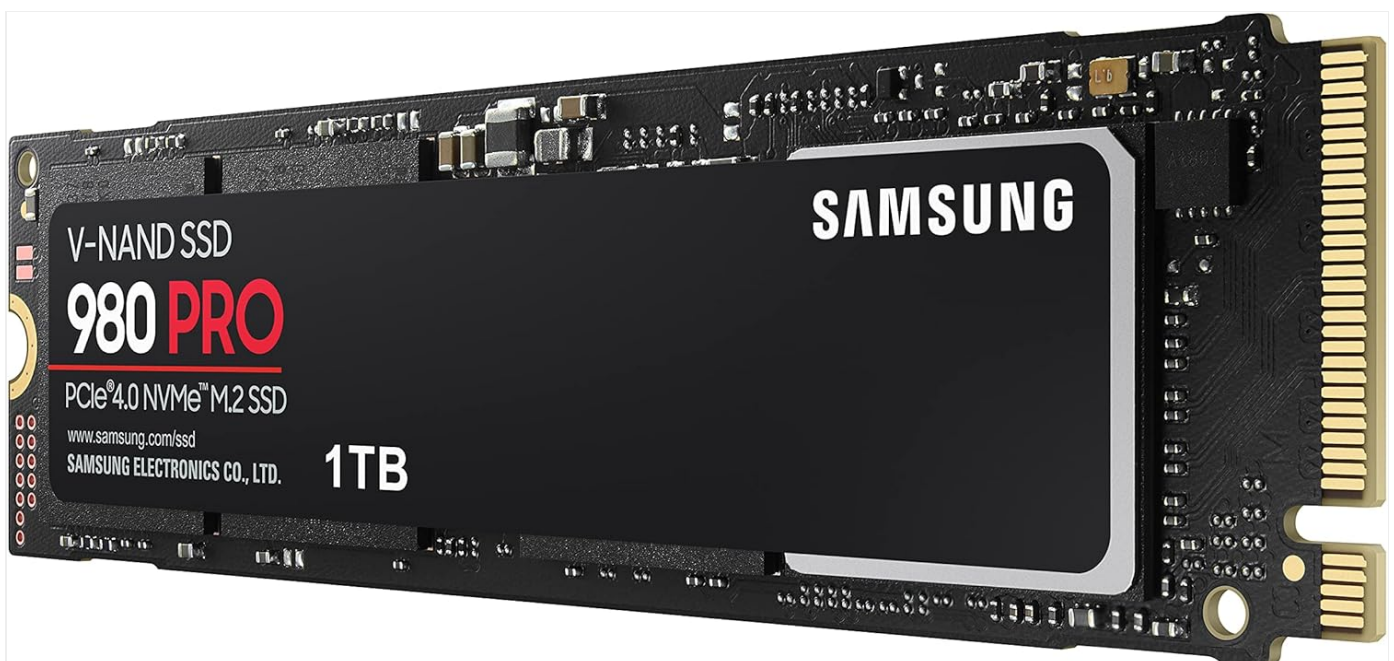


Image 3.1: Angled view of the Samsung 980 PRO NVMe M.2 SSD, showing the M.2 connector pins and the overall compact form factor.

3.3. Software Setup (Windows)

1. **Boot System:** Power on your computer.

2. **Initialize Disk:** For a new SSD, you will need to initialize and format it before use.

- Right-click on the Start button and select 'Disk Management'.
- A 'Initialize Disk' window should appear for the new SSD. Select 'GPT (GUID Partition Table)' and click 'OK'.
- Right-click on the 'Unallocated' space of the new SSD and select 'New Simple Volume'.
- Follow the 'New Simple Volume Wizard' to assign a drive letter and format the drive (NTFS recommended).

• **Install Samsung NVMe Driver (Optional but Recommended):** For optimal performance, download and install the latest Samsung NVMe driver from the official Samsung website.

• **Install Samsung Magician Software:** Download and install the Samsung Magician software from the official Samsung website. This software helps manage and optimize your SSD.

4. OPERATING THE SSD

Once installed and formatted, your Samsung 980 PRO SSD will function like any other storage drive. For best performance, consider the following:

- **Primary Drive:** For maximum speed benefits, consider installing your operating system on the 980 PRO.
- **Gaming and Applications:** Install frequently used games and demanding applications on the SSD to leverage its high read/write speeds for faster loading times.
- **Samsung Magician Software:** Utilize the Samsung Magician software for performance optimization, firmware updates, and health monitoring.

5. MAINTENANCE

Regular maintenance helps ensure the longevity and optimal performance of your SSD.

- **Firmware Updates:** Periodically check for and install the latest firmware updates using the Samsung Magician software. Firmware updates can improve performance, stability, and compatibility.
- **TRIM Command:** Ensure the TRIM command is enabled in your operating system. TRIM helps the SSD manage its data more efficiently, preventing performance degradation over time. Windows typically enables this by default for SSDs.
- **Over-provisioning:** Samsung Magician allows you to set aside a portion of the drive for over-provisioning, which can improve performance and endurance.
- **Health Monitoring:** Use Samsung Magician to monitor the SSD's health, temperature, and Total Bytes Written (TBW).
- **Data Backup:** Regularly back up important data from your SSD to another storage device. While SSDs are reliable, no storage device is immune to failure.

6. TROUBLESHOOTING

If you encounter issues with your Samsung 980 PRO SSD, try the following steps:

Problem	Possible Cause	Solution
SSD not detected by system/BIOS	Incorrect installation, BIOS settings, or faulty M.2 slot.	Ensure SSD is fully seated in the M.2 slot. Check BIOS/UEFI settings to ensure the M.2 slot is enabled and configured correctly (e.g., PCIe mode). Try the SSD in a different M.2 slot if available, or on another compatible system.
Slow performance	Incorrect drivers, full drive, high temperature, or TRIM not enabled.	Install the latest Samsung NVMe driver. Ensure the drive is not nearly full (keep at least 10-15% free space). Check SSD temperature using Samsung Magician. Ensure adequate system cooling. Verify TRIM is enabled in your OS.
SSD not showing in 'My Computer' (Windows)	Not initialized or formatted.	Go to 'Disk Management' and initialize/format the drive as described in Section 3.3.

If these steps do not resolve the issue, please refer to the Samsung support website or contact customer service.

7. SPECIFICATIONS

Key technical specifications for the Samsung 980 PRO NVMe M.2 SSD (1TB model):

- **Digital Storage Capacity:** 1000 GB
- **Hard Disk Interface:** PCIe x 4
- **Connectivity Technology:** PCI Express 4.0
- **Brand:** Samsung
- **Special Feature:** Portable (refers to the M.2 form factor's portability within compatible systems)
- **Hard Disk Form Factor:** 2.5 Centimeters (refers to the M.2 2280 standard, where 22mm is width and 80mm is length)
- **Hard Disk Description:** Solid State Drive
- **Compatible Devices:** Desktop, Laptop, PC
- **Installation Type:** Internal Hard Drive
- **Color:** N.A (Not Applicable, as it's an internal component)
- **Read Speed:** Up to 7,000 MB/s
- **Write Speed:** Up to 5,000 MB/s



Image 7.1: Back view of the Samsung 980 PRO NVMe M.2 SSD, displaying various regulatory compliance markings and manufacturing information.

8. WARRANTY AND SUPPORT

For detailed warranty information, including terms, conditions, and duration, please refer to the official Samsung website or the warranty card included with your product. Samsung provides technical support for its products.

8.1. Obtaining Support

- **Online Resources:** Visit the official Samsung support website for FAQs, drivers, firmware updates, and troubleshooting guides.
- **Contact Customer Service:** If you require further assistance, contact Samsung customer service through the channels provided on their support website (phone, chat, email).
- **Product Registration:** Registering your product online may facilitate warranty claims and provide access to additional support resources.

