Samsung MZ-V9S2T0B/AM

Samsung 990 EVO Plus SSD 2TB M.2 NVMe User Manual

Model: MZ-V9S2T0B/AM

1. INTRODUCTION

This manual provides essential information for the installation, operation, and maintenance of your Samsung 990 EVO Plus 2TB M.2 NVMe Solid State Drive (SSD). Please read these instructions carefully before proceeding with installation to ensure proper functionality and to maximize the performance and lifespan of your device. This SSD is designed for use in compatible desktop and laptop systems.

2. PRODUCT OVERVIEW

The Samsung 990 EVO Plus is a high-performance M.2 NVMe SSD, offering significant speed improvements and efficient power consumption. It is compatible with both PCIe Gen 4x4 and Gen 5x2 interfaces, providing versatility for various system configurations.

Image: The Samsung 990 EVO Plus 2TB M.2 NVMe SSD module, showcasing its compact form factor and branding.

Key Features:

- **High-Speed Performance:** Sequential read speeds up to 7,250 MB/s and write speeds up to 6,300 MB/s, enabled by the latest NAND memory and Intelligent TurboWrite 2.0 technology.
- **PCIe Compatibility:** Supports PCIe 4.0 x4 and PCIe 5.0 x2 interfaces for broad system compatibility and optimized data transfer.
- **Enhanced Power Efficiency:** Features a nickel-coated controller that improves power efficiency, reducing power consumption while maintaining high performance and thermal control.
- **Magician Software Support:** Provides tools for firmware updates, performance optimization, and drive health monitoring.

Your browser does not support the video tag.

Video: An overview of the Samsung 990 EVO Plus SSD's features and benefits, demonstrating its speed and efficiency.

3. SPECIFICATIONS

Attribute	Value
Model Number	MZ-V9S2T0B/AM
Capacity	2 TB
Interface	PCIe Gen 4x4, Gen 5x2 NVMe
Form Factor	M.2 2280
Sequential Read Speed	Up to 7,250 MB/s
Sequential Write Speed	Up to 6,300 MB/s
Dimensions (LxWxH)	3.2 x 0.9 x 0.1 inches
Weight	0.317 ounces
Hardware Platform	PC
Compatible Devices	Desktop, Laptop
Included Components	Internal SSD

4. SETUP & INSTALLATION

Proper installation is crucial for optimal performance. Always ensure your system is powered off and unplugged before installing hardware components. Refer to your computer's motherboard manual for specific M.2 slot locations and installation procedures.

Installation Steps:

1. **Prepare Your System:** Power down your computer and disconnect all power cables. Open your computer case or laptop chassis.
2. **Locate M.2 Slot:** Identify an available M.2 slot on your motherboard. The Samsung 990 EVO Plus uses the M.2 2280 form factor.
3. **Insert SSD:** Gently insert the Samsung 990 EVO Plus SSD into the M.2 slot at a 30-degree angle. Push it down until it is parallel with the motherboard.
4. **Secure SSD:** Secure the SSD with the screw provided by your motherboard manufacturer. Do not overtighten.
5. **Reassemble and Power On:** Close your computer case or laptop chassis, reconnect power, and power on your system.
6. **Initialize and Format:** Once the system boots, you may need to initialize and format the new SSD through your operating system's Disk Management utility before it can be used.
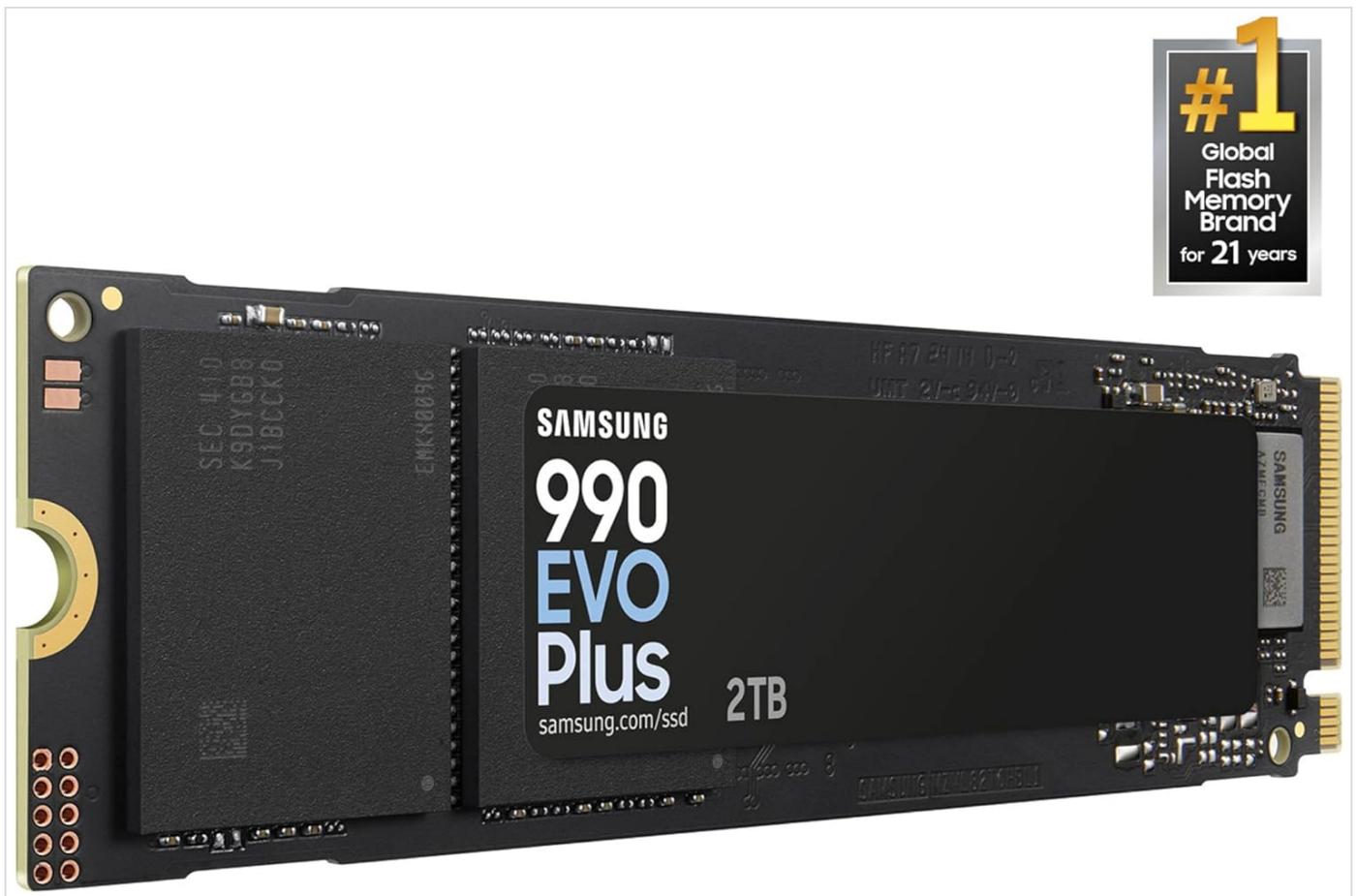
Image: The Samsung 990 EVO Plus SSD alongside its retail packaging and a small installation guide, indicating what is included in the box.

Compatibility Note: To achieve the maximum performance of the 990 EVO Plus, ensure your system supports PCIe 4.0 or PCIe 5.0. Consult your motherboard or system manufacturer's website for compatibility details.

5. OPERATING INSTRUCTIONS

After successful installation and formatting, your Samsung 990 EVO Plus SSD is ready for use as a primary boot drive or secondary storage. For optimal management and performance, Samsung recommends installing the Samsung Magician Software.

Using Samsung Magician Software:

- **Drive Information:** View detailed information about your SSD, including model name, serial number, firmware version, and health status.
- **Performance Benchmark:** Test the read and write speeds of your SSD to verify performance.
- **Performance Optimization:** Utilize features like TRIM and over-provisioning to maintain optimal performance over time.
- **Secure Erase:** Permanently delete data from the SSD for security purposes.
- **Firmware Update:** Easily update the SSD's firmware to the latest version.

Works like magic

It's not hocus-pocus. Your 990 EVO Plus SSD performs like new with the always up-to-date Magician Software. With firmware updates, extra encryption and continual monitoring of your drive health, it works like a charm.

Firmware update

Performance optimization

Encrypted drive

Image: A laptop screen showing the Samsung Magician Software interface, highlighting features like firmware updates, performance optimization, and encrypted drive management.

6. MAINTENANCE

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

Recommended Maintenance Practices:

- **Firmware Updates:** Periodically check for and install the latest firmware updates using Samsung Magician Software. Firmware updates often include performance enhancements and bug fixes.
- **Monitor Drive Health:** Use Samsung Magician Software to monitor the health and temperature of your SSD. This can help identify potential issues early.
- **TRIM Functionality:** Ensure TRIM is enabled in your operating system. TRIM helps the SSD manage data more efficiently, preventing performance degradation over time. Samsung Magician Software can assist with this.
- **Avoid Full Capacity:** While SSDs perform well even when nearly full, maintaining some free space (e.g., 10-15%)

can help sustain optimal performance and extend lifespan.

7. TROUBLESHOOTING

If you encounter issues with your Samsung 990 EVO Plus SSD, consider the following troubleshooting steps:

Common Issues and Solutions:

- **SSD Not Detected:**
  - Ensure the SSD is correctly seated in the M.2 slot.
  - Check your motherboard's BIOS/UEFI settings to confirm the M.2 slot is enabled and configured correctly (e.g., NVMe mode).
  - Verify that your motherboard chipset drivers are up to date.
  - Try the SSD in a different M.2 slot or another compatible system if available.

- **Slow Performance:**
  - Confirm your system supports PCIe 4.0 or 5.0 for optimal speeds. If using a slower PCIe generation, performance will be limited.
  - Ensure your operating system and drivers are up to date.
  - Check SSD health and performance using Samsung Magician Software.
  - Verify that TRIM is enabled.
  - Monitor SSD temperature; excessive heat can lead to thermal throttling and reduced performance. Ensure adequate system cooling.

- **Operating System Not Booting:**
  - If this is a new installation, ensure the operating system was installed correctly on the SSD.
  - Check BIOS/UEFI boot order to ensure the SSD is set as the primary boot device.
  - If migrating an OS, ensure the cloning process was successful.

For further assistance, refer to the Samsung support website or contact their customer service.

8. WARRANTY AND SUPPORT

Your Samsung 990 EVO Plus SSD is covered by a limited warranty. Please retain your proof of purchase for warranty claims. For detailed warranty terms and conditions, visit the official Samsung website.

Customer Support: For technical support, driver downloads, and firmware updates, please visit the official Samsung Semiconductor website or contact Samsung customer service in your region. The Samsung Magician Software is a valuable resource for managing your SSD and accessing support features.