

Samsung MZ-77E2T0B/AM

Samsung 870 EVO 2TB 2.5-inch SATA III Internal SSD User Manual

Model: MZ-77E2T0B/AM | Brand: Samsung

1. INTRODUCTION

This manual provides essential information for the proper installation, operation, maintenance, and troubleshooting of your Samsung 870 EVO 2TB 2.5-inch SATA III Internal Solid State Drive. The 870 EVO series is designed for enhanced performance, reliability, and compatibility, making it suitable for various computing environments.



Figure 1: Front view of the Samsung 870 EVO 2TB SSD.

2. SAFETY INFORMATION

Please read and follow these safety guidelines to prevent damage to the product and ensure user safety:

- Always handle the SSD with care to avoid physical damage.
- Ensure your system is powered off and unplugged before installation or removal.
- Discharge any static electricity from your body before handling the SSD to prevent electrostatic discharge (ESD) damage.
- Do not expose the SSD to extreme temperatures or moisture.
- Refer to your computer's manual for specific instructions on opening the case and installing internal components.

3. SETUP

3.1 Physical Installation

The Samsung 870 EVO SSD is a 2.5-inch form factor drive, compatible with most desktop PCs and laptops that support SATA III (6 Gb/s) interfaces.

1. **Prepare Your System:** Power off your computer and disconnect all cables. Open the computer case according to the manufacturer's instructions.
2. **Locate a Drive Bay:** Identify an available 2.5-inch drive bay. If only 3.5-inch bays are available, you may need a 2.5-inch to 3.5-inch adapter bracket (not included).
3. **Mount the SSD:** Secure the SSD into the drive bay using screws or the system's tool-less mounting mechanism.
4. **Connect Cables:** Connect a SATA data cable from the SSD to an available SATA port on your motherboard. Connect a SATA power cable from your power supply unit (PSU) to the SSD.



Figure 2: Installation of the Samsung 870 EVO SSD into a desktop PC.



Figure 3: SATA data and power connectors on the SSD.

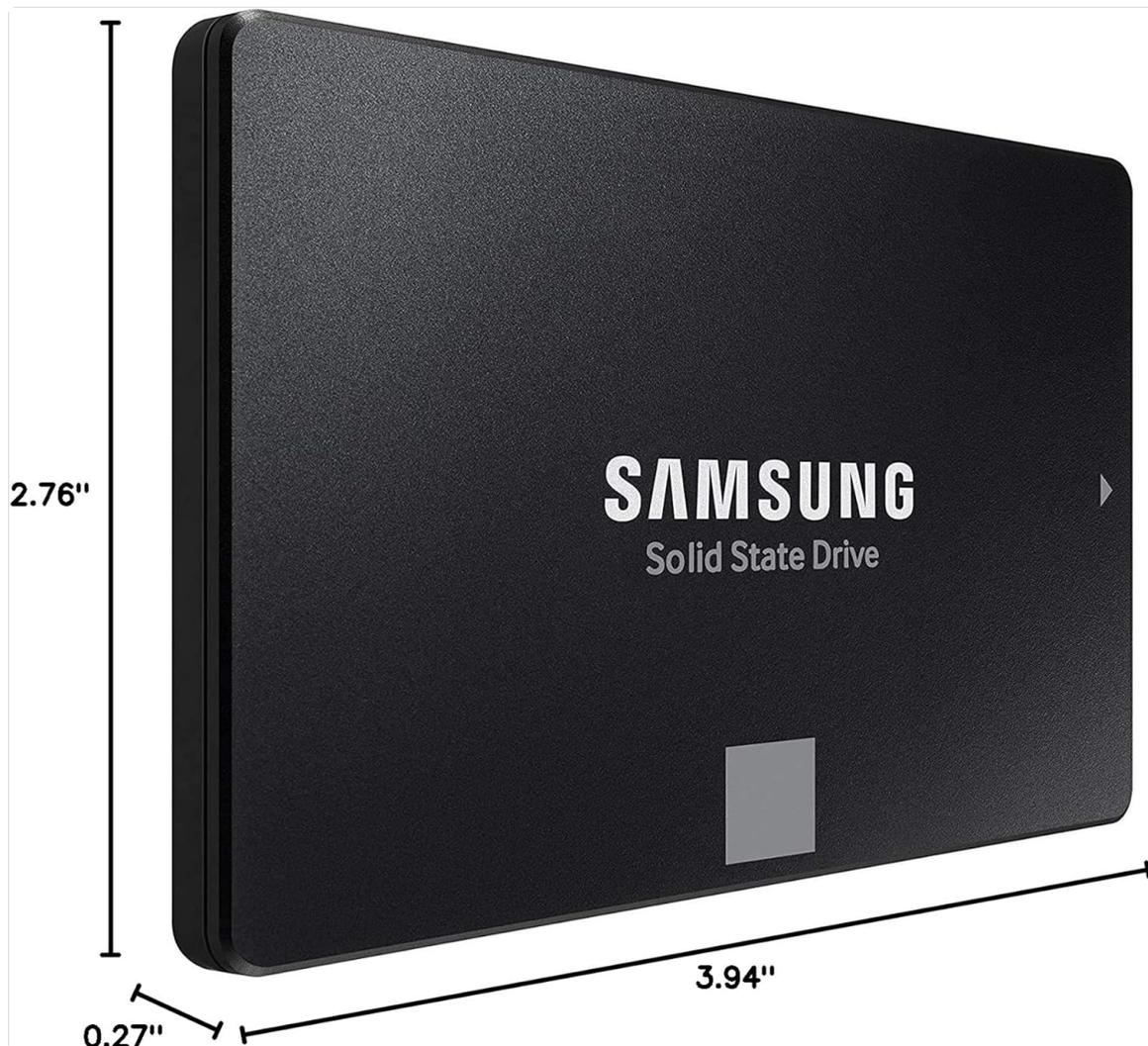


Figure 4: Physical dimensions of the Samsung 870 EVO SSD.

3.2 Software Installation and Data Migration

For optimal performance and easy data transfer, Samsung provides dedicated software:

- **Samsung Magician Software:** This utility helps manage your SSD, monitor its health, optimize performance, and update firmware. Download from the official Samsung website.
- **Samsung Data Migration Software:** If you are replacing an existing drive, this software allows you to clone your operating system, applications, and data from your old drive to the new 870 EVO SSD. Download from the official Samsung website.

Follow the on-screen instructions provided by the software for installation and data migration.

4. OPERATING

Once installed and configured, your Samsung 870 EVO SSD will function as a high-speed storage device. It can be used as:

- **Boot Drive:** Install your operating system on the SSD for significantly faster boot times and application loading.
- **Storage Drive:** Use it to store large files, games, or frequently accessed data for quick retrieval.

The 870 EVO features **Intelligent TurboWrite technology**, which accelerates write speeds and maintains long-term high performance by utilizing a larger variable buffer. This ensures consistent speed even under heavy workloads, such as 8K video processing.

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.
- **Drive Health Monitoring:** Use Samsung Magician to monitor the SSD's health status, temperature, and total bytes written (TBW). This helps anticipate potential issues.
- **TRIM Support:** Ensure TRIM is enabled in your operating system. TRIM helps the SSD manage data blocks more efficiently, maintaining performance over time.
- **Avoid Full Capacity:** While SSDs perform well even when nearly full, leaving some free space (e.g., 10-15%) can help maintain optimal performance and endurance.
- **Data Backup:** Regularly back up important data to another storage device. While SSDs are reliable, no storage device is immune to failure.

6. TROUBLESHOOTING

If you encounter issues with your Samsung 870 EVO SSD, consider the following:

- **SSD Not Detected:**
 - Check all cable connections (SATA data and power).
 - Ensure the SATA port on the motherboard is enabled in the BIOS/UEFI settings.
 - Try connecting the SSD to a different SATA port or with different cables.
- **Slow Performance:**
 - Verify that your system's SATA controller is operating in AHCI mode (not IDE mode) in the BIOS/UEFI.
 - Ensure TRIM is enabled in your operating system.
 - Update the SSD firmware using Samsung Magician.
 - Check the drive's health status with Samsung Magician for any warnings.
- **Operating System Installation Issues:**
 - Ensure the SSD is properly initialized and formatted before attempting OS installation.
 - If migrating an OS, ensure the source drive is healthy and the migration software completes successfully.

For persistent issues, consult the Samsung support website or contact customer service.

7. SPECIFICATIONS

Feature	Specification
Model Number	MZ-77E2T0B/AM
Capacity	2TB
Form Factor	2.5-inch
Interface	SATA III (6 Gb/s), compatible with SATA II (3 Gb/s) and SATA I (1.5 Gb/s)
Sequential Read Speed	Up to 560 MB/s
Sequential Write Speed	Up to 530 MB/s (with Intelligent TurboWrite)
NAND Type	Samsung V-NAND MLC
Dimensions (LxWxH)	3.94 x 2.76 x 0.27 inches
Weight	3.04 ounces
Operating Temperature	0°C to 70°C (32°F to 158°F)
Shock Resistance	1,500 G & 0.5 ms (Half sine)
Encryption	Class 0 (AES 256) TCG/Opal v2.0, MS eDrive (IEEE1667)

8. WARRANTY

The Samsung 870 EVO SSD comes with a **5-year limited warranty or up to 2,400 TBW (Total Bytes Written)**, whichever comes first. For detailed warranty terms and conditions, please refer to the warranty statement included in the product packaging or visit the official Samsung website.

9. SUPPORT

For further assistance, technical support, or to download the latest software and drivers, please visit the official Samsung website:

- **Samsung Support Website:** www.samsung.com/us/support/

- **Samsung Magician & Data Migration Software:** Available on the support website.

When contacting support, please have your SSD model number (MZ-77E2T0B/AM) and serial number ready.