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> [SAMSUNG 850 PRO Series SSD User Manual](#)

**SAMSUNG MZ-7KE512BW**

# SAMSUNG 850 PRO Series SSD User Manual

Model: MZ-7KE512BW

## 1. INTRODUCTION

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The SAMSUNG 850 PRO 512GB 2.5-Inch SATA III Internal SSD (Model: MZ-7KE512BW) is engineered for demanding applications and power users. It leverages Samsung's advanced 3D V-NAND technology to deliver exceptional performance and long-term reliability. This manual provides essential information for the setup, operation, maintenance, and troubleshooting of your SSD.



Figure 1: Samsung 850 PRO 512GB Solid State Drive

## 2. PACKAGE CONTENTS

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Verify that your package contains the following items:

- One 2.5-Inch SATA III (6GB/s) SSD
- User Manual (this document)

## 3. SETUP AND INSTALLATION

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### 3.1 Physical Installation

1. **Power Off:** Ensure your computer system is completely powered off and disconnected from the power source.
2. **Open Case:** Open your computer case to access the drive bays.
3. **Mount SSD:** Securely mount the 2.5-inch SSD into an available drive bay. You may need a 2.5-inch to 3.5-inch adapter bracket (not included) for desktop PCs.
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 to the SSD.
5. **Close Case:** Close your computer case and reconnect the power source.

### 3.2 Software Setup

After physical installation, you will need to prepare the SSD for use:

- **Initialize and Format:** For new installations, initialize the SSD in Disk Management (Windows) or Disk Utility (macOS) and format it to your desired file system (e.g., NTFS for Windows, APFS/HFS+ for macOS).
- **Operating System Installation:** Install your operating system onto the SSD for optimal performance.
- **Samsung Magician Software:** Install the Samsung Magician software (available from the Samsung website) to manage your SSD, monitor its health, optimize performance, and update firmware.
- **Samsung Data Migration Software:** If migrating from an existing drive, use the Samsung Data Migration software to transfer your operating system and data to the new SSD.

## 4. OPERATING YOUR SSD

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The Samsung 850 PRO SSD offers significant performance advantages over traditional hard drives:

- **Faster Boot Times:** Experience computer boot-up times as fast as 15 seconds.
- **Application Responsiveness:** Applications load and respond significantly faster.
- **Energy Efficiency:** Features Device Sleep mode for Ultranotebooks, improving battery life by up to 45 minutes compared to standard hard drives.
- **Data Security:** Supports AES 256-bit encryption, Microsoft Bitlocker, and TCG / Opal 2.0 for worry-free data security.

 Video: Official Samsung video demonstrating the V-NAND technology and performance benefits of the Solid State Drive.

## 5. MAINTENANCE

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To ensure optimal performance and longevity of your Samsung 850 PRO SSD, consider the following maintenance practices:

- **TRIM Command:** Ensure your operating system has TRIM enabled. TRIM helps the SSD manage data more efficiently, preventing performance degradation over time.
- **Firmware Updates:** Regularly check for and install the latest firmware updates using Samsung Magician software. Firmware updates can improve performance, stability, and compatibility. *Note: Exercise caution when updating firmware; ensure a stable power supply and follow all instructions carefully.*
- **Overprovisioning:** For advanced users, consider setting aside 25%-30% of the drive's capacity as unpartitioned, unallocated free space (overprovisioning). This can significantly boost sustained write performance and

endurance.

- **Avoid Defragmentation:** Do not defragment your SSD. Defragmentation is designed for traditional hard drives and can reduce the lifespan of an SSD without providing any performance benefit.

## 6. TROUBLESHOOTING

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If you encounter issues with your Samsung 850 PRO SSD, try the following steps:

- **SSD Not Detected:**
  - Check SATA data and power cable connections.
  - Verify that the SATA port on your motherboard is enabled in the BIOS/UEFI settings.
  - Test the SSD in another computer or with different cables if possible.
- **Performance Issues:**
  - Ensure TRIM is enabled and functioning correctly.
  - Update the SSD firmware to the latest version.
  - Check your motherboard's SATA controller drivers and update them if necessary.
  - Verify that the SSD is connected to a SATA III (6Gb/s) port for maximum speed.
- **Operating System Errors:**
  - Run a disk check (e.g., `chkdsk` on Windows) to identify and fix file system errors.
  - If issues persist, consider reinstalling the operating system or performing a secure erase using Samsung Magician software (this will delete all data).

For further assistance, refer to the official Samsung support resources.

## 7. SPECIFICATIONS

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Feature	Description
Brand	SAMSUNG
Series	850 Pro
Model Number	MZ-7KE512BW
Digital Storage Capacity	512 GB
Hard Disk Interface	Serial ATA (SATA III 6Gb/s compatible)
Hard Disk Form Factor	2.5 Inches
Item Weight	2.32 ounces
Product Dimensions (LxWxH)	3.94 x 2.76 x 0.27 inches
Hardware Platform	PC; Mac
Operating System Compatibility	Windows 10/8/7/Vista SP1 and above (32/64 bit), Windows Server 2008 (32/64 bit), Linux

## 8. WARRANTY

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The SAMSUNG 850 PRO SSD is backed by an industry-leading **10-year limited warranty** or a **150 TBW (Terabytes Written) rating**, whichever comes first. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims.

## 9. SUPPORT

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For additional support, resources, and the latest drivers and software, please visit the official Samsung website or refer to the comprehensive user manual PDF:

- Official Samsung Support Website: [www.samsung.com/us/support/](http://www.samsung.com/us/support/)
- User Manual (PDF): [Download PDF Manual](#)