

INLAND Professional 512GB SSD SATA III 6Gb/s 2.5" 7mm TLC 3D NAND

INLAND Professional 512GB SATA III SSD User Manual

Internal Solid State Drive (SSD) - Model: 512GB

1. INTRODUCTION

Thank you for choosing the INLAND Professional 512GB SATA III Solid State Drive. This manual provides essential information for the proper installation, operation, and maintenance of your new SSD. Please read this manual thoroughly before proceeding with installation to ensure optimal performance and longevity of your device. The INLAND Professional SSD is designed to enhance the performance of your desktop or laptop computer, offering faster boot times, quicker application loading, and improved overall system responsiveness compared to traditional hard disk drives.

2. PRODUCT OVERVIEW

The INLAND Professional 512GB SSD features a 2.5-inch form factor with a 7mm thickness, making it compatible with most laptops and desktops. It utilizes a SATA III 6Gb/s interface for high-speed data transfer and 3D TLC NAND flash technology for reliability and efficiency.

Key Features:

- **Capacity:** 512GB
- **Interface:** SATA III 6Gb/s
- **Form Factor:** 2.5-inch, 7mm slim design
- **NAND Flash:** 3D TLC NAND
- **Performance:** Sequential Read up to 520MB/s, Sequential Write up to 450MB/s
- **Durability:** Resistant to shock, vibration, no moving parts
- **Efficiency:** Low power consumption, silent operation, no overheating

OPTIMIZED SOLID STATE DRIVE



Image: Front view of the INLAND Professional 512GB SSD, showing the SATA III interface and performance specifications.

3. SETUP AND INSTALLATION

Before beginning installation, ensure your computer is powered off and disconnected from the power source. It is recommended to wear an anti-static wrist strap to prevent electrostatic discharge (ESD) damage to components.

3.1 Tools Required:

- Phillips head screwdriver
- Anti-static wrist strap (recommended)
- SATA data cable (usually included with motherboard/PC case)
- SATA power cable (from power supply)

3.2 Desktop Installation:

1. Open your computer case.
2. Locate an available 2.5-inch drive bay. If your case only has 3.5-inch bays, you may need a 2.5-inch to 3.5-inch adapter bracket (not included).
3. Secure the SSD into the drive bay using screws.
4. Connect one end of the SATA data cable to the SSD and the other end to an available SATA port on your motherboard.
5. Connect a SATA power cable from your power supply to the SSD.
6. Close your computer case and reconnect the power.

3.3 Laptop Installation:

1. Refer to your laptop's specific service manual for instructions on how to access the drive bay. This usually involves removing the back panel.
2. Remove the existing hard drive or SSD.
3. Carefully slide the INLAND Professional SSD into the drive bay. Ensure it is seated correctly in the SATA connector.
4. Secure the SSD with any screws or brackets provided by your laptop manufacturer.
5. Reassemble your laptop.

RENEW YOUR LAPTOP OR PC AS NEW



Video



Design



Game



Width:3.94" Depth:2.75" Height:2.75"

Image: The INLAND Professional SSD, highlighting its 2.5-inch form factor and 7mm thickness, suitable for laptop and desktop upgrades.

4. INITIALIZING AND FORMATTING THE SSD

After physical installation, the SSD needs to be initialized and formatted before it can be used. If you are installing an operating system (OS) on the SSD, the OS installer will typically handle this process. If you are adding the SSD as a secondary drive, follow these steps:

4.1 For Windows:

1. Boot your computer.
2. Right-click on the Start button and select "Disk Management".
3. A "Initialize Disk" window should appear automatically for the new SSD. If not, locate the new disk (it will likely be marked as "Unallocated" or "Not Initialized").
4. Right-click on the disk and select "Initialize Disk". Choose GPT (GUID Partition Table) for modern systems or MBR (Master Boot Record) for older systems (GPT is generally recommended).
5. Once initialized, right-click on the "Unallocated" space on the new disk and select "New Simple Volume".
6. Follow the New Simple Volume Wizard to assign a drive letter and format the drive (NTFS file system is standard for Windows).

4.2 For macOS:

1. Boot your computer.
2. Open "Disk Utility" (Applications > Utilities > Disk Utility).
3. Select the new INLAND SSD from the sidebar.
4. Click "Erase".
5. Choose a name for the drive, select a format (e.g., APFS for macOS High Sierra or later, Mac OS Extended (Journaled) for older versions), and a scheme (GUID Partition Map).
6. Click "Erase" again to confirm.

4.3 For Linux:

1. Boot your computer.
2. Use a disk management tool like GParted or the command-line utility `fdisk` or `parted` to partition and format the drive.
3. Common file systems include Ext4, XFS, or Btrfs.



Image: An INLAND SSD connected to a laptop, illustrating its role in enhancing system speed and data handling.

5. OPERATING INSTRUCTIONS

Once installed, initialized, and formatted, your INLAND Professional SSD operates like any other storage drive. Its primary function is to store data and run applications or operating systems with enhanced speed and reliability.

5.1 Using the SSD as a Boot Drive:

If you installed your operating system on the SSD, it will significantly reduce boot times and improve overall system responsiveness. Ensure your BIOS/UEFI settings are configured to boot from the SSD.

5.2 Using the SSD as a Secondary Drive:

For users who keep their operating system on a traditional hard drive, the SSD can be used to store frequently accessed applications, games, or large files to benefit from faster loading times. Simply drag and drop files or install applications directly to the SSD.

5.3 Data Transfer and Performance:

The SATA III 6Gb/s interface allows for rapid data transfer. Performance may vary based on your system's hardware, motherboard chipset, and the specific files being transferred. Large sequential files generally transfer faster than numerous small files.

3D NAND Flash Technology

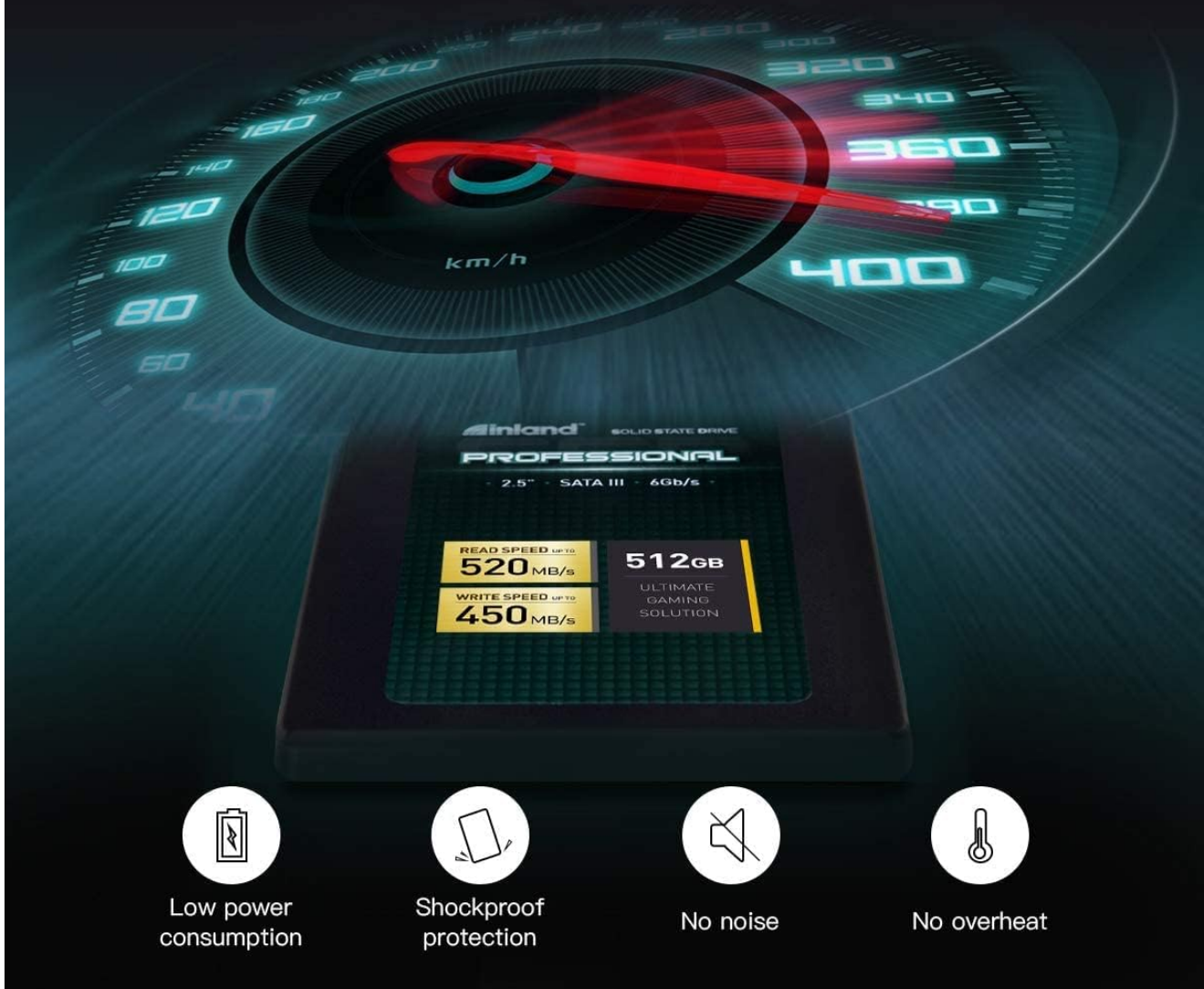


Image: Illustration of 3D NAND Flash Technology, emphasizing low power consumption, shockproof protection, no noise, and no overheating benefits.

6. MAINTENANCE

Solid State Drives require less maintenance than traditional hard drives due to the absence of moving parts. However, a few practices can help ensure optimal performance and longevity.

6.1 Enable TRIM:

Ensure that the TRIM command is enabled on your operating system. TRIM helps the SSD manage its storage space more efficiently, preventing performance degradation over time. Modern operating systems (Windows 7+, macOS 10.6.8+, Linux kernel 2.6.33+) typically enable TRIM by default for SSDs.

6.2 Firmware Updates:

Periodically check the INLAND website for any available firmware updates for your SSD model. Firmware updates can improve performance, fix bugs, and enhance compatibility.

6.3 Avoid Defragmentation:

Do not defragment your SSD. Defragmentation is designed for traditional hard drives and can reduce the lifespan of an SSD by performing unnecessary write cycles.

6.4 Keep Some Free Space:

It is advisable to leave some free space (e.g., 10-15% of total capacity) on your SSD. This allows the drive's wear-leveling algorithms to function optimally, distributing write operations evenly across all NAND cells and extending the drive's lifespan.

7. TROUBLESHOOTING

If you encounter issues with your INLAND Professional SSD, refer to the following common troubleshooting steps.

7.1 SSD Not Detected:

- **Check Cables:** Ensure both the SATA data and power cables are securely connected to the SSD and the motherboard/power supply.
- **BIOS/UEFI Settings:** Enter your computer's BIOS/UEFI setup and verify that the SATA port the SSD is connected to is enabled. Also, check if the SSD is listed under storage devices.
- **Try Another Port/Cable:** Test the SSD with a different SATA data cable, power cable, or SATA port on the motherboard.
- **Disk Management (Windows):** If detected by BIOS but not in Windows Explorer, check Disk Management to see if it needs to be initialized and formatted (refer to Section 4).

7.2 Slow Performance:

- **SATA Mode:** Ensure your motherboard's SATA controller is set to AHCI mode in the BIOS/UEFI for optimal SSD performance.
- **TRIM Enabled:** Verify that TRIM is enabled on your operating system (refer to Section 6.1).
- **Driver Updates:** Ensure your motherboard's chipset drivers are up to date.
- **Free Space:** Make sure the SSD is not nearly full. Performance can degrade when an SSD is close to its maximum capacity.
- **Overheating:** While SSDs generate less heat than HDDs, ensure adequate airflow in your system, especially if other components are running hot.

7.3 Data Loss Prevention:

Regularly back up your important data. While SSDs are reliable, no storage device is immune to failure. Consider cloud storage or external hard drives for backups.

8. SPECIFICATIONS

Feature	Specification
Digital Storage Capacity	512 GB
Hard Disk Interface	Serial ATA-600 (SATA III)
Connectivity Technology	SATA
Brand	INLAND
Special Feature	Portable (referring to its compact 2.5" form factor)
Hard Disk Form Factor	2.5 Inches
Hard Disk Description	Solid State Drive
Compatible Devices	Laptop, Desktop
Installation Type	Internal Hard Drive
Sequential Read Speed	Up to 520MB/s
Sequential Write Speed	Up to 450MB/s
NAND Flash Type	3D TLC NAND

9. WARRANTY AND SUPPORT

The INLAND Professional 512GB SSD comes with a **3-Year Limited Parts and Labor Warranty**. This warranty covers defects in materials and workmanship under normal use during the warranty period.

For warranty claims or technical support, please contact INLAND customer service through their official website or the retailer where the product was purchased. Keep your proof of purchase for warranty validation.

Note: Performance may vary based on system hardware and configuration. The warranty does not cover damage caused by improper installation, misuse, accidents, unauthorized repairs, or modifications.