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## ADATA ASU800SS-512GT-C

# ADATA Ultimate SU800 512GB SATA III SSD User Manual

Model: ASU800SS-512GT-C | Brand: ADATA

## 1. INTRODUCTION

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The ADATA Ultimate SU800 is a high-performance Solid State Drive (SSD) designed to enhance the speed and efficiency of your computer. Utilizing 3D NAND Flash technology, it offers superior storage density, efficiency, and reliability compared to traditional 2D NAND. This SSD features intelligent SLC caching and a DRAM cache buffer to achieve impressive read/write speeds of up to 560 MB/s and 520 MB/s respectively. It incorporates advanced technologies such as LDPC ECC (Low-Density Parity-Check Error Correcting Code) and DEVSLP (Device Sleep) for enhanced stability, durability, and power efficiency. This manual provides essential information for the setup, operation, maintenance, and troubleshooting of your ADATA Ultimate SU800 SSD.

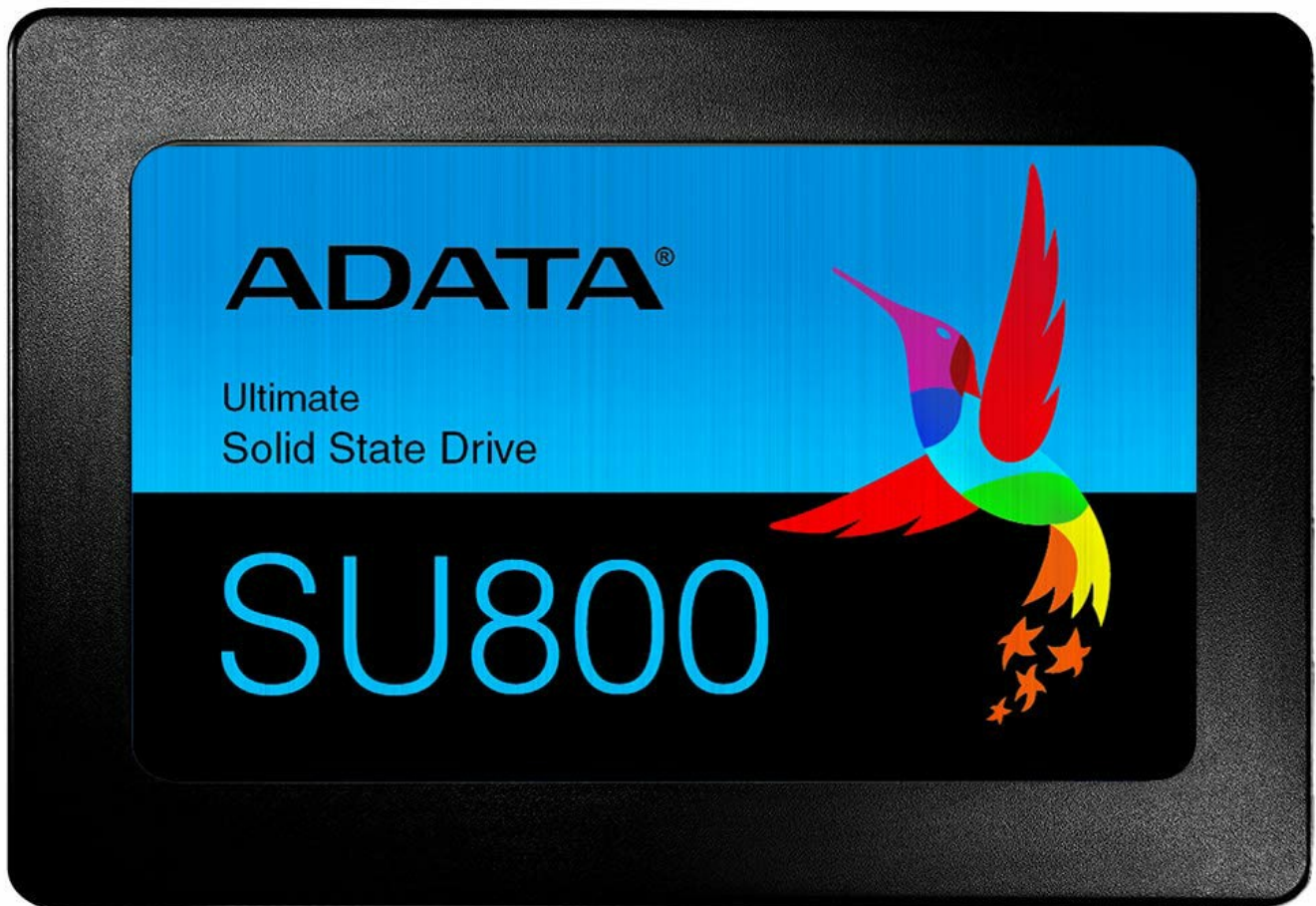


Figure 1: ADATA Ultimate SU800 SSD

## 2. PRODUCT FEATURES

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- **High-Speed Performance:** Delivers sequential read speeds up to 560 MB/s and write speeds up to 520 MB/s, significantly improving system responsiveness and application loading times.
- **3D NAND Flash Technology:** Provides higher storage density, improved power efficiency, and enhanced reliability over traditional 2D NAND.
- **Intelligent SLC Caching and DRAM Cache Buffer:** Optimizes data transfer speeds and extends the lifespan of the SSD.
- **Advanced Data Protection:** Features LDPC ECC for robust data integrity and Data Shaping technology for extended drive longevity.
- **Energy Efficient:** Supports DEVSLP (Device Sleep) power-saving mode, contributing to longer battery life in laptops and reduced power consumption in desktops.
- **Durable and Reliable:** Designed with shock and dust resistance, ensuring stable operation in various

environments.

- **Free Software Tools:** Includes access to ADATA's SSD Toolbox for drive monitoring and management, and Migration Utility for easy data transfer.



Figure 2: 3D NAND Flash Technology



Figure 3: SLC Caching and DRAM Cache Buffer



Lower Power Consumption,  
Longer Battery Life



Figure 4: Low Power Consumption

### 3. PACKAGE CONTENTS

The ADATA Ultimate SU800 package typically includes:

- ADATA Ultimate SU800 Solid State Drive (512GB)

*Note: SATA data and power cables are not included and must be purchased separately if needed for desktop installations.*



Figure 5: ADATA Ultimate SU800 Retail Box

## 4. SETUP AND INSTALLATION

The ADATA Ultimate SU800 SSD is designed for easy installation in both laptops and desktop computers that support a 2.5-inch SATA drive bay.

### 4.1 Before Installation

- **Backup Data:** Always back up important data from your existing drive before performing any hardware changes.
- **Gather Tools:** You may need a screwdriver (Phillips head is common), SATA data cable, and SATA power cable (for desktops).
- **Static Precautions:** Discharge static electricity by touching a grounded metal object before handling the SSD.
- **Power Off:** Ensure your computer is completely powered off and unplugged from the wall outlet.

### 4.2 Physical Installation (Laptop)

1. Locate the hard drive bay on your laptop. This is often on the bottom panel, secured by screws.
2. Remove the existing hard drive (if any) by unscrewing it from its bracket or sliding it out.
3. Attach the ADATA SU800 SSD to the hard drive bracket (if applicable) using the provided screws or the screws from the old drive.
4. Slide the SSD with the bracket into the hard drive bay and secure it.

5. Reassemble your laptop.

### 4.3 Physical Installation (Desktop)

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. Mount the SSD into the drive bay or adapter bracket.
4. Connect one end of a 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 unit (PSU) to the SSD.
6. Close your computer case.



Figure 6: SSD fitting into a laptop bay

### 4.4 Initializing and Formatting the SSD

After physical installation, the SSD needs to be initialized and formatted by your operating system before it can be used.

1. Power on your computer.
2. **For Windows:**
  - Right-click on the Start button and select "Disk Management".
  - You should see the new SSD listed as "Unallocated" or "Not Initialized".
  - Right-click on the SSD and select "Initialize Disk". Choose MBR (Master Boot Record) for older systems or GPT (GUID Partition Table) for newer systems (recommended for drives larger than 2TB, though 512GB can use either).
  - Once initialized, right-click on the "Unallocated" space and select "New Simple Volume". Follow the wizard to create and format a new partition.
3. **For macOS:**

- Open "Disk Utility" (Applications > Utilities > Disk Utility).
- Select the new SSD from the sidebar.
- Click "Erase". Choose a name, format (e.g., APFS or Mac OS Extended (Journaled)), and scheme (GUID Partition Map).
- Click "Erase" again to confirm.

#### 4. For Linux:

- Use a disk utility like GParted or thefdisk/mkfs commands in the terminal to partition and format the drive.

### 4.5 Data Migration

If you are replacing your primary drive, you can use ADATA's Migration Utility to clone your existing operating system and data to the new SU800 SSD. This utility is available for free download from the official ADATA website.



Figure 7: ADATA SSD Toolbox and Migration Utility

## 5. OPERATING INSTRUCTIONS

Once installed and formatted, the ADATA Ultimate SU800 SSD functions like any other storage drive. You can install operating systems, applications, and store files on it. For optimal performance and longevity, consider the following:

- **Operating System Support:** Ensure your operating system supports TRIM functionality, which helps maintain SSD performance over time. Modern operating systems (Windows 7+, macOS 10.6.8+, Linux kernel 2.6.33+) typically support TRIM automatically.
- **ADATA SSD Toolbox:** Download and install the ADATA SSD Toolbox from the official ADATA website. This software allows you to:
  - Monitor drive health and lifespan.

- View drive information (firmware version, temperature).
- Perform diagnostic scans.
- Update firmware.
- Optimize the SSD.

## 6. MAINTENANCE

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SSDs generally require less maintenance than traditional HDDs due to the absence of moving parts. However, some practices can help ensure optimal performance and longevity:

- **Enable TRIM:** Ensure TRIM is enabled in your operating system. This command helps the SSD manage its storage space efficiently, preventing performance degradation. Most modern OS versions enable this by default.
- **Avoid Defragmentation:** Do not defragment your SSD. Defragmentation is designed for HDDs and can reduce the lifespan of an SSD without providing any performance benefit.
- **Keep Firmware Updated:** Regularly check for and install firmware updates using the ADATA SSD Toolbox. Firmware updates can improve performance, stability, and compatibility.
- **Maintain Free Space:** While not strictly necessary, keeping some free space (e.g., 10-15%) on your SSD can help maintain performance, especially for drives with lower capacities.
- **Regular Backups:** Always perform regular backups of your important data to another storage device. While SSDs are reliable, no storage device is immune to failure.

## 7. TROUBLESHOOTING

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If you encounter issues with your ADATA Ultimate SU800 SSD, refer to the following common troubleshooting steps:

### 7.1 SSD Not Detected

- **Check Cables:** Ensure the SATA data and power cables are securely connected to both the SSD and the motherboard/PSU.
- **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 recognized in the boot device list.
- **Try Different Port/Cable:** Test the SSD with a different SATA data cable, power cable, or SATA port on the motherboard.
- **Disk Management (Windows):** If detected in BIOS but not in Windows Explorer, check Disk Management to see if it needs to be initialized and formatted (refer to Section 4.4).
- **Driver Updates:** Ensure your motherboard's SATA controller drivers are up to date.

### 7.2 Slow Performance

- **TRIM Enabled:** Verify that TRIM is enabled for your operating system.
- **SATA Mode:** Ensure your motherboard's SATA controller is set to AHCI mode in the BIOS/UEFI, not IDE mode.
- **Firmware Update:** Check for and install the latest firmware for your SSD using the ADATA SSD Toolbox.
- **Over-provisioning:** While the SU800 has built-in over-provisioning, ensure you are not consistently filling the drive to near 100% capacity, as this can impact performance.
- **System Resources:** Check if other system components (CPU, RAM) are bottlenecking performance.

### 7.3 Operating System Not Booting

- **Boot Order:** Check your BIOS/UEFI settings to ensure the SSD is set as the primary boot device.
- **Data Migration:** If you cloned your old drive, ensure the cloning process was successful and the boot sector was

correctly transferred.

- **Reinstall OS:** If all else fails, a clean installation of the operating system on the SSD may be necessary.

## 8. SPECIFICATIONS

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Feature	Detail
Model Name	Ultimate SU800
Model Number	ASU800SS-512GT-C
Digital Storage Capacity	512 GB
Hard Disk Interface	SATA III (6Gb/s)
Form Factor	2.5 Inches
NAND Flash Type	3D NAND
Sequential Read Speed	Up to 560 MB/s
Sequential Write Speed	Up to 520 MB/s
Special Features	Backward Compatible, Dust Resistant, Hardware Encryption, Shock Resistant, SLC Caching, DRAM Cache Buffer, LDPC ECC, DEVSLP
Compatible Devices	Desktop PCs, Laptops
Color	Black
Item Weight	1.6 ounces (approx. 45g)
Operating Temperature	0°C to 70°C
Storage Temperature	-40°C to 85°C



Figure 8: SSD Back Label with Model Information

## 9. WARRANTY INFORMATION

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The ADATA Ultimate SU800 SSD comes with a **3-year limited warranty**. This warranty covers defects in materials and workmanship under normal use. For detailed terms and conditions, please refer to the official ADATA website or contact ADATA customer support.

*Note: Warranty void if removed or tampered with. Please refer to the product label for specific warranty codes (e.g., 2G0123456789) and WWN codes (e.g., 5707C18D12345678) which may be required for warranty claims.*

## 10. SUPPORT

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For further assistance, technical support, or to download the latest drivers and software (such as the ADATA SSD Toolbox and Migration Utility), please visit the official ADATA website:

[www.adata.com](http://www.adata.com)

You can also find FAQs and contact information for customer service on their website.

