



**Premier Pro SP600 SATA Solid State Drive
Product Reviewer's Guide**

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Introduction

This performance guide contains information on the new Premier Pro SP600 Solid State Drive, including product features and descriptions, and benchmark results.

The ADATA logo and usage guidelines are available at

http://www.adata.com.tw/index.php?action=bs_main&page=bs_content_logo&lan=en.

Please refer to this guide prior to and during testing, and feel free to use this content when composing review articles.

If you encounter any problems during the testing process, or if you have questions regarding the test results, please contact us via email using the contact information found at the end of the guide.

Product Background

Following up on the successful launch on March 2012 of Premier Pro series SP900 SATA solid state drive, which received an enthusiastic industry response and multiple awards, ADATA Technology has introduced the industry's best entry-level budget SP600 solid state drive. Designed for notebook and desktop hard drive replacements and upgrades, it maximizes the computer investment while boosting the performance of the system and its applications.

With native support for the SATA 6Gb/s platform, the SP600 makes complete use of the revolutionary high-speed performance of solid state drives. With read and write speeds twice that of SSDs using the older SATA II specification the SP600 can transfer large media files in fast speed, and lead to shorter boot speeds in a range of operating systems.

All purchasers of the SP600 can download the free Disk Migration Utility software, developed in cooperation with Acronis™. It facilitates the quick transfer of all files to the new solid state drive, significantly reducing the troublesome and time-consuming process of reinstalling software and restoring data from backups.

Product Positioning

In component and accessory markets worldwide, the performance advantages of SSDs over mechanical drives are almost universally recognized and valued. In conjunction with this trend, the SATA 6Gb/sec transfer specification (sometimes referred to as SATA III) is gaining in popularity as operating systems, games, and high definition media all place higher demands on primary system disks. The Premier Pro SP600 is a bold move by an industry heavyweight to meet the full range of user requirements in these ever-changing market conditions

The Premier Pro SP600 makes computers more responsive than ever. Boot up is quicker and applications load faster than ever before. More reliable and more durable than a traditional hard drive. Maximum 4KB random read/write speeds are 40,000 and 30,000 IOPS respectively, with sequential read and write speeds reaching 360 and 130MB/s

The SP600 offers a 3 year warranty, and supports the Windows TRIM command*. In both desktop and notebook computers, users will enjoy an unprecedented high-speed experience.

*About Windows TRIM command:

On computers running the Windows 7 operating system, the Windows TRIM optimization command can directly delete stored data in the Flash memory and release unused space (Free Blocks) to be used for system writes immediately. This results in more accelerated transfer and write performance for solid state drives, and is also effective in slowing down efficiency decline and depletion chances, maintaining effective operation and extending the life of the disk.

Product Highlights

SP600:

- Updated Firmware with support for capacities: 32GB, 64GB, 128GB
- Supports SATA 6Gb/s standard.
- Offers up to **360MB/s** sequential Read speed and up to **130MB/s** sequential Write speed to ensure high performance on large data access.
- Offers up to 40,000 IOPS random read and **30,000** IOPS random write speed to ensure high performance while system proceeding multiple storage I/Os
- 2.5" to 3.5" bracket and mounting screws included.
- **3-year** warranty.
- OS Compatibility: Windows 8 / 7 / Vista / XP; Mac OS X; Linux

Specifications

Product Model	SP600
Capacity	32GB/64GB/128GB
Form factor	2.5 inch
NAND Flash	Multi-Level Cell (MLC) NAND Flash Memory
Controller	JMicron JMF661
Dimensions	100 x 69.85 x 9.5mm (L x W x H)
Weight	76g
Interface	SATA 6Gb/s
Performance(Max)	AS SSD: Sequential Read: 360 MB/s Sequential Write: 130 MB/s IO Meter: IOPS: 40K (Maximum 4KB Random Read) IOPS: 30K (Maximum 4KB Random Write)
Power Consumption	0.7W Idle/1.5W Active
Operating temperature	0 °C - 70 °C
Storage temperature	-40 °C - 85 °C
Shock resistance	1500G
MTBF	1,000,000 Hours
ECC Recovery	Up to 40 bits correctable per 1K-byte sector (BCH) *varies depending on exact configuration
Operating Humidity:	10% to 90% RH (0° to 40°C)
Storing Humidity:	5% to 90% RH (-10° to 40°C)
Max Operating Altitude	12000m
Certifications	CE / FCC / VCCI / BSMI
Warranty	3 Years

Installation Instruction

Handling Precautions

Please ground yourself before handling the Solid State Drive, as Electrostatic Discharge (ESD) can cause damage to the drive and other computer components. It is recommended to wear an antistatic wrist strap or glove to prevent damage. Avoid direct exposure to sunlight and moisture to prevent damage.

SATA Installation

1. Before the installation commences, be sure to shut down your computer system by disconnecting the power cord, or by removing the battery from battery powered systems.
2. Please remove the outer casing of your computer (refer to computer owner's manual), locate and identify the SATA connectors of your system. Please refer to your computer system's user manual for information on how to remove the existing hard drive.
3. SATA cables of the motherboard should be connected to the SATA data and power connectors on the solid state drive. Please be aware that the L-shaped SATA connector can only fit in one direction. Before pressing them into position, be sure to align the SATA plugs and solid state drive connectors properly.
4. The Solid State Drive can be securely mounted with the screws provided.
5. After installation is complete, restore the outer casing to original position and reconnect the power cord or battery.
6. Switch on the computer system to verify the installation.

Configuring the BIOS and Partitioning the drive

1. Power on your computer system normally and follow the on-screen instruction during boot-up to proceed into the BIOS or CMOS configuration menu.
2. Select the Auto function in the BIOS/CMOS menu that represents the SSD. This will allow your system to auto-detect the disk, and after that press ESC.
3. Locate the SATA settings menu item and ensure the motherboard SATA ports are enabled.
4. To save new settings and exit the BIOS/CMOS setup menu, choose the Save and Exit option.
5. Reboot the system or device allowing the changes to take effect.
6. If you are going to install an OS onto the SSD, please first delete the original partition before repartitioning the SSD during installation of the OS.

7. If you intend to install any backup tools, such as Norton Ghost or others with your SSD, format the drive by using FDISK.EXE prior to installation.

Benchmark Tools

To perform SP600 benchmark, the following tools are recommended to you for most product review situations. You may choose some of the following tools or your favorite benchmark tools for your review.

⇒ **Recommended tools for tweaking your system before benchmarking:**

- SSD Tweaker (for SSD TRIM and others tweaking to boost your system):
<http://elpamsoft.com/Downloads.aspx?Name=SSD%20Tweaker>

⇒ **Diagnostic/Examining Tools:**

- SSD Life (for SSD T.E.C. date evaluation): www.ssd-life.com

⇒ **Systemwide Benchmark Tools Recommendation:**

- PC Mark 7 (for specific HDD/SSD component testing): <http://www.pcmark.com>
- Windows System Assessment Tool (for Windows Experience Index, WEI):
<http://windows.microsoft.com/en-US/windows7/What-is-the-Windows-Experience-Index>
- Bootrace (for calculating Windows boot time): <http://www.greatis.com/bootracer/>

⇒ **Storage-specific Benchmark Tools Recommendation:**

- AS SSD Benchmark (for read/write performance):
http://www.alex-is.de/PHP/fusion/downloads.php?cat_id=4&download_id=9
- HDBench (for read/write performance measurement):
<http://www.hdbench.net/en-us/index.html>
- HDTune (for read/write performance and latency measurement):
<http://www.hdtune.com>
- CrystalMark (for read/write performance measurement):
<http://crystalmark.info/?lang=en>
- ATTO Benchmark (for read/write performance measurement):
http://www.attotech.com/products/product.php?sku=Disk_Benchmark
- IOMeter (for IOPS measurement) : <http://www.iometer.org>
- Anvil Storage Utilities (for multiple SSD performance measurement):
<http://thessdreview.com/latest-buzz/anvil-storage-utilities-releases-new-storage-and-ssd-benchmark/>