MINERVA

AD563FA9 Converter Card

Performance & Burn In Test Rev. 1.0

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AD563FA9 Converter Card

1. Overview

AD563FA9 adapters, support Mini PCI-e 52pin connector to convert mSATA mini SSD into SATA III 7+15pin standard interface.

2. Tools and Results of Performance Measurement

2.1 Test Platform
M/B :   ASUS **P8P67**
CPU :   Intel **i5-2500,** 3.3MHz/ 6G Cache/ 5GT
Memory :   Kingston **KVR1333D3N9K2/4G,** DDR3-1333MHz,4G(2GB DIMM*2)
ATX Power : TC START W500, **500W ATX**,12V V2.2 Power Supplier
Graphic :   MSI **, R6700** / AMD HD 6700 Series
OS :   Microsoft **Windows 7 64bit OS**

2.2 Test target: AD563FA9 adapter and SanDisk 64GB(SDSA5FK-064G) mSATA mini SSD

AD563FA9   AD563FA9 + mSATA SSD   Sandisk mSATA SSD

2.3 Install Hardware
Insert SanDisk 64GB(SDSA5FK-064G) into AD563FA9 converter's mini PCI-e 52pin connector, and then with latch to fix SSDs. (Please refer to the Installation Notes). Connect AD563FA9 converter to SATA III Port of ASUS P8P67 motherboard.

2.4 BIOS & Windows 7 OS environment setup
2.4.1   In BIOS(Basic Input/Output Setup) – Change IDE Mode into AHCI Mode
2.4.2   In Windows 7, formatted SSD to NTFS Mode. Don't install any program.

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2.5   SSD I/O Performance impact factors

    2.5.1   SATA I/O performance -- depending on the SSD Controller IC

    2.5.2   SATA I/O performance - -depending on the NAND Flash IC.

        2.5.2.1   Toggle DDR mode or ONFI synchronous NAND Flash IC, will show good performance

        2.5.2.2   Traditional asynchronous or SDR NAND Flash IC, will show poor performance
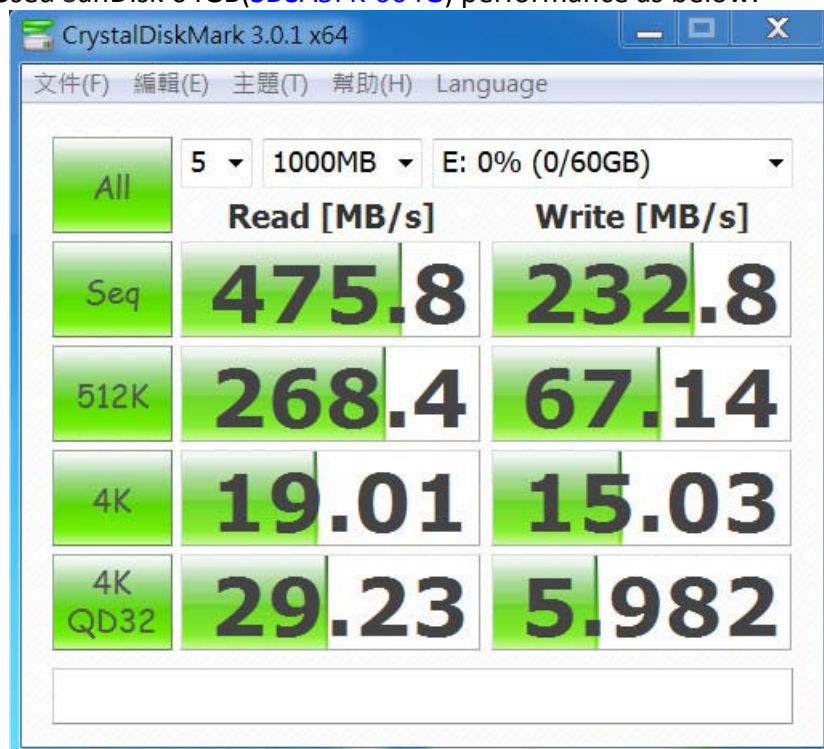
Suggestion:

Please use the motherboard containing native SATA 6Gb/s Port testing, can provide more correct I/O performance. (Such as Intel 6 Series chipsets or AMD 9 Series Chipsets).

If you are using a motherboard plus SATA III host bus adapter, non-native 6Gb/s Port or SATA to PCI-e adapter provides 6Gb/s Port. I/O performance testing will be very much lower than the native SATA III Port.

2.6   CrystalDiskMark 3.0.1 x64 performance test

    ※Benchmark (Sequential Read & Write / default = 1MB)

    2.6.1   Used SanDisk 64GB(SDSA5FK-064G) performance as below:
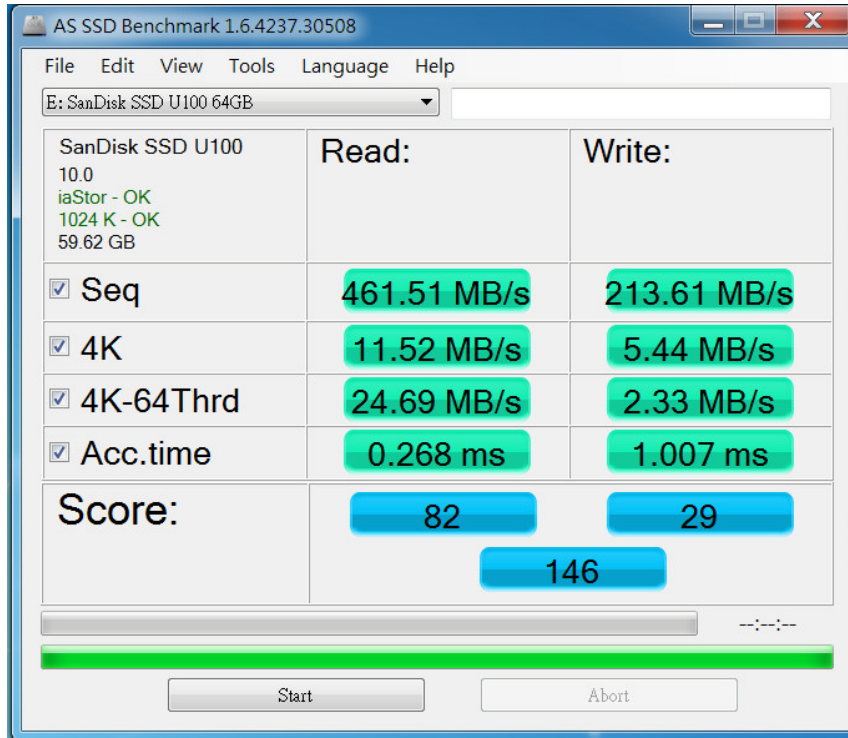
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2.7 AS SSD Benchmark 1.6 performance test

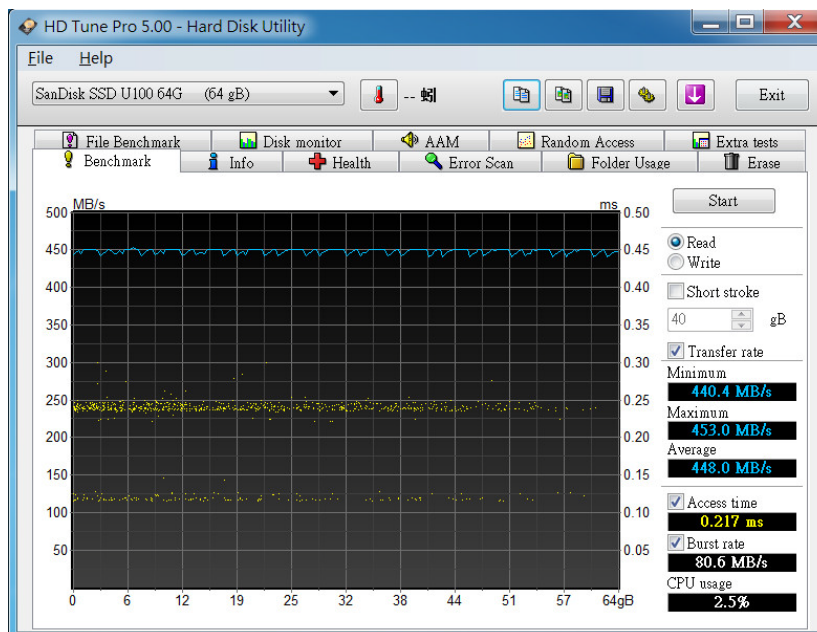※Benchmark (Read & Write by MB/s, default block size = 16MB)

2.7.1 Used SanDisk 64GB(SDSA5FK-064G) performance as below:
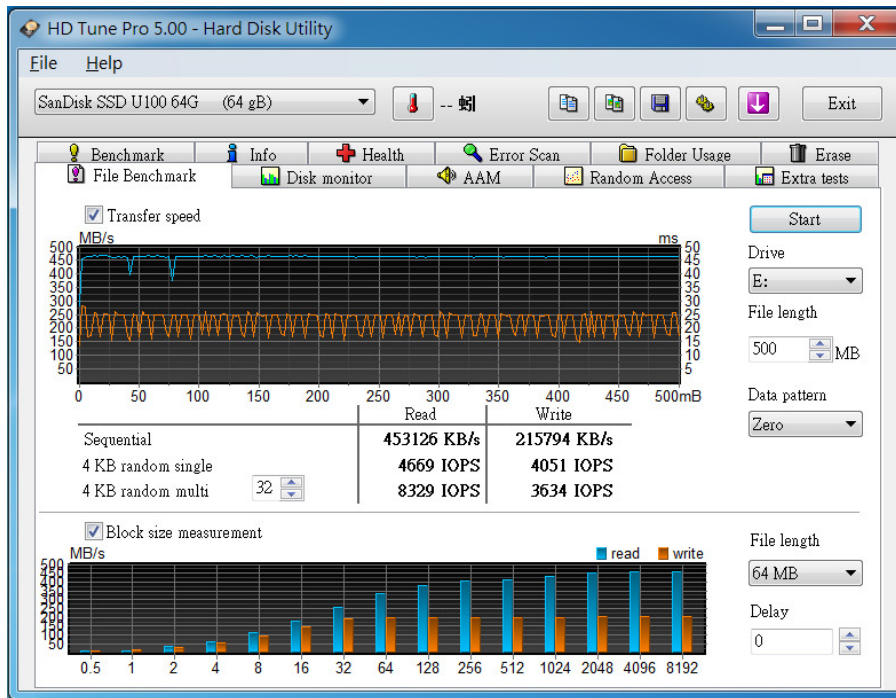

2.8 HD Tune Pro 5.0 performance test

※Benchmark (Sequential Read / default block size = 64KB)

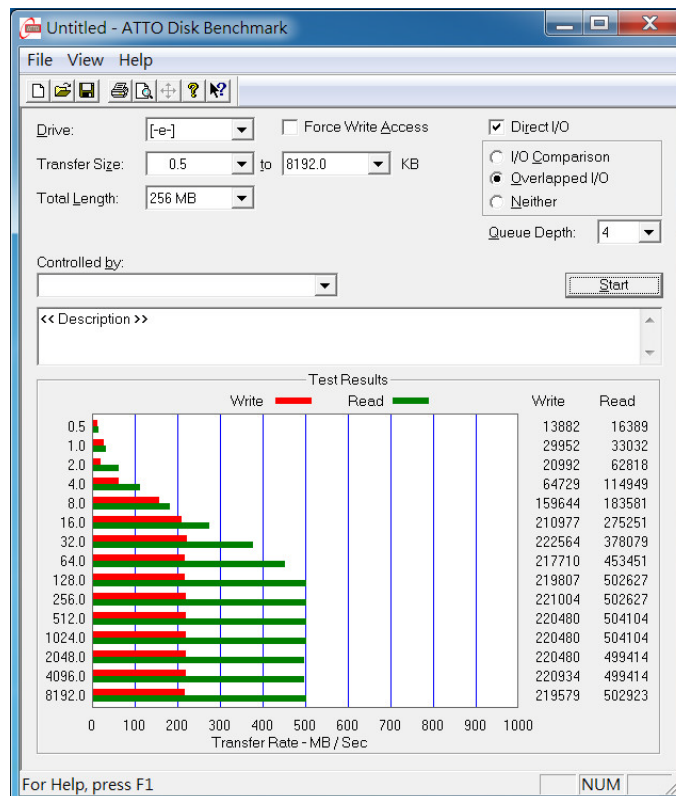2.8.1 Used SanDisk 64GB(SDSA5FK-064G) performance as below:

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2.8.2   Used SanDisk 64GB(SDSA5FK-064G) File Benchmark as below:

2.9   ATTO Disk Benchmark

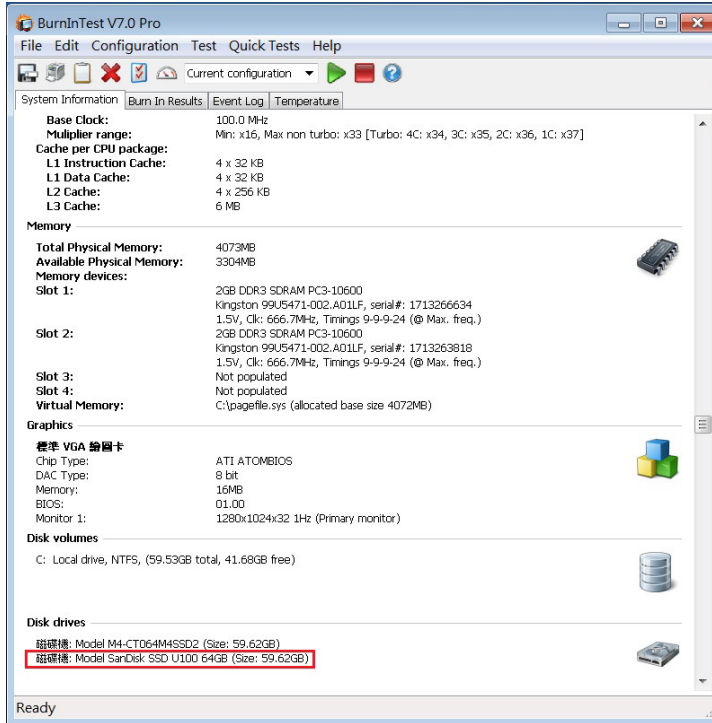2.9.1   Used SanDisk 64GB(SDSA5FK-064G) performance as below:
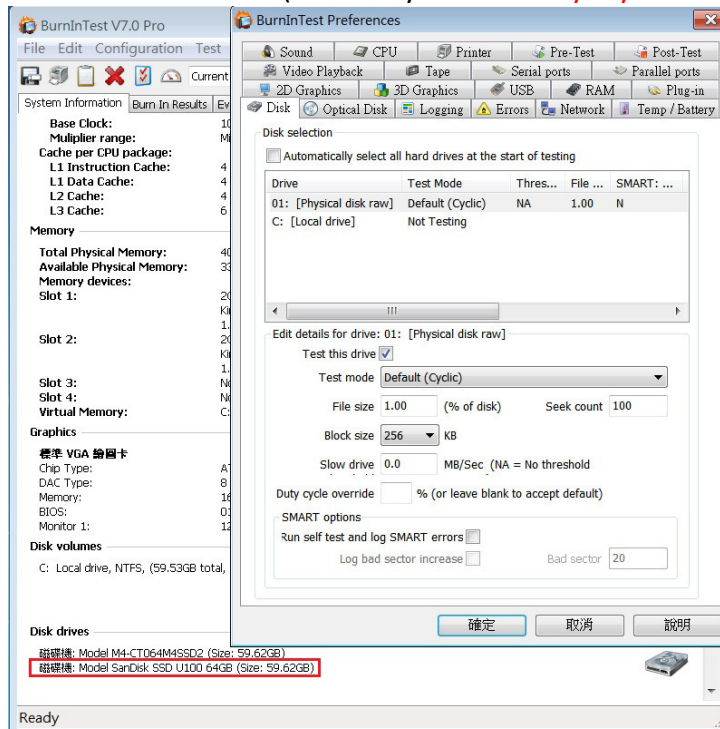
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Burn In Tests and Results

3.1 BurnInTest v7.0 Pro

3.1.1 **system information** for SanDisk 64GB(SDSA5FK-064G) as below:
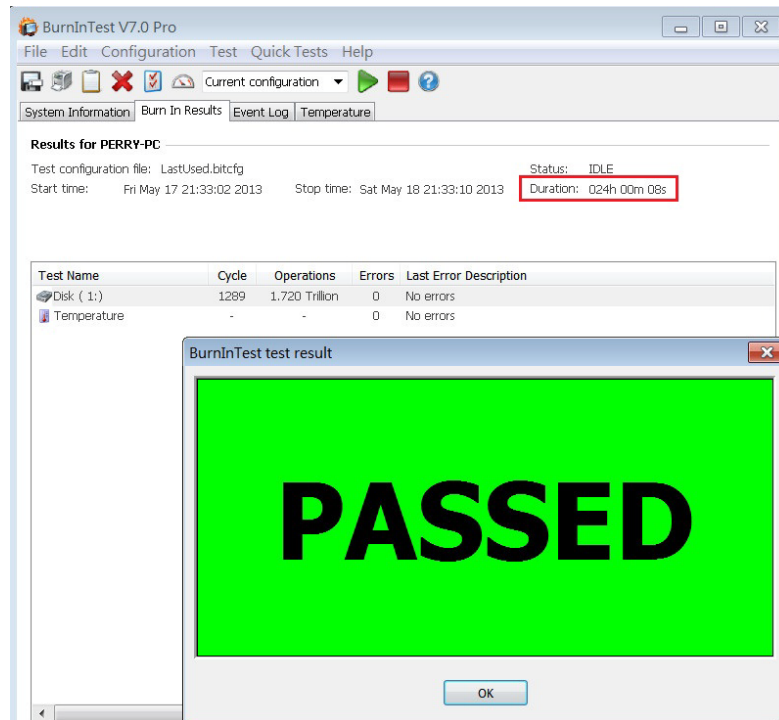

3.1.2 show Disk test mode(default cyclic -- 10 ways cycle test)

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3.1.3 show SanDisk 64GB(SDSA5FK-064G) 24-hour Burn-in test PASSED

4. Summary

4.1 SanDisk 64GB(SDSA5FK-064G) mSATA is SATA III Interface, I/O speed max. to 600MB/s.

4.2 AD563FA9 adapter I/O performance is based on mSATA mini SSD