MINERVA

USB 3.1 Gen 2 for mSATA SSD, M.2 SSD & CFast Card with Micro-B

Performance & Burn In Test Rev. 1.0

Table of Contents

USB 3.1 Micro-B for mSATA SSD, M.2 SSD & CFast Card adapter

1. Overview

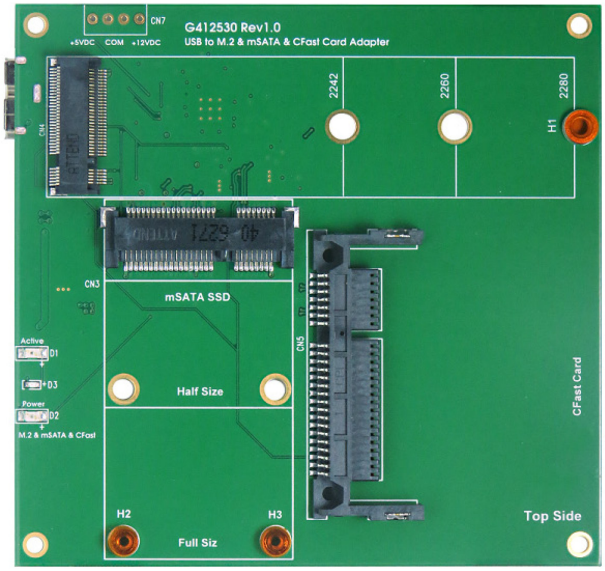
U4345A adapter, built-in USB3.1 Micro-B connectors, provides one CFast connector, one M.2 B-key connector and one Mini PCI-e connector. First inserts M.2 SSD into M.2 connector, using USB A-type to Micro-B cable to connect to the host USB 3.1 A-port, M.2 SSD can work.

2. Tools and Results of Performance Measurement

2.1 Test Platform:

M/B :	GIGABYTE **Z170X UD5 TH**
CPU :	Intel **i5-6500**, 3.2GHz/ 6M Cache/ LGA1150
Memory :	Kingston **KVR21N15D8/8**, DDR4-2133MHz, 8G(8GB DIMM*2)
ATX Power :	FSP RAIDER 550, **550W ATX**, 12V V2.2 Power Supply
Graphic :	Z170 Chipsets built-in **HD Graphics 530**
Adapter:	USB 3.1+Micro-B to mSATA, M.2, CFast adapter
CABLE:	A-type to micro-B USB 3.1 cable
OS :	Microsoft **Windows 10 64bit OS**

2.2 Test target: U4345A adapter and M.2 SATA SSD(**Samsung CM871a M.2 / 256GB**)



U4345A Adapter

Samsung CM871a M.2 SSD

2.3 Install Hardware

Inserts M.2 SSD into U4345A adapter's M.2 connector, and use the coppers and screws to fix SSDs (please refer to the installation Notes). Then this adapter through USB cable to connect to USB3.1 port of GIGABYTE **Z170X UD5 TH.**

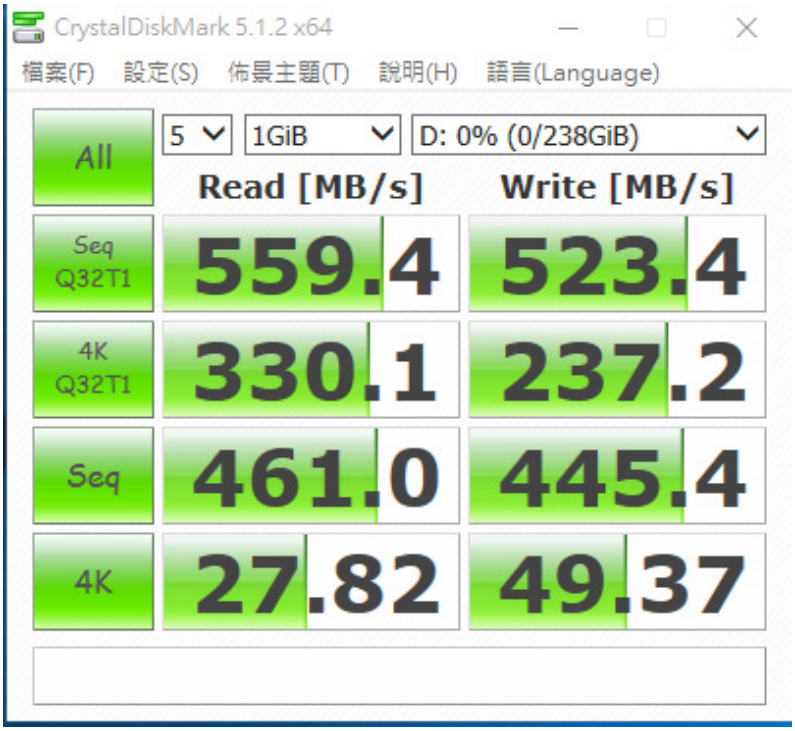
2.4 BIOS & Windows 10 OS environment setup

2.4.1 U4345A adapter formatted NTFS.

2.5 CrystalDiskMark 5.1.2 x64 performance test

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

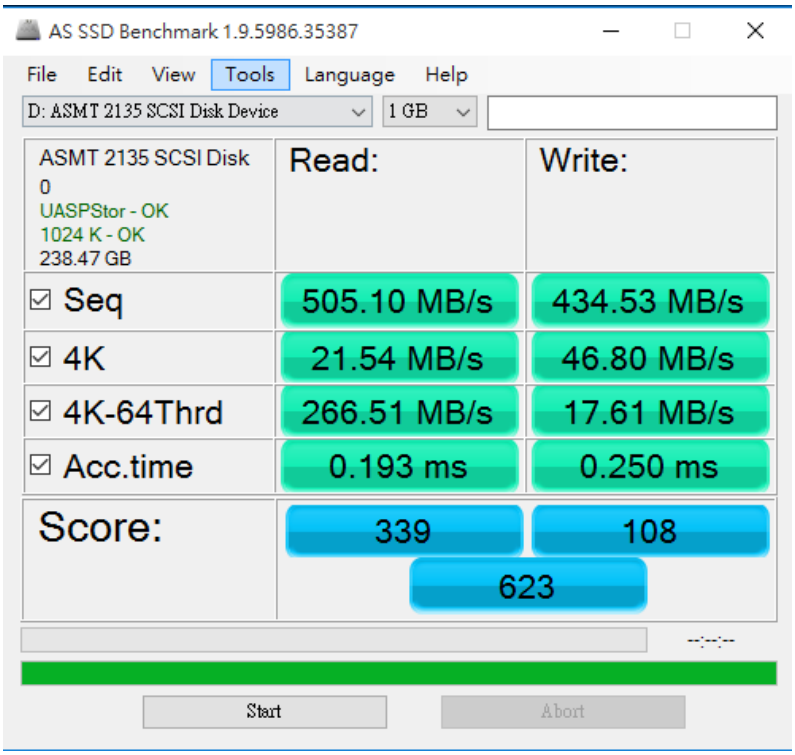
2.5.1 show M.2 SATA SSD(Samsung CM871a M.2 / 256GB) performance as below:



2.6 AS SSD Benchmark 1.9 performance test

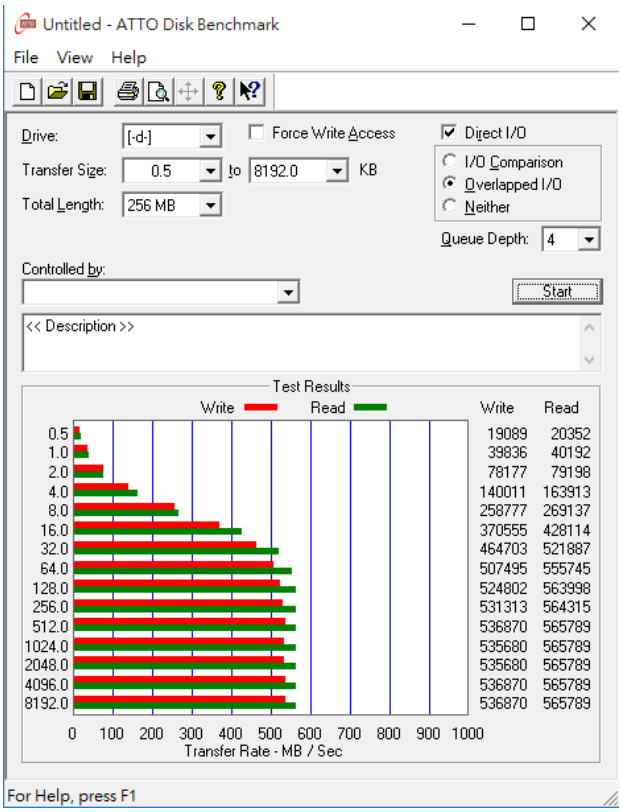
※Benchmark (Read & Write by MB/s, default block size = 16MB)

2.6.1 show M.2 SATA SSD(Samsung CM871a M.2 / 256GB) performance as below:



2.7 ATTO Disk Benchamrk 2.47 performance test

2.7.1 show M.2 SATA SSD(Samsung CM871a M.2 / 256GB) performance as below:



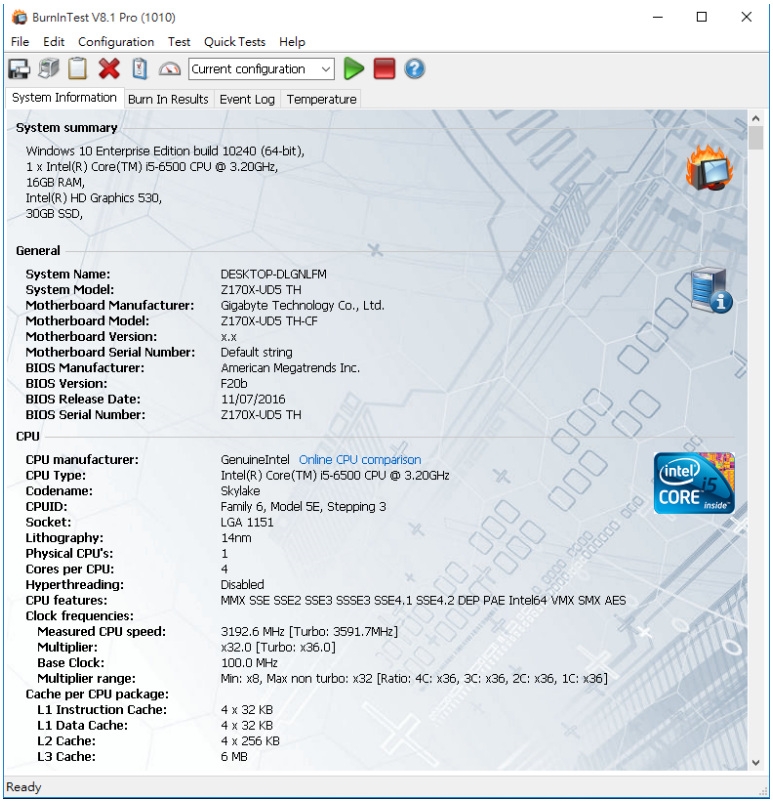
2.8 AnvilBenchmark_V110_B337

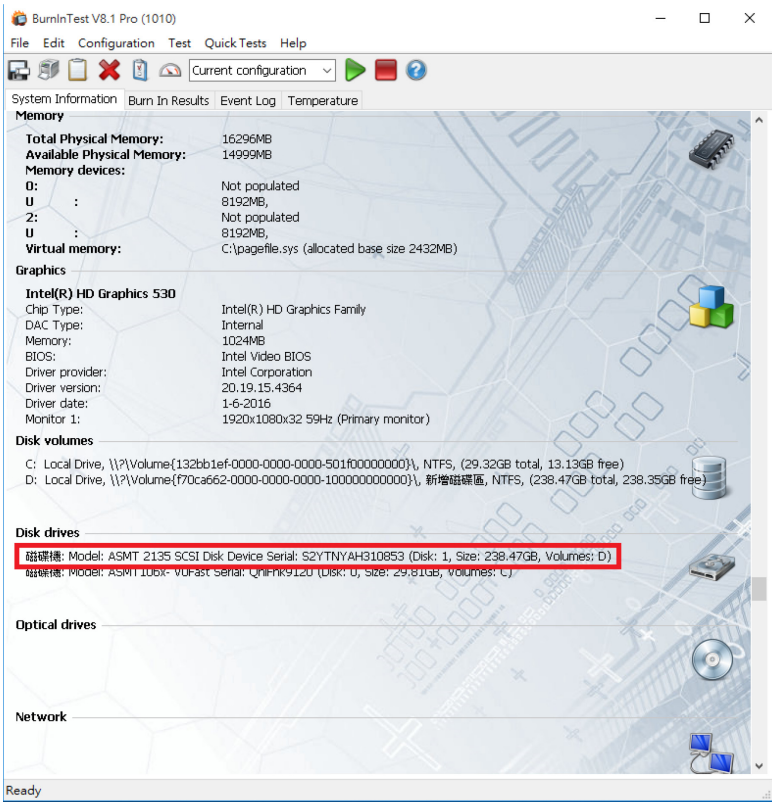
2.8.1 show M.2 SATA SSD(Samsung CM871a M.2 / 256GB) performance as below:

3. Burn In Tests and Results

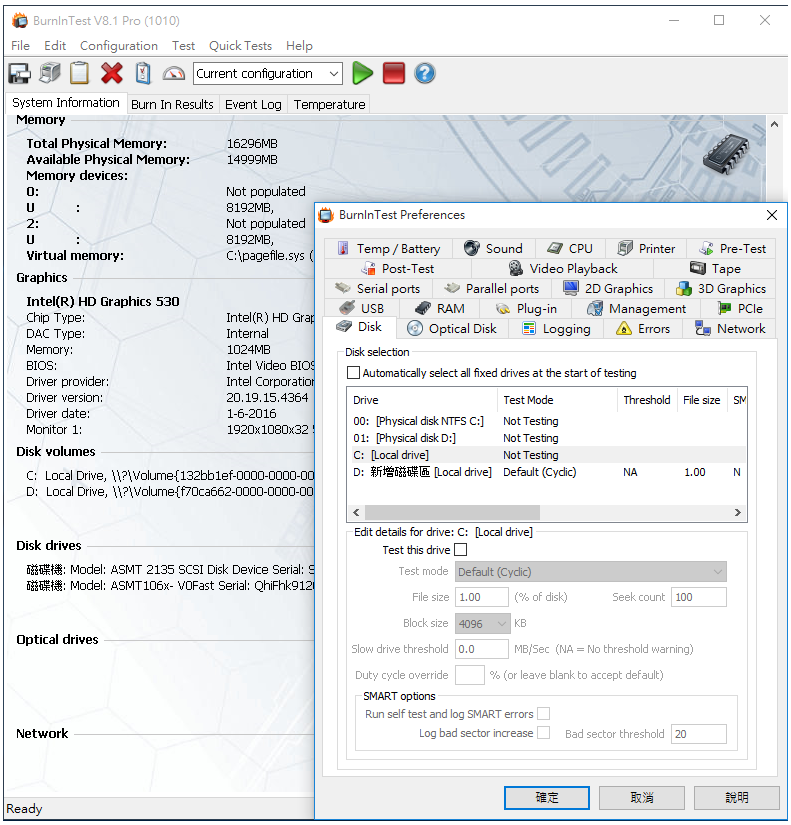
3.1 BurnInTest v8.1 Pro

3.1.1 **system information** for M.2 SSD(**Samsung CM871a M.2 / 256GB**) as below:

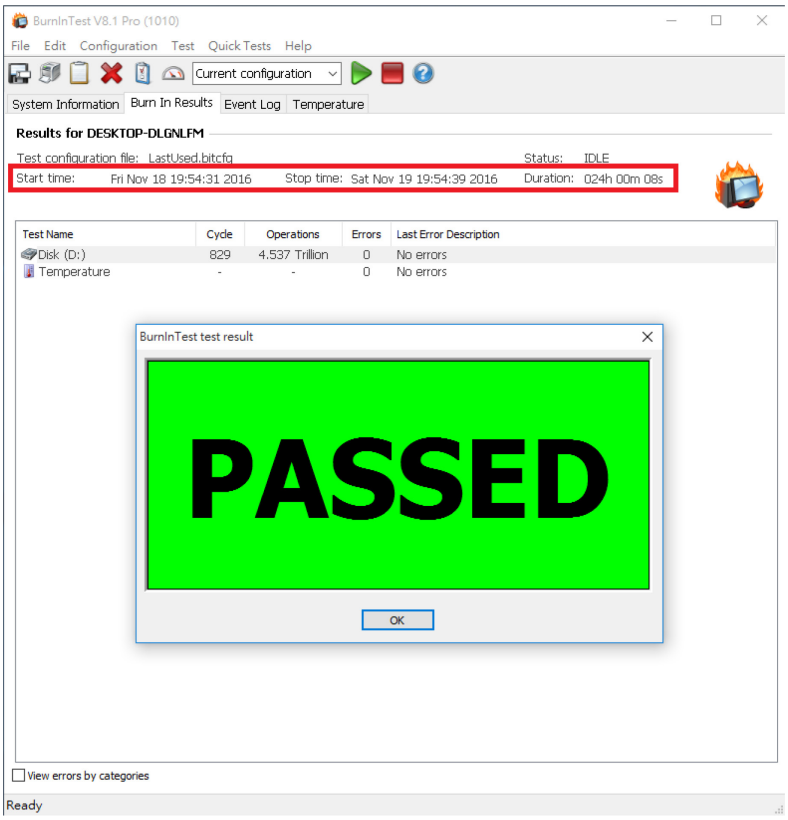




3.2.2 show Disk test mode(10 ways cycle test)



3.1.3 show 24-hour Burn-in test PASSED



4. Summary

4.1 USB 3.1 is 10Gbps Interface.

4.2 SATA III is 6Gbps Interface.

4.3 M.2 SSD is SATA III Interface, I/O speed, max. to 600MB/s.

4.4 U4345A enclosure I/O performance is based on M.2 SSD.