MINERVA

USB 3.1 Gen 2 for 2.5" SATA, mSATA SSD & M.2 SSD with Micro-B

Performance & Burn In Test   Rev. 1.0

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USB 3.1 Micro-B for 2.5" SATA, mSATA SSD & M.2 SSD adapter
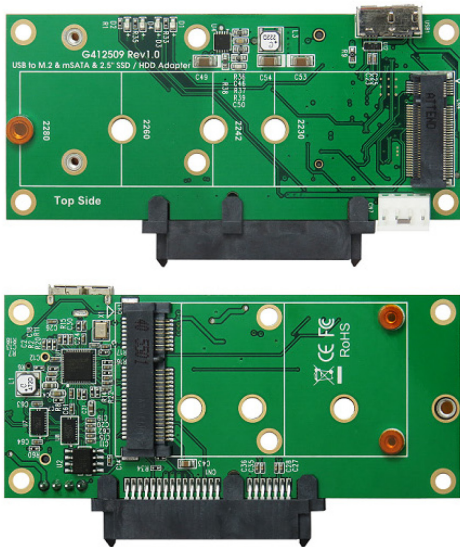
1. Overview

U4315A adapter, built-in USB3.1 Micro-B connectors, provides one SATA connector, one M.2 B-key connector and one Mini PCI-e connector. First inserts mSATA SSD inserts into Mini PCI-e connector, using USB A-type to Micro-B cable to connect to the host, mSATA SSD can work.

2. Tools and Results of Performance Measurement

2.1 Test Platform:
M/B : ASRock **Z170 Extreme 7+.**
CPU : Intel **i5-6400,** 2.7GHz/ 6M Cache/ LGA1151
Memory : Kingston **KVR21N15D8/8,** DDR4-2133MHz, 16G(8GB DIMM*2)
ATX Power : FSP RAIDER 550, **550W ATX**, 12V V2.2 Power Supply
Graphic : Z170 Chipsets built-in **HD Graphics 530**
Cable: USB 3.1 A to micro-B cable
OS : Microsoft **Windows 8.1 64bit OS**

2.2 Test target: U4315A adapter and Crucial mSATA / 128GB(CT-128M550SSD3)

U4315A Adapter   Crucial 128GB mSATA SSD

Install Hardware

Inserts mSATA SSD into U4315A adapter's Mini PCI-e 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 ASRock **Z170 Extreme 7+.**

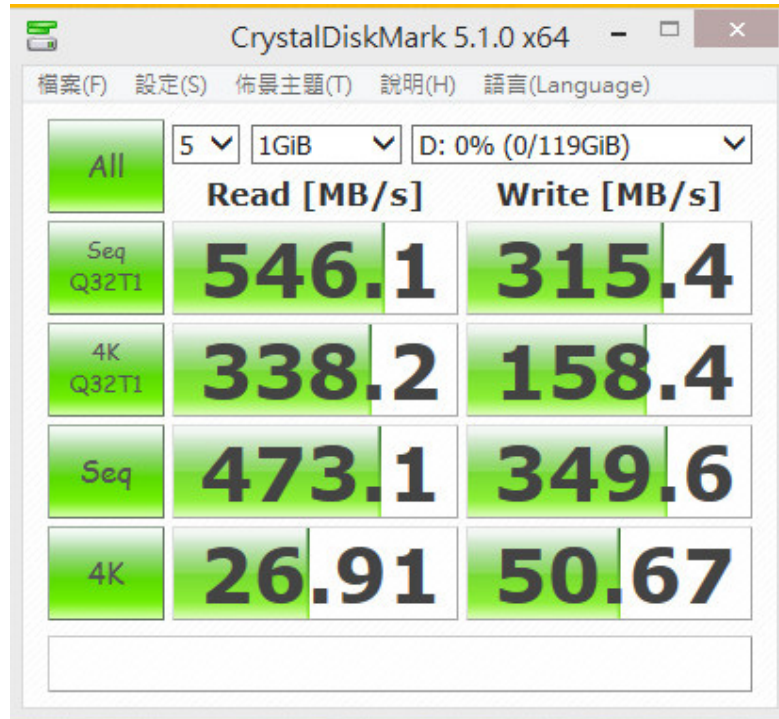### 2.3 BIOS & Windows 8.1 OS environment setup
2.3.1 install Windows 8.1 64bit OS.

USB 3.1 Micro-B for 2.5" SATA, mSATA SSD & M.2 SSD adapter

2.4   CrystalDiskMark 5.1.2 x64 performance test
　　　※Benchmark (Sequential Read & Write / default = 1MB)
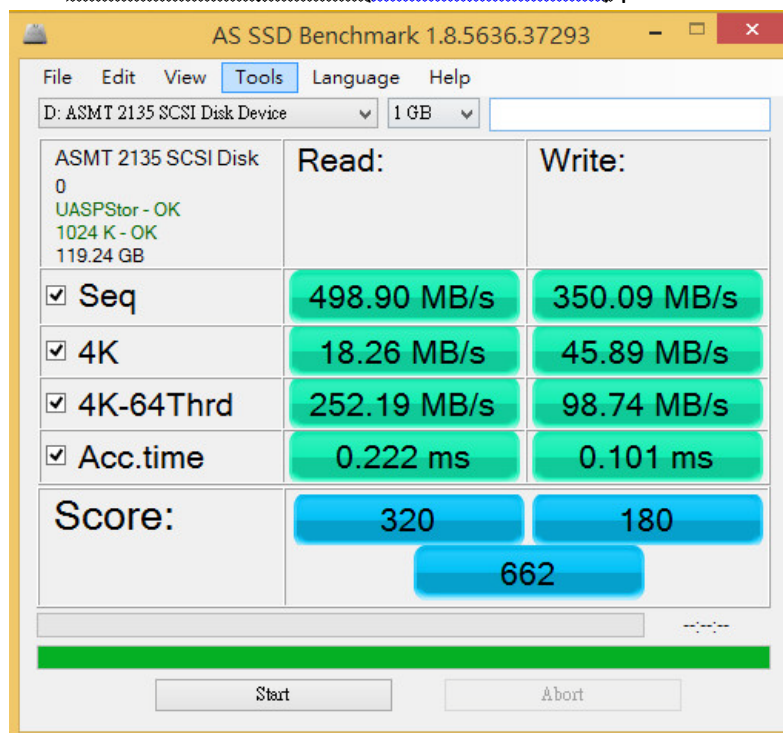　　　2.5.1　　　show Crucial mSATA / 128GB(CT-128M550SSD3) performance as below:

2.6   AS SSD Benchmark 1.9 performance test
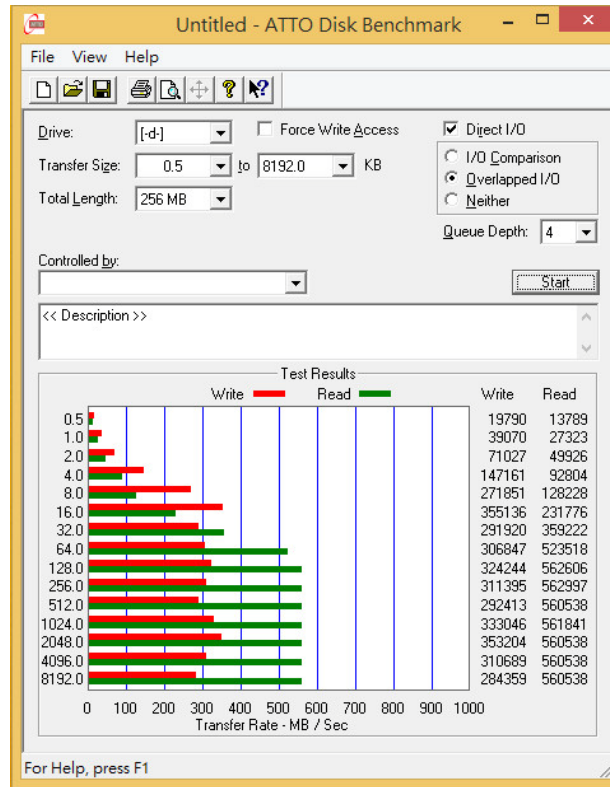　　　※Benchmark (Read & Write by MB/s, default block size = 16MB)
　　　2.6.1　　show Crucial mSATA / 128GB(CT-128M550SSD3) performance as below:

USB 3.1 Micro-B for 2.5" SATA, mSATA SSD & M.2 SSD adapter
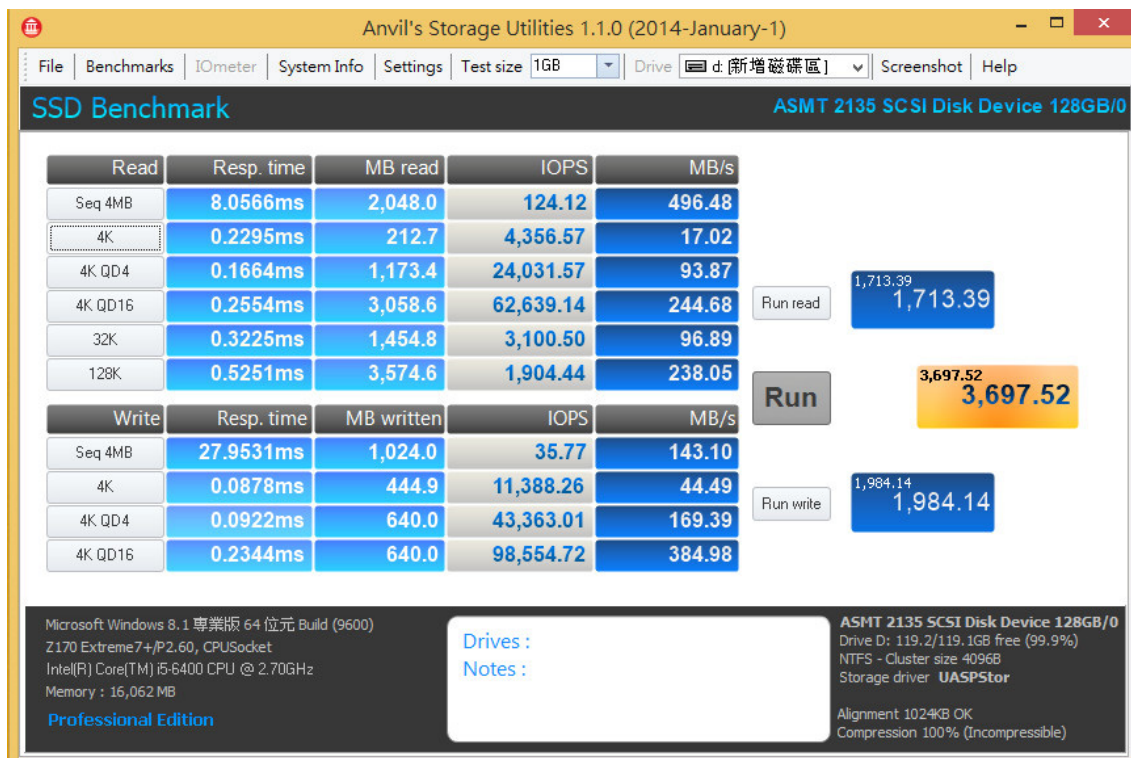
2.7 ATTO Disk Benchamrk 2.47 performance test

    2.7.1   show Crucial mSATA / 128GB(CT-128M550SSD3) performance as below:

2.8 AnvilBenchmark_V110_B337

    2.8.1   show Crucial mSATA / 128GB(CT-128M550SSD3) performance as below:
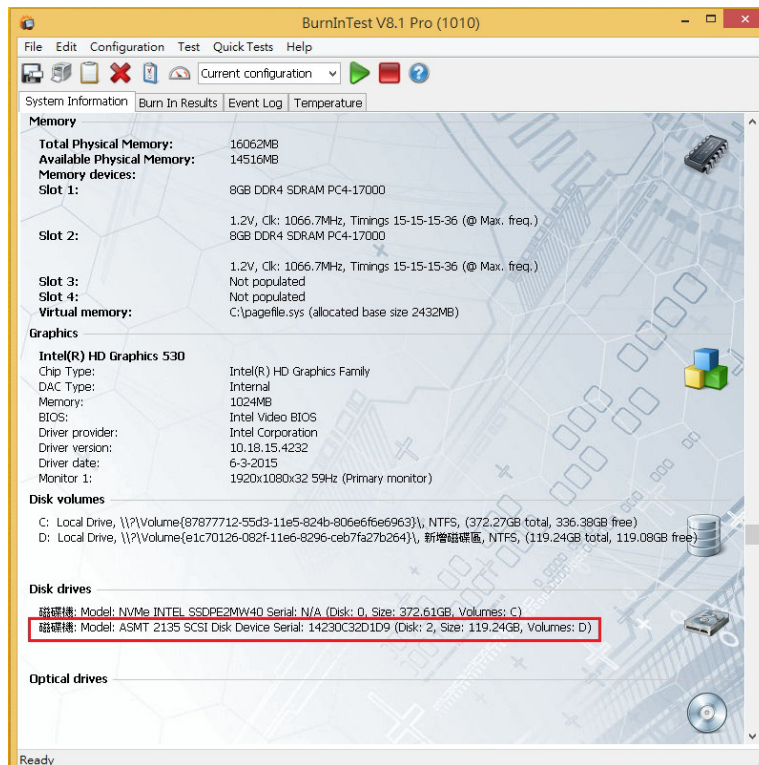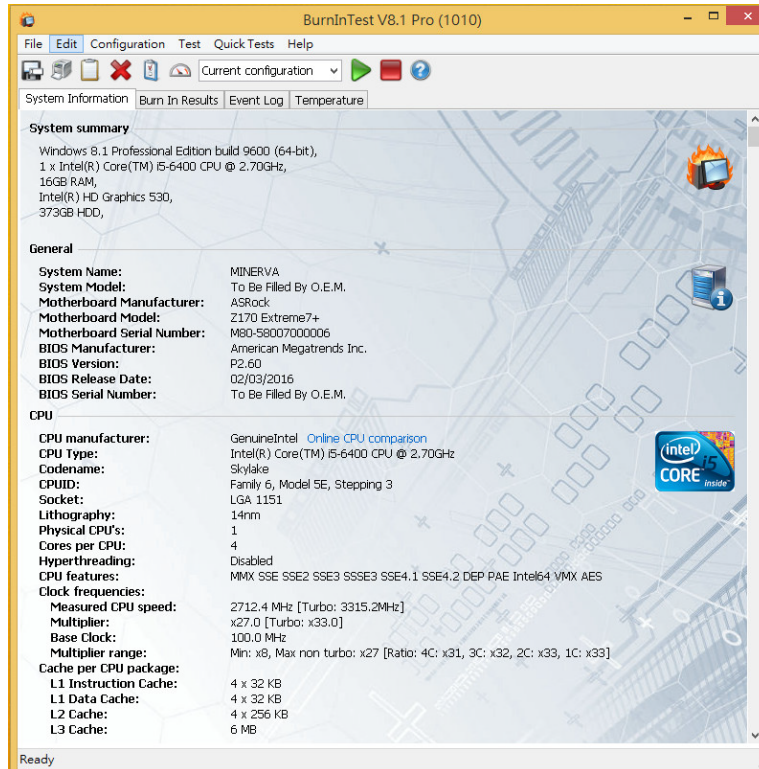
USB 3.1 Micro-B for 2.5" SATA, mSATA SSD & M.2 SSD adapter
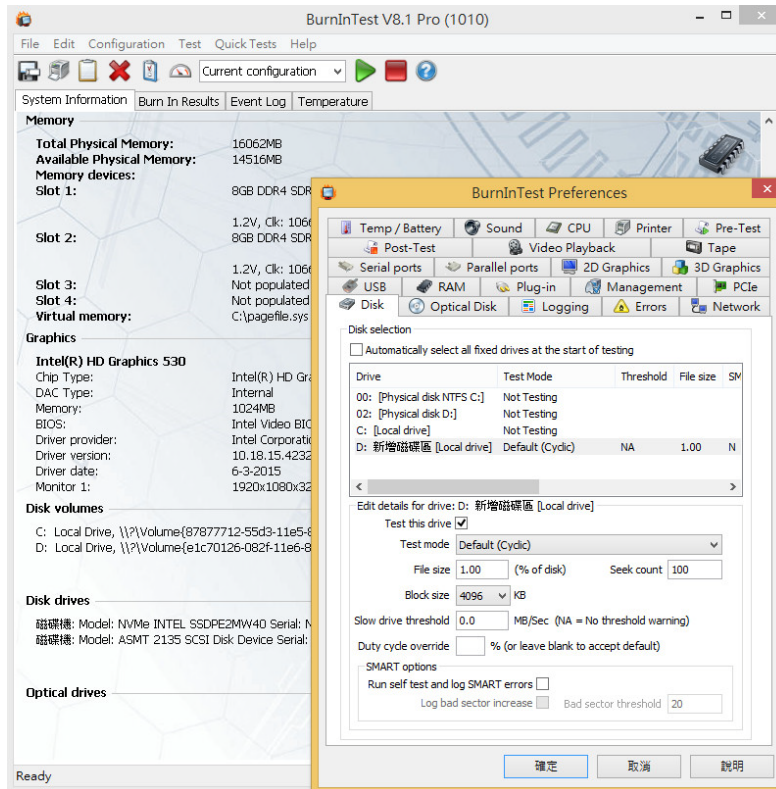
3. Burn In Tests and Results

3.1 BurnInTest v8.1 Pro

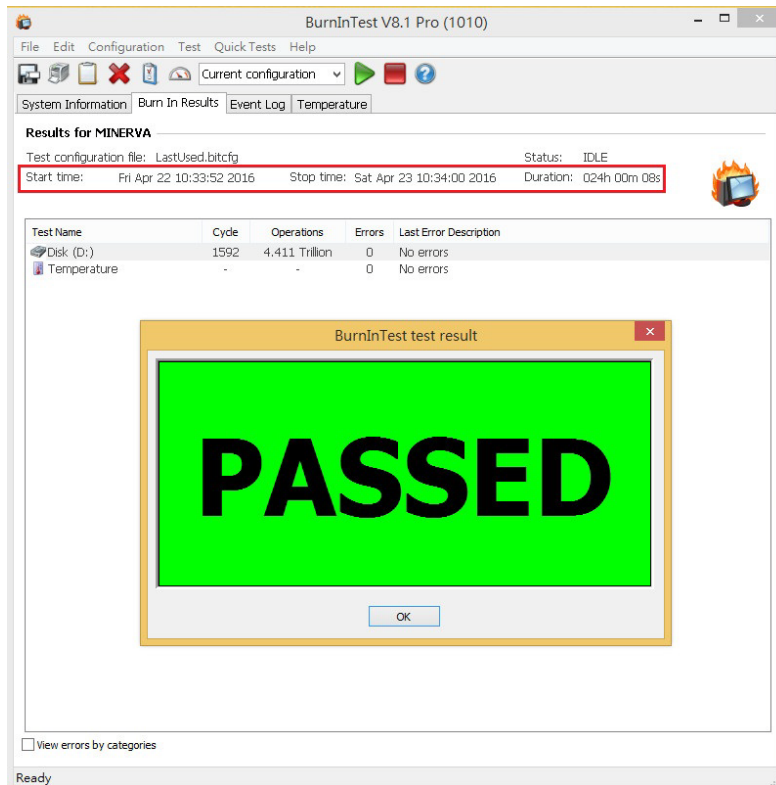#### 3.1.1 **system information** for mSATA 128GB(CT-128M550SSD3) as below:

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

4.4   U4327A enclosure I/O performance is based on mSATA SSD.