



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

Table of Contents

- 1. Overview**

- 2. Performance Measurement Tools and Results**
 - 2.1 Test Platform
 - 2.2 Test target and Used M.2 NGFF SSD
 - 2.3 Install Hardware
 - 2.4 BIOS & Windows 8.1 OS environment setup
 - 2.5 CrystalDiskMark 5.1.0 x64 performance test
 - 2.6 AS SSD Benchmark 1.8 performance test
 - 2.7 ATTO Disk Benchamrk 2.47 performance test
 - 2.8 AnvilBenchmark_V110_B337 Benchmark performance test

- 3. Burn In Tests and Results**
 - 3.1 BurnInTestv8.1 Pro burn in test

- 4. Summary**

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

1. Overview

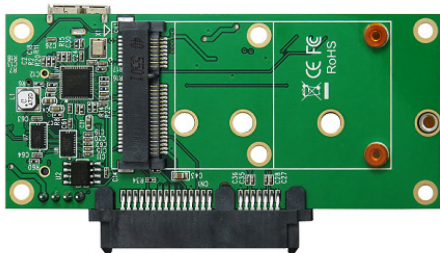
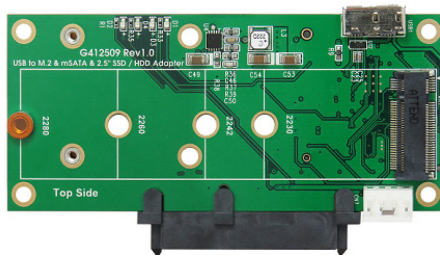
U4315A adapter, built-in USB3.1 Micro-B connectors, provides one SATA connector, one M.2 B-key connector and one Mini PCI-e connector. First inserts M.2 SSD into M.2 B-key connector, using USB A-type to Micro-B cable to connect to the host, M.2 SSD can work.

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 M.2 / 128GB(LGT-128M6G)



U4315A Adapter



Lite ON M.2 SSD (LGT-128M6G)

2.3 Install Hardware

Inserts M.2 SSD into U4315AF 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 ASRock **Z170 Extreme 7+**

2.4 BIOS & Windows 8.1 OS environment setup

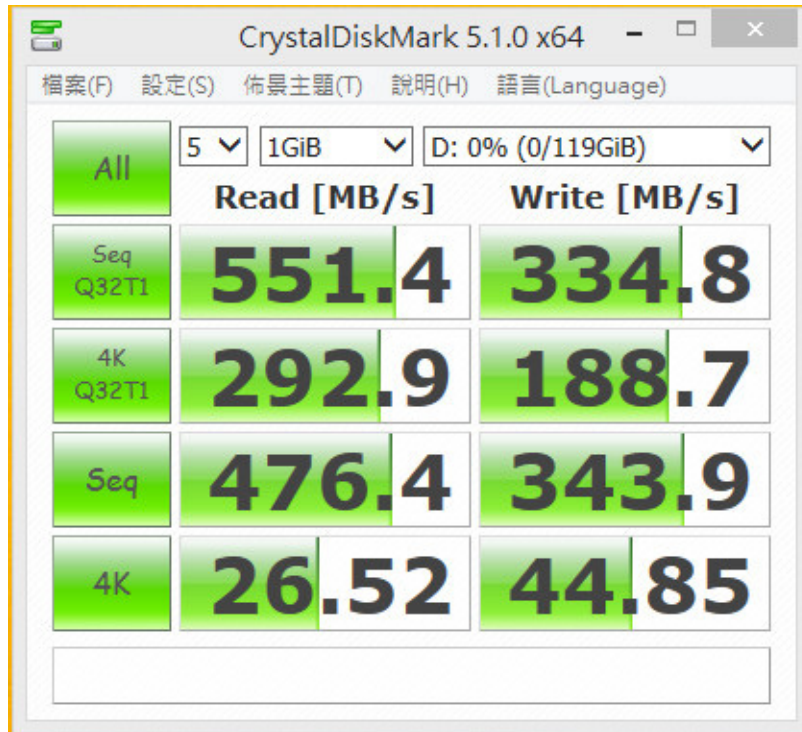
2.4.1 install Windows 8.1 64bit OS.

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2.5 CrystalDiskMark 5.1.2 x64 performance test

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

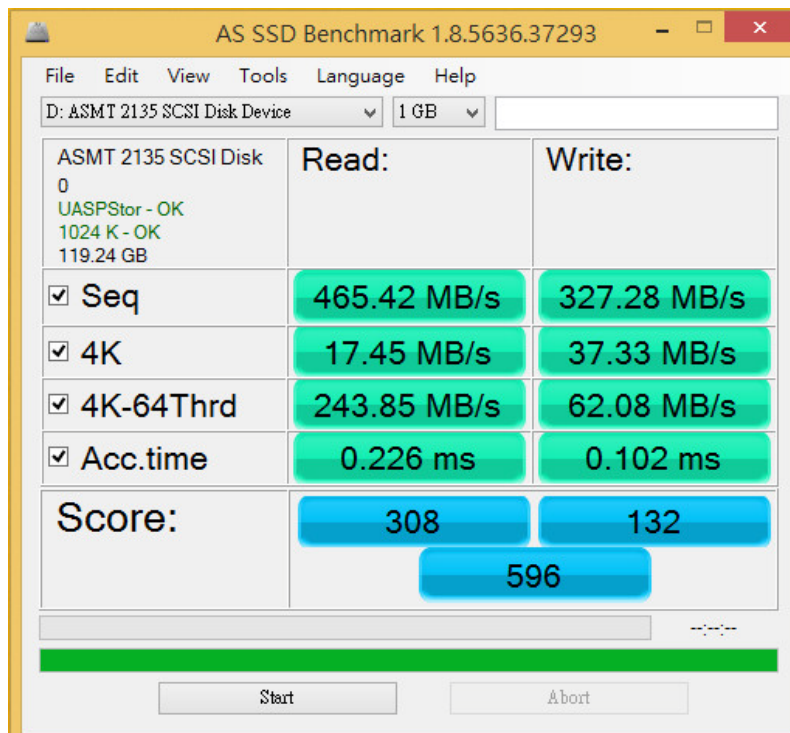
2.5.1 show LITE-ON M.2 / 128GB(**LGT-128M6G**) performance as below:



2.6 AS SSD Benchmark 1.9 performance test

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

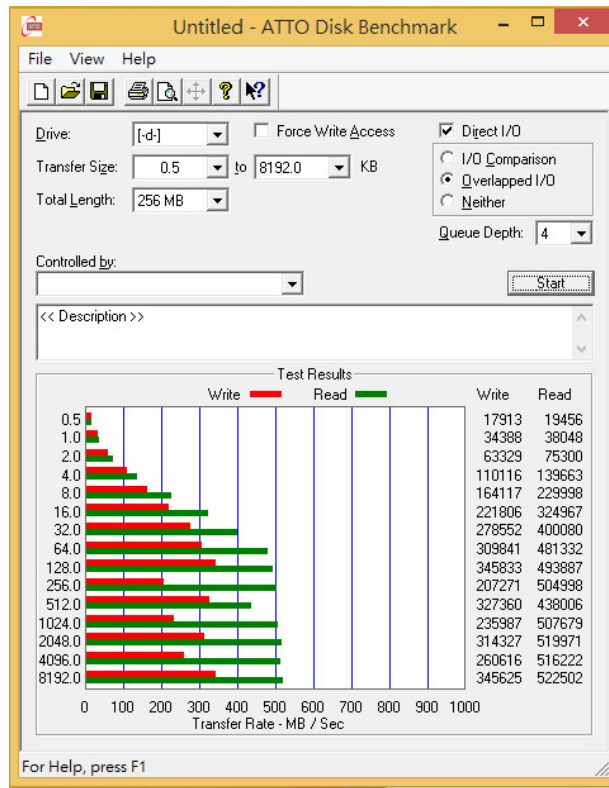
2.6.1 show LITE-ON M.2 / 128GB(**LGT-128M6G**) performance as below:



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

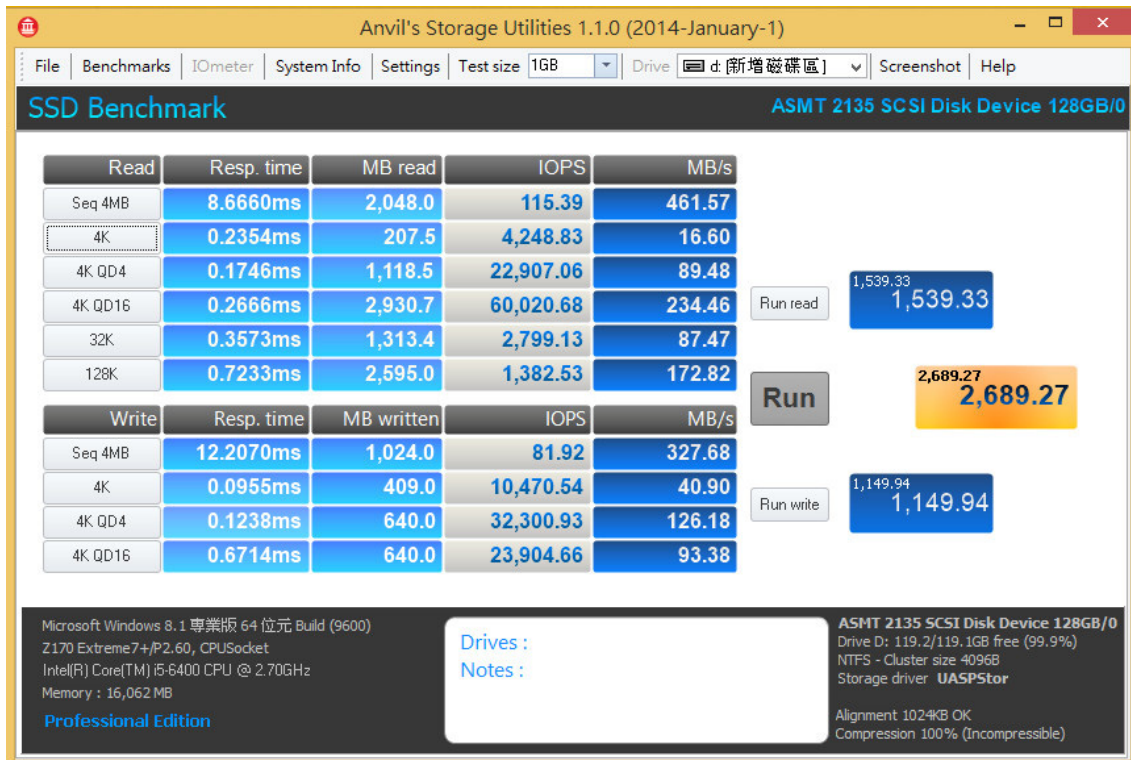
2.7 ATTO Disk Benchmark 2.47 performance test

2.7.1 show LITE-ON M.2 / 128GB(LGT-128M6G) performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 show LITE-ON M.2 / 128GB(LGT-128M6G) performance as below:

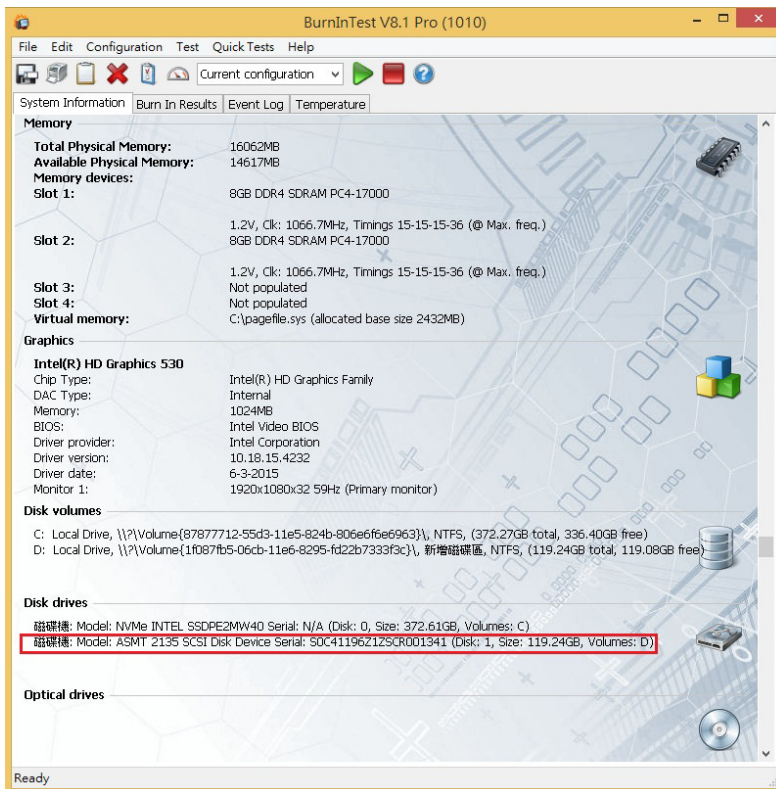
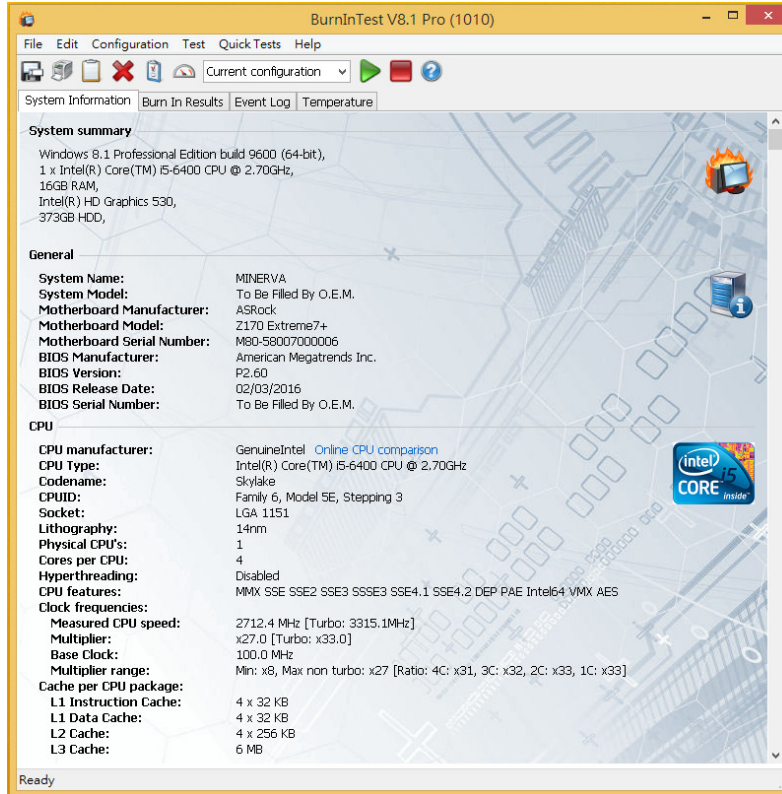


USB 3.1 Micro-B for 2.5" SATA, mSATA SSD & M.2 SSD adapter

3. Burn In Tests and Results

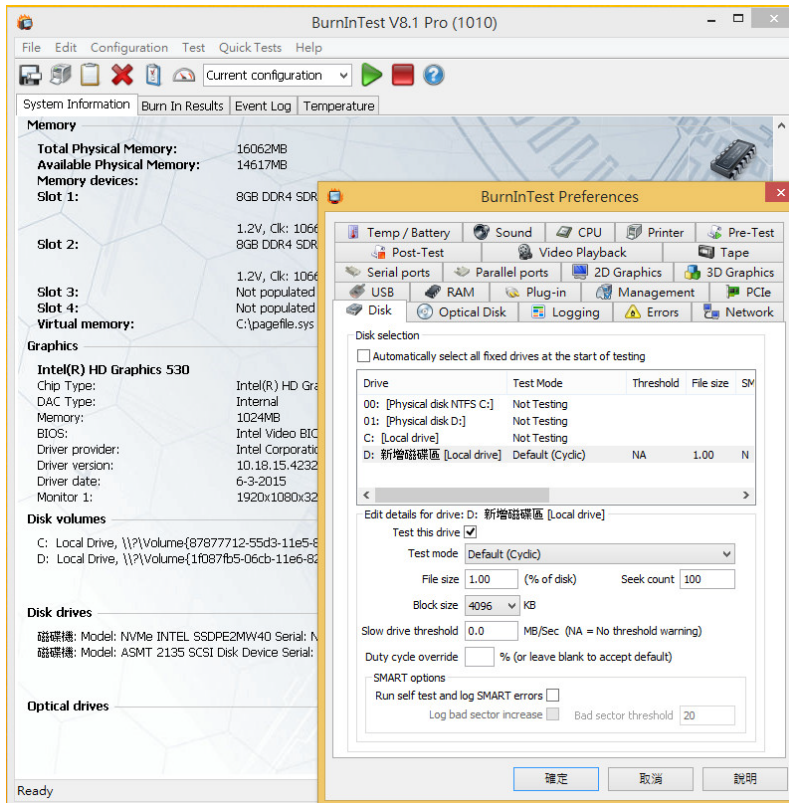
3.1 BurnInTest v8.1 Pro

3.1.1 [system information](#) for [LITE-ON M.2 / 128GB\(LGT-128M6G\)](#) as below:

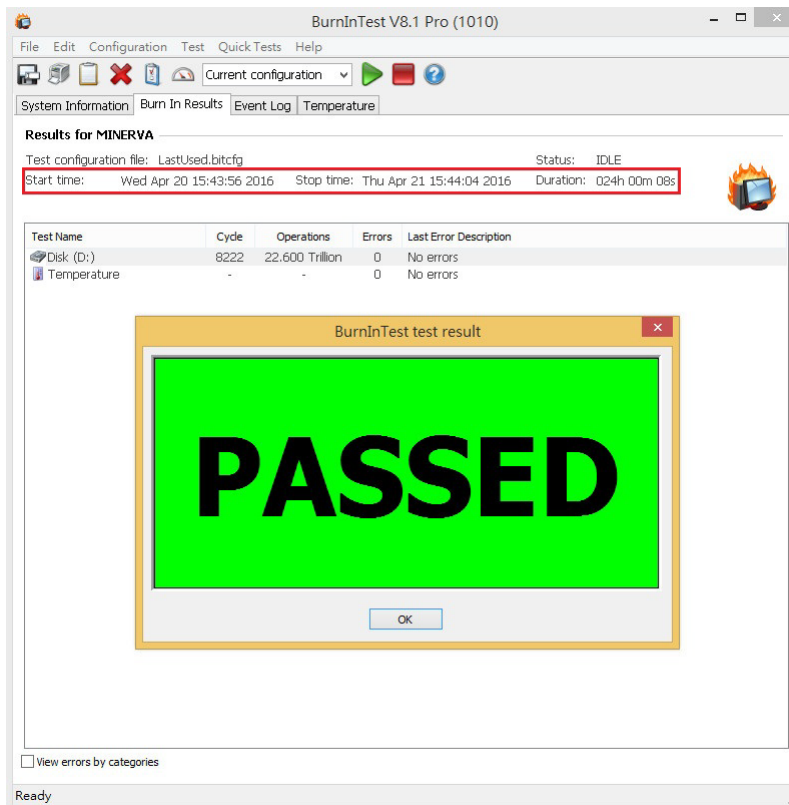


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3.1.2 show Disk test mode (10 ways cycle test)



3.1.3 show 24-hour Burn-in test PASSED



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

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 U4315A enclosure I/O performance is based on M.2 SSD.