



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 5.1.2 x64 performance test

2.6 AS SSD Benchmark 1.9 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

U4327A 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 2.5" SATA SSD, M.2 SSD inserts into M.2 B-key connector or mSATA SSD inserts into Mini PCI-e connector, using USB A-type to Micro-B cable to connect to the host, 2.5" SATA SSD, M.2 SSD & mSATA SSD, only two can work, 2.5" SATA SSD, M.2 SSD would be priority.

2. Tools and Results of Performance Measurement

2.1 Test Platform

M/B : ASUS [X99-PRO/USB3.1](#)
CPU : Intel [i7-5820K](#), 3.3GHz/ 15M Cache/ LGA2013-v3
Memory : ADATA DDR4 PC4-1700MHz, 8G(4GB DIMM*2)
ATX Power : COOLER MASTER G750M, [750W ATX](#), 12V V2.31 Power Supply
Graphic : ATI Radeon [HD Graphics 5450](#) Graphics Processor
OS : Microsoft [Windows 8.1 64bit OS](#)

2.2 Test target: U4327A adapter and 2.5" SATA SSD, M.2 SSD & Msata SSD)



U4327A Adapter

Crucial mSATA SSD

Lite on M.2 SSD

Crucial 2.5" SSD

2.3 Install Hardware

Inserts 2.5" SATA, M.2 SSD & mSATA SSD into U4327AF adapter's SATA, M.2 and 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 ASUS [X99-PRO/USB3.1](#).

2.4 BIOS & Windows 8.1 OS environment setup

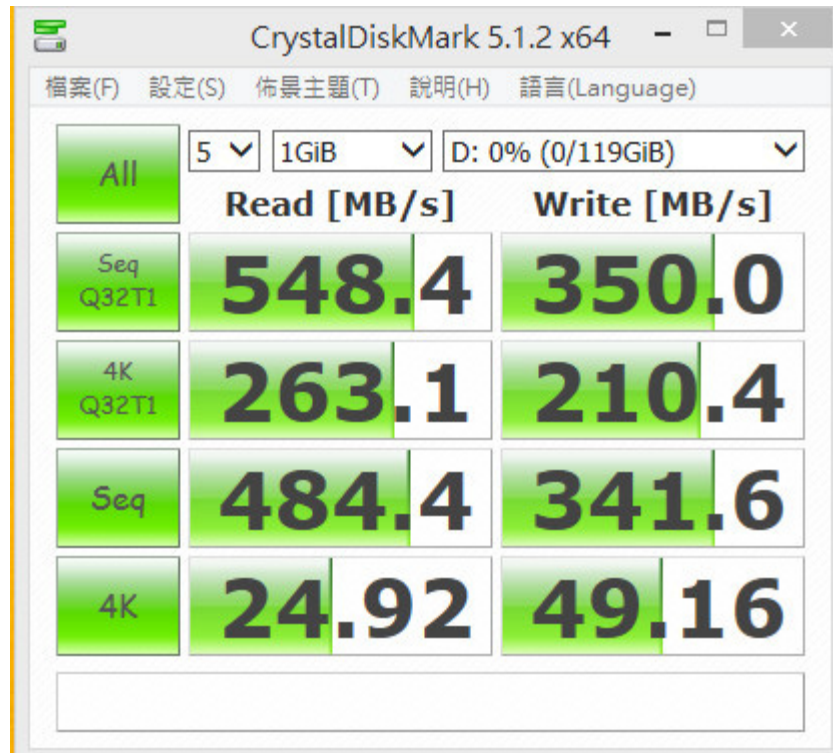
2.4.1 install Windows 8.1 64bit OS.

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

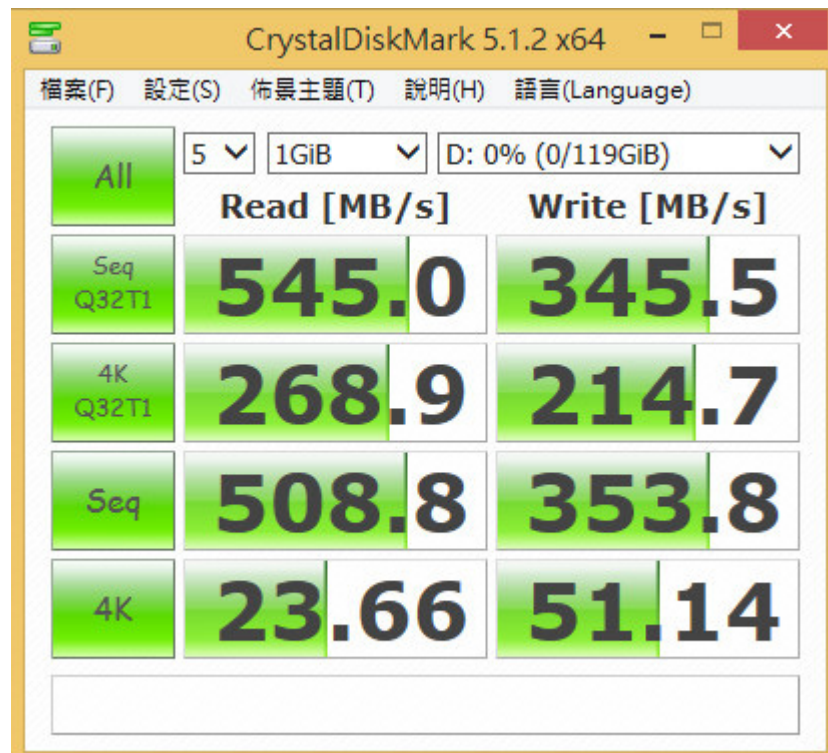
2.5 CrystalDiskMark 5.1.2 x64 performance test

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

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

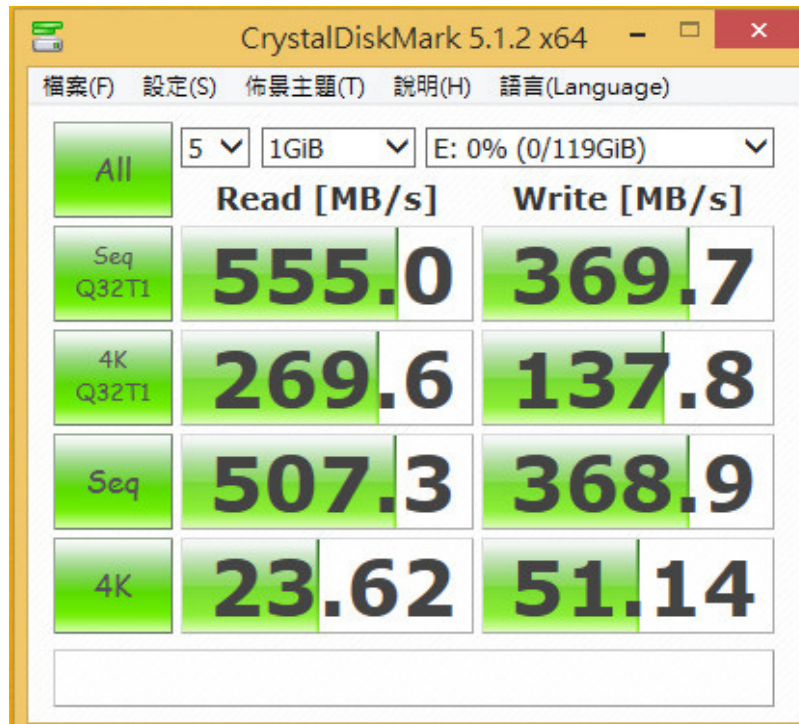


2.5.2 show Crucial mSATA / 128GB([CT-128M550SSD3](#)) performance as below:



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

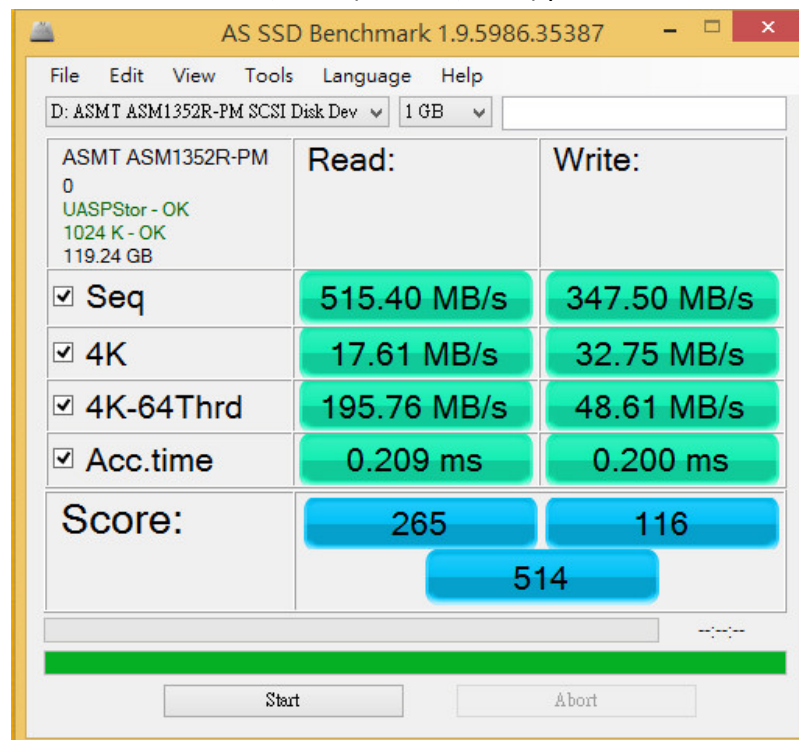
2.5.3 show Crucial M550 [CT128M550SSD1 2.5" 128GB](#) performance as below:



2.6 AS SSD Benchmark 1.9 performance test

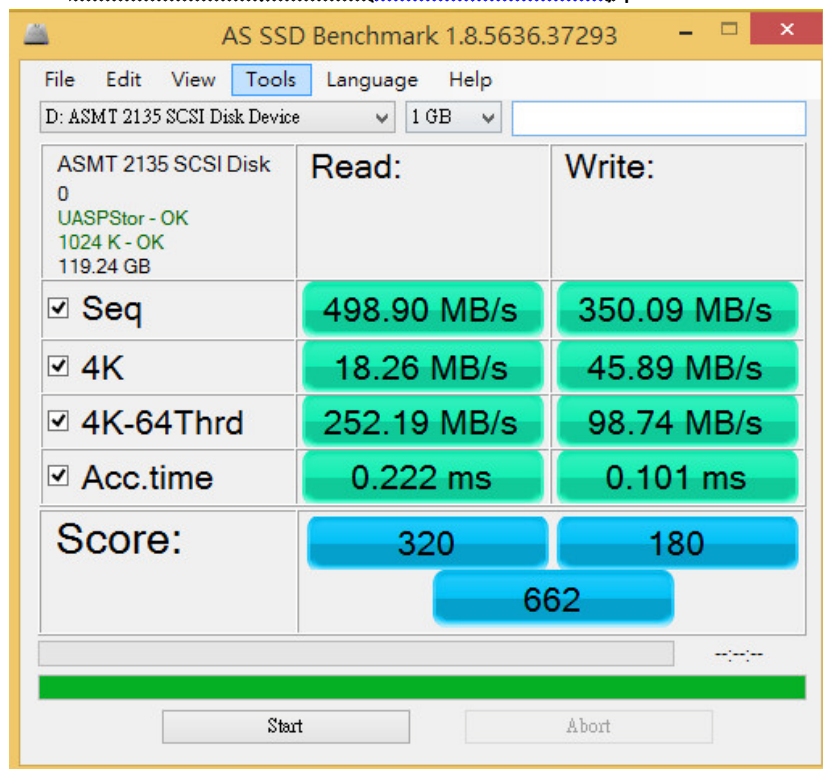
※Benchmark (Read & Write by MB/s, default block size = 16MB)

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

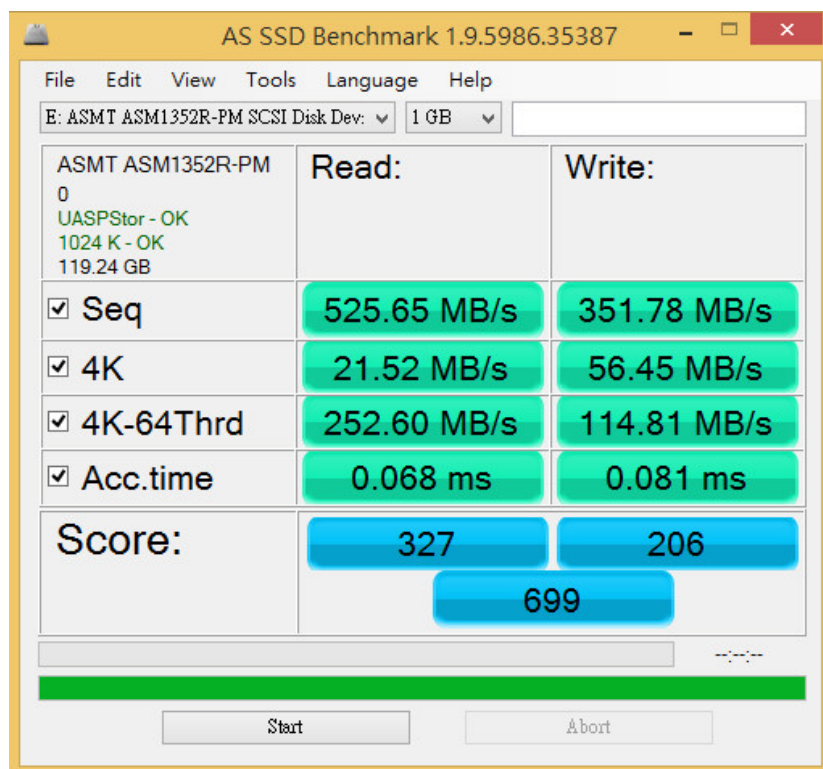


USB 3.1 Micro-B for 2.5" SATA, mSATA SSD & M.2 SSD adapter

2.6.2 show Crucial mSATA / 128GB([CT-128M550SSD3](#)) performance as below:



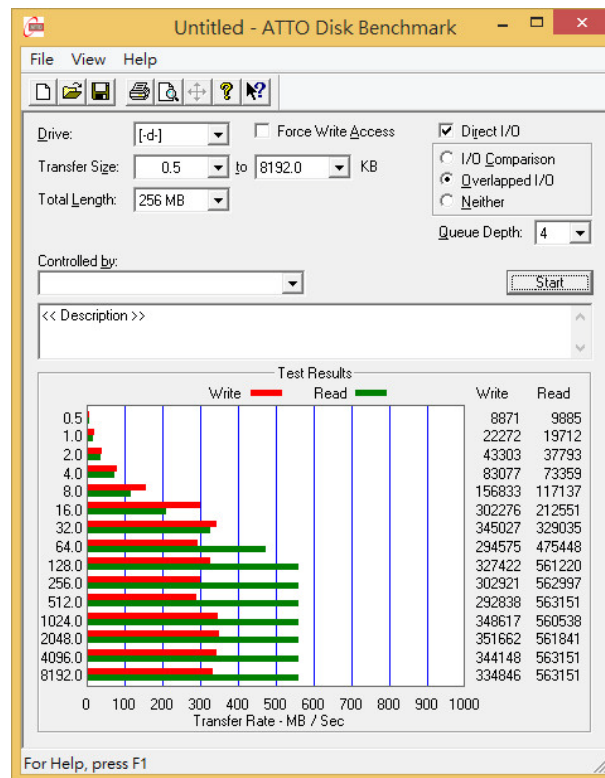
2.6.3 show Crucial M550 [CT128M550SSD1 2.5" 128GB](#) performance as below:



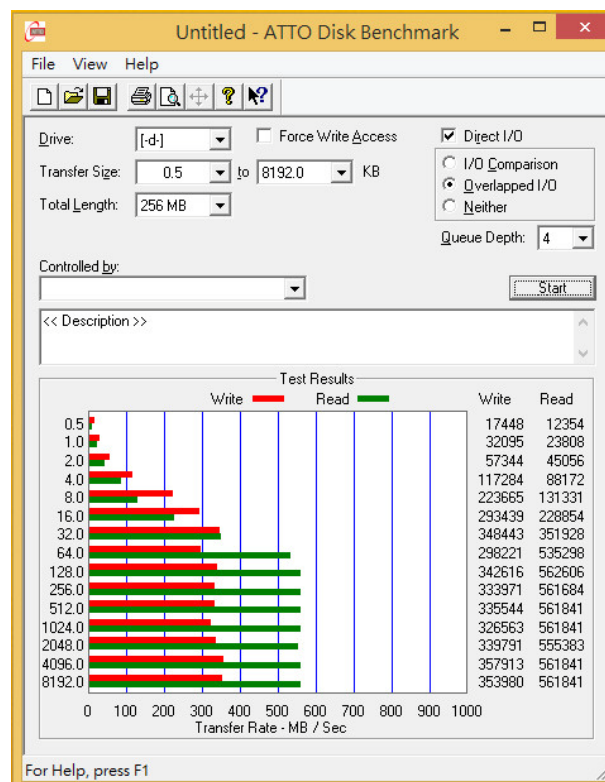
USB 3.1 Micro-B for 2.5" SATA, mSATA SSD & M.2 SSD adapter

2.7 ATTO Disk Benchmark 2.47 performance test

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

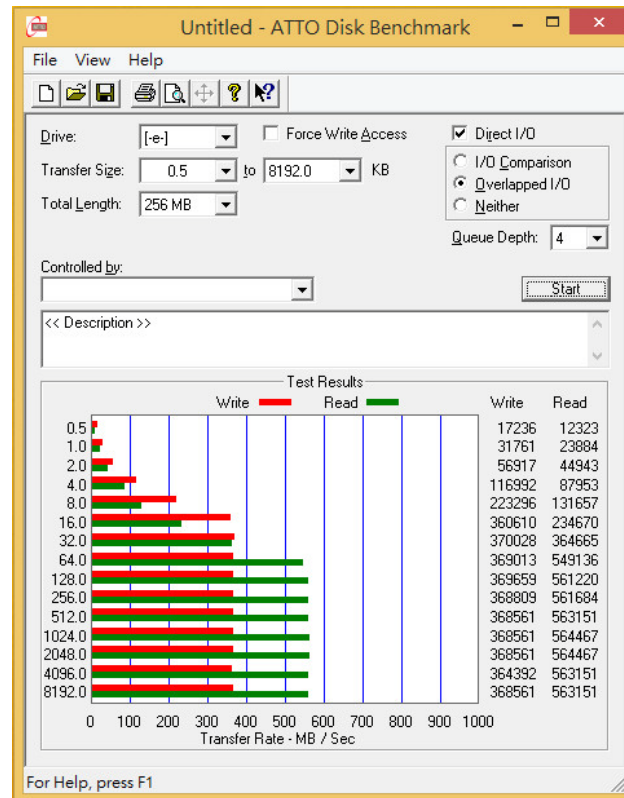


2.7.2 show Crucial mSATA / 128GB(CT-128M550SSD3) performance as below:



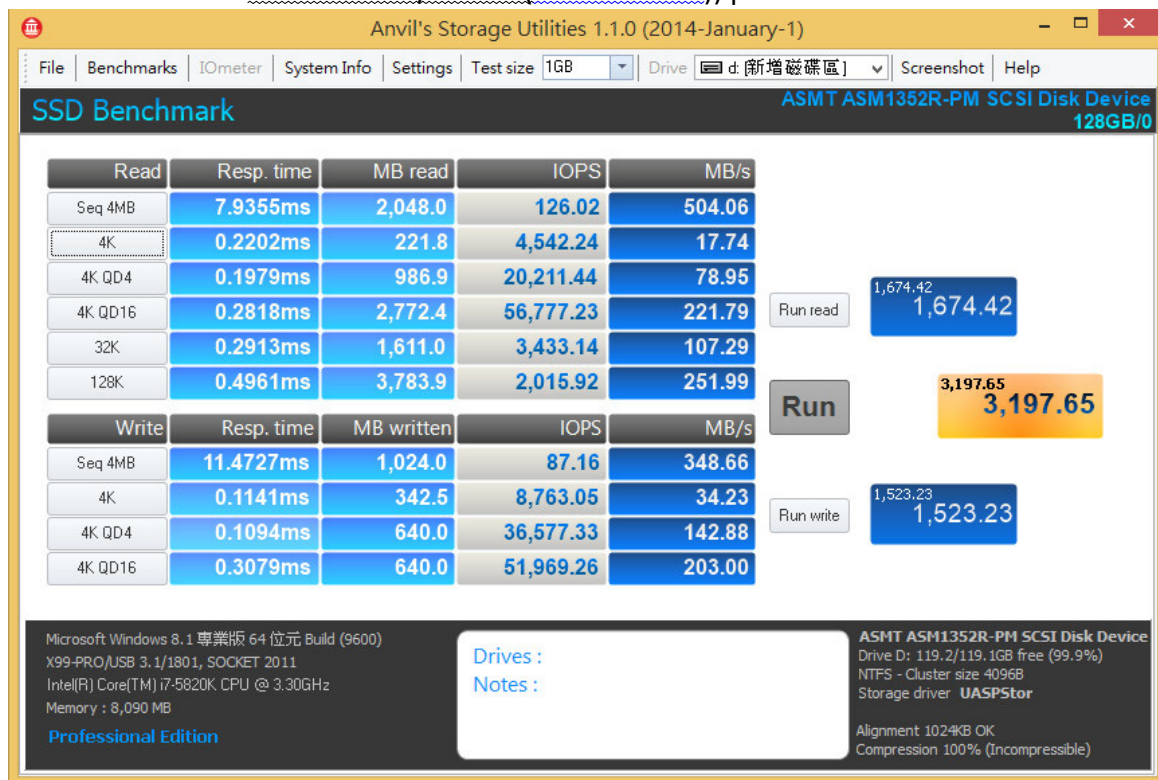
USB 3.1 Micro-B for 2.5" SATA, mSATA SSD & M.2 SSD adapter

2.7.3 show Crucial M550 [CT128M550SSD1 2.5" 128GB](#) performance as below:



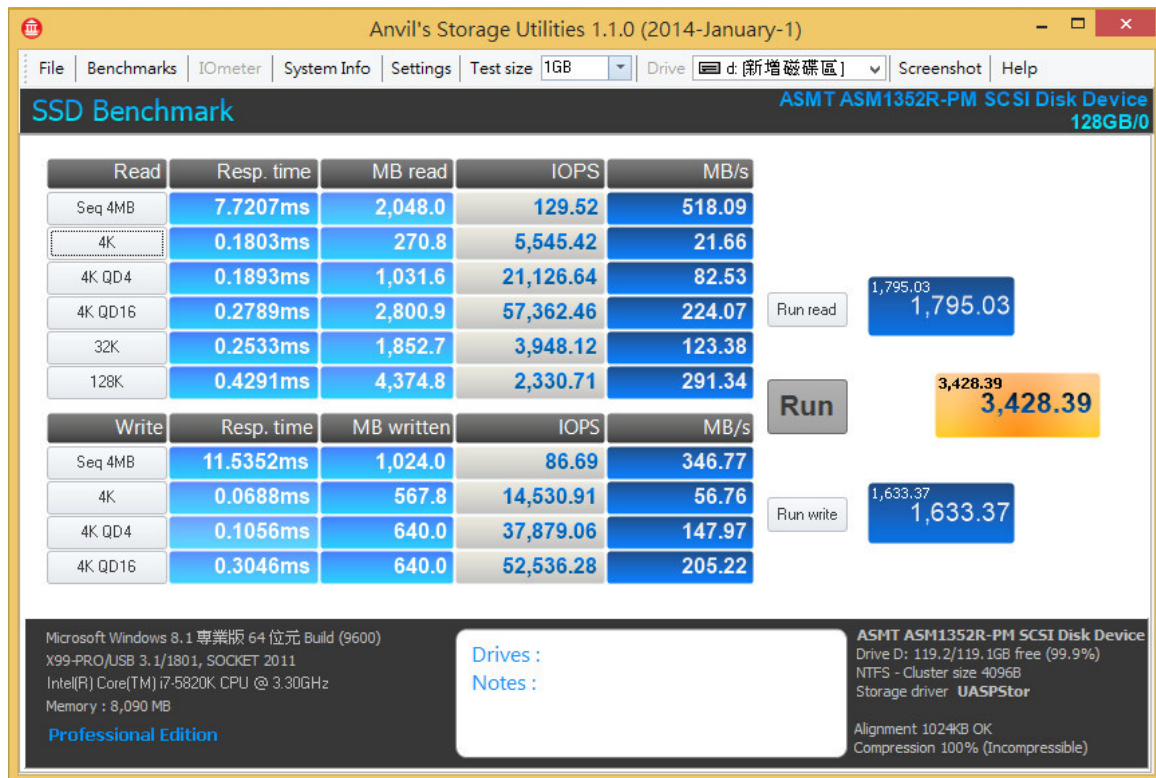
2.8 AnvilBenchmark_V110_B337

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

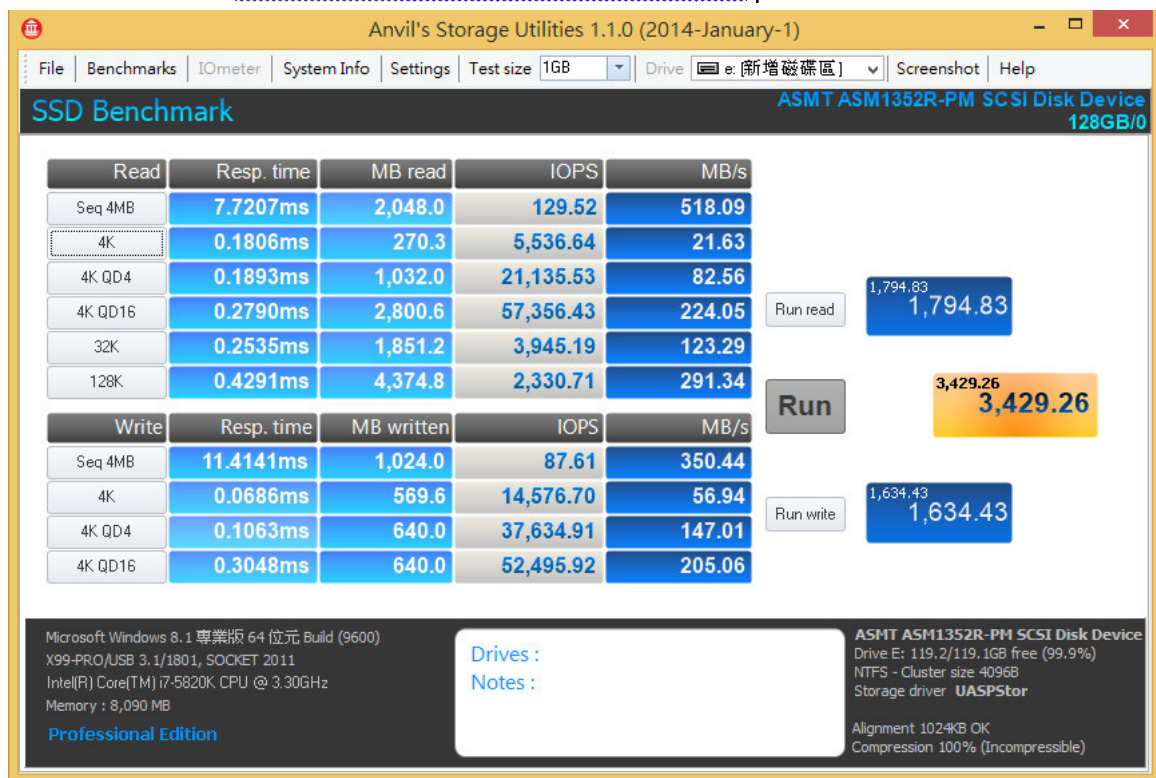


USB 3.1 Micro-B for 2.5" SATA, mSATA SSD & M.2 SSD adapter

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



2.8.3 show Crucial M550 CT128M550SSD1 2.5" 128GB performance as below:



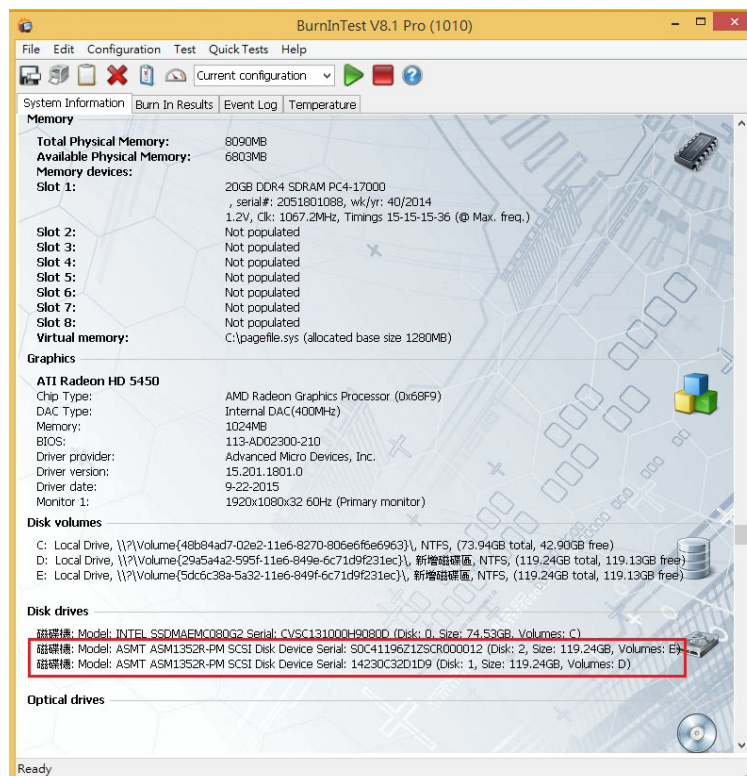
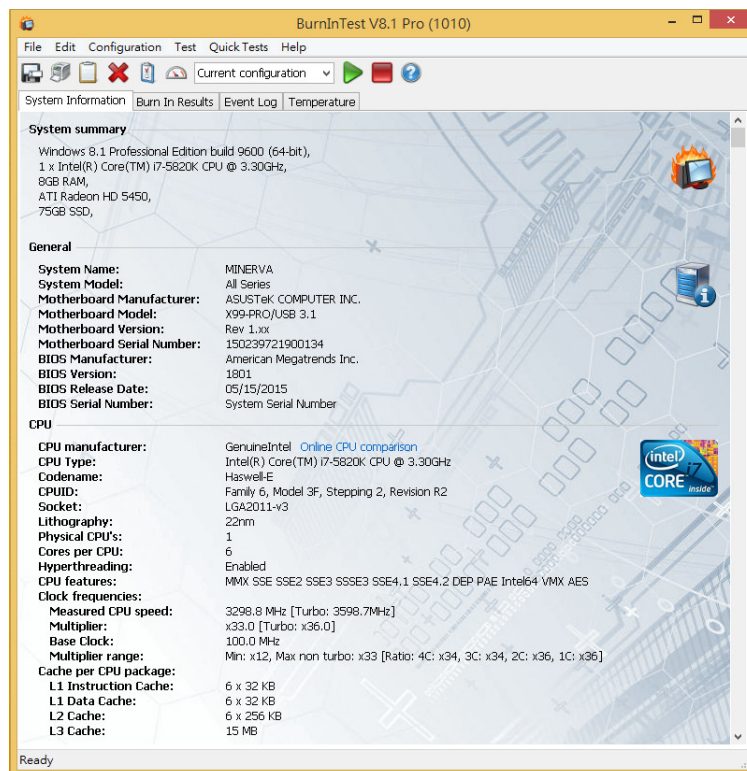
USB 3.1 Micro-B for 2.5" SATA, mSATA SSD & M.2 SSD adapter

3. Burn In Tests and Results

3.1 BurnInTest v8.1 Pro

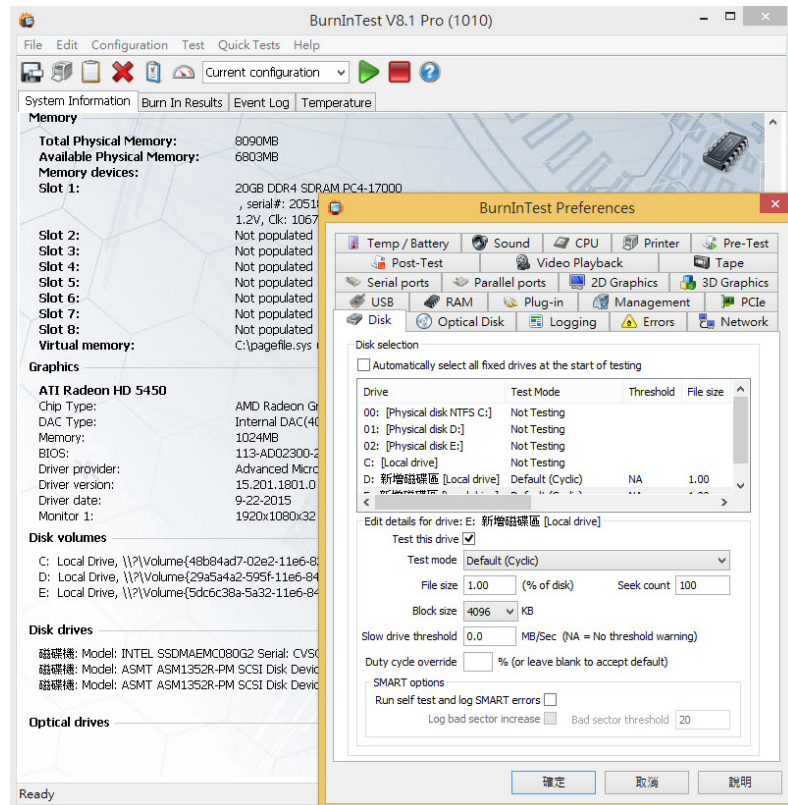
show M.2 128GB([LGT-128M6G](#)) & mSATA 128GB([CT-128M550SSD3](#))

3.1.1 **system information** as below:

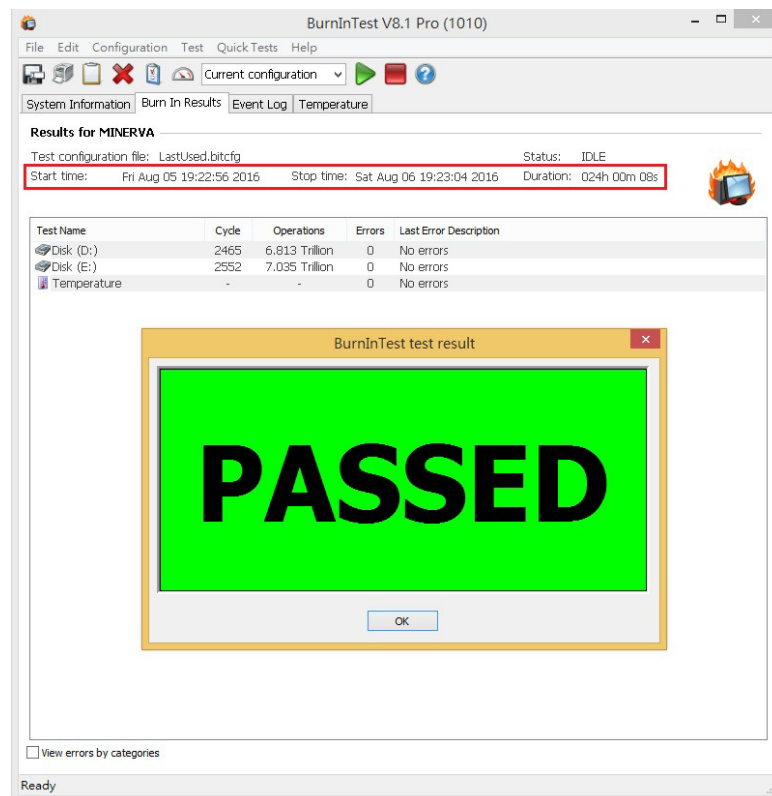


USB 3.1 Micro-B for 2.5" SATA, mSATA SSD & M.2 SSD adapter

3.1.2 show Disk test mode(10 ways cycle test)



3.1.3 show 24-hour Burn-in test PASSED

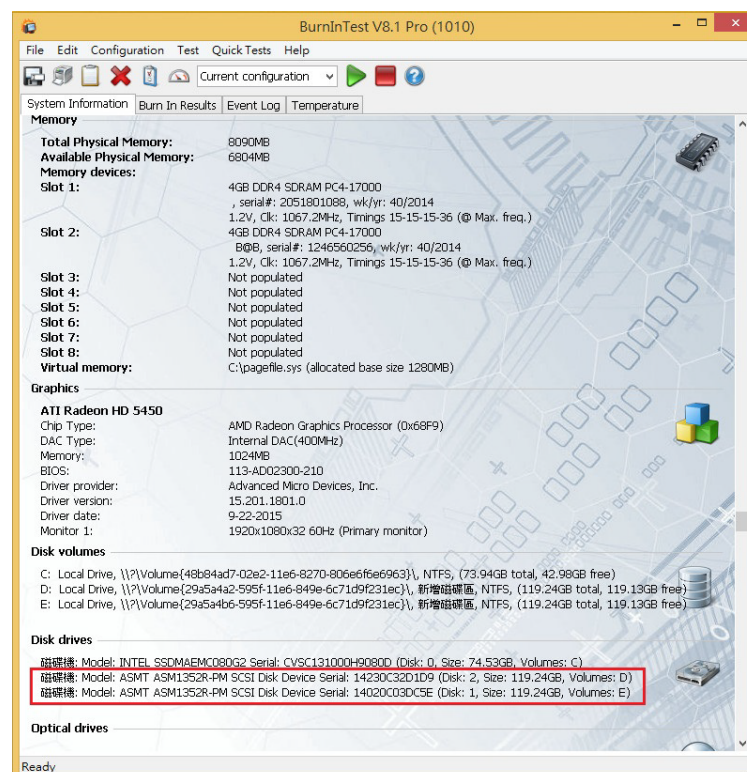
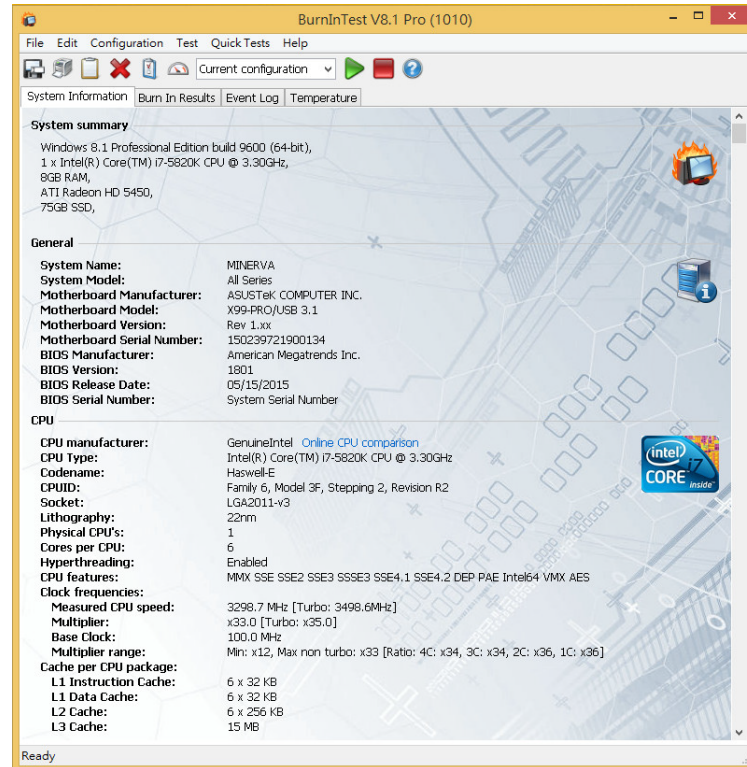


USB 3.1 Micro-B for 2.5" SATA, mSATA SSD & M.2 SSD adapter

3.2 BurnInTest v8.1 Pro

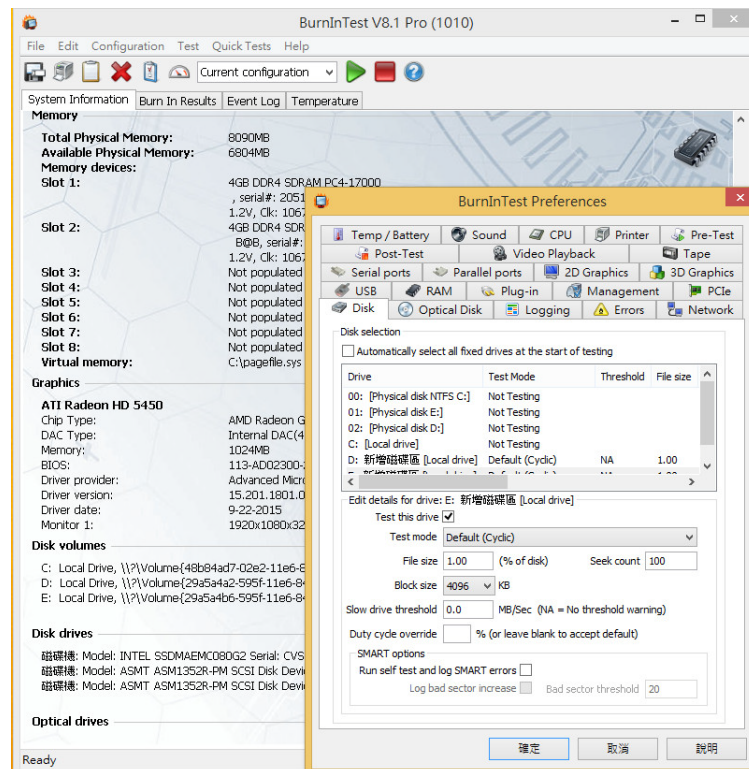
show 2.5" 128GB([CT128M550SSD1](#)) & mSATA 128GB([CT-128M550SSD3](#))

3.2.1 system information as below:

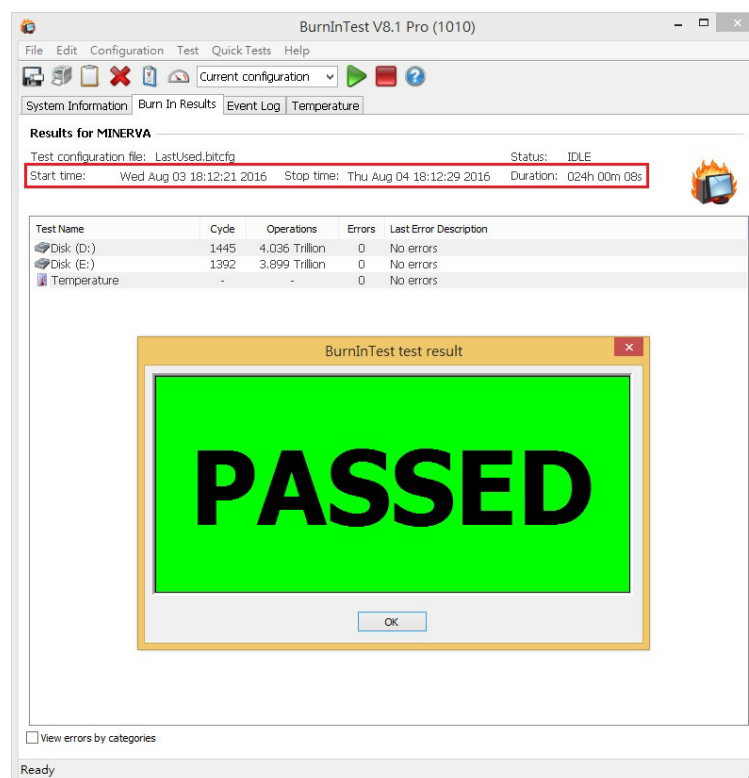


USB 3.1 Micro-B for 2.5" SATA, mSATA SSD & M.2 SSD adapter

3.2.2 show Disk test mode(10 ways cycle test)



3.1.3 show 24-hour Burn-in test PASSED

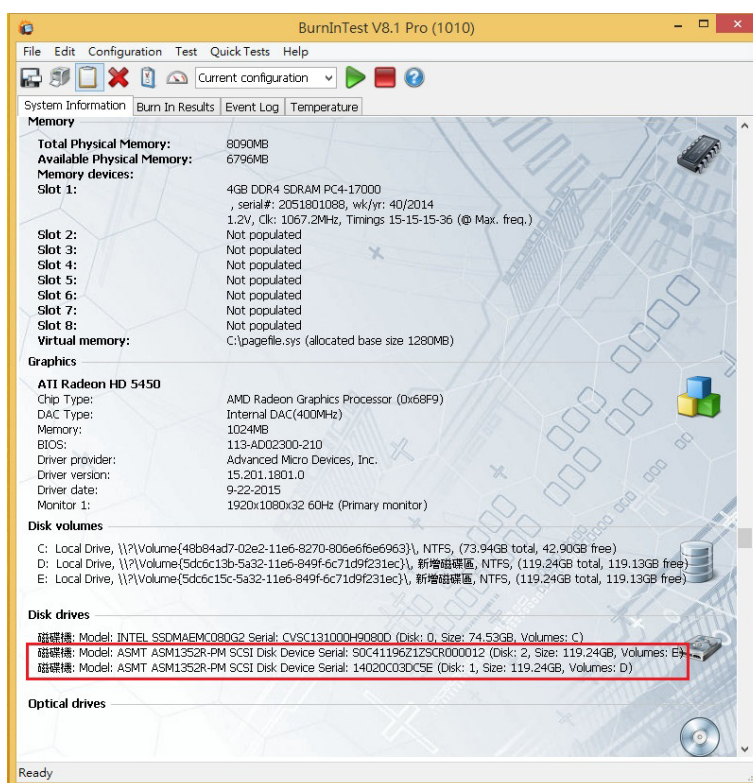
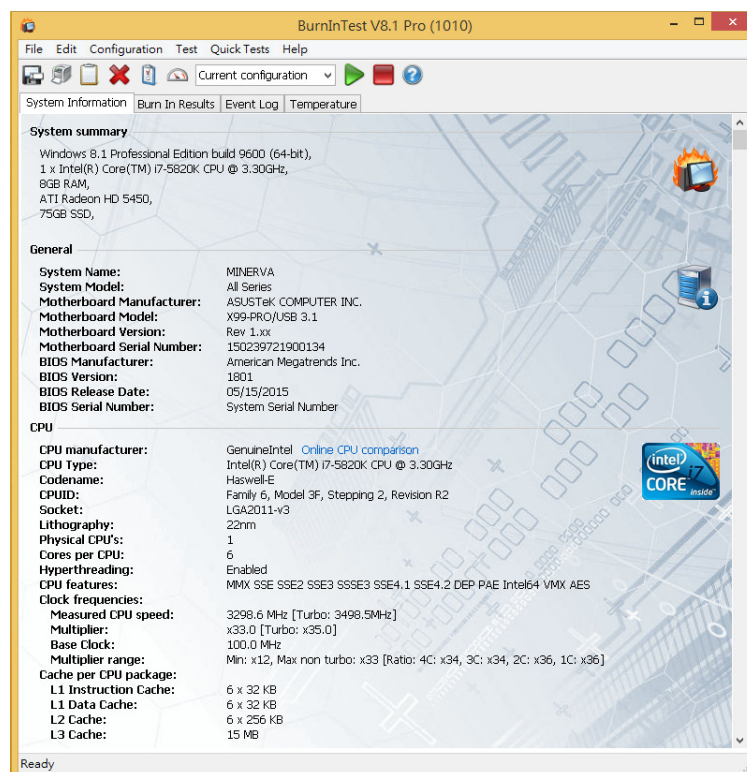


USB 3.1 Micro-B for 2.5" SATA, mSATA SSD & M.2 SSD adapter

3.3 BurnInTest v8.1 Pro

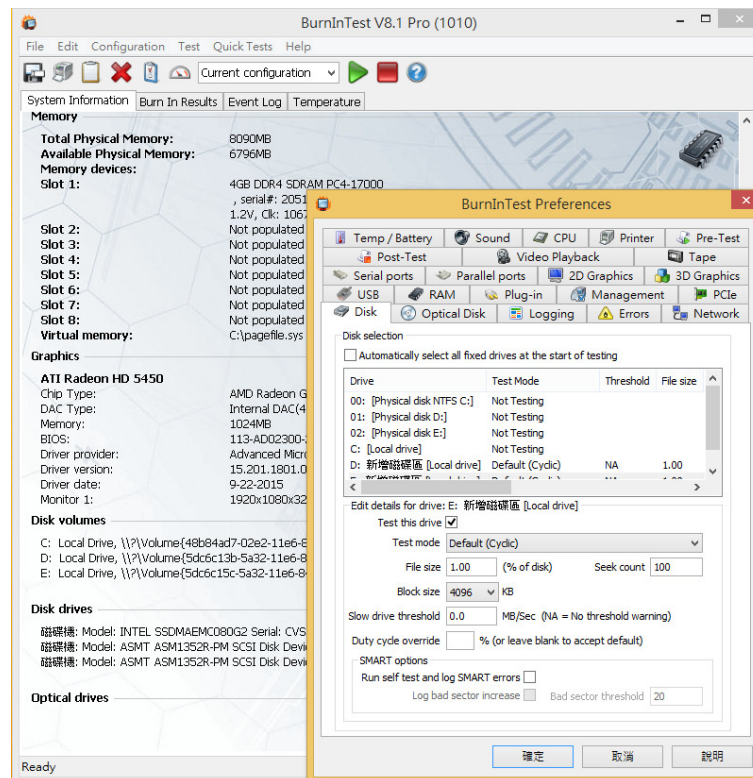
show 2.5" 128GB([CT128M550SSD1](#)) & M.2 128GB([LGT-128M6G](#))

3.3.1 system information as below:

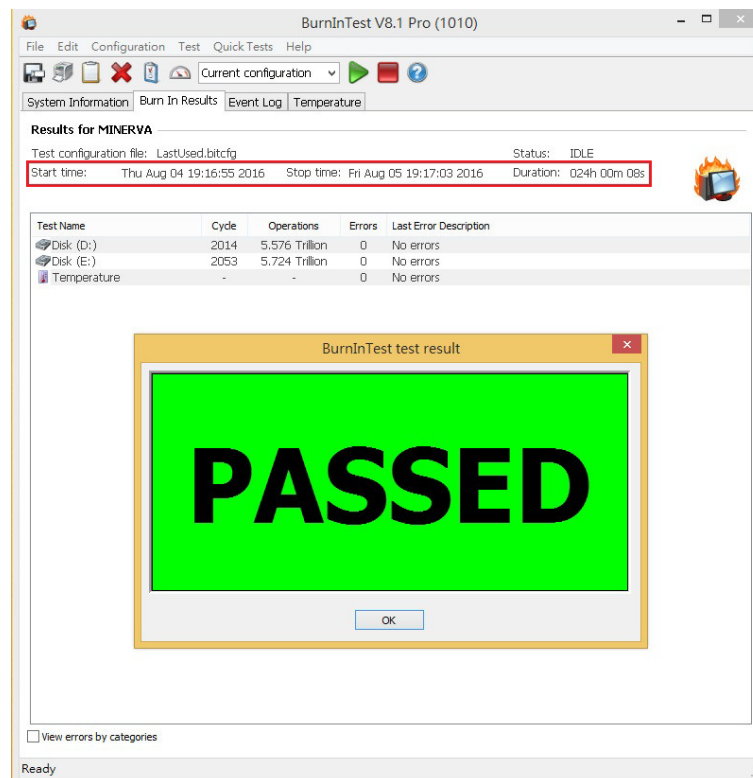


USB 3.1 Micro-B for 2.5" SATA, mSATA SSD & M.2 SSD adapter

3.3.2 show Disk test mode(10 ways cycle test)



3.3.3 show 24-hour Burn-in test PASSED



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

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 mSATA SSD is SATA III Interface, I/O speed, max. to 600MB/s.
- 4.4 U4327A enclosure I/O performance is based on 2.5" SATA, M.2 SSD or mSATA SSD.