MINERVA

S2083A / Rev1.2   Converter Card

Performance & Burn In Test   Rev. 1.0

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S2083A/Rev1.2 Converter Card

1. Overview

S2083A adapter, support mini PCI-e & M.2 B-key connector to convert mSATA SSD or M.2 SSD into SATA III 7+15pin standard interface.

2. Tools and Results of Performance Measurement

2.1   Test Platform

M/B :   ASRock **Z97 Extreme 6**

CPU :   Intel **i5-4426,** 3.2GHz/ 6M Cache/ LGA1150

Memory :   Kingston **KVR16N11S8/4,** DDR3-1600MHz, 8G(4GB DIMM*2)

ATX Power : FSP RAIDER 550, **550W ATX**, 12V V2.2 Power Supply

Graphic :   Z97 Chipsets built-in **HD Graphics 4600**

OS :   Microsoft **Windows 8.1 64bit OS**

2.2   Test target: S2083A adapter and SSD(M.2 / 128GB or mSATA / 128GB)

S2083A Adapter   CT-128M550SSD3   LITE-ON LGT-128M6G

2.3   Install Hardware

Insert M.2 SSD or mSATA SSD into S2083A converter's M.2 B-key or mini PCI-e connector, and then with coppers, and screws to fix SSDs. (Please refer to the Installation Notes). Connect S2083A converter to **SATA III Port of ASRock Z97 Extreme 6**.

2.4   BIOS & Windows 8.1 OS environment setup

2.4.1   In UFEI(Basic Input/Output Setup) – Change IDE Mode into AHCI Mode

2.4.2   In Windows 8.1, 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.
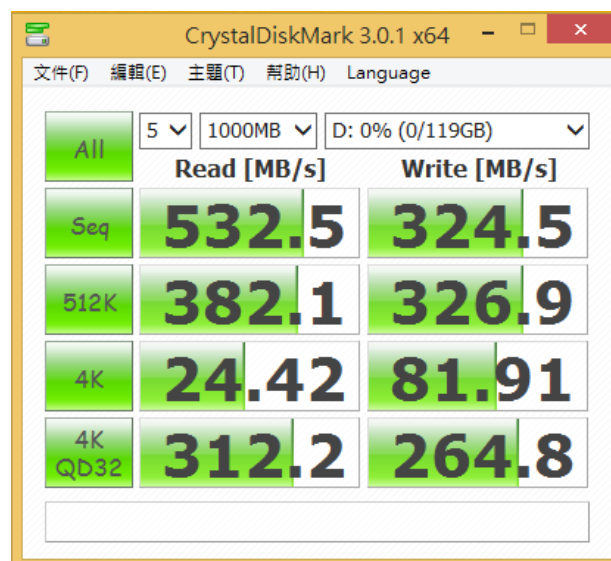
         2.5.2.1   Toggle DDR mode or ONFI synchronous NAND Flash IC, will show good performance

         2.5.2.2   Traditional asynchronous or SDR NAND Flash IC, will show poor performance
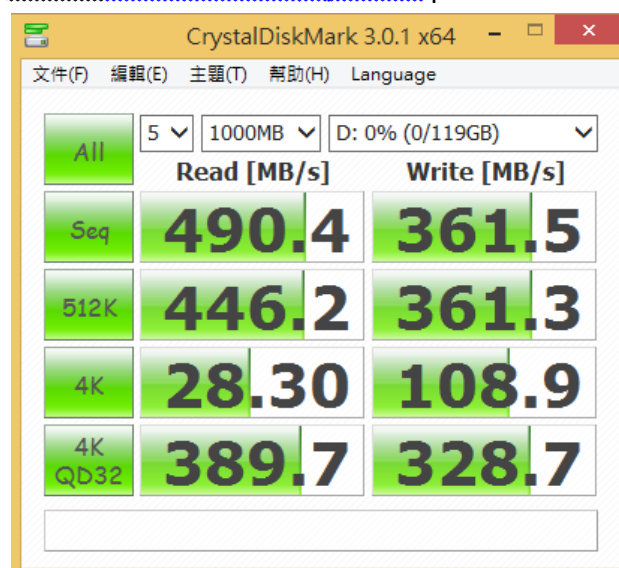
2.6   CrystalDiskMark 3.0.1 x64 performance test

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

     2.6.1   Used LITE-ON LGT-128M6G/128G performance as below:

CrystalDiskMark 3.0.1 x64	Read [MB/s]	Write [MB/s]
Seq	532.5	324.5
512K	382.1	326.9
4K	24.42	81.91
4K QD32	312.2	264.8

Used Crucial CT-128M550SSD3/128GB performance as below:

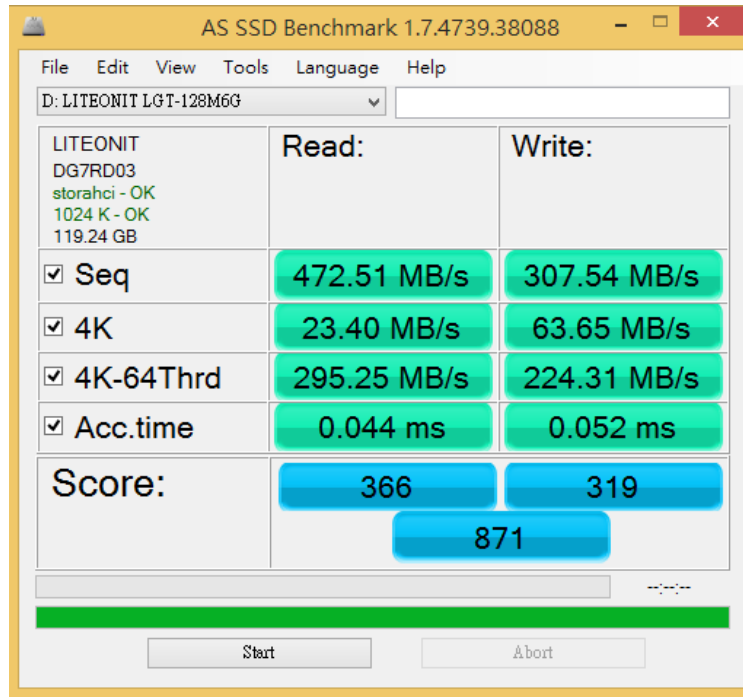| CrystalDiskMark 3.0.1 x64	Read [MB/s]	Write [MB/s]
Seq	490.4	361.5
512K	446.2	361.3
4K	28.30	108.9
4K QD32	389.7	328.7

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2.7   AS SSD Benchmark 1.7 performance test

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

2.7.1   Used LITE-ON LGT-128M6G/128G performance as below:

Used Crucial CT-128M550SSD3/128GB performance as below:

2.8   ATTO Disk Benchamrk 2.47 performance test

2.8.1   Used LITE-ON LGT-128M6G/128G performance as below:

Used Crucial CT-128M550SSD3/128GB performance as below:
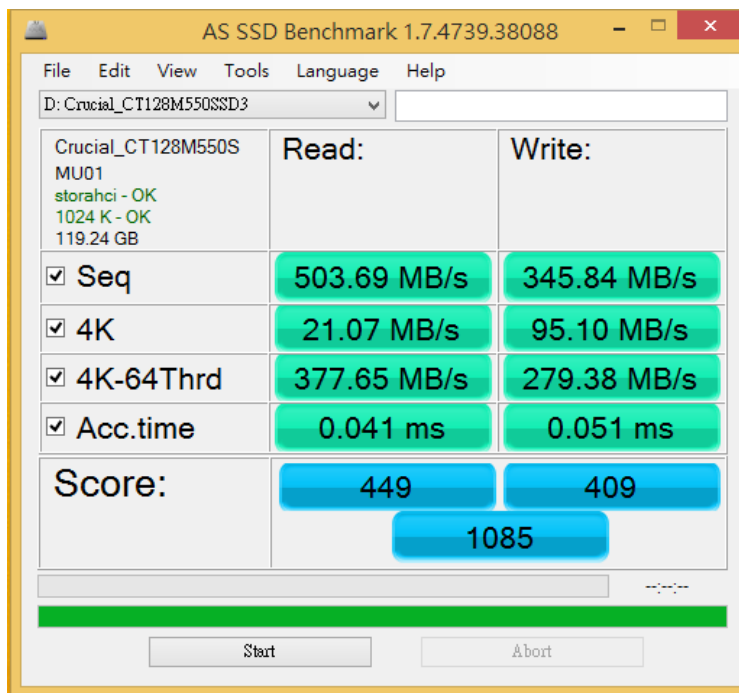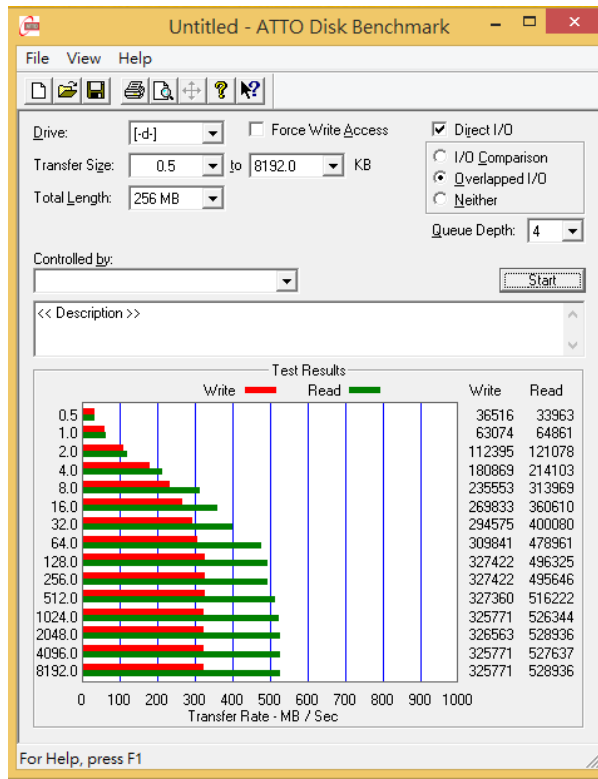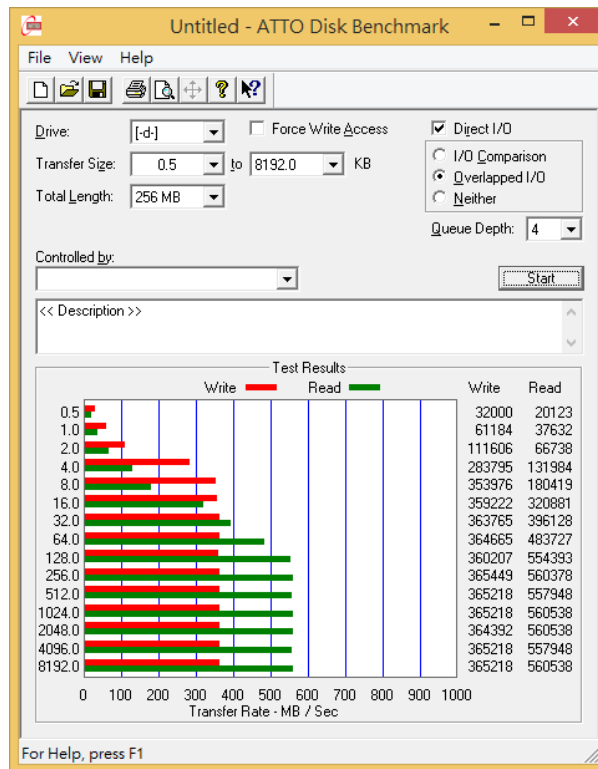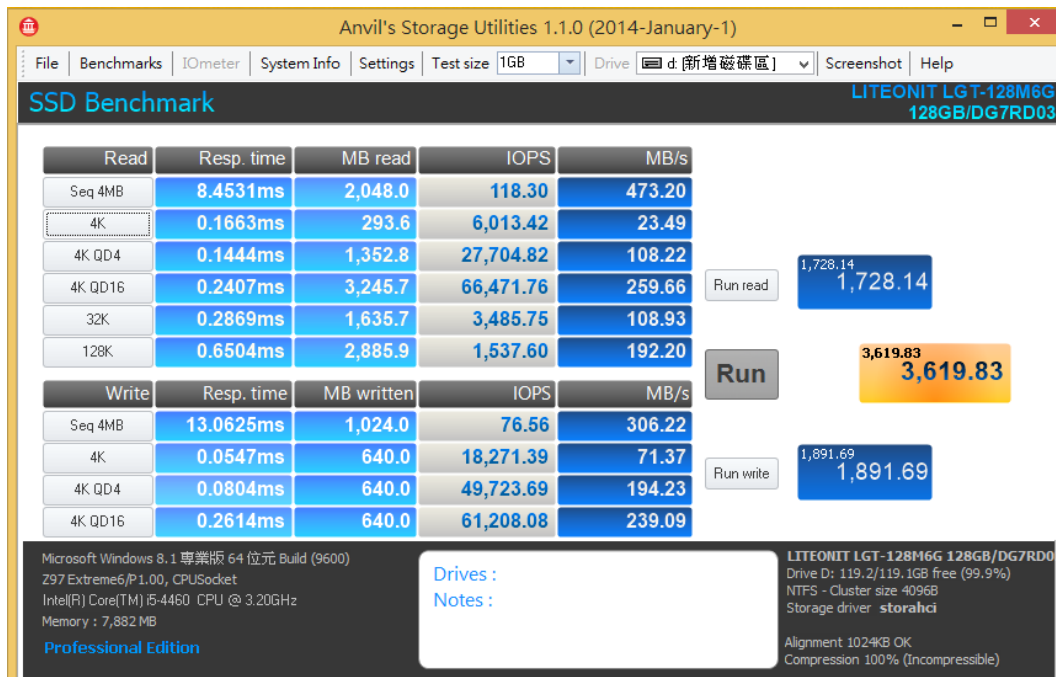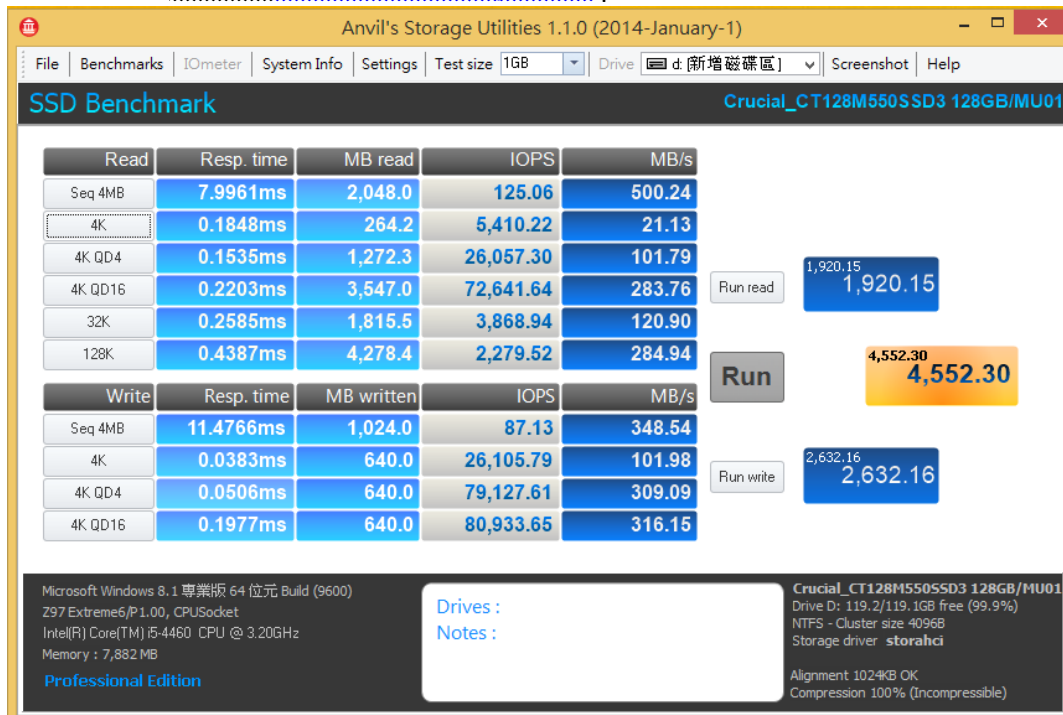
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2.9   AnvilBenchmark_V110_B337

    2.9.1   Used LITE-ON LGT-128M6G/128G performance as below:

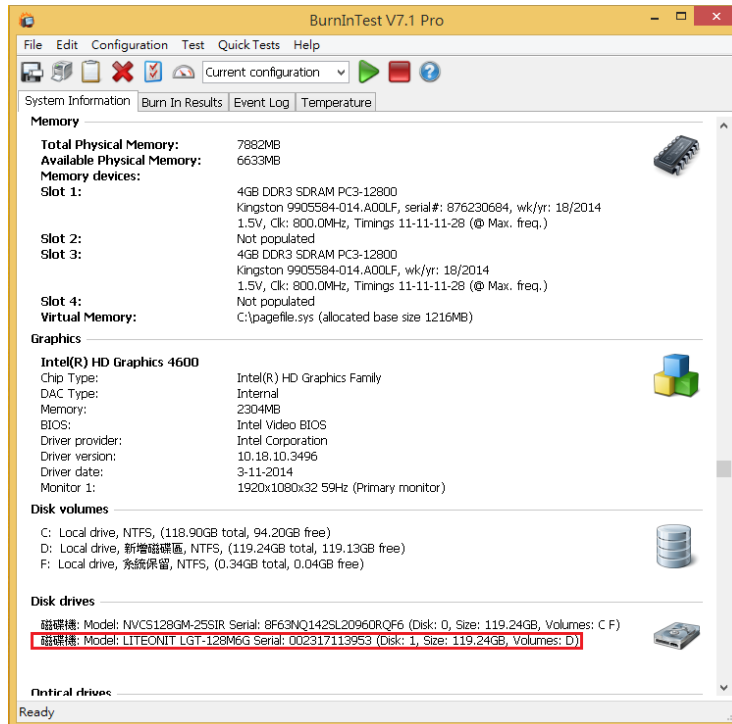Used Crucial CT-128M550SSD3/128GB performance as below:

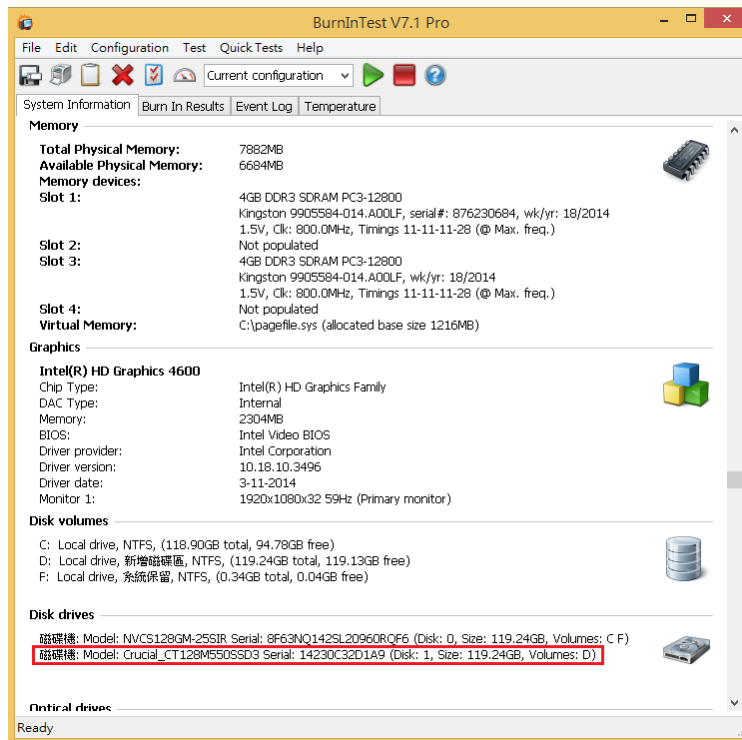# S2083A/Rev1.2   Converter Card

3. Burn In Tests and Results

3.1   BurnInTest v7.1 Pro

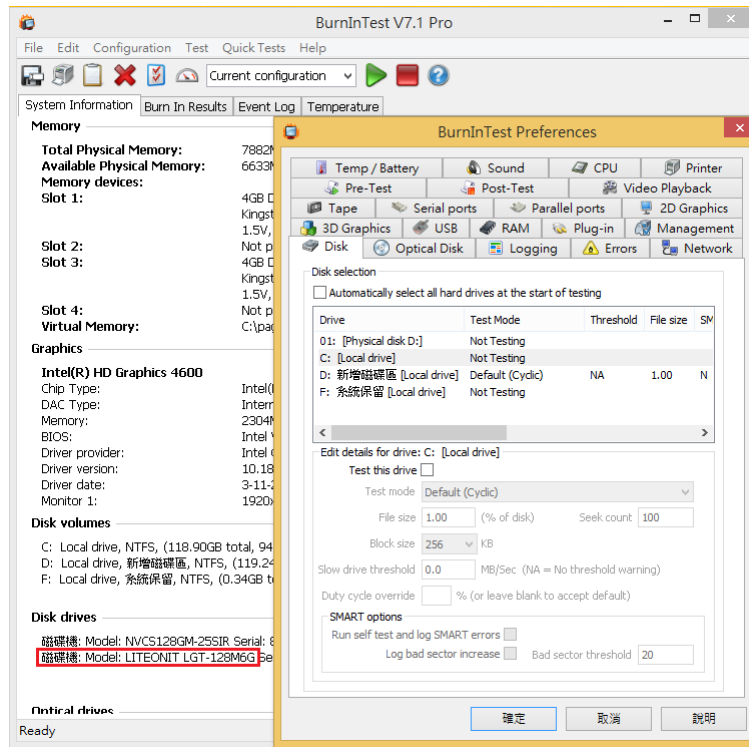#### 3.1.1   **system information** for LITE-ON LGT-128M6G/128G as below:

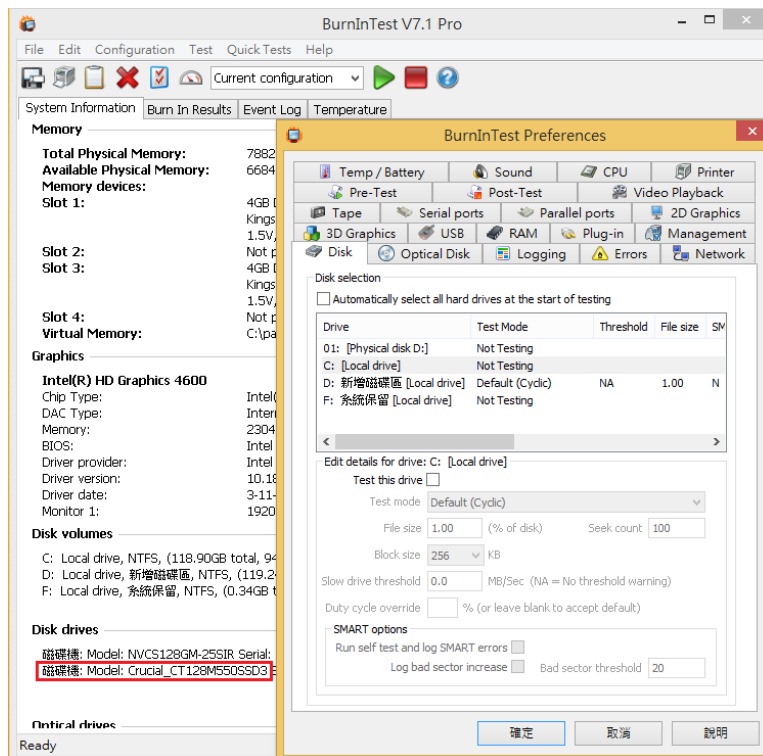**system information** for Crucial CT-128M550SSD3/128GB as below:

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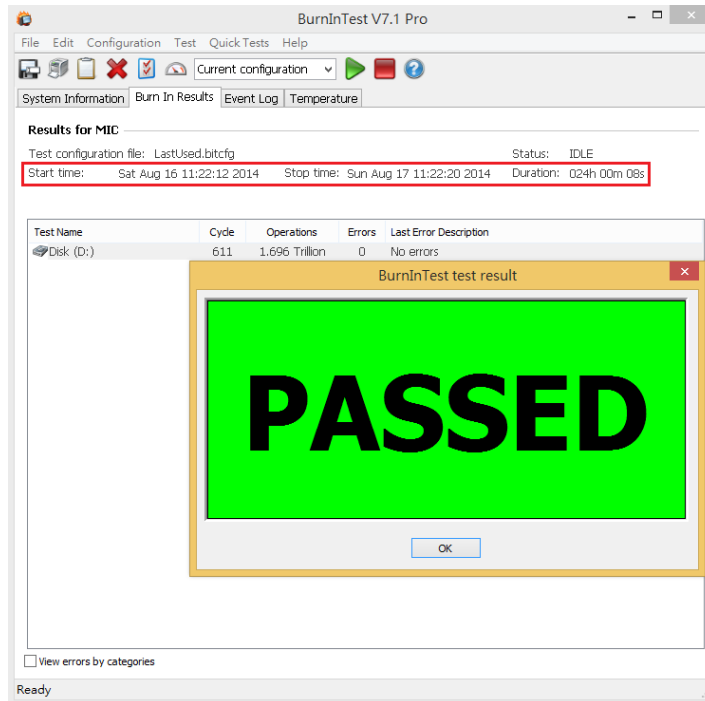3.1.2   show LITE-ON LGT-128M6G/128G Disk test mode(10 ways cycle test)

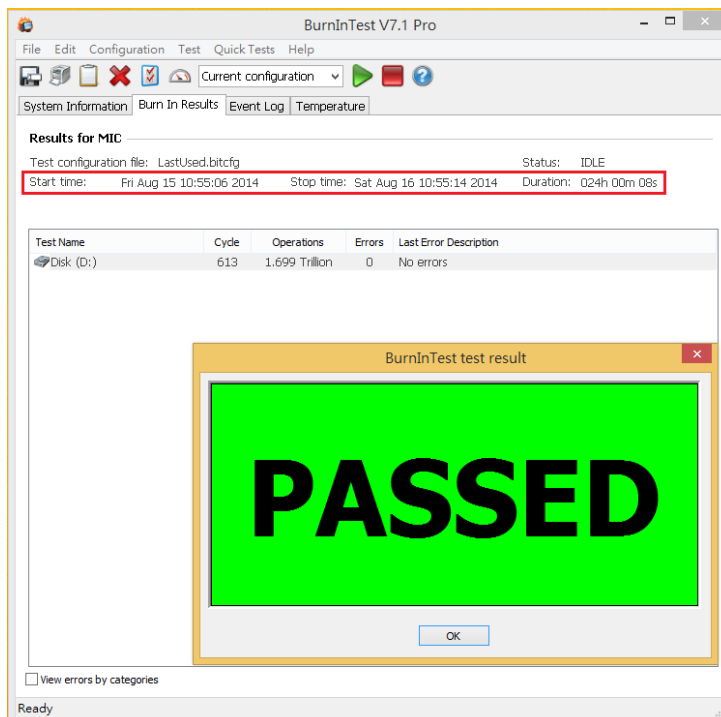show Crucial CT-128M550SSD3/128GB Disk test mode(10 ways cycle test)

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3.1.3 show LITE-ON LGT-128M6G/128G 24-hour Burn-in test PASSED

show Crucial CT-128M550SSD3/128GB 24-hour Burn-in test PASSED

4. Summary

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

4.2 S2083A adapter I/O performance is based on mSATA SSD or M.2 SSD.

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