



MINERVA

S2093F Converter Card

Performance & Burn In Test Rev. 1. 0

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4. Summary

S2093F Converter Card

1. Overview

S2093F adapter, providing M.2 B-key & CFast connector can be M.2 SATA SSD or CFast Card converted into SATA.

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 10 64bit OS**

2.2 Test target: S2093F adapter with M.2 SATA 128GB or CFast 128GB



S2093F Adapter



Samsung CM871a M.2 SSD



Transcend 128G CFast Card

2.3 Install Hardware

Insert M.2 SATA SSD or CFast Card into S2093F converter's M.2 B-key or CFast connector, and then with coppers, and screws to fix SSDs. (Please refer to the Installation Notes).
Then connect S2093F converter to SATA port of ASUS **X99-PRO/USB3.1**

2.4 BIOS & Windows 8.1 OS environment setup

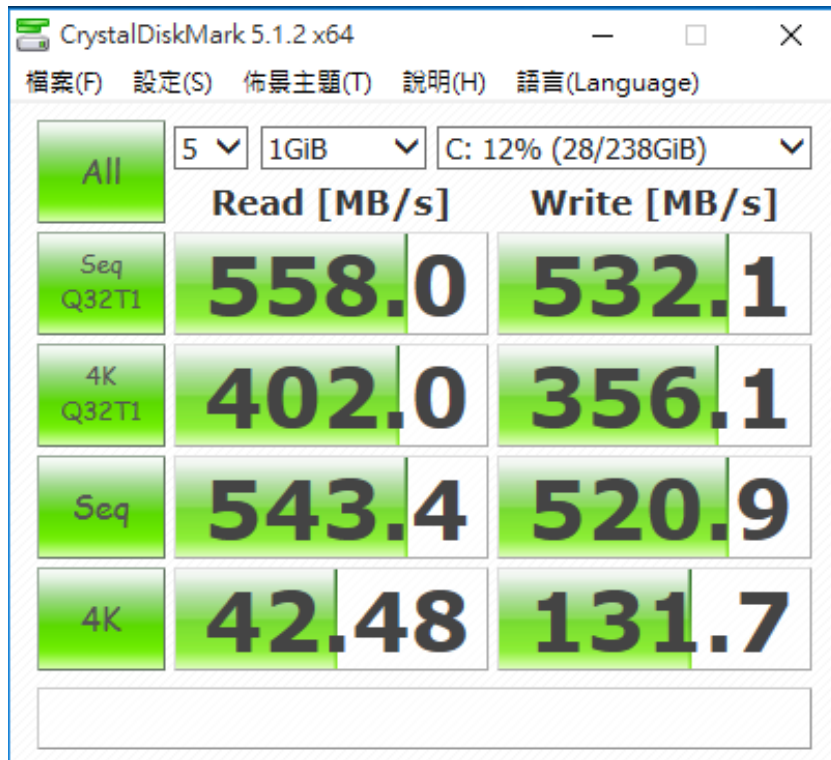
- 2.4.1 Install Windows 10 64bit OS in M.2 SATA SSD
- 2.4.2 Install Windows 10 64bit OS in CFast SATA SSD

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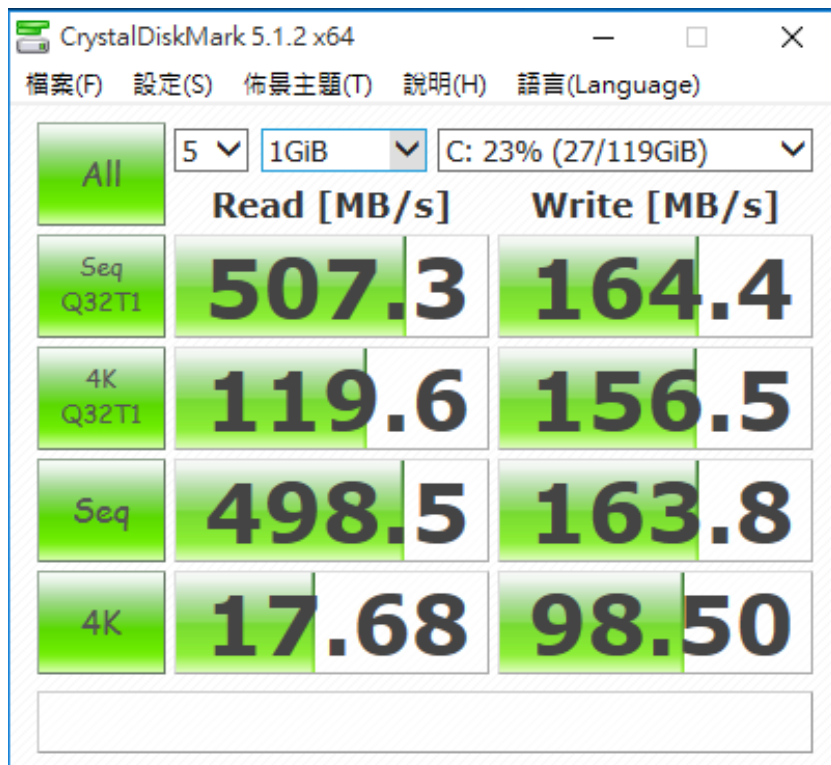
2.5 CrystalDiskMark 5.1.2 x64 performance test

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

2.5.1 show Samsung 256GB([Samsung CM871a M.2](#)) performance as below:



2.5.2 show Trancend 128GB([TS128GCFX600](#)) performance as below:

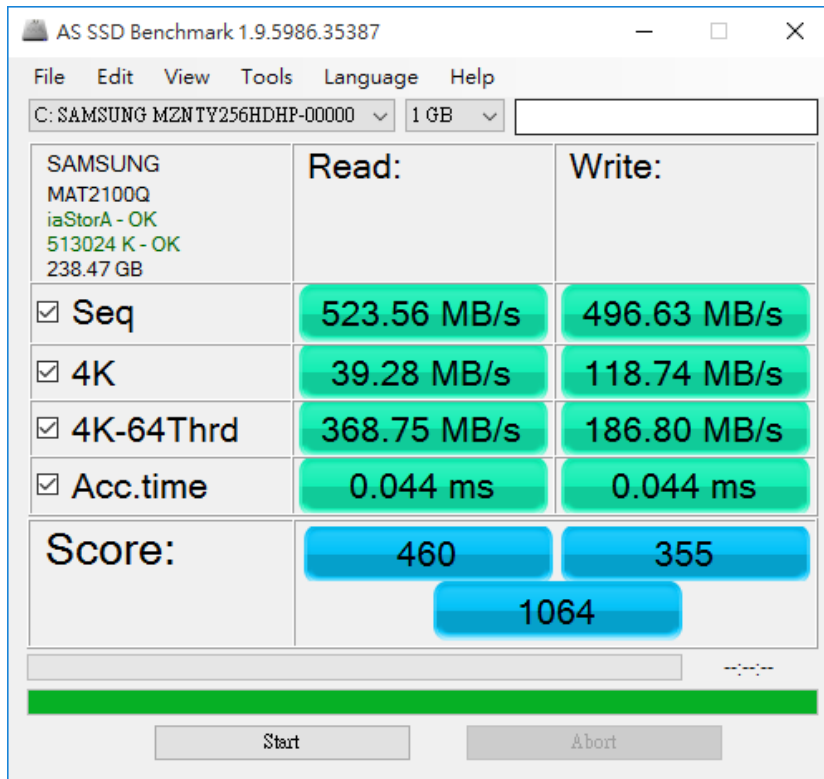


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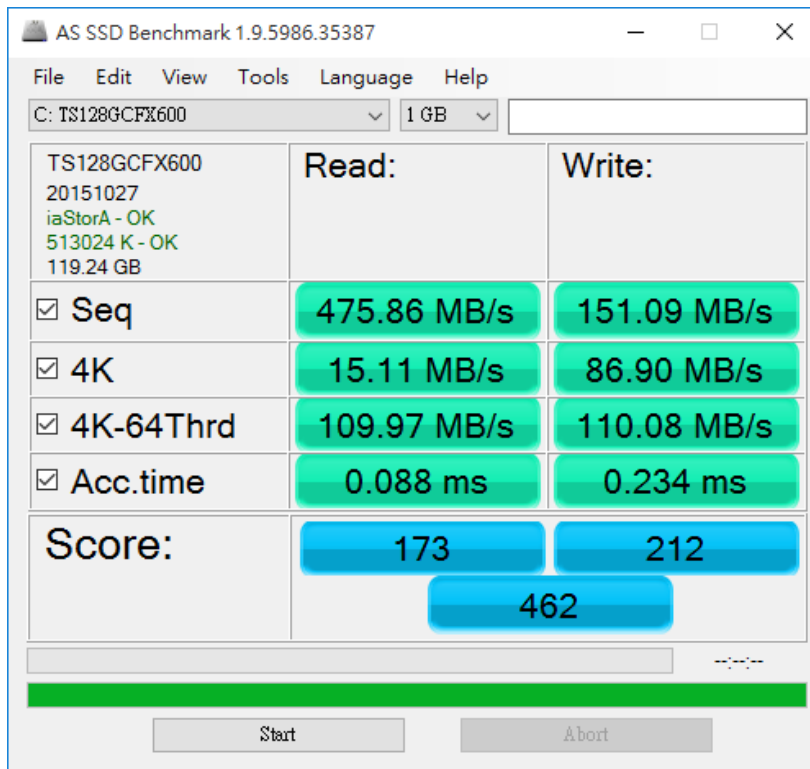
2.6 AS SSD Benchmark 1.9 performance test

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

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



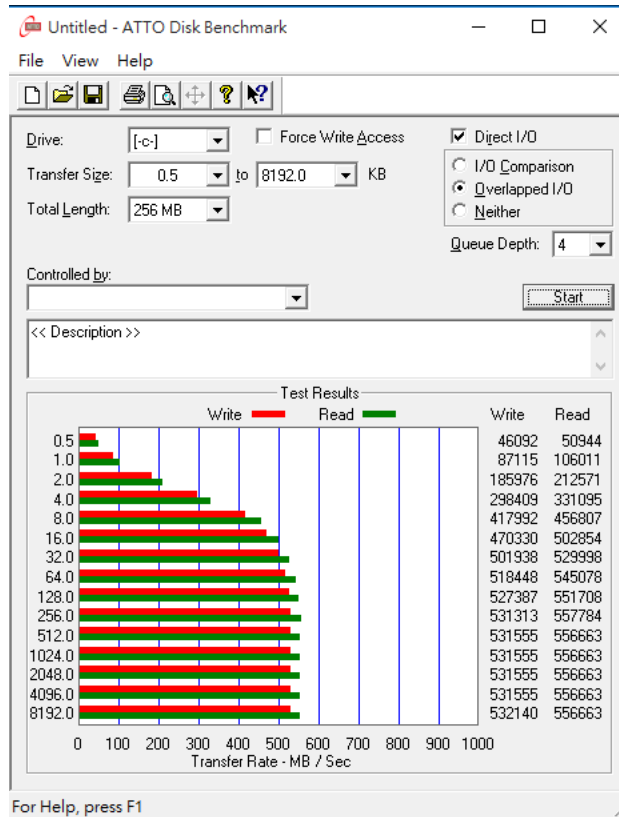
2.6.2 show Trancend 128GB(TS128GCFX600) performance as below:



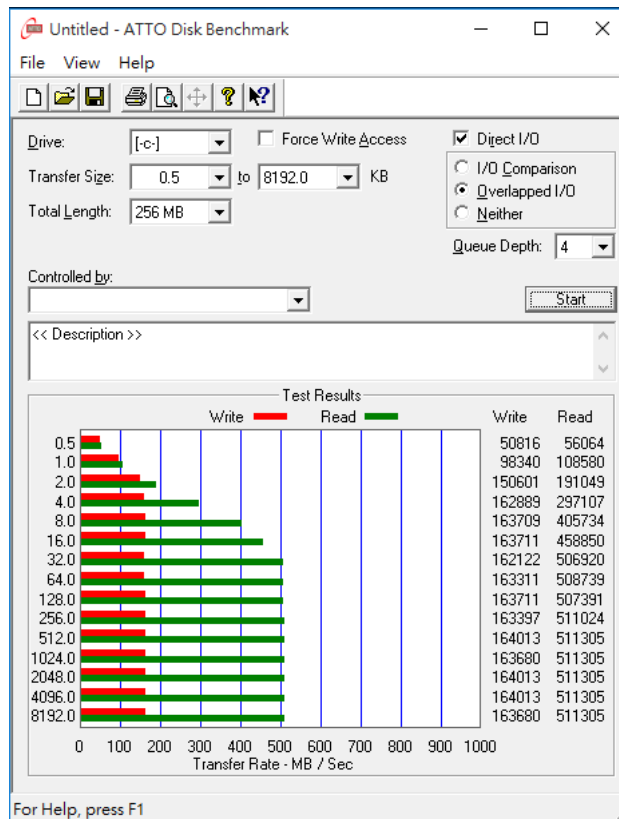
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2.7 ATTO Disk Benchmark 2.47 performance test

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



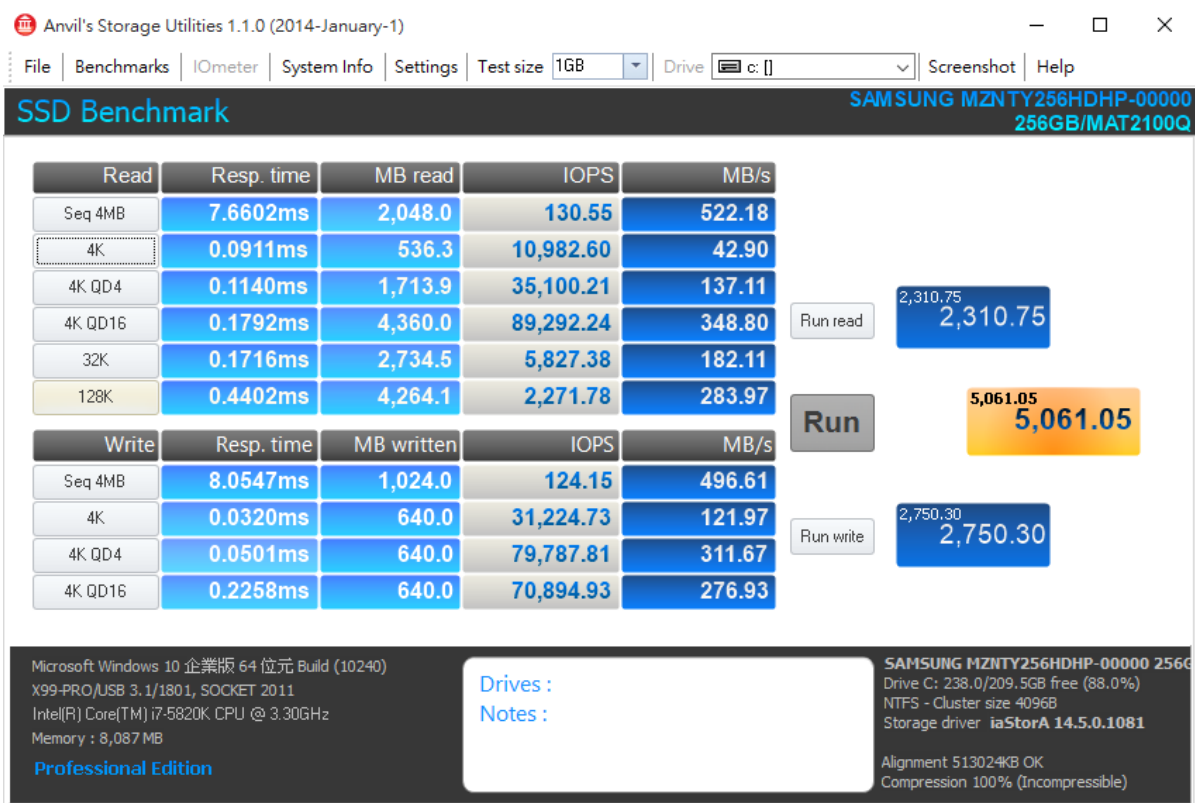
2.7.2 show Trancend 128GB(TS128GCFX600) performance as below:



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2.8 AnvilBenchmark_V110_B337

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



2.8.2 show Trancend 128GB(TS128GCFX600) performance as below:

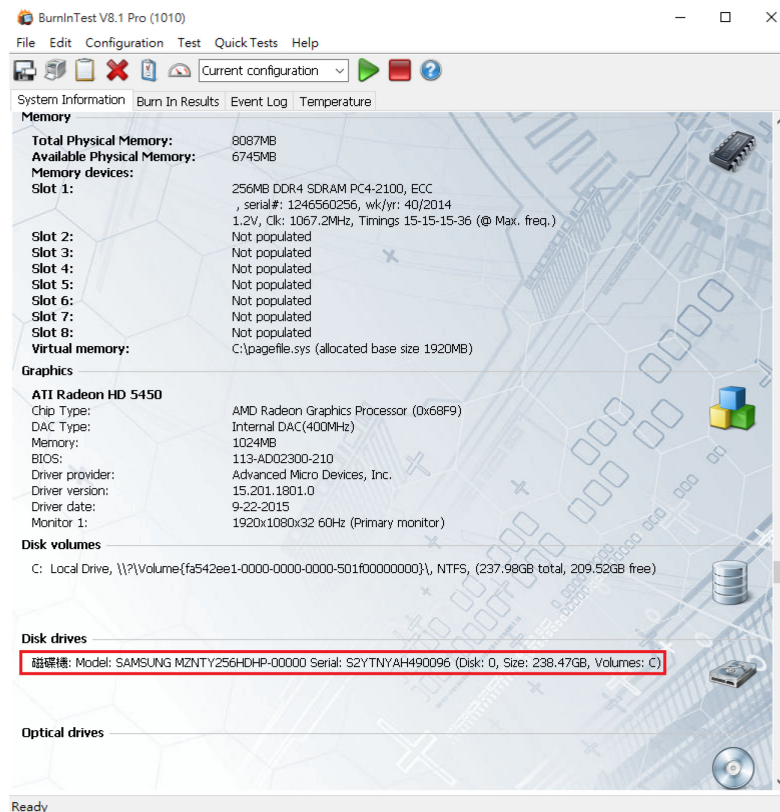
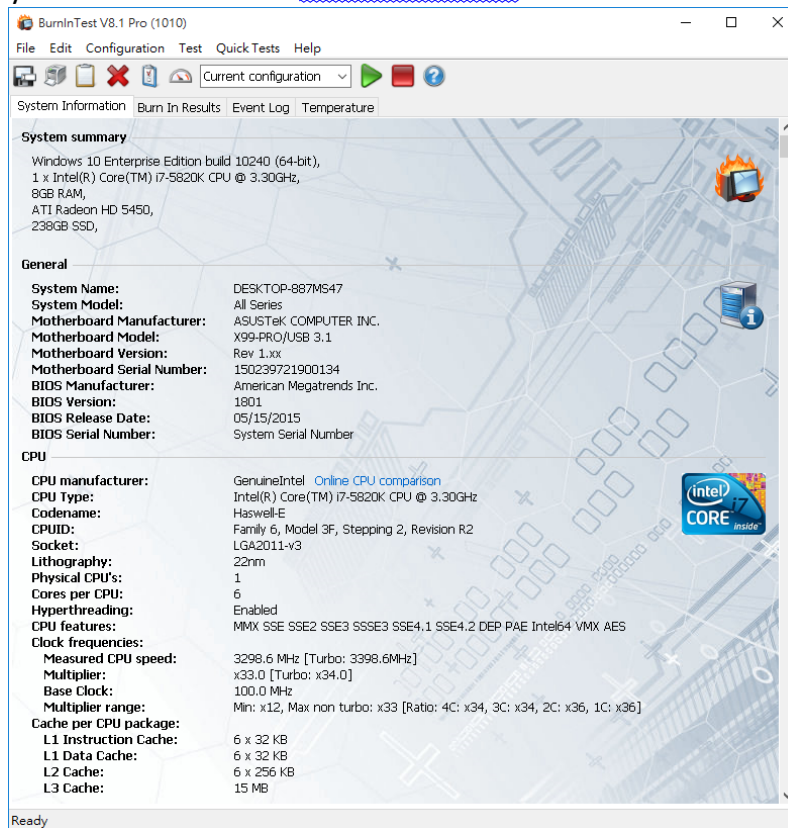


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3. Burn In Tests and Results

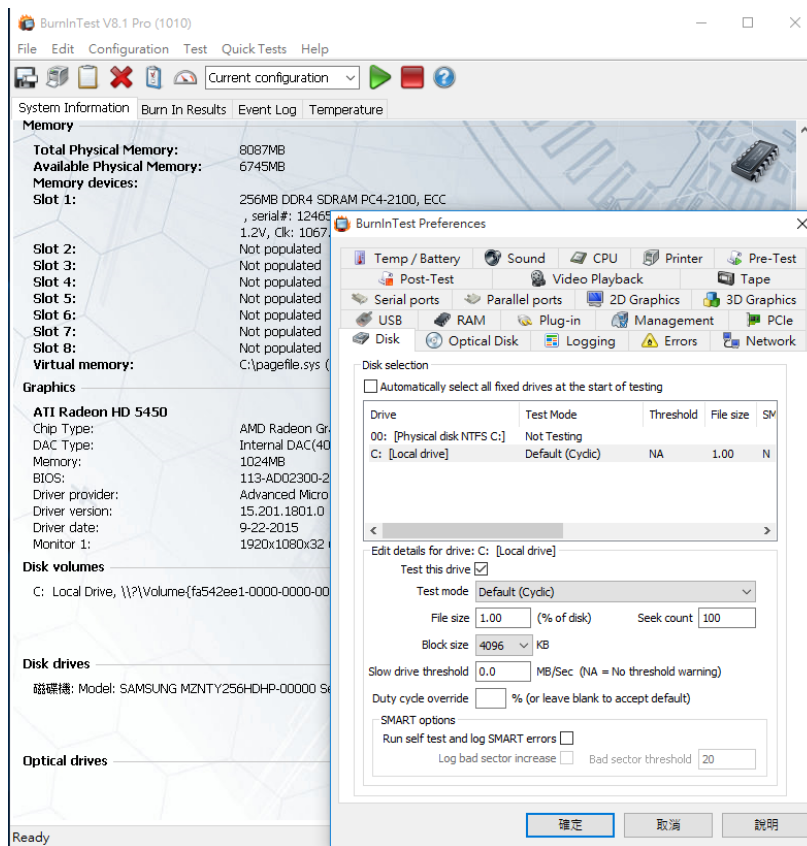
3.1 BurnInTest v8.1 Pro

3.1.1 system information for [M.2 SATA 256GB](#) as below:

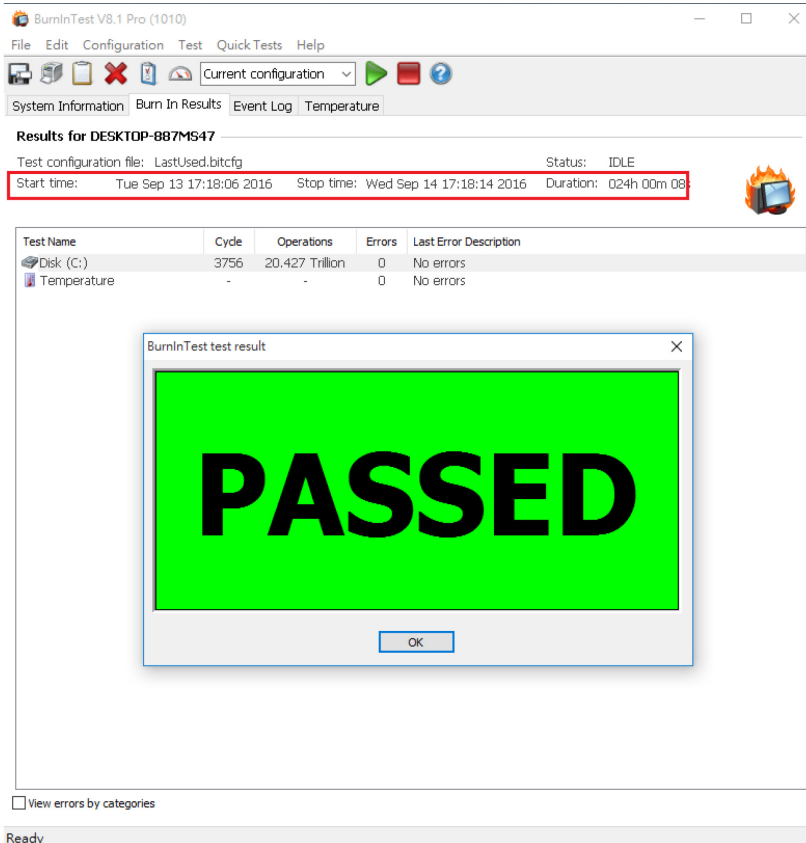


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3.1.2 show Disk test mode (10 ways cycle test)



3.1.3 show 24-hour Burn-in test PASSED



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3.2.1 system information for [CFast 128GB](#) as below:

BurnInTest V8.1 Pro (1010)

File Edit Configuration Test Quick Tests Help

System Information Burn In Results Event Log Temperature

System summary

Windows 10 Enterprise Edition build 10240 (64-bit),
1 x Intel(R) Core(TM) i7-5820K CPU @ 3.30GHz,
8GB RAM,
ATI Radeon HD 5450,
119GB SSD,

General

System Name: DESKTOP-G3IR141
System Model: All Series
Motherboard Manufacturer: ASUSTek COMPUTER INC.
Motherboard Model: X99-PRO/USB 3.1
Motherboard Version: Rev 1.xx
Motherboard Serial Number: 150239721900134
BIOS Manufacturer: American Megatrends Inc.
BIOS Version: 1801
BIOS Release Date: 05/15/2015
BIOS Serial Number: System Serial Number

CPU

CPU manufacturer: GenuineIntel [Online CPU comparison](#)
CPU Type: Intel(R) Core(TM) i7-5820K CPU @ 3.30GHz
Codename: Haswell-E
CPUID: Family 6, Model 3F, Stepping 2, Revision R2
Socket: LGA2011-v3
Lithography: 22nm
Physical CPU's: 1
Cores per CPU: 6
Hyperthreading: Enabled
CPU features: MMX SSE SSE2 SSE3 SSSE3 SSE4.1 SSE4.2 DEP PAE Intel64 VMX AES
Clock frequencies:
Measured CPU speed: 3298.8 MHz [Turbo: 3398.7MHz]
Multiplier: x33.0 [Turbo: x34.0]
Base Clock: 100.0 MHz
Multiplier range: Min: x12, Max non turbo: x33 [Ratio: 4C: x34, 3C: x34, 2C: x36, 1C: x36]
Cache per CPU package:
L1 Instruction Cache: 6 x 32 KB
L1 Data Cache: 6 x 32 KB
L2 Cache: 6 x 256 KB

Ready

BurnInTest V8.1 Pro (1010)

File Edit Configuration Test Quick Tests Help

System Information Burn In Results Event Log Temperature

Memory

Total Physical Memory: 8087MB
Available Physical Memory: 6655MB
Memory devices:
Slot 1: 4GB DDR4 SDRAM PC4-17000
, serial#: 2051801088, wk/yr: 40/2014
1.2V, Clk: 1067.2MHz, Timings 15-15-15-36 (@ Max. freq.)
Slot 2: 4GB DDR4 SDRAM PC4-17000
, serial#: 1246560256, wk/yr: 40/2014
1.2V, Clk: 1067.2MHz, Timings 15-15-15-36 (@ Max. freq.)
Slot 3: Not populated
Slot 4: Not populated
Slot 5: Not populated
Slot 6: Not populated
Slot 7: Not populated
Slot 8: Not populated
Virtual memory: C:\pagefile.sys (allocated base size 1920MB)

Graphics

ATI Radeon HD 5450

Chip Type: AMD Radeon Graphics Processor (Dx68F9)
DAC Type: Internal DAC(400MHz)
Memory: 1024MB
BIOS: 113-AD02300-210
Driver provider: Advanced Micro Devices, Inc.
Driver version: 15.201.1801.0
Driver date: 9-22-2015
Monitor 1: 1920x1080x32 60Hz (Primary monitor)

Disk volumes

C: Local Drive, \\?\Volume{706507f1-0000-0000-0000-501f00000000}\, NTFS, (118.75GB total, 90.93GB free)
D: Removable

Disk drives

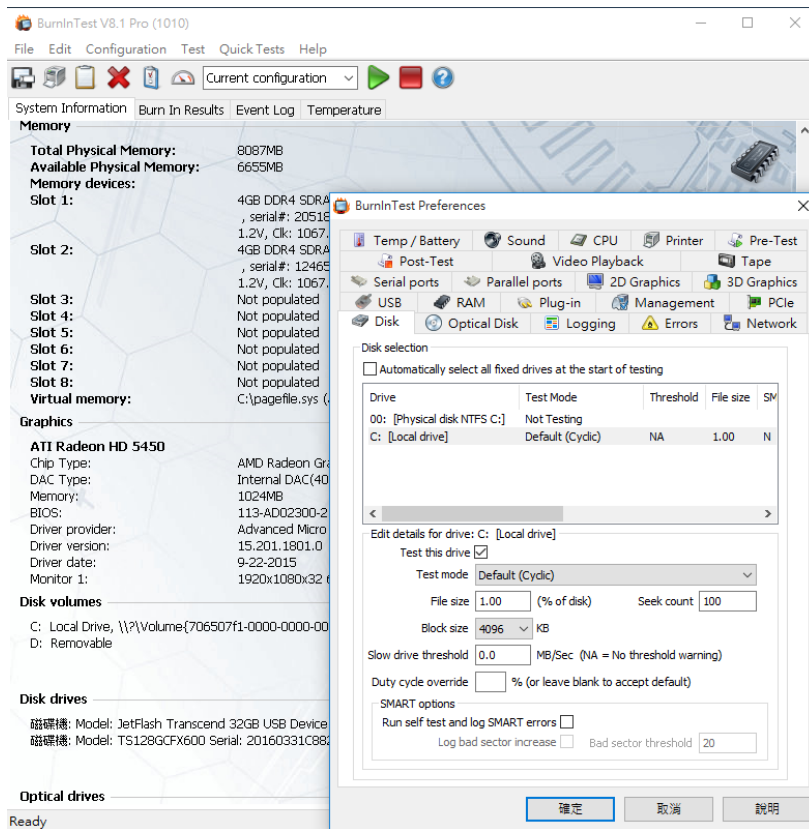
磁碟機: Model: JetFlash Transcend 32GB USB Device Serial: N/A (Disk: 1, Size: 29.42GB, Volumes: N/A)
磁碟機: Model: TS128GCFX600 Serial: 20160331C88256151731 (Disk: 0, Size: 119.24GB, Volumes: C)

Optical drives

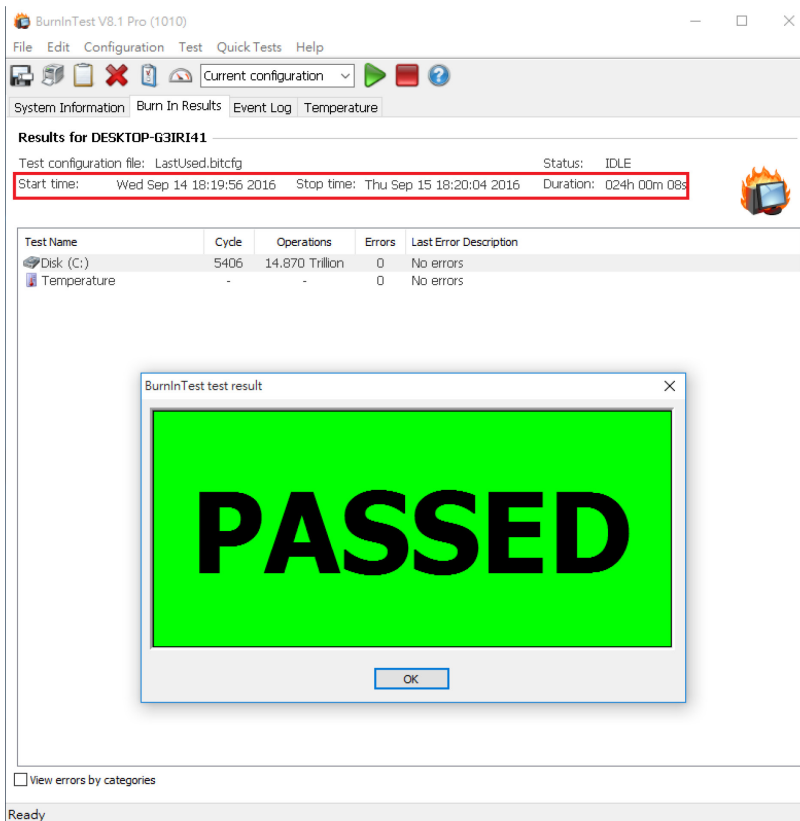
Ready

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3.2.2 show Disk test mode (10 ways cycle test)



3.2.3 show 24-hour Burn-in test PASSED



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4. Summary

- 4.1 M.2 SATA SSD is SATA 3 Interface, I/O speed, max. to 6Gbps.
- 4.2 CFast Card is SATA 3 Interface, I/O speed, max. to 6Gbps.
- 4.3 S2093F adapter I/O performance is based on M.2 SSD or CFast Card.