



MINERVA

PU3401A Converter Card

Performance & Burn In Test Rev. 1. 0

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4. Summary

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1. Overview

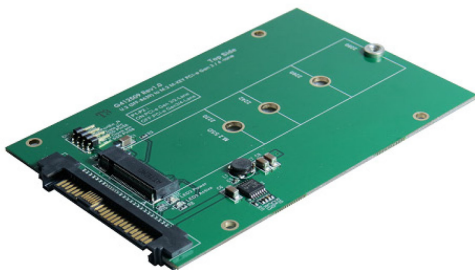
PU3401A adapter, providing M.2 M-key connector can be M.2 (PCI-e I/F) SSD converted into U.2(SFF-8639), PCI-e Gen 3 / 4 Lanes interface.

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**
PCIe adapter: PCIe Gen 3/4 Lanes to SFF-8639 adapter
Cable: SFF-8643 to SFF-8639 cable
OS : Microsoft **Windows 8.1 64bit OS**

2.2 Test target: PU3401A adapter & [SM951 256GB AHCI MZHPV256HDGL-00000](#)/M.2(PCI-e)SSD



PU3401A Adapter



PU3401A + M.2 SSD



Samsung SM951 / 256GB

2.3 Install Hardware

Insert M.2 SSD into PU3401A converter's M.2 M-key connector, and then with coppers, and screws to fix SSDs. (Please refer to the Installation Notes). Use SFF-8643 to SFF-8639 cable to connect PU3401A converter to **PCI-e adapter of Z97 M/B**.

2.4 BIOS & Windows 8.1 OS environment setup

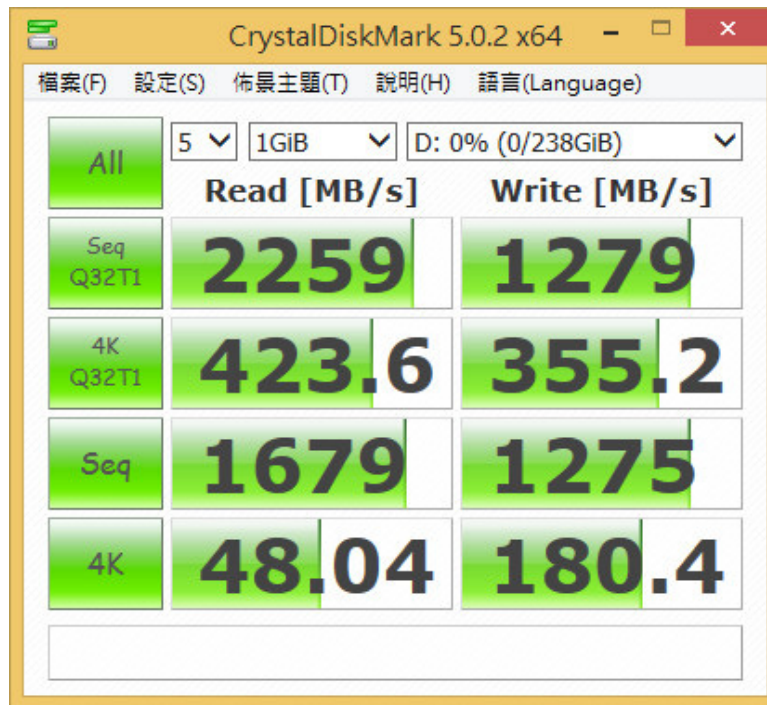
2.4.1 In Windows 8.1, formatted SSD to NTFS Mode. Don't install any program.

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2.5 CrystalDiskMark 5.0.2 x64 performance test

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

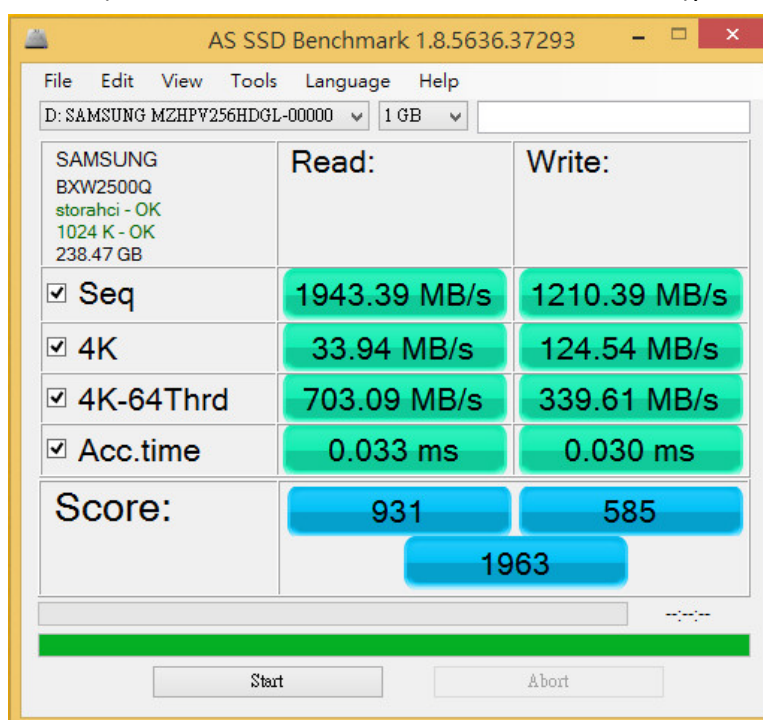
2.5.1 Used SSD(**SM951 256GB AHCI MZHPV256HDGL-00000**)performance as below:



2.6 AS SSD Benchmark 1.7 performance test

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

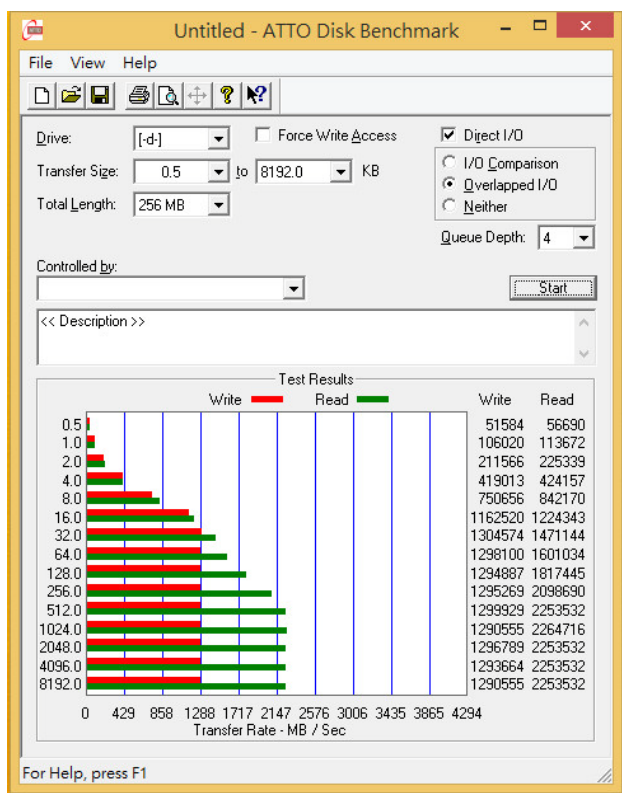
2.6.1 Used SSD(**SM951 256GB AHCI MZHPV256HDGL-00000**)performance as below:



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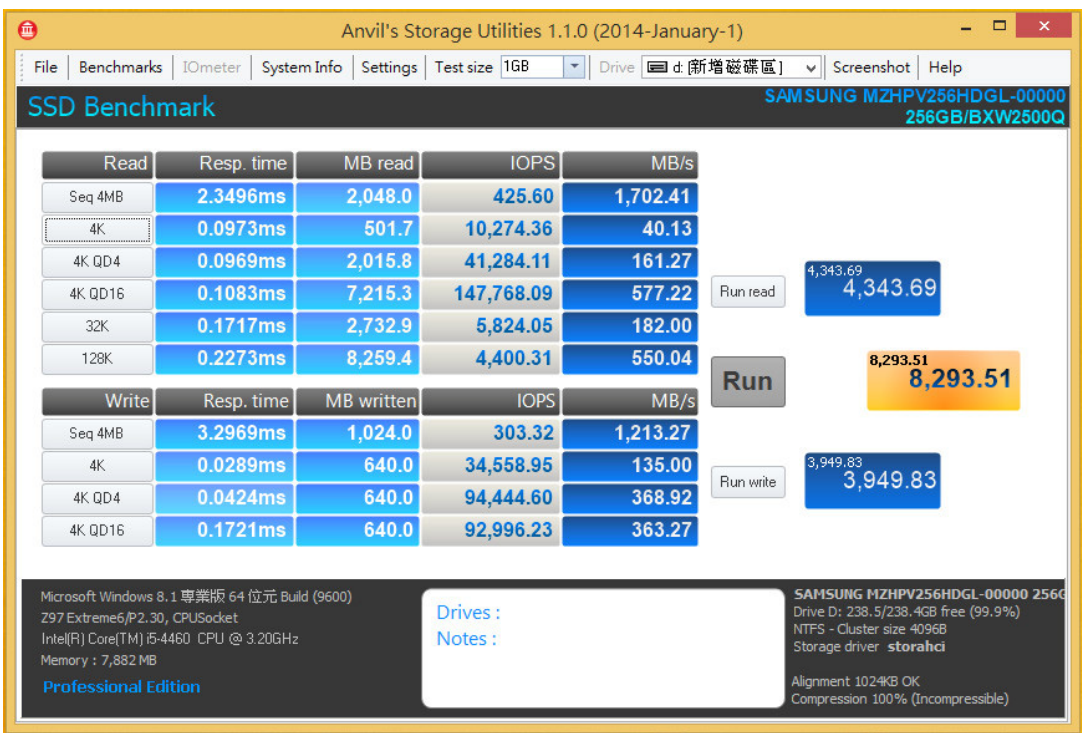
2.7 ATTO Disk Benchamrk 2.47 performance test

2.7.1 Used SSD(SM951 256GB AHCI MZHPV256HDGL-00000)performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 Used SSD(SM951 256GB AHCI MZHPV256HDGL-00000)performance as below:

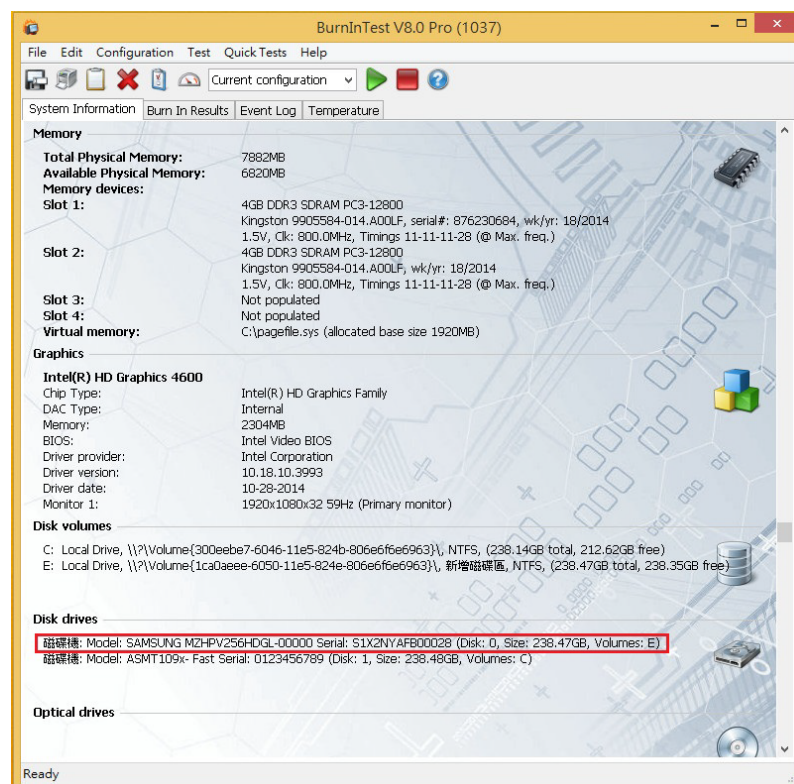
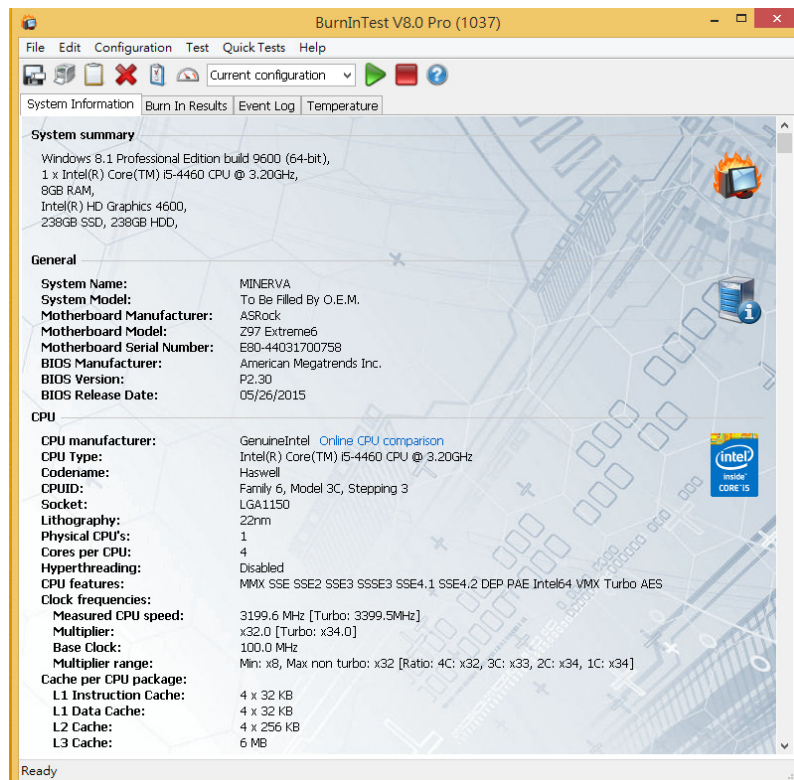


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3. Burn In Tests and Results

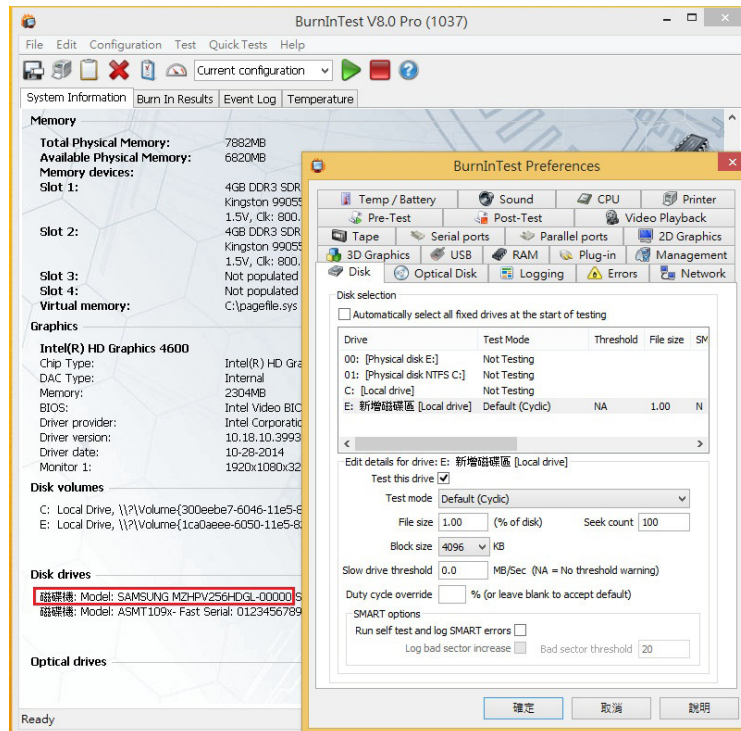
3.1 BurnInTest v8.0 Pro for SSD(SM951 256GB AHCI MZHPV256HDGL-00000)

3.1.1 **system information** as below:

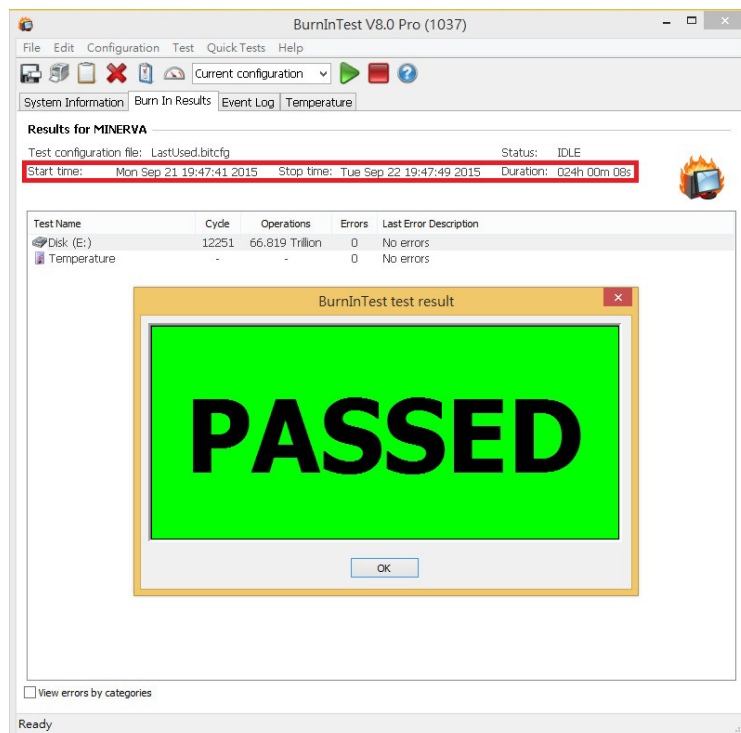


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3.1.2 show Disk test mode(10 ways cycle test)



3.1.3 show 24-hour Burn-in test PASSED



4. Summary

- 4.1 M.2(PCI-e I/F) SSD is PCI-e Gen 3 / 4 Lanes Interface, I/O speed, max. to 32Gbps.
- 4.2 PU3401A adapter I/O performance is based on M.2 PCI-e Gen 3 / 4 Lanes SSD.