



MINERVA

PE0403 / Rev1.1 Converter Card

Performance & Burn In Test **Rev. 2.0**

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1. Overview

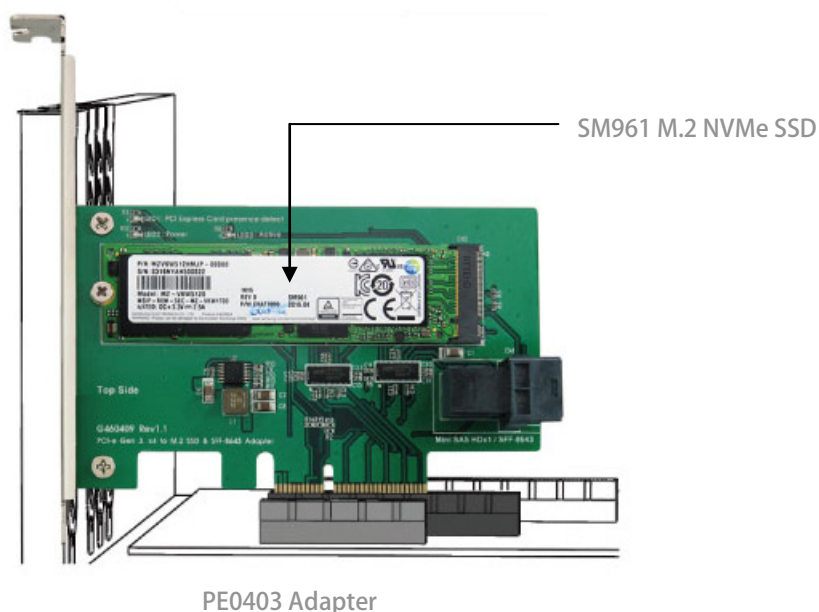
PE0403 adapter, providing M.2 M-key connector can be M.2 (PCI-e I/F) SSD converted into PCI-e Gen 3 / 4-lane standard interface or using SFF-8643 to SFF-8639 cable to connect U.2 SSD.

2. Tools and Results of Performance Measurement

2.1 Test Platform

M/B : GIGABYTE **Z170X UD5 TH**
CPU : Intel **i5-6500**, 3.2GHz/ 6M Cache/ LGA1150
Memory : Kingston **KVR21N15D8/8**, **DDR4-2133MHz**, **16GB**(8GB DIMM*2)
ATX Power : COOLER MASTER G750M, **750W ATX**, 12V V2.2 Power Supply
Graphic : Z170 M/B built-in **HD Graphics 530**
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: PE0403 adapter and **SM961 512GB/M.2(NVMe)SSD**



2.3 Install Hardware

Insert M.2 SSD into PE0403 converter's M.2 M-key connector, and then with coppers, and screws to fix SSDs. (Please refer to the Installation Notes). Connect PE0403 converter to **PCI-e slot of Z170X UD5 TH**.

2.4 BIOS & Windows 10 OS environment setup

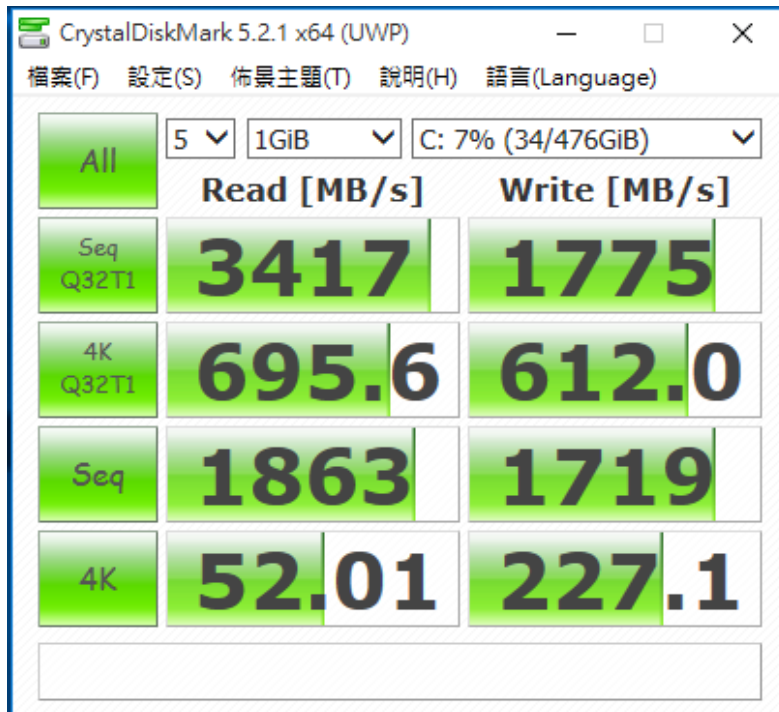
2.4.1 Installs Windows 10 64 bit OS in Samsung SM961 NVMe SSD.

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2.5 CrystalDiskMark 5.2.1 x64 performance test

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

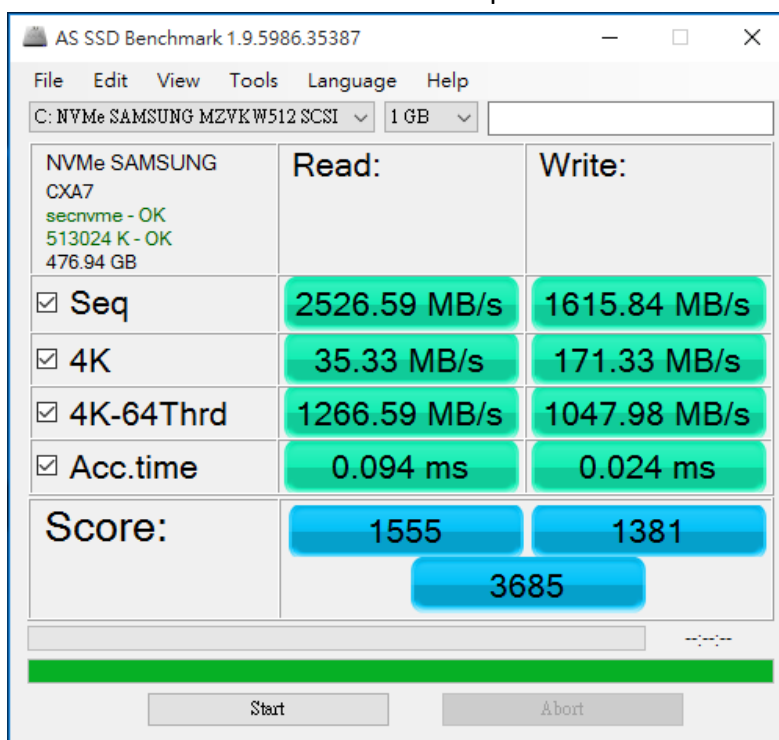
2.5.1 Shows SM961 M.2 512GB NVMe SSD performance as below:



2.6 AS SSD Benchmark 1.9 performance test

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

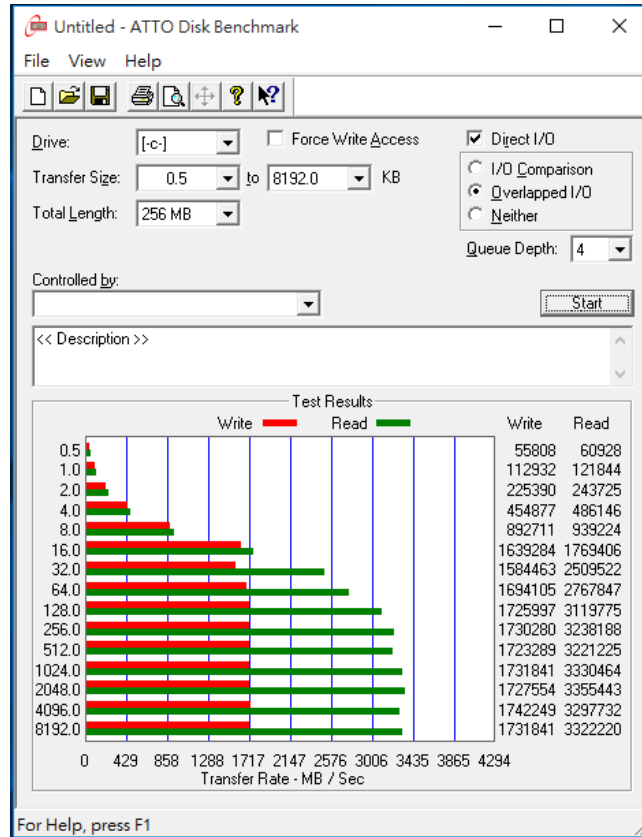
2.6.1 Shows SM961 M.2 512GB NVMe SSD performance as below:



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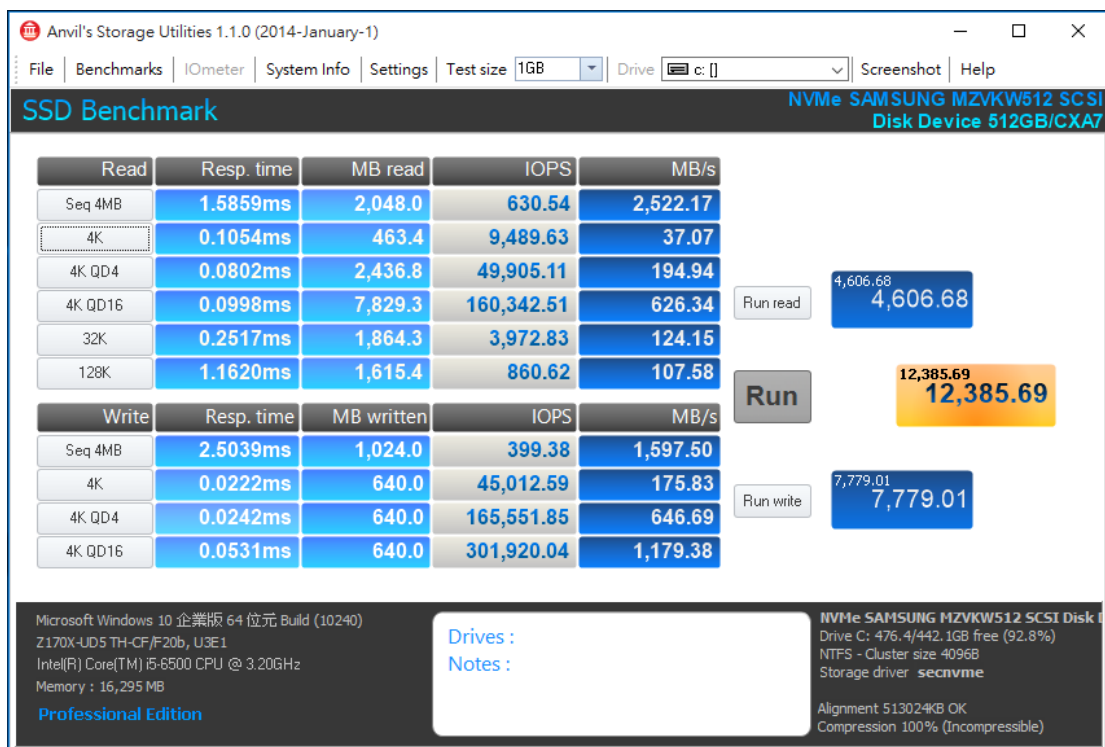
2.7 ATTO Disk Benchmark 2.47 performance test

2.7.1 Shows SM961 M.2 512GB NVMe SSD performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 Shows SM961 M.2 512GB NVMe SSD performance as below:

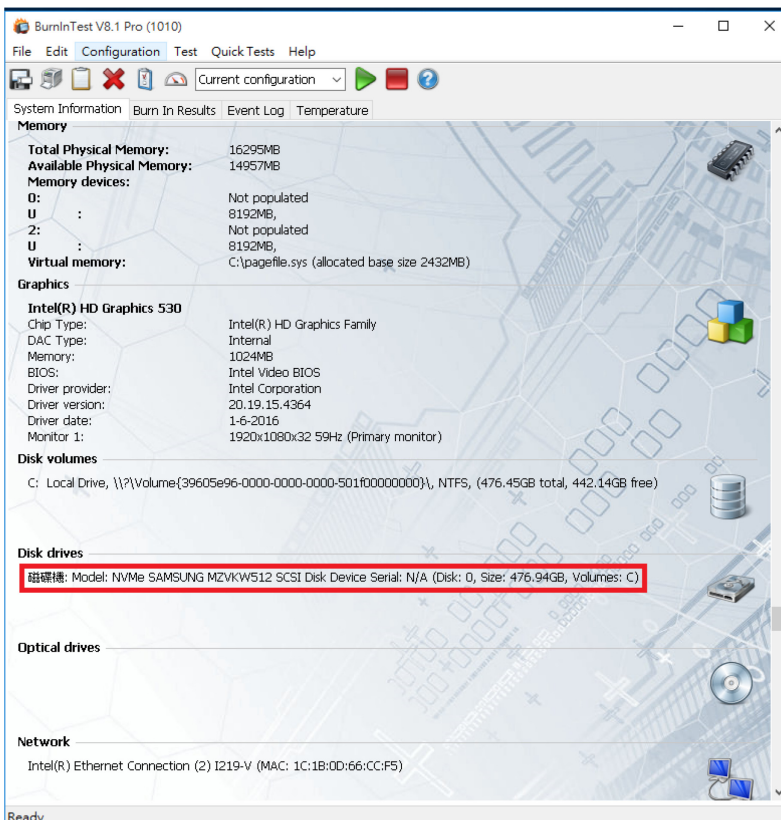
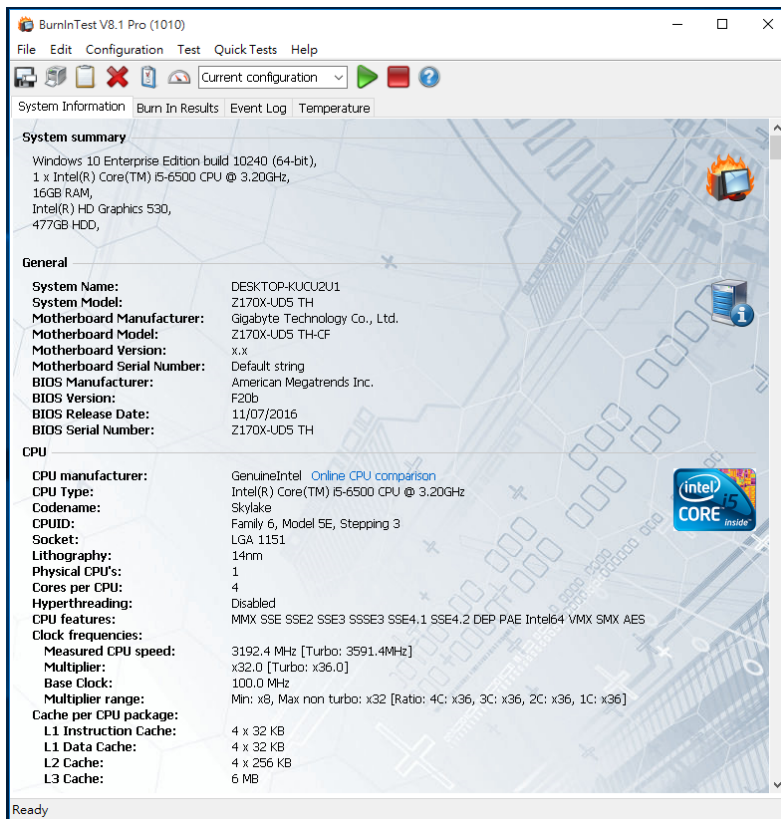


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3. Burn In Tests and Results

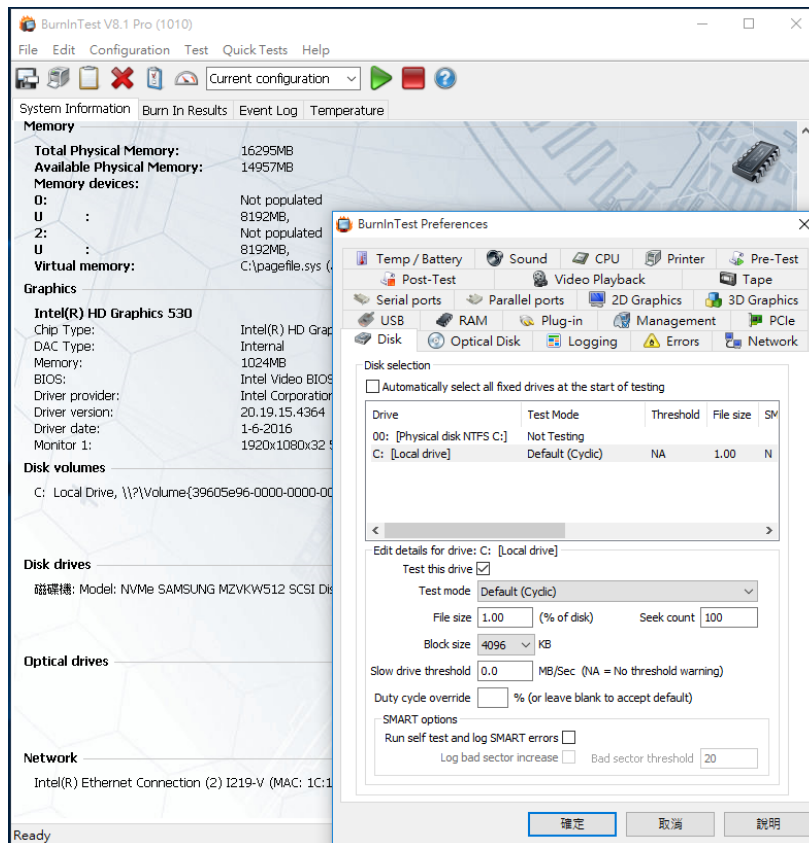
3.1 BurnInTest v8.1 Pro for SM961 M.2 512GB NVMe SSD

3.1.1 system information as below:

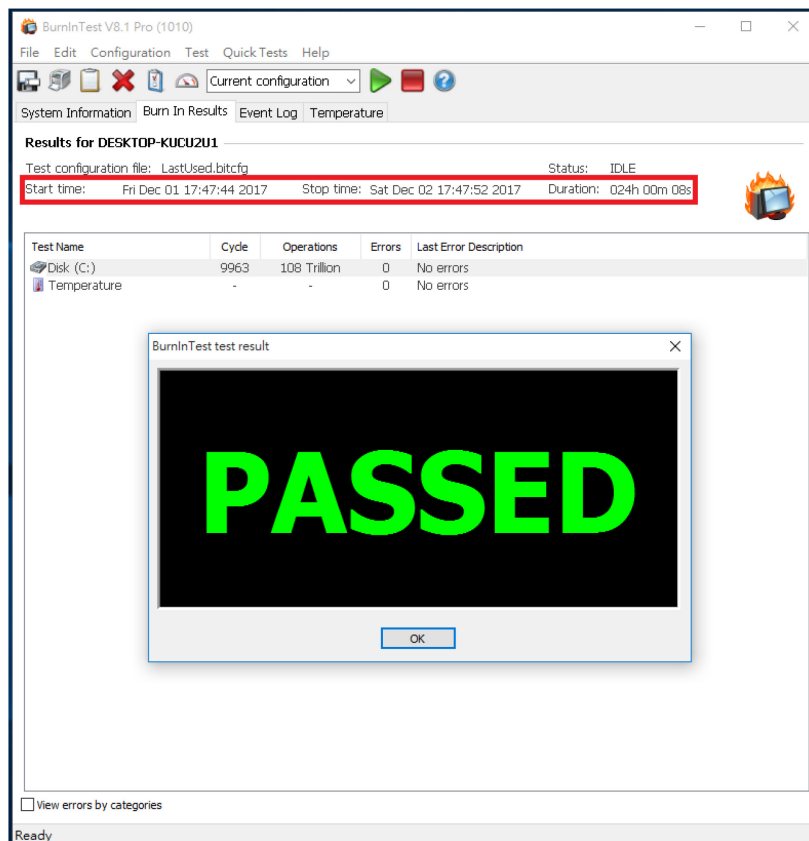


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3.1.2 show Disk test mode (10 ways cycle test)



3.1.3 show 24-hour Burn-in test PASSED



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4. Summary

- 4.1 M.2 NVMe SSD is PCI-e Gen 3 / 4-lane Interface, I/O speed, max. to 32Gbps.
- 4.2 PE0403 adapter I/O performance is based on M.2 NVMe SSD.