



MINERVA

PE0406 Converter Card

Performance & Burn In Test Rev. 1. 0

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1. Overview

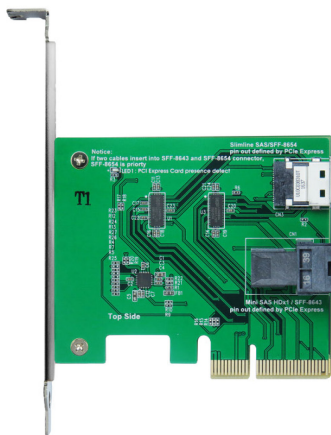
PE0406 adapter, providing SFF-8643 Mini SAS HD and SFF-8654 Slimline SAS connector can be U.2(SFF-8639)SSD or SFF-8639 to M.2 NVMe SSD converted into PCI-e Gen 3 / 4 Lanes interface.

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 Chipsets built-in **HD Graphics 530**
Adapter: PE0406 PCIe to SFF-8643 Mini SAS HD& SFF-8654 Slimline SAS
CABLE: Amphenol U.2(SFF-8639) to SFF-8654 Slimline SAS Cable
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: PE0406 adapter + PU3401F + **Samsung SM961 512GB NVMe SSD**



PE0406 Adapter



SFF-8654 to SFF-8639 cable



PU3401F Adapter



Samsung SM961 M.2

2.3 Install Hardware

Use SFF-8654 to SFF-8639 cable to connect PU3401F to PE0406 PCI-e adapter of GIGABYTE **Z170X UD5 TH**.

2.4 BIOS & Windows 10 OS environment setup

2.4.1 Install Windows 10 64BIT OS.

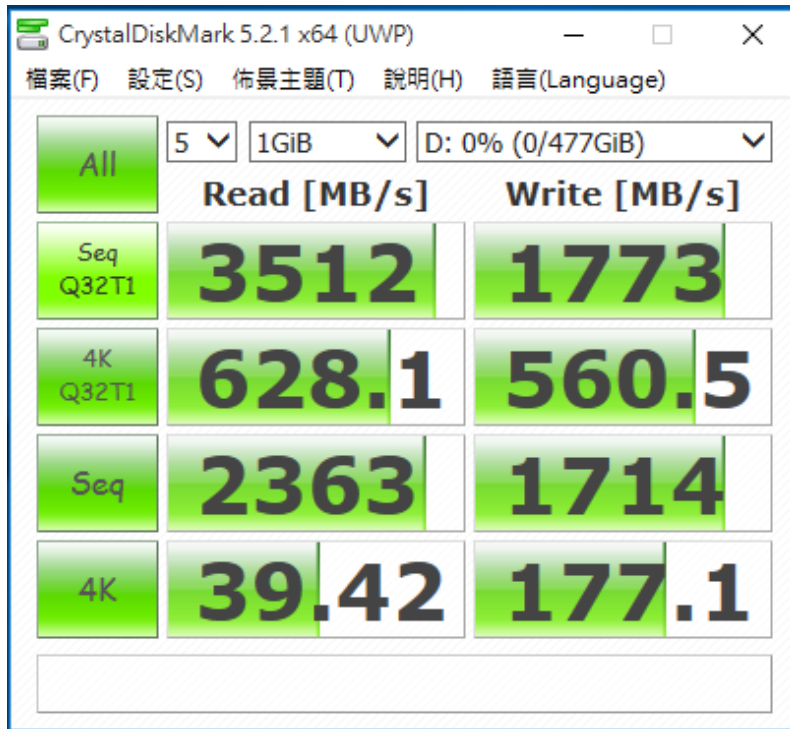
2.4.2 Samsung SM961 formatted NTFS

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2.5 CrystalDiskMark 5.2.1 x64 performance test

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

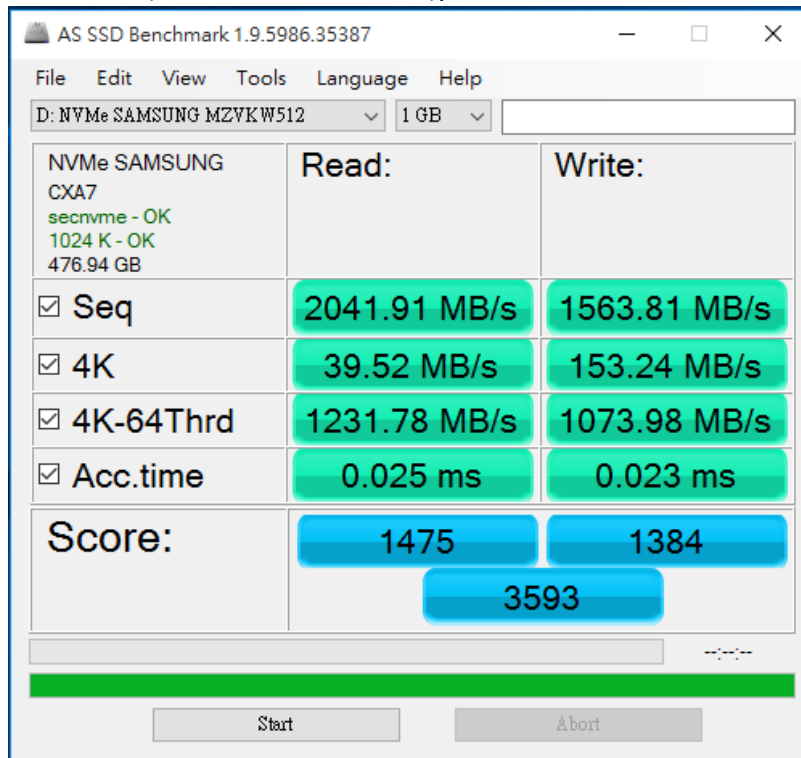
2.5.1 shows SSD([SM961 512GB NVMe](#))performance as below:



2.6 AS SSD Benchmark 1.9 performance test

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

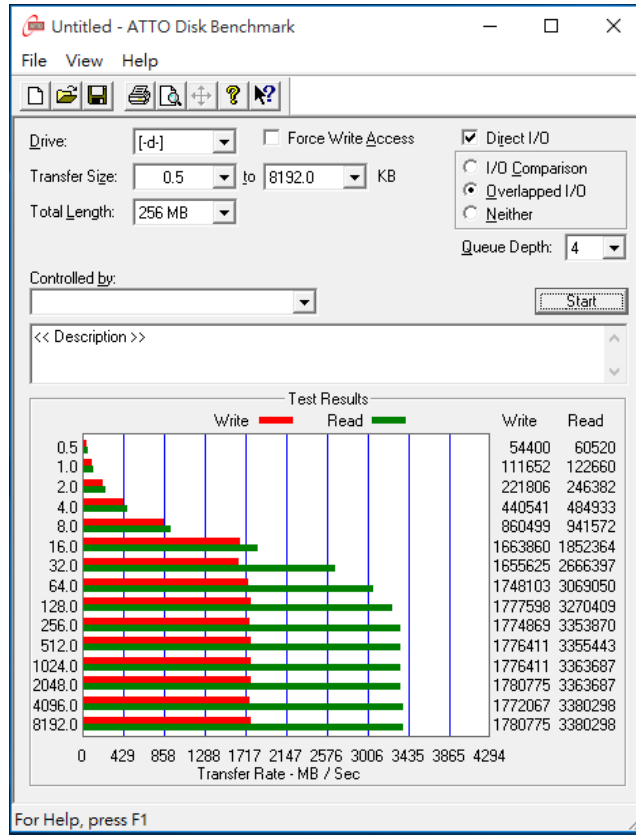
2.6.1 shows SSD([SM961 512GB NVMe](#))performance as below:



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2.7 ATTO Disk Benchmark 2.47 performance test

2.7.1 shows SSD(SM961 512GB NVMe)performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 shows SSD(SM961 512GB NVMe)performance as below:

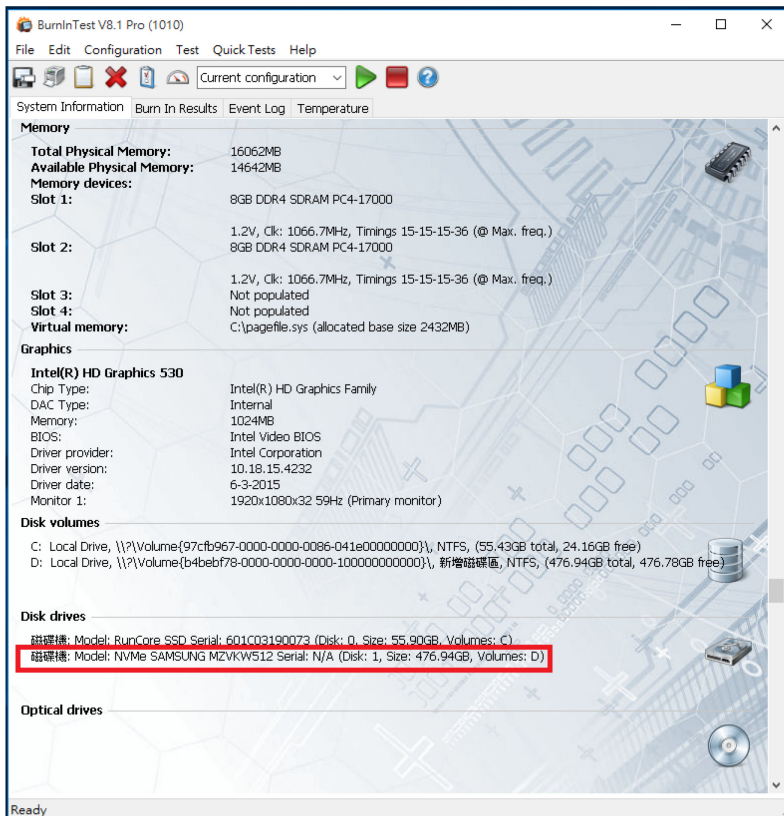
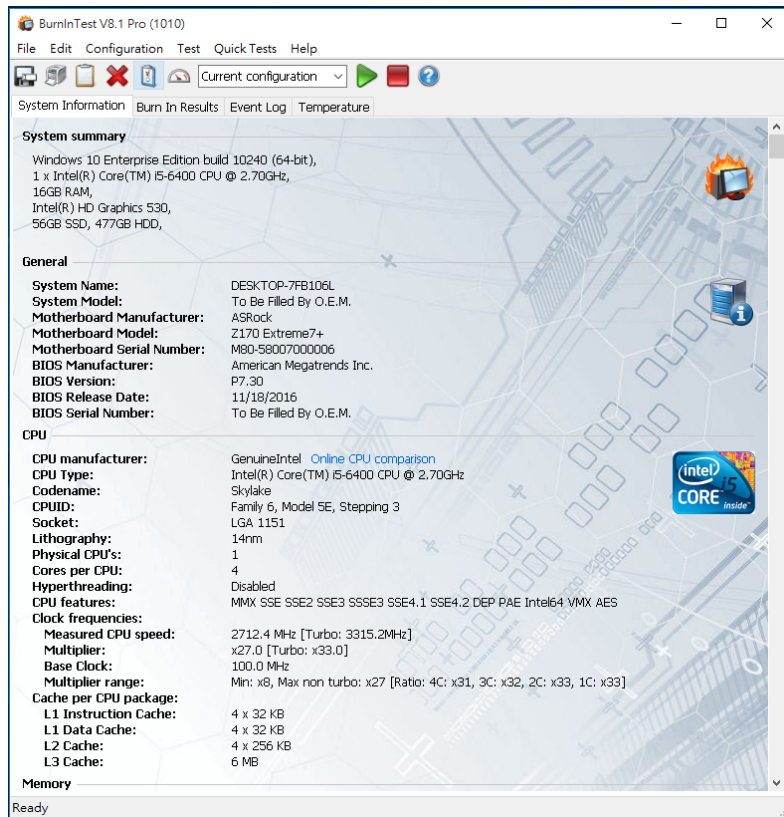


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3. Burn In Tests and Results

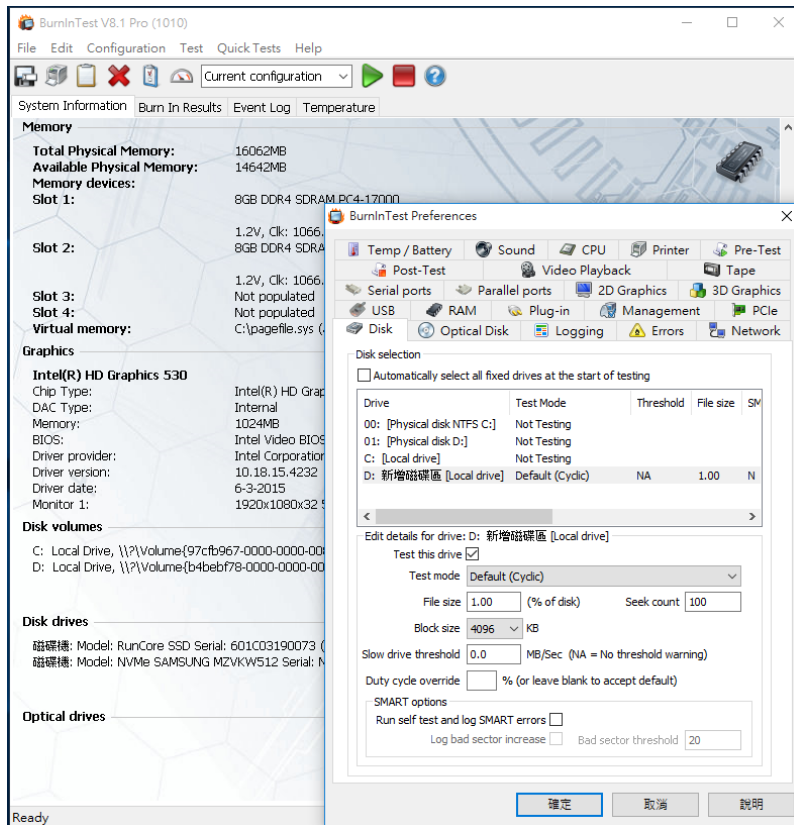
3.1 BurnInTest v8.0 Pro for SSD(SM961 512GB NVMe)

3.1.1 system information as below:

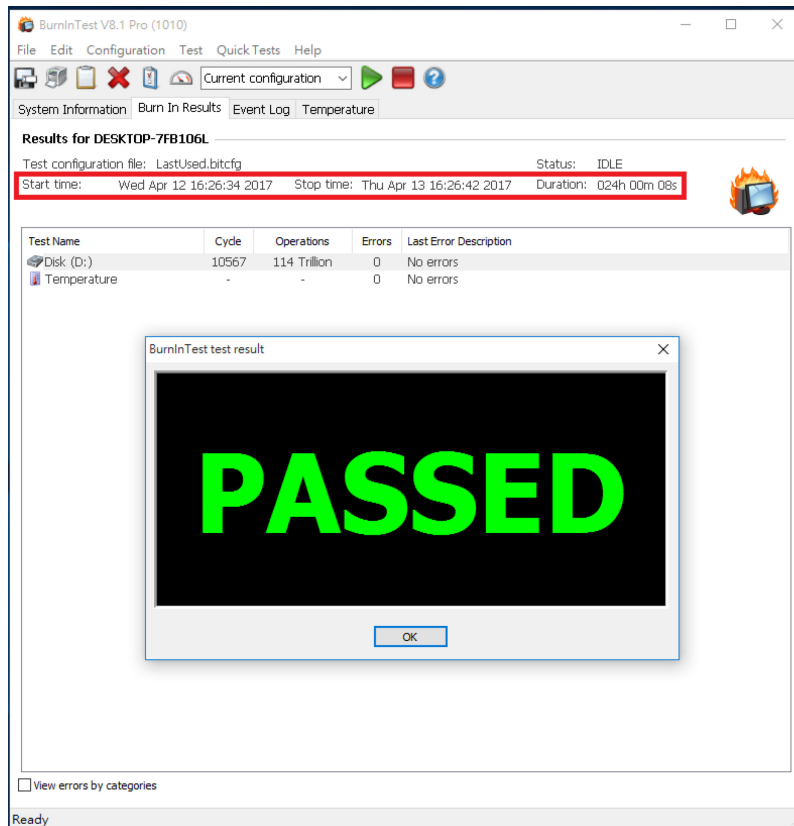


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3.1.2 show Disk test mode(10 ways cycle test)



3.1.3 show 24-hour Burn-in test PASSED



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4. Summary

- 4.1 SM961 M.2 512GB NVMe SSD is PCI-e Gen 3 / 4 Lanes Interface, I/O speed, max. to 32Gbps.
- 4.2 PE0406 adapter I/O performance is based on SM961 512GB NVMe.