MINERVA

PU422F Converter Card

Performance & Burn In Test Rev. 1. 0

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PU422F Converter Card

1. Overview

PU422F 2.5” Drive Enclosure, providing M.2 M-key connector can be M.2 NVMe SSD converted into U.2 NVMe, 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 V750, **750W ATX**, 12V V2.2 Power Supply
Graphic :	Z170 Chipsets built-in **HD Graphics 530**
Adapter:	PE0404 PCIe to SFF-8643 Mini SAS HD Cable
CABLE:	Amphenol U.2(SFF-8639) to SFF-8463 Mini SAS HD Cable
OS :	Microsoft **Windows 10 64bit OS**

2.2 Test target: PU422F adapter & Sasung SM961 **512GB** NVMe SSD

PU422F Adapter

Samsung SM961 512G M.2 SSD

2.3 Install Hardware

Inserts M.2 NVMe SSD into PU422F 2.5” Drive Enclosure converter’s M.2 M-key connector, and then with coppers, and screws to fix SSDs. (Please refer to the Installation Notes). Connects PU422F converter to PE0404 adapter(PCI-e 4-lane to Mini SAS HD SFF-8643) using U.2 cable and Plugs PE0404 into **PCI-e slot of Z170X UD5 TH MB.**

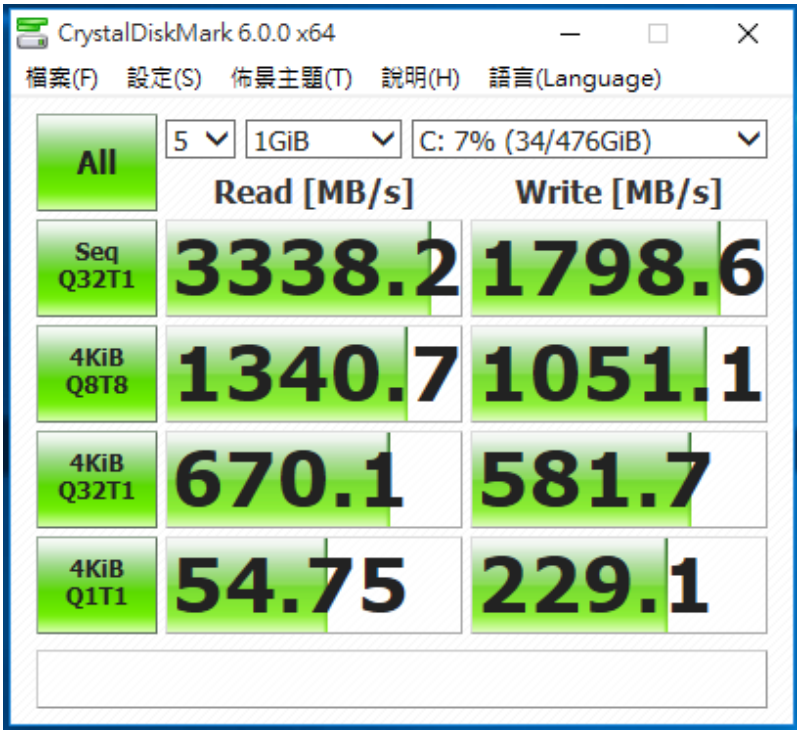
2.4 BIOS & Windows 10 OS environment setup

2.4.1 Install Windows 10 64bit OS into SM961 **512GB** NVMe SSD

2.5 CrystalDiskMark 5.2.1 x64 performance test

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

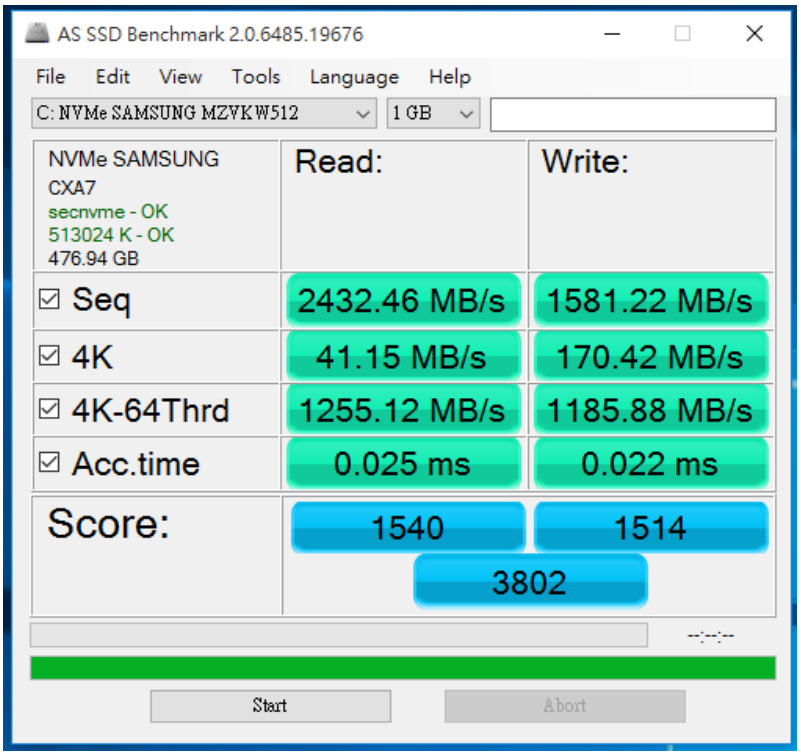
2.5.1 Shows Samsung SM961 M.2/512GB performance as below:



2.6 AS SSD Benchmark 2.0 performance test

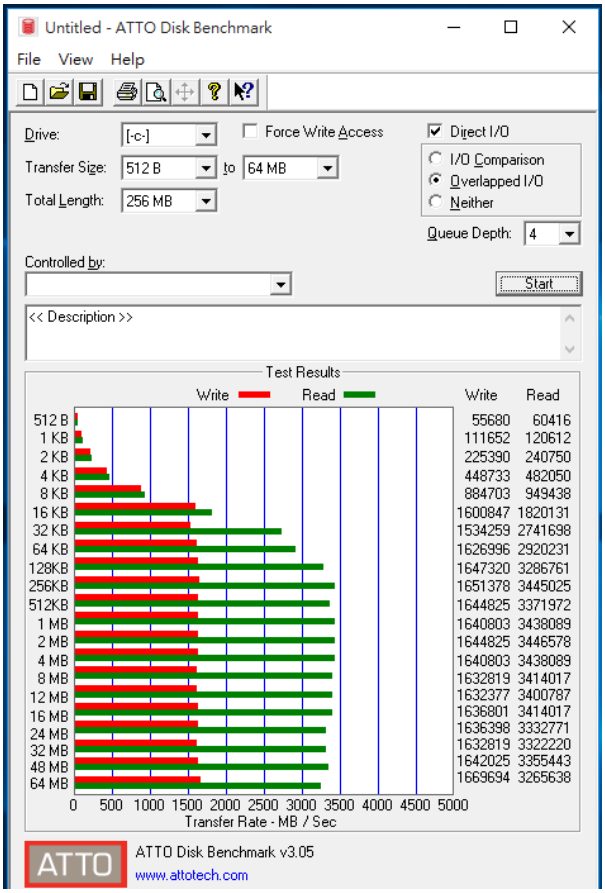
※Benchmark (Read & Write by MB/s, default block size = 16MB)

2.6.1 Show Samsung SM961 M.2/512GB performance as below:



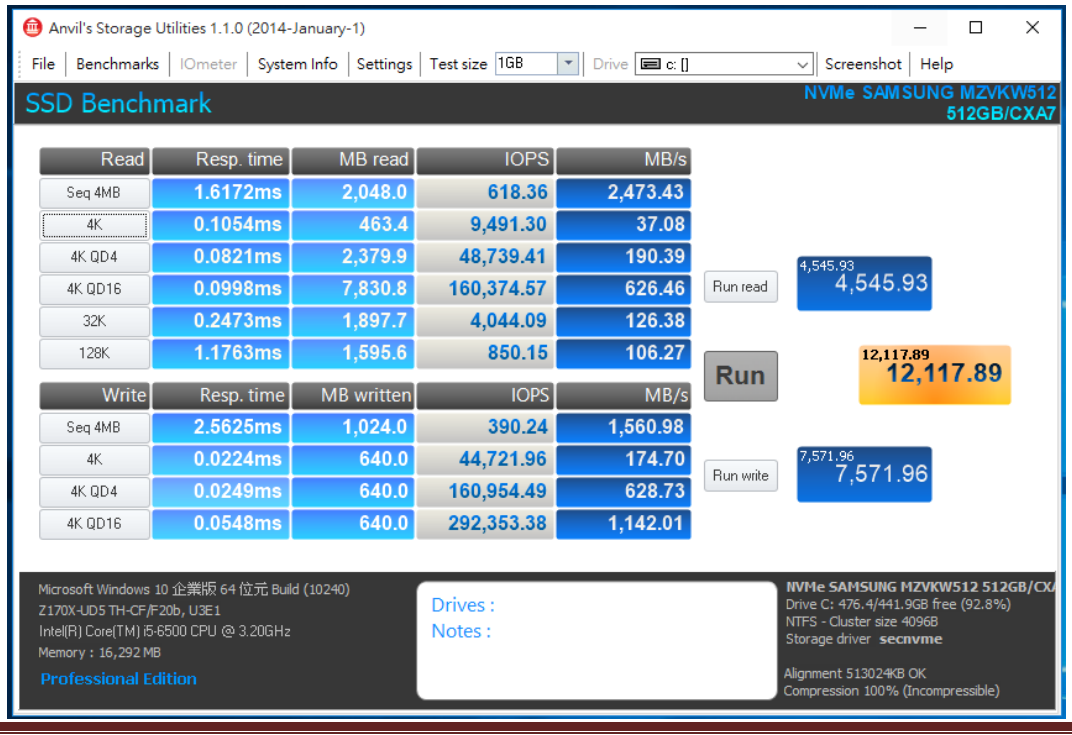
2.7 ATTO Disk Benchamrk 2.47 performance test

2.7.1 Show Samsung SM961 M.2/512GB performance as below:



2.8 AnvilBenchmark_V110_B337

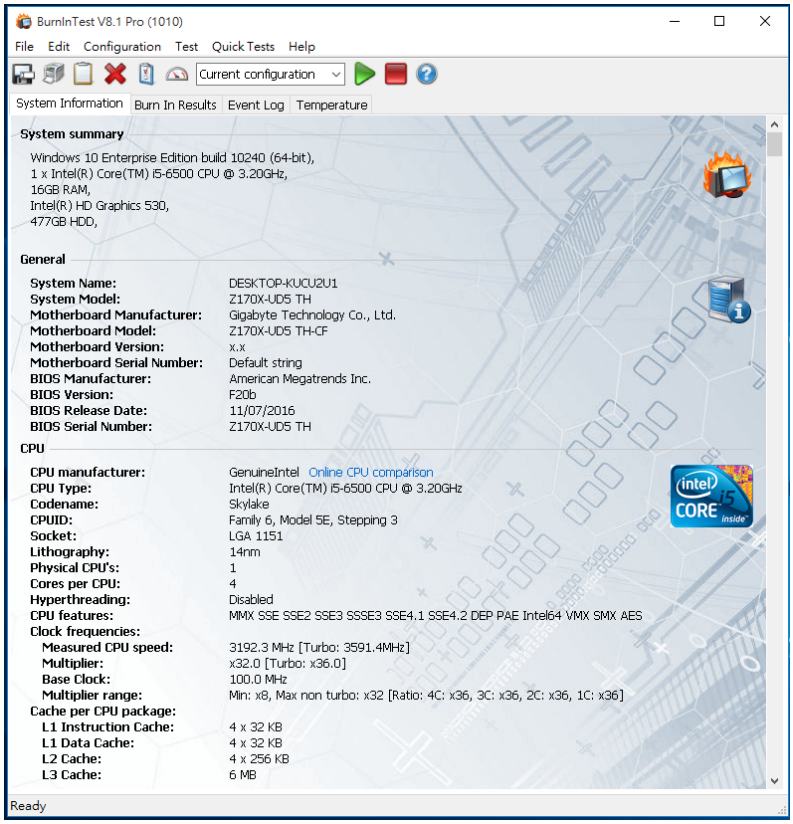
2.8.1 Show Samsung SM961 M.2/512GB performance as below:

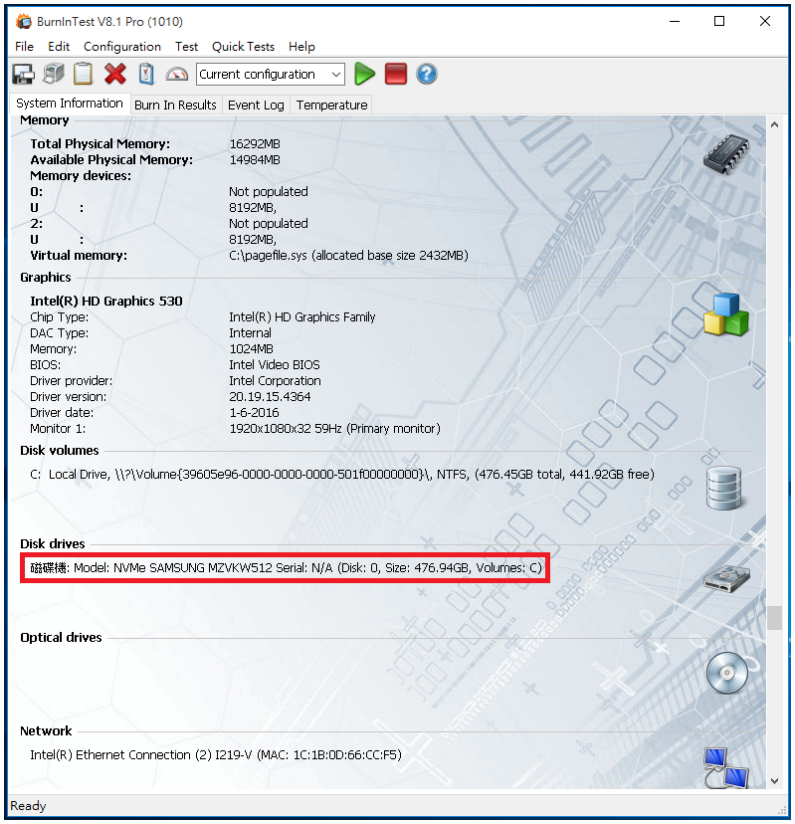


3. Burn In Tests and Results

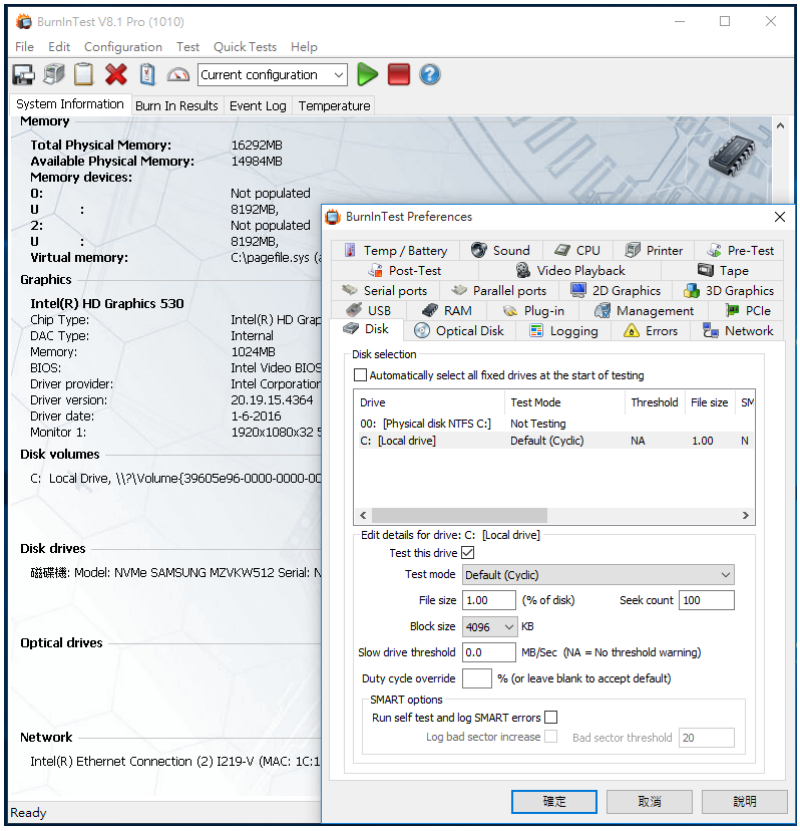
3.1 BurnInTest v8.1 Pro for Samsung SM961 M.2/512GB SSD

3.1.1 system information as below:

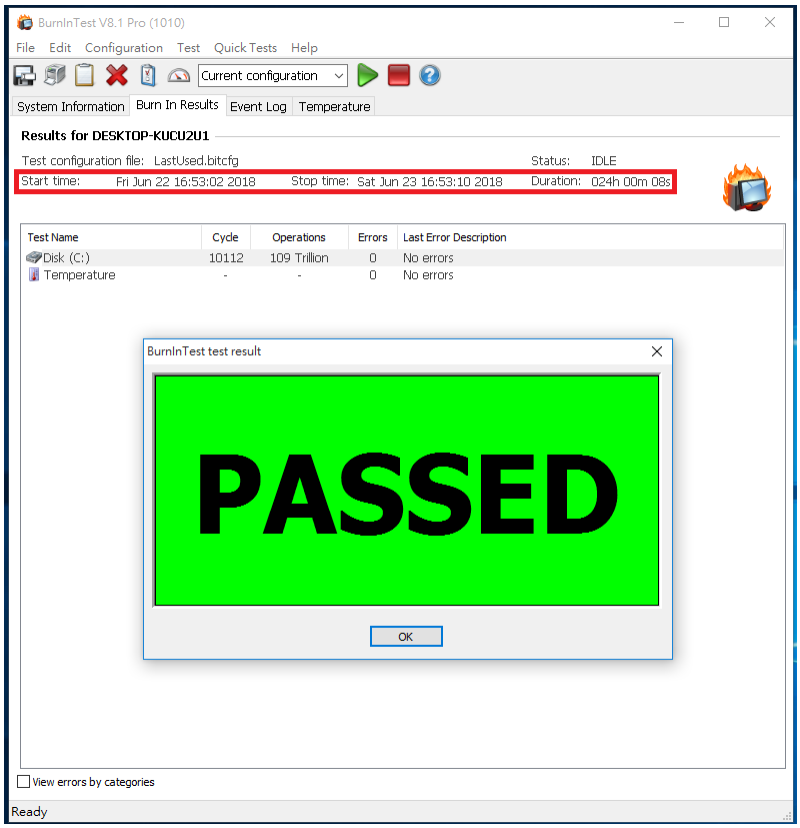




3.1.2 show Disk test mode(10 ways cycle test)



3.1.3 show 24-hour Burn-in test PASSED



4. Summary

4.1 M.2 NVMe SSD is PCI-e Gen 3 / 4 Lanes Interface, I/O speed, max. to 32Gbps.

4.2 PU422F adapter I/O performance is based on M.2 NVMe PCI-e Gen 3 / 4 Lanes SSD.