MINERVA

PU412G Converter Card

Performance & Burn In Test Rev. 1. 0

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PU412G Converter Card

1. Overview

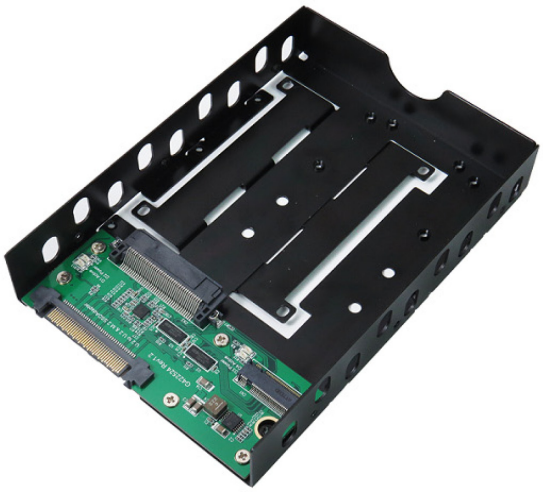
The PU412G Adapters provide a very simple mean for controlling and switching the PCI Express lanes in the connection to a U.2 SSD. It is possible to isolate & test specific lanes in order to isolate performance issues quickly and easily.

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, **16G**(8GB DIMM*2)
ATX Power :	COOLER MASTER G750M, **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: PU412G adapter & Intel 750 U.2(SFF-8639) 400GB SSD



PU412G Adapter

Intel 750 Series U.2 SSD

2.3 Install Hardware

Insert U.2 SSD into PU409G converter's U.2 female connector. Connect PU409G converter to PE0404 adapter(PCI-e 4-lane to Mini SAS HD SFF-8643) using U.2 cable, plugs PE0404 into **PCI-e slot of Z170X UD5 TH.**

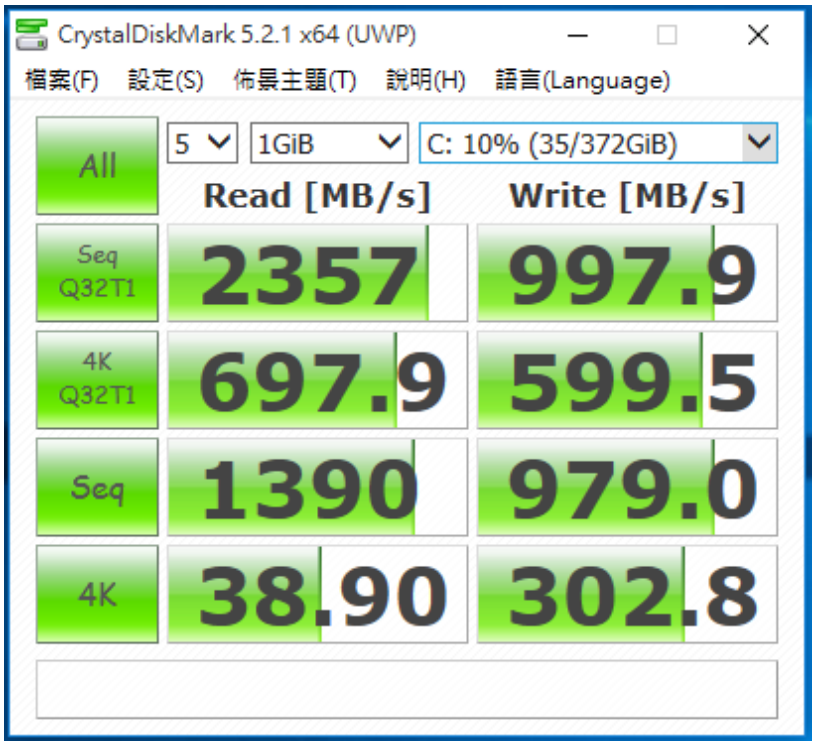
2.4 BIOS & Windows 10 OS environment setup

2.4.1 Install Windows 10 64bit OS into Intel 750 U.2 400GB SSD

2.5 CrystalDiskMark 5.2.1 x64 performance test

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

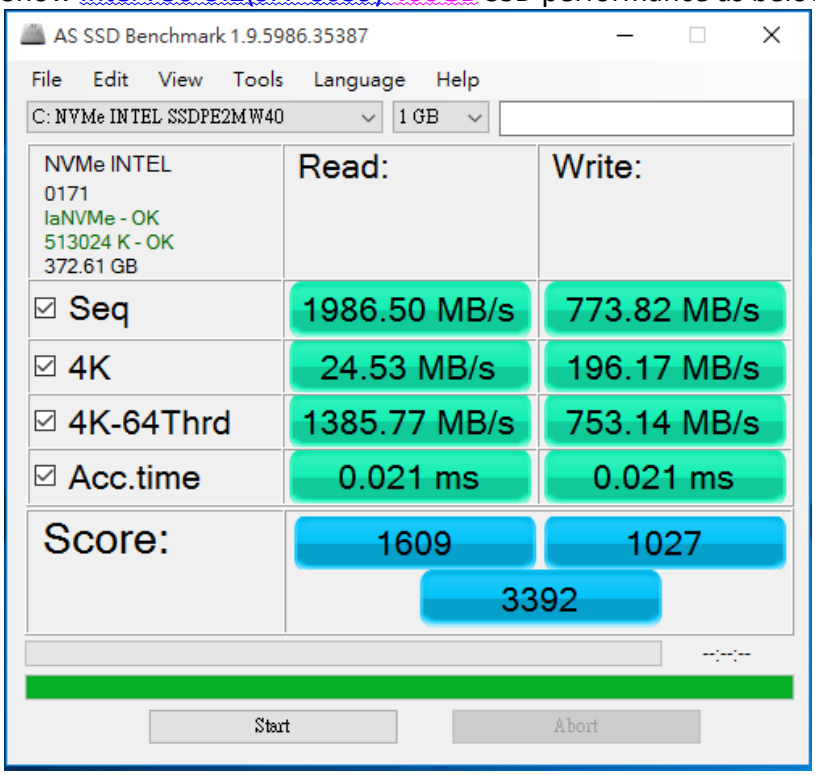
2.5.1 Show Intel 750 U.2 400GB SSD performance as below:



2.6 AS SSD Benchmark 1.9 performance test

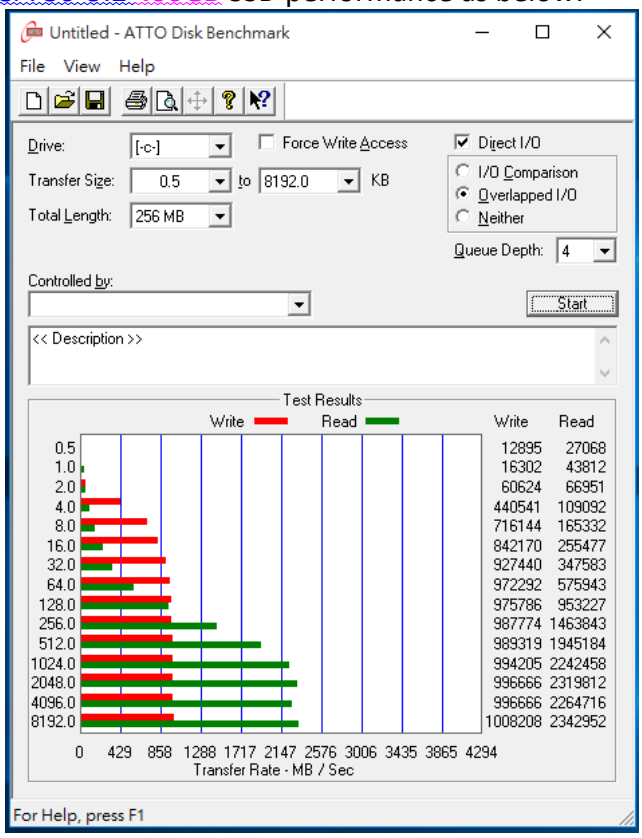
※Benchmark (Read & Write by MB/s, default block size = 16MB)

2.6.1 Show Intel 750 U.2(SFF-8639) 400GB SSD performance as below:



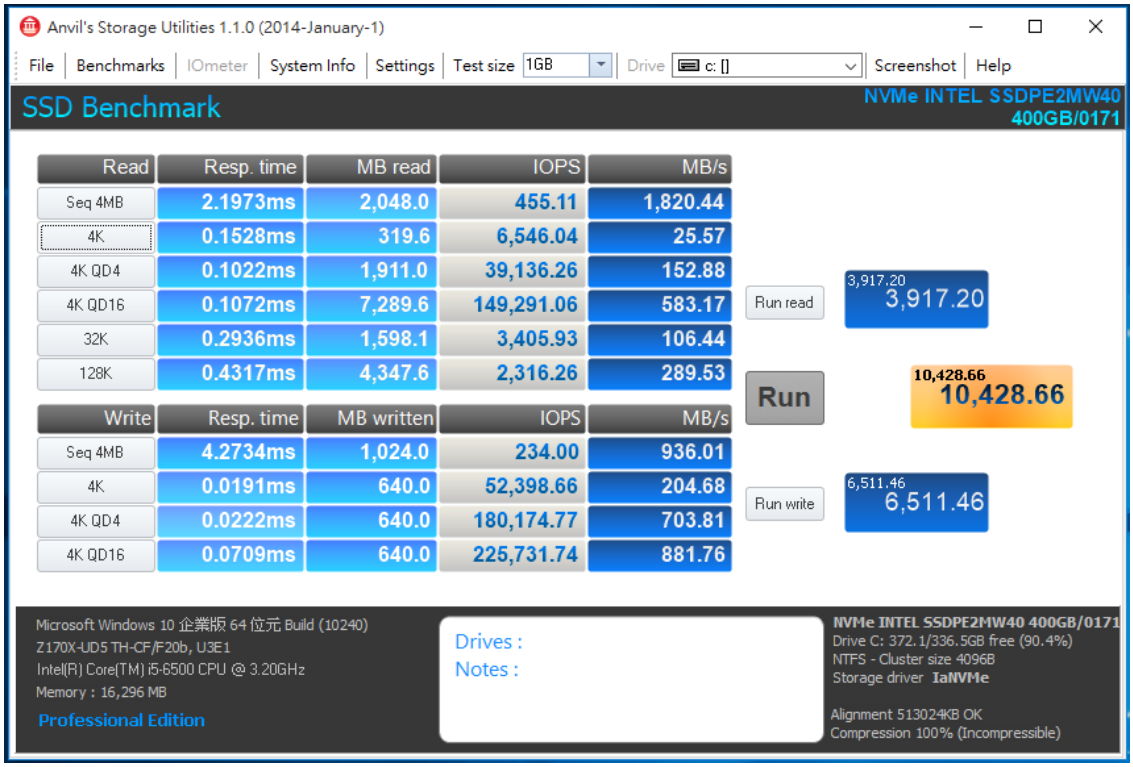
2.7 ATTO Disk Benchamrk 2.47 performance test

2.7.1 Show Intel 750 U.2 400GB SSD performance as below:



2.8 AnvilBenchmark_V110_B337

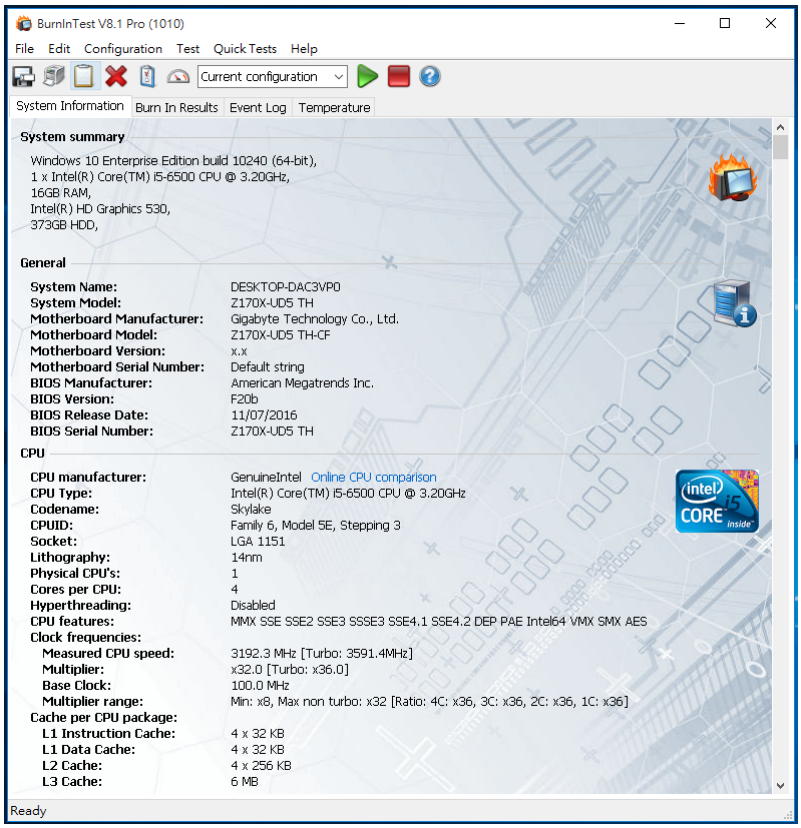
2.8.1 Show Intel 750 U.2 400GB SSD performance as below:

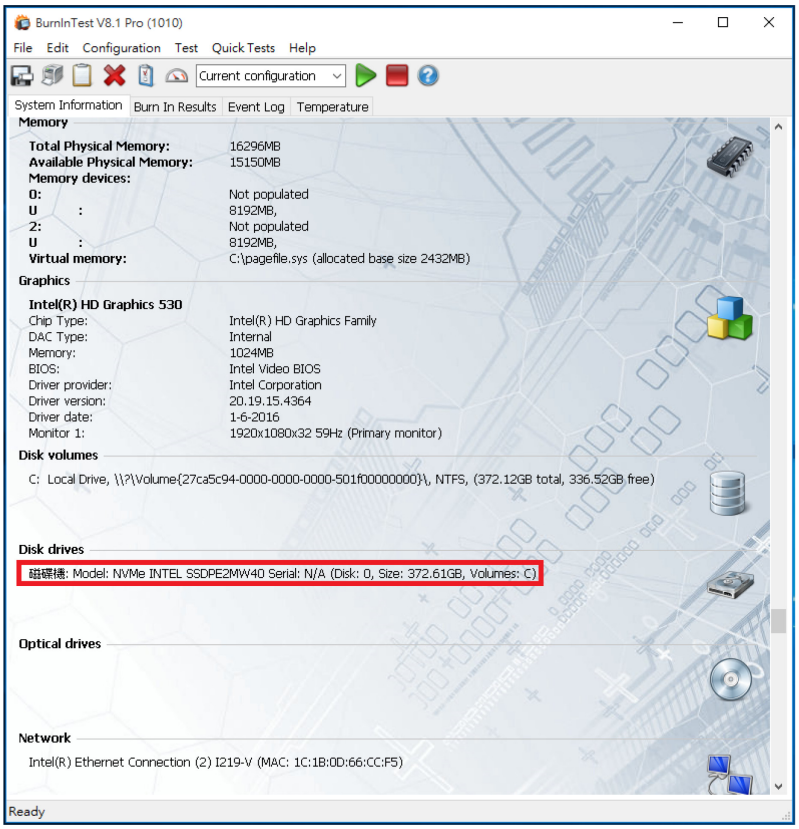


3. Burn In Tests and Results

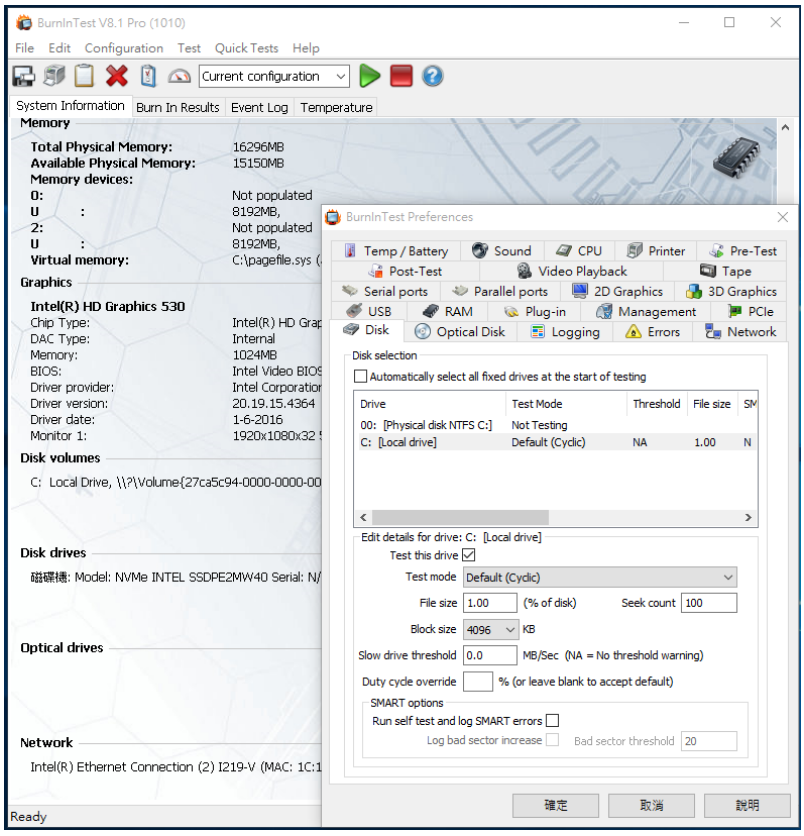
3.1 BurnInTest v8.1 Pro for Intel 750 U.2(SFF-8639) 400GB SSD

3.1.1 system information as below:

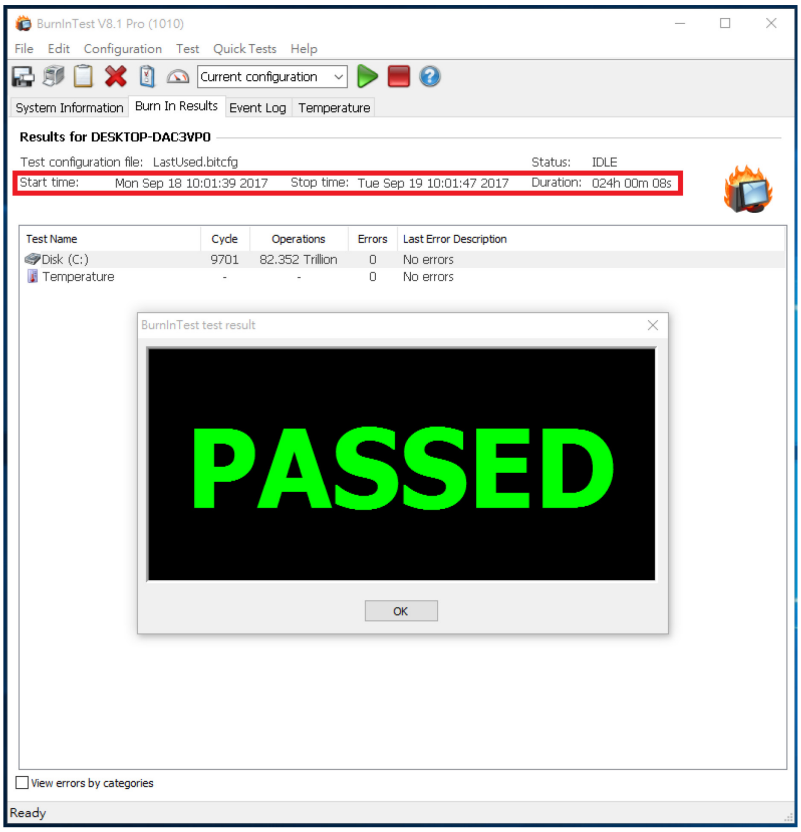




3.1.2 show Disk test mode(10 ways cycle test)



3.1.3 show 24-hour Burn-in test PASSED



4. Summary

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

4.2 PU412G adapter I/O performance is based on U.2 NVMe PCI-e Gen 3 / 4 Lanes SSD.