



MINERVA

PE0411 Converter Card

Performance & Burn In Test Rev. 1.0

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1. Overview

PE0411 adapter, providing SFF-8654 Slimline SAS and SFF-8639 U.2 connector can be U.2(SFF-8639) 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: PE0411 PCIe to SFF-8639 Mini SAS HD& SFF-8654 Slimline SAS
CABLE: Amphenol **U.2(SFF-8639) Female to U.2(SFF-8639) Female Cable**
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: PE0411 adapter + **INTEL 750 U.2 NVMe 400GB SSD**



PE0411 Adapter



SFF-8639 to SFF-8639 female cable



Intel 750 Series U.2 SSD

2.3 Install Hardware

Use SFF-8639 to SFF-8639 cable to connect INTEL 750 SSD to PE0411 PCI-e adapter of GIGABYTE **Z170X UD5 TH**.

2.4 BIOS & Windows 10 OS environment setup

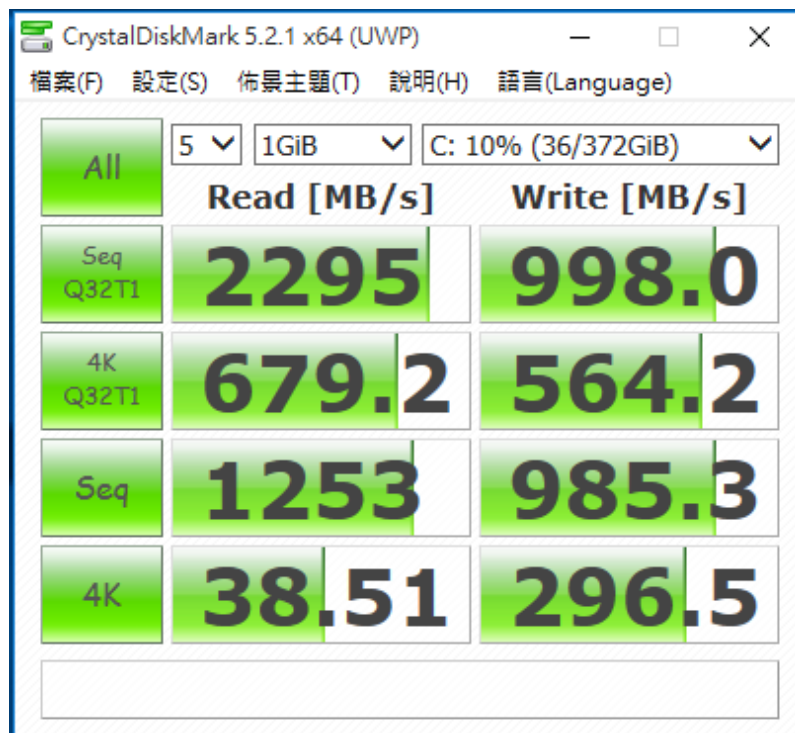
2.4.1 Install Windows 10 64BIT OS in U.2 NVMe SSD.

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2.5 CrystalDiskMark 5.2.1 x64 performance test

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

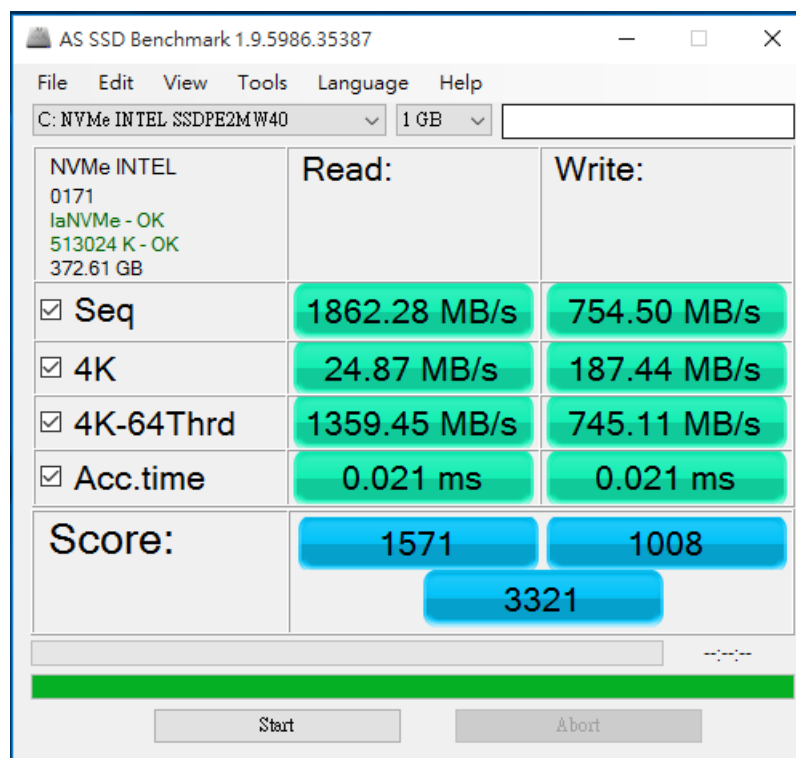
2.5.1 shows **INTEL 750 U.2 NVMe 400GB** performance as below:



2.6 AS SSD Benchmark 1.9 performance test

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

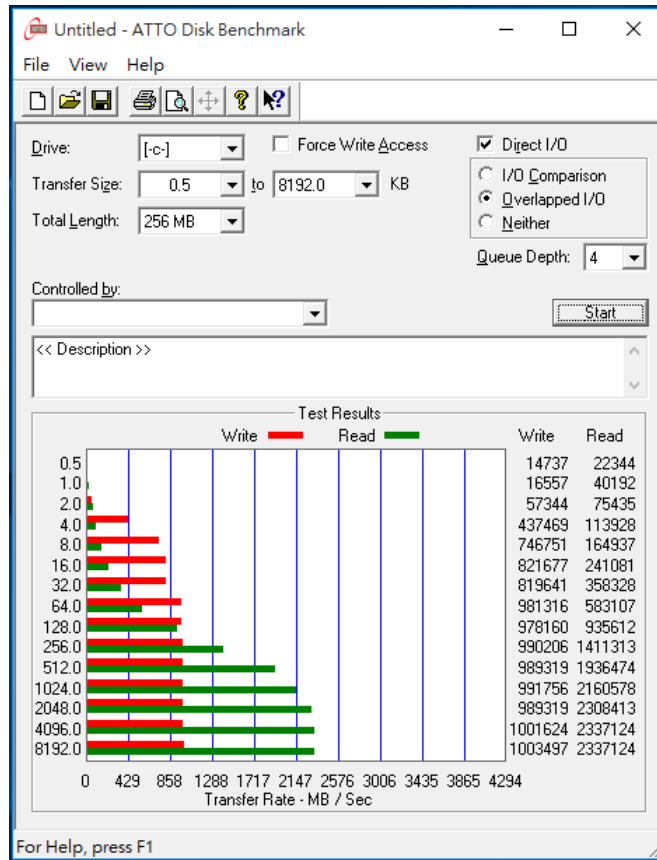
2.6.1 shows **INTEL 750 U.2 NVMe 400GB** performance as below:



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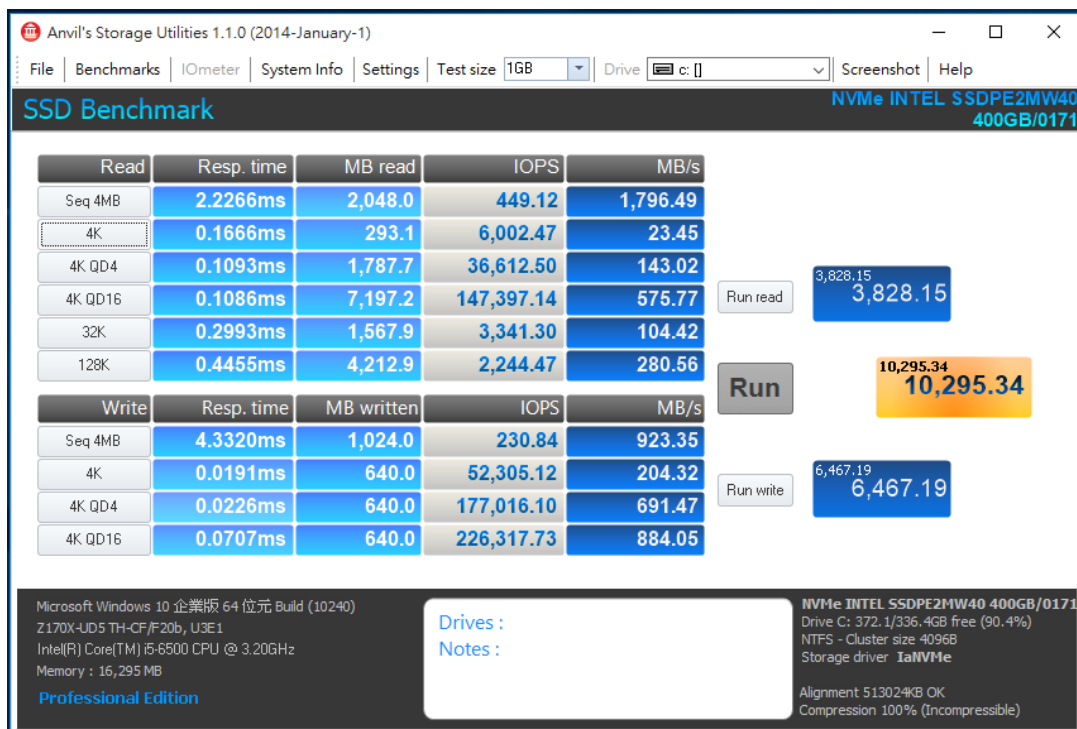
2.7 ATTO Disk Benchmark 2.47 performance test

2.7.1 shows [INTEL 750 U.2 NVMe 400GB](#) performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 shows [INTEL 750 U.2 NVMe 400GB](#) performance as below:

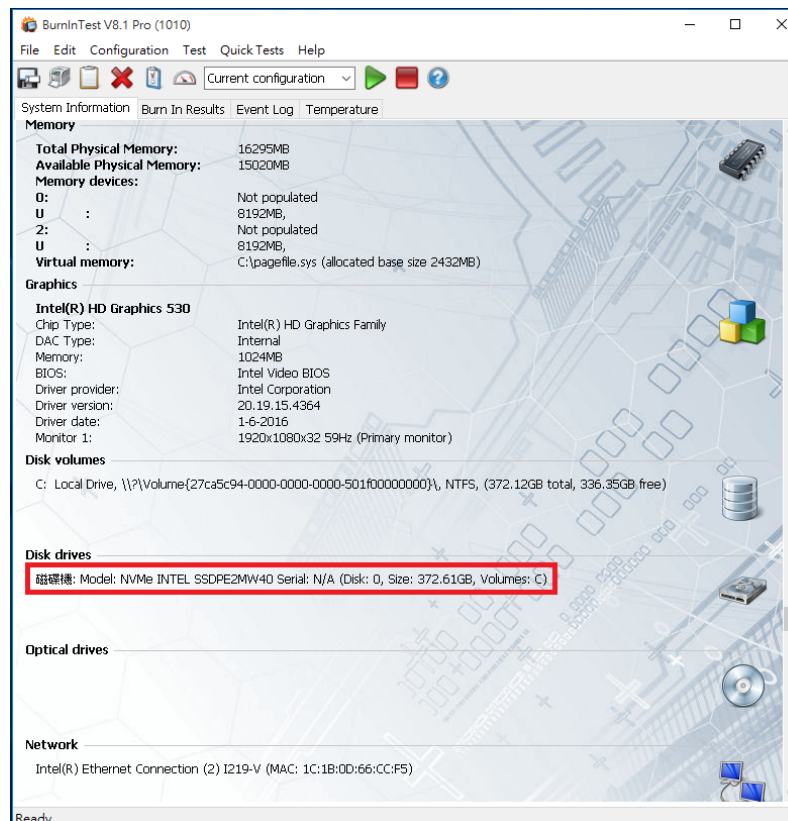
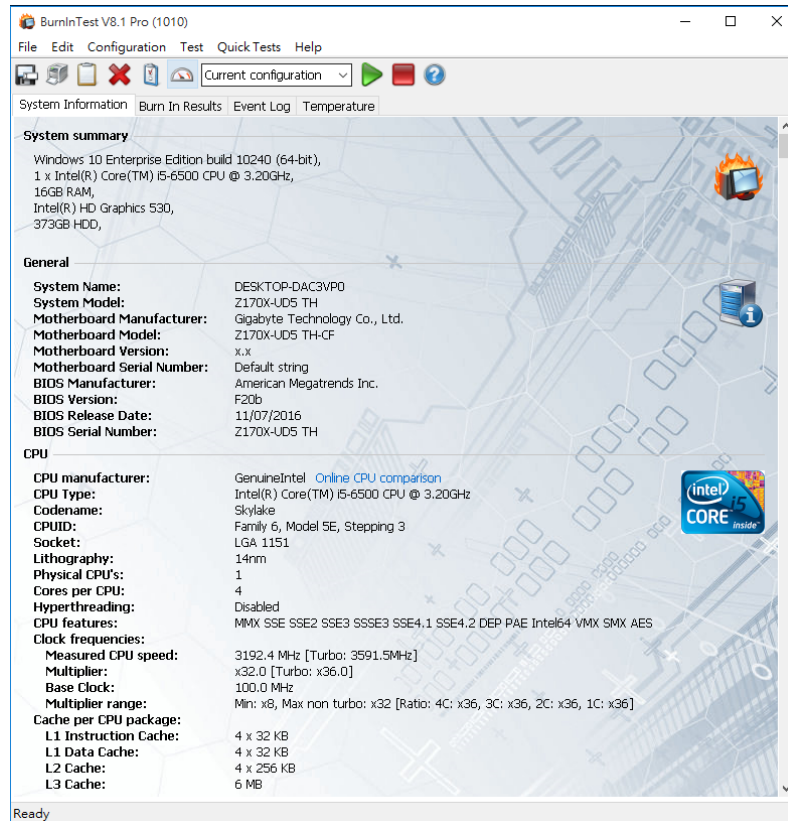


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3. Burn In Tests and Results

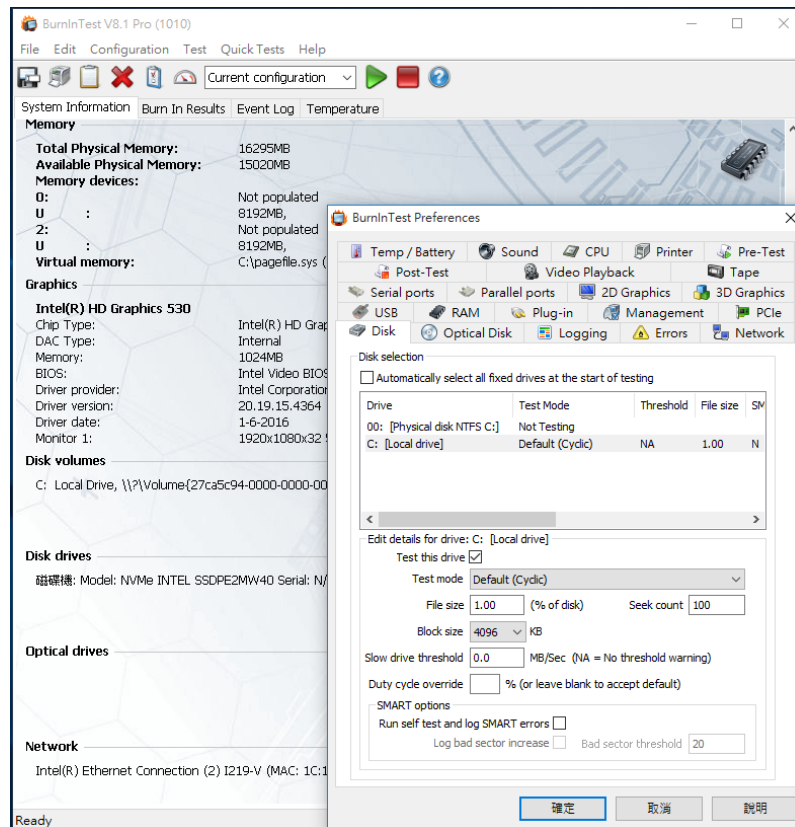
3.1 BurnInTest v8.1 Pro for INTEL 750 U.2 NVMe 400GB

3.1.1 System information as below:

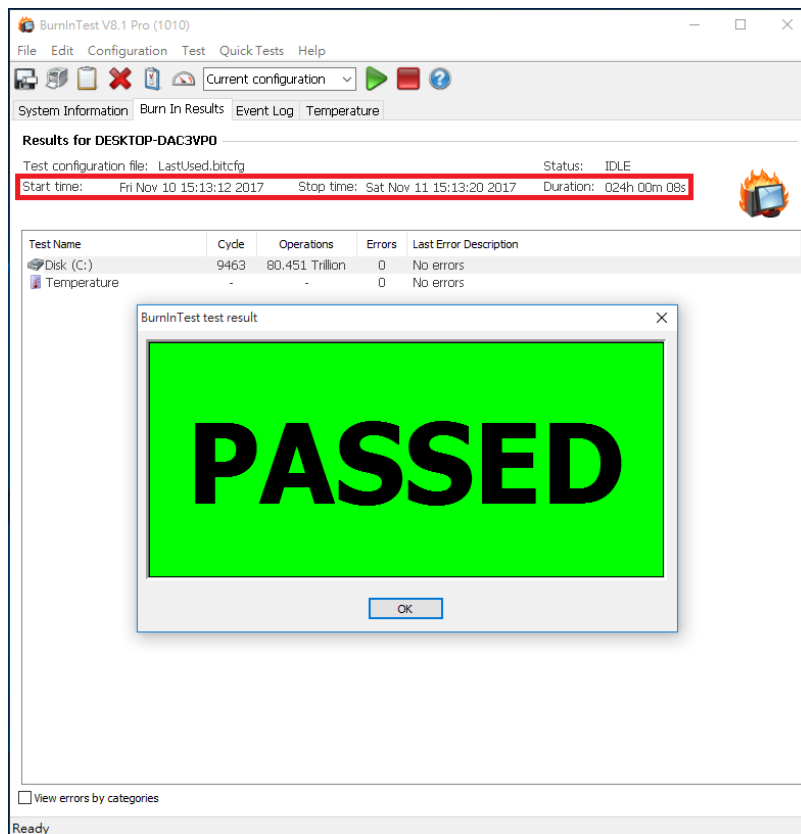


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3.1.2 shows Disk test mode(10 ways cycle test)



3.1.3 shows 24-hour Burn-in test PASSED



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4. Summary

- 4.1 U.2 SSD is PCI-e Gen 3 / 4 Lanes Interface, I/O speed, max. to 32Gbps
- 4.2 PE0411 adapter I/O performance is based on U.2 NVMe PCI-e Gen 3 / 4 Lanes SSD.