



# MINERVA

## PE0409 Converter Card

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### Performance & Burn In Test Rev. 1. 0

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## 1. Overview

PE0409 adapter, providing SFF-8643 Mini SAS HD and SFF-8639 U.2 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: PE0409 PCIe to SFF-8643 Mini SAS HD& SFF-8639 U.2  
CABLE: Amphenol **U.2(SFF-8639) to SFF-8463 Mini SAS HD Cable**  
OS : Microsoft **Windows 10 64bit OS**

### 2.2 Test target: PE0409 adapter + INTEL 750 U.2 NVMe 400GB SSD



### 2.3 Install Hardware

Use SFF-8643 to SFF-8639 cable to connect INTEL 750 SSD to PE0409 PCI-e adapter of GIGABYTE **Z170X UD5 TH**.

### 2.4 BIOS & Windows 10 OS environment setup

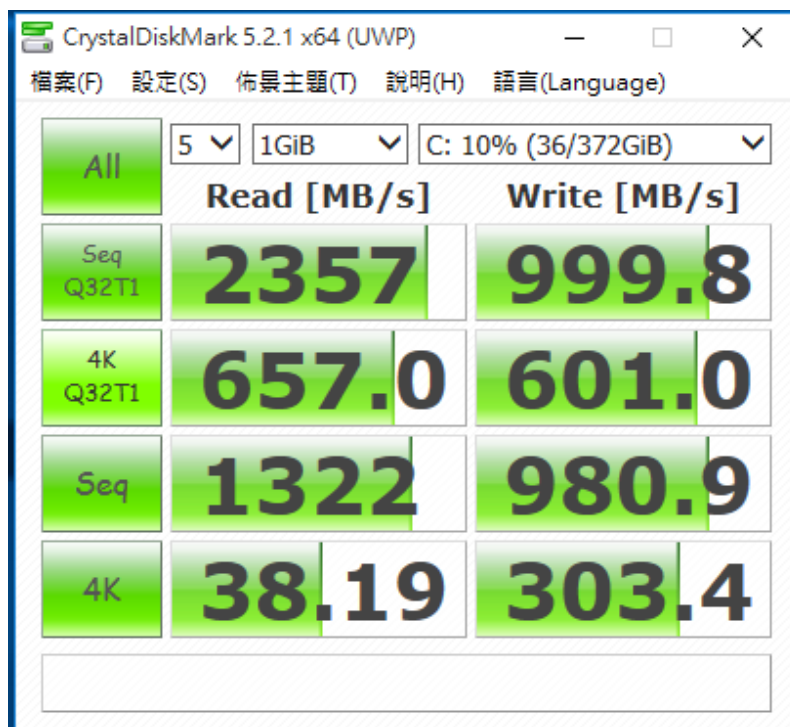
2.4.1 Install Windows 10 64BIT OS in U.2 NVMe SSD.

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## 2.5 CrystalDiskMark 5.2.1 x64 performance test

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

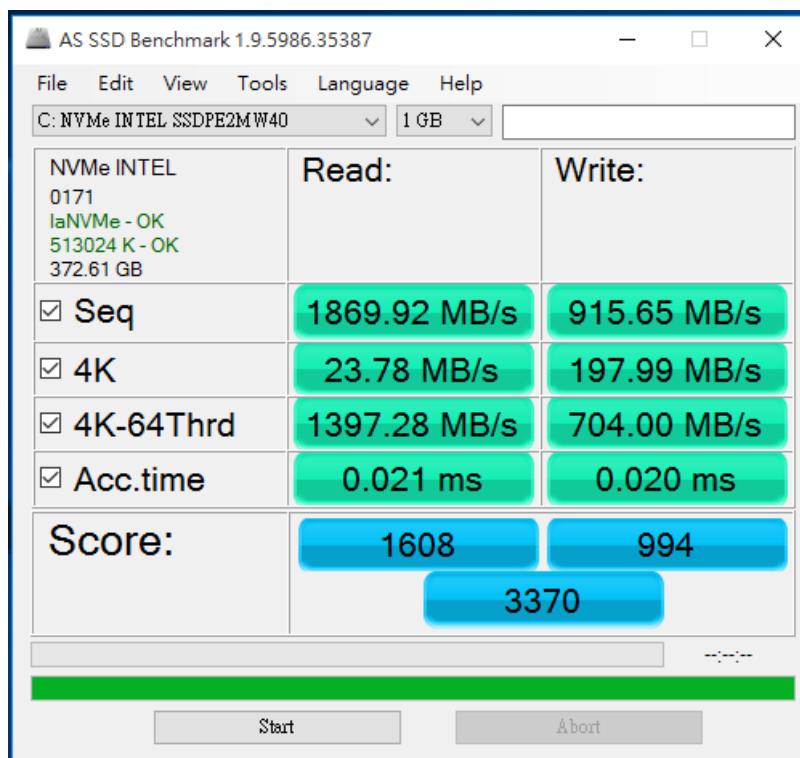
2.5.1 shows **INTEL 750 U.2 NVMe 400GB** performance as below:



## 2.6 AS SSD Benchmark 1.9 performance test

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

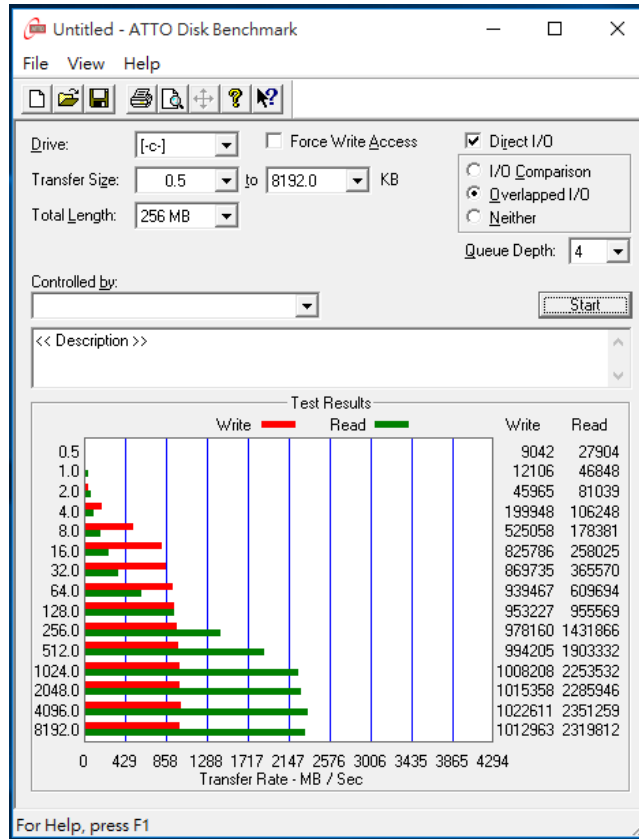
2.6.1 shows **INTEL 750 U.2 NVMe 400GB** performance as below:



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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:

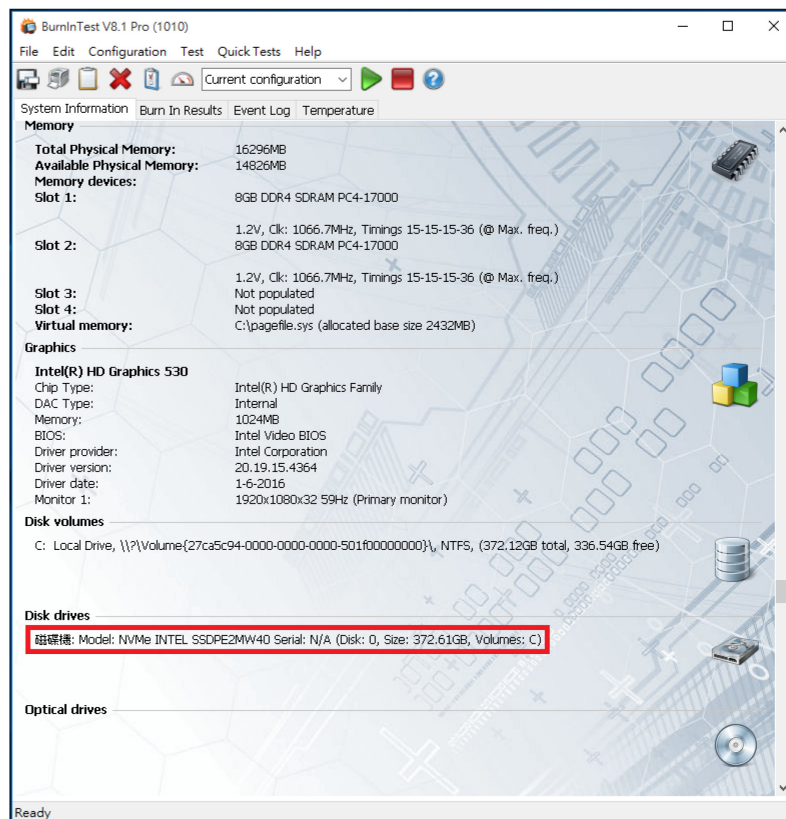
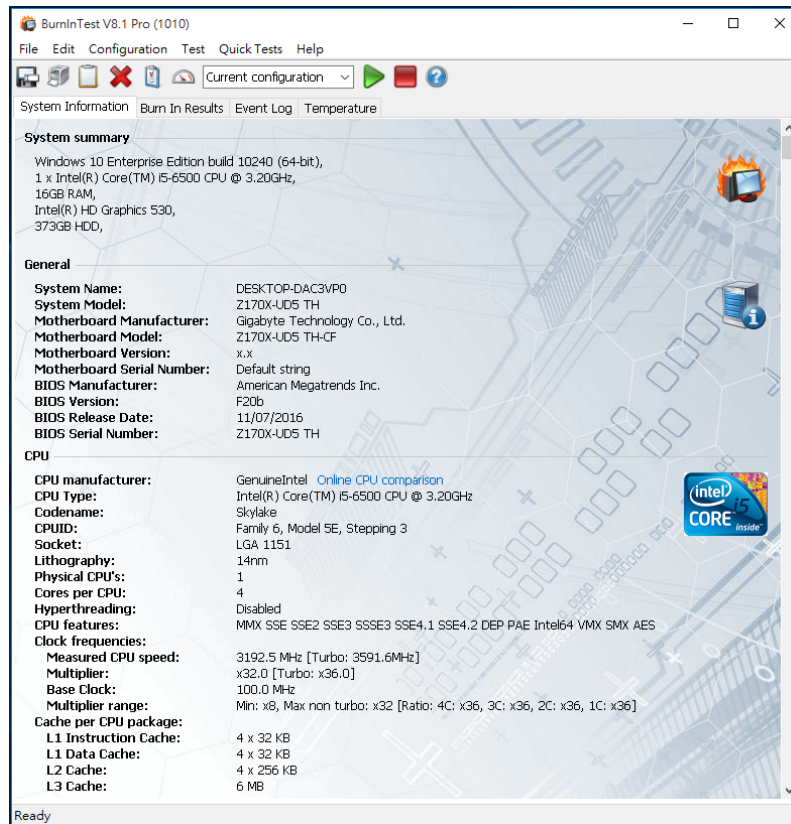


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## 3. Burn In Tests and Results

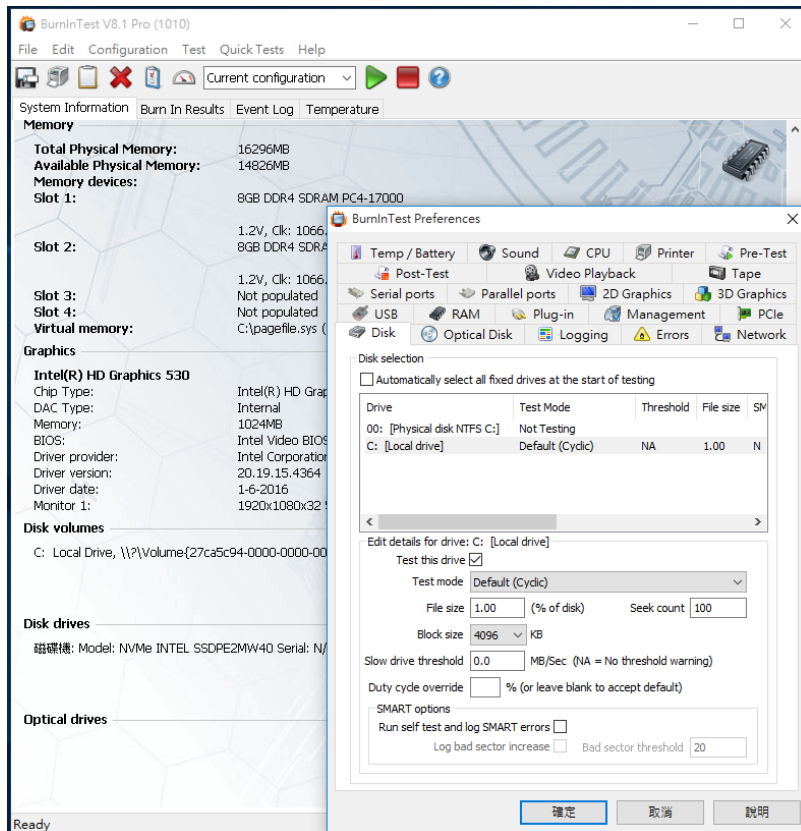
### 3.1 BurnInTest v8.1 Pro for INTEL 750 U.2 NVMe 400GB

#### 3.1.1 System information as below:

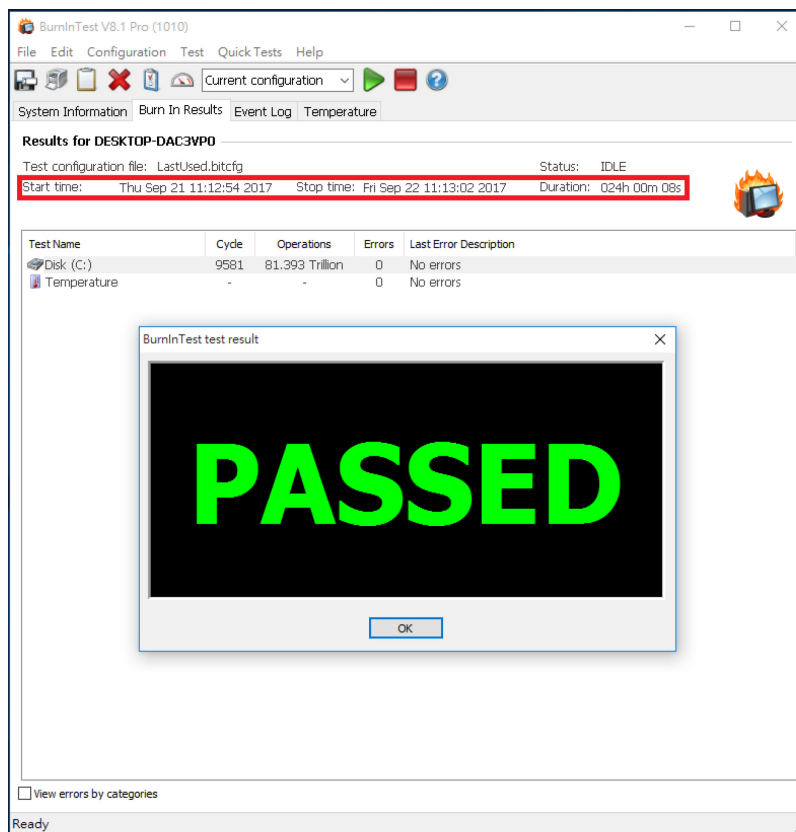


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## 3.1.2 shows Disk test mode( 10 ways cycle test)



## 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 4GB.
- 4.2 PE0409 adapter I/O performance is based on U.2 NVMe PCI-e Gen 3 / 4 Lanes SSD.