



MINERVA

PU413A Converter Card

Performance & Burn In Test Rev. 1. 0

Table of Contents

1. Overview

2. Performance Measurement Tools and Results

2.1 Test Platform

2.2 Test target and Intel PCIe x4 SSD

2.3 Install Hardware

2.4 Windows 8.1 OS environment setup

2.5 CrystalDiskMark 5.2.1 x64 performance test

2.6 AS SSD Benchmark 1.9 performance test

2.7 ATTO Disk Benchamrk 2.47 performance test

2.8 AnvilBenchmark_V110_B337 Benchmark performance test

3. Burn In Tests and Results

3.1 BurnInTest v8.1 Pro burn in test

4. Summary

PU413A Converter Card

1. Overview

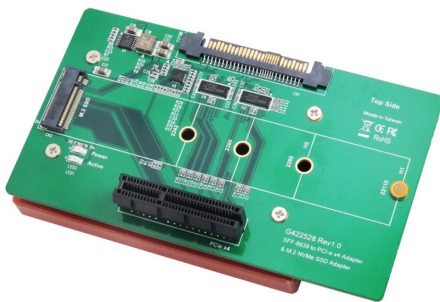
PU413A adapter, providing PCIe Gen 3 x4 slot can be PCI-e SSD converted into U.2(SFF-8639) PCI-e Gen 3 / 4 Lanes interface.

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 V2.31 Power Supply
Graphic : Z170 Chipsets built-in **HD Graphics 530**
Adapter: PE0404 PCIe to SFF-8643 Mini SAS HD adapter
Cable: Amphenol U.2(SFF-8639) to SFF-8643 Mini SAS HD Cable
OS : Microsoft **Windows 10 64bit OS**

2.2. Test target: PU413A adapter & **INTEL 750 SSDPEDMW400G4R5 Add-in Card**



PU413A Adapter



Intel 750 Series PCIe SSD

2.3. Install Hardware

Insert Intel PCIe SSD into PU413A converter's PCIe Gen 3 x4 slot, and then use SFF-8643 to SFF-8639 cable to connect PU413A converter to **PCI-e to SFF-8643 adapter of Z170 M/B**.

2.4. Windows 8.1 OS environment setup

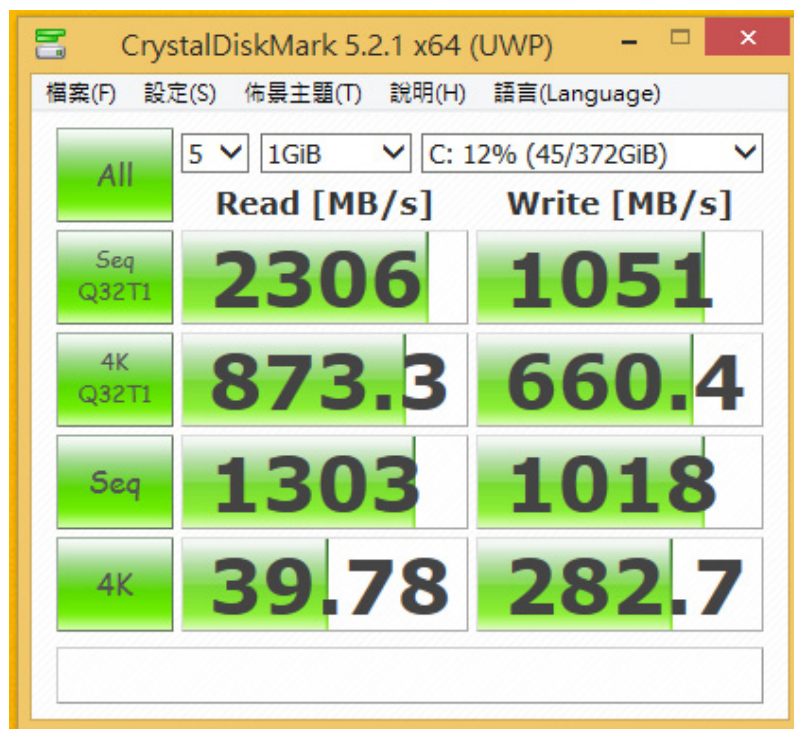
2.4.1. Install Windows 8.1 OS in Intel PCIe 750 SSD.

PU413A Converter Card

2.5. CrystalDiskMark 5.2.1 x64 performance test

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

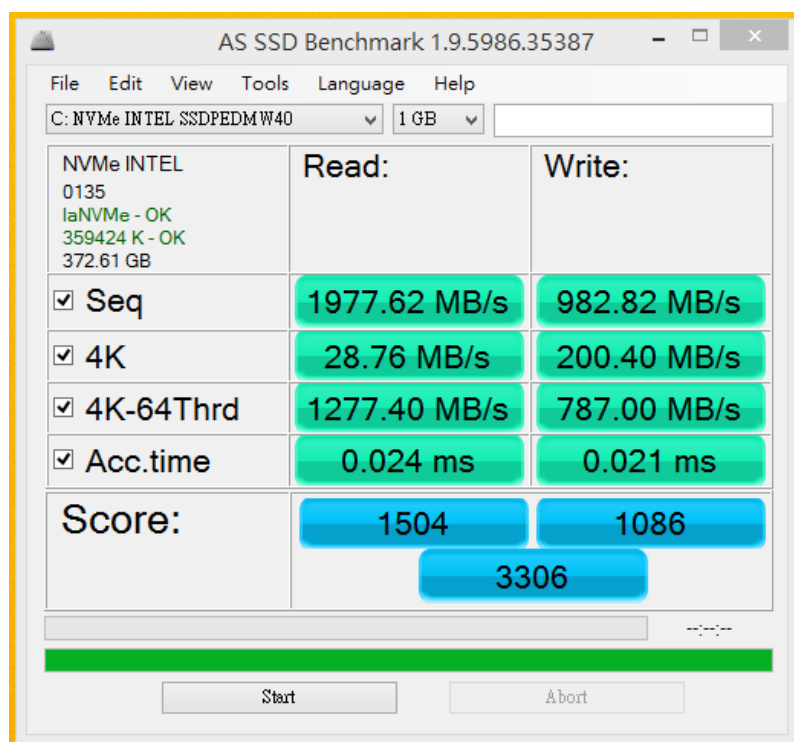
2.5.1 shows **INTEL 750 Add-in Card / 400GB** performance as below:



2.6 AS SSD Benchmark 1.9 performance test

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

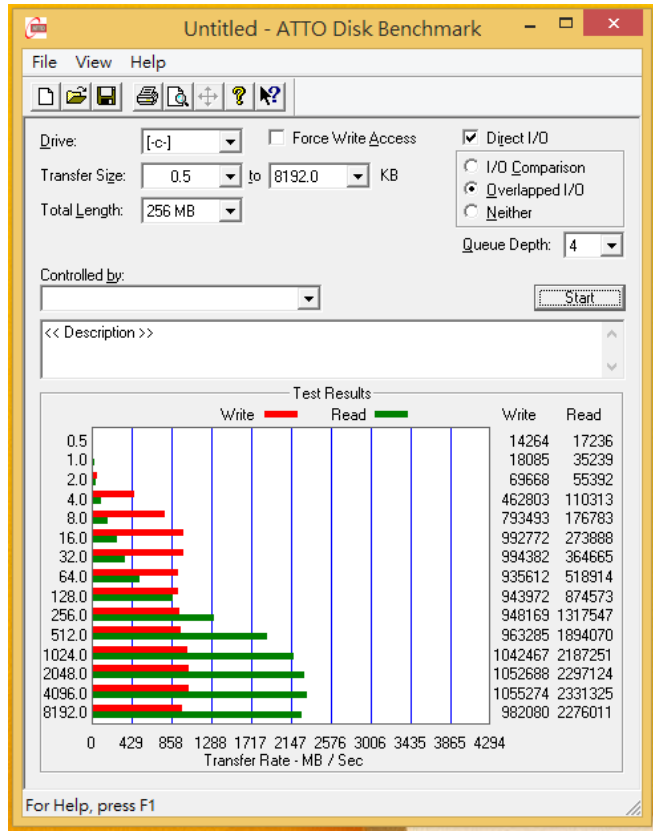
2.6.1 shows **INTEL 750 Add-in Card / 400GB** performance as below:



PU413A Converter Card

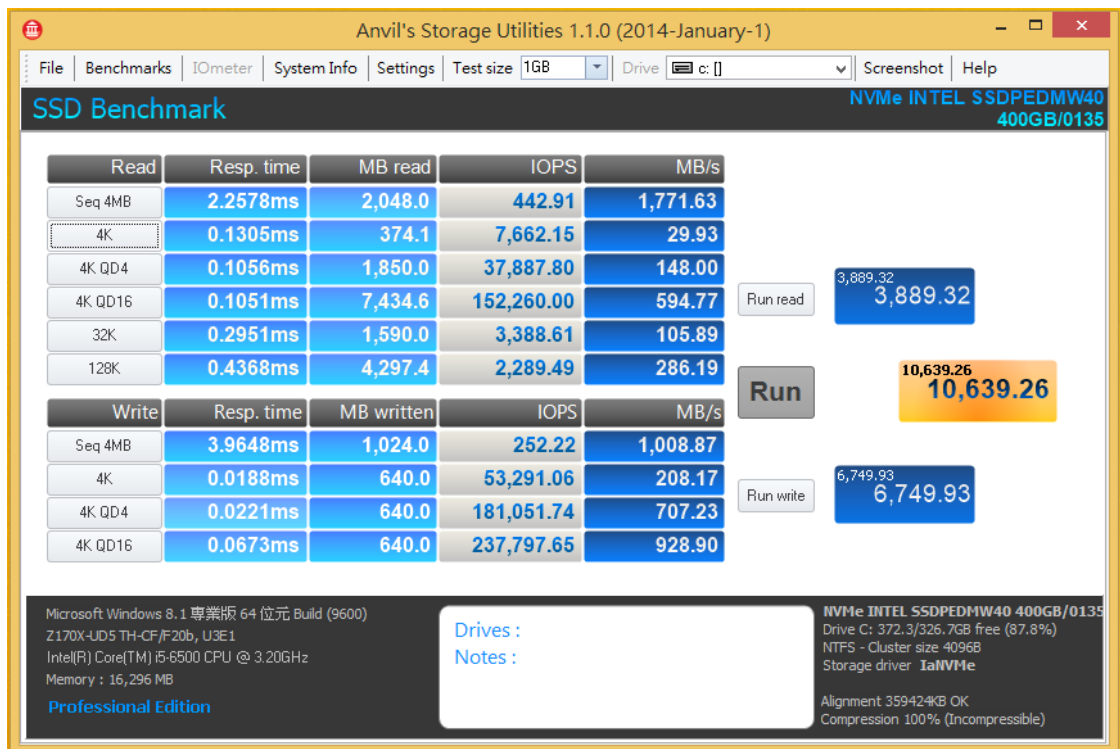
2.7 ATTO Disk Benchmark 2.47 performance test

2.7.1 shows [INTEL 750 Add-in Card / 400GB](#) performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 shows [INTEL 750 Add-in Card / 400GB](#) performance as below:

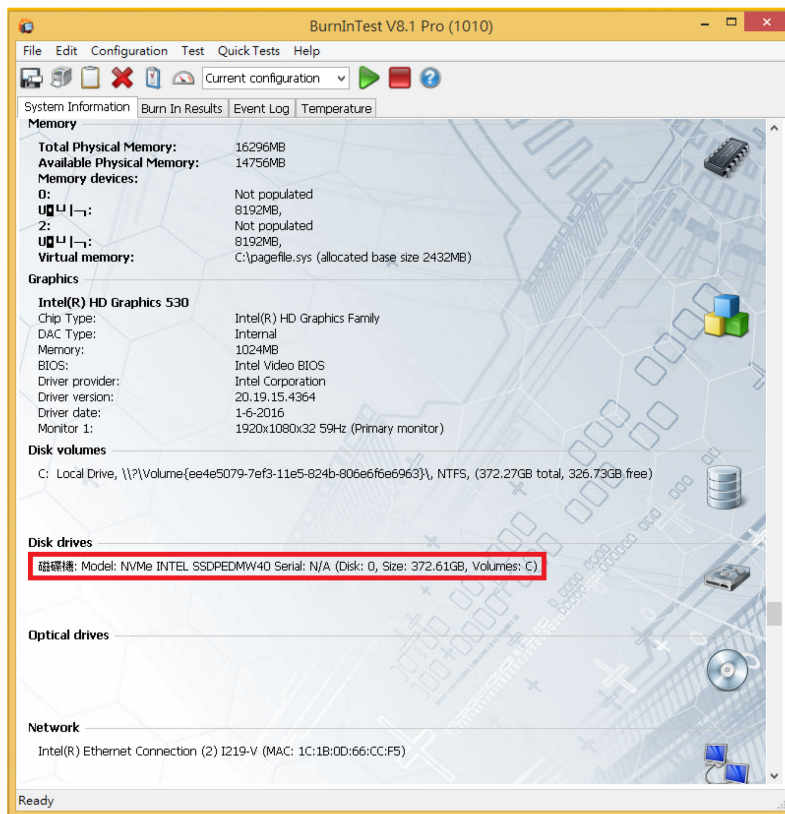
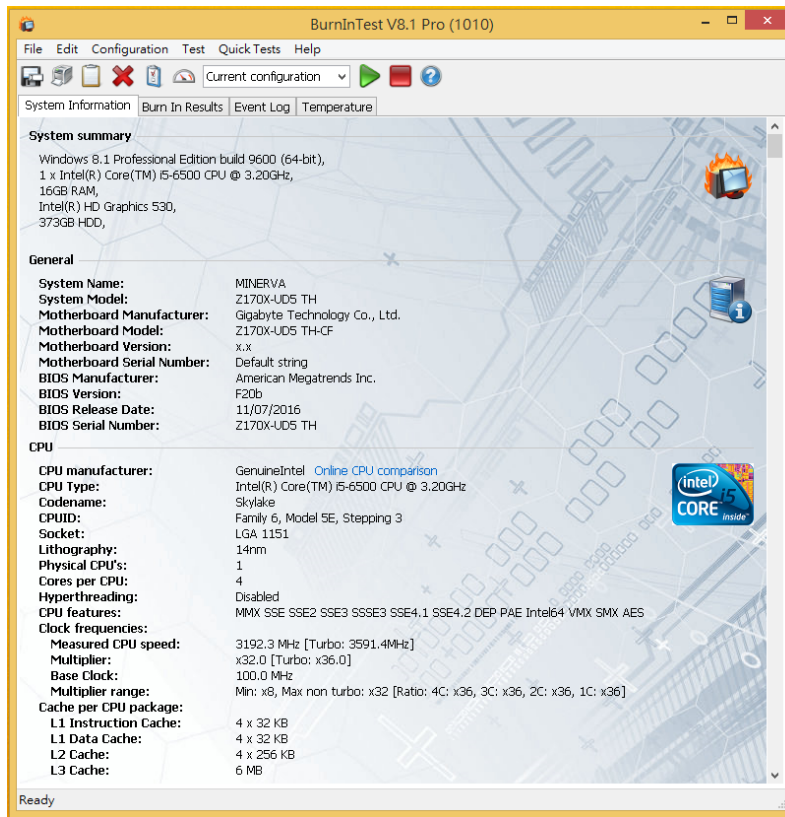


PU413A Converter Card

3. Burn In Tests and Results

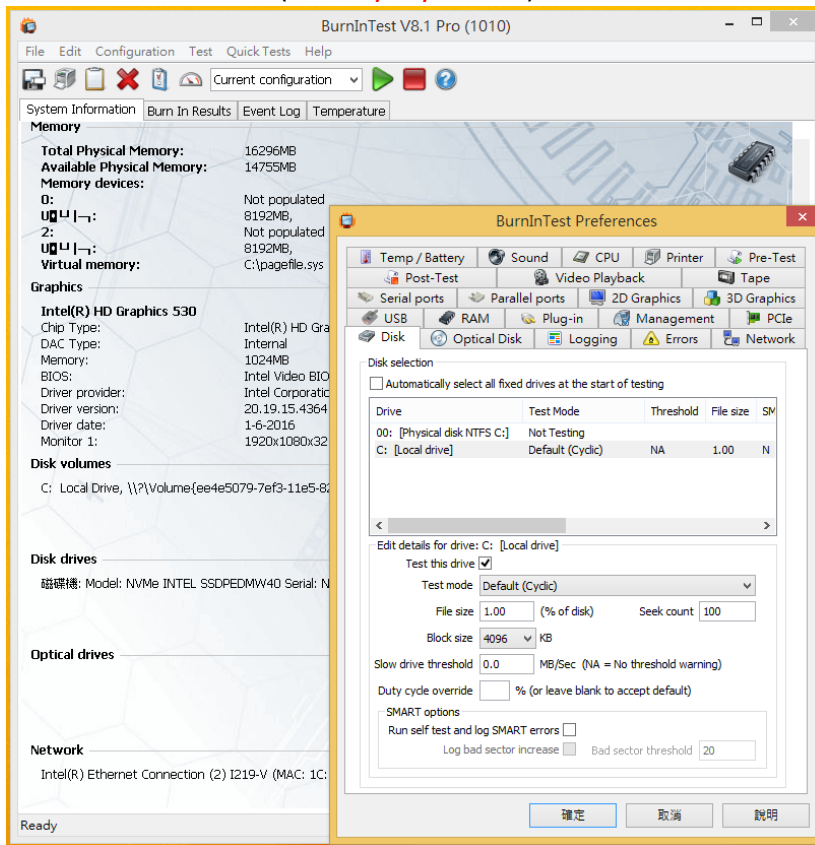
3.1 BurnInTest v8.1 Pro for INTEL 750 Add-in Card / 400GB

3.1.1 system information as below:

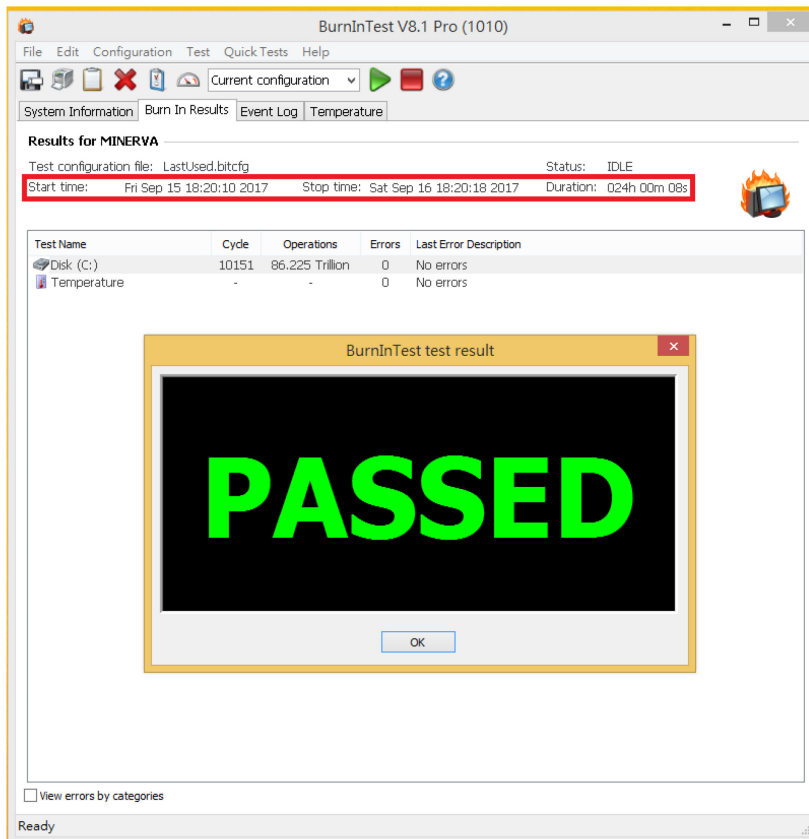


PU413A Converter Card

3.1.2 show SSD test mode(10 ways cycle test)



3.1.3 show 24-hour Burn-in test PASSED



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4. Summary

- 4.1 Intel PCI-e SSD is PCI-e Gen 3 / 4 Lanes Interface, I/O speed, max. to 32Gbps.
- 4.2 PU413A adapter I/O performance is based on Intel PCI-e 400GB SSD.