



MINERVA

PA429A 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 M.3 NF1 NVMe SSD

2.3 Install Hardware

2.4 BIOS & Windows 10 OS environment setup

2.5 CrystalDiskMark 6.02 x64 performance test

2.6 AS SSD Benchmark 2.06 performance test

2.7 ATTO Disk Benchamrk 3.05 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

PA429A Converter Card

1. Overview

The PA429A adapter, providing M.2 M-key connector can be M.2, M.3 NF1 SSD converted into MINI SAS HD(SFF-8643), PCI-e Gen 3 / 4 Lanes interface and uses heat sink strip to M.2 or M.3 SSD.

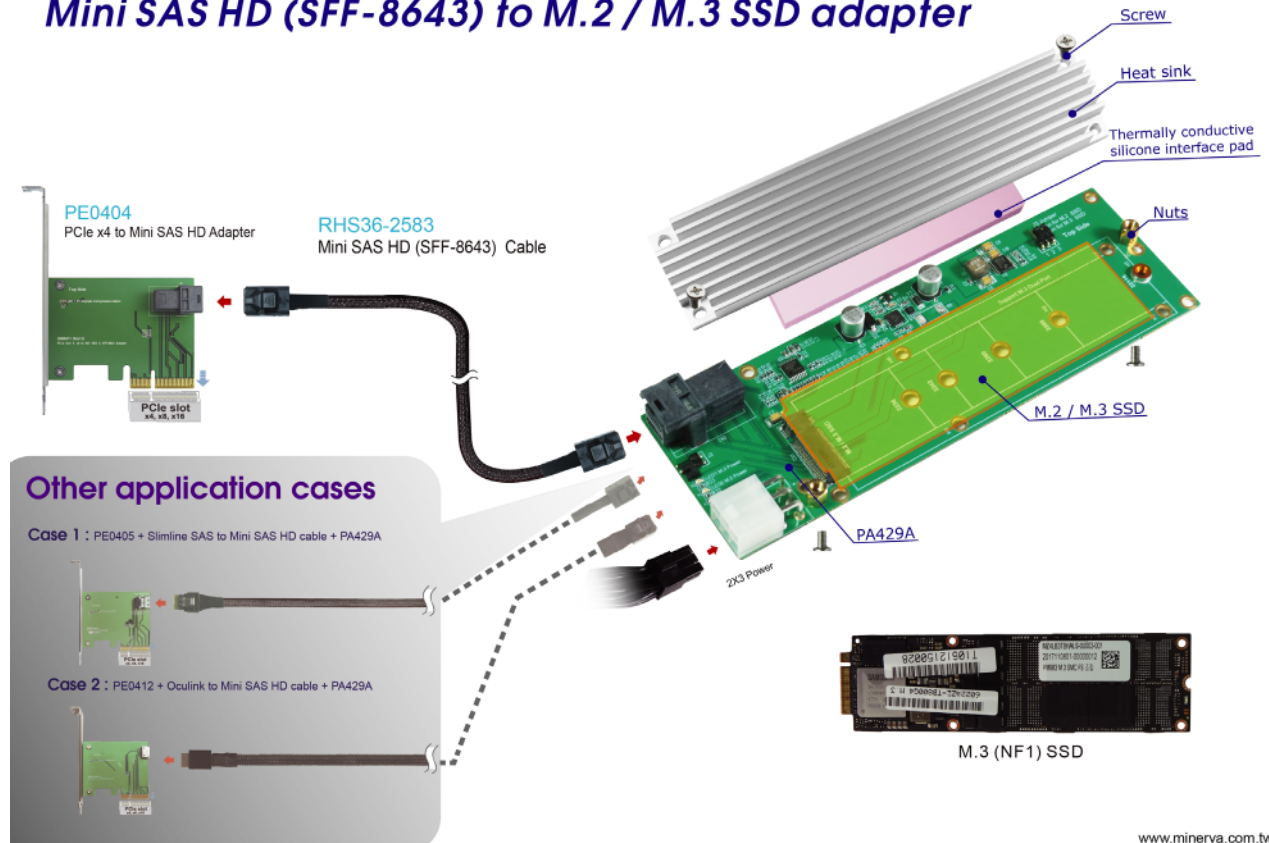
2. Tools and Results of Performance Measurement

2.1 Test Platform

M/B : GIGABYTE **X570 AORUS MASTER**
CPU : AMD **Ryzen 7, 3700X 8-Core**
Memory : Kingston **KVR26N19D8/16, DDR4-2666MHz, 32GB**(16GB DIMM*2)
ATX Power : COOLER MASTER G750M, **750W ATX**, 12V V2.2 Power Supply
Adapter: PCIe Gen3 x4 to SFF-8643 MINI SAS HD adapter
Cable: MINI SAS HD (SFF-8643) to MINI SAS HD (SFF-8643) Cable
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: PA429A adapter & M.3 NF1 Samsung MZ4LB3T8HALS-000 4TB NVMe SSD

Model No. : **PA429A**
Mini SAS HD (SFF-8643) to M.2 / M.3 SSD adapter



PA429A Converter Card

2.3 Install Hardware

Insert M.3 NF1 SSD into PA429A converter's M.2 M-key connector, and then with coppers, and screws to fix SSDs. Connects PA429A converter to PE0404 adapter through MINI SAS HD High Speed cable, and then Plug PE0404 into GIGABYTE **X570 AORUS MASTER**.

2.4 BIOS & Windows 10 OS environment setup

2.4.1 M.3 NF1 NVMe SSD, formatted to NTFS Mode. Don't install any program.

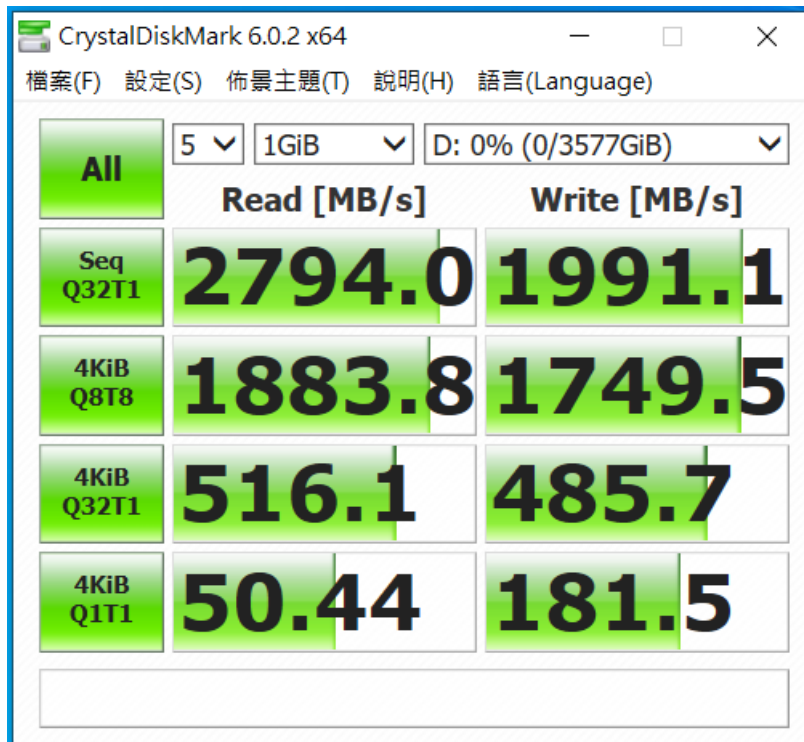


PA429A Converter Card

2.5 CrystalDiskMark 6.02x64 performance test

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

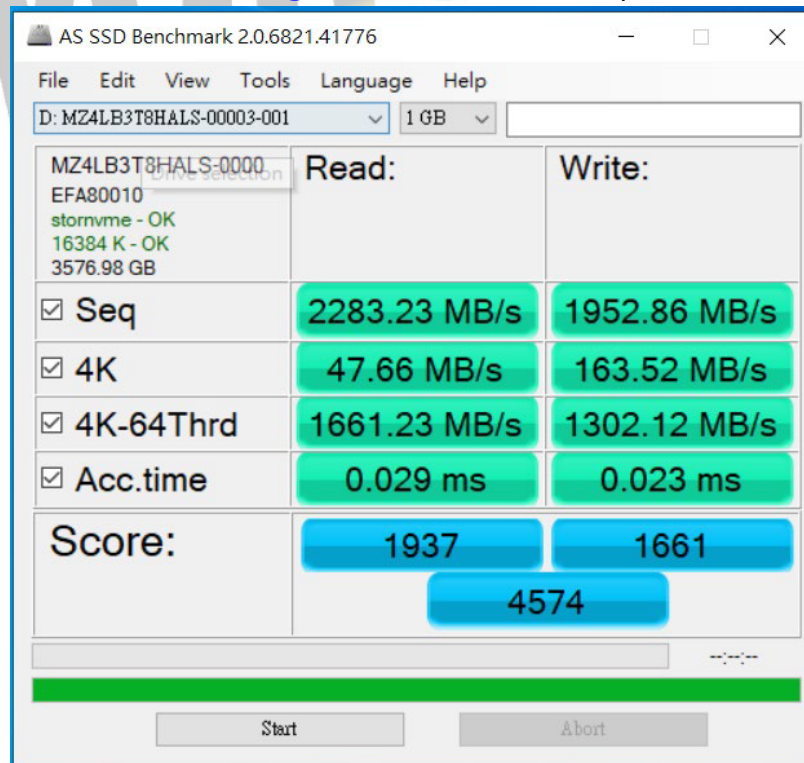
2.5.1 **M.3 NF1 NVMe Samsung PM983/4TB** in Drive D: performance as below:



2.6 AS SSD Benchmark 2.06 performance test

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

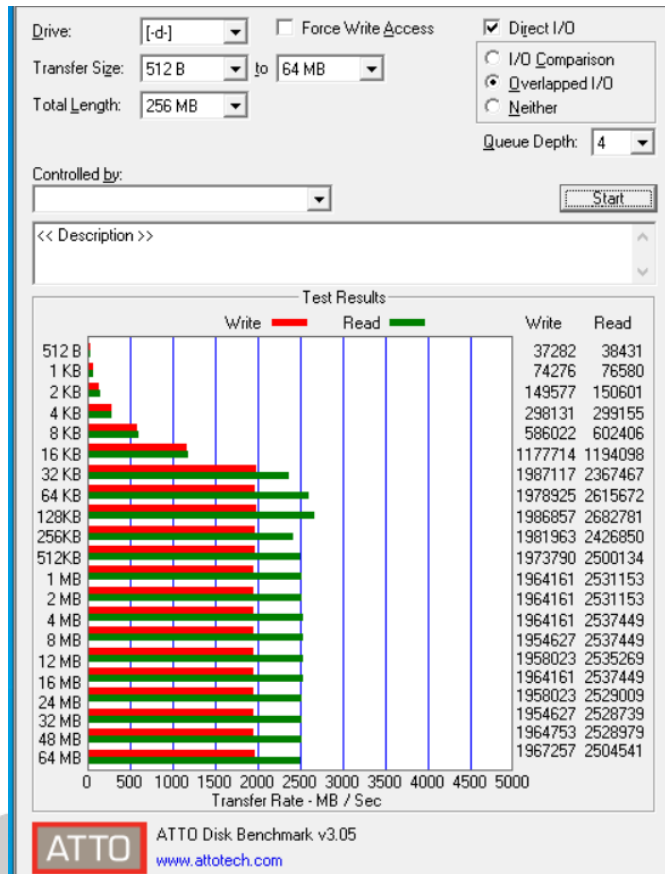
2.6.1 **M.3 NF1 NVMe Samsung PM983/4TB** in Drive D: performance as below:



PA429A Converter Card

2.7 ATTO Disk Benchmark 3.05 performance test

2.7.1 **M.3 NF1 NVMe Samsung PM983/4TB** in Drive D: performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 **M.3 NF1 NVMe Samsung PM983/4TB** in Drive D: performance as below:

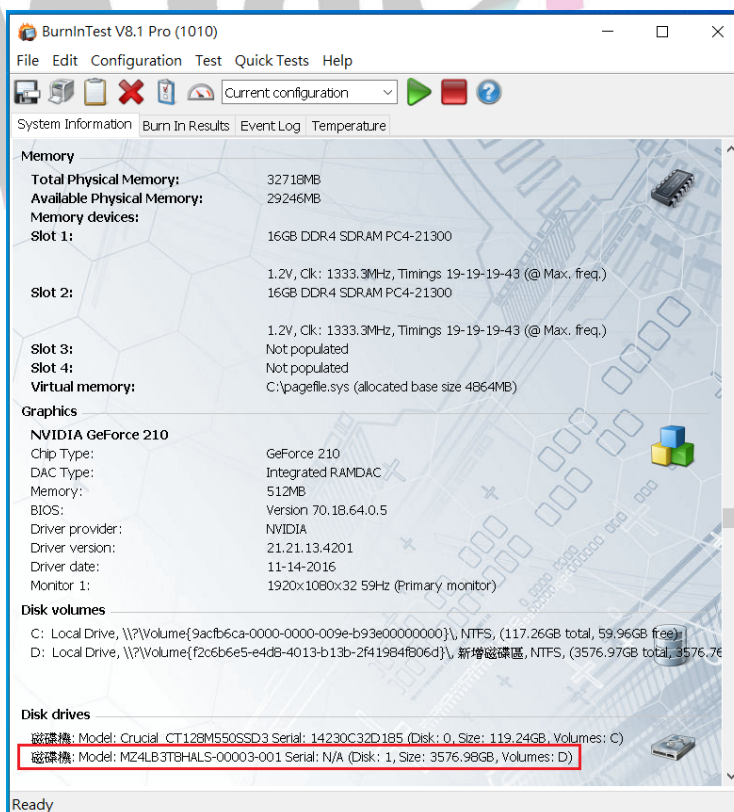


PA429A Converter Card

3. Burn In Tests and Results

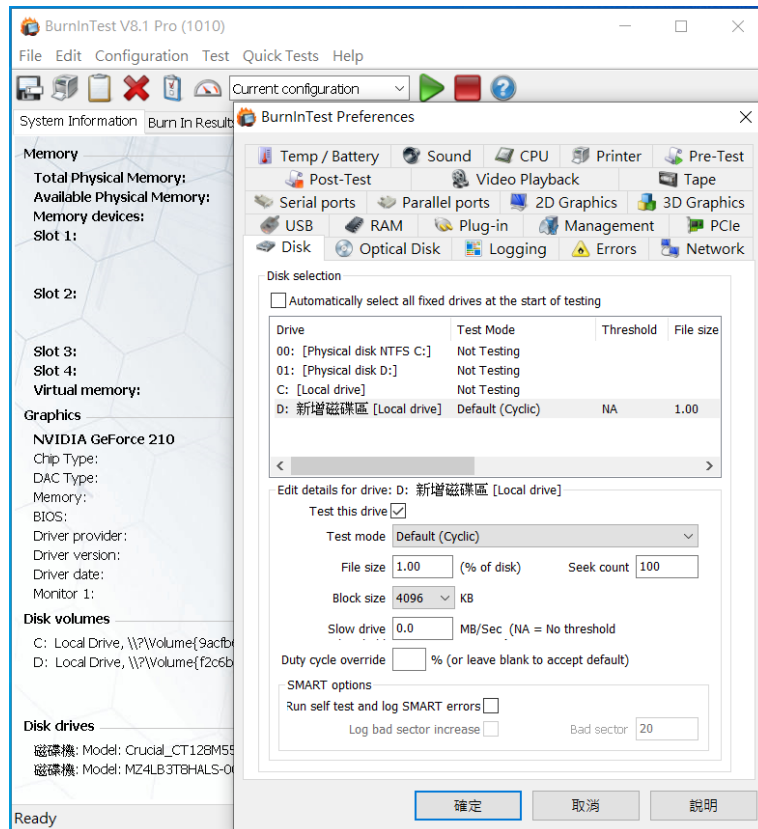
3.1 BurnInTest v8.1 Pro for **M.3 NF1 NVMe Samsung PM983/4TB**

3.1.1 system information as below:

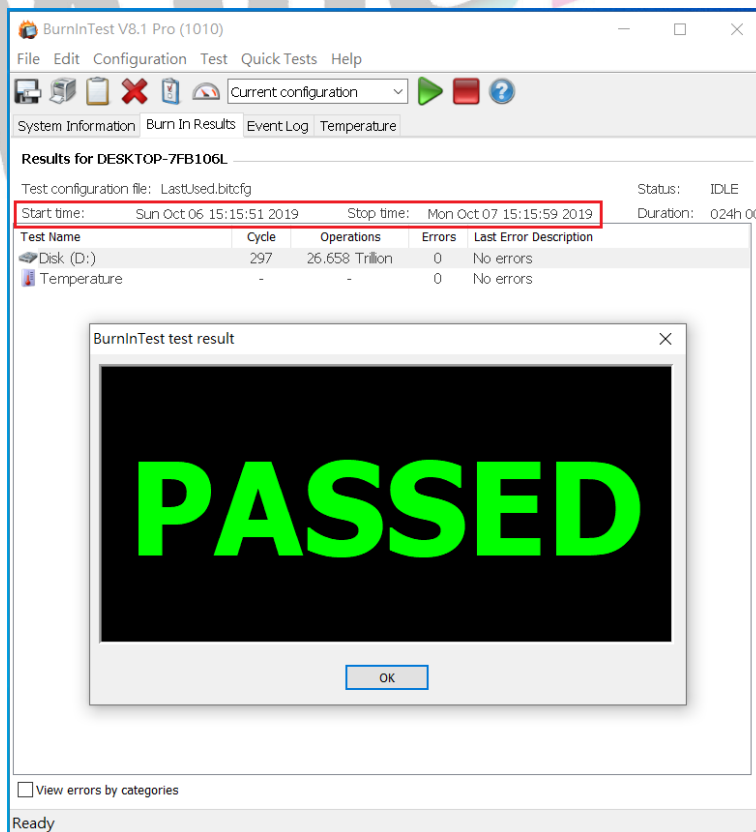


PA429A Converter Card

3.1.2 Disk test mode (10 ways cycle test)



3.1.3 24-hour Burn-in test PASSED



PA429A Converter Card

4. Summary

- 4.1 M.3 NF1 SSD is PCI-e Gen 3 / 4 Lanes Interface, I/O speed, max. to 32Gbps.
- 4.2 PA429A adapter I/O performance is based on M.3 NVMe PCI-e Gen 3 / 4 Lanes SSD.

