# MINERVA

PD893A OCulink(SFF-8612 8i) to M.2/M.3 Dual ports converter

## Performance & Burn In Test Rev 1.0

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## 1. Overview

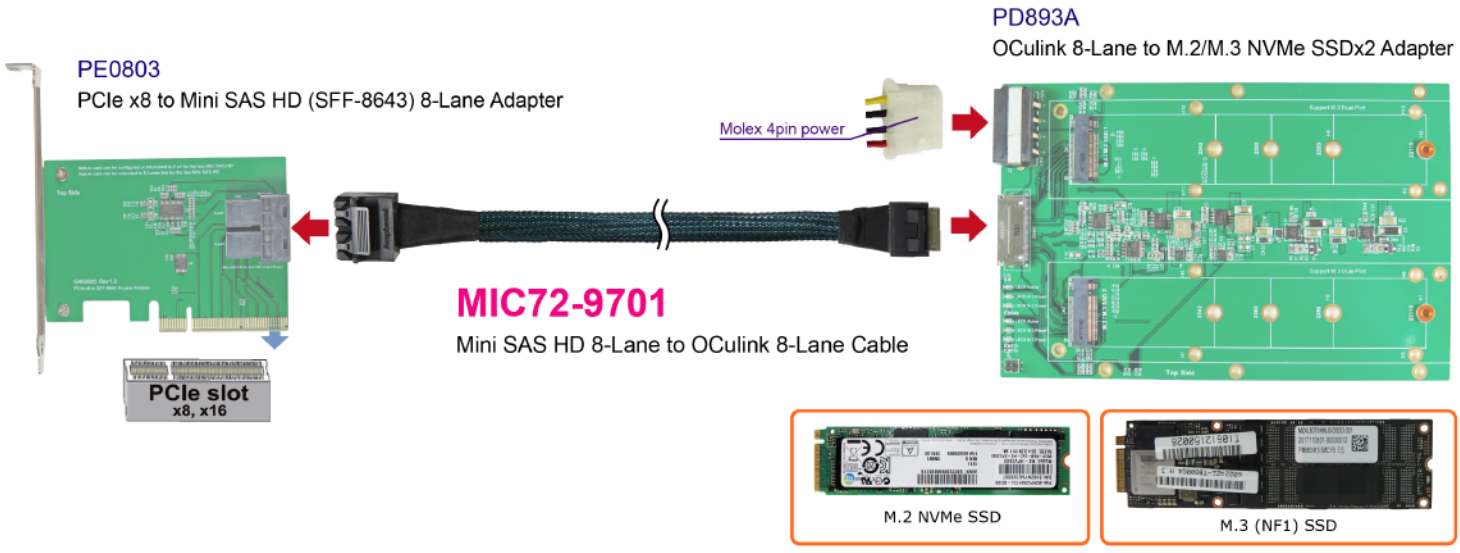
This adapter has built-in OCulink(SFF-8612) 8i connector and M.2 M-key connector dual ports, which can be inserted into M.2 or M.3 NVMe SSD. It is designed for use by supporting PCIe Gen 3 x8, x16 bifurcation AIC and SFF-9402 pinout PCIe Switch RAID Card.

## 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 |
| Add in Card: | PE0803 PCIe x8 to Mini SAS HD 8x Adapter |
| Cable: | SFF-8643(Mini SAS HD 8x) to SFF-8611(OCulink 8i) Cable |
| Adapter: | PD893A SFF-8612 8i to M.2/M.3 Adapter dual ports |
| OS : | Microsoft **Windows 10 64bit OS** |

### 2.2 Test target: PD893A adapter and M.3 NF1 4TB & M.2 512GB NVMe SSD



## 2.3 Install Hardware

First inserts the M.3 and M.2 SSD into the PD893A riser card M.2 connector, then with copper nuts, and screws to fix SSDs. (Please refer to the Installation Notes). To connect the PD893A adapter to the PCIe to SFF-8643 8x AIC card using the **MIC72-9701 Cable**, and Plugs PE0803 AIC into GIGABYTE **X570 AORUS MASTER**.

## 2.4 BIOS & Windows 10 OS environment setup

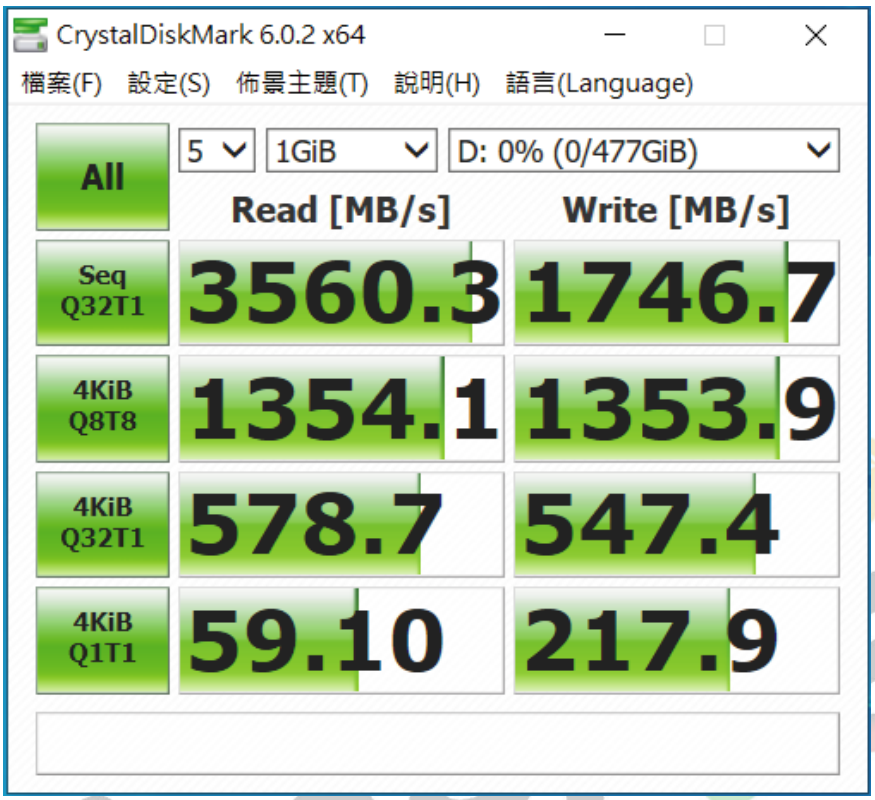
2.4.1 Primary NVMe SSD install Windows 10 OS.

2.4.2 M.3 and M.2 NVMe SSD , formatted to NTFS Mode. Don’t install any program.

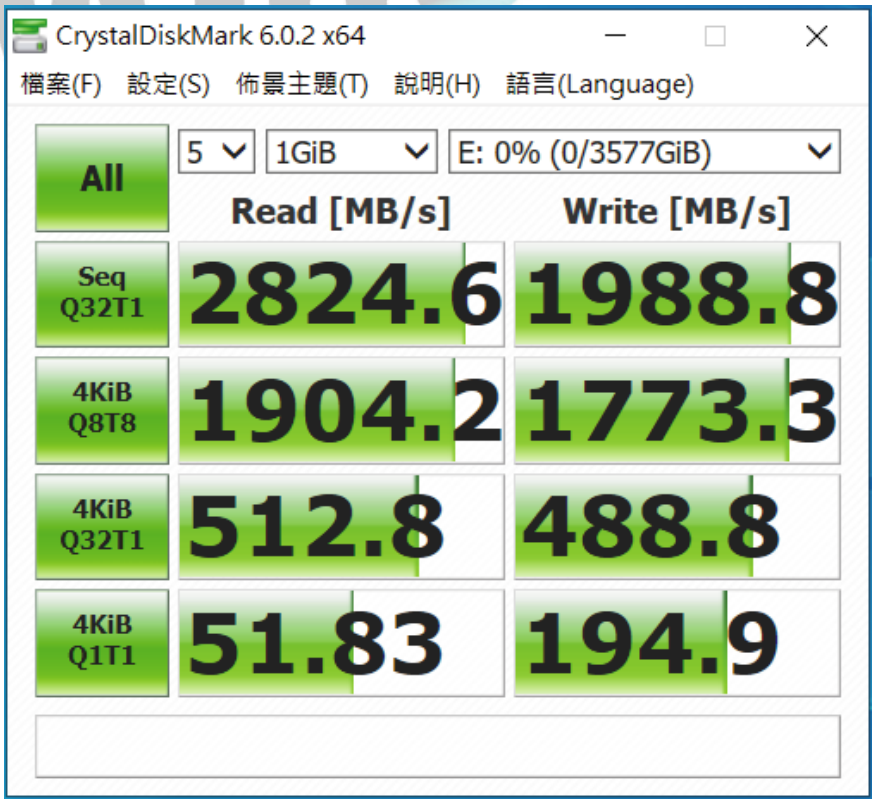
2.5 CrystalDiskMark 6.0.2 x64 performance test

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

2.5.1 **M.2 NVMe Samsung PM961 / 512GB** in **Drive D:** performance as below:



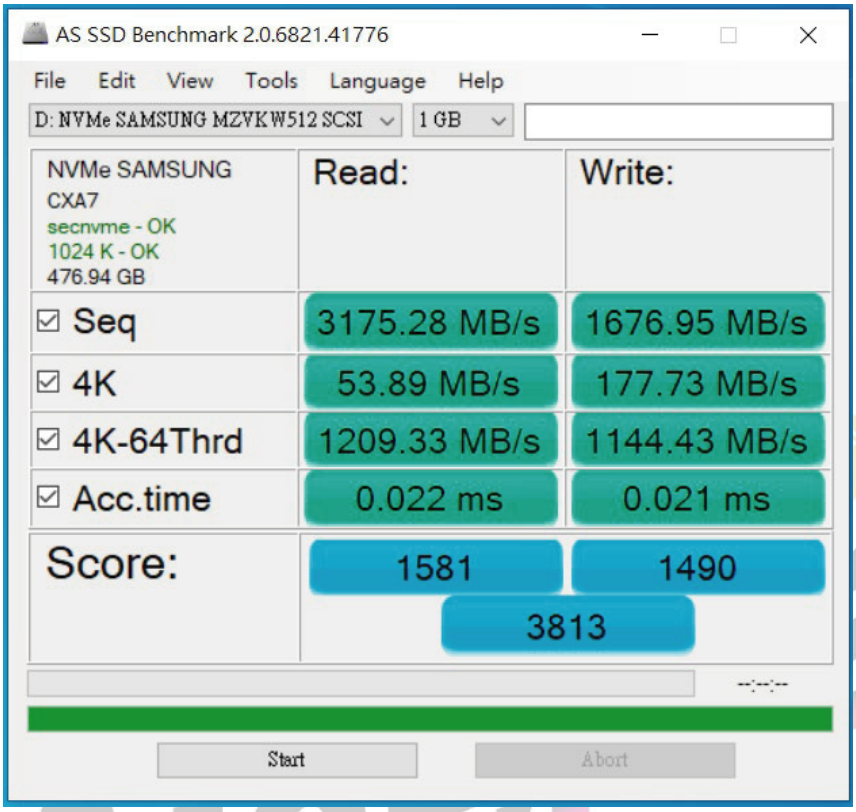

2.5.2 **M.3 NF1 NVMe Samsung PM983/4TB** in **Drive E:** performance as below:



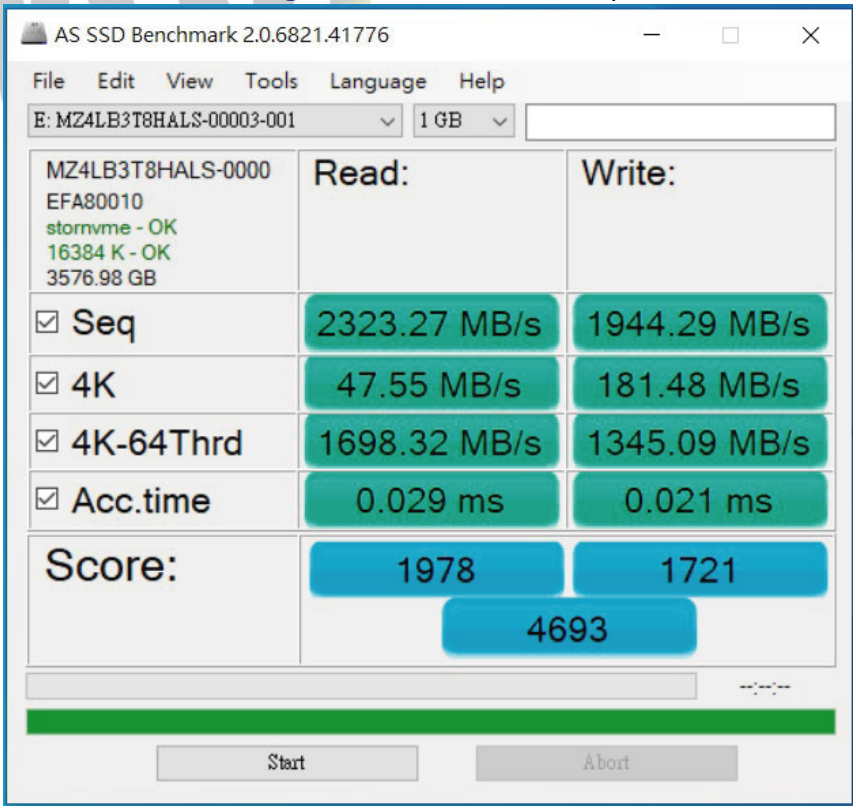
## 2.6 AS SSD Benchmark 1.9 performance test

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

### 2.6.1 M.2 NVMe Samsung PM961 / 512GB in **Drive D:** performance as below:

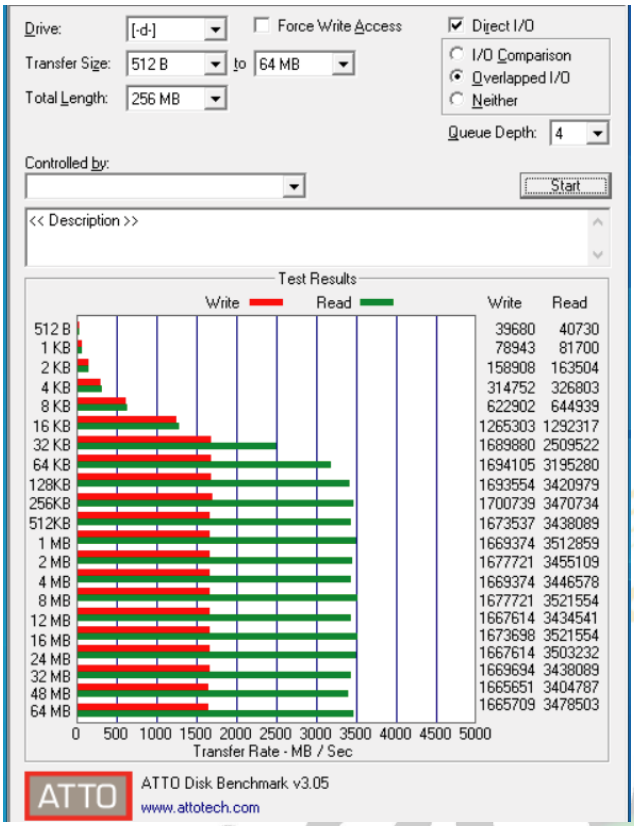



### 2.6.2 M.3 NF1 NVMe Samsung PM983/4TB in **Drive E:** performance as below:

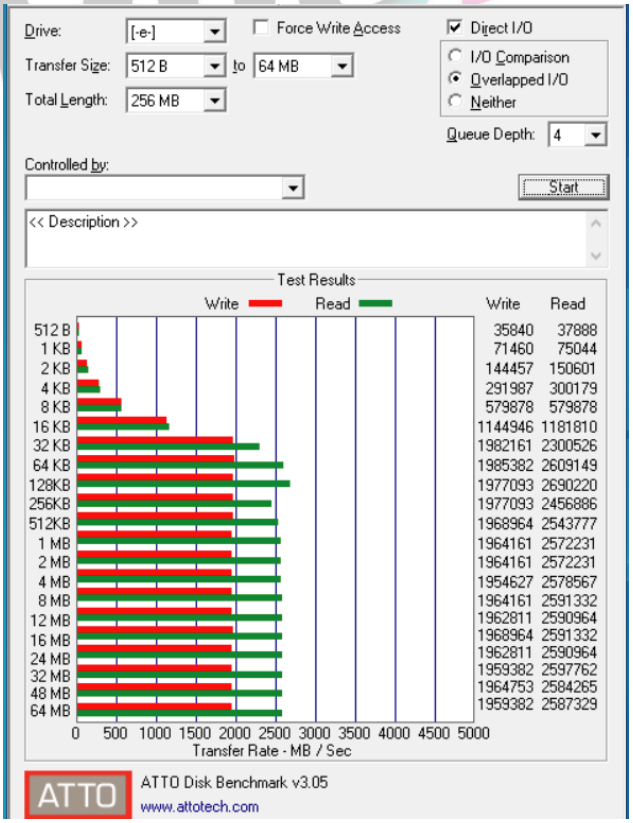


2.7 ATTO Disk Benchamrk 3.05 performance test

2.7.1 **M.2 NVMe Samsung PM961 / 512GB in Drive D:** performance as below:



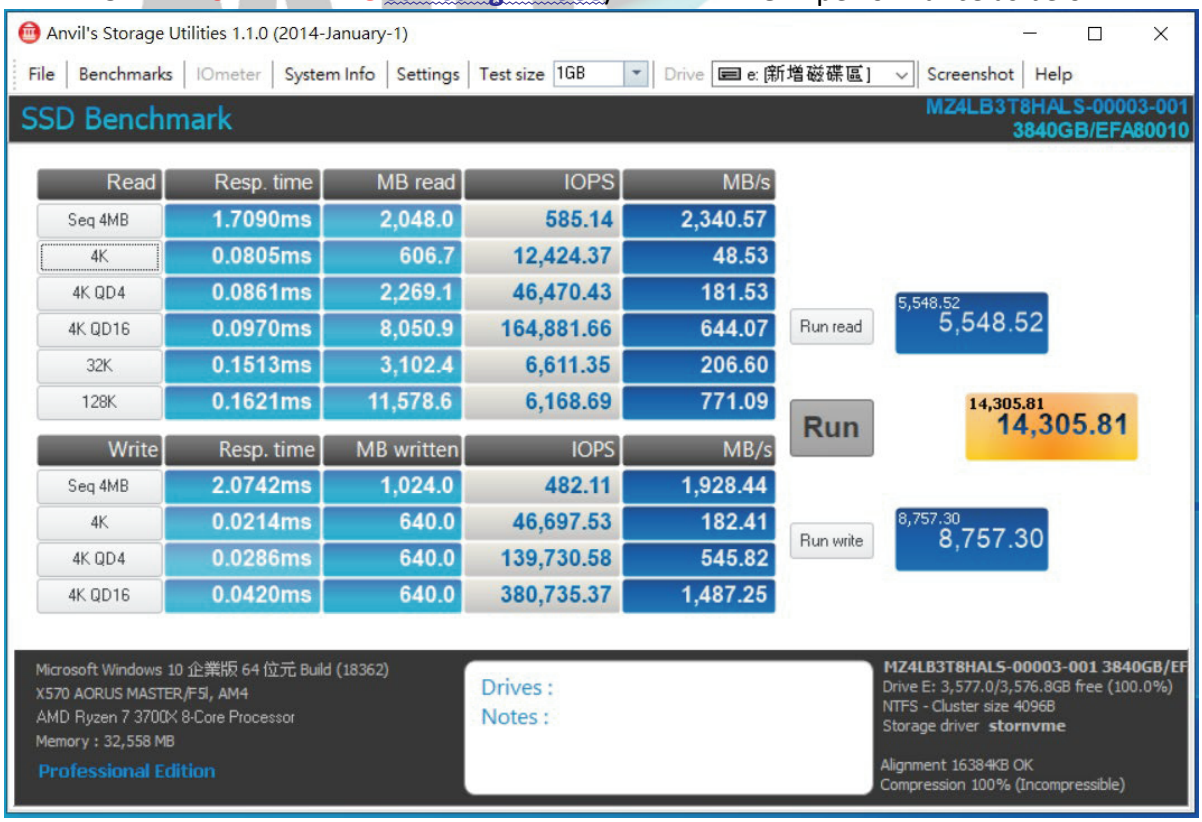

2.7.2 **M.3 NF1 NVMe Samsung PM983/4TB in Drive E:** performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 **M.2 NVMe Samsung PM961 / 512GB in Drive D:** performance as below:

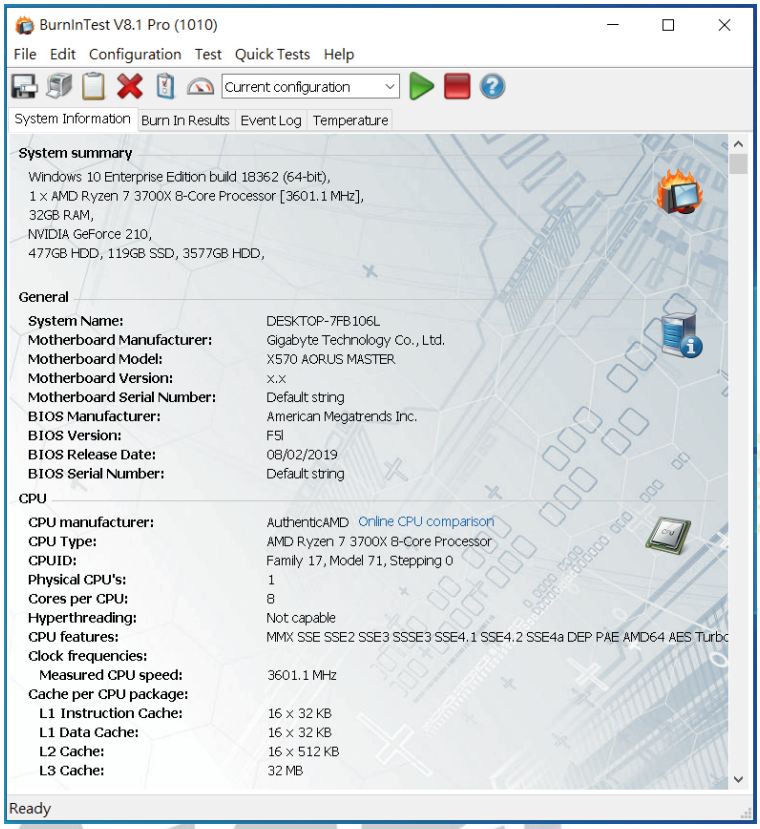

2.8.2 **M.3 NF1 NVMe Samsung PM983/4TB in Drive E:** performance as below:



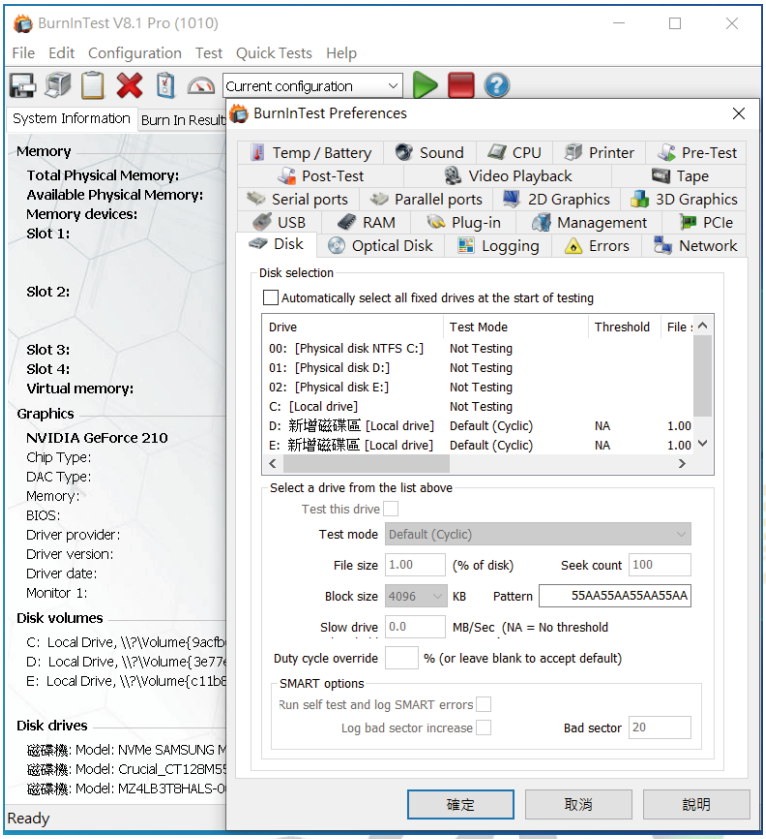
# 3. Burn In Tests and Results

## 3.1 BurnInTest v8.1 Pro

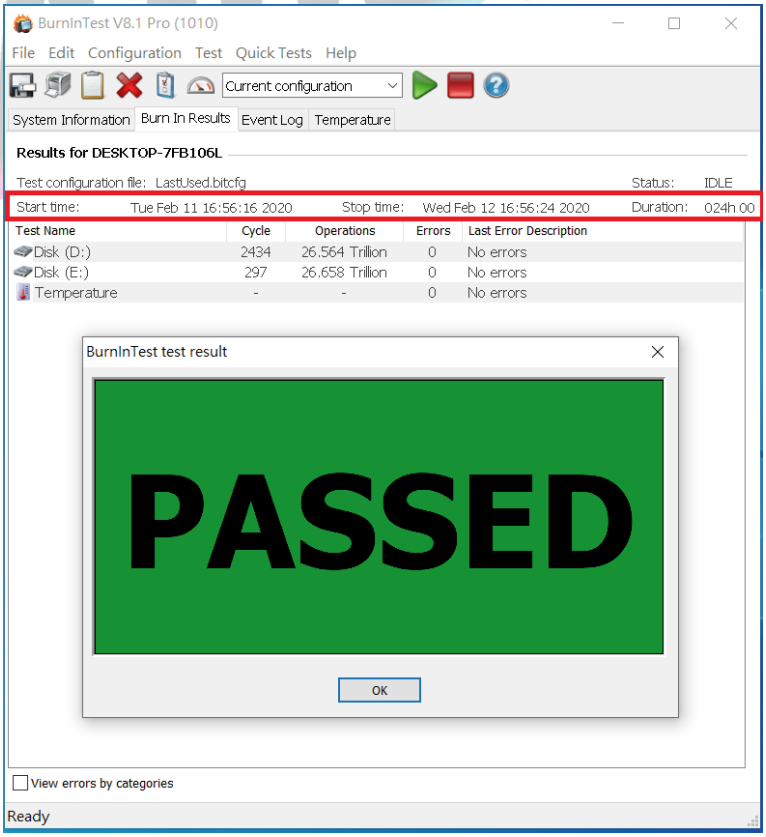
### 3.1.1 system information as below:




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




### 3.1.3 24-hour Burn-in test PASSED



## 4. Summary

4.1 M.3 and M.2 NVMe SSD is PCI-e Gen 3 / 4 Lane Interface, I/O speed, max. to 32Gbps.

4.2 PD893A adapter I/O performance is based on NVMe SSD.