



# MINERVA

## EP8102 PCIe x8 Gen 5 with ReDriver to MCIO 38P Dual port

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### Performance & Burn In Test Rev 1.0

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# EP8102 Add-in Card

## 1. Overview

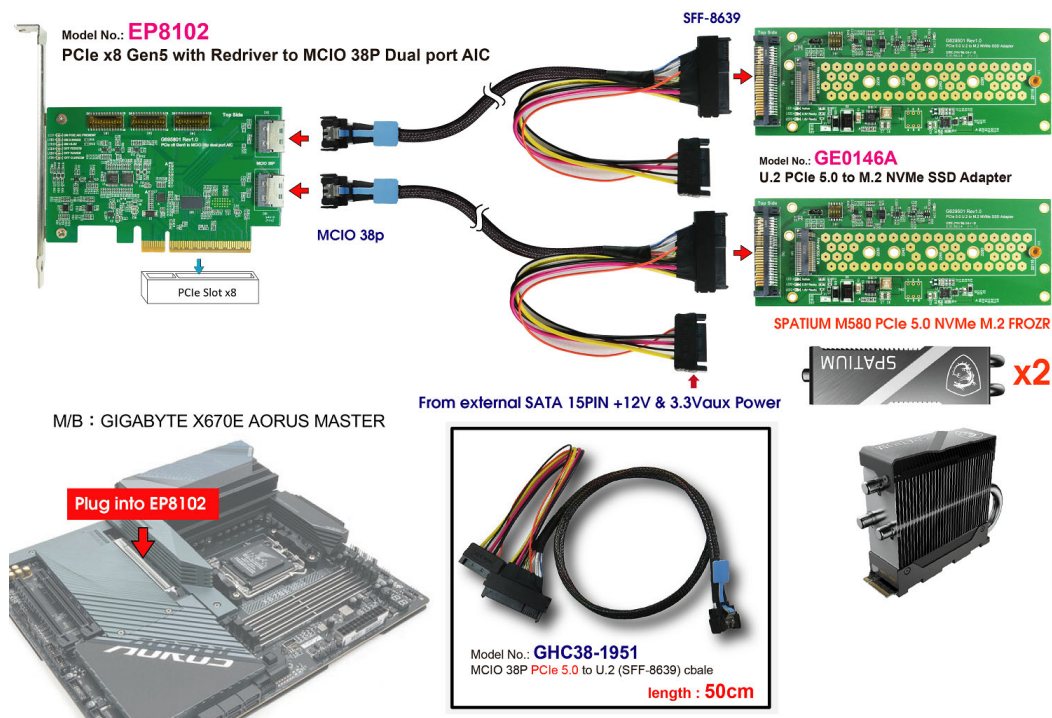
This Add-on Card is built-in MCIO 38P(SFF-TA-1016) dual port connector. It is designed for be used by PCIe x8 link width to configure two x4 bifurcations which could be extended PCIe 5.0 signals. The ReDriver on board may support CTLE to boost up to **22 dB at 16 GHz**.

## 2. Tools and Results of Performance Measurement

### 2.1 Test Platform:

M/B : GIGABYTE **X670E AORUS MASTER**  
CPU : AMD **Ryzen 5, 7600X 6-Core**  
Memory : Kingston **KF556C36BBEK2, DDR5-5600MT/s, 64GB**(32GB DIMM\*2)  
ATX Power : Apexgaming AN-550, **550W ATX**, 12V V2.2 Power Supply  
AIC: EP8102 PCIe x8 Gen 5 with Redriver to MCIO 38P dual port ADD-in Card  
Cable: PCIe 5.0 MCIO 38P to U.2(SFF-8639), **50cm** Cable  
Adapter: GE0146A U.2 PCIe 5.0 to M.2 adapter  
OS : Microsoft **Windows 11 64bit OS**

### 2.2 Test target: EP8102 AIC & MSI M580 **2TB** PCIe 5.0 M.2 NVMe SSD



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### 2.3 Install Hardware

First inserts the M.2 SSD into the GE0146A adapter, and then connects the GHC38-1951, 50cm cable, one side to GE0146A adapter, another side to EP8102 AIC card MCIO 38P. The EP8102 AIC card (PCIe x8 Gen 5 to MCIO 38Px2) plugs into PCIe x16 Slot of GIGABYTE **X670E AORUS MASTER**.

### 2.4 BIOS & Windows 10 OS environment setup

- 2.4.1 Primary SATA NVMe SSD install Windows 10 OS.
- 2.4.2 M.2 NVMe SSD, formatted to NTFS Mode. Don't install any program.

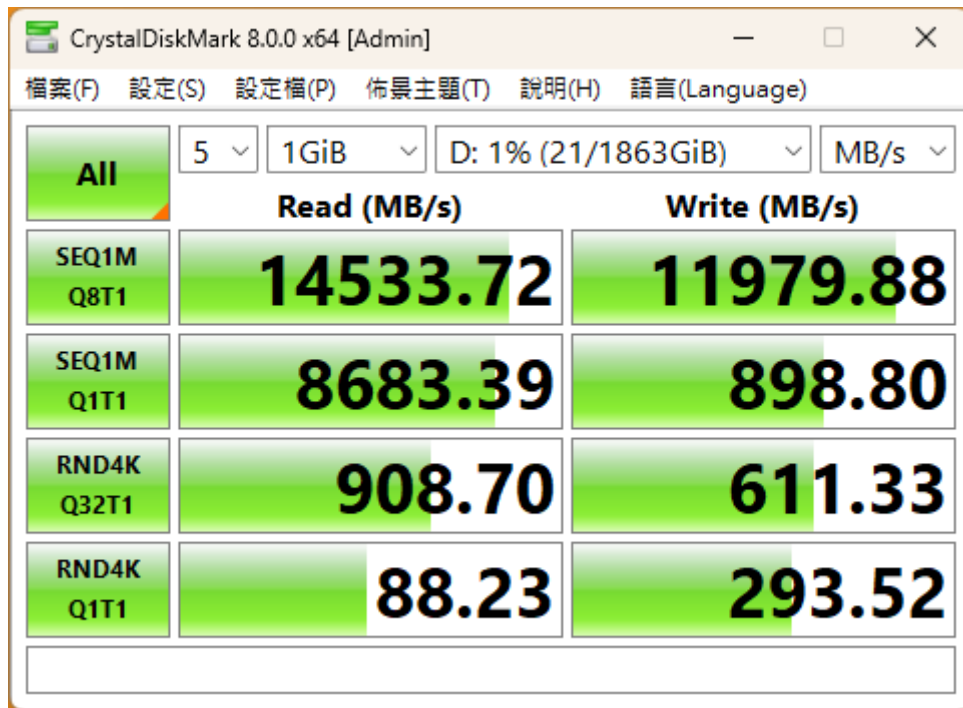


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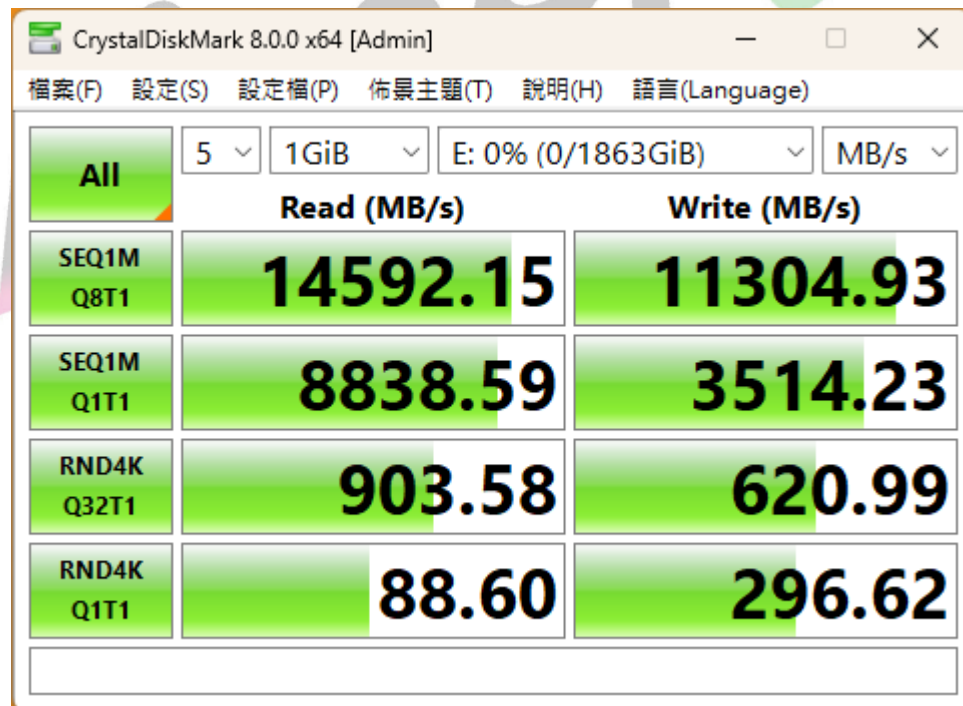
## 2.5 CrystalDiskMark 8.0.0 x64 performance test

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

2.5.1 MSI M580 **2TB** PCIe 5.0 M.2 SSD performance with 50cm cable as below:



2.5.2 MSI M580 **2TB** PCIe 5.0 M.2 SSD performance with 50cm cable as below:

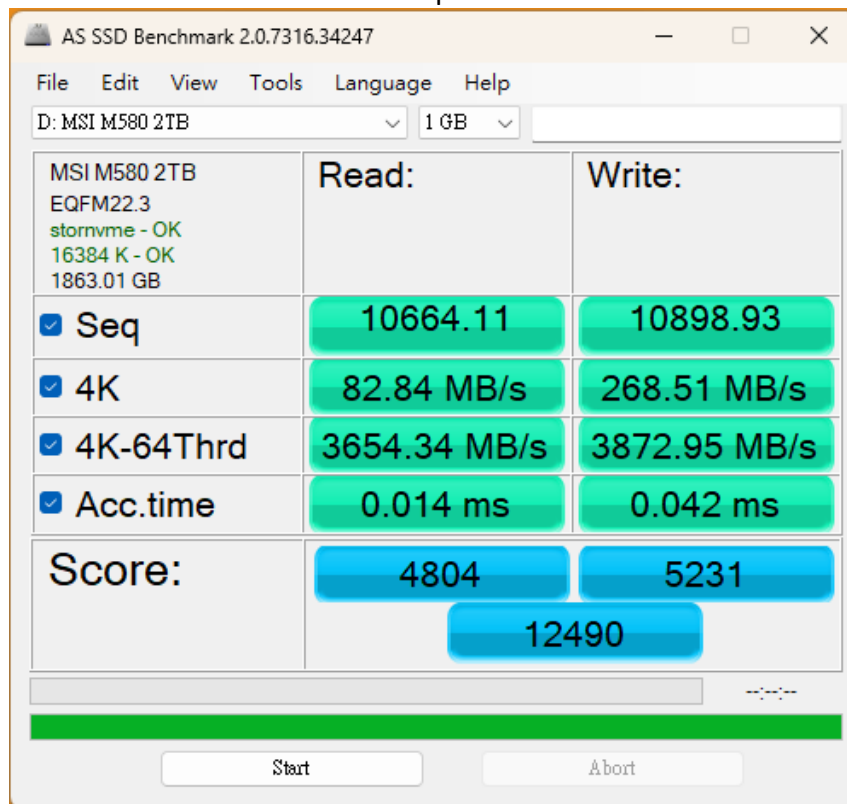


## EP8102 Add-in Card

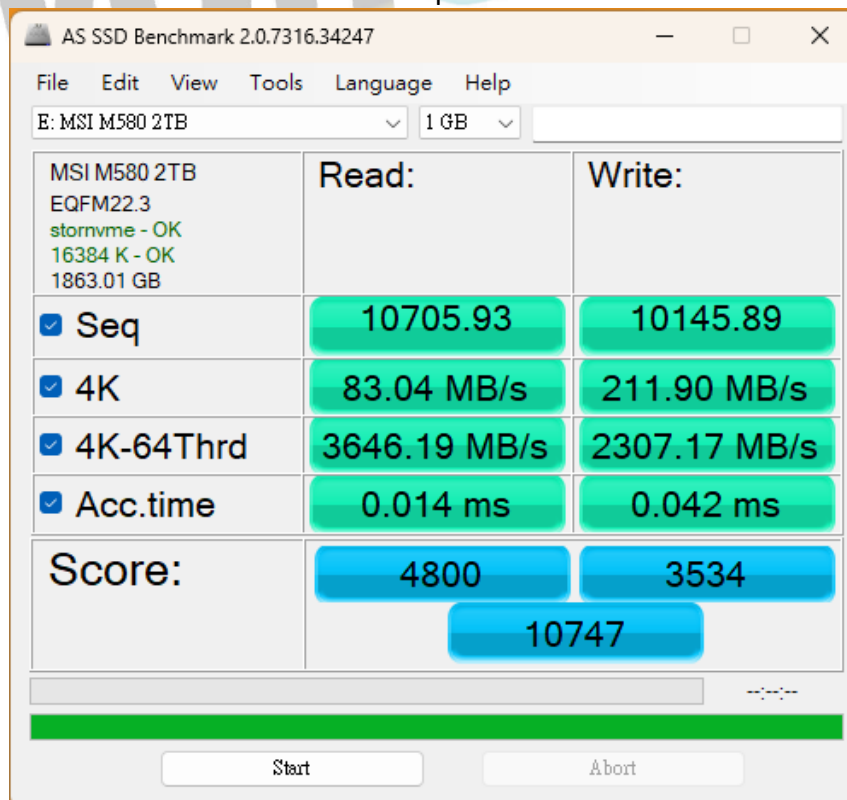
### 2.6 AS SSD Benchmark 2.0 performance test

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

2.6.1 MSI M580 2TB PCIe 5.0 M.2 SSD performance with 50cm cable as below:



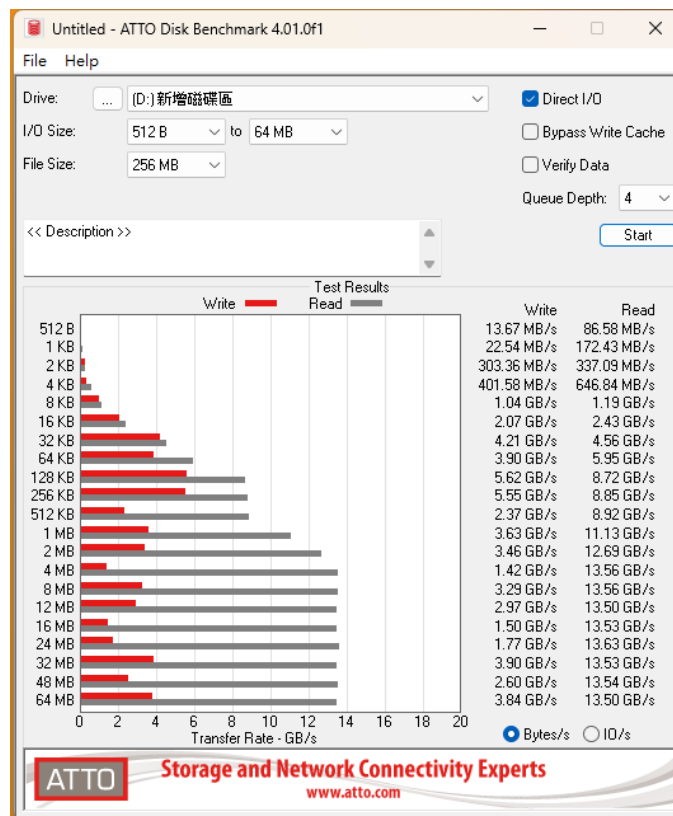
2.6.2 MSI M580 2TB PCIe 5.0 M.2 SSD performance with 50cm cable as below:



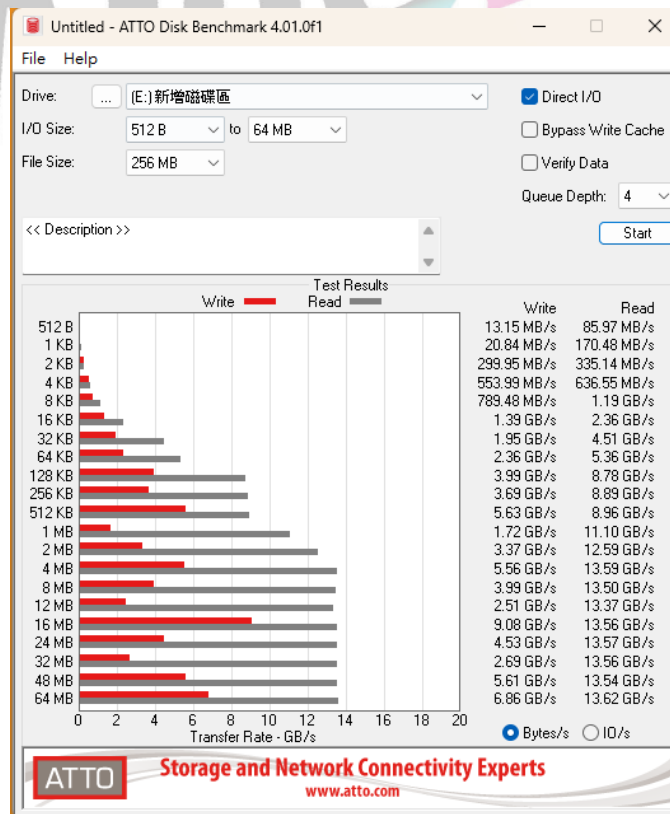
# EP8102 Add-in Card

## 2.7 ATTO Disk Benchmark 4.01 performance test

2.7.1 MSI M580 2TB PCIe 5.0 M.2 SSD performance with 50cm cable as below:



2.7.2 MSI M580 2TB PCIe 5.0 M.2 SSD performance with 50cm cable as below:



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## 2.8 AnvilBenchmark\_V110\_B337

### 2.8.1 MSI M580 2TB PCIe 5.0 M.2 SSD performance with 50cm cable as below:



### 2.8.2 MSI M580 2TB PCIe 5.0 M.2 SSD performance with 50cm cable as below:

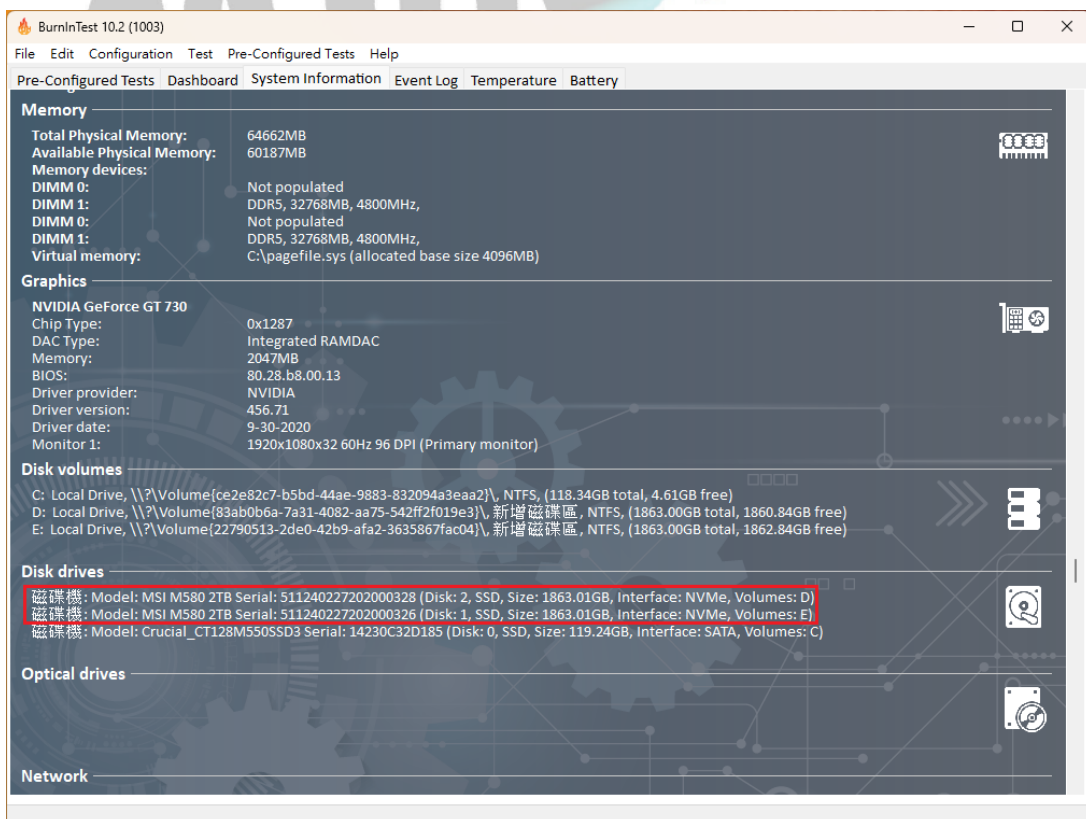
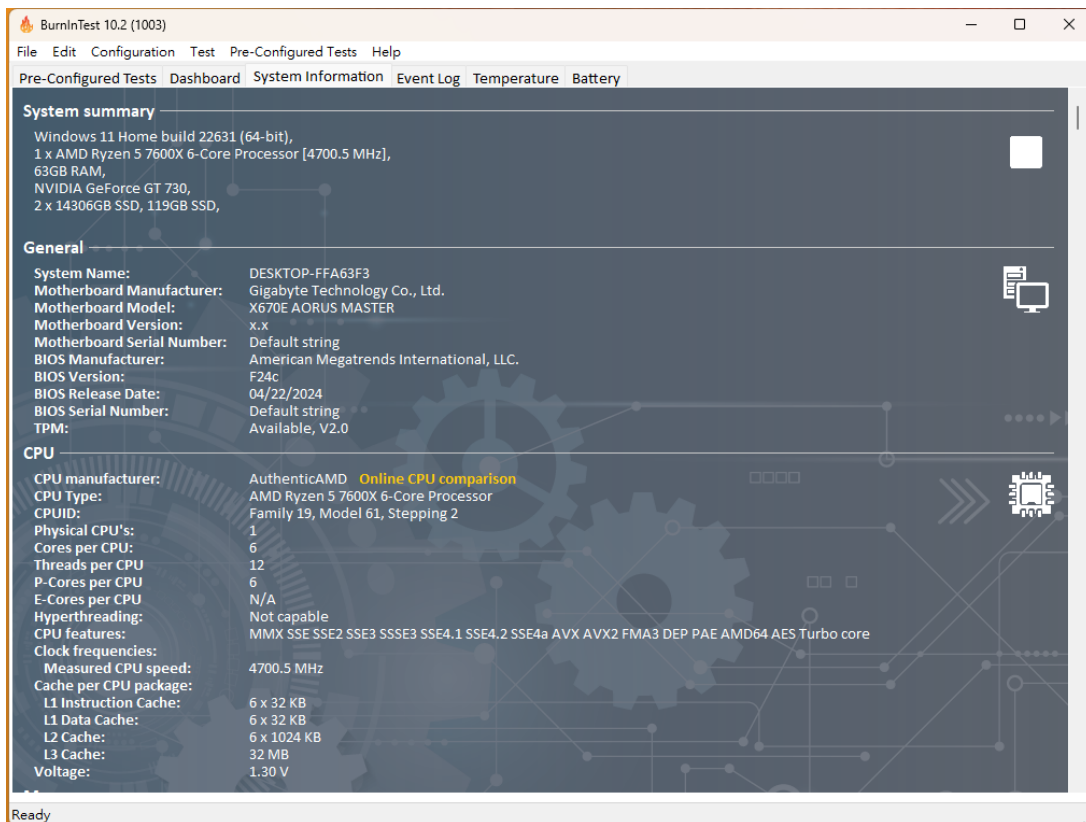


# EP8102 Add-in Card

## 3. Burn In Tests and Results

### 3.1 BurnInTest v8.1 Pro

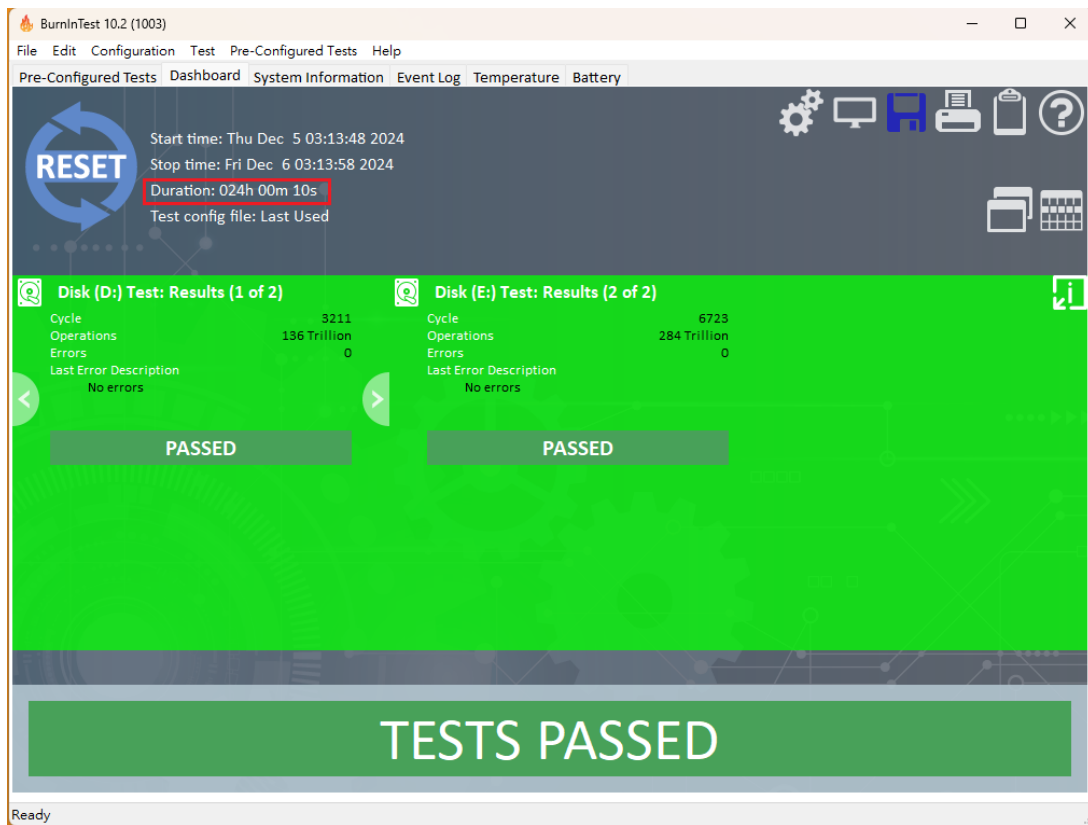
#### 3.1.1 system information as below:





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## 3.1.2 24-hour Burn-in test PASSED



## 4. Summary

- 4.1 EP8102 AIC is PCIe x8 Gen 5 with M.2 38P dual port
- 4.2 GE0146A is U.2 PCIe 5.0 to M.2
- 4.3 M.2 NVMe SSD is PCIe 5.0 / 4 Lane Interface, I/O speed, max. to 128Gbps.
- 4.3 EP8102 AIC I/O performance is based on U.2 NVMe SSD.