



MINERVA

GE0146A U.2 PCIe 5.0 for M.2 NVMe SSD Adapter

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.2 NVMe SSD
 - 2.3 Install Hardware
 - 2.4 BIOS & Windows 10 OS environment setup
 - 2.5 CrystalDiskMark 8.0 x64 performance test
 - 2.6 AS SSD Benchmark 2.0.7 performance test
 - 2.7 ATTO Disk Benchamrk 4.0.1 performance test
 - 2.8 AnvilBenchmark_V110_B337 Benchmark performance test
3. Burn In Tests and Results
 - 3.1 BurnInTest v10.2 Pro burn in test
4. Summary

GE0146A Converter Card

1. Overview

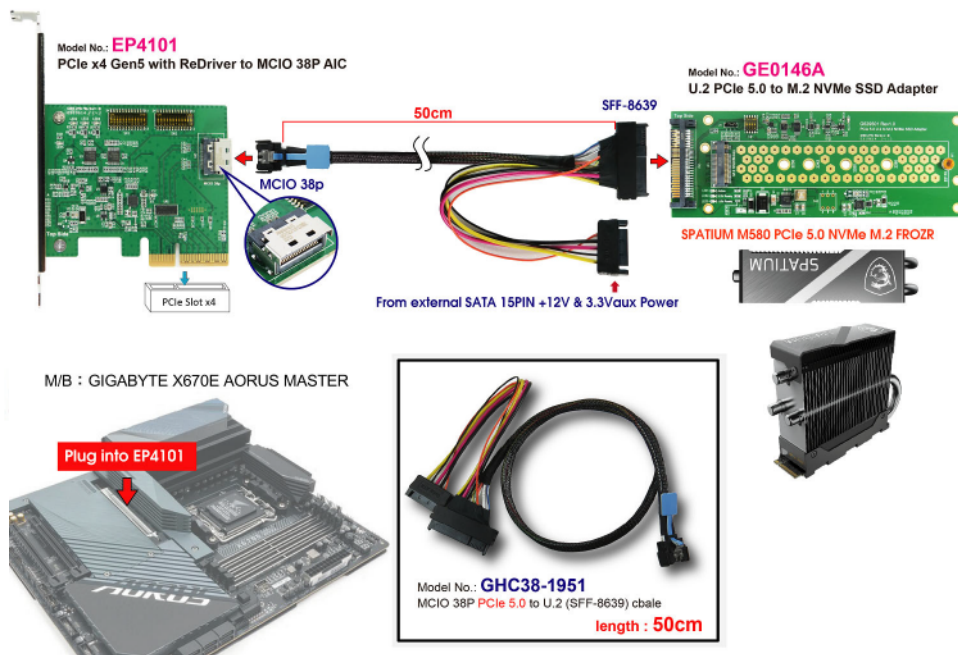
GE0146A Adapter, providing M.2 M-key connector can be M.2 NVMe SSD converted into U.2 PCIe 5.0, 32GT/s 4-Lane interface.

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: EP4101 PCIe x4 Gen 5 with Redriver to MCIO 38P ADD-in Card
Cable: MCIO 38P to U.2(SFF-8639) PCIe 5.0, **50cm** Cable
OS : Microsoft **Windows 11 64bit OS**

2.2 Test target: GE0146A Adapter & MSI SPATIUM M580 FROZR **2TB** PCIe 5.0 NVMe M.2 SSD



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2.3 Install Hardware

Inserts M.2 NVMe SSD into GE0146A adapter converter's M.2 M-key connector, and then with coppers, and screws to fix SSDs. (Please refer to the Installation Notes). Connects GE0146A converter to EP4101 adapter(PCIe x5 Gen 5 with Redriver to MCIO 38P ADD-in Card), Using MCIO 38P to U.2(SFF-8639) cable and plugs EP4101 into GIGABYTE **X670E AORUS MASTER**

2.4 BIOS & Windows 10 OS environment setup

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

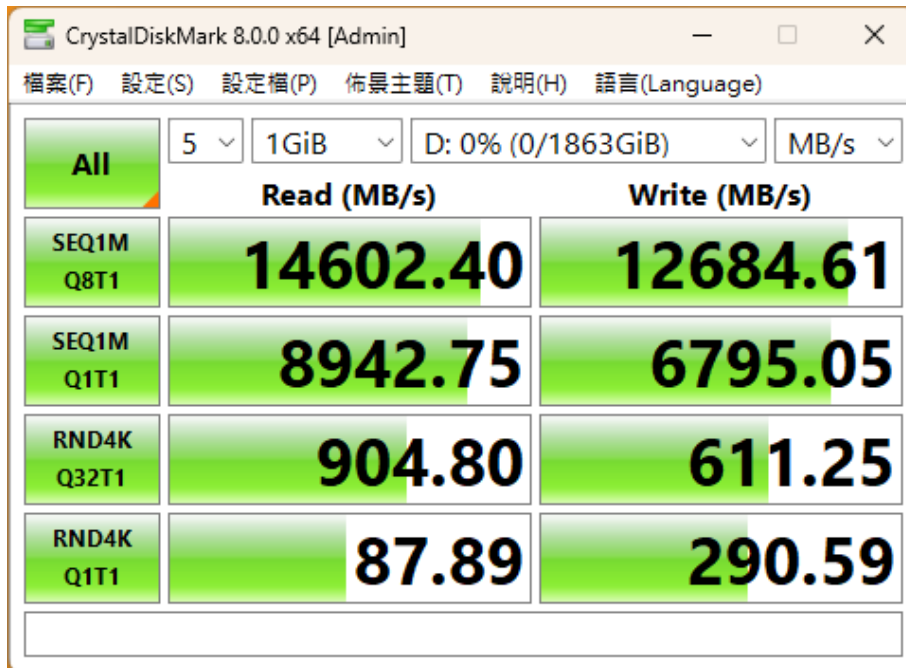


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2.5 CrystalDiskMark 8.0 x64 performance test

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

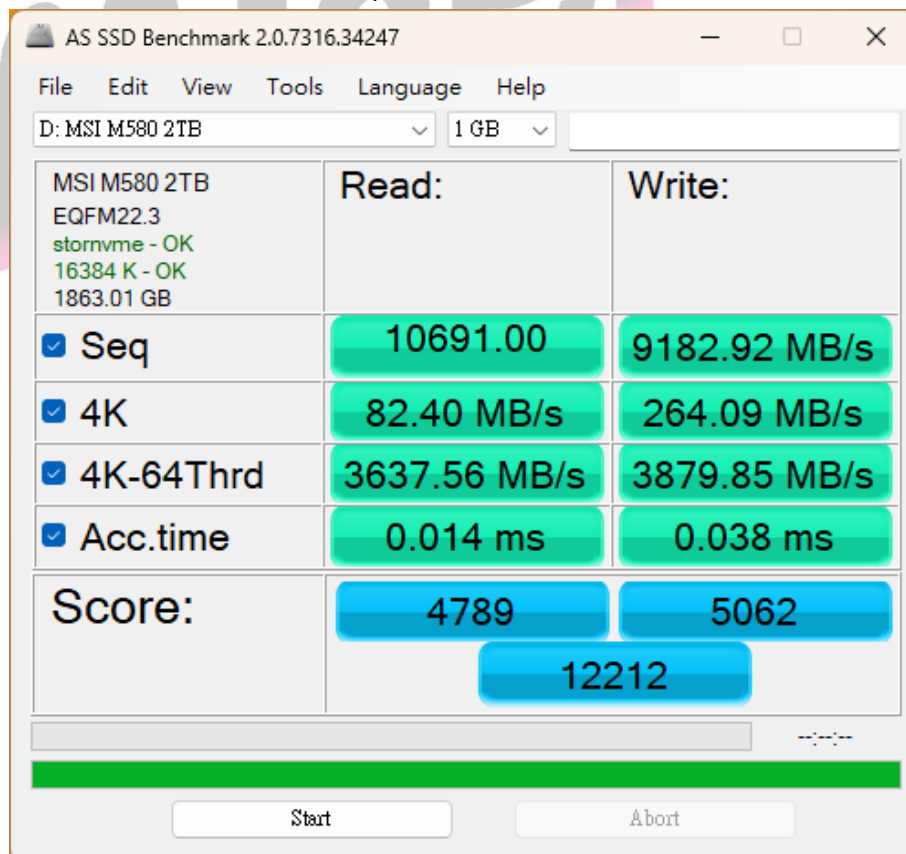
2.5.1 **MSI M.2 NVMe SSD/ 2TB** performance as below:



2.6 AS SSD Benchmark 2.0.7 performance test

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

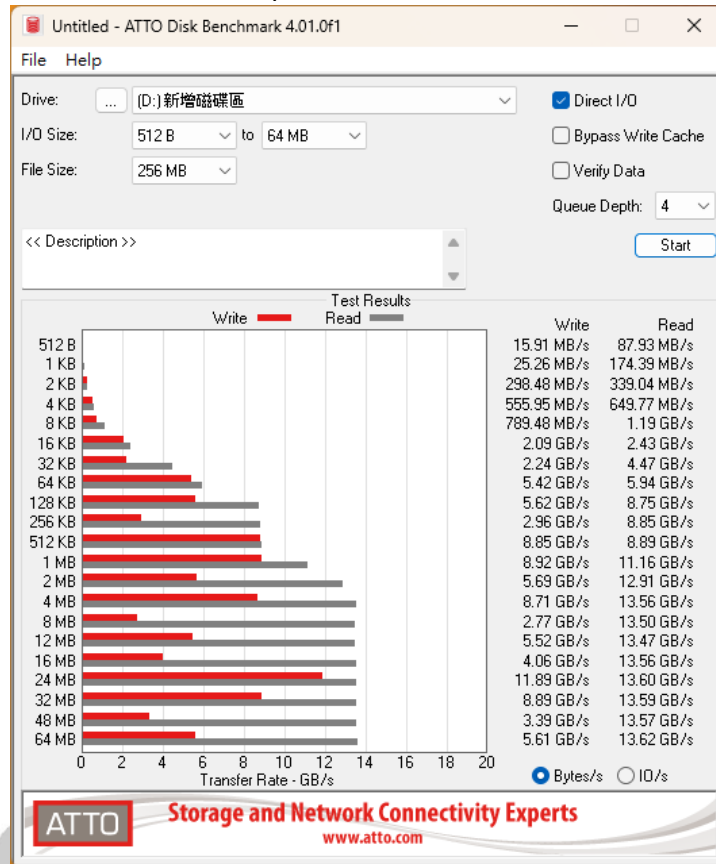
2.6.1 **MSI M.2 NVMe SSD/ 2TB** performance as below:



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2.7 ATTO Disk Benchmark 4.01 performance test

2.7.1 MSI M.2 NVMe SSD/ 2TB performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 MSI M.2 NVMe SSD/ 2TB performance as below:

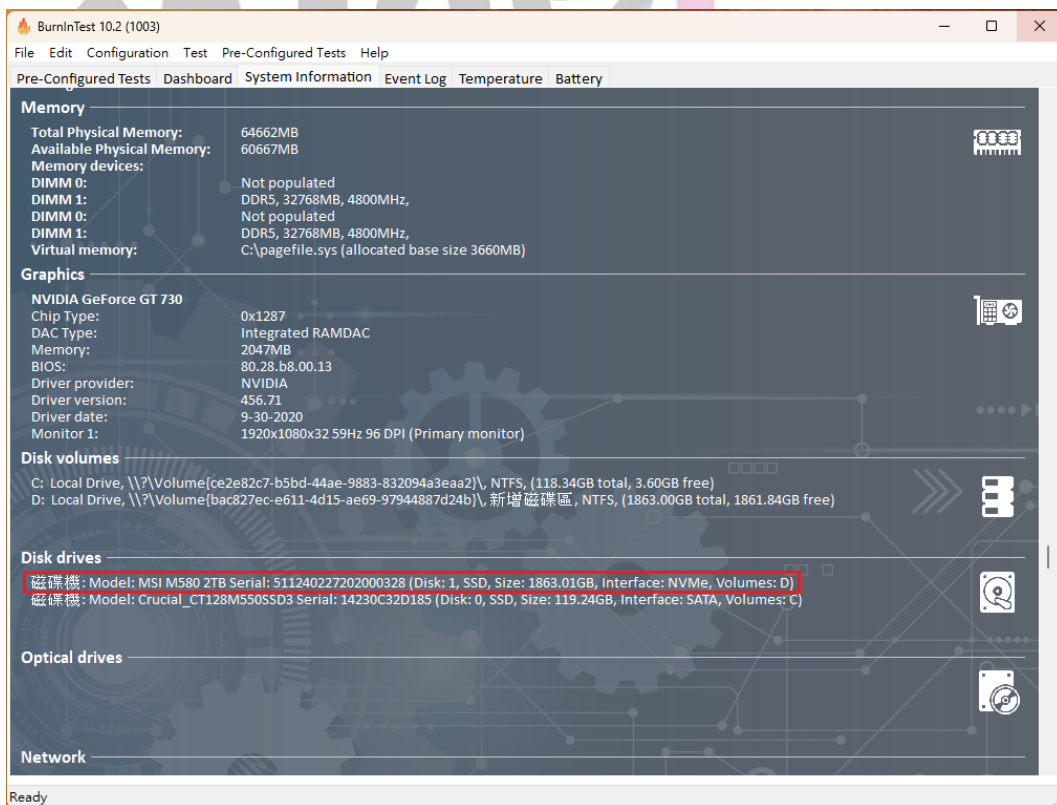
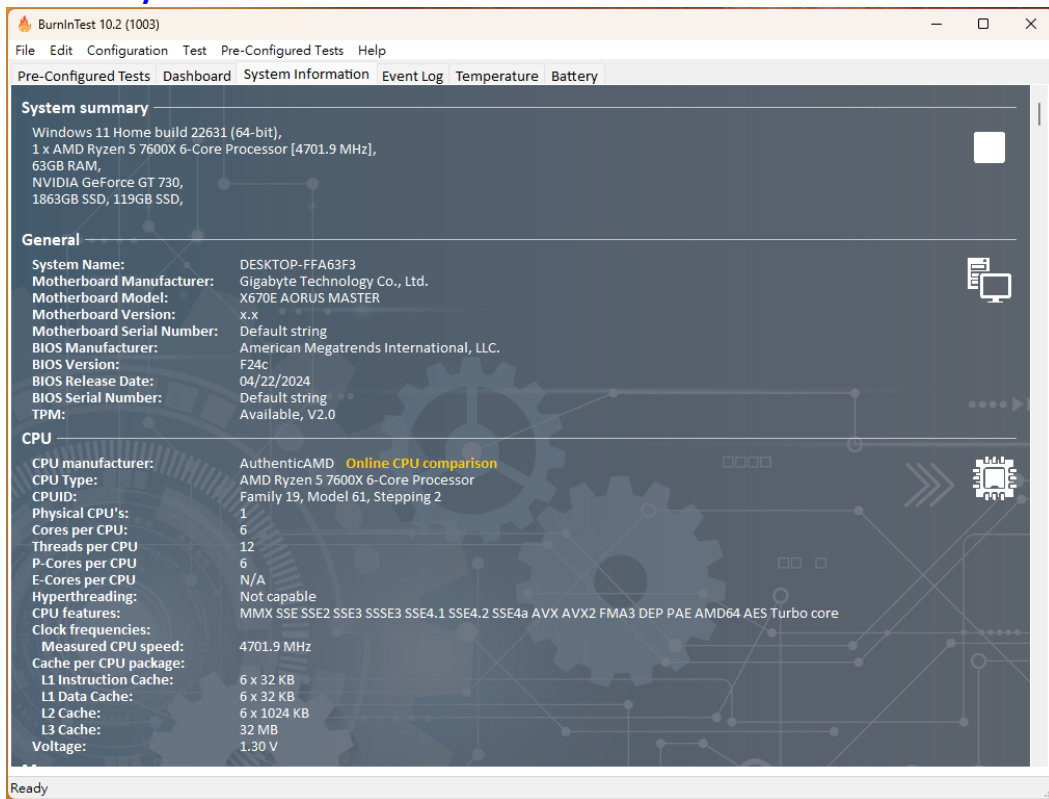


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3. Burn In Tests and Results

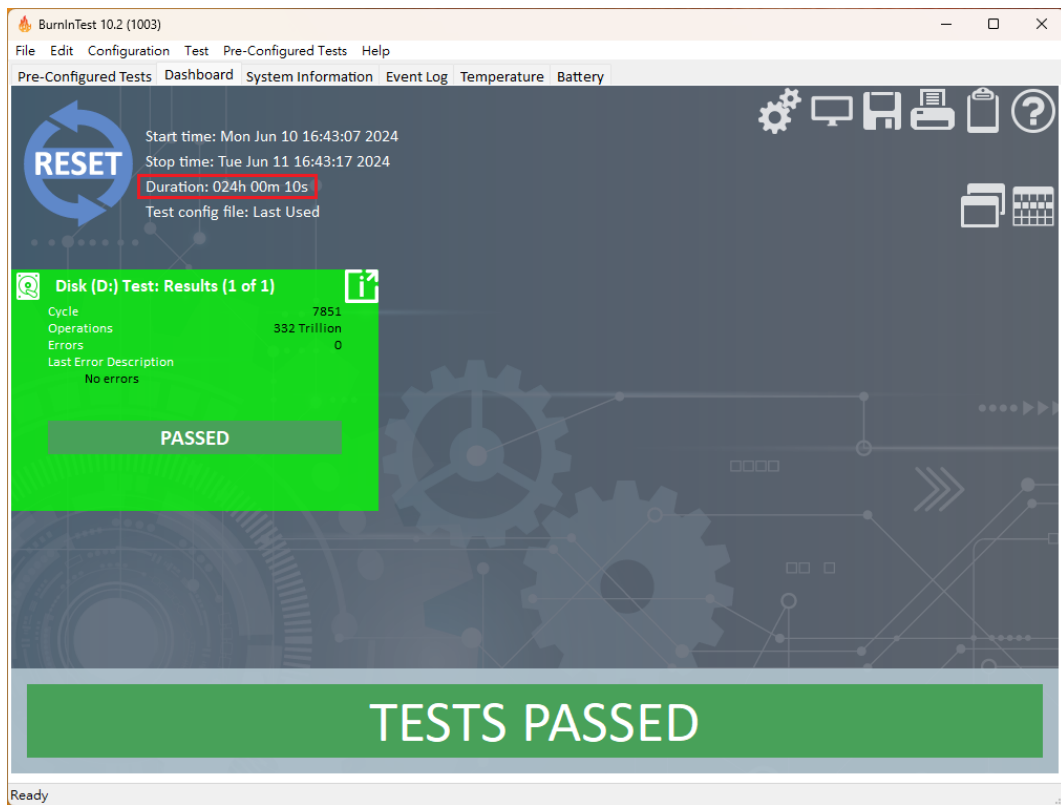
3.1 BurnInTest v10 Pro for MSI M.2 NVMe SSD/ 2TB

3.1.1 System Information as below:



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3.1.2 24-hour Burn-in test PASSED



4. Summary

- 4.1 M.2 NVMe SSD is PCIe Gen 5, 32GT/s , 4 Lanes Interface, I/O speed, max. to 128Gbps.
- 4.2 GE0146A adapter I/O performance is based on M.2 NVMe SSD.