



MINERVA

EP7102 M.2 PCIe 5.0 with ReDriver for MCIO 38P

Performance & Burn In Test Rev. 1. 0

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4. Summary

EP7102Rev1.0 Host Bus Adapter

1. Overview

The Host Bus Adapter may provide PCIe x4 Gen 5, 32GT/s high-speed signals extension, built-in ReDriver controller to provides equalization up to **24 dB at 16 GHz** to MCIO 38P.

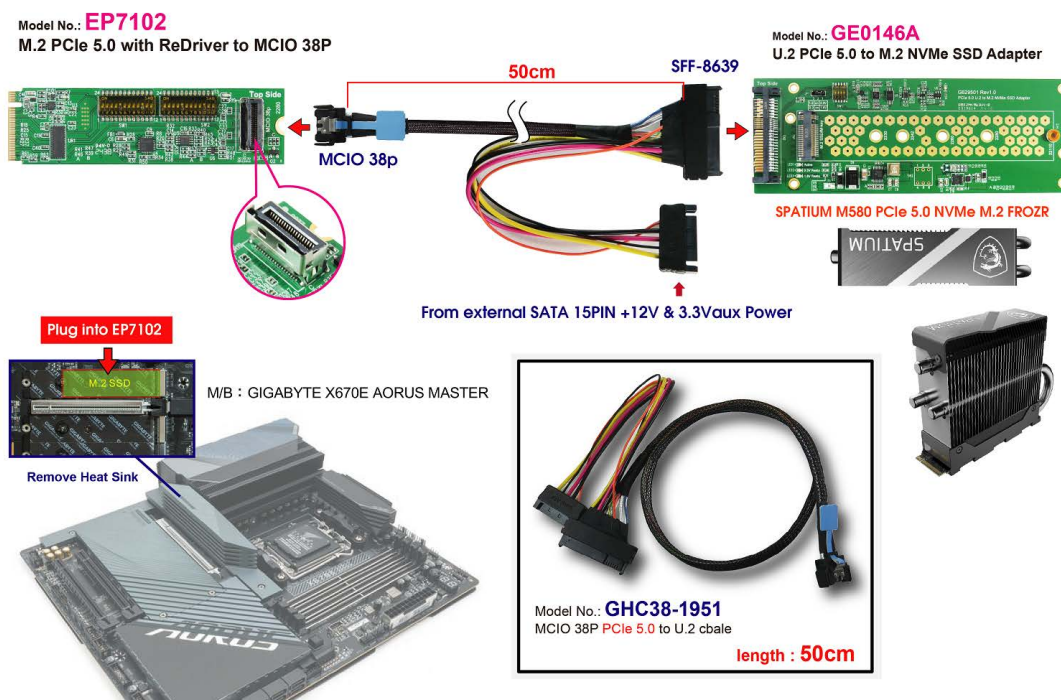
GE0146A Adapter, providing M.2 M-key connector can be M.2 NVMe SSD converted into U.2 PCIe 5.0, 16GT/s 4-Lane interface.

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: EP7102 M.2 PCIe 5.0 with Redriver to MCIO 38P adapter
Cable: MCIO 38P to U.2(SFF-8639) PCIe 5.0, **50cm** Cable
Adapter: GE0146A U.2 to M.2 with Hot Plug Power protection adapter
OS : Microsoft **Windows 11 64bit OS**

2.2 Test target: EP7102 AIC, GE0146A Adapter & MSI M580 **2TB** PCIe 5.0 NVMe M.2 SSD



EP7102Rev1.0 Host Bus Adapter

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 EP7102 adapter(M.2 PCIe 5.0 with Redriver to MCIO 38P Adapter), Using MCIO 38P to U.2(SFF-8639) cable and plugs EP7102 into M.2 connector of 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.

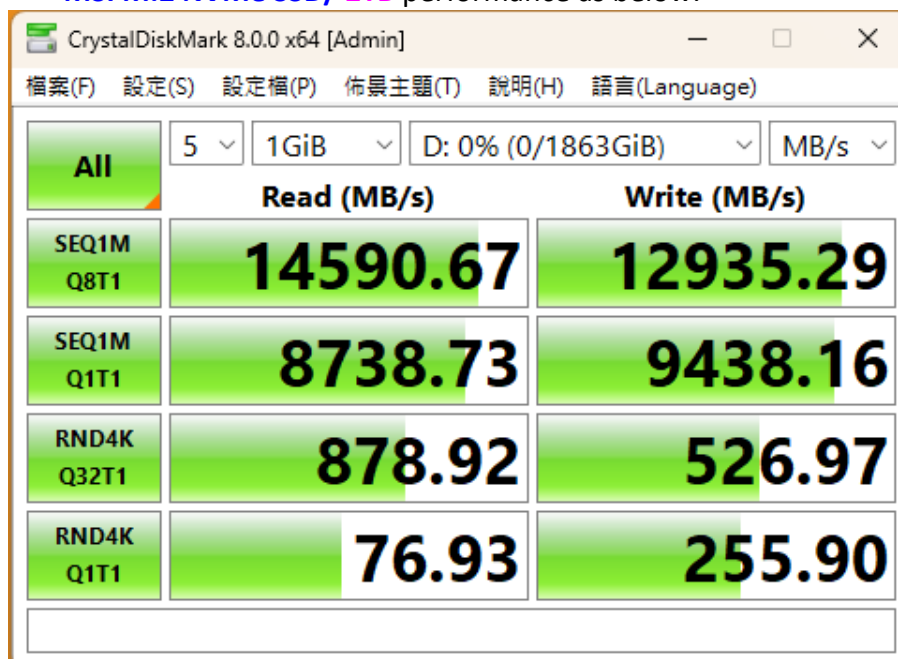
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EP7102Rev1.0 Host Bus Adapter

2.5 CrystalDiskMark 8.0 x64 performance test

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

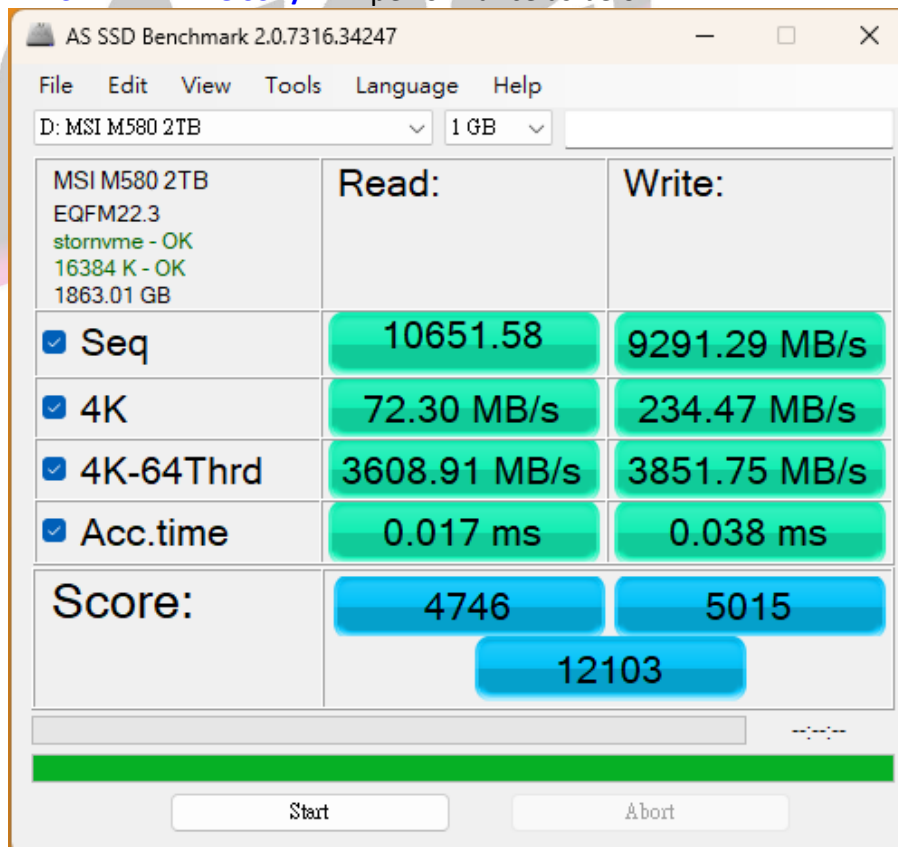
2.5.1 **MSI M.2 NVMe SSD/ 2TB** performance as below:



2.6 AS SSD Benchmark 2.0.7 performance test

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

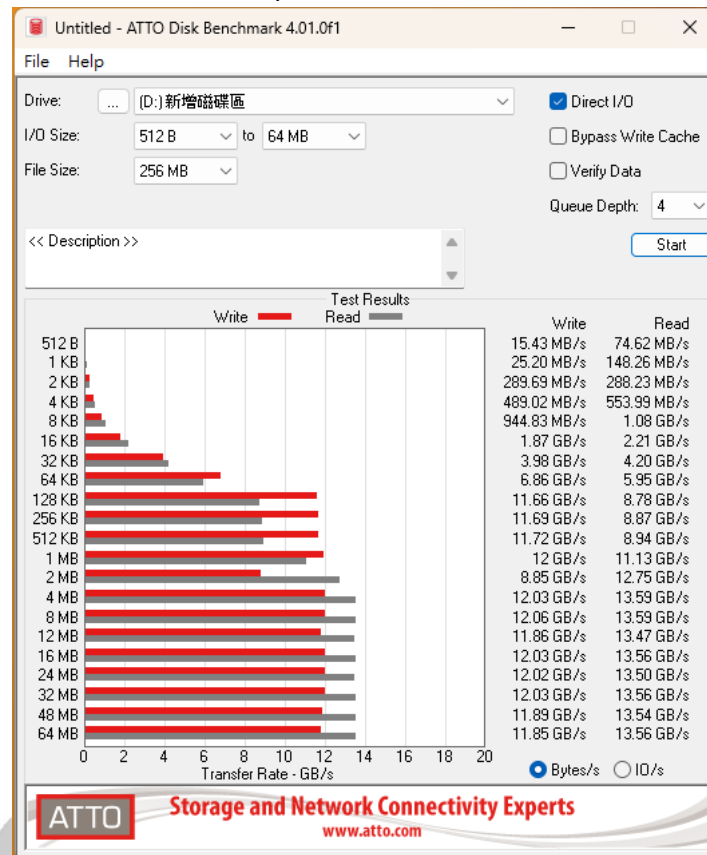
2.6.1 **MSI M.2 NVMe SSD/ 2TB** performance as below:



EP7102Rev1.0 Host Bus Adapter

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:

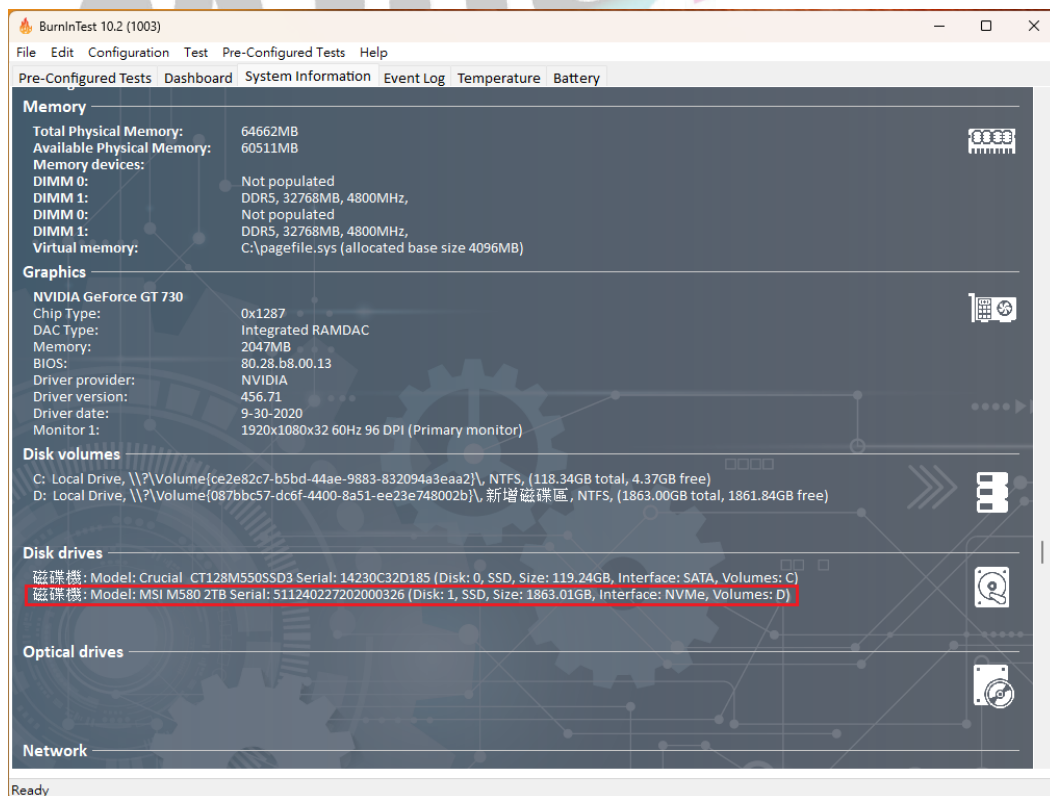
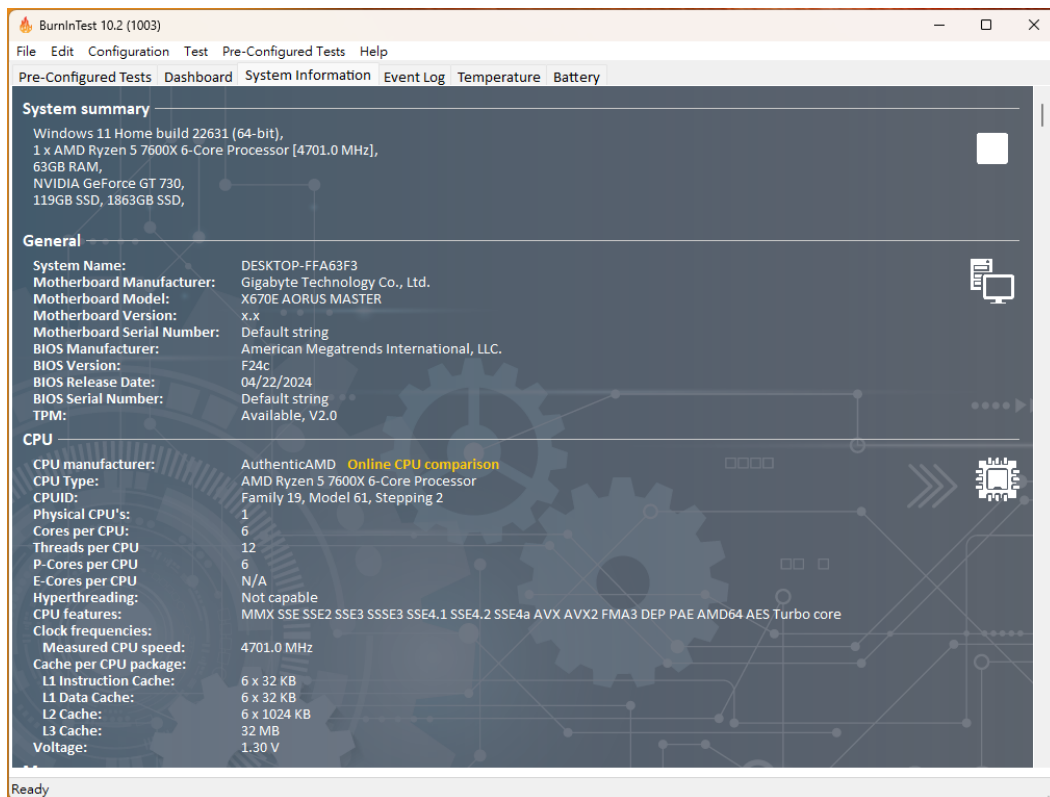


EP7102Rev1.0 Host Bus Adapter

3. Burn In Tests and Results

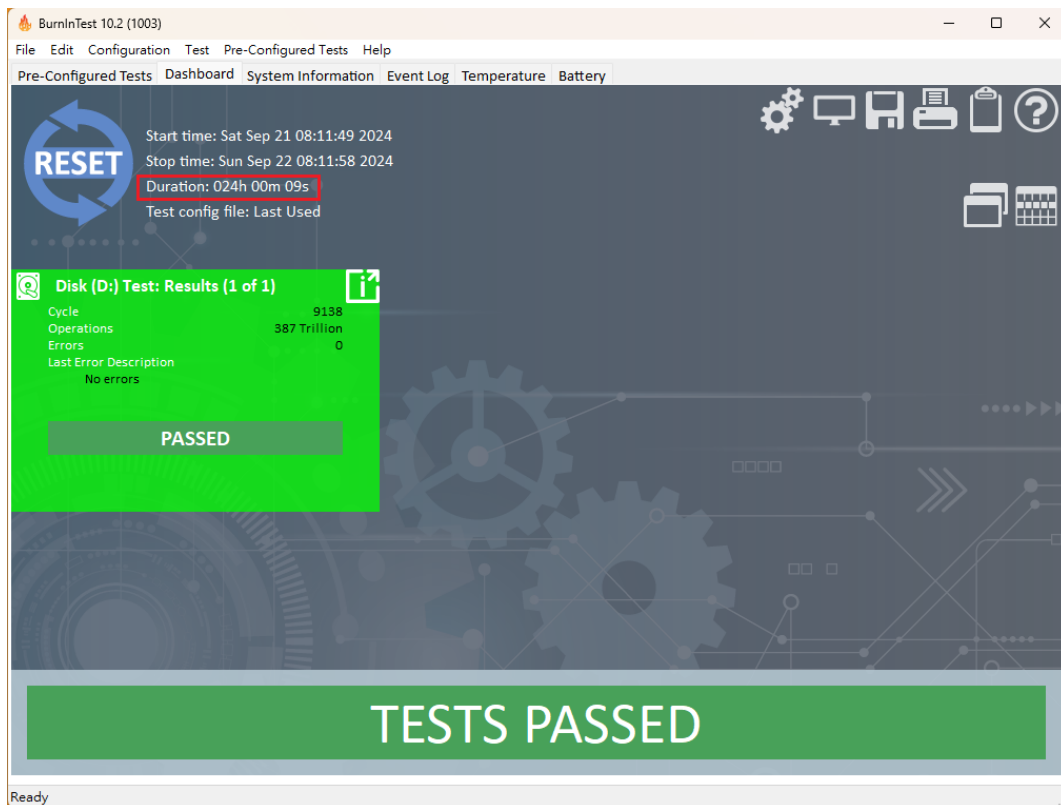
3.1 BurnInTest v10 Pro for **MSI M.2 NVMe SSD/ 2TB**

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 5.0, 32GT/s , 4 Lanes Interface, I/O speed, max. to 128Gbps.
- 4.2 EP7102 AIC I/O performance is based on M.2 NVMe SSD.
- 4.3 GE0146A adapter I/O performance is based on M.2 NVMe SSD.