



MINERVA

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

Performance & Burn In Test Rev. 1. 0

PS: Using MCIO 38P PCIe 5.0 to U.2, **100cm** cable

Table of Contents

1. Overview

2. Performance Measurement Tools and Results
 - 2.1 Test Platform
 - 2.2 Test target and U.2 NVMe SSD
 - 2.3 Install Hardware
 - 2.4 BIOS & Windows 11 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

EP7102Rev1.0 Host Bus Adapter

1. Overview

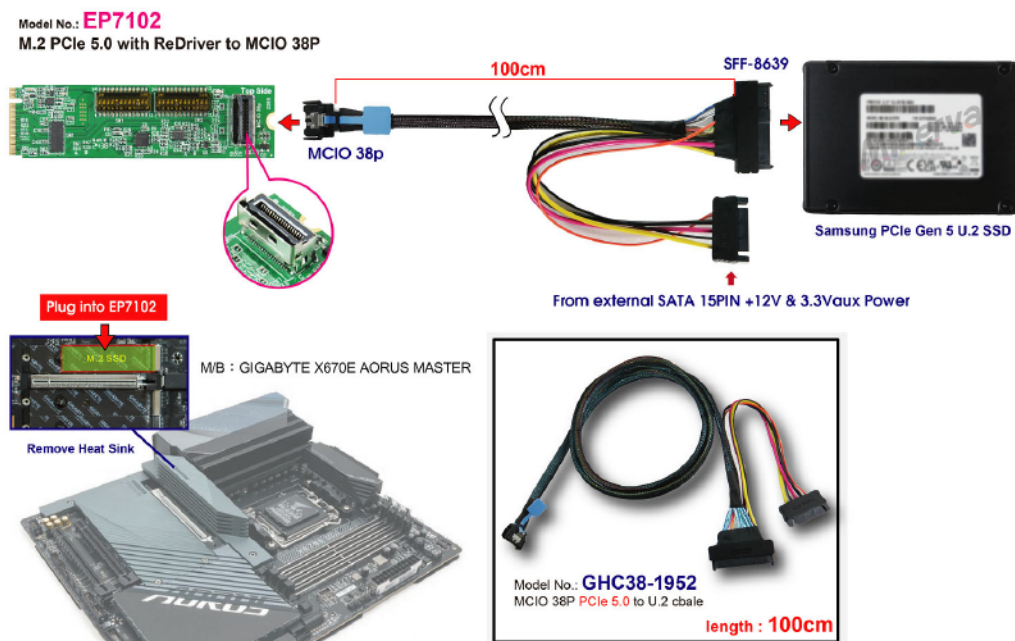
The Host Bus Adapter may provide PCIe x4 Gen 5, 32GT/s high-speed signals extension, built-in ReDriver controller to provides equalization up to **24 dB at 16 GHz** to MCIO 38P.

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, **100cm** Cable
OS : Microsoft **Windows 11 64bit OS**

2.2 Test target: EP4101 & Samsung **U.2 PM1783 / 15.36TB NVMe SSD**



EP7102Rev1.0 Host Bus Adapter

2.3 Install Hardware

Inserts U.2 NVMe SSD into MCIO 38P cable, and connects cable to EP7102 AIC. The EP7102 plugs into M.2 PCIe Gen5 connector of GIGABYTE **X670E AORUS MASTER**

2.4 BIOS & Windows 11 OS environment setup

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

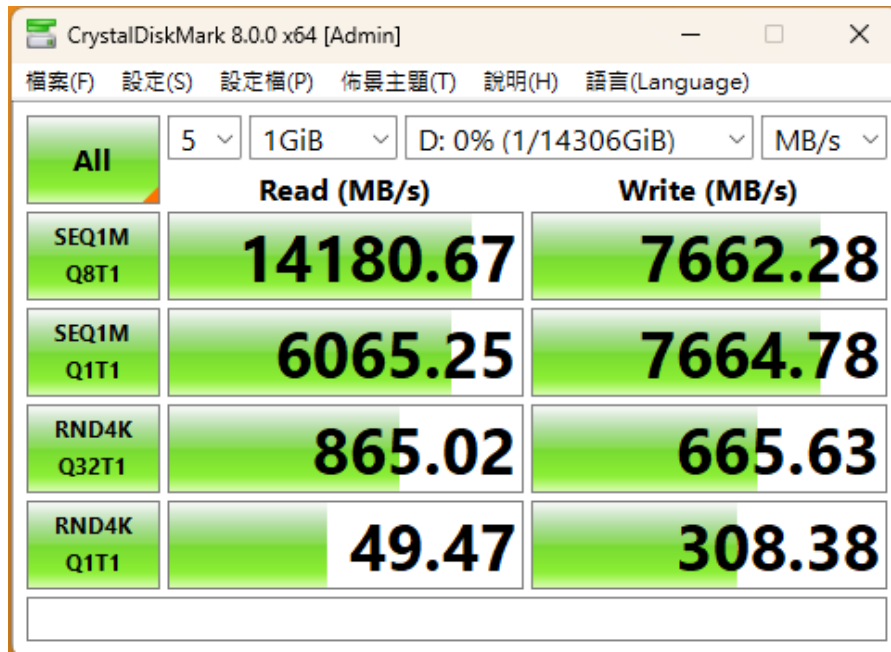


EP7102Rev1.0 Host Bus Adapter

2.5 CrystalDiskMark 8.0 x64 performance test

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

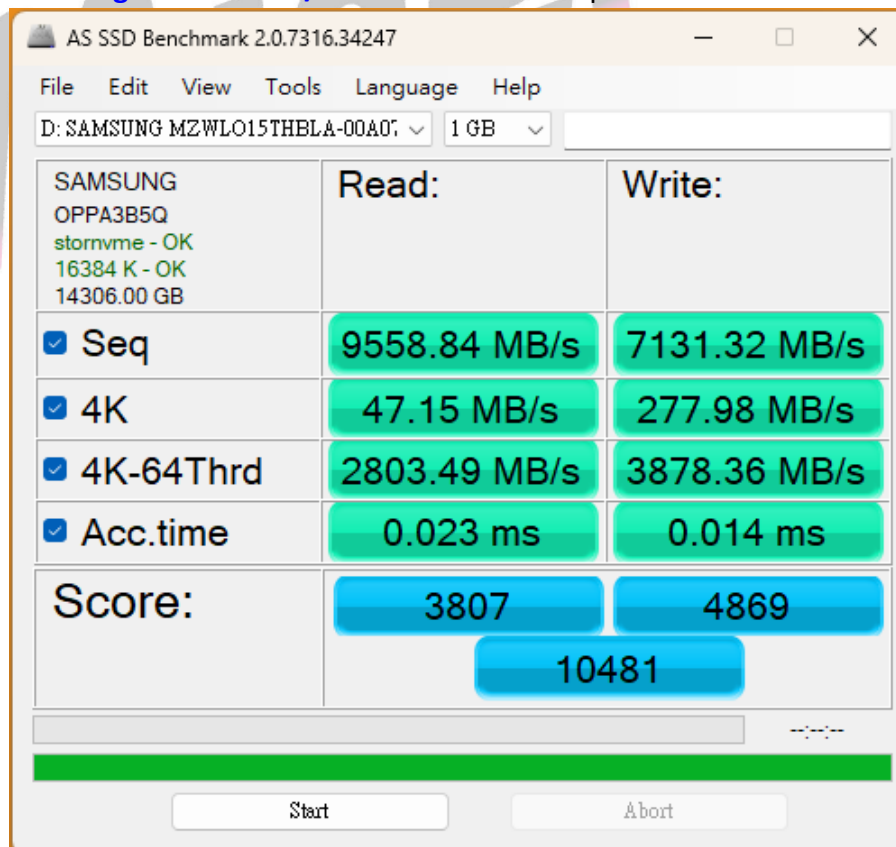
2.5.1 Samsung U.2 PM1783 / 15.36TB NVMe SSD performance as below:



2.6 AS SSD Benchmark 2.0.7 performance test

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

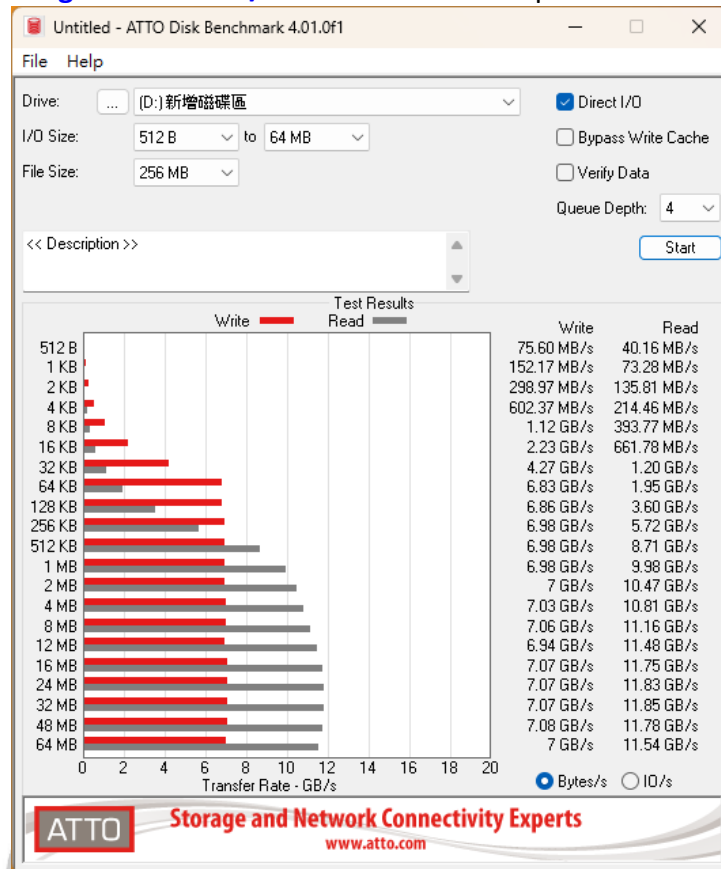
2.6.1 Samsung U.2 PM1783 / 15.36TB NVMe SSD performance as below:



EP7102Rev1.0 Host Bus Adapter

2.7 ATTO Disk Benchmark 4.01 performance test

2.7.1 **Samsung U.2 PM1783 / 15.36TB NVMe SSD** performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 **Samsung U.2 PM1783 / 15.36TB NVMe SSD** performance as below:

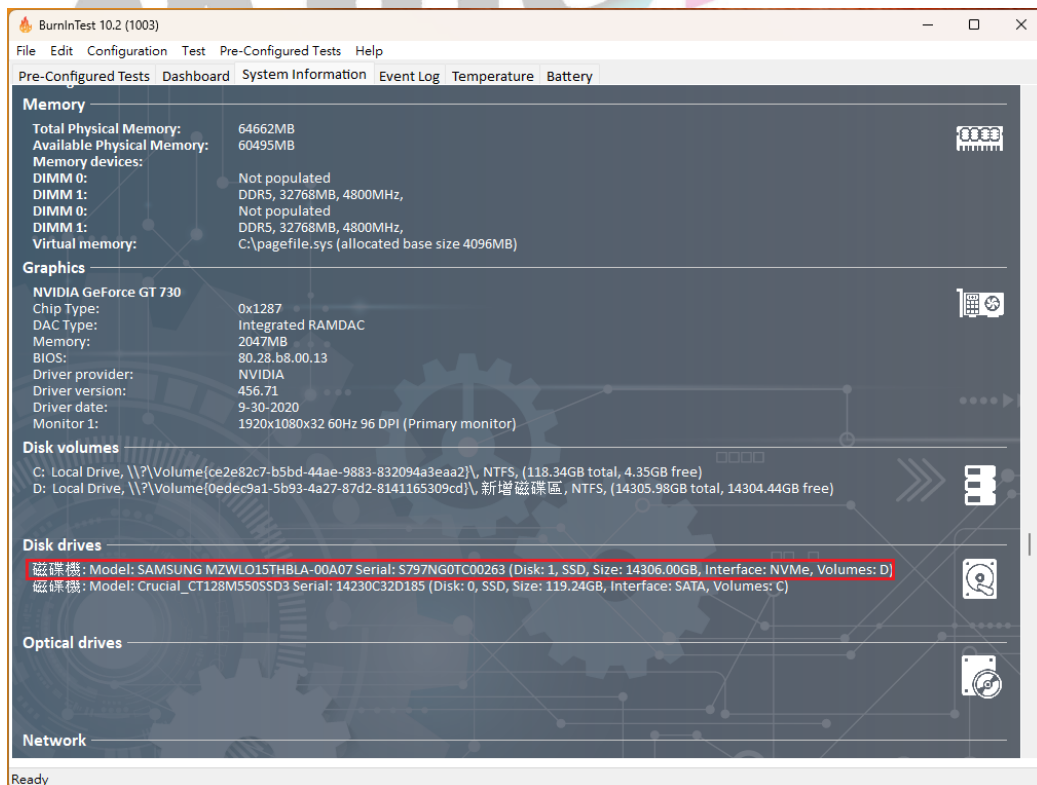
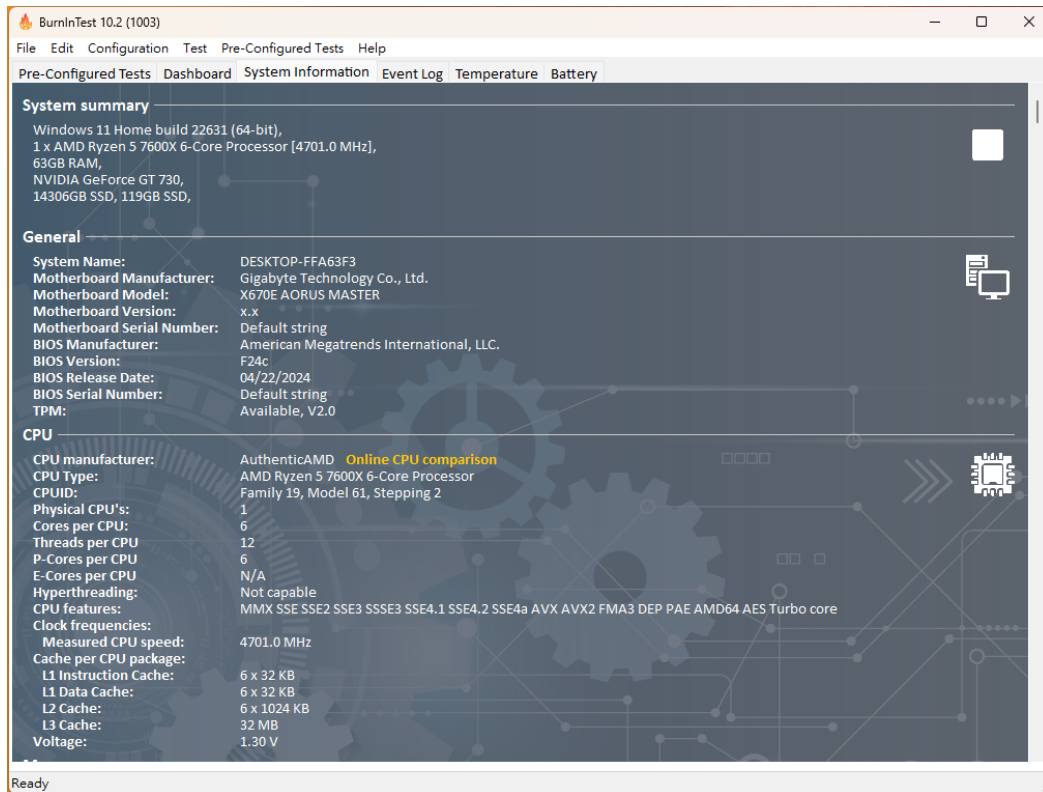


EP7102Rev1.0 Host Bus Adapter

3. Burn In Tests and Results

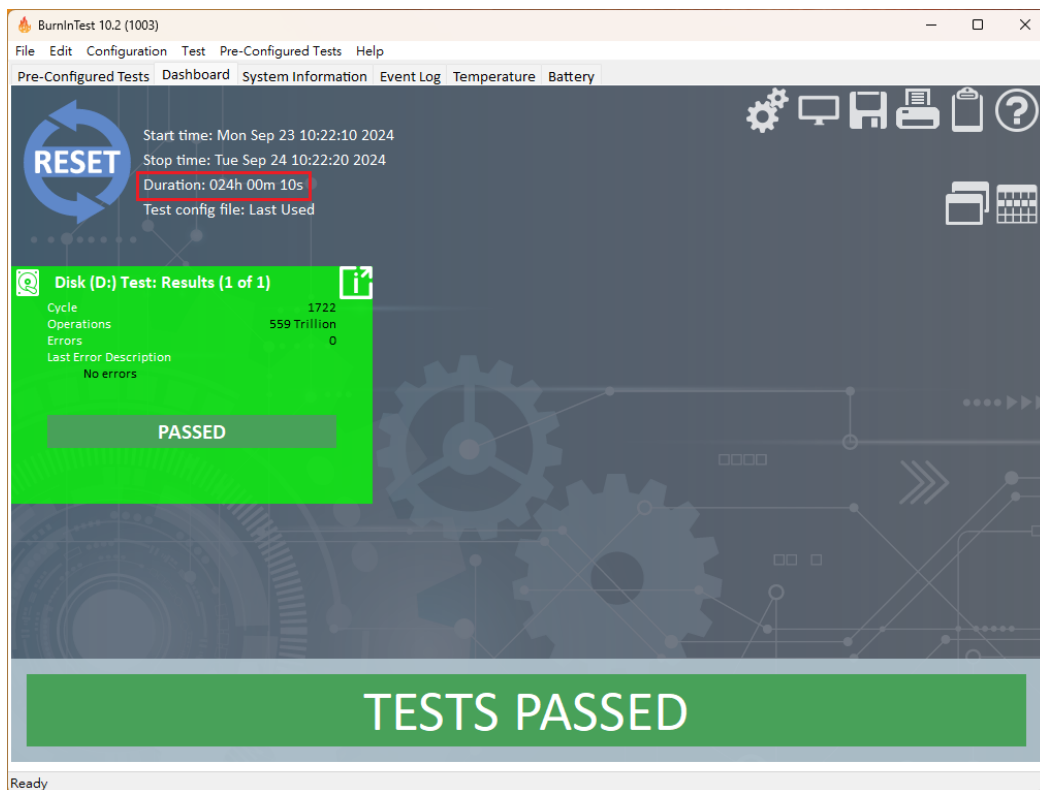
3.1 BurnInTest v10.2 Pro for Samsung U.2 PM1783 / 15.36TB NVMe SSD

3.1.1 System Information as below:



EP7102Rev1.0 Host Bus Adapter

3.1.2 24-hour Burn-in test PASSED



4. Summary

- 4.1 U.2 NVMe SSD is PCIe 5.0, 32GT/s , 4 Lanes Interface, I/O speed, max. to 128Gbps.
- 4.2 EP7102 Host Bus Adapter I/O performance is based on U.2 NVMe SSD.