



MINERVA

EP4101 PCIe x4 Gen 5 with ReDriver for MCIO 38P

Performance & Burn In Test Rev. 1. 0

PS: Using MCIO 38P PCIe 5.0 to U.2, **50cm** cable

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4. Summary

EP4101 Rev1.0 Host Bus Adapter

1. Overview

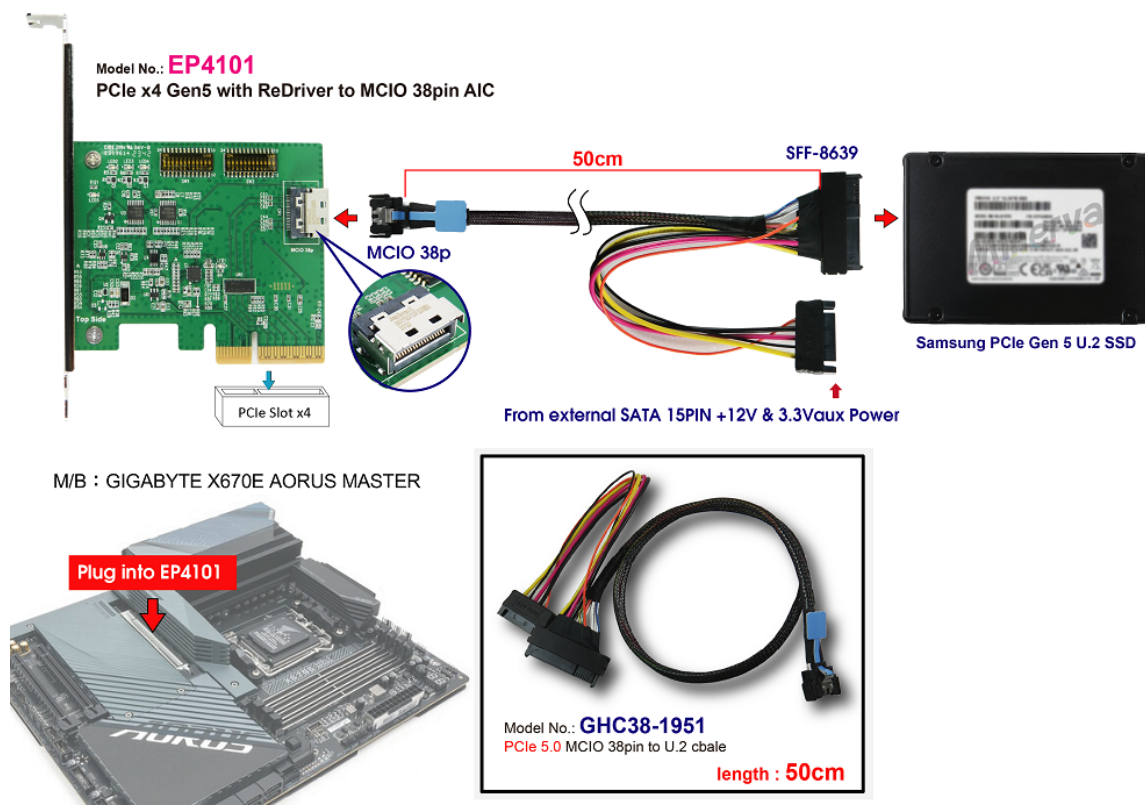
The Host Bus Adapter may provide PCIe x4 Gen 5, 32GT/s high-speed signals extension, built-in ReDriver controller to provides equalization up to **24 dB at 16 GHz** to MCIO 38P.

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



EP4101 Rev1.0 Host Bus Adapter

2.3 Install Hardware

Inserts U.2 NVMe SSD into MCIO 38P cable, and connects cable to EP4101 AIC. The EP4101 plugs into PCIe x16 Slot 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.

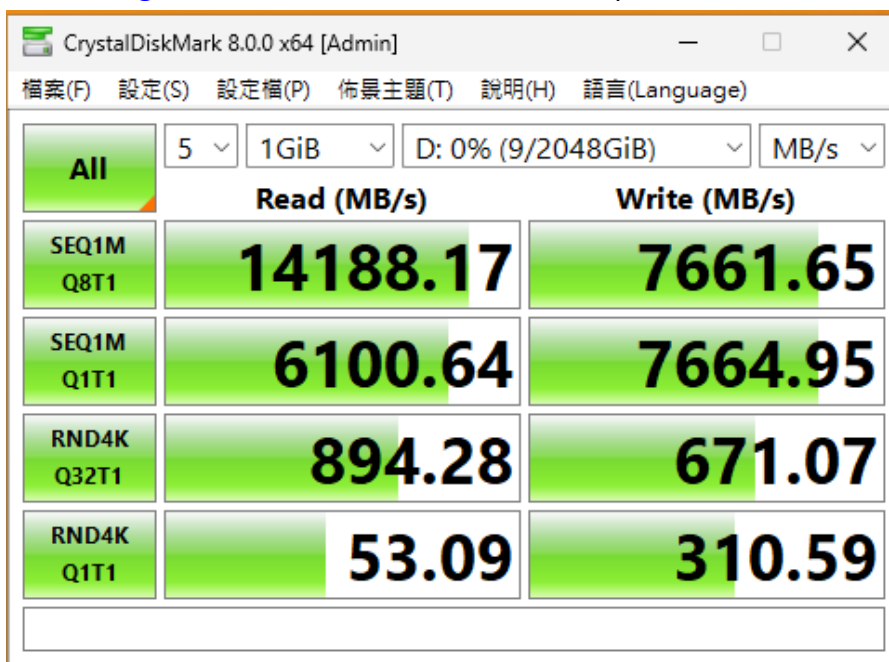


EP4101 Rev1.0 Host Bus Adapter

2.5 CrystalDiskMark 8.0 x64 performance test

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

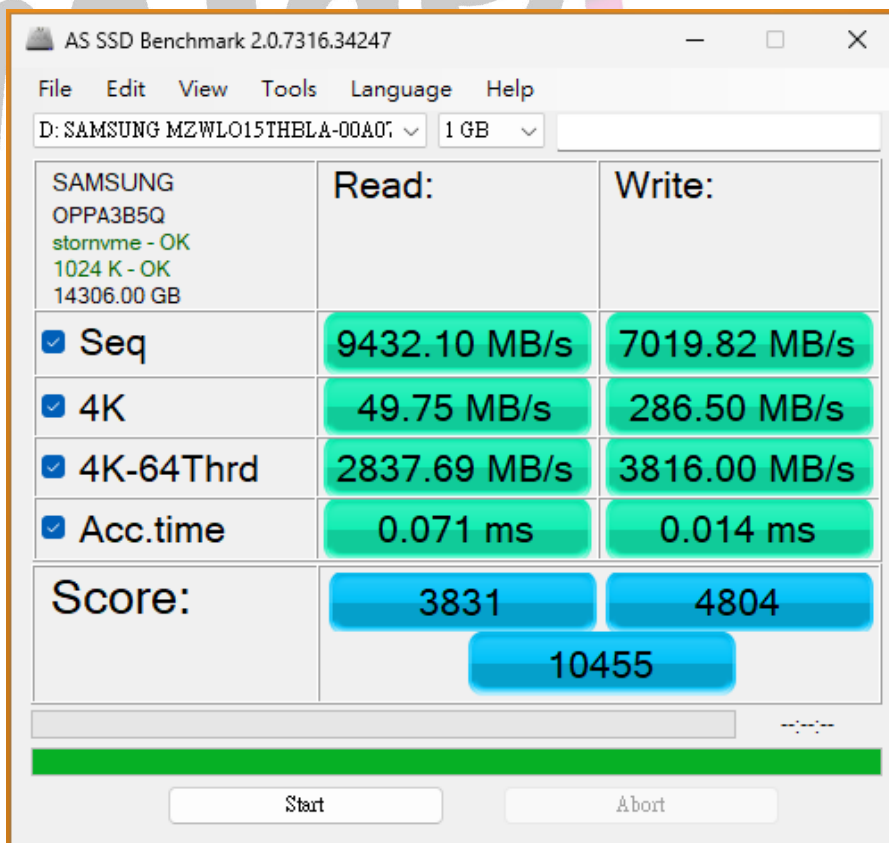
2.5.1 Samsung U.2 PM1783 / 15.36TB NVMe SSD performance as below:



2.6 AS SSD Benchmark 2.0.7 performance test

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

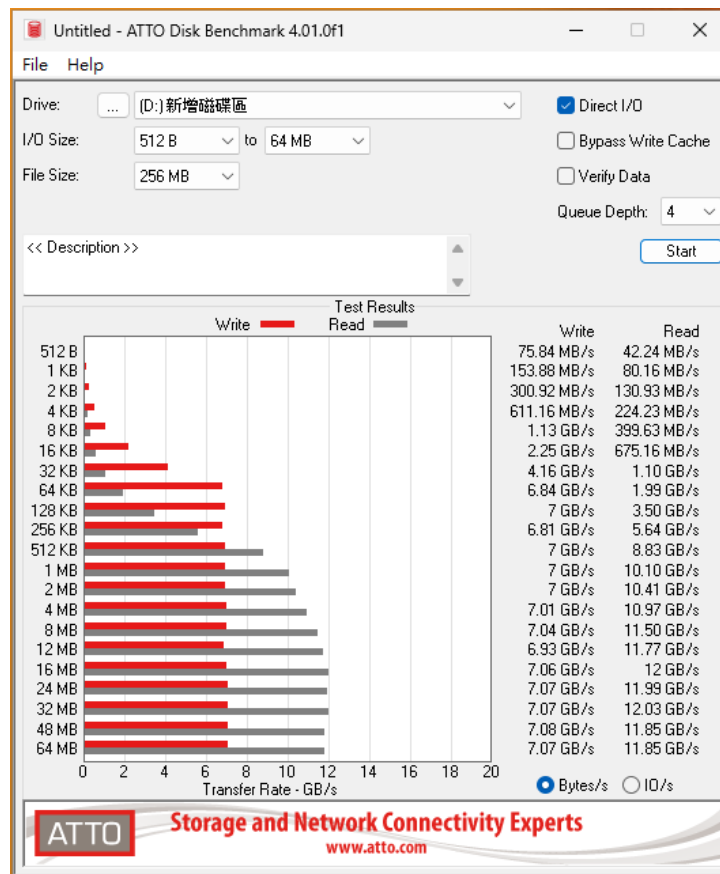
2.6.1 Samsung U.2 PM1783 / 15.36TB NVMe SSD performance as below:



EP4101 Rev1.0 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:

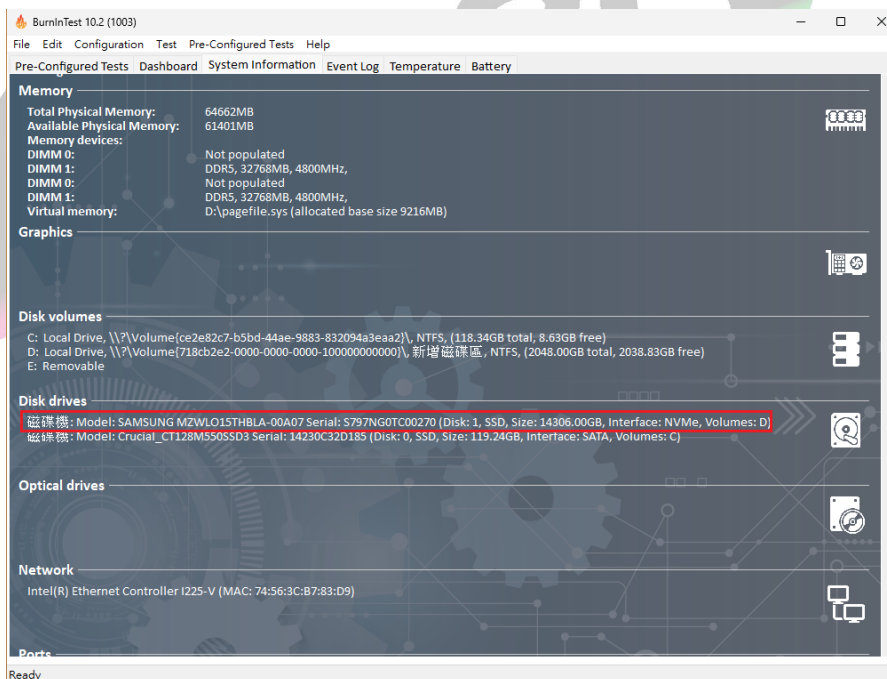
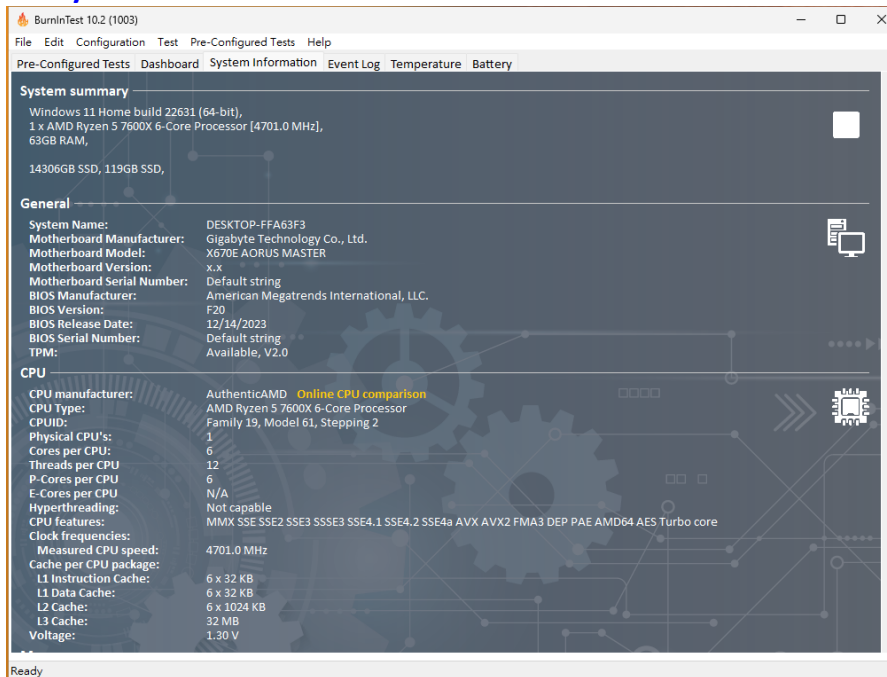


EP4101 Rev1.0 Host Bus Adapter

3. Burn In Tests and Results

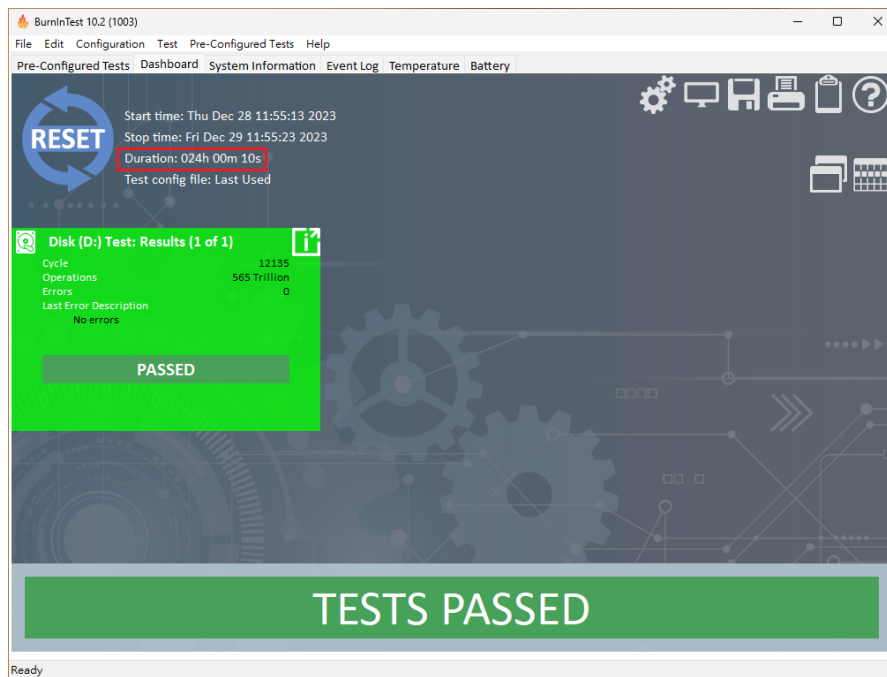
3.1 BurnInTest v10.2 Pro for Samsung U.2 PM1783 / 15.36TB NVMe SSD

3.1.1 System Information as below:



EP4101 Rev1.0 Host Bus Adapter

3.1.2 24-hour Burn-in test **PASSED**



4. Summary

- 4.1 U.2 NVMe SSD is PCIe Gen 5, 32GT/s , 4 Lanes Interface, I/O speed, max. to 128Gbps.
- 4.2 EP4101 Host Bus Adapter I/O performance is based on U.2 NVMe SSD.