



MINERVA

GD1401A U.2 PCIe 4.0 for M.2 NVMe SSD adapter

Performance & Burn In Test Rev. 1.3

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GD1401A Converter Card

1. Overview

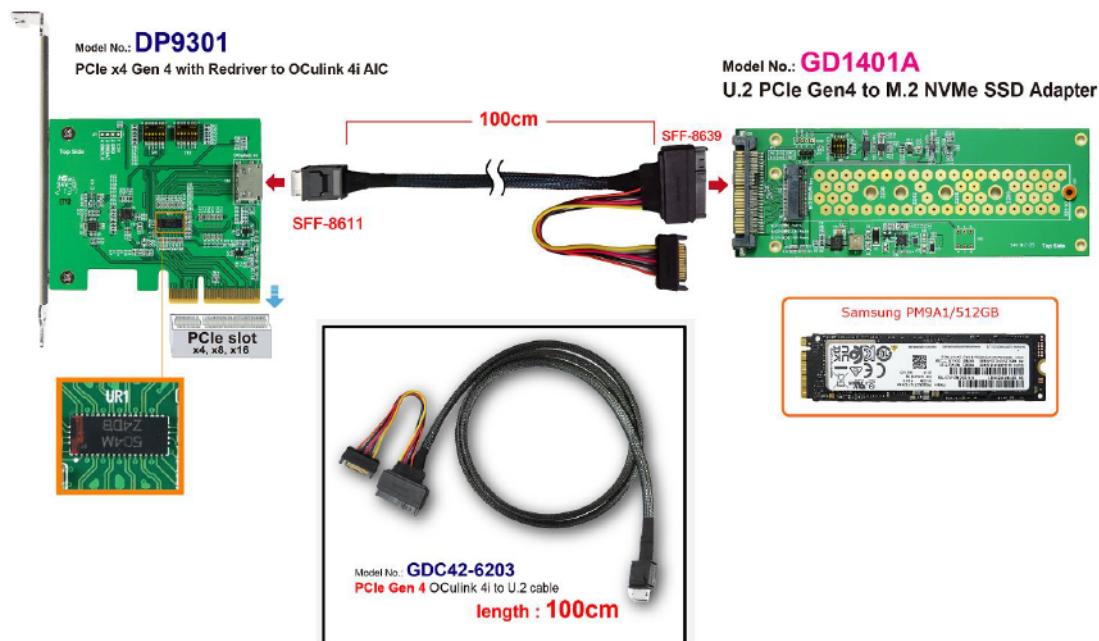
GD1401A Adapter, providing M.2 M-key connector can be M.2 NVMe SSD converted into U.2 PCIe Gen 4 16GT/s 4 Lanes interface.

2. Tools and Results of Performance Measurement

2.1 Test Platform

M/B : GIGABYTE **X570 AORUS MASTER**
CPU : AMD **Ryzen 7, 3700X 8-Core**
Memory : Kingston **KVR26N19D8/16, DDR4-2666MHz, 32GB**(16GB DIMM*2)
ATX Power : COOLER MASTER G750M, **750W ATX**, 12V V2.2 Power Supply
AIC: DP9301 PCIe x4 Gen 4 with **Diodes Redriver** to OCulink 4i ADD-in Card
Adapter: GD1401A U.2 PCIe Gen 4 to M.2 NVMe SSD Adapter
Cable: OCulink 4i(SFF-8612) to U.2(SFF-8639) PCIe Gen 4 Cable, **100cm**
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: GD1401A Adapter, DP9301Rev1.2 AIC & **Samsung M.2 PM9A1 512GB SSD**



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2.3 Install Hardware

Inserts M.2 NVMe SSD into GD1401A converter's M.2 M-key connector, and then with coppers, and screws to fix SSDs. (Please refer to the Installation Notes). Connects GD1401A converter to DP9301 AIC(PCIe x4 Gen 4 with Redriver to OCulink 4i ADD-in Card), Using SFF-8611 4i to U.2(SFF-8639) cable and plugs DP9301 into GIGABYTE **X570 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.

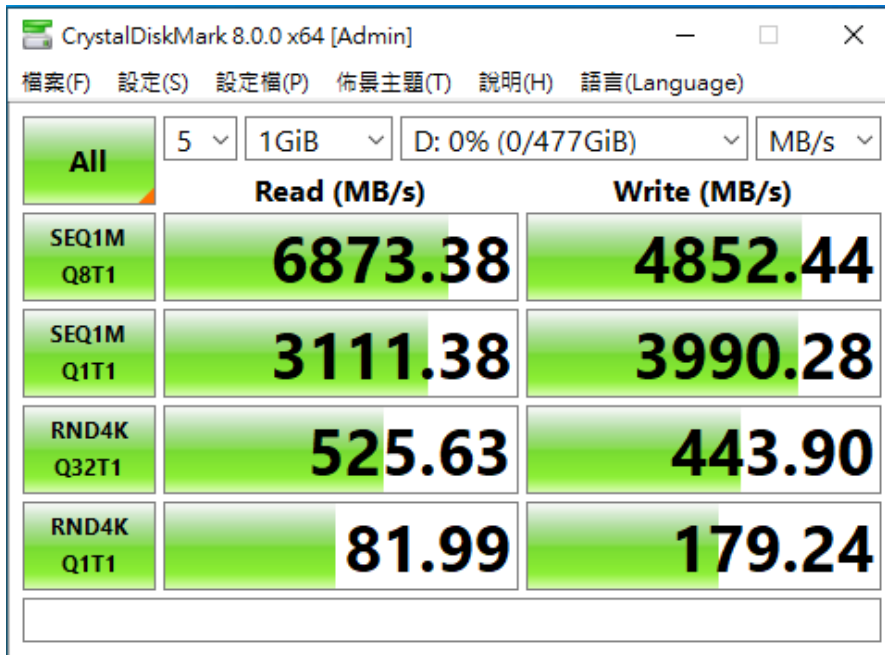


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2.5 CrystalDiskMark 8.0 x64 performance test

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

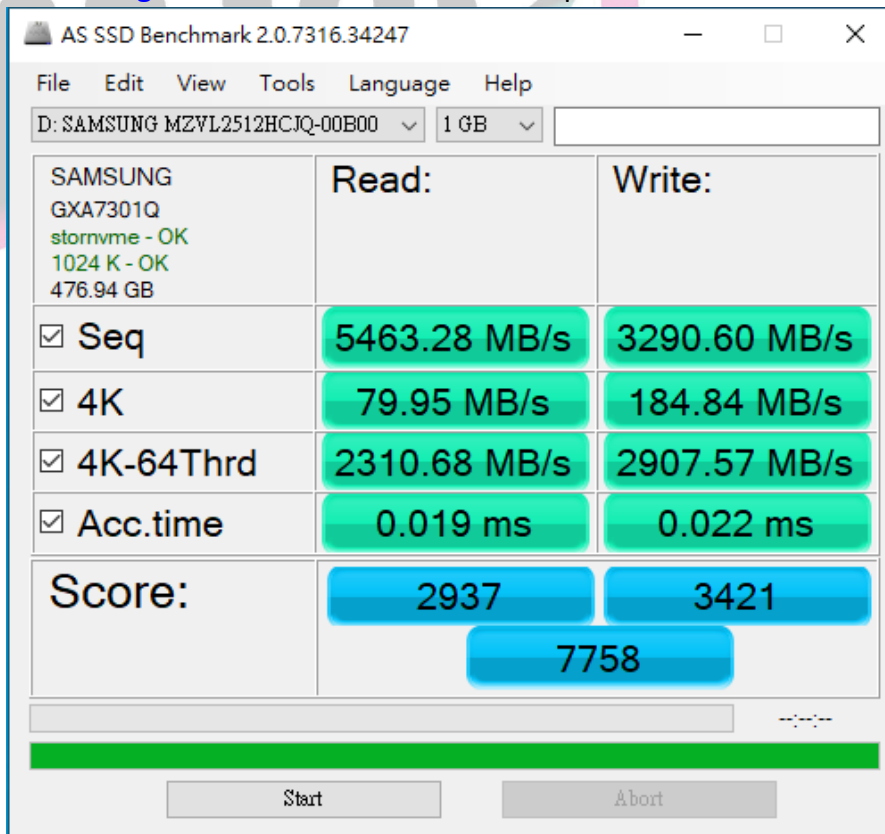
2.5.1 **Samsung M.2 PM9A1** NVMe SSD **512GB** performance as below:



2.6 AS SSD Benchmark 2.0.7 performance test

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

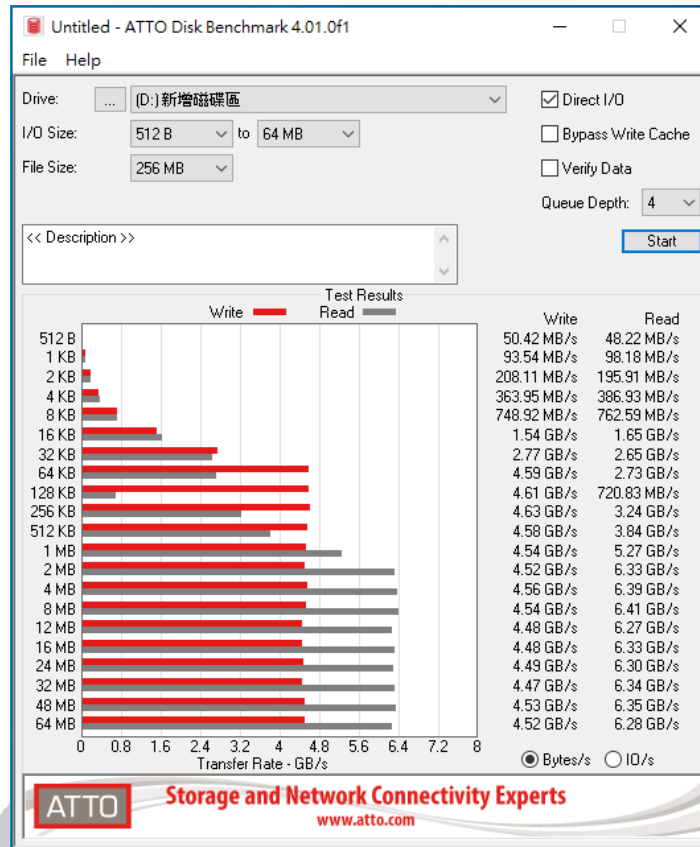
2.6.1 **Samsung M.2 PM9A1** NVMe SSD **512GB** performance as below:



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2.7 ATTO Disk Benchmark 4.01 performance test

2.7.1 Samsung M.2 PM9A1 NVMe SSD 512GB performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 Samsung M.2 PM9A1 NVMe SSD 512GB performance as below:

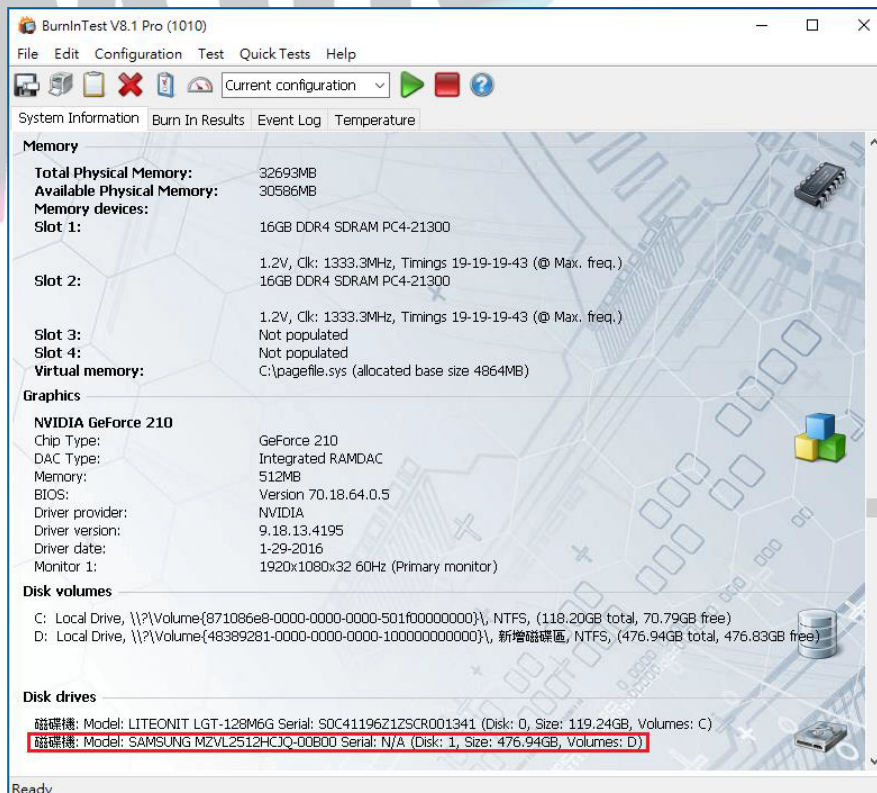
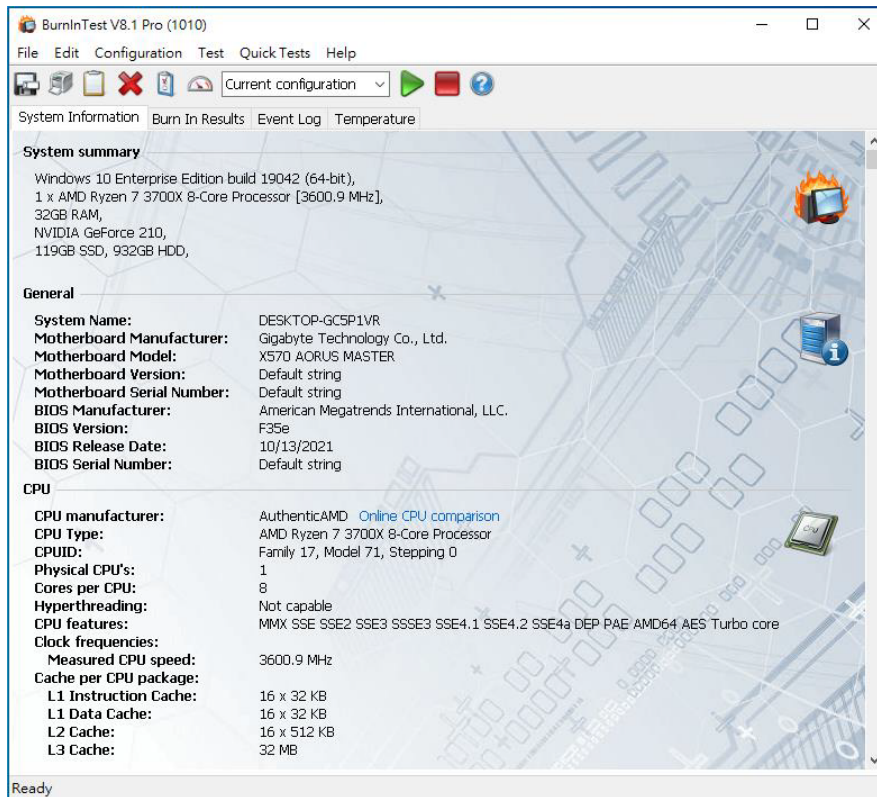


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3. Burn In Tests and Results

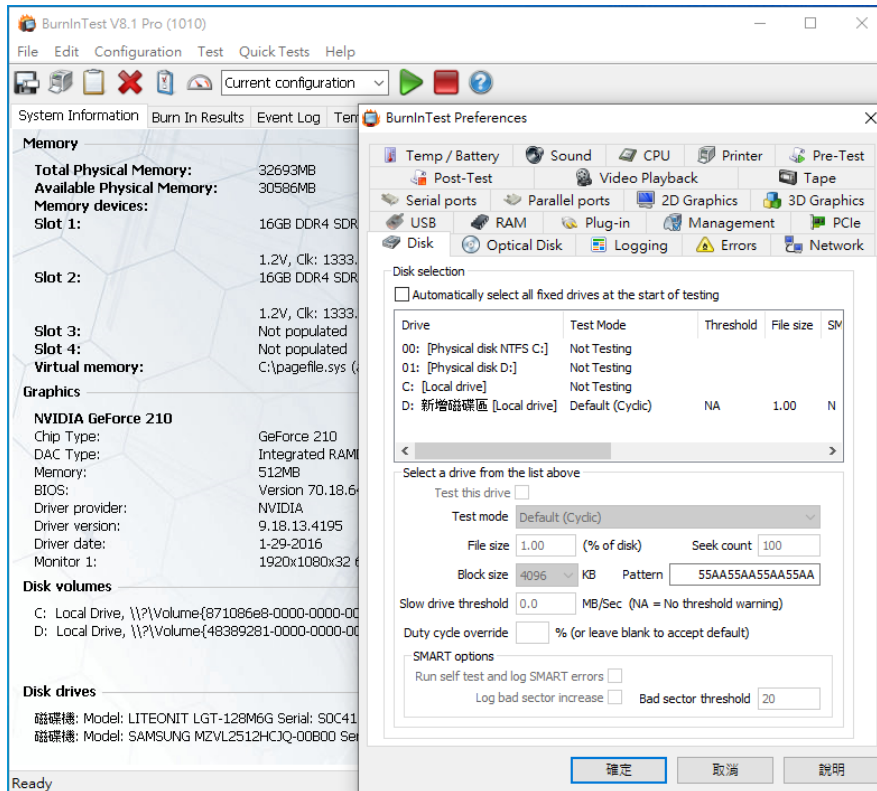
3.1 BurnInTest v8.1 Pro for Samsung M.2 PM9A1 NVMe SSD 512GB

3.1.1 System Information as below:

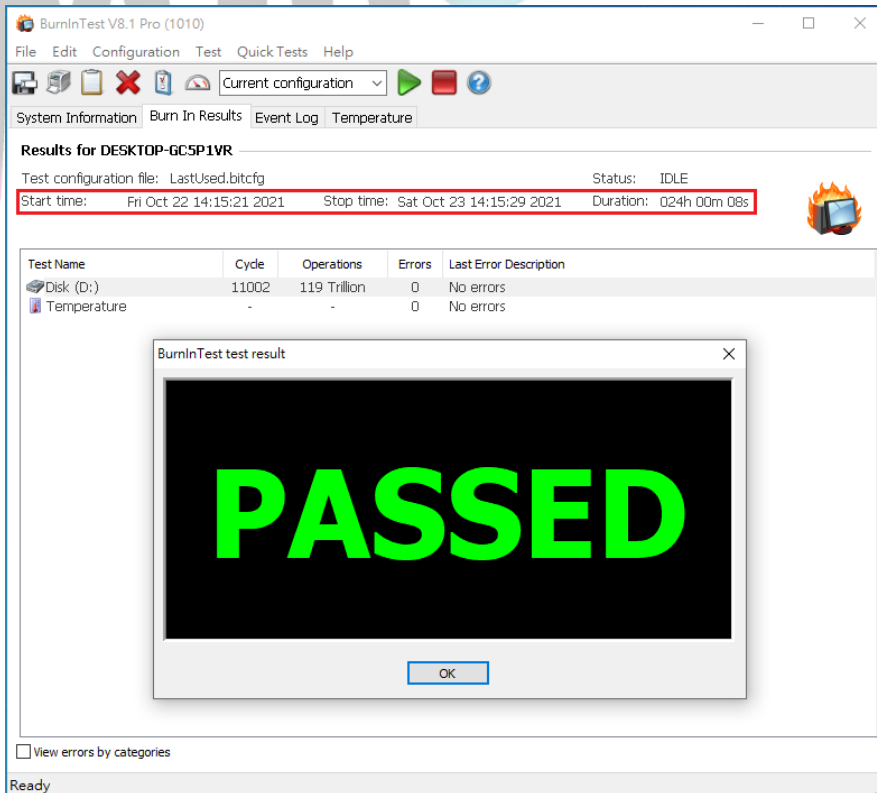


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3.1.2 Disk test mode(10 ways cycle test)



3.1.3 24-hour Burn-in test PASSED



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4. Summary

- 4.1 M.2 NVMe SSD is PCIe Gen 4, 16GT/s , 4 Lanes Interface, I/O speed, max. to 64Gbps.
- 4.2 GD1401A adapter I/O performance is based on M.2 NVMe SSD.

