



MINERVA

GD4405A Convert Card for OCulink to U.2 150cm Cable

Performance & Burn In Test Rev. 1. 0

Table of Contents

1. Overview

2. Performance Measurement Tools and Results

2.1 Test Platform

2.2 GD4405A Adapter, DP4203 Adapter and M.2 NVMe SSD

2.3 Install Hardware

2.4 BIOS & Windows 10 OS environment setup

2.5 CrystalDiskMark 7.0 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 v8.1 Pro burn in test

4. Summary

GD4405A U.2 PCIe Gen 4,16GT/s to Gen-Z 1C Adapter

1. Overview

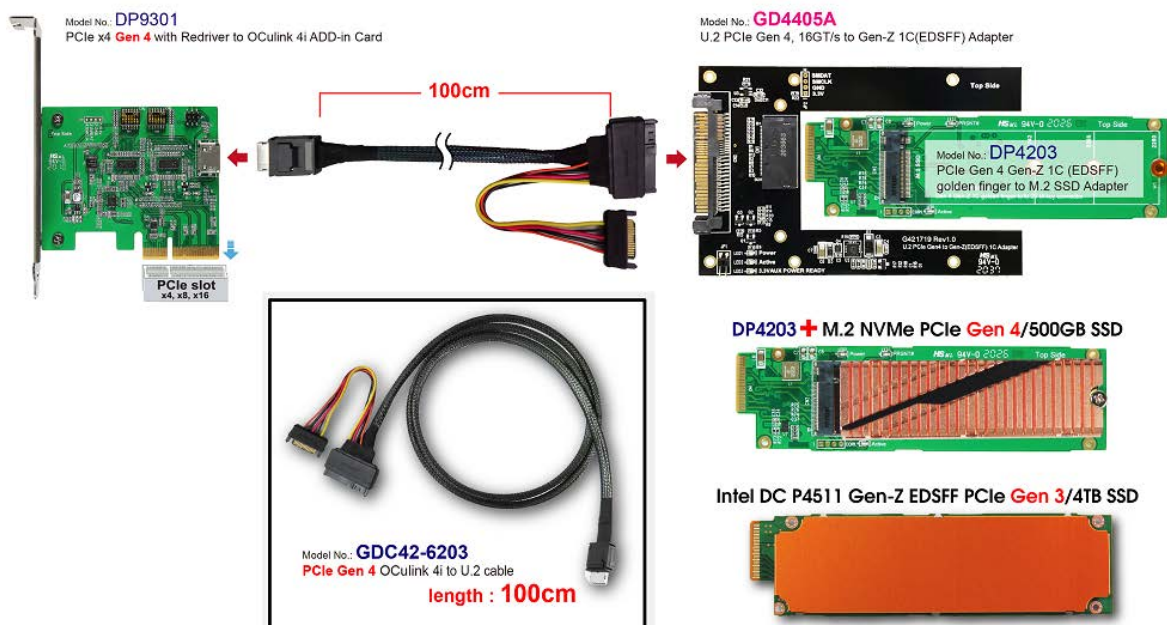
This adapter supports PCIe Gen 4, 16GT/s high-speed transmission, and provides Gen-Z 1C NVMe SSD to U.2 conversion.

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 to OCulink 4i Add-In Card
Adapter: GD4405A U.2 to Gen-Z 1C Storage Adapter
Adapter: DP4203 Gen-Z 1C to M.2 Storage Adapter
Cable: SFF-8611 4i to U.2 **150cm** Cable
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: GD4405A adapter, DP4203 adapte and **M.2 NVMe 512B SSD**



2.3 Install Hardware

Insert DP4203 adapter(with M.2 NVMe SSD) into GD4405A converter's Gen-Z 1C female connector. Connect GD4405A to DP9301 AIC(PCI-e x4 Gen 4 to OCulink) using SFF-8611 to U.2 **150cm** cable, plugs DP9301 adapter into **PCI-e slot of 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.

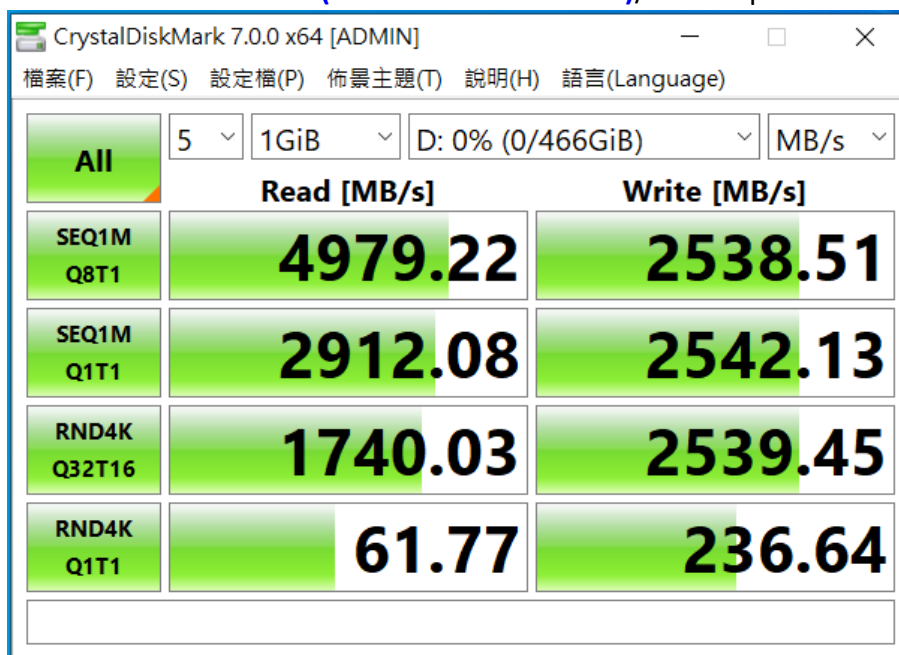


GD4405A U.2 PCIe Gen 4,16GT/s to Gen-Z 1C Adapter

2.5 CrystalDiskMark 7.0.0 x64 performance test

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

2.5.1 GIGABYTE **M.2 Gen4(GP-ASM2NE6100TTD)**/ **512GB** performance as below:



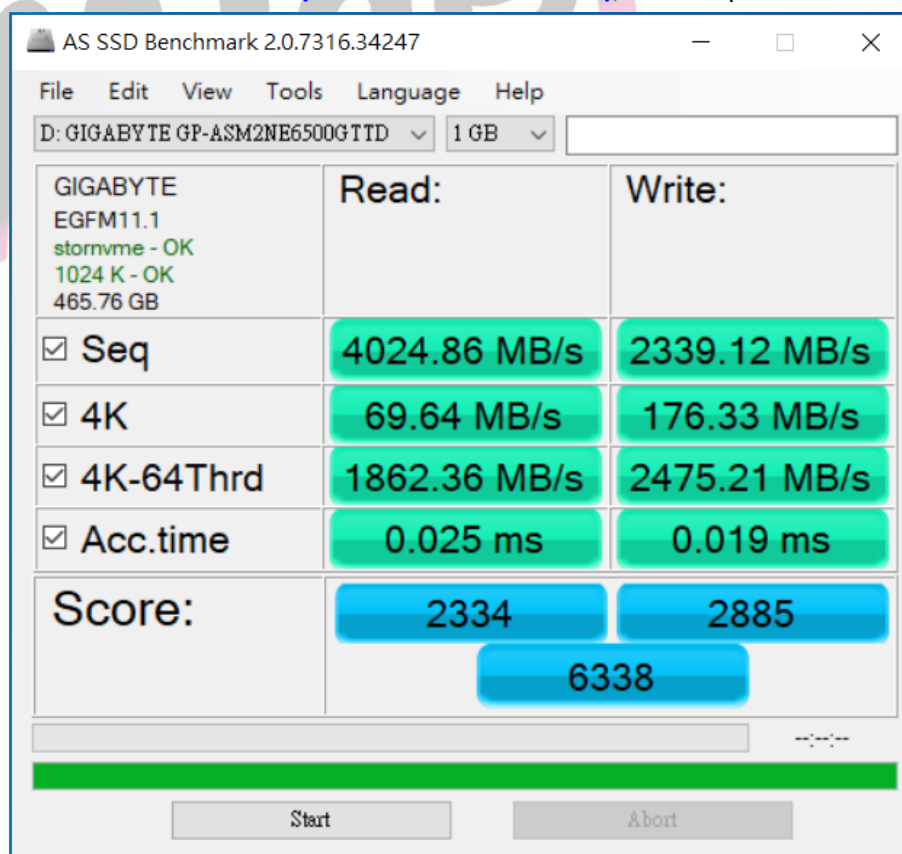
CrystalDiskMark 7.0.0 x64 [ADMIN] window showing performance results for GIGABYTE M.2 Gen4(GP-ASM2NE6100TTD) 512GB SSD. The interface includes a menu bar (File, Settings, Themes, Help, Language), a toolbar with test type (All), sample size (5), block size (1GiB), drive (D: 0% (0/466GiB)), and unit (MB/s). The results table shows sequential and random read/write speeds.

	Read [MB/s]	Write [MB/s]
SEQ1M Q8T1	4979.22	2538.51
SEQ1M Q1T1	2912.08	2542.13
RND4K Q32T16	1740.03	2539.45
RND4K Q1T1	61.77	236.64

2.6 AS SSD Benchmark 2.0.7 performance test

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

2.6.1 GIGABYTE **M.2 Gen4(GP-ASM2NE6100TTD)**/ **512GB** performance as below:



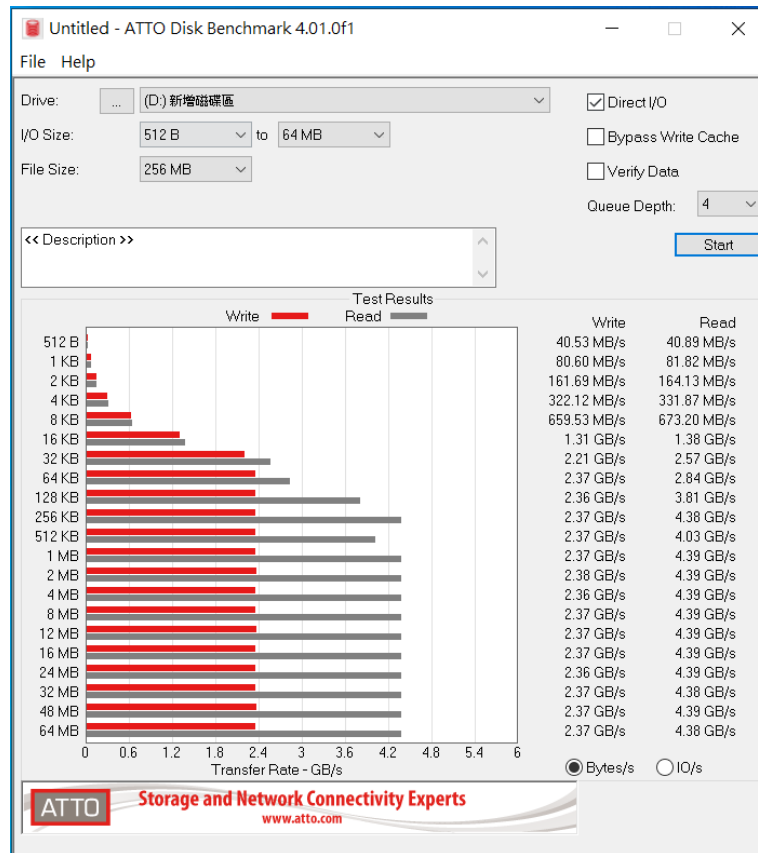
AS SSD Benchmark 2.0.7316.34247 window showing performance results for GIGABYTE GP-ASM2NE6500GTTD 512GB SSD. The interface includes a menu bar (File, Edit, View, Tools, Language, Help), a toolbar with drive (D: GIGABYTE GP-ASM2NE6500GTTD) and block size (1 GB). The results table shows sequential and 4K random read/write speeds, access times, and a total score.

	Read:	Write:
GIGABYTE EGFM11.1 stornvme - OK 1024 K - OK 465.76 GB		
☒ Seq	4024.86 MB/s	2339.12 MB/s
☒ 4K	69.64 MB/s	176.33 MB/s
☒ 4K-64Thrd	1862.36 MB/s	2475.21 MB/s
☒ Acc.time	0.025 ms	0.019 ms
Score:	2334	2885
	6338	

GD4405A U.2 PCIe Gen 4,16GT/s to Gen-Z 1C Adapter

2.7 ATTO Disk Benchmark 4.0.1 performance test

2.7.1 GIGABYTE M.2 Gen4(GP-ASM2NE6100TTD)/ 512GB performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 GIGABYTE M.2 Gen4(GP-ASM2NE6100TTD)/ 512GB performance as below:

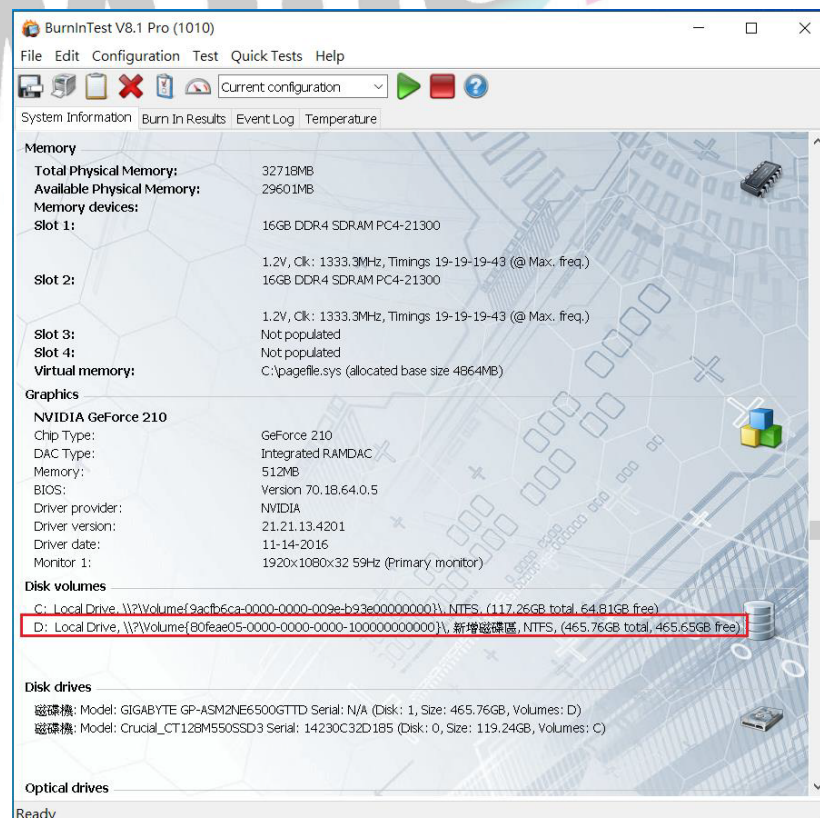
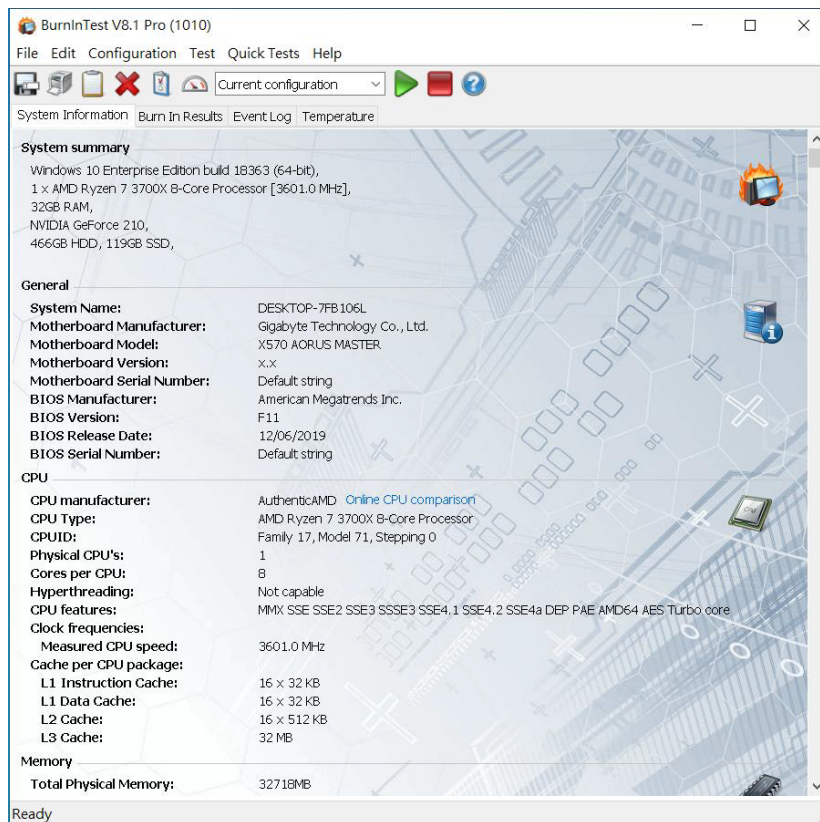


GD4405A U.2 PCIe Gen 4,16GT/s to Gen-Z 1C Adapter

3. Burn In Tests and Results

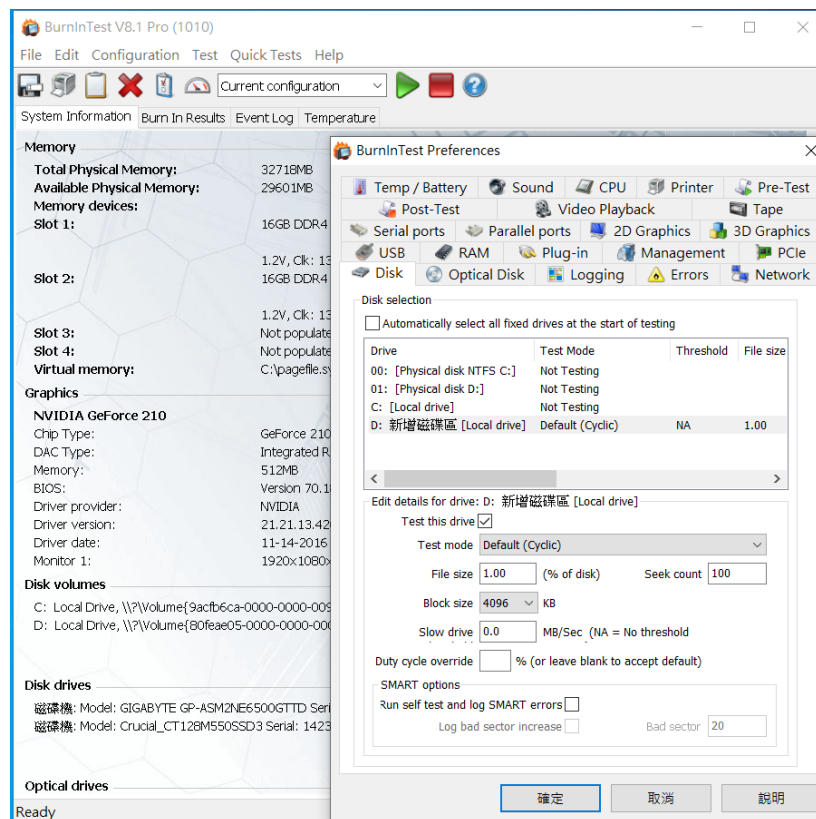
3.1 BurnInTest v8.1 Pro for GIGABYTE M.2 Gen4(GP-ASM2NE6100TTD)/ 512GB SSD

3.1.1 system information as below:

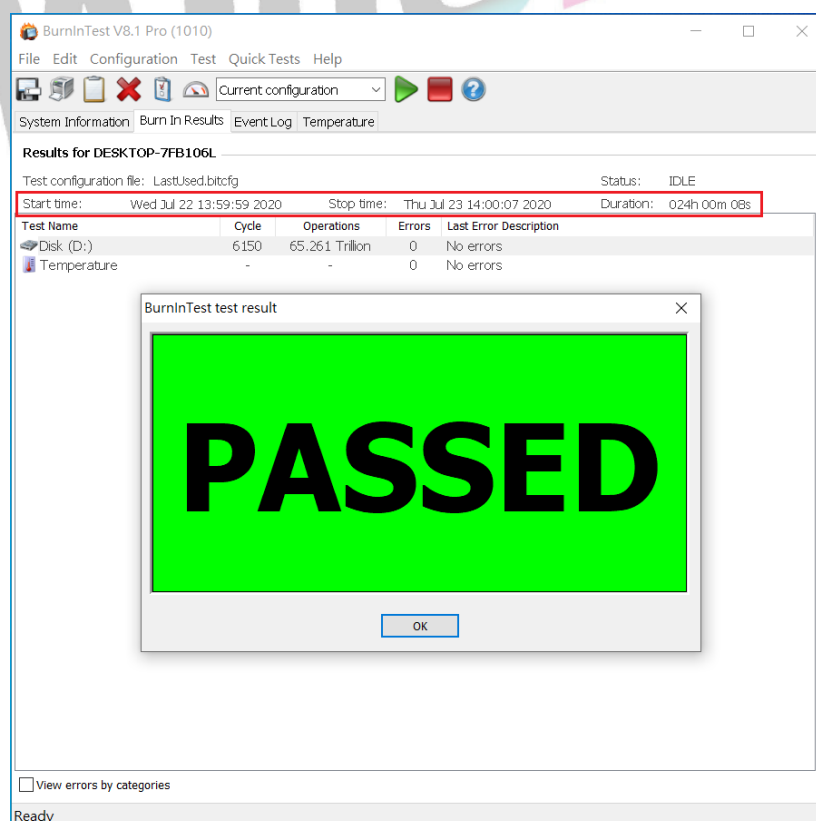


GD4405A U.2 PCIe Gen 4,16GT/s to Gen-Z 1C Adapter

3.1.2 Disk test mode(10 ways cycle test)



3.1.3 24-hour Burn-in test PASSED



4. Summary

- 4.1 M.2 SSD is PCIe Gen 4 / 4 Lanes Interface, I/O speed, max. to 64Gbps.
- 4.2 GD4405A adapter I/O performance is based on M.2 NVMe PCIe Gen 4 / 4 Lanes SSD.
- 4.3 OCulink to U.2 **150cm** cable could connect Host AIC to Device adapter normally.

