



MINERVA

GD4405A Convert Card for OCulink to U.2 100cm Cable

Performance & Burn In Test Rev. 1. 0

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4. Summary

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

1. Overview

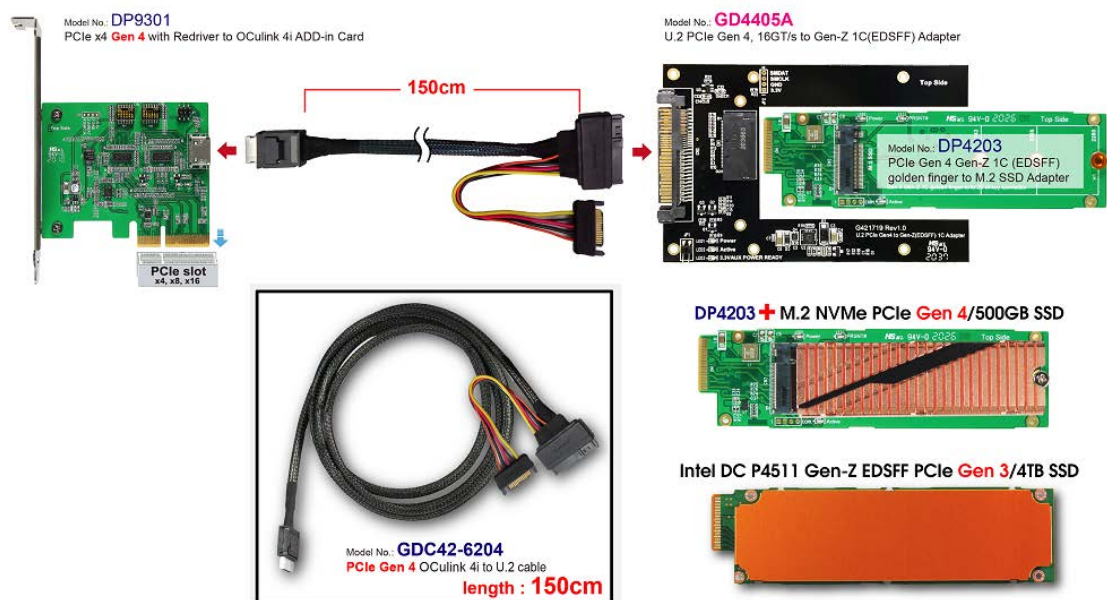
This adapter supports PCIe Gen 4, 16GT/s high-speed transmission, and provides Gen-Z 1C NVMe SSD to U.2 conversion.

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 **100cm** Cable
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: GD4405A adapter, DP4203 adapte and **M.2 NVMe 512GB 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 **100cm** 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.

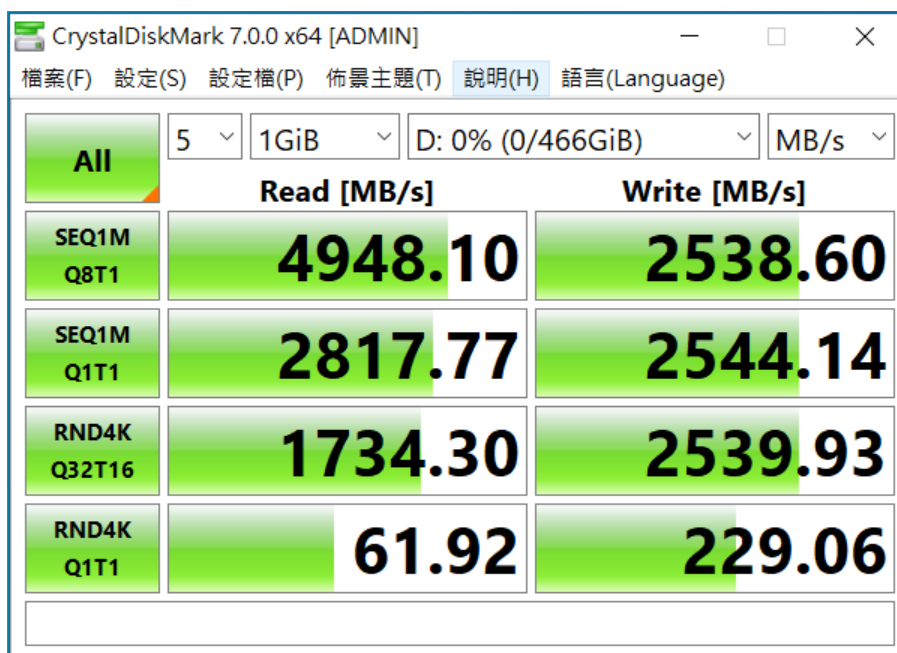


GD4405A U.2 PCIe Gen 4,16GT/s to Gen-Z 1C Adapter

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:



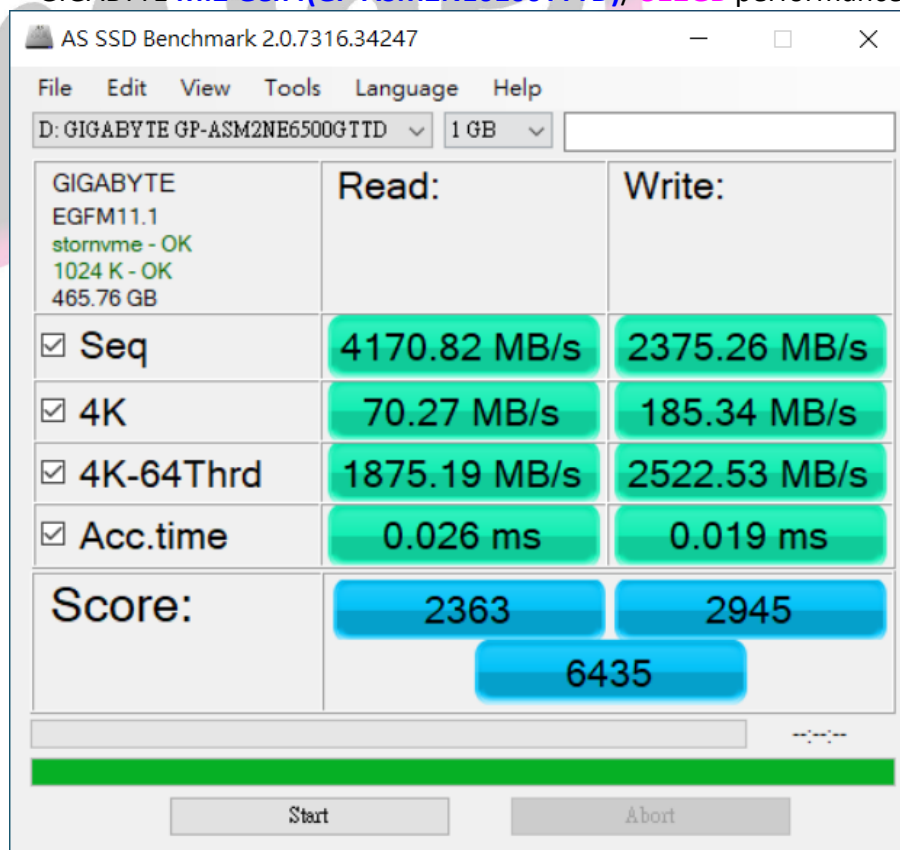
CrystalDiskMark 7.0.0 x64 [ADMIN] window showing performance results. The interface includes a menu bar (檔案(F), 設定(S), 設定檔(P), 佈景主題(T), 說明(H), 語言(Language)), a toolbar with 'All', '5', '1GiB', 'D: 0% (0/466GiB)', and 'MB/s' dropdowns, and a table of results.

	Read [MB/s]	Write [MB/s]
SEQ1M Q8T1	4948.10	2538.60
SEQ1M Q1T1	2817.77	2544.14
RND4K Q32T16	1734.30	2539.93
RND4K Q1T1	61.92	229.06

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:



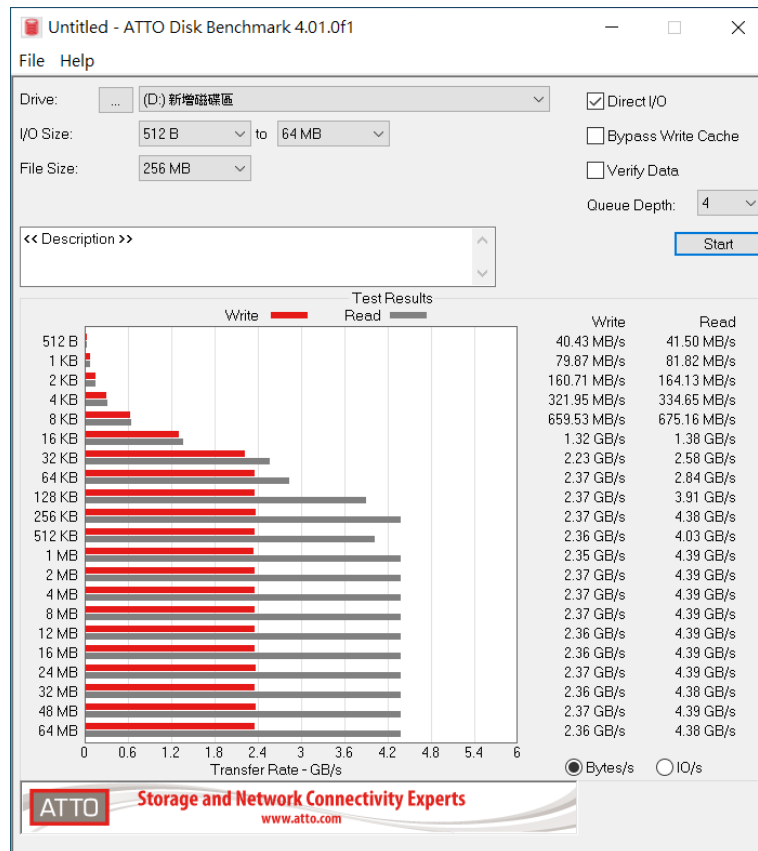
AS SSD Benchmark 2.0.7316.34247 window showing performance results. The interface includes a menu bar (File, Edit, View, Tools, Language, Help), a toolbar with 'D: GIGABYTE GP-ASM2NE6500GTTD' and '1 GB' dropdowns, and a table of results.

	Read:	Write:
GIGABYTE EGFM11.1 stornvme - OK 1024 K - OK 465.76 GB		
☒ Seq	4170.82 MB/s	2375.26 MB/s
☒ 4K	70.27 MB/s	185.34 MB/s
☒ 4K-64Thrd	1875.19 MB/s	2522.53 MB/s
☒ Acc.time	0.026 ms	0.019 ms
Score:	2363	2945
	6435	

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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:

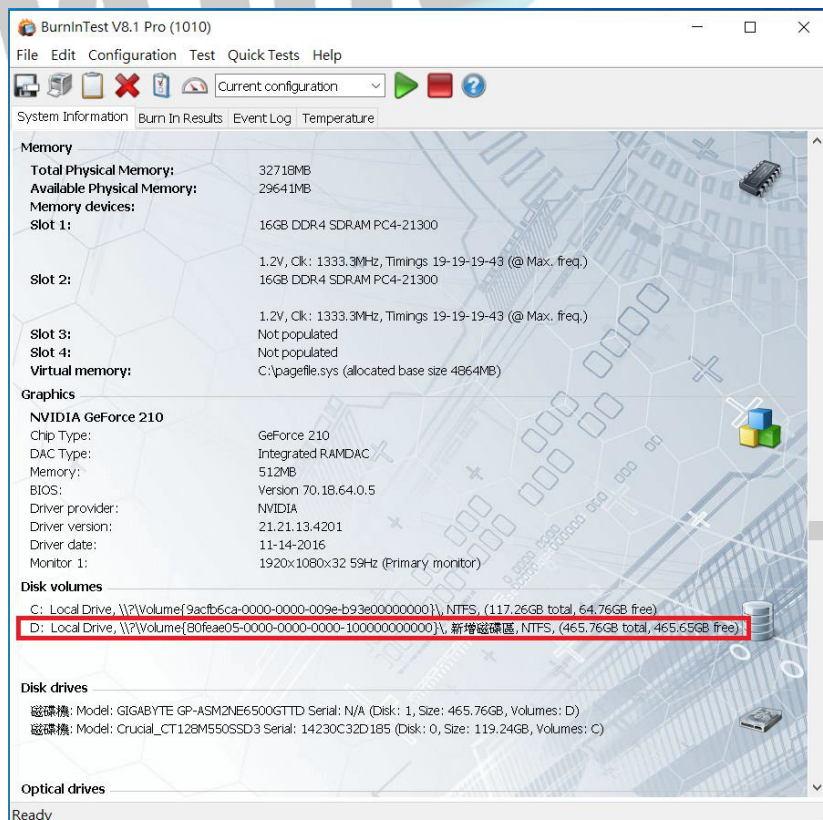
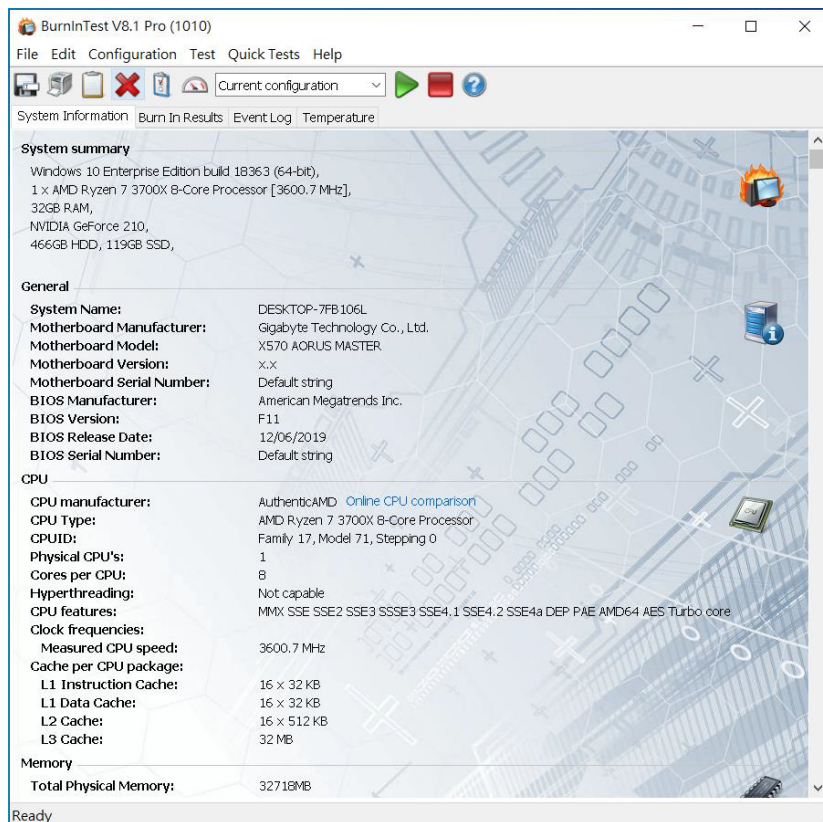


GD4405A U.2 PCIe Gen 4,16GT/s to Gen-Z 1C Adapter

3. Burn In Tests and Results

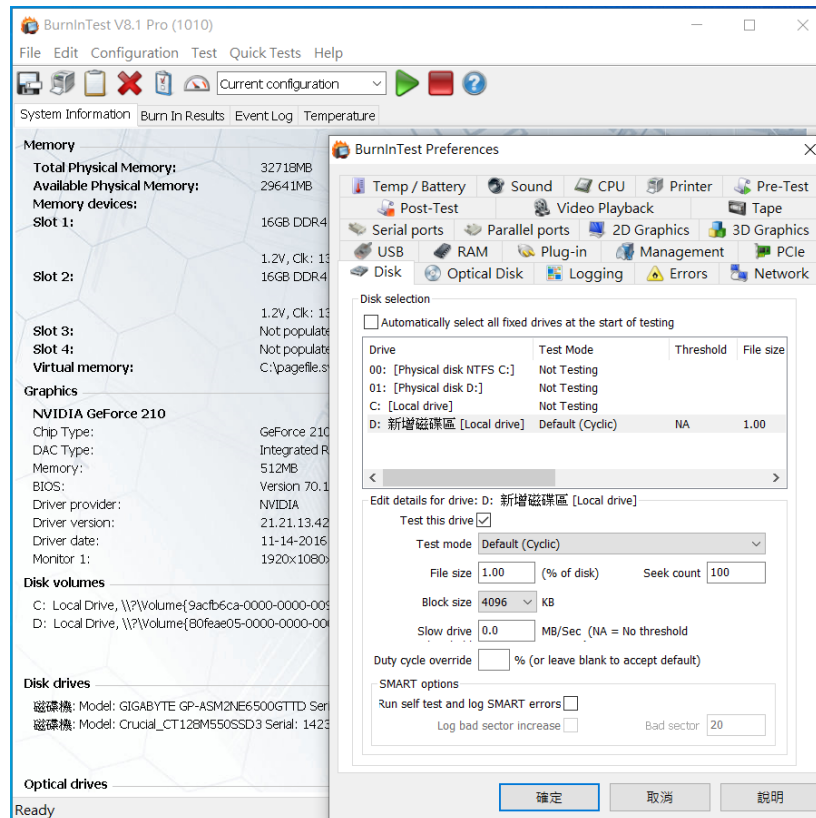
3.1 BurnInTest v8.1 Pro for GIGABYTE M.2 Gen4(GP-ASM2NE6100TTTD)/ 512GB SSD

3.1.1 system information as below:

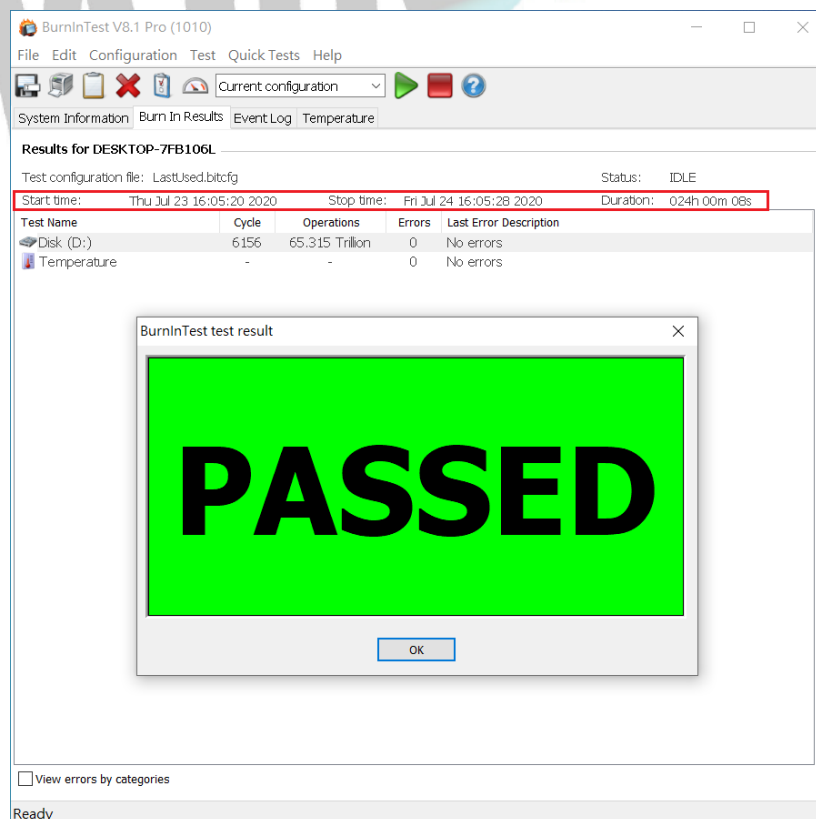


GD4405A U.2 PCIe Gen 4,16GT/s to Gen-Z 1C Adapter

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 **100cm** cable could connect Host AIC to Device adapter normally.

