



MINERVA

GD1407A U.3 PCIe Gen 4,16GT/s to EDSFF(Gen-Z) 1C Adapter

Performance & Burn In Test Rev. 1. 1

Table of Contents

1. Overview

2. Performance Measurement Tools and Results

2.1 Test Platform

2.2 GD1407A Adapter, DP4203 Adapter and M.2 NVMe SSD

2.3 Install Hardware

2.4 BIOS & Windows 10 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 v8.1 Pro burn in test

4. Summary

GD1407A Convert Card

1. Overview

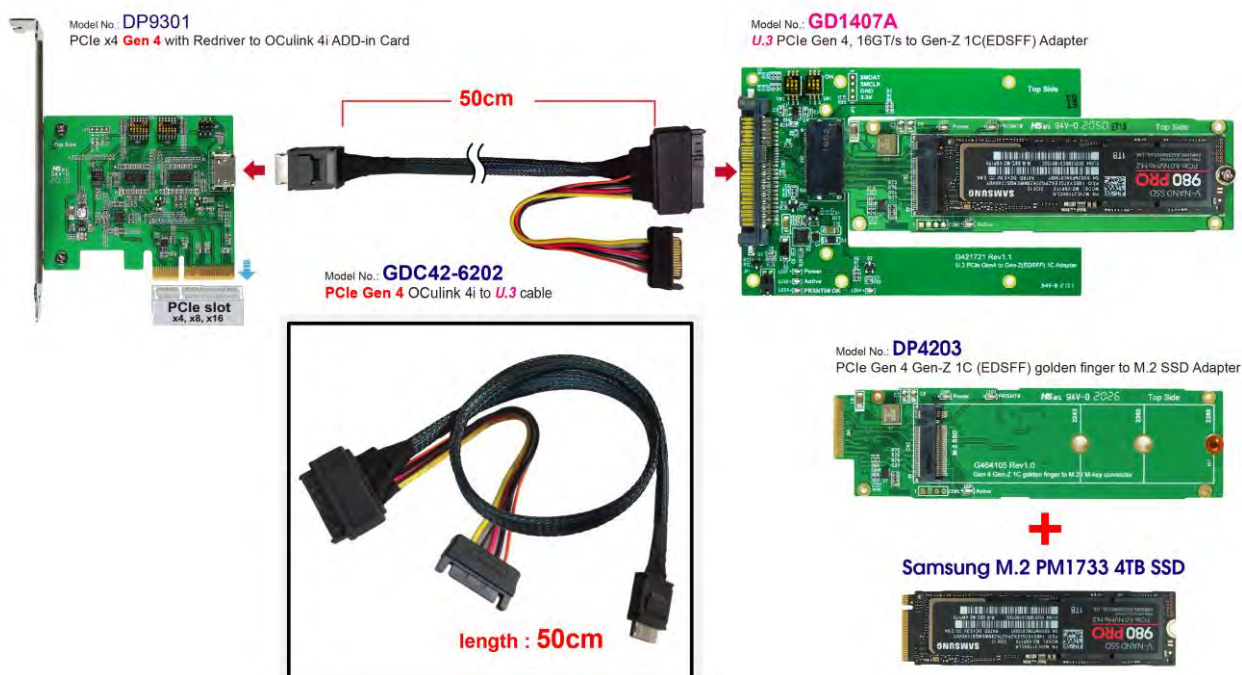
This adapter supports PCIe Gen 4, 16GT/s high-speed transmission, and provides Gen-Z 1C NVMe SSD to U.2 conversion.

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: GD1407A U.3 to Gen-Z 1C Storage Adapter
Adapter: DP4203 Gen-Z 1C to M.2 Storage Adapter
Cable: SFF-8611 4i to U.3 Cable, 50cm
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: GD1407A adapter, DP4203 adapter and M.2 NVMe 1TB SSD



2.3 Install Hardware

Insert DP4203 adapter(with M.2 NVMe SSD) into GD1407A converter's Gen-Z 1C female connector. Connect GD1407A to DP9301 AIC(PCIe x4 Gen 4 to Oculink 4i) using SFF-8611 to U.3 cable, plugs DP9301 adapter into **PCIe 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.



GD1407A Convert Card

2.5 CrystalDiskMark 8.0.0 x64 performance test

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

2.5.1 Samsung 980 PRO M.2 SSD/ 1TB performance as below:

	Read (MB/s)	Write (MB/s)	Mix (MB/s)
SEQ1M Q8T1	6746.53	4926.01	6225.40
SEQ1M Q1T1	4173.62	4140.48	3919.55
RND4K Q32T1	531.05	462.03	519.53
RND4K Q1T1	83.21	199.94	83.73

2.6 AS SSD Benchmark 2.0.7 performance test

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

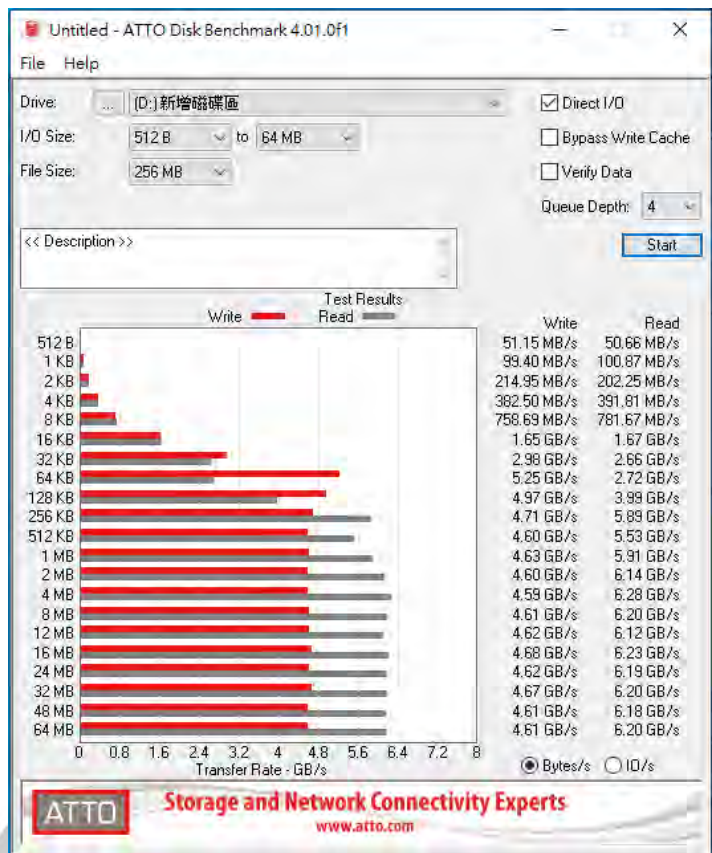
2.6.1 Samsung 980 PRO M.2 SSD/ 1TB performance as below:

	Read:	Write:
Samsung SSD 980 2B2QGXA7 stornvme - OK 1024 K - OK 931.51 GB		
<input checked="" type="checkbox"/> Seq	5385.37 MB/s	3829.25 MB/s
<input checked="" type="checkbox"/> 4K	80.27 MB/s	186.12 MB/s
<input checked="" type="checkbox"/> 4K-64Thrd	2497.88 MB/s	2954.52 MB/s
<input checked="" type="checkbox"/> Acc.time	0.019 ms	0.022 ms
Score:	3117	3524
	8161	

GD1407A Convert Card

2.7 ATTO Disk Benchmark 4.0.1 performance test

2.7.1 Samsung 980 PRO M.2 SSD/ 1TB performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 Samsung 980 PRO M.2 SSD/ 1TB performance as below:

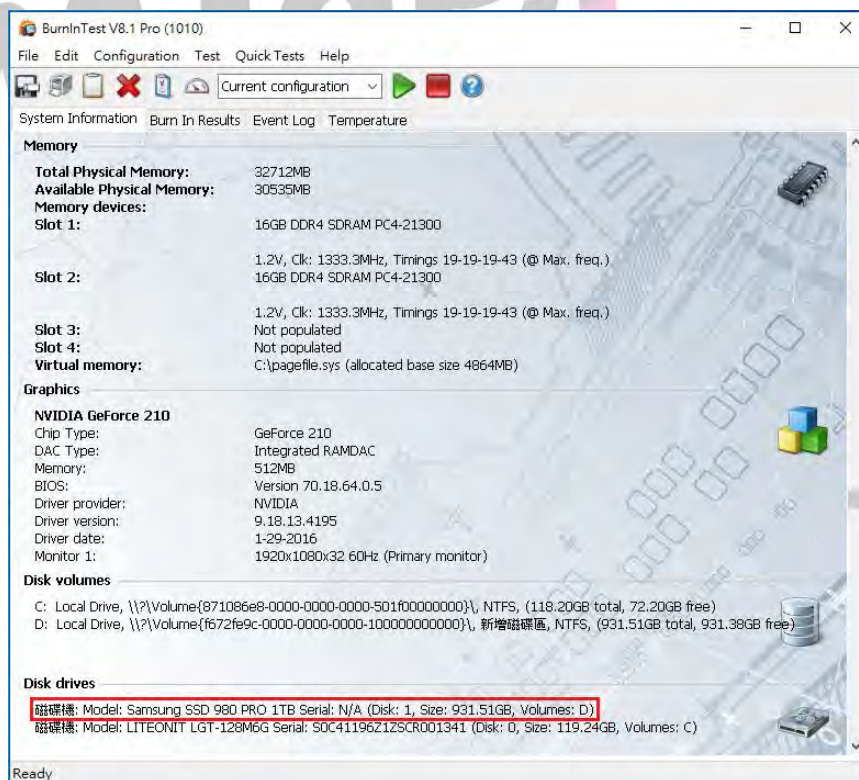
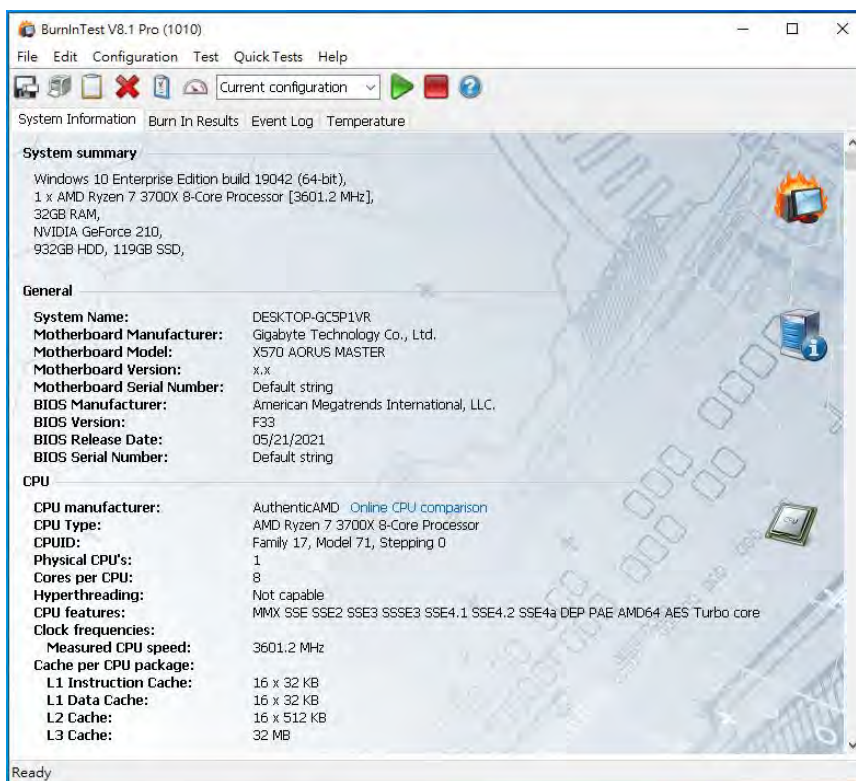


GD1407A Convert Card

3. Burn In Tests and Results

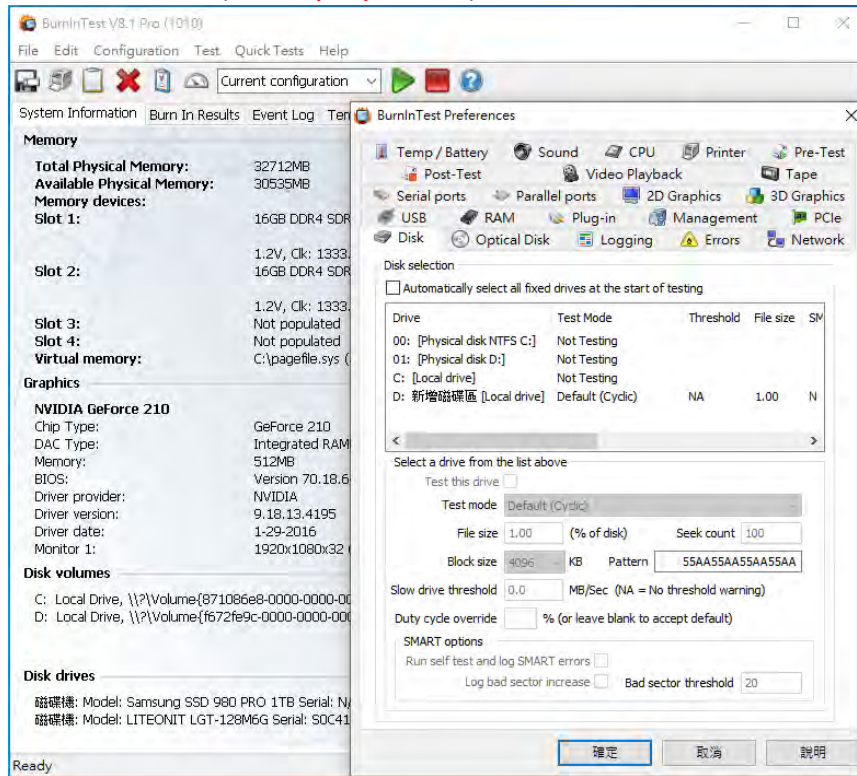
3.1 BurnInTest v8.1 Pro for GIGABYTE M.2 Gen4(GP-ASM2NE6100TTD)/ 512B SSD

3.1.1 system information as below:

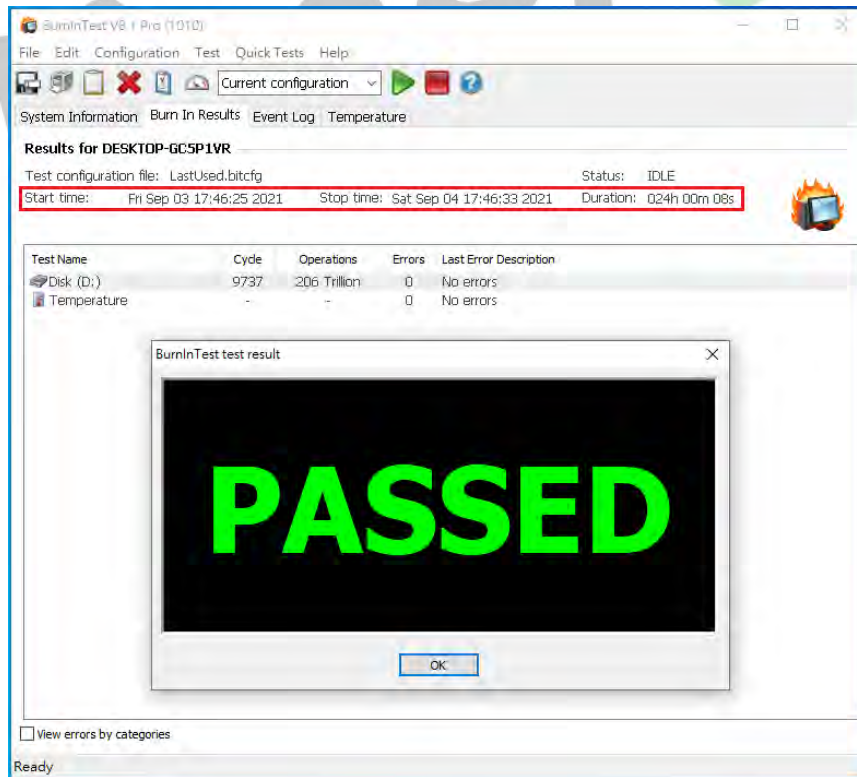


GD1407A Convert Card

3.1.2 Disk test mode(10 ways cycle test)



3.1.2 24-hour Burn-in test PASSED



GD1407A Convert Card

4. Summary

- 4.1 DP4203 with M.2 SSD is simulated as EDSFF 1C SSD
- 4.2 M.2 SSD is PCIe Gen 4 / 4 Lanes Interface, I/O speed, max. to 64Gbps.
- 4.2 GD1407A adapter I/O performance is based on M.2 NVMe SSD.

