



MINERVA

DP8412 PCIe x8 Gen 4 with ReTimer to SlimSAS 8i A.I.C

Performance & Burn In Test Rev 1.0

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DP8412 Add-in Card

1. Overview

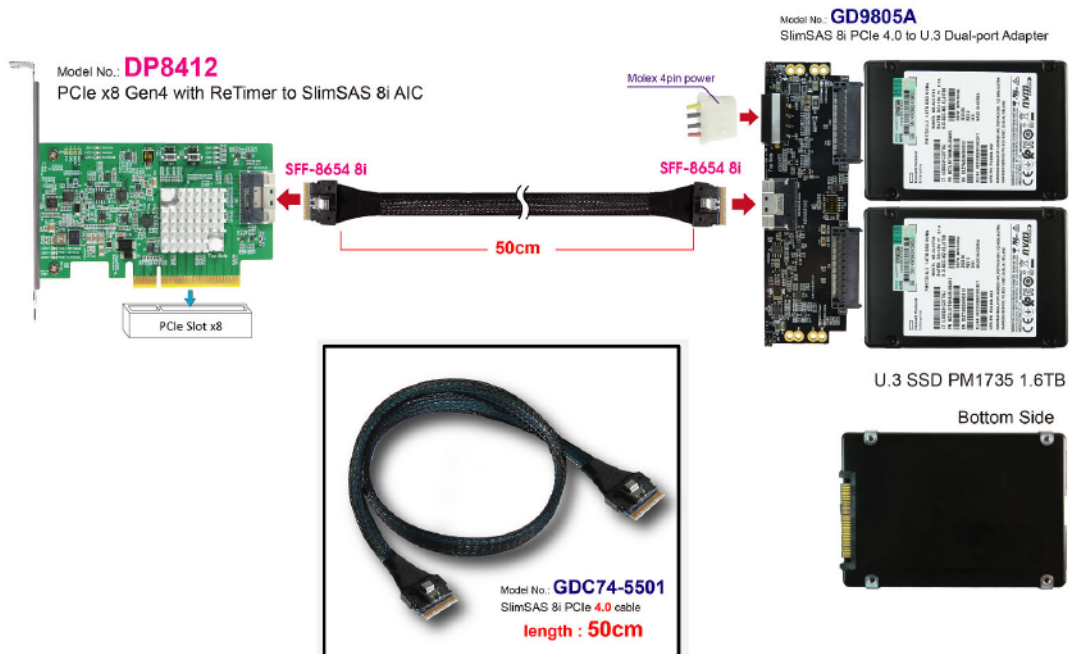
This riser card is built-in PCIe 4.0 ReTimer controller and with SlimSAS(SFF-8654) 8i connector. It is designed for use by PCIe x8 to configure two x4 bifurcations. The controller Channel insertion loss is **28 dB at 8 GHz**.

2. Tools and Results of Performance Measurement

2.1 Test Platform

M/B : ASUS **PRIME X570-PRO**
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
Add in Card: DP8412 PCIe x8 Gen4 built-in ReTimer to SlimSAS(SFF-8654) 8i AIC
Cable: PCIe Gen 4 SlimSAS(SFF-8654) 8i to SlimSAS(SFF-8654) 8i, **50cm** Cable
Adapter: GD9805A SlimSAS(SFF-8654) 8i to U.3 dual ports adapter
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: DP8412, GD9805A adapter with SAMSUNG U.3 **1.6TB** x2pcs



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2.3 Install Hardware

First inserts the U.3 SSD into the GD9805A U.3 connector, then to connect the GD9805A adapter to the DP8412 AIC card (PCIe x8 Gen 4 with ReTimer to SFF-8654 8i) using the **GDC74-5501, 50cm Cable**, and Plugs DP8412 AIC into ASUS **PRIME X570-PRO**.

2.4 BIOS & Windows 10 OS environment setup

2.4.1 Primary SATA NVMe SSD install Windows 10 OS.

2.4.2 TWO U.3 NVMe SSDs, formatted to NTFS Mode. Don't install any program.



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2.5 CrystalDiskMark 8.0.0 x64 performance test

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

2.5.1 **U.3 NVMe SAMSUNG / 1.6TB** in **Drive D:** performance as below:

CrystalDiskMark 8.0.0 x64 [Admin]

檔案(F) 設定(S) 設定檔(P) 佈景主題(T) 說明(H) 語言(Language)

All 5 1GiB D: 0% (0/1490GiB) MB/s

	Read (MB/s)	Write (MB/s)
SEQ1M Q8T1	7451.37	2592.18
SEQ1M Q1T1	2819.73	2601.88
RND4K Q32T1	551.89	476.36
RND4K Q1T1	53.56	194.50

2.5.2 **U.3 NVMe SAMSUNG / 1.6TB** in **Drive E:** performance as below:

CrystalDiskMark 8.0.0 x64 [Admin]

檔案(F) 設定(S) 設定檔(P) 佈景主題(T) 說明(H) 語言(Language)

All 5 1GiB E: 0% (0/1490GiB) MB/s

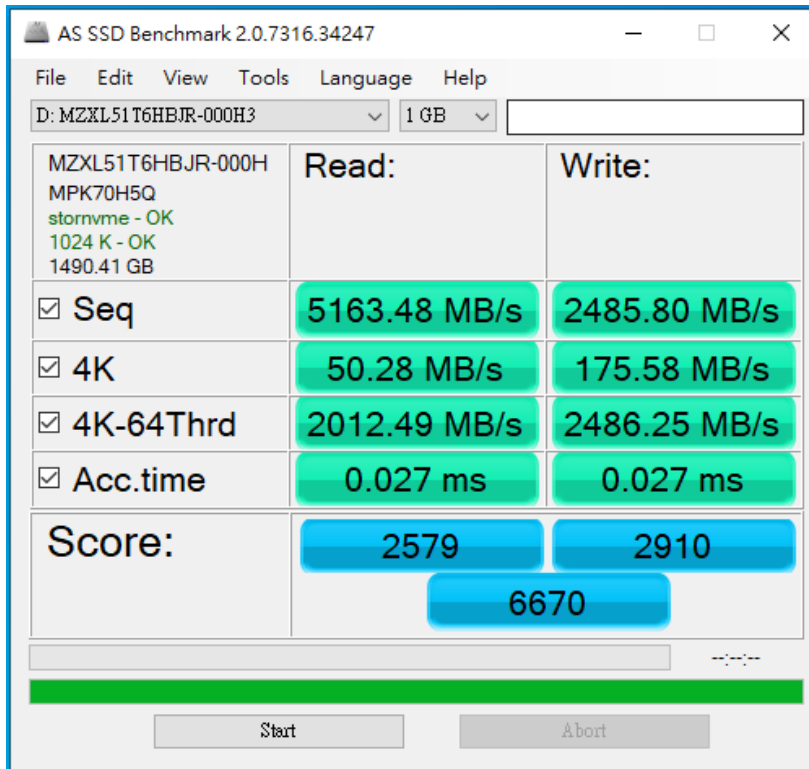
	Read (MB/s)	Write (MB/s)
SEQ1M Q8T1	7444.26	2591.23
SEQ1M Q1T1	2818.87	2598.68
RND4K Q32T1	549.76	475.53
RND4K Q1T1	53.73	194.96

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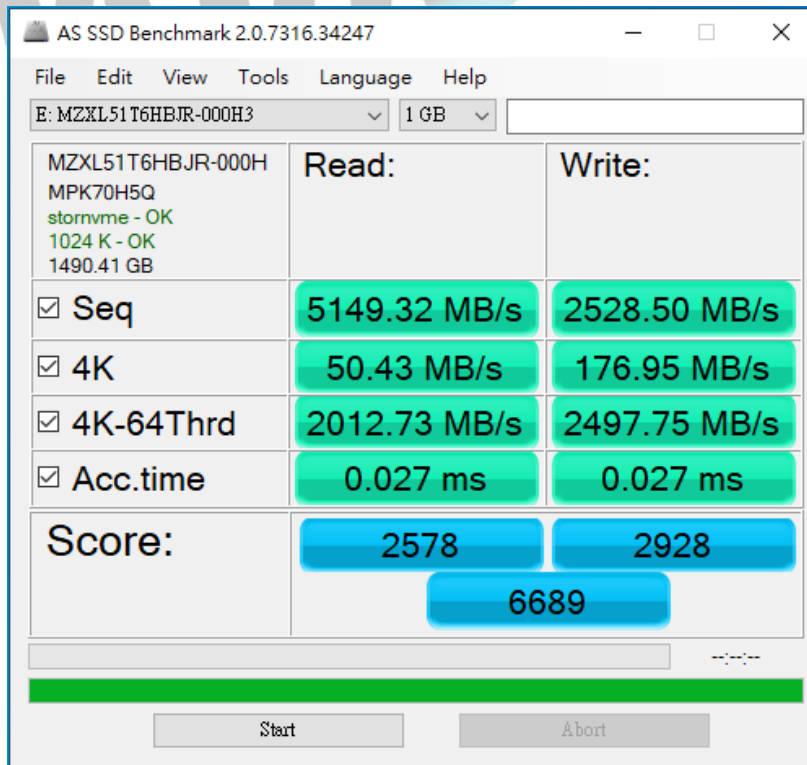
2.6 AS SSD Benchmark 2.0 performance test

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

2.6.1 **U.3 NVMe SAMSUNG / 1.6TB** in Drive D: performance as below:



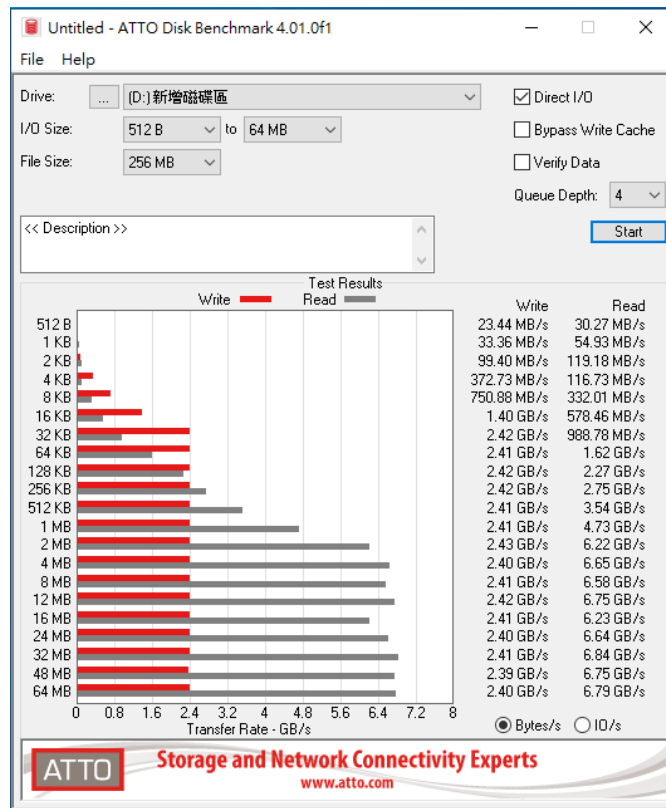
2.6.2 **U.3 NVMe SAMSUNG / 1.6TB** in Drive E: performance as below:



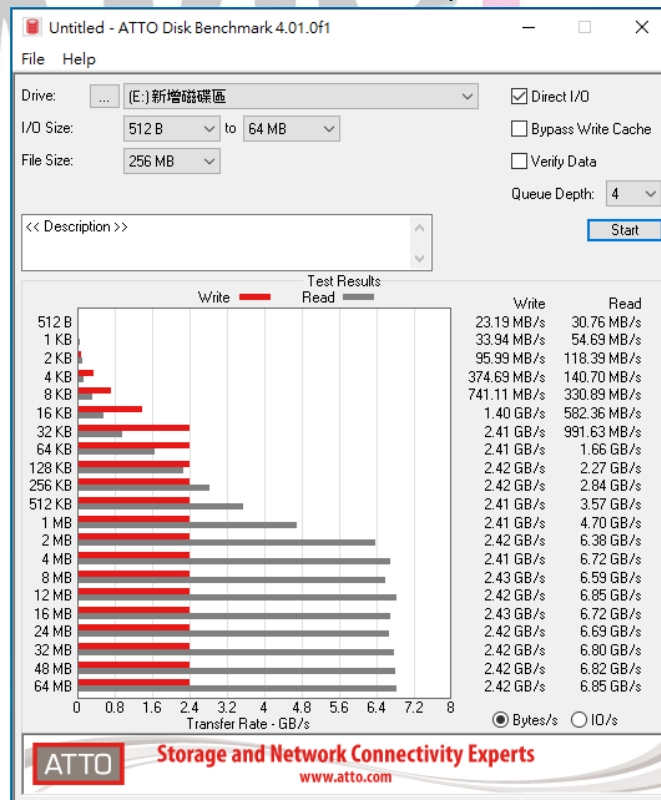
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2.7 ATTO Disk Benchmark 4.01 performance test

2.7.1 U.3 NVMe SAMSUNG / 1.6TB in Drive D: performance as below:



2.7.2 U.3 NVMe SAMSUNG / 1.6TB in Drive E: performance as below:



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2.8 AnvilBenchmark_V110_B337

2.8.1 U.3 NVMe SAMSUNG / 1.6TB in Drive D: performance as below:



2.8.2 U.3 NVMe SAMSUNG / 1.6TB in Drive E: performance as below:

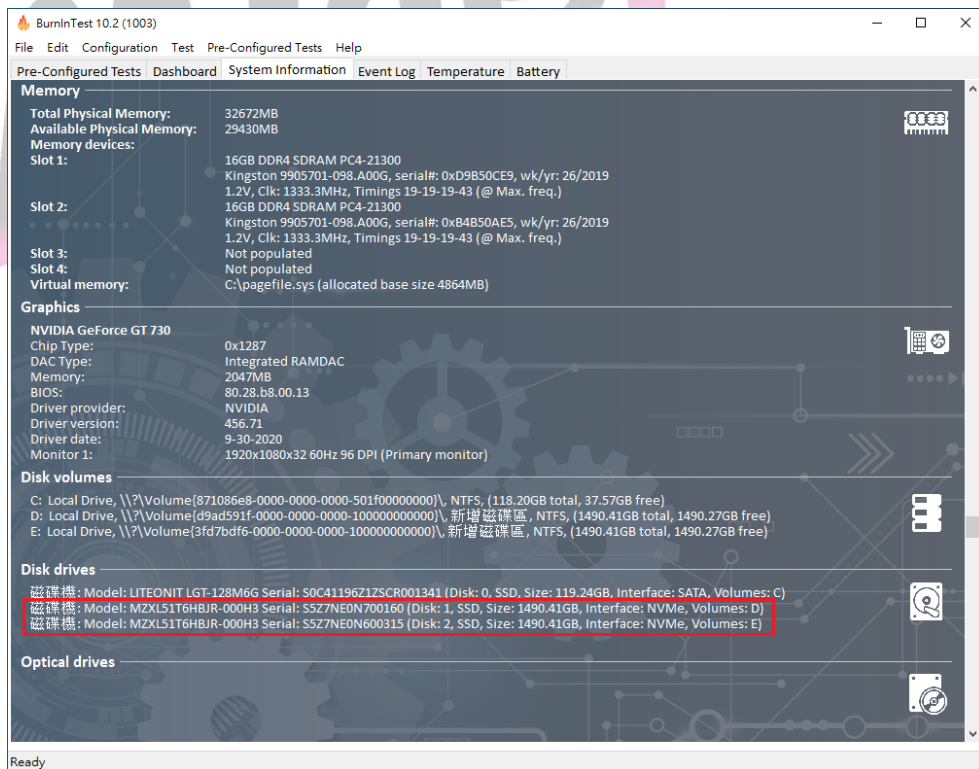
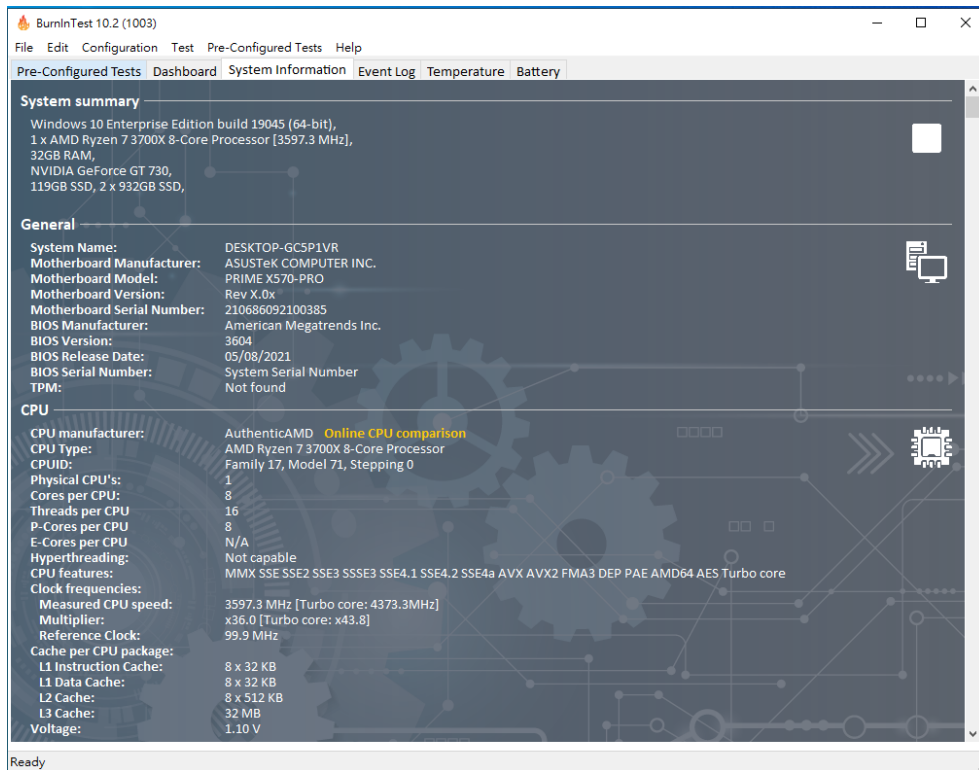


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3. Burn In Tests and Results

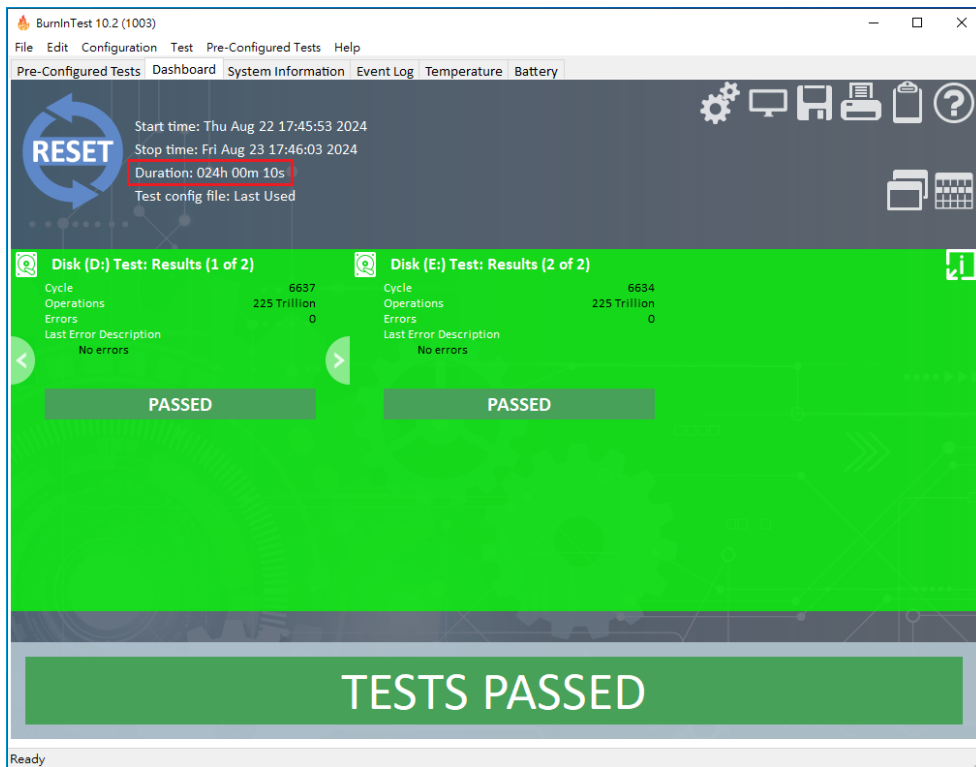
3.1 BurnInTest v10.2 Pro

3.1.1 **system information** as below:



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



4. Summary

- 4.1 U.3 NVMe SSD is PCIe Gen 4 / 4 Lane Interface, I/O speed, max. to 64Gbps.
- 4.2 GD9805A adapter I/O performance is based on U.3 NVMe SSD.