



MINERVA

DP9710 PCIe x4 Gen4 with ReDriver for Mini SAS HD(SFF 8673)

Performance & Burn In Test Rev. 1. 0

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DP9710 Add-in Card

1. Overview

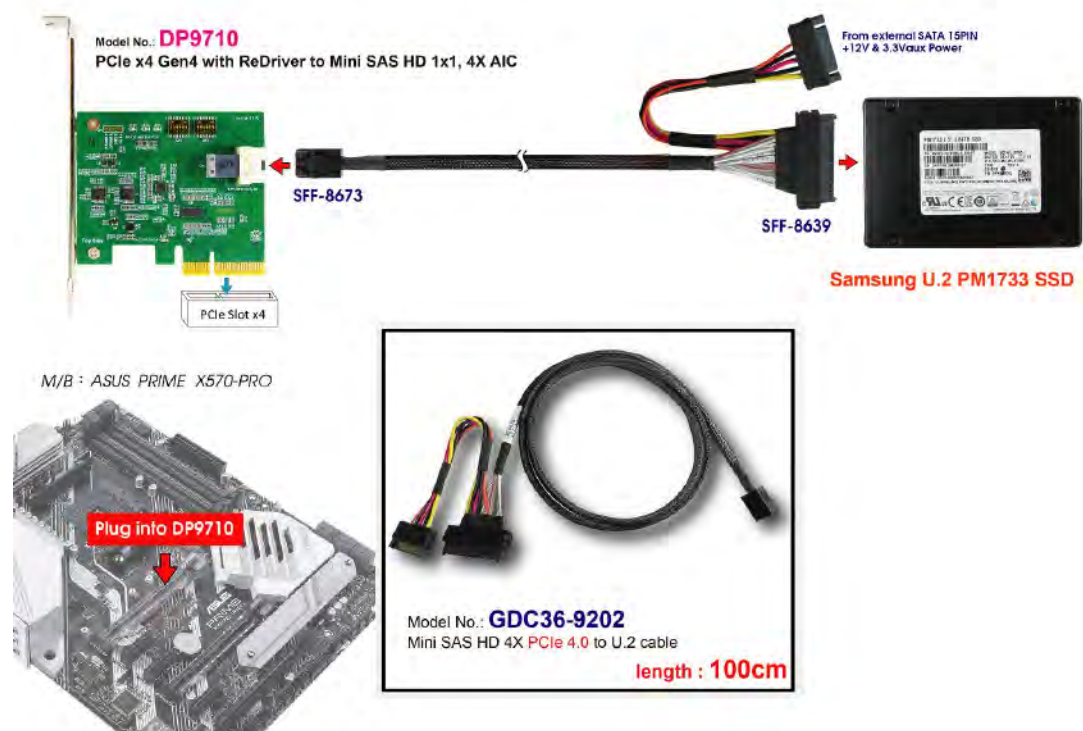
This add-in card built-in ReDriver provides PCIe x4 Gen4, 16GT/s high-speed signals extension to Mini SAS HD 1x1, 4X(SFF-8673).

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**
- AIC: **DP9710 PCIe x4 Gen 4 with Redriver to SFF-8673 Add-in Card**
- Cable: **SFF-8673 PCIe 4.0 to U.2(SFF-8639), 100cm Cable**
- OS : **Microsoft Windows 10 64bit OS**

2.2 Test target: DP9710 AIC & Samsung U.2 NVMe 4TB SSD



DP9710 Add-in Card

2.3 Install Hardware

Inserts U.2 NVMe SSD into GDC36-9202 cable's U.2 connector, and then Connects to DP9710 ADD-in Card (PCIe x4 Gen4 with Redriver to MNI SAS HD). The DP9710 AIC plugs into PCIe Slot of **ASUS PRIME X570-PRO**

2.4 BIOS & Windows 10 OS environment setup

- 2.4.1 Primary SATA SSD installed Windows 10 OS.
- 2.4.2 U.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 U.2 NVMe 4TB SSD performance as below:

	Read (MB/s)	Write (MB/s)
SEQ1M Q8T1	7408.27	3718.91
SEQ1M Q1T1	1977.78	3799.38
RND4K Q32T1	532.67	540.81
RND4K Q1T1	53.41	37.32

2.6 AS SSD Benchmark 2.0.7 performance test

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

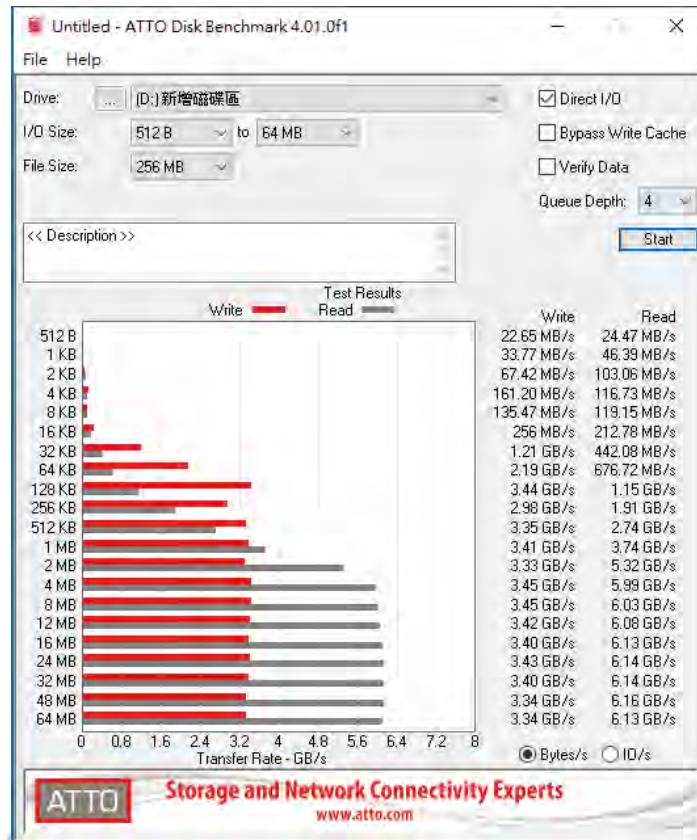
2.6.1 Samsung U.2 NVMe 4TB SSD performance as below:

	Read:	Write:
SAMSUNG EPK98B5Q stornvme - OK 16384 K - OK 3576.98 GB		
<input checked="" type="checkbox"/> Seq	5339.22 MB/s	3635.23 MB/s
<input checked="" type="checkbox"/> 4K	51.88 MB/s	151.06 MB/s
<input checked="" type="checkbox"/> 4K-64Thrd	2244.89 MB/s	2395.21 MB/s
<input checked="" type="checkbox"/> Acc.time	0.030 ms	0.098 ms
Score:	2831	2910
	7097	

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2.7 ATTO Disk Benchmark 4.01 performance test

2.7.1 Samsung U.2 NVMe 4TB SSD performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 Samsung U.2 NVMe 4TB SSD performance as below:

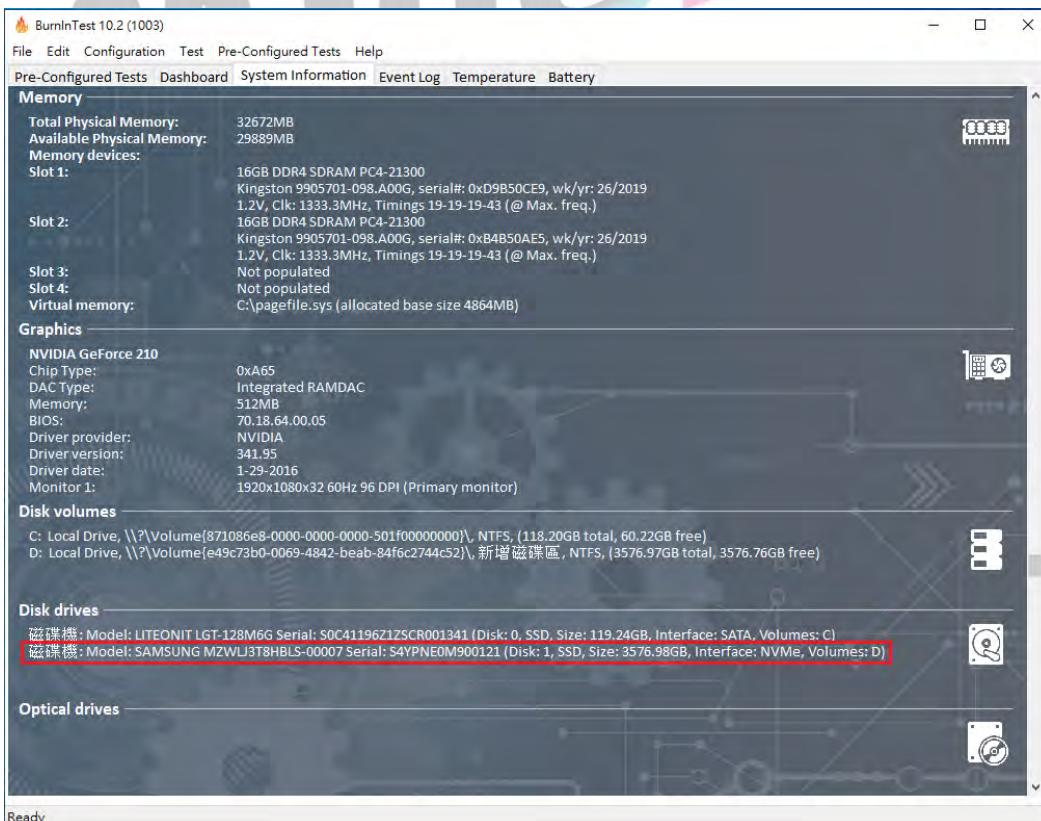
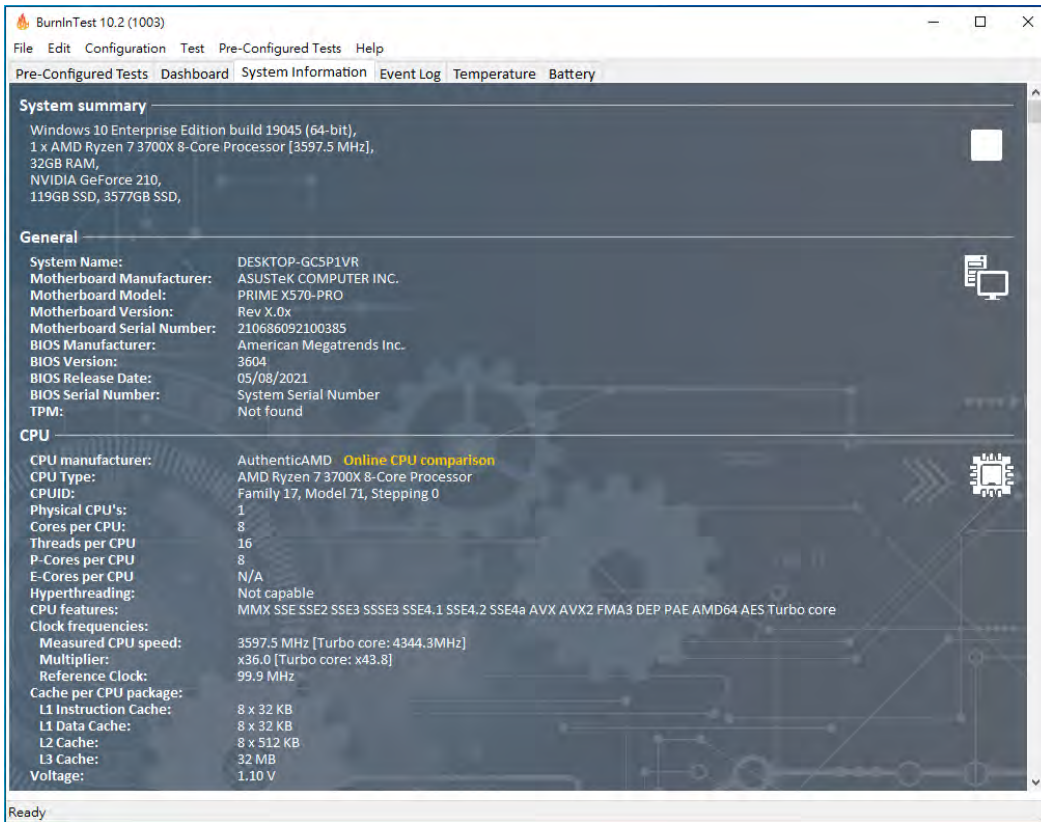


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3. Burn In Tests and Results

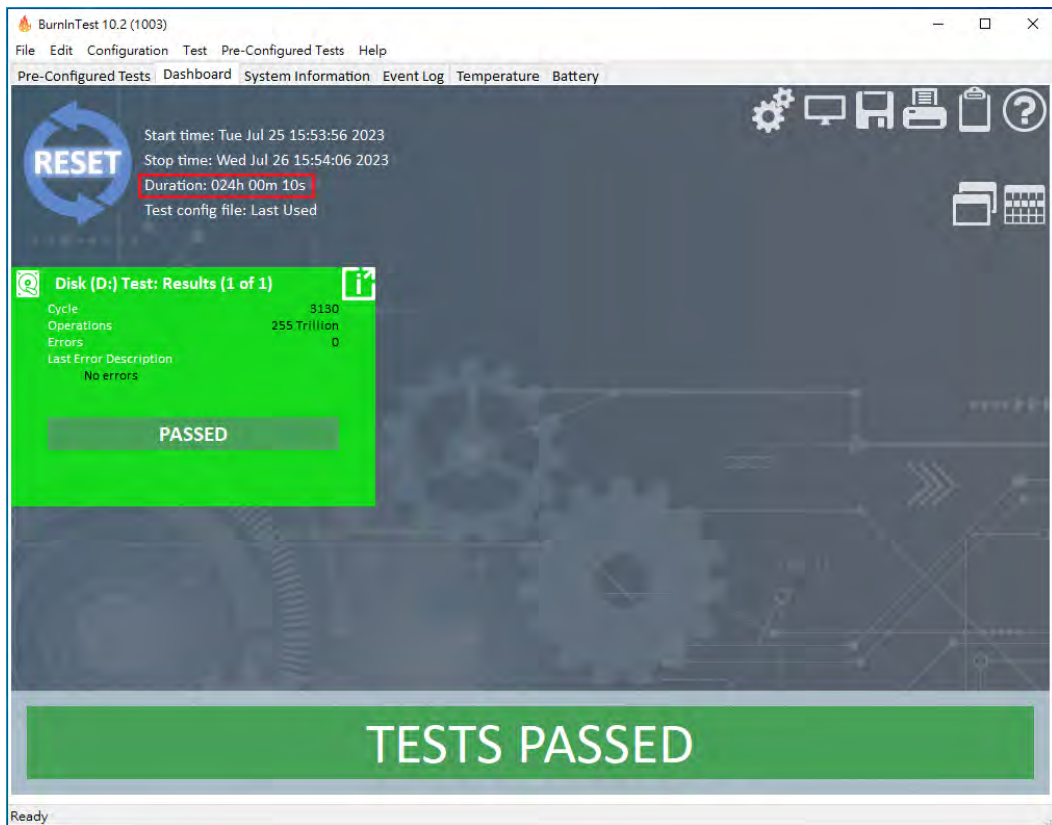
3.1 BurnInTest v10.2 Pro for Samsung U.2 NVMe 4TB SSD

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.2 NVMe SSD is PCIe Gen4, 16GT/s , 4 Lanes Interface, I/O speed, max. to 64Gbps.
- 4.2 DP9710 AIC I/O performance is based on U.2 NVMe SSD.