



MINERVA

DP9609 PCIe x4 Gen4 with ReDriver for MCIO 38P AIC

Performance & Burn In Test Rev. 1. 0

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DP9609 Add-in Card

1. Overview

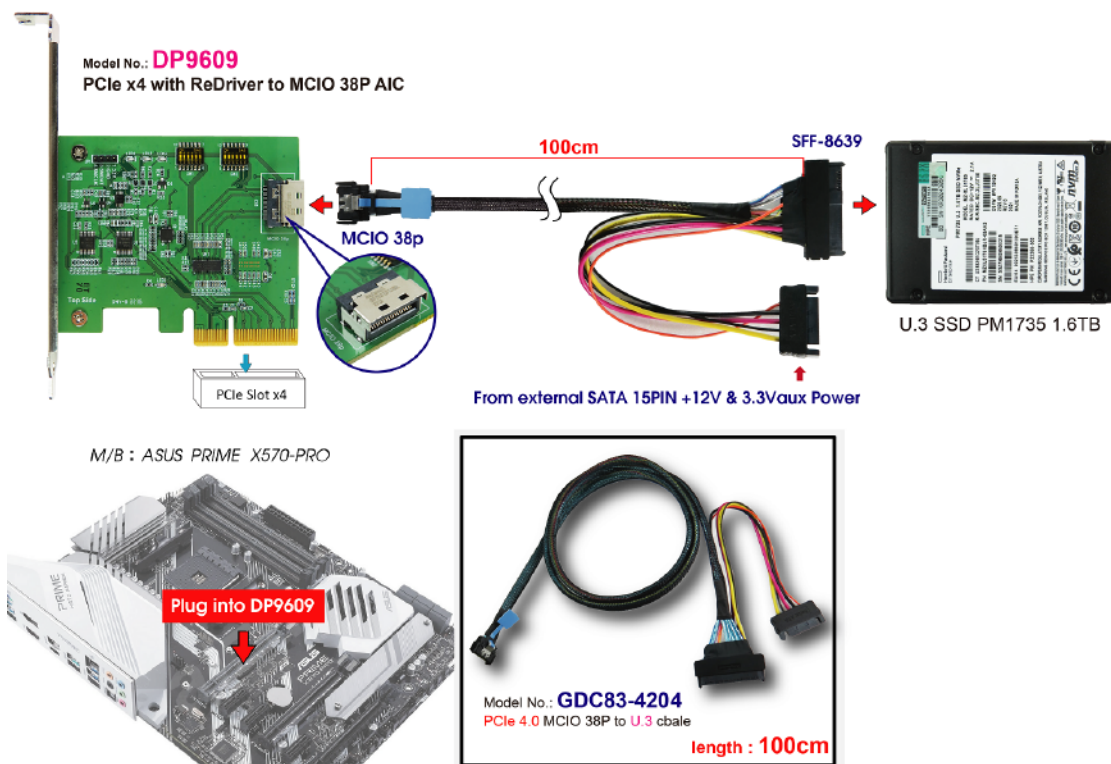
This add-in card built-in ReDriver provides PCIe x4 Gen4, 16GT/s high-speed signals extension to MCIO 38P.

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: DP9609 PCIe x4 Gen 4 with Redriver to MCIO 38P Add-in Card
DUT: PCIe 4.0 U.3 NVMe SSD Adapter
Cable: MCIO 38P PCIe 4.0 to U.3(SFF-8639), **100cm** Cable
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: DP9609 AIC, **Samsung PM1735 U.3 NVMe 1.6TB SSD**



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2.3 Install Hardware

Inserts U.3 NVMe SSD into MCIO 38P to U.3 cable's U.3 connector and connects cable to DP9609 ADD-in Card (PCIe x4 Gen4 with Redriver to MCIO 38P). The DP9609 AIC plugs into 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.3 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.3 NVMe SSD/ 1.6TB** performance as below:

	Read (MB/s)	Write (MB/s)
SEQ1M Q8T1	7431.06	2576.55
SEQ1M Q1T1	2789.45	2574.78
RND4K Q32T1	546.46	583.38
RND4K Q1T1	51.05	35.51

2.6 AS SSD Benchmark 2.0.7 performance test

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

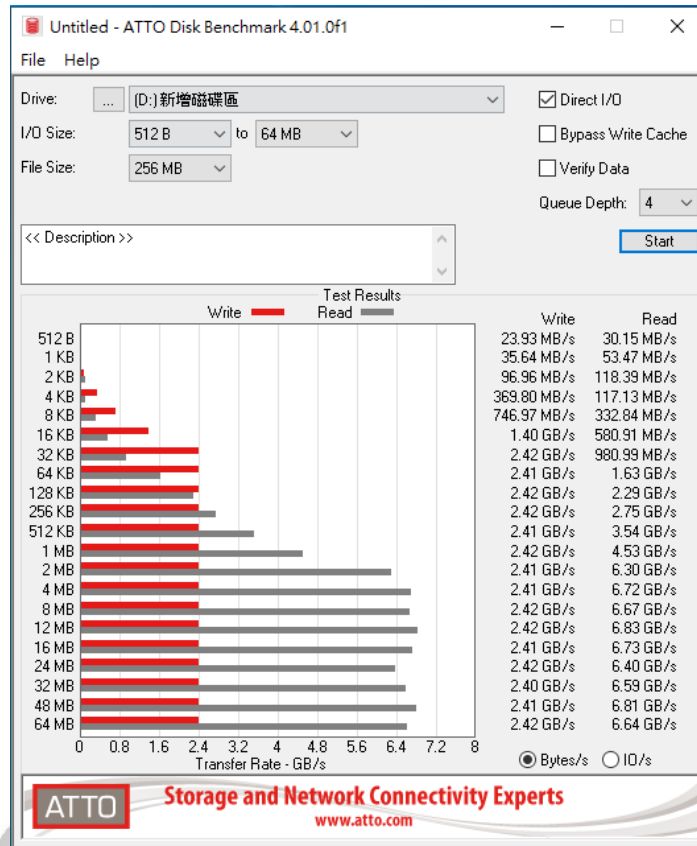
2.6.1 **SAMSUNG U.3 NVMe SSD/ 1.6TB** performance as below:

	Read:	Write:
Seq	5175.05 MB/s	2540.76 MB/s
4K	50.35 MB/s	177.99 MB/s
4K-64Thrd	2024.68 MB/s	2559.71 MB/s
Acc.time	0.026 ms	0.026 ms
Score:	2593	2992
	6774	

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2.7 ATTO Disk Benchmark 4.01 performance test

2.7.1 SAMSUNG U.3 NVMe SSD/ 1.6TB performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 SAMSUNG U.3 NVMe SSD/ 1.6TB performance as below:

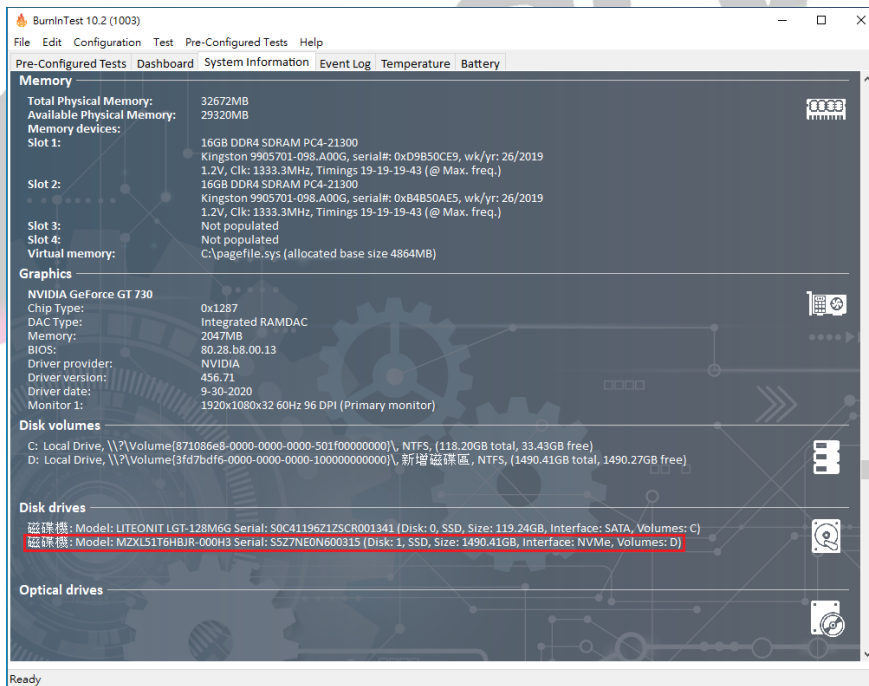
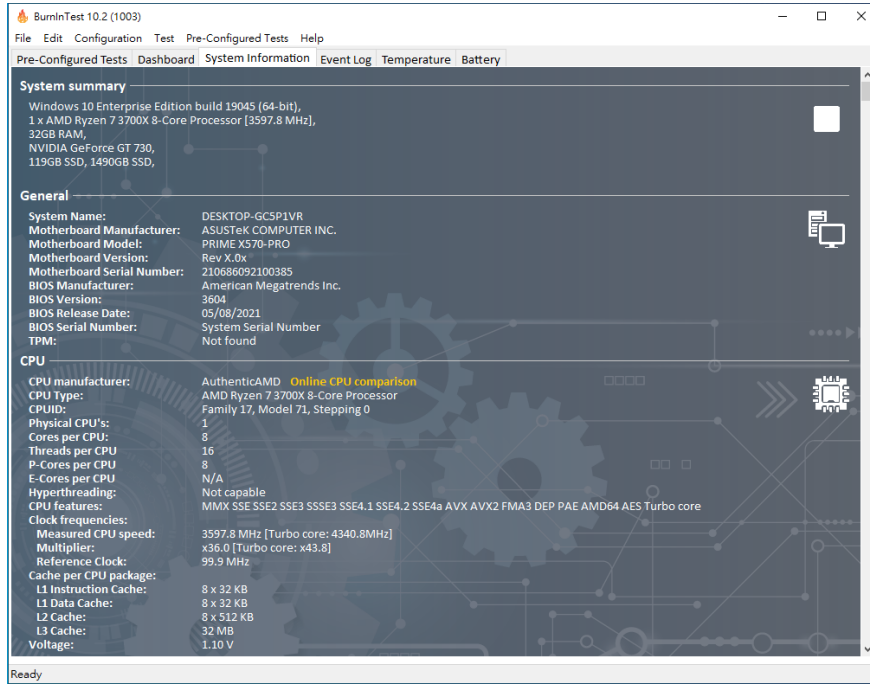


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3. Burn In Tests and Results

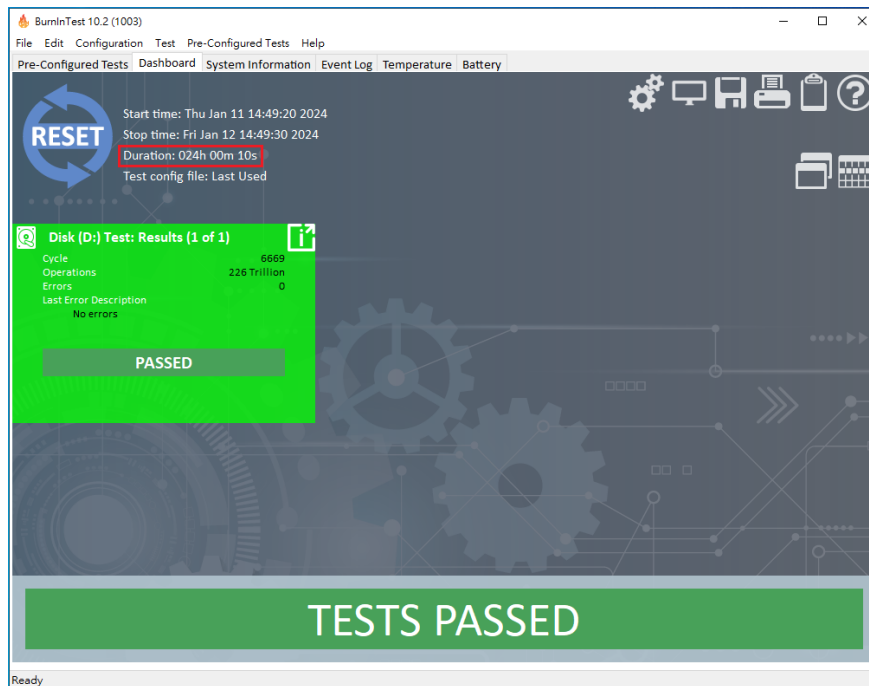
3.1 BurnInTest v10.2 Pro for SAMSUNG U.3 NVMe SSD/ 1.6TB

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 Gen4, 16GT/s , 4 Lanes Interface, I/O speed, max. to 64Gbps.
- 4.2 DP9609 AIC I/O performance is based on U.3 NVMe SSD.
- 4.3 MCIO 38P to U.3, 100cm cable performance is based on U.3 NVMe SSD.