



MINERVA

DP9301 PCIe x4 Gen 4 for OCulink 4i(SFF-8612) AIC

Performance & Burn In Test Rev. 1. 0

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4. Summary

DP9301 Add-in Card

1. Overview

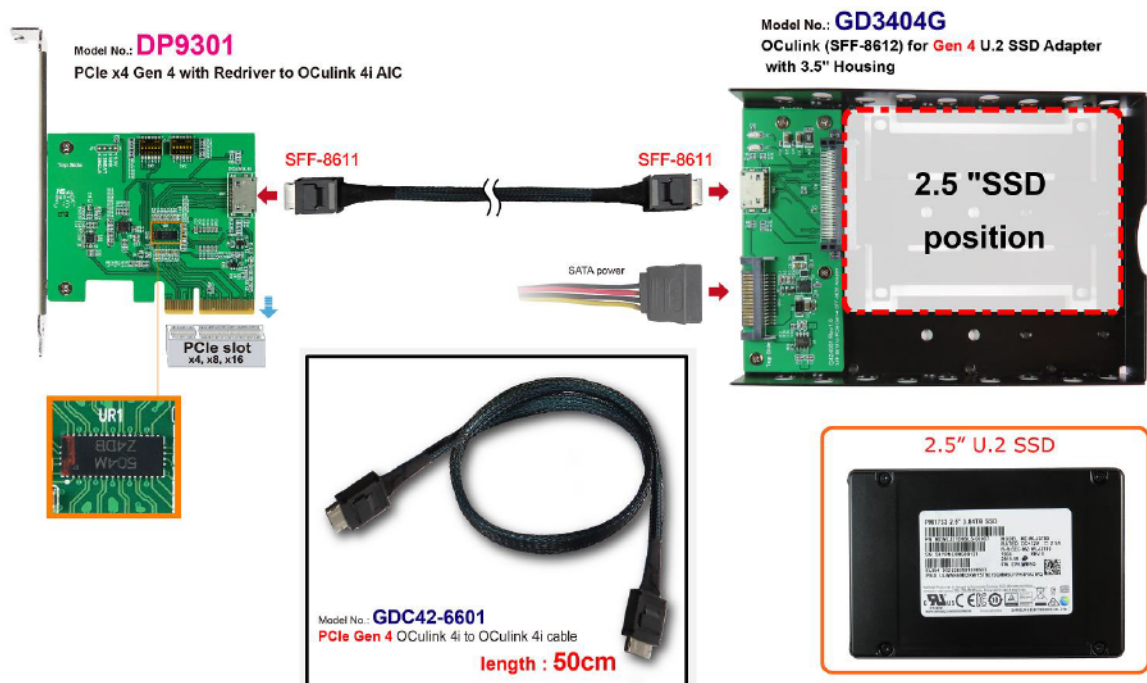
The Host Bus Adapter may provide PCIe x4 Gen4, 16GT/s high-speed signals extension to OCulink 4i(SFF-8612).

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 Gen 4 with **Redriver** to OCulink 4i Add-in Card
PS: AIC with **ON Semi PCIe 4.0 ReDriver**
Adapter: GD3404G OCulink 4i PCIe 4.0 to U.2 Female Adapter
Cable: SFF-8611 Male to Male PCIe 4.0 Cable, 50cm
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: GD3404G Adapter & Samsung PM17433 U.2 4TB NVMe SSD



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2.3 Install Hardware

Inserts U.2 NVMe SSD into GD3404G adapter converter's U.2 connector, and then with coppers, and screws to fix SSDs. (Please refer to the Installation Notes). Connects GD3404G converter to DP9301 AIC(PCIe x4 Gen4 with Redriver to OCulink 4i ADD-in Card), Using SFF-8611 4i male to male, 50cm cable and plugs DP9301 into 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 U.2 NVMe SSD, formatted to NTFS Mode. Don't install any program.

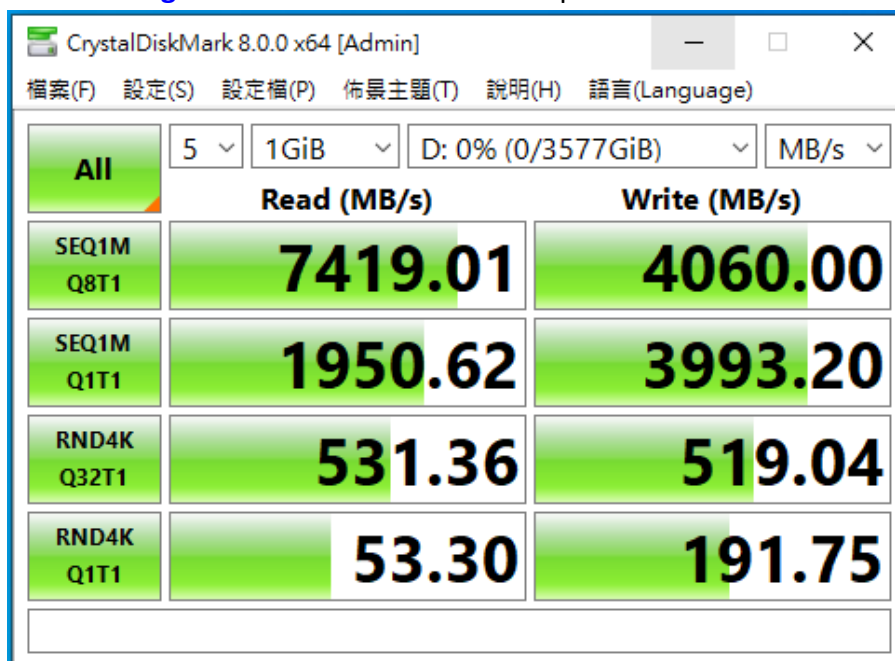
Innocard
Minerva

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2.5 CrystalDiskMark 8.0 x64 performance test

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

2.5.1 Samsung PM1733 U.2 4TB NVMe SSD 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)

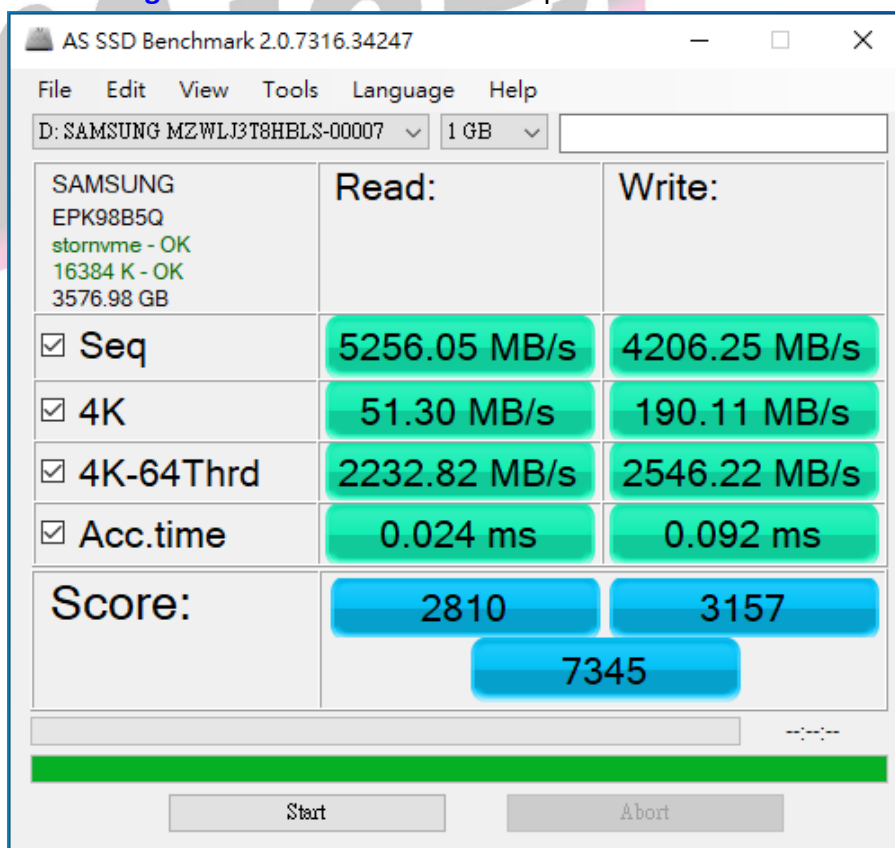
All 5 1GiB D: 0% (0/3577GiB) MB/s

	Read (MB/s)	Write (MB/s)
SEQ1M Q8T1	7419.01	4060.00
SEQ1M Q1T1	1950.62	3993.20
RND4K Q32T1	531.36	519.04
RND4K Q1T1	53.30	191.75

2.6 AS SSD Benchmark 2.0.7 performance test

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

2.6.1 Samsung PM1733 U.2 4TB NVMe SSD performance as below:



AS SSD Benchmark 2.0.7316.34247

File Edit View Tools Language Help

D: SAMSUNG MZWLJ3T8HBL5-00007 1 GB

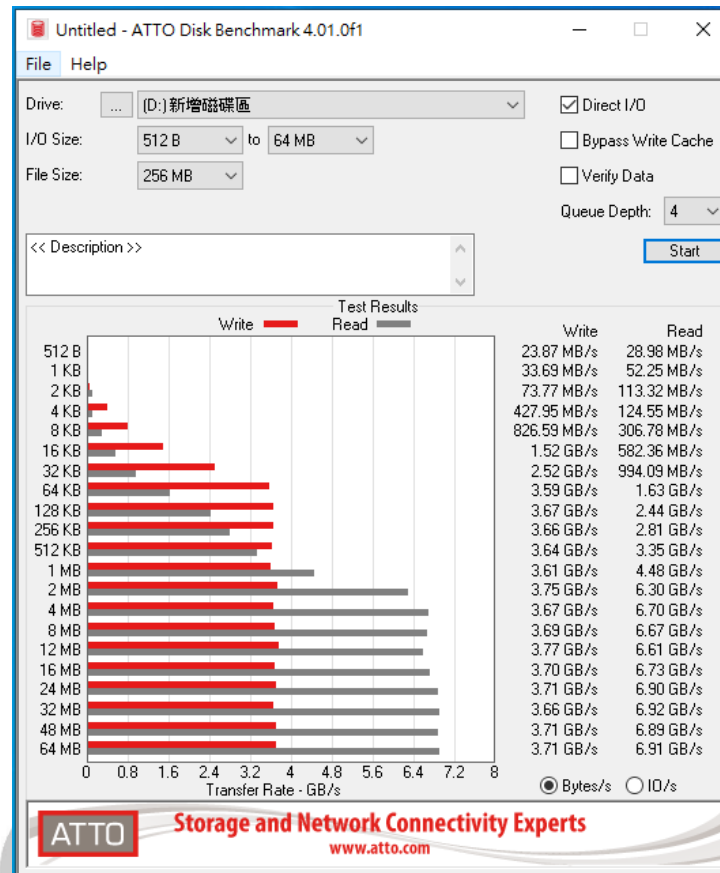
	Read:	Write:
SAMSUNG EPK98B5Q stornvme - OK 16384 K - OK 3576.98 GB		
☒ Seq	5256.05 MB/s	4206.25 MB/s
☒ 4K	51.30 MB/s	190.11 MB/s
☒ 4K-64Thrd	2232.82 MB/s	2546.22 MB/s
☒ Acc.time	0.024 ms	0.092 ms
Score:	2810	3157
	7345	

Start Abort

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2.7 ATTO Disk Benchmark 4.01 performance test

2.7.1 Samsung PM1733 U.2 4TB NVMe SSD performance as below:



2.8 AnvilBenchmark V110_B337

2.8.1 Samsung PM1733 U.2 4TB NVMe SSD performance as below:

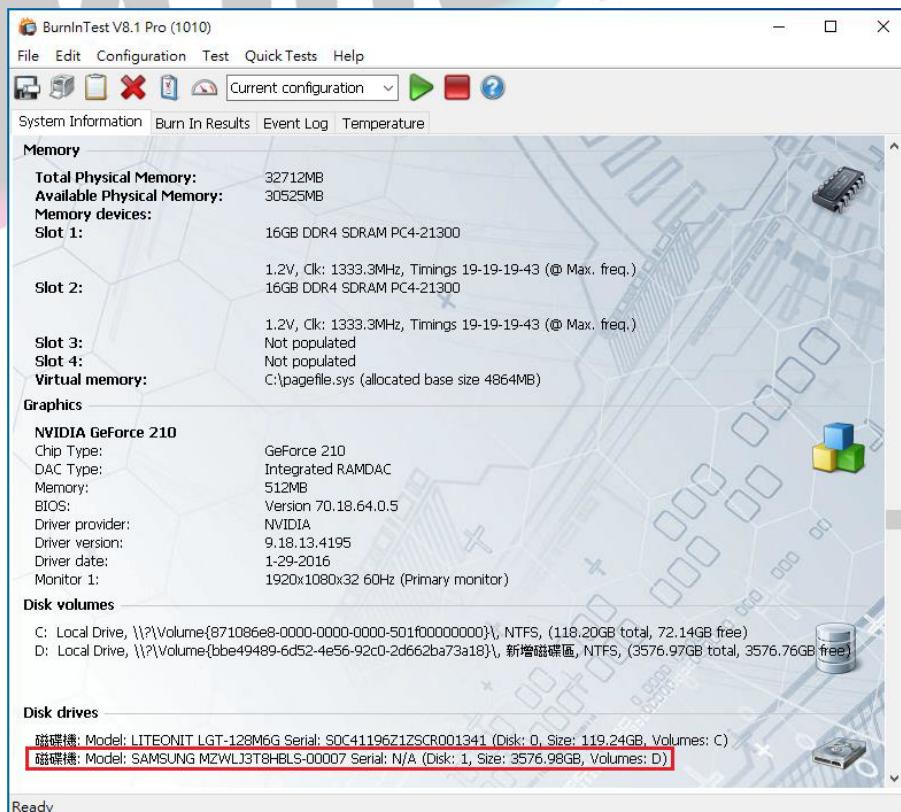
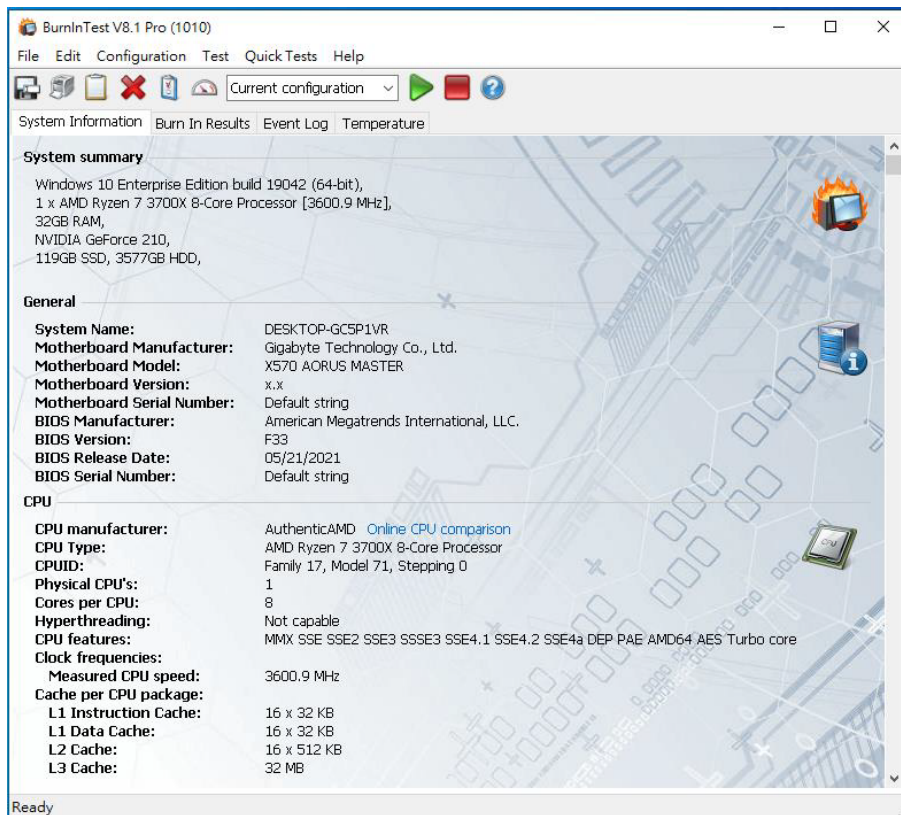


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3. Burn In Tests and Results

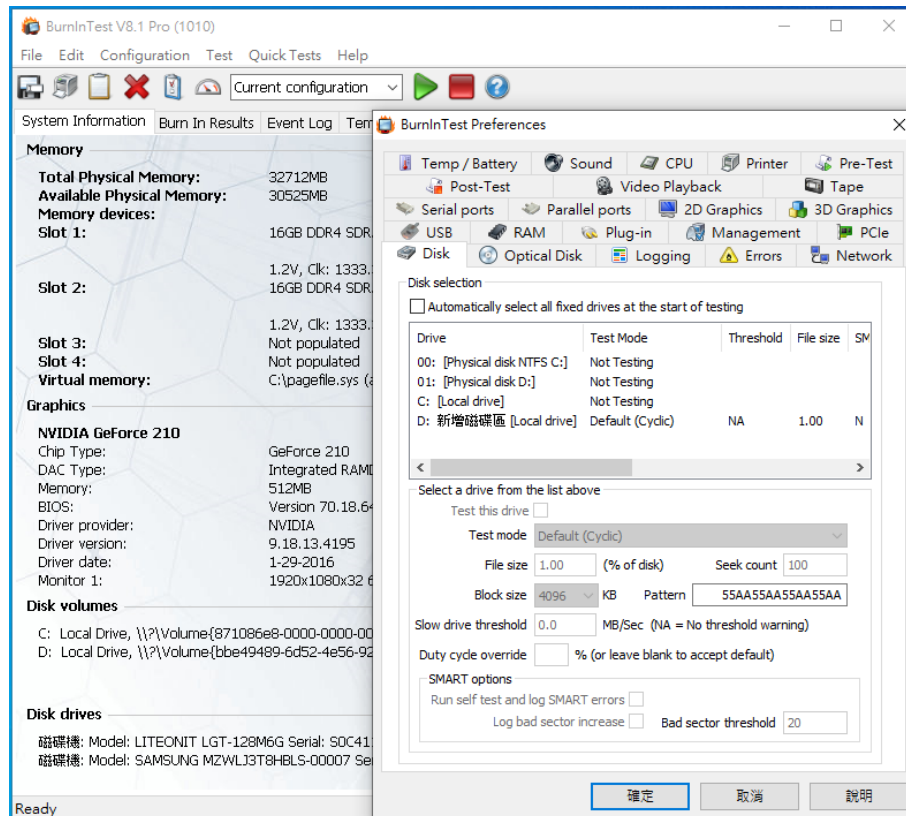
3.1 BurnInTest v8.1 Pro for **Samsung PM1733 U.2 4TB NVMe SSD**

3.1.1 **System Information** as below:

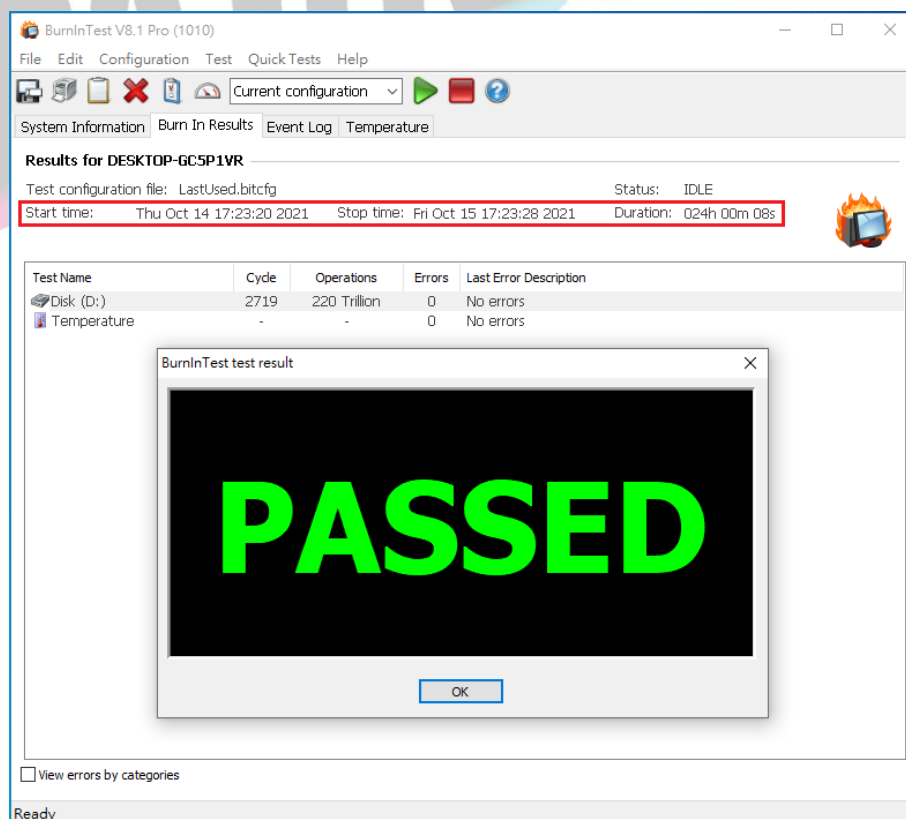


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3.1.2 Disk test mode(10 ways cycle test)



3.1.3 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 DP9301 AIC & GD3404G adapter I/O performance are based on U.2 NVMe SSD.

