



MINERVA

DP9504 PCIe x4 Gen 4 with ReDriver for Gen-Z 1C AIC

Performance & Burn In Test Rev. 1. 0

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DP9504 Rev1.2 Host Bus Adapter

1. Overview

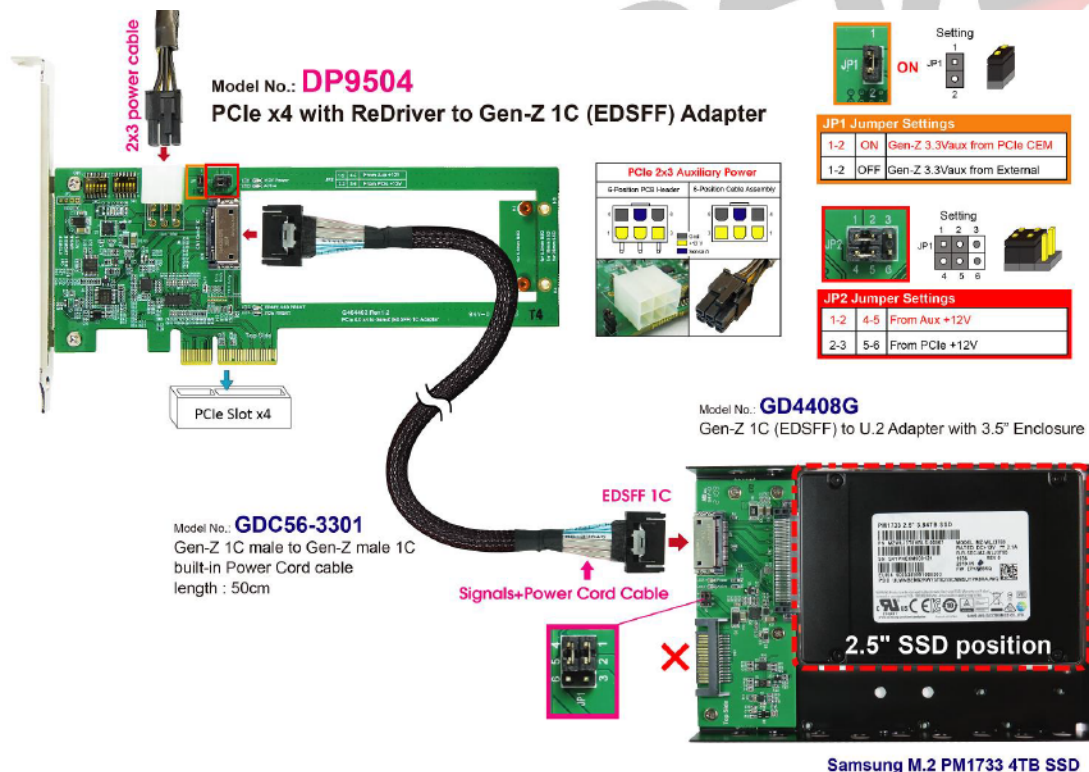
The Host Bus Adapter may provide PCIe x4 Gen4, 16GT/s high-speed signals extension with ReDriver controller to Gen-Z 1C (EDSFF).

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: DP9504 PCIe x4 Gen 4 with Redriver to Gen-Z 1C ADD-in Card
Cable: Gen-Z 1C Male to Male **with** Power Cord Cable, **50cm**
Adapter: GD4408G Gen-Z 1C to U.2 adapter
OS : Microsoft **Windows 10 64bit OS**

2.2 Test target: DP9504, GD4408G & Samsung U.2 4TB NVMe SSD



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2.3 Install Hardware

The U.2 NVMe SSD Inserts into GD4408G adapter and connects GD4408G adapter to the DP9504 AIC, using Gen-Z 1C male to male **with Power Cord cable**. The DP9504 plugs 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 U.2 NVMe SSD, formatted to NTFS Mode. Don't install any program.

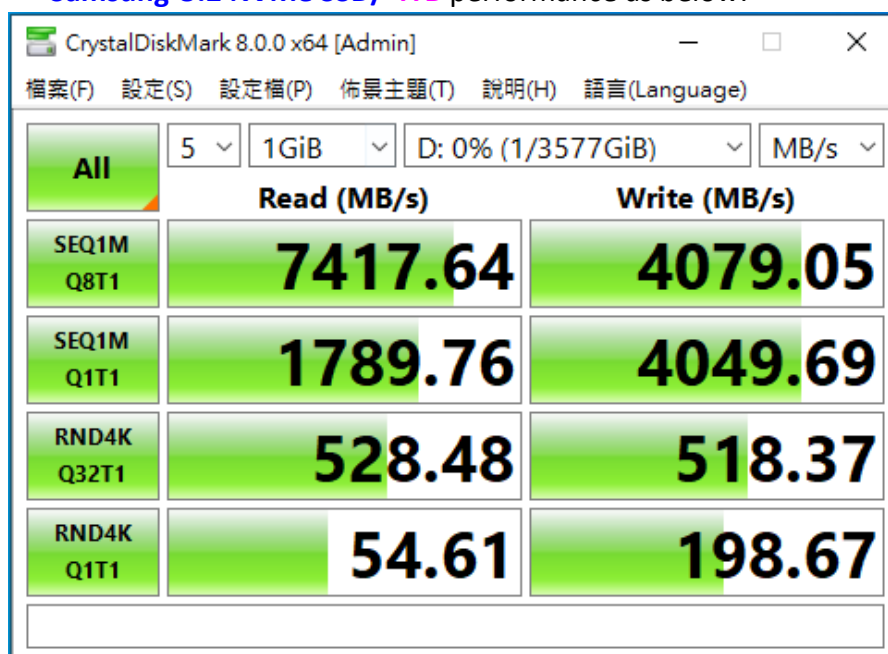


DP9504 Rev1.2 Host Bus Adapter

2.5 CrystalDiskMark 8.0 x64 performance test

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

2.5.1 Samsung U.2 NVMe SSD/ 4TB 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)

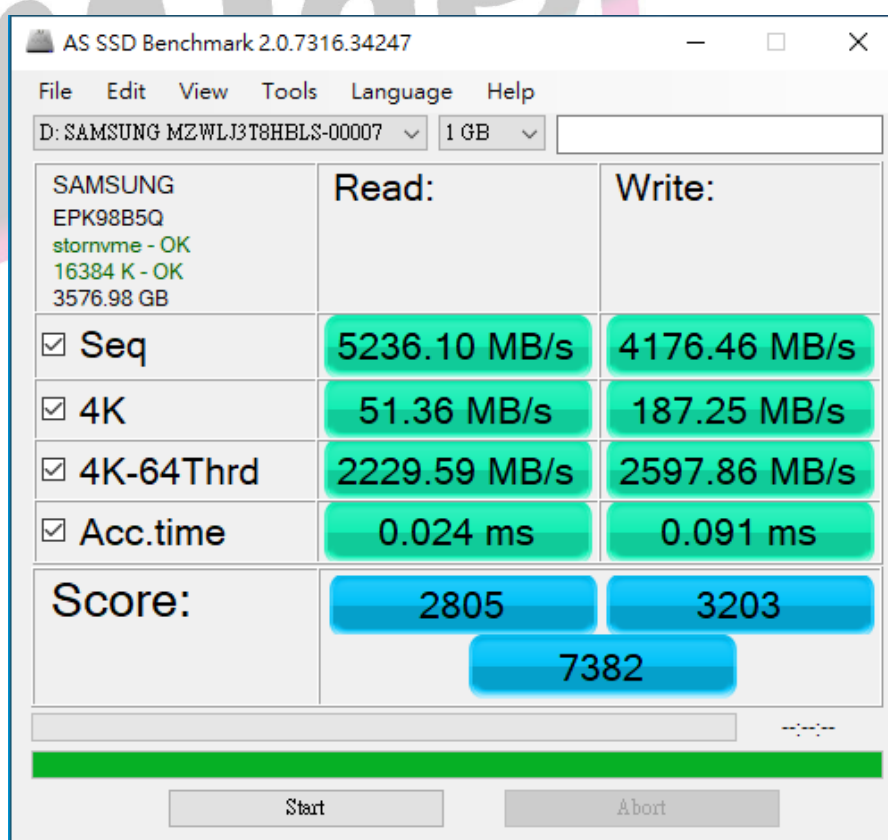
All 5 1GiB D: 0% (1/3577GiB) MB/s

	Read (MB/s)	Write (MB/s)
SEQ1M Q8T1	7417.64	4079.05
SEQ1M Q1T1	1789.76	4049.69
RND4K Q32T1	528.48	518.37
RND4K Q1T1	54.61	198.67

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 SSD/ 4TB performance as below:



AS SSD Benchmark 2.0.7316.34247

File Edit View Tools Language Help

D: SAMSUNG MZWUJ3T8HBL5-00007 1 GB

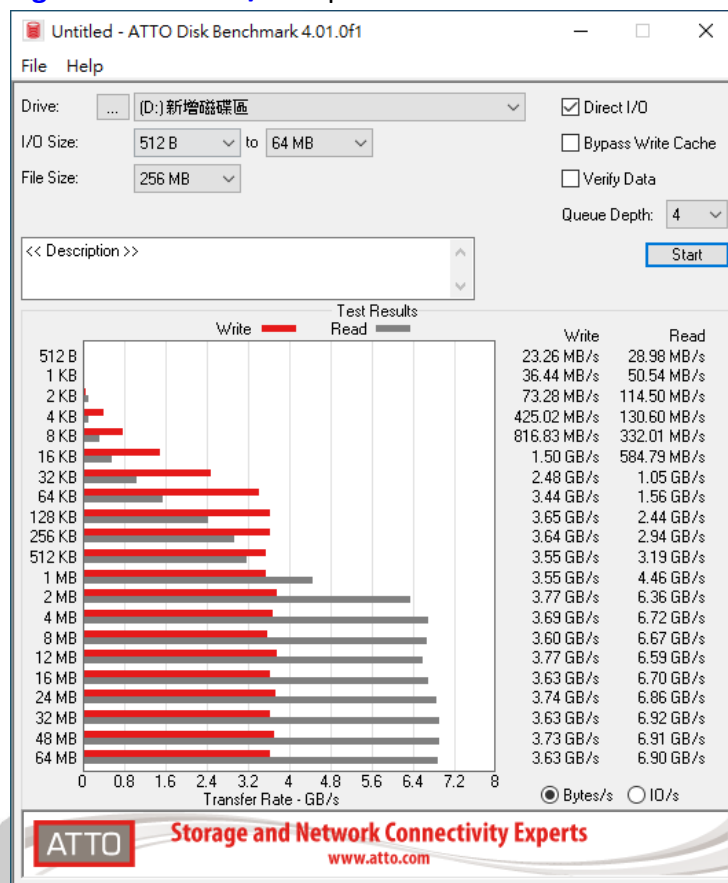
	Read:	Write:
SAMSUNG EPK98B5Q stornvme - OK 16384 K - OK 3576.98 GB		
<input checked="" type="checkbox"/> Seq	5236.10 MB/s	4176.46 MB/s
<input checked="" type="checkbox"/> 4K	51.36 MB/s	187.25 MB/s
<input checked="" type="checkbox"/> 4K-64Thrd	2229.59 MB/s	2597.86 MB/s
<input checked="" type="checkbox"/> Acc.time	0.024 ms	0.091 ms
Score:	2805	3203
	7382	

Start Abort

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2.7 ATTO Disk Benchmark 4.01 performance test

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



2.8 AnvilBenchmark_V110_B337

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

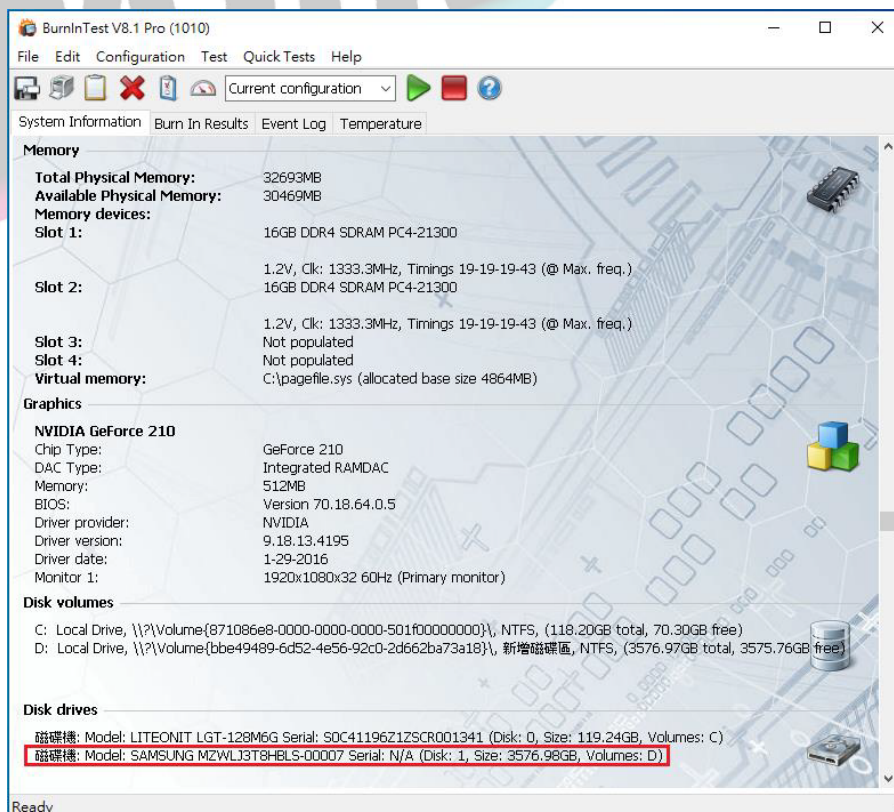
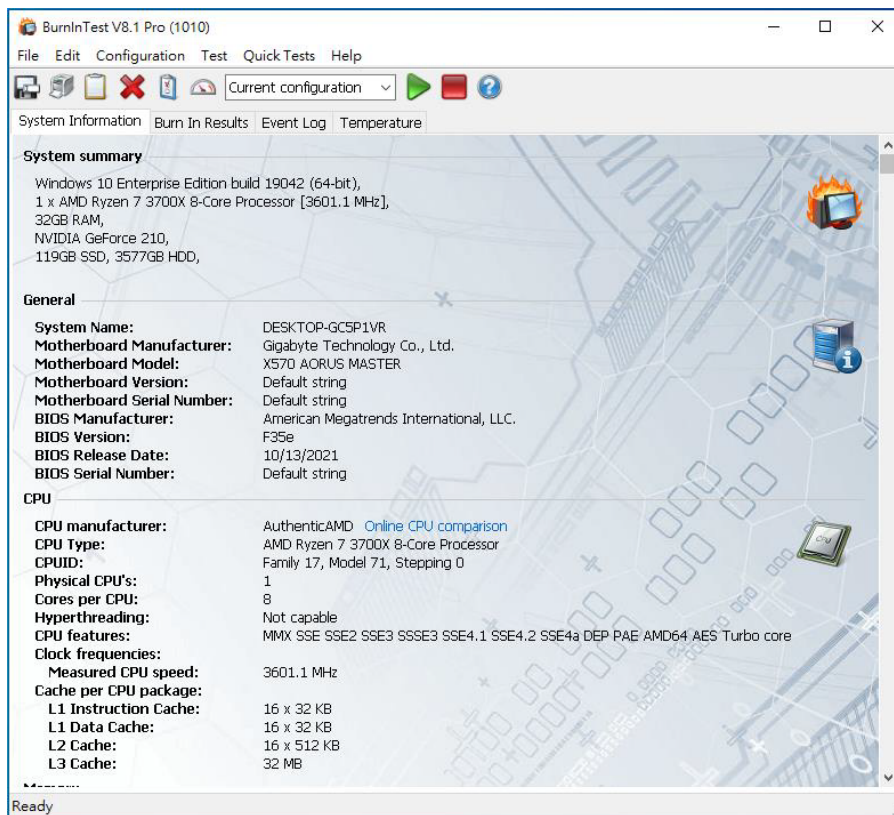


DP9504 Rev1.2 Host Bus Adapter

3. Burn In Tests and Results

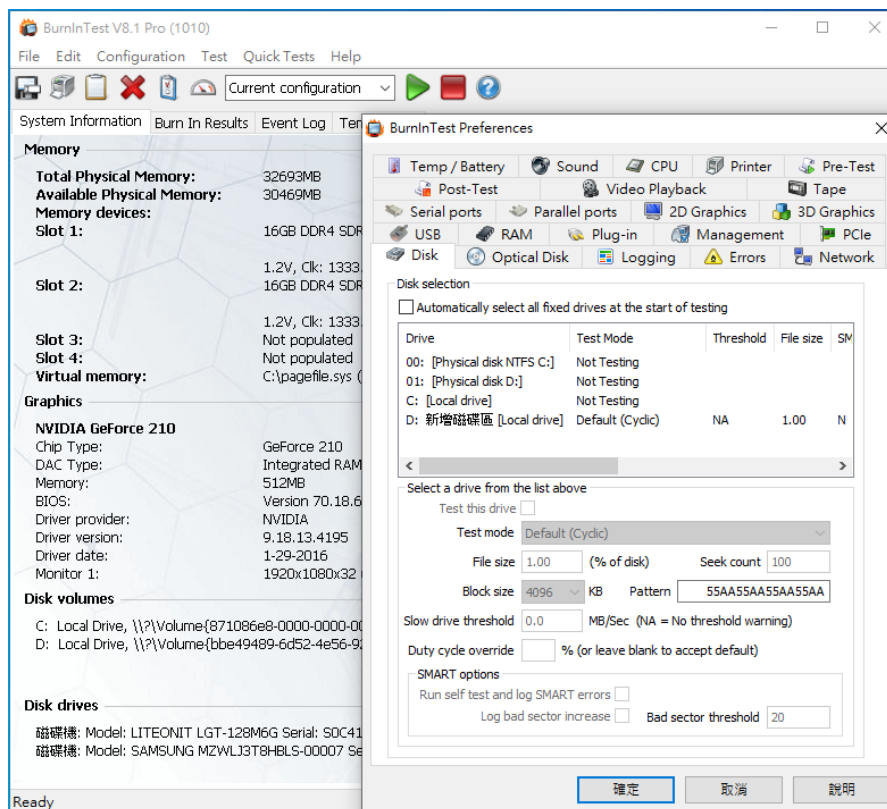
3.1 BurnInTest v8.1 Pro for Samsung U.2 NVMe SSD/ 4TB

3.1.1 System Information as below:

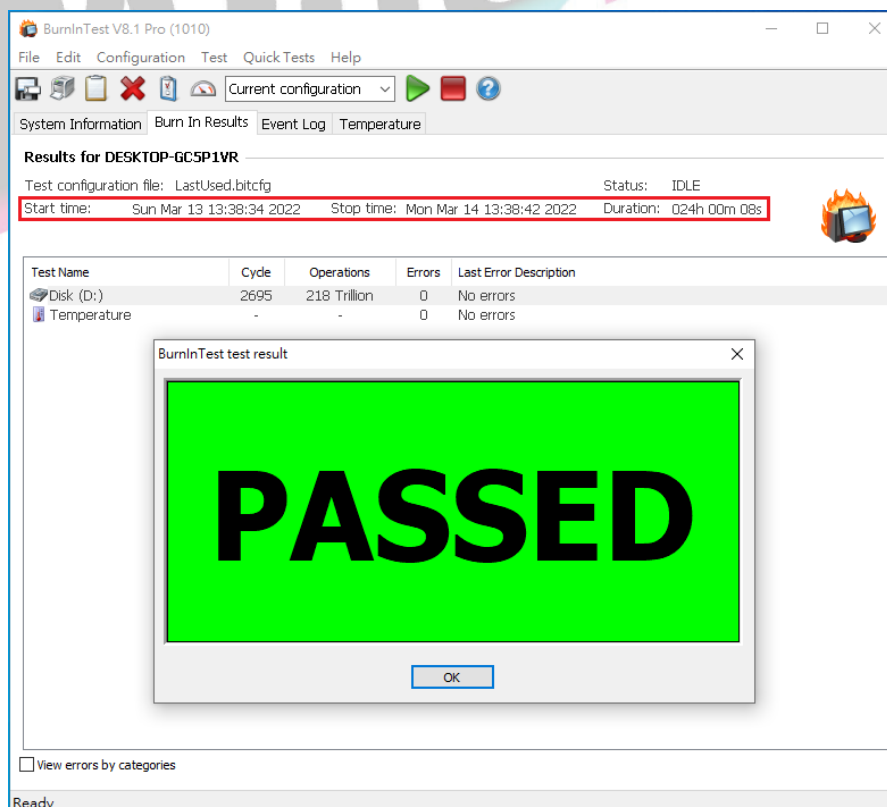


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3.1.2 Disk test mode(10 ways cycle test)



3.1.3 24-hour Burn-in test PASSED



4. Summary

- 4.1 U.2 NVMe SSD is PCIe Gen 4, 16GT/s, I/O speed, max. to 64Gbps.
- 4.2 DP9504 Host Bus Adapter I/O performance is based on U.2 NVMe SSD.
- 4.3 GD4408G Adapter I/O performance is based on U.2 NVMe SSD.

