

DP8503 PCIe x 8 Gen 4 with ReDriver for Gen Z 1 C dual port AIC

Performance & Burn In Test Rev. 1.0

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1. Overview

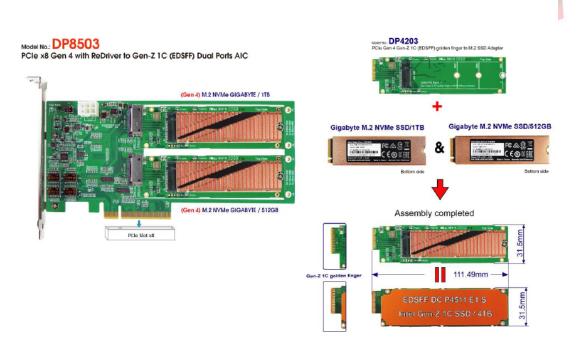
The Host Bus Adapter may provide PCIe x8 Gen4, 16GT/s high-speed signals, it can be bifurcated into two x4 for Gen-Z 1C (EDSFF) dual port.

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:	DP8503 PCIe x8 Gen 4 with Redriver to Gen-Z 1C dual port ADD-in Card
Adapter:	DP4203 Gen-Z 1C to M.2 M-key
OS :	Microsoft Windows 10 64bit OS

2.2 Test target: DP9504, DP4203, Gigabyte 1TB NVMe SSD & 512GB NVMe SSD



2.3 Install Hardware

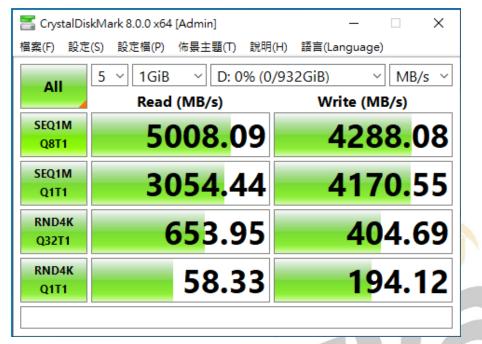
Inserts M.2 NVMe SSD into DP4203 adapter, and plugs DP4203 to DP8503 AIC. The DP8503 AIC plugs into GIGABYTE X570 AORUS MASTER

2.4 BIOS & Windows 10 OS environment setup

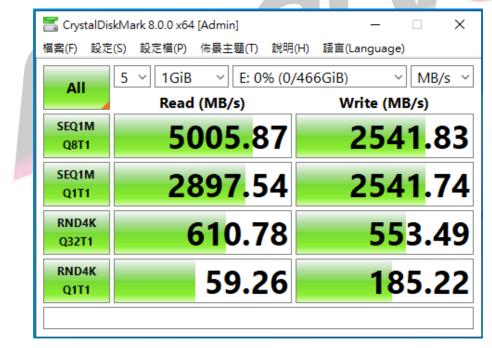
2.4.1 Primary SATA SSD installed Windows 10 OS.2.4.2 M.2 NVMe SSD, formatted to NTFS Mode. Don't install any program.



- 2.5 CrystalDiskMark 8.0 x64 performance test
 ※Benchmark (Sequential Read & Write / default = 1MB)
 - 2.5.1 Gigabyte M.2 NVMe SSD/ 1TB performance as below:



2.5.2 Gigabyte M.2 NVMe SSD/ 512GB performance as below:



2.6 AS SSD Benchmark 2.0.7 performance test
※Benchmark (Read & Write by MB/s, default block size = 16MB)
2.6.1 Gigabyte M.2 NVMe SSD/ 1TB performance as below:

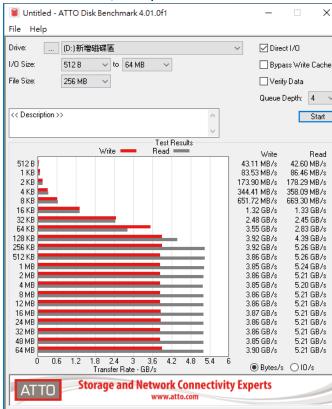
AS SSD Benchmark 2.0.73	16.34247	– 🗆 X	7
File Edit View Tools	Language Help		
D: GIGABYTE GP-ASM2NE650	OGTTD V 1GB V		
GIGABYTE EGFM11.2 stornyme - OK 1024 K - OK 931.51 GB	Read:	Write:	
⊠ Seq	4129.10 MB/s	3894.19 MB/s	
⊠ 4K	73.88 MB/s	198.64 MB/s	
☑ 4K-64Thrd	2212.24 MB/s	2684.13 MB/s	
☑ Acc.time	0.021 ms	0.019 ms	2
Score:	2699	3272	
	73	46	
Star	t	Abort	

2.6.2 Gigabyte M.2 NVMe SSD/ 512GB performance as below:

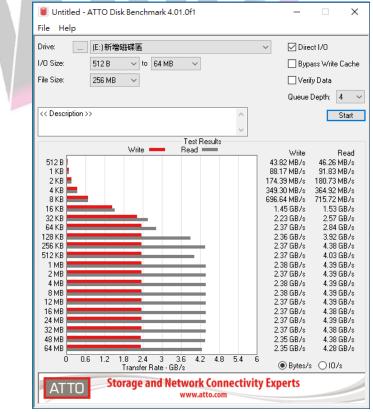
👛 AS SSD Benchmark 2.0.73	16.34247	_		×			
File Edit View Tools							
E: GIGABYTE GP-ASM2NE6100TTTD V 1 GB V							
GIGABYTE EGFM11.1 stornyme - OK 1024 K - OK 465.76 GB	Read:	Write:					
⊠ Seq	4030.36 MB/s	2324.9	3 MB	/s			
⊠ 4K	74.07 MB/s	199.74 MB/s					
☑ 4K-64Thrd	1875.94 MB/s	2662.97 MB/s					
☑ Acc.time	0.023 ms	0.017 ms					
Score:	2353	30	95				
	6577						
			;;				
Star	t	Abort					

2.7 ATTO Disk Benchamrk 4.01 performance test

2.7.1 Gigabyte M.2 NVMe SSD/ 1TB performance as below:



2.7.2 Gigabyte M.2 NVMe SSD/ 512GB performance as below:



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2.8 AnvilBenchmark_V110_B337

2.8.1 Gigabyte M.2 NVMe SSD/ 1TB performance as below:

e Benchmarks	IOmeter System	n Info Settings	Test size Tub	🔽 Drive 🖃 d: 閉		✓ Screenshot Help
SD Benchn	nark				GIG	ABYTE GP-ASM2NE6500G 1000GB/EGFM
Deed	Deer time (MB read	IOPS	MB/s		
Read	Resp. time					
Seq 4MB	1.4336ms	2,048.0	697.55	2,790.19		
4K	0.0676ms	722.3	14,793.52	57.79		
4K QD4	0.0732ms	2,667.1	54,621.55	213.37		6,473.60
4K QD16	0.0880ms	8,882.7	181,916.80	710.61	Run read	6,473.60
32K	0.1039ms	4,000.0	9,626.23	300.82		
128K	0.1451ms	12,936.0	6,891.85	861.48		18,453.30
Write	Resp. time	MB written	IOPS	MB/s	Run	18,453.30
Seq 4MB	0.9766ms	1,024.0	1,024.00	4,096.00		
4K	0.0188ms	640.0	53,229.37	207.93		^{11,979,70} 11,979.70
4K QD4	0.0244ms	640.0	164,102.30	641.02	Run write	11,979.70
4K QD16	0.0366ms	640.0	437,667.40	1,709.64		
icrosoft Windows 10) 企業版 64 位元 Build	(19042)				GIGABYTE GP-ASM2NE6500GTTD
570 AORUS MASTER			Drives :			Drive D: 931.5/931.4GB free (100.0%) NTFS - Cluster size 4096B
MD Ryzen 7 3700X	8-Core Processor		Notes :			Storage driver stornvme

2.8.2 Gigabyte M.2 NVMe SSD/ 512GB performance as below:

ile Benchmarks	IOmeter System	n Info Settings	Test size 1GB	Drive 🔳 e: 僚	·	✓ Screenshot Help	
1		n mo settings	Test size Tub			GABYTE GP-ASM2N	-6400TT
SD Benchm	nark				GI		B/EGFM1
Read	Resp. time	MB read	IOPS	MB/s			
Seq 4MB	1.4355ms	2,048.0	696.60	2,786.39			
4K	0.0662ms	737.3	15,099.95	58.98			
4K QD4	0.0732ms	2,668.7	54,654.86	213.50		6.372.76	
4K QD16	0.0939ms	8,318.0	170,351.93	665.44	Run read	6,372.76 6,372.76	
32K	0.1251ms	3,751.9	7,996.14	249.88			
128K	0.1421ms	13,207.5	7,036.96	879.62		16,277.13 16,27	
Write	Resp. time	MB written	IOPS	MB/s	Run	16,27	1.13
Seg 4MB	1.7070ms	1,024.0	585.81	2,343.25			
4K	0.0201ms	640.0	49,784.62	194.47		9,904.37	
4K QD4	0.0268ms	640.0	150,182.50	586.65	Run write	9,904.37	
4K QD16	0.0373ms	640.0	428,653.56	1,674.43			
Microsoft Windows 10	企業版 64 位元 Build	(19042)			_	GIGABYTE GP-ASM2NE61	00TTTD 50
Microsoft Windows 10 企業版 64 位元 Build (19042) X570 AORUS MASTER/F33i, AM4			Drives :			Drive E: 465.8/465.7GB free NTES - Cluster size 4096B	(100.0%)
AMD Ryzen 7 3700X 8-Core Processor			Notes :			NTFS - Cluster size 40968 Storage driver stornvme	
Memory : 32,712 MB Professional Edi						Alignment 1024KB OK	

3. Burn In Tests and Results

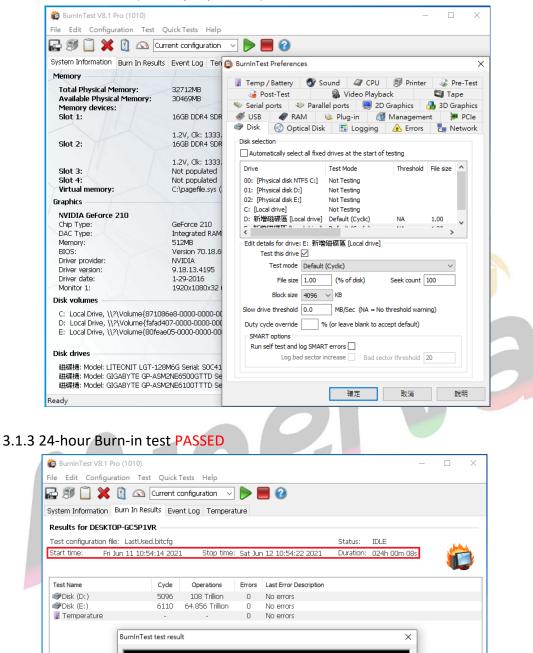
3.1 BurnInTest v8.1 Pro for Gigabyte M.2 NVMe SSD/ 1TB & 512GB

3.1.1 System Information as below:



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3.1.2 Disk test mode(10 ways cycle test)



OK

View errors by categories

Ready

4. Summary

- 4.1 M.2 NVMe SSD is PCIe Gen 4, 16GT/s , 4 Lanes Interface, I/O speed, max. to 64Gbps.
- 4.2 DP8503 Host Bus Adapter I/O performance is based on M.2 NVMe SSD.
- 4.3 DP4203 Host Bus Adapter I/O performance is based on M.2 NVMe SSD.

