

Notice: Use without no Power Cord cable connection

Performance & Burn In Test Rev. 1.0

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1. Overview

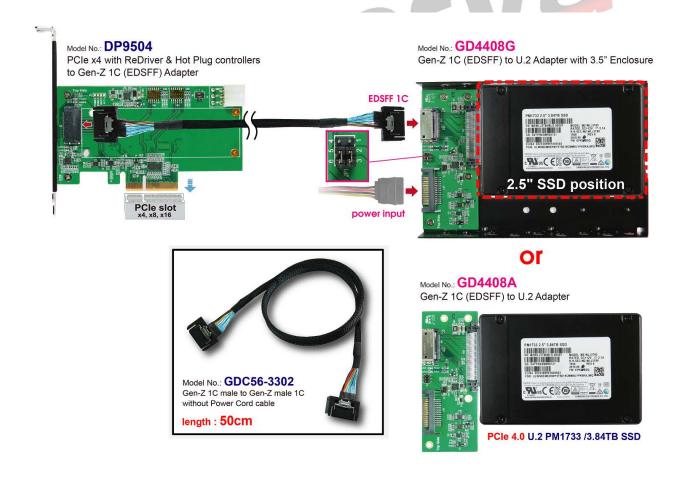
This adapter supports PCIe Gen 4, 16GT / s high-speed transmission, and provides U.2 NVMe SSD to Gen-Z 1C conversion. It can put 2.5" SSD into 3.5" standard H.D.D. caddy.

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
Adapter:	Gen-Z 1C PCIe Gen 4 to U.2(SFF-8639) Adapter
Cable:	Gen-Z 1C Male to Gen-Z 1C Male without Power cord, 50cm Cable
OS :	Microsoft Windows 10 64bit OS

2.2 Test target: DP9504 AIC, GD4408A/G Adapter & Samsung U.2 PM1733 / 4TB NVMe SSD



2.3 Install Hardware

Inserts U.2 NVMe SSD into GD4408G adapter, and connects cable to DP9504 AIC. 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.



2.5 CrystalDiskMark 8.0 x64 performance test

Weight Constraints (Sequential Read & Write / default = 1MB)
Weight Constraints (Sequential Read & Write / default = 1MB)

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

Crystal Dis	kMark 8.0.0 x64 [Admin]	– 🗆 X
檔案(F) 設定	(S) 設定檔(P) 佈綦主題(T) 說明	(H) 語言(Language)
All	5 ~ 1GiB ~ D: 0% (0	/3577GiB) ~ MB/s ~
A	Read (MB/s)	Write (MB/s)
SEQ1M	7424.63	3979.71
Q8T1	1424.05	5979.71
SEQ1M	1941 .78	3993. 10
Q1T1	1941.70	5995.10
RND4K	515.79	50 6.76
Q32T1	515.79	500.70
RND4K	55.45	195.24
Q1T1	55.45	195.24

2.6 AS SSD Benchmark 2.0.7 performance test

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

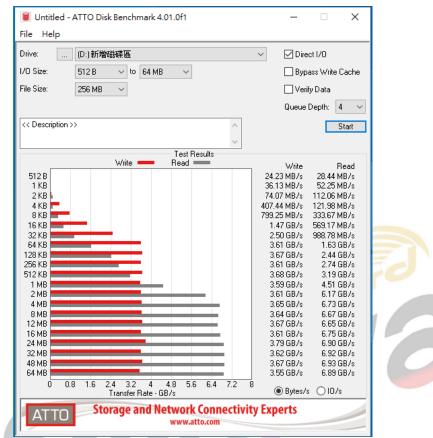
2.6.1 Samsung U.2 PM1733 / 4TB NVMe SSD performance as below:

AS SSD Benchmark 2.0.73	16.34247	- 🗆	×
File Edit View Tools			
D: SAMSUNG MZWLJ3T8HBLS	-00007 V 1 GB V		
SAMSUNG EPK98B5Q stornvme - OK 16384 K - OK 3576.98 GB	Read:	Write:	
⊠ Seq	5425.62 MB/s	3643.34 MB	s/s
⊠ 4K	52.12 MB/s	177.87 MB/	/s
☑ 4K-64Thrd	2170.46 MB/s	2495.72 MB	s/s
☑ Acc.time	0.024 ms	0.090 ms	
Score:	2765	3038	
	71	23	
Star	t	Abort	

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2.7 ATTO Disk Benchamrk 4.01 performance test

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



2.8 AnvilBenchmark_V110_B337

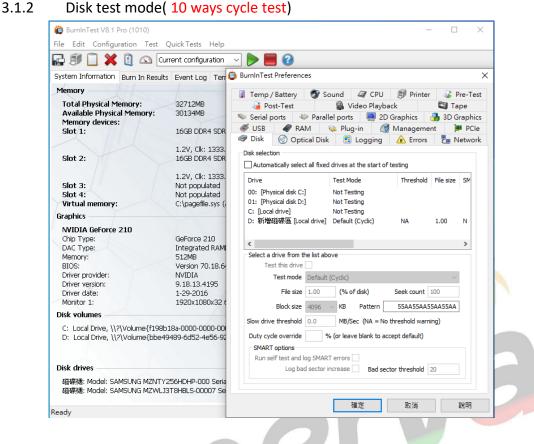
2.8.1 Samsung U.2 PM1733 / 4TB NVMe SSD performance as below:

Anvil's Storage L									>
ile Benchmarks	IOmeter Sy	stem Info S	Settings	Test size 1GB	Drive 🗖	:[新増磁碟區]	✓ Screenshot He		
SD Benchr	nark					SA	MSUNG MZWLJ3T 3840G	8HBLS-(B/EPK9	
						_			
Read	Resp. tim		3 read	IOPS					
Seq 4MB	1.0996m	^	048.0	909.41	3,637.6				
4K	0.0744m	s	655.9	13,432.43	52.4	17			
4K QD4	0.0805m	s 2,	425.4	49,672.27	194.0)3	7,356.94		
4K QD16	0.0873m	s 8,	950.8	183,311.95	716.0	6 Run read	7,356.94		
32K	0.1002m	s 4,	000.0	9,978.17	311.8	2			
128K	0.1354m	s 13,	861.3	7,384.79	923.1		18,057.07		
Write	Resp. tim	e MB v	vritten	IOPS	ME	Run	18,0	57.07	
Seq 4MB	0.9766m	_	024.0	1,024.00	4,096.0	0			
4K	0.0201m	s	640.0	49,837.38	194.6		10,700.14 10,700.14		
4K QD4	0.0275m	s	640.0	145,584.76	568.6	9 Run write	10,700.14		
4K QD16	0.0455m	s	640.0	351,518.51	1,373.1	2			
						_			
Microsoft Windows 1	0企業版 64 位元	Build (18362)	_				SAMSUNG MZWLJ3T8		
X570 AORUS MASTER				Drives : Notes :			Drive D: 3,577.0/3,576.80 NTFS - Cluster size 4096B		.09
AMD Ryzen 7 3700X Memory : 32,712 MB				notes :			Storage driver stornvm	e	
							Alignment 16384KB OK Compression 100% (Incom		

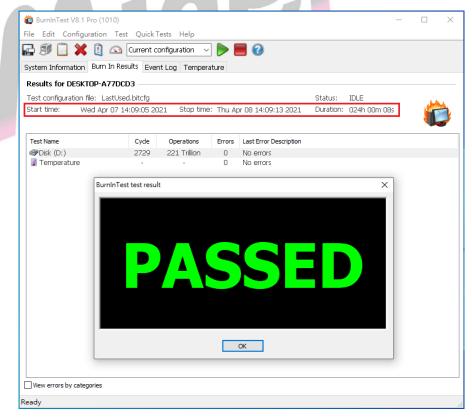
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3. Burn In Tests and Results

- 3.1 BurnInTest v8.1 Pro for Samsung U.2 PM1733 / 4TB NVMe SSD
 - 3.1.1 System Information as below: BurnInTest V8.1 Pro (1010) X File Edit Configuration Test Quick Tests Help 🔛 🗊 📋 💢 🛐 🖎 Current configuration 🖂 🍉 📕 🕝 System Information Burn In Results Event Log Temperature System summary Windows 10 Enterprise Edition build 18362 (64-bit), 1 x AMD Ryzen 7 3700X 8-Core Processor [3600.9 MHz], 32GB RAM. NVIDIA GeForce 210, 238GB SSD, 3577GB HDD, General System Name: DESKTOP-A77DCD3 Motherboard Manufacturer: Gigabyte Technology Co., Ltd. Motherboard Model: X570 AORUS MASTER Motherboard Version: x.x Default string Motherboard Serial Number: BIOS Manufacturer: BIOS Version: American Megatrends International, LLC. F33a BIOS Release Date: BIOS Serial Number: 01/22/2021 Default string CPU CPU manufacturer: AuthenticAMD Online CPU comparison AMD Ryzen 7 3700X 8-Core Processor Family 17, Model 71, Stepping 0 CPU Type: CPUID: Physical CPU's: Cores per CPU: Hyperthreading: Not capable CPU features: MMX SSE SSE2 SSE3 SSSE3 SSE4.1 SSE4.2 SSE4a DEP PAE AMD64 AES Turbo core Clock frequencies: Measured CPU speed: 3600.9 MHz Cache per CPU package: L1 Instruction Cache: 16 x 32 KB 16 x 32 KB 16 x 512 KB L1 Data Cache: L2 Cache: L3 Cache: 32 MB Ready BurnInTest V8.1 Pro (1010) × File Edit Configuration Test Quick Tests Help 🔛 🗊 📋 💢 🛐 🖾 Current configuration 🖂 🍉 📕 🕝 System Information Burn In Results Event Log Temperature Memory Total Physical Memory: Available Physical Memory: 32712MB 30134MB Memory devices: Slot 1: 16GB DDR4 SDRAM PC4-21300 1.2V, Clk: 1333.3MHz, Timings 19-19-19-43 (@ Max. freq.) 16GB DDR4 SDRAM PC4-21300 Slot 2: 1.2V, Clk: 1333.3MHz, Timings 19-19-19-43 (@ Max. freq.) Slot 3: Not populated Not populated Slot 4: Virtual memory: C:\pagefile.sys (allocated base size 4864MB) Graphics **NVIDIA GeForce 210** Chip Type: DAC Type: GeForce 210 Integrated RAMDAC Memory: 512MB Version 70.18.64.0.5 BIOS: Driver provider: Driver version: NVIDIA 9.18.13.4195 Driver date: 1-29-2016 Monitor 1: 1920x1080x32 60Hz (Primary monitor) Disk volumes C: Local Drive, \\?\Volume{f198b18a-0000-0000-0000-10000000000}\, NTFS, (237.93GB total, 179.21GB free) D: Local Drive, \\?\Volume{bbe49489-6d52-4e56-92c0-2d662ba73a18}\, 新增磁碟區, NTFS, (3576.97GB total, 3576.76GB fractional definition of the state of t Disk drives 磁碟機: Model: SAMSUNG MZNTY256HDHP-000 Serial: S2ZSNBRJ301968 (Disk: 0, Size: 238.47GB, Volumes: C) 磁碟機: Model: SAMSUNG MZWLJ3T8HBLS-00007 Serial: N/A (Disk: 1, Size: 3576.98GB, Volumes: D) lead



3.1.3 24-hour Burn-in test PASSED



4. Summary

- 4.1 U.2 NVMe SSD is PCIe Gen 4, 16GT/s , 4 Lanes Interface, I/O speed, max. to 64Gbps.
- 4.2 GD4408A/G Adapter I/O performance is based on U.2 NVMe SSD.

