

### Notice: Use without no Power Cord cable connection

Performance & Burn In Test Rev. 1.0

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### 1. Overview

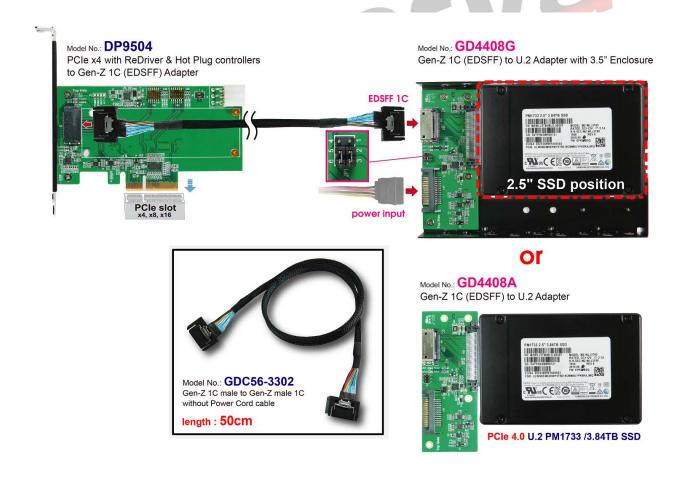
This adapter supports PCIe Gen 4, 16GT / s high-speed transmission, and provides U.2 NVMe SSD to Gen-Z 1C conversion. It can put 2.5" SSD into 3.5" standard H.D.D. caddy.

### 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, <b>750W ATX</b> , 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	<b>1941</b> .78	<b>3993.</b> 10
Q1T1	1941.70	5995.10
RND4K	515.79	<b>50</b> 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)

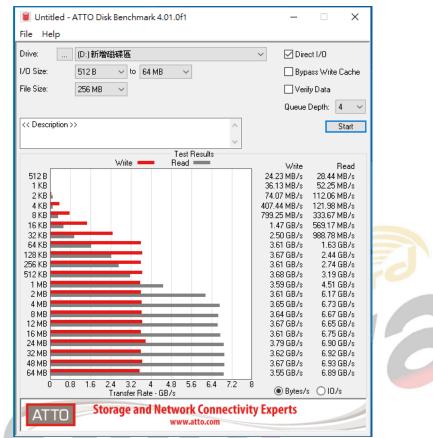
2.6.1 Samsung U.2 PM1733 / 4TB NVMe SSD performance as below:

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

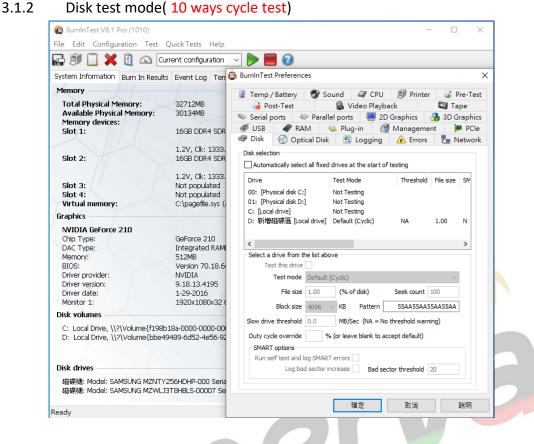
#### 2.8.1 Samsung U.2 PM1733 / 4TB NVMe SSD performance as below:

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 <b>stornvm</b>	e	
							Alignment 16384KB OK Compression 100% (Incom		

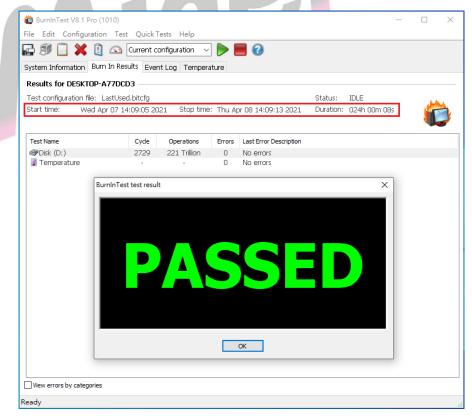
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#### 3. Burn In Tests and Results

- 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.

