

# Performance & Burn In Test Rev. 1.0

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## 1. Overview

GD4405A adapter, providing Gen-Z 1C connector can be Gen-Z 1C EDSFF SSD converted into U.2(SFF-8639), PCI-e Gen 4 / 4 Lanes interface.

## 2. Tools and Results of Performance Measurement

### 2.1 Test Platform

M/B :	GIGABYTE Z270-Gaming 8
CPU :	Intel <b>i7-7700,</b> 3.6GHz/ 8M Cache/ LGA1151
Memory :	Kingston KVR21N15D8/8, DDR4-2133MHz, 16G(8GB DIMM*2)
ATX Power :	COOLER MASTER G750M, <b>750W ATX</b> , 12V V2.2 Power Supply
Graphic :	Z270 Chipsets built-in HD Graphics 630
Cable:	USB3.1 type-C to type-C Cable
OS :	Microsoft Windows 10 64bit OS

### 2.2 Test target: GD4405A adapter & INTEL Gen-Z 1C 4TB NVMe SSD



### 2.3 Install Hardware

First, inserts Intel Gen-Z 1C SSD into GD4405A converter's Gen-Z 1C connector, and then and connects GD4405A converter to PE0412 adapter(PCI-e 4-lane to SFF-8612) using sff-8611 to U.2 cable, Plugs PE0412 AIC into PCIe slot of Z270-Gaming 8.

### 2.4 BIOS & Windows 10 OS environment setup

- 2.4.1 Primary SATA SSD installs Windows 10 OS.
- 2.4.2 Gen-Z 1C SSD, formatted to NTFS Mode. Don't install any program.



### 2.5 CrystalDiskMark7.0 x64 performance test

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

2.5.1 Intel Gen-Z 1C PCIe Gen 3/ 4TB 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 Intel Gen-Z 1C PCle Gen 3/ 4TB performance as below:

INTEL VEV10270 stornvme - OK 16384 K - OK 3726.02 GB	Read:	Write:	
⊠ Seq	2140.74 MB/s	2148.53 MB/	
⊠ <b>4</b> K	25.18 MB/s	195.09 MB/s	
☑ 4K-64Thrd	1260.65 MB/s	1533.00 MB/s	
Acc.time	0.015 ms	0.020 ms	
Score:	1500	1943	
	42	206	

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## 2.7 ATTO Disk Benchamrk v3.05 performance test

2.7.1 Intel Gen-Z 1C PCIe Gen 3/ 4TB performance as below:

Intitled - ATTO Disk Benchmark 4.01.0f1	– 🗆 X
File Help	
Drive: (D:) 新增磁碟區	✓ Direct I/O
VO Size: 512 B $\checkmark$ to 64 MB $\checkmark$	Bypass Write Cache
File Size: 256 MB V	Verify Data
	Queue Depth: 4 🗸
<< Description >>	Start
Test Results	
Write  Read    512 B	Write      Read        64.12 MB/s      64.37 MB/s        130.20 MB/s      129.95 MB/s        252.06 MB/s      195.42 MB/s        492.92 MB/s      386.94 MB/s        492.92 MB/s      386.94 MB/s        11.16 GB/s      422.01 MB/s        1.16 GB/s      615.06 MB/s        1.87 GB/s      615.06 MB/s        2.08 GB/s      887.84 MB/s        2.20 GB/s      1.33 GB/s        2.23 GB/s      1.39 GB/s        2.24 GB/s      1.91 GB/s        2.27 GB/s      2.22 GB/s        2.30 GB/s      2.38 GB/s        2.30 GB/s      2.44 GB/s        2.30 GB/s      2.49 GB
Transfer Rate - GB/s	Bytes/s  O IO/s
AITO www.atto.com	

## 2.8 AnvilBenchmark\_V110\_B337

## 2.8.1 Intel Gen-Z 1C PCle Gen 3/ 4TB performance as below:

🙆 An	📴 Anvil's Storage Utilities 1.1.0 (2014-January-1) - 🗆 🗙								
File	Benchmarks	IOmeter Syste	m Info   Settings	Test size 1GB	🔽 Drive 🔳 d: 🏦	所増磁碟區]	✓ Screenshot Help		
SSD Benchmark INTEL SSDPEY							PEYKX	040T8 10270	
	Read	Resp. time	MB read	IOPS	MB/s				
	Seq 4MB	2.3809ms	2,048.0	420.02	1,680.07				
	4K	0.2245ms	217.5	4,454.82	17.40				
	4K QD4	0.1345ms	1,452.3	29,743.17	116.18		3,302.74		
	4K QD16	0.1381ms	5,658.3	115,881.72	452.66	Run read	3,302.74		
	32K	0.3219ms	1,457.8	3,106.62	97.08				
	128K	0.5587ms	3,359.5	1,789.94	223.74		11,713.44		
	Write	Resp. time	MB written	IOPS	MB/s	Run	11,713.	.44	
	Seq 4MB	2.9922ms	1,024.0	334.20	1,336.81				
	4K	0.0196ms	640.0	50,891.60	198.80		8,410.70		
	4K QD4	0.0236ms	640.0	169,845.41	663.46	Hun write	8,410.70		
	4K.QD16	0.0437ms	640.0	365,937.28	1,429.44				
Micro	Microsoft Windows 10 企業版 64 位元 Build (18363)			Distance			INTEL SSDPEYKX040T8 400	OGB/VEV	10270
Z270	2270X-Gaming 8/F7, U3E1 Intel(B) Core(TM) (7,7700 CPLL (8) 3 60GHz			Drives :			NTFS - Cluster size 4096B	se (100.0.	(o)
Mem	Memory : 16,109 MB			HOLES .			Storage driver <b>stornvme</b>		
() Pro	Professional Edition						Alignment 16384KB OK Compression 100% (Incompres	sible)	
							compression zoo re (ancompres		

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### 3. Burn In Tests and Results

- 3.1 BurnInTest v8.1 Pro for Intel Gen-Z 1C PCIe Gen 3/ 4TB SSD
  - 3.1.1 **system information** as below:



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### 3.1.2 SSD test mode( 10 ways cycle test)



### 3.1.3 24-hour Burn-in test PASSED

🐞 BurnInTest V8.	1 Pro (1010)				- 🗆	$\times$
File Edit Config	uration Test Quick Tes	sts Help				
R 🗊 🗎 🎽	🕻 🛐 🔊 Current con	figuration 🗸				
System Information	Burn In Results Event Log	g Temperature				
Results for DESK1	OP-A77DCD3					
Test configuration fi	le: LastUsed.bitcfg				Status:	IDLE
Start time:	Thu Jul 09 16:11:50 2020	Stop time:	Fri Jul	10 16:11:58 2020	Duration:	024h 00
Test Name	Cycle	Operations	Errors	Last Error Description		
⊲≫Disk (D:)	1885	158 Trillion	0	No errors		
📱 Temperature	-	-	0	No errors		
BurnInT	est test result				×	
			_			
		ОК				
			_			
View errors by cate	egories					
Ready						

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## 4. Summary

- 4.1 Gen-Z 1C SSD PCIe Gen 3 / 4 Lanes Interface, I/O speed, max. to 32Gbps.
- 4.2 GD4405A adapter I/O performance is based on Gen-Z 1C SSD.

