

RAID 1 mode Performance & Burn In Test Rev. 1.0

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1. Overview

R2056A RAID card offers SATA 3 interface, built-in 2-port SATA 7-pin connector, can be combined two SATA SSD into RAID 0, RAID 1, JBOD mode.

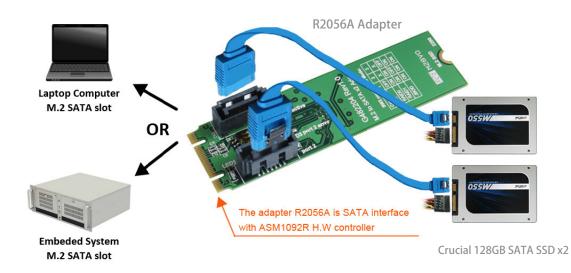
This test report is based on SATA III 128GB SSD x2, RAID 1 mode as a benchmark.

2. Tools and Results of Performance Measurement

2.1 Test Platform

M/B :	GIGABYTE Z170X UD5 TH
CPU :	Intel i5-6500, 3.2GHz/ 6M Cache/ LGA1150
Memory :	Kingston KVR21N15D8/8, DDR4-2133MHz, 16GB(8GB DIMM*2)
ATX Power :	COOLER MASTER V750, 750W ATX , 12V V2.2 Power Supply
Graphic :	Z170 Chipsets built-in HD Graphics 530
Adapter:	S2093F SATA III to M.2 & CFast Card Converter
OS :	Microsoft Windows 10 64bit OS

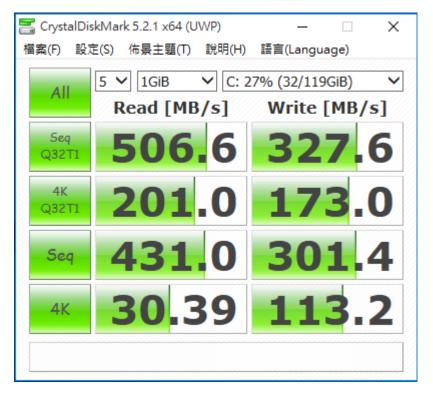
2.2 Test target: R2056A RAID Card and Crucial M550 CT128M550SSD1 2.5" 128GB)x2



2.3 Install Hardware

- 2.3.1 Use two SATA 7pin cable, connect the two 2.5" SSD to R2056A array card. And then inserts R2056A into S2093F converter. Using SATA 7pin signal cable, connect the converter to SATA III Port of GIGABYTE Z170X UD5 TH .
- 2.4 BIOS & Windows 10 OS environment setup
 - 2.4.1 Install Windows 10 x64 OS.

- 2.5 CrystalDiskMark 5.2.1 x64 performance test
 ※Benchmark (Sequential Read & Write / default = 1MB)
 - 2.5.1 shows Crucial CT128M550SSD1/128GBx2 in RAID 1 performance as below:



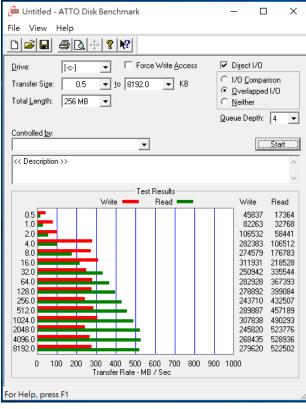
2.6 AS SSD Benchmark 1.9 performance test

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

2.6.1 Shows Crucial CT128M550SSD1/128GBx2 in RAID 1 performance as below:

🚢 AS SSD Benchmark 1.9.5986.35387 — 🗆 🗙							
File Edit View Tools	Language Help						
C: ASMT109x- Safe v 1 GB v							
ASMT109x- Safe MU01 iaStorA - OK 513024 K - OK 119.22 GB	Read:	Write:					
⊠ Seq	477.26 MB/s	340.51 MB/s					
⊠ 4K	21.89 MB/s	53.97 MB/s					
☑ 4K-64Thrd	182.24 MB/s	40.91 MB/s					
☑ Acc.time	0.194 ms	0.140 ms					
Score:	252	129					
	511						
Start Abort							

- 2.7 ATTO Disk Benchmark performance test
 - ※Benchmark (Sequential Read / default block size = 8MB)
 - 2.7.1 Shows Crucial CT128M550SSD1/128GBx2 in RAID 1 performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 Shows Crucial CT128M550SSD1/128GBx2 in RAID 1 performance as below:

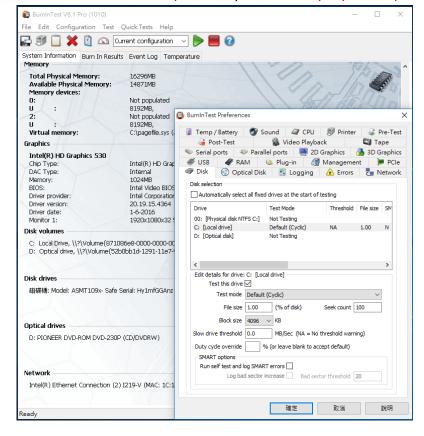
💼 Anvil's Storage l	Jtilities 1.1.0 (2014-Ja	anuary-1)				- 0				
File Benchmarks	IOmeter System	n Info Settings	Test size 1GB	🔹 Drive 🔳 c: []		✓ Screenshot Help				
SSD Benchmark						ASMT109x- Safe 128GB/ML				
			IODOL	10						
Read	Resp. time	MB read	IOPS	MB/s						
Seq 4MB	8.6680ms	2,048.0	115.37	461.47						
4K	0.1718ms	284.2	5,819.69	22.73						
4K QD4	0.1482ms	1,318.0	26,992.28	105.44		1,697.15				
4K QD16	0.2555ms	3,057.4	62,614.06	244.59	Run read	1,697.15				
32K	0.2515ms	1,866.1	3,976.76	124.27						
128K	0.6440ms	2,914.4	1,552.68	194.08		3,700.13				
Write	Resp. time	MB written	IOPS	MB/s	Run	3,700.13				
Seq 4MB	15.9922ms	1,024.0	62.53	250.12						
4K	0.0431ms	640.0	23,217.29	90.69		2,002.98				
4K.QD4	0.0542ms	640.0	73,736.44	288.03	Run write	2,002.98				
4K QD16	0.3566ms	640.0	44,884.23	175.33						
Microsoft Windows 1	0 企業版 64 位元 Build	(10240)				ASMT109x- Safe 128GB/MU01				
Z170X-UD5 TH-CF/F20b, U3E1			NTES - Cluster size 40968			Drive C: 118.7/86.3GB free (72.7%) NTFS - Cluster size 4096B				
Intel(R) Core(TM) i5-6500 CPU @ 3.20GHz Memory : 16,296 MB			Notes :	Storage driver iaStorA 14.8.0.10						
Professional Edition						Alignment 513024KB OK				
						Compression 100% (Incompressible)				

3. Burn In Tests and Results

- 3.1 BurnInTest v8.1 Pro
 - 3.1.1 system information for Crucial CT128M550SSD1/128GBx2 in RAID 1 as below:



show 2.5" SSD/128GBx2 in JBOD test mode(default cyclic -- 10 ways cycle test)



R2056A M.2 to SATA 2-port RAID Card

👸 BurnInTest V8.1 Pro (1010)		-		>
File Edit Configuration Test Q	Duick Tests Help			
	rent configuration 🖂 ┝ 📕 🥝			
System Information Burn In Results	Event Log Temperature			
Memory				0
Total Physical Memory: Available Physical Memory: Memory devices:	16296MB 14871MB	16	Con the second	
0:	Not populated			
U :	8192MB,			
2:	Not populated			
U : Virtual memory:	8192MB, C:\pagefile.sys (allocated base size 2944MB)			
Graphics	C.(pagenie.sys (allocated base size 2944MB)			
Intel(R) HD Graphics 530		1	~	
Chip Type:	Intel(R) HD Graphics Family	~		\mathbf{N}
DAC Type:	Internal	~		J.
Memory:	1024MB	0		
BIOS:	Intel Video BIOS	~		10
Driver provider:	Intel Corporation	/		
Driver version:	20.19.15.4364	~		
Driver date:	1-6-2016	5		
Monitor 1:	1920x1080x32 59Hz (Primary monitor)	\sim		
Disk volumes				
	568-0000-0000-0000-501f00000000} NTFS, (118.73GB total, 86.28GB free) bb1d-1291-11e7-9bc1-806e6f6e6963}\			
Disk drives				5
	erial: Hy1mfGGAnz (Disk: 0, Size: 119.22GB, Volumes: C)		135	/
	x SX &		-	
		11	1	Ø,
			-00	20
Optical drives				
Optical drives D: PIONEER DVD-ROM DVD-230P ((CD/DVDRW)	31	6	p
	(CD/DVDRW)	AH	0	P
D: PIONEER DVD-ROM DVD-230P (CD/DVDRW)		0	P
	CD/DVDRW)		٢	P
D: PIONEER DVD-ROM DVD-230P (-/// <u>28/// × M</u>			9
D: PIONEER DVD-ROM DVD-230P (-/// <u>28/// × M</u>			P
D: PIONEER DVD-ROM DVD-230P (-/// <u>28/// × M</u>			P

3.1.3 show Crucial CT128M550SSD1/128GBx2 in RAID 1 24-hour Burn-in test PASSED

🐞 BurnInTest V8.1 Pro (1010))						_	\times
File Edit Configuration	Test Quick Tes	ts Help						
🕞 🗊 📋 X 🐧 d	Current con	figuration \sim	🕨	0				
System Information Burn In	Results Event	Log Tempera	iture					
Results for DESKTOP-RN4	C8IH							
Test configuration file: Last	Used.bitcfg				Status:	IDLE		
	7 12:24:05 2017	Stop time	: Tue M	ar 28 12:24:13 2017	Duration:	024h 00m 08s		<u> </u>
								-
Test Name	Cycle	Operations	Errors	Last Error Description				
Disk (0:)	1603 4	4.415 Trillion	0	No errors				
🚺 Temperature	-	-	0	No errors				
Rumle	Test test result					×		
burnin	rrest test result					^		
				S				
			_					
				OK				
View errors by categories								
Ready								.4

4. Summary

- 4.1 R2056A is SATA III Interface, I/O speed, max. to 600MB/s.
- 4.2 R2056A adapter I/O performance is based on SATA III 2.5" SSD RAID 1 mode.