MINERVA ST964MD SATA 3 to CFast Converter Card

Performance & Burn In Test Rev. 1.0

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1. Overview

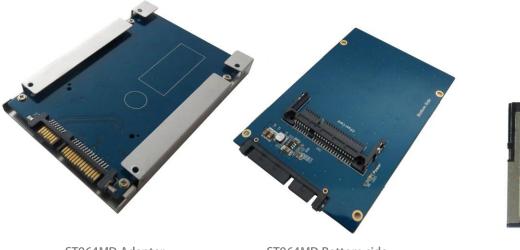
ST964MD adapter, providing CFast connector can be CFast Card converted into SATA III.

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 G750M, 750W ATX , 12V V2.2 Power Supply
Graphic :	Z170 Chipsets built-in HD Graphics 530
OS :	Microsoft Windows 10 64bit OS

2.2 Test target: ST964MD adapter with LEXAR CFast 64GB





ST964MD Adapter

ST964MD Bottom side

Lexar 64GB CFast Card

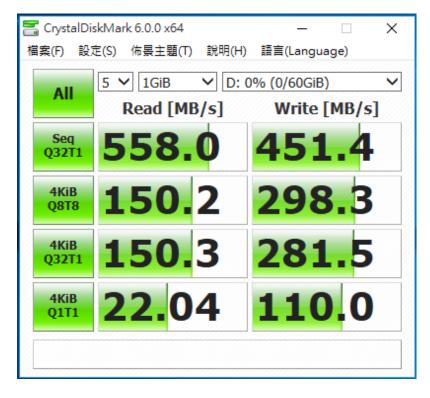
2.3 Install Hardware

Inserts CFast Card into ST964MD converter's CFast connector, and then connect ST964MD converter to SATA port of GIGABYTE Z170X UD5 TH

2.4 BIOS & Windows 10 OS environment setup

- 2.4.1 Promary Drive installs Windows 10 64bit OS
- 2.4.2 Secondary Drive formats CFast Card into NTFS, don't install any application.

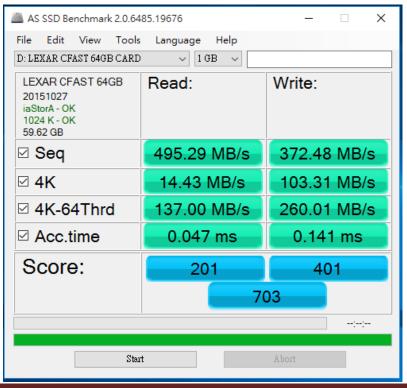
- 2.5 CrystalDiskMark 6.0.0 x64 performance test
 - Weight Constraints (Sequential Read & Write / default = 1MB)
 MB
 - 2.5.1 Shows **CFast 64GB** performance as below:



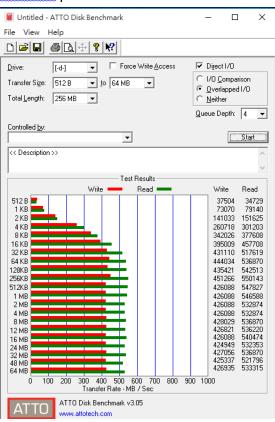
2.6 AS SSD Benchmark 2.0 performance test

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

2.6.1 Shows **CFast 64GB** performance as below:



- 2.7 ATTO Disk Benchamrk 3.0.5 performance test
 - 2.7.1 Shows **CFast 64GB** performance as below:



2.8 AnvilBenchmark_V110_B337

2.8.1 Shows **CFast 64GB** performance as below:

💼 Anvi	il's Storage Ut	tilities 1.1.0	(2014-Januar	y-1)					- 0	×
File	Benchmarks	lOmeter	System Info	Settings	Test size 1GB	🔽 Drive 🖃 d: 僚	〔増磁碟區〕	 ✓ Screenshot 	Help	
SSD	Benchm	nark						LEXAR CF	AST 64GB 64GB/201	
									04010/201	0102
	Read	Resp.	time	MB read	IOPS	MB/s				
S	eq 4MB	8.3008	Bms	2,048.0	120.47	481.88				
	4K	0.2039	Əms	239.5	4,904.89	19.16				
4	IK QD4	0.2479	9ms	787.9	16,136.44	63.03		1,237.89		
4	K QD16	0.4637	7ms	1,685.0	34,508.46	134.80	Run read	1,237.8	9	
	32K	0.5754	4ms	815.6	1,738.01	54.31				
	128K	0.9091	1ms	2,064.6	1,099.96	137.50	D	3,588.1		
	Write	Resp.	time M	B written	IOPS	MB/s	Run		,588.12	
S	eq 4MB	11.1055	ōms	1,024.0	90.05	360.18				
	4K	0.0376	ôms	640.0	26,619.62	103.98	Run write	2,350.22 2,350.2	2	
4	IK QD4	0.0623	3ms	640.0	64,169.87	250.66	Hurl wille	2,000.2	. 2	
4	K QD16	0.2281	1ms	640.0	70,154.10	274.04				
	oft Windows 10		〕元 Build (1024	0)	Drives :			LEXAR CFAST 64G		20151
Z170X-UD5 TH-CF/F20b, U3E1 Intel(R) Core(TM) i5-6500 CPU @ 3.20GHz			Notes :	NTES - Cluster size 40968						
	ry: 16,292 MB									2
								Alignment 1024KB OK Compression 100% (I		

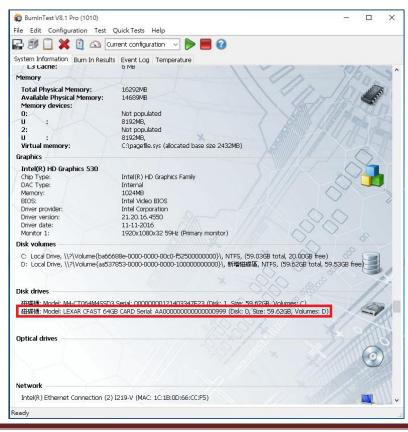
Minerva Innovation Company

3. Burn In Tests and Results

3.1 BurnInTest v8.1 Pro

3.1.1 System information for **CFast 64GB** as below:

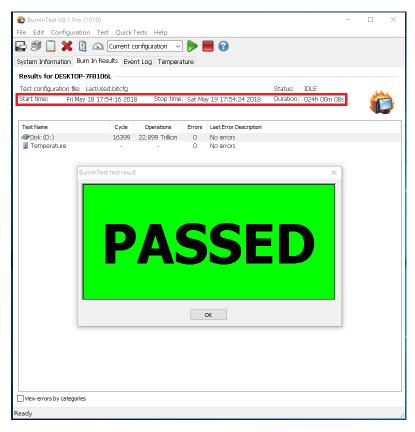




3.2.1 Shows Disk test mode(10 ways cycle test)

👸 BurnInTest V8.1 Pro (1010)				_	-	\times			
File Edit Configuration Test	Quick Tests Help								
🔂 🗊 📋 🗱 🛐 🕰	urrent configuration	- Þ 📕 📀							
System Information Burn In Result	ts Event Log Temp o MB	erature	VD	-	26	0			
Memory		1	VIA)		3			
Total Physical Memory: Available Physical Memory: Memory devices:	16292MB 14689MB		11/1	IT LET		and a			
0: U :	Not populated (8192MB,	BurnInTest Preferences				:			
2:	Not populated	👔 Temp / Battery 🛛 🚳	Sound 🥥 CPU	Printer	😽 Pi	re-Test			
U :	8192MB,	Post-Test	Video Playb	ack	Taj	pe			
Virtual memory:	C:\pagefile.sys (Serial ports Parallel ports 20 Graphics 30 Graphics							
Graphics		🚿 USB 🛛 🛷 RAM		Managemer		PCle			
Intel(R) HD Graphics 530		Ø Disk Optical E		A Errors		etwork			
Chip Type:	Intel(R) HD Grap	0	int in cogging	2 2.1010	C				
DAC Type:	Internal	Disk selection							
	Memory: 1024MB		ixed drives at the start of	testing					
BIOS: Driver provider:	Intel Video BIOS Intel Corporation	Drive	Test Mode	Threshold	File size	SM			
Driver version:	21.20.16.4550	00: [Physical disk D:]	Not Testing						
Driver date:	11-11-2016	01: [Physical disk NTFS C:							
Monitor 1:	1920×1080×32	C: [Local drive]	Not Testing						
Disk volumes		D: 新增磁碟區 [Local driv		NA	1.00	N			
 C: Local Drive, \\?ba66 D: Local Drive, \\?\Volume{aa53 		<				>			
D. Lucal Drive, (() (volume(aabo	17033-0000-0000-00	Edit details for drive: D:	新始磁碼 [local drive]			-			
	- 60 / A	Test this drive	Pressinger [cocar arrive]						
Disk drives		Test mode Defa	and the (Cound to)						
		Test mode Defa	ault (Cyclic)		~				
磁碟機: Model: M4-CT064M4SSD 磁碟機: Model: LEXAR CEAST 64		File size 1.00) (% of disk)	Seek count 1	100				
1881年(语: MUUEI: LEXAR CFAST 04)	GB CARD Serial: AAU	Block size 409	5 ∨ KB						
			-						
Optical drives		Slow drive threshold 0.0	MB/Sec (NA = No	threshold warni	ing)				
optical unites		Duty cycle override	% (or leave blank to ad	ccept default)					
	11 11	SMART options	-						
	1 1/1	Run self test and log SM	ART errors						
	1 1/1	-		ctor threshold	20				
Network	N/1/8/		500 50	an optional La	-				
Intel(R) Ethernet Connection (2) I219-V (MAC: 1C:1								
			確定	取消	1	說明			
eady									

3.2.3 Shows 24-hour Burn-in test PASSED



4. Summary

- 4.1 CFast Card is SATA 3 Interface, I/O speed, max. to 6Gbps.
- 4.2 ST964MD adapter I/O performance is based on CFast Card Card.