



**BIWIN Flash Storage**

# **Test Report**

**Product Name:** SSD

**Product Model:** CHF87GS237D-240

**Test Item:** Performance Test

**Reporter:** Erik Zhang

**Date:** 2015-11-24

**Approver:** \_\_\_\_\_

**Date:** \_\_\_\_\_

## 1.Sample Information

<b>Product Model</b>	CHF87GS237D-240	<b>Quantity</b>	4PCS
<b>Controller</b>	SM2256K	<b>Flash</b>	K9CHGD8U5D
<b>PCB</b>	SM2256AB_8BGA152_00928	<b>Capacity</b>	240GB
<b>Firmware</b>	O1015A		

## 2.Hardware Test Equipment

<b>CPU</b>	Intel i3-2100 3.10G	<b>Motherboard</b>	GA-Z77-D3H
<b>Chipset</b>	Intel Z77	<b>Memory</b>	Samsung DDR3 1600/4G
<b>Graphics Card</b>	On Board VGA	<b>OS HDD</b>	Seagate 500GB
<b>Power Supply</b>	HuntKey ATX-500W	<b>OS Version</b>	Windows7 X64

## 3.Test Enviroment

<b>Temperature</b>	25°C	<b>Humidity</b>	50%
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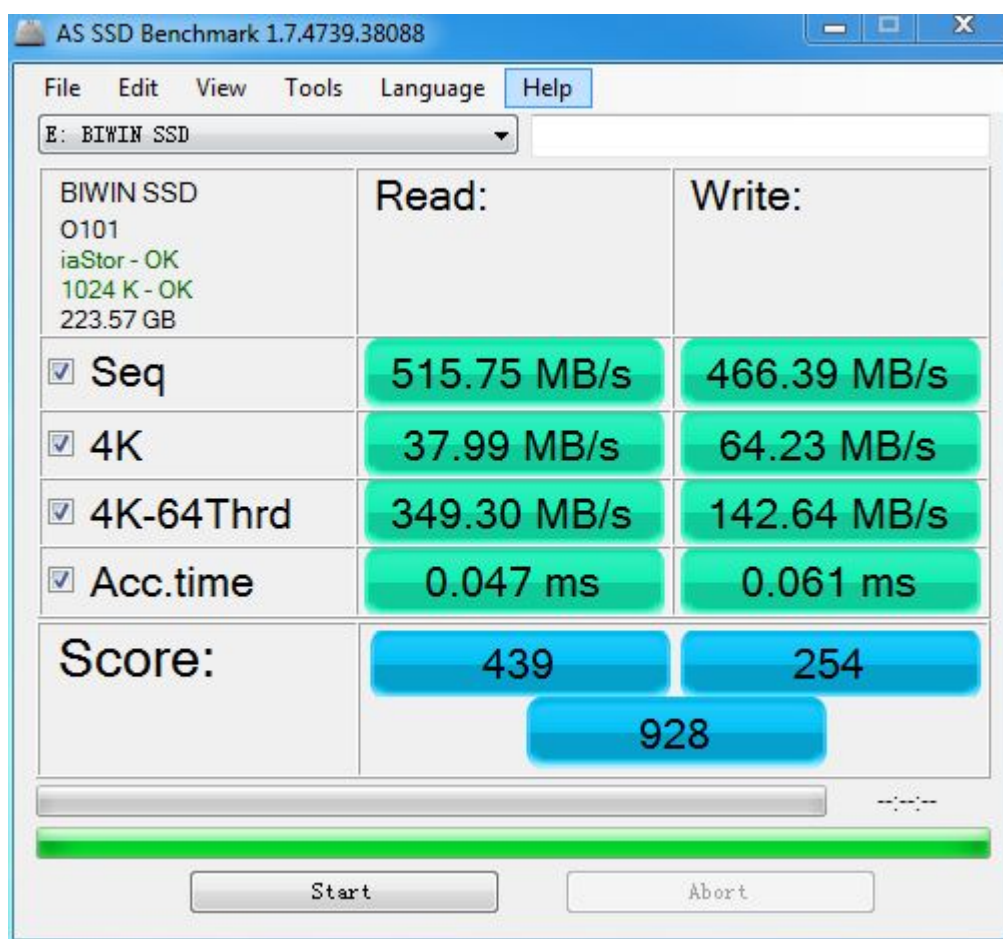
## 4.Test Software

Item	Tools	Model	Result
R/W speed test	AS SSD Benchmark	V1.7.4739.38088	Record data and print screen
	FastCopy	V2.08	Record data and print screen
	H2testw	V1.0.4.0	Record data and print screen
	HDBENCH	V3.4003	Record data and print screen
	ATTO Disk Benchmark	V2.46	Record data and print screen
	PCMark Vantage	V1.0.2.1	Record data and print screen
	Iometer	V2008.06.18	Record data and print screen
	CrystalDiskMark	V3.02	Record data and print screen
Capacity test	N/A	Windows 7 X64	Print screen
Power Consumption Test	Multimeter	Fluke 18B	Record data and print screen
Power on-off test	System Computer	N/A	Check the final result
S3/S4 test	System Computer	N/A	Check the final result
Reboot test	System Computer	N/A	Check the final result

#### 4.1.AS SSD Benchmark Test(V1.7.4739.38088)

Test Step	Test Process	Test Result	
1	Run AS SSD Benchmark and test the performance of write, Record data and print screen	Sequence Read	515.57 MB/s
2		Sequence Write	466.39 MB/s
3		4K Read	37.99 MB/s
4		4K Write	64.23 MB/s
5		4K-64Thrd Read	349.30 MB/s
6		4K-64Thrd Write	142.64 MB/s
7		ACC.time Read	0.047 ms
8		ACC.time Write	0.061 ms
9		Score Read	439
10		Score Write	254
11		Score All	928

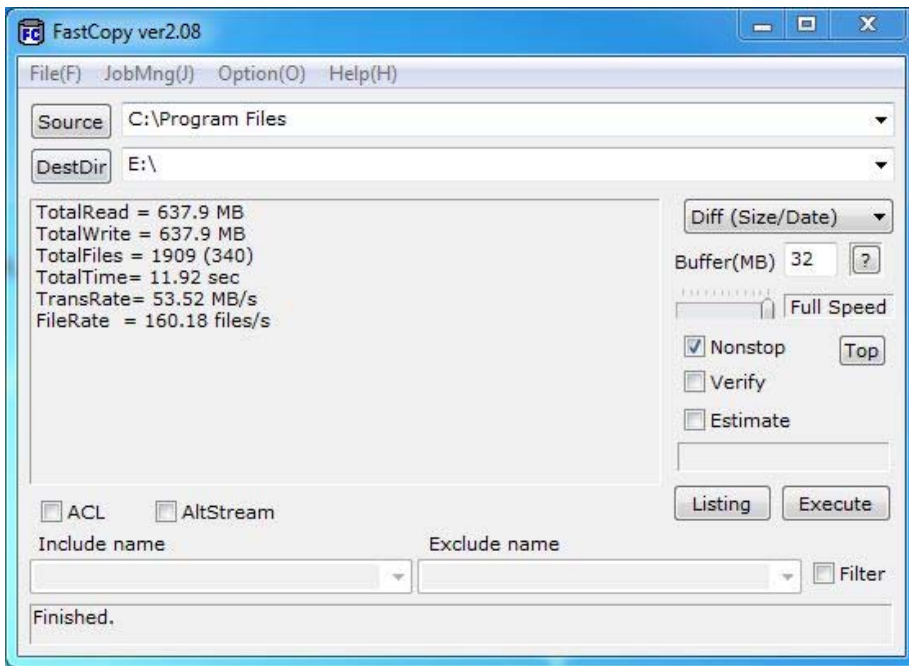
Printscreen of test result:



#### 4.2. FastCopy Test (V2.08)

Test Step	Test Process	Test Result	
1	Run FastCopy and test the performance, Record data and print screen	Transport speed	53.52 MB/s

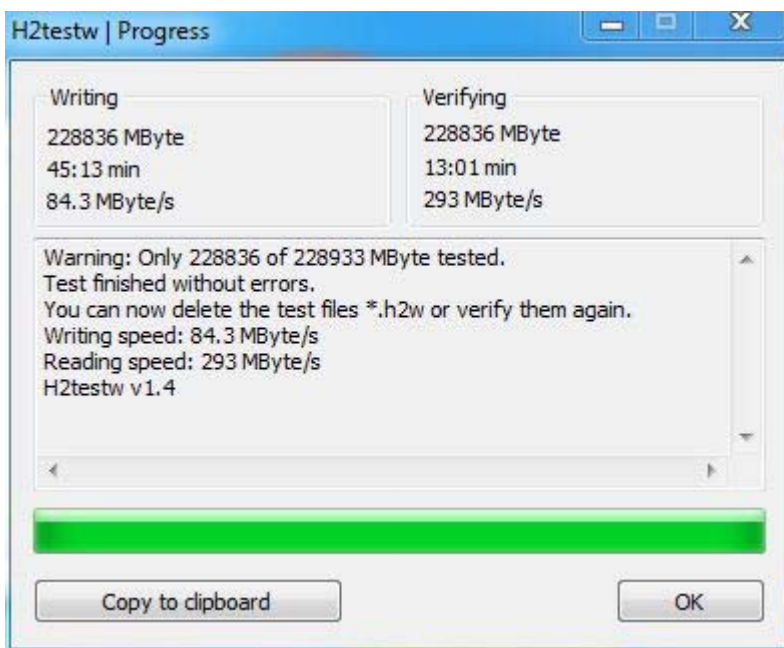
Printscreen of test result:



#### 4.3.H2testw Test(V1.0.4.0)

Test Step	Test Process	Test Result	
1	Run H2testw and test the performance of write.	Write	84.3 MB/s
2	Record data and print screen	Read	293 MB/s

Printscreen of test result:



#### 4.4.HDBENCH Test (V3.40)

Test Step	Test Process	Test Result	
1	Run HDBENCH and test the performance. Record data and print screen	Sequential Read	503 MB/s
2		Sequential Write	468 MB/s
3		Random Read	145 MB/s
4		Random Write	204 MB/s

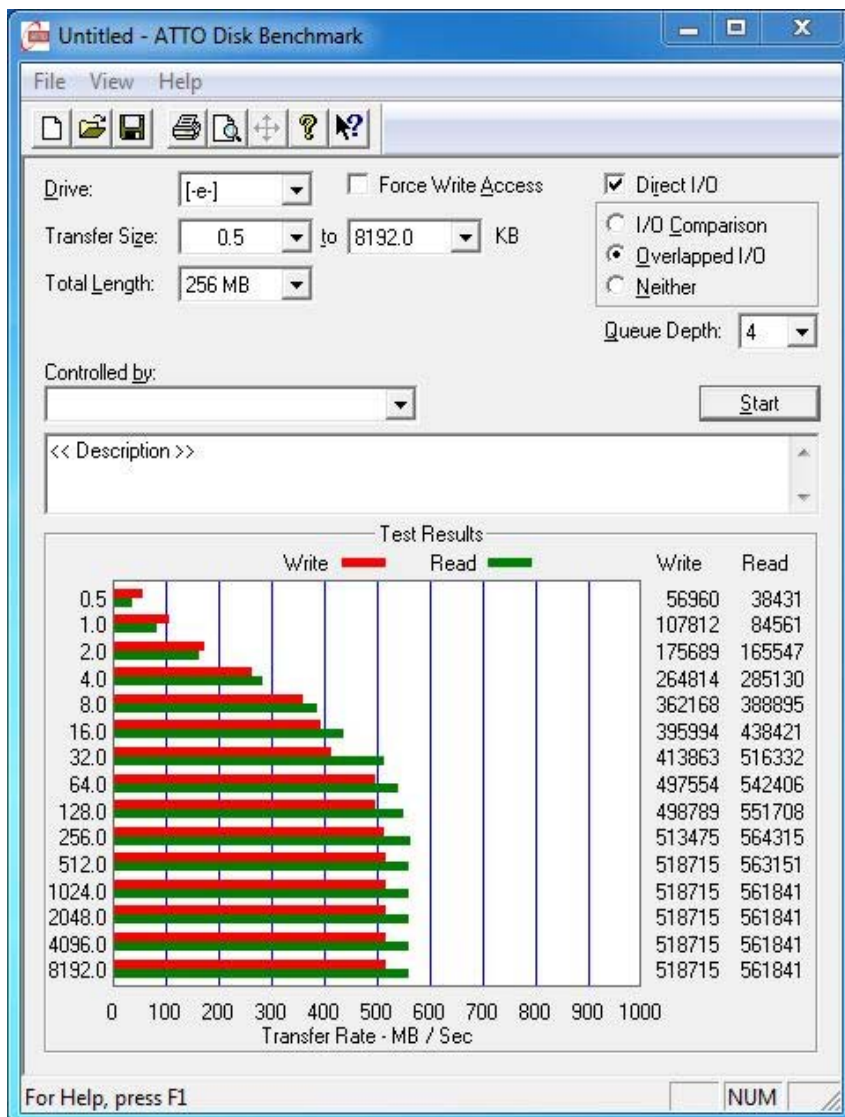
Printscreen of test result:



#### 4.5.ATTO Disk Benchmark Test(V2.46)

Test Step	Test Process	Test Result	
1	Run ATTO Disk Benchmark and test the performance. Record data and print screen	Read	563 MB/s
2		Write	518 MB/s

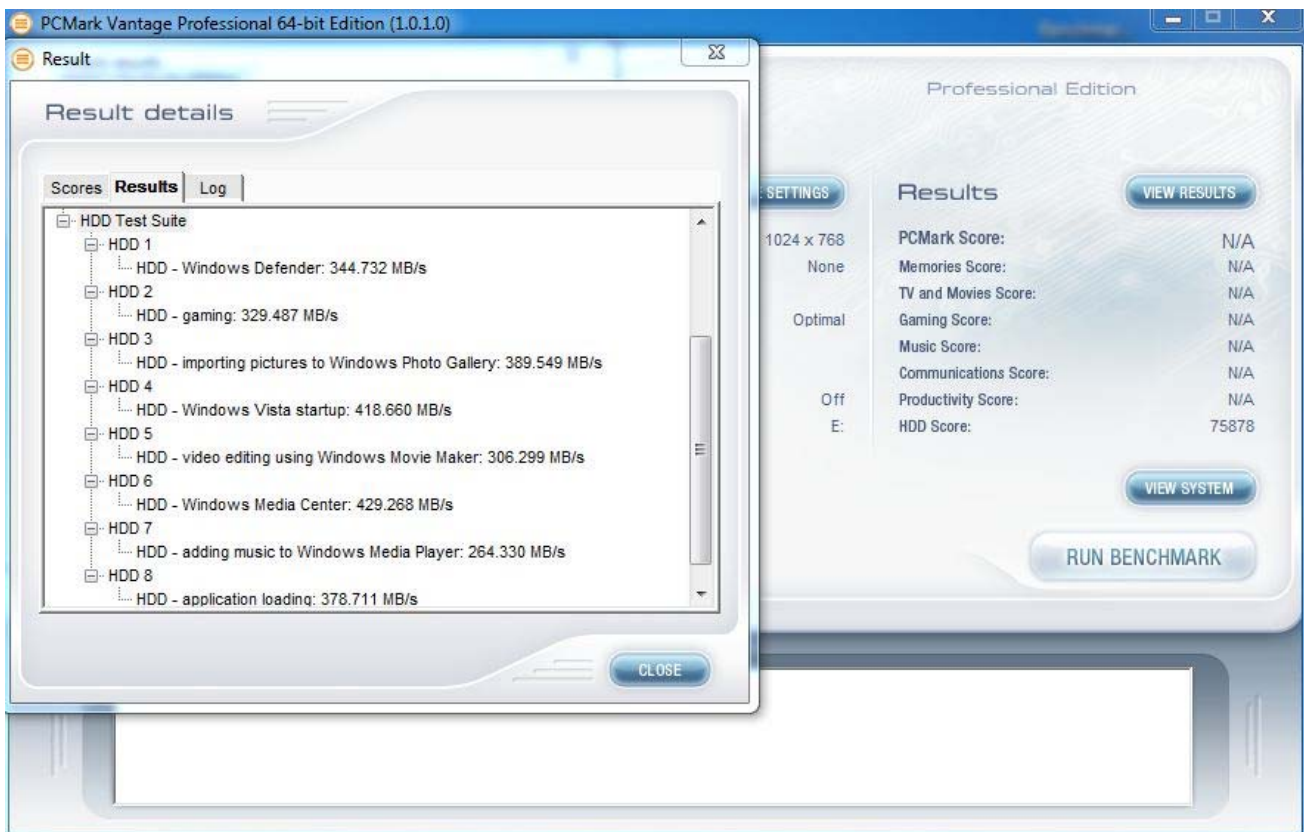
Printscreen of test result:



#### 4.6. PCMark Vantage Test (1.0.2.1)

Test Step	Test Process	Test Result	
1	Run PCMark Vantage and test the performance. Record data and print screen	HDD Score	75878
2		Windows Defender	344.732 MB/s
3		Gaming	329.487 MB/s
4		Importing Pictures	389.549 MB/s
5		Windows Vista Startup	418.660 MB/s
6		Video Editing	306.299 MB/s
7		Windows Media Center	429.268 MB/s
8		Adding Musing	264.330 MB/s
9		Application Loading	378.711 MB/s

Printscreen of test result:



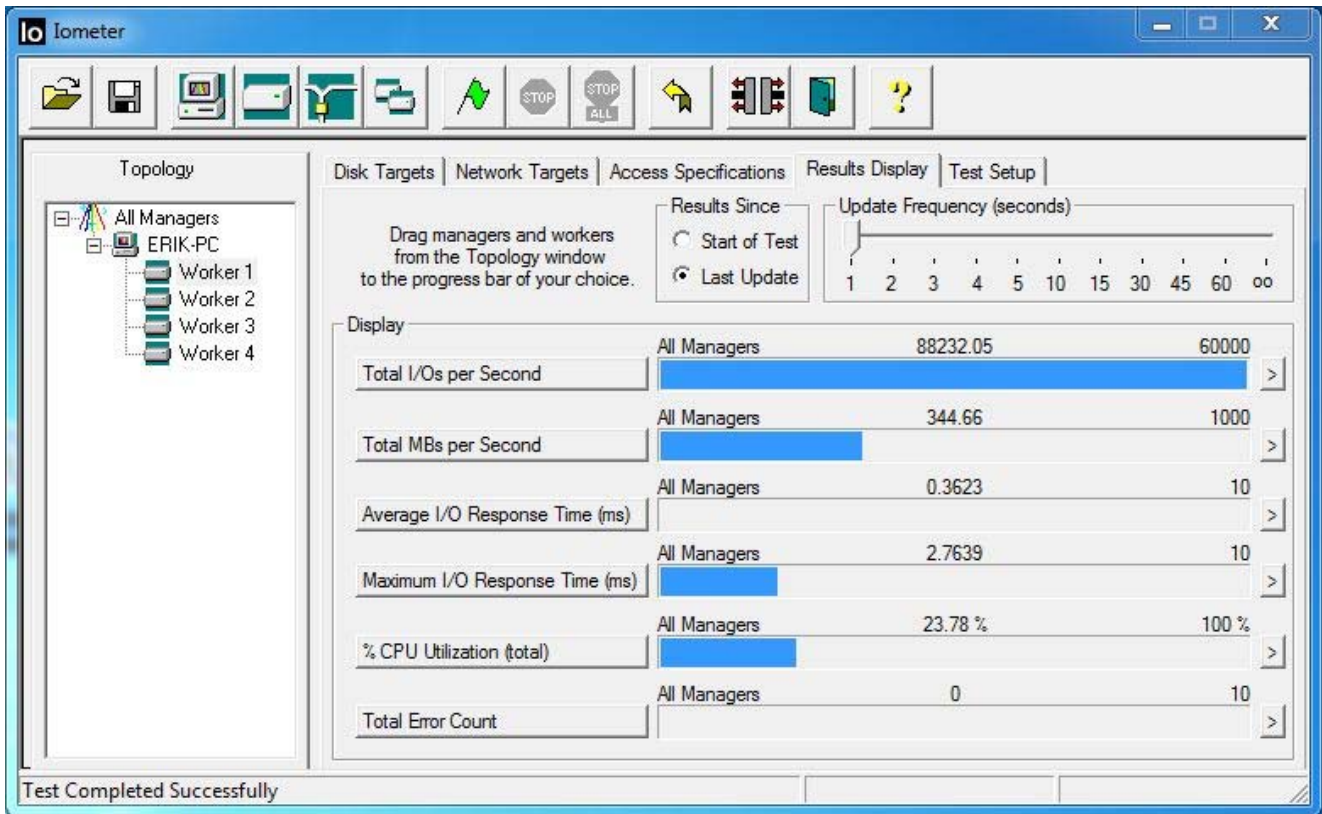
#### 4.7. Iometer Test (V2008.06.18)

##### 4.7.1 4KB Random Read

Test Step	Test Process	Test Result	
1	Run Iometer and test the performance of read, Record data and print screen	Average IO/s	88232.05
2		Average MB/s	344.66 MB/s
3		Average Response Time	0.3623ms

Printscreen of test result:

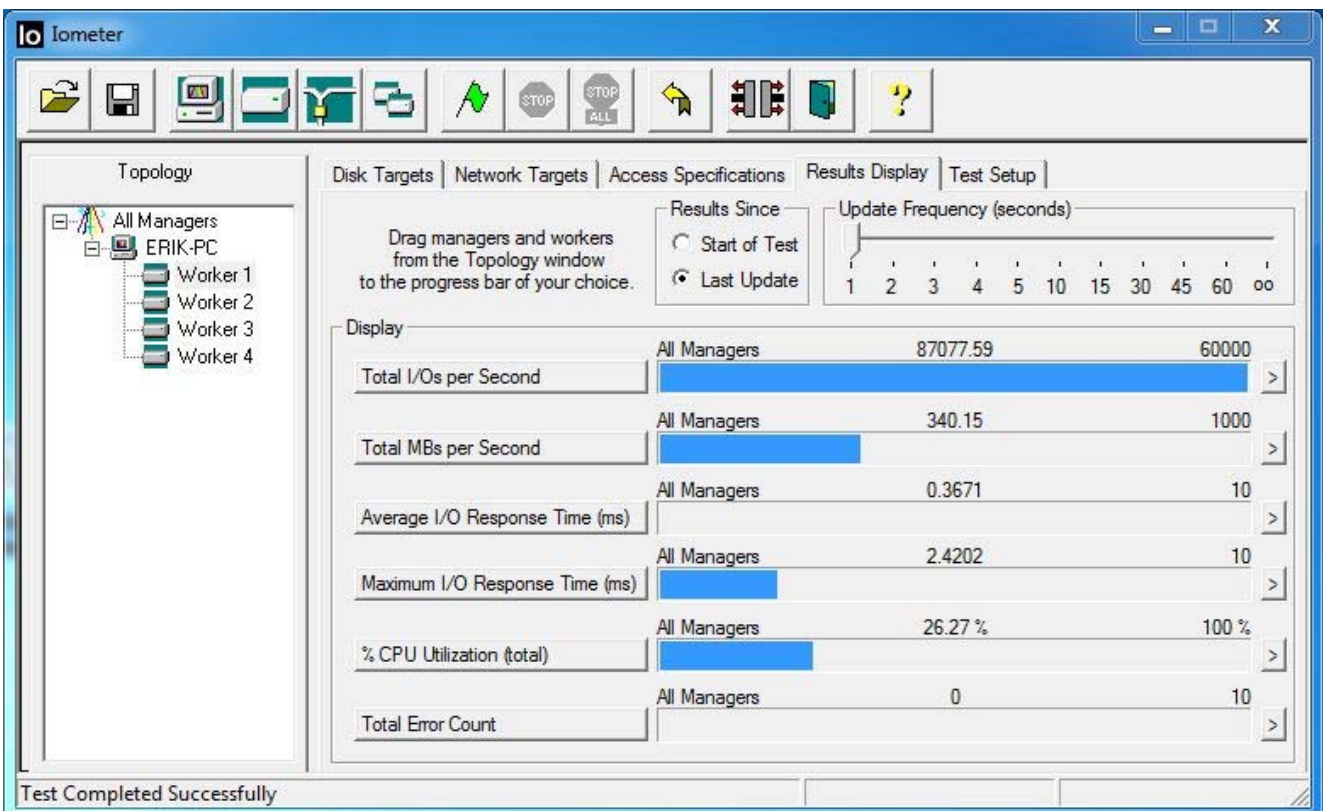




#### 4.7.2 4KB Random Write

Test Step	Test Process	Test Result	
1	Run iometer and test the performance of write, Record data and print screen	Average IO/s	87077.59
2		Average MB/s	340.15 MB/s
3		Average Response Time	0.3671ms

Printscreen of test result:

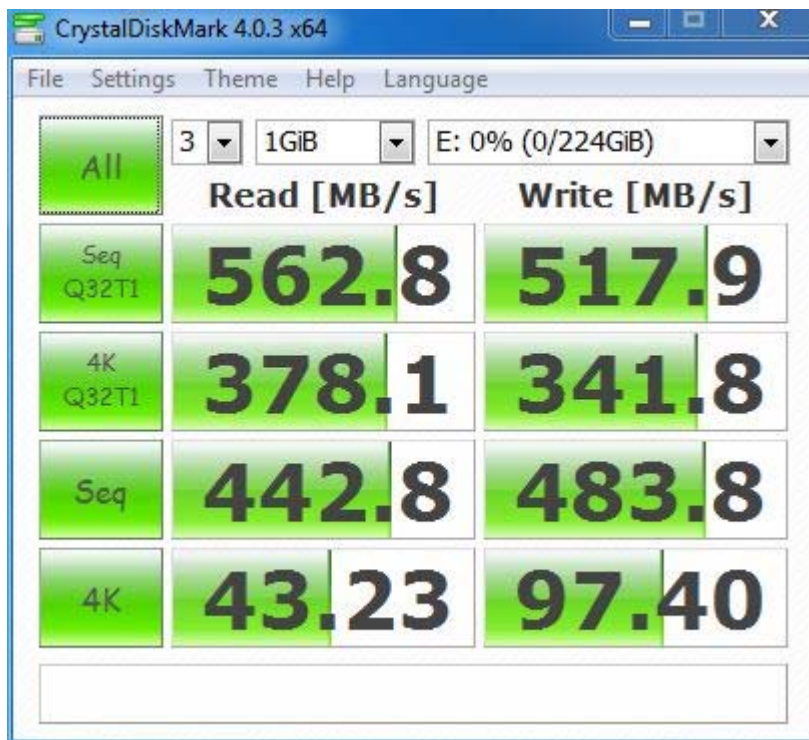


## 4.8. Crystal DiskMark Test(V4.0.3)

### 4.8.1 Default Setup

Test Step	Test Process	Test Result	
1	Run Crystal DiskMark and test the performance, Record data and print screen	Sequence QD32 Read	562.8 MB/s
2		Sequence QD32 Write	517.9 MB/s
3		4K QD32 Read	378.1 MB/s
4		4K QD32 Write	341.8 MB/s
5		Sequence Read	442.8 MB/s
6		Sequence Write	483.8 MB/s
7		4K Read	43.23 MB/s
8		4K Write	97.40 MB/s

Printscreen of test result:

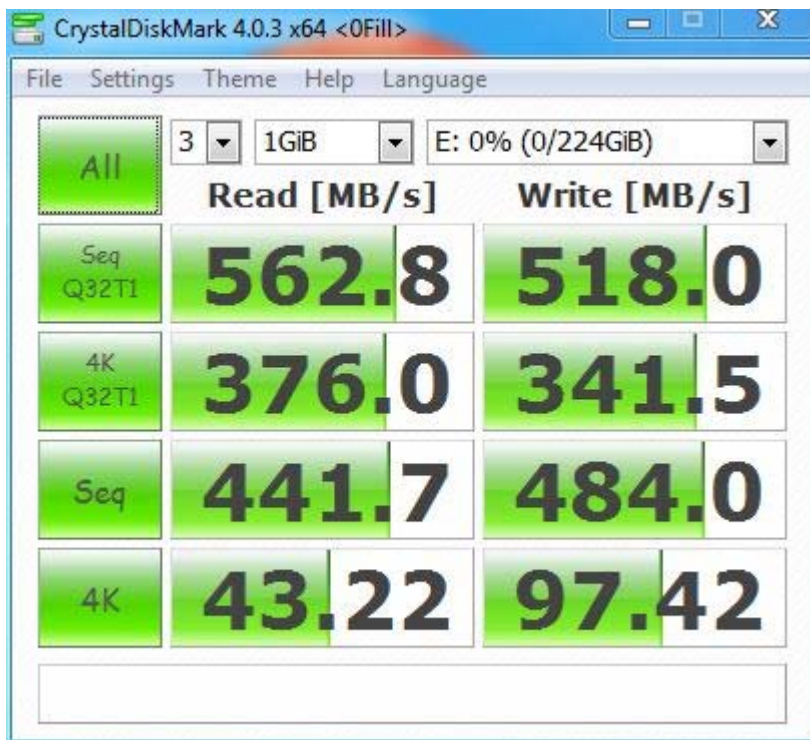


### 4.8.2 All 0 Setup

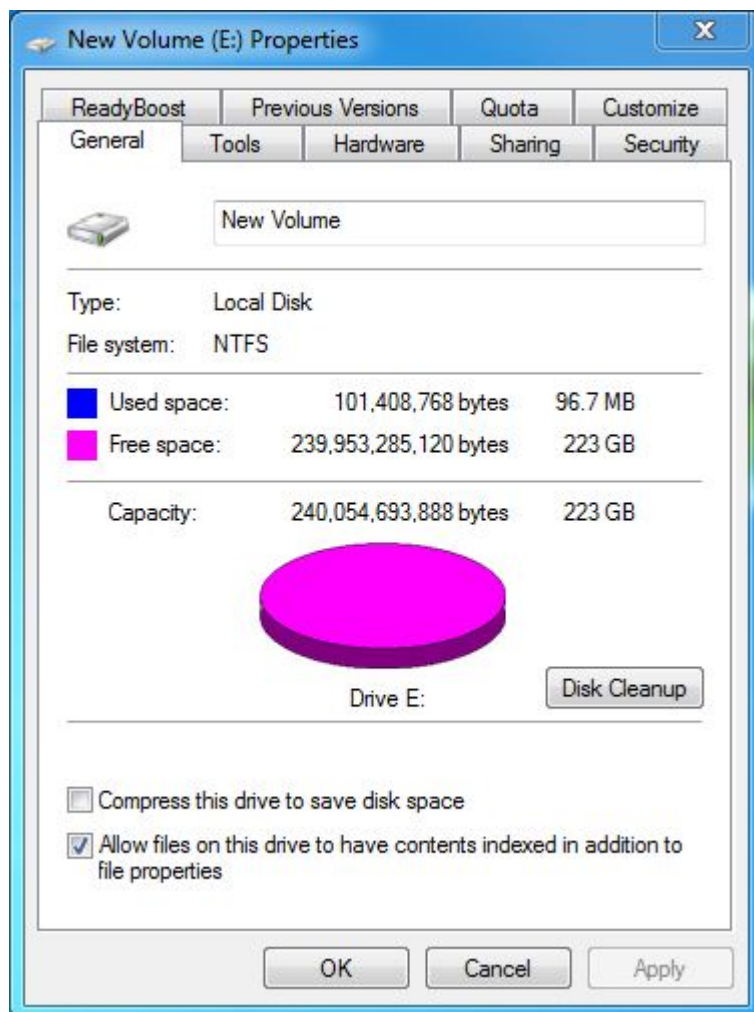
Test Step	Test Process	Test Result	
1	Run Crystal DiskMark and test the performance, Record data and print screen	Sequence QD32 Read	562.8 MB/s
2		Sequence QD32 Write	518.0 MB/s
3		4K QD32 Read	376.0 MB/s
4		4K QD32 Write	341.5 MB/s
5		Sequence Read	441.7 MB/s
6		Sequence Write	484.0 MB/s
7		4K Read	43.22 MB/s
8		4K Write	97.42 MB/s

Printscreen of test result:





#### 4.9. Capacity Test



#### 4.10. Power Consumption Test

Test Step	Test Process	Work State	Voltage	Current (Max)	Power
1	Add a resistor of 0.5ohm between the power-in site, calculate the current after measuring the voltage by the multimeter.	Read	5V	382mA	1.91W
2		Write	5V	660mA	3.3W
3		Idle	5V	78mA	0.39W

#### 4.11 Power on-off Test

Test Step	Test Process	Test Result
1	Plug the SSD to the system computer.	PASS
2	Set the time from booting to shut down as 60s	
3	Run burnin test after the system booting normally	
4	Run 3000 times at least for this test	
5	Check the sample which have functional failure and data loss or not	

#### 4.12 S3/S4 Test

Test Step	Test Process	Test Result
1	Install the Windows 7 into the test sample of SSD	PASS
2	Run the S3/S4 test program for 3000 times	
3	Check the sample which have dropped drive or not	

#### 4.13 Restart Test

Test Step	Test Process	Test Result
1	Install the Windows 7 into the test sample of SSD	PASS
2	Run the restart test program for 3000 times	
3	Check the sample which have dropped drive or not	