

# AQD-SD3L8GE16-MG

## Test Report

<b>Test Requestor</b>	Eric.Tu	<b>Job Title</b>		<b>Release Date</b>	2014-01-14
<b>Testing Engineer</b>	Jason.Jiang	<b>Job Title</b>	AKDC DQA Engineer	<b>Revision</b>	V1.0
<b>Approved by</b>	Sophie.song	<b>Job Title</b>	AKDC DQA assistant manager	<b>Release Status</b>	Formal Release

**Revision History:**

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2014/01/14	1.0	First version released	Jason.Jiang

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## Test Result Definition:

Item	Description
<b>Pass</b>	Compatibility test properly without any problem.
<b>Fail</b>	Compatibility test can't work properly and can't meet the product spec, please describe issue to the "Remark" item detailedly.
No test	No test (no test tool or device or driver not ready), please write reason to the "Remark" item.
N/A	Spec not support.
<b>Limitation</b>	Compatibility issue Limitation, it needs formal approval mail or other formal reply from PM or Applicant or Manufacturer.

## Test Item List Summary

Num.	Test item	Result	Remark
Chapter 1	Function test	Pass	
1.1	Device Information confirm	Pass	
1.2	Basic function test	Pass	
Chapter 2	Compatibility test	Pass	
2.1	With OS compatibility test	Pass	
2.2	With motherboard compatibility test	Pass	
2.3	With CPU compatibility test	Pass	
Chapter 3	Performance test	Pass	
3.1	Sisoftware Sandra	Pass	
Chapter 4	Reliability test	Pass	
4.1	Room temperature test	Pass	

### Appendix 1:Motherboard List

MB/SBC	Core Chipset	Remark
SOM-5890FG	Intel Ivy bridge QM67	

## Product Information:

<b>Advantech Part Number</b>	AQD-SD3L8GE16-MG
<b>Manufacturer</b>	ADATA
<b>Module Part NO.</b>	ADDDBI600W8G11-BMIE
<b>PCB Part NO.</b>	G220093073C001
<b>IC Brand(chip model)</b>	Micron PPLT 3LE77D9QBJ
<b>Memory Category</b>	DDR3L SODIMM
<b>Socket type</b>	204PIN
<b>Size</b>	8G
<b>ECC&amp;REG</b>	ECC
<b>Bandwidth</b>	12.8GB/s
<b>Speed Grade</b>	1600 Mbps
<b>Max Frequency</b>	800MHz
<b>CAS Latency</b>	CL11
<b>Organization</b>	1024*72bit
<b>Component Composition</b>	512*8bit*18EA
<b>Number of Rank</b>	2R
<b>Power supply(VDD)</b>	1.35V&1.5V
<b>Operating Temperature</b>	0~85°C
<b>Dimension (W x H x D)</b>	67.6x30 x1(mm)
<b>RoHS Status (Yes/No)</b>	Yes




Photo:



## Test Platform

<b>MB/SBC</b>	SOM-5890		
<b>PCB version</b>	B101-1	<b>CPU</b>	Onboard i7-2715QE
<b>BIOS version</b>	V1.12	<b>DRAM</b>	AQD-SD3L8GE16-MG*2
<b>Core Chipset</b>	Sandy bridge QM67	<b>Backplane</b>	SOM-DB5800_00A1E
<b>VGA Chipset</b>	CPU ingegrated	<b>Other</b>	

## Test Software

Utilities	Version / Description
Power On/Off (For Reliability test)	
Passmark Burn_In Test Pro (For Reliability test)	V7.0 build 1005
MemTest 86+ (For Function test)	V4.20
SiSoftware Sandra 2011 (for Performance test)	V17.77
EVEREST Ultimate Edition	V5.5



## Test Item

### Chapter 1: Function test

#### 1.1 Device Information confirm

The test ensures the product meets SPEC. Check Memory information under EVEREST Ultimate Edition- Motherboard-SPD- Device description, and paste the screenshot of test result as below.

Test result (MB/SBC: SOM-5890FG):

The screenshot shows the EVEREST Ultimate Edition [ TRIAL VERSION ] interface. The left-hand navigation tree is expanded to 'Motherboard' > 'Memory' > 'SPD'. The main window displays the following information:

**Device Description**

- DIMM1: A-Data (8 GB DDR3-1600 ECC DDR3 SDRAM)
- DIMM3: [ TRIAL VERSION ]

Field	Value
<b>Memory Module Properties</b>	
Module Name	A-Data
Serial Number	None
Module Size	8 GB (2 ranks, 8 banks)
Memory Type	DDR3 SDRAM
Memory Speed	DDR3-1600 (800 MHz)
Module Width	72 bit
Error Detection Method	ECC
DRAM Manufacturer	Micron
<b>Memory Timings</b>	
@ 761 MHz	10-10-10-27 (CL-RCD-RP-RAS) / 37-199-5-12-6-6 (RC-RFC-RRD-...
@ 685 MHz	9-9-9-24 (CL-RCD-RP-RAS) / 33-179-5-11-6-6 (RC-RFC-RRD-WR-...
@ 609 MHz	8-8-8-22 (CL-RCD-RP-RAS) / 30-159-4-10-5-5 (RC-RFC-RRD-WR-...
@ 533 MHz	7-7-7-19 (CL-RCD-RP-RAS) / 26-139-4-8-4-4 (RC-RFC-RRD-WR-...
@ 457 MHz	6-6-6-16 (CL-RCD-RP-RAS) / 22-119-3-7-4-4 (RC-RFC-RRD-WR-...
@ 380 MHz	5-5-5-14 (CL-RCD-RP-RAS) / 19-100-3-6-3-3 (RC-RFC-RRD-WR-...
<b>Memory Module Features</b>	
<input checked="" type="checkbox"/> Auto Self Refresh	Supported
<input checked="" type="checkbox"/> Extended Temperature Range	Supported
<input type="checkbox"/> Extended Temperature Refre...	Not Supported
<input type="checkbox"/> On-Die Thermal Sensor Rea...	Not Supported
<b>Memory Module Manufacturer</b>	
Company Name	A-DATA Technology Co., Ltd.
Product Information	<a href="http://www.adata.com.tw/adata_en/drammodule.php">http://www.adata.com.tw/adata_en/drammodule.php</a>

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## 1.2 Basic function test

The test ensures the product basic function normally. Please see the table list as below:

Please see the test criteria as below:

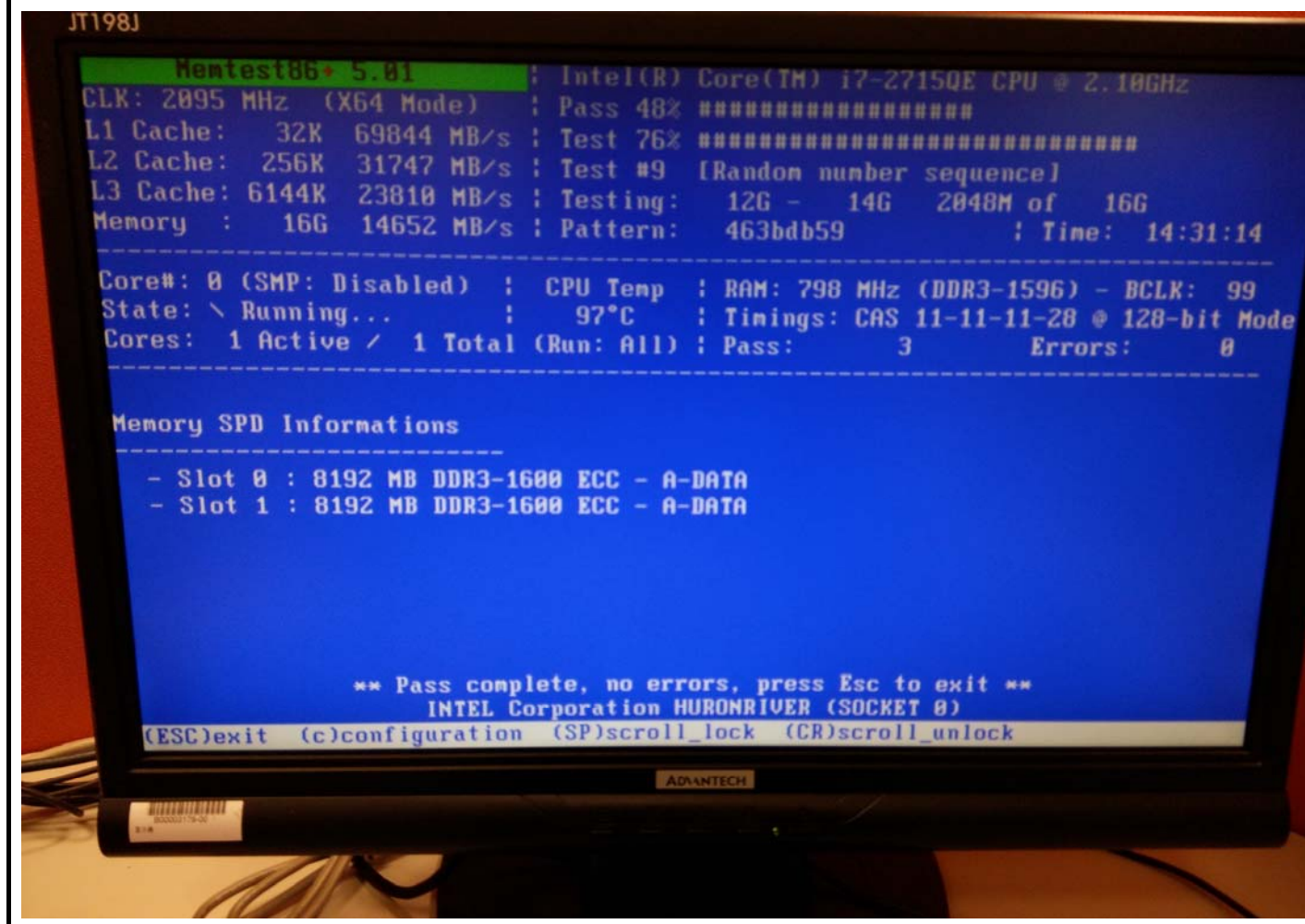
1. The Memory can boot up without any problem and power on/off 10 times, the test must be pass;
2. Check Memory size and frequency can display correctly and pass the self-test;
3. Verify the Memory can't have any problem when running memtest86+ v4.20 test program for 3 cycles.

And paste the photo of test result as below.

MB/SBC:SOM-5890FG

Test Item	Result	Remark
Boot up(power on/off) test	Pass	
POST test	Pass	
Memtest86+ V5.01	Pass	

Memtest86 test result(photo):



## Chapter 2: Compatibility test

### 2.1 With OS compatibility test

The test ensures mainstream windows OS can be installed and boot into OS properly.

Please see the test criteria as below (All the memory slot should add on memory):

1. Verify the install process can't have any problem or hangs;
2. Check and record Memory size under my computer-properties-General-computer information;
3. Check the Memory can't have any problem or system hangs when running Passmark (Select CPU&RAM&2D&3D), test program for 15 Minutes.

Test platform	SOM-5890FG		
OS	Version	Memory size	Result
Windows XP	Windows XP professional edition 32bit	3.41GB	Pass
Windows 7	Windows 7 Ultimate 64bit	15.9GB	Pass
Windows 2008	Windows 2008 sever 64bit R2 SP1	15.9GB	Pass
Windows 8	Windows 8 professional edition 64bit	15.9GB	Pass

### 2.2 With motherboard compatibility test

The test ensures the memory can work properly with different framework and chipsets of Motherboard.

Please see the test criteria as below (Please select motherboard support of the max CPU for test):

1. Check Memory size and frequency can display correctly, and record the result as below list.
2. Verify the Memory can't have any problem when running memtest86+ v5.01 test program for 3 cycles (All the memory slot should add on memory).
3. Power on/off 10 times, the test must pass when socket combination as single channel and dual channel and full loading.

Memtest86+ v5.01 test result					
MB/SBC	CPU	Memory Size	Frequency	Result	Remark
SOM-5890	Intel i7-2715QE 2.10G	16384MB	1600	Pass	

Socket function and combination test result						
MB/SBC	CPU	DIMM socket	Memory Size	Frequency	Result	Remark
SOM-5890	Intel i7-2715QE 2.10G	DIMM 1	8192MB	1600	Pass	
		DIMM 2	8192MB	1600	Pass	
		Full loading	16384MB	1600	Pass	

### 2.3 With CPU compatibility test

The test ensures the Memory can work properly with different CPU of core/speed/ FSB.

Please see the test criteria as below (All the memory slot should add on memory):

1. Check Memory size and frequency can display correctly, and record the result as below list;
2. Check the Memory can't have any problem or system hangs when running Passmark(Select CPU&RAM&2D&3D), test program for 30 minutes;
3. Power on/off 10 times, the test must pass.

CPU	MB/SBC	Memory Size	Frequency	Result	Remark
Intel i7-2715QE 2.10G	SOM-5890FG	16384MB	1600	Pass	

## Chapter 3: Performance test

The test ensures the Memory performance can reach the average value. Record the benchmark score and compare the score with other product (All the memory slot should add on memory).

### 3.1 Sisoftware Sandra

MB/SBC	CPU	Sisoftware Sandra2011.SP4c (17.77)				Result	Remark
		Memory Bandwidth-Int Buff'd (GB/s)	Memory Bandwidth Float Buff'd (GB/s)	Memory (Random Access) Latency (ns)	Memory Latency-Speed Factor		
SOM-5890	Intel i7-2715QE 2.10G	19.63	19.57	91.1	57.80	Pass	

## Chapter 4: Reliability test

### 4.1 Room temperature test

The test ensures after High/Low temperature test, the memory can work properly in room temperature.

<b>Test platform</b>	SOM-5890FG	
<b>OS</b>	Windows 7 Ultimate 64bit	
<b>Item</b>	<b>Pass Criteria</b>	<b>Result</b>
Power on/off	Power on/off 100 times, successful boot rate 100%;	<b>Pass</b>
Passmark Burn_in	Set CPU/2D/3D/Memory loading 100%; The result should be passed when running Burn_in V7.0 for 12 hours.	<b>Pass</b>