96SD3-4G1600NN-AP

Test Report

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Approved by	Sophie.Song	**Job Title**	AKDC DQA assistant manager	**Release Status**	Formal Release

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Revision History:

Revision Date	Revision	Description	Creator
2011/08/17	1.0	First version released	Jier.liu
2012/04/25	1.1	Adjust the test method, update report format.	Jier.liu

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Test Result Definition:

Item	Description
Pass	Compatibility test properly without any problem.
Fail	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.
Limitation	Compatibility issue Limitation, it needs formal approval mail or other formal reply from PM or Applicant or Manufacturer.

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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	High/Low temperature test	Pass	
4.2	Room temperature test	Pass	

Appendix 1:Motherboard List

MB/SBC	Core Chipset	Remark
UNO-2184	Intel Cougar Point-M QM67	
AIMB-272	Intel Cougar Point-M QM67	
PCM-8206	Atom D2700+NM10	Chipset limitation, support the max memory size is 4GB, so only test the bottom Socket, and down to Frequency1067.
PCM-8506	Atom N2800+NM10	Chipset limitation, down to Frequency1067.

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Product Information:

Advantech Part Number	**96SD3-4G1600NN-AP**
Manufacturer	Apacer
Module Part NO.	78.B2GCJ.AF10C
Transcend DB P/N	NA
PCB Part NO.	48.18220.091
IC Brand(chip model)	Hynix H5TQ2G83CFR
Memory Category	DDR3
Socket type	204Pin
Size	4GB
ECC&REG	NO
Bandwidth	12.8GB/sec
Speed Grade	1600Mbps
Max Frequency	800MHz
CAS Latency	CL9
Organization	512Mx64
Component Composition	258Mx8bit
Number of Rank	2
Power supply(VDD)	1.5V ± 0.075V
Operating Temperature	0℃-95℃
Dimension (W x H x D)	67.60x30x3.80(mm)
ROHS Status (Yes/No)	Yes

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Photo:

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Test Platform

MB/SBC	UNO-2184		
PCB version	A101-2	**CPU**	Intel i7-2715QE 2.10GHz
BIOS version	2184X016	**DRAM**	Apacer DDR3 1600 4GBX2 SODIMM
Core Chipset	Intel Cougar Point-M QM67	**Backplane**	NA
VGA Chipset	CPU integrated VGA Controller	**Other**	

MB/SBC	AIMB-272		
PCB version	A101-3	**CPU**	Intel i7-2710QE 2.10GHz
BIOS version	A272X014	**DRAM**	Apacer DDR3 1600 4GBX2 SODIMM
Core Chipset	Intel Cougar Point-M QM67	**Backplane**	NA
VGA Chipset	CPU integrated VGA Controller	**Other**	

MB/SBC	PCM-8206		
PCB version	A101-1	**CPU**	Onboard D2700 1.86GHz
BIOS version	8206x001	**DRAM**	Apacer DDR3 1600 4GBX2 SODIMM
Core Chipset	Atom D2700+NM10	**Backplane**	NA
VGA Chipset	CPU integrated VGA Controller	**Other**	

MB/SBC	PCM-8506		
PCB version	A101-2	**CPU**	Onboard N2800 1.86GHz
BIOS version	8506x006	**DRAM**	Apacer DDR3 1600 4GBX2 SODIMM
Core Chipset	Intel N2800+ICH10	**Backplane**	NA
VGA Chipset	CPU integrated VGA Controller	**Other**	

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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

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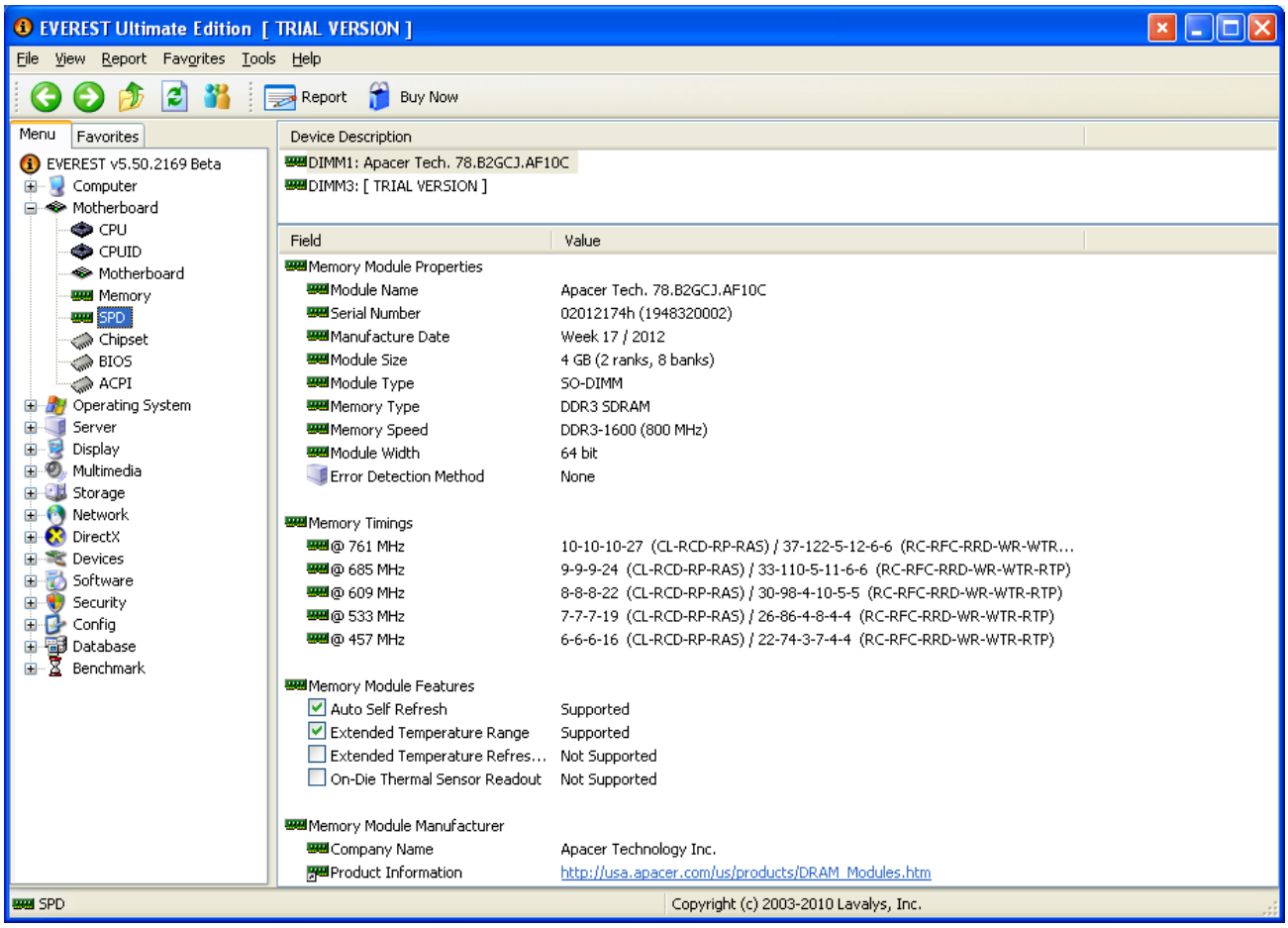
Test Item

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: UNO-2184):



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1.2 Basic function test

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

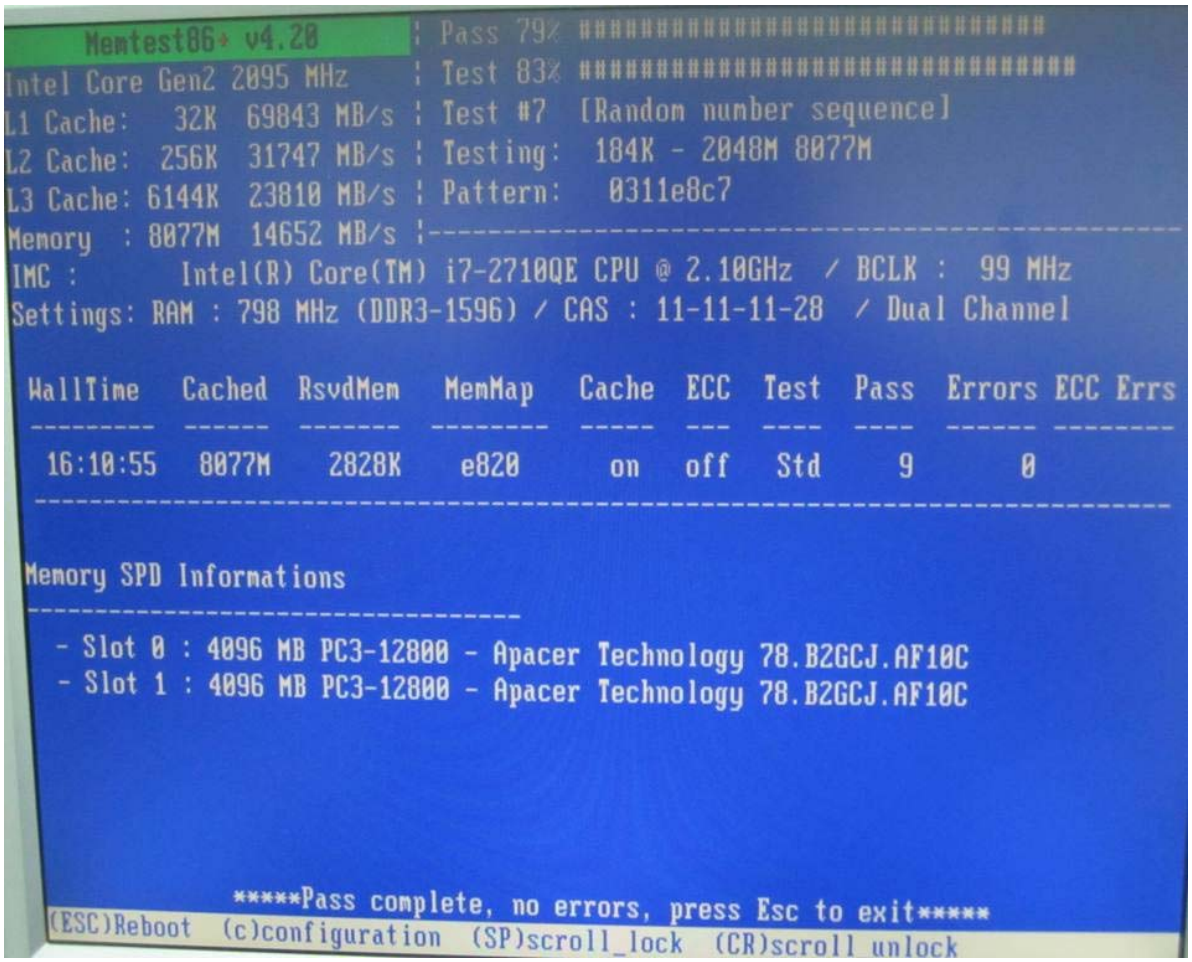
Please see the test criteria as below:

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: AIMB-272

Test Item	Result	Remark
Boot up(power on/off) test	**Pass**	
POST test	**Pass**	
Memtest86+ V4.20	**Pass**	

Memtest86 test result(photo):



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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	**AIMB-272**		
OS	**Version**	**Memory size**	**Result**
Windows XP	Windows XP professional with 32bit SP3(English)	3.41GB	**Pass**
Windows 7	Windows 7 Ultimate 32bit(English)	8.0GB	**Pass**
Windows 2008	Windows Server2008 32bit with SP2(English)	8.0GB	**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+ v4.20 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+ v4.20 test result					
MB/SBC	**CPU**	**Memory Size**	**Frequency**	**Result**	**Remark**
UNO-2184	Intel i7-2715QE 2.10GHz	8GB	1600	**Pass**	
AIMB-272	Intel i7-2710QE 2.10GHz	8GB	No display	**Pass**	BIOS can't display RAM information
PCM-8506	Onboard N2800 1.86GHz	4GB	1067	**Pass**	
PCM-8206	Onboard D2700 1.86GHz	4GB	1067	**Pass**	Connect the bottom socket

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Socket function and combination test result						
MB/SBC	**CPU**	**DIMM socket**	**Memory Size**	**Frequency**	**Result**	**Remark**
UNO-2184	Intel i7-2715QE 2.10GHz	DIMM1	4GB	1600	**Pass**	
		DIMM2	4GB	1600	**Pass**	
		Full Loading	8GB	1600	**Pass**	
AIMB-272	Intel i7-2710QE 2.10GHz	DIMM1	4GB	No display	**Pass**	BIOS can't display RAM information
		DIMM2	4GB	No display	**Pass**	
		Full Loading	8GB	No display	**Pass**	
PCM-8506	Onboard N2800 1.86GHz	SODIMM	4GB	1067	**Pass**	
PCM-8206	Onboard D2700 1.86GHz	SODIMM	4GB	1067	**Pass**	Connect the bottom socket

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 B810 1.60GHz	AIMB-272	8GB	No display	**Pass**	BIOS can't display RAM information

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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).

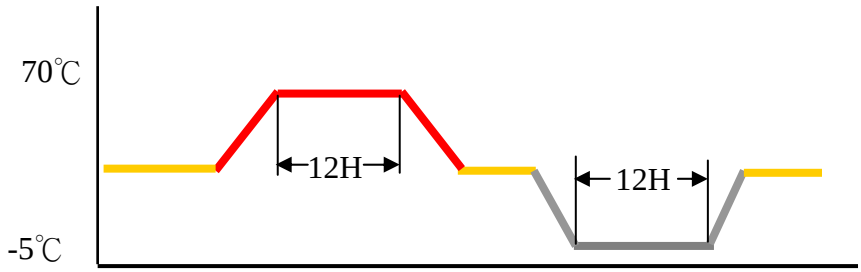
3.1 Sisoftware Sandra

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		
UNO-2184	Intel i7-2715QE 2.10GHz	20.38	20	88.5	42.6	**Pass**	
AIMB-272	Intel i7-2710QE 2.10GHz	20.36	20.36	83.4	63.1	**Pass**	
PCM-8506	Onboard N2800 1.86GHz	4	3.38	141.3	86.8	**Pass**	
PCM-8206	Onboard D2700 1.86GHz	2	1.75	357	86.8	**Pass**	

Chapter 4: Reliability test

4.1 High/Low temperature test

The test ensures the memory can work properly in High/Low temperature of environment.
Test Environment: -5℃~70℃



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Test platform	**AIMB-272**	
OS	Windows XP professional with 32bit SP3(English)	
Item	**Pass Criteria**	**Result**
Power on/off	Power on/off 100 times，successful boot rate 100%;	**Pass**
Passmark Burn_in	Set CPU/2D/3D/Memory loading 100%; The result should be passed when running Burn_in V7.0 for 12 hours.	**Pass**

4.2 Room temperature test

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

Test platform	**UNO-2184/PCM-8206/PCM-8506**	
OS	Windows XP professional with 32bit SP3(English)	
Item	**Pass Criteria**	**Result**
Power on/off	Power on/off 100 times，successful boot rate 100%;	**Pass**
Passmark Burn_in	Set CPU/2D/3D/Memory loading 100%; The result should be passed when running Burn_in V7.0 for 12 hours.	**Pass**

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