96D3-8G1600NN-APL

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
FWA-6500	Intel® 5520（Tylersburg-EP）+ICH10R	BIOS cannot display the Frequency information of Memory. Down Frequency to 1333.
ASMB-781	C206 PCH	Down Frequency to 1333.
FWA-3210	C206 PCH	

Ps: All test only used 4pcs memory sample.

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Product Information:

Advantech Part Number	**96D3-8G1600NN-APL**
Manufacturer	Advantech
Module Part NO.	78.C1GET.ATF0C
Transcend DB P/N	NA
PCB Part NO.	48.18213.09F0C
IC Brand(chip model)	MICRON 2GD27 D9PCP
Memory Category	DDR3
Socket type	240Pin
Size	8GB
ECC&REG	No ECC&REG
Bandwidth	12.8GB/sec
Speed Grade	1600Mbps
Max Frequency	800MHz
CAS Latency	CL11
Organization	1024Mx64
Component Composition	512Mx8bit
Number of Rank	2
Power supply(VDD)	1.5V ± 0.075V
Operating Temperature	0℃-85℃
Dimension (W x H x D)	133.35x18.75x1.27 (mm)
ROHS Status (Yes/No)	Yes

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Photo:

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Test Platform

MB/SBC	FWA-6500		
PCB version	A104-1	**CPU**	Intel E5504 2.00GHz X2
BIOS version	6500V180	**DRAM**	Apacer DDR3 1600 8GBx4 UDIMM
Core Chipset	Intel® 5520（Tylersburg-EP）+ICH10R	**Backplane**	NA
VGA Chipset	NVDIA GT610	**Other**	

MB/SBC	ASMB-781		
PCB version	A101-3	**CPU**	Intel i7-2600 3.40GHz
BIOS version	S781X018	**DRAM**	Apacer DDR3 1600 8GBx4 UDIMM
Core Chipset	Intel Cougar Point C206	**Backplane**	NA
VGA Chipset	NVDIA GT610	**Other**	

MB/SBC	FWA-3210		
PCB version	A101-3	**CPU**	Intel Ivy Bridge E3-1275 3.50GHz
BIOS version	3210X031	**DRAM**	Apacer DDR3 1600 8GBx4 UDIMM
Core Chipset	Intel Cougar Point C206	**Backplane**	NA
VGA Chipset	C206 integrated	**Other**	

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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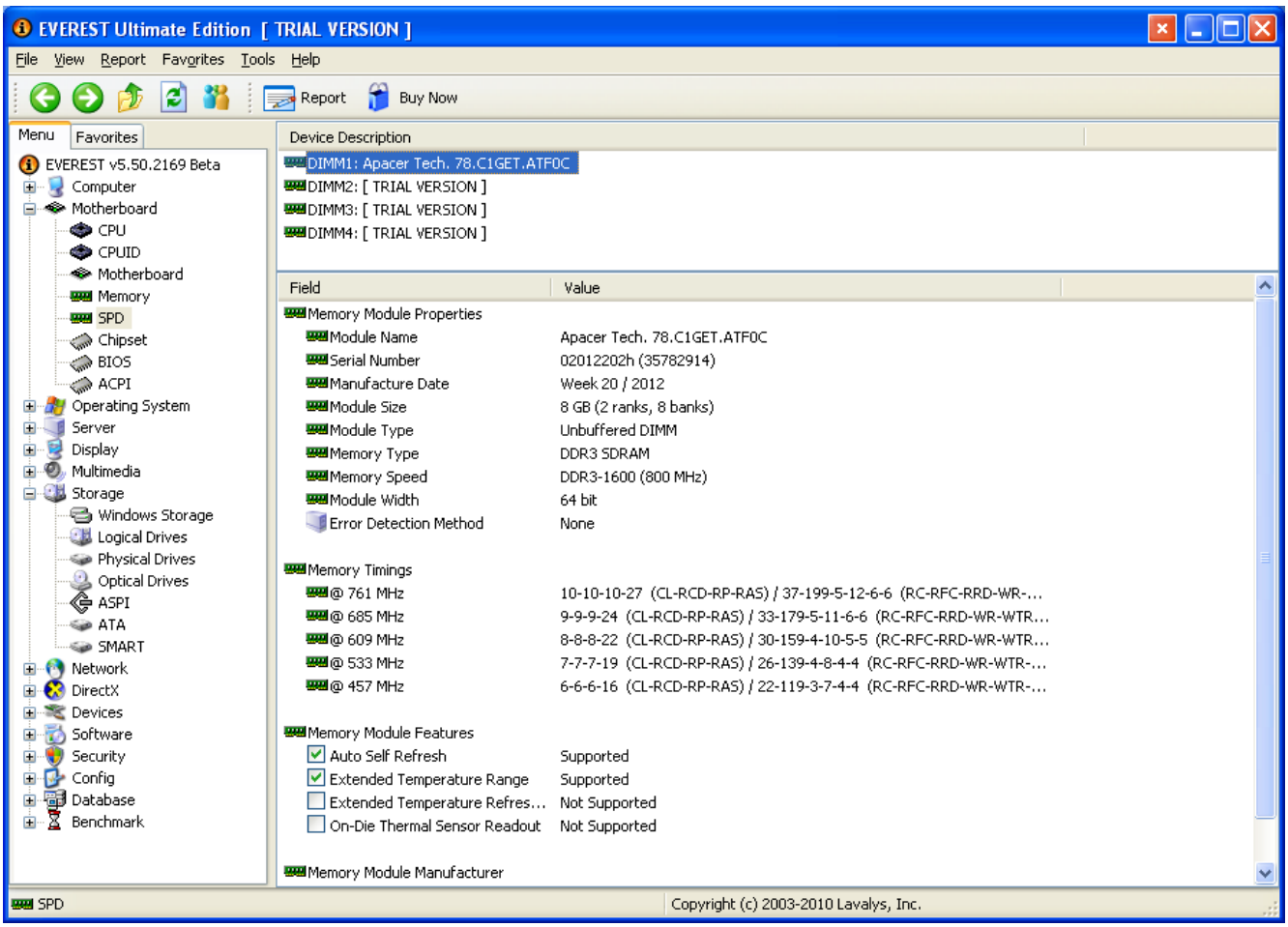
Test Item

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: FWA-3210):



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1.2 Basic function test

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

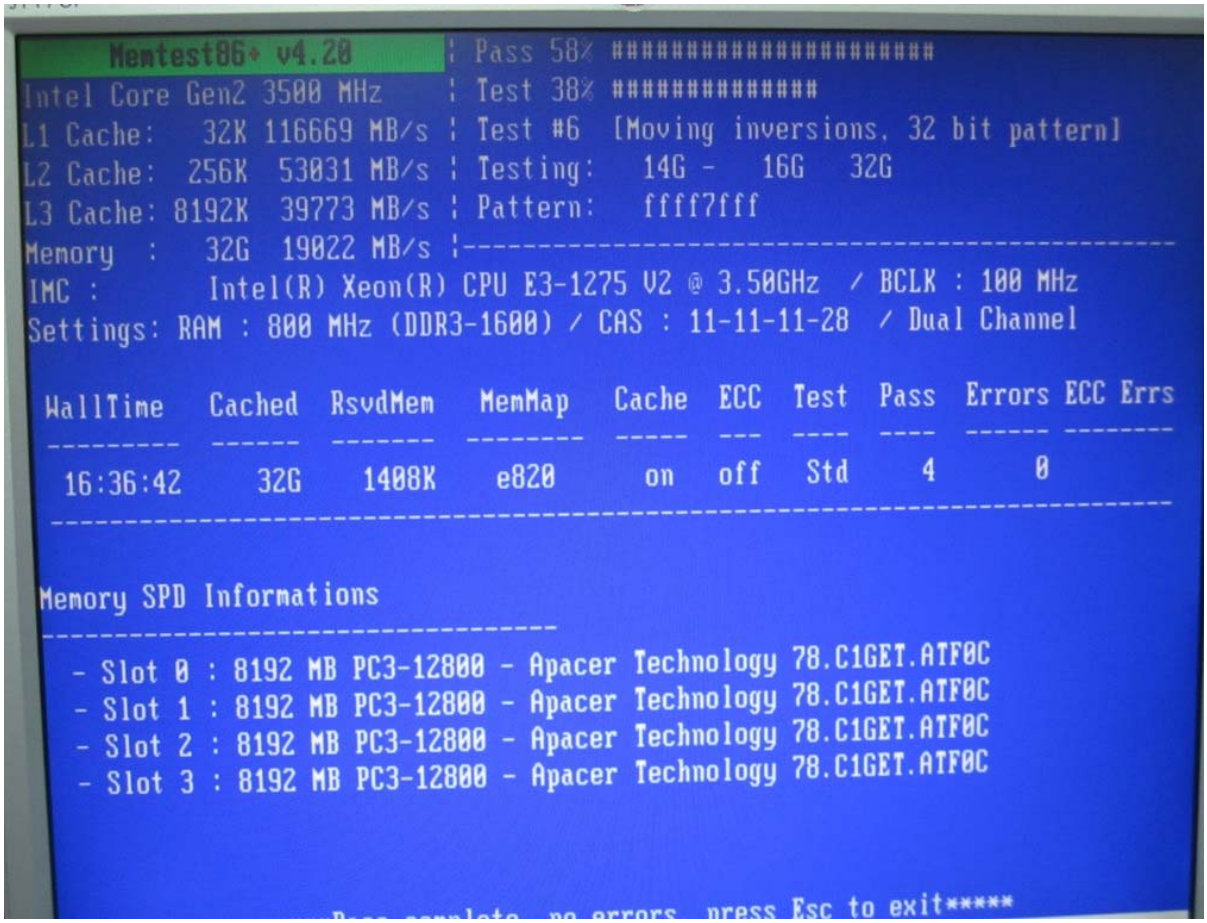
Please see the test criteria as below:

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: FWA-3210

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	**FWA-3210**		
OS	**Version**	**Memory size**	**Result**
Windows XP	Windows XP professional edition64 bit with SP3	31.8GB	**Pass**
Windows 7	Windows 7 Ultimate 64bit(English)	32.0GB	**Pass**
Windows 2008	Windows Server2008 64bit (English)	32.0GB	**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**
FWA-6500	Intel E5504 2.00GHz X2	32760MB	BIOS No display	**Pass**	Memory Size less 8MB
ASMB-781	Intel i7-2600 3.40GHz	32768MB	1333	**Pass**	Down Frequency to 1333
FWA-3210	Intel Ivy Bridge E3-1275 3.50GHz	32768MB	1600	**Pass**	

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Socket function and combination test result						
MB/SBC	**CPU**	**DIMM socket**	**Memory Size**	**Frequency**	**Result**	**Remark**
FWA-6500	Intel E5504 2.00GHz X2	DIMMA1	8184 MB	BIOS No display	**Pass**	Memory Size less 8MB
		DIMMA2	can't boot up		**N/A**	Chipset Limitation
		DIMMD1	8184 MB		**Pass**	Memory Size less 8MB
		DIMME1	8184 MB		**Pass**	
		DIMMA1+A2	16376 MB		**Pass**	
		DIMM A1+A2+D1+E1	32760 MB		**Pass**	
ASMB-781	Intel i7-2600 3.40GHz	DIMM A0	8192 MB	1333	**Pass**	Down to Frequency 1333
		DIMM B0	8192 MB	1333	**Pass**	
		DIMM A1	8192 MB	1333	**Pass**	
		DIMM B1	8192 MB	1333	**Pass**	
		DIMM A0+B0	16384 MB	1333	**Pass**	
		DIMM A1+B1	16384 MB	1333	**Pass**	
		Full	32768 MB	1333	**Pass**	
FWA-3210	Intel Ivy Bridge E3-1275 3.50GHz	DIMM A1	8192 MB	1600	**Pass**	
		DIMM B1	8192 MB	1600	**Pass**	
		DIMM A2	8192 MB	1600	**Pass**	
		DIMM B2	8192 MB	1600	**Pass**	
		DIMM A1+B1	16384 MB	1600	**Pass**	
		DIMM A2+B2	16384 MB	1600	**Pass**	
		Full	32768 MB	1600	**Pass**	

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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 Ivy Bridge i5-3550S 3.00GHz	FWA-3210	32768MB	1600	**Pass**	
Intel i3-2120 3.30GHz	FWA-3210	32768MB	1333	**Pass**	Down to Frequency 1333
Intel Pentium G850 2.90GHz	FWA-3210	32768MB	1333	**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		
FWA-6500	Intel E5504 2.00GHz X2	3.88	4	113	55	**Pass**	
ASMB-781	Intel i7-2600 3.40GHz	17.24	17.26	77.1	66.20	**Pass**	
FWA-3210	Intel Ivy Bridge E3-1275 3.50GHz	19.77	19.77	70.7	64.70	**Pass**	

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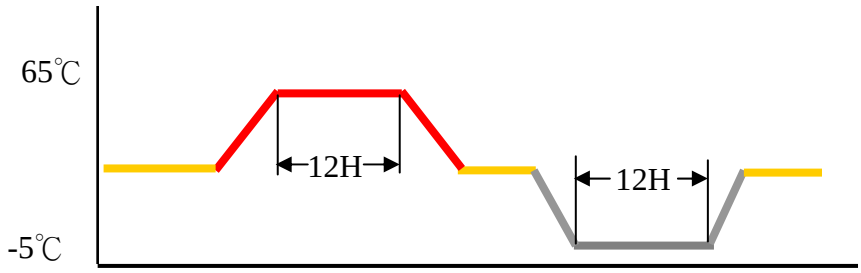
Chapter 4: Reliability test

4.1 High/Low temperature test

The test ensures the memory can work properly in High/Low temperature of environment.

Test Environment: -5℃~65℃



Test platform	ASMB-781 (NVDIA GT610 VGA card)	
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	FWA-3210	
OS	Windows 7 Ultimate 64bit(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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