

96D3-2G1600NN-TR

Test Report

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Testing Engineer	Jeans.Zhou	Job Title	AKDC DQA Engineer	Revision	V1.1
Approved by	Sophie. Song	Job Title	AKDC DQA assistant manager	Release Status	Formal Release

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.

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-3210	Intel Cougar Point C206	
PCE-5125W	Intel3450 Chipset	Down Frequency to 1333
AIMB-780W	Intel3450 Chipset	Down Frequency to 1066
ASMB-781	Intel Cougar Point C206	Down Frequency to 1333
FWA-6500	Intel® 5520+ICH10R	BIOS cannot display the Frequency information of Memory. Down Frequency to 1333

Product Information:

Advantech Part Number	96D3-2G1600NN-TR
Manufacturer	TRANSCEND
Module Part NO.	TS256MLK64V6N
Transcend DB P/N	TS5KNN28100-6M
PCB Part NO.	09-2810
IC Brand(chip model)	Micron 2DM27D9PFJ
Memory Category	DDR3
Socket type	240Pin
Size	2G
ECC&REG	NO ECC®
Bandwidth	12.8GB/sec
Speed Grade	1600Mbps
Max Frequency	800MHZ
CAS Latency	CL11
Organization	256Mx64
Component Composition	256Mx8bits
Number of Rank	1
Power supply(VDD)	1.5V±0.075V
Operating Temperature	0°C to 85°C
Dimension (W x H x D)	133.35x30.0x1.27(mm)
RoHS Status (Yes/No)	YES

Photo:



Test Platform

MB/SBC	FWA-3210		
PCB version	A101-1	CPU	Intel Xeon E3-1275V2 3.50GHZ
BIOS version	NAMB3210x031	DRAM	Transcend DDR3 1600 UDIMMx4
Core Chipset	Intel C206 PCH	Backplane	NA
VGA Chipset	CPU integrated VGA Controller	Other	


MB/SBC	PCE-5125W		
PCB version	A101-3	CPU	Intel Core i3 540 3.06GHZ
BIOS version	25Wx0032	DRAM	Transcend DDR3 1600 UDIMMx2
Core Chipset	Intel3450 Chipset	Backplane	PCE-5B13-08_A101-1
VGA Chipset	CPU integrated VGA Controller	Other	

MB/SBC	AIMB-780W		
PCB version	A101-2	CPU	Intel Pentium G6950 2.80GHZ
BIOS version	780Wx003	DRAM	Transcend DDR3 1600 UDIMMx4
Core Chipset	Intel3450	Backplane	NA
VGA Chipset	CPU integrated VGA Controller	Other	

MB/SBC	ASMB-781		
PCB version	A101-3	CPU	Intel Core i7-2600 3.10GHZ
BIOS version	V1.10	DRAM	Transcend DDR3 1600 UDIMMx2
Core Chipset	PCHC206	Backplane	NA
VGA Chipset	C206 integrated	Other	

MB/SBC	FWA-6500		
PCB version	A102-1	CPU	Intel Xeon E5504 2.00GHZx2
BIOS version	6500V180	DRAM	Transcend DDR3 1600 UDIMMx2
Core Chipset	Intel 5520+ICH10R	Backplane	NA
VGA Chipset	NVIDIA GT210	Other	

Test Software

Utilities	Version / Description
Power On/Off (For Reliability test)	
Passmark Burn_In Test Pro (For Reliability test)	V7.0 build 1013
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: FWA-3210):

The screenshot displays the EVEREST Ultimate Edition [TRIAL VERSION] interface. The left sidebar shows a tree view with 'Memory' expanded to 'SPD'. The main window shows the 'Device Description' for DIMM1: Transcend TS256MLK64V6N. Below this, a table lists various memory module properties and their values.

Field	Value
Memory Module Properties	
Module Name	Transcend TS256MLK64V6N
Serial Number	00001111h (286326784)
Manufacture Date	Week 17 / 2012
Module Size	2 GB (1 rank, 8 banks)
Module Type	Unbuffered DIMM
Memory Type	DDR3 SDRAM
Memory Speed	DDR3-1600 (800 MHz)
Module Width	64 bit
Error Detection Method	None
Memory Timings	
@ 761 MHz	10-10-10-27 (CL-RCD-RP-RAS) / 37-122-5-12-6-6 (RC-RFC-RRD-WR-WTR-...
@ 685 MHz	9-9-9-24 (CL-RCD-RP-RAS) / 33-110-5-11-6-6 (RC-RFC-RRD-WR-WTR-RTP)
@ 609 MHz	8-8-8-22 (CL-RCD-RP-RAS) / 30-98-4-10-5-5 (RC-RFC-RRD-WR-WTR-RTP)
@ 533 MHz	7-7-7-19 (CL-RCD-RP-RAS) / 26-86-4-8-4-4 (RC-RFC-RRD-WR-WTR-RTP)
@ 457 MHz	6-6-6-16 (CL-RCD-RP-RAS) / 22-74-3-7-4-4 (RC-RFC-RRD-WR-WTR-RTP)
Memory Module Features	
<input type="checkbox"/> Auto Self Refresh	Not Supported
<input checked="" type="checkbox"/> Extended Temperature Range	Supported
<input type="checkbox"/> Extended Temperature Refres...	Not Supported
<input type="checkbox"/> On-Die Thermal Sensor Readout	Not Supported
Memory Module Manufacturer	
Company Name	Transcend Information Inc.
Product Information	http://www.transcendusa.com/Products/MemList.asp?srhMemWay=STD&...

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:

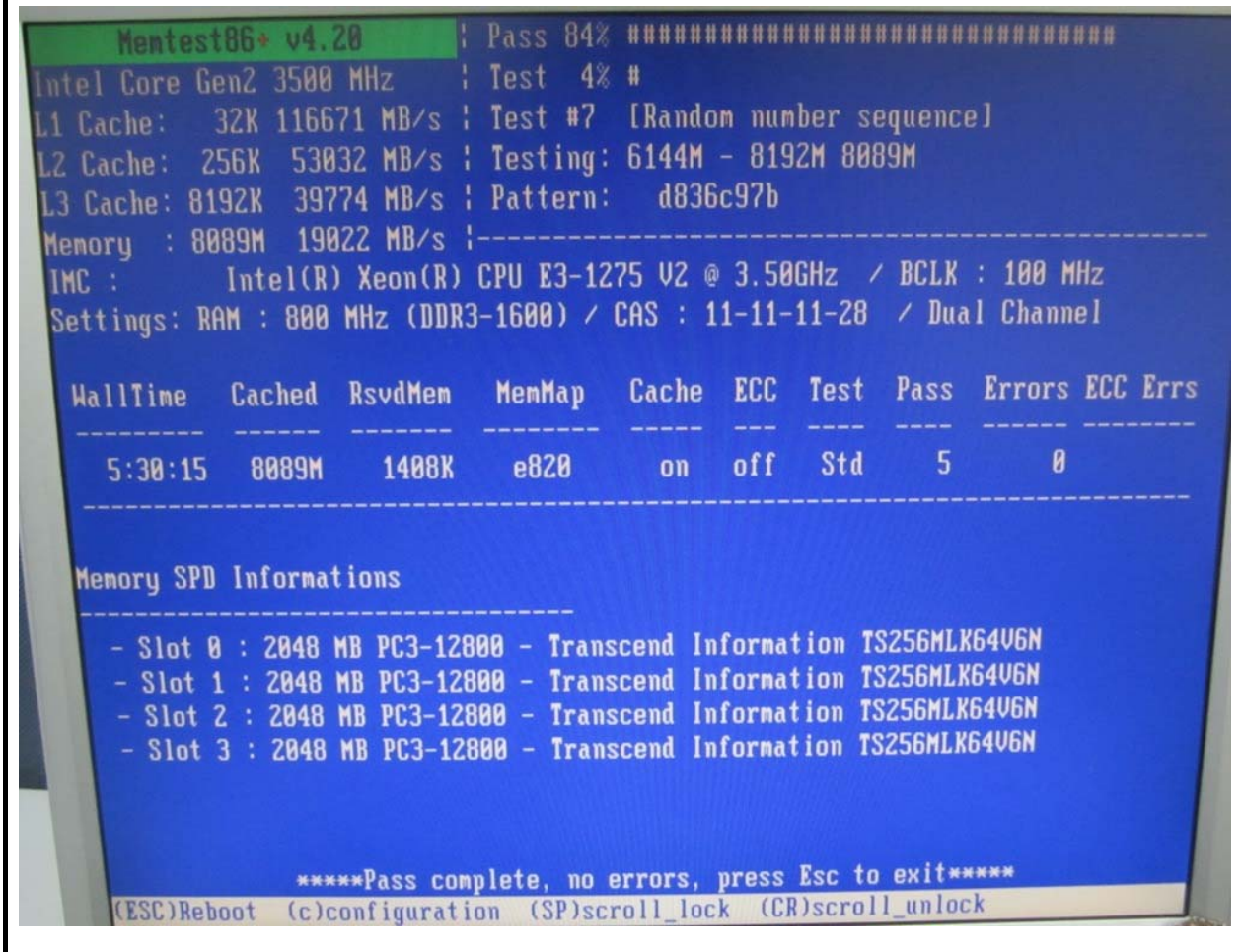
1. The Memory can boot up without any problem and power on/off 10 times, the test must be pass;
2. Check Memory size and frequency can display correctly and pass the self-test;
3. Verify the Memory can't have any problem when running memtest86+ v4.20 test program for 3 cycles.

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):



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-780W		
OS	Version	Memory size	Result
Windows XP	Windows XP professional edition 32bit with SP3	2.92GB	Pass
Windows 7	Windows 7 Ultimate 32bit	8GB	Pass
Windows 2008	Windows Server 2008 standard 32bit with SP2	8GB	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-3210	Intel Xeon E3-1275V2 3.50GHZ	8192MB	1600	Pass	
PCE-5125W	Intel Core i3 540 3.06GHZ	3896MB	1333	Pass	less than actual size 200M Down Frequency to 1333
AIMB-780W	Intel Pentium G6950 2.80GHZ	7992MB	1066	Pass	less than actual size 200M Down Frequency to 1066
ASMB-781	Intel Core i7 2600 3.40GHZ	8192MB	1333	Pass	less than actual size 0M Down Frequency to 1333

FWA-6500	Intel Xeon E5504 2.00GHZx2	8184MB	BIOS No display	Pass	less than actual size 8M
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Socket function and combination test result						
MB/SBC	CPU	DIMM socket	Memory Size	Frequency	Result	Remark
FWA-3210	Intel Xeon E3-1275V 2 3.50GHZ	DIMM A1	2048MB	1600	Pass	
		DIMM A2	2048MB	1600	Pass	
		DIMM B1	2048MB	1600	Pass	
		DIMM B2	2048MB	1600	Pass	
		DIMM A1+B1	4096MB	1600	Pass	
		DIMM A2+B2	4096MB	1600	Pass	
		Full	8192MB	1600	Pass	
PCE-5125W	Intel Core i3 540 3.06GHZ	DIMMA1	1912MB	1333	Pass	less than actual size 136M Down Frequency to 1333
		DIMMB1	1912MB	1333	Pass	less than actual size 136M Down Frequency to 1333
		FULL	3896MB	1333	Pass	less than actual size 200M Down Frequency to 1333
AIMB-780W	Intel Pentium G6950 2.80GHZ	DIMMA1	1912MB	1066	Pass	less than actual size 136M Down Frequency to 1066
		DIMMA2	1912MB	1066	Pass	less than actual size 136M Down Frequency to 1066
		DIMMB1	1912MB	1066	Pass	less than actual size 136M Down Frequency to 1066
		DIMMB2	1912MB	1066	Pass	less than actual size 136M Down Frequency to 1066
		DIMMA1+A2	3896MB	1066	Pass	less than actual size 200M Down Frequency to 1066
		DIMMB1+B2	3896MB	1066	Pass	less than actual size 200M Down Frequency to 1066
		FULL	7992MB	1066	Pass	less than actual size 200M Down Frequency to 1066

ASMB-781	Intel Core i7 2600 3.40GHZ	DIMMA0	2048MB	1333	Pass	Down Frequency to 1333	
		DIMMA1	2048MB	1333	Pass	Down Frequency to 1333	
		DIMMB0	2048MB	1333	Pass	Down Frequency to 1333	
		DIMMB1	2048MB	1333	Pass	Down Frequency to 1333	
		DIMMA0+A1	4096MB	1333	Pass	Down Frequency to 1333	
		DIMMB0+B1	4096MB	1333	Pass	Down Frequency to 1333	
		Full	8192MB	1333	Pass	Down Frequency to 1333	
FWA-6500	Intel Xeon E5504 2.00GHZx 2	DIMMA1	2040MB	BIOS No display	Pass	less than actual size 8M	
		DIMMA2	It can't boot up			Because of chipset limitation	
		DIMMA1+A2	4088MB	BIOS No display	Pass	less than actual size 8M	
		DIMME1	2040MB		Pass	less than actual size 8M	
		DIMMF1	2040MB		Pass	less than actual size 8M	
		Full	8184MB		Pass	less than actual size 8M	

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 Pentium G850 2.90GHZ	FWA-3210	8192MB	1333	Pass	less than actual size 0M Down Frequency to 1333
Intel Core i3-2120 3.30GHZ	FWA-3210	8192MB	1333	Pass	less than actual size 0M Down Frequency to 1333

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).

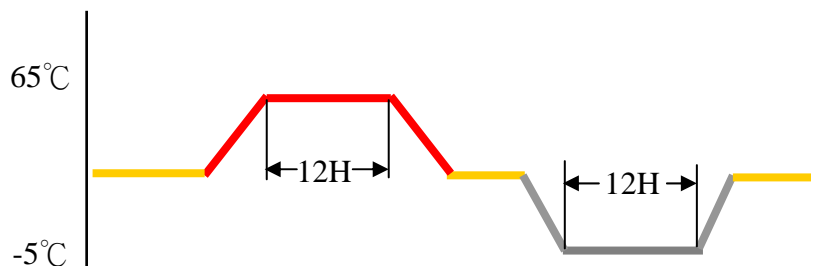
3.1 Sisoftware Sandra

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-3210	Intel Xeon E3-1275V2 3.50GHZ	19.8	19.82	68.3	62.80	Pass	
PCE-5125W	Intel Core i3 540 3.06GHZ	10.74	10.72	110.6	88.00	Pass	
AIMB-780W	Intel Pentium G6950 2.80GHZ	9.26	9.12	136.4	92.6	Pass	
ASMB-781	Intel Core i7 2600 3.40GHZ	17.2	17.18	73.2	67.8	Pass	
FWA-6500	Intel Xeon E5504 2.00GHZx2	4.86	4.86	116.9	53.6	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 platform	ASMB-781	
OS	Windows XP professional edition 32bit with SP3	
Item	Pass Criteria	Result
Power on/off	Power on/off 100 times, successful boot rate 100%;	Pass
Passmark Burn_in	Set CPU/2D/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/AIMB-780W/PCE-5125W	
OS	Windows XP professional edition 32bit with SP3	
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