

Product Test Report



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Testing Engineer	Jamin
Check Engineer	JEFF

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1. Function test

1.1 Hardware function

Item	Description	Result	Remark
1	Power Button	PASS	
2	Reset	PASS	
3	Power LED	PASS	
4	HDD LED	PASS	
5	SATA 1/2/3/4/5/6	PASS	
6	CN_USB3- 1/2	PASS	
	CN_USB 3/4	PASS	
7	DDRIII 1/2	PASS	
8	CN_LPT		
9	CN_COM 1/2/3/4/5/6	PASS	B&B √ mouse √
10	VGA Port	PASS	
11	PS2	PASS	
12	CN_AUDIO	PASS	
13	CD_IN	PASS	
14	CN_DIO	PASS	
15	CPUFAN	PASS	
16	SYSFAN	PASS	
17	MINICARD	PASS	
18	CN_DVI	PASS	
19	LAN 1/2	PASS	
20	IrDA	PASS	
21	DC_IN	PASS	
22	CN_PS		
23	JRTC	PASS	
24	PCI 1/2/3/4	PASS	PCI VGA :with bridge x , without bridge √ PCI LAN :with bridge √ , without bridge √
25	PCIEx16	PASS	PCIEx16:PX9500GT √ PCIEx4:PX9500GT+Ricer card x4 √ PCIEx1:MPX-574+ Ricer card x1 √

26	PCIEx4		PCIEx4: PX9500GT+ Ricer card x4x PCIEx1: MPX-574+ Ricer card x1 v
27	PCIEx1	PASS	PCIEx1: MPX-574 Ricer card x1 v
28	CN_CRT	PASS	
29	CN_LVDS	PASS	

1.2 Jumper function

Item	Description	Result
1	JRTC	PASS
2	JCSEL1	PASS
3	JCSEL2	PASS
4	JVLCD	PASS
5	JAT	PASS

1.3 BIOS function

Item	Description	Result	Remark
1	Press 'Del' to run Setup Utility	PASS	
2	Ctrl-Alt-Del – Soft-Reboot	PASS	
3	Save & Exit Setup	PASS	
4	System Date & Time Setting	PASS	
5	NumLock	PASS	
6	Quick Boot	PASS	
7	Diagnostic Splash Screen	PASS	
8	Diagnostic Summary Screen	PASS	
9	Console Redirection	PASS	Com1 v
10	UEFI Boot	PASS	
11	View Error Manager Log	PASS	
12	Clear Error Manager Log	PASS	
13	Active Processor Cores	PASS	
14	Intel(R) HT Technology	PASS	
15	SATA Device	PASS	
16	Interface Combination	PASS	IDE v AHCI v

			RAID ∨
17	Max TOLUD	PASS	
18	DVMT Total Gfx Mem	PASS	
19	Boot Type	PASS	CRT ∨ DVI ∨ LVDS ∨
20	USB Per-Port Disable Control	PASS	
21	Azalia	PASS	
22	PCH Internal LAN	PASS	
23	LAN OPROM Selection	PASS	82574L ∨ 82579LM ∨
24	Wake on PCH LAN	NOT PASS	82579LM ∨
25	Intel(R) AMT	PASS	
26	Serial Port	PASS	
27	IR Func.	PASS	
28	Watch Dog Timer	PASS	15s
29	PowerLoss	PASS	Former State ∨ Always On ∨ Always Off ∨
30	CPU Warning Temp	PASS	60
31	CPU Fan Feature	PASS	
32	APM Configuration	PASS	
33	Set Supervisor Password	PASS	
34	Set User password	PASS	
35	Load Setup Defaults	PASS	

1.4 Driver

CD Edition : IPCI5-1.0

1. Windows XP SP2 32-bit driver test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.3.0.1011
2	VGA Driver	PASS	6.14.10.5421
3	Audio Driver	PASS	5.10.0.6083
4	LAN Driver	PASS	82579LM : 11.15.12.0 82574L : 11.14.48.0

2. Windows XP SP2 64-bit driver test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.3.0.1011
2	VGA Driver	PASS	6.14.10.5421
3	Audio Driver (Need UAA bus driver)	PASS	5.10.0.6083
4	LAN Driver	PASS	82579LM : 11.15.12.0 82574L : 11.14.48.0

3. Windows Server 2003 32-bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.3.0.1011
2	Audio Driver	PASS	5.10.0.6083
3	LAN Driver	PASS	82579LM : 11.15.12.0 82574L : 11.14.48.0

4. Windows Server 2003 64-bit driver test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.3.0.1011
2	Audio Driver	PASS	5.10.0.6083
3	LAN Driver	PASS	82579LM : 11.15.12.0 82574L : 11.14.48.0

5. Windows Vista 32-bit driver test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.3.0.1011
2	VGA Driver	PASS	9.17.10.2875
3	Audio Driver	PASS	6.0.1.6083
4	LAN Driver	PASS	82579LM : 12.2.45.0 82574L : 11.17.27.0

6. Windows Vista 64-bit driver test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.3.0.1011
2	VGA Driver	PASS	9.17.10.2875
3	Audio Driver	PASS	6.0.1.6083
4	LAN Driver	PASS	82579LM : 12.2.45.0 82574L : 11.17.27.0

7. Windows Server 2008 32-bit driver test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.3.0.1011
2	Audio Driver	PASS	6.0.1.6083
3	LAN Driver	PASS	82579LM : 12.2.45.0 82574L : 11.17.27.0

8. Windows Server 2008 64-bit driver test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.3.0.1011
2	Audio Driver	PASS	6.0.1.6083
3	LAN Driver	PASS	82579LM : 12.2.45.0 82574L : 11.17.27.0

9. Windows 7 32-bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.3.0.1011
2	VGA Driver	PASS	9.17.10.2875
3	Audio Driver	PASS	6.0.1.6083
4	LAN Driver	PASS	82579LM : 12.2.45.0 82574L : 11.17.27.0
5	USB 3.0 Driver	PASS	1.0.5.235

10. Windows 7 64-bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.3.0.1011
2	VGA Driver	PASS	9.17.10.2875
3	Audio Driver	PASS	6.0.1.6083
4	LAN Driver	PASS	82579LM : 12.2.45.0 82574L : 11.17.27.0
5	USB 3.0 Driver	PASS	1.0.5.235

2. Compatibility test

2.1 CPU Test

Test environment:

OS Windows XP professional SP2

Test program : PC MARK 2005

Spec	CPU Speed	Family	Processor	DMI	Smart Cache	Result
SR02T	2.10 GHz	Core	i7-2710QE	5 GT/s	6 MB	PASS
SR0NP	2.30 GHz	Core	i7-3610QE	5 GT/s	6 MB	PASS
SR0MZ	2.50 GHz	Core	i5-3210M	5 GT/s	3 MB	PASS
SR02U	2.50 GHz	Core	i5-2510E	5 GT/s	3 MB	PASS
SR0WL	2.40 GHz	Core	i3-3120ME	5 GT/s	3 MB	PASS
SR02V	2.20 GHz	Core	i3-2330E	5 GT/s	3 MB	PASS
SR088	1.60 GHz	Celeron	B810	5 GT/s	2 MB	PASS

2.2 Operation System Test

Item	Description	Result	Remark
1	Windows 7 64-bit	PASS	
2	Windows 7 32-bit	PASS	
3	Windows Server 2008 64-bit	PASS	
4	Windows Server 2008 32-bit	PASS	
5	Windows Vista 64-bit	PASS	
6	Windows Vista 32-bit	PASS	
7	Windows XP SP2 64-bit	PASS	
8	Windows XP SP2 32-bit	PASS	
9	Windows Server 2003 64-bit	PASS	
10	Windows Server 2003 32-bit	PASS	

2.3 Memory Test

Test environment:

OS Windows XP professional SP2

Test program : PC MARK 2005

Manufacturer	Chip	Frequency	Capacity Mbytes	Result
Kingston	J4208BASE-DJ-F	DDR3 1333	8 GB	PASS
Kingston	K4B2G0846B-HCFB	DDR3 1066	4 GB	PASS
Kingston	D2568JENC PGD9U	DDR3 1333	4 GB	PASS
A-DATA	J2108BCSE-GN-F	DDR3 1600	4 GB	PASS
A-DATA	K4B1G0846D	DDR3 1066	2 GB	PASS
A-DATA	K4B1G0846D	DDR3 1066	1 GB	PASS
Transcend	K4B1G0846D	DDR3 1066	2 GB	PASS
Transcend	K4B1G0846D	DDR3 1066	1 GB	PASS
INNODISK	H5TQ2G83CFR	DDR3 1333	4 GB	PASS
INNODISK	H5TQ2G83CFR	DDR3 1333	2 GB	PASS

2.4 VGA Graphic Quality Test

Test environment:

OS Windows XP professional SP2 32/64-bit

Driver version : 6.14.10.5337

Resolution	Color	Result	Remark
800*600	16 / 32bit	PASS	
1024*768	16 / 32bit	PASS	
1152*864	16 / 32bit	PASS	
1280*600	16 / 32bit	PASS	
1280*720	16 / 32bit	PASS	
1280*768	16 / 32bit	PASS	
1280*800	16 / 32bit	PASS	
1280*960	16 / 32bit	PASS	
1280*1024	16 / 32bit	PASS	
1360*768	16 / 32bit	PASS	
1366*768	16 / 32bit	PASS	
1400*1050	16 / 32bit	PASS	
1440*900	16 / 32bit	PASS	
1600*900	16 / 32bit	PASS	
1600*1200	16 / 32bit	PASS	
1680*1050	16 / 32bit	PASS	
1792*1344	16 / 32bit	PASS	
1856*1392	16 / 32bit	PASS	
1920*1080	16 / 32bit	PASS	
1920*1200	16 / 32bit	PASS	

2.5 Audio

Test environment:

OS Windows XP professional SP2 32-bit

Driver version : 5.10.0.6083

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	
3	CDIN	PASS	

OS Windows XP professional SP2 64-bit

Driver version : 5.10.0.6083

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	
3	CDIN	PASS	

OS Windows Server 2003 32-bit

Driver version : 5.10.0.6083

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	
3	CDIN	PASS	

OS Windows Server 2003 64-bit

Driver version : 5.10.0.6083

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	
3	CDIN	PASS	

OS Windows Vista 32 bit**Driver version : 6.0.1.6083**

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	
3	CDIN	PASS	

OS Windows Vista 64 bit**Driver version : 6.0.1.6083**

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	
3	CDIN	PASS	

OS Windows Server 2008 32-bit**Driver version : 6.0.1.6083**

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	
3	CDIN	PASS	

OS Windows Server 2008 64-bit**Driver version : 6.0.1.6083**

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	
3	CDIN	PASS	

OS Windows 7 32-bit**Driver version : 6.0.1.6083**

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	
3	CDIN	PASS	

OS Windows 7 64-bit**Driver version : 6.0.1.6083**

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	
3	CDIN	PASS	

2.6 HDD Test

Test environment:

OS Windows XP professional SP2

Model	Interface	Capacity	Size Detect	Data Transfer
Western Digital WD10EALX-009BA0	SATA	1.0 TB	PASS	PASS
Western Digital WD3200AAKS-00B3A0	SATA	320 GB	PASS	PASS
Western Digital WD3200AAJS-00YZCA0	SATA	320 GB	PASS	PASS
Western Digital WD1600AAJS-00B4A0	SATA	160 GB	PASS	PASS
Hitachi HTS543216L9A300	SATA	160 GB	PASS	PASS
Western Digital WD2500BPVT-22JJ5T0	SATA	250 GB	PASS	PASS
Western Digital WD3200BPVT-00JJ5T0	SATA	320 GB	PASS	PASS
Western Digital WD5000AAKS-00V1A0	SATA	500 GB	PASS	PASS
Western Digital WD10EARS-00Y5B1	SATA	1 TB	PASS	PASS

2.7 DVD-ROM Test

Test environment:

OS Windows XP professional SP2

Model	Interface	Detect	Data Transfer	Play CD
LG DVD GH20NS15	SATA	PASS	PASS	PASS
LITEON DVD eTAU108	USB	PASS	PASS	PASS
PIONEER DVD DVR-S19LBK	SATA	PASS	PASS	PASS
PIONEER DVD DVR-212BK	SATA	PASS	PASS	PASS

2.8 USB device Test

1. Windows XP SP2 32/64-bit

Item	Result	Remark
External USB Keyboard Test	PASS	
External USB Mouse Test	PASS	
Hot plugging test	PASS	
CD ROM	PASS	
USB Mass storage	PASS	

2. Windows Server 2003 32/64-bit

Item	Result	Remark
External USB Keyboard Test	PASS	
External USB Mouse Test	PASS	
Hot plugging test	PASS	
CD ROM	PASS	
USB Mass storage	PASS	

3. Windows Vista 32/64-bit

Item	Result	Remark
External USB Keyboard Test	PASS	
External USB Mouse Test	PASS	
Hot plugging test	PASS	
CD ROM	PASS	
USB Mass storage	PASS	

4. Windows Server 2008 32/64-bit

Item	Result	Remark
External USB Keyboard Test	PASS	
External USB Mouse Test	PASS	
Hot plugging test	PASS	
CD ROM	PASS	
USB Mass storage	PASS	

5. Windows 7 32/64-bit

Item	Result	Remark
External USB Keyboard Test	PASS	
External USB Mouse Test	PASS	
Hot plugging test	PASS	
CD ROM	PASS	
USB Mass storage	PASS	
USB 3.0	PASS	

2.9 Serial Port Test

1. MS-DOS

Item	Description	Result	Remark
1	RS-422 & RS-485	PASS	
2	CHKIT	PASS	

2. Windows XP SP2 32-bit

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	RS-232 Mouse Test	PASS	
3	b&b com port test	PASS	

3. Windows XP SP2 64-bit

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	RS-232 Mouse Test	PASS	

4. Windows Server 2003 32-bit

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	RS-232 Mouse Test	PASS	
3	b&b com port test	PASS	

5. Windows Server 2003 64-bit

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	RS-232 Mouse Test	PASS	

6. Windows Vista 32-bit

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	RS-232 Mouse Test	PASS	

7. Windows Vista 64-bit

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	RS-232 Mouse Test	PASS	

8. Windows Server 2008 32-bit

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	RS-232 Mouse Test	PASS	
3	b&b com port test	PASS	

9. Windows Server 2008 64-bit

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	RS-232 Mouse Test	PASS	

10. Windows 7 32-bit

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	RS-232 Mouse Test	PASS	

11. Windows 7 64-bit

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	RS-232 Mouse Test	PASS	

2.10 PS2 Keyboard 、 Mouse Test

1. MS-DOS

Item	Description	Result	Remark
1	Keyboard LED Status Test	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

2. Windows XP SP2 32/64-bit

Item	Description	Result	Remark
1	Keyboard LED Status Test	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

3. Windows Server 2003 32/64-bit

Item	Description	Result	Remark
1	Keyboard LED Status Test	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

4. Windows Vista 32/64-bit

Item	Description	Result	Remark
1	Keyboard LED Status Test	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

5. Windows server 2008 32/64-bit

Item	Description	Result	Remark
1	Keyboard LED Status Test	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

6. Windows 7 32/64-bit

Item	Description	Result	Remark
1	Keyboard LED Status Test	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

2.11 Print Port Test

1. MS-DOS

Item	Description	Result	Remark
1	ECP/EPP PRINT TEST	PASS	

2. Windows Server 2003 32/64-bit

Item	Description	Result	Remark
1	ECP/EPP PRINT TEST	PASS	

3. Windows XP SP2 32/64-bit

Item	Description	Result	Remark
1	ECP/EPP PRINT TEST	PASS	

4. Windows Vista 32/64-bit

Item	Description	Result	Remark
1	ECP/EPP PRINT TEST	PASS	

5. Windows Server 2008 32/64-bit

Item	Description	Result	Remark
1	ECP/EPP PRINT TEST	PASS	

6. Windows 7 32/64-bit

Item	Description	Result	Remark
1	ECP/EPP PRINT TEST	PASS	

2.12 LAN Test

Data Transfer Test environment:

-CAT 6 UTP 100M

-8 HR. continuous

1. Windows XP SP2 32/64-bit (82579LM)

32-bit driver version : 11.15.12.0 ; 64-bit driver version : 11.15.12.0

Item	Description	Result	Remark
1	Device Manager Check	PASS	(IPERF)
2	Data Transfer Test	PASS	(IPERF)

2. Windows Server 2003 32/64-bit (82579LM)

32-bit driver version : 11.15.12.0 ; 64-bit driver version : 11.15.12.0

Item	Description	Result	Remark
1	Device Manager Check	PASS	(IPERF)
2	Data Transfer Test	PASS	(IPERF)

3. Windows Vista 32/64-bit (82579LM)

32-bit driver version : 12.2.45.0 ; 64-bit driver version : 12.2.45.0

Item	Description	Result	Remark
1	Device Manager Check	PASS	(IPERF)
2	Data Transfer Test	PASS	(IPERF)

4. Windows Server 2008 32/64-bit (82579LM)

32-bit driver version : 12.2.45.0 ; 64-bit driver version : 12.2.45.0

Item	Description	Result	Remark
1	Device Manager Check	PASS	(IPERF)
2	Data Transfer Test	PASS	(IPERF)

5. Windows Server 7 32/64-bit (82579LM)

32-bit driver version : 12.2.45.0 ; 64-bit driver version : 12.2.45.0

Item	Description	Result	Remark
1	Device Manager Check	PASS	(IPERF)
2	Data Transfer Test	PASS	(IPERF)

2.13 Power Supply Test

Item	TYPE	Description	Result	Remark
1	ATX Power	CHANNEL WELL TECHNOLOGY CWT-300ATX12 300W	PASS	
2	ATX Power	HIGH POWER HPC-250-101 A/OEM 250W	PASS	
3	ATX Power	Enhance ENP-2120A 200W	PASS	
4	ATX Power	Seasonic SS-500ET 500W	PASS	
5	ATX Power	AcBel ATX-350P-DNSS 350W	PASS	
6	ATX Power	Seventeam ST-300BKV 280W	PASS	
7	ATX Power	AcBel ATX350P-DNSS 350W	PASS	

2.14 PCI Express mini card

WIN7 SP1 32bit

Motherboard	PCI Express mini card	Remark
FS-A77	MPX-574D*	PASS
	MPX-574D2*	PASS 只支援上面那組
	MPX-643*	PASS
	MPX-750 DVI	PASS
	MPX-827*	PASS
	MPX-885	PASS
	MPX-954*	PASS
	MPX-3132*	PASS
	MPX-5201	PASS
	MPX-6864*	PASS
	MPX-TP4R	PASS
	MPX-SDVOD*	PASS
	MPX-25858*	PASS
	MPX-7202	PASS
	MPX-2515	PASS

Attention: Use MPX-3132 installs OS

Needs to change the BIOS setting as following:

=> Advanced => South Bridge Configuration

=> SB PCI Express Coning

=> PCI Express Root Port 4

=> PCIe Speed [Gen1]

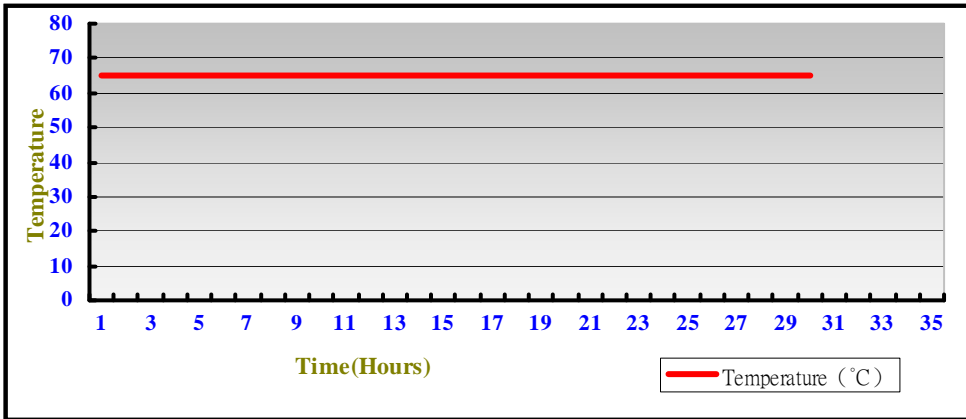
2.15 Back plane

Item	Brand	Model	Result	Remark
1	Aicsys	BPE-1308A	PASS	
2	AXIOMTEK	FAB113-13A7P4	PASS	Rev:A0-RC

3. Environmental test

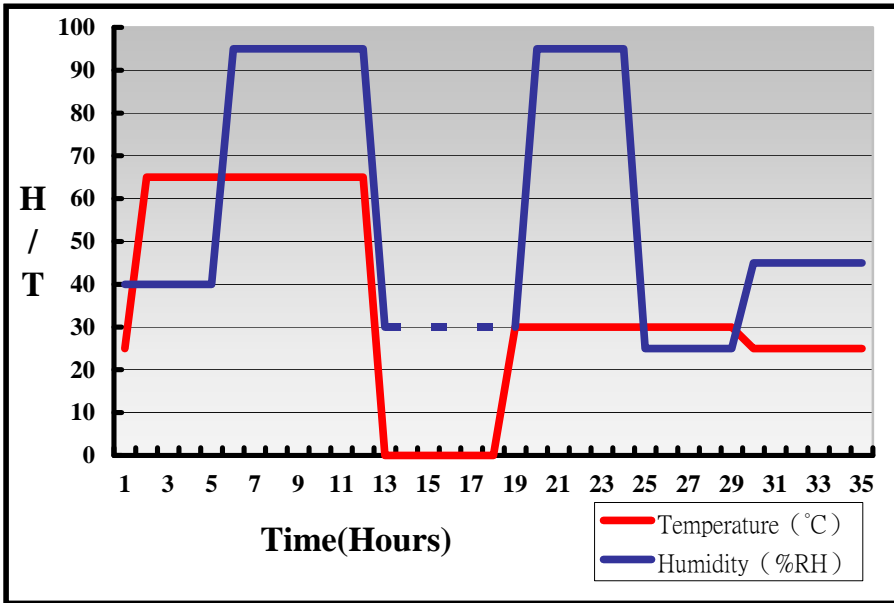
3.1 Temperature Test

System Board	FS-A77
CPU	Intel® Core™ i5-3210M 2.50GHz
Memory	Kingston DDR3 1066 4GB (K4B2G0846B-HCFB)
HDD	Western Digital WD10EALX-089BA0 1.0TB
Operating OS	Windows XP
Test Equipment	GIANT FORCE (GTH-150-60-CP-AR)
Test Program	3DMark 2003



Hardware Device list:

System Board	FS-A77
CPU	Intel® Core™ i5-3210M 2.50GHz
Memory	Kingston DDR3 1066 4GB (K4B2G0846B-HCFB)
HDD	Western Digital WD10EALX-089BA0 1.0TB
Operating OS	Windows XP
Test Equipment	GIANT FORCE (GTH-150-60-CP-AR)
Test Program	3DMark 2003



Definition : When the temperature is 30 degrees below arrive, humidity measurements have not, so by the dashed line express.

Boot Up Test:

Hardware Device list:

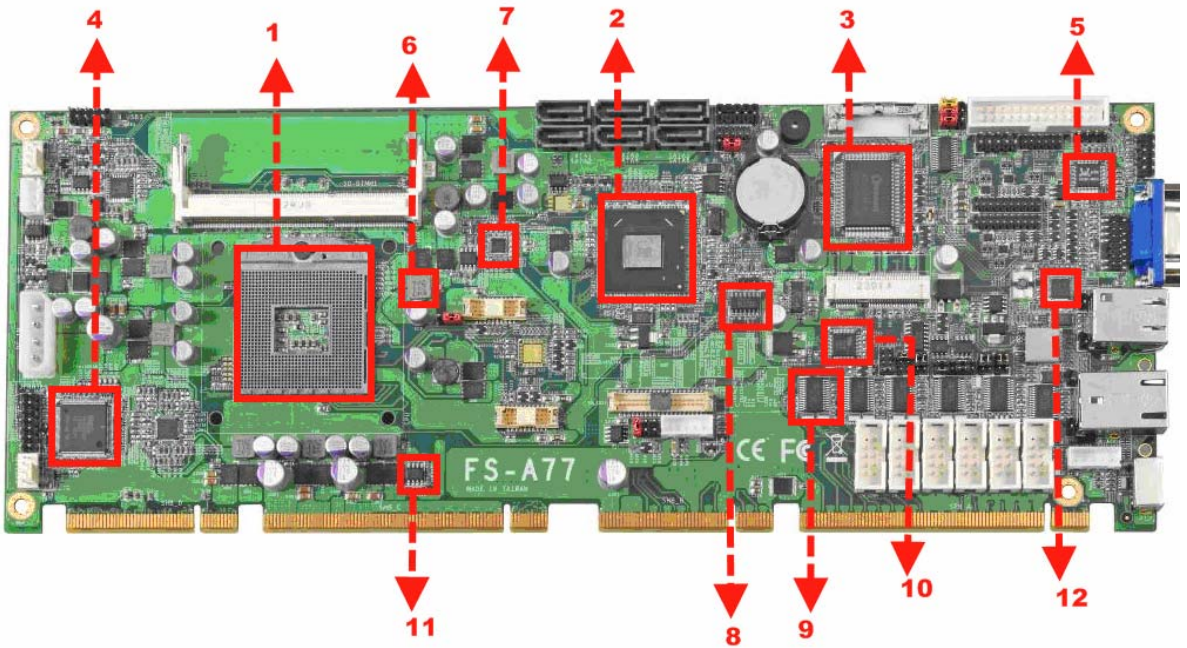
System Board	FS-A77
CPU	Intel® Core™ I5-3320M @ 2.60GHz
Memory	Transcend DDR3 1066 1GB
HDD	Western Digital WD5002AALX-00J37A0 500GB

Temperature	Result	Remark
0°C	PASS	50 Times
65°C	PASS	50 Times

3.2 Thermal measurements at various points on the board

Test Environment :

CPU	Intel® Core™ I5-3320M @ 2.60GHz
Memory	Transcend DDR3 1066 1GB
HDD	Western Digital WD5002AALX-00J37A0 500GB
Power	SEED POWER SUPPLY 400W
Operating System	Windows 7 SP1 32bit
Test Program	PRIME95 + 3DMARK06



Test Result:

Item	Environmental temperature	29.3°C
1	CPU	63.0°C
2	PCH1 (ICHQM77)	38.3°C
3	LPCIO (ICH83627DHG-P)	28.5°C
4	U39(ICTSI383)	31.5°C

5	U2 (ICHALC888)	41.9°C
6	L5(LLC0.47UH)	34.3°C
7	U17 (ISL6228)	33.3°C
8	U25 (ITS74HC14)	31.8°C
9	U33 (ICADM213ECA-T)	29.5°C
10	U28 (ICHF81216D)	30.1°C
11	U41 (ISWISL6612ACBZ)	36.8°C
12	U23 (ICH82579LM)	29.4°C

4. Reliability Test

4.1 Power Consumption Test

Power Consumption Test

1. Test Environment:

Motherboard	FS-A77
CPU	Intel® Core™ i3-3120ME Processor(3M Cache, 2.40 GHz)
Memory	Kingston DDR3 1600 8G (J4208BBBG-GN-F)x2
HDD	Western Digital 1TB (WD10EALX)
Back Plan	BPE-1308A

(A) Power Supply: AcBel ATX12V Power430

Voltage	MS-DOS Boot up		Windows 7 SP1 64 bit 3DMARK 2003+ Prime95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	0.9	10.8	2.16	25.92
5V	2.14	10.7	3.48	17.4
5VSB	0.14	0.7	0.086	0.43

1.a.Test Environment:

Motherboard	FS-A77
CPU	Intel® Core™ i3-3120ME Processor(3M Cache, 2.40 GHz)
Memory	Kingston DDR3 1600 8G (J4208BBBG-GN-F)x2
HDD	Western Digital 1TB (WD10EALX)
Back Plan	BPE-1308A
Display Panel	AUO M170EG01 17” LCD

(A) Power Supply: AcBel ATX12V Power430

Voltage	MS-DOS Boot up		Windows XP SP2 64 bit 3DMARK 2003+ Prime95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	2.29	27.48	3.72	44.64
5V	2.78	13.9	4.08	20.4
5VSB	0.122	0.61	0.042	0.21

1.b.Test Environment:

Motherboard	FS-A77
CPU	Intel® Core™ i3-3120ME Processor(3M Cache, 2.40 GHz)
Memory	Kingston DDR3 1600 8G (J4208BBBG-GN-F)x2
HDD	Western Digital 1TB (WD10EALX)
Back Plan	BPE-1308A
Graphics card	AX6770 1GBD5-PPV

(A) Power Supply: AcBel ATX12V Power430

Voltage	MS-DOS Boot up		Windows XP SP2 64 bit 3DMARK 2003+ Prime95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	5.61	67.32	7.21	86.52
5V	2.59	12.95	2.51	12.55
5VSB	0.153	0.765	0.053	0.265

2. Test Environment:

Motherboard	FS-A77
CPU	Intel® Core™ i7-3610QE Processor (6M Cache, up to 3.30 GHz)
Memory	Kingston DDR3 1600 8G (J4208BBBG-GN-F)x2
HDD	Western Digital 1TB (WD10EALX)
Back Plan	BPE-1308A

(A) Power Supply: AcBel ATX12V Power430

Voltage	MS-DOS Boot up		Windows 7 SP1 64 bit 3DMARK 2003+ Prime95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	1.73	20.76	4.95	59.4
5V	2.46	12.3	4.46	22.3
5VSB	0.142	0.71	0.053	0.265

2.a.Test Environment:

Motherboard	FS-A77
CPU	Intel® Core™ i7-3610QE Processor (6M Cache, up to 3.30 GHz)
Memory	Kingston DDR3 1600 8G (J4208BBBG-GN-F)x2
HDD	Western Digital 1TB (WD10EALX)
Back Plan	BPE-1308A
Display Panel	AUO M170EG01 17" LCD

(A) Power Supply: AcBel ATX12V Power430

Voltage	MS-DOS Boot up		Windows XP SP2 64 bit 3DMARK 2003+ Prime95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	2.62	31.44	6.67	80.04
5V	2.96	14.8	4.46	22.3
5VSB	0.156	0.78	0.055	0.275

2.b.Test Environment:

Motherboard	FS-A77
CPU	Intel® Core™ i7-3610QE Processor (6M Cache, up to 3.30 GHz)
Memory	Kingston DDR3 1600 8G (J4208BBBG-GN-F)x2
HDD	Western Digital 1TB (WD10EALX)
Back Plan	BPE-1308A
Graphics card	AX6770 1GBD5-PPV

(A) Power Supply: AcBel ATX12V Power430

Voltage	MS-DOS Boot up		Windows XP SP2 64 bit 3DMARK 2003+ Prime95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	6.13	73.56	7.62	91.44
5V	2.65	13.25	2.85	14.25
5VSB	0.146	0.73	0.091	0.455

5. Performance Test

5.1 Performance Test 8.0

Windows XP SP3 32-bit

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	<p>Intel® Core™ I5-3320M @ 2.60GHz Transcend DDR3 1066 1GB Western Digital WD5002AALX-00J37A0 500GB</p>	PASS	<p>Summary CPU Mark 2452 2D Graphics Mark 554 3D Graphics Mark 127.9 Memory Mark 636 Disk Mark 1417</p>

Windows 7 SP1 32-bit

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	<p>Intel® Core™ I5-3320M @ 2.60GHz Transcend DDR3 1066 1GB Western Digital WD5002AALX-00J37A0 500GB</p>	PASS	<p>Summary CPU Mark 2443 2D Graphics Mark 436.9 3D Graphics Mark N/A Memory Mark 702 Disk Mark 768</p>

Windows 7 SP1 64-bit

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	<p style="text-align: center;"> Intel® Core™ I5-3320M @ 2.60GHz Transcend DDR3 1066 1GB INTEL SSDSC2CT060A3 60GB </p>	PASS	<p style="text-align: center;"> Summary CPU Mark 3246 2D Graphics Mark 593 3D Graphics Mark 263.3 Memory Mark 718 Disk Mark 1754 </p>

Windows 8.1 32-bit

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	<p style="text-align: center;"> Intel® Core™ I5-3320M @ 2.60GHz Transcend DDR3 1066 1GB INTEL SSDSC2CT060A3 60GB </p>	PASS	<p style="text-align: center;"> Summary CPU Mark 2464 2D Graphics Mark 482.6 3D Graphics Mark 234.9 Memory Mark 725 Disk Mark 1747 </p>

Windows 8.1 64-bit

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	Intel® Core™ I5-3320M @ 2.60GHz ADATA DDR3 1600 4GB INTEL SSDSC2CT060A3 60GB	PASS	Summary CPU Mark 3337 2D Graphics Mark 575 3D Graphics Mark 295.6 Memory Mark 1584 Disk Mark 1731

5.2 3D MARK(2001、2003、2005)

Windows XP SP3 32-bit

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Score	Intel® Core™ I5-3320M @ 2.60GHz Transcend DDR3 1066 1GB Western Digital WD5002AALX-00J37A0 500GB	PASS	11695
3DMARK2003 Score		PASS	4169
3DMARK2005 Score		PASS	4355

Windows 7 SP1 32-bit

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Score	Intel® Core™ I5-3320M @ 2.60GHz Transcend DDR3 1066 1GB Western Digital WD5002AALX-00J37A0 500GB	PASS	11413
3DMARK2003 Score		PASS	5182
3DMARK2005 Score		PASS	5872

Windows 7 SP1 64-bit

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Score	Intel® Core™ I5-3320M @ 2.60GHz Transcend DDR3 1066 1GB INTEL SSDSC2CT060A3 60GB	PASS	12046
3DMARK2003 Score		PASS	7864
3DMARK2005 Score		PASS	5708

Windows 8.1 32-bit

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Score	Intel® Core™ I5-3320M @ 2.60GHz Transcend DDR3 1066 1GB INTEL SSDSC2CT060A3 60GB	PASS	12076
3DMARK2003 Score		PASS	7895
3DMARK2005 Score			N/A

Windows 8.1 64-bit

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Score	Intel® Core™ I5-3320M @ 2.60GHz ADATA DDR3 1600 4GB INTEL SSDSC2CT060A3 60GB	PASS	16232
3DMARK2003 Score		PASS	10441
3DMARK2005 Score		PASS	8188

5.3 3D MARK2006

Windows XP SP3 32-bit

Item	WEIGHTED SUITE	Test Environment	Result	Remark
1	3DMARK Score	Intel® Core™ I5-3320M @ 2.60GHz Transcend DDR3 1066 1GB Western Digital WD5002AALX-00J37A0 500GB	PASS	2803
2	SM2.0 Score		PASS	786
3	HDR/SM3.0 Score		PASS	1230
4	CPU Score		PASS	3082

Windows 7 SP1 32-bit

Item	WEIGHTED SUITE	Test Environment	Result	Remark
1	3DMARK Score	Intel® Core™ I5-3320M @ 2.60GHz Transcend DDR3 1066 1GB Western Digital WD5002AALX-00J37A0 500GB		N/A
2	SM2.0 Score		PASS	787
3	HDR/SM3.0 Score		PASS	957
4	CPU Score			N/A

Windows 7 SP1 64-bit

Item	WEIGHTED SUITE	Test Environment	Result	Remark
1	3DMARK Score	Intel® Core™ I5-3320M @ 2.60GHz Transcend DDR3 1066 1GB Western Digital WD5002AALX-00J37A0 500GB		N/A
2	SM2.0 Score		PASS	993
3	HDR/SM3.0 Score		PASS	1487
4	CPU Score			N/A

Windows 8.1 32-bit

Item	WEIGHTED SUITE	Test Environment	Result	Remark
1	3DMARK Score	Intel® Core™ I5-3320M @ 2.60GHz Transcend DDR3 1066 1GB Western Digital WD5002AALX-00J37A0 500GB	PASS	3063
2	SM2.0 Score		PASS	948
3	HDR/SM3.0 Score		PASS	1259
4	CPU Score		PASS	3284

Windows 8.1 64-bit

Item	WEIGHTED SUITE	Test Environment	Result	Remark
1	3DMARK Score	Intel® Core™ I5-3320M @ 2.60GHz ADATADDR3 1600 4GB Western Digital WD5002AALX-00J37A0 500GB	PASS	5210
2	SM2.0 Score		PASS	1601
3	HDR/SM3.0 Score		PASS	2311
4	CPU Score		PASS	3308

5.4 PC MARK2002

Test Environment
Intel® Core™ i5-3320M 2.60GHz Transcend DDR3 1066 1GB Western Digital WD5002AALX-00J37A0 500GB

Windows 7 SP1 32-bit

Item	Weighted Suite	Result	Remark
1	CPU Score	PASS	N/A
2	Memory Score	PASS	45901
3	HDD Score	PASS	2841

Test Environment
Intel® Core™ i5-3320M 2.60GHz Transcend DDR3 1066 1GB INTEL SSDSC2CT060A3 60GB

Windows XP SP3 32-bit

Item	Weighted Suite	Result	Remark
1	CPU Score	PASS	13994
2	Memory Score	PASS	47557
3	HDD Score	PASS	5983

Windows 7 SP1 64-bit

Item	Weighted Suite	Result	Remark
1	CPU Score	PASS	N/A
2	Memory Score	PASS	44606
3	HDD Score	PASS	9634

5.5 PC MARK2004

Test Environment
Intel® Core™ i5-3320M 2.60GHz Transcend DDR3 1066 1GB Western Digital WD5002AALX-00J37A0 500GB

Windows 7 SP1 32-bit

Item	Weighted Suite	Result	Remark
1	PCMark Score	PASS	N/A
2	CPU Score	PASS	N/A
3	Memory Score	PASS	8844
4	Graphic Score	PASS	5777
5	HDD Score	PASS	6519

Test Environment
Intel® Core™ i5-3320M 2.60GHz Transcend DDR3 1066 1GB INTEL SSDSC2CT060A3 60GB

Windows XP SP3 32-bit

Item	Weighted Suite	Result	Remark
1	PCMark Score	PASS	N/A
2	CPU Score	PASS	N/A
3	Memory Score	PASS	7586
4	Graphic Score	PASS	4945
5	HDD Score	PASS	55534

Windows 7 SP1 64-bit

Item	Weighted Suite	Result	Remark
1	PCMark Score	PASS	N/A
2	CPU Score	PASS	9025
3	Memory Score	PASS	8131
4	Graphic Score	PASS	5505
5	HDD Score	PASS	66804

Windows 8.1 32-bit

Item	Weighted Suite	Result	Remark
1	PCMark Score	PASS	N/A
2	CPU Score	PASS	N/A
3	Memory Score	PASS	8483
4	Graphic Score	PASS	N/A
5	HDD Score	PASS	N/A

5.6 PC MARK2005

Test Environment
Intel® Core™ i5-3320M 2.60GHz Transcend DDR3 1066 1GB Western Digital WD5002AALX-00J37A0 500GB

Windows 7 SP1 32bit

Item	Weighted Suite	Result	Remark
1	PCMark Score	PASS	N/A
2	CPU Score	PASS	9398
3	Memory Score	PASS	8358
4	Graphic Score	PASS	N/A
5	HDD Score	PASS	N/A

Test Environment
Intel® Core™ i5-3320M 2.60GHz Transcend DDR3 1066 1GB INTEL SSDSC2CT060A3 60GB

Windows XP SP3 32bit

Item	Weighted Suite	Result	Remark
1	PCMark Score	PASS	10147
2	CPU Score	PASS	9508
3	Memory Score	PASS	8403
4	Graphic Score	PASS	3988
5	HDD Score	PASS	32744

Windows 7 SP1 64bit

Item	Weighted Suite	Result	Remark
1	PCMark Score	PASS	N/A
2	CPU Score	PASS	9375
3	Memory Score	PASS	7805
4	Graphic Score	PASS	N/A
5	HDD Score	PASS	N/A

Windows 8.1 32bit

Item	Weighted Suite	Result	Remark
1	PCMark Score	PASS	N/A
2	CPU Score	PASS	9288
3	Memory Score	PASS	8327
4	Graphic Score	PASS	2282
5	HDD Score	PASS	41170

Test Environment

Intel® Core™ i5-3320M 2.60GHz
 ADATA DDR3 1600 4GB
 INTEL SSDSC2CT060A3 60GB

Windows 8.1 64bit

Item	Weighted Suite	Result	Remark
1	PCMark Score	PASS	N/A
2	CPU Score	PASS	9280
3	Memory Score	PASS	7178
4	Graphic Score	PASS	2729
5	HDD Score	PASS	53350

5.7 AQUAMARK3

Test Environment

Intel® Core™ i5-3320M 2.60GHz

Transcend DDR3 1066 1GB

Western Digital WD5002AALX-00J37A0 500GB
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Windows XP SP3 32bit

Item	WEIGHTED SUITE	Result	Remark
1	GFX	PASS	4815
2	CPU	PASS	12881
3	AquaMark3 TRISCORE	PASS	40569

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Item	WEIGHTED SUITE	Result	Remark
1	GFX	PASS	7800
2	CPU	PASS	5544
3	AquaMark3 TRISCORE	PASS	45798

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Item	WEIGHTED SUITE	Result	Remark
1	GFX	PASS	11289
2	CPU	PASS	5326
3	AquaMark3 TRISCORE	PASS	54816

Windows 8.1 32bit

Item	WEIGHTED SUITE	Result	Remark
1	GFX	PASS	11649
2	CPU	PASS	5531
3	AquaMark3 TRISCORE	PASS	56747

5.8 CINEBENCH

Test Environment
Intel® Core™ i5-3320M 2.60GHz Transcend DDR3 1066 1GB INTEL SSDSC2CT060A3 60GB

Windows 7 SP1 64bit

Item	WEIGHTED SUITE	Result	Remark
1	OpenGL	PASS	5.03fps
2	CPU	PASS	206 cb

Test Environment
Intel® Core™ i5-3320M 2.60GHz ADATA DDR3 1600 4GB INTEL SSDSC2CT060A3 60GB

Windows 8.1 64bit

Item	WEIGHTED SUITE	Result	Remark
1	OpenGL	PASS	16.62fps
2	CPU	PASS	210cb

5.9 ZD CPUMARK

Test Environment
Intel® Core™ i5-3320M 2.60GHz Transcend DDR3 1066 1GB Western Digital WD5002AALX-00J37A0 500GB

Windows XP SP3 32bit

Item	WEIGHTED SUITE	Result	Remark
1	SCORE	PASS	511

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Item	WEIGHTED SUITE	Result	Remark
1	SCORE	PASS	516

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Item	WEIGHTED SUITE	Result	Remark
1	SCORE	PASS	517

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Item	WEIGHTED SUITE	Result	Remark
1	SCORE	PASS	516

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Item	WEIGHTED SUITE	Result	Remark
1	SCORE	PASS	519

5.10 Storage Performance

5.10.1 HDD

Test environment:

Windows 7 SP1 32-bit

Program (HD Tune)

HDD Model	Interface	Capacity	Average	Burst Rate	Access time
INTEL SSDSC2CT060A3	SATA	60 GB	219.7MB/sec	92.3MB/sec	0.2ms
Western Digital WD5002AALX-00J37A0	SATA	500GB	108.2 MB/sec	177.7MB/sec	16.2ms
ADATA USB FLASH DRIVE	USB2	32 GB	31.1 MB/sec	17.9 MB/sec	1.4 ms

5.10.2 CD-ROM

Test environment:

Windows XP SP3 32-bit

Program (NERO)

CD-ROM Model	Interface	Average Speed	Full Read	Burst Rate	CD
LG DVD GH20NS15	SATA	34.05 x	183 ms	37 MB/s	52 X CD-R
ASUS DRW-24D1ST	SATA	34.20 x	170 ms	41 MB/s	52 X CD-R
ZYNET GT32N A201	USB	5.93x	282ms	20 MB/s	16 X CD-R

5.10.3 Vibration Test

Motherboard	FS-A77			
Test Equipment	VS-5060L			
Amplitude	Degree	Frequency	Time (1min/1Time)	Result
0.75mm	40	5 → 55 → 5 Hz	10	PASS
1.00mm	55	5 → 55 → 5 Hz	10	PASS
1.25mm	70	5 → 55 → 5 Hz	10	PASS
1.5mm	90	5 → 55 → 5 Hz	10	PASS
1.5mm	90	5 → 55 → 5 Hz	120	PASS