

Product Test Report



Product Name	FS-97D
Product Version	B
Issued Date	2008/11/10
Report Edition	1.0
BIOS Version	1.0
Testing Engineer	Borlin

Index

Index	3
1. Function test	6
1.1 Hardware function.....	6
1.2 BIOS function	8
1.3 Driver	10
2. Compatibility test.....	12
2.1 CPU Test	12
2.2 Memory Test	13
2.3 VGA Graphic Quality Test.....	14
2.4 Audio	15
2.5 HDD Test	16
2.6 CD-ROM Test.....	18
2.7 USB Test	19
2.8 Serial Port Test.....	21
2.9 PS2 Keyboard 、 Mouse Test.....	22
2.10 LAN Test.....	24
2.11 Power Supply Test.....	25
2.13 Os Install	27

3. Environmental test	28
3.1 Temperature Test	28
3.2 Thermal measurements at various points on the board	29
4. Reliability Test	30
4.1 Power Consumption Test.....	30
5. Performance Test	34
5.1 Business Win Stone 2001	34
5.2 Business Win Stone 2002	35
5.3 Business Win Stone 2004	36
5.4 3D MARK(2001.2003.2005)	37
5.5 3D MARK2006.....	39
5.6 PC MARK2002.....	41
5.7 PC MARK2004.....	43
5.8 PC MARK2005.....	45
5.9 SATA Performance.....	47
5.10 USB Performance.....	48

1. Function test

1.1 Hardware function

Base Function Test

Item	Description	Result
1	Power Button	PASS
2	Reset	PASS
3	Power LED	PASS
4	HDD LED	PASS
5	SATA1	PASS
6	SATA2	PASS
7	SATA3	PASS
8	SATA4	PASS
9	SATA5	PASS
10	SATA6	PASS
11	DDR2_A	PASS
12	DDR2_B	PASS
13	USB1	PASS
14	USB2	PASS
15	USB3	PASS
16	USB4	PASS
17	COM1	PASS
18	COM2	PASS
19	VGA Port	PASS
20	PS2	PASS
21	AUDIO	PASS
22	CD_IN	PASS
23	DIO	PASS
24	CPUFAN	PASS

25	SYSFAN	PASS
26	SPDIF	PASS
27	Min-PCI	PASS
28	LAN_1	PASS
29	LAN_2	PASS
30	IrDA	PASS
31	Floppy	PASS
32	CN_LVDS	PASS
33	CN_DVI2	PASS

Jumper

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

1.2 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	Date & Time Setting	PASS	
5	Quick Power On Self Test	PASS	
6	Boot Device Setting	PASS	
7	Boot Up Num Lock Status	PASS	
8	Halt On	PASS	
9	Onboard Serial Port	PASS	
10	USB Controller	PASS	
11	USB Keyboard Support	PASS	
12	Soft-Off by PWRBTN	PASS	
13	Power On Function	PASS	
14	ACPI Function	PASS	
15	Hot Key Password	PASS	
16	Wake-up by PCI card	PASS	
17	Watch Dog Timer Select	PASS	
18	Init Display First	PASS	
19	PWRON After PWR-Fail	PASS	
20	Power On by Ring	PASS	
21	Set Supervisor Password	PASS	
22	Set User Password	PASS	
23	UART Mode Select	PASS	
24	RxD , Txd Active	PASS	
25	IR Transmission Delay	PASS	

26	UR2 duplex Mode	PASS	
27	Use IR Pins	PASS	

1.3 Driver

CD Edition : IPCi 2 - 1.3

1. Windows XP SP2 Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	8.3.1.1009
2	VGA Driver	PASS	6.14.10.4906
3	Audio Driver	PASS	5.10.00.5464
4	LAN Driver	PASS	10.2

2. Windows Vista 64 bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	8.3.1.1009
2	VGA Driver	PASS	7.14.10.1409
3	Audio Driver	PASS	6.0.1.5473
4	LAN Driver	PASS	12.1

3. Windows Vista 32 bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	8.3.1.1009
2	VGA Driver	PASS	7.14.10.1409
3	Audio Driver	PASS	6.0.1.5473
4	LAN Driver	PASS	12.1

4. Windows Server 2003 Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	8.3.1.1009
2	Audio Driver	PASS	5.10.0.5464
3	LAN Driver	PASS	12.1

5. Windows 7 32 bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	9.1.1.1013

2	VGA Driver	PASS	8.15.10.1930
3	Audio Driver	PASS	2.11.15.0
4	LAN Driver	PASS	4.0.100.1124

6. Windows 7 64 bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	9.1.1.1025
2	VGA Driver	PASS	8.15.10.1930
3	Audio Driver	PASS	2.11.15.0
4	LAN Driver	PASS	4.0.100.1124

2. Compatibility test

2.1 CPU Test

Test environment:

OS Windows XP professional SP2

Test program : PC MARK 2005

Spec	CPU Speed	Family	Processor	FSB	L2 Size	Result
<u>SLA9V</u>	2.66 GHz	Core2Duo	E6750	1333 MHz	4 MB	PASS
<u>SLAPL</u>	3 GHz	Core2Duo	E8400	1333 MHz	6 MB	PASS
<u>SL9TA</u>	1.86 GHz	Core2Duo	E6300	1066 MHz	2MB	PASS
<u>SLACR</u>	2.40 GHz	Core2Quad	Q6600	1066 MHz	8MB	PASS
<u>SL9UM</u>	2.40 GHz	Core2Quad	Q6600	1066 MHz	8 MB	PASS
<u>SLAWE</u>	2.50 GHz	Core2Quad	Q9300	1333 MHz	6 MB	PASS
<u>SL9XP</u>	1.60 GHz	Celeron	420	800 MHz	512 KB	PASS
<u>SL9XL</u>	2 GHz	Celeron	440	800 MHz	512 KB	PASS
<u>SLAWR</u>	2.66 GHz	Core2Quad	Q9450	1333 MHz	12MB	PASS

2.2 Memory Test

Test environment:

OS Windows XP professional SP2

Test program : PC MARK 2005

Manufacturer	Chip	DDRII frequency	Capacity Mbytes	Memory test Source
Transcend	K4T160840A	DDRII 667	2GB	Pass
Transcend	K4T51083QC	DDRII 800	1GB	Pass
ADATA	HY5PS1G831C	DDRII 667	2GB	Pass
Kingston	V59C1512804QBF25	DDRII 800	1GB	Pass
ADATA	AD209084BA	DDRII 800	2GB	Pass
Kingston	D1288TPFCGL25U	DDRII 800	2GB	Pass

2.3 VGA Graphic Quality Test

Test environment:

OS Windows XP professional SP2

Driver version : 6.14.10.4764

Resolution	Color	Result	
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*960	16 /32bit	PASS	
1280*1024	16 /32bit	PASS	
1400*1050	16 /32bit	PASS	
1600*900	16 /32bit	PASS	
1600*1200	16 /32bit	PASS	

2.4 Audio

Test envirement:

OS Windows XP professional SP2

Driver version : 5.10.00.5464

Item	Description	Result	
1	2.1 CH	PASS	
2	Microphone	PASS	
3	CDIN	PASS	

OS Windows Vista 64 bit

Driver version : 6.0.1.5473

Item	Description	Result	
1	2.1 CH	PASS	
2	Microphone	PASS	
3	CDIN	PASS	

OS Windows Vista 32bit

Driver version : 6.0.1.5473

Item	Description	Result	
1	2.1 CH	PASS	
2	Microphone	PASS	
3	CDIN	PASS	

OS Windows Server 2003

Driver version : 5.10.0.5464

Item	Description	Result	
1	2.1 CH	PASS	
2	Microphone	PASS	
3	CDIN	PASS	

OS Windows 7 32 bit

Driver version : 8.15.10.1930

Item	Description	Result	
1	2.1 CH	PASS	
2	Microphone	PASS	
3	CDIN	PASS	

OS Windows 7 64 bit

Driver version : 8.15.10.1930

Item	Description	Result	
1	2.1 CH	PASS	
2	Microphone	PASS	
3	CDIN	PASS	

2.5 HDD Test

Test envirement:

OS Windows XP professional SP2

HDD Mode	Interface	Capacity	HDD Size Detect	HDD Data Transfer	HDD LED Check
Western Digital WD800JD-00LSA0	SATA	80GB	PASS	PASS	PASS
Seagate ST3250620AS	SATA	250GB	PASS	PASS	PASS
Western Digital WD1600AAJS-22PSA0	SATA	160GB	PASS	PASS	PASS
Western Digital WD3000JS-22PDB0	SATA	300GB	PASS	PASS	PASS

2.6 CD-ROM Test

Test envirement:

OS Windows XP professional SP2

CD-ROM MODEL	INTERFACE	CD-ROM Detect	CD-ROM Data Transfer	PLAY DVD
LG DVD GSA-H62L	SATA	PASS	PASS	PASS
PIONEER DVD PVR-212B	SATA	PASS	PASS	PASS
ASUS DVD DRW-1814BLT	SATA	PASS	PASS	PASS
LITEON SOSC-2485KX	USB	PASS	PASS	PASS

2.7 USB Test

1. Windows XP SP2

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

2. Windows Vista 64 bit

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

3. Windows Vista 32 bit

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

4. Windows Server 2003 Driver Test

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

5. Windows 7 32 bit

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

6. Windows 7 64 bit

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

2.8 Serial Port Test

1. MS-DOS

Item	Description	Result	Remark
1	RS-232 Mouse Test	PASS	
2	RS-422 & RS-485	PASS	
3	PC Check	PASS	
4	TS	PASS	

2. Windows XP SP2

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

3. Windows Vista 62 bit

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

4. Windows Vista 32 bit

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

5. Windows Server 2003 Driver Test

Item	Description	Result	Remark
------	-------------	--------	--------

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

6. Windows 7 32 bit

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

7. Windows 7 64 bit

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

2.9 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

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

3. Windows Vista 64 bit

Item	Description	Result	Remark
------	-------------	--------	--------

1	Device Manager Check	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

4. Windows Vista 32 bit

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

5.Windows Server 2003 Driver Test

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

6.Windows 7 32 bit

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

7.Windows 7 64 bit

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

2.10 LAN Test

Data Transfer Test environment:

-CAT 6 UTP 100M

-8 HR. continuous

1. Windows XP SP2

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

2. Windows Vista 32bit

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

3. Windows Vista 64bit

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

4. Windows Server 2003 Driver Test

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

5. Windows 7 32 bit

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

6. Windows 7 64 bit

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

2.11 Power Supply Test

1. MS-DOS

Item	Description	Verification	
		Result	Remark
1	ATX Power On/Off	PASS	Seventeam ST-300WAP 300W
2	ATX Power On/Off	PASS	HEC WINDMILL PRO 315W
3	ATX Power On/Off	PASS	Seasonic SS-430-HB 430W

2. Windows XP SP2

Item	Description	Verification	
		Result	Remark
1	ATX Power On/Off	PASS	Seventeam ST-300WAP 300W
2	ATX Power On/Off	PASS	HEC WINDMILL PRO 315W
3	ATX Power On/Off	PASS	Seasonic SS-430-HB 430W

3. Windows Vista 64 bit

Item	Description	Verification	
		Result	Remark
1	ATX Power On/Off	PASS	Seventeam ST-300WAP 300W
2	ATX Power On/Off	PASS	HEC WINDMILL PRO 315W
3	ATX Power On/Off	PASS	Seasonic SS-430-HB 430W

4. Windows Vista 32 bit

Item	Description	Verification
------	-------------	--------------

		Result	Remark
1	ATX Power On/Off	PASS	Seventeam ST-300WAP 300W
2	ATX Power On/Off	PASS	HEC WINDMILL PRO 315W
3	ATX Power On/Off	PASS	Seasonic SS-430-HB 430W

5. Windows Server 2003 Driver Test

Item	Description	Verification	
		Result	Remark
1	ATX Power On/Off	PASS	Seventeam ST-300WAP 300W
2	ATX Power On/Off	PASS	HEC WINDMILL PRO 315W
3	ATX Power On/Off	PASS	Seasonic SS-430-HB 430W

4. Windows 7 32 bit

Item	Description	Verification	
		Result	Remark
1	ATX Power On/Off	PASS	Enhance ENP-2222D 300W
2	ATX Power On/Off	PASS	AcBel AP13PC50 350W
3	ATX Power On/Off	PASS	Seasonic SS-380-HB 380W

5. Windows 7 64 bit

Item	Description	Verification	
		Result	Remark
1	ATX Power On/Off	PASS	Enhance ENP-2222D 300W
2	ATX Power On/Off	PASS	AcBel AP13PC50 350W
3	ATX Power On/Off	PASS	Seasonic SS-380-HB 380W

2.13 Os Install

	Description	Result	Remark
1	Windows Vista 64 bit	PASS	
2	Windows Vista 32 bit	PASS	
3	Windows XP SP2	PASS	
4	Windows Server 2003 Driver Test	PASS	
5	Fedora 8.0	PASS	
6	Windows 7 32 bit	PASS	
7	Windows 7 64 bit	PASS	

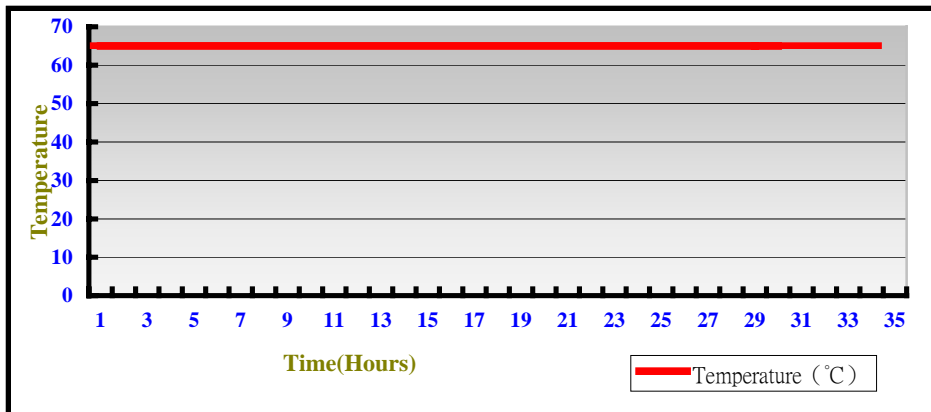
3. Environmental test

3.1 Temperature Test

Hardware Device list:

System Board	FS-97D
CPU	Intel Core 2 Duo 2.66 E6750
Memory	Transcend DDRII 667(K4T160840A) 2GB Transcend DDRII 667(K4T160840A) 2GB
HDD	Western Digital WD800JD-75MSA3 80GB
Operating OS	Windows XP
Test Equipment	THERMOTRON 2800 Programmer/Controller
Test Program	3DMark 2003

Test Result:



Boot Up Test:

Temperature	Result	Remark
-20°C	PASS	50 Times
70°C	PASS	50 Times

3.2 Thermal measurements at various points on the board

Test Environment :

CPU	Intel Core 2 Duo 2.66 E6750
Memory	Transcend DDRII 667(K4T160840A) 2GB Transcend DDRII 667(K4T160840A) 2GB
HDD	Western Digital WD1600AAJS-22PSA0 160GB
Power	Seventeam ST-300WAP
Operating System	Windows XP
Test Program	3D WinMark2003

Test Result:

CPU	58.4°C
Q35 (Northbridge)	45.7°C
ICH9-DO (Southbridge)	51.1°C
U10	38.9°C
U13	37.7°C
U20	55.4°C
LPCIO	42.7°C

4. Reliability Test

4.1 Power Consumption Test

1. Test Environment:

CPU	Intel® Core™2 Quad Processor Q9300 2.5 GHz
Memory	Transcend DDRII 667(K4T160840A) 2GB Transcend DDRII 667(K4T160840A) 2GB
Test OS	DOS

Power Supply: Snake PK-350WAP

Test Result

Voltage	Current (A)	Power (W)	Remark
12V	2.63	31.56	
5V	5.52	27.6	
5VSB	0.22	1.1	

2. Test Environment:

CPU	Intel® Core™2 Quad Processor Q9300 2.5 GHz
Memory	Transcend DDRII 667(K4T160840A) 2GB Transcend DDRII 667(K4T160840A) 2GB
HDD	Western Digital WD800 VWAM9L018750 80G
17" PANEL	AUO M170EG01
Test OS	Windows XP
Test Program	3DMARK 2003

Power Supply: Snake PK-350WAP

Test Result

Voltage	Current (A)	Power (W)	Remark
12V	5.07	37.44	
5V	7.71	38.55	
5VSB	0.22	1.1	

3.Test Environment:

CPU	Intel® Core™2 Due Processor E6750 2.66Hz
Memory	Transcend DDRII 667(K4T160840A) 2GB Transcend DDRII 667(K4T160840A) 2GB
Test OS	DOS

Power Supply:Snake PK-350WAP

Test Result

Voltage	Current (A)	Power (W)	Remark
12V	3.33	39.96	
5V	5.27	26.35	
5VSB	0.09	0.45	

4.Test Environment:

CPU	Intel® Core™2 Quad Processor E6750 2.66GHZ
Memory	Transcend DDRII 667(K4T160840A) 2GB Transcend DDRII 667(K4T160840A) 2GB
HDD	Western Digital WD800 VWAM9L018750 80G
17" PANEL	AUO M170EG01
Test OS	Windows XP
Test Program	3DMARK 2003

Power Supply:Snake PK-350WAP

Test Result

Voltage	Current (A)	Power (W)	Remark
12V	6.08	72.96	
5V	7.47	37.35	
5VSB	0.21	1.05	

5. Test Environment:

CPU	Intel® Core™2 Due Processor E6300 1.86GHZ
Memory	Transcend DDRII 667(K4T160840A) 2GB Transcend DDRII 667(K4T160840A) 2GB
Test OS	DOS

Power Supply:Snake PK-350WAP

Test Result

Voltage	Current (A)	Power (W)	Remark
12V	2.13	25.56	
5V	4.97	24.85	
5VSB	0.26	1.3	

6. Test Environment:

CPU	Intel® Core™2 Quad Processor E6300 1.86GHZ
Memory	Transcend DDRII 667(K4T160840A) 2GB Transcend DDRII 667(K4T160840A) 2GB
HDD	Western Digital WD800 VWAM9L018750 80G
17" PANEL	AUO M170EG01
Test OS	Windows XP
Test Program	3DMARK 2003

Power Supply:Snake PK-350WAP

Test Result

Voltage	Current (A)	Power (W)	Remark
12V	4.16	49.92	
5V	7.07	35.35	
5VSB	0.19	0.95	

7. Test Environment:

CPU	Intel® Celrom 440 Processor 2.0GHZ
Memory	Transcend DDRII 667(K4T160840A) 2GB
	Transcend DDRII 667(K4T160840A) 2GB
Test OS	DOS

Power Supply:Snake PK-350WAP

Test Result

Voltage	Current (A)	Power (W)	Remark
12V	2.0	24.00	
5V	4.97	24.85	
5VSB	0.26	1.3	

8. Test Environment:

CPU	Intel® Celrom 440 Processor 2.0GHZ
Memory	Transcend DDRII 667(K4T160840A) 2GB
	Transcend DDRII 667(K4T160840A) 2GB
HDD	Western Digital WD800 VWAM9L018750 80G
17" PANEL	AUO M170EG01
Test OS	Windows XP
Test Program	3DMARK 2003

Power Supply:Snake PK-350WAP

Test Result

Voltage	Current (A)	Power (W)	Remark
12V	4.56	54.72	
5V	7.24	36.20	
5VSB	0.21	1.05	

5. Performance Test

5.1 Business Win Stone 2001

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
<p align="center">Business Win stone2001</p>	<p>Intel Core 2 Duo 1.86GHZ Transcend DDRII 667(K4T160840A) 2GB Transcend DDRII 667(K4T160840A) 2GB Western Digital WD800JD-75MSA3 80GB</p>	<p align="center">Pass</p>	<p align="center">82.3 84.8 83.9 82.2 84.5</p>
<p align="center">Business Win stone2001</p>	<p>Intel Core 2 Duo 1.86GHZ Transcend DDRII 667(K4T160840A) 2GB Transcend DDRII 667(K4T160840A) 2GB Western Digital WD800JD-75MSA3 80GB</p>	<p align="center">Pass</p>	<p align="center">84 83.5 84.7 82.8 83.5</p>
<p align="center">Business Win stone2001</p>	<p>Intel Core 2 Duo 1.86GHZ Transcend DDRII 667(K4T160840A) 2GB Transcend DDRII 667(K4T160840A) 2GB Western Digital WD800JD-75MSA3 80GB</p>	<p align="center">Pass</p>	<p align="center">95.3 95.4 96.3 95.7 95.8</p>

5.2 Business Win Stone 2002

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
<p align="center">Business Win stone2002</p>	<p align="center">Intel Core 2 Quad 2.4GHZ(105W) ADATA DDR2 800 (AD209084BA) 2G ADATA DDR2 800 (AD209084BA) 2G Western Digital WD800JD-75MSA3 80GB</p>	<p align="center">Pass</p>	<p align="center">42.7 44.4 44.3 43.8 43</p>
<p align="center">Business Win stone2002</p>	<p align="center">Intel Core 2 Quad 2.4GHZ(105W) ADATA DDR2 800 (AD209084BA) 2G ADATA DDR2 800 (AD209084BA) 2G Western Digital WD800JD-75MSA3 80GB GB</p>	<p align="center">Pass</p>	<p align="center">44.5 44 43.6 42 43.4</p>
<p align="center">Business Win stone2002</p>	<p align="center">Intel Core 2 Quad 2.4GHZ(105W) ADATA DDR2 800 (AD209084BA) 2G ADATA DDR2 800 (AD209084BA) 2G Western Digital WD800JD-75MSA3 80GB</p>	<p align="center">Pass</p>	<p align="center">40.7 40.8 40.6 40.4 40.2</p>

5.3 Business Win Stone 2004

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
Business Win stone2004	Intel Core 2 Duo 1.86GHZ ADATA DDR2 800 (AD209084BA) 2G ADATA DDR2 800 (AD209084BA) 2G Western Digital WD800JD-75MSA3 80GB	Pass	15.9 22.1 23 22.7 16.1
Business Win stone2004	Intel Core 2 Duo 1.86GHZ ADATA DDR2 800 (AD209084BA) 2G ADATA DDR2 800 (AD209084BA) 2G Western Digital WD800JD-75MSA3 80GB	Pass	18.1 25 17.7 25.4 25.3

5.4 3D MARK(2001.2003.2005)

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Scores	Intel® Core™2 Due Processor E6750 2.66 GHz Kingston DDRII 800 (D1288TPFCGL25U) 2GB	Pass	10573
3DMARK2003 Scores	Kingston DDRII 800 (D1288TPFCGL25U) 2GB	Pass	2468
3DMARK2005 Scores	Western Digital WD800JD-75MSA3 80GB	Pass	920

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Scores	Intel® Celerom Processor 420 1.6 GHz Kingston DDRII 800 (D1288TPFCGL25U) 2GB	Pass	6401
3DMARK2003 Scores	Kingston DDRII 800 (D1288TPFCGL25U) 2GB	Pass	1715
3DMARK2005 Scores	Western Digital WD800JD-75MSA3 80GB	Pass	560

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Scores	Intel® Core™2 Quad Processor Q9450 2.66 GHz Kingston DDRII 800	Pass	10332
3DMARK2003 Scores	(D1288TPFCGL25U) 2GB Kingston DDRII 800 (D1288TPFCGL25U) 2GB	Pass	1920
3DMARK2005 Scores	Western Digital WD800JD-75MSA3 80GB	Pass	940

5.5 3D MARK2006

Windows XP SP2

Item	WEIGHTED SUITE	Test Environment	Result	Remark
1	3DMARK Source	Intel® Core™2 Quad Processor Q9450 2.66 GHz	Pass	298
2	SM2.0 Source	Kingston DDRII 800 (D1288TPFCGL25U) 2GB	Pass	140
3	HDR/SM3.0 Source	Kingston DDRII 800 (D1288TPFCGL25U) 2GB	Pass	N/A
4	CPU Source	Western Digital WD800JD-75MSA3 80GB	Pass	3870

Windows XP SP2

Item	WEIGHTED SUITE	Test Environment	Result	Remark
1	3DMARK Source	Intel® Celerom Processor 420 1.6 GHz	Pass	202
2	SM2.0 Source	Kingston DDRII 800 (D1288TPFCGL25U) 2GB	Pass	N/A
3	HDR/SM3.0 Source	Kingston DDRII 800 (D1288TPFCGL25U) 2GB	Pass	N/A
4	CPU Source	Western Digital WD800JD-75MSA3 80GB	Pass	695

Windows XP SP2

Item	WEIGHTED SUITE	Test Environment	Result	Remark
1	3DMARK Source	Intel® Core™2 Due Processor E6750 2.66 GHz	Pass	260
2	SM2.0 Source	Kingston DDRII 800 (D1288TPFCGL25U) 2GB	Pass	N/A
3	HDR/SM3.0 Source	Kingston DDRII 800 (D1288TPFCGL25U) 2GB	Pass	N/A
4	CPU Source	Western Digital WD800JD-75MSA3 80GB	Pass	2280

5.6 PC MARK2002

Test Environment
Intel® Core™2 Quad Processor Q9450 2.66 GHz Kingston DDRII 800 (D1288TPFCGL25U) 2GB Kingston DDRII 800 (D1288TPFCGL25U) 2GB Western Digital WD800JD-75MSA3 80GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	CPU test Source	Pass	10450
2	Memory test Source	Pass	31337
3	HDD test Source	Pass	1360

Test Environment
Intel® Celerom Processor 420 1.6 GHz Kingston DDRII 800 (D1288TPFCGL25U) 2GB Kingston DDRII 800 (D1288TPFCGL25U) 2GB Western Digital WD800JD-75MSA3 80GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	CPU test Source	Pass	6440
2	Memory test Source	Pass	9273
3	HDD test Source	Pass	1390

Test Environment

Intel® Core™2 Duo Processor E6750 2.66 GHz
Kingston DDRII 800 (D1288TPFCGL25U) 2GB
Kingston DDRII 800 (D1288TPFCGL25U) 2GB
Western Digital WD800JD-75MSA3 80GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	CPU test Source	Pass	10533
2	Memory test Source	Pass	3299 0
3	HDD test Source	Pass	1363

5.7 PC MARK2004

Test Environment
Intel® Core™2 Quad Processor Q9450 2.66 GHz Kingston DDRII 800 (D1288TPFCGL25U) 2GB Kingston DDRII 800 (D1288TPFCGL25U) 2GB Western Digital WD800JD-75MSA3 80GB

Windows XP PS2

Item	WEIGHTED SUITE	Result	Remark
1	PCMark Source	Pass	N/A
2	CPU test Source	Pass	N/A
3	Memory test Source	Pass	8120
4	Graphic test Source	Pass	1520
5	HDD test Source	Pass	4080

Test Environment
Intel® Celerom Processor 420 1.6 GHz Kingston DDRII 800 (D1288TPFCGL25U) 2GB Kingston DDRII 800 (D1288TPFCGL25U) 2GB Western Digital WD800JD-75MSA3 80GB

Windows XP PS2

Item	WEIGHTED SUITE	Result	Remark
1	PCMark Source	Pass	3341
2	CPU test Source	Pass	3628
3	Memory test Source	Pass	4650
4	Graphic test Source	Pass	1421
5	HDD test Source	Pass	4223

Test Environment

Intel® Core™2 Due Processor E6750 2.66 GHz
Kingston DDRII 800 (D1288TPFCGL25U) 2GB
Kingston DDRII 800 (D1288TPFCGL25U) 2GB
Western Digital WD800JD-75MSA3 80GB

Windows XP PS2

Item	WEIGHTED SUITE	Result	Remark
1	PCMark Source	Pass	N/A
2	CPU test Source	Pass	N/A
3	Memory test Source	Pass	9510
4	Graphic test Source	Pass	1578
5	HDD test Source	Pass	4066

5.8 PC MARK2005

Test Environment
Intel® Core™2 Quad Processor Q9450 2.66 GHz Kingston DDRII 800 (D1288TPFCGL25U) 2GB Kingston DDRII 800 (D1288TPFCGL25U) 2GB Western Digital WD800JD-75MSA3 80GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	System test Source	Pass	N/A
2	CPU test Source	Pass	8560
3	Memory test Source	Pass	5769
4	Graphic test Source	Pass	1660
5	HDD test Source	Pass	4575

Test Environment
Intel® Core™2 Due Processor E6750 2.66 GHz Kingston DDRII 800 (D1288TPFCGL25U) 2GB Kingston DDRII 800 (D1288TPFCGL25U) 2GB Western Digital WD800JD-75MSA3 80GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	System test Source	Pass	4732
2	CPU test Source	Pass	6912
3	Memory test Source	Pass	5698
4	Graphic test Source	Pass	1709
5	HDD test Source	Pass	4517

Test Environment

Intel® Celerom Processor 420 1.6 GHz
Kingston DDRII 800 (D1288TPFCGL25U) 2GB
Kingston DDRII 800 (D1288TPFCGL25U) 2GB
Western Digital WD800JD-75MSA3 80GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	System test Source	Pass	2370
2	CPU test Source	Pass	2910
3	Memory test Source	Pass	3672
4	Graphic test Source	Pass	1142
5	HDD test Source	Pass	4680

5.9 SATA Performance

5.9.1 SATA HDD

Test envirement:

OS Windows XP professional SP2

Program (HDTune)

HDD MODEL	INTERFACE	capacity	Average	Burst Rate	Access time
Seagate ST3250620 AS	SATA	250GB	60MB/sec	76.4 MB/sec	13.2ms
Western Digital WD800JD- 00LSA0		80GB	61.0MB/sec	103.1 MB/sec	13.0ms
Western Digital WD3000JS- 22PDB0		300GB	53.1MB/sec	135.1 MB/sec	13.2ms
Western Digital WD1600AA JS-22PSA		160GB	61.0MB/sec	124.9 MB/sec	12.9ms

5.9.2 SATA CD-ROM

Test envirement:

OS Windows XP professional SP2

Program (NERO)

CD-ROM MODEL	INTERFACE	Average speed	Fill READ	Burst Rate	CD
PIONEER DVD DVR-212BK	SATA	30.76 x	187ms	44MB/s	52 X CD-R
LG DVD GSA-H62L		35.22 x	193ms	38MB/s	52X CD-R
ASUS DVD DRW-1814BLT		36.92 x	188ms	44MB/s	52X CD-R

5.10 USB Performance

5.10.1 USB HDD

Test envirement:

OS Windows XP professional SP2

Program (HDTune)

HDD MODEL	INTERFACE	capacity	Average	Burst Rate	Access time
HITACHI DK237A-32	USB	4GB	5.5MB/sec	16.8 MB/sec	20.6ms
HITACHI IC25N020A TMR04-0		20GB	22.9MB/sec	25.0 MB/sec	18.9ms

5.10.2 UBS CD-ROM

Test envirement:

OS Windows XP professional SP2

Program (NERO)

CD-ROM MODEL	INTERFACE	Average speed	Fill READ	Burst Rate	CD
LITEON DVD SOSC-2485KX	USB	15.53 x	128ms	22MB/s	52X CD-R
LITEON DVD SOSW-833XS		15.49 x	141ms	21MB/s	52X CD-R