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1. Function test

1.1 Hardware function

Base Function Test

1	Power Button	PASS
2	Reset	PASS
3	Power LED	PASS
4	HDD LED	PASS
5	IDE Primary Master	PASS
6	IDE Primary Slave	PASS
7	DIMM	PASS
8	Floppy	PASS
9	Keyboard	PASS
10	Mouse	PASS
11	VGA Port	PASS
12	AUDIO Port	PASS
13	LVDS Port	PASS
14	COM 1	PASS
15	COM 2	PASS
16	Printer Port	PASS
17	USB Port	PASS
18	IRDA	PASS
19	CDIN	PASS
20	CPUFAN	PASS
21	SYSFAN	PASS
22	Mini PCI	PASS
23	Compact Flash	PASS

2.0 PITCH (DIP)

1	JRTC	PASS
2	JVLCD	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	Drive A	PASS	
6	Quick Power On Self Test	PASS	
7	Boot Device Setting	PASS	
8	Boot Up Floppy Seek	PASS	
9	Boot Up NumLock Status	PASS	
10	On Chip VGA	PASS	
11	On Chip Frame Buffer Size	PASS	
12	Boot Display	PASS	
13	On Chip Primary PCI IDE	PASS	
14	USB Controller	PASS	
15	USB 2.0 Controller	PASS	
16	USB Keyboard Support	PASS	
17	USB Mouse Support	PASS	
18	AC97 Audio	PASS	
19	Init Display First	PASS	
20	POWER ON Function	PASS	
21	Onboard FDC Controller	PASS	
22	Onboard Serial Port	PASS	
23	Onboard Parallel Port	PASS	
24	PWRON After PWR-Fail	PASS	
25	Onboard Lan Boot ROM	PASS	
26	Watch Dog Timer Select	PASS	

27	ACPI Function	PASS	
28	ACPI Suspend Type	PASS	
29	Soft-Off by PWRBTN	PASS	
30	Power On by Ring	PASS	
31	Wake Up On LAN	PASS	
32	Resume by Alarm	PASS	

1.3 Driver

1. Windows 98 Driver Test

Item	Description	Result	Remark
1	Chip set Driver	PASS	
2	VGA Driver	PASS	
3	Audio Driver	PASS	
4	LAN Driver	PASS	

2. Windows 2000 Driver Test

Item	Description	Result	Remark
1	Chip set Driver	PASS	
2	VGA Driver	PASS	
3	Audio Driver	PASS	
4	LAN Driver	PASS	

3. Windows Server 2000 Driver Test

	Description	Result	Remark
1	Chip set Driver	PASS	
2	VGA Driver	PASS	
3	Audio Driver	PASS	
4	LAN Driver	PASS	

4. Windows XP Driver Test

Item	Description	Result	Remark
1	Chip set Driver	PASS	
2	VGA Driver	PASS	
3	Audio Driver	PASS	
4	LAN Driver	PASS	

5. WindowsNT 4.0 Driver Test

Item	Description	Result	Remark
1	Microsoft SP6 Install	PASS	
2	VGA Driver	PASS	
3	Audio Driver	PASS	
4	LAN Driver	PASS	

2. Compatibility test

2.1 CPU Test

CPU	Operating System	Result	Remark
Pentium-M/400/2M 1.7GHZ	Windows 98	PASS	
	Windows 2000	PASS	
	Windows Server 2000	PASS	
	Windows XP	PASS	
Pentium-M/533/2M 1.86GHZ	Windows 98	PASS	
	Windows 2000	PASS	
	Windows Server 2000	PASS	
	Windows XP	PASS	
Pentium-M/400/2M 2.0GHZ	Windows 98	PASS	
	Windows 2000	PASS	
	Windows Server 2000	PASS	
	Windows XP	PASS	
Pentium-M/533/2M 2.13GHZ	Windows 98	PASS	
	Windows 2000	PASS	
	Windows Server 2000	PASS	
	Windows XP	PASS	

2.2 Memory Test

DDR DRAM	DDR Freq	Capacity Mbytes	Operating System	Result
NANYA (NT5DS16M8AT-7K)	DDR266	128MB	Win98, Win2000 WinXP	PASS
Micron (MT8VDDT1664AG-265A1)	DDR266	128MB	Win98, Win2000 WinXP	PASS
NANYA (HT5DS16M8AT-7K)	DDR266	256MB	Win98, Win2000 WinXP	PASS
HYUNDAI (HY5DU28822T-H)	DDR266	256MB	Win98, Win2000 WinXP	PASS
Infineon (HYB25D256800BT-6)	DDR333	512MB	Win98, Win2000 WinXP	PASS
KINGMAX (KDL388P4EA-60)	DDR333	512MB	Win98, Win2000 WinXP	PASS
SAMSUNG (K4H560838D-TCB3)	DDR333	512MB	Win98, Win2000 WinXP	PASS
SAMSUNG (K4H560438D-TCB3)	DDR333	1GB	Win2000 WinXP	PASS
SAMSUNG (K4H560838D-TCCC)	DDR400	512MB	Win98, Win2000 WinXP	PASS
HYNIX (Kingston) (HY5DU12822AT-D43)	DDR400	1GB	Win2000 WinXP	PASS

2.3 VGA Graphic Test

1. Windows 98

Item	Description	Result	Remark
1	Resolution/Color Change	PASS	
2	CRT Display Test	PASS	
3	CRT Display Quality Test	PASS	
4	LVDS Display Test	PASS	

2. Windows 2000

Item	Description	Result	Remark
1	Resolution/Color Change	PASS	
2	CRT Display Test	PASS	
3	CRT Display Quality Test	PASS	
4	LVDS Display Test	PASS	

3. Windows Server 2000

Item	Description	Result	Remark
1	Resolution/Color Change	PASS	
2	CRT Display Test	PASS	
3	CRT Display Quality Test	PASS	

4. Windows XP

Item	Description	Result	Remark
1	Resolution/Color Change	PASS	
2	CRT Display Test	PASS	
3	CRT Display Quality Test	PASS	
4	LVDS Display Test	PASS	

2.4 Audio Test

1. Windows 98

Item	Description	Result	Remark
1	Sound Effect	PASS	
2	Equalizer	PASS	
3	Microphone	PASS	

2. Windows 2000

Item	Description	Result	Remark
1	Sound Effect	PASS	
2	Equalizer	PASS	
3	Microphone	PASS	

3. Windows Server 2000

Item	Description	Result	Remark
1	Sound Effect	PASS	
2	Equalizer	PASS	
3	Microphone	PASS	

4. Windows XP

Item	Description	Result	Remark
1	Sound Effect	PASS	
2	Equalizer	PASS	
3	Microphone	PASS	

5. Sound Card

Sound Card	Operating System	Result	Remark
Yamaha YMF724C-V (PCI)	Windows XP	PASS	
ESS ES1989S (PCI)	Windows XP	PASS	

2.5 HDD Test

HDD Type	Operating System	HDD Size Detect	HDD Data Transfer	HDD LED Check
IBM DTL/307030 30.6GB	MS-DOS Win98 Win2000 WinXP	PASS	PASS	PASS
Maxtor 4A160J0 160GB		PASS	PASS	PASS
HITACHI IC35L040AVVN07-0 7200RPM 40GB		PASS	PASS	PASS
HITACHI IC25N040ATMR04-0 4200RPM 40GB		PASS	PASS	PASS

2.6 CD-ROM Test

CD-ROM Type	Operating System	CD-ROM Detect	CD-ROM Data Transfer	PLAY DVD
EPO Science and Technology Inc DVD-8216	Win98 Win2000 WinXP	PASS	PASS	PASS
SONY DDU1621		PASS	PASS	PASS
Pioneer DVD-ROM DVD-K11		PASS	PASS	PASS

2.7 USB Test

1. Windows 98

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	External USB Keyboard Test	PASS	
3	External USB Mouse Test	PASS	
4	Hot plugging test	PASS	

2. Windows 2000

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	External USB Keyboard Test	PASS	
3	External USB Mouse Test	PASS	
4	Hot plugging test	PASS	

3. Windows XP

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	External USB Keyboard Test	PASS	
3	External USB Mouse Test	PASS	
4	Hot plugging test	PASS	

2.8 Serial Port & Printer Port Test

1. Windows 98

Item	Description	Result	Remark
1	MS-DOS PCCheck TEST	PASS	
2	Device Manager Check	PASS	
3	RS-232 Modem Test	PASS	

2. Windows 2000

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

3. Windows XP

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

2.9 Keyboard、 Mouse Test

1. MS-DOS 6.22

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

2. Windows 98

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

3. Windows 2000

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

4. Windows Server 2000

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

5. Windows XP

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

2.10 LAN Test

1. Windows 98

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

2. Windows 2000

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

3. Windows Server 2000

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

4. Windows XP

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	Data Transfer Test (With 100M Standard Cable)	PASS	

5. LAN Card

LAN Card	Operating System	Result	Remark
Realtek RTL8029AS	Windows XP	PASS	
D-link DFE-530TX	Windows XP	PASS	

2.11 Power Supply Test

1. MS-DOS 6.22

Item	Description	Verification	
		Result	Remark
1	ATX Power On/Off	Pass	AOpen FSP300-60ATV
2	ATX Power On/Off	Pass	Seventeam ST-300BLV

2. Windows 98

Item	Description	Verification	
		Result	Remark
1	ATX Power On/Off	Pass	AOpen FSP300-60ATV
2	ATX Power On/Off	Pass	Seventeam ST-300BLV

3. Windows 2000

Item	Description	Verification	
		Result	Remark
1	ATX Power On/Off	Pass	AOpen FSP300-60ATV
2	ATX Power On/Off	Pass	Seventeam ST-300BLV

4. Windows XP

Item	Description	Verification	
		Result	Remark
1	ATX Power On/Off	Pass	AOpen FSP300-60ATV
2	ATX Power On/Off	Pass	Seventeam ST-300BLV

2.12 Floppy Drive Test

Model: SAMSUNG SFD321S

1. MS-DOS 6.22

Item	Description	Result	Remark
1	Floppy Drive Detect	PASS	
2	Boot from Floppy	PASS	
3	Floppy Data Transfer	PASS	

2. Windows 98

Item	Description	Result	Remark
1	Floppy Drive Detect	PASS	
2	Floppy Data Transfer	PASS	

3. Windows 2000

Item	Description	Result	Remark
1	Floppy Drive Detect	PASS	
2	Floppy Data Transfer	PASS	

4. Windows XP

Item	Description	Result	Remark
1	Floppy Drive Detect	PASS	
2	Floppy Data Transfer	PASS	

2.13 Boot Up Test

Item	Description	Result	Remark
1	Soft boot from HDD	PASS	Times
2	Soft boot from CD-ROM	PASS	Times
3	Soft boot from Floppy	PASS	Times
4	Reboot test with Win 98	PASS	Times
5	Reboot test with Win 2000	PASS	Times
6	Reboot test with Win Server 2000	PASS	Times
7	Reboot test with Win XP	PASS	Times
8	Reboot test with WinNT 4.0	PASS	Times

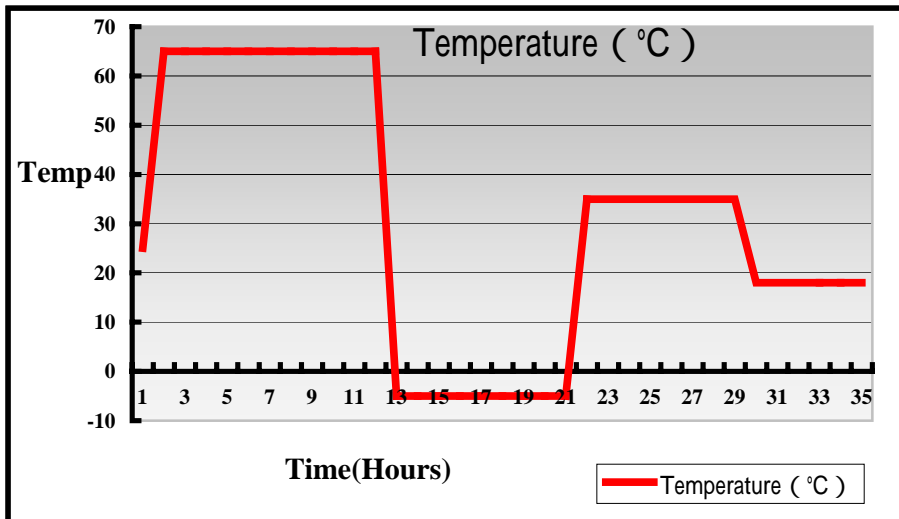
3. Environmental test

3.1 Temperature & Humidity Test

Hardware Device list:

System Board	LE-370
CPU	Pentium-M / 2M / 2.0 GHZ
Memory	SAMSUNG 184 Pin DDR333 512MB
HDD	HITACHI IC35L040AVVN07-0 7200RPM 40GB
Operating OS	Windows XP
Test Equipment	THERMOTRON 2800 Programmer/Controller
Test Program	3D WinMark 2003

Test Result:



4. Reliability Test

4.1 Power Consumption Test

1.Test Environment:

CPU	Celeron-M /512K/ 1.3 GHZ
Memory	SEITEC DDR333 512MB
HDD	HITACHI IC35L040AVVN07-0 40GB
CDROM	SONY DDU1621 DVD-ROM
Operating System	Windows XP
Test Program	3DwinMark 2003

Voltae	Current (A)	Power (W)	Remark
12V	2.55	30.6	

2.Test Environment:

CPU	Pentium M/533/2M/ 1.86 GHZ
Memory	HYNIX DDR333 1GB
HDD	HITACHI IC25N040ATMR04-0 4200RPM 40GB
CDROM	SONY DDU1621 DVD-ROM
Operating System	Windows XP
Test Program	3DwinMark 2003

Voltae	Current (A)	Power (W)	Remark
12V	3.4	40.8	

3.Test Environment:

CPU	Pentium M/400/2M/ 2.0 GHZ
Memory	HYNIX DDR333 1GB
HDD	HITACHI IC25N040ATMR04-0 4200RPM 40GB
CDROM	SONY DDU1621 DVD-ROM
Operating System	Windows XP
Test Program	3DwinMark 2003

Voltae	Current (A)	Power (W)	Remark
12V	3.2	38.4	

4.Test Environment:

CPU	Pentium M /2M/ 2.13 GHZ
Memory	SAMSUNG DDR333 512MB
HDD	HITACHI IC25N040ATMR04-0 4200RPM 40GB
CDROM	SONY DDU1621 DVD-ROM
Operating System	Windows XP
Test Program	3DwinMark 2003

Voltae	Current (A)	Power (W)	Remark
12V	3.4	40.8	

5. Test Environment:

CPU	Pentium M/533/2M/ 2.13 GHZ
Memory	HYNIX DDR333 1GB
HDD	HITACHI IC25N040ATMR04-0 4200RPM 40GB
CDROM	SONY DDU1621 DVD-ROM
LVDS Panel	LG PHILIPS LM170E01 17" Panel
Operating System	Windows XP
Test Program	3DwinMark 2003

Voltae	Current (A)	Power (W)	Remark
12V	5.3	63.6	

4.2 Thermal measurements at various points on the board

Test Environment :

CPU	Pentium-M/533/2M 2.13GHz (with fan)
Memory	SAMSUNG 184 Pin DDR333 512MB
HDD	HITACHI IC25N040ATMR04-0 4200RPM 40GB
Operating System	Windows XP
Test Program	3DMark 2003

Test Result:

CPU	45.2°C
INTEL 82852GME	44.3°C
INTEL 82801DB	42.3°C
LC1	56.3°C
LC3	55.6°C
EC13	51.2°C
Q29	52.7°C
Q40	53.2°C
U16	43.9°C

5. Performance Test

5.1 Business Win Stone 2001

1. Windows 98

WEIGHTED SUITE	Test Environment	Result	Remark
Business Win stone2001	Pentium-M /400/2M/ 2.0 GHZ SAMSUNG DDR333 512MB HITACHI 4200RPM 40GB	Pass	53 .9 55 54.1 55.3 55.8

2. Windows 2000

WEIGHTED SUITE	Test Environment	Result	Remark
Business Win stone2001	Pentium-M /400/2M/ 2.0 GHZ SAMSUNG DDR333 512MB HITACHI 7200RPM 40GB	Pass	85.5 87.8 85.6 85.3 85.3

5.2 Business Win Stone 2002

1. Windows 98

WEIGHTED SUITE	Test Environment	Result	Remark
Business Win stone2002	Pentium-M /400/2M/ 2.0 GHZ SAMSUNG DDR333 512MB HITACHI 4200RPM 40GB	Pass	25.1
			26.2
			26.2
			26
			26

2. Windows 2000

WEIGHTED SUITE	Test Environment	Result	Remark
Business Win stone2002	Pentium-M /400/2M/ 2.0 GHZ HYNIX DDR333 1GB HITACHI 7200RPM 40GB	Pass	42.5
			43.4
			42.5
			43.1
			42.9

3. Windows XP

WEIGHTED SUITE	Test Environment	Result	Remark
Business Win stone2002	Pentium-M /400/2M/ 2.0 GHZ HYNIX DDR333 1GB HITACHI 7200RPM 40GB	Pass	41.1
			41.4
			41.1
			41.6
			41.6

5.3 Winstone Content Creation 2001

1. Windows 98

WEIGHTED SUITE	Test Environment	Result	Remark
Winstone Content Creation2001	Pentium-M /400/2M/ 2.0 GHZ SAMSUNG DDR333 512MB HITACHI 4200RPM 40GB	Pass	64.6
			61.8
			64.1
			64.5
			68.5

2. Windows 2000

WEIGHTED SUITE	Test Environment	Result	Remark
Winstone Content Creation2001	Pentium-M /400/2M/ 2.0 GHZ HYNIX DDR333 1GB HITACHI 7200RPM 40GB	Pass	131
			131.4
			132.4
			131
			131.5

3. Windows XP

WEIGHTED SUITE	Test Environment	Result	Remark
Winstone Content Creation2001	Pentium-M /400/2M/ 2.0 GHZ HYNIX DDR333 1GB HITACHI 7200RPM 40GB	Pass	129.1
			129.6
			129.6
			129.8
			130.2

5.4 Winstone Content Creation 2003

1. Windows 98

WEIGHTED SUITE	Test Environment	Result	Remark
Winstone Content Creation2003	Pentium-M /400/2M/ 2.0 GHZ SAMSUNG DDR333 512MB HITACHI 4200RPM 40GB	Pass	30.9
			31.6
			31.6
			31.9
			31.6

2. Windows 2000

WEIGHTED SUITE	Test Environment	Result	Remark
Winstone Content Creation2003	Pentium-M /533/2M/ 2.13 GHZ HYNIX DDR333 1GB HITACHI 7200RPM 40GB	Pass	58.6
			58.5
			58.5
			58.6
			58.6

3. Windows XP

WEIGHTED SUITE	Test Environment	Result	Remark
Winstone Content Creation2003	Pentium-M /400/2M/ 2.0 GHZ HYNIX DDR333 1GB HITACHI 7200RPM 40GB	Pass	54.2
			54.5
			54.5
			55
			54.2

5.5 Winstone Content Creation 2004

1. Windows 2000

WEIGHTED SUITE	Test Environment	Result	Remark
Winstone Content Creation2004	Pentium-M /400/2M/ 2.0 GHZ	Pass	26.7
	HYNIX DDR333 1GB		27.5
	HITACHI 7200RPM 40GB		27.5
			27.4
			27.6

2. Windows XP

WEIGHTED SUITE	Test Environment	Result	Remark
Winstone Content Creation2004	Pentium-M /400/2M/ 2.0 GHZ	Pass	27.3
	HYNIX DDR333 1GB		27.4
	HITACHI 7200RPM 40GB		27.4
			27.3
			27.5

5.6 3D MARK

1. Windows 98

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Scores	Pentium-M /400/2M/ 2.0 GHZ	Pass	2347
3DMARK2003 Scores	SAMSUNG DDR333 512MB HITACHI 4200RPM 40GB	Pass	118

2. Windows 2000

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Scores	Pentium-M /400/2M/ 2.0 GHZ	Pass	2445
3DMARK2003 Scores	HYNIX DDR333 1GB HITACHI 7200RPM 40GB	Pass	121

3. Windows XP

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Scores	Pentium-M /400/2M/ 2.0 GHZ	Pass	2456
3DMARK2003 Scores	HYNIX DDR333 1GB HITACHI 7200RPM 40GB	Pass	117