

Product Test Report



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Product Version	A
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Report Edition	1.1
BIOS Version	1.1
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REVISION HISTORY

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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	USB1	Pass
9	USB2	Pass
10	USB3	Pass
11	USB4	Pass
12	USB5	Pass
13	USB6	Pass
14	USB7	Pass
15	USB8	Pass
16	DDRII	Pass
17	COM1	Pass
18	COM2	Pass
19	COM3	Pass
20	COM4	Pass
21	COM5	Pass
22	COM6	Pass
23	VGA Port	Pass
24	KB/MS	Pass

25	AUDIO	Pass
26	CN_AUDIO	Pass
27	CD_IN	Pass
28	Mini PCI	Pass
29	PCIE Mini Card 1	Pass
30	PCIE Mini Card 2	Pass
31	DIO	Pass
32	CPUFAN	Pass
33	SYSFAN	Pass
34	PCI	Pass
35	IDE	Pass
36	LVDS	Pass
37	LAN 1	Pass
38	LAN 2	Pass
39	IrDA	Pass
40	CF	Pass
41	CN_LPT	Pass
42	SPDIF	Pass

Jumper

Item	Description	Result
1	JRTC	Pass
2	JCSEL1	Pass
3	JCSEL2	Pass
4	JAT	Pass
5	JVLCD	Pass
6.	JP39	Pass
7.	JP49	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	Halt On	Pass	
6	Quick Power On Self Test	Pass	
7	Boot Device Setting	Pass	
8	Boot Up Num Lock Status	Pass	
9	VGA Setting	Pass	
10	Onboard Serial Port	Pass	
11	Power On Function	Pass	
12	Watch Dog Timer Select	Pass	
13	USB Device Setting	Pass	
14	ACPI Function	Pass	
15	ACPI Suspend Type	Pass	
16	Soft-Off by PWRBTN	Pass	
17	Wake-up by PCI card	Pass	
18	Power On by Ring	Pass	
19	Resume by Alarm	Pass	
20	USB KB Wake-Up From S3	Pass	
21	Init Display First	Pass	
22	UART Mode Select	Pass	
23	RxD , Txd Active	Pass	
24	IR Transmission Delay	Pass	
25	UR2 duplex Mode	Pass	
26	Use IR Pins	Pass	
27	PWRON After PWR-Fail	Pass	

28	Shutdown Temperature	Pass	
29	CPU Warning Temperature	Pass	
30	Set Supervisor Password	Pass	
31	Set User Password	Pass	

1.3 Driver

CD Edition : IPCi 3–1.0

1. Windows XP SP2 Driver Test

Item	Description	Result	version
1	Chipset Driver	Pass	9.1.1.1027
2	VGA Driver	Pass	6.14.10.5134
3	Audio Driver	Pass	5.10.0.6083
4	LAN Driver	Pass	11.4.7.0

2. Windows XP 64 bit Driver Test

Item	Description	Result	version
1	Chipset Driver	Pass	9.1.1.1027
2	VGA Driver	Pass	6.14.10.5134
3	Audio Driver	Pass	5.10.0.6083
4	LAN Driver	Pass	11.4.7.0

3. Windows Server 2003 Driver Test

Item	Description	Result	version
1	Chipset Driver	Pass	9.1.1.1027
2	VGA Driver	Pass	6.14.10.5134
3	Audio Driver	Pass	5.10.0.6083
4	LAN Driver	Pass	11.4.7.0

4. Windows Vista 32 bit Driver Test

Item	Description	Result	version
1	Chipset Driver	Pass	9.1.1.1027
2	VGA Driver	Pass	6.14.10.5134
3	Audio Driver	Pass	6.0.1.6083
4	LAN Driver	Pass	11.4.7.0

5. Windows Vista 64 bit Driver Test

Item	Description	Result	version
1	Chipset Driver	Pass	9.1.1.1027
2	VGA Driver	Pass	6.14.10.5134
3	Audio Driver	Pass	6.0.1.6083
4	LAN Driver	Pass	11.4.7.0

6. Windows 7 32 bit Driver Test

Item	Description	Result	version
1	Chipset Driver	Pass	9.1.1.1027
2	VGA Driver	Pass	8.14.10.1972
3	Audio Driver	Pass	6.0.1.6083
4	LAN Driver	Pass	11.4.7.0

7. Windows 7 64 bit Driver Test

Item	Description	Result	version
1	Chipset Driver	Pass	9.1.1.1027
2	VGA Driver	Pass	8.14.10.2023
3	Audio Driver	Pass	6.0.1.6083
4	LAN Driver	Pass	11.4.7.0

8. Windows 2008 32 bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	Pass	9.1.1.1027
2	VGA Driver	Pass	8.14.10.1972
3	Audio Driver	Pass	6.0.1.6083
4	LAN Driver		

9. Windows 2008 64 bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	Pass	9.1.1.1027
2	VGA Driver	Pass	8.14.10.2023
3	Audio Driver	Pass	6.0.1.6083
4	LAN Driver		

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>SLBMG</u>	1.66 GHz	Atom™	N450	N/A	512KB	Pass
<u>SLBMH</u>	1.66 GHz	Atom™	D410	N/A	512KB	Pass
<u>SLBLA</u>	1.66 GHz	Atom™	D510	N/A	1MB	Pass
<u>SLBXC</u>	1.80 GHz	Atom™	D525	N/A	1MB	Pass
<u>SLBX9</u>	1.66 GHz	Atom™	N455	N/A	512KB	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
A-DATA	AD20908A8A	DDRII 667	1GB	Pass
PQI	7QE22D9HNL	DDRII 667	2GB	Pass
Transcend	A3R1GE3CFF	DDRII 800	2GB	Pass
PQI	HY5PS1G831C	DDRII 800	2GB	Pass
Kingston	TGK427A36-A	DDRII 800	1GB	Pass

2.3 VGA Graphic Quality Test

Test environment:

OS Windows XP professional SP2

Driver version : 6.14.10.5134

Resolution	Color	Result	Remark
640 x 480	16 /32bit	Pass	
800 x 600	16 /32bit	Pass	
1024 x 768	16 /32bit	Pass	
1152 x 864	16 /32bit	Pass	
1280 x 600	16 /32bit	Pass	
1280 x 720	16 /32bit	Pass	
1280 x 768	16 /32bit	Pass	
1280 x 960	16 /32bit	Pass	
1280 x 1024	16 /32bit	Pass	
1400 x 1050	16 /32bit	Pass	
1600 x 900	16 /32bit	Pass	
1680 x 1050	16 /32bit	Pass	
1920 x 1080	16 /32bit	Pass	

2.4 Audio

Test environment:

OS Windows XP professional SP2

Driver version : 5.10.0.6083

Item	Description	Result	Remark
1	2 CH	Pass	
2	Microphone	Pass	
3	LINE	Pass	
4	CDIN	Pass	
5	SPDIF	Pass	

OS Windows professional x64 Edition

Driver version : 5.10.0.6083

Item	Description	Result	Remark
1	2 CH	Pass	
2	Microphone	Pass	
3	LINE	Pass	
4	CDIN	Pass	
5	SPDIF	Pass	

OS Windows Server 2003

Driver version : 5.10.0.6083

Item	Description	Result	Remark
1	2 CH	Pass	
2	Microphone	Pass	
3	LINE	Pass	
4	CDIN	Pass	
5	SPDIF	Pass	

OS Windows Vista 32 bit

Driver version : 6.0.1.6083

Item	Description	Result	Remark
1	2 CH	Pass	
2	Microphone	Pass	
3	LINE	Pass	
4	CDIN	Pass	
5	SPDIF	Pass	

OS Windows Vista 64 bit

Driver version : 6.0.1.6083

Item	Description	Result	Remark
1	2 CH	Pass	
2	Microphone	Pass	
3	LINE	Pass	
4	CDIN	Pass	
5	SPDIF	Pass	

OS Windows 7 32 bit

Driver version : 6.0.1.6083

Item	Description	Result	Remark
1	2 CH	Pass	
2	Microphone	Pass	
3	LINE	Pass	
4	CDIN	Pass	
5	SPDIF	Pass	

OS Windows 7 64 bit

Driver version : 6.0.1.6083

Item	Description	Result	Remark
1	2 CH	Pass	
2	Microphone	Pass	
3	LINE	Pass	
4	CDIN	Pass	
5	SPDIF	Pass	

OS Windows 2008 32 bit

Driver version : 6.0.1.6083

Item	Description	Result	Remark
1	2 CH	Pass	
2	Microphone	Pass	
3	LINE	Pass	
4	CDIN	Pass	
5	SPDIF	Pass	

OS Windows 2008 64 bit

Driver version : 6.0.1.6083

Item	Description	Result	Remark
1	2 CH	Pass	
2	Microphone	Pass	
3	LINE	Pass	
4	CDIN	Pass	
5	SPDIF	Pass	

2.5 HDD Test

Test environment:

OS Windows XP professional SP2

HDD MODEL	INTERFACE	Capacity	HDD Size Detect	HDD Data Transfer	HDD LED Check
HITACHI IC25N040ATMR04-0	IDE	40 GB	Pass	Pass	Pass
HITACHI HTS541280H9A		80 GB	Pass	Pass	Pass
SEAGATE HD3350297876831	SATA	160 GB	Pass	Pass	Pass
Western Digital WD1600AAJS-00B4A0		160 GB	Pass	Pass	Pass
Western Digital WD2500AAJS-00B4A0		250 GB	Pass	Pass	Pass
Western Digital WD3200BEKT-22KA9T0		320 GB	Pass	Pass	Pass
Western Digital WD10EADS-00L5B1		1.0 TB	Pass	Pass	Pass
FUDIA FDM642-004G100C	IDE DOM	4 GB	Pass	Pass	Pass
INNODISK ICF4000	CF Card	16 GB	Pass	Pass	Pass
PQI CSS HAK40-016G		16 GB	Pass	Pass	Pass
PQI INDUSTRIAL		4 GB	Pass	Pass	Pass

2.6 CD-ROM Test

Test environment:

OS Windows XP professional SP2

CD-ROM MODEL	INTERFACE	CD-ROM Detect	CD-ROM Data Transfer	PLAY DVD
BenQ DW200S	IDE	Pass	Pass	Pass
ASUS CD-SS520/A		Pass	Pass	Pass
LITEON SHW-1635S		Pass	Pass	Pass
SONY DVD AD7240S	SATA	Pass	Pass	Pass
LG DVD GGW-H20L		Pass	Pass	Pass
LITEON DVD SOSW-833XS	USB	Pass	Pass	Pass
MATSHITA DVD EBC100		Pass	Pass	Pass

2.7 USB Test

1. Windows XP SP2

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 XP 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 Server 2003

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 Vista 32 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 Vista 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	

6. Windows 7 32 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	

7. Windows 7 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	

8. Windows Server 2008 32bit

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

9. Windows Server 2008 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	

2.8 Serial Port Test

1. MS-DOS

Item	Description	Result	Remark
1	RS-232 Mouse Test	Pass	Pass
2	RS-422 & RS-485	Pass	Pass
3	PC Check	Pass	Pass
4	TS	Pass	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 XP 64 bit

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

4. Windows Server 2003

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

5. Windows Vista 32 bit

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

6. Windows Vista 64 bit

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

7. Windows 7 32 bit

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

8. Windows 7 64 bit

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

9. 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	

10. Windows Server 2008 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 XP 64 bit

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

4. Windows Server 2003

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

5. Windows Vista 32 bit

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

6. Windows Vista 64 bit

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

7. Windows 7 32 bit

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

8. Windows 7 64 bit

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

9. Windows Server 2008 32 bit

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

10. Windows Server 2008 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 XP 64 bit

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

3. Windows Server 2003

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

4. Windows Vista 32bit

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

5. Windows Vista 64 bit

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

6. Windows 7 32bit

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

7. Windows 7 64 bit

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

8. Windows Server 2008 32 bit

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

9. Windows Server 2008 64bit

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

2.11 Power Supply Test

Item	TYPE	Description	Result	Remark
1	ATX Power	Seventeam ST-300WAP 300W	Pass	
2	ATX Power	Seasonic SS-330-HB 330W	Pass	
3	ATX Power	SC MC-B350ATX 350W	Pass	
4	ATX Power	Snake PSP-525S2 350W	Pass	
5	ATX Power	Coolive AP-350F 380W	Pass	
6	ADAPTER	LS 0219B1280(80W)	Pass	
7	ADAPTER	EDAC EA11001C-120(80W)	Pass	
8	ADAPTER	LS 0227B19120(120W)	Pass	

2.12 PCI Express Mini Card Test

Motherboard	PCI Express mini card	Result
LV-67E	MPX-954	Pass
LV-67E	MPX-643	Pass
LV-67E	MPX-1040	Pass
LV-67E	MPX-574D	Pass
LV-67E	MPX-574D2	Pass
LV-67E	MPX-7767	Pass
LV-67E	MPX-2503	Pass
LV-67E	MPX-827	Pass
LV-67E	MPX-3132	Pass
LV-67E	MPX-7202	Pass
LV-67E	MPX-TP4R	Pass
LV-67E	MPX-885	Pass

2.12 Mini-PCI Card Test

Motherboard	PCI Express mini card	Result
LV-67E	MP-6421	Pass
LV-67E	MP-954GPS	Pass
LV-67E	MP-954	Pass
LV-67E	MP-2501	Pass
LV-67E	MP-323	Pass
LV-67E	MP-541D	Pass
LV-67E	MP-541D2	Pass
LV-67E	MP-840	Pass
LV-67E	MP-6100	Pass
LV-67E	MP-60102	Pass
LV-67E	MP-6010	
LV-67E	MP-2010	Pass
LV-67E	MP-9200	Pass
LV-67E	MP-6802T	Pass
LV-67E	MP-878D2	Pass
LV-67E	MP-878D	Pass

2.13 Os Install

Item	Description	Result	Remark
1	Windows XP SP2	Pass	
2	Window XP 64 bit	Pass	
3	Windows Server 2003	Pass	
4	Windows Vista 32 bit	Pass	
5	Windows Vista 64 bit	Pass	
6	Windows Server 2008 32 bit	Pass	
7	Windows Server 2008 64 bit	Pass	
8	Windows 7 32 bit	Pass	
9	Windows 7 64 bit	Pass	
10	Ubuntu 9.10	Pass	
11	Fedora 12 i386	Pass	
12	Debian 5.0	Pass	
13	Knoppix	Pass	

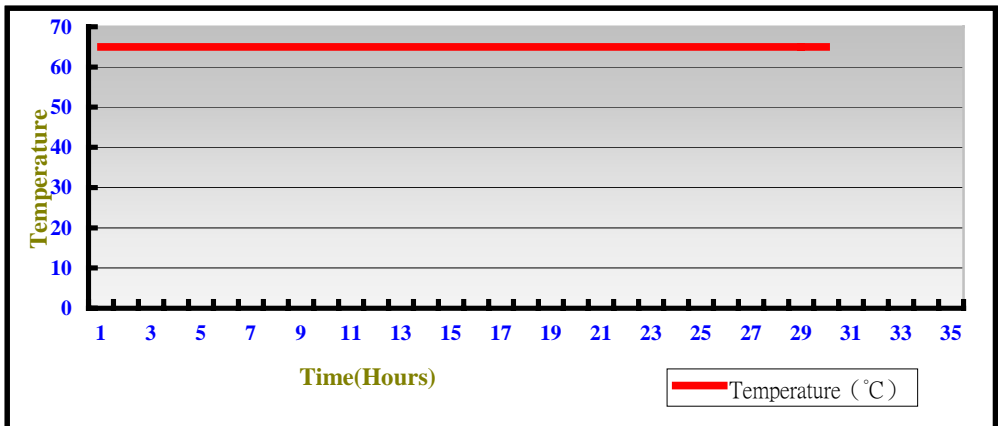
3. Environmental test

3.1 Temperature Test

Hardware Device list:

System Board	LV-67E G/H/A
CPU	Intel® Atom N450/D410/D510 1.66GHZ processor
Memory	Transcend DDRII 667 2GB (E1108ACBG)
HDD	Western Digital WD10EADS 1.0TB
Operating OS	Windows XP
Test Equipment	THERMOTRON 2800 Programmer/Controller
Test Program	3DMark 2003

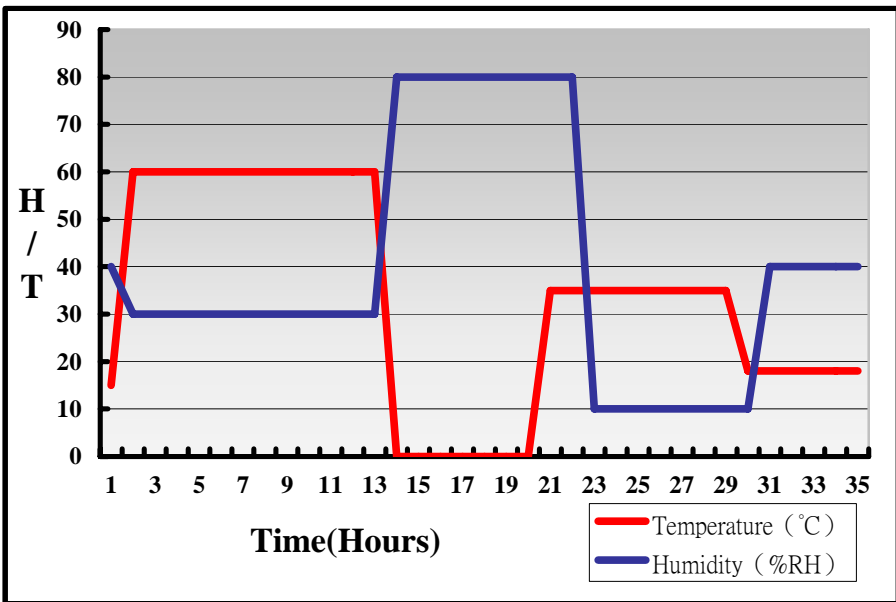
Test Result:



Hardware Device list:

System Board	LV-67E G/H/A
CPU	Intel® Atom N450/D410/D510 1.66GHZ
Memory	Transcend DDRII 667 2GB (E1108ACBG)
Operating OS	Windows XP
Test Equipment	GIANT FORCE (GTH-150-60-CP-AR)
Test Program	3DMark 2003

Test Result:



Boot Up Test:

Hardware Device list:

System Board	LV-67E G/H/A
CPU	Intel® Atom N450/D410/D510 1.66GHZ
Memory	Transcend DDRII 667 2GB (E1108ACBG)
HDD	Western Digital WD10EADS 1.0TB

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

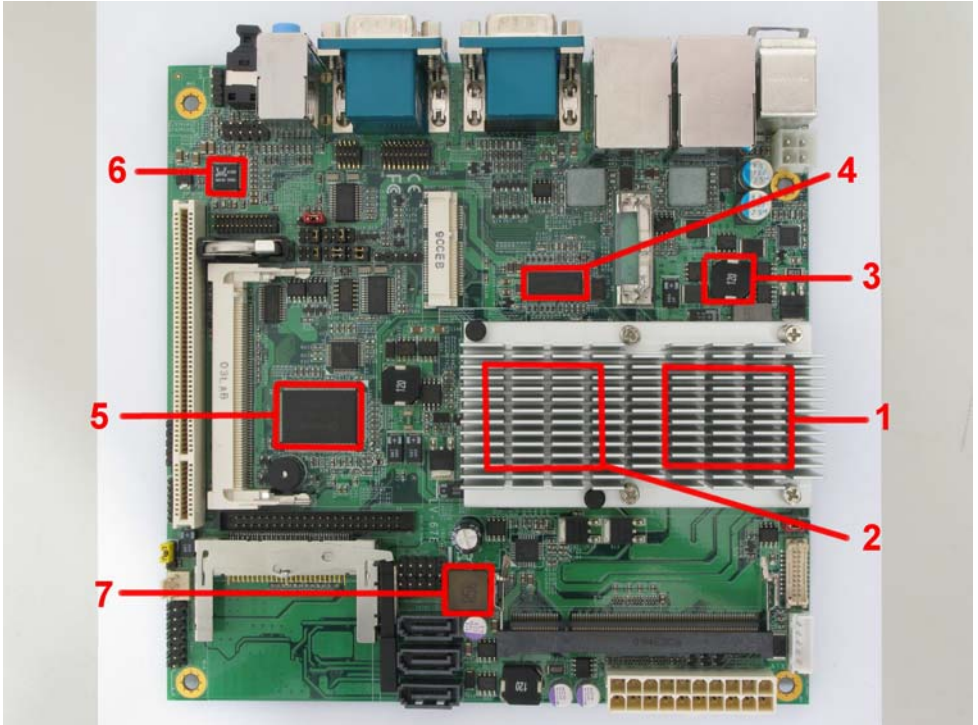
3.2 Thermal measurements at various points on the board

Test Environment :

CPU	Intel® Atom N450 1.66GHZ
Memory	PQI DDRII 667 2GB (7QE22D9HNL)
HDD	Western Digital WD10EADS 1.0TB
Power	Seventeam ST-300WAP
Operating System	Windows XP
Test Program	3D WinMark2003

Test Result:

Item	Environmental temperature	26°C
1	CPU	60.9°C
2	ICH8M (Southbridge)	59.6°C
3	LC1 (LLC12UH/1050KS)	48.3°C
4	U6 (ICS9LP505)	61.1°C
5	LPCIO (ICH83627DHG-P)	43.3°C
6	U17 (ALC888)	50.2°C
7	LC3 (LLC0.56UH/0445)	49.6°C



4. Reliability Test

4.1 Power Consumption Test

1. Test Environment:

Motherboard	LV-67EG
CPU	Intel® Atom N450 processor
Memory	PQI DDRII 667 2GB (7QE22D9HNL)
HDD	Western Digital WD10EADS 1.0TB

Power Supply: HEC Windmill PRO 315W

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	0.26	3.12	0.46	5.52
5V	2.3	11.5	2.58	12.9
3.3V	0.62	2.046	0.77	2.541
5VSB	0.222	1.11	0.023	0.115

Power Supply: LS 0219B1280(80W)

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	1.5	18	2.24	26.88

Power Supply: LS 0227B19120(120W)

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
19V	1.18	22.42	1.46	27.74

1.a.Test Environment:

The same as above but with LCD panel

Display Panel	CRUUS G084SN03 8.4" LCD
---------------	-------------------------

Power Supply: HEC Windmill PRO 315W

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	0.89	10.68	0.99	11.88
5V	2.54	12.7	2.56	12.8
3.3V	1.09	3.597	1.03	3.399
5VSB	0.194	0.97	0.042	0.21

Power Supply: LS 0219B1280(80W)

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	2.4	28.8	2.94	35.28

Power Supply: LS 0227B19120(120W)

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
19V	1.63	30.97	1.89	35.91

2.Test Environment:

Motherboard	LV-67EA
CPU	Intel® Atom D510 processor
Memory	PQI DDRII 667 2GB (7QE22D9HNL)
HDD	Western Digital WD10EADS 1.0TB

Power Supply: HEC Windmill PRO 315W

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	0.39	4.68	0.5	6
5V	2.52	12.6	2.59	12.95
3.3V	0.62	2.046	0.39	1.287
5VSB	0.312	1.56	0.006	0.03

Power Supply: LS 0219B1280(80W)

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	1.78	21.36	2.37	28.44

Power Supply: LS 0227B19120(120W)

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
19V	1.16	22.04	1.52	28.88

2.a.Test Environment:

The same as above but with LCD panel

Display Panel	CRUUS G084SN03 8.4" LCD
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Power Supply: HEC Windmill PRO 315W

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	0.94	11.28	0.88	10.56
5V	2.54	12.7	2.27	11.35
3.3V	0.92	3.036	0.85	2.805
5VSB	0.352	1.76	0.025	0.125

Power Supply: LS 0219B1280(80W)

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	2.58	30.96	3.09	37.08

Power Supply: LS 0227B19120(120W)

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
19V	1.6	30.4	2.58	49.02

3. Test Environment:

Motherboard	LV-67EH
CPU	Intel® Atom D410 processor
Memory	PQI DDRII 667 2GB (7QE22D9HNL)
HDD	Western Digital WD10EADS 1.0TB

Power Supply: HEC Windmill PRO 315W

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	0.29	3.48	0.19	2.28
5V	2.51	12.55	2.14	10.7
3.3V	0.63	2.079	0.91	3.003
5VSB	0.233	1.165	0.043	0.215

Power Supply: LS 0219B1280(80W)

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	1.79	21.48	2.25	27

Power Supply: LS 0227B19120(120W)

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
19V	0.99	18.81	1.52	28.88

3.a.Test Environment:

The same as above but with LCD panel

Display Panel	Samaung LTM150XH-L10
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Power Supply: HEC Windmill PRO 315W

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	0.85	10.2	0.76	9.12
5V	2.29	11.45	2.58	12.9
3.3V	0.93	3.069	1.21	3.993
5VSB	0.286	1.43	0.046	0.23

Power Supply: LS 0219B1280(80W)

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	2.53	30.36	2.98	35.76

Power Supply: LS 0227B19120(120W)

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current (A)	Power (W)	Current (A)	Power (W)
19V	1.6	30.4	1.95	37.05

5. Performance Test

5.1 Business Win Stone 2002

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
<p align="center">Business Win stone2002</p>	<p align="center">Intel® Atom N450 processor PQI DDRII 667 2GB (7QE22D9HNL) Western Digital WD10EADS 1.0TB</p>	<p align="center">Pass</p>	<p align="center">25.2 25.0 24.9 24.9</p>
<p align="center">Business Win stone2002</p>	<p align="center">Intel® Atom N450 processor Transcend DDRII 800 2GB (A3R1GE3CFF) Western Digital WD10EADS 1.0TB</p>	<p align="center">Pass</p>	<p align="center">25.2 25.1 25.1 24.8</p>
<p align="center">Business Win stone2002</p>	<p align="center">Intel® Atom N450 processor ADATA DDRII 667 1GB (AD20908A8A-3EG) Western Digital WD10EADS 1.0TB</p>	<p align="center">Pass</p>	<p align="center">25.1 25.0 24.8 24.8</p>

5.2 Business Win Stone 2004

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
<p align="center">Business Win stone2004</p>	<p align="center">Intel® Atom N450 processor PQI DDRII 667 2GB (7QE22D9HNL) Western Digital WD10EADS 1.0TB</p>	<p align="center">Pass</p>	<p align="center">12.3 12.1 11.2 8.6</p>
<p align="center">Business Win stone2004</p>	<p align="center">Intel® Atom N450 processor Transcend DDRII 800 2GB (A3R1GE3CFF) Western Digital WD10EADS 1.0TB</p>	<p align="center">Pass</p>	<p align="center">8.2 7.2 11.9 6.6</p>
<p align="center">Business Win stone2004</p>	<p align="center">Intel® Atom N450 processor ADATA DDRII 667 1GB (AD20908A8A-3EG) Western Digital WD10EADS 1.0TB</p>	<p align="center">Pass</p>	<p align="center">8.5 13.4 9.2 10.3</p>

5.3 Content Creation Winstone 2001

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
Content Creation Winstone 2003	Intel® Atom N450 processor PQI DDRII 667 2GB (7QE22D9HNL) Western Digital WD10EADS 1.0TB	Pass	66.7 66.7 66.5 66.5 66.6
Content Creation Winstone 2003	Intel® Atom N450 processor Transcend DDRII 800 2GB (A3R1GE3CFF) Western Digital WD10EADS 1.0TB	Pass	66.8 66.8 66.7 66.7 66.5
Content Creation Winstone 2003	Intel® Atom N450 processor ADATA DDRII 667 1GB (AD20908A8A-3EG) Western Digital WD10EADS 1.0TB	Pass	66.6 66.4 66.4 66.6 66.7

5.4 Content Creation Winstone 2004

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
<p align="center">Content Creation Winstone 2004</p>	<p align="center">Intel® Atom N450 processor PQI DDRII 667 2GB (7QE22D9HNL) Western Digital WD10EADS 1.0TB</p>	<p align="center">Pass</p>	<p align="center">15.0 15.0 15.0 14.9</p>
<p align="center">Content Creation Winstone 2004</p>	<p align="center">Intel® Atom N450 processor Transcend DDRII 800 2GB (A3R1GE3CFF) Western Digital WD10EADS 1.0TB</p>	<p align="center">Pass</p>	<p align="center">14.9 14.9 14.9 15.0</p>
<p align="center">Content Creation Winstone 2004</p>	<p align="center">Intel® Atom N450 processor ADATA DDRII 667 1GB (AD20908A8A-3EG) Western Digital WD10EADS 1.0TB</p>	<p align="center">Pass</p>	<p align="center">14.8 14.9 14.9 14.9</p>

5.5 3D MARK(2001、2003、2005)

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Scores	Intel® Atom N450 processor ADATA DDRII 667 1GB (AD20908A8A-3EG) Western Digital WD10EADS 1.0TB	Pass	3042
3DMARK2003 Scores		Pass	796
3DMARK2005 Scores		Pass	265

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Scores	Intel® Atom N450 processor Transcend DDRII 800 2GB (A3R1GE3CFF) Western Digital WD10EADS 1.0TB	Pass	3039
3DMARK2003 Scores		Pass	803
3DMARK2005 Scores		Pass	265

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Scores	Intel® Atom N450 processor PQI DDRII 667 2GB (7QE22D9HNL) Western Digital WD10EADS 1.0TB	Pass	3087
3DMARK2003 Scores		Pass	802
3DMARK2005 Scores		Pass	267

5.6 3D MARK2006

Windows XP SP2

Item	WEIGHTED SUITE	Test Environment	Result	Remark
1	3DMARK Score	Intel® Atom N450 processor ADATA DDRII 667 1GB (AD20908A8A-3EG) Western Digital WD10EADS 1.0TB	Pass	104
2	SM2.0 Score		Pass	48
3	HDR/SM3.0 Score		Pass	N/A
4	CPU Score		Pass	515

Windows XP SP2

Item	WEIGHTED SUITE	Test Environment	Result	Remark
1	3DMARK Score	Intel® Atom N450 processor Transcend DDRII 800 2GB (A3R1GE3CFF) Western Digital WD10EADS 1.0TB	Pass	108
2	SM2.0 Score		Pass	49
3	HDR/SM3.0 Score		Pass	N/A
4	CPU Score		Pass	518

Windows XP SP2

Item	WEIGHTED SUITE	Test Environment	Result	Remark
1	3DMARK Score	Intel® Atom N450 processor PQI DDRII 667 2GB (7QE22D9HNL) Western Digital WD10EADS 1.0TB	Pass	105
2	SM2.0 Score		Pass	48
3	HDR/SM3.0 Score		Pass	N/A
4	CPU Score		Pass	518

5.7 PC MARK2002

Test Environment
Intel® Atom N450 processor ADATA DDRII 667 1GB (AD20908A8A-3EG) Western Digital WD10EADS 1.0TB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	CPU test Score	Pass	2801
2	Memory test Score	Pass	7105
3	HDD test Score	Pass	2163

Test Environment
Intel® Atom N450 processor Transcend DDRII 800 2GB (A3R1GE3CFF) Western Digital WD10EADS 1.0TB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	CPU test Score	Pass	2796
2	Memory test Score	Pass	7425
3	HDD test Score	Pass	2156

Test Environment
Intel® Atom N450 processor PQI DDRII 667 2GB (7QE22D9HNL) Western Digital WD10EADS 1.0TB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	CPU test Score	Pass	2786
2	Memory test Score	Pass	7306
3	HDD test Score	Pass	2143

5.8 PC MARK2004

Test Environment

Intel® Atom N450 processor ADATA DDRII 667 1GB (AD20908A8A-3EG) Western Digital WD10EADS 1.0TB

Windows XP PS2

Item	WEIGHTED SUITE	Result	Remark
1	PC Mark Score	Pass	2141
2	CPU test Score	Pass	2209
3	Memory test Score	Pass	3221
4	Graphic test Score	Pass	739
5	HDD test Score	Pass	6413

Test Environment

Intel® Atom N450 processor Transcend DDRII 800 2GB (A3R1GE3CFF) Western Digital WD10EADS 1.0TB

Windows XP PS2

Item	WEIGHTED SUITE	Result	Remark
1	PC Mark Score	Pass	2143
2	CPU test Score	Pass	2210
3	Memory test Score	Pass	3344
4	Graphic test Score	Pass	779
5	HDD test Score	Pass	6403

Test Environment

**Intel® Atom N450 processor
PQI DDRII 667 2GB (7QE22D9HNL)
Western Digital WD10EADS 1.0TB**

Windows XP PS2

Item	WEIGHTED SUITE	Result	Remark
1	PC Mark Score	Pass	2151
2	CPU test Score	Pass	2211
3	Memory test Score	Pass	3336
4	Graphic test Score	Pass	747
5	HDD test Score	Pass	6393

5.9 PC MARK2005

Test Environment
Intel® Atom N450 processor ADATA DDRII 667 1GB (AD20908A8A-3EG) Western Digital WD10EADS 1.0TB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	PC Mark Score	Pass	1767
2	CPU test Score	Pass	1567
3	Memory test Score	Pass	2536
4	Graphics test Score	Pass	609
5	HDD test Score	Pass	6644

Test Environment
Intel® Atom N450 processor Transcend DDRII 800 2GB (A3R1GE3CFF) Western Digital WD10EADS 1.0TB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	PC Mark Score	Pass	1778
2	CPU test Score	Pass	1566
3	Memory test Score	Pass	2575
4	Graphics test Score	Pass	610
5	HDD test Score	Pass	6660

Test Environment

**Intel® Atom N450 processor
PQI DDRII 667 2GB (7QE22D9HNL)
Western Digital WD10EADS 1.0TB**

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	PC Mark Score	Pass	1771
2	CPU test Score	Pass	1566
3	Memory test Score	Pass	2574
4	Graphics test Score	Pass	609
5	HDD test Score	Pass	6713

5.10 Storage Performance

5.10.1 HDD

Test environment:

OS Windows XP professional SP2

Program (HD Tune)

HDD Model	Interface	Capacity	Average	Burst Rate	Access time
HITACHI IC25N040ATMR04-0	IDE	40 GB	21.4 MB/sec	29.6 MB/sec	18.5 ms
HITACHI HTS541280H9A		80 GB	27.8 MB/sec	29.4 MB/sec	18.3 ms
SEAGATE HD3350297876831	SATA	160 GB	59.5 MB/sec	141.3 MB/sec	15.4 ms
Western Digital WD1600AAJS-00B4A0		160 GB	87.8 MB/sec	132.4 MB/sec	15.7 ms
Western Digital WD2500AAJS-00B4A0		250 GB	78.2 MB/sec	134.8 MB/sec	15.8 ms
Western Digital WD3200BEKT-22KA9T0		320 GB	72.7 MB/sec	128.9 MB/sec	14.4 ms
Western Digital WD10EADS-00L5B1		1.0 TB	73.8 MB/sec	141.6 MB/sec	13.9 ms
FUDIA FDM642-004G100C		IDE DOM	4 GB	2.9 MB/sec	3.0 MB/sec
INNODISK ICF4000	CF Card	16GB	23.2 MB/sec	23.2 MB/sec	0.2 ms
PQI CSS HAK40-016G		16 GB	3.1 MB/sec	3.1 MB/sec	0.3 ms
PQI INDUSTRIAL		4 GB	3.0 MB/sec	3.0 MB/sec	0.4 ms

5.10.2 CD-ROM

Test environment:

OS Windows XP professional SP2

Program (NERO)

CD-ROM Model	Interface	Average speed	Full READ	Burst Rate	CD
BenQ DW200S	IDE	31.45x	145 ms	41 MB/s	52 X CD-R
ASUS CD-SS520/A		17.21x	142 ms	3 MB/s	
LITEON SHW-1635S		37.13x	124 ms	22 MB/s	
SONY DVD AD7240S	SATA	35.81x	227 ms	33 MB/s	
LG DVD GGW-H20L		30.23x	220 ms	38 MB/s	
LITEON DVD SOSW-833XS	USB	18.34x	193 ms	20 MB/s	
MATSHITA DVD EBC100		18.64x	268 ms	19 MB/s	

5.11 Vibration Test

Motherboard	LV-67E		
Test Equipment	VS-5060L		
Amplitude	Frequency	Time (1min/1Time)	Result
0.75mm	5 → 55 → 5 Hz	10	Pass
1.00mm	5 → 55 → 5 Hz	10	Pass
1.25mm	5 → 55 → 5 Hz	10	Pass
1.5mm	5 → 55 → 5 Hz	10	Pass
1.5mm	5 → 55 → 5 Hz	120	Pass