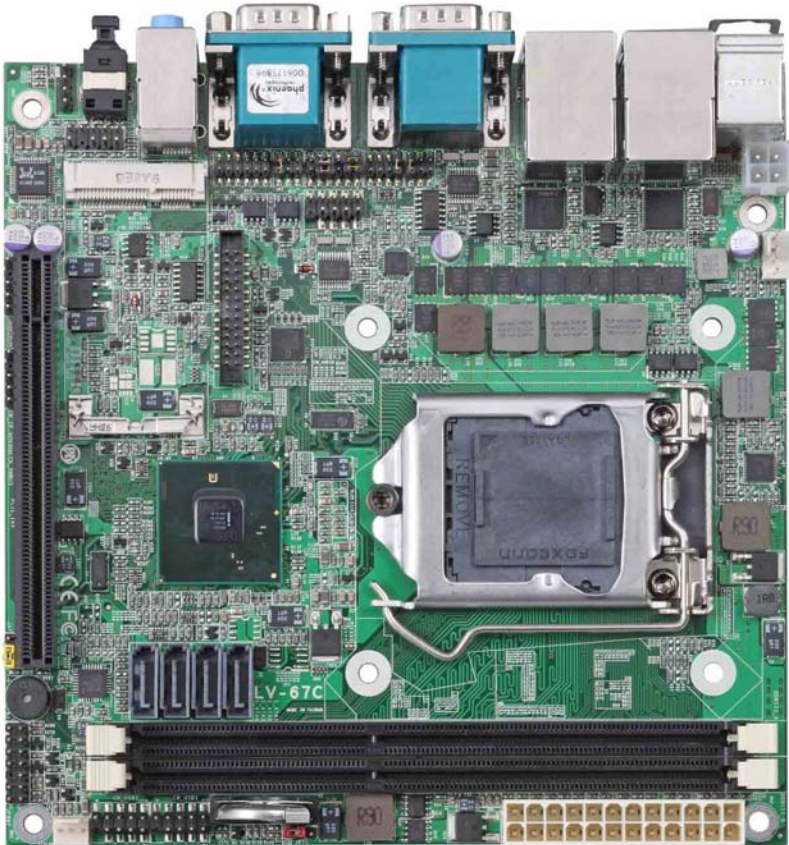


Product Test Report



Product Name	LV-67C
Product Version	A
Issued Date	April 3, 2014
Report Edition	1.1
BIOS Version	1.0
Testing Engineer	RICK
Check Engineer	GARY

REVISION HISTORY

DATE	REVISION NO.	PAGE	DESCRIPTONS
August.13.2010	Ver. 1.0	59	New release
April 3, 2014	Ver 1.1	59	Add Linux OS , mini PCI / card

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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	SATA 1/2/3/4	PASS
6	USB 1/2/3/4/5/6/7/8	PASS
7	DDRIII 1/2	PASS
8	COM 1/2/3/4	PASS
9	VGA Port	PASS
10	DVI	PASS
11	PS2	PASS
12	AUDIO	PASS
13	CN_AUDIO	PASS
14	CD_IN	PASS
15	DIO	PASS
16	CPUFAN	PASS
17	SYSFAN	PASS
18	PCIE 1x / 4x / 16x	PASS
19	MINI PCI (BIOS Ver 1.1)	PASS
20	MINI CARD	PASS
21	LAN 1/2	PASS
22	IrDA	PASS

23	SPDIF	PASS
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Jumper

Item	Description	Result
1	JRTC	PASS
2	JAT	PASS
3	JCSEL1	PASS
4	JCSEL2	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	Exit Saving Changes	PASS	
4	Date & Time Setting	PASS	
5	Halt On	PASS	
6	Boot Device Setting	PASS	
7	HD Audio	PASS	
8	Onboard Serial Port	PASS	
9	Serial Port 2 IR Mode	PASS	
10	Default Primary Video Adapter	PASS	
11	LAN Controller	PASS	
12	IGD-Memory Size	PASS	
13	Enabled ACPI (debug only)	PASS	
14	Disable ACPI _Sx	PASS	
15	Console Redirection	PASS	
16	Watch Dog Timer Select	PASS	
17	Set Supervisor Password	PASS	
18	Set User Password	PASS	
19	CPU Warning Temperature	PASS	
20	Shutdown Temperature	PASS	
21	Smart Fan1 Temperature	PASS	
22	SATA Mode Selection	PASS	
23	Exit Discarding Changes	PASS	

1.3 Driver

CD Edition :

1. Windows XP SP2 Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.1.1.1025
2	VGA Driver	PASS	6.14.10.5248
3	Audio Driver	PASS	5.10.0.6101
4	LAN Driver	PASS	10.3.49.0

2. Windows Server 2003 Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.1.1.1025
2	Audio Driver	PASS	5.10.0.6101
3	LAN Driver	PASS	10.3.49.0

3. Windows Vista 32-bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.1.1.1025
2	VGA Driver	PASS	8.15.10.2104
3	Audio Driver	PASS	6.0.1.6101
4	LAN Driver	PASS	10.3.49.0

4. Windows Vista 64-bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.1.1.1025
2	VGA Driver	PASS	8.15.10.2104
3	Audio Driver	PASS	6.0.1.6101
4	LAN Driver	PASS	10.3.49.0

5. Windows Server 2008 32-bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.1.1.1025
2	Audio Driver	PASS	6.0.1.6101
3	LAN Driver	PASS	10.3.49.0

6. Windows Server 2008 64-bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.1.1.1025
2	Audio Driver	PASS	6.0.1.6101
3	LAN Driver	PASS	10.3.49.0

7. Windows 7 32-bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.1.1.1025
2	VGA Driver	PASS	8.15.10.2104
3	Audio Driver	PASS	6.0.1.6101

8. Windows 7 64-bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.1.1.1025
2	VGA Driver	PASS	8.15.10.2104
3	Audio Driver	PASS	6.0.1.6101

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
<u>SLBMQ</u>	3.06 GHz	Core	i3-540	2.5 GT/s	4MB	PASS
<u>SLBLC</u>	2.66 GHz	Core	i5-750	2.5 GT/s	8MB	PASS
<u>SLBJJ</u>	2.8 GHz	Core	i7-860	2.5 GT/s	8MB	PASS
<u>SLBMS</u>	2.8 GHz	Pentium	G6950	2.5 GT/s	3MB	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	PASS	
8	Windows Server 2003	PASS	
9	Red Hat 5 (2.6.18-164.el5xen)	PASS	BIOS ver:1.5

2.3 Memory Test

Test environment:

OS Windows XP professional SP2

Test program : PC MARK 2005

Manufacturer	Chip	Frequency	Capacity Mbytes	Result
A-DATA	AD309080BD-151G	DDR3 1333	1 GB	PASS
PQI	H5TQ1G83BFR	DDR3 1333	1 GB	PASS
Transcend	K4B1G0846D	DDR3 1066	2 GB	PASS
INNODISK	H5TQ1G83BFR	DDR3 1333	2 GB	PASS
PQI	H5TQ1G83BFR	DDR3 1333	2 GB	PASS
Kingston	K4B2G0846B-HCFB	DDR3 1066	4 GB	PASS
Kingston	H5TQ2G83AFR	DDR3 1066	4 GB	PASS
PQI	H5TQ1G83BFR	DDR3 1333	4 GB	PASS

2.4 VGA Graphic Quality Test

Test environment:

OS Windows XP professional SP2

Driver version : 6.14.10.5248

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	
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	
1680*1050	16 / 32bit	PASS	

2.5 Audio

Test environment:

OS Windows XP professional SP2

Driver version : 5.10.0.6101

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 : 5.10.0.6101

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 : 6.0.1.6101

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 : 6.0.1.6101

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

OS Windows Server 2008 32-bit
Driver version : 6.0.1.6101

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

OS Windows Server 2008 64-bit
Driver version : 6.0.1.6101

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 : 6.0.1.6101

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 : 6.0.1.6101

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

2.6 HDD Test

Test environment:

OS Windows XP professional SP2

MODEL	INTERFACE	Capacity	Size Detect	Data Transfer
Hitachi HTS543216L9A300	SATA	160 GB	PASS	PASS
Seagate ST3160815AS	SATA	160 GB	PASS	PASS
Hitachi HDST722525DLA380	SATA	250 GB	PASS	PASS
Western Digital WD2500KS-00MJB0	SATA	250 GB	PASS	PASS
Western Digital WD10EADS-00L5B1	SATA	1000 GB	PASS	PASS

2.7 DVD-ROM Test

Test environment:

OS Windows XP professional SP2

MODEL	INTERFACE	Detect	Data Transfer	PLAY DVD
ASUS DVD DRW-1814BLT	SATA	PASS	PASS	PASS
PIONEER DVD DVR-212BK	SATA	PASS	PASS	PASS
LITEON DVD SOSC-2485KX	USB	PASS	PASS	PASS
LITEON DVD SOSW-833SX	USB	PASS	PASS	PASS
MATSHITA BD-CMB UJ-120	USB	PASS	PASS	PASS

2.8 USB device 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 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	

3. 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	

4. 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	

5. Windows Server 2008 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	

6. 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	

7. 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	

8. 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	

2.9 Serial Port Test

1. MS-DOS

Item	Description	Result	Remark
1	RS-232 Mouse Test	PASS	
2	RS422/485	PASS	
3	TS	PASS	

2. 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	

3. 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	

4. Windows Vista 32-bit

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

5. Windows Vista 64-bit

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

6. 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	

7. Windows Server 2008 64-bit

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

8. Windows 7 32-bit

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

9. 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 Server 2003

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

3. Windows XP SP2

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

4. Windows Vista 32-bit

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

5. Windows Vista 64-bit

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

6. Windows Server 2008 32-bit

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

7. Windows Server 2008 64-bit

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

8. Windows 7 32-bit

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

9. Windows 7 64-bit

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

2.11 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 Server 2003

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

3. Windows Vista 32-bit

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

4. Windows Vista 64-bit

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

5. Windows Server 2008 32-bit

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

6. Windows Server 2008 64-bit

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

2.12 Power Supply Test

Item	TYPE	Description	Result	Remark
1	ATX Power	CHANNEL WELL TECHNOLOGY CO.,LTD CWT-300BDP-F 300W	PASS	
2	ATX Power	CHANNEL WELL TECHNOLOGY CO.,LTD CWT-300ATX12 300W	PASS	
3	ATX Power	Seasonic SS-500ET 500W	PASS	
4	ATX Power	Seasonic SS-330HB 330W	PASS	
5	ATX Power	Seventeam ST-300WAP 300W	PASS	
6	ATX Power	Seventeam ST-400EAG-05F 400W	PASS	
7	ATX Power	Enhance ENP-2222D 220W	PASS	
8	ATX Power	Enhance ENH-0630A 300W	PASS	
9	ATX Power	AcBel PC7008 380W	PASS	

2.13 Mini-PCI Card

Motherboard	PCI Express mini card	Result	Remark
LV-67C	MP-954	PASS	
	MP-840	PASS	Only H.264
	MP-323	PASS	
	MP-541D	PASS	
	MP-541D2	PASS	BIOS Ver:1.5
	MP-878D	PASS	
	MP-878D2	PASS	
	MP-60102	PASS	
	MP-6100E	PASS	
	MP-6421	NO SUPPLY	
	MP-6802T	PASS	
	MP-6816D4	PASS	
	MP-6816D8	PASS	
	MP-Z9S	NO SUPPLY	

2.14 PCI Express mini card

Motherboard	PCI Express mini card	Remark
LV-67C	MPX-210D	PASS
	MPX-210D2	PASS
	MPX-574D	PASS
	MPX-574D2	PASS
	MPX-643	PASS
	MPX-750	NO SUPPLY
	MPX-827	PASS
	MPX-885	PASS
	MPX-954	PASS
	MPX-954E	PASS
	MPX-1040	PASS
	MPX-2515	NO SUPPLY
	MPX-3132	PASS
	MPX-5201	PASS
	MPX-6864	PASS
	MPX-7202	PASS
	MPX-7767	PASS
	MPX-9125	PASS
	MPX-24794G2	PASS
	MPX-25858	PASS
MPX-TP4R	PASS	
MPX-SDVOD	NO SUPPLY	
MPX-SDVOX	NO SUPPLY	

3. Environmental test

3.1 Boot Up Test

Hardware Device list:

System Board	LV-67C
CPU	Intel(R) Pentium(R) CPU G6950 2.8GHz
Memory	A-DATA DDR3 1333 1GB (AD30908CBD-15HG)
HDD	Hitachi HDT722525DLA380 250GB

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

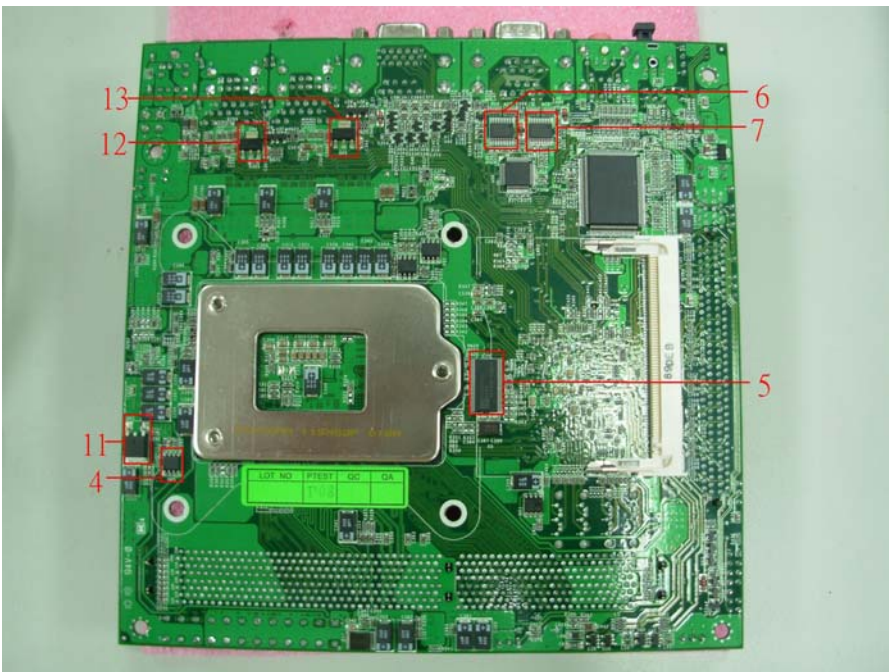
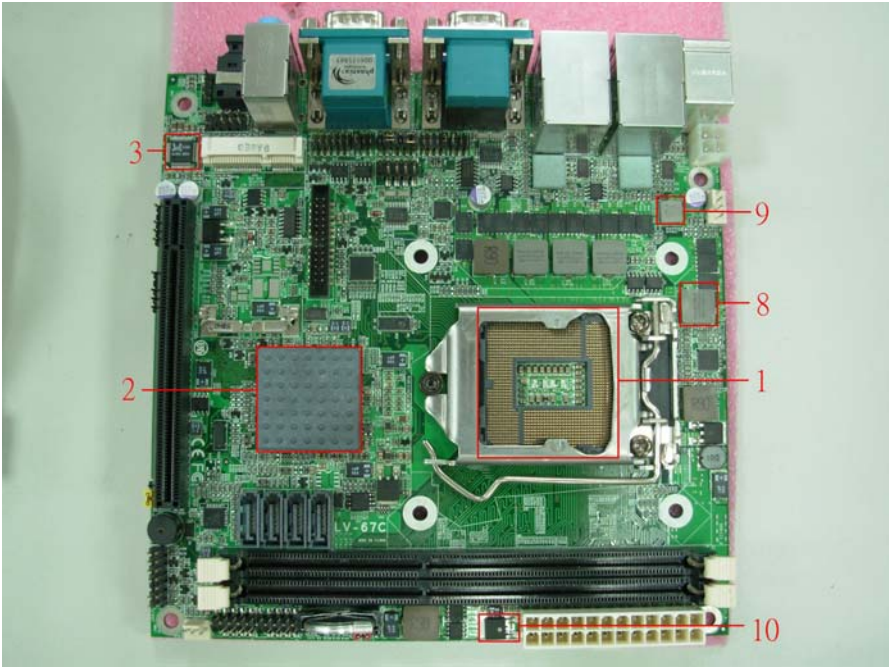
3.2 Thermal measurements at various points on the board

Test Environment :

CPU	Intel(R) Core(TM) i3 CPU 540 3.06GHz
Memory	Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR)
HDD	Hitachi HDT722525DLA380 250GB
Power	COOLER MASTER RS-390-PMSR-A3
Operating System	Windows XP
Test Program	Burnin 5.3

Test Result:

Item	Environmental temperature	27.2°C
1	CPU	45°C
2	PCH(ICHQ57)	34.7°C
3	U24(ICHALC888)	42.3°C
4	U25(ISWISL6612ACBZ)	41.9°C
5	U34(ICS9LP505)	43°C
6	U35(ITS75232S)	47.4°C
7	U37(ITS75232S)	47.3°C
8	L4(LLC0.36UH/0445)	35.7°C
9	L11(LLC0.47UH/0.63T)	35.6°C
10	Q14(TMSTRFR3709ZTRPBF)	35°C
11	Q43(TMSTRFR3709ZTRPBF)	34.3°C
12	Q44(ICBCP69)	36°C
13	Q45(ICBCP69)	35.8°C



4. Reliability Test

4.1 Power Consumption Test

1. Test Environment:

Motherboard	LV-67C
CPU	Intel(R) Core(TM) i3 CPU 540 3.06GHz
Memory	Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR)
HDD	Hitachi HDT722525DLA380 250GB

Power Supply : COOLER MASTER RS-390-PMSR-A3

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003 + PRIME 95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	3.42	41.04	4.2	50.4
5V	1.73	8.65	2.87	14.35
3.3V	4.39	14.487	3.59	11.847
5VSB	0.548	2.74	0.007	0.035

2.Test Environment:

Motherboard	LV-67C
CPU	Intel(R) Core(TM) i5 CPU 750 2.67GHz
Memory	Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR)
HDD	Hitachi HDT722525DLA380 250GB
PCIE 16x Card	DLEADTEK PX9500GT

Power Supply : COOLER MASTER RS-390-PMSR-A3

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003 + PRIME 95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	5.82	69.84	8.72	104.64
5V	2.43	12.15	2.89	14.45
3.3V	5.45	17.985	6.81	22.473
5VSB	0.609	3.045	0.007	0.035

3.Test Environment:

Motherboard	LV-67C
CPU	Intel(R) Core(TM) i7 CPU 860 2.8GHz
Memory	Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR)
HDD	Hitachi HDT722525DLA380 250GB
PCIE 16x Card	DLEADTEK PX9500GT

Power Supply : COOLER MASTER RS-390-PMSR-A3

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003 + PRIME 95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	6.06	72.72	9.33	111.96
5V	2.43	12.15	3	15
3.3V	6.1	20.13	8.36	27.588
5VSB	0.591	2.955	0.011	0.055

4. Test Environment:

Motherboard	LV-67C
CPU	Intel(R) Pentium(R) CPU G6950 2.8GHz
Memory	Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR)
HDD	Hitachi HDT722525DLA380 250GB

Power Supply : COOLER MASTER RS-390-PMSR-A3

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003 + PRIME 95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	2.82	33.84	3.13	37.56
5V	1.78	8.9	2.63	13.15
3.3V	4.36	14.388	4.79	15.807
5VSB	0.659	3.295	0.005	0.025

5. Performance Test

5.1 Business Win Stone 2002

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
Business Win stone2002	Intel(R) Core(TM) i3 CPU 540 3.06GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB	PASS	47.3 47.5 46.8 46.3
Business Win stone2002	Intel(R) Core(TM) i5 CPU 750 2.67GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB	PASS	44.3 45.3 45 44.6
Business Win stone2002	Intel(R) Core(TM) i7 CPU 860 2.8GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB	PASS	44.8 43 43.7 43.7

<p>Business Win stone2002</p>	<p>Intel(R) Pentium(R) CPU G6950 2.8GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB</p>	<p>PASS</p>	<p>44.5 45.2 45.6 45.5</p>
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5.2 Business Win Stone 2004

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
<p>Business Win stone2004</p>	<p>Intel(R) Core(TM) i3 CPU 540 3.06GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB</p>	<p>PASS</p>	<p>28.3 26.7 28 28.1</p>
<p>Business Win stone2004</p>	<p>Intel(R) Core(TM) i5 CPU 750 2.67GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB</p>	<p>PASS</p>	<p>12.4 10.8 12.3 12.7</p>
<p>Business Win stone2004</p>	<p>Intel(R) Core(TM) i7 CPU 860 2.8GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB</p>	<p>PASS</p>	<p>28.2 28.6 26.2 28.5</p>

<p>Business Win stone2004</p>	<p>Intel(R) Pentium(R) CPU G6950 2.8GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB</p>	<p>PASS</p>	<p>25.6 26.6 24.5 21.8</p>
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5.3 Content Creation Winstone 2004

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
<p>Content Creation Winstone 2004</p>	<p>Intel(R) Core(TM) i3 CPU 540 3.06GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB</p>	<p>PASS</p>	<p>54.2 54.4 54.4 54.1</p>
<p>Content Creation Winstone 2004</p>	<p>Intel(R) Core(TM) i5 CPU 750 2.67GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB</p>	<p>PASS</p>	<p>38.7 39 38.6 38.8</p>
<p>Content Creation Winstone 2004</p>	<p>Intel(R) Core(TM) i7 CPU 860 2.8GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB</p>	<p>PASS</p>	<p>51.2 51.9 52 51.6</p>

<p>Content Creation Winstone 2004</p>	<p>Intel(R) Pentium(R) CPU G6950 2.8GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB</p>	<p>PASS</p>	<p>49.9 49.8 49.6 50</p>
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5.4 3D MARK(2001、2003、2005)

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Scores	Intel(R) Core(TM) i3 CPU 540 3.06GHz Kingston DDR3 1066 4GB	PASS	13948
3DMARK2003 Scores	(K4B2G0846B-HCFB) Kingston DDR3 1066 4GB	PASS	4220
3DMARK2005 Scores	(H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB	PASS	3323

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Scores	Intel(R) Core(TM) i5 CPU 750 2.67GHz Kingston DDR3 1066 4GB	PASS	36148
3DMARK2003 Scores	(K4B2G0846B-HCFB) Kingston DDR3 1066 4GB	PASS	18311
3DMARK2005 Scores	(H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB	PASS	12349

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Scores	Intel(R) Core(TM) i7 CPU 860 2.8GHz Kingston DDR3 1066 4GB	PASS	37502
3DMARK2003 Scores	(K4B2G0846B-HCFB) Kingston DDR3 1066 4GB	PASS	10097
3DMARK2005 Scores	(H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB	PASS	12380

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
3DMARK2001 Scores	Intel(R) Pentium(R) CPU G6950 2.8GHz Kingston DDR3 1066 4GB	PASS	11103
3DMARK2003 Scores	(K4B2G0846B-HCFB) Kingston DDR3 1066 4GB	PASS	3607
3DMARK2005 Scores	(H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB	PASS	2534

5.5 3D MARK2006

Windows XP SP2

Item	WEIGHTED SUITE	Test Environment	Result	Remark
1	3DMARK Scores	Intel(R) Core(TM) i3 CPU 540 3.06GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB	PASS	2020
2	SM2.0 Scores		PASS	654
3	HDR/SM3.0 Scores		PASS	787
4	CPU Scores		PASS	2589

Windows XP SP2

Item	WEIGHTED SUITE	Test Environment	Result	Remark
1	3DMARK Scores	Intel(R) Core(TM) i5 CPU 750 2.67GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB	PASS	7887
2	SM2.0 Scores		PASS	3011
3	HDR/SM3.0 Scores		PASS	2984
4	CPU Scores		PASS	4488

Windows XP SP2

Item	WEIGHTED SUITE	Test Environment	Result	Remark
1	3DMARK Scores	Intel(R) Core(TM) i7 CPU 860 2.8GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB	PASS	7939
2	SM2.0 Scores		PASS	3014
3	HDR/SM3.0 Scores		PASS	2988
4	CPU Scores		PASS	4734

Windows XP SP2

Item	WEIGHTED SUITE	Test Environment	Result	Remark
1	3DMARK Scores	Intel(R) Pentium(R) CPU G6950 2.8GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB	PASS	1550
2	SM2.0 Scores		PASS	497
3	HDR/SM3.0 Scores		PASS	600
4	CPU Scores		PASS	2350

5.6 PC MARK2002

Test Environment
Intel(R) Core(TM) i3 CPU 540 3.06GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	CPU test Scores	PASS	11246
2	Memory test Scores	PASS	40095
3	HDD test Scores	PASS	1439

Test Environment
Intel(R) Core(TM) i5 CPU 750 2.67GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	CPU test Scores	PASS	10040
2	Memory test Scores	PASS	36878
3	HDD test Scores	PASS	1459

Test Environment
Intel(R) Core(TM) i7 CPU 860 2.8GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	CPU test Scores	PASS	10545
2	Memory test Scores	PASS	38890
3	HDD test Scores	PASS	1517

Test Environment
I Intel(R) Pentium(R) CPU G6950 2.8GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	CPU test Scores	PASS	10327
2	Memory test Scores	PASS	36033
3	HDD test Scores	PASS	1427

5.7 PC MARK2004

Test Environment
Intel(R) Core(TM) i3 CPU 540 3.06GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB

Windows XP PS2

Item	WEIGHTED SUITE	Result	Remark
1	PCMark Scores	PASS	N/A
2	CPU test Scores	PASS	N/A
3	Memory test Scores	PASS	9487
4	Graphic test Scores	PASS	3111
5	HDD test Scores	PASS	5191
Test Environment			
Intel(R) Core(TM) i5 CPU 750 2.67GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB			

Windows XP PS2

Item	WEIGHTED SUITE	Result	Remark
1	PCMark Scores	PASS	N/A
2	CPU test Scores	PASS	N/A
3	Memory test Scores	PASS	10500
4	Graphic test Scores	PASS	9667
5	HDD test Scores	PASS	5189

Test Environment

Intel(R) Core(TM) i7 CPU 860 2.8GHz
Kingston DDR3 1066 4GB (K4B2G0846B-HCFB)
Kingston DDR3 1066 4GB (H5TQ2G83AFR)
Hitachi HDT722525DLA380 250GB

Windows XP PS2

Item	WEIGHTED SUITE	Result	Remark
1	PCMark Scores	PASS	N/A
2	CPU test Scores	PASS	N/A
3	Memory test Scores	PASS	10965
4	Graphic test Scores	PASS	9667
5	HDD test Scores	PASS	5205

Test Environment

Intel(R) Pentium(R) CPU G6950 2.8GHz
Kingston DDR3 1066 4GB (K4B2G0846B-HCFB)
Kingston DDR3 1066 4GB (H5TQ2G83AFR)
Hitachi HDT722525DLA380 250GB

Windows XP PS2

Item	WEIGHTED SUITE	Result	Remark
1	PCMark Scores	PASS	N/A
2	CPU test Scores	PASS	N/A
3	Memory test Scores	PASS	7208
4	Graphic test Scores	PASS	2344
5	HDD test Scores	PASS	5167

5.8 PC MARK2005

Test Environment
Intel(R) Core(TM) i3 CPU 540 3.06GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	System test Scores	PASS	5743
2	CPU test Scores	PASS	7812
3	Memory test Scores	PASS	6427
4	Graphic test Scores	PASS	3003
5	HDD test Scores	PASS	5008

Test Environment
Intel(R) Core(TM) i5 CPU 750 2.67GHz Kingston DDR3 1066 4GB (K4B2G0846B-HCFB) Kingston DDR3 1066 4GB (H5TQ2G83AFR) Hitachi HDT722525DLA380 250GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	System test Scores	PASS	7379
2	CPU test Scores	PASS	8356
3	Memory test Scores	PASS	8839
4	Graphic test Scores	PASS	7359
5	HDD test Scores	PASS	5361

Test Environment

Intel(R) Core(TM) i7 CPU 860 2.8GHz
Kingston DDR3 1066 4GB (K4B2G0846B-HCFB)
Kingston DDR3 1066 4GB (H5TQ2G83AFR)
Hitachi HDT722525DLA380 250GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	System test Scores	PASS	7960
2	CPU test Scores	PASS	8785
3	Memory test Scores	PASS	9166
4	Graphic test Scores	PASS	6442
5	HDD test Scores	PASS	5257

Test Environment

Intel(R) Pentium(R) CPU G6950 2.8GHz
Kingston DDR3 1066 4GB (K4B2G0846B-HCFB)
Kingston DDR3 1066 4GB (H5TQ2G83AFR)
Hitachi HDT722525DLA380 250GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	System test Scores	PASS	N/A
2	CPU test Scores	PASS	6925
3	Memory test Scores	PASS	6000
4	Graphic test Scores	PASS	2619
5	HDD test Scores	PASS	N/A

Test Environment
Intel(R) Core(TM) i3 CPU 540 3.06GHz Transcend DDR3 1333 2GB (K4B1G0846D) Hitachi HDT722525DLA380 250GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	System test Scores	PASS	5791
2	CPU test Scores	PASS	7620
3	Memory test Scores	PASS	6638
4	Graphic test Scores	PASS	3130
5	HDD test Scores	PASS	5142

Test Environment
Intel(R) Core(TM) i3 CPU 540 3.06GHz A-DATA DDR3 1333 1GB (AD30908CBD-15HG) Hitachi HDT722525DLA380 250GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	System test Scores	PASS	5753
2	CPU test Scores	PASS	7610
3	Memory test Scores	PASS	6639
4	Graphic test Scores	PASS	3046
5	HDD test Scores	PASS	5131

Test Environment
Intel(R) Core(TM) i3 CPU 540 3.06GHz INNODISK DDR3 1333 2GB (H5TQ1G8313BFR) Hitachi HDT722525DLA380 250GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	System test Scores	PASS	5818
2	CPU test Scores	PASS	7588
3	Memory test Scores	PASS	6654
4	Graphic test Scores	PASS	3133
5	HDD test Scores	PASS	5143

Test Environment
Intel(R) Core(TM) i3 CPU 540 3.06GHz PQI DDR3 1333 1GB (H5TQ1G83BFR) Hitachi HDT722525DLA380 250GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	System test Scores	PASS	5721
2	CPU test Scores	PASS	7576
3	Memory test Scores	PASS	6638
4	Graphic test Scores	PASS	3065
5	HDD test Scores	PASS	5162

Test Environment
Intel(R) Core(TM) i3 CPU 540 3.06GHz PQI DDR3 1333 2GB (H5TQ1G83BFR) Hitachi HDT722525DLA380 250GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	System test Scores	PASS	5807
2	CPU test Scores	PASS	7625
3	Memory test Scores	PASS	6657
4	Graphic test Scores	PASS	3128
5	HDD test Scores	PASS	5149

Test Environment
Intel(R) Core(TM) i3 CPU 540 3.06GHz PQI DDR3 1333 4GB (H5TQ1G83BFR) Hitachi HDT722525DLA380 250GB

Windows XP SP2

Item	WEIGHTED SUITE	Result	Remark
1	System test Scores	PASS	5841
2	CPU test Scores	PASS	7595
3	Memory test Scores	PASS	6667
4	Graphic test Scores	PASS	3115
5	HDD test Scores	PASS	5145

5.9 Storage Performance

5.9.1 HDD

Test environment:

OS Windows XP professional SP2

Program (HD Tune)

HDD MODEL	INTERFACE	capacity	Average	Burst Rate	Access time
Hitachi HTS543216L9A300	SATA	160 GB	42.3 MB/sec	107.1 MB/sec	18.0 ms
Seagate ST3160815AS	SATA	160 GB	58.7 MB/sec	124.8 MB/sec	15.6 ms
Hitachi HDST722525DLA380	SATA	250 GB	37.3 MB/sec	95.8 MB/sec	14.7 ms
Western Digital WD2500KS-00MJB0	SATA	250 GB	50.7 MB/sec	96.5 MB/sec	13.6 ms
Western Digital WD10EADS-00L5B1	SATA	1000 GB	66.3 MB/sec	117.9 MB/sec	14.1 ms
TDK LoR Trans-Iit Drive	USB	4 GB	14.9 MB/sec	15.6 MB/sec	1.1 ms
Apacer USB FLASH DRIVE	USB	515 MB	8.5 MB/sec	4.5 MB/sec	2.0 ms

5.9.2 DVD-ROM

Test environment:

OS Windows XP professional SP2

Program (NERO)

CD-ROM MODEL	INTERFACE	Average speed	Full Read	Burst Rate	CD
ASUS DVD DRW-1814BLT	SATA	30.07 x	166 ms	39 MB/s	52 X CD-R
PIONEER DVD DVR-212BK	SATA	30.27 x	187 ms	38 MB/s	52 X CD-R
LITEON DVD SOSC-2485KX	USB	14.53 x	199 ms	19 MB/s	52X CD-R
LITEON DVD SOSW-833SX	USB	16.56 x	258 ms	19 MB/s	52X CD-R
MATSHITA BD-CMB UJ-120	USB	18.38 x	307 ms	18 MB/s	52X CD-R

5.10 Vibration Test

Motherboard	LV-67C_A			
Test Equipment	VS-5060L			
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