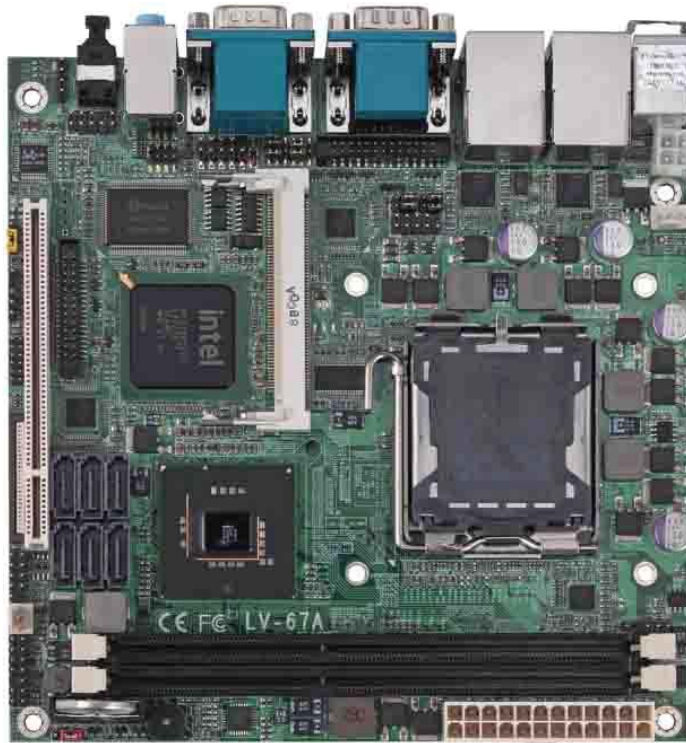


# Product Test Report



<b>Product Name</b>	<b>LV-67A</b>
<b>Product Version</b>	<b>A</b>
<b>Issued Date</b>	<b>7.Sep.2009</b>
<b>Report Edition</b>	<b>1.0</b>
<b>BIOS Version</b>	<b>1.1</b>
<b>Testing Engineer</b>	<b>RICK</b>
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<b>REVISION HISTORY</b>			
<b>DATE</b>	<b>REVISION NO.</b>	<b>PAGE</b>	<b>DESCRIPTONS</b>
<b>7.Sep.2009</b>	<b>Ver. 1.0</b>	<b>54</b>	<b>New release</b>

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# 1.Function test

## 1.1Hardware function

### Base Function Test

Item	Description	Result
1	Power Button	PASS
2	Reset	PASS
3	Power LED	PASS
4	HDD LED	PASS
5	SATA 1/2/3/4/5/6	PASS
6	USB 1/2/3/4/5/6/7/8	PASS
7	DDRIII 1/2	PASS
8	Floppy	PASS
9	COM 1/2/3/4	PASS
10	VGA Port	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	PCI	PASS
19	Mini PCI	PASS
20	LAN 1/2	PASS
21	IrDA	PASS
22	DVI	PASS
23	SPDIF	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	ACPI Suspend Type	PASS	
9	Halt On	PASS	
10	Onboard Serial Port	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	Resume by Alarm	PASS	
18	Watch Dog Timer Select	PASS	
19	Init Display First	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	

<b>28</b>	<b>CPU Warning Temperature</b>	PASS	
<b>29</b>	<b>Shutdown Temperature</b>	PASS	
<b>30</b>	<b>USB KB Wake Up by S3</b>	PASS	
<b>31</b>	<b>Smart CPUFAN Temp.</b>	PASS	



## 1.3 Driver

### CD Edition : IPCi 2-1.3

#### 1.Windows XP SP2 Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.0.0.1008
2	VGA Driver	PASS	6.14.0.5009
3	Audio Driver	PASS	5.10.0.5464
4	LAN Driver	PASS	10.3.49.0

#### 2. Windows Server 2003 Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.0.0.1008
2	Audio Driver	PASS	5.10.0.5464
3	LAN Driver	PASS	10.3.49.0

#### 3. Windows Vista 32 bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.0.0.1008
2	VGA Driver	PASS	7.15.10.1518
3	Audio Driver	PASS	6.0.1.5473
4	LAN Driver	PASS	10.3.49.0

#### 4. Windows Vista 64 bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.0.0.1008
2	VGA Driver	PASS	7.15.10.1688
3	Audio Driver	PASS	6.0.1.5473
4	LAN Driver	PASS	10.3.49.0

## 2. Compatibility test

### 2.1 CPU Test

Test environment:

OS Windows XP professional SP2

Test program : PC MARK 2005

<b>Spec</b>	<b>CPU Speed</b>	<b>Family</b>	<b>Processor</b>	<b>FSB</b>	<b>L2 Size</b>	<b>Result</b>
<b><u>SL9XP</u></b>	1.60 GHz	Celeron	420	800MHz	512KB	PASS
<b><u>SL9XL</u></b>	2.00 GHz	Celeron	440	800MHz	512KB	PASS
<b><u>SLAQZ</u></b>	2.20 GHz	Celeron	E1500	800 MHz	512KB	PASS
<b><u>SL9TA</u></b>	1.86 GHz	Core 2 Duo	E6300	1066MHz	2 MB	PASS
<b><u>SLA9V</u></b>	2.66 GHz	Core 2 Duo	E6750	1333MHz	4 MB	PASS
<b><u>SLAPL</u></b>	3.00 GHz	Core 2 Duo	E8400	1333MHz	6 MB	PASS
<b><u>SLACR</u></b>	2.40 GHz	Core 2 Quad	Q6600	1066MHz	8 MB	PASS
<b><u>SLAWE</u></b>	2.50 GHz	Core 2 Quad	Q9300	1333MHz	6 MB	PASS

## 2.2 Operation System Test

Item	Description	Result	Remark
1	Windows Vista 64 bit	PASS	
2	Windows Vista 32 bit	PASS	
3	Windows Server 2008	PASS	
4	Windows XP SP2	PASS	
5	Windows Server 2003	PASS	
6	Windows 2000 SP4	PASS	
7	Fedora Code 10 (Kernel 2.6.27.5-117.fc10.i686)	PASS	

## 2.3 Memory Test

Test environment:

OS Windows XP professional SP2

Test program : PC MARK 2005

Manufacturer	Chip	Frequency	Capacity Mbytes	Result
A-DATA	K4B1G0846D	DDR3 1333	2 GB	PASS
A-DATA	AD309080BD-151G	DDR3 1333	1 GB	PASS
Transcend	K4B1G0846D	DDR3 1066	2 GB	PASS
A-DATA	AD30908CBD-151G	DDR3 1333	2 GB	PASS

### Supported DIMM Module Configurations

Memory Type	Raw Card Version	DIMM Capacity	DRAM Device Technology	DRAM Organization	# of DRAM Devices	# of Physical Device Ranks	# of Row/ Col Address Bits	# of Banks Inside DRAM	Page Size
DDR3 800 and 1066	A	512 MB	512Mb	64M X 8	8	1	13/10	8	8K
		1 GB	1Gb	128M X 8	8	1	14/10	8	8K
	B	1 GB	512Mb	64M X 8	16	2	13/10	8	8K
		2 GB	1Gb	128M X 8	16	2	14/10	8	8K
	C	256 MB	512Mb	32M X 16	4	1	12/10	8	8K
		512 MB	1Gb	64M X 16	4	1	13/10	8	8K
	F	512 MB	512Mb	32M X 16	8	2	12/10	8	8K
		1 GB	1Gb	64M X 16	8	2	13/10	8	8K

## 2.4 VGA Graphic Quality Test

Test environment:

OS Windows XP professional SP2

Driver version : 6.14.0.5009

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*960	16 /32bit	PASS	
1280*1024	16 /32bit	PASS	
1400*1050	16 /32bit	PASS	
1600*900	16 /32bit	PASS	
1680*1050	16 /32bit	PASS	

## 2.5 Audio

Test environment:

OS Windows XP professional SP2

Driver version : 5.10.0.5464

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 : 5.10.0.5464

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 : 6.0.1.5473

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 : 6.0.1.5473**

<b>Item</b>	<b>Description</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>2 CH</b>	PASS	
<b>2</b>	<b>Microphone</b>	PASS	
<b>3</b>	<b>LINE</b>	PASS	
<b>4</b>	<b>CDIN</b>	PASS	
<b>5</b>	<b>SPDIF</b>	PASS	

## 2.6 HDD Test

Test environment:

OS Windows XP professional SP2

<b>MODEL</b>	<b>INTERFACE</b>	<b>capacity</b>	<b>Size Detect</b>	<b>Data Transfer</b>
Western Digital WD800JD-00LSA0	SATA	80 GB	PASS	PASS
Western Digital WD800JD-75MSA3	SATA	80 GB	PASS	PASS
Hitachi HDS728080PLA380	SATA	82.3 GB	PASS	PASS
Hitachi HDT722525DLA380	SATA	250 GB	PASS	PASS
Seagate ST3160815AS	SATA	160 GB	PASS	PASS
Western Digital WD6400H1Q-00	USB	640 GB	PASS	PASS



## 2.7 CD-ROM Test

Test environment:

OS Windows XP professional SP2

<b>MODEL</b>	<b>INTERFACE</b>	<b>Detect</b>	<b>Data Transfer</b>	<b>PLAY DVD</b>
<b>ASUS DVD DRW-1814BLT</b>	<b>SATA</b>	PASS	PASS	PASS
<b>PIONEER DVD DVR-212BK</b>	<b>SATA</b>	PASS	PASS	PASS
<b>LG DVD GSA-H62L</b>	<b>SATA</b>	PASS	PASS	PASS
<b>LITEON DVD SOSC-2485KX</b>	<b>USB</b>	PASS	PASS	PASS
<b>LITEON DVD SOSW-833SX</b>	<b>USB</b>	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 2000 SP4

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 Server 2008

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	RS-422 & RS-485	PASS	
3	PC Check	PASS	
4	TS	PASS	

### 2. Windows 2000 SP4

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

### 3. 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	

### 4. 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	

#### 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 Server 2008

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

## 2.10 Floppy Drive Test

Floppy	Floppy Drive Detect	Floppy Data Transfer
TEAC FD-05HG	PASS	PASS
MITSUMI D353FUE	PASS	PASS
MITSUMI D353GUE	PASS	PASS

## 2.11 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 2000 SP4

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

### 3. Windows Server 2003

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

### 4. Windows XP SP2

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

**5. Windows Vista 32 bit**

<b>Item</b>	<b>Description</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>Keyboard LED Status Test</b>	PASS	
<b>2</b>	<b>Keyboard Typing Test</b>	PASS	
<b>3</b>	<b>Mouse Detect Test</b>	PASS	

**6. Windows Vista 64 bit**

<b>Item</b>	<b>Description</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>Keyboard LED Status Test</b>	PASS	
<b>2</b>	<b>Keyboard Typing Test</b>	PASS	
<b>3</b>	<b>Mouse Detect Test</b>	PASS	

**7. Windows Server 2008**

<b>Item</b>	<b>Description</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>Keyboard LED Status Test</b>	PASS	
<b>2</b>	<b>Keyboard Typing Test</b>	PASS	
<b>3</b>	<b>Mouse Detect Test</b>	PASS	



## 2.12 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	

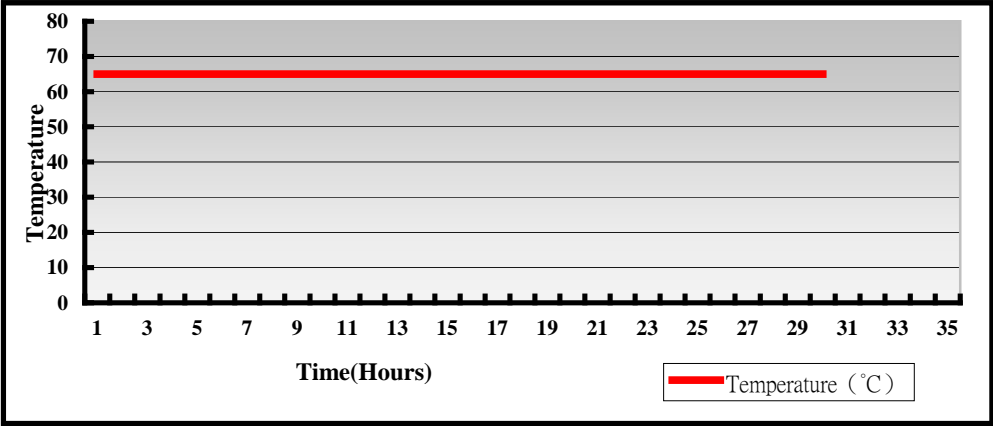
### 2.13 Power Supply Test

Item	TYPE	Description	Result	Remark
1	ATX Power	Snake pk-350W 350W	PASS	
2	ATX Power	COOLER MASTER RS-390-PMSR-A3 390W	PASS	
3	ATX Power	CHANNEL WELL TECHNOLOGY CWT-250ATX 250W	PASS	
4	ATX Power	CHANNEL WELL TECHNOLOGY CO.,LTD. CWT-300BS 300W	PASS	
5	ATX Power	Seasonic SS-380HB 380W	PASS	

### 3. Environmental test

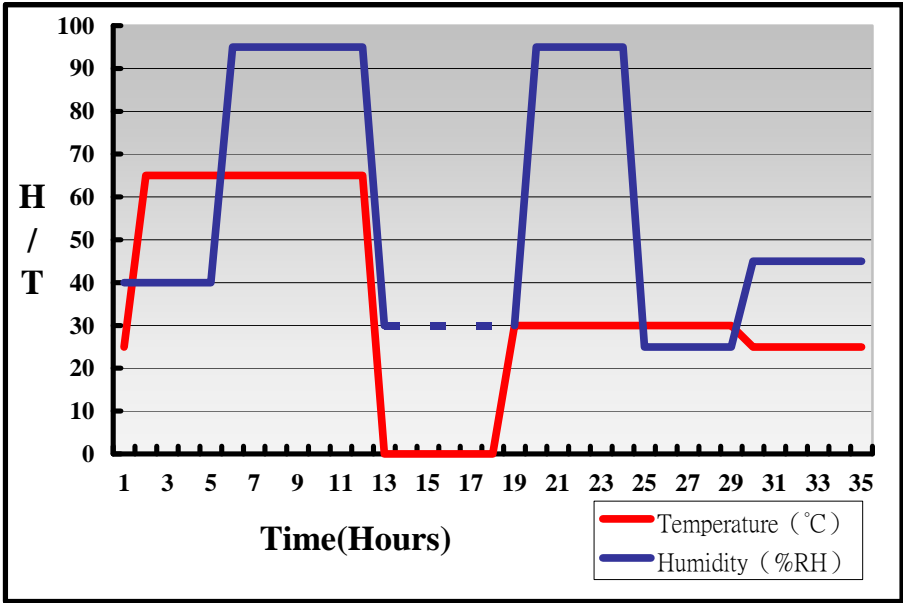
#### 3.1 Temperature Test

System Board	LV-67A
CPU	Intel(R) Celeron(R) Processor 440 2.00GHz
Memory	Transcend DDR3 1066 2GB(K4B1G0846D)*2
Operating OS	Windows XP
Test Equipment	GIANT FORCE (GTH-150-60-CP-AR)
Test Program	3DMark 2003



**Hardware Device list:**

System Board	LV-67A
CPU	Intel(R) Celeron(R) Processor 440 2.00GHz
Memory	Transcend DDR3 1066 2GB(K4B1G0846D)*2
Operating OS	Windows XP
Test Equipment	GIANT FORCE (GTH-150-60-CP-AR)
Test Program	3DMark 2003



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

**Boot Up Test:****Hardware Device list:**

<b>System Board</b>	<b>LV-67A</b>
<b>CPU</b>	<b>Intel(R) Celeron(R) Processor 440 2.00GHz</b>
<b>Memory</b>	<b>Transcend DDR3 1066 2GB(K4B1G0846D)*2</b>
<b>HDD</b>	<b>Western Digital WD800JD-75MSA3 80GB</b>

<b>Temperature</b>	<b>Result</b>	<b>Remark</b>
<b>-20°C</b>	<b>PASS</b>	<b>50 Times</b>
<b>65°C</b>	<b>PASS</b>	<b>50 Times</b>

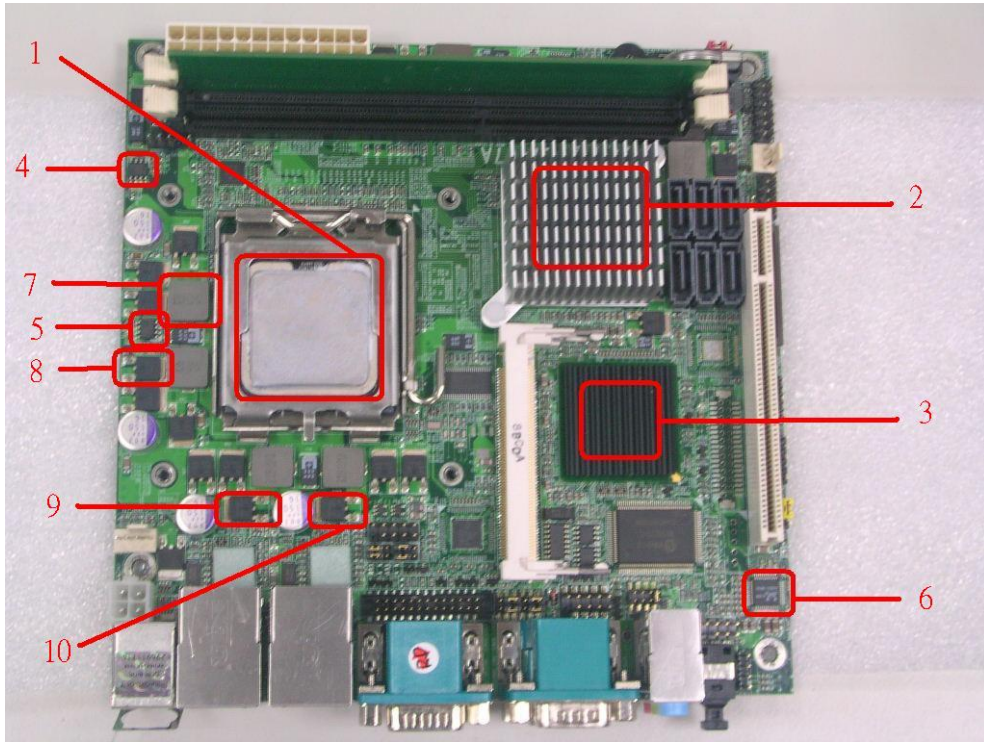
### 3.2 Thermal measurements at various points on the board

Test Environment :

<b>CPU</b>	Intel(R) Core(TM)2 Duo E6300 1.86GHz
<b>Memory</b>	A-DATA DDR3 1333 1GB (AD309080BD-151G)
<b>HDD</b>	Western Digital WD800JD-75MSA3 80GB
<b>Power</b>	COOLER MASTER RS-390-PMSR-A3
<b>Operating System</b>	Windows XP
<b>Test Program</b>	Burnin 5.3

Test Result:

<b>Item</b>	<b>Environmental temperature</b>	
		27.1°C
<b>1</b>	<b>CPU</b>	43°C
<b>2</b>	<b>Q45(Northbridge)</b>	42.6°C
<b>3</b>	<b>ICH10DO(Southbridge)</b>	43.9°C
<b>4</b>	<b>U1(ISWHIP6601CB)</b>	48°C
<b>5</b>	<b>U2(ISWHIP6601CB)</b>	52.5°C
<b>6</b>	<b>U21(ICHALC888)</b>	47.4°C
<b>7</b>	<b>D12(TDIBAT54C)</b>	45.7°C
<b>8</b>	<b>DQ2(TMSTRFR3709ZTRPBF)</b>	44.5°C
<b>9</b>	<b>DQ9(TMSTRFR3709ZTRPBF)</b>	46.5°C
<b>10</b>	<b>DQ10(TMSTRFR3709ZTRPBF)</b>	47.1°C



## 4. Reliability Test

### 4.1 Power Consumption Test

#### 1. Test Environment:

<b>Motherboard</b>	LV-67A
<b>CPU</b>	Intel(R) Core(TM)2 Quad Q6600 2.40GHz
<b>Memory</b>	A-DATA DDR3 1066 2G (AD30908CBD-151G)*2

#### Power Supply : snake PK-350W

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
<b>12V</b>	4.11	49.32	4.26	51.12
<b>5V</b>	1.89	9.45	2.02	10.1
<b>3.3V</b>	2.8	9.24	5.02	16.566
<b>5VSB</b>	0.222	1.11	0.005	0.025



## 2.Test Environment:

<b>Motherboard</b>	LV-67A
<b>CPU</b>	Intel(R) Core(TM)2 Duo E6750 2.66GHz
<b>Memory</b>	A-DATA DDR3 1066 2G (AD30908CBD-151G)*2

### Power Supply : snake PK-350W

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
<b>12V</b>	3.83	45.96	4.26	51.12
<b>5V</b>	2.03	10.15	2.03	10.15
<b>3.3V</b>	2.88	9.504	5.21	17.193
<b>5VSB</b>	0.226	1.13	0.006	0.03

### 3.Test Environment:

<b>Motherboard</b>	LV-67A
<b>CPU</b>	Intel(R) Core(TM)2 Quad Q9300 2.87GHz
<b>Memory</b>	A-DATA DDR3 1066 2G (AD30908CBD-151G)*2

#### Power Supply : snake PK-350W

Voltage	MS-DOS Boot up		Windows XP SP2 3DMARK 2003	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
<b>12V</b>	3.03	36.36	3.19	38.28
<b>5V</b>	2.19	10.95	2.08	10.4
<b>3.3V</b>	3.01	9.933	5.32	17.556
<b>5VSB</b>	0.202	1.01	0.002	0.01

## 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)2 Duo E6300 1.86GHz DATA DDR3 1333 1GB (AD309080BD-151G) Western Digital WD800JD-75MSA3 80GB	PASS	35.9 34 34.8 33.6
Business Win stone2002	Intel(R) Celeron(R) Processor 440 2.00GHz DATA DDR3 1333 1GB (AD309080BD-151G) Western Digital WD800JD-75MSA3 80GB	PASS	35.7 34.8 35.3 34.5
Business Win stone2002	Intel(R) Core(TM)2 Quad Q6600 2.40GHz DATA DDR3 1333 1GB (AD309080BD-151G) Western Digital WD800JD-75MSA3 80GB	PASS	40.3 42.2 41.9 41.7

## 5.2 Business Win Stone 2004

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
Business Win stone2004	Intel(R) Core(TM)2 Duo E6300 1.86GHz DATA DDR3 1333 1GB (AD309080BD-151G) Western Digital WD800JD-75MSA3 80GB	PASS	21.2 22.1 21.5 21.9
Business Win stone2004	Intel(R) Celeron(R) Processor 440 2.00GHz DATA DDR3 1333 1GB (AD309080BD-151G) Western Digital WD800JD-75MSA3 80GB	PASS	20.8 19.8 20.1 19.8
Business Win stone2004	Intel(R) Core(TM)2 Quad Q6600 2.40GHz DATA DDR3 1333 1GB (AD309080BD-151G) Western Digital WD800JD-75MSA3 80GB	PASS	24.3 19.1 24 24.4

### 5.3 Content Creation Winstone 2004

Windows XP SP2

WEIGHTED SUITE	Test Environment	Result	Remark
<p><b>Content Creation Winstone 2004</b></p>	<p><b>Intel(R) Core(TM)2 Duo E6300 1.86GHz DATA DDR3 1333 1GB (AD309080BD-151G) Western Digital WD800JD-75MSA3 80GB</b></p>	<p>PASS</p>	<p>33.4 34.1 34.1 34.3</p>
<p><b>Content Creation Winstone 2004</b></p>	<p><b>Intel(R) Celeron(R) Processor 440 2.00GHz DATA DDR3 1333 1GB (AD309080BD-151G) Western Digital WD800JD-75MSA3 80GB</b></p>	<p>PASS</p>	<p>31.6 31.1 31.5 31.6</p>
<p><b>Content Creation Winstone 2004</b></p>	<p><b>Intel(R) Core(TM)2 Quad Q6600 2.40GHz DATA DDR3 1333 1GB (AD309080BD-151G) Western Digital WD800JD-75MSA3 80GB</b></p>	<p>PASS</p>	<p>40.3 40.6 40.4 40.3</p>

## 5.4 3D MARK(2001、2003、2005)

### Windows XP SP2

<b>WEIGHTED SUITE</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
<b>3DMARK2001 Scores</b>	<b>Intel(R) Core(TM)2 Duo E6300 1.86GHz</b>	PASS	6702
<b>3DMARK2003 Scores</b>	<b>A-DATA DDR3 1333 2GB (K4B1G0846D) Western Digital WD800BB-00JHC0 80GB</b>	PASS	2343
<b>3DMARK2005 Scores</b>		PASS	1679

### Windows XP SP2

<b>WEIGHTED SUITE</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
<b>3DMARK2001 Scores</b>	<b>Intel(R) Celeron(R) Processor 440 2.00GHz</b>	PASS	4645
<b>3DMARK2003 Scores</b>	<b>DATA DDR3 1333 1GB (AD309080BD-151G) Western Digital WD800JD-75MSA3 80GB</b>	PASS	1855
<b>3DMARK2005 Scores</b>		PASS	1404

**Windows XP SP2**

<b>WEIGHTED SUITE</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
<b>3DMARK2001 Scores</b>	<b>Intel(R) Core(TM)2 Quad Q6600 2.40GHz</b>	PASS	6907
<b>3DMARK2003 Scores</b>	<b>DATA DDR3 1333 1GB (AD309080BD-151G)</b>	PASS	2362
<b>3DMARK2005 Scores</b>	<b>Western Digital WD800JD-75MSA3 80GB</b>	PASS	1642

**5.5 3D MARK2006**

**Windows XP SP2**

<b>Item</b>	<b>WEIGHTED SUITE</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
1	3DMARK Scores	<b>Intel(R) Core(TM)2 Duo E6300</b> <b>1.86GHz</b> <b>A-DATA DDR3 1333 2GB</b> <b>(K4B1G0846D)</b> <b>Western Digital</b> <b>WD800BB-00JHC0</b> <b>80GB</b>	PASS	1021
2	SM2.0 Scores		PASS	323
3	HDR/SM3.0 Scores		PASS	399
4	CPU Scores		PASS	1569

**Windows XP SP2**

<b>Item</b>	<b>WEIGHTED SUITE</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
1	3DMARK Scores	<b>Intel(R) Celeron(R) Processor 440</b> <b>2.00GHz</b> <b>DATA DDR3 1333 1GB</b> <b>(AD309080BD-151G)</b> <b>Western Digital WD800JD-75MSA3</b> <b>80GB</b>	PASS	778
2	SM2.0 Scores		PASS	254
3	HDR/SM3.0 Scores		PASS	305
4	CPU Scores		PASS	861



**Windows XP SP2**

<b>Item</b>	<b>WEIGHTED SUITE</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>3DMARK Scores</b>	<b>Intel(R) Core(TM)2 Quad Q6600 2.40GHz DATA DDR3 1333 1GB (AD309080BD-151G) Western Digital WD800JD-75MSA3 80GB</b>	PASS	1019
<b>2</b>	<b>SM2.0 Scores</b>		PASS	316
<b>3</b>	<b>HDR/SM3.0 Scores</b>		PASS	389
<b>4</b>	<b>CPU Scores</b>		PASS	3334

## 5.6 PC MARK2002

Test Environment
Intel(R) Core(TM)2 Duo E6300 1.86GHz A-DATA DDR3 1333 2GB (K4B1G0846D) Western Digital WD800BB-00JHC0 80GB

### Windows XP SP2

Item	WEIGHTED \$SUITE	Result	Remark
1	CPU test Scores	PASS	7359
2	Memory test Scores	PASS	16250
3	HDD test Scores	PASS	1430

Test Environment
Intel(R) Celeron(R) Processor 440 2.00GHz DATA DDR3 1333 1GB (AD309080BD-151G) Western Digital WD800JD-75MSA3 80GB

### Windows XP SP2

Item	WEIGHTED \$SUITE	Result	Remark
1	CPU test Scores	PASS	7800
2	Memory test Scores	PASS	10270
3	HDD test Scores	PASS	1422

<b>Test Environment</b>
<b>Intel(R) Core(TM)2 Quad Q6600 2.40GHz</b> <b>DATA DDR3 1333 1GB (AD309080BD-151G)</b> <b>Western Digital WD800JD-75MSA3 80GB</b>

**Windows XP SP2**

Item	WEIGHTED SUITE	Result	Remark
1	CPU test Scores	PASS	9452
2	Memory test Scores	PASS	30073
3	HDD test Scores	PASS	1346

**5.7 PC MARK2004**

<b>Test Environment</b>
<b>Intel(R) Core(TM)2 Duo E6300 1.86GHz</b> <b>A-DATA DDR3 1333 2GB (K4B1G0846D)</b> <b>Western Digital WD800BB-00JHC0 80GB</b>

**Windows XP PS2**

<b>Item</b>	<b>WEIGHTED \$SUITE</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>PCMark Scores</b>	PASS	6051
<b>2</b>	<b>CPU test Scores</b>	PASS	6319
<b>3</b>	<b>Memory test Scores</b>	PASS	5951
<b>4</b>	<b>Graphic test Scores</b>	PASS	1872
<b>5</b>	<b>HDD test Scores</b>	PASS	4449

<b>Test Environment</b>
<b>Intel(R) Celeron(R) Processor 440 2.00GHz</b> <b>DATA DDR3 1333 1GB (AD309080BD-151G)</b> <b>Western Digital WD800JD-75MSA3 80GB</b>

**Windows XP PS2**

<b>Item</b>	<b>WEIGHTED \$SUITE</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>PCMark Scores</b>	PASS	4150
<b>2</b>	<b>CPU test Scores</b>	PASS	4471
<b>3</b>	<b>Memory test Scores</b>	PASS	4987
<b>4</b>	<b>Graphic test Scores</b>	PASS	1603
<b>5</b>	<b>HDD test Scores</b>	PASS	4267

<b>Test Environment</b>
<b>Intel(R) Core(TM)2 Quad Q6600 2.40GHz</b> <b>DATA DDR3 1333 1GB (AD309080BD-151G)</b> <b>Western Digital WD800JD-75MSA3 80GB</b>

**Windows XP PS2**

<b>Item</b>	<b>WEIGHTED SUITE</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>PCMark Scores</b>	PASS	N/A
<b>2</b>	<b>CPU test Scores</b>	PASS	N/A
<b>3</b>	<b>Memory test Scores</b>	PASS	8347
<b>4</b>	<b>Graphic test Scores</b>	PASS	1857
<b>5</b>	<b>HDD test Scores</b>	PASS	4200

**5.8 PC MARK2005**

<b>Test Environment</b>
<b>Intel(R) Core(TM)2 Duo E6300 1.86GHz</b> <b>A-DATA DDR3 1333 2GB (K4B1G0846D)</b> <b>Western Digital WD800BB-00JHC0 80GB</b>

**Windows XP SP2**

Item	WEIGHTED \$SUITE	Result	Remark
1	<b>System test Scores</b>	PASS	4134
2	<b>CPU test Scores</b>	PASS	4798
3	<b>Memory test Scores</b>	PASS	4378
4	<b>Graphic test Scores</b>	PASS	1945
5	<b>HDD test Scores</b>	PASS	4691

<b>Test Environment</b>
<b>Intel(R) Core(TM)2 Duo E6300 1.86GHz</b> <b>A-DATA DDR3 1333 1GB (AD309080BD-151G)</b> <b>Western Digital WD800BB-00JHC0 80GB</b>

**Windows XP SP2**

Item	WEIGHTED \$SUITE	Result	Remark
1	<b>System test Scores</b>	PASS	4097
2	<b>CPU test Scores</b>	PASS	4799
3	<b>Memory test Scores</b>	PASS	4334
4	<b>Graphic test Scores</b>	PASS	1900
5	<b>HDD test Scores</b>	PASS	4681

<b>Test Environment</b>
<b>Intel(R) Celeron(R) Processor 440 2.00GHz</b> <b>DATA DDR3 1333 1GB (AD309080BD-151G)</b> <b>Western Digital WD800JD-75MSA3 80GB</b>

**Windows XP SP2**

<b>Item</b>	<b>WEIGHTED \$SUITE</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>System test Scores</b>	PASS	2717
<b>2</b>	<b>CPU test Scores</b>	PASS	3575
<b>3</b>	<b>Memory test Scores</b>	PASS	4092
<b>4</b>	<b>Graphic test Scores</b>	PASS	1555
<b>5</b>	<b>HDD test Scores</b>	PASS	4781

<b>Test Environment</b>
<b>Intel(R) Core(TM)2 Quad Q6600 2.40GHz</b> <b>DATA DDR3 1333 1GB (AD309080BD-151G)</b> <b>Western Digital WD800JD-75MSA3 80GB</b>

**Windows XP SP2**

<b>Item</b>	<b>WEIGHTED \$SUITE</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>System test Scores</b>	PASS	4866
<b>2</b>	<b>CPU test Scores</b>	PASS	7737
<b>3</b>	<b>Memory test Scores</b>	PASS	5167
<b>4</b>	<b>Graphic test Scores</b>	PASS	1957
<b>5</b>	<b>HDD test Scores</b>	PASS	4613

<b>Test Environment</b>
<b>Intel(R) Core(TM)2 Quad Q6600 2.40GHz</b> <b>Transcend DDR3 1066 2GB (K4B1G0846D)</b> <b>Western Digital WD800JD-75MSA3 80GB</b>

**Windows XP SP2**

<b>Item</b>	<b>WEIGHTED \$SUITE</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>System test Scores</b>	PASS	1914
<b>2</b>	<b>CPU test Scores</b>	PASS	7741
<b>3</b>	<b>Memory test Scores</b>	PASS	5263
<b>4</b>	<b>Graphic test Scores</b>	PASS	2012
<b>5</b>	<b>HDD test Scores</b>	PASS	4581

<b>Test Environment</b>
<b>Intel(R) Core(TM)2 Duo E8400 3.00GHz</b> <b>A-DATA DDR3 1333 2GB (AD30908CBD-151G)</b> <b>Western Digital WD800JD-75MSA3 80GB</b>

**Windows XP SP2**

<b>Item</b>	<b>WEIGHTED \$SUITE</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>System test Scores</b>	PASS	5218
<b>2</b>	<b>CPU test Scores</b>	PASS	7644
<b>3</b>	<b>Memory test Scores</b>	PASS	6373
<b>4</b>	<b>Graphic test Scores</b>	PASS	1999
<b>5</b>	<b>HDD test Scores</b>	PASS	4530



<b>Test Environment</b>
<b>Intel(R) Core(TM)2 Duo E6750 2.66GHz</b> <b>A-DATA DDR3 1333 2GB (AD30908CBD-151G)</b> <b>Western Digital WD800JD-75MSA3 80GB</b>

**Windows XP SP2**

<b>Item</b>	<b>WEIGHTED \$SUITE</b>	<b>Result</b>	<b>Remark</b>
1	<b>System test Scores</b>	PASS	4810
2	<b>CPU test Scores</b>	PASS	6824
3	<b>Memory test Scores</b>	PASS	5799
4	<b>Graphic test Scores</b>	PASS	1941
5	<b>HDD test Scores</b>	PASS	4510

<b>Test Environment</b>
<b>Intel(R) Core(TM)2 Quad Q9300 2.50GHz</b> <b>A-DATA DDR3 1333 2GB (AD30908CBD-151G)</b> <b>Western Digital WD800JD-75MSA3 80GB</b>

**Windows XP SP2**

<b>Item</b>	<b>WEIGHTED \$SUITE</b>	<b>Result</b>	<b>Remark</b>
1	<b>System test Scores</b>	PASS	5327
2	<b>CPU test Scores</b>	PASS	5053
3	<b>Memory test Scores</b>	PASS	5546
4	<b>Graphic test Scores</b>	PASS	1914
5	<b>HDD test Scores</b>	PASS	4488

<b>Test Environment</b>
<b>Intel(R) Celeron(R) Processor 420 1.60GHz</b> <b>A-DATA DDR3 1333 2GB (AD30908CBD-151G)</b> <b>Western Digital WD800JD-75MSA3 80GB</b>

**Windows XP SP2**

<b>Item</b>	<b>WEIGHTED \$SUITE</b>	<b>Result</b>	<b>Remark</b>
1	<b>System test Scores</b>	PASS	N/A
2	<b>CPU test Scores</b>	PASS	2921
3	<b>Memory test Scores</b>	PASS	3656
4	<b>Graphic test Scores</b>	PASS	N/A
5	<b>HDD test Scores</b>	PASS	4660

<b>Test Environment</b>
<b>Intel(R) Celeron(R) Processor E1500 2.20GHz</b> <b>A-DATA DDR3 1333 1GB (AD309080BD-151G)</b> <b>Hitachi HDS728080PLA380 82.3GB</b>

**Windows XP SP2**

<b>Item</b>	<b>WEIGHTED \$SUITE</b>	<b>Result</b>	<b>Remark</b>
1	<b>System test Scores</b>	PASS	4210
2	<b>CPU test Scores</b>	PASS	5596
3	<b>Memory test Scores</b>	PASS	4342
4	<b>Graphic test Scores</b>	PASS	1684
5	<b>HDD test Scores</b>	PASS	5212

## 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
Western Digital WD800JD-00LSA0	SATA	80 GB	47.1 MB/sec	123.9 MB/sec	13.6ms
Western Digital WD800JD-75MSA3	SATA	80 GB	47.5 MB/sec	141.3 MB/sec	18.7ms
Hitachi HDS728080PLA380	SATA	82.3 GB	47.8 MB/sec	111.4 MB/sec	13.1ms
Hitachi HDT722525DLA380	SATA	250 GB	53.2 MB/sec	110 MB/sec	12.9ms
Seagate ST3160815AS	SATA	160 GB	59.5 MB/sec	150.1 MB/sec	15.4ms
Western Digital WD6400H1Q-00	USB	640 GB	27.4 MB/sec	27.7 MB/sec	14.7ms

<b>TDK LoR Trans-It Drive</b>	<b>USB</b>	<b>4 GB</b>	16.7 MB/sec	17.9 MB/sec	0.8ms
<b>Apacer USB FLASH DRIVE</b>	<b>USB</b>	<b>515 MB</b>	9.1 MB/sec	4.9 MB/sec	1.7ms
<b>ACTIONS USB DISK DEVICE</b>	<b>USB</b>	<b>261 MB</b>	0.5 MB/sec	0.5 MB/sec	5.9ms

## 5.9.2 CD-ROM

Test environment:

OS Windows XP professional SP2

Program (NERO)

<b>CD-ROM MODEL</b>	<b>INTERFACE</b>	<b>Average speed</b>	<b>Full READ</b>	<b>Burst Rate</b>	<b>CD</b>
<b>ASUS DVD DRW-1814BLT</b>	<b>SATA</b>	28.26 x	167 ms	44 MB/s	52 X CD-R
<b>PIONEER DVD DVR-212BK</b>	<b>SATA</b>	28.28 x	175 ms	43 MB/s	52 X CD-R
<b>LG DVD GSA-H62L</b>	<b>SATA</b>	33.42 x	184 ms	38 MB/s	52 X CD-R
<b>LITEON DVD SOSC-2485KX</b>	<b>USB</b>	17.03 x	159 ms	22 MB/s	52X CD-R
<b>LITEON DVD SOSW-833SX</b>	<b>USB</b>	16.94 x	174 ms	21 MB/s	52X CD-R

### 5.10 Vibration Test

<b>Motherboard</b>	<b>LV-67A</b>		
<b>Test Equipment</b>	<b>VS-5060L</b>		
<b>Amplitude</b>	<b>Frequency</b>	<b>Time (1min/1Time)</b>	<b>Result</b>
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