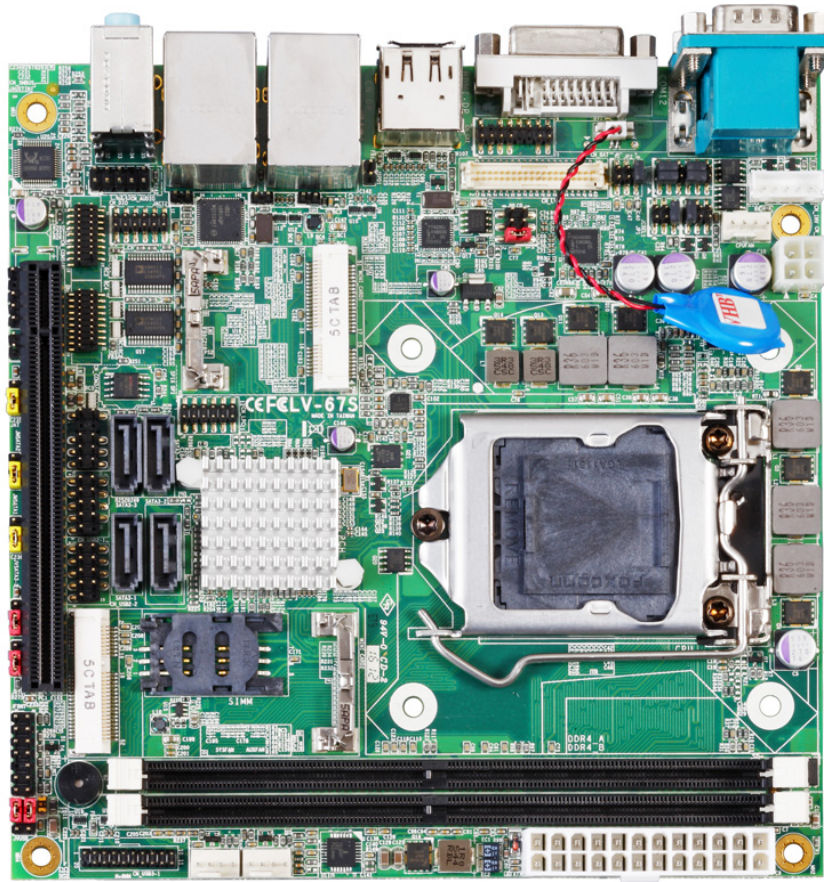


# Product Test Report



<b>Product Name</b>	<b>LV-67S</b>
<b>Product Version</b>	<b>A</b>
<b>Issued Date</b>	<b>2016.06.15</b>
<b>Report Edition</b>	<b>1.0</b>
<b>BIOS Version</b>	<b>1.02</b>
<b>Testing Engineer</b>	<b>Rick</b>
<b>Check Engineer</b>	<b>Daniel</b>

<b>REVISION HISTORY</b>			
<b>DATE</b>	<b>REVISION NO.</b>	<b>PAGE</b>	<b>DESCRIPTONS</b>
<b>2016.06.15</b>	<b>Ver. 1.0</b>	<b>56</b>	<b>Initial Release</b>

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# 1. Function test

## 1.1 Hardware functions

### Base Function Test

Item	Description	Result
1	Power Button	PASS
2	Reset	PASS
3	Power LED	PASS
4	HDD LED	PASS
5	CPUFAN	PASS
6	SYSFAN	PASS
7	AUXFAN	PASS
8	AUDIO	PASS
9	CN_AUDIO	PASS
10	LAN1	PASS
11	LAN2	PASS
12	DDR4 A/B	PASS
13	SATA1/2/3/4	PASS
14	USB2.0 1/2/3/4	PASS
15	USB3.0 1/2/3/4/5/6	PASS
16	COM 1/2/3/4/5/6	PASS
17	DVI	PASS
18	HDMI	PASS
19	Display Port	PASS
20	CN_CRT	PASS
21	LVDS	PASS
22	MINI_CRAD1	PASS
23	MINI_CRAD2	PASS

24	PCIEX16 (X1)	PASS
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#### Jumper

Item	Description	Result
1	JRTC	PASS
2	JAT	PASS
4	JP1	PASS
5	JP2	PASS
6	JCSEL1	PASS
7	JCSEL2	PASS
8	JVUSB	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	Selection Language	PASS	
7	Smart Fan Feature	PASS	
8	Serial Port	PASS	
9	Watch Dog Timer	PASS	
10	Set Supervisor Password	PASS	

Item	Description	Result	Remark
11	Set User Password	PASS	
12	Quick Boot	PASS	
13	Diagnostic Splash Screen	PASS	
14	Diagnostic Summary Screen	PASS	
15	Serial Port	PASS	
16	Watch Dog Timer	PASS	
17	SATA Mode Selection	PASS	
18	Power Control	PASS	
19	HD Audio	PASS	
20	USB Configuration	PASS	
21	HDD(AHCI)(Win 7)	PASS	
22	HDD(RAID)(Win 7)	PASS	

### 1.3 Driver

#### CD edition : IPCI1-1.4

##### 1. Windows 7 32 bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	10.1.1
2	VGA Driver	PASS	20.19.15.4352
3	Audio Driver	PASS	6.0.1.7541
4	LAN Driver	PASS	12.13.17.4

## 2. Windows 7 64 bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	10.1.1
2	VGA Driver	PASS	15.40.14.64.4352
3	Audio Driver	PASS	6.0.1.7541
4	LAN Driver	PASS	12.13.17.4

## 3. Windows 8.1 32 bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	10.1.1
2	Audio Driver	PASS	6.0.1.7541
3	LAN Driver	PASS	12.13.17.4

## 4. Windows 8.1 64 bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	10.1.1
2	VGA Driver	PASS	20.19.15.4352
3	Audio Driver	PASS	6.0.1.7541
4	LAN Driver	PASS	12.13.17.4

## 5. Windows 10 32 bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	10.1.1
2	Audio Driver	PASS	6.0.1.7541
3	LAN Driver	PASS	12.13.17.4

## 6. Windows 10 64 bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	10.1.1
2	VGA Driver	PASS	20.19.15.4352
3	Audio Driver	PASS	6.0.1.7541
4	LAN Driver	PASS	12.13.17.4



## 2. Compatibility test

### 2.1 CPU Test

Test environment:

OS: Windows 7

Test program : PC MARK 2005

Spec	CPU Speed	Family	Processor	MAX TDP	Smart Cache	Result
<a href="#">SR2LP</a>	2.40GHz	CORE	i7-6700TE	35W	8 MB	PASS
<a href="#">SR2HG</a>	3.70GHz	CORE	i3-6100	51W	3 MB	PASS
<a href="#">SR2L6</a>	3.20GHz	CORE	i5-6500	65W	6 MB	PASS
<a href="#">SR2L2</a>	3.40GHz	CORE	i7-6700	65W	8 MB	PASS
<a href="#">SR2LK</a>	3.60GHz	XEON	E3-1275V5	80W	8 MB	PASS

### 2.2 Memory Test

Test environment:

OS: Windows 7

Test program : PC MARK 2005

Manufacturer	Chip	Frequency	Capacity Mbytes	Memory test Source
Acpi CMA6-3GA01AA R01M00	SK hynix H5N4G8NMFR	DDR4 2133	8 GB	PASS
Acpi CMA6-3FA01AA R01M00	SK hynix H5N4G8NMFR	DDR4 2133	4 GB	PASS
Kingston KVR21N15D8/8	SK hynix H5AN4G8NMFR	DDR4 2133	8 GB	PASS
Transcend TS1GLH64V1H	SEC 446 BCPB K4A4G085WD	DDR4 2133	8 GB	PASS

<b>Kingston KVR21N15S8/4</b>	<b>SK hynix H5AN4G8NMFR</b>	<b>DDR4 2133</b>	<b>4 GB</b>	<b>PASS</b>
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### 2.3 CRT Graphic Quality Test

Test environment:

OS Windows 7

Driver version : 20.19.15.4352

<b>Resolution</b>	<b>Color</b>	<b>Result</b>	<b>Remark</b>
<b>800 x 600</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1024 x 768</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1152 x 864</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1280 x 600</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1280 x 720</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1280 x 768</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1280 x 800</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1280 x 960</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1280 x 1024</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1360 x 768</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1366 x 768</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1400 x 1050</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1440 x 900</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1600 x 900</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1600 x 1200</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1680 x 1050</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1920 x 1080</b>	<b>16 /32bit</b>	<b>PASS</b>	

## 2.4 DVI Graphic Quality Test

Test environment:

OS Windows 7

Driver version : 20.19.15.4352

Resolution	Color	Result	Remark
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 800	16 /32bit	PASS	
1280 x 960	16 /32bit	PASS	
1280 x 1024	16 /32bit	PASS	
1360 x 768	16 /32bit	PASS	
1366 x 768	16 /32bit	PASS	
1400 x 1050	16 /32bit	PASS	
1440 x 900	16 /32bit	PASS	
1600 x 900	16 /32bit	PASS	
1680 x 1050	16 /32bit	PASS	
1920 x 1080	16 /32bit	PASS	

## 2.5 Display Port Graphic Quality Test

Test environment:

OS Windows 7

Driver version : 20.19.15.4352

Resolution	Color	Result	Remark
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 800	16 /32bit	PASS	
1280 x 960	16 /32bit	PASS	
1280 x 1024	16 /32bit	PASS	
1360 x 768	16 /32bit	PASS	
1366 x 768	16 /32bit	PASS	
1400 x 1050	16 /32bit	PASS	
1440 x 900	16 /32bit	PASS	
1600 x 900	16 /32bit	PASS	
1600 x 1050	16 /32bit	PASS	
1920 x 1080	16 /32bit	PASS	
3840 x 2160	16 /32bit	PASS	

## 2.6 Audio

Test environment:

OS Windows 7 32/64-bit

Driver version : 6.0.1.7541

Item	Description	Result	Remark
1	2.1CH	PASS	
2	Microphone	PASS	
3	LINE	PASS	

OS Windows 8.1 32/64-bit

Driver version : 6.0.1.7541

Item	Description	Result	Remark
1	2.1CH	PASS	
2	Microphone	PASS	
3	LINE	PASS	

OS Windows 10 32/64-bit

Driver version : 6.0.1.7541

Item	Description	Result	Remark
1	2.1CH	PASS	
2	Microphone	PASS	
3	LINE	PASS	

OS Ubuntu 12.04 / 14.04

Item	Description	Result	Remark
1	2.1CH	PASS	

## 2.7 HDD Test

Test environment:

OS Windows 7

HDD Model	Interface	Capacity	HDD Size Detect	HDD Data Transfer	HDD LED Check
Seagate ST3160815AS	SATA	160 GB	PASS	PASS	PASS
Western Digital WD2500BPVT-22JJ5T0	SATA	250 GB	PASS	PASS	PASS
Western Digital WD3200BEKT-00F3T0	SATA	320 GB	PASS	PASS	PASS
Western Digital WD5000AAKS-00V1A0	SATA	500 GB	PASS	PASS	PASS
Western Digital WD5002AALX-00J37A0	SATA	500 GB	PASS	PASS	PASS
Western Digital WD10EADS-00P8B0	SATA	1.0 TB	PASS	PASS	PASS
Western Digital WD10EALX-009BA0	SATA	1.0 TB	PASS	PASS	PASS
MemoRight MRSAJ6C064GC125C00	SSD	64 GB	PASS	PASS	PASS
INTEL SSDSC2BW240A4	SSD	240 GB	PASS	PASS	PASS
KINGSTON SV300S37A24G	SSD	240 GB	PASS	PASS	PASS

## 2.8 DVD-ROM Test

Test environment:

OS Windows 7

DVD-ROM Model	Interface	DVD-ROM Detect	DVD-ROM Data Transfer	Play DVD
ASUS DRW-24D1ST	SATA	PASS	PASS	PASS
PIONEER DVR-S19LBK	SATA	PASS	PASS	PASS
LITE-ON iHES312	SATA	PASS	PASS	PASS
PIONEER DVR-XD11T	USB	PASS	PASS	PASS
LITEON DVD eTAU108	USB	PASS	PASS	PASS

## 2.9 USB Test

### 1. Windows 7 32/64-bit

Item	Result	Remark
External USB Keyboard Test	PASS	
External USB Mouse Test	PASS	
Hot plugging test	PASS	
DVD-ROM	PASS	
USB Mass storage	PASS	

## 2. Windows 8.1 32/64-bit

Item	Result	Remark
External USB Keyboard Test	PASS	
External USB Mouse Test	PASS	
Hot plugging test	PASS	
DVD-ROM	PASS	
USB Mass storage	PASS	

## 3. Windows 10 32/64-bit

Item	Result	Remark
External USB Keyboard Test	PASS	
External USB Mouse Test	PASS	
Hot plugging test	PASS	
DVD-ROM	PASS	
USB Mass storage	PASS	

## 4. Ubuntu 12.04 / 14.04

Item	Result	Remark
External USB Keyboard Test	PASS	
External USB Mouse Test	PASS	
Hot plugging test	PASS	
DVD-ROM	PASS	
USB Mass storage	PASS	



## 2.10 Serial Port Test

### 1. Windows 7 32/64-bit

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

### 2. Windows 8.1 32/64-bit

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

### 3. Windows 10 32/64-bit

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

## 2.11 PS2 Keyboard 、 Mouse Test

### 1. Windows 7 32/64-bit

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

## 2. Windows 8.1 32/64-bit

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

## 3. Windows 10 32/64-bit

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

## 4. Ubuntu 12.04 / 14.04

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

## 2.12 LAN Test

Data Transfer Test environment:

-CAT 6 UTP 100M

-8 HR. continuous

### 1. Windows 7 32/64-bit

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

## 2. Windows 8.1 32/64-bit

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

## 3. Windows 10 32/64-bit

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

## 4. Ubuntu 12.04 / 14.04

Item	Description	Result	Remark
1	Device Manager Check	PASS	(IPERF)

## 2.13 Power Supply Test

Item	Type	Description	Result	Remark
1	ATX Power	Seasonic SS-520GB 520W	PASS	
2	ATX Power	AcBel PC7008 430W	PASS	
3	ATX Power	Snake SPD-420WS 400W	PASS	
4	ATX Power	Seventeam ST-300BLV 300W	PASS	
5	ATX Power	ENERMAX EG301P-V(E) 300W	PASS	

## 2.14 OS Install

Item	Description	Result	Remark
1	Windows 7 32/64 bit	PASS	
2	Windows 8.1 32/64 bit	PASS	
3	Windows 10 32/64 bit	PASS	
4	Ubuntu12.04 (3.13.0-32-generic)	PASS	
5	Ubuntu14.04 (3.19.0-25-generic)	PASS	

## 2.15 PCI Express Mini Card

Motherboard	PCI Express mini card	Remark
LV-67S	MPX-210D	Only Mini Card2
	MPX-210D2	Only Mini Card2
	MPX-574D	Only Mini Card2
	MPX-574D2	Only Mini Card2
	MPX-643	Only Mini Card2
	MPX-750	Only Mini Card2
	MPX-954	Only Mini Card2
	MPX-954E	Only Mini Card2
	MPX-885	Only Mini Card2
	MPX-3132	No SUPPLY
	MPX-827	Only Mini Card2
	MPX-5201	PASS (But it needs half cut for Mini Card1)
	MPX-6864	Only Mini Card2
MPX-7202	Only Mini Card2	

	<b>MPX-8188</b>	PASS (But it needs unscrew for Mini Card1)
	<b>MPX-9125</b>	Only Mini Card2
	<b>MPX-24794G2</b>	Only Mini Card2
	<b>MPX-25858</b>	Only Mini Card2
	<b>MPX-TP4R</b>	Only Mini Card2

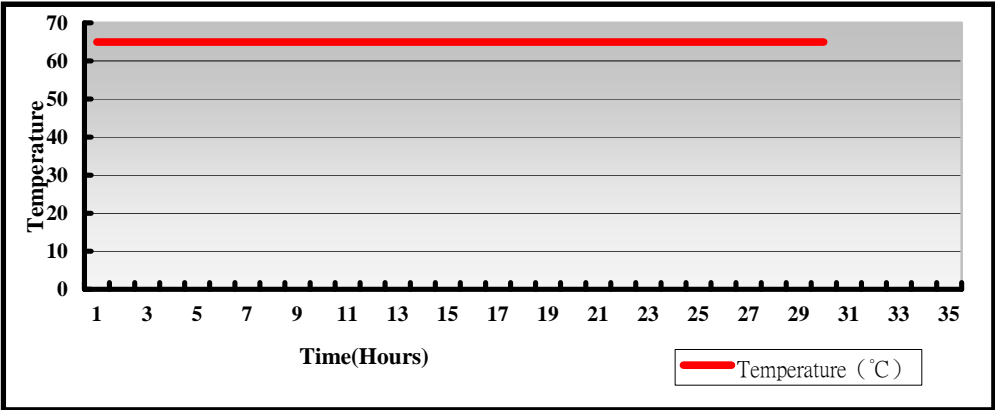
### 3. Environmental test

#### 3.1 Temperature Test

Hardware Device list:

System Board	LV – 67S
CPU	Intel(R) Core(TM) i7-6700 3.40GHz
Memory	Kingston DDR4 8GB*2 (SK hynix H5AN4GBNMFR)
HDD	Western Digital WD3200BEKT-00F3T0 320GB
Operating OS	Windows 7
Test Equipment	THERMOTRON 2800 Programmer/Controller
Test Program	3DMark 2006 + Prime95

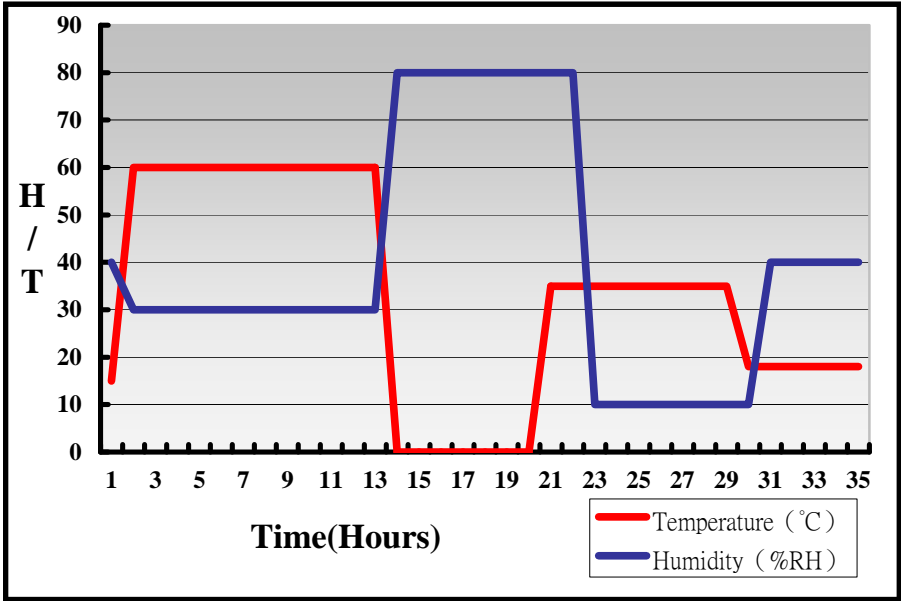
Test Result:



**Hardware Device list:**

System Board	LV – 67S
CPU	Intel(R) Core(TM) i7-6700 3.40GHz
Memory	Kingston DDR4 8GB*2 (SK hynix H5AN4GBNMFR)
HDD	Western Digital WD3200BEKT-00F3T0 320GB
Operating OS	Windows 7
Test Equipment	THERMOTRON 2800 Programmer/Controller
Test Program	3DMark 2006 + Prime95

**Test Result:**



**Boot up Test:****Hardware Device list:**

<b>System Board</b>	<b>LV-67S</b>
<b>CPU</b>	<b>Intel(R) Core(TM) i7-6700 3.40GHz</b>
<b>Memory</b>	<b>Kingston DDR4 8GB*2 (SK hynix H5AN4GBNMFR)</b>
<b>HDD</b>	<b>Western Digital WD3200BEKT-00F3T0 320GB</b>

<b>Temperature</b>	<b>Result</b>	<b>Remark</b>
<b>-40°C</b>	PASS	50 Times.
<b>85°C</b>	PASS	50 Times



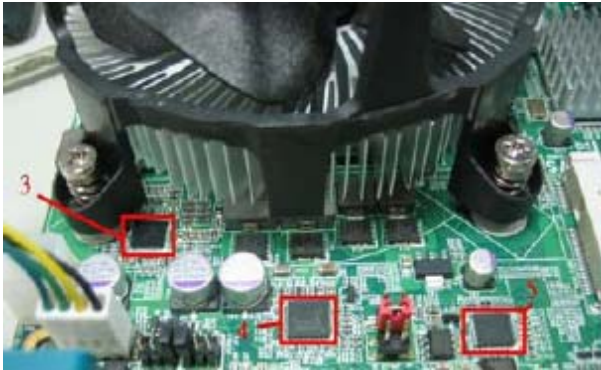
### 3.2 Thermal measurements at various points on the board

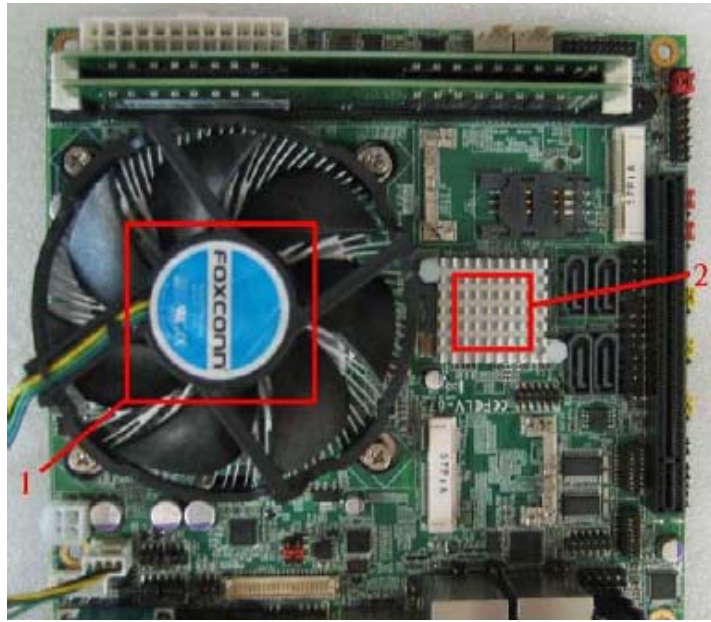
**Test Environment:**

CPU	Intel(R) Core(TM) i7-6700 3.40GHz
Memory	Kingston DDR4 8GB*2 (SK hynix H5AN4GBNMFR)
HDD	Western Digital WD3200BEKT-00F3T0 320GB
Power	AcBel PC7008
Operating System	Windows 7 32-bit
Test Program	3DMARK2006+Prime95

**Test Result:**

Item	Environmental temperature	25°C
1	CPU	48.3°C
2	PCH (ICH9M)	32.3°C
3	U3 (ISL95855HRTZ)	43.1°C
4	U4 (ICPTN3460BS)	36.3°C
5	U5 (ICPTN3355BS)	32.5°C
6	U24 (ITS74F125)	36.8°C
7	U25 (ICADM213ECA-T)	38.5°C
8	U27 (ICADM213ECA-T)	40.7°C
9	Q37 (TMSIRFH9714TRPBF)	34.8°C





## 4. Reliability Test

### 4.1 Power Consumption Test

#### 1. Test Environment:

<b>Motherboard</b>	<b>LV-67S</b>
<b>CPU</b>	Intel(R) Core(TM) i7-6700TE 2.40GHz
<b>Memory</b>	acpi DDR4 2133 8GB (SKhynix H5N4G8NMFR)*2
<b>HDD</b>	Western Digital WD2500BPVT-22J5T0 250GB

Power Supply: AcBel P7008

Voltage	MS-DOS Boot up		Windows 7 3DMARK 2006 + Prime95	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
12V	1.11	13.32	2.5	30
5V	1.87	9.35	2.88	14.4
3.3V	0.34	1.122	0.32	1.056
5VSB	0.939	4.695	0.004	0.02

#### 1. a. Test Environment:

The same as above but with LCD

<b>Display Panel</b>	<b>AUO M170EG01 17"LCD</b>
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Power Supply: AcBel P7008

Voltage	MS-DOS Boot up		Windows 7 3DMARK 2006 + Prime95	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
12V	2.38	28.56	3.58	42.96
5V	2.8	14	3.92	19.6
3.3V	0.48	1.584	0.47	1.551
5VSB	0.9	4.5	0.005	0.025

## 2. Test Environment:

<b>Motherboard</b>	<b>LV-67S</b>
<b>CPU</b>	<b>Intel(R) Core(TM) i3-6100 3.70GHz</b>
<b>Memory</b>	<b>acpi DDR4 2133 8GB (SKhynix H5N4G8NMFR)*2</b>
<b>HDD</b>	<b>Western Digital WD2500BPVT-22J5T0 250GB</b>

**Power Supply: AcBel P7008**

<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Windows 7 3DMARK 2006 + Prime95</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>12V</b>	<b>1.37</b>	<b>16.44</b>	<b>3.82</b>	<b>45.84</b>
<b>5V</b>	<b>1.81</b>	<b>9.05</b>	<b>3.01</b>	<b>15.05</b>
<b>3.3V</b>	<b>0.23</b>	<b>0.759</b>	<b>0.2</b>	<b>0.66</b>
<b>5VSB</b>	<b>0.86</b>	<b>4.3</b>	<b>0.002</b>	<b>0.01</b>

### 2. a. Test Environment:

**The same as above but with LCD**

<b>Display Panel</b>	<b>AUO M170EG01 17"LCD</b>
----------------------	----------------------------

**Power Supply: AcBel P7008**

<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Windows 7 3DMARK 2006 + Prime95</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>12V</b>	<b>2.62</b>	<b>31.44</b>	<b>5.12</b>	<b>61.44</b>
<b>5V</b>	<b>2.83</b>	<b>9.15</b>	<b>4.03</b>	<b>20.15</b>
<b>3.3V</b>	<b>0.38</b>	<b>1.254</b>	<b>0.35</b>	<b>1.115</b>
<b>5VSB</b>	<b>0.89</b>	<b>4.45</b>	<b>0.004</b>	<b>0.02</b>

### 3. Test Environment:

<b>Motherboard</b>	<b>LV-67S</b>
<b>CPU</b>	<b>Intel(R) Core(TM) i5-6500 3.20GHz</b>
<b>Memory</b>	<b>acpi DDR4 2133 8GB (SKhynix H5N4G8NMFR)*2</b>
<b>HDD</b>	<b>Western Digital WD2500BPVT-22J5T0 250GB</b>

**Power Supply: AcBel P7008**

<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Windows 7 3DMARK 2006 + Prime95</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>12V</b>	<b>1.67</b>	<b>20.04</b>	<b>4.23</b>	<b>50.76</b>
<b>5V</b>	<b>1.89</b>	<b>9.45</b>	<b>3.18</b>	<b>15.9</b>
<b>3.3V</b>	<b>0.231</b>	<b>0.7623</b>	<b>0.19</b>	<b>0.627</b>
<b>5VSB</b>	<b>0.964</b>	<b>4.82</b>	<b>0.005</b>	<b>0.025</b>

### 3. a. Test Environment:

**The same as above but with LCD**

<b>Display Panel</b>	<b>AUO M170EG01 17"LCD</b>
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**Power Supply: AcBel P7008**

<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Windows 7 3DMARK 2006 + Prime95</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>12V</b>	<b>2.97</b>	<b>35.64</b>	<b>5.6</b>	<b>67.2</b>
<b>5V</b>	<b>2.6</b>	<b>13</b>	<b>4.21</b>	<b>21.05</b>
<b>3.3V</b>	<b>0.37</b>	<b>1.221</b>	<b>0.34</b>	<b>1.122</b>
<b>5VSB</b>	<b>0.985</b>	<b>4.925</b>	<b>0.005</b>	<b>0.025</b>

#### 4. Test Environment:

<b>Motherboard</b>	<b>LV-67S</b>
<b>CPU</b>	<b>Intel(R) Core(TM) i7-6700 3.40GHz</b>
<b>Memory</b>	<b>acpi DDR4 2133 8GB (SKhynix H5N4G8NMFR)*2</b>
<b>HDD</b>	<b>Western Digital WD2500BPVT-22J5T0 250GB</b>

**Power Supply: AcBel P7008**

<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Windows 7 3DMARK 2006 + Prime95</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>12V</b>	<b>2.11</b>	<b>25.32</b>	<b>4.64</b>	<b>55.68</b>
<b>5V</b>	<b>1.94</b>	<b>9.7</b>	<b>3.12</b>	<b>15.6</b>
<b>3.3V</b>	<b>0.22</b>	<b>0.726</b>	<b>0.17</b>	<b>0.561</b>
<b>5VSB</b>	<b>0.938</b>	<b>4.69</b>	<b>0.008</b>	<b>0.04</b>

#### 4. a. Test Environment:

**The same as above but with LCD**

<b>Display Panel</b>	<b>AUO M170EG01 17"LCD</b>
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**Power Supply: AcBel P7008**

<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Windows 7 3DMARK 2006 + Prime95</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>12V</b>	<b>3.35</b>	<b>40.2</b>	<b>5.92</b>	<b>71.04</b>
<b>5V</b>	<b>2.73</b>	<b>13.65</b>	<b>4.29</b>	<b>21.45</b>
<b>3.3V</b>	<b>0.36</b>	<b>1.188</b>	<b>0.34</b>	<b>1.122</b>
<b>5VSB</b>	<b>1.008</b>	<b>5.04</b>	<b>0.012</b>	<b>0.06</b>

**5. Test Environment:**

<b>Motherboard</b>	<b>LV-67S</b>
<b>CPU</b>	<b>Intel(R) Xeon(TM) E3-1275V5 3.60GHz</b>
<b>Memory</b>	<b>acpi DDR4 2133 8GB (SKhynix H5N4G8NMFR)*2</b>
<b>HDD</b>	<b>Western Digital WD3200BEKT-00F3T0 320GB</b>

**Power Supply: AcBel P7008**

<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Windows 7 3DMARK 2006 + Prime95</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>12V</b>	<b>2.1</b>	<b>25.2</b>	<b>5.22</b>	<b>62.64</b>
<b>5V</b>	<b>1.91</b>	<b>9.55</b>	<b>3</b>	<b>15</b>
<b>3.3V</b>	<b>0.23</b>	<b>0.759</b>	<b>0.19</b>	<b>0.627</b>
<b>5VSB</b>	<b>0.984</b>	<b>4.92</b>	<b>0.001</b>	<b>0.005</b>

**5. a. Test Environment:****The same as above but with LCD**

<b>Display Panel</b>	<b>AUO M170EG01 17”LCD</b>
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**Power Supply: AcBel P7008**

<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Windows 7 3DMARK 2006 + Prime95</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>12V</b>	<b>3.55</b>	<b>42.6</b>	<b>6.45</b>	<b>77.4</b>
<b>5V</b>	<b>2.7</b>	<b>13.5</b>	<b>3.99</b>	<b>19.95</b>
<b>3.3V</b>	<b>0.42</b>	<b>1.386</b>	<b>0.34</b>	<b>1.122</b>
<b>5VSB</b>	<b>0.966</b>	<b>4.83</b>	<b>0.005</b>	<b>0.025</b>

## 5. Performance Test

### 5.1 3D MARK(2003、2005)

Windows 7 32-bit

Weighted Suite	Test Environment	Result	Remark
3DMARK2003 Scores	Intel(R) Core(TM) i7-6700TE 2.40GHz acpi DDR4 2133 8GBx2 (SKhynix H5N4G8NMFR)	PASS	23173
3DMARK2005 Scores	Western Digital WD2500BPVT-22J5T0 250GB	PASS	20302

Windows 7 32-bit

Weighted Suite	Test Environment	Result	Remark
3DMARK2003 Scores	Intel(R) Core(TM) i7-6700 3.40GHz Kingston DDR4 2133 8GBx2 (SKhynix H5N4G8NMFR)	PASS	22817
3DMARK2005 Scores	Western Digital WD3200BEKT-00P3T0 320GB	PASS	21952



**Windows 7 32-bit**

<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
<b>3DMARK2003 Scores</b>	<b>Intel(R) Core(TM) i7-6700 3.40GHz Kingston DDR4 2133 4GBx2 (SKhynix H5N4G8NMFR)</b>	<b>PASS</b>	<b>24460</b>
<b>3DMARK2005 Scores</b>	<b>Western Digital WD3200BEKT-00P3T0 320GB</b>	<b>PASS</b>	<b>22102</b>

**Windows 7 32-bit**

<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
<b>3DMARK2003 Scores</b>	<b>Intel(R) Core(TM) i7-6700 3.40GHz Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD)</b>	<b>PASS</b>	<b>25342</b>
<b>3DMARK2005 Scores</b>	<b>Western Digital WD3200BPVT-00JJ5T0 320GB</b>	<b>PASS</b>	<b>21919</b>

**Windows 7 32-bit**

<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
<b>3DMARK2003 Scores</b>	<b>Intel(R) Core(TM) i5-6500 3.20GHz Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD) Western Digital WD3200BPVT-00JJ5T0 320GB</b>	<b>PASS</b>	<b>23529</b>
<b>3DMARK2005 Scores</b>		<b>PASS</b>	<b>20158</b>

**Windows 7 32-bit**

<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
<b>3DMARK2003 Scores</b>	<b>Intel(R) Core(TM) i3-6100 3.70GHz Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD) Western Digital WD3200BPVT-00JJ5T0 320GB</b>	<b>PASS</b>	<b>22955</b>
<b>3DMARK2005 Scores</b>		<b>PASS</b>	<b>20388</b>

**Windows 7 32-bit**

Weighted Suite	Test Environment	Result	Remark
3DMARK2003 Scores	Intel(R) Xeon(R) E3-1275v5 3.60GHz Transcend DDR4 2133 8GBx2	PASS	25122
3DMARK2005 Scores	(SEC 446 BCPB K4A4G085WD) Western Digital WD3200BPVT-00JJ5T0 320GB	PASS	21785

**5.2 3D MARK2006**

**Windows 7 32-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	Intel(R) Core(TM) i7-6700TE 2.40GHz	PASS	11381
2	SM2.0 Source	acpi DDR4 2133 8GBx2 (SKhynix H5N4G8NMFR)	PASS	3896
3	HDR/SM3.0 Source	Western Digital WD2500BPVT-22J5T0	PASS	4795
4	CPU Source	250GB	PASS	6234

**Windows 7 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
1	3DMARK Source	Intel(R) Core(TM) i7-6700TE 2.40GHz	PASS	11629
2	SM2.0 Source	acpi DDR4 2133 8GBx2 (SKhynix H5N4G8NMFR)	PASS	4075
3	HDR/SM3.0 Source	Western Digital WD3200BEKT-00F3T0	PASS	4949
4	CPU Source	320GB	PASS	5643

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
1	3DMARK Source	Intel(R) Core(TM) i7-6700 3.40GHz	PASS	15885
2	SM2.0 Source	Kingston DDR4 2133 8GBx2	PASS	5327
3	HDR/SM3.0 Source	(SKhynix H5N4G8NMFR) Western Digital WD3200BEKT-00P3T0	PASS	7095
4	CPU Source	320GB	PASS	7305

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
1	3DMARK Source	<b>Intel(R) Core(TM) i7-6700 3.40GHz Kingston DDR4 2133 4GBx2 (SKhynix H5N4G8NMFR) Western Digital WD3200BEKT-00P3T0 320GB</b>	PASS	17884
2	SM2.0 Source		PASS	5692
3	HDR/SM3.0 Source		PASS	8432
4	CPU Source		PASS	7720

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
1	3DMARK Source	<b>Intel(R) Core(TM) i7-6700 3.40GHz Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD) Western Digital WD3200BPVT-00JJ5T0 320GB</b>	PASS	13092
2	SM2.0 Source		PASS	4471
3	HDR/SM3.0 Source		PASS	5508
4	CPU Source		PASS	7281

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
1	3DMARK Source	Intel(R) Core(TM) i5-6500 3.20GHz Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD) Western Digital WD3200BPVT-00JJ5T0 320GB	PASS	11619
2	SM2.0 Source		PASS	3973
3	HDR/SM3.0 Source		PASS	4890
4	CPU Source		PASS	6421

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
1	3DMARK Source	Intel(R) Core(TM) i3-6100 3.70GHz Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD) Western Digital WD3200BPVT-00JJ5T0 320GB	PASS	11036
2	SM2.0 Source		PASS	3917
3	HDR/SM3.0 Source		PASS	4721
4	CPU Source		PASS	5044

**Windows 7 32-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	<b>Intel(R) Xeon(R) E3-1275v5 3.60GHz Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD) Western Digital WD3200BPVT-00JJ5T0 320GB</b>	PASS	12665
2	SM2.0 Source		PASS	4292
3	HDR/SM3.0 Source		PASS	5320
4	CPU Source		PASS	7308

**5.3 3D MARK VANTAGE**

**Windows 7 32-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	<b>Intel(R) Core(TM) i7-6700 3.40GHz Kingston DDR4 2133 8GB (SKhynix H5N4G8NMFR) Western Digital WD3200BEKT-00P3T0 320GB</b>	PASS	P7276
2	GPU SCORE		PASS	5823
3	CPU SCORE		PASS	28948

**Windows 7 64-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i7-6700TE 2.40GHz acpi DDR4 2133 8GB (SKhynix H5N4G8NMFR) Western Digital WD3200BEKT-00F3T0 320GB	PASS	P6461
2	GPU SCORE		PASS	5289
3	CPU SCORE		PASS	19270

**Windows 7 32-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i7-6700 3.40GHz Kingston DDR4 2133 4GBx2 (SKhynix H5N4G8NMFR) Western Digital WD3200BEKT-00P3T0 320GB	PASS	P7046
2	GPU SCORE		PASS	5646
3	CPU SCORE		PASS	27541

**Windows 7 64-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i7-6700 3.40GHz Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD) Western Digital WD3200BPVT-00JJ5T0 320GB	PASS	P7293
2	GPU SCORE		PASS	5844
3	CPU SCORE		PASS	28489



**Windows 7 32-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i5-6500 3.20GHz Transcend DDR4	PASS	P6528
2	GPU SCORE	2133 8GBx2 (SEC 446 BCPB K4A4G085WD)	PASS	5332
3	CPU SCORE	Western Digital WD3200BPVT-00JJ5T0 320GB	PASS	19959

**Windows 7 32-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i3-6100 3.70GHz Transcend DDR4	PASS	P6023
2	GPU SCORE	2133 8GBx2 (SEC 446 BCPB K4A4G085WD)	PASS	5048
3	CPU SCORE	Western Digital WD3200BPVT-00JJ5T0 320GB	PASS	14316

**Windows 7 32-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Xeon(R) E3-1275v5 3.60GHz Transcend DDR4	PASS	P7001
2	GPU SCORE	2133 8GBx2 (SEC 446 BCPB K4A4G085WD)	PASS	5615

3	CPU SCORE	Western Digital WD3200BPVT-00JJ5T0 320GB WD3200BPVT-00JJ5T0 320GB	PASS	26942
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#### 5.4 PC MARK2002

<b>Test Environment</b>
Intel(R) Core(TM) i7-6700TE 2.40GHz acpi DDR4 2133 8GBx2 (SKhynix H5N4G8NMFR) Western Digital WD2500BPVT-22J5T0 250GB

##### Windows 7 32-bit

Item	Weighted Suite	Result	Remark
1	CPU test Source	PASS	N/A
2	Memory test Source	PASS	59904
3	HDD test Source	PASS	1880

<b>Test Environment</b>
Intel(R) Core(TM) i7-6700TE 2.40GHz acpi DDR4 2133 8GBx2 (SKhynix H5N4G8NMFR) Western Digital WD3200BEKT-00F3T0 320GB

##### Windows 7 64-bit

Item	Weighted Suite	Result	Remark
1	CPU test Source	PASS	N/A
2	Memory test Source	PASS	60298
3	HDD test Source	PASS	1764

<b>Test Environment</b>
<b>Intel(R) Core(TM) i7-6700 3.40GHz</b> <b>Kingston DDR4 2133 8GBx2 (SKhynix H5N4G8NMFR)</b> <b>Western Digital WD3200BEKT-00P3T0 320GB</b>

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>CPU test Source</b>	PASS	N/A
<b>2</b>	<b>Memory test Source</b>	PASS	71432
<b>3</b>	<b>HDD test Source</b>	PASS	2024

<b>Test Environment</b>
<b>Intel(R) Core(TM) i7-6700TE 2.40GHz</b> <b>acpi DDR4 2133 8GBx2 (SKhynix H5N4G8NMFR)</b> <b>Western Digital WD3200BEKT-00F3T0 320GB</b>

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>CPU test Source</b>	PASS	N/A
<b>2</b>	<b>Memory test Source</b>	PASS	71410
<b>3</b>	<b>HDD test Source</b>	PASS	2116

<b>Test Environment</b>
<b>Intel(R) Core(TM) i7-6700 3.40GHz</b> <b>Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD)</b> <b>Western Digital WD3200BPVT-00JJ5T0 320GB</b>

**Windows 7 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>CPU test Source</b>	PASS	N/A
<b>2</b>	<b>Memory test Source</b>	PASS	72203
<b>3</b>	<b>HDD test Source</b>	PASS	1964

<b>Test Environment</b>
<b>Intel(R) Core(TM) i7-6700 3.40GHz</b> <b>Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD)</b> <b>Western Digital WD3200BPVT-00JJ5T0 320GB</b>

**Windows 7 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>CPU test Source</b>	PASS	N/A
<b>2</b>	<b>Memory test Source</b>	PASS	72203
<b>3</b>	<b>HDD test Source</b>	PASS	1964

<b>Test Environment</b>
<b>Intel(R) Core(TM) i5-6500 3.20GHz</b> <b>Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD)</b> <b>Western Digital WD3200BPVT-00JJ5T0 320GB</b>

**Windows 7 32-bit**

Item	Weighted Suite	Result	Remark
1	CPU test Source	PASS	N/A
2	Memory test Source	PASS	63643
3	HDD test Source	PASS	1994

Test Environment
Intel(R) Core(TM) i3-6100 3.70GHz Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD) Western Digital WD3200BPVT-00JJ5T0 320GB

Windows 7 32-bit

Item	Weighted Suite	Result	Remark
1	CPU test Source	PASS	N/A
2	Memory test Source	PASS	62883
3	HDD test Source	PASS	1976

Test Environment
Intel(R) Xeon(R) E3-1275v5 3.60GHz Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD) Western Digital WD3200BPVT-00JJ5T0 320GB

Windows 7 32-bit

Item	Weighted Suite	Result	Remark
1	CPU test Source	PASS	N/A
2	Memory test Source	PASS	69396
3	HDD test Source	PASS	1981

## 5.4 PC MARK2004

Test Environment
Intel(R) Core(TM) i7-6700TE 2.40GHz acpi DDR4 2133 8GBx2 (SKhynix H5N4G8NMFR) Western Digital WD2500BPVT-22J5T0 250GB

### Windows 7 32-bit

Item	Weighted Suite	Result	Remark
1	PC Mark Source	PASS	N/A
2	CPU test Source	PASS	N/A
3	Memory test Source	PASS	17922
4	Graphic test Source	PASS	14114
5	HDD test Source	PASS	N/A

Test Environment
Intel(R) Core(TM) i7-6700TE 2.40GHz acpi DDR4 2133 8GBx2 (SKhynix H5N4G8NMFR) Western Digital WD3200BEKT-00F3T0 320GB

### Windows 7 64-bit

Item	Weighted Suite	Result	Remark
1	PC Mark Source	PASS	N/A
2	CPU test Source	PASS	N/A
3	Memory test Source	PASS	17550
4	Graphic test Source	PASS	14147
5	HDD test Source	PASS	N/A

<b>Test Environment</b>
<b>Intel(R) Core(TM) i7-6700 3.40GHz</b> <b>Kingston DDR4 2133 8GBx2 (SKhynix H5N4G8NMFR)</b> <b>Western Digital WD3200BEKT-00P3T0 320GB</b>

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
1	PC Mark Source	PASS	N/A
2	CPU test Source	PASS	N/A
3	Memory test Source	PASS	21001
4	Graphic test Source	PASS	16519
5	HDD test Source	PASS	N/A

<b>Test Environment</b>
<b>Intel(R) Core(TM) i7-6700TE 2.40GHz</b> <b>acpi DDR4 2133 4GBx2 (SKhynix H5N4G8NMFR)</b> <b>Western Digital WD3200BEKT-00F3T0 320GB</b>

**Windows 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
1	PC Mark Source	PASS	N/A
2	CPU test Source	PASS	N/A
3	Memory test Source	PASS	20965
4	Graphic test Source	PASS	16302
5	HDD test Source	PASS	N/A

<b>Test Environment</b>
<b>Intel(R) Core(TM) i7-6700 3.40GHz</b> <b>Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD)</b> <b>Western Digital WD3200BPVT-00JJ5T0 320GB</b>

**Windows 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>PC Mark Source</b>	PASS	N/A
<b>2</b>	<b>CPU test Source</b>	PASS	N/A
<b>3</b>	<b>Memory test Source</b>	PASS	21075
<b>4</b>	<b>Graphic test Source</b>	PASS	16293
<b>5</b>	<b>HDD test Source</b>	PASS	N/A

<b>Test Environment</b>
<b>Intel(R) Core(TM) i5-6500 3.20GHz</b> <b>Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD)</b> <b>Western Digital WD3200BPVT-00JJ5T0 320GB</b>

**Windows 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>PC Mark Source</b>	PASS	N/A
<b>2</b>	<b>CPU test Source</b>	PASS	N/A
<b>3</b>	<b>Memory test Source</b>	PASS	18073
<b>4</b>	<b>Graphic test Source</b>	PASS	14807
<b>5</b>	<b>HDD test Source</b>	PASS	N/A



<b>Test Environment</b>
<b>Intel(R) Core(TM) i3-6100 3.70GHz</b> <b>Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD)</b> <b>Western Digital WD3200BPVT-00JJ5T0 320GB</b>

**Windows 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
1	PC Mark Source	PASS	N/A
2	CPU test Source	PASS	N/A
3	Memory test Source	PASS	17007
4	Graphic test Source	PASS	14313
5	HDD test Source	PASS	N/A

<b>Test Environment</b>
<b>Intel(R) Xeon(R) E3-1275v5 3.60GHz</b> <b>Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD)</b> <b>Western Digital WD3200BPVT-00JJ5T0 320GB</b>

**Windows 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
1	PC Mark Source	PASS	N/A
2	CPU test Source	PASS	N/A
3	Memory test Source	PASS	20426
4	Graphic test Source	PASS	16011
5	HDD test Source	PASS	N/A

**5.5 PC MARK2005**

<b>Test Environment</b>
<b>Intel(R) Core(TM) i7-6700TE 2.40GHz</b> <b>acpi DDR4 2133 8GB (SKhynix H5N4G8NMFR) *2</b> <b>Western Digital WD2500BPVT-22J5T0 250GB</b>

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
1	<b>System test Source</b>	PASS	N/A
2	<b>CPU test Source</b>	PASS	13440
3	<b>Memory test Source</b>	PASS	15357
4	<b>Graphic test Source</b>	PASS	N/A
5	<b>HDD test Source</b>	PASS	N/A

<b>Test Environment</b>
<b>Intel(R) Core(TM) i7-6700TE 2.40GHz</b> <b>acpi DDR4 2133 8GB (SKhynix H5N4G8NMFR)</b> <b>Western Digital WD3200BEKT-00F3T0 320GB</b>

**Windows 7 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
1	<b>System test Source</b>	PASS	N/A
2	<b>CPU test Source</b>	PASS	12582
3	<b>Memory test Source</b>	PASS	15103
4	<b>Graphic test Source</b>	PASS	N/A
5	<b>HDD test Source</b>	PASS	N/A

<b>Test Environment</b>
<b>Intel(R) Core(TM) i7-6700 3.40GHz</b> <b>Kingston DDR4 2133 8GB (SKhynix H5N4G8NMFR)</b> <b>Western Digital WD3200BEKT-00P3T0 320GB</b>

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>System test Source</b>	PASS	N/A
<b>2</b>	<b>CPU test Source</b>	PASS	16127
<b>3</b>	<b>Memory test Source</b>	PASS	16895
<b>4</b>	<b>Graphic test Source</b>	PASS	N/A
<b>5</b>	<b>HDD test Source</b>	PASS	N/A

<b>Test Environment</b>
<b>Intel(R) Core(TM) i7-6700TE 2.40GHz</b> <b>acpi DDR4 2133 4GB (SKhynix H5N4G8NMFR)</b> <b>Western Digital WD3200BEKT-00F3T0 320GB</b>

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>System test Source</b>	PASS	N/A
<b>2</b>	<b>CPU test Source</b>	PASS	16104
<b>3</b>	<b>Memory test Source</b>	PASS	16400
<b>4</b>	<b>Graphic test Source</b>	PASS	N/A
<b>5</b>	<b>HDD test Source</b>	PASS	N/A

<b>Test Environment</b>
<b>Intel(R) Core(TM) i7-6700 3.40GHz</b> <b>Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD)</b> <b>Western Digital WD3200BPVT-00JJ5T0 320GB</b>

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>System test Source</b>	PASS	N/A
<b>2</b>	<b>CPU test Source</b>	PASS	16240
<b>3</b>	<b>Memory test Source</b>	PASS	17288
<b>4</b>	<b>Graphic test Source</b>	PASS	N/A
<b>5</b>	<b>HDD test Source</b>	PASS	N/A

<b>Test Environment</b>
<b>Intel(R) Core(TM) i5-6500 3.20GHz</b> <b>Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD)</b> <b>Western Digital WD3200BPVT-00JJ5T0 320GB</b>

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>System test Source</b>	PASS	N/A
<b>2</b>	<b>CPU test Source</b>	PASS	14555
<b>3</b>	<b>Memory test Source</b>	PASS	14838
<b>4</b>	<b>Graphic test Source</b>	PASS	N/A
<b>5</b>	<b>HDD test Source</b>	PASS	N/A

<b>Test Environment</b>
<b>Intel(R) Core(TM) i3-6100 3.70GHz</b> <b>Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD)</b> <b>Western Digital WD3200BPVT-00JJ5T0 320GB</b>

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
1	<b>System test Source</b>	PASS	N/A
2	<b>CPU test Source</b>	PASS	13590
3	<b>Memory test Source</b>	PASS	14168
4	<b>Graphic test Source</b>	PASS	N/A
5	<b>HDD test Source</b>	PASS	N/A

<b>Test Environment</b>
<b>Intel(R) Core(TM) E3-1275v5 3.60GHz</b> <b>Transcend DDR4 2133 8GBx2 (SEC 446 BCPB K4A4G085WD)</b> <b>Western Digital WD3200BPVT-00JJ5T0 320GB</b>

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
1	<b>System test Source</b>	PASS	N/A
2	<b>CPU test Source</b>	PASS	15405
3	<b>Memory test Source</b>	PASS	16915
4	<b>Graphic test Source</b>	PASS	N/A
5	<b>HDD test Source</b>	PASS	N/A

## 5.9 Storage Performance

### 5.9.1 HDD

Test environment:

OS Windows 7

Program (HD Tune)

HDD Model	Interface	Capacity	Average	Burst Rate	Access Time
Seagate ST3160815AS	SATA	160 GB	59.6 MB/sec	58.1 MB/sec	15.9 ms
Western Digital WD2500BPVT-22JJ5T0	SATA	250 GB	51.2 MB/sec	54.4 MB/sec	19.3 ms
Western Digital WD3200BEKT-00F3T0	SATA	320 GB	52.1 MB/sec	121.8 MB/sec	33.4 ms
Western Digital WD5000AAKS-00V1A0	SATA	500 GB	62.1 MB/sec	132.6 MB/sec	15.6 ms
Western Digital WD5002AALX-00J37A0	SATA	500 GB	108.0 MB/sec	177.4 MB/sec	16.5 ms
Western Digital WD10EADS-00P8B0	SATA	1.0 TB	63.3 MB/sec	120.7 MB/sec	15.1 ms
Western Digital WD10EALX-009BA0	SATA	1.0 TB	99.0 MB/sec	189.6 MB/sec	13.0 ms
MemoRight MRSAJ6C064GC125C00	SSD	64 GB	130.6 MB/sec	56.6 MB/sec	0.2 ms
INTEL SSDSC2BW240A4	SSD	240 GB	255.9 MB/sec	234.6 MB/sec	0.2 ms
KINGSTON SV300S37A24G	SSD	240 GB	313.5 MB/sec	67.6 MB/sec	0.2 ms
Silicon-Power	USB	4 GB	1.1 MB/sec	1.1 MB/sec	2.7 ms

## 5.9.2 DVD-ROM

Test environment:

OS Windows 7

Program (NERO)

DVD-ROM Model	Interface	Average Speed	Full Read	Burst Rate	DVD
ASUS DRW-24D1ST	SATA	10.90 x	169 ms	61 MB/s	16 x
PIONEER DVR-S19LBK	SATA	11.02 x	196 ms	50 MB/s	16 x
LITE-ON iHES312	SATA	10.82 x	152 ms	49 MB/s	16 x
PIONEER DVR-XD11T	USB	5.56 x	182 ms	21 MB/s	16 x
LITEON DVD eTAU108	USB	5.15 x	202 ms	25 MB/s	16 x