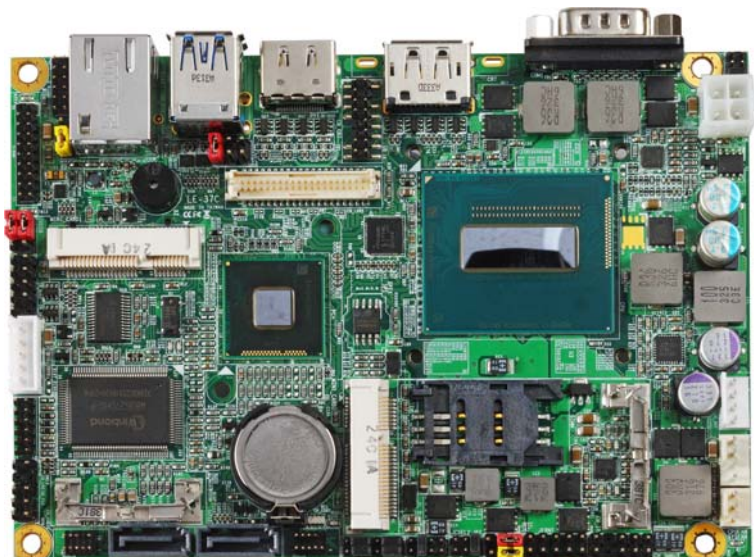


# Product Test Report



<b>Product Name</b>	<b>LE-37C</b>
<b>Product Version</b>	<b>A</b>
<b>Issued Date</b>	<b>2014.12.01</b>
<b>Report Edition</b>	<b>1.0</b>
<b>BIOS Version</b>	<b>1.0</b>
<b>Testing Engineer</b>	<b>DeWei</b>
<b>Check Engineer</b>	<b>Jerry</b>

REVISION HISTORY			
DATE	REVISION NO.	PAGE	DESCRIPTONS
2014.05.30	Ver. 1.0	53	Initial Release
2014.09.03	Ver. 1.1	54	Increase mini PCI Express card
2014.12.01	Ver. 1.2	65	Increase the memory test

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# 1. Function test

## 1.1 Hardware function

### Base Function Test

Item	Description	Result	Remark
1	Power Button	PASS	
2	Reset	PASS	
3	Power LED	PASS	
4	HDD LED	PASS	
5	SATA3 1/2	PASS	
6	USB3.0 1/2	PASS	
7	CN_USB2-1	PASS	
8	DDR3L	PASS	
9	CN_COM 1/2	PASS	B&B BurnInTest 7.0 mouse
10	HDMI	PASS	
11	DisplayPort	PASS	
12	PS/2	PASS	
13	CN_AUDIO	PASS	
14	CN_DIO	PASS	DOS
15	CN_LPC	PASS	ADP-TPM
16	CPUFAN	PASS	
17	SYSFAN	PASS	
18	Mini PCIe	PASS	
19	CN_CRT	PASS	
20	CN_LVDS	PASS	
21	CN_INV	PASS	
22	LAN	PASS	

23	IrDA	PASS	
24	DC_IN	PASS	
25	ATX	PASS	
26	RS422-485	PASS	

## Jumper

Item	Description	Result
1	JRTC	PASS
2	JCSEL1	PASS
3	JCSEL2	PASS
4	JVLCD	PASS
5	JAT	PASS
6	JMSATA	PASS
7	JP1	PASS
8	JP2	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	NumLock	PASS	
6	Quick Boot	PASS	
7	Diagnostic Splash Screen	PASS	
8	Diagnostic Summary Screen	PASS	
9	Console Redirection	PASS	

10	View Error Manager Log	PASS	
11	Clear Error Manager Log	PASS	
12	Active Processor Cores	PASS	
13	Intel(R) HT Technology	PASS	
14	SATA Device	PASS	
15	Interface Combination	PASS	IDE~ AHCI~ RAID~
16	Max TOLUD (32BIT OS)	PASS	
17	Boot Type	PASS	CRT~ DVI~ LVDS~ DP~
18	Azalia	PASS	
19	PCH Internal LAN	PASS	
20	LAN OPROM Selection	PASS	
21	Wake on PCH LAN	PASS	Shutdown ~
22	Intel(R) AMT	PASS	
23	Serial Port	PASS	
24	IR Func.	PASS	
25	Watch Dog Timer	PASS	
26	PowerLoss	PASS	Power on/off
27	CPU Shutdown Temp	PASS	
28	CPU Warning Temp	PASS	
29	CPU Smart Fan	PASS	
30	Power On By RTC Alarm	PASS	
31	Set Supervisor Password	PASS	
32	Set User password	PASS	
33	ADP-TPM	PASS	
34	VCORE, 3.3V, 5V, 5VSB, 12V, VBAT	PASS	

## 1.3 Driver

### CD Edition : IPCI5-1.0

#### 1. Windows XP SP3 32-bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	9.4.0.1022
2	VGA Driver	N/A	
3	Audio Driver	PASS	5.10.0.6914
4	LAN Driver	N/A	

#### 2. Windows XP SP2 64-bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	9.4.0.1022
2	VGA Driver	N/A	
3	Audio Driver	N/A	
4	LAN Driver	N/A	

#### 3. Windows Server 2003 32-bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	9.4.0.1022
2	VGA Driver	N/A	
3	Audio Driver	PASS	5.10.0.6914
4	LAN Driver	N/A	

#### 4. Windows Server 2003 64-bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	9.4.0.1022
2	VGA Driver	N/A	

<b>3</b>	<b>Audio Driver</b>	<b>PASS</b>	<b>5.10.0.6914</b>
<b>4</b>	<b>LAN Driver</b>	<b>N/A</b>	

#### 5. Windows Vista 32-bit Driver Test

<b>Item</b>	<b>Description</b>	<b>Result</b>	<b>version</b>
<b>1</b>	<b>Chipset Driver</b>	<b>PASS</b>	<b>9.4.0.1022</b>
<b>2</b>	<b>VGA Driver</b>	<b>N/A</b>	
<b>3</b>	<b>Audio Driver</b>	<b>PASS</b>	<b>6.0.1.6914</b>
<b>4</b>	<b>LAN Driver</b>	<b>N/A</b>	

#### 6. Windows Vista 64-bit Driver Test

<b>Item</b>	<b>Description</b>	<b>Result</b>	<b>version</b>
<b>1</b>	<b>Chipset Driver</b>	<b>PASS</b>	<b>9.4.0.1022</b>
<b>2</b>	<b>VGA Driver</b>	<b>N/A</b>	
<b>3</b>	<b>Audio Driver</b>	<b>PASS</b>	<b>6.0.1.6914</b>
<b>4</b>	<b>LAN Driver</b>	<b>N/A</b>	

#### 7. Windows Server 2008 32-bit Driver Test

<b>Item</b>	<b>Description</b>	<b>Result</b>	<b>version</b>
<b>1</b>	<b>Chipset Driver</b>	<b>PASS</b>	<b>9.4.0.1022</b>
<b>2</b>	<b>VGA Driver</b>	<b>N/A</b>	
<b>3</b>	<b>Audio Driver</b>	<b>PASS</b>	<b>6.0.1.6914</b>
<b>4</b>	<b>LAN Driver</b>	<b>N/A</b>	

#### 8. Windows Server 2008 64-bit Driver Test

<b>Item</b>	<b>Description</b>	<b>Result</b>	<b>version</b>
-------------	--------------------	---------------	----------------



1	Chipset Driver	PASS	9.4.0.1022
2	VGA Driver	N/A	
3	Audio Driver	PASS	6.0.1.6914
4	LAN Driver	N/A	

### 9. Windows Server 2008R2 Enterprise 64-bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	9.4.0.1022
2	VGA Driver	PASS	9.18.10.3165
3	Audio Driver	PASS	6.0.1.6914
4	LAN Driver	PASS	12.8.33.0
5	USB 3.0 Driver	PASS	2.5.1.28

### 10. Windows 7 32-bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	9.4.0.1022
2	VGA Driver	PASS	9.18.10.3165
3	Audio Driver	PASS	6.0.1.6914
4	LAN Driver	PASS	12.8.33.0
5	USB 3.0 Driver	PASS	2.5.1.28

### 11. Windows 7 64-bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	9.4.0.1022
2	VGA Driver	PASS	9.18.10.3165
3	Audio Driver	PASS	6.0.1.6914

4	LAN Driver	PASS	12.8.33.0
5	USB 3.0 Driver	PASS	2.5.1.28

#### 12. Windows 8 32-bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	9.4.0.1022
2	VGA Driver	PASS	9.18.10.3165
3	Audio Driver	PASS	6.0.1.6914
4	LAN Driver	PASS	12.8.33.0

#### 13. Windows 8 64-bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	9.4.0.1022
2	VGA Driver	PASS	9.18.10.3165
3	Audio Driver	PASS	6.0.1.6914
4	LAN Driver	PASS	12.8.33.0

#### 14. Windows 8.1 32-bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	9.4.1022
2	VGA Driver	PASS	10.18.10.3412
3	Audio Driver	PASS	6.0.1.6914
4	LAN Driver	PASS	12.9.16.0

#### 15. Windows 8.1 64-bit Driver Test

Item	Description	Result	version
------	-------------	--------	---------

1	Chipset Driver	PASS	9.4.0.1022
2	VGA Driver	PASS	10.18.10.3412
3	Audio Driver	PASS	6.0.1.6914
4	LAN Driver	PASS	12.6.47.1

## 16. Windows Server 2012 R2 Enterprise 64-bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	9.4.0.1022
2	VGA Driver	PASS	9.18.10.3165
3	Audio Driver	PASS	6.0.1.6914
4	LAN Driver	PASS	12.9.16.0

## 2. Compatibility test

### 2.1 CPU Test

Test environment:

OS : Windows 7 32-bit

Test program : PC MARK 2005

Spec Code	CPU Speed	Family	Processor	Max TDP	DMI	Smart Cache	Result
<a href="#">SR17L</a>	2.40 GHz	Core	i7-4700EQ	47W	5 GT/s	6 MB	PASS
<a href="#">SR17Q</a>	1.60 GHz	Core	i5-4402E	25W	5 GT/s	6 MB	PASS
<a href="#">SR17R</a>	1.60 GHz	Core	i3-4102E	25W	5 GT/s	3 MB	PASS
<a href="#">SR17P</a>	1.50 GHz	Celeron	2002E	25W	5 GT/s	2 MB	PASS

## 2.2 Operation System Test

Item	Description	Result	Remark
1	Windows 8.1 64-bit	PASS	
2	Windows 8.1 32-bit	PASS	
3	Windows 8 64-bit	PASS	
4	Windows 8 32-bit	PASS	
5	Windows 7 64-bit	PASS	
6	Windows 7 32-bit	PASS	
7	Windows Server 2012R2 Enterprise 64-bit	PASS	
8	Windows Server 2008R2 Enterprise 64-bit	PASS	
9	Windows Server 2008 32-bit	PASS	
10	Windows Server 2008 64-bit	PASS	
11	Windows Vista 64-bit	PASS	
12	Windows Vista 32-bit	PASS	
13	Windows XP SP2 64-bit	PASS	
14	Windows XP SP3 32-bit	PASS	
15	Windows Server 2003 64-bit	PASS	
16	Windows Server 2003 32-bit	PASS	

## 2.3 Memory Test

Test environment:

OS : Windows 8 32-bit

Test program : 3DMARK 2006

Manufacturer	Chip	Frequency	Capacity MBytes	Result
Transcend	SEC 234 HYK0 K4B4G0846B	DDR3L 1600	4GB	PASS

Kingston	ELPIDA J4208EBBG	DDR3L 1600	4GB	PASS
Kingston	NANYA	DDR3L 1600	4GB	PASS
ADATA	ELPIDA J2108BCSE-GN-F	DDR3 1600	4GB	PASS
ACPI	SKhynix H5TC4G83AFRPBA	DDR3 1600	8GB	PASS
Transcend TS512MSK64W6H-I	SEC 431 XYK0 K4B4G0846D	DDR3L 1600	4GB	PASS
Kingston KVR16LS11/8	Micron 4GE77 D9GBJ	DDR3L 1600	8GB	PASS

## 2.4 VGA Graphic Quality Test

Test environment:

OS : Windows 7 32/64-bit

Driver version : 9.18.10.3165

Resolution	Color	CRT	HDMI	DP	Remark
800*600	16 / 32bit	PASS	PASS	PASS	
1024*768	16 / 32bit	PASS	PASS	PASS	
1152*864	16 / 32bit	PASS	PASS	PASS	
1280*600	16 / 32bit	PASS	PASS	PASS	
1280*720	16 / 32bit	PASS	PASS	PASS	
1280*768	16 / 32bit	PASS	PASS	PASS	
1280*800	16 / 32bit	PASS	PASS	PASS	
1280*960	16 / 32bit	PASS	PASS	PASS	

<b>1280*1024</b>	<b>16 / 32bit</b>	PASS	PASS	PASS	
<b>1360*768</b>	<b>16 / 32bit</b>	PASS	PASS	PASS	
<b>1366*768</b>	<b>16 / 32bit</b>	PASS	PASS	PASS	
<b>1400*1050</b>	<b>16 / 32bit</b>	PASS	PASS	PASS	
<b>1440*900</b>	<b>16 / 32bit</b>	PASS	PASS	PASS	
<b>1600*900</b>	<b>16 / 32bit</b>	PASS	PASS	PASS	
<b>1680*1050</b>	<b>16 / 32bit</b>	PASS	PASS	PASS	
<b>1920*1080</b>	<b>16 / 32bit</b>	PASS	PASS	PASS	

## 2.5 Audio

**Test environment:**

**OS : Windows XP Professional SP2 64-bit**

**Driver version : N/A**

Item	Description	Result	Remark
1	2 CH	N/A	
2	Microphone	N/A	

**OS Windows XP Professional SP3 32-bit**

**Driver version : 5.10.0.6914**

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

**OS Windows Server 2003 32-bit**

**Driver version : 5.10.0.6914**

Item	Description	Result	Remark
------	-------------	--------	--------

1	2 CH	PASS	
2	Microphone	PASS	

### OS Windows Server 2003 64-bit

Driver version : 5.10.0.6914

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

### OS Windows Vista 32 bit

Driver version : 6.0.1.6914

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

### OS Windows Vista 64 bit

Driver version : 6.0.1.6914

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

### OS Windows Server 2008 32-bit

Driver version : 6.0.1.6914

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

**OS Windows Server 2008 64-bit**

**Driver version : 6.0.1.6914**

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

**OS Windows Server 2008 R2 Enterprise 64-bit**

**Driver version : 6.0.1.6914**

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

**OS Windows Server 2012 R2 64-bit**

**Driver version : 6.0.1.6914**

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

**OS Windows 7 32-bit**

**Driver version : 6.0.1.6914**

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

**OS Windows 7 64-bit**

**Driver version : 6.0.1.6914**



Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

### OS Windows 8 32-bit

Driver version : 6.0.1.6914

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

### OS Windows 8 64-bit

Driver version : 6.0.1.6914

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

### OS Windows 8.1 32-bit

Driver version : 6.0.1.6914

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

### OS Windows 8.1 64-bit

Driver version : 6.0.1.6914

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

## 2.6 HDD Test

Test environment:

OS : Windows 7 64-bit

Model	Interface	Capacity	Size Detect	Data Transfer
Western Digital WD5000AAKX-22ERMA0	SATA3	500 GB	PASS	PASS
Western Digital WD5002AALX-00J37A0	SATA3	500 GB	PASS	PASS
Western Digital WD3200BEKT-00F3T0(2.5")	SATA2	320 GB	PASS	PASS
Kingston SKC300S37A(SSD)	SATA3	180 GB	PASS	PASS
InnoDisk DEMSR-32GD06SC2QC	mSATA3	32 GB	PASS	PASS

## 2.7 CD-ROM Test

Test environment:

OS Windows 7 64-bit

Model	Interface	Detect	Data Transfer	Play CD
ASUS DRW-24D1ST	SATA	PASS	PASS	PASS
PIONEER DDVR-S19LBK	SATA	PASS	PASS	PASS
LITE-ON ETAU108	USB	PASS	PASS	PASS
ZYNET HL-DT-ST DVDRW	USB	PASS	PASS	PASS

## 2.8 USB Device Test

### 1. Windows XP SP3 32-bit / SP2 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. Windows Server 2003 32/64-bit

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

### 3. Windows Vista 32/64-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	

### 4. Windows Server 2008 32/64-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 R2 Enterprise 32-bit

##### Windows Server 2012 R2 Enterprise 64-bit

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

#### 6. Windows 7 32/64-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	
USB 3.0	PASS	

#### 7. Windows 8 32/64-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	
USB 3.0	PASS	

## 8. Windows 8.1 32/64-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	
USB 3.0	PASS	

## 2.9 Serial Port Test

### 1. MS-DOS

Item	Description	Result	Remark
1	RS-422 & RS-485	PASS	
2	CHKIT	PASS	

### 2. Windows XP SP3 32-bit

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 64-bit

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

### 4. Windows Server 2003 32-bit

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

### 5. Windows Server 2003 64-bit

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

### 6. Windows Vista 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 Vista 64-bit

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

#### 8. 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	

#### 9. Windows Server 2008 64-bit

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

#### 10. Windows Server 2008 R2 Enterprise 64-bit

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

#### 11. Windows 7 32-bit

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

#### 12. Windows 7 64-bit

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

### 13. Windows 8 32-bit

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

### 14. Windows 8 64-bit

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

### 15. Windows 8.1 32-bit

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

### 16. Windows 8.1 64-bit

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

### 17. Windows Server 2012 R2 Enterprise 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	

### 2. Windows XP SP3 32-bit / SP2 64-bit

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

### 3. Windows Server 2003 32/64-bit

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

### 4. Windows Vista 32/64-bit

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

3	Mouse Detect Test	PASS	
---	-------------------	------	--

#### 5. Windows server 2008 32/64-bit

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

#### 6. Windows Server 2008R2 Enterprise 64-bit

##### Windows Server 2012 R2 Enterprise 64-bit

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

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

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

#### 8. Windows 8 32/64-bit

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

## 9. Windows 8.1 32/64-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 Server 2008 R2 Enterprise 64-bit

64-bit driver version : 12.8.33.0

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

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

32-bit driver version : 12.8.33.0

64-bit driver version : 12.8.33.0

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

### 3. Windows 8 32/64-bit

32-bit driver version : 12.8.33.0

64-bit driver version : 12.8.33.0

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

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

32-bit driver version : 12.8.33.0

64-bit driver version : 12.8.33.0

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

### 2.12 Power Supply Test

Item	TYPE	Description	Result	Remark
1	ATX Power	AcBel API3PC50 350W	PASS	
2	ATX Power	SWITCHCHING MC-B350ATX 350W	PASS	
3	ATX Power	Snake PK-350 350W	PASS	
4	ATX Power	AOpen FSP300-602ATV 300W	PASS	
5	ATX Power	Seventeam ST-300BLV	PASS	
6	ATX Power	Enhance 300W	PASS	
7	ATX Power	SWITCHCHING B-300ATX 300W	PASS	
8	ATX Power	CHANNEL WELL	PASS	

		<b>CWT-250ATX12 250W</b>		
<b>9</b>	<b>ATX Power</b>	<b>Enhance ENP-2120A 200W</b>	<b>PASS</b>	
<b>10</b>	<b>ATX Power</b>	<b>AcBel ATX-350P-DNSS 350W</b>	<b>PASS</b>	

### 2.13 Mini PCI Express card

<b>Motherboard</b>	<b>PCI Express mini card</b>	<b>Result</b>	<b>Remark</b>
<b>LE-37C</b>	<b>MPX-210D / D2</b>	PASS	
	<b>MPX-574D / D2</b>	PASS	
	<b>MPX-750</b>	PASS	
	<b>MPX-827</b>	PASS	
	<b>MPX-885</b>	PASS	
	<b>MPX-954</b>	PASS	
	<b>MPX-954E</b>	PASS	
	<b>MPX-3132</b>	PASS	<b>NOTE</b>
	<b>MPX-5201</b>	PASS	
	<b>MPX-6864</b>	PASS	
	<b>MPX-7202</b>	PASS	
	<b>MPX-9125</b>	PASS	
	<b>MPX-24794G2</b>	PASS	
	<b>MPX-25858</b>	PASS	
	<b>MPX-TP4R</b>	PASS	
<b>mSATA</b>	PASS		

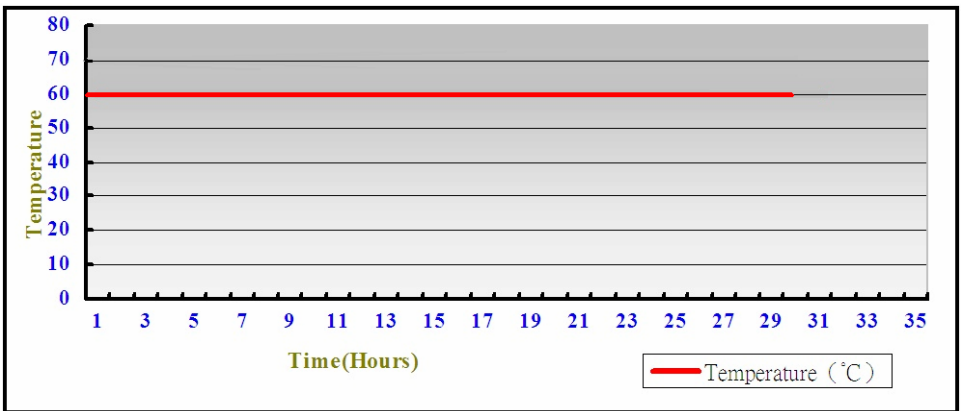
**NOTE: It needs to BIOS setting: Advanced -> South Bridge Configuration**

**-> SB PCI Express config -> PCI Express Port 5 & 7 config. -> PCIe Speed [Gen1]**

### 3. Environmental test

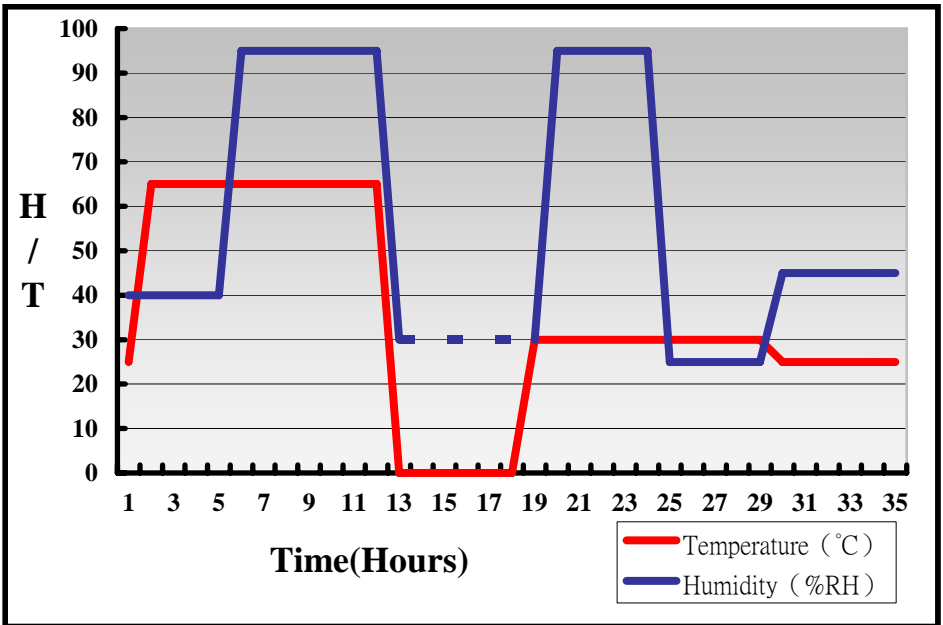
#### 3.1 Temperature Test

System Board	LE-37C
CPU	Intel® Core™ i7-4700EQ 2.40GHz
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)
HDD	Western Digital WD5002AALX-00J37A0
Operating OS	Windows 7 64-bit
Test Equipment	GIANT FORCE (GTH-150-60-CP-AR)
Test Program	3DMark06+Prime95-255a



## Hardware Device list:

System Board	LE-37C
CPU	Intel® Core™ i7-4700EQ 2.40GHz
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)
HDD	Western Digital WD5002AALX-00J37A0
Operating OS	Windows 7 64-bit
Test Equipment	GIANT FORCE (GTH-150-60-CP-AR)
Test Program	3DMark06+Prime95-255a



**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:

System Board	LE-37C
CPU	Intel® Core™ i7-4700EQ 2.40GHz
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)
HDD	Western Digital WD5002AALX-00J37A0
Operating OS	Windows 7 64-bit

Temperature	Result	Remark
60°C	PASS	50 Times
- 40°C	PASS	50 Times

## 3.2 Thermal measurements at various points on the board

### Test Environment :

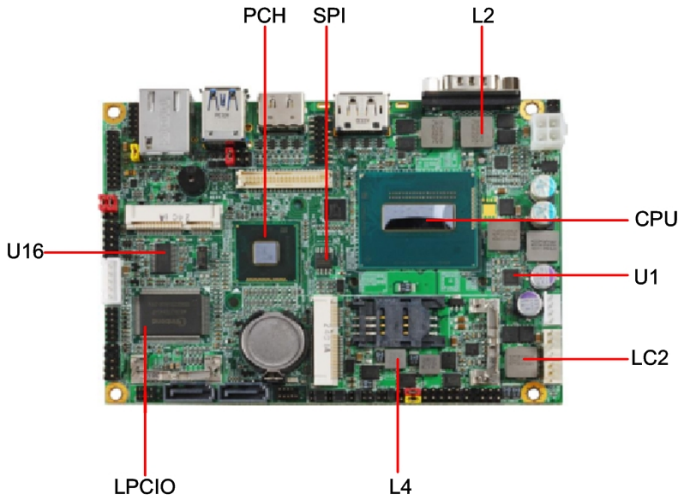
CPU	Intel® Core™ i7-4700EQ 2.40GHz
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)
HDD	Western Digital WD5002AALX-00J37A0
Power	AcBel ATX-350P-DNSS
Operating OS	Windows 7 64-bit
Test Program	3DMark06+Prime95-255a

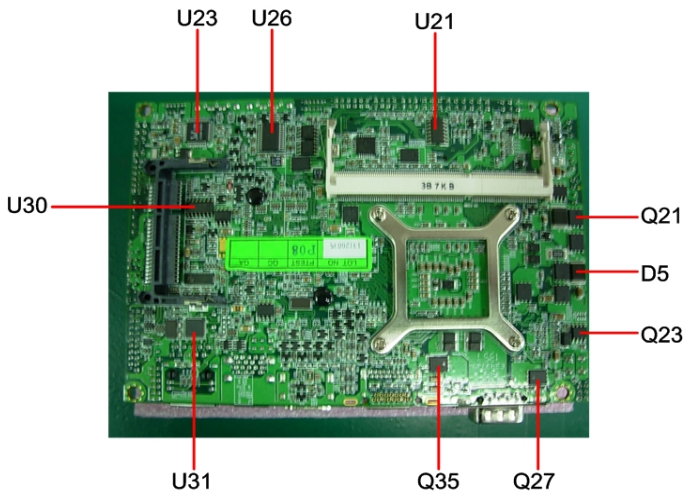
### Test Result:

Item	Environmental temperature	25 °C
1	CPU	40.4°C
2	PCH	52.0°C
3	LPCIO	40.5°C
4	SPI	51.0°C



5	L2	38.9°C
6	L4	40.6°C
7	LC2	36.1°C
8	U1	41.1°C
9	U16	37.7°C
10	D5	40.5°C
11	Q21	44.9°C
12	Q23	41.8°C
13	Q27	50.1°C
14	Q35	48.8°C
15	U21	44.0°C
16	U23	42.6°C
17	U26	39.6°C
18	U30	37.3°C
19	U31	33.2°C





## 4. Reliability Test

### 4.1 Power Consumption Test

#### 1. Test Environment:

<b>CPU</b>	Intel® Core™ i7-4700EQ 2.40GHz			
<b>Memory</b>	ACPI DDR3 1600 4GBx1(H5TC4G83AFR)			
<b>HDD</b>	Western Digital WD5002AALX-00J37A0			
<b>Power Supply</b>	SWITCHCHING MC-B350ATX 350W			
<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Win8 PRO(64-Bit) 3DMark2013 + Prime95-255a</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>12V</b>	<b>1.90</b>	<b>22.8</b>	<b>3.80</b>	<b>45.6</b>

The same as above but with LCD panel

<b>Display Panel</b>		<b>AUO M170EG01 17"LCD</b>		
<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Win8 PRO(64-Bit) 3DMark2006 + Prime95(v255a)</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>12V</b>	<b>2.00</b>	<b>24.00</b>	<b>6.65</b>	<b>79.8</b>

## 2.Test Environment:

<b>CPU</b>	<b>Intel® Core™ i7-4700EQ 2.40GHz</b>			
<b>Memory</b>	<b>ACPI DDR3 1600 4GBx1(H5TC4G83AFR)</b>			
<b>HDD</b>	<b>Western Digital WD5002AALX-00J37A0</b>			
<b>Power Supply</b>	<b>AcBel ATX-350P-DNSS 350W</b>			
<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Win8 PRO(64-Bit) 3DMark2013 + Prime95-255a</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>12V</b>	<b>1.80</b>	<b>21.60</b>	<b>3.70</b>	<b>44.40</b>

The same as above but with LCD panel

<b>Display Panel</b>		<b>AUO M170EG01 17"LCD</b>		
<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Win8 PRO(64-Bit) 3DMark2006 + Prime95(v255a)</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>12V</b>	<b>2.10</b>	<b>25.20</b>	<b>6.06</b>	<b>72.72</b>

## 3.Test Environment:

<b>CPU</b>	<b>Intel® Core™ i5-4402E 1.60GHz</b>			
<b>Memory</b>	<b>Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)</b>			
<b>HDD</b>	<b>Western Digital WD5002AALX-00J37A0</b>			
<b>Power Supply</b>	<b>SWITCHCHING MC-B350ATX 350W</b>			

Voltage	MS-DOS Boot up		Win8 PRO(64-Bit) 3DMark2013 + Prime95-255a	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
12V	1.35	16.20	2.67	32.04

The same as above but with LCD panel

Display Panel		AUO M170EG01 17"LCD		
Voltage	MS-DOS Boot up		Win8 PRO(64-Bit) 3DMark2006 + Prime95(v255a)	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
12V	1.34	16.08	4.60	55.20

#### 4.Test Environment:

CPU	Intel® Core™ i5-4402E 1.60GHz			
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)			
HDD	Western Digital WD5002AALX-00J37A0			
Power Supply	AcBel ATX-350P-DNSS 350W			
Voltage	MS-DOS Boot up		Win8 PRO(64-Bit) 3DMark2013 + Prime95-255a	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
12V	1.49	17.88	2.30	27.60

The same as above but with LCD panel

Display Panel		AUO M170EG01 17"LCD		
Voltage	MS-DOS Boot up		Win8 PRO(64-Bit) 3DMark2006 + Prime95(v255a)	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
12V	2.21	26.52	4.90	58.8

### 5.Test Environment:

<b>CPU</b>	<b>Intel® Celeron 2002E 1.50GHz</b>			
<b>Memory</b>	<b>Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)</b>			
<b>HDD</b>	<b>Western Digital WD5002AALX-00J37A0</b>			
<b>Power Supply</b>	<b>SWITCHCHING MC-B350ATX 350W</b>			
<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Win8 PRO(64-Bit) 3DMark2013 + Prime95-255a</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>12V</b>	<b>1.50</b>	<b>18.00</b>	<b>2.40</b>	<b>28.80</b>

The same as above but with LCD panel

<b>Display Panel</b>	<b>AUO M170EG01 17"LCD</b>			
<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Win8 PRO(64-Bit) 3DMark2006 + Prime95(v255a)</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>12V</b>	<b>1.51</b>	<b>18.12</b>	<b>4.70</b>	<b>56.40</b>

### 6.Test Environment:

<b>CPU</b>	<b>Intel® Celeron 2002E 1.50GHz</b>			
<b>Memory</b>	<b>Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)</b>			
<b>HDD</b>	<b>Western Digital WD5002AALX-00J37A0</b>			
<b>Power Supply</b>	<b>AcBel ATX-350P-DNSS 350W</b>			
<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Win8 PRO(64-Bit) 3DMark2013 + Prime95-255a</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>12V</b>	<b>1.30</b>	<b>15.60</b>	<b>2.27</b>	<b>27.24</b>

The same as above but with LCD panel

<b>Display Panel</b>	<b>AUO M170EG01 17"LCD</b>			
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Voltage	MS-DOS Boot up		Win8 PRO(64-Bit) 3DMark2006 + Prime95(v255a)	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
12V	1.53	18.36	4.55	54.60

### 7.Test Environment:

CPU	Intel® Core i3-4102E 1.60GHz			
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)			
HDD	Western Digital WD5002AALX-00J37A0			
Power Supply	SWITCHCHING MC-B350ATX 350W			
Voltage	MS-DOS Boot up		Win8 PRO(64-Bit) 3DMark2013 + Prime95-255a	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
12V	1.39	16.68	2.32	27.84

The same as above but with LCD panel

Display Panel	AUO M170EG01 17”LCD			
Voltage	MS-DOS Boot up		Win8 PRO(64-Bit) 3DMark2006 + Prime95(v255a)	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
12V	1.45	17.40	4.76	57.12

### 8.Test Environment:

CPU	Intel® Core i3-4102E 1.60GHz			
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)			
HDD	Western Digital WD5002AALX-00J37A0			
Power Supply	AcBel ATX-350P-DNSS 350W			

Voltage	MS-DOS Boot up		Win8 PRO(64-Bit) 3DMark2013 + Prime95-255a	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
12V	1.45	17.40	2.33	27.96

The same as above but with LCD panel

Display Panel		AUO M170EG01 17”LCD		
Voltage	MS-DOS Boot up		Win8 PRO(64-Bit) 3DMark2006 + Prime95(v255a)	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
12V	1.45	17.40	4.51	54.12

## 5. Performance Test

### 5.1 Performance Test 7.0

Windows 7 32-bit

Test Environment		
CPU	Intel® Core™ i3-4102E 1.60GHz	
Memory	Transcend DDR3L 1600 4GBx1 (SEC 431 XYK0 K4B4G0846D)	
HDD	Western Digital WD5000AAKS-00V1A0 500GB	
WEIGHTED SUITE	Result	Score
PassMark Rating	PASS	881.3
CPU Mark	PASS	1791.1
2D Graphics Mark	PASS	243.3
3D Graphics Mark	PASS	337.6
Memory Mark	PASS	583.7
Disk Mark	PASS	711.7

## Windows 7 64-bit

Test Environment		
CPU	Intel® Core™ i3-4102E 1.60GHz	
Memory	Transcend DDR3L 1600 4GBx1 (SEC 431 XYK0 K4B4G0846D)	
HDD	Western Digital WD5000AAKS-00V1A0 500GB	
WEIGHTED SUITE	Result	Score
PassMark Rating	PASS	1042.3
CPU Mark	PASS	2540.4
2D Graphics Mark	PASS	289.2
3D Graphics Mark	PASS	332.1
Memory Mark	PASS	661.2
Disk Mark	PASS	697

## Windows 7 32-bit

Test Environment		
CPU	Intel® Core™ i3-4102E 1.60GHz	
Memory	Kingston DDR3L 1600 8GB (Micron 4GE77 D9GBJ)	
HDD	Western Digital WD5000AAKS-00V1A0 500GB	
WEIGHTED SUITE	Result	Score
PassMark Rating	PASS	889.6
CPU Mark	PASS	2142.9
2D Graphics Mark	PASS	244.5
3D Graphics Mark	PASS	368.9
Memory Mark	PASS	560.9
Disk Mark	PASS	721.6



## Windows 7 64-bit

Test Environment		
CPU	Intel® Core™ i3-4102E 1.60GHz	
Memory	Kingston DDR3L 1600 8GB (Micron 4GE77 D9GBJ)	
HDD	Western Digital WD5000AAKS-00V1A0 500GB	
WEIGHTED SUITE	Result	Score
PassMark Rating	PASS	977.6
CPU Mark	PASS	2547.3
2D Graphics Mark	PASS	235.4
3D Graphics Mark	PASS	358
Memory Mark	PASS	957.1
Disk Mark	PASS	572.1

## 5.2 Performance Test 8.0

### Windows 7 64-bit

Test Environment		
CPU	Intel® Core™ i7-4700EQ 2.40GHz	
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)	
HDD	Western Digital WD5002AALX-00J37A0 500GB	
WEIGHTED SUITE	Result	Score
PassMark Rating	PASS	1878
CPU Mark	PASS	6784
2D Graphics Mark	PASS	817
3D Graphics Mark	PASS	502
Memory Mark	PASS	1429
Disk Mark	PASS	835

Test Environment		
CPU	Intel® Core™ i5-4402E 1.60GHz	
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)	
HDD	Western Digital WD5002AALX-00J37A0 500GB	
WEIGHTED SUITE	Result	Score
PassMark Rating	PASS	1568.2
CPU Mark	PASS	3754
2D Graphics Mark	PASS	663
3D Graphics Mark	PASS	450.6
Memory Mark	PASS	1317
Disk Mark	PASS	820

Test Environment		
CPU	Intel® Core™ i3-4102E 1.50GHz	
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)	
HDD	Western Digital WD5002AALX-00J37A0 500GB	
WEIGHTED SUITE	Result	Score
PassMark Rating	PASS	1283.1
CPU Mark	PASS	2364
2D Graphics Mark	PASS	422.6
3D Graphics Mark	PASS	448.9
Memory Mark	PASS	1156
Disk Mark	PASS	843

Test Environment		
CPU	Intel® Celeron 2002E 1.50GHz	
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)	

<b>HDD</b>	<b>Western Digital WD5002AALX-00J37A0 500GB</b>	
<b>WEIGHTED SUITE</b>	<b>Result</b>	<b>Score</b>
<b>PassMark Rating</b>	PASS	1075.1
<b>CPU Mark</b>	PASS	1678
<b>2D Graphics Mark</b>	PASS	396.6
<b>3D Graphics Mark</b>	PASS	343.2
<b>Memory Mark</b>	PASS	1112
<b>Disk Mark</b>	PASS	870

### 5.3 3DMark

Windows 7 SP1 64-bit

<b>Test Environment</b>			
<b>CPU</b>	<b>Intel® Core™ i7-4700EQ 2.40GHz</b>		
<b>Memory</b>	<b>Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)</b>		
<b>HDD</b>	<b>Western Digital WD5002AALX-00J37A0 500GB</b>		
<b>WEIGHTED SUITE</b>	<b>Result</b>	<b>Score</b>	<b>Remark</b>
<b>3DMark06</b>			
<b>3DMarks</b>	PASS	6580	
<b>SM2.0</b>	PASS	2048	
<b>HDR/SM3.0</b>	PASS	2757	
<b>CPU</b>	PASS	5729	
<b>3DMarkVantage</b>			
<b>3DMark</b>	PASS	P3962	
<b>GPU</b>	PASS	3127	
<b>CPU</b>	PASS	19960	
<b>3DMark11</b>			
<b>3DMark</b>	PASS	P951	

<b>Graphics</b>	PASS	850	
<b>Physics</b>	PASS	5083	
<b>Combined</b>	PASS	721	
<b>3DMark 2013</b>			
<b>FIRE STRIKE 1.1</b>	PASS	544	
<b>CLOUD GATE 1.1</b>	PASS	5172	
<b>ICE vSTORM 1.1</b>	PASS	36236	

<b>Test Environment</b>			
<b>CPU</b>	Intel® Core™ i5-4402E 1.60GHz		
<b>Memory</b>	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)		
<b>HDD</b>	Western Digital WD5002AALX-00J37A0 500GB		
WEIGHTED SUITE	Result	Score	Remark
<b>3DMark06</b>			
<b>3DMarks</b>	PASS	4023	
<b>SM2.0</b>	PASS	1316	
<b>HDR/SM3.0</b>	PASS	1640	
<b>CPU</b>	PASS	3239	
<b>3DMarkVantage</b>			
<b>3DMark</b>	PASS	P2935	
<b>GPU</b>	PASS	2414	
<b>CPU</b>	PASS	8292	
<b>3DMark11</b>			
<b>3DMark</b>	PASS	P724	
<b>Graphics</b>	PASS	639	
<b>Physics</b>	PASS	3074	
<b>Combined</b>	PASS	633	

<b>3DMark 2013</b>			
<b>FIRE STRIKE 1.1</b>	PASS	425	
<b>CLOUD GATE 1.1</b>	PASS	3822	
<b>ICE vSTORM 1.1</b>	PASS	34042	

<b>Test Environment</b>			
<b>CPU</b>	Intel® Core™ i3-4102E 1.60GHz		
<b>Memory</b>	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)		
<b>HDD</b>	Western Digital WD5002AALX-00J37A0 500GB		
<b>WEIGHTED SUITE</b>	<b>Result</b>	<b>Score</b>	<b>Remark</b>
<b>3DMark06</b>			
<b>3DMarks</b>	PASS	2931	
<b>SM2.0</b>	PASS	989	
<b>HDR/SM3.0</b>	PASS	1310	
<b>CPU</b>	PASS	1322	
<b>3DMarkVantage</b>			
<b>3DMark</b>	PASS	P2354	
<b>GPU</b>	PASS	1986	
<b>CPU</b>	PASS	5298	
<b>3DMark11</b>			
<b>3DMark</b>	PASS	P584	
<b>Graphics</b>	PASS	522	
<b>Physics</b>	PASS	1689	
<b>Combined</b>	PASS	536	
<b>3DMark 2013</b>			
<b>FIRE STRIKE 1.1</b>	PASS	441	
<b>CLOUD GATE 1.1</b>	PASS	3385	

<b>ICE vSTORM 1.1</b>	PASS	30839	
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<b>Test Environment</b>			
<b>CPU</b>	Intel® Celeron 2002E 1.50GHz		
<b>Memory</b>	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)		
<b>HDD</b>	Western Digital WD5002AALX-00J37A0 500GB		
<b>WEIGHTED SUITE</b>	<b>Result</b>	<b>Score</b>	<b>Remark</b>
<b>3DMark06</b>			
<b>3DMarks</b>	PASS	3982	
<b>SM2.0</b>	PASS	1398	
<b>HDR/SM3.0</b>	PASS	1765	
<b>CPU</b>	PASS	1661	
<b>3DMarkVantage</b>			
<b>3DMark</b>	PASS	N/A	
<b>GPU</b>	PASS	2555	
<b>CPU</b>	PASS	4089	
<b>3DMark11</b>			
<b>3DMark</b>	PASS	P517	
<b>Graphics</b>	PASS	455	
<b>Physics</b>	PASS	1687	
<b>Combined</b>	PASS	516	
<b>3DMark 2013</b>			
<b>FIRE STRIKE 1.1</b>	PASS	286	
<b>CLOUD GATE 1.1</b>	PASS	2202	
<b>ICE vSTORM 1.1</b>	PASS	23951	

**Windows 7 32-bit**

<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
<b>3DMARK2001 SE SCORE</b>	<b>Intel® Core i3-4102E 1.60GHz</b> <b>Transcend DDR3L 1600 4GBx1</b> <b>(SEC 431 XYK0 K4B4G0846D)</b> <b>Western Digital</b> <b>WD5000AAKS-00V1A0 500GB</b>	PASS	14990
<b>3DMARK2003 SCORE</b>		PASS	11422
<b>3DMARK2005 SCORE</b>		PASS	7016

**Windows 7 64-bit**

<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
<b>3DMARK2001 SE SCORE</b>	<b>Intel® Core i3-4102E 1.60GHz</b> <b>Transcend DDR3L 1600 4GBx1</b> <b>(SEC 431 XYK0 K4B4G0846D)</b> <b>Western Digital</b> <b>WD5000AAKS-00V1A0 500GB</b>	PASS	15233
<b>3DMARK2003 SCORE</b>		PASS	11552
<b>3DMARK2005 SCORE</b>		PASS	7387

**Windows 7 32-bit**

<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
<b>3DMARK2001 SE SCORE</b>	<b>Intel® Core i3-4102E 1.60GHz Kingston DDR3L 1600 8GB (Micron 4GE77 D9GBJ) Western Digital WD5000AAKS-00V1A0 500GB</b>	PASS	15407
<b>3DMARK2003 SCORE</b>		PASS	11722
<b>3DMARK2005 SCORE</b>		PASS	7744

**Windows 7 64-bit**

<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
<b>3DMARK2001 SE SCORE</b>	<b>Intel® Core i3-4102E 1.60GHz Kingston DDR3L 1600 8GB (Micron 4GE77 D9GBJ) Western Digital WD5000AAKS-00V1A0 500GB</b>	PASS	15600
<b>3DMARK2003 SCORE</b>		PASS	11914
<b>3DMARK2005 SCORE</b>		PASS	8080



### Windows 7 32-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK2006 SCORE	<b>Intel® Core i3-4102E 1.60GHz</b> <b>Transcend DDR3L 1600 4GBx1 (SEC 431 XYK0 K4B4G0846D)</b> <b>Western Digital</b> <b>WD5000AAKS-00V1A0 500GB</b>	PASS	4683
2	SM2.0 SCORE		PASS	1553
3	HDR/SM3.0 SCORE		PASS	2119
4	CPU SCORE		PASS	2115

### Windows 7 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK2006 SCORE	<b>Intel® Core i3-4102E 1.60GHz</b> <b>Transcend DDR3L 1600 4GBx1 (SEC 431 XYK0 K4B4G0846D)</b> <b>Western Digital</b> <b>WD5000AAKS-00V1A0 500GB</b>	PASS	4704
2	SM2.0 SCORE		PASS	1556
3	HDR/SM3.0 SCORE		PASS	2145
4	CPU SCORE		PASS	2076

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
1	3DMARK2006 SCORE	<b>Intel® Core i3-4102E 1.60GHz</b> <b>Kingston DDR3L 1600 8GB</b> <b>(Micron 4GE77 D9GBJ)</b> <b>Western Digital</b> <b>WD5000AAKS-00V1A0 500GB</b>	PASS	5070
2	SM2.0 SCORE		PASS	1709
3	HDR/SM3.0 SCORE		PASS	2318
4	CPU SCORE		PASS	2113

**Windows 7 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
1	3DMARK2006 SCORE	<b>Intel® Core i3-4102E 1.60GHz</b> <b>Kingston DDR3L 1600 8GB</b> <b>(Micron 4GE77 D9GBJ)</b> <b>Western Digital</b> <b>WD5000AAKS-00V1A0 500GB</b>	PASS	5098
2	SM2.0 SCORE		PASS	1720
3	HDR/SM3.0 SCORE		PASS	2333
4	CPU SCORE		PASS	2115

## 5.4 PCMark

Windows 7 SP1 64-bit

<b>Test Environment</b>			
<b>CPU</b>	Intel® Core™ i7-4700EQ 2.40GHz		
<b>Memory</b>	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)		
<b>HDD</b>	Western Digital WD5002AALX-00J37A0		
<b>WEIGHTED SUITE</b>	<b>Result</b>	<b>Score</b>	<b>Remark</b>
<b>PCMarkVantage</b>			
<b>PCMark</b>	PASS	7599	
<b>Memories</b>	PASS	5044	
<b>TV and Movies</b>	PASS	5527	
<b>Gaming</b>	PASS	5273	
<b>Music</b>	PASS	7143	
<b>Communications</b>	PASS	7849	
<b>Productivity</b>	PASS	7424	
<b>HDD</b>	PASS	4390	
<b>PCMark8</b>			
<b>Home Score</b>	PASS	3291	
<b>Web Browsing-Amazonia</b>	PASS	0.13 s	
<b>Web Browsing-JunglePin</b>	PASS	0.32 s	
<b>Photo Editing</b>	PASS	3.4 s	
<b>Writing</b>	PASS	5.22 s	
<b>Video Chat encoding</b>	PASS	70.0 ms	
<b>Video Chat playback 1</b>	PASS	30.0 fps	
<b>Casual Gaming</b>	PASS	1639 fps	

<b>Test Environment</b>			
<b>CPU</b>	Intel® Core™ i5-4402E 1.60GHz		
<b>Memory</b>	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)		
<b>HDD</b>	Western Digital WD5002AALX-00J37A0		
<b>WEIGHTED SUITE</b>	<b>Result</b>	<b>Score</b>	<b>Remark</b>
<b>PCMarkVantage</b>			
<b>PCMark</b>	PASS	6485	
<b>Memories</b>	PASS	4490	
<b>TV and Movies</b>	PASS	4098	
<b>Gaming</b>	PASS	4193	
<b>Music</b>	PASS	6883	
<b>Communications</b>	PASS	7590	
<b>Productivity</b>	PASS	7059	
<b>HDD</b>	PASS	43840	
<b>PCMark8</b>			
<b>Home Score</b>	PASS	3040	
<b>Web Browsing-Amazonia</b>	PASS	0.13 s	
<b>Web Browsing-JunglePin</b>	PASS	0.33 s	
<b>Photo Editing</b>	PASS	4.38 s	
<b>Writing</b>	PASS	4.25 s	
<b>Video Chat encoding</b>	PASS	122.0 ms	
<b>Video Chat playback 1</b>	PASS	30. fps	
<b>Casual Gaming</b>	PASS	15.1 fps	

<b>Test Environment</b>	
<b>CPU</b>	Intel® Core™ i3-4102E 1.50GHz
<b>Memory</b>	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)

<b>HDD</b>	<b>Western Digital WD5002AALX-00J37A0</b>		
<b>WEIGHTED SUITE</b>	<b>Result</b>	<b>Sorce</b>	<b>Remark</b>
<b>PCMarkVantage</b>			
<b>PCMark</b>	PASS	4690	
<b>Memories</b>	PASS	3261	
<b>TV and Movies</b>	PASS	3154	
<b>Gaming</b>	PASS	3554	
<b>Music</b>	PASS	4741	
<b>Communications</b>	PASS	4209	
<b>Productivity</b>	PASS	4647	
<b>HDD</b>	PASS	4245	
<b>PCMark8</b>			
<b>Home Score</b>	PASS	2479	
<b>Web Browsing-Amazonia</b>	PASS	0.14 s	
<b>Web Browsing-JunglePin</b>	PASS	0.38 s	
<b>Photo Editing</b>	PASS	6396 s	
<b>Writing</b>	PASS	6.25 s	
<b>Video Chat encoding</b>	PASS	195.0 ms	
<b>Video Chat playback 1</b>	PASS	30 fps	
<b>Casual Gaming</b>	PASS	15.7 fps	

<b>Test Environment</b>			
<b>CPU</b>	<b>Intel® Celeron 2002E 1.50GHz</b>		
<b>Memory</b>	<b>Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)</b>		
<b>HDD</b>	<b>Western Digital WD5002AALX-00J37A0</b>		
<b>WEIGHTED SUITE</b>	<b>Result</b>	<b>Sorce</b>	<b>Remark</b>
<b>PCMarkVantage</b>			

<b>PCMark</b>	PASS	4449	
<b>Memories</b>	PASS	3093	
<b>TV and Movies</b>	PASS	3060	
<b>Gaming</b>	PASS	2535	
<b>Music</b>	PASS	4332	
<b>Communications</b>	PASS	4653	
<b>Productivity</b>	PASS	4556	
<b>HDD</b>	PASS	3719	
<b>PCMark8</b>			
<b>Home Score</b>	PASS	2301	
<b>Web Browsing-Amazonia</b>	PASS	0.14 s	
<b>Web Browsing-JunglePin</b>	PASS	0.4 s	
<b>Photo Editing</b>	PASS	7.63 s	
<b>Writing</b>	PASS	5.94 s	
<b>Video Chat encoding</b>	PASS	186.3 ms	
<b>Video Chat playback 1</b>	PASS	20.0 fps	
<b>Casual Gaming</b>	PASS	13.1 fps	

## PCMARK 2002

<b>Test Environment</b>
<b>Intel® Core i3-4102E 1.60GHz</b> <b>Transcend DDR3L 1600 4GBx1 (SEC 431 XYK0 K4B4G0846D)</b> <b>Western Digital WD5000AAKS-00V1A0 320GB</b>

Windows 7 32-bit

Item	Weighted Suite	Result	Remark
1	<b>CPU SCORE</b>	PASS	N/A

<b>2</b>	<b>Memory SCORE</b>	PASS	28317
<b>3</b>	<b>HDD SCORE</b>	PASS	2778

**Windows 7 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>CPU SCORE</b>	PASS	N/A
<b>2</b>	<b>Memory SCORE</b>	PASS	28845
<b>3</b>	<b>HDD SCORE</b>	PASS	2959

**PCMARK 2002**

<b>Test Environment</b>
<b>Intel® Core i3-4102E 1.60GHz</b> <b>Kingston DDR3L 1600 8GB (Micron 4GE77 D9GBJ)</b> <b>Western Digital WD5000AAKS-00V1A0 320GB</b>

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>CPU SCORE</b>	PASS	N/A
<b>2</b>	<b>Memory SCORE</b>	PASS	28578
<b>3</b>	<b>HDD SCORE</b>	PASS	2730

**Windows 7 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>CPU SCORE</b>	PASS	N/A
<b>2</b>	<b>Memory SCORE</b>	PASS	28726
<b>3</b>	<b>HDD SCORE</b>	PASS	2376

## PCMARK 2004

<b>Test Environment</b>
<b>Intel® Core i3-4102E 1.60GHz</b> <b>Transcend DDR3L 1600 4GBx1 (SEC 431 XYK0 K4B4G0846D)</b> <b>Western Digital WD5000AAKS-00V1A0 320GB</b>

### Windows 7 32-bit

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>PCMark SCORE</b>	PASS	N/A
<b>2</b>	<b>CPU SCORE</b>	PASS	6319
<b>3</b>	<b>Memory SCORE</b>	PASS	7319
<b>4</b>	<b>Graphic SCORE</b>	PASS	7816
<b>5</b>	<b>HDD SCORE</b>	PASS	N/A

### Windows 7 64-bit

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>PCMark SCORE</b>	PASS	N/A
<b>2</b>	<b>CPU SCORE</b>	PASS	6344
<b>3</b>	<b>Memory SCORE</b>	PASS	7268
<b>4</b>	<b>Graphic SCORE</b>	PASS	7987
<b>5</b>	<b>HDD SCORE</b>	PASS	N/A



## PCMARK 2004

<b>Test Environment</b>
Intel® Core i3-4102E 1.60GHz Kingston DDR3L 1600 8GB (Micron 4GE77 D9GBJ) Western Digital WD5000AAKS-00V1A0 320GB

### Windows 7 32-bit

Item	Weighted Suite	Result	Remark
1	PCMark SCORE	PASS	N/A
2	CPU SCORE	PASS	6226
3	Memory SCORE	PASS	7579
4	Graphic SCORE	PASS	8186
5	HDD SCORE	PASS	N/A

### Windows 7 64-bit

Item	Weighted Suite	Result	Remark
1	PCMark SCORE	PASS	N/A
2	CPU SCORE	PASS	6334
3	Memory SCORE	PASS	7572
4	Graphic SCORE	PASS	8330
5	HDD SCORE	PASS	N/A

## PCMARK 2005

<b>Test Environment</b>
<b>Intel® Core i3-4102E 1.60GHz</b> <b>Transcend DDR3L 1600 4GBx1 (SEC 431 XYK0 K4B4G0846D)</b> <b>Western Digital WD5000AAKS-00V1A0 320GB</b>

### Windows 7 32-bit

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>PCMark SCORE</b>	PASS	N/A
<b>2</b>	<b>CPU SCORE</b>	PASS	5349
<b>3</b>	<b>Memory SCORE</b>	PASS	4232
<b>4</b>	<b>Graphic SCORE</b>	PASS	N/A
<b>5</b>	<b>HDD SCORE</b>	PASS	N/A

### Windows 7 64-bit

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>PCMark SCORE</b>	PASS	N/A
<b>2</b>	<b>CPU SCORE</b>	PASS	5426
<b>3</b>	<b>Memory SCORE</b>	PASS	6248
<b>4</b>	<b>Graphic SCORE</b>	PASS	N/A
<b>5</b>	<b>HDD SCORE</b>	PASS	N/A

## PCMARK 2005

<b>Test Environment</b>
<b>Intel® Core i3-4102E 1.60GHz</b> <b>Kingston DDR3L 1600 8GB (Micron 4GE77 D9GBJ)</b> <b>Western Digital WD5000AAKS-00V1A0 320GB</b>

### Windows 7 32-bit

Item	Weighted Suite	Result	Remark
1	PCMark SCORE	PASS	N/A
2	CPU SCORE	PASS	5431
3	Memory SCORE	PASS	6266
4	Graphic SCORE	PASS	N/A
5	HDD SCORE	PASS	N/A

### Windows 7 64-bit

Item	Weighted Suite	Result	Remark
1	PCMark SCORE	PASS	N/A
2	CPU SCORE	PASS	5417
3	Memory SCORE	PASS	6283
4	Graphic SCORE	PASS	N/A
5	HDD SCORE	PASS	N/A

## 5.5 AQUAMARK3

Test Environment	
CPU	Intel® Core™ i7-4700EQ 2.40GHz
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)
HDD	Western Digital WD5002AALX-00J37A0

Windows 7 64-bit

WEIGHTED SUITE	Result	Sorce	Remark
GFX	PASS	15519	
CPU	PASS	9148	

Test Environment	
CPU	Intel® Core™ i5-4402E 1.60GHz
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)
HDD	Western Digital WD5002AALX-00J37A0

Windows 7 64-bit

WEIGHTED SUITE	Result	Sorce	Remark
GFX	PASS	11901	
CPU	PASS	8569	

Test Environment	
CPU	Intel® Core™ i3-4102E 1.50GHz
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)
HDD	Western Digital WD5002AALX-00J37A0

Windows 7 64-bit

WEIGHTED SUITE	Result	Sorce	Remark
GFX	PASS	11055	
CPU	PASS	8066	

Test Environment	
CPU	Intel® Celeron 2002E 1.50GHz
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)
HDD	Western Digital WD5002AALX-00J37A0

Windows 7 64-bit

WEIGHTED SUITE	Result	Sorce	Remark
GFX	PASS	7491	
CPU	PASS	5223	

## 5.6 CINEBENCH R15

Test Environment	
CPU	Intel® Core™ i7-4700EQ 2.40GHz
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)
HDD	Western Digital WD5002AALX-00J37A0

Windows 7 64-bit

WEIGHTED SUITE	Result	Sorce	Remark
OpenGL	PASS	15.76fps	
CPU	PASS	542 cb	

Test Environment	
CPU	Intel® Core™ i5-4402E 1.60GHz
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)
HDD	Western Digital WD5002AALX-00J37A0

Windows 7 64-bit

WEIGHTED SUITE	Result	Sorce	Remark
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<b>OpenGL</b>	PASS	17.13fps	
<b>CPU</b>	PASS	240 cb	

<b>Test Environment</b>	
<b>CPU</b>	Intel® Core™ i3-4102E 1.50GHz
<b>Memory</b>	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)
<b>HDD</b>	Western Digital WD5002AALX-00J37A0

Windows 7 64-bit

<b>WEIGHTED SUITE</b>	<b>Result</b>	<b>Sorce</b>	<b>Remark</b>
<b>OpenGL</b>	PASS	19.70 fps	
<b>CPU</b>	PASS	162	

<b>Test Environment</b>	
<b>CPU</b>	Intel® Celeron 2002E 1.50GHz
<b>Memory</b>	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)
<b>HDD</b>	Western Digital WD5002AALX-00J37A0

Windows 7 64-bit

<b>WEIGHTED SUITE</b>	<b>Result</b>	<b>Sorce</b>	<b>Remark</b>
<b>OpenGL</b>	PASS	12.57 fps	
<b>CPU</b>	PASS	104	

## 5.7 ZD CPUMARK

<b>Test Environment</b>	
<b>CPU</b>	Intel® Core™ i7-4700EQ 2.40GHz
<b>Memory</b>	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)
<b>HDD</b>	Western Digital WD5002AALX-00J37A0

Windows 7 64-bit

Item	WEIGHTED SUITE	Result	Remark
1	SCORE	PASS	555

Test Environment	
CPU	Intel® Core™ i5-4402E 1.60GHz
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)
HDD	Western Digital WD5002AALX-00J37A0

Windows 7 64-bit

Item	WEIGHTED SUITE	Result	Remark
1	SCORE	PASS	463

Test Environment	
CPU	Intel® Core™ i3-4102E 1.50GHz
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)
HDD	Western Digital WD5002AALX-00J37A0

Windows 7 64-bit

Item	WEIGHTED SUITE	Result	Remark
1	SCORE	PASS	278

Test Environment	
CPU	Intel® Celeron 2002E 1.50GHz
Memory	Transcend DDR3L 1600 4GBx1 (SEC 234 HYK0 K4B4G0846B)
HDD	Western Digital WD5002AALX-00J37A0

Windows 7 64-bit

Item	WEIGHTED SUITE	Result	Remark
1	SCORE	PASS	260

## 5.8 Storage Performance

### 5.8.1 HDD

Test environment:

OS Windows 7 (64Bit)

Program (HD Tune)

HDD Model	Interface	Capacity	Average (MB/s)	Burst Rate (MB/s)	Access time (ms)
Western Digital WD5002AALX-00J37A0	SATA3	500 GB	102.7	151.4	16.7
Western Digital WD5000AAKX	SATA3	500 GB	127	156	15.7
Western Digital WD3200BEKT (2.5")	SATA2	320 GB	64.4	111.7	14.9
Kingston SKC300S37A180S(SSD)	SATA3	180 GB	255.9	201.3	0.2
InnoDisk DEMSR-32GD06SC2QC	mSATA3	32 GB	225	173.6	0.1
ADATA UV128	USB3	32 GB	93.9	151	17.4



<b>Kingston DataTraveler</b>	<b>USB2</b>	<b>16 GB</b>	19.9	14.7	0.7
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## 5.8.2 CD-ROM

Test environment:

OS Windows 7 64-bits

Program (NERO)

<b>CD-ROM Model</b>	<b>Interface</b>	<b>Average Speed(x)</b>	<b>Access times Full Read(ms)</b>	<b>Burst Rate (MB/s)</b>	<b>CD (x)</b>
<b>PIONEER DDVR-S19LBK</b>	<b>SATA</b>	6.84	193	51	52
<b>ASUS DRW-24DT1ST</b>	<b>SATA</b>	6.72	165	42	52
<b>ZYNET HL-DT-ST DVDRW</b>	<b>USB</b>	4.97	245	23	52
<b>LITE-ON ETAU108</b>	<b>USB</b>	4.97	245	23	52