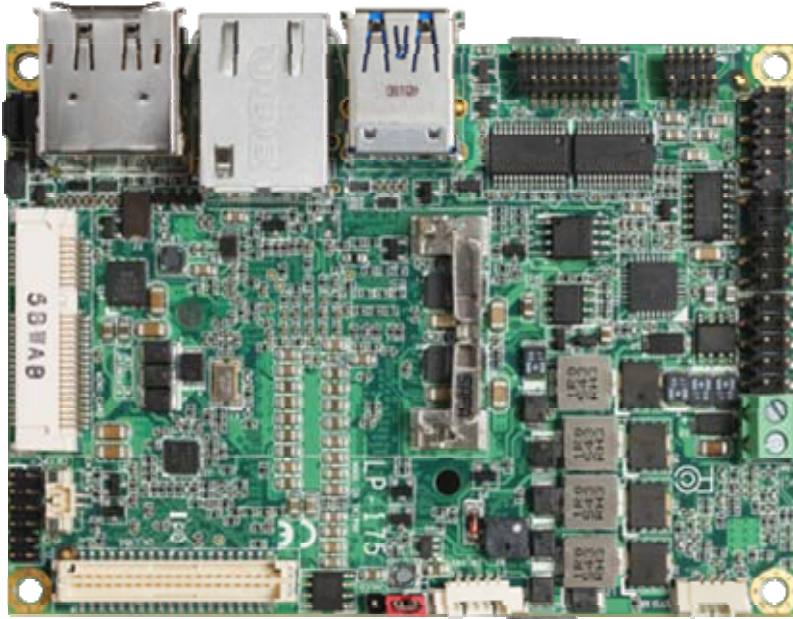


# Product Test Report



<b>Product Name</b>	<b>LP-175</b>
<b>Product Version</b>	<b>A</b>
<b>Issued Date</b>	<b>2017.02.07</b>
<b>Report Edition</b>	<b>1.2</b>
<b>BIOS Version</b>	<b>1.1</b>
<b>Testing Engineer</b>	<b>Rick</b>
<b>Check Engineer</b>	<b>Perry</b>

<b>REVISION HISTORY</b>			
<b>DATE</b>	<b>REVISION NO.</b>	<b>PAGE</b>	<b>DESCRIPTONS</b>
2016.10.14	Ver. 1.0	37	Initial Release
2016.11.07	Ver. 1.1	38	Add Boot up test and PCI Express Mini Card
2017.02.07	Ver. 1.2	45	Add Power Consumption Test and Performance Test

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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	PS2	PASS
8	CN_AUDIO	PASS
9	LAN	PASS
10	DDR4	PASS
11	SATA	PASS
12	USB2.0 1/2	PASS
13	USB3.0 1/2	PASS
14	COM 1/2	PASS
15	HDMI	PASS
16	Display Port	PASS
17	MINI_CRAD	PASS
18	BAT	PASS

## Jumper

Item	Description	Result
1	JRTC	PASS
2	JMSATA	PASS
3	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	Halt On	PASS	
6	Selection Language	PASS	
7	Serial Port	PASS	
8	Watch Dog Timer	PASS	
9	Set Supervisor Password	PASS	
10	Set User Password	PASS	
11	Set HDD Password	PASS	
12	Quick Boot	PASS	
13	Diagnostic Splash Screen	PASS	
14	Diagnostic Summary Screen	PASS	
15	Serial Port	PASS	
16	Audio configuration	PASS	
17	USB Configuration	PASS	

## 1.3 Driver

### CD edition : IPCI1-1.4

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

Item	Description	Result	Version
1	Chipset Driver	PASS	10.1.1.13
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	10.1.1.13
2	VGA Driver	PASS	20.19.15.4352
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	10.1.1.13
2	VGA Driver	PASS	20.19.15.4352
3	Audio Driver	PASS	6.0.1.7541
4	LAN Driver	PASS	12.13.17.4

#### 4. Windows 8.1 64 bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	10.1.1.13
2	VGA Driver	PASS	20.19.15.4352

<b>3</b>	<b>Audio Driver</b>	PASS	<b>6.0.1.7541</b>
<b>4</b>	<b>LAN Driver</b>	PASS	<b>12.13.17.4</b>

**5. Windows 10 32 bit Driver Test**

<b>Item</b>	<b>Description</b>	<b>Result</b>	<b>Version</b>
<b>1</b>	<b>Chipset Driver</b>	PASS	<b>10.1.1.13</b>
<b>2</b>	<b>VGA Driver</b>	PASS	<b>20.19.15.4352</b>
<b>3</b>	<b>Audio Driver</b>	PASS	<b>6.0.1.7541</b>
<b>4</b>	<b>LAN Driver</b>	PASS	<b>12.13.17.4</b>

**6. Windows 10 64 bit Driver Test**

<b>Item</b>	<b>Description</b>	<b>Result</b>	<b>Version</b>
<b>1</b>	<b>Chipset Driver</b>	PASS	<b>10.1.1.13</b>
<b>2</b>	<b>VGA Driver</b>	PASS	<b>20.19.15.4352</b>
<b>3</b>	<b>Audio Driver</b>	PASS	<b>6.0.1.7541</b>
<b>4</b>	<b>LAN Driver</b>	PASS	<b>12.13.17.4</b>



## 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="#">SR2EU</a>	2.30GHz	Core	i3-6100U	15 W	3 MB	PASS
<a href="#">SR2F0</a>	2.40GHz	Core	i5-6300U	15 W	3 MB	PASS
<a href="#">SSR2F1</a>	2.60GHz	Core	i7-6600U	15 W	4 MB	PASS

### 2.2 Memory Test

Test environment:

OS: Windows 7

Test program : PC MARK 2005

Manufacturer	Chip	Frequency	Capacity Mbytes	Memory test Source
Kingston KVR21S15D8/16	Micro 6JB47D9TBH	DDR4 2133	16 GB	PASS
Acpi DDRIV-2133 SO-DIMM 1.2V	SKhynix H5AN4G8NMFR	DDR4 2133	8 GB	PASS
ACPI CMA6-3FA01BAR0 1M00	SKhynix H5AN4GBNMFB	DDR4 2133	4 GB	PASS
Transcend TS1GSH64V1H	SEC 607 K4A4G08 5WE BCRC	DDR4 2133	8 GB	PASS

<b>MEMPHIS D4SO512M644G-A58 HA</b>	<b>SKhynix H5AN4G8NMFR</b>	<b>DDR4 2400</b>	<b>4 GB</b>	<b>PASS</b>
<b>MEMPHIS D4SO1G644G-A58 HA</b>	<b>SKhynix H5AN4G8NMFR</b>	<b>DDR4 2400</b>	<b>8 GB</b>	<b>PASS</b>
<b>Kingston KVR21S15D8/8</b>	<b>SKhynix H5AN4G8NMFR</b>	<b>DDR4 2133</b>	<b>8 GB</b>	<b>PASS</b>
<b>Crucial CT4G4SFS8213</b>	<b>5RA77D9RGQ</b>	<b>DDR4 2133</b>	<b>4GB</b>	<b>PASS</b>

## 2.3 HDMI Graphic Quality Test

Test environment:

OS Windows 10 32-bit

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>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 Display Port Graphic Quality Test**

**Test environment:**

**OS Windows 10 32-bit**

**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 480</b>	<b>16 /32bit</b>	<b>PASS</b>	
<b>1440 x 576</b>	<b>16 /32bit</b>	<b>PASS</b>	

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 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	

OS Windows 8.1 32/64-bit

Driver version : 6.0.1.7541

Item	Description	Result	Remark
1	2.1CH	PASS	
2	Microphone	PASS	

OS Windows 10 32/64-bit

Driver version : 6.0.1.7541

Item	Description	Result	Remark
1	2.1CH	PASS	
2	Microphone	PASS	

## 2.6 HDD Test

Test environment:

OS Windows 7

HDD Model	Interface	Capacity	HDD Size Detect	HDD Data Transfer	HDD LED Check
Western Digital WD3200BEKT-00F3T0	SATA	320 GB	PASS	PASS	PASS
Western Digital WD5000BPKT-00PK4T0	SATA	500 GB	PASS	PASS	PASS
Western Digital WD5000LPCX-22VHAT0	SATA	500 GB	PASS	PASS	PASS
MemoRight MRSAJ6C064GC125C00	SSD	64 GB	PASS	PASS	PASS
INTEL SSDSC2BW240A4	SSD	240 GB	PASS	PASS	PASS
KINGSTON SV300S37A	SSD	240 GB	PASS	PASS	PASS
Crucial CT120M500SSD3	mSATA	120 GB	PASS	PASS	PASS
InnoDisk DEMSR-32GD06SC2QC	mSATA	32 GB	PASS	PASS	PASS
TOSHIBA TransMemory-Ex2	USB 3.0	64 GB	PASS	PASS	PASS
SanDisk Extreme	USB 3.0	64 GB	PASS	PASS	PASS
Silicon-Power	USB 2.0	4 GB	PASS	PASS	PASS

## 2.7 DVD-ROM Test

Test environment:

OS Windows 7

DVD-ROM Model	Interface	DVD-ROM Detect	DVD-ROM Data Transfer	Play DVD
PIONEER DVR-XD11T	USB	PASS	PASS	PASS
LITEON DVD eTAU108	USB	PASS	PASS	PASS

## 2.8 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	

## 2.9 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	

## 2.10 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	



## 2.11 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)

## 2.12 Adapter Test

Item	Type	Description	Result	Remark
1	Adapter	TG-4201-5V 30W	PASS	
2	Adapter	SECPRE STD-0505P 25W	PASS	
3	Adapter	SCEPRE PS2D-5038APL6A 19W	PASS	

Power supply needs add DC-DC3

### 2.13 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	

### 2.14 PCI Express Mini Card

Motherboard	PCI Express mini card	Result	Remark
LP-175	MPX-210D	PASS	WIN7
	MPX-210D2	PASS	WIN7
	MPX-350	PASS	WIN7 & WIN8.1
	MPX-574D	PASS	WIN7
	MPX-574D2	PASS	WIN7
	MPX-643	PASS	WIN7
	MPX-885	PASS	WIN7
	MPX-6864	PASS	WIN7
	MPX-7202	PASS	WIN7
	MPX-8188	PASS	WIN7
	MPX-9125	NO SUPPLY	
	MPX-25858	PASS	WIN7
	mSATA	PASS	WIN7

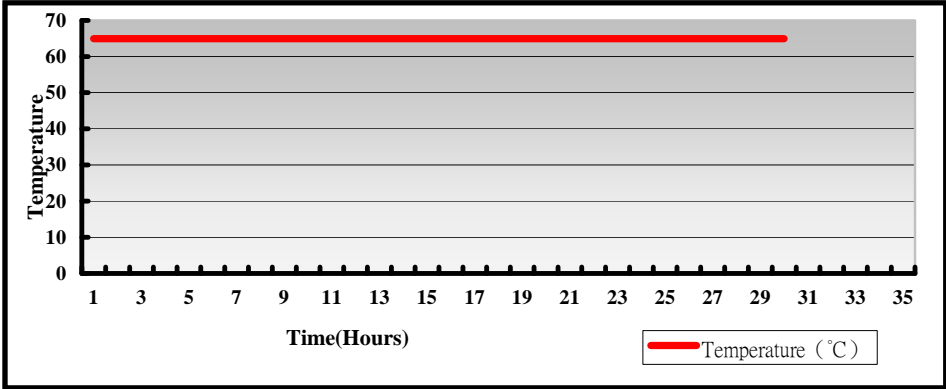
### 3. Environmental test

#### 3.1 Temperature Test

Hardware Device list:

System Board	LP-175 include Heat Spreader
CPU	Intel(R) Core(TM) i3-6100U 2.30GHz
Memory	Transcend DDR4 2133 8GB (SEC 607 K4A4G08 5WE BCRC)
HDD	Western Digital WD3200BEKT-00F3T0 320GB
Operating OS	Windows 7
Test Equipment	THERMOTRON 2800 Programmer/Controller
Test Program	3DMark 2006 + Prime95

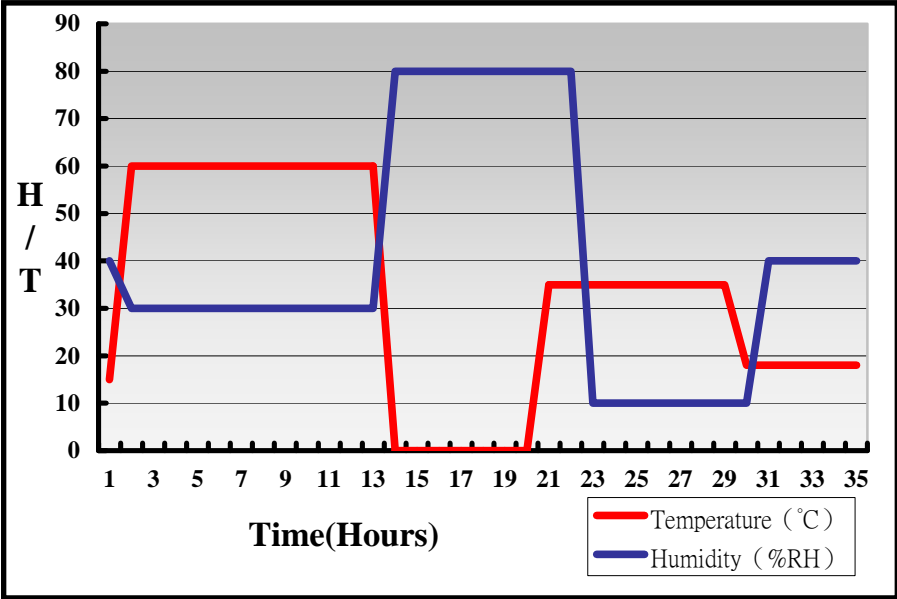
#### Test Result:



**Hardware Device list:**

System Board	LP-175 include Heat Spreader
CPU	Intel(R) Core(TM) i3-6100U 2.30GHz
Memory	Transcend DDR4 2133 8GB (SEC 607 K4A4G08 5WE BCRC)
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:

System Board	LP-175 include Heat Spreader
CPU	Intel(R) Core(TM) i3-6100U 2.30GHz
Memory	Transcend DDR4 2133 8GB (SEC 607 K4A4G08 5WE BCRC)
HDD	Western Digital WD3200BEKT-00F3T0 320GB

Temperature	Result	Remark
-40°C	PASS	50 Times.
75°C	PASS	50 Times

## 3.2 Thermal measurements at various points on the board

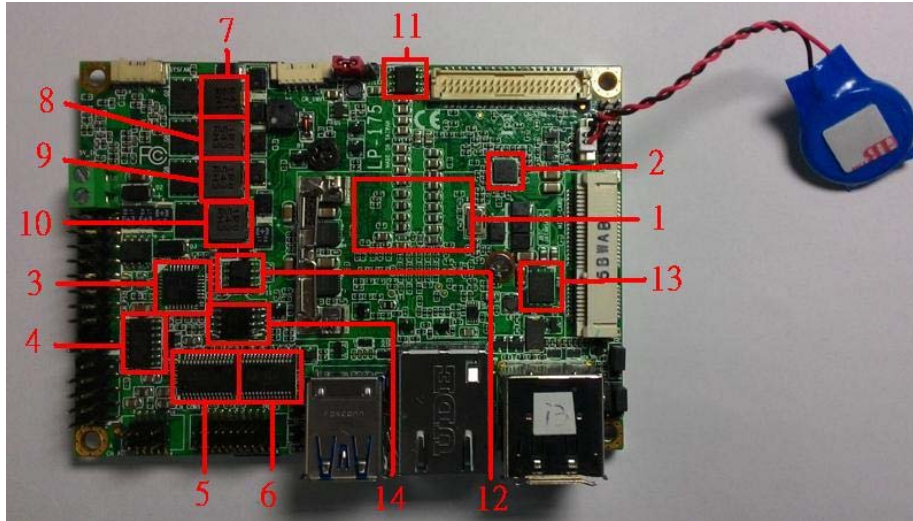
### Test Environment:

CPU	Intel(R) Core(TM) i3-6100U 2.30GHz
Memory	Transcend DDR4 2133 8GB (SEC 607 K4A4G08 5WE BCRC)
HDD	Western Digital WD3200BEKT-00F3T0 320GB
Power	SEED BS400 & DC-DC3_A
Operating System	Windows 7 32-bit
Test Program	BurnIn 7.1

### Test Result:

Item	Environmental temperature	24.2°C
1	CPU	83.1°C
2	U2 (ISL95853HRZ)	80.1°C
3	U5 (ISL6537CR)	66.8°C
4	U7 (ITS74HC14)	63.2°C
5	U12 (ICADM213ECA-T)	72.5°C

6	U13 (ICADM213ECA-T)	73°C
7	L2 (LLC0.47UH/063T)	71.7°C
8	L3 (LLC1.0UH/063T)	70.3°C
9	L4 (LLC1.0UH/063T)	68.1°C
10	L5 (LLC1UH/063T)	68°C
11	Q1 (IC9934)	82°C
12	Q13 (TMSFDMS8984)	70.2°C
13	Q14 (TMSIRFH7914PBF)	82.4°C
14	SPI (ICW25Q64CVSSIG)	71.1°C
15	Heatsink	84°C



## 4. Reliability Test

### 4.1 Power Consumption Test

#### 1. Test Environment:

CPU	Intel(R) Core(TM) i7-6600U 2.60GHz			
Memory	Kingston DDR4 2133 16GB (Micro 6JB47D9TBH)			
HDD	Western Digital WD3200BEKT-00F3T0 320GB			
POWER	Seasonic SS-520GB & DC-DC3-5V_A			
Voltage	MS-DOS Boot up		Windows 7 32-bit 3DMARK 2006 + Prime95	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
5V	2.42	12.1	4.9	24.5

The same as above but with LCD panel

Display Panel	AUO M170EG01 17"LCD			
Voltage	MS-DOS Boot up		Windows 7 32-bit 3DMARK 2006 + Prime95	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
5V	3.26	16.3	6.14	30.7

\*The Panel Backlight is connected to Power Supply 12V.

**2. Test Environment:**

<b>CPU</b>	Intel(R) Core(TM) i5-6300U 2.60GHz			
<b>Memory</b>	Kingston DDR4 2133 16GB (Micro 6JB47D9TBH)			
<b>HDD</b>	Western Digital WD3200BEKT-00F3T0 320GB			
<b>POWER</b>	Seasonic SS-520GB & DC-DC3-5V_A			
<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Windows 7 32-bit 3DMARK 2006 + Prime95</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>5V</b>	<b>2.57</b>	<b>12.85</b>	<b>5.19</b>	<b>25.95</b>

The same as above but with LCD panel

<b>Display Panel</b>	AUO M170EG01 17"LCD			
<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Windows 7 32-bit 3DMARK 2006 + Prime95</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>5V</b>	<b>3.71</b>	<b>18.55</b>	<b>6.42</b>	<b>32.1</b>

\*The Panel Backlight is connected to Power Supply 12V.



### 3. Test Environment:

<b>CPU</b>	Intel(R) Core(TM) i3-6100U 2.30GHz			
<b>Memory</b>	Transcend DDR4 2133 8GB (SEC 607 K4A4G08 5WE BCRC)			
<b>HDD</b>	Western Digital WD3200BEKT-00F3T0 320GB			
<b>POWER</b>	SEED BS400 & DC-DC3-5V_A			
<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Windows 7 32-bit 3DMARK 2006 + Prime95</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>5V</b>	<b>3.35</b>	<b>16.75</b>	<b>5.53</b>	<b>27.65</b>

### 4. Test Environment:

<b>CPU</b>	Intel(R) Core(TM) i7-6600U 2.60GHz			
<b>Memory</b>	Kingston DDR4 2133 16GB (Micro 6JB47D9TBH)			
<b>HDD</b>	Western Digital WD3200BEKT-00F3T0 320GB			
<b>12V Adapter</b>	LI SHIN 0219B1280 & DC-DC3-5V_A			
<b>Voltage</b>	<b>MS-DOS Boot up</b>		<b>Windows 7 32-bit 3DMark2006 + Prime95</b>	
	<b>Current ( A )</b>	<b>Power ( W )</b>	<b>Current ( A )</b>	<b>Power ( W )</b>
<b>5V</b>	<b>1.64</b>	<b>8.2</b>	<b>5.94</b>	<b>29.7</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) i3-6100U 2.30GHz	PASS	10738
3DMARK2005 Scores	Acpi DDR4 2133 4GB (SKhynix H5AN4GBNMFB) Western Digital WD3200BEKT-00F3T0 320GB	PASS	11255

Windows 7 64-bit

Weighted Suite	Test Environment	Result	Remark
3DMARK2003 Scores	Intel(R) Core(TM) i3-6100U 2.30GHz	PASS	13192
3DMARK2005 Scores	Acpi DDR4 2133 4GB (SKhynix H5AN4GBNMFB) Western Digital WD3200BEKT-00F3T0 320GB	PASS	9938

**Windows 7 64-bit**

<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
<b>3DMARK2003 Scores</b>	<b>Intel(R) Core(TM) i3-6100U 2.30GHz Transcend DDR4 2133 8GB</b>	<b>PASS</b>	<b>13510</b>
<b>3DMARK2005 Scores</b>	<b>(SEC 607 K4A4G08 5WE BCRC) Western Digital WD3200BEKT-00F3T0 320GB</b>	<b>NO SUPPLY</b>	<b>N/A</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) i5-6300U 2.40GHz Kingston DDR4 2133 16GB</b>	<b>PASS</b>	<b>17957</b>
<b>3DMARK2005 Scores</b>	<b>(Micro 6JB47D9TBH) Western Digital WD3200BEKT-00F3T0 320GB</b>	<b>PASS</b>	<b>12827</b>

**Windows 7 32-bit**

Weighted Suite	Test Environment	Result	Remark
3DMARK2003 Scores	Intel(R) Core(TM) i7-6600U 2.60GHz	PASS	17826
3DMARK2005 Scores	Kingston DDR4 2133 16GB (Micro 6JB47D9TBH) Western Digital WD3200BEKT-00F3T0 320GB	PASS	13300

**5.2 3D MARK2006**

**Windows 7 32-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	Intel(R) Core(TM) i3-6100U 2.30GHz	PASS	5997
2	SM2.0 Source	Acpi DDR4 2133 4GB (SKhynix H5AN4GBNMFB)	PASS	2343
3	HDR/SM3.0 Source	Western Digital WD3200BEKT-00F3T0	PASS	2352
4	CPU Source	320GB	PASS	2738

**Windows 7 64-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	<b>Intel(R) Core(TM) i3-6100U 2.30GHz Acpi DDR4 2133 4GB (SKhynix 5AN4GBNMFB) Western Digital WD3200BEKT-00F3T0 320GB</b>	PASS	4073
2	SM2.0 Source		PASS	1352
3	HDR/SM3.0 Source		PASS	1807
4	CPU Source		PASS	1980

**Windows 7 32-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	<b>Intel(R) Core(TM) i3-6100U 2.30GHz Transcend DDR4 2133 8GB (SEC 607 K4A4G08 5WE BCRC) Western Digital WD3200BEKT-00F3T0 320GB</b>	PASS	4558
2	SM2.0 Source		PASS	1879
3	HDR/SM3.0 Source		PASS	1779
4	CPU Source		PASS	1794

**Windows 7 64-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	Intel(R) Core(TM) i3-6100U 2.30GHz  Transcend DDR4 2133 8GB (SEC 607 K4A4G08 5WE BCRC) Western Digital WD3200BEKT-00F3T0 320GB	PASS	5040
2	SM2.0 Source		PASS	2021
3	HDR/SM3.0 Source		PASS	1961
4	CPU Source		PASS	2170

**Windows 7 32-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	Intel(R) Core(TM) i5-6300U 2.40GHz  Kingston DDR4 2133 16GB (Micro 6JB47D9TBH) Western Digital WD3200BEKT-00F3T0 320GB	PASS	7663
2	SM2.0 Source		PASS	2575
3	HDR/SM3.0 Source		PASS	3318
4	CPU Source		PASS	3972

### Windows 7 32-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	<b>Intel(R) Core(TM) i7-6600U 2.60GHz Kingston DDR4 2133 16GB (Micro 6JB47D9TBH) Western Digital WD3200BEKT-00F3T0 320GB</b>	PASS	8024
2	SM2.0 Source		PASS	2767
3	HDR/SM3.0 Source		PASS	3397
4	CPU Source		PASS	4194

### 5.3 3D MARK VANTAGE

#### Windows 7 32-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	<b>Intel(R) Core(TM) i3-6100U 2.30GHz Acpi DDR4 2133 4GB (SKhynix H5AN4GBNMFB) Western Digital WD3200BEKT-00F3T0 320GB</b>	PASS	P3400
2	GPU SCORE		PASS	2935
3	CPU SCORE		PASS	6480

**Windows 7 32-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
1	3DMARK SCORE	Intel(R) Core(TM) i3-6100U 2.30GHz Acpi DDR4 2133 4GB (SKhynix H5AN4GBNMFB) Western Digital WD3200BEKT-00F3T0 320GB	PASS	P3707
2	GPU SCORE		PASS	3237
3	CPU SCORE		PASS	6569

**Windows 7 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
1	3DMARK SCORE	Intel(R) Core(TM) i3-6100U 2.30GHz Transcend DDR4 2133 8GB (SEC 607 K4A4G08 5WE BCRC) Western Digital WD3200BEKT-00F3T0 320GB	PASS	P3533
2	GPU SCORE		PASS	3077
3	CPU SCORE		PASS	6365



**Windows 7 32-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i5-6300U 2.40GHz Kingston DDR4 2133 16GB (Micro 6JB47D9TBH) Western Digital WD3200BEKT-00F3T0 320GB	PASS	P4994
2	GPU SCORE		PASS	4216
3	CPU SCORE		PASS	11201

**Windows 7 32-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i7-6600U 2.60GHz Kingston DDR4 2133 16GB (Micro 6JB47D9TBH) Western Digital WD3200BEKT-00F3T0 320GB	PASS	P4927
2	GPU SCORE		PASS	4139
3	CPU SCORE		PASS	11470

## 5.4 3D MARK11

Windows 7 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Score	<b>Intel(R) Core(TM) i3-6100U 2.30GHz Acpi DDR4 2133 4GB (SKhynix H5AN4GBNMFB) Western Digital WD3200BEKT-00F3T0 320GB</b>	PASS	P649
2	Graphics Score		PASS	583
3	Physics Score		PASS	2121
4	Combined Score		PASS	551

Windows 7 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Score	<b>Intel(R) Core(TM) i3-6100U 2.30GHz Transcend DDR4 2133 8GB (SEC 607 K4A4G08 5WE BCRC) Western Digital WD3200BEKT-00F3T0 320GB</b>	PASS	P677
2	Graphics Score		PASS	619
3	Physics Score		PASS	2083
4	Combined Score		PASS	518

**5.5 PC MARK2002**

<b>Test Environment</b>
<b>Intel(R) Core(TM) i3-6100U 2.30GHz</b> <b>Acpi DDR4 2133 4GB (SKhynix H5AN4GBNMFB)</b> <b>Western Digital WD3200BEKT-00F3T0 320GB</b>

**Windows 7 32-bit**

Item	Weighted Suite	Result	Remark
1	CPU test Source	PASS	N/A
2	Memory test Source	PASS	39194
3	HDD test Source	PASS	2052

<b>Test Environment</b>
<b>Intel(R) Core(TM) i3-6100U 2.30GHz</b> <b>Acpi DDR4 2133 4GB (SKhynix H5AN4GBNMFB)</b> <b>Western Digital WD3200BEKT-00F3T0 320GB</b>

**Windows 7 64-bit**

Item	Weighted Suite	Result	Remark
1	CPU test Source	PASS	N/A
2	Memory test Source	PASS	40240
3	HDD test Source	PASS	1318

<b>Test Environment</b>
<b>Intel(R) Core(TM) i3-6100U 2.30GHz</b> <b>Transcend DDR4 2133 8GB (SEC 607 K4A4G08 5WE BCRC)</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	28787
<b>3</b>	<b>HDD test Source</b>	PASS	1923

<b>Test Environment</b>
<b>Intel(R) Core(TM) i3-6100U 2.30GHz</b> <b>Transcend DDR4 2133 8GB (SEC 607 K4A4G08 5WE BCRC)</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>
<b>1</b>	<b>CPU test Source</b>	PASS	N/A
<b>2</b>	<b>Memory test Source</b>	PASS	39534
<b>3</b>	<b>HDD test Source</b>	PASS	1501

<b>Test Environment</b>
<b>Intel(R) Core(TM) i5-6300U 2.40GHz</b> <b>Kingston DDR4 2133 16GB (Micro 6JB47D9TBH)</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	49869
<b>3</b>	<b>HDD test Source</b>	PASS	1937

<b>Test Environment</b>
<b>Intel(R) Core(TM) i7-6600U 2.60GHz</b> <b>Kingston DDR4 2133 16GB (Micro 6JB47D9TBH)</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	57129
<b>3</b>	<b>HDD test Source</b>	PASS	2005

**5.6 PC MARK2004**

<b>Test Environment</b>
Intel(R) Core(TM) i3-6100U 2.30GHz Acpi DDR4 2133 4GB (SKhynix H5AN4GBNMFB) Western Digital WD3200BEKT-00F3T0 320GB

**Windows 7 32-bit**

Item	Weighted Suite	Result	Remark
1	PC Mark Source	PASS	N/A
2	CPU test Source	PASS	5671
3	Memory test Source	PASS	8804
4	Graphic test Source	PASS	7103
5	HDD test Source	PASS	N/A

<b>Test Environment</b>
Intel(R) Core(TM) i3-6100U 2.30GHz Acpi DDR4 2133 4GB (SKhynix H5AN4GBNMFB) 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	10786
4	Graphic test Source	PASS	9967
5	HDD test Source	PASS	N/A

<b>Test Environment</b>
<b>Intel(R) Core(TM) i3-6100U 2.30GHz</b> <b>Transcend DDR4 2133 8GB (SEC 607 K4A4G08 5WE BCRC)</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>
1	PC Mark Source	PASS	N/A
2	CPU test Source	PASS	7273
3	Memory test Source	PASS	9367
4	Graphic test Source	PASS	7452
5	HDD test Source	PASS	N/A

<b>Test Environment</b>
<b>Intel(R) Core(TM) i3-6100U 2.30GHz</b> <b>Transcend DDR4 2133 8GB (SEC 607 K4A4G08 5WE BCRC)</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	PC Mark Source	PASS	N/A
2	CPU test Source	PASS	N/A
3	Memory test Source	PASS	10653
4	Graphic test Source	PASS	10631
5	HDD test Source	PASS	N/A

<b>Test Environment</b>
<b>Intel(R) Core(TM) i5-6300U 2.40GHz</b> <b>Kingston DDR4 2133 16GB (Micro 6JB47D9TBH)</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>
1	<b>PC Mark Source</b>	PASS	N/A
2	<b>CPU test Source</b>	PASS	N/A
3	<b>Memory test Source</b>	PASS	13458
4	<b>Graphic test Source</b>	PASS	11281
5	<b>HDD test Source</b>	PASS	N/A

<b>Test Environment</b>
<b>Intel(R) Core(TM) i7-6600U 2.60GHz</b> <b>Kingston DDR4 2133 16GB (Micro 6JB47D9TBH)</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>
1	<b>PC Mark Source</b>	PASS	N/A
2	<b>CPU test Source</b>	PASS	N/A
3	<b>Memory test Source</b>	PASS	15343
4	<b>Graphic test Source</b>	PASS	12675
5	<b>HDD test Source</b>	PASS	N/A



## 5.7 PC MARK2005

Test Environment			
Intel(R) Core(TM) i3-6100U 2.30GHz			
Acpi DDR4 2133 4GB (SKhynix H5AN4GBNMFB)			
Western Digital WD3200BEKT-00F3T0 320GB			

### Windows 7 32-bit

Item	Weighted Suite	Result	Remark
1	System test Source	PASS	N/A
2	CPU test Source	PASS	6030
3	Memory test Source	PASS	8162
4	Graphic test Source	PASS	N/A
5	HDD test Source	PASS	N/A

Test Environment			
Intel(R) Core(TM) i3-6100U 2.30GHz			
Acpi DDR4 2133 4GB (SKhynix H5AN4GBNMFB)			
Western Digital WD3200BEKT-00F3T0 320GB			

### Windows 7 64-bit

Item	Weighted Suite	Result	Remark
1	System test Source	PASS	N/A
2	CPU test Source	PASS	7726
3	Memory test Source	PASS	9155
4	Graphic test Source	PASS	N/A
5	HDD test Source	PASS	5123

<b>Test Environment</b>
<b>Intel(R) Core(TM) i3-6100U 2.30GHz</b> <b>Transcend DDR4 2133 8GB (SEC 607 K4A4G08 5WE BCRC)</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>
1	<b>System test Source</b>	PASS	N/A
2	<b>CPU test Source</b>	PASS	8050
3	<b>Memory test Source</b>	PASS	9007
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) i3-6100U 2.30GHz</b> <b>Transcend DDR4 2133 8GB (SEC 607 K4A4G08 5WE BCRC)</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	8051
3	<b>Memory test Source</b>	PASS	9258
4	<b>Graphic test Source</b>	PASS	N/A
5	<b>HDD test Source</b>	PASS	4884

<b>Test Environment</b>
<b>Intel(R) Core(TM) i5-6300U 2.40GHz</b> <b>Kingston DDR4 2133 16GB (Micro 6JB47D9TBH)</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>
1	<b>System test Source</b>	PASS	N/A
2	<b>CPU test Source</b>	PASS	10782
3	<b>Memory test Source</b>	PASS	10429
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) i7-6600U 2.60GHz</b> <b>Kingston DDR4 2133 16GB (Micro 6JB47D9TBH)</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>
1	<b>System test Source</b>	PASS	N/A
2	<b>CPU test Source</b>	PASS	11930
3	<b>Memory test Source</b>	PASS	11404
4	<b>Graphic test Source</b>	PASS	N/A
5	<b>HDD test Source</b>	PASS	N/A

## 5.8 Storage Performance

### 5.8.1 HDD

Test environment:

OS Windows 7

Program (HD Tune)

HDD Model	Interface	Capacity	Average	Burst Rate	Access Time
Western Digital WD3200BEKT-00F3T0	SATA	320 GB	101.6 MB/sec	62.6 MB/sec	15.1 ms
Western Digital WD5000BPKT-00PK4T0	SATA	500 GB	66.6 MB/sec	111.7 MB/sec	16.3 ms
Western Digital WD5000LPCX-22VHAT0	SATA	500 GB	82.3 MB/sec	192.9 MB/sec	19.1 ms
MemoRight MRSAJ6C064GC125C00	SSD	64 GB	120.4 MB/sec	37.1 MB/sec	0.2 ms
INTEL SSDSC2BW240A4	SSD	240 GB	319.4 MB/sec	140.7 MB/sec	0.2 ms
KINGSTON SV300S37A	SSD	240 GB	298.2 MB/sec	115 MB/sec	0.2 ms
Crucial CT120M500SSD3	mSATA	120 GB	294.3 MB/sec	80.8 MB/sec	0.1 ms
InnoDisk DEMSR-32GD06SC2QC	mSATA	32 GB	170.5 MB/sec	231.6 MB/sec	0.2 ms
TOSHIBA TransMemory-Ex2	USB 3.0	64 GB	32.1 MB/sec	17.4 MB/sec	1.2 ms
SanDisk Extreme	USB 3.0	64 GB	33.2 MB/sec	20.1 MB/sec	0.9 ms
Silicon-Power	USB 2.0	4 GB	1.1 MB/sec	1.1 MB/sec	2.6 ms

## 5.8.2 DVD-ROM

Test environment:

OS Windows 7

Program (NERO)

DVD-ROM Model	Interface	Average Speed	Full Read	Burst Rate	DVD
PIONEER DVR-XD11T	USB	5.56 x	186 ms	18 MB/s	16 x
LITEON DVD eTAU108	USB	5.53 x	220 ms	18 MB/s	16 x

LP-175 only can use USB DVD-ROM