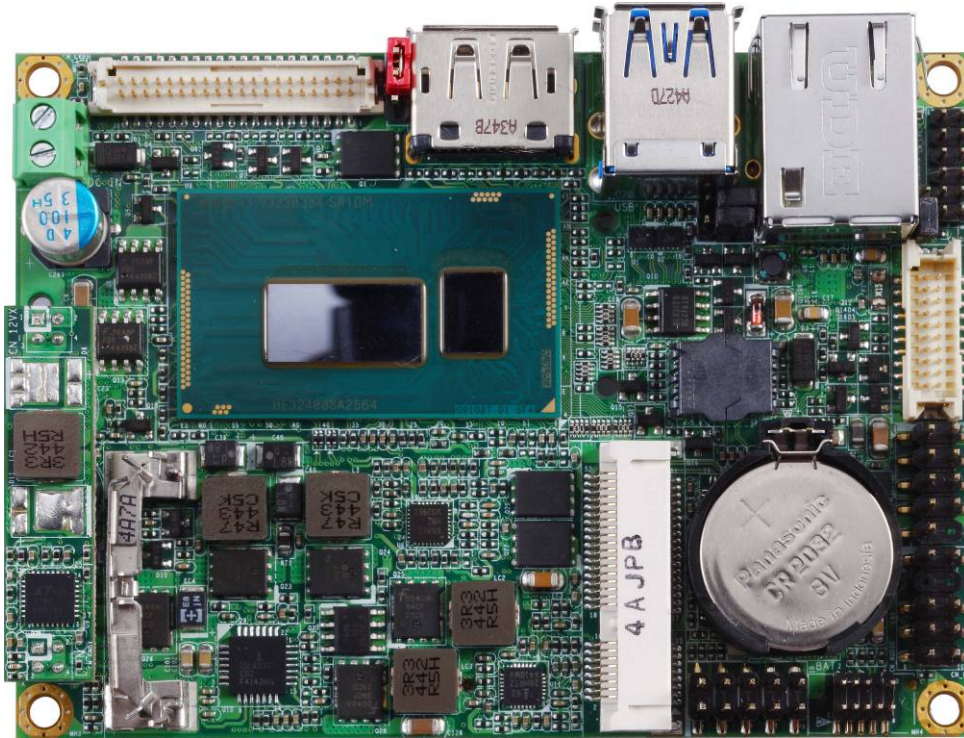


Product Test Report



Product Name	LP-174
Product Version	B
Issued Date	2017.02.23
Revision No.	1.1
BIOS Version	1.0
Testing Engineer	Rick
Check Engineer	Jerry

Revision History			
Date	Revision NO.	Page	Description
2015.11.02	Ver. 1.0	27	Initial Release
2017.02.23	Ver. 1.1	28	Increase Operation System 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	SO-DIMM	PASS	DDR3L
6	SATAIII	PASS	
7	USB 3.0	PASS	
8	USB 2.0	PASS	
9	CN_COM 1/2	PASS	
10	CN_PS2	PASS	
11	CN_AUDIO	PASS	
12	CN_LPC	PASS	
13	CPUFAN	PASS	
14	SYSFAN	PASS	
15	Mini PCIe	PASS	
16	CN_DVI	PASS	
17	CN_LVDS	PASS	
18	Display Port	PASS	
19	CN_INV	PASS	
20	LAN	PASS	
21	DC_IN	PASS	
22	DC_OUT	PASS	

Jumper

Item	Description	Result
1	JRTC	PASS
2	JVLCD	PASS
3	JAT	PASS
4	JMSATA	PASS

1.2 BIOS function

Item	Description	Result	Remark
1	Press 'Del' to run Setup Utility	PASS	
2	BIOS update success	PASS	
3	Ctrl-Alt-Del – Soft-Reboot	PASS	
4	Save & Exit Setup	PASS	
5	Date & Time Setting	PASS	
6	NumLock	PASS	
7	Quick Boot	PASS	
8	Diagnostic Splash Screen	PASS	
9	Diagnostic Summary Screen	PASS	
10	BIOS Level USB	PASS	
11	Chipset SATA	PASS	
12	Interface Combination	PASS	AHCI
13	Boot Type	PASS	Auto / LVDS / DVI / DP
14	Audio Controller	PASS	HD AUDIO
15	Panel Color Depth	PASS	18 / 24 bit
16	Serial Port 1/2	PASS	
17	PXE ROM	PASS	
18	CPU Shutdown Temp	PASS	
19	Watch Dog Timer	PASS	
20	PowerLoss	PASS	Power On / Off
21	Power On By RTC Alarm	PASS	
22	Set Supervisor Password	PASS	
23	Set User password	PASS	
24	Authenticate User on Boot	PASS	
25	Set HDD User Password	PASS	
26	ADP-TPM	PASS	CN_LPC
27	VCORE, 3.3V, 5V, 12V, VBAT	PASS	
28	OS Install complete	PASS	

1.3 Driver

CD Edition : DIPCi1-1.3

1.. Windows 7 32-bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	10.0
2	VGA Driver	PASS	10.18.14.4170
3	Audio Driver	PASS	6.0.1.7240
4	LAN Driver	PASS	12.12.80.19

2. Windows 7 64-bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	10.0
2	VGA Driver	PASS	10.18.14.4170
3	Audio Driver	PASS	6.0.1.7240
4	LAN Driver	PASS	12.12.80.19

3. Windows 8 32-bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	10.0
2	VGA Driver	PASS	10.18.14.4170
3	Audio Driver	PASS	6.0.1.6914
4	LAN Driver	PASS	12.12.80.19

4. Windows 8 64-bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	10.0
2	VGA Driver	PASS	10.18.14.4170
3	Audio Driver	PASS	6.0.1.6873
4	LAN Driver	PASS	12.12.80.19

5. Windows 8.1 32-bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	10.0
2	VGA Driver	PASS	10.18.14.4170
3	Audio Driver	PASS	6.0.1.7240
4	LAN Driver	PASS	12.12.80.19

6. Windows 8.1 64-bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	10.0
2	VGA Driver	PASS	10.18.14.4170
3	Audio Driver	PASS	6.0.1.6873
4	LAN Driver	PASS	12.12.80.19

2. Compatibility test

2.1 CPU Test

Test environment:

OS : Windows 7 32-bit

Test program : PC MARK 2006

Link	CPU Speed	Family	Processor	Max TDP	Smart Cache	Result
SR23Z	2.10 GHz	Core	i3-5010U	15 W	3 MB	PASS
SR268	2.90 GHz	Core	i5-5350U	15 W	3 MB	PASS
SR267	3.20 GHz	Core	i7-5650U	15 W	4 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 2008R2 64-bit	PASS	
8	Windows Server 2008 32-bit	PASS	
9	Ubuntu 14.04 (4.4.0-31-generic)	PASS	
10	Ubuntu 16.04 (4.4.0-31-generic)	PASS	

2.3 Memory Test

Test environment:

OS : Windows 7 64-bit

Test program : PC MARK 2006

Manufacturer	Chip	Frequency	Capacity Mbytes	Result
Acpi	Skhynix H5TC4G83AFR	DDR3L 1600	8 GB	PASS
Kingston	Micron 4EE77D9QBJ	DDR3L 1600	8 GB	PASS
Kingston	NANGA NT5CC512M8BN-DI	DDR3L 1066	4 GB	PASS
CERVOZ	ISSI TS43TR82560BL	DDR3L 1066	4 GB	PASS

2.4 Display Port and DVI Graphic Quality Test

Test environment OS : Windows 7 32/64-bit

Driver version : 10.18.14.4170

Resolution	Color	DP	DVI	Remark
800*600	16 / 32bit	PASS	PASS	
1024*768	16 / 32bit	PASS	PASS	
1152*864	16 / 32bit	PASS	PASS	
1280*600	16 / 32bit	PASS	PASS	
1280*720	16 / 32bit	PASS	PASS	
1280*768	16 / 32bit	PASS	PASS	
1280*800	16 / 32bit	PASS	PASS	
1280*960	16 / 32bit	PASS	PASS	
1280*1024	16 / 32bit	PASS	PASS	
1360*768	16 / 32bit	PASS	PASS	
1366*768	16 / 32bit	PASS	PASS	
1400*1050	16 / 32bit	PASS	PASS	
1440*900	16 / 32bit	PASS	PASS	

1600*900	16 / 32bit	PASS	PASS	
1600*1200	16 / 32bit	PASS	NONE	DVI doesn't supply
1680*1050	16 / 32bit	PASS	PASS	
1792*1344	16 / 32bit	PASS	NONE	DVI doesn't supply
1856*1392	16 / 32bit	PASS	NONE	DVI doesn't supply
1920*1080	16 / 32bit	PASS	PASS	

2.5 Audio

Test environment:

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 : 6.0.1.6873

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 : 6.0.1.6873

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

2.6 HDD Test

Test environment:

OS : Windows 7 32-bit

Model	Interface	Capacity	Size Detect	Data Transfer
InnoDisk 32GD6SC2QC	mSATA3	32 GB	PASS	PASS
Crucial CT120M500SSD3	mSATA3	120 GB	PASS	PASS
Seagate ST3160815AS	SATA2	160 GB	PASS	PASS
Western Digital WD2500AAKS-00VYA0	SATA2	250 GB	PASS	PASS
Western Digital WD3200BEKT-00F3T0	SATA2	320 GB	PASS	PASS
Western Digital WD10ELAX-089BA0	SATA3	1 TB	PASS	PASS
MemoRight MRSAJ6C064GC125C00	SSD	64 GB	PASS	PASS

2.7 DVD-ROM Test

Test environment:

OS Windows 7 32-bit

Model	Interface	Detect	Data Transfer	Play DVD
ASUS DRW-24DT1ST	SATA	PASS	PASS	PASS
ASUS DWR-1814BLT	SATA	PASS	PASS	PASS
LITEON DVD iHES312	SATA	PASS	PASS	PASS
PIONEER DVR-XD11	USB	PASS	PASS	PASS
LITEON DVD ETAU108	USB	PASS	PASS	PASS

2.8 USB device Test

1. Windows Server 2008 32-bit

Item	Result	Remark
External USB Keyboard Test	PASS	
External USB Mouse Test	PASS	
Hot plugging test	PASS	
CD ROM	PASS	
USB Mass storage	PASS	
USB 3.0	PASS	

2. Windows Server 2008R2 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	

3. 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	

4. 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	

5. 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	

6. Ubuntu 14.04 / 16.04

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. Windows 7 32-bit

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

2. Windows 7 64-bit

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

4. Windows 8 32-bit

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

5. Windows 8 64-bit

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

6. Windows 8.1 32-bit

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

7. Windows 8.1 64-bit

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

2.10 PS/2 Keyboard & Mouse Test

1. MS-DOS

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

2. 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	

3. 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	

4. 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	

5. Windows 8.1 Enterprise 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 7 32/64-bit

32/64-bit driver version :

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

2. Windows 8 32/64-bit

32/64-bit driver version :

Item	Description	Result	Remark
1	Device Manager Check	PASS	

3. Windows 8.1 32/64-bit

32/64-bit driver version

Item	Description	Result	Remark
1	Device Manager Check	PASS	

2.12 Power Supply Test

Item	TYPE	Description	Result	Remark
1	Adapter	LI SHIN 12V 80W LI SHIN 0279B1280	PASS	
2	Adapter	FSP GROUP INC. FSP120-AAA 19V 120W	PASS	

2.13 mini PCI card

Motherboard	PCI Express mini card	Result	Remark
	MPX-210D2	PASS	
	MPX-574D	PASS	
	MPX-574D2	PASS	
	MPX-24794G2	PASS	
	MPX-25858	PASS	

	MPX-5201	PASS	
	MPX-885	PASS	
	MPX-643	PASS	
	MPX-750	N/A	
	MPX-827	PASS	
	MPX-954	PASS	
	MPX-6864	PASS	
	MPX-3132	PASS	
	MPX-7202	PASS	
	MPX-9125	PASS	
	MPX-SDVOD	N/A	
	mSATA	PASS	

Attention: Need to set the BIOS first before use

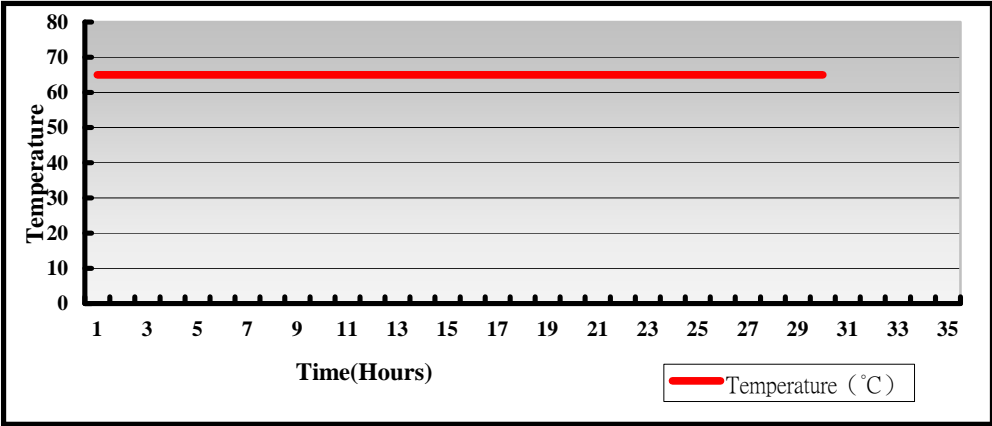
- => Advanced
- => South Bridge Configuration
- => SB PCI Express Config
- => PCI Express Root Port 3
- => PCIe Speed [Gen1]

For more setup information, please refer MPX-3132 user's manual.

3. Environmental test

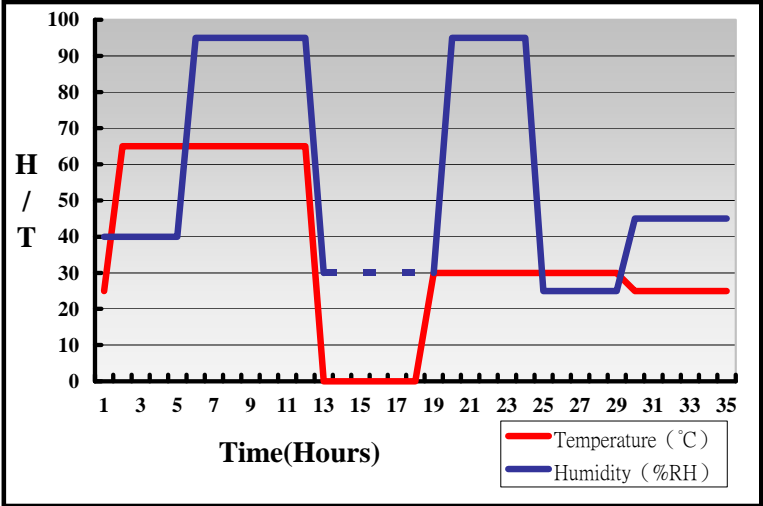
3.1 Temperature Test

System Board	LP-174
CPU	Intel(R) Core(TM) i7-5650U 2.20GHz
Memory	ACPI DDR3L 1600 8GB (SK H5TC4GB3AFB)
HDD	Western Digital WD3200BEKT-00F3T0 320GB
Operating OS	Windows 7 32-bit
Test Equipment	GIANT FORCE (GTH-150-60-CP-AR)
Test Program	3DMark06+Prime95



Hardware Device list:

System Board	LP-174
CPU	Intel(R) Core(TM) i7-5650U 2.20GHz
Memory	Kingston DDR3L 1600 8GB (Micron 4EE77D9QBJ)
HDD	Western Digital WD3200BEKT-00F3T0 320GB
Operating OS	Windows 7 32-bit
Test Equipment	GIANT FORCE (GTH-150-60-CP-AR)
Test Program	3DMark06+Prime95



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	LP-174
CPU	Intel(R) Core(TM) i7-5650U 2.20GHz
Memory	Kingston DDR3L 1600 8GB (Micron 4EE77D9QBJ)
HDD	Western Digital WD3200BEKT-00F3T0 320GB
Operating OS	Windows 7 32-bit

Temperature	Result	Remark
85°C	PASS	50 Times
- 40°C	PASS	50 Times

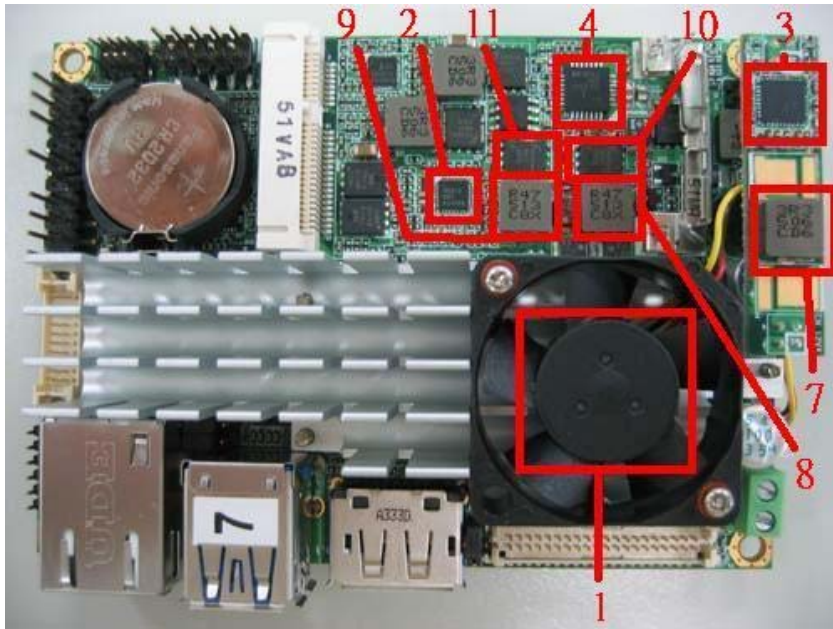
3.2 Thermal measurements at various points on the board

Test Environment :

CPU	Intel(R) Core(TM) i7-5650U 2.20GHz
Memory	ACPI DDR3L 1600 8GB (SK H5TC4GB3AFB)
HDD	Western Digital WD3200BEKT-00F3T0 320GB
Adapter	FSP120-AAA
Operating OS	Windows 7 32-bit
Test Program	BurnIn 6.0

Test Result:

Item	Environmental temperature	25°C
1	CPU	41°C
2	U8 (ICADM213ECA-T)	43.9°C
3	U9 (ISWLTC3780)	50.7°C
4	U10 (ISL6537CR)	43.2°C
5	U21 (ICHALC888)	51.9°C
6	U57 (ICNCT6102D)	40.9°C
7	LC1 (LLC3.3UH/063T)	51°C
8	L2 (LLC0.47UH/063T)	43.5°C
9	L3 (LLC0.47UH/063T)	44.9°C
10	Q23 (TMSFDMS3669S)	45.9°C
11	Q24 (TMSFDMS3669S)	46.2°C



4. Reliability Test

4.1 Power Consumption Test

1. Test Environment:

CPU	Intel(R) Core(TM) i7-5650U 2.20GHz
Memory	ACPI DDR3L 1600 8GB (SK H5TC4GB3AFB)
HDD	Western Digital WD3200BEKT-00F3T0 320GB

Adapter : 12V => LI SHIN 0279B1280 ; 19V => FSP120-AAA

Voltage	MS-DOS Boot up		Win7(32Bit) 3DMark2006 + Prime95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	1.15	13.8	1.84	22.08
19V	0.86	16.34	1.48	28.12

The same as above but with LCD panel

Display Panel	AUO M170EG01 17"LCD
---------------	---------------------

Adapter : 12V => LI SHIN 0279B1280 ; 19V => FSP120-AAA

Voltage	MS-DOS Boot up		Win7(32Bit) 3DMark2006 + Prime95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	3.26	39.12	3.76	45.12
19V	2.09	39.71	2.41	45.79

2. Test Environment:

CPU	Intel(R) Core(TM) i5-5350U 1.80GHz
Memory	ACPI DDR3L 1600 8GB (SK H5TC4GB3AFB)
HDD	Western Digital WD3200BEKT-00F3T0 320GB

Adapter : 12V => LI SHIN 0279B1280 ; 19V => FSP120-AAA

Voltage	MS-DOS Boot up		Win7(32Bit) 3DMark2006 + Prime95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	1.11	13.32	1.8	21.6
19V	0.82	15.58	1.16	22.04

The same as above but with LCD panel

Display Panel	AUO M170EG01 17"LCD
---------------	---------------------

Adapter : 12V => LI SHIN 0279B1280 ; 19V => FSP120-AAA

Voltage	MS-DOS Boot up		Win7(32Bit) 3DMark2006 + Prime95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	3.11	37.32	3.72	44.64
19V	2.04	38.76	2.4	45.6

3. Test Environment:

CPU	Intel(R) Core(TM) i3-5010U 2.10GHz
Memory	ACPI DDR3L 1600 8GB (SK H5TC4GB3AFB)
HDD	Western Digital WD3200BEKT-00F3T0 320GB

Adapter : 12V => LI SHIN 0279B1280 ; 19V => FSP120-AAA

Voltage	MS-DOS Boot up		Win7(32Bit) 3DMark2006 + Prime95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	1.08	12.96	1.79	21.48
19V	0.69	13.11	1.14	21.66

The same as above but with LCD panel

Display Panel	AUO M170EG01 17"LCD
---------------	---------------------

Adapter : 12V => LI SHIN 0279B1280 ; 19V => FSP120-AAA

Voltage	MS-DOS Boot up		Win7(32Bit) 3DMark2006 + Prime95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	2.9	34.8	3.65	43.8
19V	1.84	34.96	2.33	44.27

5. Performance Test

5.1 3DMark

Windows 7 32-bit

Test Environment			
CPU	Intel(R) Core(TM) i7-5650U 2.20GHz		
Memory	ACPI DDR3L 1600 8GB (SK H5TC4GB3AFB)		
HDD	Western Digital WD3200BEKT-00F3T0 320GB		
Weighted Suite	Result	Score	Remark
3DMark05			
3DMarks	PASS	6895	
CPU	PASS	2198	
3DMark06			
3DMarks	PASS	4750	
SM2.0	PASS	1636	
HDR/SM3.0	PASS	1966	
CPU	PASS	2761	
3DMarkVantage			
3DMark	PASS	P3056	
GPU	PASS	2557	
CPU	PASS	7364	
Test Environment			
CPU	Intel(R) Core(TM) i5-5350U 1.80GHz		
Memory	ACPI DDR3L 1600 8GB (SK H5TC4GB3AFB)		
HDD	Western Digital WD3200BEKT-00F3T0 320GB		
Weighted Suite	Result	Score	Remark
3DMark05			
3DMarks	PASS	6280	
CPU	PASS	1795	
3DMark06			
3DMarks	PASS	4412	
SM2.0	PASS	1535	
HDR/SM3.0	PASS	1823	
CPU	PASS	2479	
3DMarkVantage			
3DMark	PASS	P2820	
GPU	PASS	2368	
CPU	PASS	6593	
Test Environment			
CPU	Intel(R) Core(TM) i3-5010U 2.10GHz		
Memory	ACPI DDR3L 1600 8GB (SK H5TC4GB3AFB)		

HDD	Western Digital WD3200BEKT-00F3T0 320GB		
Weighted Suite	Result	Score	Remark
3DMark05			
3DMarks	PASS	7666	
CPU	PASS	2094	
3DMark06			
3DMarks	PASS	5131	
SM2.0	PASS	1770	
HDR/SM3.0	PASS	2173	
CPU	PASS	2166	
3DMarkVantage			
3DMark	PASS	P3239	
GPU	PASS	2721	
CPU	PASS	7541	
Test Environment			
CPU	Intel(R) Core(TM) i3-5010U 2.10GHz		
Memory	CERVOZ DDR3L 1066 4GB (ISSI TS43TR82560BL)		
HDD	Western Digital WD3200BEKT-00F3T0 320GB		
Weighted Suite	Result	Score	Remark
3DMark03			
3DMarks	PASS	8038	
3DMark05			
3DMarks	PASS	5672	
CPU	PASS	2094	
3DMark06			
3DMark	PASS	3720	
SM2.0	PASS	1275	
HDR/SM3.0	PASS	1578	
CPU	PASS	1970	
Test Environment			
CPU	Intel(R) Core(TM) i3-5010U 2.10GHz		
Memory	Kingston DDR3L 1600 8GB (Micron 4EE77D9QBJ)		
HDD	Western Digital WD3200BEKT-00F3T0 320GB		
Weighted Suite	Result	Score	Remark
3DMark03			
3DMarks	PASS	9898	
3DMark05			
3DMarks	PASS	6542	
CPU	PASS	2098	
3DMark06			
3DMark	PASS	3876	
SM2.0	PASS	1377	

HDR/SM3.0	PASS	1632	
CPU	PASS	1872	

5.2 PCMark

Windows 7 SP1 32-bit

Test Environment			
CPU	Intel(R) Core(TM) i7-5650U 2.20GHz		
Memory	ACPI DDR3L 1600 8GB (SK H5TC4GB3AFB)		
HDD	Western Digital WD3200BEKT-00F3T0 320GB		
WEIGHTED SUITE	Result	Score	Remark
PCMark2005			
Weighted Suite	Result	Score	Remark
PCMark Score	PASS	N/A	
CPU Score	PASS	8567	
Memory Score	PASS	10234	
Graphics Score	PASS	N/A	
HDD Score	PASS	N/A	
Test Environment			
CPU	Intel(R) Core(TM) i5-5350U 1.80GHz		
Memory	ACPI DDR3L 1600 8GB (SK H5TC4GB3AFB)		
HDD	Western Digital WD3200BEKT-00F3T0 320GB		
PCMark2005			
Weighted Suite	Result	Score	Remark
PCMark Score	PASS	N/A	
CPU Score	PASS	7836	
Memory Score	PASS	9499	
Graphics Score	PASS	N/A	
HDD Score	PASS	N/A	
Test Environment			
CPU	Intel(R) Core(TM) i3-5010U 2.10GHz		
Memory	ACPI DDR3L 1600 8GB (SK H5TC4GB3AFB)		
HDD	Western Digital WD3200BEKT-00F3T0 320GB		
PCMark2005			
Weighted Suite	Result	Score	Remark
PCMark Score	PASS	N/A	
CPU Score	PASS	7347	
Memory Score	PASS	7908	
Graphics Score	PASS	N/A	
HDD Score	PASS	N/A	

Test Environment			
CPU	Intel(R) Core(TM) i3-5010U 2.10GHz		
Memory	CERVOZ DDR3L 1066 4GB (ISSI TS43TR82560BL)		
HDD	Western Digital WD3200BEKT-00F3T0 320GB		
PCMark2002			
Weighted Suite	Result	Score	Remark
CPU Score	PASS	N/A	
Memory Score	PASS	33000	
HDD Score	PASS	2170	
PCMark2004			
Weighted Suite	Result	Score	Remark
PCMark Score	PASS	N/A	
CPU Score	PASS	N/A	
Memory Score	PASS	7238	
Graphics Score	PASS	6664	
HDD Score	PASS	N/A	
PCMark2005			
Weighted Suite	Result	Score	Remark
PCMark Score	PASS	N/A	
CPU Score	PASS	6354	
Memory Score	PASS	6976	
Graphics Score	PASS	N/A	
HDD Score	PASS	N/A	
Test Environment			
CPU	Intel(R) Core(TM) i3-5010U 2.10GHz		
Memory	Kingston DDR3L 1600 8GB (Micron 4EE77D9QBJ)		
HDD	Western Digital WD3200BEKT-00F3T0 320GB		
PCMark2002			
Weighted Suite	Result	Score	Remark
CPU Score	PASS	N/A	
Memory Score	PASS	34479	
HDD Score	PASS	2199	
PCMark2004			
Weighted Suite	Result	Score	Remark
PCMark Score	PASS	N/A	
CPU Score	PASS	N/A	
Memory Score	PASS	8518	
Graphics Score	PASS	8339	
HDD Score	PASS	N/A	
PCMark2005			

Weighted Suite	Result	Score	Remark
PCMark Score	PASS	N/A	
CPU Score	PASS	6184	
Memory Score	PASS	7864	
Graphics Score	PASS	N/A	
HDD Score	PASS	N/A	

5.3 Storage Performance

5.3.1 HDD

Test environment:
OS Windows 7 32-bit
Program (HD Tune)

HDD Model	Interface	Capacity	Average (MB/s)	Burst Rate(MB/s)	Access time (ms)
InnoDisk 32GD6SC2QC	mSATA3	32 GB	262.1	269	0.1
Crucial CT120M500SSD3	mSATA3	120 GB	349.3	62.6	0.1
Seagate ST3160815AS	SATA2	160 GB	59.7	60.6	15.9
Western Digital WD2500AAKS-00VYA0	SATA2	250 GB	63.6	70.8	12.7
Western Digital WD2500BPVT-22J5T0	SATA2	250 GB	47.6	66.4	21.1
Western Digital WD3200BEKT-00F3T0	SATA2	320 GB	63	98	15.3
Western Digital WD10ELAX-089BA0	SATA3	1 TB	14	6.4	15.7
MemoRight MRSAJ6C064GC125C00	SSD	64 GB	58.9	33.1	0.2
\BUFFALO BUF-HD-HXU3(B)	USB 3.0	1 TB	30.3	24.7	14.2
KingstonDT HyperX 3.0	USB 3.0	64 GB	30.6	17.8	0.8
SP Sillion-Power	USB 2.0	4 GB	14.1	12.8	0.7

5.3.2 DVD-ROM

Test environment:

OS Windows7 32-bit

Program : NERO

CD-ROM Model	Interface	Average Speed	Access times (Full Read, ms)	Burst Rate (MB/s)	DVD
ASUS DRW-24DT1ST	SATA	10.12 X	154	34	16 x
ASUS DWR-1814BLT	SATA	10.24 X	186	39	16 x
LITEON DVD iHES312	SATA	10.05 X	145	40	16 x
PIONEER DVR-XD11	USB	5.56 X	186	20	16x
LITEON DVD ETAU108	USB	5.53 X	208	19	16x