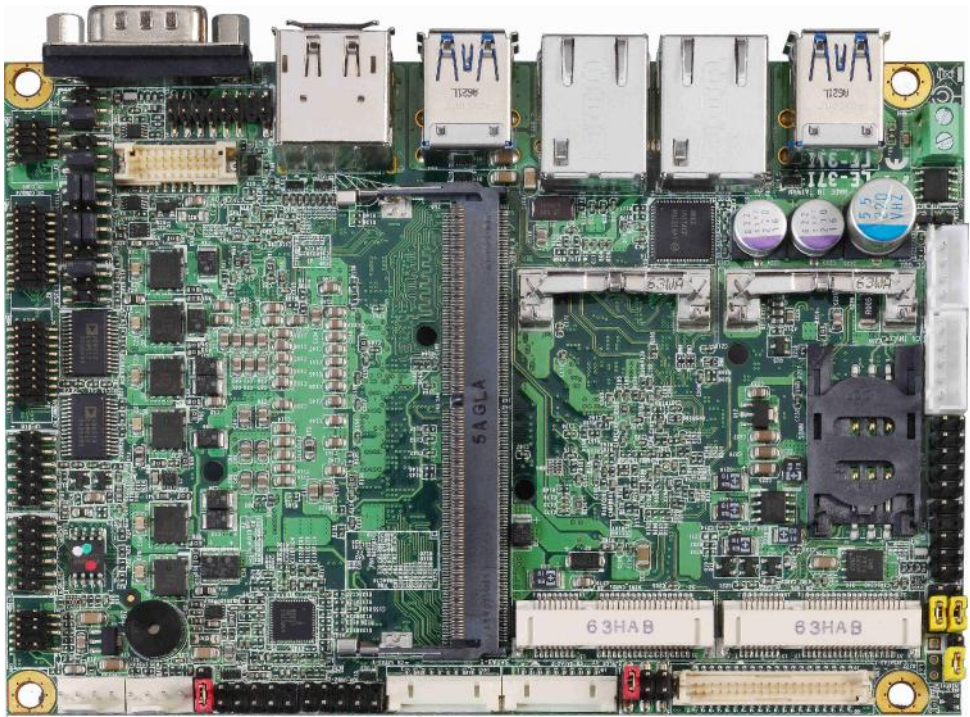


Product Test Report



Product Name	LE-371
Product Version	A
Issued Date	2016.11.09
Report Edition	1.0
BIOS Version	1.0
Testing Engineer	Howard
Check Engineer	Daniel

REVISION HISTORY			
DATE	REVISION NO.	PAGE	DESCRIPTONS
2016.11.09	Ver. 1.0	51	Initial Release

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1. Function test

1.1 Hardware function

Base Function Test(OS:Win7 Pro 64bit)

Item	Description	Result	Remark
1	Power Button	PASS	
2	Reset	PASS	
3	Power LED	PASS	
4	HDD LED	PASS	
5	CN_SATA3-1	PASS	
6	CN_SATA3-2	PASS	
7	CN_USB2-1	PASS	
8	CN_USB2-2	PASS	
9	USB3.0 1/2/3/4	PASS	
10	DDR4	PASS	
11	COM 1	PASS	
12	CN_COM2	PASS	
13	CN_COM 3/4	PASS	
14	CN_COM 5/6	PASS	
15	CN_PS2	PASS	
16	CN_AUDIO	PASS	
17	CN_DIO	PASS	
18	CN_LPC	PASS	
19	CPUFAN	PASS	
20	SYSFAN	PASS	
21	MINI_CARD	PASS	
22	MSATA	PASS	

23	CN_CRT	PASS	
24	DVI	PASS	
25	Display port	PASS	
26	HDMI	PASS	
27	CN_LVDS	PASS	
28	CN_INV	PASS	
29	LAN 1/2	PASS	
30	DC_IN	PASS	
31	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

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	UEFI Boot	PASS	
10	Select Language	PASS	
13	Primary IGFX Boot Display	PASS	
14	SATA Configuration	PASS	
16	HD Audio Configuration	PASS	
17	Wake on LAN Enable	PASS	
18	Super IO Chip	PASS	
19	Watch Dog Timer Select	PASS	
20	Power Control	PASS	
21	Smart Fan Feature	PASS	
22	Hardware Monitor	PASS	

1.3 Driver

CD Edition : DIPCi1-1.4

1. Windows 7 32-bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	6.1.7600.16385
2	Graphic Driver	PASS	20.19.15.4352
3	Audio Driver	PASS	6.0.1.7541
4	LAN Driver	PASS	I219-LM:12.13.17.4 I210:12.13.27.0
5	USB 3.0 Driver	PASS	4.0.0.36

2. Windows 7 64-bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	6.1.7600.16385
2	Graphic Driver	PASS	20.19.15.4352
3	Audio Driver	PASS	6.0.1.7541
4	LAN Driver	PASS	I219-LM:12.13.17.4 I210:12.13.27.0
5	USB 3.0 Driver	PASS	4.0.4.51

3. Windows 10 64-bit Driver test

Item	Description	Result	version
1	Chipset Driver	PASS	10.0.14393.0
2	Graphic Driver	PASS	20.19.15.4352
3	Audio Driver	PASS	6.0.1.7541
4	LAN Driver	PASS	I219-LM:12.13.17.4 I210:12.12.226.0

2. Compatibility test

2.1 CPU Test

Test environment:

OS Windows 7 professional SP1

Test program : PC MARK7

Spec Code	CPU Speed	Max Turbo Frequency	Family	Processor	Max TDP	Cache	Result
SR2DW	2.00GHZ	2.80GHz	Core	I7-6822EQ	25W	8MB	PASS
SR2DU	2.70GHz	3.40GHz	Core	I5-6440EQ	45W	6MB	PASS
SR2DV	2.70GHz	N/A	Core	I3-6100E	35W	3MB	PASS

2.2 Operation System Test

Item	Description	Result	Remark
1	Windows 7 32-bit	PASS	
2	Windows 7 64-bit	PASS	
3	Windows 8.1 32-bit	PASS	
4	Windows 8.1 64-bit	PASS	
5	Windows 10 64-bit	PASS	
6	Ubuntu 16.04 LTS 64bit	PASS	

2.3 Memory Test

Test environment:

OS Windows 7 Professional SP1

Test program : PC MARK 7 & AIDA64

Manufacturer/ Model No.	Chip	Frequency	Capacity Mbytes	Result
Transcend TS2SLH64V1B	SEC622 K4A8G085WB BCRC	DDR4 2133	16GB	PASS
Kinston KVR21S15D8/16	61B77D9TBH	DDR4 2133	16GB	PASS
Transcend TS1GSH64V1H	SEC 613 BCPB K4A4G085WD	DDR4 2133	8GB	PASS
Kingston KVR21S15D8/8	SKhynix H5AN4G8NMFR	DDR4 2133	8GB	PASS
Crcial Micron CT4G4SFS8213	5RA77D9RGQ	DDR4 2133	4GB	PASS

2.4 Graphic Quality Test

2.4.1 Test environment OS : Windows 7 Pro 32/64-bit

Driver version : 20.19.15.4352

Resolution	Color	CRT	DVI	HDMI	Display Port
800*600	16 / 32bit	PASS	PASS	PASS	PASS
1024*768	16 / 32bit	PASS	PASS	PASS	PASS
1152*864	16 / 32bit	PASS	PASS	PASS	PASS
1280*600	16 / 32bit	PASS	PASS	PASS	PASS
1280*720	16 / 32bit	PASS	PASS	PASS	PASS
1280*768	16 / 32bit	PASS	PASS	PASS	PASS
1280*800	16 / 32bit	PASS	PASS	PASS	PASS
1280*960	16 / 32bit	PASS	PASS	PASS	PASS
1280*1024	16 / 32bit	PASS	PASS	PASS	PASS
1360*768	16 / 32bit	PASS	PASS	PASS	PASS
1366*768	16 / 32bit	PASS	PASS	PASS	PASS
1400*1050	16 / 32bit	PASS	PASS	PASS	PASS
1440*900	16 / 32bit	PASS	PASS	PASS	PASS
1600*900	16 / 32bit	PASS	PASS	PASS	PASS
1680*1050	16 / 32bit	PASS	PASS	PASS	PASS
1920*1080	16 / 32bit	PASS	PASS	PASS	PASS
1920*1200	16 / 32bit			PASS	PASS
1920*1440	16 / 32bit			PASS	PASS
2048*1152	16 / 32bit			PASS	PASS
2560*1920	16 / 32bit			PASS	PASS
3840*2160	16 / 32bit			PASS	PASS

2.4.2 Test environment OS : Windows 10 Pro 64-bit

Driver version : 20.19.15.4380

Resolution	Color	CRT	DVI	HDMI	Display Port
800*600	16 / 32bit	PASS	PASS	PASS	PASS
1024*768	16 / 32bit	PASS	PASS	PASS	PASS
1152*864	16 / 32bit	PASS	PASS	PASS	PASS
1280*600	16 / 32bit	PASS	PASS	PASS	PASS
1280*720	16 / 32bit	PASS	PASS	PASS	PASS
1280*768	16 / 32bit	PASS	PASS	PASS	PASS
1280*800	16 / 32bit	PASS	PASS	PASS	PASS
1280*960	16 / 32bit	PASS	PASS	PASS	PASS
1280*1024	16 / 32bit	PASS	PASS	PASS	PASS
1360*768	16 / 32bit	PASS	PASS	PASS	PASS
1366*768	16 / 32bit	PASS	PASS	PASS	PASS
1400*1050	16 / 32bit	PASS	PASS	PASS	PASS
1440*900	16 / 32bit	PASS	PASS	PASS	PASS
1600*900	16 / 32bit	PASS	PASS	PASS	PASS
1680*1050	16 / 32bit	PASS	PASS	PASS	PASS
1920*1080	16 / 32bit	PASS	PASS	PASS	PASS
1920*1200	16 / 32bit			PASS	PASS
1920*1440	16 / 32bit			PASS	PASS
2048*1152	16 / 32bit			PASS	PASS
2560*1920	16 / 32bit			PASS	PASS
3840*2160	16 / 32bit			PASS	PASS

2.5 Audio

Test environment:

OS Windows 7 32-bit

Driver version : 6.0.1.7541

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

OS Windows 7 64-bit

Driver version : 6.0.1.7541

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

OS Windows 10 64-bit

Driver version : 6.0.1.7541

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

2.6 HDD Test

Test environment:

OS Windows 7 32/64bit & Windows 10

Model	Interface	Capacity	Size Detect	Data Transfer
WD WD10EALX	SATA3	1TB	PASS	PASS
ACPI MSS4F-M	MSATA3	64GB	PASS	PASS

2.7 DVD/CD-ROM Test

Test environment:

OS Windows 10

Model	Interface	Detect	Data Transfer	Play CD
LITEON eBAU108	USB	PASS	PASS	PASS
LITEON eTAU108	USB	PASS	PASS	PASS
Pioneer DVR-XD11T	USB	PASS	PASS	PASS
Pioneer DDVR-S19LBK-24X	SATA	PASS	PASS	PASS
LITEON iHES312	SATA	PASS	PASS	PASS
ASUS DRW-1814BLT	SATA	PASS	PASS	PASS

2.8 USB device 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/CD ROM	PASS	
USB Mass storage	PASS	
USB 3.0	PASS	

*USB device need to install driver first.

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/CD ROM	PASS	
USB Mass storage	PASS	

3. Windows 10 64-bit

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

3. Windows 10 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	
3	Mouse Detect Test	N/A	

2. Windows 7 32bit

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

3. Windows 7 64-bit

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

4. Windows 10 64-bit

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

2.11 Power Supply Test

Item	TYPE	Description	Result	Remark
1	ATX Power(12V)	CORSAIR CX500	PASS	
2	ATX Power(12V)	SEED Power Supply 400W	PASS	

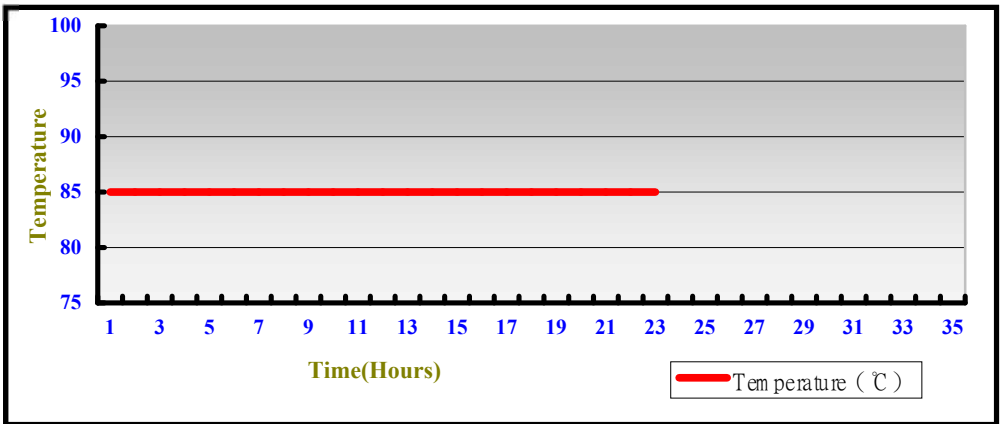
2.12 PCI Express mini card

Motherboard	PCI Express mini card	Result
LE-37I	MPX-210D	PASS
	MPX-210D2	PASS
	MPX-350	PASS
	MPX-574D	PASS
	MPX-574D2	PASS
	MPX-643	PASS
	MPX-750	FAIL
	MPX-885	PASS
	MPX-954	PASS
	MPX-954E	PASS
	MPX-5201	PASS
	MPX-6864	PASS
	MPX-7202	PASS
	MPX-9125	PASS
	MPX-24794G2	PASS(not support win10)
MPX-25858	PASS	

3. Environmental test

3.1 Temperature Test

System Board	LE-37I
CPU	Intel® Core™ i7-6822EQ Processor
Memory	Transcend DDR4 2133 16GB
HDD	Intel SSD S3500 Series 120GB
Power	SEED Power Supply 400W
Operating OS	Windows 10 Pro 64bit
Test Equipment	GIANT FORCE (GTH-150-60-CP-AR)
Test Program	AIDA64



Boot Up Test:

Hardware Device list:

System Board	LE-37I
CPU	Intel® Core™ i7-6822EQ Processor
Memory	Transcend DDR4 2133 16GB
HDD	Intel SSD S3500 Series 120GB
Power	SEED Power Supply 400W

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

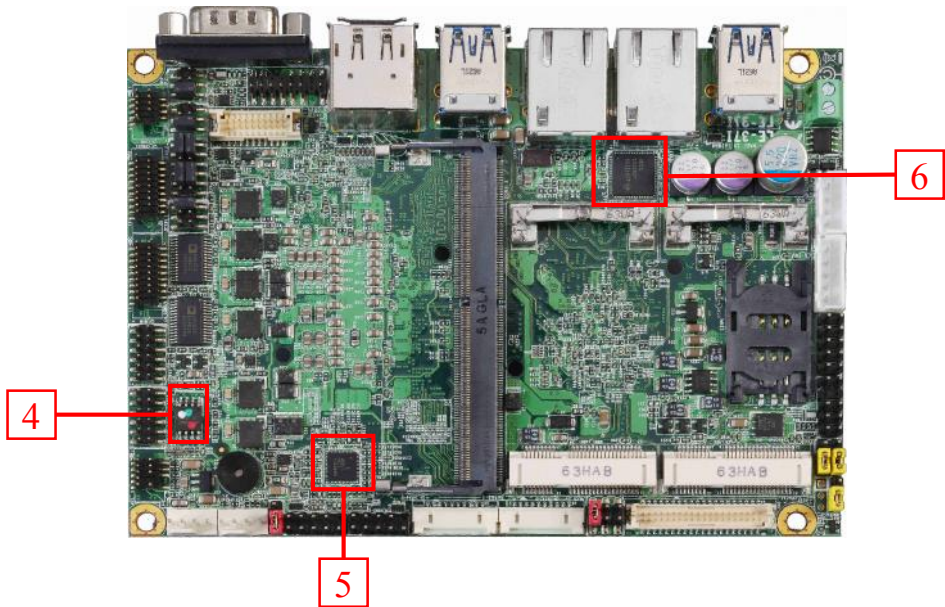
3.2 Thermal measurements at various points on the board

Test Environment :

CPU	Intel® Core™ i5-6440EQ Processor
Memory	Crucial DDR4 2133 4GB
HDD	ACPI MSS4F-M mSATA3 64GB
Power	Corsair CX500
Operating System	Windows 10 Pro 64 bit
Test Program	3DMark06 + AIDA64

Test Result:

Item	Environmental temperature	24.6°C
1	CPU	66.9°C
2	PCH(QM170)	62.7°C
3	L1(LLC1.0UH/063T)	61.2°C
4	SPI(ICW25Q128FVSIG)	75.9°C
5	U10(ISL95855HRTZ)	74.9°C
6	U15(ICH1210AT)	72.1°C
7	Heat Spreader	62.7°C



4. Reliability Test

4.1 Power Consumption Test

1. Test Environment:

Motherboard	LE-37I
CPU	I7-6822EQ
Memory	Transcend DDR4 2133 16GB
HDD	ACPI MSS4F-M mSATA3 64GB

Voltage	MS-DOS Boot up		Win7(64Bit) 3DMARK 06(once) +AIDA64	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	1.059	12.708	2.472	29.664
24V	0.559	13.416	1.281	30.744

The same as above but with LCD panel

Display Panel	M170EG01
----------------------	-----------------

Voltage	MS-DOS Boot up		Win7(64Bit) 3DMARK 06(once) +AIDA64	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	2.967	35.604	4.840	58.080
24V	1.451	34.824	2.193	52.632

2. Test Environment:

Motherboard	LE-37I
CPU	I5-6440EQ
Memory	Transcend DDR4 2133 16GB
HDD	ACPI MSS4F-M mSATA3 64GB

Voltage	MS-DOS Boot up		Win7(64Bit) 3DMARK 06(once) +AIDA64	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	1.365	16.38	3.840	46.08
24V	0.716	17.184	1.936	46.464

The same as above but with LCD panel

Display Panel	M170EG01
----------------------	-----------------

Voltage	MS-DOS Boot up		Win7(64Bit) 3DMARK 06(once) +AIDA64	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	3.438	41.256	6.050	72.6
24V	1.660	39.84	2.855	68.52

3. Test Environment:

Motherboard	LE-37I
CPU	I3-6100E
Memory	Transcend DDR4 2133 16GB
HDD	ACPI MSS4F-M mSATA3 64GB

Voltage	MS-DOS Boot up		Win7(64Bit) 3DMARK 06(once) +AIDA64	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	1.367	16.404	3.172	38.064
24V	0.704	16.896	1.613	38.712

The same as above but with LCD panel

Display Panel	M170EG01
----------------------	-----------------

Voltage	MS-DOS Boot up		Win7(64Bit) 3DMARK 06(once) +AIDA64	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	3.210	38.52	5.210	62.52
24V	1.576	37.824	2.497	59.928

5. Performance Test

5.1 Performance Test 8.0

Windows 7 32-bit

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	Intel(R) Core(TM) CPU i7-6822EQ @ 2.00GHZ Transcend DDR4 2133 16GB ACPI MSS4F-M mSATA3 64GB	PASS	Summary 2052 CPU Mark 5608 2D Graphics Mark 470.9 3D Graphics Mark 628 Memory Mark 1263 Disk Mark 2529

Windows 7 32-bit

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	Intel(R) Core(TM) CPU i5-6440EQ @ 2.70GHZ Transcend DDR4 2133 16GB ACPI MSS4F-M mSATA3 64GB	PASS	Summary 2190 CPU Mark 5363 2D Graphics Mark 572 3D Graphics Mark 634 Memory Mark 1421 Disk Mark 2519

Windows 7 32-bit

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	Intel(R) Core(TM) CPU i3-6100E @ 2.70GHZ Crucial DDR4 2133 4GB ACPI MSS4F-M mSATA3 64GB	PASS	Summary 1654 CPU Mark 2830 2D Graphics Mark 474.4 3D Graphics Mark 534 Memory Mark 1153 Disk Mark 2582

Windows 7 64-bit

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	Intel(R) Core(TM) CPU i7-6822EQ @ 2.00GHZ Transcend DDR4 2133 16GB ACPI MSS4F-M mSATA3 64GB	PASS	Summary 2516 CPU Mark 7028 2D Graphics Mark 654 3D Graphics Mark 626 Memory Mark 2027 Disk Mark 2565

Windows 7 64-bit

WEIGHTED SUITE	Test Environment	Result	Remark
<u>Performance Test</u> <u>8.0</u>	Intel(R) Core(TM) CPU i5-6440EQ @ 2.70GHZ Transcend DDR4 2133 16GB ACPI MSS4F-M mSATA3 64GB	PASS	Summary 2501 CPU Mark 5700 2D Graphics Mark 782 3D Graphics Mark 606 Memory Mark 2146 Disk Mark 2545

Windows 7 64-bit

WEIGHTED SUITE	Test Environment	Result	Remark
<u>Performance Test</u> <u>8.0</u>	Intel(R) Core(TM) CPU i3-6100E @ 2.70GHZ Crucial DDR4 2133 4GB ACPI MSS4F-M mSATA3 64GB	PASS	Summary 2118 CPU Mark 4112 2D Graphics Mark 690 3D Graphics Mark 566 Memory Mark 1629 Disk Mark 2476

Windows 10 64-bit

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	Intel(R) Core(TM) CPU i7-6822EQ @ 2.00GHZ Transcend DDR4 2133 16GB WD WD10EALX 1TB SATA3	PASS	Summary 2020 CPU Mark 6845 2D Graphics Mark 601 3D Graphics Mark 626 Memory Mark 2003 Disk Mark 899

Windows 10 64-bit

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	Intel(R) Core(TM) CPU i5-6440EQ @ 2.70GHZ Transcend DDR4 2133 16GB WD WD10EALX 1TB SATA3	PASS	Summary 2015 CPU Mark 6273 2D Graphics Mark 622 3D Graphics Mark 606 Memory Mark 2160 Disk Mark 913

Windows 10 64-bit

WEIGHTED SUITE	Test Environment	Result	Remark
<u>Performance Test</u> <u>8.0</u>	Intel(R) Core(TM) CPU i3-6100E @ 2.70GHZ Crucial DDR4 2133 4GB ACPI MSS4F-M mSATA3 64GB	PASS	Summary 2007 CPU Mark 4099 2D Graphics Mark 656 3D Graphics Mark 573 Memory Mark 1664 Disk Mark 1647

5.2 3D MARK

Windows 7 32-bit

CPU	Intel(R) Core(TM) CPU i7-6822EQ @ 2.00GHZ			
Memory	Transcend DDR4 2133 16GB			
HDD	ACPI MSS4F-M mSATA3 64GB			
WEIGHTED SUITE	Result	Score	Remark	
<u>3DMARK6</u>	3DMARK Score	PASS	9447	
	SM2.0 Score	PASS	3154	
	HDR/SM3.0 Score	PASS	4025	
	CPU Score	PASS	5386	
<u>3DMARK11</u>	3DMARK11 Score	PASS	P1507	
	Graphics score	PASS	1336	
	Physics score	PASS	5825	
	Combined score	PASS	1309	

Windows 7 32-bit

CPU	Intel(R) Core(TM) CPU i5-6440EQ @ 2.70GHZ			
Memory	Transcend DDR4 2133 16GB			
HDD	ACPI MSS4F-M mSATA3 64GB			
WEIGHTED SUITE		Result	Score	Remark
<u>3DMARK6</u>	3DMARK Score	PASS	9296	
	SM2.0 Score	PASS	3060	
	HDR/SM3.0 Score	PASS	3904	
	CPU Score	PASS	6044	
<u>3DMARK11</u>	3DMARK11 Score	PASS	P1486	
	Graphics score	PASS	1316	
	Physics score	PASS	5941	
	Combined score	PASS	1290	

Windows 7 32-bit

CPU	Intel(R) Core(TM) CPU i3-6100E @ 2.70GHZ			
Memory	Crucial DDR4 2133 4GB			
HDD	ACPI MSS4F-M mSATA3 64GB			
WEIGHTED SUITE		Result	Score	Remark
<u>3DMARK6</u>	3DMARK Score	PASS	7663	
	SM2.0 Score	PASS	2617	
	HDR/SM3.0 Score	PASS	3324	
	CPU Score	PASS	3744	
<u>3DMARK11</u>	3DMARK11 Score	PASS	P1255	
	Graphics score	PASS	1129	
	Physics score	PASS	3637	
	Combined score	PASS	1097	

Windows 7 64-bit

CPU	Intel(R) Core(TM) CPU i7-6822EQ @ 2.00GHZ			
Memory	Transcend DDR4 2133 16GB			
HDD	ACPI MSS4F-M mSATA3 64GB			
WEIGHTED SUITE		Result	Score	Remark
<u>3DMARK6</u>	3DMARK Score	PASS	9590	
	SM2.0 Score	PASS	3189	
	HDR/SM3.0 Score	PASS	4113	
	CPU Score	PASS	5383	
<u>3DMARK11</u>	3DMARK11 Score	PASS	P1510	
	Graphics score	PASS	1335	
	Physics score	PASS	6233	
	Combined score	PASS	1310	

Windows 7 64-bit

CPU	Intel(R) Core(TM) CPU i5-6440EQ @ 2.70GHZ			
Memory	Transcend DDR4 2133 16GB			
HDD	ACPI MSS4F-M mSATA3 64GB			
WEIGHTED SUITE		Result	Score	Remark
<u>3DMARK6</u>	3DMARK Score	PASS	7857	
	SM2.0 Score	PASS	2816	
	HDR/SM3.0 Score	PASS	3239	
	CPU Score	PASS	4004	
<u>3DMARK11</u>	3DMARK11 Score	PASS	P1467	
	Graphics score	PASS	1317	
	Physics score	PASS	4472	
	Combined score	PASS	1276	

Windows 7 64-bit

CPU	Intel(R) Core(TM) CPU i3-6100E @ 2.70GHZ			
Memory	Crucial DDR4 2133 4GB			
HDD	ACPI MSS4F-M mSATA3 64GB			
WEIGHTED SUITE		Result	Score	Remark
<u>3DMARK6</u>	3DMARK Score	PASS	7747	
	SM2.0 Score	PASS	2643	
	HDR/SM3.0 Score	PASS	3374	
	CPU Score	PASS	3736	
<u>3DMARK11</u>	3DMARK11 Score	PASS	P1259	
	Graphics score	PASS	1130	
	Physics score	PASS	3896	
	Combined score	PASS	1090	

Windows 10 64-bit

CPU	Intel(R) Core(TM) CPU i7-6822EQ @ 2.00GHZ			
Memory	Transcend DDR4 2133 16GB			
HDD	WD WD10EALX 1TB SATA3			
WEIGHTED SUITE		Result	Score	Remark
<u>3DMARK6</u>	3DMARK Score	PASS	9474	
	SM2.0 Score	PASS	3216	
	HDR/SM3.0 Score	PASS	3936	
	CPU Score	PASS	5728	
<u>3DMARK11</u>	3DMARK11 Score	PASS	P1514	
	Graphics score	PASS	1349	
	Physics score	PASS	5859	
	Combined score	PASS	1272	

Windows 10 64-bit

CPU	Intel(R) Core(TM) CPU i5-6440EQ @ 2.70GHZ			
Memory	Transcend DDR4 2133 16GB			
HDD	WD WD10EALX 1TB SATA3			
WEIGHTED SUITE		Result	Score	Remark
<u>3DMARK6</u>	3DMARK Score	PASS	8413	
	SM2.0 Score	PASS	2760	
	HDR/SM3.0 Score	PASS	3501	
	CPU Score	PASS	5852	
<u>3DMARK11</u>	3DMARK11 Score	PASS	P1499	
	Graphics score	PASS	1328	
	Physics score	PASS	5852	
	Combined score	PASS	1306	

Windows 10 64-bit

CPU	Intel(R) Core(TM) CPU i3-6100E @ 2.70GHZ			
Memory	Crucial DDR4 2133 4GB			
HDD	ACPI MSS4F-M mSATA3 64GB			
WEIGHTED SUITE		Result	Score	Remark
<u>3DMARK6</u>	3DMARK Score	PASS	7576	
	SM2.0 Score	PASS	2598	
	HDR/SM3.0 Score	PASS	3241	
	CPU Score	PASS	3861	
<u>3DMARK11</u>	3DMARK11 Score	PASS	P1258	
	Graphics score	PASS	1137	
	Physics score	PASS	3665	
	Combined score	PASS	1062	

5.4 PC MARK

Windows 7 32-bit

CPU	Intel(R) Core(TM) CPU i7-6822EQ @ 2.00GHZ			
Memory	Transcend DDR4 2133 16GB			
HDD	ACPI MSS4F-M mSATA3 64GB			
WEIGHTED SUITE		Result	Score	Remark
PCMARK7	PCMark score	PASS	4428	
PCMARK8	Home 3.0 score	PASS	2807	

Windows 7 32-bit

CPU	Intel(R) Core(TM) CPU i5-6440EQ @ 2.70GHZ			
Memory	Transcend DDR4 2133 16GB			
HDD	ACPI MSS4F-M mSATA3 64GB			
WEIGHTED SUITE		Result	Score	Remark
PCMARK7	PCMark score	PASS	4850	
PCMARK8	Home 3.0 score	PASS	2984	

Windows 7 32-bit

CPU	Intel(R) Core(TM) CPU i3-6100E @ 2.70GHZ			
Memory	Crucial DDR4 2133 4GB			
HDD	ACPI MSS4F-M mSATA3 64GB			
WEIGHTED SUITE		Result	Score	Remark
PCMARK7	PCMark score	PASS	4153	
PCMARK8	Home 3.0 score	PASS	2534	

Windows 7 64-bit

CPU	Intel(R) Core(TM) CPU i7-6822EQ @ 2.00GHZ			
Memory	Transcend DDR4 2133 16GB			
HDD	ACPI MSS4F-M mSATA3 64GB			
WEIGHTED SUITE		Result	Score	Remark
<u>PCMARK7</u>	PCMark score	PASS	4537	
<u>PCMARK8</u>	Home 3.0 score	PASS	2839	

Windows 7 64-bit

CPU	Intel(R) Core(TM) CPU i5-6440EQ @ 2.70GHZ			
Memory	Transcend DDR4 2133 16GB			
HDD	ACPI MSS4F-M mSATA3 64GB			
WEIGHTED SUITE		Result	Score	Remark
<u>PCMARK7</u>	PCMark score	PASS	4868	
<u>PCMARK8</u>	Home 3.0 score	PASS	2780	

Windows 7 64-bit

CPU	Intel(R) Core(TM) CPU i3-6100E @ 2.70GHZ			
Memory	Crucial DDR4 2133 4GB			
HDD	ACPI MSS4F-M mSATA3 64GB			
WEIGHTED SUITE		Result	Score	Remark
<u>PCMARK7</u>	PCMark score	PASS	4574	
<u>PCMARK8</u>	Home 3.0 score	PASS	2548	

Windows 10 64-bit

CPU	Intel(R) Core(TM) CPU i7-6822EQ @ 2.00GHZ			
Memory	Transcend DDR4 2133 16GB			
HDD	WD WD10EALX 1TB SATA3			
WEIGHTED SUITE		Result	Score	Remark
<u>PCMARK7</u>	PCMark score	PASS	3518	
<u>PCMARK8</u>	Home 3.0 score	PASS	2856	

Windows 10 64-bit

CPU	Intel(R) Core(TM) CPU i5-6440EQ @ 2.70GHZ			
Memory	Transcend DDR4 2133 16GB			
HDD	WD WD10EALX 1TB SATA3			
WEIGHTED SUITE		Result	Score	Remark
<u>PCMARK7</u>	PCMark score	PASS	3800	
<u>PCMARK8</u>	Home 3.0 score	PASS	2927	

Windows 10 64-bit

CPU	Intel(R) Core(TM) CPU i3-6100E @ 2.70GHZ			
Memory	Crucial DDR4 2133 4GB			
HDD	ACPI MSS4F-M mSATA3 64GB			
WEIGHTED SUITE		Result	Score	Remark
<u>PCMARK7</u>	PCMark score	PASS	4820	
<u>PCMARK8</u>	Home 3.0 score	PASS	2618	

5.5 AIDA64 Benchmark

Windows 7 32-bit

CPU	Intel(R) Core(TM) CPU i7-6822EQ @ 2.00GHZ
Memory	Transcend DDR4 2133 16GB
HDD	ACPI MSS4F-M mSATA3 64GB
Memory Read	16117 MB/s
Memory Write	15778 MB/s
Memory Copy	16496 MB/s
Memory Latency	73.8 ns
CPU Queen	30425
CPU PhotoWorxx	9711 MPixel/s
CPU ZLib	218.2 MB/s
CPU AES	11382 MB/s
CPU Hash	2432 MB/s
FPU VP8	4306
FPU Julia	18627
FPU Mandel	9121
FPU SinJulia	3007
FP32 Ray-Trace	3185 KRay/s
FP64 Ray-Trace	1584 KRay/s

Windows 7 32-bit

CPU	Intel(R) Core(TM) CPU i5-6440EQ @ 2.70GHZ
Memory	Transcend DDR4 2133 16GB
HDD	ACPI MSS4F-M mSATA3 64GB
Memory Read	16033 MB/s
Memory Write	15781 MB/s
Memory Copy	16475 MB/s
Memory Latency	67.9 ns
CPU Queen	27967
CPU PhotoWorxx	10104 MPixel/s
CPU ZLib	205.1 MB/s
CPU AES	13689 MB/s
CPU Hash	2789 MB/s
FPU VP8	4624
FPU Julia	19829
FPU Mandel	10111
FPU SinJulia	2629
FP32 Ray-Trace	3791 KRay/s
FP64 Ray-Trace	1953 KRay/s

Windows 7 32-bit

CPU	Intel(R) Core(TM) CPU i3-6100E @ 2.70GHZ
Memory	Crucial DDR4 2133 4GB
HDD	ACPI MSS4F-M mSATA3 64GB
Memory Read	15734 MB/s
Memory Write	15028 MB/s
Memory Copy	14421 MB/s
Memory Latency	66.7 ns
CPU Queen	17533
CPU PhotoWorxx	9434 MPixel/s
CPU ZLib	118.5 MB/s
CPU AES	6146 MB/s
CPU Hash	1314 MB/s
FPU VP8	2887
FPU Julia	11482
FPU Mandel	6023
FPU SinJulia	1623
FP32 Ray-Trace	2074 KRay/s
FP64 Ray-Trace	1086 KRay/s

Windows 7 64-bit

CPU	Intel(R) Core(TM) CPU i7-6822EQ @2.00GHZ
Memory	Transcend DDR4 2133 16GB
HDD	ACPI MSS4F-M mSATA3 64GB
Memory Read	16385 MB/s
Memory Write	15829 MB/s
Memory Copy	16629 MB/s
Memory Latency	73.5 ns
CPU Queen	30539
CPU PhotoWorxx	10106 MPixel/s
CPU ZLib	222.2 MB/s
CPU AES	11380 MB/s
CPU Hash	2793 MB/s
FPU VP8	4798
FPU Julia	19652
FPU Mandel	9269
FPU SinJulia	3012
FP32 Ray-Trace	3715 KRay/s
FP64 Ray-Trace	1943 KRay/s

Windows 7 64-bit

CPU	Intel(R) Core(TM) CPU i5-6440EQ @2.70GHZ
Memory	Transcend DDR4 2133 16GB
HDD	ACPI MSS4F-M mSATA3 64GB
Memory Read	16143 MB/s
Memory Write	15901 MB/s
Memory Copy	15570 MB/s
Memory Latency	74.7 ns
CPU Queen	28614
CPU PhotoWorxx	10790 MPixel/s
CPU ZLib	155.6 MB/s
CPU AES	11312 MB/s
CPU Hash	2231 MB/s
FPU VP8	2892
FPU Julia	11897
FPU Mandel	6348
FPU SinJulia	2025
FP32 Ray-Trace	2309 KRay/s
FP64 Ray-Trace	1270 KRay/s

Windows 7 64-bit

CPU	Intel(R) Core(TM) CPU i3-6100E @2.70GHZ
Memory	Crucial DDR4 2133 4GB
HDD	ACPI MSS4F-M mSATA3 64GB
Memory Read	15892 MB/s
Memory Write	15799 MB/s
Memory Copy	15109 MB/s
Memory Latency	67.0 ns
CPU Queen	18438
CPU PhotoWorxx	9924 MPixel/s
CPU ZLib	121.8 MB/s
CPU AES	6144 MB/s
CPU Hash	1549 MB/s
FPU VP8	3242
FPU Julia	11446
FPU Mandel	6166
FPU SinJulia	1626
FP32 Ray-Trace	2446 KRay/s
FP64 Ray-Trace	1375 KRay/s

Windows 10 64-bit

CPU	Intel(R) Core(TM) CPU i7-6822EQ @ 2.00GHZ
Memory	Transcend DDR4 2133 16GB
HDD	WD WD10EALX 1TB SATA3
Memory Read	16093 MB/s
Memory Write	15778 MB/s
Memory Copy	16812 MB/s
Memory Latency	76.9 ns
CPU Queen	30530
CPU PhotoWorxx	10080 MPixel/s
CPU ZLib	224.6 MB/s
CPU AES	11375 MB/s
CPU Hash	2778 MB/s
FPU VP8	4728
FPU Julia	19450
FPU Mandel	9272
FPU SinJulia	3010
FP32 Ray-Trace	3704 KRay/s
FP64 Ray-Trace	1951 KRay/s

Windows 10 64-bit

CPU	Intel(R) Core(TM) CPU i5-6440EQ @ 2.70GHZ
Memory	Transcend DDR4 2133 16GB
HDD	WD WD10EALX 1TB SATA3
Memory Read	16505 MB/s
Memory Write	15871 MB/s
Memory Copy	16101 MB/s
Memory Latency	76.3 ns
CPU Queen	28451
CPU PhotoWorxx	10702 MPixel/s
CPU ZLib	2119.4 MB/s
CPU AES	13637 MB/s
CPU Hash	3384 MB/s
FPU VP8	5158
FPU Julia	22981
FPU Mandel	12411
FPU SinJulia	2617
FP32 Ray-Trace	4356 KRay/s
FP64 Ray-Trace	2311 KRay/s

Windows 10 64-bit

CPU	Intel(R) Core(TM) CPU i3-6100E @ 2.70GHZ
Memory	Crucial DDR4 2133 4GB
HDD	ACPI MSS4F-M mSATA3 64GB
Memory Read	15947 MB/s
Memory Write	15887 MB/s
Memory Copy	15236 MB/s
Memory Latency	66.9 ns
CPU Queen	18442
CPU PhotoWorxx	9958 MPixel/s
CPU ZLib	121.2 MB/s
CPU AES	6145 MB/s
CPU Hash	1546 MB/s
FPU VP8	3172
FPU Julia	11451
FPU Mandel	6163
FPU SinJulia	1626
FP32 Ray-Trace	2448 KRay/s
FP64 Ray-Trace	1376 KRay/s

5.6 CINEBENCH R15

Windows 7 64-bit

CPU	Intel(R) Core(TM) CPU i7-6822EQ @2.00GHZ
Memory	Transcend DDR4 2133 16GB
HDD	ACPI MSS4F-M mSATA3 64GB
OpenGL	39.43 fps
CPU	509 cb

Windows 7 64-bit

CPU	Intel(R) Core(TM) CPU i5-6440EQ @2.70GHZ
Memory	Transcend DDR4 2133 16GB
HDD	ACPI MSS4F-M mSATA3 64GB
OpenGL	39.00 fps
CPU	305 cb

Windows 7 64-bit

CPU	Intel(R) Core(TM) CPU i3-6100E @2.70GHZ
Memory	Crucial DDR4 2133 4GB
HDD	ACPI MSS4F-M mSATA3 64GB
OpenGL	33.97 fps
CPU	294 cb

Windows 10 64-bit

CPU	Intel(R) Core(TM) CPU i7-6822EQ @ 2.00GHZ
Memory	Transcend DDR4 2133 16GB
HDD	WD WD10EALX 1TB SATA3
OpenGL	39.34 fps
CPU	503 cb

Windows 10 64-bit

CPU	Intel(R) Core(TM) CPU i5-6440EQ @ 2.70GHZ
Memory	Transcend DDR4 2133 16GB
HDD	WD WD10EALX 1TB SATA3
OpenGL	39.17 fps
CPU	513 cb

Windows 10 64-bit

CPU	Intel(R) Core(TM) CPU i3-6100E @ 2.70GHZ
Memory	Crucial DDR4 2133 4GB
HDD	ACPI MSS4F-M mSATA3 64GB
OpenGL	35.15 fps
CPU	293 cb

5.7 GEEKBENCH4

Windows 7 32 bit

CPU	Intel(R) Core(TM) CPU i7-6822EQ @2.00GHZ
Memory	Transcend DDR4 2133 16GB
Single-Core score	3118
Multi-Core score	9583
Result	link

Windows 7 32 bit

CPU	Intel(R) Core(TM) CPU i5-6440EQ @2.70GHZ
Memory	Transcend DDR4 2133 16GB
Single-Core score	3655
Multi-Core score	9901
Result	link

Windows 7 32 bit

CPU	Intel(R) Core(TM) CPU i3-6100E @ 2.70GHZ
Memory	Crucial DDR4 2133 4GB
Single-Core score	2906
Multi-Core score	5821
Result	link

Windows 7 64 bit

CPU	Intel(R) Core(TM) CPU i7-6822EQ @2.00GHZ
Memory	Transcend DDR4 2133 16GB
Single-Core score	3497
Multi-Core score	10177
Result	link

Windows 7 64 bit

CPU	Intel(R) Core(TM) CPU i5-6440EQ @2.70GHZ
Memory	Transcend DDR4 2133 16GB
Single-Core score	4027
Multi-Core score	10297
Result	link

Windows 7 64 bit

CPU	Intel(R) Core(TM) CPU i3-6100E @2.70GHZ
Memory	Crucial DDR4 2133 4GB
Single-Core score	3296
Multi-Core score	6289
Result	link

Windows 10 64 bit

CPU	Intel(R) Core(TM) CPU i7-6822EQ @2.00GHZ
Memory	Transcend DDR4 2133 16GB
Single-Core score	3402
Multi-Core score	9898
Result	link

Windows 10 64 bit

CPU	Intel(R) Core(TM) CPU i5-6440EQ @2.70GHZ
Memory	Transcend DDR4 2133 16GB
Single-Core score	3804
Multi-Core score	9996
Result	link

Windows 10 64 bit

CPU	Intel(R) Core(TM) CPU i3-6100E @2.70GHZ
Memory	Crucial DDR4 2133 4GB
Single-Core score	3222
Multi-Core score	6130
Result	link

Ubuntu 16.04 LTS 64Bit

CPU	Intel(R) Core(TM) CPU i5-6440EQ @2.70GHZ
Memory	Crucial DDR4 2133 4GB
Single-Core score	3939
Multi-Core score	10592
Result	link

5.8 Storage Performance

5.8.1 HDD

Test environment:

OS Windows 7 (64Bit)

Program (HD Tune)

HDD Model	Interface	Capacity	Average	Burst Rate	Access time
SanDisk Cruzer Switch	USB2.0	4GB	17.7 MB/s	14.1 MB/s	0.776ms
SanDisk Ultra	USB3.0	32GB	62.0 MB/s	43.3 MB/s	1.47ms
ADATA S102	USB3.0	32GB	109.0 MB/s	62.9 MB/s	1.42ms
SanDisk Extreme	USB3.0	64GB	166.8 MB/s	59.4MB/s	0.449ms
WD WD2500AAKS-00VYA0	SATA2	250GB	59 MB/s	82.4 MB/s	13.4 ms
ACPI MSS4F-M	MSATA	64GB	395.7 MB/s	102.3 MB/s	0.084ms
PLEXTOR PX-256M8PeY	PCIe	256GB	944.3 MB/s	342.2 MB/s	0.041ms

5.8.2 CD/DVD-ROM

Test environment:

OS Windows 10 (64Bit)

Program (NERO)

CD/DVD-ROM Model	Interface	Average Speed	Full Read	Burst Rate	DVD
LITEON eBAU108	USB	5.91x	235 ms	17 MB/s	1-16X DVD-R
LITEON eTAU108	USB	5.98x	211 ms	19 MB/s	1-16X DVD-R
Pioneer DVR-XD11T	USB	6.01x	184 ms	21 MB/s	1-16X DVD-R
Pioneer DDVR-S19LBK-24X	SATA	11.92x	206 ms	37 MB/s	1-16X DVD-R
LITEON iHES312	SATA	11.70X	162 ms	42 MB/s	1-16X DVD-R
ASUS DRW-1814BLT	SATA	8.80x	191 ms	35 MB/s	1-16X DVD-R