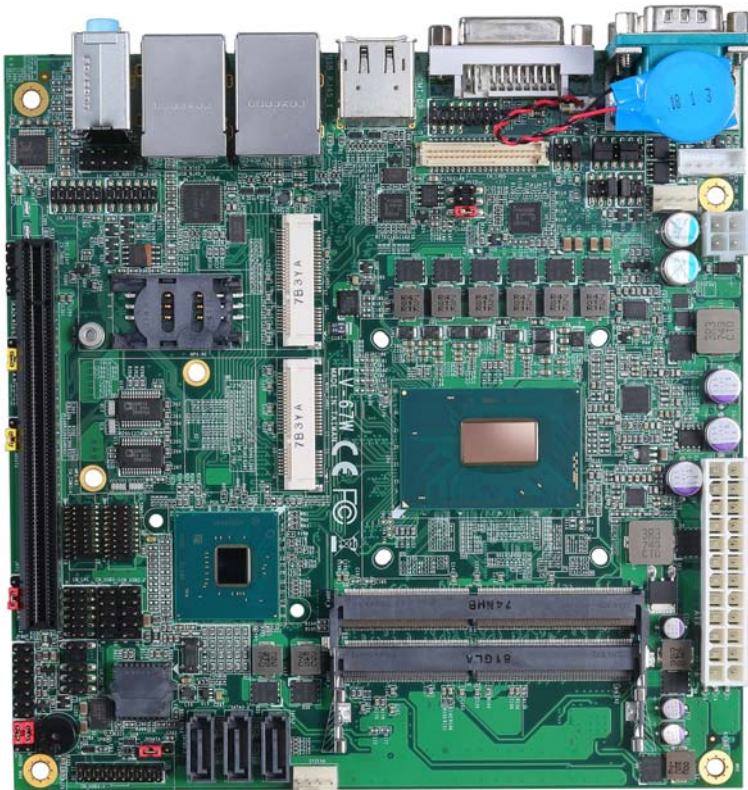


# Product Test Report



<b>Product Name</b>	<b>LV-67W</b>
<b>Product Version</b>	<b>A</b>
<b>Issued Date</b>	<b>2019.06.10</b>
<b>Report Edition</b>	<b>1.0</b>
<b>BIOS Version</b>	<b>1.0</b>
<b>Testing Engineer</b>	<b>Perry</b>
<b>Check Engineer</b>	<b>Daniel</b>

**REVISION HISTORY**

<b>DATE</b>	<b>REVISION NO.</b>	<b>PAGE</b>	<b>DESCRIPTONS</b>
<b>2019.06.10</b>	<b>Ver. 1.0</b>	<b>46</b>	<b>Initial Release</b>

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# 1. Function test

## 1.1 Hardware functions

### Base Function Test

Item	Description	Result
1	Power Button	PASS
2	Reset	PASS
3	Power LED	PASS
4	HDD LED	PASS
5	CPUFAN	PASS
6	SYSFAN	PASS
7	AUDIO	PASS
8	CN_AUDIO	PASS
9	LAN1	PASS
10	LAN2	PASS
11	DDR4 A/B	PASS
12	SATA3-1/2/3	PASS
13	USB3.0 1/2/3/4	PASS
14	CN_USB2-1/2	PASS
15	CN_USB3-1	PASS
16	COM 1/2	PASS
17	COM 3/4/5/6	PASS
18	CN_PS2	PASS
19	DVI	PASS

20	HDMI	PASS
21	Display Port	PASS
22	CN_CRT	PASS
23	LVDS	PASS
24	MINI_CRAD1	PASS
25	MINI_CRAD2	PASS
26	PCIEX16	PASS

### Jumper

Item	Description	Result
1	JRTC	PASS
2	JAT	PASS
4	JP1	PASS
5	JP2	PASS
6	JCSEL1	PASS
7	JCSEL2	PASS
8	JVUSB	PASS
9	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	Selection Language	PASS	

Item	Description	Result	Remark
6	Numlock	PASS	
7	Active Processor Cores	PASS	
8	Hyper-Threading	PASS	
9	Channel A&B DIMM Control	PASS	
10	LCD Control	PASS	
11	HD Audio	PASS	
12	Wake On LAN	PASS	
13	LVDS Configuration	PASS	
14	COM Port 1~6	PASS	
15	Keyboard Controller	PASS	
16	Power Loss	PASS	
17	Watch Dog Timer	PASS	
18	Auto Wake on S5	PASS	
19	iAMT	PASS	

### 1.3 Driver

#### CD edition : IPCI2-1.0

##### 1. Windows 10 64 bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	
2	VGA Driver	PASS	24.20.100.6194
3	Audio Driver	PASS	6.0.1.8036
4	LAN Driver	PASS	I219LM:12.17.10.7 I210: 12.15.184.0

## 2. Compatibility test

### 2.1 CPU Test

Test environment:

OS: Windows 10 64bit

Test program : PC MARK05 & BurnIn Test8.1

Spec	CPU Speed	Family	Processor	MAX TDP	Smart Cache	Result
<a href="#">SR3YZ</a>	2.6GHz	CORE	i7-8850H	45W	9 MB	PASS
<a href="#">SR3Z1</a>	2.5GHz	CORE	i5-8400H	45W	8 MB	PASS

### 2.2 Memory Test

Test environment:

OS: Windows 10 64bit

Test program : PC MARK05 & BurnIn Test8.1 & MemTest64  
& MemTest86+

Manufacturer	Chip	Frequency	Capacity Mbytes	Memory test Source
SLINK MBG-JBM J4AGSH1G8QHFC	SKhynix H5AN8G8NCJR -VKC 830A	DDR4 2666	16 GB	PASS
ACPI CMA6-5HD03BAR0 1B00	SEC 625 K4A8G085WB- BCRC	DDR4 2666	16 GB	PASS
ACPI CMA6-5GD03BAR0 1B00	SEC 625 K4A8G085WB- BCRC	DDR4 2666	8 GB	PASS
TLA AD4SSX10T7WB-G TGC	SEC 807 K4A8G085WC- BCTD	DDR4 2666	16 GB	PASS
TLA AD4SSX8GT3WB-G TGC	SEC 807 K4A8G085WC- BCTD	DDR4 2666	8 GB	PASS

<b>DSL D4SS1G082SH26A· C</b>	<b>SEC 816 K4A8G085WC- BCTD</b>	<b>DDR4 2666</b>	<b>16 GB</b>	<b>PASS</b>
<b>DSL D4SS1G081SH26A· C</b>	<b>SEC 816 K4A8G085WC- BCTD</b>	<b>DDR4 2666</b>	<b>8 GB</b>	<b>PASS</b>

## 2.3 CRT Graphic Quality Test

Test environment:

OS Windows 10 64bit

Driver version : 24.20.100.6194

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



## 2.4 DVI Graphic Quality Test

Test environment:

OS Windows 10 64bit

Driver version : 24.20.100.6194

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

## 2.5 HDMI Graphic Quality Test

Test environment:

OS Windows 10 64bit

Driver version : 24.20.100.6194

Resolution	Color	Result	Remark
800 x 600	32bit	PASS	
1024 x 768	32bit	PASS	
1152 x 864	32bit	PASS	
1280 x 600	32bit	PASS	
1280 x 720	32bit	PASS	
1280 x 768	32bit	PASS	
1280 x 800	32bit	PASS	
1280 x 960	32bit	PASS	
1280 x 1024	32bit	PASS	
1360 x 768	32bit	PASS	
1366 x 768	32bit	PASS	
1400 x 1050	32bit	PASS	
1440 x 900	32bit	PASS	
1600 x 900	32bit	PASS	
1680 x 1050	32bit	PASS	
1920 x 1080	32bit	PASS	
3840 x 2160	32bit	PASS	

## 2.6 Display Port Graphic Quality Test

Test environment:

OS Windows 10 64bit

Driver version : 24.20.100.6194

Resolution	Color	Result	Remark
800 x 600	32bit	PASS	
1024 x 768	32bit	PASS	
1152 x 864	32bit	PASS	
1280 x 600	32bit	PASS	
1280 x 720	32bit	PASS	
1280 x 768	32bit	PASS	
1280 x 800	32bit	PASS	
1280 x 960	32bit	PASS	
1280 x 1024	32bit	PASS	
1360 x 768	32bit	PASS	
1366 x 768	32bit	PASS	
1400 x 1050	32bit	PASS	
1440 x 900	32bit	PASS	
1600 x 900	32bit	PASS	
1600 x 1050	32bit	PASS	
1920 x 1080	32bit	PASS	
3840 x 2160	32bit	PASS	

## 2.7 Audio

Test environment:

OS Windows 10 64-bit

Driver version : 6.0.1.8036

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

## OS Ubuntu 16.04 / 18.04

Item	Description	Result	Remark
1	2.1CH	PASS	

## OS Fedora 28 Workstation

Item	Description	Result	Remark
1	2.1CH	PASS	

## 2.8 HDD Test

Test environment:

OS Windows 10 64bit

Test program : PC MARK05 & BurnIn Test8.1 & CrystalDiskMark

HDD Model	Interface	Capacity	HDD Size Detect	HDD Data Transfer	HDD LED Check
INTEL SSDSC2BW240A4	SSD	240 GB	PASS	PASS	PASS
SPCC Solid State disk(S55)	SSD	120 GB	PASS	PASS	PASS
CT120 BX500	SSD	120 GB	PASS	PASS	PASS

<b>WD 10EZEX</b>	<b>HDD</b>	<b>1 TB</b>	PASS	PASS	PASS
<b>Kingston DT100G3/32GB</b>	<b>USB</b>	<b>32 GB</b>	PASS	PASS	PASS
<b>Kingston DT Hyper X 3.0</b>	<b>USB</b>	<b>63 GB</b>	PASS	PASS	PASS
<b>Crucial_CT 120M500SSD</b>	<b>mSATA</b>	<b>120 GB</b>	PASS	PASS	PASS

## 2.9 DVD-ROM Test

Test environment:

OS Windows 10 64bit

<b>DVD-ROM Model</b>	<b>Interface</b>	<b>DVD-ROM Detect</b>	<b>DVD-ROM Data Transfer</b>	<b>Play DVD</b>
<b>PIONEER DVD DVR-219L</b>	<b>SATA</b>	PASS	PASS	PASS
<b>ASUS DRW-2D1ST a</b>	<b>SATA</b>	PASS	PASS	PASS
<b>ASUS DRW-1814BLT</b>	<b>SATA</b>	PASS	PASS	PASS
<b>LITEON iHES312-33 3</b>	<b>SATA</b>	PASS	PASS	PASS
<b>Transcend DVD TS8XDVDS-K</b>	<b>USB</b>	PASS	PASS	PASS
<b>LITEON DVD eTAU108</b>	<b>USB</b>	PASS	PASS	PASS
<b>PIONEER DVD DVR-XD11T</b>	<b>USB</b>	PASS	PASS	PASS
<b>ZYNET GT32N A201</b>	<b>USB</b>	PASS	PASS	PASS

## 2.10 USB Test

### 1. Windows 10 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. Ubuntu 16.04 / 18.04

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

### 3. Fedora 28 Workstation

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

## 2.11 Serial Port Test

### 1. Windows 10 64-bit

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

## 2.12 PS2 Keyboard 、 Mouse Test

### 1. Windows 10 64-bit

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

### 2. Ubuntu 16.04 / 18.04

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

### 3. Fedora 28 Workstation

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

## 2.13 LAN Test

Data Transfer Test environment:

-CAT 6 UTP 100M

-8 HR. continuous

### 1. Windows 10 64-bit

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

### 2. Ubuntu 16.04 / 18.04

Item	Description	Result	Remark
1	Device Manager Check	PASS	

### 3. Fedora 28 Workstation

Item	Description	Result	Remark
1	Device Manager Check	PASS	

## 2.14 Power Supply Test

Item	Type	Description	Result	Remark
1	ATX Power	Thermaltake TR2-450AH2NCB	PASS	
2	ATX Power	SEED BS400	PASS	
3	ATX Power	Seasonic SS-520GB 520W	PASS	
4	ATX Power	AcBel PC7008 430W	PASS	



## 2.15 OS Install

Item	Description	Result	Remark
1	Windows 10 64 bit	PASS	
2	Ubuntu16.04 (ubuntu-16.04.5-desktop-amd64)	PASS	
3	Ubuntu18.04 (ubuntu-18.04.1-desktop-amd64)	PASS	
4	Fedora 28 (Fedora-Workstation-Live-x86_64-28-1.1)	PASS	

## 2.16 PCI Express Mini Card

Motherboard	PCI Express mini card	Result	Remark
LV-67W	MPX-210D	PASS	Mini Card 1 & 2
	MPX-210D2	PASS	Mini Card 1 & 2
	MPX-574D	PASS	Mini Card 1 & 2
	MPX-574D2	PASS	Mini Card 1 & 2
	MPX-350	PASS	Mini Card 1 & 2
	MPX-2213	PASS	Mini Card 1 & 2 But BIOS PCIE ASPM Disabled
	MPX-643 (EOL)	PASS	Mini Card 1 & 2 But BIOS PCIE ASPM Disabled
	MPX-8188	PASS	Windows10

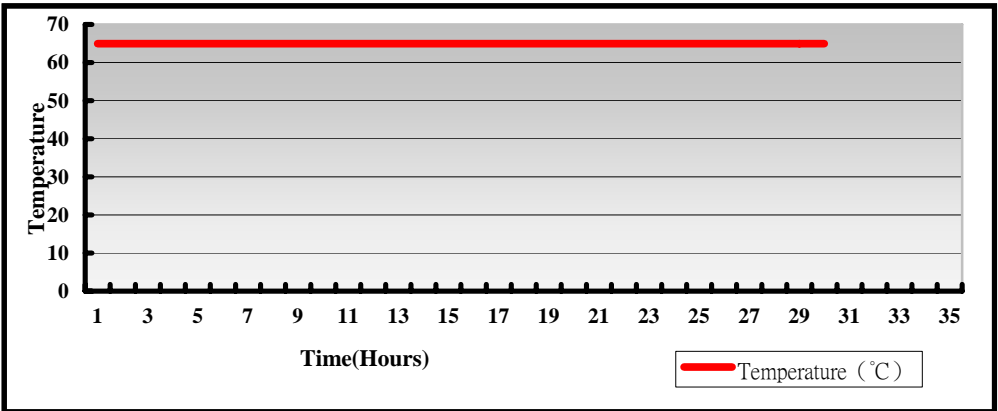
### 3. Environmental test

#### 3.1 Temperature Test

Hardware Device list:

System Board	LV-67W
CPU	Intel(R) Core(TM) i7-8850H 2.6GHz
Memory	SLINK MBG-JBM J4AGSH1G8QHFC (SKhynix H5AN8G8NCJR-VKC 830A)
HDD	INTEL SSDSC2BW240A4 240GB
Operating OS	Windows 10 64bit
Test Equipment	GIANT FORCE GTH-150-60-SP-AR LCD-9530 Programmer/Controller
Test Program	3DMark06 + Prime95

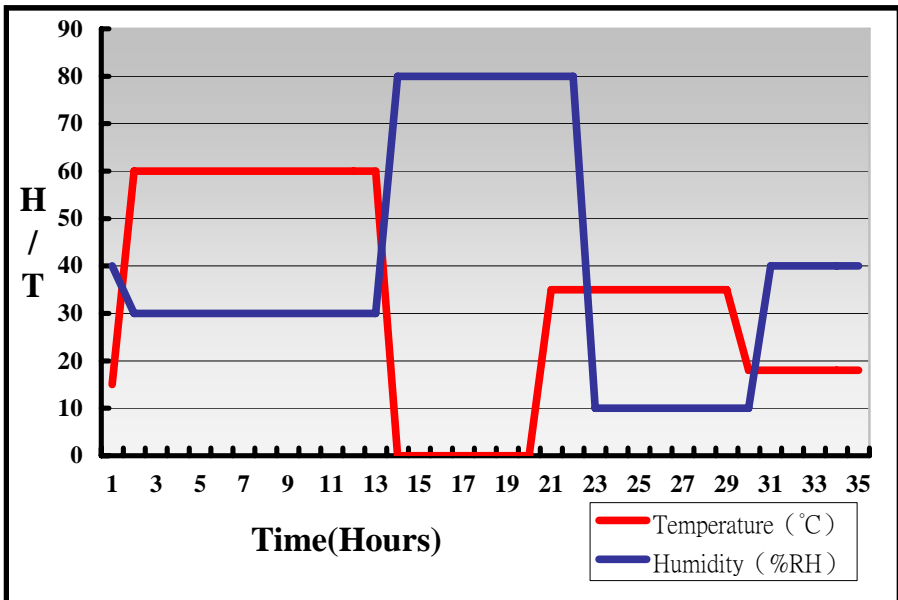
Test Result:



### Hardware Device list:

System Board	LV-67W
CPU	Intel(R) Core(TM) i7-8850H 2.6GHz
Memory	SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix H5AN8G8NCJR-VKC 830A)
HDD	INTEL SSDSC2BW240A4 240GB
Operating OS	Windows 10 64bit
Test Equipment	GIANT FORCE GTH-150-60-SP-AR LCD-9530 Programmer/Controller
Test Program	3DMark06 + Prime95

### Test Result:



## Boot up Test:

### Hardware Device list:

<b>System Board</b>	<b>LV-67W</b>
<b>CPU</b>	<b>Intel(R) Core(TM) i5-8400H 2.5GHz</b>
<b>Memory</b>	<b>SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix H5AN8G8NCJR-VKC 830A)</b>
<b>HDD</b>	<b>INTEL SSDSC2BW240A4 240GB</b>

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

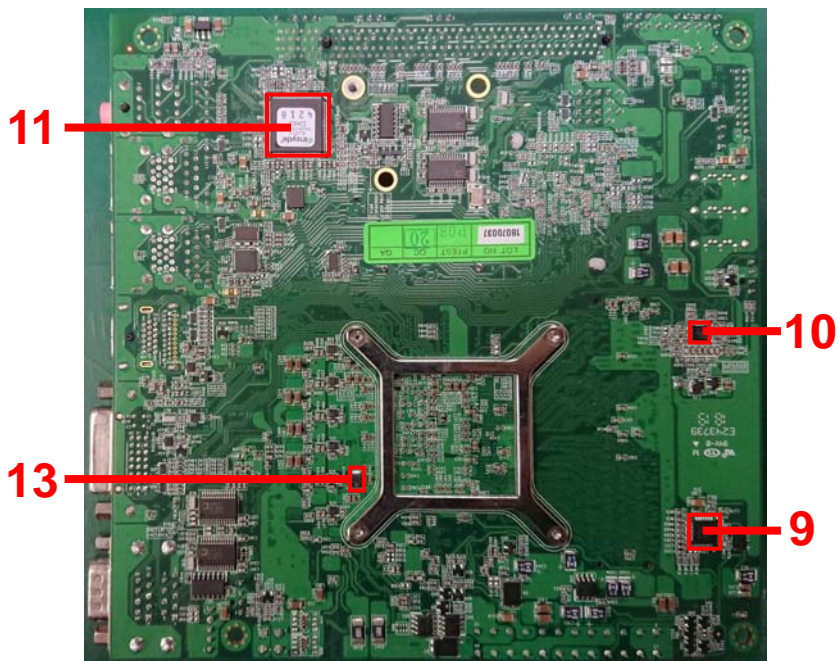
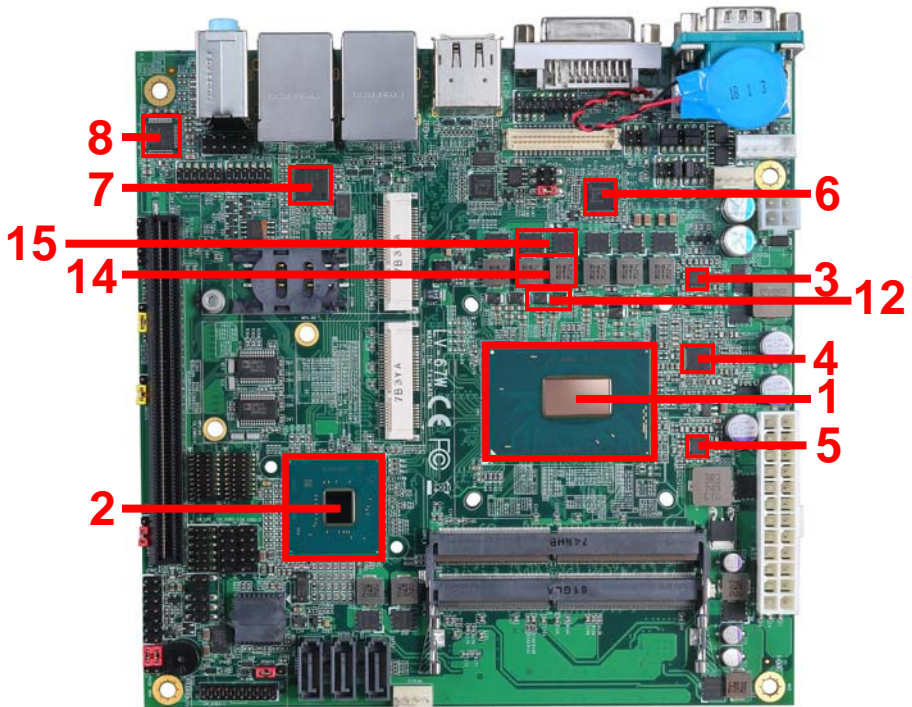
## 3.2 Thermal measurements at various points on the board

### Test Environment:

<b>CPU</b>	Intel(R) Core(TM) i5-8400H 2.5GHz
<b>Memory</b>	SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix H5AN8G8NCJR-VKC 830A)
<b>HDD</b>	INTEL SSDSC2BW240A4 240GB
<b>Power</b>	Thermaltake TR2-450AH2NCB
<b>Operating System</b>	Windows 10 64-bit
<b>Test Program</b>	3DMARK06+Prime95

### Test Result:

<b>Item</b>	<b>Environmental temperature</b>	<b>25°C</b>
<b>1</b>	<b>CPU + Heatsink Fan</b>	<b>63°C</b>
<b>2</b>	<b>PCH (QM370)</b>	<b>46.4°C</b>
<b>3</b>	<b>U3</b>	<b>48.5°C</b>
<b>4</b>	<b>U4</b>	<b>49.2°C</b>
<b>5</b>	<b>U5</b>	<b>49.5°C</b>
<b>6</b>	<b>U6</b>	<b>57.4°C</b>
<b>7</b>	<b>U14</b>	<b>49.7°C</b>
<b>8</b>	<b>U22</b>	<b>53.2°C</b>
<b>9</b>	<b>U25</b>	<b>60.2°C</b>
<b>10</b>	<b>U40</b>	<b>52.9°C</b>
<b>11</b>	<b>U48</b>	<b>46.9°C</b>
<b>12</b>	<b>C124 &amp; C137</b>	<b>64.3°C</b>
<b>13</b>	<b>C400</b>	<b>56.7°C</b>
<b>14</b>	<b>L8 &amp; L9</b>	<b>59.2°C</b>
<b>15</b>	<b>Q21 &amp; Q22</b>	<b>74.5°C</b>



## 4. Reliability Test

### 4.1 Power Consumption Test

#### 1. Test Environment:

<b>Motherboard</b>	<b>LV-67W</b>
<b>CPU</b>	<b>Intel(R) Core(TM) i7-8850H 2.6GHz</b>
<b>Memory</b>	<b>SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix H5AN8G8NCJR-VKC 830A)</b>
<b>HDD</b>	<b>INTEL SSDSC2BW240A4 240GB</b>

**Power Supply: GW INSTEK SPS-3610(DC Power Supply)**

Voltage	MS-DOS Boot up		Windows 10 64bit 3DMARK 2006 + Prime95	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
12V	2.09	25.08	6.51	78.12
19V	1.44	27.36	4.15	78.85
24V	1.22	29.28	3.47	83.28

#### 1. a. Test Environment:

The same as above but with LCD

<b>Display Panel</b>	<b>LTM170EH-L01 17”LCD</b>
----------------------	----------------------------

**Power Supply: GW INSTEK SPS-3610(DC Power Supply)**

Voltage	MS-DOS Boot up		Windows 10 64bit 3DMARK 2006 + Prime95	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
12V	2.99	35.88	8.15	97.8
19V	2.02	38.38	5.21	98.99
24V	1.71	41.04	4.3	103.2

## 2. Test Environment:

<b>Motherboard</b>	<b>LV-67W</b>
<b>CPU</b>	<b>Intel(R) Core(TM) i5-8400H 2.5GHz</b>
<b>Memory</b>	<b>SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix H5AN8G8NCJR-VKC 830A)</b>
<b>HDD</b>	<b>INTEL SSDSC2BW240A4 240GB</b>

### Power Supply: GW INSTEK SPS-3610(DC Power Supply)

Voltage	MS-DOS Boot up		Windows 10 64bit 3DMARK 2006 + Prime95	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
12V	1.93	23.16	6.41	76.92
19V	1.33	25.27	4.24	80.56
24V	1.13	27.12	3.51	84.24

## 2. a. Test Environment:

The same as above but with LCD

<b>Display Panel</b>	<b>LTM170EH-L01 17”LCD</b>
----------------------	----------------------------

### Power Supply: GW INSTEK SPS-3610(DC Power Supply)

Voltage	MS-DOS Boot up		Windows 10 64bit 3DMARK 2006 + Prime95	
	Current ( A )	Power ( W )	Current ( A )	Power ( W )
12V	2.69	32.28	7.81	93.72
19V	1.8	34.2	5.14	97.66
24V	1.45	34.8	4.26	102.24



## 5. Performance Test

### 5.1 3D MARK(2003、2005)

Windows 10 64-bit (i7-8850H)

Weighted Suite	Test Environment	Result	Remark
3DMARK2003 Scores	Intel(R) Core(TM) i7-8850H 2.6GHz SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2	PASS	16502
3DMARK2005 Scores	(SKhynix H5AN8G8NCJR-VKC 830A) INTEL SSDSC2BW240A4 240GB	PASS	17441

Weighted Suite	Test Environment	Result	Remark
3DMARK2003 Scores	Intel(R) Core(TM) i7-8850H 2.6GHz ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2	PASS	16470
3DMARK2005 Scores	(SEC 625 K4A8G085WB-BCRC) INTEL SSDSC2BW240A4 240GB	PASS	17548

Weighted Suite	Test Environment	Result	Remark
3DMARK2003 Scores	Intel(R) Core(TM) i7-8850H 2.6GHz DSL D4SS1G082SH26A-C DDR4 2666 16Gx2 (SEC 816	PASS	16512
3DMARK2005 Scores	K4A8G085WC-BCTD) INTEL SSDSC2BW240A4 240GB	PASS	17598

**Windows 10 64-bit (i5-8400H)**

Weighted Suite	Test Environment	Result	Remark
3DMARK2003 Scores	Intel(R) Core(TM) i5-8400H 2.5GHz SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix	PASS	15915
3DMARK2005 Scores	H5AN8G8NCJR-VKC 830A) INTEL SSDSC2BW240A4 240GB	PASS	16910

Weighted Suite	Test Environment	Result	Remark
3DMARK2003 Scores	Intel(R) Core(TM) i5-8400H 2.5GHz ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2 (SEC 625	PASS	16041
3DMARK2005 Scores	K4A8G085WB-BCRC) INTEL SSDSC2BW240A4 240GB	PASS	16906

Weighted Suite	Test Environment	Result	Remark
3DMARK2003 Scores	Intel(R) Core(TM) i5-8400H 2.5GHz DSL D4SS1G082SH26A-C DDR4 2666 16Gx2 (SEC 816 K4A8G085WC-BCTD) INTEL SSDSC2BW240A4 240GB	PASS	15955
3DMARK2005 Scores		PASS	16880

## 5.2 3D MARK2006

Windows 10 64-bit (i7-8850H)

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	Intel(R) Core(TM) i7-8850H 2.6GHz SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix H5AN8G8NCJR-VKC 830A) INTEL SSDSC2BW240A4 240GB	PASS	11115
2	SM2.0 Source		PASS	3831
3	HDR/SM3.0 Source		PASS	4269
4	CPU Source		PASS	9976

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	<b>Intel(R) Core(TM) i7-8850H 2.6GHz ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2 (SEC 625 K4A8G085WB-BCRC) INTEL SSDSC2BW240A4 240GB</b>	PASS	11086
2	SM2.0 Source		PASS	3819
3	HDR/SM3.0 Source		PASS	4256
4	CPU Source		PASS	10015

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	<b>Intel(R) Core(TM) i7-8850H 2.6GHz DSL D4SS1G082SH26A·C DDR4 2666 16Gx2 (SEC 816 K4A8G085WC-BCTD) INTEL SSDSC2BW240A4 240GB</b>	PASS	11105
2	SM2.0 Source		PASS	3869
3	HDR/SM3.0 Source		PASS	4225
4	CPU Source		PASS	9935

**Windows 10 64-bit (i5-8400H)**

<b>Item</b>	<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
1	3DMARK Source	<b>Intel(R) Core(TM) i5-8400H 2.5GHz SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix H5AN8G8NCJR-VKC 830A) INTEL SSDSC2BW240A4 240GB</b>	PASS	10580
2	SM2.0 Source		PASS	3662
3	HDR/SM3.0 Source		PASS	4077
4	CPU Source		PASS	9014

<b>Item</b>	<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
1	3DMARK Source	<b>Intel(R) Core(TM) i5-8400H 2.5GHz ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2 (SEC 625 K4A8G085WB-BCRC) INTEL SSDSC2BW240A4 240GB</b>	PASS	10669
2	SM2.0 Source		PASS	3707
3	HDR/SM3.0 Source		PASS	4100
4	CPU Source		PASS	9064

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	<b>Intel(R) Core(TM) i5-8400H 2.5GHz DSL D4SS1G082SH26A·C DDR4 2666 16Gx2 (SEC 816 K4A8G085WC-BCTD) INTEL SSDSC2BW240A4 240GB</b>	PASS	10645
2	SM2.0 Source		PASS	3690
3	HDR/SM3.0 Source		PASS	4101
4	CPU Source		PASS	9024

### 5.3 3D MARK VANTAGE

Windows 10 64-bit (i7-8850H)

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	<b>Intel(R) Core(TM) i7-8850H 2.6GHz SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix H5AN8G8NCJR-VKC 830A) INTEL SSDSC2BW240A4 240GB</b>	PASS	P8160
2	GPU SCORE		PASS	6458
3	CPU SCORE		PASS	38918

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	<b>Intel(R) Core(TM) i7-8850H 2.6GHz ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2 (SEC 625 K4A8G085WB-BCRC) INTEL SSDSC2BW240A4 240GB</b>	PASS	P8114
2	GPU SCORE		PASS	6424
3	CPU SCORE		PASS	38525

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	<b>Intel(R) Core(TM) i7-8850H 2.6GHz DSL D4SS1G082SH26A·C DDR4 2666 16Gx2 (SEC 816 K4A8G085WC-BCTD) INTEL SSDSC2BW240A4 240GB</b>	PASS	P8152
2	GPU SCORE		PASS	6451
3	CPU SCORE		PASS	38981

#### Windows 10 64-bit (i5-8400H)

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	<b>Intel(R) Core(TM) i5-8400H 2.5GHz SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix H5AN8G8NCJR-VKC 830A) INTEL SSDSC2BW240A4 240GB</b>	PASS	P7812
2	GPU SCORE		PASS	6259
3	CPU SCORE		PASS	30531

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i5-8400H 2.5GHz ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2 (SEC 625 K4A8G085WB-BCRC) INTEL SSDSC2BW240A4 240GB	PASS	P7767
2	GPU SCORE		PASS	6226
3	CPU SCORE		PASS	30209

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i5-8400H 2.5GHz DSL D4SS1G082SH26A·C DDR4 2666 16Gx2 (SEC 816 K4A8G085WC-BCTD) INTEL SSDSC2BW240A4 240GB	PASS	P7767
2	GPU SCORE		PASS	6220
3	CPU SCORE		PASS	30613

## 5.4 3D MARK 11

Windows 10 64-bit (i7-8850H)

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i7-8850H 2.6GHz SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix H5AN8G8NCJR-VKC 830A) INTEL SSDSC2BW240A4 240GB	PASS	P2175
2	Graphics SCORE		PASS	1895
3	Physics SCORE		PASS	10032
4	Combined SCORE		PASS	2047



Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i7-8850H 2.6GHz ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2 (SEC 625 K4A8G085WB-BCRC) INTEL SSDSC2BW240A4 240GB	PASS	P2182
2	Graphics SCORE		PASS	1895
3	Physics SCORE		PASS	10777
4	Combined SCORE		PASS	2062

#### Windows 10 64-bit (i5-8400H)

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i5-8400H 2.5GHz SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix H5AN8G8NCJR-VKC 830A) INTEL SSDSC2BW240A4 240GB	PASS	P2129
2	Graphics SCORE		PASS	1855
3	Physics SCORE		PASS	10361
4	Combined SCORE		PASS	1970

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i5-8400H 2.5GHz ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2 (SEC 625 K4A8G085WB-BCRC) INTEL SSDSC2BW240A4 240GB	PASS	P2143
2	Graphics SCORE		PASS	1874
3	Physics SCORE		PASS	9299
4	Combined SCORE		PASS	1997

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i5-8400H 2.5GHz DSL D4SS1G082SH26A-C DDR4 2666 16Gx2 (SEC 816 K4A8G085WC-BCTD) INTEL SSDSC2BW240A4 240GB	PASS	P2128
2	Graphics SCORE		PASS	1853
3	Physics SCORE		PASS	10306
4	Combined SCORE		PASS	1977

## 5.5 3D MARK

Windows 10 64-bit (i7-8850H)

Item	Weighted Suite	Test Environment	Result	Remark
1	Time Spy	Intel(R) Core(TM) i7-8850H 2.6GHz SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix H5AN8G8NCJR-VKC 830A) INTEL SSDSC2BW240A4 240GB	PASS	481
2	Graphics SCORE		PASS	415
3	CPU SCORE		PASS	5188

Item	Weighted Suite	Test Environment	Result	Remark
1	Time Spy	Intel(R) Core(TM) i7-8850H 2.6GHz ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2 (SEC 625 K4A8G085WB-BCRC) INTEL SSDSC2BW240A4 240GB	PASS	482
2	Graphics SCORE		PASS	416
3	CPU SCORE		PASS	5211

**Windows 10 64-bit (i5-8400H)**

Item	Weighted Suite	Test Environment	Result	Remark
1	Time Spy	Intel(R) Core(TM) i5-8400H 2.5GHz SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix H5AN8G8NCJR-VKC 830A) INTEL SSDSC2BW240A4 240GB	PASS	460
2	Graphics SCORE		PASS	398
3	CPU SCORE		PASS	4230

Item	Weighted Suite	Test Environment	Result	Remark
1	Time Spy	Intel(R) Core(TM) i5-8400H 2.5GHz ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2 (SEC 625 K4A8G085WB-BCRC) INTEL SSDSC2BW240A4 240GB	PASS	460
2	Graphics SCORE		PASS	398
3	CPU SCORE		PASS	4181

Item	Weighted Suite	Test Environment	Result	Remark
1	Time Spy	Intel(R) Core(TM) i5-8400H 2.5GHz DSL D4SS1G082SH26A·C DDR4 2666 16Gx2 (SEC 816 K4A8G085WC-BCTD) INTEL SSDSC2BW240A4 240GB	PASS	461
2	Graphics SCORE		PASS	399
3	CPU SCORE		PASS	4217

## 5.6 PC MARK2005

<b>Test Environment</b>
<b>Intel(R) Core(TM) i7-8850H 2.6GHz</b> <b>SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16G*2</b> <b>(SKhynix H5AN8G8NCJR-VKC 830A)</b> <b>INTEL SSDSC2BW240A4 240GB</b>

**Windows 10 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
1	<b>PCMark Source</b>	PASS	N/A
2	<b>CPU Source</b>	PASS	16634
3	<b>Memory Source</b>	PASS	13601
4	<b>Graphic Source</b>	PASS	5737
5	<b>HDD Source</b>	PASS	34814

<b>Test Environment</b>
<b>Intel(R) Core(TM) i7-8850H 2.6GHz</b> <b>ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2</b> <b>(SEC 625 K4A8G085WB-BCRC)</b> <b>INTEL SSDSC2BW240A4 240GB</b>

**Windows 10 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
1	<b>PCMark Source</b>	PASS	N/A
2	<b>CPU Source</b>	PASS	17074
3	<b>Memory Source</b>	PASS	13516
4	<b>Graphic Source</b>	PASS	5764
5	<b>HDD Source</b>	PASS	39662

<b>Test Environment</b>
<b>Intel(R) Core(TM) i5-8400H 2.5GHz</b> <b>SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16G*2</b> <b>(SKhynix H5AN8G8NCJR-VKC 830A)</b> <b>INTEL SSDSC2BW240A4 240GB</b>

**Windows 10 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
1	<b>PCMark Source</b>	PASS	N/A
2	<b>CPU Source</b>	PASS	16268
3	<b>Memory Source</b>	PASS	13331
4	<b>Graphic Source</b>	PASS	5556
5	<b>HDD Source</b>	PASS	38914

<b>Test Environment</b>
<b>Intel(R) Core(TM) i5-8400H 2.5GHz</b> <b>ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2</b> <b>(SEC 625 K4A8G085WB-BCRC)</b> <b>INTEL SSDSC2BW240A4 240GB</b>

**Windows 10 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
1	<b>PCMark Source</b>	PASS	N/A
2	<b>CPU Source</b>	PASS	16124
3	<b>Memory Source</b>	PASS	13409
4	<b>Graphic Source</b>	PASS	5573
5	<b>HDD Source</b>	PASS	39425

<b>Test Environment</b>
<b>Intel(R) Core(TM) i5-8400H 2.5GHz</b> <b>DSL D4SS1G082SH26A-C DDR4 2666 16Gx2</b> <b>(SEC 816 K4A8G085WC-BCTD)</b> <b>INTEL SSDSC2BW240A4 240GB</b>

**Windows 10 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
1	<b>PCMark Source</b>	PASS	N/A
2	<b>CPU Source</b>	PASS	17191
3	<b>Memory Source</b>	PASS	13255
4	<b>Graphic Source</b>	PASS	5744
5	<b>HDD Source</b>	PASS	40095

## **5.7 PC MARK 7 & 8**

**Windows 10 64-bit (i7-8850H)**

<b>Weighted Suite</b>	<b>Test Environment</b>	<b>Result</b>	<b>Remark</b>
<b>PCMARK 7 Scores</b>	<b>Intel(R) Core(TM)</b> <b>i7-8850H 2.6GHz</b> <b>SLINK MBG-JBM</b> <b>J4AGSH1G8QHFC</b> <b>DDR4 2666 16Gx2</b>	PASS	6775
<b>PCMARK 8 Scores</b>	<b>(SKhynix</b> <b>H5AN8G8NCJR-VKC</b> <b>830A)</b> <b>INTEL SSDSC2BW240A4</b> <b>240GB</b>	PASS	5354

Weighted Suite	Test Environment	Result	Remark
PCMARK 7 Scores	Intel(R) Core(TM) i7-8850H 2.6GHz ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2 (SEC 625 K4A8G085WB-BCRC) INTEL SSDSC2BW240A4 240GB	PASS	6797
PCMARK 8 Scores		PASS	5353

**Windows 10 64-bit (i5-8400H)**

Weighted Suite	Test Environment	Result	Remark
PCMARK 7 Scores	Intel(R) Core(TM) i5-8400H 2.5GHz SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix H5AN8G8NCJR-VKC 830A) INTEL SSDSC2BW240A4 240GB	PASS	6746
PCMARK 8 Scores		PASS	5288

Weighted Suite	Test Environment	Result	Remark
PCMARK 7 Scores	Intel(R) Core(TM) i5-8400H 2.5GHz ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2 (SEC 625 K4A8G085WB-BCRC) INTEL SSDSC2BW240A4 240GB	PASS	6771
PCMARK 8 Scores		PASS	5274

Weighted Suite	Test Environment	Result	Remark
PCMARK 7 Scores	Intel(R) Core(TM) i5-8400H 2.5GHz DSL D4SS1G082SH26A-C DDR4 2666 16Gx2 (SEC 816 K4A8G085WC-BCTD) INTEL SSDSC2BW240A4 240GB	PASS	6771
PCMARK 8 Scores		PASS	5304

## 5.8 PC MARK10

Test Environment
Intel(R) Core(TM) i7-8850H 2.6GHz SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16G*2 (SKhynix H5AN8G8NCJR-VKC 830A) INTEL SSDSC2BW240A4 240GB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	PCMark Scores	PASS	4158
2	Essentials	PASS	8598
3	Productivity	PASS	6734
4	Digital Content Creation	PASS	3371

Test Environment
Intel(R) Core(TM) i7-8850H 2.6GHz ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2 (SEC 625 K4A8G085WB-BCRC) INTEL SSDSC2BW240A4 240GB



**Windows 10 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
1	PCMark Scores	PASS	4165
2	Essentials	PASS	8589
3	Productivity	PASS	6767
4	Digital Content Creation	PASS	3374

<b>Test Environment</b>
<p style="text-align: center;"> <b>Intel(R) Core(TM) i5-8400H 2.5GHz</b>  <b>SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16G*2</b>  <b>(SKhynix H5AN8G8NCJR-VKC 830A)</b>  <b>INTEL SSDSC2BW240A4 240GB</b> </p>

**Windows 10 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
1	PCMark Scores	PASS	4054
2	Essentials	PASS	8345
3	Productivity	PASS	6865
4	Digital Content Creation	PASS	3157

<b>Test Environment</b>
<p style="text-align: center;"> <b>Intel(R) Core(TM) i5-8400H 2.5GHz</b>  <b>ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2</b>  <b>(SEC 625 K4A8G085WB-BCRC)</b>  <b>INTEL SSDSC2BW240A4 240GB</b> </p>

**Windows 10 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>PCMark Scores</b>	PASS	4035
<b>2</b>	<b>Essentials</b>	PASS	8370
<b>3</b>	<b>Productivity</b>	PASS	6772
<b>4</b>	<b>Digital Content Creation</b>	PASS	3146

<b>Test Environment</b>
<b>Intel(R) Core(TM) i5-8400H 2.5GHz</b> <b>DSL D4SS1G082SH26A-C DDR4 2666 16Gx2</b> <b>(SEC 816 K4A8G085WC-BCTD)</b> <b>INTEL SSDSC2BW240A4 240GB</b>

**Windows 10 64-bit**

<b>Item</b>	<b>Weighted Suite</b>	<b>Result</b>	<b>Remark</b>
<b>1</b>	<b>PCMark Scores</b>	PASS	4069
<b>2</b>	<b>Essentials</b>	PASS	8456
<b>3</b>	<b>Productivity</b>	PASS	6853
<b>4</b>	<b>Digital Content Creation</b>	PASS	3156

## 5.9 PerformanceTest 9.0

Windows 10 64-bit (i7-8850H)

Item	Weighted Suite	Test Environment	Result	Remark
1	PassMark Rating	<b>Intel(R) Core(TM) i7-8850H 2.6GHz SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix H5AN8G8NCJR-VKC 830A) INTEL SSDSC2BW240A4 240GB</b>	PASS	4250.8
2	CPU Mark		PASS	14101.0
3	2D Graphics Mark		PASS	836.7
4	3D Graphics Mark		PASS	1335.1
5	Memory Mark		PASS	3053.4
6	Disk Mark		PASS	4330.6

Item	Weighted Suite	Test Environment	Result	Remark
1	PassMark Rating	<b>Intel(R) Core(TM) i7-8850H 2.6GHz ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2 (SEC 625 K4A8G085WB-BCRC) INTEL SSDSC2BW240A4 240GB</b>	PASS	4233.3
2	CPU Mark		PASS	14097.3
3	2D Graphics Mark		PASS	836.3
4	3D Graphics Mark		PASS	1320.3
5	Memory Mark		PASS	3024.5
6	Disk Mark		PASS	4345.4

**Windows 10 64-bit (i5-8400H)**

Item	Weighted Suite	Test Environment	Result	Remark
1	PassMark Rating	Intel(R) Core(TM) i5-8400H 2.5GHz SLINK MBG-JBM J4AGSH1G8QHFC DDR4 2666 16Gx2 (SKhynix H5AN8G8NCJR-VKC 830A) INTEL SSDSC2BW240A4 240GB	PASS	4078.9
2	CPU Mark		PASS	11845.4
3	2D Graphics Mark		PASS	841.4
4	3D Graphics Mark		PASS	1288.5
5	Memory Mark		PASS	2962.8
6	Disk Mark		PASS	4293.1

Item	Weighted Suite	Test Environment	Result	Remark
1	PassMark Rating	Intel(R) Core(TM) i5-8400H 2.5GHz ACPI CMA6-5HD03BAR01B00 DDR4 2666 16Gx2 (SEC 625 K4A8G085WB-BCRC) INTEL SSDSC2BW240A4 240GB	PASS	4089.2
2	CPU Mark		PASS	11852.7
3	2D Graphics Mark		PASS	847.3
4	3D Graphics Mark		PASS	1287.7
5	Memory Mark		PASS	2954.5
6	Disk Mark		PASS	4326.6

Item	Weighted Suite	Test Environment	Result	Remark
1	PassMark Rating	<b>Intel(R) Core(TM) i5-8400H 2.5GHz DSL D4SS1G082SH26A·C DDR4 2666 16Gx2 (SEC 816 K4A8G085WC-BCTD) INTEL SSDSC2BW240A4 240GB</b>	PASS	4081.8
2	CPU Mark		PASS	11770.3
3	2D Graphics Mark		PASS	841.1
4	3D Graphics Mark		PASS	1286.7
5	Memory Mark		PASS	2980.3
6	Disk Mark		PASS	4345.4

## 5.10 Storage Performance

### 5.10.1 HDD

Test environment:

OS Windows 10 64bit

Program: HD Tune

HDD Model	Interface	Capacity	Average	Burst Rate	Access Time
INTEL SSDSC2BW240A4	SSD	240 GB	322.0 MB/sec	287.7 MB/sec	0.161 ms
SPCC Solid State disk(S55)	SSD	120 GB	403.4 MB/sec	137.9 MB/sec	0.042 ms
CT120 BX500	SSD	120 GB	409.5 MB/sec	165.7 MB/sec	0.037 ms
WD 10EZEX	HDD	1 TB	151.0 MB/sec	233.5 MB/sec	16.2 ms
Kingston DT100G3/32G	USB	32 GB	94.5 MB/sec	35.8 MB/sec	0.262 ms
Kingston DT Hyper X 3.0	USB	63 GB	163.2 MB/sec	161.9 MB/sec	0.529 ms
Crucial_CT 120M500SSD	mSATA	120 GB	324.6 MB/sec	32.0 MB/sec	0.129 ms

## 5.10.2 DVD-ROM

Test environment:

OS Windows 10 64bit

Program (NERO)

DVD-ROM Model	Interface	Average Speed	Full Read	Burst Rate	DVD
PIONEER DVD DVR-219L	SATA	11.50x	195 ms	42 MB/s	1 - 16 x
ASUS DRW-2D1ST a	SATA	11.3 x	220 ms	35 MB/s	1 - 16 x
ASUS DRW-1814BLT	SATA	8.49 x	181 ms	42 MB/s	1 - 16 x
LITEON iHES312-33 3	SATA	11.29 x	156 ms	37 MB/s	1 - 16 x
Transcend DVD TS8XDVDS-K	USB	2.86 x	308 ms	14 MB/s	1 - 16 x
LITEON DVD eTAU108	USB	5.57 x	208 ms	18 MB/s	1 – 16 x
PIONEER DVD DVR-XD11T	USB	5.80 x	181 ms	20 MB/s	1 - 16 x
ZYNET GT32N A201	USB	5.70 x	213 ms	20 MB/s	1 - 16 x