

Product Test Report



Product Name	LV-6715
Product Version	A
Issued Date	2023.02.01
Report Edition	1.0
BIOS Version	1.0
Testing Engineer	Perry
Check Engineer	Daniel

REVISION HISTORY			
DATE	REVISION NO.	PAGE	DESCRIPTONS
2023.02.01	Ver. 1.0	42	Initial Release

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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	CN_AUDIO	PASS
8	AUDIO	PASS
9	LAN1(I219)	PASS
10	LAN2(I226-LM)	PASS
11	LAN3(I226-LM)	PASS
12	DDR5_A/B	PASS
13	SATA1/2	PASS
14	USB3 - 1/2/3/4	PASS
15	USB2-1	PASS
16	CN_USB	PASS
17	COM 1/2	PASS
18	CN_COM 3/4/5/6	PASS
19	CN_DIO	PASS
20	DHDMI	PASS
21	DDP	PASS

22	LVDS	PASS
23	CN_DVI/HDMI	PASS
24	M2-KEYE	PASS
25	M2-NVME1	PASS
26	M2-NEME2	PASS
27	MPX	PASS
28	PCIE_16X	PASS

Jumper

Item	Description	Result
1	JRTC	PASS
2	JAT	PASS
3	JMSATA	PASS
4	JVLCD	PASS
5	JP1&JP2	PASS

1.2 BIOS function

Item	Description	Result	Remark
1	Press 'Del' to run Setup Utility	PASS	
2	Ctrl-Alt-Del – Soft-Reboot	PASS	
3	Save & Exit Setup	PASS	
4	Date & Time Setting	PASS	
5	SATA Controller(s)	PASS	
6	BIOS LOCK	PASS	
7	HD Audio	PASS	

Item	Description	Result	Remark
8	EDID Panel Type	PASS	
9	Restore On Power Loss	PASS	
10	Watch Dog Timer Select	PASS	
11	Power On By RTC Alarm	PASS	
12	Wake On LAN	PASS	

1.3 Driver

CD edition : IPCI2-1.3

1. Windows 10 64 bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	
2	VGA Driver	PASS	30.0.101.1960
3	Audio Driver	PASS	6.0.1.8036
4	LAN Driver	PASS	I219LM:12.19.2.45 I226LM:1.1.3.28

2. Compatibility test

2.1 CPU Test

Test environment:

OS: Windows 10 64bit

Test program : BurnIn Test8.1 & AIDA64

Spec	Performance -core Frequency	Family	Processor	Processor Base Power	Smart Cache	Result
SRFDS	4.6GHz	CORE	i7-12800HE	45W	24 MB	PASS
SRFDU	4.5GHz	CORE	i5-12600HE	45W	18 MB	PASS

2.2 Memory Test

Test environment:

OS: Windows 10 64bit

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

Manufacturer	Chip	Frequency	Capacity Mbytes	Memory test Source
Innodisk M5S0-BGS2OCVP-K35	SEC 149 K4RAH086VB BCQK	DDR5 4800	32 GB	PASS
Kingston KVR48S40S8-16	Micron 2EA45D8BNJ	DDR5 4800	16 GB	PASS
ADATA AD5S480016G-S	Micron 2CA45D8BNJ	DDR5 4800	16 GB	PASS
ADATA AD5S480016G-S	Spectek PT010 TP	DDR5 4800	16 GB	PASS
Crucial CT16G48C40S5.M8A1	Micron 1YA45D8BNJ	DDR5 4800	16 GB	PASS
Transcend JM4800ASE-16G	SEC 210 K4RAH086VB BCQK	DDR5 4800	16 GB	PASS

2.3 HDMI Graphic Quality Test

Test environment:

OS Windows 10 64bit

Driver version : 30.0.101.1960

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	

2.4 Display Port Graphic Quality Test

Test environment:

OS Windows 10 64bit

Driver version : 30.0.101.1960

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	

2.5 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	

OS Ubuntu 21.04

Item	Description	Result	Remark
1	2.1CH	PASS	

OS Fedora 35 Workstation

Item	Description	Result	Remark
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1	2.1CH	PASS	
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OS RHEL 8.6

Item	Description	Result	Remark
1	2.1CH	PASS	

2.6 HDD Test

Test environment:

OS Windows 10 64bit

Test program : 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
SPPC Solid State disk(S55)	SSD	120 GB	PASS	PASS	PASS
CT120 BX500	SSD	120 GB	PASS	PASS	PASS
WD 10EZEX	HDD	1 TB	PASS	PASS	PASS
Kingston DT100G3/32G	USB	32 GB	PASS	PASS	PASS
ACPI MSS4F-M SATA III	mSATA	64 GB	PASS	PASS	PASS

2.7 DVD-ROM Test

Test environment:

OS Windows 10 64bit

DVD-ROM Model	Interface	DVD-ROM Detect	DVD-ROM Data Transfer	Play DVD
---------------	-----------	----------------	-----------------------	----------

Transcend DVD TS8XDVDS-K	USB	PASS	PASS	PASS
LITEON DVD eTAU108	USB	PASS	PASS	PASS
PIONEER DVD DVR-XD11T	USB	PASS	PASS	PASS
ZYNET GT32N A201	USB	PASS	PASS	PASS

2.8 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 21.04

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 35 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	

4. RHEL 8.6

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 10 64-bit

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

2.10 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	(IPERF3)
2	Data Transfer Test	PASS	(IPERF3)

2. Ubuntu 21.04

Item	Description	Result	Remark
1	Device Manager Check	PASS	

3. Fedora 35 Workstation

Item	Description	Result	Remark
1	Device Manager Check	PASS	

4. RHEL 8.6

Item	Description	Result	Remark
1	Device Manager Check	PASS	

2.11 Power Supply Test

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

2.12 OS Install

Item	Description	Result	Remark
1	Windows 10 64 bit	PASS	
2	Ubuntu21.04 (ubuntu-21.04.1-desktop-amd64)	PASS	
3	Fedora 35 (Fedora-Workstation-Live-x86_64-35-1.2)	PASS	
4	RHEL 8.6 (Red Hat Enterprise Linux – 8.6)	PASS	

2.13 PCI Express Mini Card

Motherboard	PCI Express mini card	Result	Remark
LV-6715	MPX-M2E+M2-210	PASS	
	MPX-M2E+M2-225	PASS	
	MPX-M2E+ M2-2213	PASS	
	MPX-210D	PASS	
	MPX-210D2	PASS	
	MPX-225	PASS	
	MPX-350	PASS	
	MPX-2213	PASS	

2.14 M2(Key E) Expansion slot

Motherboard	PCI Express mini card	Result	Remark
LV-6715	M2-210	PASS	
	M2-225	PASS	
	M2-2213	PASS	

2.15 M2_NVME(Key M) Expansion slot

Motherboard	M2(Key M)	Result	Remark
LV-6715	NVMe SSD (Intel)	PASS	Model : SSDPEKKW512G7
	NVMe SSD (ADATA)	PASS	Model : ASX8000NP-128GM-C
	NVMe SSD (SEAGATE)	PASS	Model : ZP500GM30002
	NVMe SSD(ACPI)	PASS	Model : M2PDD-8L
	M2-3504 & M2-3502	PASS	

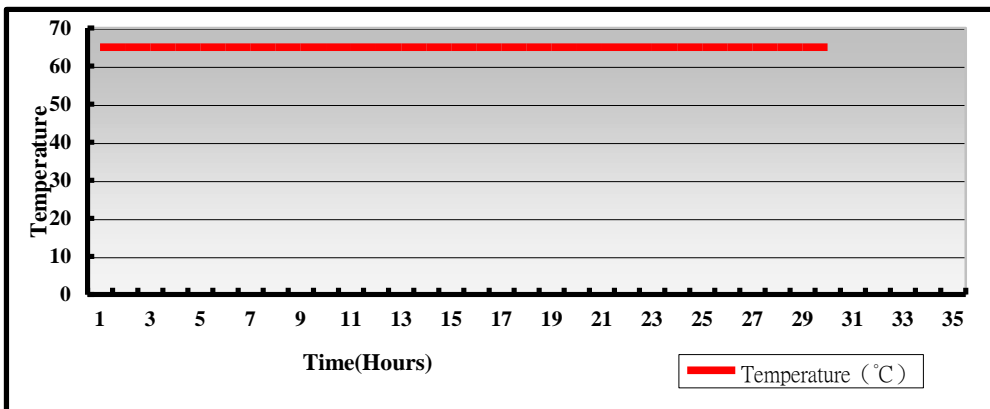
3. Environmental test

3.1 Temperature Test

Hardware Device list:

System Board	LV-6715
CPU	Intel(R) Core(TM) i7-12800HE 4.6GHz
Memory	Innodisk M5S0-BGS2OCVP-K35 32GB x2 (SEC 149 K4RAH086VB BCQK)
HDD	SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)
Operating OS	Windows 10 64bit
Test Equipment	GIANT FORCE GTH-150-60-SP-AR LCD-9530 Programmer/Controller
Test Program	BurnIn 8.1

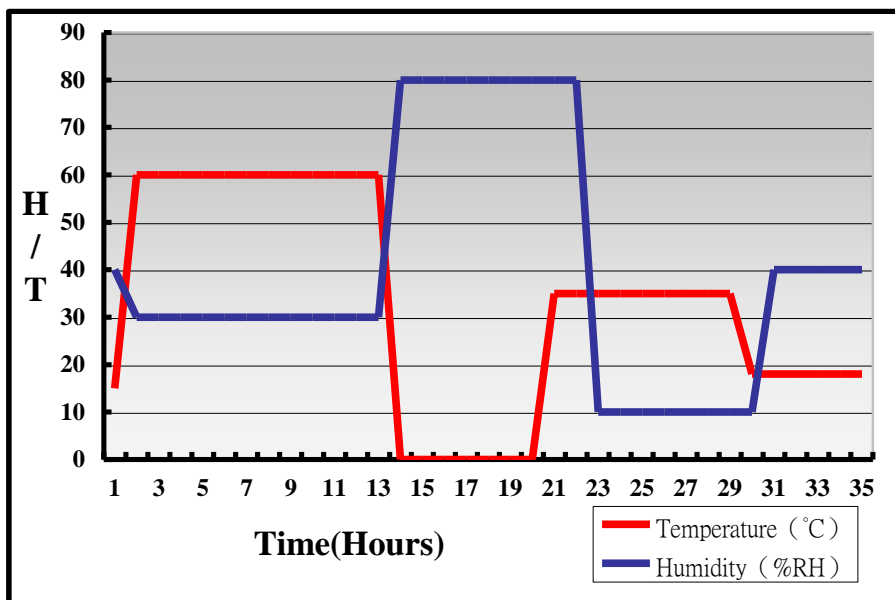
Test Result:



Hardware Device list:

System Board	LV-6715
CPU	Intel(R) Core(TM) i7-12800HE 4.6GHz
Memory	Innodisk M5S0-BGS2OCVP-K35 32GB x2 (SEC 149 K4RAH086VB BCQK)
HDD	WD BLUE 3D NAND SSD 250GB (WDS250G2B0A-00SM50)
Operating OS	Windows 10 64bit
Test Equipment	GIANT FORCE GTH-150-60-SP-AR LCD-9530 Programmer/Controller
Test Program	BurnIn 8.1

Test Result:



Boot up Test:

Hardware Device list:

System Board	LV-6715
CPU	Intel(R) Core(TM) i7-12800HE 4.6GHz
Memory	Kingston KVR48S40S8-16 16GB x2 (Micron 2EA45D8BNJ)
HDD	SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)

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

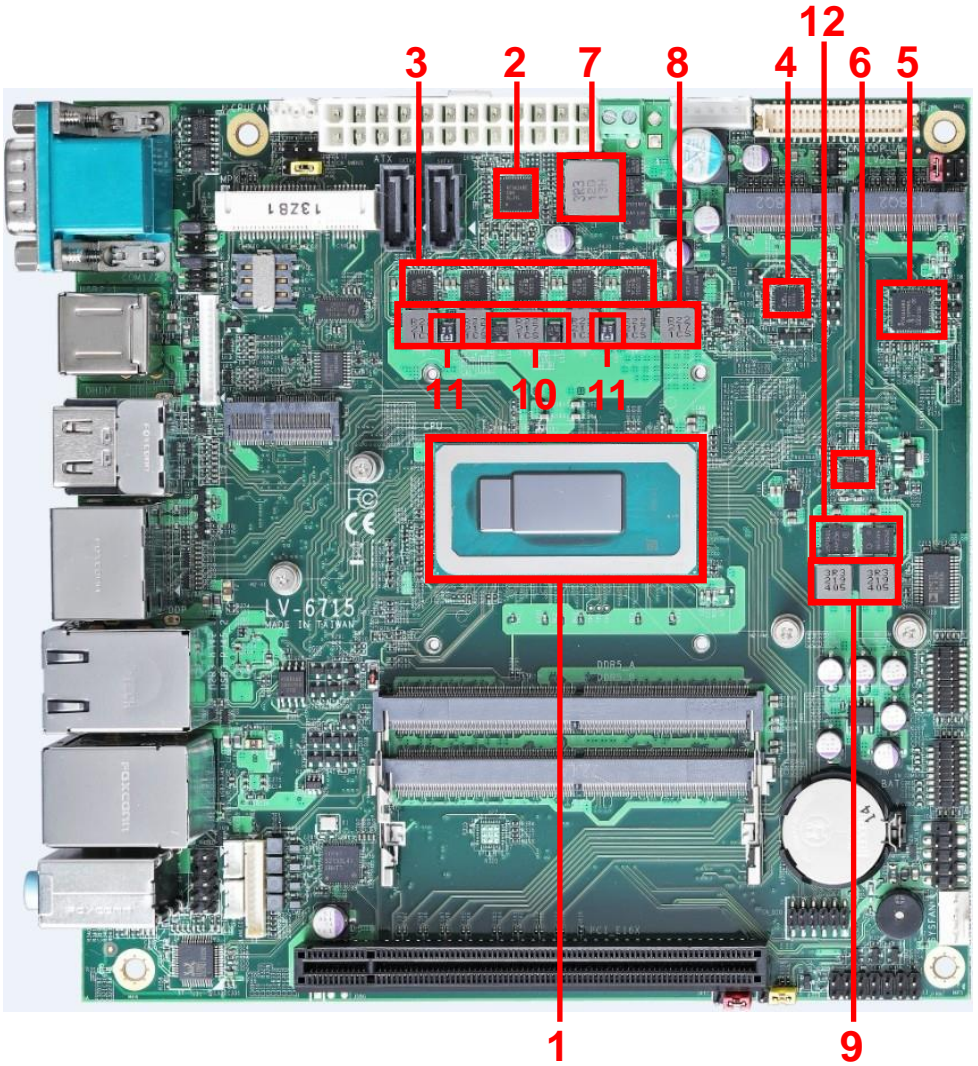
3.2 Thermal measurements at various points on the board

Test Environment:

CPU	Intel(R) Core(TM) i7-12800HE 4.6GHz
Memory	Innodisk M5S0-BGS20CVP-K35 32GB x2 (SEC 149 K4RAH086VB BCQK)
HDD	SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)
Power	SEASONIC SS-520GB ACTIVE PFC F3 (S12II-520Bronze)
Operating System	Windows 10 64-bit
Test Program	BurnIn 8.1

Test Result:

Item	Environmental temperature	25°C
1	CPU	70°C
2	U3	52.1°C
3	U4~U8	58.7°C
4	U9	48.5°C
5	U11	42.3°C
6	U19	42.1°C
7	L1	42.6°C
8	L2~L7	56.1°C
9	L8 & L9	43.4°C
10	C132 & C133	55.3°C
11	C131 & C134	56.2°C
12	Q25 & Q26	43.8°C



4. Reliability Test

4.1 Power Consumption Test

1. Test Environment:

Motherboard	LV-6715H7
CPU	Intel(R) Core(TM) i7-12800HE 4.6GHz
Memory	Innodisk M5S0-BGS2OCVP-K35 32GB x2 (SEC 149 K4RAH086VB BCQK)
HDD	SPCC S55 Silicon Power SSD 120GB(MSIP-REM-SLL-S55)

Power Supply: SEASONIC SS-520GB ACTIVE PFC F3(S12II-520Bronze)
GW INSTEK SPS-3610(DC Power Supply)(19V & 24V)

Voltage	UEFI Boot up		Windows 10 64bit BurnIn 8.1 (15min)	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	2.74	32.88	12.63	151.56
19V	1.77	33.63	7.78	147.82
24V	1.49	35.76	6.40	153.6

1. a. Test Environment:

The same as above but with LCD

Display Panel	AUO M215HW03 V1 21.5"LCD
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Power Supply: SEASONIC SS-520GB ACTIVE PFC F3(S12II-520Bronze)
GW INSTEK SPS-3610(DC Power Supply)(19V & 24V)

Voltage	UEFI Boot up		Windows 10 64bit BurnIn 8.1 (15min)	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	3.81	45.72	14.81	177.72
19V	2.78	52.82	8.93	169.67
24V	2.27	54.48	7.34	176.16

2. Test Environment:

Motherboard	LV-6715H7
CPU	Intel(R) Core(TM) i7-12800HE 4.6GHz
Memory	Kingston KVR48S40S8-16 16GB x2 (Micron 2EA45D8BNJ)
HDD	SPCC S55 Silicon Power SSD 120GB(MSIP-REM-SLL-S55)

Power Supply: SEASONIC SS-520GB ACTIVE PFC F3(S12II-520Bronze)
GW INSTEK SPS-3610(DC Power Supply)(19V & 24V)

Voltage	UEFI Boot up		Windows 10 64bit BurnIn 8.1 (15min)	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	2.58	30.96	12.49	149.88
19V	1.82	34.58	7.78	147.82
24V	1.50	36	6.21	149.04

2. a. Test Environment:

The same as above but with LCD

Display Panel	AUO M215HW03 V1 21.5"LCD
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Power Supply: SEASONIC SS-520GB ACTIVE PFC F3(S12II-520Bronze)
GW INSTEK SPS-3610(DC Power Supply)(19V & 24V)

Voltage	UEFI Boot up		Windows 10 64bit BurnIn 8.1 (15min)	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	4.15	49.8	14.86	178.32
19V	2.54	48.26	8.86	168.34
24V	2.27	54.48	7.40	177.6

3. Test Environment:

Motherboard	LV-6715H5
CPU	Intel(R) Core(TM) i5-12600HE 4.5GHz
Memory	Innodisk M5S0-BGS20CVP-K35 32GB x2 (SEC 149 K4RAH086VB BCQK)
HDD	SPCC S55 Silicon Power SSD 120GB(MSIP-REM-SLL-S55)

**Power Supply: SEASONIC SS-520GB ACTIVE PFC F3(S12II-520Bronze)
GW INSTEK SPS-3610(DC Power Supply)(19V & 24V)**

Voltage	UEFI Boot up		Windows 10 64bit BurnIn 8.1 (15min)	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	2.50	30	9.61	115.32
19V	1.64	31.16	5.68	107.92
24V	1.37	32.88	4.68	112.32

3. a. Test Environment:

The same as above but with LCD

Display Panel	AUO M215HW03 V1 21.5”LCD
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**Power Supply: SEASONIC SS-520GB ACTIVE PFC F3(S12II-520Bronze)
GW INSTEK SPS-3610(DC Power Supply)(19V & 24V)**

Voltage	UEFI Boot up		Windows 10 64bit BurnIn 8.1 (15min)	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	3.53	42.36	11.4	136.8
19V	2.46	46.74	6.85	130.15
24V	2.16	50.4	5.57	133.68

4. Test Environment:

Motherboard	LV-6715H5
CPU	Intel(R) Core(TM) i5-12600HE 4.5GHz
Memory	Kingston KVR48S40S8-16 16GB x2 (Micron 2EA45D8BNJ)
HDD	SPCC S55 Silicon Power SSD 120GB(MSIP-REM-SLL-S55)

Power Supply: SEASONIC SS-520GB ACTIVE PFC F3(S12II-520Bronze)
GW INSTEK SPS-3610(DC Power Supply)(19V & 24V)

Voltage	UEFI Boot up		Windows 10 64bit BurnIn 8.1 (15min)	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	2.39	28.68	9.54	114.48
19V	1.63	30.97	5.53	105.07
24V	1.35	32.4	4.68	112.32

4. a. Test Environment:

The same as above but with LCD

Display Panel	AUO M215HW03 V1 21.5”LCD
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Power Supply: SEASONIC SS-520GB ACTIVE PFC F3(S12II-520Bronze)
GW INSTEK SPS-3610(DC Power Supply)(19V & 24V)

Voltage	UEFI Boot up		Windows 10 64bit BurnIn 8.1 (15min)	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	3.68	44.16	11.77	141.24
19V	2.38	45.22	6.85	130.15
24V	2.04	48.96	5.40	129.6

5. Performance Test

5.1 3D MARK VANTAGE

i7-12800HE

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i7-12800HE 4.6GHz Innodisk M5S0-BGS2OCVP-K35 32GB x2 (SEC 149 K4RAH086VB BCQK) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	P7607
2	GPU SCORE		PASS	5877
3	CPU SCORE		PASS	65100

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i7-12800HE 4.6GHz Kingston KVR48S40S8-16 16GBx2 (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	P7614
2	GPU SCORE		PASS	5884
3	CPU SCORE		PASS	64617

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i7-12800HE 4.6GHz Kingston KVR48S40S8-16 16GB (Micron 2EA45D8BNJ) PCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	P7448
2	GPU SCORE		PASS	5751
3	CPU SCORE		PASS	64692

i5-12600HE**Windows 10 64-bit**

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i5-12600HE 4.5GHz Innodisk M5S0-BGS20CVP-K35 32GB x2 (SEC 149 K4RAH086VB BCQK) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	P6386
2	GPU SCORE		PASS	4908
3	CPU SCORE		PASS	66441

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i5-12600HE 4.5GHz Kingston KVR48S40S8-16 16GBx2 (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	P6325
2	GPU SCORE		PASS	4861
3	CPU SCORE		PASS	65442

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i5-12600HE 4.5GHz Kingston KVR48S40S8-16 16GB (Micron 2EA45D8BNJ) PCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	P6260
2	GPU SCORE		PASS	4810
3	CPU SCORE		PASS	65037

5.2 3D MARK 11

i7-12800HE

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i7-12800HE 4.6GHz Innodisk M5S0-BGS20CVP-K35 32GB x2 (SEC 149 K4RAH086VB BCQK) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	P1920
2	Graphics SCORE		PASS	1634
3	Physics SCORE		PASS	25357
4	Combined SCORE		PASS	1796

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i7-12800HE 4.6GHz Kingston KVR48S40S8-16 16GBx2 (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	P1944
2	Graphics SCORE		PASS	1657
3	Physics SCORE		PASS	24470
4	Combined SCORE		PASS	1800

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i7-12800HE 4.6GHz Kingston KVR48S40S8-16 16GB (Micron 2EA45D8BNJ) PCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	P1912
2	Graphics SCORE		PASS	1633
3	Physics SCORE		PASS	19626
4	Combined SCORE		PASS	1784

i5-12600HE

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i5-12600HE 4.5GHz Innodisk M5S0-BGS20CVP-K35 32GB x2 (SEC 149 K4RAH086VB BCQK) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	P1707
2	Graphics SCORE		PASS	1453
3	Physics SCORE		PASS	23675
4	Combined SCORE		PASS	1583

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i5-12600HE 4.5GHz Kingston KVR48S40S8-16 16GBx2 (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	P1709
2	Graphics SCORE		PASS	1455
3	Physics SCORE		PASS	22789
4	Combined SCORE		PASS	1585

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Core(TM) i5-12600HE 4.5GHz Kingston KVR48S40S8-16 16GB (Micron 2EA45D8BNJ) PCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	P1705
2	Graphics SCORE		PASS	1456
3	Physics SCORE		PASS	18757
4	Combined SCORE		PASS	1578

5.3 3D MARK

i7-12800HE

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	Time Spy	Intel(R) Core(TM) i7-12800HE 4.6GHz Innodisk M5S0-BGS20CVP-K35 32GB x2 (SEC 149 K4RAH086VB BCQK) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	512
2	Graphics SCORE		PASS	439
3	CPU SCORE		PASS	11300

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	Time Spy	Intel(R) Core(TM) i7-12800HE 4.6GHz Kingston KVR48S40S8-16 16GBx2 (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	512
2	Graphics SCORE		PASS	439
3	CPU SCORE		PASS	11217

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	Time Spy	Intel(R) Core(TM) i7-12800HE 4.6GHz Kingston KVR48S40S8-16 16GB (Micron 2EA45D8BNJ) PCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	512
2	Graphics SCORE		PASS	439
3	CPU SCORE		PASS	10169

i5-12600HE

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	Time Spy	Intel(R) Core(TM) i5-12600HE 4.5GHz Innodisk M5S0-BGS20CVP-K35 32GB x2 (SEC 149 K4RAH086VB BCQK) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	409
2	Graphics SCORE		PASS	350
3	CPU SCORE		PASS	9891

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	Time Spy	Intel(R) Core(TM) i5-12600HE 4.5GHz Kingston KVR48S40S8-16 16GBx2 (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	409
2	Graphics SCORE		PASS	350
3	CPU SCORE		PASS	9835

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	Time Spy	Intel(R) Core(TM) i5-12600HE 4.5GHz Kingston KVR48S40S8-16 16GB (Micron 2EA45D8BNJ) PCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	409
2	Graphics SCORE		PASS	350
3	CPU SCORE		PASS	9226

5.4 PC MARK 7 & 8

i7-12800HE

Windows 10 64-bit

Weighted Suite	Test Environment	Result	Remark
PCMARK 7 Scores	Intel(R) Core(TM) i7-12800HE 4.6GHz Innodisk M5S0-BGS2OCVP-K35 32GB x2 (SEC 149 K4RAH086VB BCQK) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	7465
PCMARK 8 Scores		PASS	Work 2.0 accelerated : 3229 Work 2.0 conventional : 4205

Windows 10 64-bit

Weighted Suite	Test Environment	Result	Remark
PCMARK 7 Scores	Intel(R) Core(TM) i7-12800HE 4.6GHz Kingston KVR48S40S8-16 16GBx2 (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	7535
PCMARK 8 Scores		PASS	Work 2.0 accelerated : 3231 Work 2.0 conventional : 4175

Windows 10 64-bit

Weighted Suite	Test Environment	Result	Remark
PCMARK 7 Scores	Intel(R) Core(TM) i7-12800HE 4.6GHz Kingston KVR48S40S8-16 16GB (Micron 2EA45D8BNJ) PCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	7258
PCMARK 8 Scores		PASS	Work 2.0 accelerated : 3247 Work 2.0 conventional : 4225

i5-12600HE

Windows 10 64-bit

Weighted Suite	Test Environment	Result	Remark
PCMARK 7 Scores	Intel(R) Core(TM) i5-12600HE 4.5GHz Innodisk M5S0-BGS20CVP-K35 32GB x2	PASS	7532
PCMARK 8 Scores	(SEC 149 K4RAH086VB BCQK) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	Work 2.0 accelerated : 3242 Work 2.0 conventional : 4287

Windows 10 64-bit

Weighted Suite	Test Environment	Result	Remark
PCMARK 7 Scores	Intel(R) Core(TM) i5-12600HE 4.5GHz Kingston KVR48S40S8-16 16GBx2	PASS	7280
PCMARK 8 Scores	(Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	Work 2.0 accelerated : 3246 Work 2.0 conventional : 4236

Windows 10 64-bit

Weighted Suite	Test Environment	Result	Remark
PCMARK 7 Scores	Intel(R) Core(TM) i5-12600HE 4.5GHz Kingston KVR48S40S8-16 16GB	PASS	7509
PCMARK 8 Scores	(Micron 2EA45D8BNJ) PCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	Work 2.0 accelerated : 3232 Work 2.0 conventional : 4229

5.5 PerformanceTest 9.0

i7-12800HE

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	PassMark Rating	Intel(R) Core(TM) i7-12800HE 4.6GHz Innodisk M5S0-BGS20CVP-K35 32GB x2 (SEC 149 K4RAH086VB BCQK) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	4317.2
2	CPU Mark		PASS	28072.0
3	2D Graphics Mark		PASS	1061.7
4	3D Graphics Mark		PASS	844.2
5	Memory Mark		PASS	3525.0
6	Disk Mark		PASS	4236.3

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	PassMark Rating	Intel(R) Core(TM) i7-12800HE 4.6GHz Kingston KVR48S40S8-16 16GBx2 (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	4255.3
2	CPU Mark		PASS	28072.1
3	2D Graphics Mark		PASS	997.7
4	3D Graphics Mark		PASS	867.6
5	Memory Mark		PASS	3373.8
6	Disk Mark		PASS	4141.3

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	PassMark Rating	Intel(R) Core(TM) i7-12800HE 4.6GHz Kingston KVR48S40S8-16 16GB (Micron 2EA45D8BNJ) PCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	4194.9
2	CPU Mark		PASS	26039.2
3	2D Graphics Mark		PASS	1063.8
4	3D Graphics Mark		PASS	839.6
5	Memory Mark		PASS	3010.5
6	Disk Mark		PASS	4324.5

i5-12600HE

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	PassMark Rating	Intel(R) Core(TM) i5-12600HE 4.5GHz Innodisk M5S0-BGS20CVP-K35 32GB x2 (SEC 149 K4RAH086VB BCQK) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	3954
2	CPU Mark		PASS	26378.7
3	2D Graphics Mark		PASS	1066.4
4	3D Graphics Mark		PASS	686.5
5	Memory Mark		PASS	3566.3
6	Disk Mark		PASS	4359.3

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	PassMark Rating	Intel(R) Core(TM) i5-12600HE 4.5GHz Kingston KVR48S40S8-16 16GBx2 (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	4003.5
2	CPU Mark		PASS	26001.1
3	2D Graphics Mark		PASS	1068.0
4	3D Graphics Mark		PASS	722.6
5	Memory Mark		PASS	3459.5
6	Disk Mark		PASS	4138.7

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	PassMark Rating	Intel(R) Core(TM) i5-12600HE 4.5GHz Kingston KVR48S40S8-16 16GB (Micron 2EA45D8BNJ) PCC S55 Silicon Power SSD 120GB (MSIP-REM-SLL-S55)	PASS	3740.8
2	CPU Mark		PASS	24108.2
3	2D Graphics Mark		PASS	1066.7
4	3D Graphics Mark		PASS	657.9
5	Memory Mark		PASS	3018.4
6	Disk Mark		PASS	4088.9

5.6 Geekbench 4

i7-12800HE

Test Environment
Intel(R) Core(TM) i7-12800HE 4.6GHz Innodisk M5S0-BGS2OCVP-K35 32GBx2 (SEC 149 K4RAH086VB BCQK) SPCC S55 Silicon Power SSD 120GB(MSIP-REM-SLL-S55)

Windows 10 64-bit

Item	Weighted Suite		Result	Remark
1	Run CPU Benchmark Score	Single-core	PASS	1594
		Multi-core		14040
2	Run Compute Benchmark (OpenCL Score)		PASS	4853

Test Environment
Intel(R) Core(TM) i7-12800HE 4.6GHz Kingston KVR48S40S8-16 16GB x2 (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB(MSIP-REM-SLL-S55)

Windows 10 64-bit

Item	Weighted Suite		Result	Remark
1	Run CPU Benchmark Score	Single-core	PASS	1592
		Multi-core		13534
2	Run Compute Benchmark (OpenCL Score)		PASS	4835

Test Environment
Intel(R) Core(TM) i7-12800HE 4.6GHz Kingston KVR48S40S8-16 16GB (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB(MSIP-REM-SLL-S55)

Windows 10 64-bit

Item	Weighted Suite		Result	Remark
1	Run CPU Benchmark Score	Single-core	PASS	1567
		Multi-core		11216
2	Run Compute Benchmark (OpenCL Score)		PASS	4793

i5-12600HE

Test Environment
Intel(R) Core(TM) i5-12600HE 4.5GHz Innodisk M5S0-BGS2OCVP-K35 32GBx2 (SEC 149 K4RAH086VB BCQK) SPCC S55 Silicon Power SSD 120GB(MSIP-REM-SLL-S55)

Windows 10 64-bit

Item	Weighted Suite		Result	Remark
1	Run CPU Benchmark Score	Single-core	PASS	1666
		Multi-core		11671
2	Run Compute Benchmark (OpenCL Score)		PASS	3821

Test Environment
Intel(R) Core(TM) i5-12600HE 4.5GHz Kingston KVR48S40S8-16 16GB x2 (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB(MSIP-REM-SLL-S55)

Windows 10 64-bit

Item	Weighted Suite		Result	Remark
1	Run CPU Benchmark Score	Single-core	PASS	1664
		Multi-core		11309
2	Run Compute Benchmark (OpenCL Score)		PASS	3784

Test Environment
Intel(R) Core(TM) i5-12600HE 4.5GHz Kingston KVR48S40S8-16 16GB (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB(MSIP-REM-SLL-S55)

Windows 10 64-bit

Item	Weighted Suite		Result	Remark
1	Run CPU Benchmark Score	Single-core	PASS	1586
		Multi-core		9433
2	Run Compute Benchmark (OpenCL Score)		PASS	3758

5.7 Cinebench R23

i7-12800HE

Test Environment
Intel(R) Core(TM) i7-12800HE 4.6GHz Innodisk M5S0-BGS2OCVP-K35 32GBx2 (SEC 149 K4RAH086VB BCQK) SPCC S55 Silicon Power SSD 120GB(MSIP-REM-SLL-S55)

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	CPU(Multi Core)	PASS	13249 pts
2	CPU(Single Core)	PASS	1565 pts
3	MP Ratio	PASS	8.47 x

Test Environment
Intel(R) Core(TM) i7-12800HE 4.6GHz Kingston KVR48S40S8-16 16GB x2 (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB(MSIP-REM-SLL-S55)

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	CPU(Multi Core)	PASS	13327 pts
2	CPU(Single Core)	PASS	1553 pts
3	MP Ratio	PASS	8.58 x

Test Environment
Intel(R) Core(TM) i7-12800HE 4.6GHz Kingston KVR48S40S8-16 16GB (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB(MSIP-REM-SLL-S55)

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	CPU(Multi Core)	PASS	13379 pts
2	CPU(Single Core)	PASS	1563 pts
3	MP Ratio	PASS	8.56 x

i5-12600HE

Test Environment
Intel(R) Core(TM) i5-12600HE 4.5GHz Innodisk M5S0-BGS2OCVP-K35 32GBx2 (SEC 149 K4RAH086VB BCQK) SPCC S55 Silicon Power SSD 120GB(MSIP-REM-SLL-S55)

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	CPU(Multi Core)	PASS	11819 pts
2	CPU(Single Core)	PASS	1635 pts
3	MP Ratio	PASS	7.23 x

Test Environment
Intel(R) Core(TM) i5-12600HE 4.5GHz Kingston KVR48S40S8-16 16GB x2 (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB(MSIP-REM-SLL-S55)

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	CPU(Multi Core)	PASS	11791 pts
2	CPU(Single Core)	PASS	1626 pts
3	MP Ratio	PASS	7.25 x

Test Environment
Intel(R) Core(TM) i5-12600HE 4.5GHz Kingston KVR48S40S8-16 16GB (Micron 2EA45D8BNJ) SPCC S55 Silicon Power SSD 120GB(MSIP-REM-SLL-S55)

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	CPU(Multi Core)	PASS	11828 pts
2	CPU(Single Core)	PASS	1639 pts
3	MP Ratio	PASS	7.22 x

5.8 Storage Performance

5.8.1 HDD

Test environment:

OS Windows 10 64bit

Program: HD Tune

HDD Model	Interface	Capacity	Average	Burst Rate	Access Time
INTEL SSDSC2BW240A4	SSD	240 GB	315.3 MB/sec	293.3 MB/sec	0.213 ms
SPCC Solid State disk(S55)	SSD	120 GB	337.2 MB/sec	118.9 MB/sec	0.142 ms
CT120 BX500	SSD	120 GB	324.2 MB/sec	151.1 MB/sec	0.059 ms
WDS250G2B0A	SSD	250 GB	422.3 MB/sec	38.6 MB/sec	0.085 ms
Kingston SV300S37A	SSD	240 GB	241.2 MB/sec	138.6 MB/sec	0.155 ms
Kingston DT100G3/32G	USB	32 GB	67.3 MB/sec	49.6 MB/sec	0.318 ms
ADATA UV128/16GB	USB	16 GB	113.7 MB/sec	63.4 MB/sec	0.94 ms
Acpi CSC064GR5-G710A00D	mSATA	64 GB	341.3 MB/sec	146.4 MB/sec	0.069 ms

5.8.2 DVD-ROM

Test environment:

OS Windows 10 64bit

Program (NERO)

DVD-ROM Model	Interface	Average Speed	Full Read	Burst Rate	DVD
Transcend DVD TS8XDVDS-K	USB	2.86 x	308 ms	18 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