Report NO:17P010019

BOXER-6640

Fanless Embedded controller with Intel Core-i Processor

System Level Product
P5
Compatibility Test Report

Summary	☒ Pass ☐ Fail ☐ Pass with Deviation (Comment: _____)

Test Results Category				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	0
Defect Unsolved	0	0	0	0

Issue date	QE Manager	Test Engineer
2017-09-22	KJ Wang	Leo Liu

Version Released Records

Date	Version	Change History	Note
5/26/2015	C0	1. Add UEFI,GPS,CANBUS,POE, Cold boot test item	
3/22/2016	C1	1. Add issue status 2. Update CTOS devices. 3. Add HDMI 5M cable compatibility test. 4. Modified boot up without display test. 5. Add Touch Function test. 6. Add DC adapter compatibility test 7. Add Windows10 compatibility test. 8. Update Benchmark tool. 9. Update DOS / Windows on/off test rule. 10. Add DDR4 SO-DIMM. 11. Update Linux to Ubuntu16.04 12. Add Stability Test \ Memory test.	
10/21/2016	C2	1. Remove Smartbits test item. 2. Update chapter7.2 \ LVDS type support. 3. Add chapter9.6. System stability after S3 / S4 / S5 cycles	
	C3	1. Modified PWB test item.	

Note :

For all test items in this report, 3 results have been defined and described as following:

Pass:	Functionality work perfectly
Fail:	Functionality failed and must be resolved in the next version
N/A:	Functionality Not Applicable or Not Available

This test report would be updated when re-test completed in product next change version.

Specification Validation

Main Specification

Item	Specification	Result			Note
		Pass	Fail	N/A	
Processor	Intel Core i7-6700TE, Quad Core, 2.4 GHz, 8M cache (TDP: 35W) Intel Core i5-6500TE, Quad Core, 2.3 GHz, 6M cache (TDP: 35W) Inte Core i3-6100TE, Dual Core, 2.7 GHz, 4M cache (TDP: 35W) Intel Core i7-7700T, Quad Core, 2.9 GHz, 8M cache (TDP: 35W) Intel Core i5-7500T, Quad Core, 2.7 GHz, 6M cache (TDP: 35W) Intel Core i3-7100T, Dual Core, 3.4 GHz, 3M cache (TDP: 35W) Ps. Turbo Boost default disable	☒	☐	☐	
PCH	H110	☒	☐	☐	
System Memory	2 x DDR4 SO-DIMM socket (double deck) Supports 1866/2133MHz DDR4 and up to 32GB Support un-buffered and ECC / non-ECC type SODIMM	☒	☐	☐	Test 2400MHz
Display	HDMI x2 (combo w/ DP) VGA x1	☒	☐	☐	
Storage	2.5” SATA Drive bay x 1 (SATA Connector default x 1, optional x 3) mSATA x 1 (share w/ minicard 2)	☒	☐	☐	
Front I/O panel	2 pin Remote power on/off connector Audio x1 (MIC-in, Line-out) USB 2.0 x 3 DB-9 x 2 for RS-232 Optional 8-bit DIO DB-9 x 1 for RS-232/422/485 with automatic flow control DB-9 x 1 for RS-232	☒	☐	☐	
Rear I/O panel	Power ON/OFF switch x 1 SYS LED x 1 HDD LED x 1 3 pin 9~36V DC Power input x 1 (+, - , GND) VGA x 1 HDMI x2 + Combo DPx2	☒	☐	☐	

	USB 3.0 x 4 RJ-45 x 2 for GbE (i211ATx1, i219LMx1)				
Expansion	Full-size Mini card(1) x 1 (PCIE + USB, w/ SIM slot) Full-size Mini card(2) x 1 (mSATA + USB, w/ SIM slot) Internal USB 2.0 x4 (reserved) Optional PCIEx[4] x 1 LPC x 1 Optional TPM x 1	☒	☐	☐	
Power Supply	3-pin Phoenix DC Input 9~36V, optional 110/230V AC adapter.	☒	☐	☐	

O.S. Support

Item	Specification	Result			Note
		Pass	Fail	N/A	
Microsoft Windows	Windows 7 English 32/64 bit	☒	☐	☐	
	Windows 8.1 English 32/64bit	☒	☐	☐	
	Windows 10 English 32/64bit	☒	☐	☐	
Linux	Kernel 2.6 above	☒	☐	☐	

Platform Information

Item	Device Information	Note
Product of department	SPD	
PCB Model / Version	PBA-SKS02 A1.0	
BIOS / Version	BOXER-6640 R1.1 (B640AM11)(08/31/2017)	
Driver folder	20170814	
CPU Type	Intel Core i3-6100TE 2.70GHz	
Memory Type	Innodisk DDR4 2400 16GB(SEC 649 K4A8G08 5WB BCRC)	
SATA HDD	TOSHIBA 2.5” 500GB(MQ01ABF050)	
USB DVD-ROM	Lite-on 8X(eNAU808)	
LCD Monitor	CHIMEI 22”(22SH-L)	
Operating System	☒ English Ubuntu16.04.2 Kernel 4.8.0-36-generic x86_64	
	☒ Windows 7 Ultimate SP1 32/64Bit	
	☒ Windows 8.1 Enterprise English Version 64Bit	
	☒ Windows 10 Enterprise English Version 64Bit	
Power Supply	DC Adapter : FSP 19V(FSP120-AAB)	
Chipset Information		
PCH Bridge	H110	
Super IO Chipset	Fintek 81866D-I	
Audio Chipset	Realtek ALC892	
Ethernet Chipset	Intel I211 Gigabit Lan Intel I219-LM Gigabit Lan	

Summary Table of contents:

1. Hardware Compatibility

1.1. CPU Compatibility Test

CPU Information (Information and frequency should show correct value)	Result			Note
	Pass	Fail	N/A	
Intel Core i7-7700T 2.90GHz	☒	☐	☐	
Intel Core i5-7500T 2.70GHz	☒	☐	☐	
Intel Core i3-7101TE 3.40GHz	☒	☐	☐	
Intel Core i7-6700TE 2.4GHz	☒	☐	☐	
Intel Core i5-6500TE 2.3GHz	☒	☐	☐	
Intel Core i3-6100TE 2.7GHz	☒	☐	☐	

1.2. Memory Compatibility Test

Memory Information (a. Information and frequency should show correct value. b. System should boot up and into OS normally.)	AAEON P/N	Result			Note
		Pass	Fail	N/A	
DDR4 SO-DIMM(保留 SPEC 規格 RAM 即可)					
Innodisk DDR4 2133 16GB SEC K4A8G085WB	N/A	☒	☐	☐	
InnoDisk DDR4-2133 8GB(SEC 446 BCPB K4A4G085WD)	N/A	☒	☐	☐	
Innodisk DDR4 2133 4GB M4S0-4GSSNCRG-26 SEC K4A4G085WD	N/A	☒	☐	☐	
Transcend DDR4 2133 16GB SEC K4A8G085WB	N/A	☒	☐	☐	
Transcend DDR4 2133 8GB TS9AASESD00AA SEC K4A4G085WD	N/A	☒	☐	☐	
Transcend DDR4 2133 4GB TS8AASESD00AA SEC K4A4G085WD	N/A	☒	☐	☐	
DSL DDR4-2133 8GB (SEC K4A4G085WD)	N/A	☒	☐	☐	
DSL DDR4-2133 4GB (SEC K4A4G085WD	N/A	☒	☐	☐	
Transcend DDR4-2400 4GB(SEC 616 K4A4G085WE BCRC)	N/A	☒	☐	☐	
Transcend DDR4-2400 8GB(SEC 616 K4A4G085WE BCRC)	N/A	☒	☐	☐	
Transcend DDR4-2400 16GB(SEC 622 K4A8G085WB BCRC)	N/A	☒	☐	☐	
Innodisk DDR4 2400 16GB(SEC 649 K4A8G08 5WB BCRC)	N/A	☒	☐	☐	
Innodisk DDR4 2400 8GB(SEC 616 K4A8G085WE BCRC)	N/A	☒	☐	☐	
Innodisk DDR4 2400 4GB(SEC 616 K4A4G085WE BCRC)	N/A	☒	☐	☐	
Transcend DDR4 2133 8GB(SEC 604 BCPB K4A4G085WD)	N/A	☒	☐	☐	
Crucial Micron DDR4 2133 16GB(Micron 6BA77D9SRJ)	N/A	☒	☐	☐	

1.3. SATA Compatibility Test

1.3.1 Onboard SATA(IDE / AHCI) Test

SATA Device Information (Information and size should show correct value with IDE and AHCI mode)		AAEON P/N	Result			Note
			Pass	Fail	N/A	
Main Board project test with 80~100cm SATA cable , typical #1709070800						
SATAIII	TOSHIBA 2.5" 500GB(MQ01ABF050)		☒	☐	☐	
SATAIII	HGST 2.5" 1TB(HTS541010A9E680)		☒	☐	☐	
SATAIII	HGST 2.5" 320GB(HTE725032A7E630)		☒	☐	☐	
SATAIII	Seagate 2.5" 500GB(ST500LT012)		☒	☐	☐	
SATAIII	WD 2.5" 320GB(WD3200BEVT)		☒	☐	☐	
SSD	Transcend TS32GSSD370 2.5".32GB.SATA III SSD MLC.	968C032G2D	☒	☐	☐	
SSD	Transcend.TS64GSSD370 2.5".64GB. SATA III.SSD.MLC	968C64G003	☒	☐	☐	
SSD	Transcend.TS128GSSD370 2.5" SATA3 SSD.128GB.MLC.	968C128G0W	☒	☐	☐	
SSD	2.5" .16GB 3MG2-P 15nm.SATA III MLC SSD.Innodisk MLC .0℃ ~ +70℃.DGS25-16GD81BC3SC-26	AP-SS968C016G3K	☒	☐	☐	
SSD	(TF)2.5".32GB 3MG2-P 15nm.SATA SSD MLC.0~70°C.HIGH IOPS.innodisk.DGS25-32GD81BC3DC-26	AP-SS968C032G1P	☒	☐	☐	
SSD	(TF)2.5".64GB.SATA MLC SSD .3MG2-P 15nm.0~70°C.HIGH IOPS.innodisk.DGS25-64GD81BC3QC-26	968C064G39	☒	☐	☐	
SSD	2.5' MLC SSD 128GB 3MG2-P 15nm.SATA 0℃~+70℃.InnoDisk.DGS25-A28D81BC3QC-26	AP-SS968C128G1P	☒	☐	☐	
SSD	2.5".256GB.SATA MLC SSD 3MG2-P 15nm.0~70°C.HIGH IOPS.innodisk.DGS25-B56D81BC3QC-26	AP-SS968C256G16	☒	☐	☐	

1.4. Flash Card Compatibility Test

m-SATA Information (a. Information and size should show correct value (b. R/W and HDD LED should work properly)	AAEON P/N	Result			Note
		Pass	Fail	N/A	
Full Size					
Transcend.TS16GMSA370 Full-size mSATA.16GB.MLC.	AP-SS968C016G2Z	☒	☐	☐	
Transcend.TS32GMSA370 Full-size mSATA.32GB.MLC.	968C032G32	☒	☐	☐	
Transcend.TS64GMSA370 (TF)Full-size.64GB.mSATA.MLC	968C064G2K	☒	☐	☐	
Innodisk full size mSATA.8GB 3ME3	CTOS	☒	☐	☐	

Innodisk full size mSATA.16GB 3ME3	CTOS	☒	☐	☐	
Innodisk full size mSATA.32GB 3ME3	CTOS	☒	☐	☐	
Innodisk full size mSATA.64GB 3ME3	CTOS	☒	☐	☐	
Innodisk full size mSATA.128GB 3ME3	CTOS	☒	☐	☐	

1.5. Monitor Compatibility Test

Monitor Information **a. Monitor should display under DOS and OS environment.** **b. Monitor should not appear ghost or ripples.**	**Result**			**Note**
	Pass	**Fail**	**N/A**	
VGA				
CHIMEI 22”(22SH-L)	☒	☐	☐	. (at least 3 monitors)
EIZO 23.5”(EV2335W)	☒	☐	☐	
HDMI (Test with 5M HDMI cable/ Bravo-u)				
*Samsung LU28D	☒	☐	☐	*Must test monitor (Tested 3 monitors at least)
*ASUS VE228	☒	☐	☐	
CHIMEI 22”(22SH-L)	☒	☐	☐	
Display port				
EIZO 23.5”(EV2335W)	☒	☐	☐	
Samsung LU28D	☒	☐	☐	

2. Basic Function Test

2.1. Video Function Test

2.1.1. Single Output Function Test

Configuration	
CPU	Intel Core i3-6100TE 2.70GHz
Memory	Innodisk DDR4 2400 16GB(SEC 649 K4A8G08 5WB BCRC)
SATA HDD	TOSHIBA 2.5" 500GB(MQ01ABF050)
VGA	CHIMEI 22"(22SH-L)
HDMI 1/2	SAMSUNG 28"(U28D590D)
Display port 1/2	SAMSUNG 28"(U28D590D)
Operating system	Windows 10 Enterprise 64bit
Color Quality	☒16bit ☐24bit ☒32bit

Resolution	VGA			HDMI1			HDMI2			DP1			Note
	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	
800X600	☒	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	
1024X768	☒	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	
1280X600	☒	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	
1280X720	☒	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	
1280X768	☒	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	
1280X800	☒	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	
1280X1024	☒	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	
1360X768	☒	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	
1366X768	☒	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	
1600X900	☒	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	
1600X1200	☐	☐	☒	☒	☐	☐	☒	☐	☐	☒	☐	☐	
1680X1050	☒	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	
1920X1080	☒	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	
1920X1200	☐	☐	☒	☒	☐	☐	☒	☐	☐	☒	☐	☐	
2048X1152	☐	☐	☒	☒	☐	☐	☒	☐	☐	☒	☐	☐	
2560X1440	☐	☐	☒	☒	☐	☐	☒	☐	☐	☒	☐	☐	
3840 X 2160	☐	☐	☒	☒	☐	☐	☒	☐	☐	☒	☐	☐	
EDID check	☒	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	
Hot plug	☒	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	
Rotation(0/90/180/270)	☒	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	
DOS Display	☒	☐	☐	☒	☐	☐	☒	☐	☐	☐	☐	☒	

Note: Pay attention to Full Screen under POST screen and Text Mode.

Resolution	DP2												Note
	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	
800X600	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
1024X768	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
1280X600	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
1280X720	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
1280X768	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
1280X800	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
1280X1024	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
1360X768	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
1366X768	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
1600X900	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
1600X1200	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
1680X1050	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
1920X1080	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
1920X1200	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
2048X1152	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
2560X1440	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
3840 X 2160	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
EDID check	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Hot plug	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Rotation(0/90/180/270)	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
DOS Display	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	

2.1.2. Multi-Display Output Test

Selection	Output	Result			Note
		Pass	Fail	N/A	
Dual Display Clone	VGA + HDMI1	☒	☐	☐	HDMI1(CN4)
Extended Desktop		☒	☐	☐	
Dual Display Clone	VGA + HDMI2	☒	☐	☐	HDMI2(CN3)
Extended Desktop		☒	☐	☐	
Dual Display Clone	VGA + DP1	☒	☐	☐	DP1(CN3)
Extended Desktop		☒	☐	☐	
Dual Display Clone	VGA + DP2	☒	☐	☐	DP2(CN4)
Extended Desktop		☒	☐	☐	
Dual Display Clone	HDMI1 + DP1	☒	☐	☐	
Extended Desktop		☒	☐	☐	
Dual Display Clone	HDMI2 + DP2	☒	☐	☐	
Extended Desktop		☒	☐	☐	
Dual Display Clone	HDMI1 + HDMI2	☒	☐	☐	
Extended Desktop		☒	☐	☐	
Dual Display Clone	DP1 + DP2	☒	☐	☐	
Extended Desktop		☒	☐	☐	

2.2. Audio Function Test

〔 〕No Support

Function Test	Result			Note
	Pass	Fail	N/A	
L (Left) Channel	☒	☐	☐	
R (Right) Channel	☒	☐	☐	
MICROPHONE	☒	☐	☐	
HDMI1/2 Audio	☒	☐	☐	
DP1/2 Audio	☒	☐	☐	

2.3. LAN Function Test

〔 〕No Support

Connect two computers via different speed LAN HUB by using "Ping" instruction (1000 times) **Command: ping xxx.xxx.xx.xx –l 65500 –n 1000**			
1000MBps LAN HUB	D-Link DGS-1008D		
100MBps LAN HUB	Accton Desktop-3005		
10MBps LAN HUB	SVEC FD916H		
OnBoard LAN1	Intel I211	MAC Address	00-01-A1-22-24-42
OnBoard LAN2	Intel I219-LM	MAC Address	88-88-88-88-87-88

LAN Speed	Link / Speed LED	Active LED	LAN 1			LAN 2			Note
			Pass	Fail	N/A	Pass	Fail	N/A	
1000Mbps Ping loss≦1			☒	☐	☐	☒	☐	☐	(Lan1)I211 (Lan2)I219-LM
100Mbps Ping loss≦1			☒	☐	☐	☒	☐	☐	
10Mbps Ping loss≦1			☒	☐	☐	☒	☐	☐	
Wake On LAN (WOL should work properly when resume from S3/S4/S5)	S3		☒	☐	☐	☒	☐	☐	
	S4		☒	☐	☐	☒	☐	☐	
	S5		☒	☐	☐	☒	☐	☐	
LAN Boot (PXE) (Boot from LAN should work properly)			☒	☐	☐	☒	☐	☐	
Internet Browser (DHCP Server) (Visit the website should work properly)			☒	☐	☐	☒	☐	☐	
Access 1GB file from ftp. (Access file should not stop or error.)			☒	☐	☐	☒	☐	☐	
Iperf $sudo iperf3 –c xx.xx.xx.xx –i 1 – t 60 (Gigabit LAN bandwidth should > 900Mbps)			☒	☐	☐	☒	☐	☐	

2.4. COM Ports Test

Test Item		Result			Note
		Pass	Fail	N/A	
Serial Modem Dial Out		☒	☐	☐	COM1/2/3/4
Serial Modem	Ring In	☒	☐	☐	Test by Modem COM1/2/3/4
Transmission Test <115200bps / 15M>		☒	☐	☐	COM1/2/3/4

2.5. RS-422 / RS-485 Test

Test Item	Result			Note
	Pass	Fail	N/A	
RS-422 for COM1	☒	☐	☐	Use loopback and WINSSD.exe to test RS-422 in Windows
	☒	☐	☐	1. The communication between the RS-422 port of two boards is linked by one 1.2km cable on Windows Terminal. 2. Confirm RS422 can work properly from G3 status 3. Test baud rate is 115200bps
RS-485 for COM1	☒	☐	☐	Use ICP CON I-7044D D/IO Module in Windows(Support Auto flow control)
	☒	☐	☐	1. The communication between the RS-485 port of two boards is linked by one 1.2km cable on Windows Terminal 2. Confirm RS485 can work properly from G3 status 3. Test baud rate is 115200bps.

2.6. Digital I/O Test

Test item	Result			Note
	Pass	Fail	N/A	
DIO VCC +5V or +3.3V	☒	☐	☐	

2.7. USB Port Integration Test

Item \ USB Port		USB2.0 ports (under OS)			USB3.0 ports (under OS)			Note
		Pass	Fail	N/A	Pass	Fail	N/A	
USB HDD:	Transcend TS500GSJ25D3	☒	☐	☐	☒	☐	☐	
USB Flash:	Transcend JetFlash 790	☒	☐	☐	☒	☐	☐	
	Transcend JetFlash 810	☒	☐	☐	☒	☐	☐	
USB DVD ROM:	Lite-on eNAU808	☒	☐	☐	☒	☐	☐	
USB keyboard:	Logitech K200	☒	☐	☐	☒	☐	☐	
USB mouse:	Logitech M-U0026	☒	☐	☐	☒	☐	☐	
USB FDD:	HP FD-05PUB	☒	☐	☐	☒	☐	☐	
USB2.0 HUB:	Transcend USB 3.0 4 port HUB	☒	☐	☐	☒	☐	☐	

Test item	Result			Note
	Pass	Fail	N/A	
USB3.0 ports with power in S3 mode	☒	☐	☐	
USB3.0 ports with power in S5 mode	☒	☐	☐	

2.8. Jumper and Connector Function Test

〔 〕No Support

Test item		Result			Note
		Pass	Fail	N/A	
Clear CMOS will clear CMOS date , time , setting , password.		☒	☐	☐	
Buzzer and 4 pin Speaker test	System boot: one short beep.	☒	☐	☐	
	No memory found: Six short beep, interval three short beep, pause a period of time.	☒	☐	☐	
Power button	One touch for power on.	☒	☐	☐	
	One touch for power off in BIOS manual.	☒	☐	☐	
	One touch for system shutdown in Windows environment. (power manager need to set “press PWB for shutdown.)	☒	☐	☐	
	＞4sec for H/W shutdown in Windows environment. (power manager need to set “press PWB do nothing.)	☒	☐	☐	
Reset button, system reset under DOS or Windows.		☒	☐	☐	
Power LED behavior	S3: Power LED off	☒	☐	☐	
	S4: Power LED off	☒	☐	☐	
	S5: Power LED off	☒	☐	☐	
HDD LED, active when SATA/mSATA	SATA: Active	☒	☐	☐	
	mSATA: Active	☒	☐	☐	
AAFP, line out / microphone work properly.		☒	☐	☐	
USB KBMS, keyboard / mouse work properly under DOS and OS .		☒	☐	☐	MS support OS
JP1 AT/ATX mode select		☒	☐	☐	
JP6 Clear CMOS		☒	☐	☐	
CN1 CRT port		☒	☐	☐	
CN2/CN8 DC-IN		☒	☐	☐	
CN3 HDMI2/DP2 connector		☒	☐	☐	
CN4 HDMI1/DP2 connector		☒	☐	☐	
CN6 Dual stack USB (3.0) + LAN		☒	☐	☐	
CN7 Dual stack USB (3.0) + LAN		☒	☐	☐	
CN13 SPI ROM connector		☒	☐	☐	
CN15 SIM card connector		☒	☐	☐	

CN20 USB 2.0 Connector(BOX connector for backup)	☒	☐	☐	
CN22 Audio Jack	☒	☐	☐	
CN23 Remote button cable connector	☒	☐	☐	
CN24 DIO connector	☒	☐	☐	
SW1 Power switch	☒	☐	☐	
SW2 H/W Reset switch	☒	☐	☐	
PWRSWCN1 Power switch (BOX connector for backup)	☒	☐	☐	
PWR1 SATA PWR connector	☒	☐	☐	
PWR2 SATA PWR connector	☒	☐	☐	
PWR3 SATA PWR connector	☒	☐	☐	
SATA1 SATA connector	☒	☐	☐	
SATA2 SATA connector	☒	☐	☐	
SATA3 SATA connector	☒	☐	☐	
BAT1 RTC battery connector	☒	☐	☐	
LPC1 Debug port connector	☒	☐	☐	
COM1 Dual COM port (COM1/ COM2)	☒	☐	☐	
COM2 Dual COM port (COM3/ COM4)	☒	☐	☐	
PCIE1 Minicard connector(SATA Only)	☒	☐	☐	
PCIE2 Minicard connector	☒	☐	☐	

3. Expansion card and Application Test

3.1. Expansion Slot Compatibility Test

Test point: Make sure expansion slots are compatible with expansion cards.

PCI-Express x4		Result			Note
		Pass	Fail	N/A	
Intel Ethernet Server Adapter I350-T4 (I350T4BLK)		☒	☐	☐	
Mini PCI Express Card		**Result**			**Note**
		Pass	**Fail**	**N/A**	
Full size	Quectel UC20 3G Card	☒	☐	☐	If M/B support SIM slot
Full size	Sierra Wireless AirPrime MC734 Qualcomm 4G	☒	☐	☐	If M/B support SIM slot 1. Ping 168.95.1.1 for 1000 clcyes, loss<2 times. 2. Download 1GB file from website.
Full size	AAEON PER-C11L Gigabit LAN card	☒	☐	☐	
Full size	AAEON PER-C41C-A10 4 port RS-232	☒	☐	☐	
Half size	AzureWave AW-NB159H 802.11b/g/n RTL8723BE combo module	☒	☐	☐	
Half size	AzureWave AW-CB161H 802.11a/b/g/n/ac(PCI-e Wireless+ USB Bluetooth) Realtek RTL8821AE	☒	☐	☐	
Half size	Bointec DPE909-AA WIFI	☒	☐	☐	

3.2. Expansion Card Integration Test

Test Item	Result			Note
	Pass	Fail	N/A	
1. Connect devices to all of expansion slots. 2. No error during OS and driver installation 3. All of expansion cards should work normal.	☒	☐	☐	

3.3. Display port Converter Compatibility Test

Test Item			Result			Note
			Pass	Fail	N/A	
DP to HDMI converter:	OS display	Full screen	☒	☐	☐	Max resolution: 1920x1080
DP to DVI converter:	OS display	Full screen	☒	☐	☐	Max resolution: 1920x1080

4. Power Consumption Test

Configuration	
CPU	Intel Core i7-7700T 2.90GHz
Memory	Innodisk DDR4 2400 16GB(SEC 649 K4A8G08 5WB BCRC)
Storage	TOSHIBA 2.5” 500GB(MQ01ABF050)
O.S	Windows 10 Enterprise 64bit

4.1. Power Consumption

Test Equipment						
Equipment	DC Power Supply					
Manufacturer	Chroma					
Model name	62012P-600-8					
Test Environment						
AC / DC source	FSP 19V(FSP120-AAB)					
Power Supply		**Current**		**P**		**Note**
(Full Loading Mode) Windows with Prime 95 Full Loading Test	(+19V)	3.03	A	57.57	W	Prime95 Version 2810
Full Loading Total Watt	57.57(W)					
S3 mode: Measure the current value when system in S3 mode of windows and without running any	(+19V)	0.06	A	1.14	W	
Suspend Total Watt	1.14(W)					
Win. Idle mode: Measure the current value when system in windows mode and without running any program	(+19V)	0.85	A	16.15	W	
Idle Total Watt	16.15(W)					
S5 mode: Measure the current value when system in S5 mode of windows and without running any	(+19V)	0.04	A	0.76	W	Erp Disable
Suspend Total Watt	0.76(W)					

4.2. PC Health Status

Test Point:
Voltage deviation: ±5%.
Fan speed deviation: ±10%
CPU DTS Temp deviation: ±15℃
System Temp deviation: ±5℃

H/W monitor	Result			BIOS		Actual		Note
	Pass	Fail	N/A					
(+) 3.3V Actual and monitor must be ±5%	☒	☐	☐	3.392	V	3.37	V	
(+) 12V Actual and monitor must be ±5%	☒	☐	☐	12.144	V	12.16	V	
(+) 5V Actual and monitor must be ±5%	☒	☐	☐	5.087	V	5.04	V	

(+) 3VSB Actual and monitor must be ±5%	☒	☐	☐	3.408	V	3.37	V	
(+) 5VSB Actual and monitor must be ±5%	☒	☐	☐	5.064	V	5.04	V	
VBAT Actual and monitor must be ±5%	☒	☐	☐	3.184	V	3.04	V	
VMEM Actual and monitor must be ±5%	☒	☐	☐	1.224	V	1.2	V	
VCORE Actual and monitor must be ±5%	☒	☐	☐	0.992	V	0.99	V	
CPU DTS Temp Actual and monitor must be ±15℃	☒	☐	☐	50	℃	39.5	℃	
System Temp Actual and monitor must be ±5℃	☒	☐	☐	41	℃	30.1	℃	

4.3. Wide Voltage Test

4.3.1. Wide Voltage Test

Test Point:

Confirm DUT can work on maximum and minimum voltage. (高低電壓請參照 SPEC 調整)

Test item **(a. System should not hang or shutdown.)** **(b. System should boot up properly.)**	**DC Power (9V~30V)**	**Result**			**Note**
		Pass	**Fail**	**N/A**	
Minimum voltage test: CPU full Loading for 3 minute. <Tool: Prime 95>	Min(+9V)	☒	☐	☐	
Maximum voltage test: G3(AC loss) cold boot over 10 cycles	Max(+30V)	☒	☐	☐	

4.3.2. DC Adapter Compatibility Test

Test Point:

Confirm each adapter can be compatible with wide voltage design.

Adapter Information **(a. System boot to OS should work properly.**		**AAEON P/N**	**Result**			**Note**
			Pass	**Fail**	**N/A**	
9V	MEANWELL SE-100-9 9V/11.2A	N/A	☒	☐	☐	
12V	FSP084-DIBAN2 84W	1255900841	☒	☐	☐	
12V	FSP084-DMAA1 84W	1757908403	☒	☐	☐	
19V	FSP120-ABAN2 120W	1255901202	☒	☐	☐	
19V	FSP120-AAB 120W	1757912005	☒	☐	☐	
24V	SINPRO MPU100-108 100W	XXXXXXXXXX	☒	☐	☐	
30v	MEANWELL HRP-600-36 30V /17.5A	N/A	☒	☐	☐	

4.4. CMOS Battery Test

Test Point: Calculated result should be > 5 years.

Battery: CR2032

Capacity 225mAh

Check item	**Measured Voltage**	**Measured Current**	**Calculate Result**	**Result**			**Note**
				Pass	**Fail**	**N/A**	

Battery leakage 1. Voltage should be >3V. 2. Calculated result should be > 5 years.	2.99	V	2.2	uA	11.6	years	☒	☐	☐	

Calculate result=225mAh/measured current / 365days/24hours

5. Time Accuracy Test

5.1. System Clock & RTC Clock Test

Under Room Temperature:

Function \ Item	Time Interval	Criteria	Actual		Result			Note
					Pass	Fail	N/A	
RTC Clock in Power On Mode	24 hrs	+/-2 sec	-2	Sec	☒	☐	☐	
RTC Clock in Power Off Mode	24 hrs	+/-2 sec	+1	Sec	☒	☐	☐	

5.2. Booting Timer Test

Installation	Actual		Note
System Booting Time	12.93	Sec	Press the Power Button till “Beep” Sound appears

5.3. Watchdog Timer Test

Use Function as below: Hi-Safexxxx

〔 〕No Support.

Time-Out Interval	Criteria	Actual		Result			Note
				Pass	Fail	N/A	
10 sec	+/- 10%	9	Sec	☒	☐	☐	
60 sec	+/- 10%	58	Sec	☒	☐	☐	
255 sec	+/- 10%	252	Sec	☒	☐	☐	

Note : Under Room Temperature:

6. O.S. Compatibility Test

6.1. English Ubuntu 16.04.2 Kernel 4.8.0-36-generic x86_64

Driver Information:

Chipset Software	System default
Graphics Media	System default
Audio Driver	System default
LAN Driver	System default

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Ubuntu 16.04.2 Kernel 4.8.0-36-generic x86_64	☒	☐	☐	Type uname -a

Test Result:

Test Item	Result			Note
	Pass	Fail	N/A	
Display Function Test				
VGA -- Full Screen	☒	☐	☐	
HDMI -- Full Screen	☒	☐	☐	
DP -- Full Screen	☒	☐	☐	
VGA + HDMI	☒	☐	☐	
VGA + DP	☒	☐	☐	
HDMI + DP	☒	☐	☐	
Network Function Test				
Connect to Internet – LAN 1	☒	☐	☐	
Connect to Internet – LAN 2	☒	☐	☐	
Audio Function Test				
Play Audio Function Test	☒	☐	☐	Play Audio Test
HDMI / DP audio function Test	☒	☐	☐	
Base Function Test				
Mouse Test	☒	☐	☐	
Keyboard Test	☒	☐	☐	
Console Redirection	☒	☐	☐	
DVD-ROM Test	☒	☐	☐	<IDE / SATA / USB >
USB 2.0/3.0 Removable Devices	☒	☐	☐	
X Windows Application				
Start Button Office	☒	☐	☐	Office function
X-Window	☒	☐	☐	Startx – Desktop in Linux
Command Test On Text Mode: Attention Delay Phenomenon				
uname –a	☒	☐	☐	Show information
Shutdown	☒	☐	☐	Init 0 or shutdown –h now
Restart the Computer	☒	☐	☐	Init 6 or shutdown –r now
ls / clear ……; cd /dev /ls –l	☒	☐	☐	Command instruction

6.2. Windows 7 Ultimate English Version 32/64Bit

32bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.1.1 2015-06-03
Graphics Media	Intel HD Graphics 530 22.20.16.4629 3/12/2017
Audio Driver	Intel Display Audio 10.23.0.272 12/6/2016 Realtek High Definition Audio 6.0.1.8036 1/5/2017
LAN Driver	Intel Ethernet Connection (2) I219-LM 12.13.17.4 6/18/2015 Intel I211 Gigabit Network Connection 12.12.226.0 5/4/2015
64bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.1.1 2015-06-03
Graphics Media	Intel HD Graphics 530 22.20.16.4629 3/12/2017
Audio Driver	Intel Display Audio 10.23.0.272 12/6/2016 Realtek High Definition Audio 6.0.1.8036 1/5/2017
LAN Driver	Intel Ethernet Connection (2) I219-LM 12.13.17.4 6/18/2015 Intel I211 Gigabit Network Connection 12.12.226.0 5/4/2015

Install OS to SATA HDD:

Installation	**Result**			**Note**
	Pass	**Fail**	**N/A**	
English Windows 7 Ultimate ACPI Mode	☒	☐	☐	

Test Results:

Test Item			**Result**			**Note**
			Pass	**Fail**	**N/A**	
Single Display						
VGA -- Full Screen			☒	☐	☐	
HDMI -- Full Screen			☒	☐	☐	
DP -- Full Screen			☒	☐	☐	
Multi display			☒	☐	☐	
Basic Function Test						
Usable memory	32bit:	2.19GB	☒	☐	☐	Total:32GB
	64bit:	32GB	☒	☐	☐	
USB Mouse and Keyboard			☒	☐	☐	
COM Port Mouse detect			☒	☐	☐	
USB Removable Devices	USB2.0		☒	☐	☐	
	USB3.0		☒	☐	☐	
	Safe to remove icon		☒	☐	☐	
LAN Function Test						
LAN1 --- Auto			☒	☐	☐	I211
LAN2 --- Auto			☒	☐	☐	I219-LM
Audio Function Test						
Line Out Test			☒	☐	☐	
Microphone Test			☒	☐	☐	
Start Menu						
Log off User			☒	☐	☐	
Shut down (S5)			☒	☐	☐	
Sleep (S3)			☒	☐	☐	
Restart			☒	☐	☐	
Hibernate (S4)			☒	☐	☐	

6.3. Windows 8.1 Enterprise English Version 64Bit

64bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.1.1 2015-06-03
Graphics Media	Intel HD Graphics 530 22.20.16.4629 3/12/2017
Audio Driver	Intel Display Audio 10.23.0.272 12/6/2016 Realtek High Definition Audio 6.0.1.8036 1/5/2017
LAN Driver	Intel Ethernet Connection (2) I219-LM 12.13.17.4 6/18/2015 Intel I211 Gigabit Network Connection 12.12.226.0 5/4/2015

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows 8.1 Enterprise 64bit UEFI mode	☒	☐	☐	

Test Results:

Test Item			Result			Note
			Pass	Fail	N/A	
Single Display						
VGA -- Full Screen			☒	☐	☐	
HDMI -- Full Screen			☒	☐	☐	
DP -- Full Screen			☒	☐	☐	
Multi display			☒	☐	☐	
Basic Function Test						
Usable memory	64bit:	32GB	☒	☐	☐	
USB Mouse and Keyboard			☒	☐	☐	
COM Port Mouse detect			☒	☐	☐	
USB Removable Devices	USB2.0		☒	☐	☐	
	USB3.0		☒	☐	☐	
	Safe to remove icon		☒	☐	☐	
LAN Function Test						
LAN1 --- Auto			☒	☐	☐	I211
LAN2 --- Auto			☒	☐	☐	I219-LM
Audio Function Test						
Line Out Test			☒	☐	☐	
Microphone Test			☒	☐	☐	
Start Menu						
Log off User			☒	☐	☐	
Shut down (S5)			☒	☐	☐	
Sleep (S3)			☒	☐	☐	
Restart			☒	☐	☐	
Hibernate (S4)			☒	☐	☐	

6.4. Windows 10 Enterprise English Version 64Bit

64bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.1.1 2015-06-03
Graphics Media	Intel HD Graphics 530 22.20.16.4629 3/12/2017
Audio Driver	Intel Display Audio 10.23.0.272 12/6/2016 Realtek High Definition Audio 6.0.1.8036 1/5/2017
LAN Driver	Intel Ethernet Connection (2) I219-LM 12.13.17.4 6/18/2015 Intel I211 Gigabit Network Connection 12.12.226.0 5/4/2015

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows 10 Enterprise 64bit	☒	☐	☐	

Test Results:

Test Item			Result			Note
			Pass	Fail	N/A	
Single Display						
VGA -- Full Screen			☒	☐	☐	
HDMI -- Full Screen			☒	☐	☐	
DP -- Full Screen			☒	☐	☐	
Multi display			☒	☐	☐	
Basic Function Test						
Usable memory	64bit:	32GB	☒	☐	☐	
USB Mouse and Keyboard			☒	☐	☐	
COM Port Mouse detect			☒	☐	☐	
USB 2.0 Removable Devices	USB2.0		☒	☐	☐	
	USB3.0		☒	☐	☐	
	Safe to remove icon		☒	☐	☐	
TPM2.0 BitLocker Feature			☒	☐	☐	
LAN Function Test						
LAN1 --- Auto			☒	☐	☐	I211
LAN2 --- Auto			☒	☐	☐	I219-LM
Audio Function Test						
Line Out Test			☒	☐	☐	
Microphone Test			☒	☐	☐	
Start Menu						
Log off User			☒	☐	☐	
Shut down (S5)			☒	☐	☐	
Sleep (S3)			☒	☐	☐	
Restart			☒	☐	☐	
Hibernate (S4)			☒	☐	☐	

7. BIOS Function Test

Configuration	
CPU	Intel Core i3-6100TE 2.70GHz
Memory	Innodisk DDR4 2400 16GB(SEC 649 K4A8G08 5WB BCRC)
Storage	TOSHIBA 2.5” 500GB(MQ01ABF050)
O.S	Windows 10 Enterprise 64bit

Test Point:
Confirm BIOS control items are working correctly.

7.1. Advanced Test

Test Item (Following item should work properly)			Result			Note
			Pass	Fail	N/A	
Dynamic Digital IO	DIO0~7		☒	☐	☐	Test under Dos and OS
*S5 RTC Wake up	Wake system with Dynamic time		☒	☐	☐	
	Wake system with fixed time		☒	☐	☐	
*Restore AC Power Loss	Power On		☒	☐	☐	
	Power Off		☒	☐	☐	
	Last State		☒	☐	☐	
*Power Mode	ATX		☒	☐	☐	
	AT	Auto power on	☒	☐	☐	
		PWB no function	☒	☐	☐	
		Disable S3/S4	☒	☐	☐	
		PWR LED and FAN still running when S5 shutdown.	☒	☐	☐	
		Support UEFI and legacy mode.	☒	☐	☐	
Trusted Computing	TPM SUPPORT		☒	☐	☐	
	Clear TPM		☒	☐	☐	
*CPU configuration	Information		☒	☐	☐	
	Hyper-threading		☒	☐	☐	Enable/Disable
	Virtualization Technology		☒	☐	☐	Enable/Disable
*SATA configuration	SATA information		☒	☐	☐	
	SATA controller		☒	☐	☐	Enable/Disable
	AHCI mode		☒	☐	☐	
USB configuration	Legacy USB Support		☒	☐	☐	
Super IO configuration	Serial port 1		☒	☐	☐	Enable/Disable
	RS232		☒	☐	☐	
	RS422		☒	☐	☐	
	RS485		☒	☐	☐	
	Serial port 2		☒	☐	☐	
	Serial port3		☒	☐	☐	
	Serial port4		☒	☐	☐	

7.2. Chipset Test

Test Item (Following item should work properly)			Result			Note
			Pass	Fail	N/A	
System Agent	Primary	Auto	☒	☐	☐	

(SA) Configuration	Display	IGFX	☒	☐	☐	
	Boot Display	VBIOS	☒	☐	☐	
		CRT	☒	☐	☐	
		HDMI1	☒	☐	☐	
		HDMI2	☒	☐	☐	
	Second Display	Disable	☒	☐	☐	
		CRT	☒	☐	☐	
		HDMI1	☒	☐	☐	
		HDMI2	☒	☐	☐	
	*Memory Configuration		☒	☐	☐	
	Max TOLUD		☒	☐	☐	Dynamic 1G~3.5G
PCH-IO Configuration	HD Audio		☒	☐	☐	
	Mini-Card 1 Gen Speed		☒	☐	☐	
	Mini-Card 2 Gen Speed		☒	☐	☐	

7.3. Boot Test

Test Item (Following item should work properly)	Result			Note
	Pass	Fail	N/A	
Quiet Boot	☒	☐	☐	
Launch PXE OpROM	☒	☐	☐	
Boot From Hard Disk	☒	☐	☐	
Boot From USB HDD	☒	☐	☐	
Boot From USB Floppy	☒	☐	☐	
Boot From USB CD-ROM	☒	☐	☐	
Boot from LAN	☒	☐	☐	
Disable	☒	☐	☐	

7.4. Clear CMOS and Load Default Test

Test Item (Following item should work properly)		Result			Note
		Pass	Fail	N/A	
Clear CMOS by jumper (under G3 status)		☒	☐	☐	Clear date, time, setting, password
Clear CMOS by remove battery(under G3 stagus)		☒	☐	☐	Clear date, time, setting, password
Load default	Date, time, password should be kept	☒	☐	☐	
	BIOS setting should be restored to default.	☒	☐	☐	
	Boot option priorities should restore from disable to default.	☒	☐	☐	

7.5. AAEON Tag Check Utility

Test Item (Following item should work properly)	Result			Note
	Pass	Fail	N/A	
Check AAEON BIOS OK	☒	☐	☐	AONCHECK.EXE

7.6. Supervisor / User Password Test

Test Item (Following item should work properly)	Result			Note
	Pass	Fail	N/A	
Administrator Password	☒	☐	☐	
User Password	☒	☐	☐	

7.7. Hi-safe Test (Test in P3 phase)

Test Item (Following item should work properly)		Result			Note
		Pass	Fail	N/A	
Version v2.2017.7.3		☒	☐	☐	
System Information	CPU Information	☒	☐	☐	
	Model Name	☒	☐	☐	
	Display Information	☒	☐	☐	
	RAM Information	☒	☐	☐	Support single DIMM
H/W Monitor	Info	☒	☐	☐	
	Temperature	☒	☐	☐	
	Voltage	☒	☐	☐	
DIO	DIO1~4 High	☒	☐	☐	
	DIO1~4 Low	☒	☐	☐	
	DIO5~8 High	☒	☐	☐	
	DIO5~8 Low	☒	☐	☐	
WatchDog	10sec	☒	☐	☐	Actual 9 sec
	1min	☒	☐	☐	Actual 58 sec
	255sec	☒	☐	☐	Actual 252 sec
	Auto Reload	☒	☐	☐	
SMBus	Device Address	☒	☐	☐	Device Address 0xA0
	Read Byte	☒	☐	☐	Slave Address A0h
	Read Word	☒	☐	☐	
	Result / Read	☒	☐	☐	

7.8. Negative Test

7.8.1 USB Keyboard Negative Test

Methods	Result			Note
	Pass	Fail	N/A	
1. Boot into BIOS setup manual. 2. Press NumLock or ScrLk and press arrow key. 3. confirm arrow key function are normally	☒	☐	☐	

7.8.2 Suspend S3 Negative Test

Methods		Result			Note
		Pass	Fail	N/A	
1. Resume from S3. 2. Confirm com ports(RS232/422/485), DIO, smartfan, LVDS backlight control, USB ports, HDMI/DP audio can work properly.	RS232/422/485	☒	☐	☐	
	DIO	☒	☐	☐	
	USB ports	☒	☐	☐	
	DP/HDMI audio	☒	☐	☐	

7.9.3 UEFI Mode Negative Test

Methods	Result			Note
	Pass	Fail	N/A	

1. Install Windows with UEFI mode. 2. Clear CMOS. 3. Confirm BIOS\Boot device was not loss “Windows boot manager” and should boot into Windows properly.	☒	☐	☐	

8. Performance Test

Configuration	
CPU	Intel Core i7-7700T 2.90GHz
Memory	Innodisk DDR4 2400 16GB(SEC 649 K4A8G08 5WB BCRC)
Storage	TOSHIBA 2.5” 500GB(MQ01ABF050)
O.S	Windows 10 Enterprise 64bit

8.1. System Performance Test

Test Result: (Display set 1920*1080 test)

Testing Software	Scope		Note
	AAEON	Ref.	
PCMark 8 (Creative)			Windows 10.1 (64bit)
PCMarks	3090	-	PCMarks
Test duration	57min 20s	-	
Web Browsing-Jungle Pin	0.294 s	-	
Web Browsing-Amazonia	0.130 s	-	
Video To Go part 1	9.7 s	-	
Video To Go part 2	12.1 s	-	
Music To Go	42.97 s	-	
Video Editing 4k part 1 conventional	14.3 s	-	
Video Editing 4k part 2 conventional	162.8 s	-	
Mainstream Gaming part 1	12.0 FPS	-	
Mainstream Gaming part 2	6.2 FPS	-	
Video Group Chat v2- Video Group Chat playback1 v2	30.0 fps	-	
Video Group Chat v2- Video Group Chat playback2 v2	30.0 fps	-	
Video Group Chat v2- Video Group Chat playback3 v2	30.0 fps	-	
Video Group Chat encoding v2	62.0 ms	-	
Photo Editing v2	0.403 s	-	
Batch Photo Editing v2	30.2 s	-	

Testing Software	Scope		Note
	AAEON	Ref.	
3DMark-v2-3-3693			
Sky Diver			
Score	4921	-	
Graphics score	4547	-	
Graphics test 1	20.85 FPS	-	
Graphics test 2	20.68 FPS	-	
Physics score	8798	-	
8 threads	153.26 FPS	-	
24 threads	92.33 FPS	-	
48 threads	53.45 FPS	-	
96 threads	29.57 FPS	-	
Combined score	4719	-	
Combined test	19.42 FPS	-	

Fire Strike			
Score	1167	-	
Graphics score	1276	-	
Graphics test 1	5.92 FPS	-	
Graphics test 2	5.23 FPS	-	
Physics score	9177	-	
Physics test	29.14 FPS	-	
Combined score	396	-	
Combined test	1.84 FPS	-	

Testing Software	Scope		Note
	AAEON	Ref.	
Performance Test 8.0			
PassMark Rating	2376.0	-	
CPU Mark	8477	-	
2D Graphics Mark	685	-	
3D Graphics Mark	1336	-	
Memory Mark	2629	-	
Disk Mark	718	-	
CD Mark	-	-	

8.2. Storage Performance Test

SATA Performance				
SATA SSD	OCZ 2.5” 120GB(Vector 150)			
CPU	Intel Core i3-6100TE 2.70GHz			
Memory	Innodisk DDR4 2400 16GB(SEC 604 BCPB K4A4G085WD)			
OS	Windows 10 Enterprise 64bit			
Item	Comment / (unit)	Software	Score	Note
SATAIII	Maximum Read	ATTO Disk Benchmark	557MB/s	SATAII 150~300MB SATAIII up 300M/B
	Maximum Write	ATTO Disk Benchmark	445MB/s	

USB3.0/2.0 Performance				
USB Flash	Transcend USB3.0 32GB			
Item	Comment / (unit)	Software	Transfer Rate (MB/s)	Note
USB3.0	Maximum Read	ATTO Disk Benchmark	89MB/s	CN6A
	Maximum Write	ATTO Disk Benchmark	61MB/s	
USB3.0	Maximum Read	ATTO Disk Benchmark	87MB/s	CN6B
	Maximum Write	ATTO Disk Benchmark	55MB/s	
USB3.0	Maximum Read	ATTO Disk Benchmark	87MB/s	CN7A
	Maximum Write	ATTO Disk Benchmark	55MB/s	
USB3.0	Maximum Read	ATTO Disk Benchmark	92MB/s	CN7B
	Maximum Write	ATTO Disk Benchmark	64MB/s	
USB2.0	Maximum Read	ATTO Disk Benchmark	40MB/s	CN21A
	Maximum Write	ATTO Disk Benchmark	30MB/s	
USB2.0	Maximum Read	ATTO Disk Benchmark	40MB/s	CN21B
	Maximum Write	ATTO Disk Benchmark	30MB/s	
USB2.0	Maximum Read	ATTO Disk Benchmark	40MB/s	CN21C

	Maximum Write	ATTO Disk Benchmark	31MB/s	

mSATA Performance				
mSATA	Transcend 64GB(TS64GMSA370)			
Item	Comment / (unit)	Software	Transfer Rate (MB/s)	Note
mSATA	Maximum Read	ATTO Disk Benchmark	446MB/s	
	Maximum Write	ATTO Disk Benchmark	80MB/s	

9. Stability test

Configuration	
CPU	Intel Core i7-7700T 2.90GHz
Memory	Innodisk DDR4 2400 16GB(SEC 649 K4A8G08 5WB BCRC)
Storage	TOSHIBA 2.5” 500GB(MQ01ABF050)
O.S	Windows 10 Enterprise 64bit

9.1. Run In Test

Under Room Temperature:

OS: Windows 8.1 Enterprise English 64bit

Test Item			Result			Note
			Pass	Fail	N/A	
Burn In Test V8.1(1020 above) Duty: 100 Time: over 12 hours <System should not error or hang during testing.>	CPU		☒	☐	☐	
	RAM		☒	☐	☐	
	COM		☒	☐	☐	
	GPU		☒	☐	☐	
	Video		☒	☐	☐	
	2D		☒	☐	☐	
	3D		☒	☐	☐	
	Disk		☒	☐	☐	
	Sound		☒	☐	☐	
	Network <Advanced>		☒	☐	☐	
	USB	2.0	☒	☐	☐	
		3.0	☒	☐	☐	

Note: COM PORT Speed Set to 115200.

9.2. Reboot Test

Under Room Temperature:

OS: Windows 8.1 Enterprise English 64bit

Test Tool: Passmark rebooter.exe

Test item	Result			Note
	Pass	Fail	N/A	
Reboot test for 500 cycles <a. System should not error or hang during testing.> <b. Device manager should not loss any devices or yellow bang >	☒	☐	☐	

9.3. ACPI G3 Cold Boot Test

Under Room Temperature:

OS: DOS

Test Point:

1. Make sure system boot up is stable.
2. Make sure boot function support AC power restored in short time.

Test item	Result			Note
	Pass	Fail	N/A	

G3(AC loss) cold boot over 1000 cycles Setting: Power on- 40sec ; Power off-- 20sec. <loss rate: 0 /1000 times>	☒	☐	☐	☒BIOS select " power on" or ☐Jumper setting auto power button
G3(AC loss) cold boot over 20 cycles Setting: Power on- 40sec ; Power off- 5sec. <loss rate: 0 /20 times>	☒	☐	☐	H/W [auto power button] need to set enable..

9.4. ACPI S5 Cold Boot Test

Under Room Temperature:
OS: Windows 10 Enterprise English 64bit

Test item	Result			Note
	Pass	Fail	N/A	
S5(standby power) cold boot over 500 cycles < System should complete 500 cycles without any error or hang.>	☒	☐	☐	1. "PassMark Rebooter" set 500 cycles ; delay 30sec and enable "auto load Rebooter at startup". 2. On/off fixture cycle time to set 150sec.

9.5. Memory Test

Under room temperature:
OS: DOS
Tool: Passmark Memtest version7.3 UEFI
Memory information: Transcend DDR4 2133 16GB x 2 (SPEC max support size).

Test item	Result			Note
	Pass	Fail	N/A	
Memory Test for 4 loops. < Memtest result should not error or hang..>	☒	☐	☐	

Remark:

9.6. System stability after S3 / S4 / S5 cycles

Under Room Temperature:
OS: Windows 10 Enterprise English 64bit

Test item	Criteria	Result			Note
		Pass	Fail	N/A	
System stability after S3 cycles <Perform S3 cycles 3 times>	1.SUT boots to OS successfully. 2. No yellow bang observed if all the drivers are installed 3.SUT does S3-resume cycles successfully without any issues	☒	☐	☐	
System stability after S4 cycles <Perform S4 cycles 3 times>	1.SUT boots to OS successfully. 2. No yellow bang observed if all the drivers are installed 3.SUT does S4-resume cycles successfully without any issues	☒	☐	☐	
System stability after S5 cycles <Perform S5 cycles 3 times>	1.SUT boots to OS successfully. 2. No yellow bang observed if all the drivers are installed 3.SUT does S5-resume cycles successfully without any issues	☒	☐	☐	

10. Front Panel Button and Mechanical Check

10.1. Front Panel Button Function Test

Test item	Function			Note
	Pass	Fail	N/A	
System Power on/off button	☒	☐	☐	
Reset button	☒	☐	☐	

10.2. Mechanical Check

Test Item	Result			Note
	Pass	Fail	N/A	
System Case construction check	☒	☐	☐	
mSATA slot construction check	☒	☐	☐	
Expansion slots construction check	☒	☐	☐	
I/O symbol check	☒	☐	☐	