

Report NO: 17P010020

# BOXER-6640M

## Fanless Embedded controller with Intel Core-i Processor System Level Product P5 Compatibility Test Report

Summary	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> Pass with Deviation (Comment: _____)			
Test Results Category				
	Critical	Major	Minor	Enhancement
<b>Defect Found</b>	0	0	0	0
<b>Defect Unsolved</b>	0	0	0	0

<b>Issue date</b>	<b>QE Manager</b>	<b>Test Engineer</b>
2017-09-25	KJ Wang	Aslen Hsieh

**Summary Table of DTS:**

Defect No.	Severity	Description	Issue status

**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 (TDP: 35W) Intel Core i5-6500TE, Quad Core (TDP: 35W) Inte Core i3-6100TE, Dual Core (TDP: 35W) Intel Core i7-7700TE, Quad Core (TDP: 35W) Intel Core i5-7500TE, Quad Core (TDP: 35W) Inte Core i3-7100TE, Dual Core (TDP: 35W)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCH	H170	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Display	HDMI x2 (option) (90 degree) VGA x1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Storage	2.5" SATA Drive bay x 1 (SATA Connector x 1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Front I/O panel	Power ON/OFF switch x 1 2 pin Remote power on/off connector SYS LED x 1 HDD LED x 1 USB 3.0 x 8 (Standard P/N: 4 port; Option: 4 port)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rear I/O panel	HDMI x2 (optional) VGA x 1 USB 2.0 x 2 RJ-45 x 9 for GbE (i210IT/ i211 co-layout) DB-9 x 1 for RS-232/422/485 with automatic flow control, isolation 3000Vdc (90 degree) 3 pin 9~36V DC Power input x 1 (+, -, GND)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Expansion	Full-size Mini card x 2 (one for SIM) Full-size Mini card(1) x 1 (PCIE + USB) Full-size Mini card(2) x 1 (mSATA + USB ,w/ SIM slot)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Power Supply	3-pin Phoenix DC Input 9~36V, optional 110/230V AC adapter.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### O.S. Support

Item	Specification	Result			Note
		Pass	Fail	N/A	
Microsoft Windows	Windows 7 English 32/64 bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Windows8.1 English 64bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Windows10 English 64bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Linux	Kernel 2.6 above	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## Platform Information

Item	Device Information	Note
Product of department	SPD	
PCB Model / Version	BOXER-6640M A1.0	
CPU Board	PBA-SKS03 A1.0	
BIOS / Version	BOXER-6640M R1.2 (B640MM12) (07/31/2017)	
Driver folder	X:\Products\BOXER-6640M\20170627	
CPU Type	Intel® Core™ i7-6700TE Processor 2.40 GHz ( 8M Cache )	
Memory Type	Transcend DDR4 2133 16GB SEC K4A8G085WB * 2pcs	
SATA HDD	OCZ / TRN100-25SAT3-240G 2.5" SATA 3 6Gb/s	
USB DVD-ROM	BUFFALO BDXL-PC6U2	
LCD Monitor	BENQ BL2710 / WQHD 2560 x 1440 / 27" monitor	
LVDS	Intel® Core™ i7-6700TE Processor 2.40 GHz ( 8M Cache )	
Compact Flash	Transcend DDR4 2133 16GB SEC K4A8G085WB * 2pcs	
Daughter Board	OCZ / TRN100-25SAT3-240G 2.5" SATA 3 6Gb/s	
Operating System	<input checked="" type="checkbox"/> Windows 7 Ultimate SP1 32/64Bit	
	<input checked="" type="checkbox"/> Windows 8.1 Enterprise English Version 64Bit	
	<input checked="" type="checkbox"/> Windows 10 Enterprise English Version 64Bit	
DC Adapter	FSP084-DIBAN2 84W	
<b>Chipset Information</b>		
North Bridge	H170	
Super IO Chipset	Fintek81866	
Audio Chipset	RealtekALC892	
Ethernet Chipset	Intel I210 Gigabit Lan	

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# 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 i7-6700TE, Quad Core (TDP: 35W)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Intel Core i5-6500TE, Quad Core (TDP: 35W)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Inte Core i3-6100TE, Dual Core (TDP: 35W)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Intel Core i7-7700TE, Quad Core (TDP: 35W)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Intel Core i5-7500TE Quad Core (TDP: 35W)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 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	
<b>DDR4 SO-DIMM</b>					
Innodisk DDR4 2133 16GB SEC K4A8G085WB	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
InnoDisk DDR4-2133 8GB(SEC 446 BCPB K4A4G085WD)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Innodisk DDR4 2133 4GB M4S0-4GSSNCRG-26 SEC K4A4G085WD	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transcend DDR4 2133 16GB SEC K4A8G085WB	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transcend DDR4 2133 8GB TS9AASESD00AA SEC K4A4G085WD	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transcend DDR4 2133 4GB TS8AASESD00AA SEC K4A4G085WD	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DSL DDR4 2400 16GB CL17 D4SS1G082SH24A-A SEC K4A8G085WB	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DSL DDR4-2133 8GB (SEC K4A4G085WD)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DSL DDR4-2133 4GB (SEC K4A4G085WD)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transcend DDR4-2400 4GB(SEC 637 K4A4G085WE BCRC)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transcend DDR4-2400 8GB(SEC 640 K4A4G085WE BCRC)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transcend DDR4-2400 16GB(SEC 634 K4A8G085WB BCRC)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 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	
<b>Main Board project test with 80~100cm SATA cable , typical #1709070800</b>					
SATAII Toshiba / MQ01AAD010C / 4200 RPM / 100GB / SATA 3.0Gb/s 2.5" SATA HDD	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATAIII HGST / 7K1000 (0J22423) /1TB 7200 RPM 32MB Cache SATA 6.0Gb/s	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

SSD	Transcend TS32GSSD370 2.5".32GB.SATA III SSD MLC.	968C032G2D	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	Transcend.TS64GSSD370 2.5".64GB. SATA III.SSD.MLC	968C64G003	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	Transcend.TS128GSSD370 2.5" SATA3 SSD.128GB.MLC.	968C128G0W	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	2.5" .16GB 3MG2-P 15nm.SATA III MLC SSD.Innodisk MLC .0°C ~ +70°C.DGS25-16GD81BC3SC-26	AP- SS968C016G3K	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	(TF)2.5".32GB 3MG2-P 15nm.SATA SSD MLC.0~70°C.HIGH IOPS.innodisk.DGS25- 32GD81BC3DC-26	AP- SS968C032G1P	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	(TF)2.5".64GB.SATA MLC SSD .3MG2-P 15nm.0~70°C.HIGH IOPS.innodisk.DGS25- 64GD81BC3QC-26	968C064G39	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	2.5' MLC SSD 128GB 3MG2-P 15nm.SATA 0°C~+70°C.InnoDisk.DGS25- A28D81BC3QC-26	AP- SS968C128G1P	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	2.5".256GB.SATA MLC SSD 3MG2-P 15nm.0~70°C.HIGH IOPS.innodisk.DGS25- B56D81BC3QC-26	AP- SS968C256G16	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	OCZ / TRN100-25SAT3-240G 2.5" SATA 3 6Gb/s	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transcend.TS32GMSA370 Full-size mSATA.32GB.MLC.	968C032G32	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transcend.TS64GMSA370 (TF)Full-size.64GB.mSATA.MLC	968C064G2K	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Innodisk full size mSATA.8GB 3ME3	CTOS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Innodisk full size mSATA.16GB 3ME3	CTOS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Innodisk full size mSATA.32GB 3ME3	CTOS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Innodisk full size mSATA.64GB 3ME3	CTOS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Innodisk full size mSATA.128GB 3ME3	CTOS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



### 1.6. Monitor Compatibility Test

Monitor Information	Result			Note
	Pass	Fail	N/A	
<b>a. Monitor should display under DOS and OS environment.</b>				
<b>b. Monitor should not appear ghost or ripples.</b>				
VGA				
LG Flatron E2260 / 1920*1080 / 22" monitor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(at least 3 monitors)
Asus PA238Q / 1920*1080 / 23" monitor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BENQ BL2710 / WQHD 2560 x 1440 / 27" monitor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI (Test with 5M HDMI cable/ Bravo-u)				
Samsung LU28D	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*Must test monitor (Tested 3 monitors at least)
ASUS VE228	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BENQ BL2710 / WQHD 2560 x 1440 / 27" monitor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Asus PA238Q / 1920*1080 / 23" monitor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 2. Basic Function Test

### 2.1. Video Function Test

#### 2.1.1. Single Output Function Test

Configuration													
CPU	Intel® Core™ i7-6700TE Processor 2.40 GHz ( 8M Cache )												
Memory	Transcend DDR4 2133 16GB SEC K4A8G085WB * 2pcs												
SATA HDD	OCZ / TRN100-25SAT3-240G 2.5" SATA 3 6Gb/s												
VGA	Asus PA238Q / 1920*1080 / 23" monitor												
HDMI	BENQ BL2710 / WQHD 2560 x 1440 / 27" monitor												
	Samsung LU28D												
Color Quality	<input checked="" type="checkbox"/> 16bit <input type="checkbox"/> 24bit <input checked="" type="checkbox"/> 32bit												
Resolution	VGA			HDMI_1(BL2710)			HDMI_2 (LU28D)			LVDS			Note
	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	
800X600	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1024X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X600	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X720	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X800	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X960	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X1024	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1360X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1366X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1400X1050	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1400X480	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1400X576	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1400X900	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1600X900	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1600X1200	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1680X1050	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1920X1080	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1920X1200	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2048X1152	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2560X1440	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2560X2048	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3840 X 2160	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
EDID check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Hot plug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Rotation(0/90/180/270)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
DOS Display	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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

#### 2.1.2. Multi-Display Output Test

Selection	Output	Result			Note
		Pass	Fail	N/A	
Dual Display Clone	VGA+HDMI1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone	VGA+HDMI2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone	HDMI1+HDMI2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Triple Display Clone	HDMI1+HDMI2+V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop	GA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 2.1.3. Boot up Without Display Test

Process step:

1. BIOS disable LVDS.
2. Power on without inserting any VGA/DVI/HDMI/DP connector until system reaches Windows desktop
3. Plug VGA connector into test machine while system reaches Windows then check Graphics driver and display.
4. Check VGA output Brightness is normal and it shows "Ghost Image" / "Flicker" or not
5. Repeat step2~4 for DVI / HDMI / DP testing.

Test item		Result			Note
		Pass	Fail	N/A	
Display should working normal in Windows Desktop	VGA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	DVI	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	HDMI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Display port	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	





### 2.2. Audio Function Test

[ ] No Support

Function Test		Result			Note
		Pass	Fail	N/A	
L (Left) Channel		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
R (Right) Channel		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
MICROPHONE		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6-channel mode for 5.1 speaker output		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
8-channel mode for 7.1 speaker output		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
S/P DIF function Test	Input	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Output	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
HDMI Audio		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 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 ~ LAN 9		Intel I210 Gigabit Lan						MAC Address		00-07-32-35-8B-52/53/57/58/59/5A/5B/5F/60		
LAN Speed	Link / Speed LED	Active LED	LAN 1 ~ LAN 3			LAN 4 ~ LAN 6			LAN 7 ~ LAN 9			
			Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	
1000Mbps Ping loss ≤ 1			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
100Mbps Ping loss ≤ 1			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

10Mbps Ping loss ≤ 1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wake On LAN (WOL should work properly when resume from S3/S4/S5)	S3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	S4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	S5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN Boot (PXE) [CN14 & CN15] (Boot from LAN should work properly)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Internet Browser (DHCP Server) (Visit the website should work properly)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Access 1GB file from ftp. (Access file should not stop or error.)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Iperf \$sudo iperf3 -c xx.xx.xx.xx -i 1 -t 60 (Gigabit LAN bandwidth should > 900Mbps)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 2.4. COM Ports Test

Test Item	Result			Note
	Pass	Fail	N/A	
Serial Modem Dial Out	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Serial Modem Ring In (COM2 ~ COM4)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test by Modem
Serial Modem +12V	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Test by Multimeter
Serial Modem +5V	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Test by Multimeter
Transmission Test <115200bps / 15M>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 2.5. RS-422 / RS-485 Test

Test Item	Result			Note
	Pass	Fail	N/A	
RS-422 for COM 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use loopback and WINSSD.exe to test RS-422 in Windows
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	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 COM 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use ICP CON I-7044D D/IO Module in Windows(Support Auto flow control)
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	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.

### 2.7. Digital I/O Test

Test item	Result			Note
	Pass	Fail	N/A	
DIO VCC +5V or +3.3V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 2.8. 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 500GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB Flash:	SanDisk Extreme USB3.0 64GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Kingston USB3.0 DT Ultimate G2 16GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB DVD ROM:	BUFFALO BDXL-PC6U2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB keyboard:	Logitech Y-U0011	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB mouse:	Logitech M-U0003	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB FDD:	Mitsumi D353GUE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB2.0 HUB:	Mini 4ports HUB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Test item	Result							Note
	Pass	Fail	N/A	Pass	Fail	N/A		
USB3.0 ports with power in S3 mode					<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB3.0 ports with power in S5 mode					<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 2.13. Jumper and Connector Function Test

[ ] No Support

Test item	Result			Note				
	Pass	Fail	N/A					
Clear CMOS will clear CMOS date , time , setting , password.					<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Buzzer and 4 pin Speaker test	System boot: one short beep.				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	No memory found: One long beep, two short beep, pause a period of time, and loop.				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Power button	One touch for power on.				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	One touch for power off in BIOS manual.				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	One touch for system shutdown in Windows environment. (power manager need to set "press PWB for shutdown.)				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	> 4sec for H/W shutdown in Windows environment. (power manager need to set "press PWB do nothing.)				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Reset button, system reset under DOS or Windows.					<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Power LED behavior	S1 (boot up): Power LED on				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	S3: Power LED off				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	S4: Power LED off				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	S5: Power LED off				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDD LED, active when SATA/CF/CFast/mSATA/M.2 access	SATA: Active				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	mSATA: Active				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
AAFP, line out / microphone work properly.					<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 3. Expansion card and Application Test

#### 3.1. Expansion Slot Compatibility Test

Mini PCI Express Card		Result			Note
		Pass	Fail	N/A	
Full size	Quectel UC20 3G Card	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If M/B support SIM slot
Full size	Sierra Wireless AirPrime MC734 Qualcomm 4G	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	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	COM ME232s2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BIOS select GEN1
Full size	AAEON PER-C11L Gigabit LAN card	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Full size	AAEON PER-C41C-A10 4 port RS-232	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Half size	AzureWave AW-NB159H 802.11b/g/n RTL8723BE combo module	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Half size	AzureWave AW-CB161H 802.11a/b/g/n/ac(PCI-e Wireless+ USB Bluetooth) Realtek RTL8821AE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Half size	Bointec DPE909-AA WIFI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCI-Express x4		Result			Note
		Pass	Fail	N/A	
Intel GIGABIT ET2 Quad Port Svr Adptr (E1G44ET2BLK)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Plextor PCIe SSD M6e 128GB		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SilverStone ECM20 Dual M.2 to PCI-E x4 and SATA 6G adapter card		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

#### 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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

#### 3.3. Display port Converter Compatibility Test

Test Item			Result			Note
			Pass	Fail	N/A	
DP to HDMI converter: LPC-1504	DOS display	Full screen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	OS display	Full screen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max resolution:
DP to DVI converter: LPC-1503	DOS display	Full screen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	OS display	Full screen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max resolution:

## 4. Power Consumption Test

Configuration	
CPU	Intel® Core™ i7-6700TE Processor 2.40 GHz ( 8M Cache )
Memory	Transcend DDR4 2133 16GB SEC K4A8G085WB * 2pcs
Storage	OCZ / TRN100-25SAT3-240G 2.5" SATA 3 6Gb/s
O.S	Windows 10 Enterprise English Version 64Bit

### 4.2. PC Health Status

Test Point:

Voltage deviation: ±5%.

Fan speed deviation: ±10%

CPU DTS Temp deviation: ±15°C

System Temp deviation: ±5°C

H/W monitor	Result			BIOS	Actual		Note	
	Pass	Fail	N/A					
(+) VCORE Actual and monitor must be ±5%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0.960	V	0.94	V	
(+) VMEM Actual and monitor must be ±5%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.224	V	1.21	V	
(+) 5V Actual and monitor must be ±5%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.087	V	4.98	V	
(+) 12V Actual and monitor must be ±5%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12.320	V	12.30	V	
(+) 3.3V Actual and monitor must be ±5%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.376	V	3.33	V	
(+) 3VSB Actual and monitor must be ±5%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.376	V	3.34	V	
(+) 5VSB Actual and monitor must be ±5%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.040	V	5.00	V	
VBAT Actual and monitor must be ±5%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.152	V	3.10	V	
CPU DTS Temp Actual and monitor must be ±15°C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	49	°C	51	°C	
System Temp Actual and monitor must be ±5°C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	43	°C	45	°C	

### 4.3. Wide Voltage Test

#### 4.3.1. Wide Voltage Test

Test Point:

Test voltage range is follow specification.

Test Environment (a. System should boot properly (b. System wasn't halt in following status. )	DC Power (9V~36V)	Current		Note
Windows 10 with Prime 95 Full Loading Test	Min(+9V)	7.50	A	
	Max(+36V)	1.81	A	
Windows 10 Without running any Software	Min(+9V)	3.16	A	
	Max(+36V)	0.71	A	

### 4.3.2. DC Adapter Compatibility Test

Test Point:

Confirm each adapter can be compatible with wide voltage design.

Adapter Information		AAEON P/N	Result			Note
(a. System boot to OS should work properly.)			Pass	Fail	N/A	
9V	MEANWELL SE-100-9 9V/11.2A	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12V	FSP084-DIBAN2 84W	1255900841	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12V	FSP084-DMAA1 84W	1757908403	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19V	FSP120-ABAN2 120W	1255901202	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19V	FSP120-AAB 120W	1757912005	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
24V	SINPRO MPU100-108 100W	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
30V	Xinyue SUNY-PD3002	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 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	Pass	Fail	N/A				
Battery leakage 1. Voltage should be >3V. 2. Calculated result should be > 5 years.	3.09	V	2.3	uA	11.1	years	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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	-1 Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RTC Clock in Power Off Mode		24 hrs	+/-2 sec	0 Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 5.2. Booting Timer Test

Installation	Actual	Note
System Booting Time	6.3 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%	11 Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
60 sec	+/- 10%	62 Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
255 sec	+/- 10%	266 Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note : Under Room Temperature:

## 6. O.S. Compatibility Test

### 6.1. Windows 7 Ultimate English Version 32/64Bit

**Win7(32bit) CPU : Intel Core i7-6700TE, Quad Core (TDP: 35W)**

**Win7(64bit) CPU : Intel Core i3-6100TE, Quad Core (TDP: 35W)**

32bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.1.1(06/03/2015)
Graphics Media	Intel HD Graphics 530 / 20.19.15.4454 (5/4/2016)
Audio Driver	Realtek High Definition Audio 6.0.1.8036 (1/5/2017)
	Intel Display Audio 6.16.0.3196 (3/24/2016)
LAN Driver	Intel® I210 Gigabit Network Connection: 12.13.27.0 (6/5/2015)
ME Driver	Intel Management Engine Interface 11.7.0.1011 (3/14/2017)
64bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.1.1(06/03/2015)
Graphics Media	Intel HD Graphics 530 / 20.19.15.4454 (5/4/2016)
Audio Driver	Realtek High Definition Audio 6.0.1.8036 (1/5/2017)
	Intel Display Audio 6.16.0.3196 (3/24/2016)
LAN Driver	Intel® I210 Gigabit Network Connection: 12.13.27.0 (6/5/2015)
ME Driver	Intel Management Engine Interface 11.7.0.1011 (3/14/2017)

### Install OS to SATA HDD/ mSATA:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows 7 Ultimate ACPI Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### Test Results:

Test Item	Result			Note
	Pass	Fail	N/A	
<b>Single Display</b>				
VGA -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI 1 -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI 2 -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Multi display	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Basic Function Test</b>				
Usable memory	32bit: 2.19GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	64bit: 32GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
USB Mouse and Keyboard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
COM Port Mouse detect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB Removable Devices	USB2.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	USB3.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Safe to remove icon	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>LAN Function Test</b>				
LAN1 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN2 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN3 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN4 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN5 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN6 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN7 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN8 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN9 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Audio Function Test</b>				
Line Out Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Microphone Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Start Menu</b>				

Log off User	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Shut down (S5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sleep (S3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Restart	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hibernate (S4)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 6.2. Windows 8.1 Enterprise English Version 64Bit

**CPU : Intel Core i5-6500TE, Quad Core (TDP: 35W)**

64bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.1.1(06/03/2015)
Graphics Media	Intel HD Graphics 530 / 20.19.15.4454 (5/4/2016)
Audio Driver	Realtek High Definition Audio 6.0.1.8036 (1/5/2017)
	Intel Display Audio 8.20.0.922 (4/16/2016)
LAN Driver	Intel® I210 Gigabit Network Connection: 12.14.7.0 (6/18/2015)
ME Driver	Intel Management Engine Interface 11.7.0.1011 (3/14/2017)

### Install OS to SATA HDD/ mSATA Card:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows8.1 Enterprise 64bit UEFI mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Please use 64bit for UEFI mode installation.

### Test Results:

Test Item	Result			Note		
	Pass	Fail	N/A			
<b>Single Display</b>						
VGA -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
HDMI 1 -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
HDMI 2 -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Multi display	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<b>Basic Function Test</b>						
Usable memory	64bit	32 GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB Mouse and Keyboard			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
COM Port Mouse detect			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB Removable Devices	USB2.0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	USB3.0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Safe to remove icon		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>LAN Function Test</b>						
LAN1 --- Auto			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN2 --- Auto			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN3 --- Auto			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN4 --- Auto			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN5 --- Auto			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN6 --- Auto			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN7 --- Auto			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN8 --- Auto			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN9 --- Auto			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Audio Function Test</b>						
Line Out Test			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Microphone Test			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Start Menu</b>						
Log off User			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Shut down (S5)			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sleep (S3)			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Restart			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hibernate (S4)			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 6.3. Windows 10 Enterprise English Version 64Bit

**CPU : Intel Core i5-6500TE, Quad Core (TDP: 35W)**  
**Intel® Core™ i7-7700T Processor (TDP: 35W)**

64bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.1.1(06/03/2015)
Graphics Media	Intel HD Graphics 530 / 21.20.16.4639 (3/22/2017)
	Intel HD Graphics 630 / 21.20.16.4639 (3/22/2017)
Audio Driver	Realtek High Definition Audio 6.0.1.8036 (1/5/2017)
	Intel Display Audio 10.22.1.97 (12/1/2016)
LAN Driver	Intel® I210 Gigabit Network Connection / 12.15.184.0 (8/4/2016)
ME Driver	Intel Management Engine Interface 11.6.0.1032 (9/15/2016)

#### Install OS to SATA HDD/ mSATA Card:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows10 Enterprise 64bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	UEFI

#### Test Results:

Test Item	Result			Note
	Pass	Fail	N/A	
<b>Single Display</b>				
VGA -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI 1 -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI 2 -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Multi display	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Basic Function Test</b>				
Usable memory	64bit: 32GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
USB Mouse and Keyboard		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COM Port Mouse detect		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TPM2.0 BitLocker Feature		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
USB 2.0	USB2.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Removable	USB3.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Devices	Safe to remove icon	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>LAN Function Test</b>				
LAN1 --- Auto		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LAN2 --- Auto		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LAN3 --- Auto		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LAN4 --- Auto		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LAN5 --- Auto		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LAN6 --- Auto		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LAN7 --- Auto		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LAN8 --- Auto		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LAN9 --- Auto		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Audio Function Test</b>				
Line Out Test		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Microphone Test		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Start Menu</b>				
Log off User		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shut down (S5)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sleep (S3)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Restart		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hibernate (S4)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 7. BIOS Function Test

Configuration	
CPU	Intel® Core™ i7-6700TE Processor 2.40 GHz ( 8M Cache )
Memory	Transcend DDR4 2133 16GB SEC K4A8G085WB * 2pcs
Storage	OCZ / TRN100-25SAT3-240G 2.5" SATA 3 6Gb/s
O.S	Windows 10 Enterprise English Version 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		
* CPU configuration	Info	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Power Manager	Power Mode	AT/ATX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	AC Power Loss	Power on	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Power off	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Last Status	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	S5 RTC Wake up	Wake system with Dynamic time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Wake system with fixed time		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
SIO Config	COM	RS232	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
H/W monitor	Voltage value		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Temp value		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 7.2. Chipset Test

Test Item		Result			Note
		Pass	Fail	N/A	
System Agent (SA) Configuration	Memory Configuration	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Primary Display	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Auto / IGFX / PCI
	Primary IGFX Boot Display	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VBIOS / VGA / HDMI 1 / HDMI 2
PCH-IO Configuration	HD Audio	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Auto / Enabled / Disabled
	Mini-Card 1 Gen Speed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Auto / Gen 1 / Gen2 / Gen3
	Mini-Card 2 Gen Speed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Auto / Gen 1 / Gen2 / Gen3

### 7.3. Boot Test

Test Item (Following item should work properly)		Result			Note
		Pass	Fail	N/A	
Quiet Boot		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Launch PXE ROM		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From Hard Disk		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From USB HDD		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From USB Floppy		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From USB CD-ROM		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot from LAN		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Disable		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 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)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clear date, time, setting, password
Clear CMOS by remove battery(under G3 status)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clear date, time, setting, password
Load default	Date, time, password should be kept	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	BIOS setting should be restored to default.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Boot option priorities should restore from disable to default.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 7.5. AAEON Tag Check Utility

Test Item (Following item should work properly)		Result			Note
		Pass	Fail	N/A	
Check AAEON BIOS OK		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	AONCHECK.EXE

### 7.6. Supervisor / User Password Test

Test Item (Following item should work properly)		Result			Note
		Pass	Fail	N/A	
Administrator Password		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
User Password		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 7.7. Hi-safe Test

Test Item (Following item should work properly)		Result			Note
		Pass	Fail	N/A	
Version(2017.7.26)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
System Information	CPU Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Model Name	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Display Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	RAM Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Support single DIMM
H/W Monitor	Info	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Voltage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WatchDog	10sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actual 11 sec
	1min	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actual 62 sec
	255sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actual 266 sec
	Auto Reload	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SMBus	SMBus IO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SMBus Address 0xA4
	Read Byte	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Slave Address 0x24h
	Read Word	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Result / Read	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 7.9. Negative Test

### 7.9.1 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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 7.9.2 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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	DIO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	SmartFan	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	LVDS Backlight control	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	USB ports	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	DP/HDMI audio	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



## 8. Performance Test

Configuration	
CPU	Intel® Core™ i7-6700TE Processor 2.40 GHz ( 8M Cache )
Memory	Transcend DDR4 2133 16GB SEC K4A8G085WB * 2pcs
Storage	OCZ / TRN100-25SAT3-240G 2.5" SATA 3 6Gb/s
O.S	Windows 10 Enterprise English Version 64Bit

### 8.1. System Performance Test

Test Result: (Display set 1920\*1080 test)

Testing Software	Scope		Note
	AAEON	Ref.	
<b>PCMark 8 v2.7.613 (Creative)</b>			<b>Windows 10 (64bit)</b>
PCMarks	3060		PCMarks
Web Browsing-Jungle Pin	0.314s		
Web Browsing-Amazonia	0.133s		
Video Group Chat v2- Video Group Chat playback1 v2	30.0fps		
Video Group Chat v2- Video Group Chat playback2 v2	30.0fps		
Video Group Chat v2- Video Group Chat playback3 v2	30.0fps		
Video Group Chat v2- Video Group Chat encoding v2	75.0ms		
Photo Editing v2	0.467s		
Batch Photo Editing v2	36.0s		
Video Editing 1 v2	14.7s		
Video Editing 2 v2	194.4s		
Mainstream Gaming part 1	10.0FPS		
Mainstream Gaming part 2	5.1FPS		
Video To Go part 1	6.3s		
Video To Go part 2	8.2s		
Music To Go	11.37s		
Benchmark duration	1h 05min 7s		

Testing Software	Scope		Note
	AAEON_ P2	Ref. AAEON_ P3	
<b>3DMark Basic Edition v2.3.3693</b>			<b>Windows 10 (64bit)</b>
<b>Sky Diver</b>			
Score	4070		
Graphics score	3756		
Graphics test 1	17.31FPS		
Graphics test 2	17.00FPS		
Physics score	7349		
8 threads	123.91FPS		
24 threads	77.70FPS		
48 threads	44.68FPS		
96 threads	24.70FPS		
Combined score	3910		
Combined test	16.09FPS		
<b>Fire Strike</b>			
Score	959		

Graphics score	1045	
Graphics test 1	4.86FPS	
Graphics test 2	4.27FPS	
Physics score	7590	
Physics test	24.10FPS	
Combined score	328	
Combined test	1.53FPS	

Testing Software	Scope		Note
	AAEON	Ref.	
<b>Performance Test 8.0</b>			<b>Windows 10 (64bit)</b>
PassMark Rating	2879		
CPU Mark	6973		
2D Graphics Mark	566		
3D Graphics Mark	1032		
Memory Mark	2177		
Disk Mark	3438		
CD Mark	NA		

## 8.2. Storage Performance Test

SATA Performance				
<b>SATA SSD</b>	OCZ / TRN100-25SAT3-240G 2.5" SATA 3 6Gb/s			
<b>CPU</b>	Intel® Core™ i7-6700TE Processor 2.40 GHz ( 8M Cache )			
<b>Memory</b>	Transcend DDR4 2133 16GB SEC K4A8G085WB * 2pcs			
<b>OS</b>	Windows 10 Enterprise English Version 64Bit			
Item	Comment / (unit)	Software	Score	Note
<b>SATAIII</b>	Maximum Read	ATTO Disk Benchmark	563.1MB/s	SATAII 150~300MB SATAIII up 300M/B
	Maximum Write	ATTO Disk Benchmark	462.8MB/s	

USB3.0/2.0 Performance				
<b>USB Flash</b>	SanDisk / SDCZ80-064G / USB3.0 / 64GB			
Item	Comment / (unit)	Software	Transfer Rate (MB/s)	Note
<b>USB3.0 (CN21_1)</b>	Maximum Read	ATTO Disk Benchmark	265.7MB/s	
	Maximum Write	ATTO Disk Benchmark	122.9MB/s	
<b>USB3.0 (CN21_2)</b>	Maximum Read	ATTO Disk Benchmark	267.6MB/s	
	Maximum Write	ATTO Disk Benchmark	141.7MB/s	
<b>USB3.0 (CN25_1)</b>	Maximum Read	ATTO Disk Benchmark	267.3MB/s	
	Maximum Write	ATTO Disk Benchmark	144.3MB/s	
<b>USB3.0 (CN25_2)</b>	Maximum Read	ATTO Disk Benchmark	267.3MB/s	
	Maximum Write	ATTO Disk Benchmark	146.1MB/s	
<b>USB3.0 (CN25_1)</b>	Maximum Read	ATTO Disk Benchmark	267.3MB/s	
	Maximum Write	ATTO Disk Benchmark	118.7MB/s	
<b>USB3.0 (CN25_2)</b>	Maximum Read	ATTO Disk Benchmark	267.8MB/s	
	Maximum Write	ATTO Disk Benchmark	126.9MB/s	
<b>USB3.0 (CN25_1)</b>	Maximum Read	ATTO Disk Benchmark	267.3MB/s	
	Maximum Write	ATTO Disk Benchmark	123.1MB/s	
<b>USB3.0 (CN25_2)</b>	Maximum Read	ATTO Disk Benchmark	267.3MB/s	

	Maximum Write	ATTO Disk Benchmark	123.1MB/s	
USB2.0 (CN22_1)	Maximum Read	ATTO Disk Benchmark	44.8MB/s	
	Maximum Write	ATTO Disk Benchmark	44.9MB/s	
USB2.0 (CN22_2)	Maximum Read	ATTO Disk Benchmark	44.7MB/s	
	Maximum Write	ATTO Disk Benchmark	44.8MB/s	

mSATA performance				
mSATA	Innodisk full size mSATA.128GB 3ME3			
Item	Comment / (unit)	Software	Transfer Rate (MB/s)	Note
mSATA	Maximum Read	ATTO Disk Benchmark	227.4MB/s	
	Maximum Write	ATTO Disk Benchmark	136.0MB/s	

## 9. Stability test

Configuration	
CPU	Intel® Core™ i7-6700TE Processor 2.40 GHz ( 8M Cache )
Memory	Transcend DDR4 2133 16GB SEC K4A8G085WB * 2pcs
Storage	OCZ / TRN100-25SAT3-240G 2.5" SATA 3 6Gb/s
O.S	Windows 10 Enterprise English Version 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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	RAM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	COM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	GPU	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Video	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	2D	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	3D	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Disk	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Sound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Network <Advanced>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Parallel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	USB	2.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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 >	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 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>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> BIOS select “ power on” or <input type="checkbox"/> 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>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	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.>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	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 version7.0 UEFI

Memory information: xxxx DDRx 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..>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 10. Front Panel Button and Mechanical Check

### 10.1. Front Panel Button Function Test

Test item	Function			Note
	Pass	Fail	N/A	
LCD Power on/off button	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Brightness+ button	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Brightness- button	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Speaker+ button	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Speaker- button	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
EXIT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

### 10.2. Mechanical Check

Test Item	Result			Note
	Pass	Fail	N/A	
System Case construction check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CF/CFast slot construction check	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Expansion slots construction check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I/O symbol check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	