

Report NO: 18E010015

# COM-BT-A30

## COM Express CPU Module

### Board / System Level Product Bulletin Compatibility Test Report

Summary	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input checked="" type="checkbox"/> Pass with Deviation (Comment: 1.COM-BT-A30 未打CPU J1900 Sample , 以N2930 & E3845 CPU 為主測 2. USB 2.0 可移除圖示無法顯示，因不影響功能，下版一並修正 3. BIOS 原LVDS 選項修正 DP/LVDS，因不影響功能，下版一並修正 4. LVDS 640x480 畫面會閃，因未有標準640x480 LVDS Panel，經討論無法判斷為BIOS所造成，如日後有客戶反應，再一並修正			
<b>Test Results Category</b>				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	1	0
Defect Unsolved	0	0	1	0

Issue date	QE Manager	Test Engineer
2018-07-05	KJ Wang	Danny Chen

**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	
01/15/2018	C3	1. Modified PWB test item. 2. Update Benchmark test tool 3. Modified wide voltage test item. 4. Add lperf for LAN performance test. 5. Defined USB3.0 power status. 6. Update POE LAN test item. 7. Add PCIe bear card test. 8. Define booting time test criteria. 9. Add TPM test item. 10. Update CTOS compatibility devices.	

**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	
Product Name	COM-BT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Form Factor	COM Express, Compact Module, Pin-out Type 6 95mm x 95mm (3.75" x 3.75")	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Processor	Intel Valley processors. N2930: Quad core 1.83G/ 7.5W, J1900: Quad Core 2.0G/10W	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chipset	Intel Bay Trail SoC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
System Memory	204-pin SODIMM x 1 supports DDR3L1066/1333, (see appendix 1) => N2930 Max. 8GB => J1900 Max. 8GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VGA/LCD Controller	Intel Valley View processors integrated : CRT: up to 1600x1200@60Hz & 32bpp LVDS(from PTN3460): up to 1920x1200@60Hz & 18/24bpp, Dual link	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LCD Interface	1xLVDS (18/24bit, fromPTN3460)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Digital Display	Type 6 : DDI x 2. 1 x LVDS / eDP (18/24bit, from PTN3460) or DP/DVI/HDMI(DDI2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Shared Memory	Shared system memory above 512MB/ DVMT 5.0 (TBC w/Intel)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPM	Meet TPM V2.0 (optional )	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ethernet	Intel I211/I210, Gigabit Ethernet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I/O Chipset	Bay Trail (By Winbond SIO card on the carrier board)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Watchdog Timer Chipset	Embedded Controller iTE8528 ==> LPC interface	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hardware Monitor Chipset	Embedded Controller iTE8528	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Expansion Interface	7x USB 2.0 1x USB3.0 2x SATAII 4x PCIe1 (one share with Gb LAN) 2x TX / RX (via IT8528E) 1x TPM 2.0 (optional) 1x LPC, 1x SMBUS, 1x I2C	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BIOS	SPI Type	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
EEPROMfi	Atmel AT24C02 (Ref) ==> SOP 8, 2Kb, Serial EEPROM ==> Save BIOS and configuration data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Wake on LAN	YES	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BBS (BIOS Boot Spec.)	YES	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Audio	High definition audio interface	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATA interface	SATA 2.0 port x 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Serial Port	2x TX/RX (via IT8528E)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
GPIO	Up to 4 input and 4 output	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	==> Signals from iTE 8528				
USB	7 x UBS 2.0 1x USB 3.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Power Supply Request	Normal : +12V	<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"/>	
	Windows10 English 64bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Linux	Ubuntu 16.04.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## Platform Information

Item	Device Information	Note
Product of department	ECD	
PCB Model / Version	COM-BT-A30	
CPU Board	COM-BT-A30	
Carrier Board	ECB-920A	
BIOS / Version	COM-BT R3.2 (CMBTAM32)(06/21/2018)	
Driver folder	20180622	
CPU Type	Intel Atom® Processor E3845 (2M Cache, 1.91 GHz)	
Memory Type	Transcend DDR3L-1600 8GB(SEC 443 BYKO K4B4G0846D)	
SATA HDD	Innodisk 3MG2-P / 2.5" SATA SSD 64GB	
SATA DVD-ROM	LITE-ON Mode : HAS124	
USB DVD-ROM	Pioneer DVR-XU01TW	
LCD Monitor	ViewSonic VP2270 27" LED	
LVDS	AUO M215HW03 V1 / 21" / 1920*1080 / 48bit	
Operating System	<input checked="" type="checkbox"/> English Ubuntu16.04 Kernel 4.4.0-21-generic x86_64	
	<input checked="" type="checkbox"/> Windows 7 Ultimate SP1 32/64Bit	
	<input checked="" type="checkbox"/> Windows 10 Enterprise English Version 2018062264Bit	
Power Supply	ATX Power Supply : SeaSonic SSR-550RM 550W 80plus Gold	
<b>Chipset Information</b>		
Chipset	Intel Bay Trail	
Super IO Chipset	ITE 8528	
Audio Chipset	High definition audio interface	
Ethernet Chipset	Intel I211 / 210	

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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® Celeron® Processor N2930 (2M Cache, up to 2.16 GHz)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Intel Atom® Processor E3845 (2M Cache, 1.91 GHz)	<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>DDR3L SO-DIMM</b>					
Transcend DDR3L-1600 2GB(SEC 501 BYMA K4B2G0846Q)	AP-DR968D3002GK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*
Transcend DDR3L-1600 4GB(SEC 446 XYKO K4B4G0846D)	AP-DR968D3004G6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transcend DDR3L-1600 8GB(SEC 443 BYKO K4B4G0846D)	968D3008G7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
InnoDisk DDR3L-1600 2GB(SEC 434 BYKO K4B2G0846Q)	AP-DR968D3002GX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
InnoDisk DDR3L-1600 4GB(SEC K4B4G0846E)	968D3004GZ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
InnoDisk DDR3L-1600 8GB(SEC K4B4G0846E)	968D3008GW	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DSL DDR3L 2GB (Hynix H5TC2G83EFR PBA 247EA)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
KingSton DDR3L 1600 4GB D5128ED1FPGGBU	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ADATA DDR3L-1600 4GB(Micro 3YE17 D9QBJ)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Innodisk DDR3L 1333 2GB Hynix H5TC2G83EFR	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DSL DDR3L 1333 4GB Hynix H5TC4G83AFR	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Innodisk DDR3L 1333 8GB H5TC4G83AFR	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transcend DR3L 1866 4GB Micron.MT41K512M8DA	AP-DR968D304G0W	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Innodisk DR3L 1866 4GB Samsung.K4B4G0846X.	AP-DR968D304G0V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Innodisk DR3L 1866 8GB Samsung.K4B4G0846X	AP-DR968D308G0C	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 1.3. SATA Compatibility Test

### 1.3.1 Onboard SATA(AHCI) Test

SATA Device Information (Information and size should show correct value with AHCI mode)	AAEON P/N	Result			Note
		Pass	Fail	N/A	
Main Board project test with 80~100cm SATA cable , typical #1709070800					

SATAII	Seagate 2.5" SATAII ST9120823AS 120GB 5400rpm	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATAII	Toshiba 2.5" SATAII MK1676GSX 160GB 5400rpm	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATAIII	TOSHIBA 3.5" SATAIII HDS721010DLE630 1TB 7200rpm	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATAIII	WD 3.5" SATAIII WD20EZRX 2TB 7200rpm	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATAIII	Seagate 3.5" SATAIII ST3000DM001 3TB 7200rpm	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DVD	LITE-ON Mode : HAS124		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	Transcend ,TS512GSSD420K-AA 512GB MLC	968C512G06	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	Phison SSBP064GTB3C0-S11 64GB ,3D TLC	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	Intel SSD 540s Series 120GB	AP- SS968C120G08	<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	Innodisk 3MG2-P MLC 16GB DGS25-16GD81BC3SC-26	AP- SS968C016G3K	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	Innodisk 3MG2-P MLC 32GB DGS25-32GD81BC3DC-26	AP- SS968C032G1P	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	Innodisk 3MG2-P MLC 64GB DGS25-64GD81BC3QC-26	968C064G39	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	Innodisk 3MG2-P MLC 128GB DGS25-A28D81BC3QC-26	AP- SS968C128G1P	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	Innodisk 3MG2-P MLC 256GB DGS25-B56D81BC3QC-26	AP- SS968C256G16	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 1.4. Power Supply Compatibility Test

Power Supply Information a. System boot to OS should work properly. b. System OS shutdown function should work properly.	Result			Note
	Pass	Fail	N/A	
SeaSonic SSR-450RM 450W 80plus Gold	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FSP AS550 550W 80plus Gold	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler Master RS-750-AMAA-G1 750W 80plus Gold	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SeaSonic SSR-550RM 550W 80plus Gold	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 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				
ViewSonic VP2770	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ASUS VE228	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DELL U2713HM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Display port				
*Samsung LU28D	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DELL U2713HM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ViewSonic VP2770	<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 Atom® Processor E3845 (2M Cache, 1.91 GHz)																			
Memory	Transcend DDR3L-1600 8GB(SEC 443 BYKO K4B4G0846D)																			
SATA HDD	Innodisk 3MG2-P MLC 64GB DGS25-64GD81BC3QC-26																			
VGA	ViewSonic VP2770-LED																			
Display port	DELL P2415Q LED																			
LVDS / eDP	AUO M215HW03 V1 / 21"/ 1920*1080 / 48bit																			
Operating system	Windows 10 Enterprise English 64bit (1703)																			
Color Quality	<input checked="" type="checkbox"/> 16bit <input type="checkbox"/> 24bit <input checked="" type="checkbox"/> 32bit																			
Resolution	VGA			DDI 1 / DDI 2			LVDS			Note										
	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A											
800X600	<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"/>	<b>SW1</b> <table border="1"> <tr> <td>OFF</td> <td>ON</td> </tr> <tr> <td>1 DP/HDMI[1](Default)</td> <td>eDP on MB(Optional)</td> </tr> <tr> <td>2 DP/HDMI[2](Optional)</td> <td>LVDS(Default)</td> </tr> <tr> <td>3 ATX(Default)</td> <td>AT</td> </tr> <tr> <td>4 Normal(Default)</td> <td>Clear CMOS</td> </tr> </table>	OFF	ON	1 DP/HDMI[1](Default)	eDP on MB(Optional)	2 DP/HDMI[2](Optional)	LVDS(Default)	3 ATX(Default)	AT	4 Normal(Default)	Clear CMOS
OFF	ON																			
1 DP/HDMI[1](Default)	eDP on MB(Optional)																			
2 DP/HDMI[2](Optional)	LVDS(Default)																			
3 ATX(Default)	AT																			
4 Normal(Default)	Clear CMOS																			
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"/>											
1152X864	<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"/>											
1280X720	<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"/>											
1280X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
1280X800	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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"/>											
1360X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
1366X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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"/>											
1600X1200	<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"/>											
1680X1050	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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"/>											
1920X1200	<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"/>											
2048X1280	<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"/>											
2560X1440	<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"/>											
3840 X 2160	<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"/>											
EDID check	<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 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"/>											
DOS Display	<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"/>											

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 + DDI 1	<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 + DDI 2	<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	DDI 1 + DDI 2	<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	DDI 1 + LVDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DDI2 & LVDS colay by SW1
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone	VGA + LVDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 2.1.3. Boot up Without Display Test

Process step:

1. 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"/>	
	Display port 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Display port 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 2.1.4. LCD Panel Test

ECD standard connector

LVDS Panel Model (LVDS display should full screen and no flicker)			Result			Note
			Pass	Fail	N/A	
18bit	800x600	AUO G084SN05 V.8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	1024x768	AUO LED backlight G121XN01-V0 1024*768 18bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	1280x800	HannStar HSD101PWW1 R0-A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
24bit	1366x768	AUO G185XW01 V0 / 18" / 1366x768 / 24bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
48bit	1920x1080	AUO M215HW03 V1 / 21" / 1920*1080 / 48bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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"/>	
Line In	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
MICROPHONE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DP 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		Intel I211 Gigabit Network Connection					MAC Address		00-01-A1-22-24-42	
LAN Speed	Link / Speed LED	Active LED	LAN 1			LAN 2			Note	
			Pass	Fail	N/A	Pass	Fail	N/A		
1000Mbps Ping loss ≤ 1			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
100Mbps Ping loss ≤ 1			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
10Mbps Ping loss ≤ 1			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	S4		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	S5		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
LAN Boot (PXE) (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"/>		
Internet Browser (DHCP Server) (Visit the website should work properly)			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Iperf (Ubuntu) \$sudo iperf3 -c xx.xx.xx.xx -w 100M -i 1 -t 60 (Gigabit LAN bandwidth should > 900Mbps)			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

### 2.4. COM Ports Test

[ x ] No Support

Test Item	Result			Note
	Pass	Fail	N/A	
Serial Modem Dial Out	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Serial Modem Ring In	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Note: Only support Tx/Rx

### 2.5. Digital I/O Test

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

## 2.6. 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"/>	
USB2.0 Flash:	Kingston 512MB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB3.0 Flash	Transcend 128GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Transcend 32GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Transcend 8GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB DVD ROM:	AOpen EDR8865U	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB keyboard:	Logitech K200	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB mouse:	Logitech M-U0026	<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:	Axpro 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	
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"/>	

## 2.7. TPM Function Test

Test item		Result			Note
		Pass	Fail	N/A	
TPM driver and version check in device manager		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPM Administration	TPM Information check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Clear TPM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BitLocker Test	Encryption test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Recovery key test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Decryption test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note TPM function for Option

## 2.8. Jumper and Connector Function Test

[ ] No Support

Test item		Result			Note
		Pass	Fail	N/A	
LVDS voltage jumper support 3.3V / 5V selection.		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Inverter voltage jumper support 5V / 12V selection.		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Brightness control jumper	PWM mode support 0~100% modulation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	DC mode support 0~100% modulation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
COM_VSET jumper support 12V / 5V / RI		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	No memory found: One long beep, two short beep, pause a period of time, and loop.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 Windows environment.		<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 access	SATA: Active	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CPU FAN	full speed can meet FAN specification	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 3. Expansion card and Application Test

#### 3.1. PCI Express Bear Card Test

Test point: Make sure PCIe power, wake# and MLW are correct.

Test item		Result			Note
		Pass	Fail	N/A	
PCIe x1 bear card	12V, 3.3V, Reset Power LED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Wake #	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Max Link Width test result GEN2 / x1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

#### 3.2. Expansion Slot Compatibility Test

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

PCI-Express x1 card PCIe X 4 to PCIe X 1 to 3 slots		Result			Note
		Pass	Fail	N/A	
Intel GIGABIT CT DESKTOP ADAPTER		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DigiFusion PCIe GIGA LAN (Realtek RTL8111F)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Broadcom GIGA LAN card / NIC-1020TIB2		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Uptech UTB242 USB3.0 4 port (TI TUSB7340)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DigiFusion PCI-e USB3.0 PTU302A		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Moxa multi serial card		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SFPX84 A8.2 PCI-e x1 Graphics card		<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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	OS display	Full screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DP to DVI converter: LPC-1503	DOS display	Full screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	OS display	Full screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max resolution:

## 4. Power Consumption Test

Configuration	
CPU	Intel Atom® Processor E3845 (2M Cache, 1.91 GHz)
Memory	Transcend DDR3L-1600 8GB(SEC 443 BYKO K4B4G0846D)
Storage	Innodisk 3MG2-P MLC 64GB DGS25-64GD81BC3QC-26
O.S	Windows10 Enterprise English 64bit (1703)

### 4.1. Power Consumption

Test Equipment					
Equipment	Electric meter				
Manufacturer	HOLA				
Model name	DM-1240				
Test Environment					
power supply	SeaSonic SSR-550RM 550W 80plus Gold				
Power Supply	Current	P		Note	
(Full Loading Mode) Windows with Prime 95 Full Loading Test	(+12 V) 0.64 A	7.68	W		
Full Loading Total Watt	7.68 (W)				
S3 mode: Measure the current value when system in S3 mode of windows and without running any	(+12 V) 0.32 A	3.84	W		
Suspend Total Watt	3.84 (W)				
Win. Idle mode: Measure the current value when system in windows mode and without running any program	(+12 V) 0 A	0	W		
Idle Total Watt	0 (W)				
S5 mode: Measure the current value when system in S5 mode of windows and without running any	(+12 V) 0 A	0	W	Erp disable	
Suspend Total Watt	0 (W)				

### 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				
(+) 12V Actual and monitor must be ±5%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12.22 V	12.2	V	
(+) 5V Actual and monitor must be ±5%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.078 V	5.065	V	
(+) 3.3V Actual and monitor must be ±5%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.264 V	3.405	V	

(+) VMEM Actual and monitor must be ±5%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.366	V	1.364	V	
5VSB Actual and monitor must be ±5%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.072	V	5.036	V	
VCORE Actual and monitor must be ±5%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0.824	V	0.817	V	
System Fan1 Speed Actual and monitor must be ±10%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4464	rpm	4500	rpm	
CPU DTS Temp Actual and monitor must be ±15°C	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	58	°C	65	°C	
System Temp Actual and monitor must be ±5°C	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	41	°C	38	°C	

### 4.3. 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.	3.03	V	2	uA	12	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 Time Test

Installation	Criteria	Actual		Note
System Booting Time < Press the Power Button till "Beep" Sound or display appears >	Booting time $\leq$ 12sec, Pass Booting time 13~20 sec, Enhancement Booting time > 20sec, Fail	8	Sec	

### 5.3. Watchdog Timer Test

Use Function as below: Hi-Safe 2014.07.25

[ ] 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%	260	Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 6. O.S. Compatibility Test

### 6.1. English Ubuntu16.04.2 Kernel 4.8.0-36-generic x86\_64

Driver Information:

Chipset Software	System default
Graphics Media	System default
Audio Driver	System default
LAN Driver	lgb 5.3.5.18

Install OS to SATA HDD :

Installation	Result			Note
	Pass	Fail	N/A	
English Ubuntu16.04.2 Kernel 4.8.0-36-generic x86_64	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Type uname -a

Test Result:

Test Item	Result			Note
	Pass	Fail	N/A	
<b>Display Function Test</b>				
VGA – Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DP – Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LVDS -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DP1 + DP2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DP2 & LVDS colay by SW1
DP1 + VGA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DP1 + LVDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VGA + LVDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Network Function Test</b>				
Connect to Internet – LAN 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Audio Function Test</b>				
Play Audio Function Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Play Audio Test
DP audio function Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Base Function Test</b>				
Mouse Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Keyboard Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Console Redirection	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
DVD-ROM Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	USB
USB 2.0/3.0 Removable Devices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>X Windows Application</b>				
Start Button Office	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Office function
X-Window	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Startx – Desktop in Linux
<b>Command Test On Text Mode: Attention Delay Phenomenon</b>				
uname -a	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Show information
Shutdown	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Init 0 or shutdown -h now
Restart the Computer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Init 6 or shutdown -r now
Suspend	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Suspend icon
ls / clear .....; cd /dev /ls -l	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Command instruction

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

32bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.0 ( 2014-04-24 )
Graphics Media	Intel Atom Processor E3800 Series / Intel Celeton Processor N2920/J1900 37.15.0.1091(6-26-2014)
Audio Driver	Intel @ Display Audio 6.16.0.3145 (4/17/2014) High Definition Audio 6.1.7601.17514 (11/19/2010)
LAN Driver	Intel @ I211 Gigabit Network Connection 12.11.97.0 (3/11/2014)
64bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.0 ( 2014-04-24 )
Graphics Media	Intel Atom Processor E3800 Series / Intel Celeton Processor N2920/J1900 37.15.0.1091(6-26-2014)
Audio Driver	Intel @ Display Audio 6.16.0.3145 (4/17/2014) High Definition Audio 6.1.7601.17514 (11/19/2010)
LAN Driver	Intel @ I211 Gigabit Network Connection 12.11.97.0 (3/11/2014)

### Install OS to SATA HDD:

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"/>		
DP -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
LVDS -- 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: 2.91MB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	64bit: 8GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PS/2 Mouse and Keyboard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
USB Mouse and Keyboard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
COM Port Mouse detect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
LPT1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	Pass with Deviation
Touch Function	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
TPM 1.2 detection.	<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"/>		
<b>Audio Function Test</b>					
Line Out Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Line In Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Microphone Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
S/P DIF Test	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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

64bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.0 ( 2014-04-24 )
Graphics Media	Intel @ HD Graphics 10.18.10.3740 ( 7-4-2014)
Audio Driver	Intel @ Display Audio 6.16.0.3145 (4/17/2014) High Definition Audio 10.0.15063.0 (3/17/2017)
LAN Driver	Intel @ I211 Gigabit Network Connection 12.11.97.0 (3/11/2014)

#### Install OS to SATA HDD :

Installation	Result			Note
	Pass	Fail	N/A	
English Windows10 Enterprise 64bit UEFI	<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"/>		
DP -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
LVDS -- 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: MB	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	64bit: 8GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PS/2 Mouse and Keyboard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
USB Mouse and Keyboard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
COM Port Mouse detect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
LPT1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	Pass with Deviation
Touch Function		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
TPM 1.2/2.0 detection.		<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"/>	
<b>Audio Function Test</b>					
Line Out Test		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Line In Test		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Microphone Test		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S/P DIF Test		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 Atom® Processor E3845 (2M Cache, 1.91 GHz)
Memory	Transcend DDR3L-1600 8GB(SEC 443 BYKO K4B4G0846D)
Storage	Innodisk 3MG2-P MLC 64GB DGS25-64GD81BC3QC-26
O.S	Windows 10 Enterprise English 64bit (1703)

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	Intel Virtualization Tech	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enable/Disable	
	EIST	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
IDE Configuration	AHCI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	IDE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
USB Configuraton		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enable/Disable/Auto	
On-Module H/W Monitor	PC Health Status	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
CPU Smart FAN	Full Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Manual Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Auto Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Digital IO	GPI0 ~ GPI3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	GPO0 ~ GPO3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Restore 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 State	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Power Mode	ATX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	AT	Auto power on	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
		PWB no function	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
		Disable S3/S4	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
		PWR LED and FAN still running when S5 shutdown.	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
		Support UEFI and legacy mode.	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
RTC Wake System from S5	Fixed Time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Dynamic Time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
SIO Configuration	Serial Port 9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enable/Disable	
	Serial Port 10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enable/Disable	
Trusted Computing	TPM SUPPORT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Clear TPM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

### 7.2. Chipset Test

Test Item (Following item should work properly)		Result			Note	
		Pass	Fail	N/A		
North Bridge	Primary display	VBIOS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		CRT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		LVDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		DP / HDMI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Second display	Disable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		CRT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		LVDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

		DP / HDMI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	LVDS Panel type	640x480	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pass with Deviation
		800x480	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		800x600	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1024x600	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1024x768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1280x768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1280x800	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1280x1024	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1366x768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1440x900	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1600x1200	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1920x1080	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1920x1200	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Brightness	0~100%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LVDS	Normal / inverted	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
* Memory Configuration		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
South Bridge	Audio Controller	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

### 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 OpROM	<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 CDROM	<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 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 <b>disable</b> to default.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note: 1. Clear CMOS by battery from ECB-920 / 2. Clear CMOS by Jumper from COM-BT & ECB-920 Jumper

### 7.5. AAEON Tag Check Utility

Test Item (Following item should work properly)	Result			Note
	Pass	Fail	N/A	
Check AAEON BIOS OK	<input checked="" 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 V2.2014.07.25	<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"/>	
H/W Monitor	Info	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Fan Speed	<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"/>	
DIO	DIO1~4 High	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	DIO1~4 Low	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	DIO5~8 High	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	DIO5~8 Low	<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 62sec
	255sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actual 260sec
	Auto Reload	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SmartFan	Speed Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	OFF Speed TMP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Full Speed TMP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SMBus	Device Address	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SMBus Address 0xE000
	Read Byte	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Slave Address A0h
	Read Word	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Result / Read	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Backlight controller	PWM mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Brightness 0~100	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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

#### 7.8.2 Suspend S3 Negative Test

	Result	Note

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

7.8.3 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 Atom® Processor E3845 (2M Cache, 1.91 GHz)
Memory	Transcend DDR3L-1600 8GB(SEC 443 BYKO K4B4G0846D)
Storage	Innodisk 3MG2-P MLC 64GB DGS25-64GD81BC3QC-26
O.S	Windows 10 Enterprise English 64bit (1703)

### 8.1. System Performance Test

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

Testing Software	Criteria	Result		
		Pass	Fail	N/A
<b>PCMark 8 Creative / Run Conventional</b>	1. No error or hang during test. 2. To compare with reference score and the deviation should < -20%.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>Score</b>	<b>Note</b>		
PCMarks	1028	Reference score:		
Test duration	112 min 16 s			
Web Browsing-Jungle Pin	0.54113s			
Web Browsing-Amazonia	0.18433s			
Video To Go part 1	16.45567s			
Video To Go part 2	26.56633s			
Music To Go	40.11600s			
Video Editing 4k part 1 conventional	48.45839s			
Video Editing 4k part 2 conventional	688.31119s			
Mainstream Gaming part 1	1.31FPS			
Mainstream Gaming part 2	0.62FPS			
Video Group Chat v2- Video Group Chat playback1 v2	29.99fps			
Video Group Chat v2- Video Group Chat playback2 v2	29.99fps			
Video Group Chat v2- Video Group Chat playback3 v2	29.99fps			
Video Group Chat encoding v2	284.00000ms			
Advanced Photo Editing1	1.89110s			
Advanced Photo Editing2	139.64635s			

<Remark: reference score is from AAEON benchmark score table.>

Testing Software	Criteria	Result		
		Pass	Fail	N/A
<b>3DMark-v2-3-3693 \ Sky Diver</b>	1. No error or hang during test. 2. To compare with reference score and the deviation should < -20%.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>Score</b>	<b>Note</b>		
Score	531	Reference score:		
Graphics score	472			
Graphics test 1	2.18 FPS			
Graphics test 2	2.13 FPS			
Physics score	1455			
8 threads	26.00 FPS			
24 threads	00 FPS			
48 threads	00 FPS			

96 threads	00 FPS	
Combined score	528	
Combined test	2.17 FPS	

Testing Software	Criteria	Result		
		Pass	Fail	N/A
Performance Test 8.0	1. No error or hang during test. 2. To compare with reference score and the deviation should < -20%.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>Score</b>	<b>Note</b>		
PassMark Rating	684	Reference score:		
CPU Mark	1699	Reference score:		
2D Graphics Mark	145			
3D Graphics Mark	155			
Memory Mark	740			
Disk Mark	1692			

### 8.2. Performance of Storage Interface Test

SATA Performance				
SATA SSD	Innodisk 3MG2-P MLC 64GB DGS25-64GD81BC3QC-26			
CPU	Intel Atom® Processor E3845 (2M Cache, 1.91 GHz)			
Memory	Transcend DDR3L-1600 8GB(SEC 443 BYKO K4B4G0846D)			
OS	Windows 10 Enterprise English 64bit (1703)			
Item	Comment / (unit)	Software	Score	Note
SATAIII ports	Maximum Read	ATTO Disk Benchmark	268MB/s	SATAII 150~300MB SATAIII up 300M/B
	Maximum Write	ATTO Disk Benchmark	94MB/s	

USB3.0/2.0 Performance				
USB Flash	Transcend USB3.0 32GB			
Item	Comment / (unit)	Software	Transfer Rate (MB/s)	Note
USB3.0 ports	Maximum Read	ATTO Disk Benchmark	108MB/s	
	Maximum Write	ATTO Disk Benchmark	70MB/s	
USB2.0 ports	Maximum Read	ATTO Disk Benchmark	39MB/s	
	Maximum Write	ATTO Disk Benchmark	34MB/s	

## 9. Stability test

Configuration	
CPU	Intel Atom® Processor E3845 (2M Cache, 1.91 GHz)
Memory	Transcend DDR3L-1600 8GB(SEC 443 BYKO K4B4G0846D)
Storage	Innodisk 3MG2-P MLC 64GB DGS25-64GD81BC3QC-26
OS	Windows10 Enterprise English 64bit (1703)
Environment	Under room temperature.

### 9.1. Run In Test

OS: Windows 10 Enterprise English 64bit

Test Item	Result			Note	
	Pass	Fail	N/A		
Burn In Test V8.1( 1025 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"/>	Speed Set "Cycle to 115200."
	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"/>	

### 9.2. Reboot Test

OS: Windows 10 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

OS: DOS or UEFI shell

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 ;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> BIOS select " power on" or

Power off-- 20sec. <Criteria: a. loss rate: 0 /1000 times. b. RTC date and time should not loss.>				<input type="checkbox"/> Jumper setting auto power button
G3(AC loss) cold boot over 20 cycles Setting: Power on- 40sec ; Power off- 5sec. <Criteria: a. loss rate: 0 /20 times. b. RTC date and time should not loss.>	<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

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

OS: UEFI

Tool: Passmark Memtest version7.0 UEFI

Memory information: Transcend DDR3L-1600 8GB(SEC 443 BYKO K4B4G0846D)

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

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"/>	