

Report NO: 16E010017

# PICO-BSW1

## Intel Braswell SoC PICO-ITX Board

### Board Level Product 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
Defect Found	0	0	0	0
Defect Unsolved	0	0	0	0

Issue date

2016-10-18

QE Manager

KJ Wang

Test Engineer

Anderson Lin

**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.	

**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	
Form Factor	PICO-ITX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Processor	Intel Braswell SoC N3710/N3160/N3060 Processors and X5-E8000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
System Memory	204-pin DDR3L 1600/1333MHz SODIMM x 1, Max up to 8GB.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chipset	Intel Braswell SOC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Super I/O	Fintek F81801	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Network	1 x Realtek RTL-8111E, 10/100/1000Base	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Wake on LAN	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BIOS	Interface – SPI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Capacitor – AMI BIOS -	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Watchdog Timer	Chipset – Braswell SoC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Function – Fintek F81801	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RTC	Chipset – Braswell SoC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
H/W Status Monitor	Chipset – Braswell SoC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Expansion	1 x mSATA/Mini Card ( Default mSATA , Full size) 1 x MiniCard (half size )	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Power Supply Request	+12V DC, AT or ATX (default and supports external +5V stand-by power input)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Display	Support CRT/TFT LCD/DP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Display Chipset	Intel Braswell Soc Processors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Display Memory	Memory integrated graphic	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Resolution	LVDS (18/24bit) up to 1920 x1200@ 60Hz [select by BIOS or jumper] HDMI up to 3840 x 2160 @ 30Hz; 2560 x 1600 @ 60Hz	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LCD Brightness	1. PWM mode is default setting, but it can be configured into voltage mode with jumper selection. 2. The resolution of the brightness level is 10 levels, and the default setting is 80% of full scale.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Storage	1 x SATA III	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Solid Storage Disk interface	1 x mSATA/MiniCard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Serial Port	2 x COM ports: internal pin headers (F81801 chipset) for 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	COM ports COM 1: RS-232 COM 2: RS-232/RS-422/RS-485 (Ring/+5V /+12V and modify by BOM Change)				
	RS-232 x 1, RS-232/422/485 (auto flow) x1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB	1 x USB 3.0/2.0 Ports (by Real IO) ; 1 x USB 2.0 Ports (by Real IO)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	USB 3.0/2.0 x 1 USB 2.0 x 1 BIO reserve USB 3.0/2.0 x1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Digital I/O	2 IN/ 2 OUT (Default)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	4 ch Digital I/O (Programmable)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Audio	HD Audio Codec (Realtek ALC892)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Audio Function (1x Line out)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BIO	The BIO use the 80-pins connector: 1. USB 3.0 (w/USB 2.0) x1 2. PCIe x1 ( => GbE x1 or MiniCard x1) 3. Line - out x1 4. SMBus x1 5. GPIO x1 6. LPC x1 ( Reserve only) 7. DDI x1 => HDMI or LVDS (2CH)	<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 32/64bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Windows10 English 32/64bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Linux	Linux	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### Platform Information

Item	Device Information	Note
Product of department	ECD	
PCB Model / Version	PICO-BSW1	
CPU Board	PICO-BSW1	
BIOS / Version	PICO-BSW1 R1.1 (ZBW1AM11)(09/12/2016)	
Driver folder	PICO-BSW1 20160818	
CPU Type	Intel © Pentium CPU N3160 @ 1.60GHz	
Memory Type	Transcend DDR3L-1600 8GB(SEC 443 BYKO K4B4G0846D)	
SATA HDD	Transcend.TS64GSSD370 2.5".64GB. SATA III.SSD.MLC	
USB DVD-ROM	Pioneer Blu-ray Disc BD ROM	
LCD Monitor	Samsung LU28D ViewSonic VP2770-LED DELL U2713HM-LED ASUS PA238-LED Dell UZ2315H-LED	
LVDS	AUO M215HW03 V1 / 21" / 1920*1080 / 48bit AUO G185XW01 V0 / 18" / 1366x768 / 24bit AUO LED backlight G121XN01-V0 1024*768 18bit	
Expansion Board	N/A N/A	
Operating System	<input checked="" type="checkbox"/> Ubuntu 15.10 Kernel 4.2.0-16-generic <input checked="" type="checkbox"/> Windows 7 Ultimate SP1 32/64Bit <input checked="" type="checkbox"/> Windows 8.1 Enterprise English Version 32/64Bit <input checked="" type="checkbox"/> Windows 10 Enterprise English Version 32/64Bit	
Power Supply	ATX Power Supply : FSP AURUM S Series AS-550 / 550W	
<b>Chipset Information</b>		
Chipset	Intel Braswell SOC	
Super IO Chipset	F83801	
Audio Chipset	Realtek ALC892	
Ethernet Chipset	RTL-8111E	

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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 ® Atom X5-E8000 CPU @ 1.04GHz	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Intel ® Celeron CPU N3160 @ 1.60GHz	<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. Memtest result should not error or halt)	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"/>	*
InnoDisk DDR3L-1066 2GB		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SD3-201338
InnoDisk DDR3L-1066 4GB		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SD3-201339
Transcend DDR3L-1333 4GB		<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 4GB(SEC 522BYKOK4B4GO846E)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SD3L-S26
InnoDisk DDR3L-1600 8GB(SEC 525BYKOK4B4GO846E)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SD3L-S31
DSL DDR3L 1600 8GB (SEC-K4B4G0846G)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 1.3. SATA Compatibility Test

### 1.3.1 Onboard SATA 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	
SATAII	TOSHIBA MK1676GSX 160GB		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATAII	TOSHIBA MQ01AAD010C 100GB		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATAII	TOSHIBA MK3276GSX 320GB		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATAIII	HGST HTS725050A7E630 / 500GB		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	Crucial CT256M550SSD1 2.5" SATA3 SSD.256GB		<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"/>	
ODD	DH-24ACSH		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 1.3.2 Onboard SATA (RAID) Test

[ x ] Not Support

SATA RAID Test (RAID function should work properly)		Result			Note
		Pass	Fail	N/A	
RAID-0 (HDDx2) Striping/Span Test	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RAID-1 (HDDx2) Mirror Test	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RAID-5 (HDDx3) Striping/Span Test Rotation Parity	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RAID-10 (HDDx3) Striping/Span Test Mirroring	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	4	<input 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"/>	

### 1.5. 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"/>	



SeaSonic SSR-550RM 550W 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"/>	
FSP AURUM S Series AS-550 / 550W	<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>				
HDMI (Test with 5M HDMI cable)				
Samsung U28D590	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3840 X 2160
ViewSonic VP2770-LED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DELL U2713HM-LED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Samsung SyncMaster BX2450	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 2. Basic Function Test

### .1. Video Function Test

#### 2.1.1. Single Output Function Test

Configuration													
CPU	Intel ® Braswell CPU N3160 @ 1.60GHz												
Memory	DSL DDR3L-1600 8GB 1.35V												
M-SATA	InnoDisk 3ME3 128GB												
HDMI	Samsung SyncMaster BX2450												
LVDS	AUO M215HW03 V1 / 21"/ 1920*1080 / 48bit												
Operating system	Windows 10 Enterprise English 64bit SP1												
Color Quality	<input type="checkbox"/> 16bit <input type="checkbox"/> 24bit <input checked="" type="checkbox"/> 32bit												
Resolution	HDMI			DVI			HDMI1/HDMI2			LVDS			Note
	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	
800X480	<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"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
800X600	<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"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1024X768	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X600	<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"/>	
1280X720	<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"/>	
1280X768	<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"/>	<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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X1024	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1360X768	<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"/>	
1366X768	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1440X900	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1600X1200	<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"/>	
1680X1050	<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"/>	
1792X1344	<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"/>	
1856X1392	<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"/>	
1920X1080	<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"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1920X1200	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1920X1440	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2048X1152	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2560X1440	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3840 X 2160	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
EDID check	<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"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot plug	<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"/>	<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 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"/>	
DOS Display	<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"/>	<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	HDMI + 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. 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	

### 2.1.4. LCD Panel Test

LVDS Panel Model (LVDS display should full screen and no flicker)			Result			Note
			Pass	Fail	N/A	
18bit	800x480	AM800480STMQWA1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Inverter
	800x600	AUO G084SN05 V.7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Inverter
	1024x768	AUO LED backlight G121XN01-V0 1024*768 18bit	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	1280x768	LTD121EX1S /12.1"/1280 x 768 x 18bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.3V
24bit	1024x768	AU M150XN07 V.2 / 15" / 1024x768 /	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	1366x768	AUO G185XW01 V0 / 18" / 1366x768 /	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
48bit	1920x1080	AUO M215HW03 V1 / 21"/ 1920*1080 / 48bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Inverter :12V,Vc c:5V







## 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"/>	
HDMI Audio Output	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Line In	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
MICROPHONE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>

## 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		Realtek RTL-8111E 10/100/1000 Base				MAC Address		00-E0-4C-68-00-06	
LAN Speed	Link / Speed LED	Active LED	LAN 1			LAN 2			Note
			Pass	Fail	N/A	Pass	Fail	N/A	
1000MBps			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
100MBps			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
10MBps			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wake On LAN			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>S3/S4/S5/Bios</b>
LAN Boot (PXE)			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Internet Browser (DHCP Server)			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Access 1GB file. Download from ftp http://XXX.XX.14.125/			<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

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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test by Modem
Serial Modem +12V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test by Multimeter
Serial Modem +5V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test by Multimeter
Transmission Test <115200bps / 15M>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9600 / 115200

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

Test Item	Result			Note
	Pass	Fail	N/A	
RS-422 for COM2	<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
RS-485 for COM2	<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

**Note : When test RS-485 function , two workstation BIOS serial port mode need set to "RS485 Receiver half duplex"**

### 2.6. LPT Port Test

Test Item	Result			Note
	Pass	Fail	N/A	
XEROX Phaser 3124 Laser Printer	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

### 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"/>	5V

### 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:	Toshiba 1 TB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB Flash:	Sony 128GB USB3.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Sandisk 16GB USB3.0	<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 / Microsoft 600	<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 / Microsoft	<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:	Powersync	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<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		
Auto Power Button Selection and Clear CMOS Jumper	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
LVDS Port Backlight Lightness Control Mode Selection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
COM2 Pin8 Function Selection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Front Panel Connector	PWR_BTN	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	HDD_LED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	SPEAKER	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	PWR_LED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	H/W RESET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LVDS Port VDD and Backlight Inverter VCC Selection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

### 3. Expansion card and Application Test

#### 3.1. Expansion Slot Compatibility Test

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

Mini PCI Express Card		Result			Note
		Pass	Fail	N/A	
Half size	Qualcomm Atheros AR946x Wireless Network Adapter	<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	AzureWave AW-NE768 802.11b/g/n PCI-e Wireless	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Half size	AzureWave AW-NB041H 802.11b/g/n PCI-e Wireless	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Half size	RAK-RT3092 802.11b/g/n PCI-e Wireless	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Half size	AzureWave AW-NB159H Realtek RTL8723BE 802.11b/g/n combo module	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 4. Power Consumption Test

Configuration	
CPU	Intel ® Braswell CPU N3160 @ 1.60GHz
Memory	DSL DDR3L-1600 8GB 1.35V
Storage	InnoDisk 3ME3 128GB
O.S	Windows 10 Enterprise English 64ibt SP1

### 4.1. Power Consumption

Test Equipment						
Equipment	DC Source					
Manufacturer	Chroma					
Model name	62012P-600-8					
Test Environment						
ATX Power Model	DC Source					
Keyboard/Mouse	USB Keyboard: Logitech K200; USB mouse: Logitech M-U0026					
Power Supply		Current		P		Note
(Full Loading Mode) Windows 8.1 with Prime 95 Full Loading Test	(+12V)	0.91	A	10.92	W	Prime95 Version 28.5 build2
Full Loading Total Watt	10.92 (W)					
S3 mode: Measure the current value when system in S3 mode of windows and without running any	(+12V)	0.04	A	0.48	W	
Suspend Total Watt	0.48 (W)					
Win. Idle mode: Measure the current value when system in windows mode and without running any program	(+12V)	0.4	A	4.8	W	
Total Watt	4.8 (W)					
S5 mode: Measure the current value when system in S5 mode of windows and without running any	(+12V)	0.03	A	0.36	W	
Suspend Total Watt	0.36 (W)					



Configuration	
CPU	Intel ® Atom X5-E8000 CPU @ 1.04GHz
Memory	DSL DDR3L-1600 8GB 1.35V
Storage	InnoDisk 3ME3 128GB
O.S	Windows 10 Enterprise English 64ibt SP1

#### 4.1. Power Consumption

Test Equipment						
Equipment	DC Source					
Manufacturer	Chroma					
Model name	62012P-600-8					
Test Environment						
ATX Power Model	DC Source					
Keyboard/Mouse	USB Keyboard: Logitech K200; USB mouse: Logitech M-U0026					
Power Supply	Current	P		Note		
(Full Loading Mode) Windows 10 with Prime 95 Full Loading Test	(+12V)	0.73	A	8.76	W	Prime95 Version 28.5 build2
Full Loading Total Watt	8.76 (W)					
S3 mode: Measure the current value when system in S3 mode of windows and without running any	(+12V)	0.07	A	0.84	W	
Suspend Total Watt	0.84 (W)					
Win10 Idle mode: Measure the current value when system in windows mode and without running any program	(+12V)	0.36	A	4.32	W	
Suspend Total Watt	4.32 (W)					
S5 mode: Measure the current value when system in S5 mode of windows and without running any	(+12V)	0.06	A	0.72	W	
Suspend Total Watt	0.72 (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

Voltage Monitoring Test	Result			BIOS (V)	Actual (V)		Note
	Pass	Fail	N/A				
VIN 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.000	0.99		
VIN 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.368	1.36		
VCC3V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.408	3.41		
VSB3V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.440	3.41		
VSB5V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A	5.04		
VBAT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.232	3.19		
System Temperature 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	51 °C	53 °C		
System Temperature 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	46 °C	43 °C		

### 4.4. CMOS Battery Test

Test Point: Calculated result should be > 5 years.

Battery: CR2032

Capacity 225mA

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.	3.08	V	2.6	uA	9	years	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Calculate result=225mA/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	+2	Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 5.2. Booting Timer Test

Installation	Actual		Note
System Booting Time	6	Sec	Press the Power Button till "AAEON" Logo appears

### 5.3. Watchdog Timer Test

Use Function as below: Hi-Safe20160426

[ ] No Support.

Time-Out Interval	Criteria	Actual		Result			Note
				Pass	Fail	N/A	
10 sec	+/- 10%	9.8	Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
60 sec	+/- 10%	58.2 9	Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
255 sec	+/- 10%	247. 6	Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note : Under Room Temperature.

## 6. O.S. Compatibility Test

### 6.1. English Ubuntu 15.10 Kernel 4.2.0-16-generic

Driver Information:

Chipset Software	System default
Graphics Media	System default
Audio Driver	System default
LAN Driver	8.040.00.NAPI

Install OS to SATA HDD/ mSATA Card:

Installation	Result			Note
	Pass	Fail	N/A	
English Ubuntu15.10 kernel 4.2.0-16-generic	<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>				
HDMI -- 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"/>	
<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
<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 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
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 10.1.1 (2015-06-03)
Graphics Media	Intel HD Graphics 20.19.15.4483 (7-1-2016)
Audio Driver	Realtek High Definition Audio 6.0.1.7541 ( 6-18-2015)
LAN Driver	Reatek PCIe GBE Family Controller 7.100.422.2016 ( 4-22-2016 )
64bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.1.1 (2015-06-03)
Graphics Media	Intel HD Graphics 20.19.15.4483 (7-1-2016)
Audio Driver	Realtek High Definition Audio 6.0.1.7541 ( 6-18-2015)
LAN Driver	Reatek PCIe GBE Family Controller 7.100.422.2016 ( 4-22-2016 )

### 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>				
HDMI-- 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"/>	
<b>Boot - Windows 7 Ultimate Advanced Options Menu</b>				
Safe Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Basic Function Test</b>				
Usable memory	32bit: 2.66GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	MAX TOLUD:2.75GB
	64bit: 8 GB	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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"/>	
	USB3.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Safe to remove icon	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Touch Function	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
TPM Function	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>LAN Function Test</b>				
LAN1 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN2 --- Auto	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Audio Function Test</b>				
Line Out Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Line In Test	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Microphone Test	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 8.1 Enterprise English Version 32/64Bit

32bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.1.1 (2015-06-03)
Graphics Media	Intel ® HD Graphics 20.19.15.4483 (7/1/2016)
Audio Driver	Realtek High Definition Audio 6.0.1.7541 ( 6-18-2015)
LAN Driver	Realtek PCIe GBE Family Controller 8.46.422.2016 (4/22/2016)
64bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.1.1 (2015-06-03)
Graphics Media	Intel ® HD Graphics 20.19.15.4483 (7/1/2016)
Audio Driver	Realtek High Definition Audio 6.0.1.7541 ( 6-18-2015)
LAN Driver	Realtek PCIe GBE Family Controller 8.46.422.2016 (4/22/2016)

#### Install OS to SATA HDD Card:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows8.1 Enterprise 32bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
English Windows8.1 Enterprise 64bit UEFI 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>					
HDMI -- 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"/>		
<b>Boot – Windows8.1 Enterprise Advanced Options Menu</b>					
Safe Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. msconfig 2. safe boot.	
<b>Basic Function Test</b>					
Usable memory	32bit: 2.66GB (Original:1.91GB)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	64bit: 8 GB	<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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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"/>	
Touch Function	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
TPM Function	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
<b>LAN Function Test</b>					
LAN1 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
LAN2 --- Auto	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
<b>Audio Function Test</b>					
Line Out Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Line In Test	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Microphone Test	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>		

### 6.4. Windows 10 Enterprise English Version 32/64Bit

32bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.1.1 (2015-06-03)
Graphics Media	Intel ® HD Graphics 20.19.15.4483 (7/1/2016)
Audio Driver	Realtek High Definition Audio 6.0.1.7541 ( 6-18-2015)
LAN Driver	Realtek PCIe GBE Family Controller 10.9.422.2016 (4/22/2016)
64bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.1.1 (2015-06-03)
Graphics Media	Intel ® HD Graphics 20.19.15.4483 (7/1/2016)
Audio Driver	Realtek High Definition Audio 6.0.1.7541 ( 6-18-2015)
LAN Driver	Realtek PCIe GBE Family Controller 10.9.422.2016 (4/22/2016)

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

Installation	Result			Note
	Pass	Fail	N/A	
English Windows10 Enterprise 32bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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>					
HDMI -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3840 x 2160	
LVDS -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1920 x 1080	
<b>Boot – Windows Enterprise Advanced Options Menu</b>					
Safe Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. msconfig 4. safe boot.	
<b>Basic Function Test</b>					
Usable memory	32bit:	2.66GB (Original:1.91GB)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	64bit:	8 GB	<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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 Devices	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"/>	
Touch Function	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
TPM Function	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
<b>LAN Function Test</b>					
LAN1 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
LAN2 --- Auto	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
<b>Audio Function Test</b>					
Line Out Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Line In Test	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Microphone Test	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 ® Pentium CPU N3160 @ 1.60GHz
Memory	DSL DDR3L-1600 8GB 1.35V
Storage	InnoDisk 3ME3 128GB
O.S	Windows 10 Enterprise English 64ibt SP1

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	EIST	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enable/Disable	
	Intel Virtual Tech	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enable/Disable	
SATA Configuration	AHCI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Hot Plug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enable/Disable	
USB Configuration	XHC I	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enable/Disable	
	Legacy USB Support	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enable/Disable	
SIO Configuration	Serial Port 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enable/Disable	
	Serial Port 2	RS-232	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		RS-422	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		RS-485	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Power Management	Power Mode	ATX Type	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		AT Type	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Restore AC Power Loss	Always off	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Always on	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Last State	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RI Wake Event	Enable/Disable	<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"/>		
Digital IO Port Configuration		<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		
System Agent (SA) Configuration	Primary IGFX Boot Display	Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Extension Board	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		LVDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		HDMI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Secondary IGFX Boot Display	Disable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Extension Board	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		LVDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		HDMI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	*Memory Configuration		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	LVDS Panel Type		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Color Depth		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Backlight Type		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Backlight Level		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



	Backlight PWN Freq	<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	
Boot up Numlock State	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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 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 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. CMOS Backup / Clear CMOS Test

Test Item (Following item should work properly)	Result			Note
	Pass	Fail	N/A	
CMOS Backup	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clear Date and time
Clear CMOS Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clear Date

### 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(20160426)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
System Information	CPU Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	Model Name	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	Display Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	RAM Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
H/W Monitor	Info	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	Fan Speed	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FANLESS
	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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	DIO5~8 Low	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
WatchDog	10sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actual 9.8 sec
	1min	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actual 58.3sec
	255sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actual 247.6sec
	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 0xF040
	Read Byte	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Slave Address A0h,A2h,A4h
	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	DC Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0~100%
	PWM Voltage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0~100%

## 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	USB ports	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	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 ® Braswell CPU N3160 @ 1.60GHz
Memory	DSL DDR3L-1600 8GB 1.35V
Storage	InnoDisk 3ME3 128GB
O.S	Windows 10 Enterprise English 64ibt SP1

### 8.1. System Performance Test

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

Testing Software	Scope		Note
	N3160	X5-E8000	
<b>PCMark 8 (Creative)</b>			
PCMarks	1098	1065	PCMarks
Web Browsing-Jungle Pin	0.54216s	0.55913s	
Web Browsing-Amazonia	0.17967s	0.18256s	
Video Group Chat v2- Video Group Chat playback1 v2	29.99 fps	29.99 fps	
Video Group Chat v2- Video Group Chat playback2 v2	29.99fps	29.99fps	
Video Group Chat v2- Video Group Chat playback3 v2	29.99fps	29.99ps	
Video Group Chat v2- Video Group Chat encoding v2	358.33333ms	269.66667ms	
Advanced Photo Editing1	2.25643s	1.97035s	
Advanced Photo Editing2	145.181565s	135.71396s	
Video Editing 4K part1 Conventional	41.05630s	45.16998s	
Video Editing 4K part2 Conventional	606.73499S	677.40202S	
Mainstream Gaming part 1	2.36FPS	1.72FPS	
Mainstream Gaming part 2	1.06FPS	0.78FPS	
Video To Go part 1	15.34733s	19.28967s	
Video To Go part 2	18.70467s	22.93433s	
Music To Go	42.19367s	40.51567s	
Benchmark duration	111 min 35 s	110 min 21 s	

Testing Software	Scope		
	N3160	X5-E8000	
<b>3Dmark11 Professional Edition</b>			
<b>Performance 1280*720 (Default)</b>			
3Dmark 11Score	P482	P292	
Graphics Score	429	250	
Physics Score	1432	1447	
Combined Score	458	314	
<b>3Dmark06 Professional Edition</b>			
<b>1920*1080</b>			
3Dmark 06Score	2333	1779	
SM 2.0	812	637	
HDR / SM 3.0	878	639	
CPU	2280	2033	

Testing Software	Scope		Note
	N3160	X5-E8000	
<b>Performance Test 8.0</b>			
PassMark Rating	824.2	730.5	
CPU Mark	1816	1763	
2D Graphics Mark	211.1	192.6	
3D Graphics Mark	180.2	182.6	
Memory Mark	683	731	
Disk Mark	3800	2463	
CD Mark	-	-	

## 8.2. Storage Performance Test

SATA Performance				
SATA SSD	<b>Crucial CT256M550SSD1 2.5" SATA3 SSD.256GB</b>			
CPU	<b>Intel® Braswell CPU N3160 @ 1.60GHz</b>			
Memory	<b>DSL DDR3L-1600 8GB 1.35V</b>			
OS	<b>Windows 10 Enterprise English 64bit SP1</b>			
Item	Comment / (unit)	Software	Score	Note
SATAIII	Maximum Read	ATTO Disk Benchmark	557.9MB/s	SATAII 150~300MB SATAIII up 300M/B
	Maximum Write	ATTO Disk Benchmark	506.5MB/s	

USB3.0/2.0 Performance				
USB Flash	<b>Sony USB3.0 128 GB</b>			
Item	Comment / (unit)	Software	Transfer Rate (MB/s)	Note
USB3.0	Maximum Read	ATTO Disk Benchmark	94MB/s	
	Maximum Write	ATTO Disk Benchmark	70.1MB/s	
USB2.0	Maximum Read	ATTO Disk Benchmark	36.6MB/s	
	Maximum Write	ATTO Disk Benchmark	28MB/s	

mSATA performance				
mSATA	<b>innoDisk 3ME3 128GB</b>			
Item	Comment / (unit)	Software	Transfer Rate (MB/s)	Note
mSATA	Maximum Read	ATTO Disk Benchmark	225MB/s	
	Maximum Write	ATTO Disk Benchmark	137.1MB/s	

## 9. Stability test

### 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( 1012 ) 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"/>	
	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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 <System should not error or hang during testing.>	<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 type="checkbox"/> BIOS select " power on" or <input checked="" 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 8.1 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.