

Report NO: 15E010020

# uCOM-BT-A20

## Intel BayTrail-I series SMARC CPU Module + SMARC Carrier 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

2015/11/20

Approval

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Test Engineer

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## Version Released Records

Date	Version	Change History	Note
2010/04/21	P3-1001	1. Re-composing test Items	
2010/06/01	P2P3-1001	1. New Test Report	
2010/06/21	P2P3-1002	1. Add BIOS -> SPI ROM Setting (South Bridge - GPIO)	
2010/12/02	P2P2-1003	1. New Test Report	
2011/02/23	P2P3-1101	1. Re-composing test Items	
2011/03/04	P2P3-1102	1. Add Specification Validation	
2012/05/29	P2P3-1201	1. Add Summary Table of DTS	
2013/12/6	P2P3-1301	<ol style="list-style-type: none"> <li>1. Rename document : [Board Level Product P2-P3 Verification Test Plan &amp; Report Template]</li> <li>2. Chapter1:Memory compatibility add AAeon P/N</li> <li>3. Chapter1:Add CFast and m-SATA test item.</li> <li>4. Chapter3:Add RS422 1.2KM/115200bps transmission test</li> <li>5. Chapter3:BurninTest test add USB2.0/3.0.</li> <li>6. Chapter5: Modify power consumption test item.</li> <li>7. Chapter7: add Windows XP Professional English Version 32/64Bit and Windows 8 Pro English Version 32/64Bit test.</li> <li>8. Chapter8: Change BIOS format from Award to AMI and add Hi-Safe, Hi-Manager test item.</li> <li>9. Chapter9: Add SATA performance test and USB3.0 performance.</li> <li>10. Remove Chapter10: Other Tests..</li> </ol>	
2014/10/03	P2P3-1401	<ol style="list-style-type: none"> <li>1. Page 1 rename: Board Level Product P2-P3 Test Report.</li> <li>2. Remove platform information\test item and add driver folder item.</li> <li>3. Chapter2.1: add EDID check, DOS display, 3840*2160, hot plug.</li> <li>4. Chapter2.2: modify from "dual display test" to "Multi display test.</li> <li>5. Remove chapter 2.3 "Boot ROM to Novell 4.11 [RPL]" item</li> <li>6. Chapter2.3.2: add "CPU information"</li> <li>7. Chapter2.4: change from optional function to "Jumper and connector function test"</li> <li>8. Chapter3.4: RS422/485 add test from G3 status.</li> <li>9. Add chapter 4.10 Display port converter compatibility test.</li> <li>10. Chapter7.1: remove "halt" test item.</li> <li>11. Chapter7.2/7.3/7.4: add touch and TPM function test</li> <li>12. Chapter9: update performance test program.</li> <li>13. Add chapter 10. Negative Test.</li> </ol>	

**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 (uCOM-BT)

Item	Specification	Result			Note
		Pass	Fail	N/A	
Form Factor	SMARC 82 x 50 mm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Processor	Intel® Atom™ SOC Processor E2825 E3845: Quad Core 1.91G/9W	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
System Memory	Onboard DDR3L 4GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chipset	Intel® Atom SOC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I/O Chipset	Intel® Atom SOC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ethernet	Intel® I211AT for 10/1000/1000Base-TX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BIOS	AMI BIOS, Legacy free BIOS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Wake on LAN	Yes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Watchdog Timer	ITE IT8518VG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
H/W Status Monitoring	Support CPU temperature monitoring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Expansion Interface	3x PCIe 2.0 , 2 x I2C 1x SMBus 1 x SPI; 1x UART for TX/RX/RTS#/ CTS# 1x UART for TX/RX only	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Power Requirement	Normal: +5V, option 3.3V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Display					
Graphic	Intel Atom SOC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Graphic Engine	Supports Simultaneous/Dual view display	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Resolution	Up to 1920 x 1080 for HDMI Up to 1920 x 1200 for LCD Supports 18bit and 24bit single channel up to 1366x768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LVDS Interface	Supports 18bit and 24bit single channel up to 1366x768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I/O					
Storage	Onboard eMMC x 1 (option), SATA signal x2, Micro SD Card signal x 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB	USB3.0 x 1 USB2.0 x 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Audio	HD Audio x 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
GPIO	12 bit, 1.8V (1 share with HDA , 2 share with MiPi)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Serial Port	UART x 2 (1 is 4 wire_TX/RX/RTS#/CTS#; 1 is 2 wire_TX/RX) follow by SMARC standard only	<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, 32/64bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Windows 8.1, 32/64bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Linux	Linux-Fedora(Fedora 18 or later)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Environmental Specifications**

Item	Specification
Operating temperature	32°F~ 140°F (0°C ~ 60°C) , Option: -40°F~185°F (-40°C ~ 80°C) by E3825/E3815 (option sku)
Storage temperature	-4°F ~ 158°F (-20°C ~ 70°C)
Operation Humidity	10% ~ 80% relative humidity, non-condensing
EMC	CE /FCC class A

**Note:** Please refer Environment Test Report for detail information

## Platform Information

Item	Device Information	Test Item
CPU Board	uCOM-BT A2.0	1,2,3,4,5,6,7,8,9,10
Carrier Board	ECB-960 A1.0	1,2,3,4,5,6,7,8,9,10
BIOS / Version	uCOM-BT R0.1 (UCBTBM01) (10/19/2015)	1,2,3,4,5,6,7,8,9,10
EC / Version	UCBTAE10(05/12/2015)	1,2,3,4,5,6,7,8,9,10
CPU Type	Intel® Atom™ Processor E3845(2M Cache, 1.91 GHz)	1,2,3,4,5,6,7,8,9,10
	Intel® Atom™ Processor E3825(1M Cache, 1.33 GHz)	1,2,3,4,5,6,7,8,9,10
Memory Type	Onboard DDR3L 4GB I'M IM8G16D3F	1,2,3,4,5,6,7,8,9,10
SATA HDD	SATAIII WDC WD5000LPVX 2.5" 500GB	1,2,3,4,5,6,7,8,9,10
SATA DVD-ROM	N/A	N/A
USB DVD-ROM	Pioneer DVR-XD11T	1,2,3,4,5,6,7,8,9,10
HDMI monitor	Dell U2713HM	1,2,3,4,5,6,7,8,9,10
LVDS Panel	M215HW03 V1 / 21" / 1920x1080 / 48bit	1,2,3,4,5,6,7,8,9,10
SD card	Transcend Premium 300x 32GB class10 (ECB-960)	1,2,3,4,5,6,7,8,9,10
eMMC	Onboard eMMC 8GB ( NANDrive 85VM1016A) (uCOM-BT)	1,2,3,4,5,6,7,8,9,10
Daughter Board	PER-T254 Rev.A0.2	1,2,3,4,5,6,7,8,9,10
Operating System	<input checked="" type="checkbox"/> English Fedora18 – Kernel 3.6.10-4.fc18.i686.PAE	7-1
	<input checked="" type="checkbox"/> Windows 7 Ultimate 32/64Bit	7-2
	<input checked="" type="checkbox"/> Windows 8.1 Enterprise English Version 32/64Bit	7-3
Power Supply	ATX Power Supply : DELTA GPS-550GB 550W	1,2,3,4,5,6,7,8,9,10
	AT Power Supply: N/A	N/A
	DC source: GW instek PSH-3630	1,2,3,4,5,6,7,8,9,10
Battery Model	N/A	N/A
<b>Chipset Information with Windows 7 Ultimate English SP1 32 Bit Driver Version</b>		
Chipset Software	Intel Chipset Device Software 10.0.21 (4/24/2014)	
Soc Bridge	Intel BayTrail-I	
EC Bridge	ITE IT8518	
VGA Chipset	Intel Atom Processor E3800 Series/Intel Celeron Processor N2920/J1900 36.15.10.1091 (06/26/2014)	
Audio Chipset	Intel Display Audio 6.16.0.3145 (04/17/2014)	
	Realtek High Definition Audio 6.0.1.7083 (11/5/2013)	
Ethernet Chipset	Intel I211 Gigabit Network Connection 12.11.97.0 (3/11/2014)	

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# 1. Hardware Test

## 1.1. CPU Compatibility Test

CPU Information	Result			Note
	Pass	Fail	N/A	
Intel® Atom™ Processor E3845(2M Cache, 1.91 GHz)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Intel® Atom™ Processor E3825(1M Cache, 1.33GHz)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 1.2. Memory Compatibility Test

Memory Information	AAEON P/N	MEM V5.01 For 3 loops			Note
		Pass	Fail	N/A	
Onboard DDR3L 4GB I'M IM8G16D3F	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 1.3. SATA Compatibility Test

### 1.3.1 Onboard SATA (IDE) Test

SATA Device Information	Result			Note
	Pass	Fail	N/A	
SATAIII WDC WD5000LPVX 2.5" 500GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win8.1_32
SATAIII Toshiba HDS721010DLE630 3.5" 7200rpm/1TB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win7_64

### 1.3.2 Onboard SATA (AHCI) Test

SATA AHCI Test	Result			Note
	Pass	Fail	N/A	
SATAIII WD WD20EZR3 3.5" 7200rpm/2TB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win7_32
SATAIII WDC WD5000AAKX 3.5" 7200rpm/500GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win8.1_32
SATAIII Seagate ST500DM002 3.5" 7200rpm/500GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win7_32
SATAIII Seagate ST500LT012 2.5" 500GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Linux 12.04
SATAIII WDC WD3200AAKX 3.5" 7200rpm/320GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fedora18
SATAII SSD Transcend SSD 16G TS16GSSD25S (SLC)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R/W
SATAIII SSD ADATA SX900 128GB (MLC)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R/W
SATAIII SSD PLEXTOR M6S PX-128M6S 128GB SSD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win8.1_64

## 1.4. USB Compatibility Test

USB Information		Result			Note
		Pass	Fail	N/A	
DVD	ASUS SDRW-08D2S-U	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DVD	lomega DVDRW8X-U	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DVD	Pioneer DVR-XD11T	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DVD	LITE-ON eNAU808	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Blu-ray	Buffalo BRXL-PC6U2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Blu-ray	Pioneer BDR-XD04T	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Flash	Kingston USB3.0 DT Ultimate G2 16GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Flash	Sandisk USB2.0 cruze 8GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDD	Transcend TS500GSJ25D3 500GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 1.5. Micro SD card Compatibility Test

SD card Information	AAEON P/N	ATTO R/W			Note
		Pass	Fail	N/A	
Nokia 128MB	XXXXXXXXXX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ADATA 128MB	XXXXXXXXXX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ADATA 8GB class10	XXXXXXXXXX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transcend Premium 300x 32GB class10	XXXXXXXXXX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transcend Premium 300x 64GB class10	XXXXXXXXXX	<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

Hardware Information with Windows8.1 Enterprise English Version 32 Bit Driver Version										
CPU	Intel® Atom™ Processor E3845(2M Cache, 1.91 GHz)									
Memory	Onboard DDR3 1333L 4GB									
SATA HDD	SATAIII WD WD5000BPKX 2.5" 500GB/7200rpm									
HDMI	DELL U2713HM 27" 2560*1440									
LVDS	M215HW03 V1 / 21" / 1920x1080 / 48bit									
Color Quality	<input checked="" type="checkbox"/> 16bit <input type="checkbox"/> 24bit <input checked="" type="checkbox"/> 32bit									
Resolution	HDMI			LVDS			VGA			Note
	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	
640X480	<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"/>	
800X600	<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"/>	
1024X768	<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"/>	
1152X864	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X600	<input 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"/>	
1280X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X800	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X960	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X1024	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1360X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1366X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1400X1050	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1440X900	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1600X900	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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"/>	
1680X1050	<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"/>	
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"/>	
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"/>	
1920X1080	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1920X1200	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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"/>	
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"/>	
Display on DOS	<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	<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)

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

#### 2.1.2. Dual Output Function Test

Selection	Output	Result			Note
		Pass	Fail	N/A	
Dual Display Clone	LVDS +HDMI	<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. Video Resolution Test**

Test points:

1. Power on without inserting any VGA connector until system reaches Windows desktop
2. Plug VGA connector into test machine while system reaches Windows then check VGA driver and display
3. Check VGA output Brightness is normal and it shows "Ghost Image" / "Flicker" or not

	Result			Note
	Pass	Fail	N/A	
In Windows Desktop	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**2.1.4. Video Resolution Test**

LVDS Model		Result			Note
		Pass	Fail	N/A	
LVDS	5_AU B104SN02 V.0 / 10.4" / 800*600 / 18bit (4:3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	8_AUO G121XN01-V0 / 12" / 1024*768 / 18bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	13_AUO T260XW02 / 26" / 1366x768 / 24bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	17_M215HW03 V1 / 21" / 1920x1080 / 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"/>	ECB-960 CN16
R (Right) Channel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Microphone	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Microphone record	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Line in	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Line in record	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI Audio line out	<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)  
(ping 192.168.xx.xx -l 65500 -n 1000)**

1000MBps LAN HUB	D-Link DGS-1210-16									
100MBps LAN HUB	D-Link DES-1008A									
10MBps LAN HUB	SVEC FD916H									
Ping test server	EMB-H81B Realtek RTL8111G									
OnBoard LAN1	Intel I211 Gigabit Ethernet						MAC Address	00-01-A1-22-24-81		
OnBoard LAN2	N/A						MAC Address	N/A		
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"/>	S3/S4/S5/DOS off	
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"/>		
Wake On LAN from extend PCI-e LAN card			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Intel CT Gigabit adapter	

### 2.3.2. Throughput Test

#### DUT Platform Information:

<input type="checkbox"/>	Fedora 15
<input type="checkbox"/>	Cent 5.5
<input checked="" type="checkbox"/>	Ubuntu14.04 kernel 3.13.0-32-generic
<input type="checkbox"/>	Red Hat

Note : Connection-Level Performance (Interaction Constants Duration Time Set to 60 Sec.)

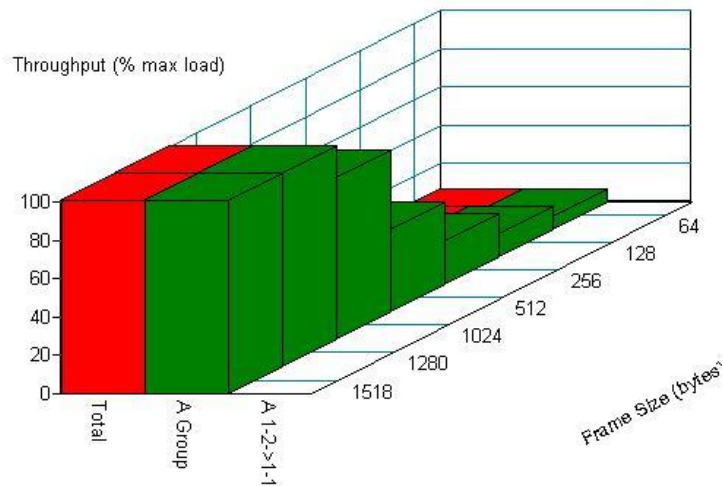
Graphics Media	Ubuntu14.04 Default setting
LAN	LAN1→ Intel I211 Gigabit Ethernet / Intel Gigabit Ethernet Network Driver igb 5.0.5-K
	LAN2→PCI-e LAN card Intel CT Gigabit Ethernet Network/ Intel pro/1000 Network Driver e1000e 7.3.21-k8-NAPI
Audio Driver	Ubuntu14.04 Default setting
CPU	Intel® Atom™ Processor E3845(2M Cache, 1.91GHz)

#### SMB Platform Information:

Chassis	SPIRENT Smartbits 600B
Chassis Version	2.80.003 (Cur) 2.50.000
Chassis Serial #	06014047
Library	6.00-29
API	5.50.42.01
File	0550042
Module	2 * LAN-3324A SmartMetrics XD 4-Port 10/100/1000Base-T Gigabit Ethernet
Test Software	SmartFlow5.50.42.1

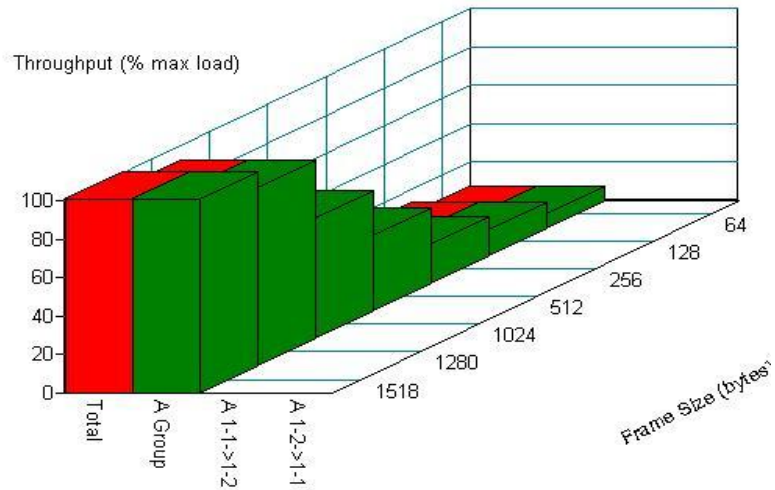
#### Test Result:

- Half Direction (LAN1: Intel I211 10/100/1G Ethernet → LAN2: Intel CT 10/100/1G Ethernet)



Name/Framesize	64	128	256	512	1024	1280	1518
Total	6.4140625	11.828125	21.8828125	42.765625	83.7578125	100	100
A Group	6.4140625	11.828125	21.8828125	42.765625	83.7578125	100	100
A 1-1->1-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A 1-2->1-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

2. Binary Direction (LAN1: Intel I211 10/100/1G Ethernet ←→ LAN2: Intel CT 10/100/1G Ethernet)



Throughput vs Frame Size

<u>Name/Framesize</u>	<u>64</u>	<u>128</u>	<u>256</u>	<u>512</u>	<u>1024</u>	<u>1280</u>	<u>1518</u>
Total	7.1875	13.375	19.5625	38.8984375	62.1015625	92.265625	100
A Group	7.1875	13.375	19.5625	38.8984375	62.1015625	92.265625	100
A 1-1->1-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A 1-2->1-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

2.4. Jumper and Connector Function Test

uCOM-BT Jumper and Connector Test	Result			Note
	Pass	Fail	N/A	
SW1 #1 Auto power button	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SW1 #2 Clear CMOS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 3. Integration Test

Hardware Information with Windows 7 Ultimate English SP1 32 Bit Driver Version	
<b>CPU</b>	Intel® Atom™ Processor E3845(2M Cache, 1.91 GHz)
<b>Memory</b>	Onboard DDR3 1333L 4GB
<b>HDD</b>	SATAIII WD WD5000BPKX 2.5" 500GB/7200rpm
Chipset Information with Windows 7 Ultimate English SP1 32 Bit Driver Version	
<b>Chipset Software</b>	Intel Chipset Device Software 10.0.21 (4/24/2014)
<b>Soc Bridge</b>	Intel BayTrail-I
<b>EC IO Chipset</b>	ITE IT8518
<b>VGA Chipset</b>	Intel Atom Processor E3800 Series/Intel Celeron Processor N2920/J1900 36.15.10.1091 (06/26/2014)
<b>Audio Chipset</b>	Intel Display Audio 6.16.0.3145 (04/17/2014) Realtek High Definition Audio 6.0.1.7083 (11/5/2013)
<b>Ethernet Chipset</b>	Intel I211 Gigabit Network Connection 12.11.97.0 (3/11/2014)

#### 3.1. USB Port Integration Test

Item	USB Port	Boot			Function(Win 7)			Note
		Pass	Fail	N/A	Pass	Fail	N/A	
USB HDD		<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"/>	
ASUS USB2.0 DVD-R/W SDRW-08D2S-U		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB Hub Test (Connect USB Device) HUB Port1: USB Keyboard / HUB Port2: USB Mouse / HUB Port3: USB HDD								
USB 2.0 HUB PowerSync / USB 2.0 4 Port HU-155					<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

#### 3.2. Digital I/O Port Test

DIO Address ( ___ )	Result			Note
	Pass	Fail	N/A	
DIO VCC +5V (12bit)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

#### 3.3. UART Test

Test Item	Result			Note
	Pass	Fail	N/A	
Transmission	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BurninTest	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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

Test Item	Result			Note
	Pass	Fail	N/A	
RS-422 for COM2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Use loopback and WINSSD.exe to test RS-422 in Windows
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The communication between the RS-422 port of two boards is linked by one 1.2km cable on Windows Terminal
RS-485 for COM2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Use ICP CON I-7044D D/IO Module in Windows(Support Auto flow control)
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The communication between the RS-485 port of two boards is linked by one 1.2km cable on Windows Terminal

### 3.5. Burn In Test

Under Room Temperature: 26 °C

OS: Windows8.1 Enterprise English 64bit

CPU: E3845

Test Item		Result			Note
		Pass	Fail	N/A	
Burn In Test V8.0 Pro(1025) Duty: 100 Time: over 12 hours	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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Parallel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	USB	2.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note: COM PORT Speed Set to 9600

### 3.6 Cold Boot Test

Under Room Temperature: 26 °C

OS: DOS

CPU: E3845

Power input : +5V

Test item	Result			Note
	Pass	Fail	N/A	
AC loss cold boot over 1000 cycles <loss rate: 0 /1000 times>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ATX mode

CPU: E3825

Power input : +3.3V

Test item	Result			Note
	Pass	Fail	N/A	
AC loss cold boot over 1000 cycles <loss rate: 0 /1000 times>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	AT mode

## 4. Application Test

Hardware Information with Windows7 Ultimate English SP1 32 Bit Driver Version	
CPU	Intel® Atom™ Processor E3845(2M Cache, 1.91 GHz)
Memory	Onboard DDR3 1333L 4GB
HDD	SATAIII WD WD5000BPKX 2.5" 500GB/7200rpm

### 4.1. PCI-Express Function Test

PCI-Express x1	Function Test			Note
	Pass	Fail	N/A	
SUNIX SATA1414 eSATA & SATAII x1Express card	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	GEN1-126MB/s
Intel GIGABIT CT DESKTOP ADAPTER	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	68-05-CA-02-61-C3
DigiFusion SATAIII 6G card PES311A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SATAIII SSD ADATA SX900 128GB Max read:296.9MB/s Burst Speed:300.5MB/s
Sunix Marvell 88e8053 Gigabit LAN	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCI-e 1x Graphics card SFX84 Rev: A8.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Moxa CP-118EL-A PCI-e multiport serial board	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 4.2. SSD Modules Compatibility Test

SSD HDD Compatibility Test:

Cable Type:  IDE  SATA2  MLC  SLC

Test Item	Result			Note
	Pass	Fail	N/A	
Transcend SSD 16G TS16GSSD25S (SLC)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SATA3G port Max read:183MB Max write:156.9 MB
ADATA SX900 128GB (MLC)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SATA3G port, Max read:282.5MB Max write:268.4MB



## 5. Power Consumption Test

Hardware Information with Windows8.1 Enterprise English SP1 32 Bit Driver Version	
CPU	Intel® Atom™ Processor E3845(2M Cache, 1.91 GHz)
Memory	Onboard DDR3 1333L 4GB
HDD	SATAIII WD WD5000BPKX 2.5" 500GB/7200rpm

### 5.1. Power Consumption

CPU: E3845

Test Equipment					
Equipment	Digital Multimeter				
Manufacturer	HOLA				
Model name	DM-1240				
Test Environment					
PCB	ECB-960 A1.0 + uCOM-BT E3845				
Power supply	GW PSH-3630 24V/10A				
Keyboard/ mouse	Microsoft USB keyboard 1366/ Microsoft USB mouse MSK1113				
Power Supply	DC Power				Note
(Full Loading Mode) Windows 8.1 with Prime 95 Full Loading Test	(+5V)	1.92	A	9.6	W Prime95 Version 259
Full Loading Total Watt	9.6 (W)				
S3 mode: Measure the current value when system in S3 mode of windows and without running any	(+5V)	0.12	A	0.6	W
Suspend Total Watt	0.6(W)				
Win. Idle mode: Measure the current value when system in windows mode and without running any program	(+5V)	1.05	A	5.25	W
Idle Total Watt	5.25 (W)				
S5 mode: Measure the current value when system in S5 mode of windows and without running any	(+5V)	0.08	A	0.4	W
S5 Total Watt	0.4(W)				

### 5.2. PC Health Status

Test Point: The value between Actual Voltage and Voltage Monitor must be + /- 5%

Voltage Monitoring Test	Result			BIOS (V)	Actual (V)	Note
	Pass	Fail	N/A			
CPU Temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	59°C	53.2°C	
System Temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	44°C	41.2°C	
+5V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.976	4.95V	
+1V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.042	1.0	
+3.3V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.241	3.27	
VMEM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.327	1.35	
+1.8V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.748	1.81	
Vcore	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0.787	0.74	

## 6. Time Accuracy Test

### 6.1. System Clock & RTC Clock Test

Under Room Temperature: 26 °C

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"/>	E3845
RTC Clock in Power Off Mode		24 hrs	+/-2 sec	+1 Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E3825

### 6.2. Booting Timer Test

Installation	Actual		Note
System Booting Time	10.8	Sec	Press the Power Button till "Beep" Sound appears

### 6.3. Watchdog Timer Test

Use Function as below: Hi-safe0917

Time-Out Interval	Criteria	Actual	Result			Note
			Pass	Fail	N/A	
10 sec	+/- 10%	10.2 Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
60 sec	+/- 10%	60.5 Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
255 sec	+/- 10%	255.4 Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note : Under Room Temperature: 26°C

## 7. O.S. Compatibility Test

### 7.1. English Fedora18 – Kernel 3.6.10-4.fc18.i686.PAE

Driver Information:

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

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Fedora18 – Kernel 3.6.10-4.fc18.i686.PAE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Install with AHCI 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"/>	1024*768
LVDS -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1024*768
LVDS + HDMI	<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"/>	USB
Keyboard Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	USB
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
Halt	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Halt,
ls / clear .....; cd /dev /ls -l	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Command instruction

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

[ X ] x32 Driver Information:

Chipset Software	Intel Chipset Device Software 10.0.21 (4/24/2014)
Graphics Media	Intel Atom Processor E3800 Series/Intel Celeron Processor N2920/J1900 36.15.10.1091 (06/26/2014)
Audio Driver	Intel Display Audio 6.16.0.3145 (04/17/2014) Realtek High Definition Audio 6.0.1.7083 (11/5/2013)
LAN Driver	Intel I211 Gigabit Network Connection 12.11.97.0 (3/11/2014)

[ X ] x64 Driver Information:

Chipset Software	Intel Chipset Device Software 10.0.21 (4/24/2014)
Graphics Media	Intel Atom Processor E3800 Series/Intel Celeron Processor N2920/J1900 37.15.10.1091 (06/26/2014)
Audio Driver	Intel Display Audio 6.16.0.3145 (04/17/2014) Realtek High Definition Audio 6.0.1.7083 (11/5/2013)
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>				
LVDS -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1920*1080
HDMI -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1920*1080
<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>				
USB Mouse and Keyboard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
UART function Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB 2.0 / 3.0 Removable Devices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
eMMC Function	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
SD card Function	<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"/>	
Microphone Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Line in Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI port Audio	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Start Menu</b>				
Log off User	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Shut down (S5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Standby(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"/>	

### 7.3. Windows 8.1 Enterprise English Version 32/64Bit

[ X ] x32 Driver Information:

Chipset Software	Intel Chipset Device Software 10.0.21 (4/24/2014)
Graphics Media	Intel HD Graphics 10.18.10.3740 (7/4/2014)
Audio Driver	Intel Display Audio 6.16.0.3145 (04/17/2014) Realtek High Definition Audio 6.0.1.7083 (11/5/2013)
LAN Driver	Intel I211 Gigabit Network Connection 12.11.97.0 (3/11/2014)

[ X ] x64 Driver Information:

Chipset Software	Intel Chipset Device Software 10.0.21 (4/24/2014)
Graphics Media	Intel HD Graphics 10.18.10.3740 (7/4/2014)
Audio Driver	Intel Display Audio 6.16.0.3145 (04/17/2014) Realtek High Definition Audio 6.0.1.7083 (11/5/2013)
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 8.1 Enterprise 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>				
LVDS -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1920*1080
HDMI -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1920*1080
<b>Basic Function Test</b>				
USB Mouse and Keyboard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
UART function Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB 2.0/3.0 Removable Devices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
eMMC Function	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SD card Function	<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"/>	
Microphone Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Line in Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI port Audio	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Start Menu</b>				
Log off User	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Shut down (S5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Standby(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"/>	

## 8. BIOS Function Test

Hardware Information with Windows 7 Ultimate English SP1 32 Bit Driver Version	
CPU	Intel® Atom™ Processor E3845(2M Cache, 1.91 GHz)
Memory	Onboard DDR3 1333L 4GB
HDD	SATAIII WD WD5000BPKX 2.5" 500GB/7200rpm

### 8.1. Advanced Test

Test Item			Result			Note
			Pass	Fail	N/A	
Power Management	Power Mode	ATX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		AT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Restore AC Power Loss	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Power on/ Power off/ Last State
	S5 RTC Wake Settings	Enable ACPI Auto Configuration	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Enable Hibernation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		ACPI Sleep State	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Wake on LAN	<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"/>	
	Wake system with Dynamic Time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Digital IO	GPIO 0,2,5~11	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	output low / high	
On-Module H/W Monitor		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
CPU configuration	CPU information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Intel Virtualization Technology	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
IDE configuration	Enable/Disable	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	.	
	AHCI/IDE mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
USB configuration	Legacy USB Support	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	USB Mass Storage Driver Support	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

### 8.2. Chipset Test

Test Item		Result			Note
		Pass	Fail	N/A	
North Bridge	Memory Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Primary IFGX boot display	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VBIOS default/HDMI/LVDS
	LVDS Flat Panel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	LVDS Channel Select	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	LVDS Color Depth	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	LVDS backlight level	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0~100%
	LVDS backlight type	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Normal/inverted
South Bridge	Azalia HD Audio	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	USB Configuration	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	PCI Express Configuration	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 8.3. Boot Test

Test Item	Result			Note
	Pass	Fail	N/A	
Quiet Boot	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Launch i210/i211 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 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"/>	

## 8.4. CMOS Backup / Clear CMOS Test

Test Item	Result			Note
	Pass	Fail	N/A	
CMOS Backup	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clear Date, time, password, CMOS setting
Clear CMOS Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clear Date, time, password, CMOS setting

## 8.5. AAEON Tag Check Utility

Test Item	Result			Note
	Pass	Fail	N/A	
Check AAEON BIOS OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	AONCHECK.EXE

## 8.6. Supervisor / User Password Test

Test Item	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"/>	

## 8.7. Hi-safe Test

Test Item	Result			Note	
	Pass	Fail	N/A		
Version(20150226)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	uCOM-BT	
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	DIO 1,3,6~8 High	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	DIO 1,3,6~8 Low	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	DIO 9~12 High	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	DIO 9~12 Low	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WatchDog	10sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actual 10.2 sec
	1min	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actual 60.5sec
	255sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actual 255.4sec
	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 0xE000
	Read Byte	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Slave Address 5Ch
	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	SMBUS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SMBus Address 0xE000
	Inverter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	AD_5247_0x5c
	0~100%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 9. Performance Test

Hardware Information with Windows 7 Ultimate English SP1 32 Bit Driver Version	
<b>CPU</b>	Intel® Atom™ Processor E3845(2M Cache, 1.91 GHz)
<b>Memory</b>	Onboard DDR3 1333L 4GB
<b>HDD</b>	SATAIII WD WD5000BPKX 2.5" 500GB/7200rpm

### 9.1. Performance Test

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

Testing Software	Scope		Note
	AAEON	Ref.	
<b>PCMark2005</b>			Windows 7_32
PCMark	N/A	-	PCMarks
CPU	3837	-	
Memory	3910	-	
Graphics	2555	-	
HDD	6555	-	
Benchmark (B)	-	-	
Average Efficiency	-	-	
<b>PCMark Vantage</b>			
PCMarks	3923	-	
Memories	2530	-	
TV and Movies	2937	-	
Gaming	2891	-	
Music	3447	-	
Communications	4249	-	
Productivity	2994	-	
HDD	4260	-	
Benchmark (B)	-	-	
Average Efficiency	-	-	

Testing Software	Scope		Note
	AAEON	Ref.	
<b>CPUmark99</b>			Windows 7_32
CPU mark99	165	-	

Testing Software	Scope		Note
	AAEON	Ref.	
<b>3Dmark2006 v120</b>			Windows7_32
3Dmark Score	1518	-	
SM2.0 Score	528	-	
HDR/SM3.0 Score	557	-	
CPU Score	1898	-	
Benchmark (B)	-	-	
Average Efficiency	-	-	

3Dmark11 Professional Edition			Windows 7_32
<b>Performance 1280*720</b>			
3Dmark 11Score	P249	-	
Graphics Score	213	-	
Physics Score	1397	-	
Combined Score	259	-	
<b>Performance 1920*1080</b>			
3Dmark 11Score	X91	-	
Graphics Score	82	-	
Physics Score	1407	-	
Combined Score	87	-	

Testing Software	Scope		Note
	AAEON	Ref.	
<b>Final Reality V1.01—BenchMark Test</b>			Windows 7_32
2D image	25.58	-	
3D	5.17	-	
Bus transfer	16.75	-	
Overall	16.75	-	
Benchmark (A)	-	-	

Testing Software	Scope		Note
	AAEON	Ref.	
<b>Performance Test 7.0</b>			Windows 7_32
PassMark Rating	543.3	-	
CPU Mark	1375.4	-	
2D Graphics Mark	156.8	-	
3D Graphics Mark	140.8	-	
Memory Mark	387.8	-	
Disk Mark	749.1	-	
CD Mark	-	-	

Testing Software	Scope		Note
	AAEON	Ref.	
<b>Windows experience index</b>			Windows 7_32
Processor	5.1	-	
Memory	5.5	-	
Graphics	4.1	-	
Gaming graphics	5.7	-	
Primary hard disk	5.9	-	

SATAII Performance(Native)				
SATA HDD	SATAIII WD WD5000BPKX 2.5" 500GB/7200rpm			
CPU	Intel® Atom™ Processor E3845(2M Cache, 1.91 GHz)			
Memory	Onboard DDR3 1333L 4GB			
OS	Windows7 32bit Ultimate SP1			
Item	Comment / (unit)	Software	Score	Note
Single HDD (SATA port 1) SATAII	Long bench(32mb zones)-Random access / (ms) (smaller is better)	HD Tach version 3.0.4.0 free	18.0ms	
	Long bench(32mb zones)-CPU utilization / (%,+/-2%) (smaller is better)	HD Tach version 3.0.4.0 free	7%	
	Long bench(32mb zones)-Average read / (MB/s)	HD Tach version 3.0.4.0 free	93.9MB/s	
	Comment / (unit)	HD Tach version 3.0.4.0 free	193.0MB/s	
USB3.0/2.0 Performance				
USB Flash	JetFlash Transcend 32GB			
Item	Comment / (unit)	Software	Score	Note
USB3.0 port	Max Read	ATTO	82.6MB/s	
	Max Write	ATTO	23.4MB/s	
USB2.0 ports	Max Read	ATTO	39.8MB/s	
	Max Write	ATTO	16.0MB/s	

eMMC/SD card Performance				
eMMC	Onboard eMMC 8GB			
SD card	Sandisk TransFlash 256MB			
OS	Windows8.1 Enterprise 32bit			
CPU	Intel® Atom™ Processor E3845(2M Cache, 1.91 GHz)			
Item	Comment / (unit)	Software	Score	Note
eMMC 8GB	Max Read	ATTO	36.5MB/s	
	Max Write	ATTO	10.9MB/s	
SD card	Max Read	ATTO	18.0MB/s	
	Max Write	ATTO	15.2MB/s	