

Report NO:16I010004

VPC-3300S

Intel Atom J1900 In-Vehicle PC

System Level Product

P5

Compatibility Test Report

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

Issue date

2016/02/18

Approval

KJ Wang

Test Engineer

Leo Liu

Version Released Records

Date	Version	Change History	Note
5/26/2015	C0	1. Add UEFI,GPS,CANBUS,POE, Cold boot test item	

Note :

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

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

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

Specification Validation

Main Specification

Item	Specification	Result			Note
		Pass	Fail	N/A	
Main System					
CPU	Onboard Intel® 22nm Bay Trail-I J1900 (4C, 2M Cache, up to 2.42GHz) Quad Core SoC, up to 10W Max	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
System Memory	1 x 204-pin Dual Channel DDR3L 1333 MHz SO-DIMM up to 4GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ethernet	Realtek RTL8111E Ethernet Connection x 6, support PoE (4 port 802.3af)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I/O Chip	Fintek F81866	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Storage	1 x 2.5" swappable SSD slot and 1 x Msata(default) colay with 1 x 2.5" internal SSD tray	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LED	Indicators for 1 x Power, 1 x HDD in front panel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Audio	HD Audio Realtek ALC 892 Codec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
GPS	On Board(reserve 1 hole on chassis for GPS)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPM	V1.2, Infineon SLB9635TT1.2(Option)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Expansion	2 x full size Mini-PCle socket (USB 2.0+ PCIe, SIM SLOT) (reserve 2 hole on chassis for 3G/4G) 1 x half size Mini-PCle socket (USB 2.0, SIM SLOT) (reserve 1 hole on chassis for WIFI) Built-in CAN 2.0B. Optional OBDII function (SAE J1939/J1708)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Watchdog Timer	0~255 step by software programming	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
H/W Status Monitor	Monitoring CPU temperature, voltage (TBA), reserve 1 pinhead for system temp. monitor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Power Supply	- AT / ATX mode - Power Input Voltage: DC 9-36 V(OVP:36.7V, UVP:8.4V), with Ignition Pin - Power connector: 3 pin Terminal Block (9~36V, GND) - 2x7 pin dip switch for delay start Delay on:5sec, 10sec, 30sec, 5 min Delay off:3min, 5min, 15min, 30min	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Display					
CPU	Intel® HD Graphics (Gfx frequency 688/854 (turbo) MHz / DX11.1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Resolution	Up to 2560 x 1600 / 60Hz for CRT Up to 1920 x 1080 / 60Hz, for	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	HDMI Two display pipes, Pipe A and B support the dual independent displays				
Front I/O					
LED	Power x1, HDD x 2, Wifi x 3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CAB BUS	CAB BUS 2.0 (2 PIN terminal block)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
POWER INPUT	1 x Power connector, 1x remote power connector (3 pin Terminal Block)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
GPIO	8bit GPIO with isolation (10 pin terminal block)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fuse	9V/20A, 12V/15A, 36V/5A, Max. 60A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SIM Card	SIM Card slot x 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Power Button	Standard power button x1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Real I/O					
Audio	2 x Audio Jack (Mic-in, Line-out)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Display	1 x HDMI, 1 x VGA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ethernet	6 x RJ45 w/ LED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Software Programmable button	Software Programmable button x1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Universal Serial Bus	1 USB 3.0, 2 USB 2.0	<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 32/64bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Windows 8.1 English 32/64bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Linux	kernel 2.6.x or above	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Platform Information

Item	Device Information	Note
Product of department	ISD	
System Model / Version	VPC-3300S A1.0	
PCB Model / Version	VPC-3300 A0.2	
BIOS / Version	VPC-3300 R1.0(VP33AM10) (12/17/2015) x64	
Driver folder	20150917	
CPU Type	Intel Celeron J1900 1.99GHz	
Memory Type	DSL DDR3L-1600 8GB(ELPIDA J4208EBBG-GN-F)	
SATA HDD	HGST 2.5" 1TB(HTS721010A9E630)	
USB DVD-ROM	Lite-on 8X(eNAU808)	
LCD Monitor	CHIMEI 22"(22SH-L)	
Operating System	<input checked="" type="checkbox"/> Ubuntu 14.04 Kernel 3.13.0-32	
	<input checked="" type="checkbox"/> Windows 7 Ultimate SP1 32/64Bit	
	<input checked="" type="checkbox"/> Windows 8.1 Enterprise English Version 32/64Bit	
Power Supply	DC Adapter : FSP GROUP 19V(FSP120-ABAN2)	
Chipset Information		
PCH Bridge	Intel Integrated Graphics	
Super IO Chipset	Fintek F81866	
Audio Chipset	Realtek ALC 892 Codec	
Ethernet Chipset	Realtek RTL8111E	

Summary Table of contents:

1. Hardware Compatibility	7
1.1. CPU Compatibility Test	7
1.2. Memory Compatibility Test.....	7
1.3. SATA Compatibility Test	7
1.4. Flash Card Compatibility Test	8
1.5. Monitor Compatibility Test	8
2. Basic Function Test	9
2.1. Video Function Test	9
2.2. Audio Function Test	10
2.3. LAN Function Test	10
2.4. COM Ports Test.....	10
2.5. RS-422 / RS-485 Test.....	14
2.6. Digital I/O Test.....	14
2.7. USB Port Integration Test.....	14
2.8. CAN BUS Test.....	15
2.9. POE LAN Function Test.....	15
2.10. Jumper and Connector Function Test.....	16
2.11. GPS Function Test.....	17
3. Expansion card and Application Test	18
3.1. Expansion Slot Compatibility Test	18
3.2. Expansion Card Integration Test	18
4. Power Consumption Test	19
4.1. Power Consumption.....	19
4.2. PC Health Status	19
4.3. Wide Voltage Test	19
4.4. CMOS Battery Test	20
5. Time Accuracy Test	21
5.1. System Clock & RTC Clock Test.....	21
5.2. Booting Timer Test	21
5.3. Watchdog Timer Test	21
6. O.S. Compatibility Test	22
6.1. English Ubuntu 14.04 Kernel 3.13.0-32-generic	22
6.2. Windows 7 Ultimate English Version 32/64Bit	23
6.3. Windows 8.1 Enterprise English Version 32/64Bit	24
7. BIOS Function Test	25
7.1. Advanced Test	25
7.2. Chipset Test.....	25
7.3. Boot Test	25
7.4. CMOS Backup / Clear CMOS Test	26
7.5. AAEON Tag Check Utility.....	26
7.6. Supervisor / User Password Test	26
7.7. Hi-safe Test.....	26
7.8. Negative Test.....	26
8. Performance Test	28
8.1. System Performance Test.....	28
8.2. Storage Performance Test.....	29
9. Stability test	30
9.1. Run In Test.....	30
9.2. Reboot Test	30
9.3. Cold Boot Test	30
10. Front Panel Button and Mechanical Check	31
10.1. Front Panel Button Function Test	31
10.2. Mechanical Check.....	31

1. Hardware Compatibility

1.1. CPU Compatibility Test

CPU Information (Information and frequency should show correct value)	Result			Note
	Pass	Fail	N/A	
Intel Celeron J1900 1.99GHz	<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	
DDR3L SO-DIMM					
Transcend DDR3L-1600 2GB(SEC 501 BYMA K4B2G0846Q)	AP-DR968D3002 GK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*
Transcend DDR3L-1600 4GB(SEC 446 XYKO K4B4G0846D)	AP-DR968D3004 G6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transcend DDR3L-1600 8GB(SEC 443 BYKO K4B4G0846D)	968D3008G7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
InnoDisk DDR3L-1600 2GB(SEC 434 BYKO K4B2G0846Q)	AP-DR968D3002 GX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
InnoDisk DDR3L-1600 4GB(SEC 425 BYKO K4B4G0846D)	968D3004GZ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
InnoDisk DDR3L-1600 8GB(SEC 446 BYKO K4B4G0846D)	968D3008GW	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DSL DDR3L-1600 8GB(ELPIDA J4208EBBG-GN-F)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ADATA DDR3L-1600 4GB(Micro 3YE17D9QBJ)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

1.3. SATA Compatibility Test

1.3.1 Onboard SATA(IDE / AHCI) Test

SATA Device Information (Information and size should show correct value with IDE and AHCI mode)	AAEON P/N	Result			Note
		Pass	Fail	N/A	
SATAII HGST 2.5" 1TB(HTS721010A9E630)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATAII Seagate 2.5" 500GB(ST500LT012)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATAII WD 2.5" 500GB(WD5000BPKX)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATAII TOSHIBA 2.5" 500GB(MK5076GSX)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATAII TOSHIBA 2.5" 320GB(MK3276GSX)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD Transcend TS32GSSD370 2.5".32GB.SATA III SSD MLC.	968C032G2D	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD Transcend.TS64GSSD370 2.5".64GB. SATA III.SSD.MLC	968C64G003	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD Transcend.TS128GSSD370 2.5" SATA3 SSD.128GB.MLC.	968C128G0W	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD InnoDisk. 3MG2-P 2.5" SATA3 SSD. 32GB. MLC	968C032G1H	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

SSD	InnoDisk. 3MG2-P 2.5" SATA3 SSD. 64GB. MLC	968C064G2M	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SSD	InnoDisk. 3MG2-P 2.5" SATA3 SSD. 128GB. MLC	AP-SS968C128 G15	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

1.4. Flash Card Compatibility Test

m-SATA Information (a. Information and size should show correct value (b. R/W and HDD LED should work properly)	AAEON P/N	Result			Note
		Pass	Fail	N/A	
Full Size					
Transcend.TS16GMSA370 Full-size mSATA.16GB.MLC.	AP-SS968C016 G2Z	<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"/>	

1.5. Monitor Compatibility Test

Monitor Information a. Monitor should display under DOS and OS environment. b. Monitor should not appear ghost or ripples.	Result			Note
	Pass	Fail	N/A	
VGA				
CHIMEI 22"(22SH-L)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ASUS 22"(VE228)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DELL 27"(U2713HMT)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI				
CHIMEI 22"(22SH-L)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ASUS 22"(VE228)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DELL 27"(U2713HMT)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Samsung 28"(LU28D)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2. Basic Function Test

2.1. Video Function Test

2.1.1. Single Output Function Test

Configuration													
CPU	Intel Celeron J1900 1.99GHz												
Memory	DSL DDR3L-1600 8GB(ELPIDA J4208EBBG-GN-F)												
SATA HDD	HGST 2.5" 1TB(HTS721010A9E630)												
VGA	CHIMEI 22"(22SH-L)												
HDMI	ASUS 22"(VE228) DELL 27"(U2713HMt)												
Operating system	Windows 8.1 Enterprise 64Bit												
Color Quality	<input checked="" type="checkbox"/> 16bit <input type="checkbox"/> 24bit <input checked="" type="checkbox"/> 32bit												
Resolution	VGA			DVI			HDMI			LVDS			Note
	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	
1024X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1152X864	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X800	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X960	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<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 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 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"/>	
1366X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1400X1050	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<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 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 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"/>	
1600X1200	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1680X1050	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	
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"/>	
EDID check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Rotation(0/90/ 180/270)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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"/>	
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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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

2.1.2. Multi-Display Output Test

Selection	Output	Result			Note
		Pass	Fail	N/A	
Dual Display Clone	VGA+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

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







2.2. Audio Function Test

[] No Support

Function Test	Result			Note
	Pass	Fail	N/A	
L (Left) Channel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
R (Right) Channel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI Audio	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
MICROPHONE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2.3. LAN Function Test

[] No Support

Connect two computers via different speed LAN HUB by using "Ping" instruction (1000 times) Command: ping xxx.xxx.xx.xx -l 65500 -n 1000									
1000Mbps LAN HUB		D-Link DGS-1008D							
100Mbps LAN HUB		Accton Desktop-3005							
10Mbps LAN HUB		SVEC FD916H							
OnBoard LAN1	Realtek 8111E Ethernet						MAC Address	00-07-32-35-8B-B7	
OnBoard LAN2	Realtek 8111E Ethernet						MAC Address	00-07-32-35-8B-B8	
OnBoard LAN3	Realtek 8111E Ethernet						MAC Address	00-07-32-35-8B-B9	
OnBoard LAN4	Realtek 8111E Ethernet						MAC Address	00-07-32-35-8B-BA	
OnBoard LAN5	Realtek 8111E Ethernet						MAC Address	00-07-32-35-8B-BB	
OnBoard LAN6	Realtek 8111E Ethernet						MAC Address	00-07-32-35-8B-BC	
LAN Speed	Link / Speed LED	Active LED	LAN 1/2			LAN 3/4/5/6			Note
			Pass	Fail	N/A	Pass	Fail	N/A	
1000Mbps			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
100Mbps			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10Mbps			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Internet Browser (DHCP Server)			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2.3.2. Throughput Test

DUT Platform Information:

<input type="checkbox"/>	Fedora 15 Kernel 2.6.27
<input type="checkbox"/>	Cent 5.5 kernel
<input checked="" type="checkbox"/>	Ubuntu 14.04 Kernel 3.13.0-32
<input type="checkbox"/>	Red Hat kernel

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

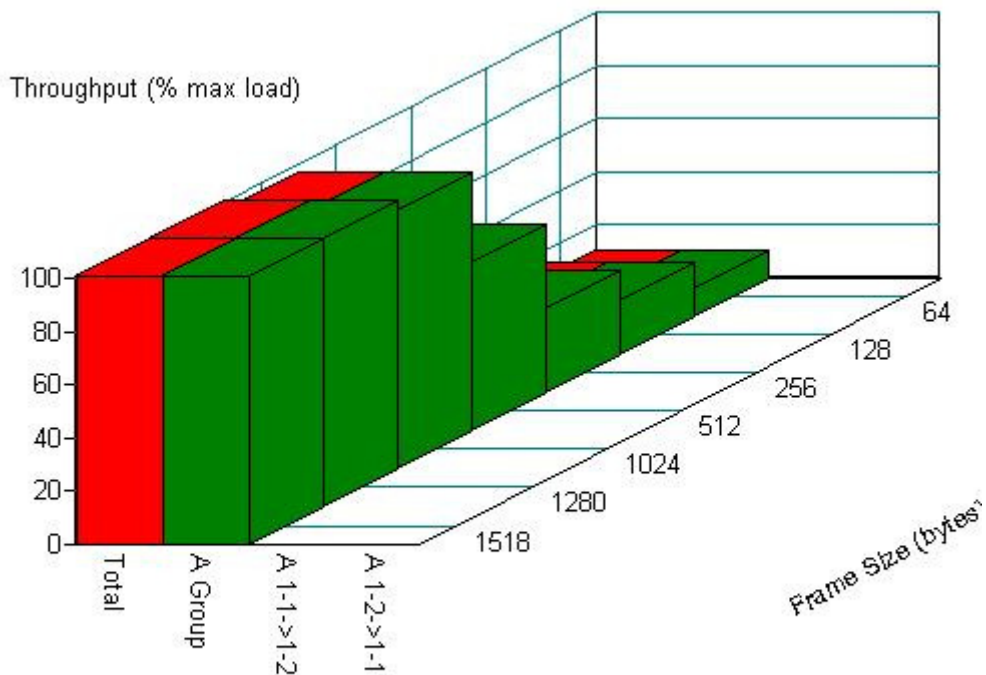
Graphics Media	Ubuntu Default setting
LAN	LAN1→Realtek 8111E Ethernet: 8.039.00
	LAN2→Realtek 8111E Ethernet: 8.039.00
	LAN3→Realtek 8111E Ethernet: 8.039.00
	LAN4→Realtek 8111E Ethernet: 8.039.00
	LAN5→Realtek 8111E Ethernet: 8.039.00
	LAN6→Realtek 8111E Ethernet: 8.039.00
Audio Driver	Ubuntu Default setting
CPU information	Intel Celeron J1900 1.99GHz

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:

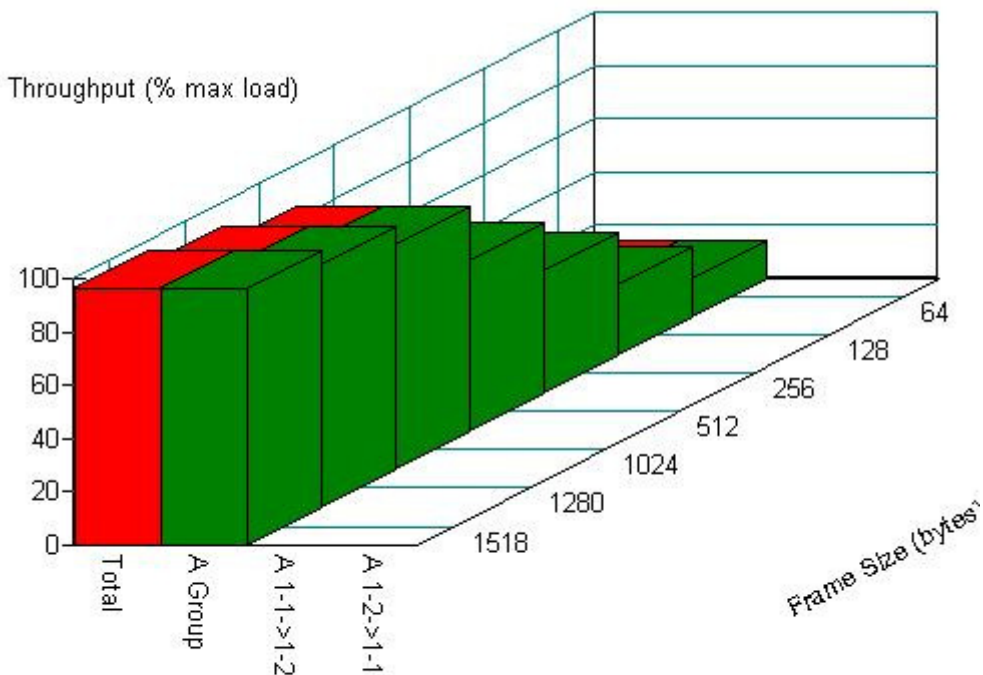
- Binary Direction (LAN1: Realtek 8111E Ethernet → LAN2: Realtek 8111E Ethernet)



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	10.28125	19.5625	31.1640625	62.875	96.90625	100	100
A Group	10.28125	19.5625	31.1640625	62.875	96.90625	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

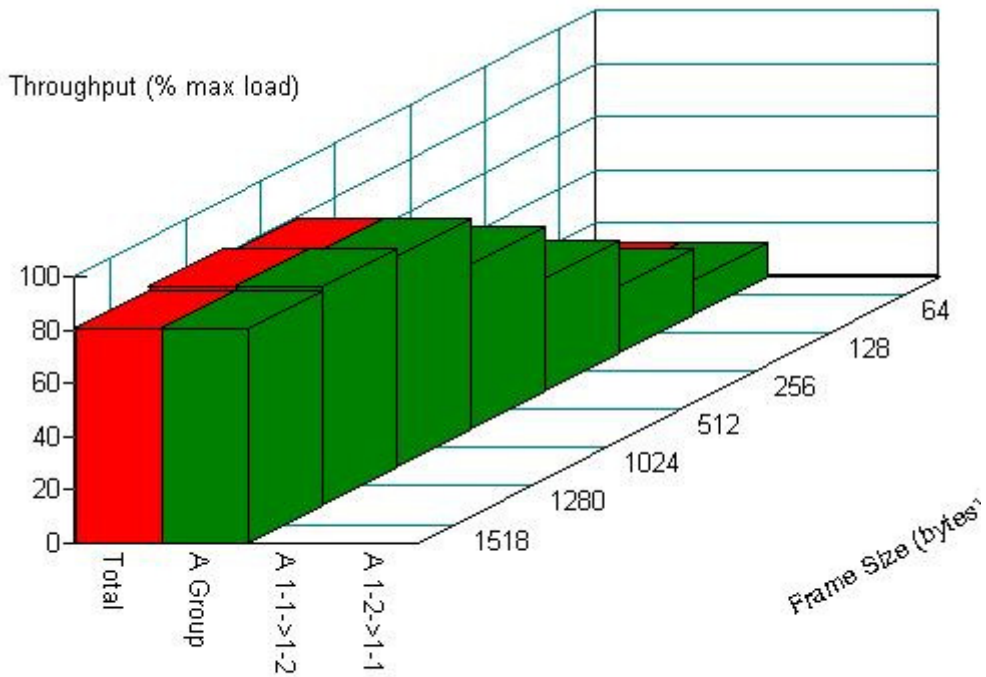
2. Binary Direction (LAN3: Realtek 8111E Ethernet → LAN4: Realtek 8111E Ethernet)



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	14.1484375	25.75	45.859375	63.6484375	83.7578125	90.71875	96.1328125
A Group	14.1484375	25.75	45.859375	63.6484375	83.7578125	90.71875	96.1328125
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

3. Binary Direction (LAN5: Realtek 8111E Ethernet → LAN6: Realtek 8111E 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	12.6015625	24.203125	41.9921875	61.328125	78.34375	81.4375	79.890625
A Group	12.6015625	24.203125	41.9921875	61.328125	78.34375	81.4375	79.890625
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. COM Ports Test

Test Item	Result			Note
	Pass	Fail	N/A	
Transmission Test <115200bps / 15M>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2.5. RS-422 / RS-485 Test

Test Item	Result			Note
	Pass	Fail	N/A	
RS-422 for COM1	<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 COM1	<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

2.6. Digital I/O Test

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









2.7. USB Port Integration Test

Item	USB Port	USB2.0 ports (under OS)			USB3.0 ports (under OS)			Note
		Pass	Fail	N/A	Pass	Fail	N/A	
USB HDD:	Transcend TS500GSJ25D3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB Flash:	Transcend JetFlash 790	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Transcend JetFlash 810	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB DVD ROM:	PIONEER 6X(BDR-XD04T)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB Keyboard:	Microsoft 1366	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB Mouse:	Microsoft MSK-1113(B)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB FDD:	HP FD-05PUB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB2.0 HUB:	USB 2.0 4 port HUB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2.8. CAN BUS Test

CAN BUS Compatibility Test		Result			Note
		Pass	Fail	N/A	
ICP I-7565-H2-G CR		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
30 meter transmission test		Result			Note
		Pass	Fail	N/A	
125K Baud rate	S mode (11bit)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	E mode (29bit)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
500K Baud rate	S mode (11bit)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	E mode (29bit)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1M Baud rate	S mode (11bit)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	E mode (29bit)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2.9. POE LAN Function Test

Connect two computers via different speed LAN HUB by using "Ping" instruction (1000 times)									
1000MBps LAN HUB		D-Link DGS-1008D							
100MBps LAN HUB		Accton Desktop-3005							
10MBps LAN HUB		SVEC FD916H							
POE Camera		ETROVISION EV8581U-BL 2M Fixed dome Camera *2 ETROVISION EV8782Q-BD 3MP Bullet Camera *2							
POE LAN3	Realtek 8111E	MAC Address			00-07-32-35-8B-B9				
POE LAN4	Realtek 8111E	MAC Address			00-07-32-35-8B-BA				
POE LAN5	Realtek 8111E	MAC Address			00-07-32-35-8B-BB				
POE LAN6	Realtek 8111E	MAC Address			00-07-32-35-8B-BC				
Device	POE LED	Active LED	LAN3/4			LAN5/6			Note
			Pass	Fail	N/A	Pass	Fail	N/A	
1000MBps Switch			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
100MBps Switch			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10MBps HUB			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
POE camera			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Internet Browser (DHCP Server)			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
POE camera recode test over 12 hours.			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2.10. Jumper and Connector Function Test

Test item			Result			Note
			Pass	Fail	N/A	
Clear CMOS will clear CMOS date , time , setting , password.			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Buzzer	System boot: one short beep.		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	No memory found: five short beep, pause a period of time, and loop.		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Non 4 pin Speaker
Reset button, system reset under DOS or Windows.			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Power LED, active when system boot.			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDD LED, active when SATA/CF/CFast/mSATA access			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SW3 MCU Delay ON/OFF/Voltage Select	On delay	5 sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		10 sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		30sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		5 min	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Off Delay	3 min	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		5 min	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		15 min	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		30 min	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DIMM2 DDR3L SODIMM			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATA1			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATA2			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SW1 Software Reset			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SW2 Power Button			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LED1 HDD Access LED			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LED2 Slot1 WWAN/WAN LED			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LED3 Slot3 WWAN/WAN LED			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LED4 Slot2 WWAN/WAN LED			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
COM1 COM1 RS232/422/485			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
COM2 COM2 only RS232			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SLOT1 MINI CARD only USB			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SLOT2 MINI CARD Full Function			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

AUDIO1 AUDIO Front+MIC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN1 CAN BUS CON	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN2 DIO CON	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN3 POWER INPUT CON	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN6 FRONT PLANE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN7 SLOT2 SIM CARD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN9 HDD POWER	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN10 HDD POWER	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN12 FUSE CON	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN18 CMOS Setting Selection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN21 LAN5+LAN6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN22 LAN3+LAN4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN23 USB3.0*1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN25 VGA+HDMI CON	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN24 USB2.0*2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN27 LAN1+LAN2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2.11. GPS Function Test

Test item		Result			Note
		Pass	Fail	N/A	
Time-To-First-Fix (TTFF)	cold start Fix time<35s	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Warm start Fix time<35s	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
X / Y coordinate check		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

3. Expansion card and Application Test

3.1. Expansion Slot Compatibility Test

Test point: Device should work properly in windows environment

Mini PCI Express Card	Result			Note
	Pass	Fail	N/A	
AzureWave AW-NB100H(PCI-e Wireless + USB Bluetooth)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Slot1/2/3
AzureWave AW-CB161H(PCI-e Wireless)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Slot2/3
Ralink RT2571 USB Wireless Card	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Slot2/3
HUAWEI EM820W 3G Card	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Slot2/3

3.2. Expansion Card Integration Test

Test Item	Result			Note
	Pass	Fail	N/A	
1. Connect devices to all of expansion slots.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. No error during OS and driver installation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

4. Power Consumption Test

Configuration	
CPU	Intel Celeron J1900 1.99GHz
Memory	DSL DDR3L-1600 8GB(ELPIDA J4208EBBG-GN-F)
Storage	HGST 2.5" 1TB(HTS721010A9E630)
O.S	Windows 8.1 Enterprise 64Bit

4.1. Power Consumption

Please refer to the "Power Supply Electronics Test Report"

4.2. PC Health Status

Test Point:

Voltage deviation: $\pm 5\%$.

Fan speed deviation: $\pm 10\%$

CPU DTS Temp deviation: $\pm 15^{\circ}\text{C}$

System Temp deviation: $\pm 5^{\circ}\text{C}$

Voltage Monitoring Test	Result			BIOS (V)	Actual (V)	Note
	Pass	Fail	N/A			
+ 3.3V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.248	3.19	
+ 5V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.003	4.99	
+ 12V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12.232	12.04	
3VSB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.312	3.25	
5VSB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.088	5.00	
VCORE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0.832	0.82	
VBAT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.232	3.17	
VMEM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.376	1.35	
CPU Temp	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	55 $^{\circ}\text{C}$	51.5 $^{\circ}\text{C}$	
System Temp	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	36 $^{\circ}\text{C}$	33.8 $^{\circ}\text{C}$	

4.3. Wide Voltage Test

4.3.1. Wide Voltage Test

Test Point:

Test voltage range is follow specification $\pm 5\%$.

Test Environment (a. System should boot properly (b. System wasn't halt in following status.)	DC Power (9V~35V)	Current		Note
Windows 8.1 with Prime 95 Full Loading Test	(+9V)	2.25	A	
	(+12V)	1.68	A	
	(+36V)	0.67	A	
Windows 8.1 Without running any Software	(+9V)	1.42	A	
	(+12V)	1.17	A	
	(+36V)	0.47	A	

4.3.2. DC Adapter Compatibility Test

Test Point:

Confirm each adapter can be compatible with wide voltage design.

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

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.	2.88	V	4.5	uA	6.9	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: 26 °C

Function	Item	Time Interval	Criteria	Actual		Result			Note
						Pass	Fail	N/A	
RTC Clock in Power On Mode		24 hrs	+/-2 sec	-2	Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RTC Clock in Power Off Mode		24 hrs	+/-2 sec	+1	Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

5.2. Booting Timer Test

Installation	Actual		Note
System Booting Time	9.83	Sec	Press the Power Button till "Beep" Sound appears

5.3. Watchdog Timer Test

Use Function as below: Hi-Safe20160115

[] No Support.

Time-Out Interval	Criteria	Actual		Result			Note
				Pass	Fail	N/A	
10 sec	+/- 10%	0	Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
60 sec	+/- 10%	0	Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
255 sec	+/- 10%	0	Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note : Under Room Temperature: 26°C

6. O.S. Compatibility Test

6.1. English Ubuntu 14.04 Kernel 3.13.0-32-generic

[] No Support

Driver Information:

Chipset Software	System default
Graphics Media	System default
Audio Driver	System default
LAN Driver	Realtek 8111E 8.039.00

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Ubuntu14.04 kernel 3.13.0-32-generic	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Type uname -a

Test Result:

Test Item	Result			Note
	Pass	Fail	N/A	
Display Function Test				
VGA -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VGA + HDMI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Network Function Test				
Connect to Internet – LAN 1/2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Connect to Internet – LAN 3/4/5/6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Audio Function Test				
Play Audio Function Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Play Audio Test
Base Function Test				
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB DVD-ROM 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"/>	
X Windows Application				
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
Command Test On Text Mode: Attention Delay Phenomenon				
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

[X] x32 Driver Information:

Chipset Software	Intel Chipset Device Software 10.1.1
Graphics Media	Intel HD Graphics 10.18.10.4276 8/17/2015
Audio Driver	Intel Display Audio 6.16.0.3154 9/9/2014 Realtek High Definition Audio 6.0.1.7541 6/18/2015
LAN Driver	Realtek PCIe GBE Family Controller 7.91.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #2 7.91.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #3 7.91.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #4 7.91.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #5 7.91.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #6 7.91.1119.2014 11/19/2014

[X] x64 Driver Information:

Chipset Software	Intel Chipset Device Software 10.1.1
Graphics Media	Intel HD Graphics 10.18.10.4276 8/17/2015
Audio Driver	Intel Display Audio 6.16.0.3154 9/9/2014 Realtek High Definition Audio 6.0.1.7541 6/18/2015
LAN Driver	Realtek PCIe GBE Family Controller 7.91.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #2 7.91.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #3 7.91.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #4 7.91.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #5 7.91.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #6 7.91.1119.2014 11/19/2014

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	
Single Display				
VGA -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot - Windows 7 Ultimate Advanced Options Menu				
Safe Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Basic Function Test				
USB Mouse and Keyboard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
COM Port Mouse detect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB 2.0/3.0 Removable Devices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPM Function	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN Function Test				
LAN1 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN2 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Audio Function Test				
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"/>	
Start Menu				
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"/>	
Restart	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

6.3. Windows 8.1 Enterprise English Version 32/64Bit

[X] x32 Driver Information:

Chipset Software	Intel Chipset Device Software 10.1.1
Graphics Media	Intel HD Graphics 10.18.10.4276 8/17/2015
Audio Driver	Intel Display Audio 6.16.0.3154 9/9/2014 Realtek High Definition Audio 6.0.1.7541 6/18/2015
LAN Driver	Realtek PCIe GBE Family Controller 8.37.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #2 8.37.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #3 8.37.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #4 8.37.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #5 8.37.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #6 8.37.1119.2014 11/19/2014

[X] x64 Driver Information:

Chipset Software	Intel Chipset Device Software 10.1.1
Graphics Media	Intel HD Graphics 10.18.10.4276 8/17/2015
Audio Driver	Intel Display Audio 6.16.0.3154 9/9/2014 Realtek High Definition Audio 6.0.1.7541 6/18/2015
LAN Driver	Realtek PCIe GBE Family Controller 8.37.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #2 8.37.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #3 8.37.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #4 8.37.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #5 8.37.1119.2014 11/19/2014 Realtek PCIe GBE Family Controller #6 8.37.1119.2014 11/19/2014

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows 8.1 Enterprise 32bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
English Windows 8.1 Enterprise 64bit UEFI mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Test Results:

Test Item	Result			Note
	Pass	Fail	N/A	
Single Display				
VGA -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot – Windows 8.1 Enterprise Advanced Options Menu				
Safe Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. msconfig 2. safe boot.
Basic Function Test				
USB Mouse and Keyboard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
COM Port Mouse detect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB 2.0/3.0 Removable Devices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPM Function	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN Function Test				
LAN1/2 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN3/4/5/6 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Audio Function Test				
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"/>	
Start Menu				
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"/>	
Restart	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

7. BIOS Function Test

Configuration	
CPU	Intel Celeron J1900 1.99GHz
Memory	DSL DDR3L-1600 8GB(ELPIDA J4208EBBG-GN-F)
Storage	HGST 2.5" 1TB(HTS721010A9E630)
O.S	Windows 8.1 Enterprise 64Bit

7.1. Advanced Test

Test Item		Result			Note
		Pass	Fail	N/A	
CPU configuration	Virtualization Technology	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enable/Disable
IDE Configuration	IDE mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	AHCI mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB configuration	Legacy USB Support				
Dynamic Digital IO	GPO0~3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test under Dos and OS
Trusted Computing	TPM SUPPORT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Clear TPM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fintek F81866 Super IO configuration	Serial port 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enable/Disable
	RS232	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	RS422	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	RS485	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Serial port 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

7.2. Chipset Test

Test Item			Result			Note
			Pass	Fail	N/A	
North Bridge Configuration	Primary IGFX Boot Display	VBIOS Default	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		CRT	<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	CRT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		HDMI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Disabled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Memory Configuration	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
South Bridge Configuration	Audio Controller	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

7.3. Boot Test

Test Item		Result			Note
		Pass	Fail	N/A	
Quiet Boot		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From Hard Disk		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From USB HDD		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From USB Floppy		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From USB CD-ROM		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Disable		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

7.4. 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 and time
Clear CMOS Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clear Date Defect No. 1151008QEE08

7.5. 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

7.6. 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"/>	

7.7. Hi-safe Test

Test Item	Result			Note
	Pass	Fail	N/A	
Version(20160115)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
System Information	CPU Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Model Name	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Display Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	RAM Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H/W Monitor	Info	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Voltage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DIO	DIO5~8 High	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIO5~8 Low	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WatchDog	10sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1min	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	255sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	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"/>
	Read Byte	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Read Word	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Result / Read	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Support single DIMM
				Actual 11 sec
				Actual 65sec
				Actual 270sec
				SMBus Address 0xE000
				Slave Address A0h,A2h,A4h

7.8. Negative Test

7.8.1 USB Keyboard Negative Test

Methods	Result			Note
	Pass	Fail	N/A	
1. Boot into BIOS setup manual. 2. Press NumLock or ScrLk and press arrow key. 3. confirm arrow key function are normally	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

7.8.2 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 Celeron J1900 1.99GHz
Memory	DSL DDR3L-1600 8GB(ELPIDA J4208EBBG-GN-F)
Storage	HGST 2.5" 1TB(HTS721010A9E630)
O.S	Windows 8.1 Enterprise 64Bit

8.1. System Performance Test

Test Result: (Display set 1920*1080 test)

Testing Software	Scope		Note
	AAEON	Ref.	
PCMark2005			
PCMark	4110	-	PCMarks
CPU	4905	-	
Memory	4475	-	
Graphics	1409	-	
HDD	6911	-	
PCMark Vantage			
PCMarks	0	-	PCMarks
Memories	3010	-	
TV and Movies	0	-	
Gaming	3088	-	
Music	4281	-	
Communications	0	-	
Productivity	0	-	
HDD	3728	-	

Testing Software	Scope		Note
	AAEON	Ref.	
3DMark2006 v120			
3DMark Score	1623	-	
SM2.0 Score	559	-	
HDR/SM3.0 Score	592	-	
CPU Score	2358	-	

3DMark11 Professional Edition			
Performance 1280*720 (Default)			
3DMark 11Score	P262	-	
Graphics Score	223	-	
Physics Score	1898	-	
Combined Score	272	-	

Testing Software	Scope		Note
	AAEON	Ref.	
Performance Test 7.0			
PassMark Rating	793.9	-	
CPU Mark	2285.0	-	
2D Graphics Mark	188.7	-	
3D Graphics Mark	152.7	-	
Memory Mark	978.8	-	
Disk Mark	901.2	-	

8.2. Storage Performance Test

SATA HDD Performance (HDD performance should meet specification)				
SATA HDD	HGST 2.5" 1TB(HTS721010A9E630)			
CPU	Intel Celeron J1900 1.99GHz			
Memory	DSL DDR3L-1600 8GB(ELPIDA J4208EBBG-GN-F)			
OS	Windows 8.1 Enterprise 64bit			
Item	Comment / (unit)	Software	Score	Note
SATAII port should be meet SATA3G 150~300MB	Long bench(32mb zones)-Random access / (ms) (smaller is better)	HD Tach version 3.0.4.0 free	0.1ms	
	Long bench(32mb zones)-CPU utilization / (%,+/-2%) (smaller is better)	HD Tach version 3.0.4.0 free	2%	
	Long bench(32mb zones)-Average read / (MB/s)	HD Tach version 3.0.4.0 free	209.8MB/s	
	Long bench(32mb zones)-Burst Speed / (MB/s)	HD Tach version 3.0.4.0 free	201.9MB/s	SATAII 150~300MB SATAIII up 300M/B

USB3.0/2.0 Performance				
USB Flash	Transcend USB3.0 32GB(JetFlash 810)			
Item	Comment / (unit)	Software	Transfer Rate (MB/s)	Note
USB3.0	Maximum Read	ATTO Disk Benchmark	114MB/s	
	Maximum Write	ATTO Disk Benchmark	31MB/s	
USB2.0	Maximum Read	ATTO Disk Benchmark	39MB/s	CN24_A
	Maximum Write	ATTO Disk Benchmark	16MB/s	
USB2.0	Maximum Read	ATTO Disk Benchmark	40MB/s	CN24_B
	Maximum Write	ATTO Disk Benchmark	18MB/s	

mSATA performance				
mSATA	Transcend 64GB(TS64GMSA370)			
Item	Comment / (unit)	Software	Transfer Rate (MB/s)	Note
mSATA	Maximum Read	ATTO Disk Benchmark	284MB/s	
	Maximum Write	ATTO Disk Benchmark	79MB/s	

9. Stability test

9.1. Run In Test

Under Room Temperature: 26 °C

OS: Windows 8.1 Enterprise English 64bit

Test Item		Result			Note
		Pass	Fail	N/A	
Burn In Test V8.1(1010) 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"/>	
	GPGPU	<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"/>	
	COM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	USB	2.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note: COM PORT Speed Set to 115200.

9.2. Reboot Test

Under Room Temperature: 26 °C

OS: Windows 8.1 Enterprise English 64bit

Test Tool: Passmark rebooter.exe

Test item	Result			Note
	Pass	Fail	N/A	
Reboot test for 1000 cycles <System should not error or hang during testing.>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

9.3. Cold Boot Test

Under Room Temperature: 26 °C

OS: DOS

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"/>	Jumper setting auto power button or BIOS select " power on"

10. Front Panel Button and Mechanical Check

10.1. Front Panel Button Function Test

Test item	Function			Note
	Pass	Fail	N/A	
Power on/off button	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

10.2. Mechanical Check

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