

Report NO: 13IP010001

EMB-H61B

Intel H61 chipset Mini-ITX Board

Bulletin Verification 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 <hr style="width: 80%; margin: 0 auto;"/> 2013/01/03	Approval <hr style="width: 80%; margin: 0 auto;"/> Tom Lin	Test Engineer <hr style="width: 80%; margin: 0 auto;"/> Louie Lee
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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	

Note :

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

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 will be updated when re-test completed in product next version of the product.

Specification Validation

Main Specification

Item	Specification	Result			Note
		Pass	Fail	N/A	
Form Factor	Mini-ITX motherboard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Processor	Socket 1155(Sandy / Ivy Bridge)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Processor feature: HyperThreading, Dual-core, EIST, Turbo Boost	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Other CPU features: Dual-core, Quad-core	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
System Memory	204 pin DDR3,Non-ECC, Memory size: Min: 512 MB, Max: 16 GBDDR Support list: DDR3 1600/1333/1066	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chipset	Intel H61(B3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Super I/O	Fintek/81866D PS/2 Kb/Ms controller Hardware Monitor Watch Dog Timer, 8-bit GPIO(4-bit input and 4-bit output), /W Status Monitor: Monitors CPU/system temperature and overheat alarm Monitors Vcore/5V/3.3V/12V voltages and failure alarm, PS2 KB/MS, 1 x RS-232/422/485 and and 5V/12V on PIN9COM1 support, 5 x RS-232	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Network	Dual LAN Gigabit: RTL8111F-VB-CG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I/O Chip	Fintek F81866D	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Storage	South Bridge: Intel H61 built-in SATA1,2 (Blue) 2 x SATA 3Gb/s port(s)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPM	Option	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB	USB 2.0 Ports: 8 mid-board: 2 ports back panel: 6 ports	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Audio	Azalia CODEC: 5.1 channels ALC887-VD2-CG (Colay with ALC886)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Expansion Slots	1 x full size Mini PCIe socket for PCIe & USB interface (Colay mSATA , BOM optional to support with JDOC MO-300 compliance) 1 x PCIe 2.0 x4(Intel inform:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PC Health Monitoring	Voltage Vcore: 3.3 V Fan Speed: CPU fan 1 Chassis fan Temperature: CPU, Motherboard New BIOS can monitor: CPU (via PECI), PCH (via DTS) and Chassis (via Super I/O thermal resister)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Form Factor	Dimensions: 6.7 x 6.7 inches	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Graphics	Integrated Gfx in North bridge On board Gfx.chipset name: Intel Sandy/Ivy Bridge + H61 On-board frame buffer: 1748 MB D-Sub Max. resolution-1: X @ HZ(4:3) Max. resolution-2: X @ HZ(16:9) Max. resolution-3: X @ HZ(16:10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Back I/O Placement	On-board connectors: CPU_FAN (4 pin CPU fan with PWM control) BUZZER CLRTC Back I/O connectors: KB_USBxx LAN1_USBxx LAN2_USBxx AUDIO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Onboard Connector	On-Board connector : SYS_FAN: Only supporte 4pins with PWM Fan COM2 ~ COM6, Int. COM (Black, 2x5 pins, pitch 2.00mm, non-kill pin) F_Panel (2x5 pin ,K10, including IDE LED, Power LED,Power Switch, Reset) Rear I/O: 1 x PS/2 KB/MS port(s) 1 x VGA2 x HDMI 2 x LAN (RJ45) port(s) 6 x USB 2.0 3 x Audio jack(s) 1 x RS-232/422/485 supports 5/12V on the 9th pin	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Jumpers, LED & BUZZER	A. Jumper: CLRTC* (3 pin, Normal/Clear RTC,with tab)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	B. LED: SB_PWR* (Green, stand-by power LED) LED : Main_PWR (Green, main power LED)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	C. BUZZER: Buzzer, if SPEAKER header is not present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Wake-up Functions	WOR by Ring* (Wake On Ring by external Modem from S1, S3, S4, S5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	WOL/WOR by PME* (Wake On LAN/Ring by PME from S1, S3, S4, S5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
POWER MANAGEMENT	S3,S4,S5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other requirements	TPM IC on board - Infineon SLB9635TT 02057-00030000C.S SLB 9635 TT 1.2 TSSOP-28-2INFINEON FW3.19	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

O.S. Support

Item	Specification	Result			Note
		Pass	Fail	N/A	
Microsoft Embedded	Windows CE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Windows XP Embedded	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Microsoft Windows	Windows XP Pro, 32bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Windows 7, 32bit / 64bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Linux	Linux kernel 2.6.x or above	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Environmental Specifications

Item	Specification
Operating temperature	32~130 °F (0~55 °C)
Storage temperature	-4~158 °F (-20~70 °C)
Operating Humidity	10~80%, non-condensing
Power Compliance	Compliant with EuP/ErP
Vibration	N/A
Shock	N/A
Drop	N/A
EMI	CE & FCC Class A

Note: Please refer to Environment Test Report for detail information

Platform Information

Item	Device Information	Test Item
PCB Model / Version	EMB-H61B A0.1	1,2,3,4,5,6,7,8,9
BIOS / Version	EMB-H61B R1.0 (EH61BM10) (12/25/2012)	1,2,3,4,5,6,7,8,9
CPU Type	Intel® Core™ i7-3770S Processor(8M Cache, up to 3.90 GHz)	1,2,3,4,5,6,7,8,9
Memory Type	Transcend DDR3 1600 8GB *2 SEC HYKO K4B4G0846B (Total 16GB)	1,2,3,4,5,6,7,8,9
SATA HDD	Seagate ST500DM002 3.5' 500GB	1,2,3,4,5,6,7,8,9
SATA DVD-ROM	LG H.L GH20 NS15 8X	1,2,3,4,5,6,7,8,9
USB DVD-ROM	ASUS SDRW-08D2S-U/DBLK/G/AS	1,2,3,4,5,6,7,8,9
LCD Monitor	LG E2260 22" LED monitor	1,2,3,4,5,6,7,8,9
LVDS	AU G150XG01 V.0 / 15" / 1024*768 / 18bit (4:3)	1,2,3,4,5,6,7,8,9
CF-SATA	Innodisk CFast D150 Series Industrial SATA Flash Module 8GB	1,2,3,4,5,6,7,8,9
CF	Innodisk iCF4000 16GB	1,2,3,4,5,6,7,8,9
Expansion Board	N/A	N/A
	N/A	N/A
Operating System	<input checked="" type="checkbox"/> Fedora 15 Kernel 2.6.38.6-26.fc15.i686	7-1
	<input checked="" type="checkbox"/> Windows 7 Ultimate 32/64Bit	7-2
	<input checked="" type="checkbox"/> Windows XP Professional English SP3 32 Bit	7-3
Power Supply	ATX Power Supply : Zippy HG2-6400P 400W	1,2,3,4,5,6,7,8,9
	AT Power Supply: Zippy HG2-6400P 400W	1,2,3,4,5,6,7,8,9
	DC Adapter : N/A	N/A
Battery Model	N/A	N/A
Chipset Information with Windows 7 Ultimate English Version 32Bit Driver Version		
Chipset Software	Intel(R) Chipset Device Software 9.3.0.1025(2012/9/14)	
PCH Bridge	Intel(R) H61	
Super IO Chipset	Fintek F81866D	
VGA Chipset	Intel(R) HD Graphics 9.17.10.2828(2012/07/31)	
Audio Chipset	Realtek High Definition Audio 6.0.1.6699(2012/08/07)	
Ethernet Chipset	Realtek PCIe GBE Family Controller 7.61.612.2012 (2012/6/12)	

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1. Hardware Test

1.1. CPU Compatibility Test

CPU Information	Result			Note
	Pass	Fail	N/A	
Intel® Core™ i5-2390T Processor (3M Cache, 2.70 GHz) 35W	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test by Windows 7,
Intel® Core™ i3-2100T Processor (3M Cache, 2.50 GHz) 35W	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test by Windows XP,7, Linux
Intel® Core™ i7-3770S Processor(8M Cache, up to 3.90 GHz) 65W	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test by Windows XP,7,
Intel® Core™ i5-3550S Processor (6M Cache, up to 3.70 GHz) 65W	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test by Windows 7,

1.2 Memory Compatibility Test

Memory Information	MEM V4.2			Note
	Pass	Fail	N/A	
Transcend DDR3 1333/1GB CL9 SEC K4B1G0846G	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Memtest4.2
Transcend DDR3 1333/4GB CL9 SEC K4B2G0846C	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Memtest4.2
Transcend DDR3 1600 8GB SEC HYKO K4B4G0846B	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Memtest4.2

1.3. SATA Compatibility Test

1.3.1 Onboard SATA (IDE) Test

SATA Device Information		Result			Note
		Pass	Fail	N/A	
HDD	Seagate ST3160811AS 3.5" 160GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDD	Toshiba MK1676GSX 2.5" 250GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DVD	LG H.L GH20 NS15 8X	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

1.3.2 Onboard SATA (AHCI) Test

SATA AHCI Test	Result			Note
	Pass	Fail	N/A	
Seagate ST3160811AS 3.5" 160GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

1.4. CF Card Compatibility Test

CFast Information	Result			Note
	Pass	Fail	N/A	
Transcend Compact Flash 4GB ULTRA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Innodisk 16GB Series (CF SATA)	<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 Windows 7 Ultimate English Version 32Bit Driver Version										Hardware Information with Windows 7 Ultimate English Version 64Bit Driver Version
CPU	Intel® Core™ i7-3770S Processor (8M Cache, up to 3.90 GHz)									Intel® Core™ i5-2390T Processor (3M Cache, up to 3.50 GHz)
Memory	Transcend DDR3 1600 8GB *2 SEC HYKO K4B4G0846B (Total 16GB)									
HDD	Seagate ST500DM002 3.5' 500GB									
VGA	DELL U2410									
HDMI1	DELL U2410									
HDMI2	LG E2260									
LVDS	AUO M215HW03 V1 /21"/1920X1080/48bit									
Color Quality	<input checked="" type="checkbox"/> 16bit <input type="checkbox"/> 24bit <input checked="" type="checkbox"/> 32bit									
Resolution	VGA			HDMI1/HDMI2			LVDS			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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1024X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1152X864	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1280X600	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1280X720	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1280X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1280X960	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1280X1024	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1360X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1366X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1400X1050	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1600X900	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1600X1200	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1920X1200	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1920X1440	<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"/>	
2048X1536	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Rotation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	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	VGA + LVDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Twin		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone	VGA + HDMI1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Twin		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone	VGA + HDMI2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Twin		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone	HDMI1 + LVDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Dual Display Twin		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Twin	HDMI1 + HDM2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Twin	HDMI2 + LVDS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 the system is booting to Windows then check VGA driver and display
3. Check brightness level and screen behavior of the monitor connected VGA output The phenomena, normal "Ghost Image" or "Flicker" should be watched carefully.

	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	
1_AUO G065VN01 V.0 / 6.5" / 640x480 / 18bit (4:3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2_AUO G065VN01 V.0 / 6.5" / 640x480 / 24bit (4:3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3_Data Image 7" / 800*480 / 18bit (16:9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4_AU G084SN05 V.3 / 8.4" / 800*600 / 18bit (4:3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
5_AU B104SN02 V.0 / 10.4" / 800*600 / 18bit (4:3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6_AUO G084SN05 v7 / 8.4" / 800*600 / 24bit (4:3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
7_AUO G121XN01-V0 12" / 1024*768 / 18bit (4:3) PWM, LED backlight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8_AU M150XN07 V.2 / 15" / 1024x768 / 24bit (4:3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9_Toshiba /12.1"/1280 x 768 x 18bit (16:9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10_AU M170EG01 V.D/ 17" / 1280*1024 / 48bit (4:3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
11_AU M170XW01 V.1 / 17" / 1280x768 / 24bit (16:9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
12_AUO T260XW02 / 26" / 1366x768 / 24bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13_AU M201UN02 V.5 / 20.1" / 1600x1200x48bit	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
14_AUO T370HW01 / 37" / 1920x1080 / 48bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15_AUO M215HW03 V1 /21"/1920X1080/48bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15_AUO M190PW01 V0 / 19"/1440X900/48 bit	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	







2.2. Audio Function Test

[] No Support

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

2.3. LAN Function Test

[] No Support

Connect two computers via different speed LAN HUB by using "Ping" instruction (1000 times)										
1000MBps LAN HUB		D-Link DGS-1008D								
100MBps LAN HUB		HP J4095A 24 Ports								
10MBps LAN HUB		SVEC FD916H								
OnBoard LAN1		Realtek RTL 8111E 10/100/1000MB					MAC Address		00-E0-4C-68-00-D3	
OnBoard LAN2		Realtek RTL 8111E 10/100/1000MB					MAC Address		00-E0-4C-68-00-D4	
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 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"/>		
Wake On LAN			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S1,S3,S4 Fail, DOS S5 ErP need to disable.	
Boot ROM to Novell 4.11 [RPL]			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
LAN Boot (PXE)			<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"/>		

2.4. Jumper Setting Test

Function Test		Result			Note
		Pass	Fail	N/A	
J1- panel voltage select		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5V/3V
J2- inverter voltage select		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12V/5V
J3- inverter control select		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DC CTL/PWM CTL
J4- AT& ATX PWR select		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
J5- COM1 RI & voltage select		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12V/5V/RI
CLRTC1- RTC jump		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
F_PANEL - Front plane	1-3 HDD LED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	2-4 Power LED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	5-7 HWRST Button	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	6-8 Power Button	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

3. Integration Test

	Hardware Information with Windows 7 Ultimate English Version 32Bit Driver Version
CPU	Intel® Core™ i7-3770S Processor(8M Cache, up to 3.90 GHz)
Memory	Transcend DDR3 1600 8GB *2 SEC HYKO K4B4G0846B (Total 16GB)
HDD	Seagate ST500DM002 3.5' 500GB
	Chipset Information with Windows 7 Ultimate English Version 32Bit Driver Version
Chipset Software	Intel(R) Chipset Device Software 9.3.0.1025(2012/9/14)
PCH Bridge	Intel(R) H61
Super IO Chipset	Fintek F81866D
VGA Chipset	Intel(R) HD Graphics 9.17.10.2828(2012/07/31)
Audio Chipset	Realtek High Definition Audio 6.0.1.6699(2012/08/07)
Ethernet Chipset	Realtek PCIe GBE Family Controller 7.61.612.2012 (2012/6/12)

3.1. USB Port Integration Test

Item	USB Port	Boot			Function(XP)			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 SDRW-08D2S-U USB2.0 DVD-R/W 8X		<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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

3.3. COM Port Integration Test

Test Item	Result			Note
	Pass	Fail	N/A	
Serial Modem Dial Out	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Serial Modem Ring In	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tested with Modem
Serial Modem +12V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test with Multimeter
Serial Modem +5V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test with Multimeter

3.4. RS-422 / RS-485 Test

Test Item	Result			Note
	Pass	Fail	N/A	
RS-422 for COM2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use loopback and WINSSD.exe to test RS-422 port in Windows
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The communication between the RS-422 ports of two boards is linked with one 1200M cable on Windows Terminal
RS-485 for COM2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use ICP CON I-7044D D/IO Module in Windows(Support Auto flow control)
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The communication between the RS-485 ports of two boards is linked with one 1200M cable on Windows Terminal

3.5. LPT Port Test

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

3.6. Burn In Test

Under Room Temperature: 26 °C

Test Item	Result			Note
	Pass	Fail	N/A	
Burn In Test V7.0 Pro	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Windows 7 Ultimate SP1 English Version 32Bit

Note: COM PORT Baud Rate is set to 115200 bauds.

4. Application Test

4.1. PCI-Express Function Test

PCI-Express 1x	Function Test			Note
	Pass	Fail	N/A	
Intel GIGABIT CT DESKTOP ADAPTER LAN Card	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCI-Express 4x	Function Test			Note
	Pass	Fail	N/A	
Intel Gigabit ET2 Quad port SVR adapter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCI-Express 16x	Function Test			Note
	Pass	Fail	N/A	
ASUS Geforce GT620	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4X signal
Mini PCI Express Card	Function Test			Note
	Pass	Fail	N/A	
AzureWave AW-NB037 Wireless + BT (PCI-E+USB interface)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

5. Power Consumption Test

Hardware Information with Windows 7 Ultimate English Version 64Bit Driver Version	
CPU	Intel® Core™ i7-3770S Processor(8M Cache, up to 3.90 GHz)
Memory	Transcend DDR3 1600 8GB *2 SEC HYKO K4B4G0846B (Total 16GB)
HDD	Seagate ST500DM002 3.5' 500GB

5.1. AT/ATX Power Consumption

Test Equipment	
Equipment	Digital Multimeter
Manufacturer	HOLA
Model name	DM-1240

12V DCin Mode Test Environment						
12V DCin Power Model	Zippy HG2-6400P					
Keyboard	Genius K639					
Mouse	Genius NetScroll 120					
CPU FAN	EMB-H61B Standard FAN					
Test Mode	Voltage(V)	Current(A)		Total Watt(W)		Note
Power on (Max)	(+12V)	4.79	A	57.48	W	
Windows 7 SP1 32bit Idle mode	(+12V)	1.67	A	20.04	W	
Suspend in Window7 (S3)	(+12V)	0.06	A	0.72	W	
(Full Loading Mode) Windows 7 SP1 with Prime 95 Full Loading Test	(+12V)	8.10	A	97.2	W	Prime95 Version 259
Power off (S5 mode)	(+12V)	0.02	A	0.24	W	
Power off (S5 mode)— ErP enable	(+12V)	0.01	A	0.12	W	ErP 2.0 < 0.5W

5.2. PC Health Status

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

Voltage Monitoring Test	Result			BIOS	Actual	Note
	Pass	Fail	N/A			
Chassis Temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	35°C	33°C	
CPU Temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	45°C	43°C	
PCH Temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	45°C	43°C	
FAN1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7300 RPM	N/A RPM	
FAN2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7300 RPM	N/A RPM	
+VCore	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0.976V	0.97V	
+5V Dual	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.087V	5.1V	
+5V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.087V	5.1V	
+12V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12.144V	12.08V	
VSB5V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.016V	5.1V	
VCC3V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.392V	3.31V	
VSB3V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.392V	3.31V	
VBAT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.296V	3.28V	

6. Time Accuracy Test

6.1. Booting Timer Test

Installation	Actual		Note
System Booting Time	6.5	Sec	Period for "Beep" starting to Sound after pressing Power Button.

6.2. Watchdog Timer Test

Use Function as below:

[] No Support.

Time-Out Interval	Criteria	Actual		Result			Note
				Pass	Fail	N/A	
10 sec	+/-2 sec	10.20	Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test With Hi-Safe
60 sec	+/-2 sec	60.1	Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
255 sec	+/-2 sec	255.2	Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note : Under Room Temperature: 26°C / DOS Mode

7. O.S. Compatibility Test

7.1. English Fedora 15 Kernel 2.6.38.6-26.fc15.i686

[] No Support

Driver Information:

Chipset Software	English Fedora 15 default driver
Graphics Media	English Fedora 15 default driver
Audio Driver	English Fedora 15 default driver
LAN Driver	English Fedora 15 default driver

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Fedora 15 Kernel 2.6.38.6-26.fc15.i686	<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"/>	
HDMI1 – Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI2—Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LVDS -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Network Function Test				
Connect to Internet – LAN 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Connect to Internet – LAN 2	<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"/>	USB
Keyboard Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	USB
Console Redirection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Support COM1,COM2
CD-ROM Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	USB DVD ROM
USB 2.0 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
Halt	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Power Off Mode
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

x32 Driver Information:

Chipset Software	Intel(R) Chipset Device Software 9.3.0.1025(2012/9/14)
Graphics Media	Intel(R) HD Graphics 9.17.10.2828(2012/07/31) Sandy bridge Intel(R) HD Graphics 4000 9.17.10.2828(2012/07/31) Ivy bridge
Audio Driver	Realtek High Definition Audio 6.0.1.6699(2012/08/07)
LAN Driver	Realtek PCIe GBE Family Controller 7.61.612.2012 (2012/6/12)

x64 Driver Information:

Chipset Software	Intel(R) Chipset Device Software 9.3.0.1025(2012/9/14)
Graphics Media	Intel(R) HD Graphics 9.17.10.2828(2012/07/31) Sandy bridge Intel(R) HD Graphics 4000 9.17.10.2828(2012/07/31) Ivy bridge
Audio Driver	Realtek High Definition Audio 6.0.1.6699(2012/08/07)
LAN Driver	Realtek PCIe GBE Family Controller 7.61.612.2012 (2012/6/12)

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows 7 Ultimate SP1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	32bit IDE mode 64bit AHCI mode

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"/>	
HDMI1 -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI2-- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LVDS -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1024*768
Boot - Windows 7 Ultimate Advanced Options Menu				
Safe Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Basic Function Test				
PS/2 Mouse and Keyboard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB Mouse and Keyboard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
COM Port Mouse detect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB 2.0 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"/>	
Line In Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Microphone Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI1 Line Out Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI2 Line Out 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"/>	
Standby(S1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Standby(S3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Support USB K/M wake up.
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 XP Professional English Version 32

[X] x32 Driver Information:

Chipset Software	Intel(R) Chipset Device Software 9.3.0.1025(2012/09/14)
Graphics Media	Intel(R) HD Graphics 6.14.10.5406(2012/04/02)
Audio Driver	Realtek High Definition Audio 5.10.0.6699(2012/08/07)
LAN Driver	Realtek PCIe GBE Family Controller 5.796.503.2012 (2012/05/03)

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows XP Professional English SP3 AHCI mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	AHCI mode

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"/>	
HDMI1 -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI2—Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LVDS -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1920*1080
Boot - Windows XP Professional Advanced Options Menu				
Safe Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Basic Function Test				
PS/2 Mouse and Keyboard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB Mouse and Keyboard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
COM Port Mouse detect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB 2.0 Removable Devices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPM	<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"/>	
Line In Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Microphone Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI1 Line Out Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI2 Line Out 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"/>	
Standby(S1)	<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 XP Professional English SP3 32 Bit Driver Version	
CPU	Intel® Core™ i5-3550S Processor (6M Cache, up to 3.70 GHz)
Memory	Transcend DDR3 1333/4GB CL9 SEC K4B2G0846C
HDD/CFD	Toshiba MK1676GSX 2.5" 250GB

8.1. Advanced Test

Test Item		Result			Note	
		Pass	Fail	N/A		
ACPI settings	Enable Hibernation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Enable/Disable	
	Sleeps state (S1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Sleeps state (S3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
S5 RTC Wake up	Wake system with Dynamic time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Wake up minute increase	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Trusted Computing	TPM SUPPORT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clear TPM passed.	
CPU configuration	Hyper-threading	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enable/Disable	
	Turbo mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enable/Disable	
SATA configuration	SATA controller	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enable/Disable	
	AHCI mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	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"/>		
F81866 Super IO configuration	Serial port 1~6	<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"/>		
	ERP Function	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
F81866 Smart FAN	FAN1	Auto by RPM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Auto by Duty-cycle	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Manual by RPM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cooler max speed: 7300rpm Test with 7000,3500,500 rpm
		Manual by Duty-cycle	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100%=7300rpm; 50%=3400rpm; 0%=46rpm
	FAN1	Auto by RPM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Auto by Duty-cycle	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Manual by RPM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cooler max speed: 7300rpm Test with 7000,3500,500 rpm
		Manual by Duty-cycle	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100%=7300rpm; 50%=3400rpm; 0%=46rpm
Digital IO		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
JMB36X ATA Controller Configuration		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

8.2. Chipset Test

Test Item			Result			Note
			Pass	Fail	N/A	
System Agent (SA) Configuration	Graphics Configuration	AUTO	<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"/>	
		HDMI2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		LVDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Primary Display	Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test with 16X Graphic card.
		IGFX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		PEG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	CH7511 B Panel type	640*480 18bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		800*600 18bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1024*768 18bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		640*480 24bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		800*600 24bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1024*768 24bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1280*1024 48bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1600*1200 48bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test with 1920*1080 panel
		800*480 18bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1280*768 18bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1280*768 24bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1366*768 24bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		1400*900 48bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test with 1920*1080 panel
		1920*1080 48bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test with 1920*1080 panel
		1280*1024 18bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	1280*1024 24bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	CH7511B Backlight control mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DC/PWM mode	
	Brightness setting	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0~100% PWM mode: BIOS:2.13V; Under Win7 100%:3.3V ; 75%:2.68V ; 50%:2.07V; 25%:1.66V; 0%:0.84V	
	Brightness control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Normal/ Inverter	
Memory Configuration	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
PCIe x4 GEN speed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test with SATA Sil3132 card		
PCH IO Configuration	PCH Azalia Configuration	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enable/Disable	
	Azalia Internal HDMI codec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Power Mode	ATX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	AT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	FP_PWR LED is not support.	
Restore AC Power Loss	Power on	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ERP support	
	Power Off	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Last State	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ERP support	
Mini PCI-E Gen Speed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test with SATA Sil3132 card		
Resume on Ring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

8.3. Boot Test

Test Item	Result			Note
	Pass	Fail	N/A	
Boot up Numlock State	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Quiet Boot	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Launch RTL8111E PXE ROM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From Hard Disk	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From CDROM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From USB HDD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From USB Floppy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From USB CD-ROM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot from LAN	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Disable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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 and time
Clear CMOS Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clear Date

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(20121207_1.1.0)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
System Information	CPU Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Model Name	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Display Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	RAM Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Support single DIMM
H/W Monitor	Info	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Fan Speed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Voltage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DIO	DIO1~4 High	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	DIO1~4 Low	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	DIO5~8 High	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	DIO5~8 Low	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WatchDog	10sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actual 10.2 sec
	1min	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actual 60.3sec
	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 0xF040
	Read Byte	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Slave Address A0h
	Read Word	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Result / Read	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Smart FAN	Chipset	<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"/>	
	Speed control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Off Speed TMP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Full Speed TMP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Backlight control	Inverter1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	SMBUS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Intel 0xF040
	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 Version 32Bit Driver Version	
CPU	Intel® Core™ i7-3770S Processor(8M Cache, up to 3.90 GHz)
Memory	Transcend DDR3 1600 8GB *2 SEC HYKO K4B4G0846B (Total 16GB)
HDD	Seagate ST500DM002 3.5' 500GB

9.1. Performance Test

Test Result: (Display set 1920*1200 test)

Testing Software	Scope		Note
	AAEON	Ref.	
CPU Mark99			Win7
Scores	568	-	

PCMark2002			Win7
CPU	N/A	-	
Memory	60525	-	
HDD	3105	-	
Benchmark (A)	-		
PCMark2005			Windows 7
PCMark	N/A	-	PCMarks
CPU	12891	-	
Memory	14158	-	
Graphics	6195	-	
HDD	7380	-	
Benchmark (B)	-		
Average Efficiency	-		
PCMark Vantage			Windows 7
PCMark	9547	-	PCMarks
Memories	5158	-	
TV and Movies	6512	-	
Gaming	5736	-	
Music	8448	-	
Communications	12493	-	
Productivity	7014	-	
HDD	4512	-	

Testing Software	Scope		Note
	AAEON	Ref.	
3Dmark2003 v360			Windows 7
3Dmark Score	6089	-	Select All
CPU Score	2549	-	
Benchmark (A)	-		
3Dmark2006 v120			Windows 7
3Dmark Score	4274	-	Select All
SM2.0	1405	-	
HDR/SM3.0	1616	-	
CPU Score	6777	-	

Testing Software	Scope		Note
	AAEON	Ref.	
Final Reality V1.01—BenchMark Test			Windows 7
2D image	97.08	-	
3D	8.66	-	
Bus transfer	61.8	-	
Overall	43.16	-	Reality marks
Benchmark (A)	-		

Testing Software	Scope		Note
	AAEON	Ref.	
Performance7			Windows 7
PassMark Rating	1802.6	-	
CPU Mark	7447.0	-	
2D Graphics Mark	499.8	-	
3D Graphics Mark	437.1	-	
Memory Mark	1388.9	-	
Disk Mark	896.9		

Testing Software	Scope		Note
	AAEON	Ref.	
Windows experience index			Windows 7
Processor	7.6	-	
Memory	7.7	-	
Graphics	6.4	-	
Gaming graphics	6.4	-	
Primary hard disk	5.9	-	