

Report NO:12I010007

# EMB-QM77

## Intel QM77 chipset Mini-ITX Motherboard

### P5 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	Approval	Test Engineer
2012/5/14	Vincent Chen	Wade Yang

**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 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 will be updated when re-test completed in product next change version.**

## Specification Validation

### Main Specification

Item	Specification	Result			Note
		Pass	Fail	N/A	
Form Factor	Mini-ITX motherboard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Processor	Socket 988B, Socket G2 Intel® IVY Bridge processors up to 45W Max	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
System Memory	2 x 204-pin Dual Channel DDR3 1066/1333/1600 MHz SO-DIMM up to 8GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chipset	Intel® IVY-Bridge + QM77	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ethernet	LAN1: Intel® PHY WG82579LM 10/100/1000Mb LANs, RJ-45 X1 LAN2: Realtek ALC 8111E 10/100/1000Mb LANs, RJ-45 X1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BIOS	AMI BIOS 128Mbit SPI ROM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I/O Chip	ITE IT8728F	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Storage	2 x SATA-III, 2 x SATA-II Support RAID 0,1,5,10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Digital I/O	8-bit programmable (4-in / 4-out)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WDT	System reset : 1~255 step programmable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
H/W Monitor	System temp, Voltage, and Cooling fan status	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Audio	HD Audio Realtek ALC 662 Codec for 5.1 CH support with phone Jack	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Expansion Interface	1 x PCI-E x 16 slot , 1 x Mini-PCIe socket, 1 x Cfast, 1 x LPC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Power Requirement	1 x ATX 4-pin connector for DC-12 V input 1 x CPU fan, 1 x System fan with 4-pin wafer, 2 x SATA power with 4-pin wafer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPM Support	1 x TPM Module(Optional)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chipset	Intel® Ivy-Bridge Processor + QM77	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Display
Graphic Engine	3 <sup>rd</sup> Generation Intel® Core™ i7 / i5 / Celeron® integrated graphics engine	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Resolutions	Up to 2560 x 1600 @ 60Hz for 1 <sup>st</sup> Display Port Up to 1920 x 1600 @ 60Hz for 2 <sup>nd</sup> Display Port Up to 1920 x 1200 @ 60Hz for VGA, DVI, HDMI LVDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Output Interface	Display Port, Dual 24-bit LVDS, DVI-D, VGA, HDMI (Co-lay with Display Port)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Serial Port	1 x RS-232 supports pin box header ( 5 x 2 box headers), and 1 x RS-232/422/485 supports 5/12V/RING by jumper on pin-9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I/O
KB & Mouse	1 x KB & 1 x MS PS/2 Port	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Universal Serial Bus	6 x USB 2.0 (with pin headers), 4 x USB3.0(2 x Dock USB w/LAN)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Audio	3 x Audio Jack ( Mic-in, Line-in,	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	Line-out), optional for 2 phone jack, or 3 x Audio Jack for 1U chassis design				
Ethernet	2 x RJ45 w/ LED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Display	Three independent displays for two displays by Display Port, 3rd one by VGA/DVI-D, or 18/24-bit dual channel LVDS. HDMI is co-lay with 2nd DP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### O.S. Support

Item	Specification	Result			Note
		Pass	Fail	N/A	
Microsoft Embedded	Windows Embedded 7/2009	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Microsoft Windows	Windows 7, 32bit / 64bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Windows XP Pro, 32bit / 64bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	USB3.0 driver not release yet
Linux	Linux kernel 2.6.x or above	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. Need to choose AHCI in BIOS for OS installation. 2. Audio Driver not release yet.

### Environmental Specifications

Item	Specification
Operating temperature	32~140 °F (0~60 °C)
Storage temperature	-4~158 °F (-20~70 °C)
Operating humidity	5%~90%RH, non-condensing
EMC	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-QM77 A1.0	1,2,3,4,5,6,7,8,9
BIOS / Version	EMB-QM77 R1.1 BIOS (EM77AM11) (04/30/2012)	1,2,3,4,5,6,7,8,9
CPU Type	Intel Core i7-2710QE/ 2.1G	1,2,3,4,5,6,7,8,9
Memory Type	DSL DDR3 1333 4GB CL9-ELPIDA J2108BCSE-DJ-F x2 Transcend DDR3 1333 / 8G Micron IVD22D9PBC Panram DDR3-1333 CL9 4GB-hynix H5TQ2G83CFR H9C 130A x2	1,2,3,4,5,6,7,8,9
SATA HDD	Seagate Barracuda 7200.9 / 160G (ST3160811AS)→SATA2 Seagate Momentus 7200.2 /120G (ST9120823AS)→ SATA2 WD WD6402AAEX / 640GB→SATA3 Seagate Barracuda 7200.12 / 1TB (ST31000524AS)→ SATA3 TOSHIBA MK1665GSX /160G → SATA2	1,2,3,4,5,6,7,8,9
SATA DVD-ROM	Pioneer DVR-212BK LG GH20NS15	1,2,3,4,5,6,7,8,9
USB DVD-ROM	Aopen EDR8865U Pioneer DVR-XD 10T	1,2,3,4,5,6,7,8,9
LCD Monitor	EIZNO EV2335W 23.5" Asus VE228H 22" Viewsonic VT2430-NT 24" DELL U2410 24" PHILIPS 244E2SB/96 24"	1,2,3,4,5,6,7,8,9
LVDS	AU G150XG01 V.0 / 15" / 1024*768 / 18bit (4:3) AU M150XN07 V.2 / 15" / 1024x768 / 24bit (4:3)	1,2,3,4,5,6,7,8,9
Operating System	<input type="checkbox"/> Linux	7-1
	<input checked="" type="checkbox"/> Fedora Core 14 – Kernel 2.6.35.6-45.fc14.i686	7-2
	<input checked="" type="checkbox"/> Windows 7 Ultimate SP1 English Version 32/64 Bit	7-2
	<input checked="" type="checkbox"/> Windows XP Professional English SP3 32/64 Bit	7-3
Power Supply	ATX Power Supply : Seasonic S12II-430Bronze	1,2,3,4,5,6,7,8,9
	ATX Power Supply : Seasonic S12II-330W	
	ATX Power Supply :Seventeam ST-500T-CG	
	ATX Power Supply: Seventeam ST-350BKV	
	AT Power Supply: ZECK ZKS-300W	
Battery Model	N/A	N/A
Chipset Information with 7 Ultimate SP1 English Version 32 Bit Driver Version		
Chipset Software	Intel Core i7-2710QE/ 2.1G 6.1.7600.163851 (6/21/2006)	
South Bridge	Intel QM77 Express Chipest 9.3.0.1011 (8/26/2011)	
Super IO Chipset	ITE IT8728F	
VGA Chipset	Intel HD Graphics 4000 8.15.10.2560 (10/21/2011)	
Audio Chipset	Realtek ALC662 6.0.1.6433 (8/12/2011)	
Ethernet Chipset	Intel 82579LM Gigabit Network 11.12.38.0 (6/23/2011)	
	Realtek RTC8111E Gigabit Network 7.48.823.2011 (8/23/2011)	
TPM	Trusted Platform Module 1.2 6.1.7600.163851 (6/21/2006)	

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# 1. Hardware Test

## 1.1. CPU Compatibility Test

CPU Information	Result			Note
	Pass	Fail	N/A	
Intel Core i7-2710QE/ 2.1G	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test by Windows XP & Windows 7 & Fedora 14 – Kernel 2.6.35.6-45.fc14.i686

## 1.2. Memory Compatibility Test

Memory Information	MEM V4.20			Note
	Pass	Fail	N/A	
DSL DDR3 1333 4GB CL9-ELPIDA J2108BCSE-DJ-F x2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DIMM at Slot 1/2/both
Transcend DDR3 1333 / 8G Micron IVD22D9PBC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Panram DDR3-1333 CL9 4GB-hynix H5TQ2G83CFR H9C 130A x2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 1.3. SATA Compatibility Test

### 1.3.1 Onboard SATA Test

SATA Device Information	Result			Note
	Pass	Fail	N/A	
Seagate Barracuda 7200.9 / 160G (ST3160811AS)→SATA2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Seagate Momentus 7200.2 /120G (ST9120823AS)→ SATA2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TOSHIBA MK1665GSX /160G → SATA2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WD WD6402AAEX / 640GB→SATA3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Seagate Barracuda 7200.12 / 1TB (ST31000524AS)→ SATA3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 1.3.2 Onboard SATA (RAID) Test

SATA RAID Test		Result			Note
		Pass	Fail	N/A	
RAID-0 (HDDx2) Striping/Span Test	1. WD WD6402AAEX / 640GB→SATA3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	2. WD WD6402AAEX / 640GB→SATA3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RAID-1 (HDDx2) Mirror Test	1. WD WD6402AAEX / 640GB→SATA3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	2. WD WD6402AAEX / 640GB→SATA3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RAID-5 (HDDx3) Striping/Span Test Rotation Parity	1.TOSHIBA MK1676GSX /160G	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	2.TOSHIBA MK1676GSX /160G	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	3.TOSHIBA MK1676GSX /160G	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RAID-10 (HDDx4) Striping/Span Test Mirroring	1.TOSHIBA MK1676GSX /160G	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	2.TOSHIBA MK1676GSX /160G	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	3.TOSHIBA MK1676GSX /160G	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	4.TOSHIBA MK1676GSX /160G	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 1.3.3 Onboard SATA (AHCI) Test

SATA AHCI Test	Result			Note
	Pass	Fail	N/A	
Seagate Barracuda 7200.12 / 1TB (ST31000524AS)→ SATA3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Slot at 1/2/3/4/OS
TOSHIBA MK1665GSX /160G → SATA2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 1.4. C-Fast Compatibility Test

Compact Flash Information	Result			Note
	Pass	Fail	N/A	
Transcend SATA II CFast 16GB / TS16GCFX500	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test at Windows 7 & Windows XP or Data Transfer (Read/Write) / Slot
INNODISK SATA II CFast 4GB	<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 7 Ultimate SP1 English Version 32 Bit Driver Version										
CPU	Intel Core i7-2710QE/ 2.1G									
Memory	Transcend DDR3 1333 / 8G Micron IVD22D9PBC									
SATA HDD	WD WD6402AAEX / 640GB									
VGA	Viewsonic VT2430-NT 24"									
DVI	Asus VE228H 22"									
Display port	EIZNO EV2335W 23.5"									
HDMI	DELL U2410 24"									
Color Quality	<input checked="" type="checkbox"/> 16bit <input type="checkbox"/> 24bit <input checked="" type="checkbox"/> 32bit									
Resolution	VGA			DVI			LVDS			Note
	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	
640X480	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X600	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X720	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1280X1024	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1366X768	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1600X900	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1600X1200	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1600X1050	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1792X1344	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1856X1392	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1920X1080	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1920X1200	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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	
Single Display	VGA + DVI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Single Display	DVI + HDMI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Single Display	VGA + LVDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Single Display	VGA + Display port	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Single Display	VGA+HDMI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Dual Display Clone	DVI + Display port	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Single Display		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone	HDMI+ LVDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Single Display		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone	VGA+ Display port*2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Triple Display Clone		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone	DVI + Display port*2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Triple Display Clone		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 2.1.3. Video Resolution Test

Test points:

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

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

### 2.1.4. Video Resolution Test

LVDS Model	Result			Note
	Pass	Fail	N/A	
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6_AUO G084SN05 v7 / 8.4" / 800*600 / 24bit (4:3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
7_AU G150XG01 V.0 / 15" / 1024*768 / 18bit (4:3)	<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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	

MICROPHONE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6-channel mode for 5.1 speaker output	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
8-channel mode for 7.1 speaker output	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
S/P DIF function Test	Input	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Output	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 2.3. LAN Function Test

[ ] No Support

Connect two computers via different speed LAN HUB by using "Ping" instruction (1000 times)									
1000MBps LAN HUB	D-Link DGS-1008D								
100MBps LAN HUB	HP J4095A 24 Ports								
10MBps LAN HUB	SVEC FD916H								
OnBoard LAN1	Intel ® 82579LM Gigabit Network Connection						MAC Address	00-07-32-19-01-09	
OnBoard LAN2	Realtek PCIe GBE Family Controller						MAC Address	00-E0-4C-68-00-2D	
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"/>	
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"/>	

#### 2.3.2. Throughput Test

DUT Platform Information:

<input type="checkbox"/>	Fedora Core 14 – Kernel
<input type="checkbox"/>	Cent 5.5
<input checked="" type="checkbox"/>	Ubuntu 10.10 Kernel 2.6.35-22-generic #33
<input type="checkbox"/>	Red Hat

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

Graphics Media	Ubuntu Default setting
LAN	LAN1→Realtek RTL 8111E 10/100/1000MB Ethernet:Ubuntu Core Default setting
	LAN2→Intel® PHY WG82579LN 10/100/1000MB Ethernet: 8.023.00-NAPI
Audio Driver	Ubuntu Default setting

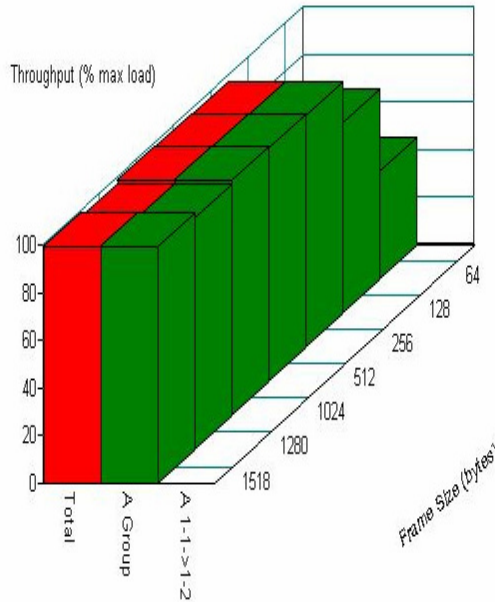
SMB Platform Information:

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:

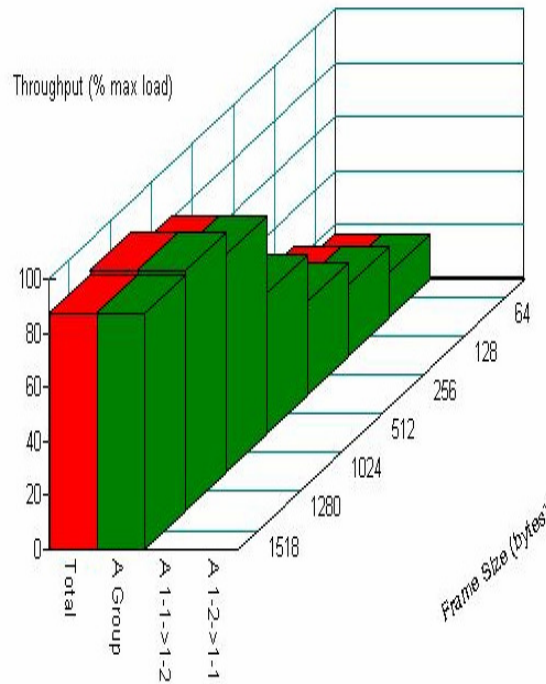
1.Half Direction (LAN1: Realtek PCIe GBE Family Controller → LAN2: Intel ® 82579LM Gigabit Network Connection)



Throughput vs Frame Size

<u>Name/Frame size</u>	<u>64</u>	<u>128</u>	<u>256</u>	<u>512</u>	<u>1024</u>	<u>1280</u>	<u>1518</u>
Total	45.0859375	79.1171875	96.90625	97.6796875	98.453125	96.90625	99.2265625
A Group	45.0859375	79.1171875	96.90625	97.6796875	98.453125	96.90625	99.2265625
A 1-1->1-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A

2.Binary Direction (LAN1: Realtek PCIe GBE Family Controller → LAN2: Intel ® 82579LM Gigabit Network Connection)



Throughput vs Frame Size

<u>Name/Frame size</u>	<u>64</u>	<u>128</u>	<u>256</u>	<u>512</u>	<u>1024</u>	<u>1280</u>	<u>1518</u>
Total	16.46875	25.75	34.2578125	51.2734375	79.890625	88.3984375	86.8515625
A Group	16.46875	25.75	34.2578125	51.2734375	79.890625	88.3984375	86.8515625
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. Optional Function Test

[ ] No Support

Function Test	Result			Note
	Pass	Fail	N/A	
3G Module	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
GPS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wireless LAN (AzureWave 802.11 b/g/n AW-NE768H)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Wireless LAN (AzureWave 802.11 b/g AW-GE112)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bluetooth	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

### 3. Integration Test

	<b>Hardware Information with 7 Ultimate SP1 English Version 32 Bit Driver Version</b>
<b>CPU</b>	Intel Core i7-2710QE/ 2.1G
<b>Memory</b>	Transcend DDR3 1333 / 8G Micron IVD22D9PBC
<b>SATA HDD</b>	WD WD6402AAEX / 640GB
	<b>Chipset Information with 7 Professional English SP1 32 Bit Driver Version</b>
<b>Chipset Software</b>	Intel Core i7-2710QE/ 2.1G 6.1.7600.163851 (6/21/2006)
<b>South Bridge</b>	Intel QM77 Express Chipset 9.3.0.1011 (8/26/2011)
<b>Super IO Chipset</b>	ITE IT8728F
<b>VGA Chipset</b>	Intel HD Graphics 4000 8.15.10.2560 (10/21/2011)
<b>Audio Chipset</b>	Realtek ALC662 6.0.1.6433 (8/12/2011)
<b>Ethernet Chipset</b>	Intel 82579LM Gigabit Network 11.12.38.0 (6/23/2011)
	Realtek RTC8111E Gigabit Network 7.48.823.2011 (8/23/2011)
<b>TPM</b>	Trusted Platform Module 1.2 6.1.7600.163851 (6/21/2006)

#### 3.1. USB Port Integration Test

Item	USB Port	Boot			Function(Win 7)			Note
		Pass	Fail	N/A	Pass	Fail	N/A	
USB HDD		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB FDD Mitsumi D353GUE		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SONY USB2.0 DVD-R/W DRX-830UL		<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 ( A00H )	Result			Note
	Pass	Fail	N/A	
DIO VCC +3.3V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ITE IT8728F

#### 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"/>	Test by Modem
Serial Modem +12V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test by Multimeter
Serial Modem +5V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test by Multimeter

#### 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 in Windows
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 port of two boards is linked by one 1.2km 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 32 Bit

Note: COM PORT Speed Set to 115200.

## 4. Application Test

### 4.1. PCI Slot Function (PCI Adapter Card) Test [ X ] No Support

Adapter VGA Card	Set Simultaneous Display and Reboot			Note
	Pass	Fail	N/A	
CHAINTECH NVIDIA GeForce4 MX440-8X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Adapter Sound Card	Play Sound			Note
	Pass	Fail	N/A	
Creative Sound BLASTER Live5.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Adapter SCSI Card	Copy files to SCSI HDD			Note
	Pass	Fail	N/A	
ADAPTEC Ultra160 SCSI ASC-29160	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Adapter Image Capture Card	Connect to CCD			Note
	Pass	Fail	N/A	
I-VIEW CP-1400AS (with Age STD-477FAI CCD)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Adapter LAN Card	Connect to Internet			Note
	Pass	Fail	N/A	
Intel GD82559 10/100 Mbps Fast Ethernet Adapter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
INTEL PWLA8391GTBLK Pro/1000 Giga LAN Card	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Adapter RAID Card	RAID 0 , 1 , 10 Function Test			Note
	Pass	Fail	N/A	
ADAPTEC 1420SA RoHS 4-Port SATA II RAID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 4.2. PCI-Express Function Test

PCI-Express x1	Function Test			Note
	Pass	Fail	N/A	
SUNIX SATA1414 eSATA & SATAII x1Express card	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Intel GIGABIT CT DESKTOP ADAPTER (EXPI9301CTBLK)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCI-Express x4	Function Test			Note
	Pass	Fail	N/A	
Adaptec AAR-1430SA SATAII HostRAID Controllers PCI-Express x4 RAID Card	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Intel GIGABIT ET2 Quad Port Svr Adptr (E1G44ET2BLK)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCI-Express x16	Function Test			Note
	Pass	Fail	N/A	
ASUS EAX1600PRO/TD/256M/A (ATI Chipset) PCI-Express x16 VGA Card	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ASUS ENGT220/DI/1GD2(LP)/A PCI-Express x16 VGA Card	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Express card	Function Test			Note
	Pass	Fail	N/A	
SUNIX SATA II Express card	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
SunBox 34mm Giga LAN Express Card	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Mini PCI Express Card	Function Test			Note
	Pass	Fail	N/A	
AzureWave 802.11 b/g/n AW-NE768H	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
AzureWave 802.11 b/g AW-GE112	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



#### 4.3. Mini PCI Card Compatibility Test [ X ] No Support

Device Item	Function Test			Note
	Pass	Fail	N/A	
Mini PCI.10/100 Base-Tx LAN (W/Intel.82551QM .A1.0) (Model:PER-C10L)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
GM-101 WLAN 11b/g 54Mbps Mini PCI Card (Model: VNT6655AM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ADLINK mPCI-8750 ATI Rage XL Mini PCI VGA Card	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

#### 4.4. CardBus (PCMCIA) Compatibility Function Test [ X ] No Support

Device Item	Bit	Function Test			Note
		Pass	Fail	N/A	
Intel PRO/Wireless 2011B LAN PC Card (WPC2011BWW)	Slot 1 (Up)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	[PC-200200]
	Slot 2 (Down)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Kingston datapack DP-PCM2 / 2GB (PC Card Typell HDD)	Slot 1 (Up)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	[PC-200201]
	Slot 2 (Down)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCi GW-NS54SG Cardbus Adapter Wireless LAN Type-II	Slot 1 (Up)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	[PC-200502]
	Slot 2 (Down)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCi GW-NS54SG Cardbus Adapter Wireless LAN Type-II	Slot 2 (Down)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	[PC-200502]

#### 4.5. ISA Slot Function Test [ X ] No Support

Test Item	Result	Result			Note
		Pass	Fail	N/A	
SCSI Card Adaptec AHA-1520B SCSI Card	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	[SS-002]
LAN Card NE2000 Compatible LAN Card (RTL8019AS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	[NW-014]
VGA Card CIRRUS LOGIC 5429 FCC ID:ICUVGA-GWV27A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	[VC-008]

#### 4.6. Adapter Compatibility- Industry Control Card PC/104, PC/104+, PCI-104

##### 4.6.1. Device List: PC/104 Module [ X ] No Support

Test Item	Result			Note
	Pass	Fail	N/A	
AAEON PCM-3660	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

##### 4.6.2. Device List: PC/104+ Module [ X ] No Support

Test Item	Result			Note
	Pass	Fail	N/A	
AAEON PCM-3430	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

##### 4.6.3. Device List: PCI-104 Module [ X ] No Support

Test Item	Result			Note
	Pass	Fail	N/A	
AAEON PCM-3730	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

##### 4.6.4. Device List: PCI/104 Express Module [ X ] No Support

Test Item	Result			Note
	Pass	Fail	N/A	
AAEON PER-123	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

#### 4.7. SSD Modules Compatibility Test

SSD HDD Compatibility Test:

Cable Type:  IDE  SATA2  MLC  SLC  No Support

Test Item	Result			Note
	Pass	Fail	N/A	
Transcend SSD 16G - TS16GSSD25S	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

#### 4.8. Peripheral Compatibility- Storage Device Test

##### 4.8.1. Disk on Chip (DOC) Test No Support

Test Item		Result			Note
		Pass	Fail	N/A	
DOC 2000 Model	16MB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	M-System / MD2200-D16
DOC 2000 Onboard Address	CC00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	D000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	D400	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	D800	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	DC00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Disable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

##### 4.8.2. Disk on module (SATA-DOM) Test

Test Item	Result			Note
	Pass	Fail	N/A	
Innodisk SATADOM 1GB(DES9-01GT11C2S)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

#### 4.9. Riser Card Function Test No Support

Test Item		Result			Note
		Pass	Fail	N/A	
LAN		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCI Slot		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCI-e Slot		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 5. Power Consumption Test

Hardware Information with 7 Ultimate SP1 English Version 32 Bit Driver Version	
CPU	Intel i7-3610QM / 2.3G 6.1.7600.163851 (6/21/2006) QS
Memory	Transcend DDR3 1333 / 8G Micron IVD22D9PBC
SATA HDD	WD WD6402AAEX / 640GB

### 5.1. AT/ATX Power Consumption

Test Equipment						
Equipment	AC/DC Digital Clamp meter					
Manufacturer	KYORITSU					
Model name	2010					
Test Environment						
ATX Power Model	Seasonic S12II-430Bronze					
Power Supply	ATX Power					Note
(Full Loading Mode) Windows 7 with Prime 95 Full Loading Test	(+12V)	3.81	A	45.72	W	Prime95 Version 259
Full Loading Total Watt	45.72 (W)					
S3 mode: Measure the current value when system in S3 mode of windows and without running any	(+12V)	0.130	A	1.56	W	
Suspend Total Watt	1.56 (W)					
Win. Idle mode: Measure the current value when system in windows mode and without running any program	(+12V)	0.73	A	8.76	W	
Idle Total Watt	8.76 (W)					
Power on - Boot sequency: Measure the maximum current value of between system power on and boot-up to O.S.	(+12V)	1.93	A	23.16	W	
Power On Total Watt	23.16 (W)					

### 5.2. PC Health Status

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

Voltage Monitoring Test	Result			BIOS (V)	Actual (V)	Note
	Pass	Fail	N/A			
VCORE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0.984	0.97	
+V1.5S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.5	1.5	
+V3.3S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.36	3.35	
+V5S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.06	5.07	
+V12S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.664	11.64	
VBAT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.168	3.12	
System Temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	39°C	38°C	
CPU Temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	35°C	32°C	
System Fan1 Speed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5973 RPM	5890 RPM	
CPU Fan1 Speed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5973 RPM	5890 RPM	

## 6. Time Accuracy Test

### 6.1. System Clock & RTC Clock Test

Under Room Temperature: 26 °C

Function	Item	Time Interval	Criteria	Actual		Result			Note
						Pass	Fail	N/A	
RTC Clock in Power On Mode		24 hrs	+/-2 sec	0	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"/>	

### 6.2. Booting Timer Test

Installation	Actual		Note
System Booting Time	9.64	Sec	Press the Power Button till "Beep" Sound appears

### 6.3. Watchdog Timer Test

Use Function as below: 8728.EXE

[ ] No Support.

Time-Out Interval	Margin for error	Actual		Result			Note
				Pass	Fail	N/A	
10 sec	+ / - 10 %	10.9	Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
60 sec	+ / - 10 %	62.8	Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
255 sec	+ / - 10 %	280	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 Core 14 – Kernel 2.6.35.6-45.fc14.i686

[ ] No Support

Driver Information:

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

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Fedora Core 14 – Kernel 2.6.35.6-45.fc14.i686	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Type uname -a

Test Result:

Test Item	Result			Note
	Pass	Fail	N/A	
<b>Display Function Test</b>				
VGA -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Network Function Test</b>				
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"/>	
<b>Audio Function Test</b>				
Play Audio Function Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Play Audio Test
<b>Base Function Test</b>				
Mouse Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Keyboard Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB 2.0 Removable Devices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>X Windows Application</b>				
Start Button Office	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Office function
X-Window	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Startx – Desktop in Linux
<b>Command Test On Text Mode: Attention Delay Phenomenon</b>				
uname -a	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Show information
Shutdown	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Init 0 or shutdown -h now
Restart the Computer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Init 6 or shutdown -r now
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

[ ] No Support

[ X ] x32 Driver Information:

Chipset Software	Intel Core i7-2710QE/ 2.1G 6.1.7600.163851 (6/21/2006)
Graphics Media	Intel HD Graphics 4000 8.15.10.2560 (10/21/2011)
Audio Driver	Realtek ALC662 6.0.1.6433 (8/12/2011)
LAN Driver	Intel 82579LM Gigabit Network 11.12.38.0 (6/23/2011)
	Realtek RTC8111E Gigabit Network 7.48.823.2011 (8/23/2011)

[ X ] x64 Driver Information:

Chipset Software	Intel Core i7-2710QE/ 2.1G 6.1.7600.163851 (6/21/2006)
Graphics Media	Intel HD Graphics 4000 15.26.0.2560 (10/27/2011)
Audio Driver	Realtek ALC662 6.0.1.6433 (8/12/2011)
LAN Driver	Intel 82579LM Gigabit Network 11.8.84.0 (12/21/2010)
	Realtek RTC8111E Gigabit Network 7.48.823.2011 (8/23/2011)

### Install OS to SATA HDD/ C-Fast:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows 7 Ultimate ACPI Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### Test Results:

Test Item	Result			Note
	Pass	Fail	N/A	
<b>Single Display</b>				
VGA -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DVI -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LVDS -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Boot - Windows 7 Ultimate Advanced Options Menu</b>				
Safe Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Basic Function Test</b>				
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"/>	
LPT1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
USB 2.0 Removable Devices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>LAN Function Test</b>				
LAN1 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN2 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Audio Function Test</b>				
Line Out Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Line In Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Microphone Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S/P DIF Test	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Start Menu</b>				
Log off User	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Shut down (S5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Standby	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Restart	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hibernate (S4)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 7.3. Windows XP SP3 English Version 32/64Bit

[ ] No Support

[ X ] x32 Driver Information:

Chipset Software	Intel Core i7-2710QE/ 2.1G 6.1.7600.163851 (6/21/2006)
Graphics Media	Intel HD Graphics 3000 6.14.10.5388 (10/10/2011)
Audio Driver	Realtek ALC662 5.10.0.5854 (5/15/2009)
LAN Driver	Intel 82579LM Gigabit Network 11.12.38.0 (6/23/2011) Realtek RTC8111E Gigabit Network 5.790.824.2011 (8/24/2011)

[ X ] x64 Driver Information:

Chipset Software	Intel Core i7-2710QE/ 2.1G 6.1.7600.163851 (6/21/2006)
Graphics Media	Intel HD Graphics 3000 6.14.10.5400
Audio Driver	Realtek ALC662 5.10.0.5854 (5/15/2009)
LAN Driver	Intel 82579LM Gigabit Network 11.12.38.0 (6/23/2011) Realtek RTC8111E Gigabit Network 5.790.824.2011 (8/24/2011)

#### Install OS to SATA HDD/ C-Fast:

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

#### Test Results:

Test Item	Result			Note
	Pass	Fail	N/A	
<b>Single Display</b>				
VGA -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DVI -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LVDS -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Boot - Windows XP Ultimate Advanced Options Menu</b>				
Safe Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Basic Function Test</b>				
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"/>	
LPT1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
USB 2.0 Removable Devices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>LAN Function Test</b>				
LAN1 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LAN2 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Audio Function Test</b>				
Line Out Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Line In Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Microphone Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S/P DIF Test	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Start Menu</b>				
Log off User	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Shut down (S5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Standby	<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 7 Ultimate SP1 English Version 32 Bit Driver Version	
CPU	Intel Core i7-2710QE/ 2.1G
Memory	Transcend DDR3 1333 / 8G Micron IVD22D9PBC
SATA HDD	WD WD6402AAEX / 640GB

### 8.1. Boot Sequence Test

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

### 8.2. Power Management Test

#### 8.2.1. APM Power Management Test

Test Item	Setting Test	Result			Note
		Pass	Fail	N/A	
Suspend Mode	Function Test	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Power Button	Delay 4 Sec	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soft-Off By PWRBTN
Power Button	Instant-Off	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soft-Off By PWRBTN

#### 8.2.2. ACPI Power Management Test

Test Item	Result			Note
	Pass	Fail	N/A	
Enable ACPI Auto Configuration	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Enable Hibernation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	From Windows 7
ACPI - S1 (POS)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Resume from PS/2 keyboard or mouse / Power button
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Resume from USB keyboard or mouse / Power button
ACPI - S3 (STR)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Suspend Disable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### 8.3. Power On Function Test

Test Item	Result			Note
	Pass	Fail	N/A	
Password	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Hot KEY	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
MOUSE Move & Click	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
MOUSE Click	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Any KEY	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
BUTTON ONLY	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	



#### 8.4. Power On after Power Failure Test

Test Item	Result			Note
	Pass	Fail	N/A	
Off	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
On	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Former-Sts (Auto)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

#### 8.5. 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 CMOS Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Only Changed date and time

##### 8.5.1 After Clear CMOS , Display will show " CMOS Checksum Error"

Test Item	Result			Note
	Pass	Fail	N/A	
CMOS Checksum Error	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

#### 8.6. 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

#### 8.7. TPM Function Test

Test Item	Result			Note
	Pass	Fail	N/A	
No Change	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Clear	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Enable & Active	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Disable & Disactive	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Detect TPM device under Windows.

#### 8.8. IAMT Function Test

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

#### 8.9. BIOS SPI ROM

Test Item	Result			Note
	Pass	Fail	N/A	
Set South Bridge GPIO (LOW)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No battery bios test
Clear CMOS Disable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Load Optimized Defaults Disable

#### 8.10. Supervisor / User Password Test

Test Item	Result			Note
	Pass	Fail	N/A	
Supervisor Password	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
User Password	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## 9. Performance Test

Hardware Information with 7 Ultimate SP1 English Version 32 Bit Driver Version	
CPU	Intel i7-3610QM / 2.3G 6.1.7600.163851 (6/21/2006) QS
Memory	Transcend DDR3 1333 / 8G Micron IVD22D9PBC
SATA HDD	FUJITSU 2.5" SATA 80GB-MHZ2080BH G2

### 9-1. Performance Test

Test Result: (Display set 1280\*1024 test)

Testing Software	Scope		Note
	AAEON	Ref.	
<b>PCMark2002</b>			Only for Windows 7
CPU	N/A	-	
Memory	44908	-	
HDD	2037	-	
Benchmark (A)	-		
<b>PCMark2005</b>			Windows 7
PCMark	8563	-	PCMarks
CPU	9111	-	
Memory	7550	-	
Graphics	5376	-	
HDD	4572	-	
Benchmark (B)	-		
Average Efficiency	-		

Testing Software	Scope		Note
	AAEON	Ref.	
<b>3Dmark2003 v360</b>			Only for Windows 7
3Dmark Score	8966	-	
CPU Score	1780	-	
Benchmark (A)	-		
<b>3Dmark2006 v120</b>			Windows 7
3Dmark Score	5238	-	
CPU Score	4958	-	
SM2.0 Score	1660	-	
HDR/SM3.0 Score	2143	-	
Benchmark (B)	-		
Average Efficiency	-		

Testing Software	Scope		Note
	AAEON	Ref.	
<b>Final Reality V1.01—BenchMark Test</b>			Windows 7
2D image	55.29	-	Reality marks
3D	6.06	-	
Bus transfer	64.60	-	
Overall	29.61	-	
Benchmark (A)	-		

Testing Software	Scope		Note
	AAEON	Ref.	
<b>PCMark7</b>			
PCMark	374	-	
CPU	-	-	
Memory	-	-	
HDD	-	-	
Benchmark (A)	-	-	
<b>PCMark Vantage</b>			
PCMarks	6287	-	PCMarks
TV and Movies	4724	-	
Memories	3879	-	
Music	5234	-	
Communications	8346	-	
Productivity	4859	-	
HDD	2405	-	
Gaming	4745	-	
Benchmark (B)	-	-	
Average Efficiency	-	-	

Testing Software	Scope		Note
	AAEON	Ref.	
<b>Performance Test 7.0</b>			
PassMark Rating	1132.7	-	
CPU Mark	6590.5	-	
2D Graphics Mark	282.1	-	
3D Graphics Mark	404.5	-	
Memory Mark	1022.3	-	
Disk Mark	350.9	-	
Benchmark (A)	-	-	

Testing Software	Scope		Note
	AAEON	Ref.	
<b>Processor Arithmetic-SiSoftware Sandra</b>			
Aggregate Arithmetic Performance	68(GOPS)	-	
Dhrystone Isse4.2	71(GIPS)	-	
Whetstone Isse3	65(GFLOPS)	-	

Testing Software	Scope		Note
	AAEON	Ref.	
<b>File Systems-SiSoftware Sandra</b>			
Drive Score	65.28(MB/s)	-	
Random Access Time	5.5(ms)	-	

Testing Software	Scope		Note
	AAEON	Ref.	
<b>Memory Bandwidth-SiSoftware Sandra</b>			
Aggregate Memory Performance	12.47(GB/s)	-	
Integer Buff'd Isse2 Memory Bandwidth	12.5(GB/s)	-	
Float Buff'd Isse2 Memory Bandwidth	12.45(GB/s)	-	

SATA Performance				
SATA HDD	WD SATA 3 640GB-WD6402AAEX			
Item	Comment / (unit)	Software	Score	Note
Single HDD (SATA port 1) SATA3.0	Long bench(32mb zones)-Random access / (ms) (smaller is better)	HD Tach version 3.0.4.0 free	15.6	
	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	105.1	
	Long bench(32mb zones)-Burst Speed / (MB/s)	HD Tach version 3.0.4.0 free	266.4	
Single HDD (SATA port 2) SATA3.0	Long bench(32mb zones)-Random access / (ms) (smaller is better)	HD Tach version 3.0.4.0 free	18	
	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	10.3.8	
	Long bench(32mb zones)-Burst Speed / (MB/s)	HD Tach version 3.0.4.0 free	268.4	
Single HDD (SATA port 3)	Long bench(32mb zones)-Random access / (ms) (smaller is better)	HD Tach version 3.0.4.0 free	16.2	
	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	104.4	
	Long bench(32mb zones)-Burst Speed / (MB/s)	HD Tach version 3.0.4.0 free	184.9	
Single HDD (SATA port 4)	Long bench(32mb zones)-Random access / (ms) (smaller is better)	HD Tach version 3.0.4.0 free	15.6	
	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	104.6	
	Long bench(32mb zones)-Burst Speed / (MB/s)	HD Tach version 3.0.4.0 free	186.8	

SATA Performance				
SATA HDD	WD WD6402AAEX / 640GB*2			
Item	Comment / (unit)	Software	Score	Note
2 HDD RAID0 (Striped) SATA3.0	Long bench(32mb zones)-Random access / (ms) (smaller is better)	HD Tach version 3.0.4.0 free	12.8	
	Long bench(32mb zones)-CPU utilization / (%,+/-2%) (smaller is better)	HD Tach version 3.0.4.0 free	4	
	Long bench(32mb zones)-Average read / (MB/s)	HD Tach version 3.0.4.0 free	179.8	
	Long bench(32mb zones)-Burst Speed / (MB/s)	HD Tach version 3.0.4.0 free	1045.8	
2 HDD RAID1 (Mirror) SATA3.0	Long bench(32mb zones)-Random access / (ms) (smaller is better)	HD Tach version 3.0.4.0 free	15.6	
	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	105.1	
	Long bench(32mb zones)-Burst Speed / (MB/s)	HD Tach version 3.0.4.0 free	190.6	