

Report NO:16I010005

VPC-5500S

Intel QM87 In-Vehicle PC

Board Level Product P5 Test Report

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

Issue date

2016-03-01

QE Manager

KJ Wang

Test Engineer

Leo Liu

Version Released Records

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

Note :

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

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

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

Specification Validation

Main Specification

Item	Specification	Result			Note
		Pass	Fail	N/A	
CPU	BGA1364, Intel® Core™ i7-4700EQ(4C, 6M Cache, 2.40GHz) processor, up to 47W Max	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
System Memory	2 x 204-pin Dual Channel DDR3L 1333/1600 MHz SO-DIMM up to 16GB (component side x 1 and solder side x 1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chipset	Intel® QM87	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ethernet	LAN1: Intel® Ethernet Connection i217LM X 1(Support Intel® AMT 9.5), I210/I211(default) x 4, support PoE (2 port 802.3af LAN2 LAN3, 2 port 802.at LAN4 LAN5)	<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	Fintek F81866D-I(-40 to +85)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Storage	1 x 2.5" swappable HDD/SSD slot and 3 x 2.5" internal HDD/SSD tray, support RAID 0/1/5/10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LED	indicators for Power, 1 x HDD, 3 x WIRELESS LED onboard in front panel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Audio	HD Audio Realtek ALC 892 Codec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Expansion	3 x mini PCIe socket, 2x USB 2.0 only (1 with SIM Socket), 1x PCIe + USB 2.0(with SIM Socket) 1 x Built-in CAN 2.0B. Optional OBDII function (SAE 1939/J1708)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Watchdog Timer	0~255 step by software programming	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
H/W Status Monitor	Monitoring CPU temperature, voltage (TBA), reserve 1 pinhead for system temp. monitor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Power Supply	- AT / ATX mode - Power Input Voltage: DC 10-35 V, with Ignition Pin - Power connector: 3 pin Terminal Block (10~35V, GND) - Remote Power Connector: 3 pin Terminal Block (PSON, GND) - DC Output, 12V @ 1A (2X2 Pin) - 2x7 pin dip switch for delay start Delay on:5sec, 10sec, 30sec, 5 min Delay off:3min, 5min, 15min, 30min	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Display					
CPU	Intel® HD Graphics 4600	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Resolution	VGA 1600 x 1200 at 60 Hz DP + HDMI , 1080P at 60 Hz(TBD, highest resolution support)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	Support three Independent displays (under Windows OS only)				
External I/O					
Serial Port	2 x RS-232/422/485 (one supports 5/12V, 0.5A), 2 x RS-232	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Universal Serial Bus	4 USB 3.0, 2 USB 2.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Audio	2 x Audio Jack (Mic-in, Line-out)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ethernet	5 x RJ45 w/ LED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Display	1 x DP, 1 x HDMI/DP, 1 x VGA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPM Support	V1.2, Infineon SLB9635TT1.2(Option)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
GPIO	8bit GPIO(5V/0.5A)(terminal block) w/isolation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Power Button	Standard power button x1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Remote Button	Remote power button x1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Reset Button	Hardware reset button x1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Software Programmable button	Software Programmable button x1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fuse	9V/20A, 12V/15A, 36V/5A, Max. 60A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

O.S. Support

Item	Specification	Result			Note
		Pass	Fail	N/A	
Microsoft Windows	Windows 7 English 32bit / 64bit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Windows 8.1 English 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	-25°C to 70°C(For System level), For board level(-25°C to 85°C)
Storage Temperature	-40°C ~ +85°C
Storage Humidity	10~80%, non-condensing
Anti-Vibration	Operating : MIL-STD-810G, Method 514.6, Category 4, common carrier US highway truck vibration exposure Storage : MIL-STD-810G, Method 514.6, Category 24, minimum integrity test
Anti-Shock	Operating : MIL-STD-810G, Method 516.6, Procedure I, functional shock=20g Non-operating : MIL-STD-810G, Method 516.6, Procedure V, crash hazard
Certification	CE & FCC Class A, CCC, eMARK 13, ISO 7637-2

Note: Please refer Environment Test Report for detail information

Platform Information

Item	Device Information	Note
Product of department	ISD	
System Model / Version	VPC-5500S A1.0	
PCB Model / Version	VPC-5500 A0.2	
BIOS / Version	VPC-5500 R1.3(V0121M13)(06/29/2015)	
Driver folder	20141229	
CPU Type	Intel Core i7-4700EQ 2.40GHz	
Memory Type	InnoDisk DDR3L-1600 8GB(SEC 446 BYKO K4B4G0846D) x2	
SATA HDD	HGST 2.5" 1TB(HTS721010A9E630)	
SATA DVD-ROM	Lite-on 24X(iHAS324)	
USB DVD-ROM	Pioneer 6X(BDR-XT04D)	
LCD Monitor	ASUS 23"(PA238)	
Operating System	<input checked="" type="checkbox"/> Ubuntu 14.04 Kernel 3.13.0.24	
	<input checked="" type="checkbox"/> Windows 7 Ultimate 32/64Bit	
	<input checked="" type="checkbox"/> Windows 8.1 Enterprise English Version 32/64Bit	
Power Supply	ATX Power Supply : Sseasonic 550W(SSR-550RM)	
Chipset Information		
PCH Bridge	Intel QM87	
Super IO Chipset	Fintek F81866D-I	
VGA Chipset	Intell HD Graphics 4600 10.18.10.4061 (12/18/2014)	
Audio Chipset	Realtek High Definition Audio 6.0.1.7246 (5/14/2014)	
Ethernet Chipset	Intell Ethernet Connection I217-LM 12.12.80.19 (9/29/2014)	
	Intell I211 Gigabit Network Connection 12.11.97.0 (5/15/2014)	
	Intell I211 Gigabit Network Connection #2 12.11.97.0 (5/15/2014)	
	Intell I211 Gigabit Network Connection #3 12.11.97.0 (5/15/2014)	
	Intell I211 Gigabit Network Connection #4 12.11.97.0 (5/15/2014)	

Summary Table of contents:

1. Hardware Test	7
1.1. CPU Compatibility Test	7
1.2. Memory Compatibility Test.....	7
1.3. SATA Compatibility Test	7
1.4. m-SATA Compatibility Test	8
2. Basic Function Test.....	9
2.1. Video Function Test	9
2.2. Audio Function Test	10
2.3. LAN Function Test	10
2.4. Optional Function Test	17
2.5. Can Bus Test.....	17
2.6. GPS Function Test.....	17
3. Integration Test.....	18
3.1. USB Port Integration Test.....	18
3.2. Digital I/O Port Test.....	18
3.3. COM Port Integration Test	18
3.4. RS-422 / RS-485 Test.....	18
4. Application Test	19
4.1. PCI-Express Function Test.....	19
4.2. SSD Modules Compatibility Test	19
4.3. Display port Converter Compatibility Test	19
5. Power Consumption Test	21
5.1. AT/ATX Power Consumption	21
5.2. PC Health Status	22
5.3. DC Power Switch.....	22
5.4. CMOS Battery Test	22
6. Time Accuracy Test.....	23
6.1. System Clock & RTC Clock Test.....	23
6.2. Booting Timer Test	23
6.3. Watchdog Timer Test	23
7. O.S. Compatibility Test	24
7.1. English Ubuntu 14.04 Kernel 3.13.0-24-generic	24
7.2. Windows 7 Ultimate English Version 32/64Bit	25
7.3. Windows 8.1 Enterprise English Version 32/64Bit	26
8. BIOS Function Test	27
8.1. Advanced Test	27
8.2. Chipset Test.....	28
8.3. Boot Test	28
8.4. CMOS Backup / Clear CMOS Test	28
8.5. AAEON Tag Check Utility.....	29
8.6. Supervisor / User Password Test	29
8.7. Hi-safe Test.....	29
8.8. Intel AMT Test	29
9. Performance Test	30
10. Negative Test	32
10.1 USB Keyboard Negative Test.....	32
11. Stability test	33
11.1. Run In Test.....	33
11.2. Reboot Test	33
11.3. Cold Boot Test.....	33

1. Hardware Test

1.1. CPU Compatibility Test

CPU Information	Result			Note
	Pass	Fail	N/A	
Intel Core i7-4700EQ 2.40GHz	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

1.2 Memory Compatibility Test

Memory Information	AAEON P/N	MEM V5.01 For 3 loops			Note
		Pass	Fail	N/A	
Transcend DDR3L-1600 4GB(SEC 316 XYKO K4B4G0846B)	AP-DR968D3004 G6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ADATA DDR3L-1600 4GB(Micro 4PN77 D9RVX)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DSL DDR3L-1600 4GB(Promos 1317ZVH V73CBG04808RAJJ11)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ADATA DDR3L-1600 8GB(Micro 4PN77 D9RVX)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Kingston DDR3L-1600 8GB(D5128ED1FPGGBU)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transcend DDR3L-1600 2GB(SEC 501 BYMA K4B2G0846Q)	AP-DR968D3002 GK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transcend DDR3L-1600 4GB(SEC 446 XYKO K4B4G0846D)	AP-DR968D3004 G6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transcend DDR3L-1600 8GB(SEC 443 BYKO K4B4G0846D)	AP-DR968D3008 G7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
InnoDisk DDR3L-1600 2GB(SEC 434 BYKO K4B2G0846Q)	AP-DR968D3002 GX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
InnoDisk DDR3L-1600 4GB(SEC 425 BYKO K4B4G0846D)	968D3004GZ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
InnoDisk DDR3L-1600 8GB(SEC 446 BYKO K4B4G0846D)	968D3008GW	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

1.3. SATA Compatibility Test

1.3.1 Onboard SATA (IDE) Test

SATA Device Information	Result			Note
	Pass	Fail	N/A	
Innodisk 2.5" 64GB(3MG2-P)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win7-32
Seagate 2.5" 500GB(ST500LT012)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win8.1-32/64
TOSHIBA 2.5" 500GB(MK5076GSX)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win7-32
HGST 2.5" 1TB(HTS721010A9E630)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win7-32/64

1.3.2 Onboard SATA (RAID) Test

SATA RAID Test	Result			Note	
	Pass	Fail	N/A		
RAID-0 (HDDx4) Striping/Span Test	1 WD 2.5" 320GB(WD3200LPVX)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win7-32
	2 WD 2.5" 320GB(WD3200LPVX)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win7-32
	3 TOSHIBA 2.5" 320GB(3276GSX)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win7-32
	4 TOSHIBA 2.5" 320GB(3276GSX)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win7-32
	1 WD 2.5" 320GB(WD3200LPVX)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win7-64

RAID-1 (HDDx2) Mirror Test	2 WD 2.5" 320GB(WD3200LPVX)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win7-64
RAID-5 (HDDx4) Striping/Span Test Rotation Parity	1 WD 2.5" 320GB(WD3200LPVX)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win8.1-32
	2 WD 2.5" 320GB(WD3200LPVX)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win8.1-32
	3 TOSHIBA 2.5" 320GB(3276GSX)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win8.1-32
RAID-10 (HDDx4) Striping/Span Test Mirroring	1 WD 2.5" 320GB(WD3200LPVX)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win8.1-64
	2 WD 2.5" 320GB(WD3200LPVX)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win8.1-64
	3 TOSHIBA 2.5" 320GB(3276GSX)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win8.1-64
	4 TOSHIBA 2.5" 320GB(3276GSX)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win8.1-64

1.3.3 Onboard SATA (AHCI) Test

SATA AHCI Test	Result			Note
	Pass	Fail	N/A	
TOSHIBA 2.5" 320GB(3276GSX)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win7-32
WD 2.5" 320GB(WD3200BEVT)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win7-64
WD 3.5" 500GB(WD5000AAKX)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ubuntu 14.04
Innodisk mini 3ME 64GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Win8.1-64

1.4 m-SATA Compatibility Test

m-SATA Information	AAEON P/N	ATTO R/W			Note
		Pass	Fail	N/A	
TS8GMSA500 8GB	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R:92M;W:73MB
Memo Right (MS-500)MRMAJ5A008GC1M2C00 8GB	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R:66MB;W:12MB
SanDisk 32GB(SD6SF1M032G)	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Innodisk mini 3ME 8GB	968C008G0G	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R:129MB;W:21MB
Innodisk mini 3ME 16GB	968C016G1W	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R:244MB;W:42MB
Innodisk mini 3ME 32GB	968C032G1B	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R:247MB;W:84MB
Innodisk mini 3ME 64GB	968C064G0T	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R:248MB;W:84MB
Transcend 16GB(TS16GMSA370)	AP-SS968C016 G2Z	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R:112MB;W:20MB
Transcend 32GB(TS32GMSA370)	968C032G32	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R:223MB;W:41MB
Transcend 64GB(TS64GMSA370)	968C064G2K	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R:250MB;W:80MB

2. Basic Function Test

2.1. Video Function Test

2.1.1. Single Output Function Test

Hardware Information with Windows 7 Ultimate English Version 32 Bit Driver Version													
CPU	Intel Core i7-4700EQ 2.40GHz												
Memory	ADATA DDR3L-1600 8GB(Micro 4PN77 D9RVX) x2												
SATA HDD	HGST 2.5" 1TB(HTS721010A9E630)												
VGA	DELL 27"(U2713HM)												
HDMI	SAMSUNG 28"(U28D590)												
Display port	SAMSUNG 28"(U28D590)												
Color Quality	<input checked="" type="checkbox"/> 16bit <input type="checkbox"/> 24bit <input checked="" type="checkbox"/> 32bit												
Resolution	VGA			HDMI			DP						Note
	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	
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"/>	<input 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"/>	<input 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"/>	<input 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"/>	<input 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"/>	<input 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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1280X800	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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"/>	<input 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"/>	<input 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"/>	<input 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"/>	<input 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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1440X900	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1600X1200	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1792X1344	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<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 type="checkbox"/>	
1856X1392	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<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 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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1920X1200	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<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 type="checkbox"/>	
1920X1440	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<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 type="checkbox"/>	
2048X1152	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2048X1536	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<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 type="checkbox"/>	
2560X1440	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<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 type="checkbox"/>	
2560X1600	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2560X1920	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2560X2048	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3840 X 2160	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<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 type="checkbox"/>	
EDID check	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot plug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rotation(0/90/ 180/270)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DOS Display	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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

2.1.2. Multi-Display Output Test

Selection	Output	Result			Note
		Pass	Fail	N/A	
Dual Display Clone	VGA + HDMI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone	VGA+DP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone	HDMI+DP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dual Display Clone	VGA+HDMI+DP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extended Desktop		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2.1.3. Video Resolution Test

Test points:

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

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





2.2. 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"/>	
Audio(HDMI)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Audio(DP)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
MICROPHONE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2.3. LAN Function Test

[] No Support

Connect two computers via different speed LAN HUB by using "Ping" instruction (1000 times) Command: ping xxx.xxx.xx.xx -l 65500 -n 1000									
1000MBps LAN HUB		D-Link DGS-1008D							
100MBps LAN HUB		Accton Desktop-3005							
10MBps LAN HUB		SVEC FD916H							
OnBoard LAN1	Intel I217 Gigabit Ethernet				MAC Address	00-07-32-31-FE-EB			
OnBoard LAN2	Intel I211 Gigabit Ethernet				MAC Address	00-07-32-31-FE-EC			
OnBoard LAN3	Intel I211 Gigabit Ethernet				MAC Address	00-07-32-31-FE-ED			
OnBoard LAN4	Intel I211 Gigabit Ethernet				MAC Address	00-07-32-31-FE-EE			
OnBoard LAN5	Intel I211 Gigabit Ethernet				MAC Address	00-07-32-31-FE-EF			
LAN Speed	Link / Speed LED	Active LED	LAN 1			LAN 2/3/4/5			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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Internet Browser (DHCP Server)			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2.3.2. Throughput Test

DUT Platform Information:

<input type="checkbox"/>	Fedora 15 Kernel 2.6.27 kernel
<input type="checkbox"/>	Cent 5.5 kernel
<input checked="" type="checkbox"/>	Ubuntu 14.04 Kernel 3.13.0-24
<input type="checkbox"/>	Red Hat kernel

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

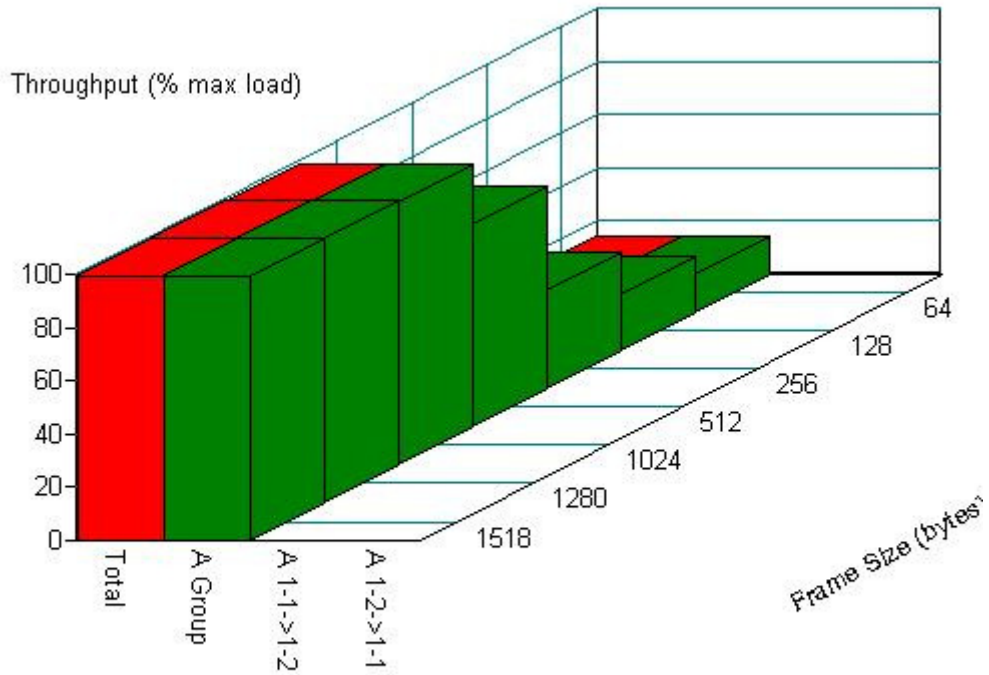
Graphics Media	Ubuntu14.04 Default setting
LAN	LAN1→Intel I217 Gigabit LAN Ethernet: 3.1.0.2
	LAN2→Intel I211 Gigabit LAN Ethernet: 3.1.0.2
	LAN3→Intel I211 Gigabit LAN Ethernet: 3.1.0.2
	LAN4→Intel I211 Gigabit LAN Ethernet: 3.1.0.2
	LAN5→Intel I211 Gigabit LAN Ethernet: 3.1.0.2
Audio Driver	Ubuntu14.04 Default setting
CPU information	Intel® Core™ i7-4700EQ Processor(6M Cache, up to 3.40 GHz)

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. Binary Direction (LAN1: Intel I217 Gigabit Ethernet → LAN2: Intel I211 Gigabit Ethernet)

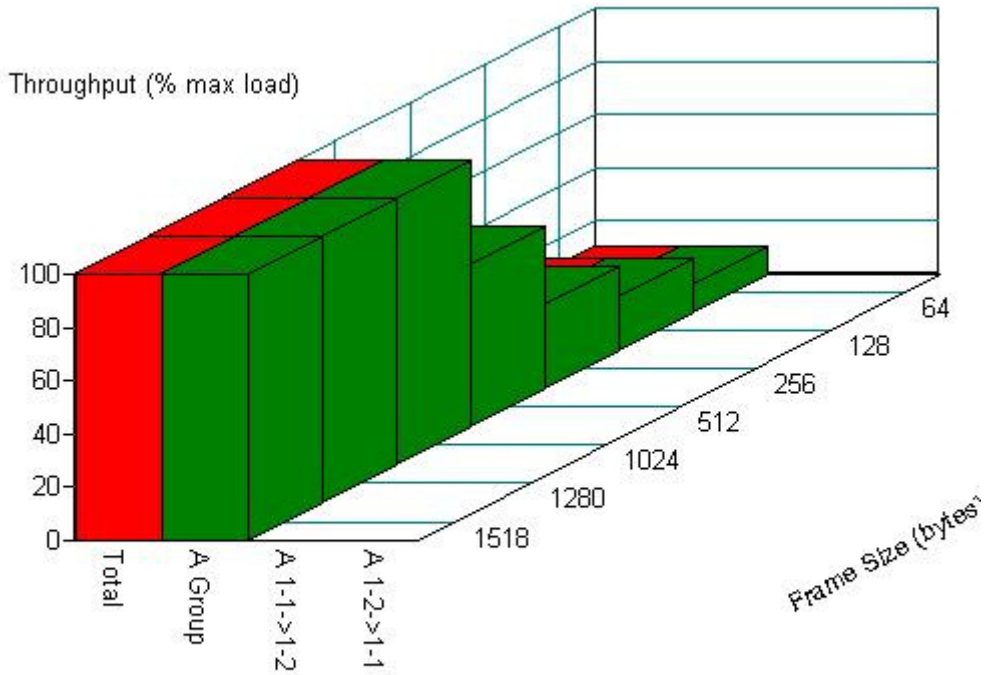


2.

Throughput vs Frame Size

<u>Name/Framesize</u>	<u>64</u>	<u>128</u>	<u>256</u>	<u>512</u>	<u>1024</u>	<u>1280</u>	<u>1518</u>
Total	14.1484375	20.3359375	36.578125	75.25	98.453125	99.2265625	99.2265625
A Group	14.1484375	20.3359375	36.578125	75.25	98.453125	99.2265625	99.2265625
A 1-1->1-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A 1-2->1-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

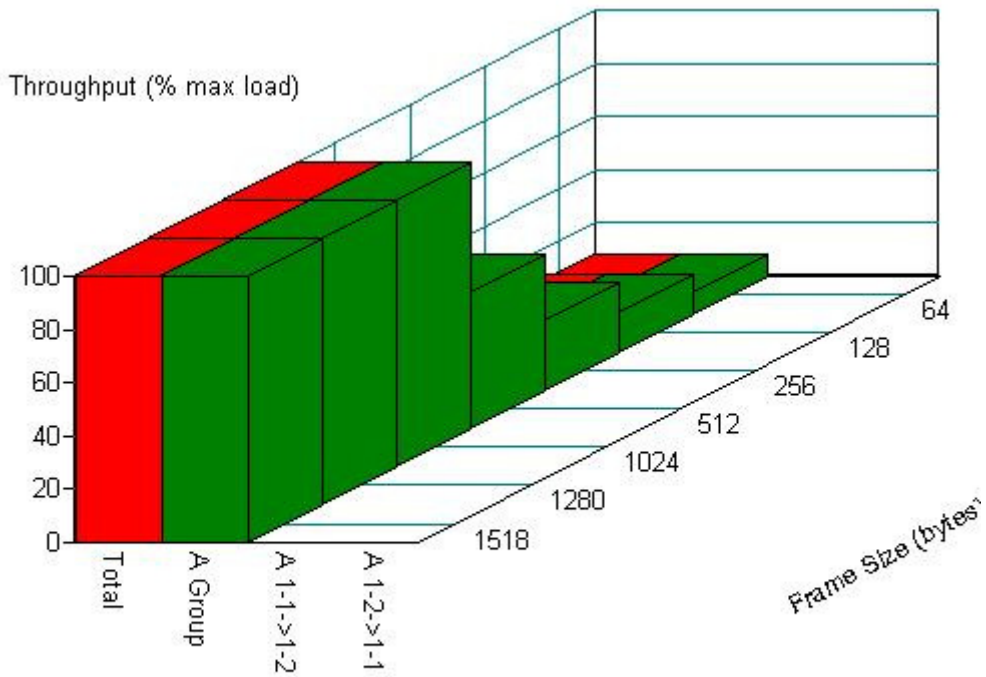
2. Binary Direction (LAN3: Intel I211 Gigabit Ethernet → LAN4: Intel I211 Gigabit Ethernet)



Throughput vs Frame Size

<u>Name/Framesize</u>	<u>64</u>	<u>128</u>	<u>256</u>	<u>512</u>	<u>1024</u>	<u>1280</u>	<u>1518</u>
Total	10.28125	19.5625	31.1640625	60.5546875	100	100	100
A Group	10.28125	19.5625	31.1640625	60.5546875	100	100	100
A 1-1->1-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A 1-2->1-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

3. Binary Direction (LAN5: Intel I211 Gigabit Ethernet → LAN1: Intel I217 Gigabit Ethernet)



Throughput vs Frame Size

<u>Name/Framesize</u>	<u>64</u>	<u>128</u>	<u>256</u>	<u>512</u>	<u>1024</u>	<u>1280</u>	<u>1518</u>
Total	7.9609375	14.921875	25.75	50.5	100	100	100
A Group	7.9609375	14.921875	25.75	50.5	100	100	100
A 1-1->1-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A 1-2->1-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

2.4. Jumper and Connector Function Test

[] No Support

Function Test	Result			Note
	Pass	Fail	N/A	
SW1 Power Button	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SW3 Software Reset	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LED2~LED4 Mini Card WLED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BZ1 Buzzer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATA1.2.3.4 SATA3 Con	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DIMM1 DDR3L SODIMM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DIMM2 DDR3L SODIMM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SW4 Power on/off delay select	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
AUDIO1 AUDIO Con (Front+MIC)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VGA1 CRT Port	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DP1 Display Port	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
COM1 COM3+COM4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
COM2 COM1+COM2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN1 USB3.0 Con	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN2 USB3.0 Con	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN3 LAN1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN4 SIM Card(With CN20)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN5 SIM Card(With CN17)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN6 LAN2(With POE Function)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN7 LAN3(With POE Function)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN8 LAN4(With POE Function)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN9 LAN5(With POE Function)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN10 Front Plane	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN11 Clear CMOS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN12 BAT CON	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN13 RTC TEST	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN17 Mini Card(only USB)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN18 PCIE104	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN20 Mini Card(PCIE+USB)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN22.24.26.27 Small 4P Power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN23 AT/ATX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN25 Mini Card(only USB)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN32 Fuse Con	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN33 COM3 RI Select	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RI/12V/5V
CN34 POWER IN & Remote Buttom	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN35 DIO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN36 USB2.0 Con	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN37 +12V Output	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN38 HDMI Colay DP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN39 CAN Bus Con	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CN40 PCIEx16 Slot	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

CN41 Msata Con	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
----------------	-------------------------------------	--------------------------	--------------------------	--

2.4 Optional Function Test

[] No Support

Function Test	Result			Note
	Pass	Fail	N/A	
3G Module (HUAWEI EM680)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CN17/CN20
4G Module (Sierra MC7304)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CN17/CN20
Wireless LAN(AzureWave AW-NB041H)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bluetooth (AzureWave AW-NB041H)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2.5. Can Bus Test

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

2.6. GPS Function Test

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

3. Integration Test

Hardware Information with Windows 7 Ultimate English SP1 32 Bit Driver Version	
CPU	Intel Core i7-4700EQ 2.40GHz
Memory	ADATA DDR3L-1600 8GB(Micro 4PN77 D9RVX) x2
HDD	HGST 2.5" 1TB(HTS721010A9E630)

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 TEAC FD-05PUB		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pioneer USB2.0 DVD-R/W BDR-XT04T		<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"/>	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 COM3/4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use loopback and WINSSD.exe to test RS-422 in Windows
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. The communication between the RS-422 port of two boards is linked by one 1.2km cable on Windows Terminal. 2. Confirm RS422 can work properly from G3 status
RS-485 for COM3/4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use ICP CON I-7044D D/IO Module in Windows(Support Auto flow control)
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. The communication between the RS-485 port of two boards is linked by one 1.2km cable on Windows Terminal 2. Confirm RS485 can work properly from G3 status

4. Application Test

4.1. PCI-Express Function Test

PCI-Express x1	Function Test			Note
	Pass	Fail	N/A	
Intel Gigabit CT Desktop Adapter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ASM 1061 SATA3 card	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SUNIX Gigabit Ethernet PCI-E 10/100M/1GB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SUNIX eSATA & SATAII card(SATA1414)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RS232 2 Port & Parallel(PETRPO2A)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB 3.0 4 Port(UTB242)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCI-E GIGA LAN(PETL01B)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NVIDIA GeForce 8400 GS	<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 Server Adapter LAN Card((E1G44ET2BLK))	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mini PCI Express Card	Function Test			Note
	Pass	Fail	N/A	
AzureWave Atheros AR9002WB-1NG Wireless Network Adapter(Model:AW-NB037H)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
AzureWave 802.11n Wireless LAN Card Adapter(Model:AW-NB041H)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
AzureWave Wireless 802.11 b/g/n (Model:AW-NB100H)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ralink RT2571WF WLAN Mini Card (USB Interface)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Intel Dual Band Wireless-AC 3160	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Silicon Image SATA Sil3132ME	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
COM-ME232s2 PCI Express Multiport Serial Adapter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
AzureWave WiFi card(AW-NE768),	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ralink 802.11n Wireless LAN card(RT2890T)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HUAWEI 3G Card(EM680)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sierra 4G Module(MC7304)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

4.2. SSD Modules Compatibility Test

SSD HDD Compatibility Test:

Cable Type: IDE SATA2 MLC SLC

Test Item	Result			Note
	Pass	Fail	N/A	
Innodisk 2.5" 64GB(3MG2-P)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

4.3. Display port Converter Compatibility Test

Test Item	Result			Note		
	Pass	Fail	N/A			
DP to HDMI converter: LPC-1504	DOS display	Full screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	OS display	Full screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max resolution:

DP to DVI converter: LPC-1503	DOS display	Full screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	OS display	Full screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max resolution:

5. Power Consumption Test

Hardware Information with Windows 7 Ultimate English SP1 32 Bit Driver Version	
CPU	Intel® Core™ i7-4700EQ Processor(6M Cache, up to 3.40 GHz)
Memory	ADATA DDR3L 1600 4G ADDS1600W4G11-BMIN Micron 4PN77 D9RVX
HDD	Toshiba MK5076GSX 2.5" 500GB

5.1. AT/ATX Power Consumption

Test Equipment						
Equipment	PROGRAMMABLE POWER SUPPLY					
Manufacturer	GW inSTEK					
Model name	PSH-3630					
Test Environment						
ATX Power Model	N/A					
Keyboard/Mouse	USB Keyboard: Microsoft 1366; USB mouse: Microsoft MSK-1113					
Note	Power consumption does not include HDD consumption.					
Power Supply	ATX Power					Note
(Full Loading Mode) Windows 7 with Prime 95 Full Loading Test	(+12V)	4.46	A	53.52	W	Prime95 Version 259
Full Loading Total Watt	53.52 (W)					
Win. Idle mode: Measure the current value when system in windows mode and without running any program	(+12V)	1.58	A	18.96	W	
Idle Total Watt	18.96 (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			
(+) 3.3V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.328	3.27	
(+) 5V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.76	4.96	
(+) 12V	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12.144	12.02	
VCORE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.760	1.73	
VMEM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.376	1.35	
3VSB 3.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.344	3.29	
VBAT 3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.136	3.11	
5VDUAL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.040	4.97	
CPU Temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	40°C	45°C	
System Temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	34°C	33.5°C	

5.3. DC Power Switch

Test Environment	Switch	DC Power (10V~35V)		Note
Windows 7 with Prime 95 Full Loading Test	(+10V)	6.19	A	
	(+19V)	3.36	A	
	(+35V)	1.85	A	
Windows 7 Without running any Software	(+10V)	1.67	A	
	(+19V)	1.14	A	
	(+35V)	0.62	A	

5.4. CMOS Battery Test

Test Point: Calculated result should be > 5 years.

Battery: CR2032

Capacity 225mA

Check item	Measured Voltage		Measured Current		Calculate Result		Result			Note
							Pass	Fail	N/A	
Battery leakage	3.08	V	2.8	uA	9.17	years	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Calculate result=225mA/measured current / 365days/24hours

6. Time Accuracy Test

6.1. System Clock & RTC Clock Test

Under Room Temperature: 26 °C

Function	Item	Time Interval	Criteria	Actual		Result			Note
						Pass	Fail	N/A	
RTC Clock in Power On Mode		24 hrs	+/-2 sec	-1	Sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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	5	Sec	Press the Power Button till "Beep" Sound appears

6.3. Watchdog Timer Test

Use Function as below: Hi-Safe20150521

[] No Support.

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

Note : Under Room Temperature: 26°C

7. O.S. Compatibility Test

7.1. English Ubuntu 14.04 Kernel 3.13.0-24-generic

[] No Support

Driver Information:

Chipset Software	System default
Graphics Media	System default
Audio Driver	System default
LAN Driver	Intel Gigabit Ethernet 3.1.0.2

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Ubuntu14.04 kernel 3.13.0-24-generic	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Type uname -a

Test Result:

Test Item	Result			Note
	Pass	Fail	N/A	
Display Function Test				
VGA -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DP -- 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"/>	217
Connect to Internet – LAN 2/3/4/5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	211
Audio Function Test				
Play Audio Function Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Play Audio Test
Base Function Test				
Mouse Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Keyboard Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DVD-ROM Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<IDE / SATA / USB >
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
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(R) Chipset Device Software 10.0 (2014/04/24)
Graphics Media	Intel(R) HD Graphics 4600 10.18.10.4061 (12/18/2014)
Audio Driver	Realtek High Definition Audio 6.0.1.7246 (5/14/2014)
LAN Driver	Intel(R) Ethernet Connection I217-LM 12.12.80.19 (9/29/2014) Intel(R) I211 Gigabit Network Connection 12.11.97.0 (5/15/2014) Intel(R) I211 Gigabit Network Connection #2 12.11.97.0 (5/15/2014) Intel(R) I211 Gigabit Network Connection #3 12.11.97.0 (5/15/2014) Intel(R) I211 Gigabit Network Connection #4 12.11.97.0 (5/15/2014)

[X] x64 Driver Information:

Chipset Software	Intel(R) Chipset Device Software 10.0 (2014/04/24)
Graphics Media	Intel(R) HD Graphics 4600 10.18.10.4061 (12/18/2014)
Audio Driver	Realtek High Definition Audio 6.0.1.7246 (5/14/2014)
LAN Driver	Intel(R) Ethernet Connection I217-LM 12.12.80.19 (9/29/2014) Intel(R) I211 Gigabit Network Connection 12.11.97.0 (5/15/2014) Intel(R) I211 Gigabit Network Connection #2 12.11.97.0 (5/15/2014) Intel(R) I211 Gigabit Network Connection #3 12.11.97.0 (5/15/2014) Intel(R) I211 Gigabit Network Connection #4 12.11.97.0 (5/15/2014)

Install OS to SATA HDD:

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

Test Results:

Test Item	Result			Note
	Pass	Fail	N/A	
Single Display				
VGA -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DP -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot - Windows 7 Ultimate Advanced Options Menu				
Safe Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Basic Function Test				
USB Mouse and Keyboard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
COM Port Mouse detect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB 2.0 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"/>	I217
LAN2/3/4/5 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I211
Audio Function Test				
Line Out Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Microphone Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Start Menu				
Log off User	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Shut down (S5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Restart	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

7.3. Windows 8.1 Enterprise English Version 32/64Bit

[] No Support

[X] x32 Driver Information:

Chipset Software	Intel(R) Chipset Device Software 10.0 (2014/04/24)
Graphics Media	Intel(R) HD Graphics 4600 10.18.10.4061 (12/18/2014)
Audio Driver	Realtek High Definition Audio 6.0.1.7246 (5/14/2014)
LAN Driver	Intel(R) Ethernet Connection I217-LM 12.12.80.19 (9/29/2014) Intel(R) I211 Gigabit Network Connection 12.11.97.1 (8/13/2014) Intel(R) I211 Gigabit Network Connection #2 12.11.97.1 (8/13/2014) Intel(R) I211 Gigabit Network Connection #3 12.11.97.1 (8/13/2014) Intel(R) I211 Gigabit Network Connection #4 12.11.97.1 (8/13/2014)

[X] x64 Driver Information:

Chipset Software	Intel(R) Chipset Device Software 10.0 (2014/04/24)
Graphics Media	Intel(R) HD Graphics 4600 10.18.10.4061 (12/18/2014)
Audio Driver	Realtek High Definition Audio 6.0.1.7246 (5/14/2014)
LAN Driver	Intel(R) Ethernet Connection I217-LM 12.12.80.19 (9/29/2014) Intel(R) I211 Gigabit Network Connection 12.11.97.1 (8/13/2014) Intel(R) I211 Gigabit Network Connection #2 12.11.97.1 (8/13/2014) Intel(R) I211 Gigabit Network Connection #3 12.11.97.1 (8/13/2014) Intel(R) I211 Gigabit Network Connection #4 12.11.97.1 (8/13/2014)

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows8.1 Enterprise	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Test Results:

Test Item	Result			Note
	Pass	Fail	N/A	
Single Display				
VGA -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HDMI -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DP -- Full Screen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot – Windows8.1 Enterprise Advanced Options Menu				
Safe Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. msconfig 2. safe boot.
Basic Function Test				
USB Mouse and Keyboard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
COM Port Mouse detect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USB 2.0 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"/>	I217
LAN2/3/4/5 --- Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I211
Audio Function Test				
Line Out Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Microphone Test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Start Menu				
Sign out	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Shut down (S5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Restart	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

8. BIOS Function Test

Hardware Information with Windows 7 Ultimate English SP1 32 Bit Driver Version	
CPU	Intel Core i7-4700EQ 2.40GHz
Memory	ADATA DDR3L-1600 8GB(Micro 4PN77 D9RVX) x2
HDD	HGST 2.5" 1TB(HTS721010A9E630)

8.1. Advanced Test

Test Item	Result			Note	
	Pass	Fail	N/A		
CPU configuration	Hyper-threading	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enabled/Disabled
	Intel Virtualization Technology	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enabled/Disabled
	Turbo Mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enabled/Disabled
AMT Configuration	Intel AMT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enabled/Disabled
	Un-Configure ME	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Trusted Computing	TPM SUPPORT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SATA configuration	SATA controller	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enabled/Disabled
	IDE mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	AHCI mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	RAID 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"/>	Enabled/Disabled/Auto
	USB 3.0 Support	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Smart Auto/Enabled/Disabled
F81866 Super IO configuration	Serial port 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enabled/Disabled
	Serial port 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enabled/Disabled
	Serial port 3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enabled/Disabled
	RS232	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	RS422	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	RS485	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Serial port 4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enabled/Disabled
	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"/>		
Power Mode	ATX Type	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	AT Type	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ACPI Sleep State	Suspend Disabled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	S3 only(Suspend to RAM)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Restore AC Power Loss	Power Off	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Power On	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Last State	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dynamic Digital IO	DIO0~7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test under Dos and OS
Serial Port Console Redirection	Console Redirection(COM1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enabled/Disabled
	Console Redirection(COM2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enabled/Disabled

8.2. Chipset Test

Test Item			Result			Note
			Pass	Fail	N/A	
PCH-IO Configuration	Mini-Card (CN20)	Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Gen1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Gen2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	PCH LAN Controller	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enabled/Disabled	
	Azalia	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enabled/Disabled/Auto	
System Agent (SA) Configuration	Primary Display	Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		IGFX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		PEG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		PCIE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Internal Graphics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enabled/Disabled/Auto	
	Primary IGFX Boot Display	VBIOS Default	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		CRT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		DP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		HDMI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Secondary IGFX Boot Display	Disabled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		DP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		HDMI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

8.3. Boot Test

Test Item	Result			Note
	Pass	Fail	N/A	
Quiet Boot	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Launch Intel I217 PXE OpROM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Launch Intel I210 PXE OpROM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From Hard Disk	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From CDROM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From USB HDD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From USB Floppy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot From USB CD-ROM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boot from LAN	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Disable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

8.4. CMOS Backup / Clear CMOS Test

Test Item	Result			Note
	Pass	Fail	N/A	
CMOS Backup	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clear Date 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(20150521)	<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"/>	
	Temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Voltage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DIO	DIO5~8 High	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	DIO5~8 Low	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WatchDog	10sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actual 11 sec
	1min	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actual 65sec
	255sec	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actual 270sec
	Auto Reload	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SMBus	SMBus IO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SMBus Address 0xF040
	Read Byte	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Slave Address A0h,A2h,A4h
	Read Word	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Result / Read	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

8.8. Intel AMT Test

Test Item	Result			Note
	Pass	Fail	N/A	
Web link: http://172.16.12.161:16992/index.htm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Power control	Power off	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Reset	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KVM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ManageabilityDeveloperToolKit

9. Performance Test

Hardware Information with Windows 7 Ultimate English SP1 32 Bit Driver Version	
CPU	Intel Core i7-4700EQ 2.40GHz
Memory	ADATA DDR3L-1600 8GB(Micro 4PN77 D9RVX) x2
HDD	HGST 2.5" 1TB(HTS721010A9E630)

9.1. Performance Test

Test Result: (Display set 1920*1080 test)

Testing Software	Scope		Note
	AAEON	Ref.	
PCMark2005			Windows 7
PCMark	16720	-	PCMarks
CPU	12272	-	
Memory	10060	-	
Graphics	8890	-	
HDD	49738	-	
PCMark Vantage			1280x960
PCMarks	18113	-	PCMarks
Memories	9818	-	
TV and Movies	7328	-	
Gaming	13537	-	
Music	20473	-	
Communications	17450	-	
Productivity	22149	-	
HDD	55201	-	

Testing Software	Scope		Note
	AAEON	Ref.	
3Dmark2006 v120			Windows 7
3DMark Score	5914	-	
SM2.0 Score	2065	-	
HDR/SM3.0 Score	2218	-	
CPU Score	5832	-	

3Dmark11 Professional Edition			Windows 7
Performance 1280*720 (Default)			
3Dmark 11Score	P1200	-	
Graphics Score	1037	-	
Physics Score	6479	-	
Combined Score	1154	-	

Testing Software	Scope		Note
	AAEON	Ref.	
Performance Test 7.0			
PassMark Rating	1707.0	-	
CPU Mark	6751.1	-	
2D Graphics Mark	335.0	-	
3D Graphics Mark	579.3	-	
Memory Mark	1125.8	-	
Disk Mark	930.1	-	
CD Mark	847.7	-	

Testing Software	Scope		Note
	AAEON	Ref.	
Windows experience index			Windows 7
Processor	7.5	-	
Memory	7.8	-	
Graphics	6.6	-	
Gaming graphics	6.6	-	
Primary hard disk	5.9	-	

SATAIII Performance				
SATA HDD	ADATA SSD SX900 128GB			
CPU	Intel® Core™ i7-4700EQ Processor(6M Cache, up to 3.40 GHz)			
Memory	ADATA DDR3L 1600 4G ADDS1600W4G11-BMIN Micron 4PN77 D9RVX			
OS	Windows7 Ultimate SP1 32bit			
Item	Comment / (unit)	Software	Transfer Rate (MB/s)	Note
Single HDD (SATA port 1/2/3/4) SATAIII	Maximum Read	ATTO Disk Benchmark	373MB/s	SATAII 150~300MB SATAIII up 300M/B
	Maximum Write	ATTO Disk Benchmark	450MB/s	

USB2.0/3.0 port Performance				
USB Flash	Kingston USB3.0 Ultimate 16GB			
Item	Comment / (unit)	Software	Transfer Rate (MB/s)	Note
USB2.0 ports (CN36)	Maximum Read	ATTO Disk Benchmark	43MB/s	
	Maximum Write	ATTO Disk Benchmark	42MB/s	
USB3.0 ports	Maximum Read	ATTO Disk Benchmark	130MB/s	
	Maximum Write	ATTO Disk Benchmark	87B/s	

10. Negative Test

10.1 USB Keyboard Negative Test

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

11. Stability test

11.1. Run In Test

Under Room Temperature: 26 °C

OS: Windows 7 Ultimate English SP1

Test Item		Result			Note
		Pass	Fail	N/A	
Burn In Test V7.1(1071) Duty: 100 Time: over 12 hours	CPU	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	RAM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	COM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Video	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	2D	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	3D	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Disk	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Sound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Network	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	USB	2.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note: COM PORT Speed Set to 115200.

11.2. Reboot Test

Under Room Temperature: 26 °C

OS:

Reboot Test	Result			Note
	Pass	Fail	N/A	
Reboot test for 1000 cycles (AP: Passmark rebooter.exe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

11.3. Cold Boot Test

Under Room Temperature: 26 °C

OS: DOS

Cold Boot Test	Result			Note
	Pass	Fail	N/A	
AC loss cold boot over 1000 times	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	