Report NO:17P010002_I

OMNI-5215-SKU-A1

21.5" Fanless Touch Panel PC w/Intel Celeron J1900 Processor

System Level Product
P3
Compatibility Test Report

Summary	☒ Pass ☐ Fail ☐ 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	QE Manager	Test Engineer
2016-05-12	KJ Wang	Leo Liu

Version Released Records

Date	Version	Change History	Note
5/26/2015	C0	1. Add UEFI,GPS,CANBUS,POE, Cold boot test item	
3/22/2016	C1	1. Add issue status 2. Update CTOS devices. 3. Add HDMI 5M cable compatibility test. 4. Modified boot up without display test. 5. Add Touch Function test. 6. Add DC adapter compatibility test 7. Add Windows10 compatibility test. 8. Update Benchmark tool. 9. Update DOS / Windows on/off test rule. 10. Add DDR4 SO-DIMM. 11. Update Linux to Ubuntu16.04 12. Add Stability Test \ Memory test.	
10/21/2016	C2	1. Remove Smartbits test item. 2. Update chapter7.2 \ LVDS type support. 3. Add chapter9.6. System stability after S3 / S4 / S5 cycles	
	C3	1. Modified PWB test item.	

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

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

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

Specification Validation
Main Specification

Item	Specification	Result			Note
		Pass	**Fail**	**N/A**	
System					
Processor	IntelR i5--6300U ,2.4 GHz	☒	☐	☐	
System Memory	204 pin DDR4 SODIMM x 1, Max.8GB	☒	☐	☐	
Ethernet	10/100/1000Base--TX, RJ--45 x 1	☒	☐	☐	
I/O Port	DB--9 for RS--232/422/485 x 2 USB 3.0 Type A x 4 SMA Antenna hole x 1 HDMI x 1 2.5" HDD Bay x 1 CFast x 1 **Added 10/100/1000Base--TX, RJ--45 x 2** 3--pin terminal block x1 for 9~30 Vdc power input LED Power on/off switch x1 (Power on = Orange, Power off =N/A)	☒	☐	☐	
Storage Disk Drive	SATA 2.5" HDD bay x 1	☒	☐	☐	
Expansion Slot	Mini card x 1 SIM card x 1 PCIE X 1 connector (AAEON PIN Define)	☒	☐	☐	
Power Supply					
DC input	DC 9(min) ~ 30 (max) V w/3--pin terminal block, ATX Power function	☒	☐	☐	

O.S. Support

Item	Specification	Result			Note
		Pass	**Fail**	**N/A**	
Microsoft Windows	Windows 7 English 32/64 bit	☒	☐	☐	
	Windows 8.1 English 32/64bit	☒	☐	☐	
	Windows 10 English 32/64bit	☒	☐	☐	
Linux	Kernel 2.6 above	☒	☐	☐	

Platform Information

Item	Device Information	Note
Product of department	SPD	
System Model / Version	OMNI-5215 A1.0	
PCB Board	PBA-SKU6 A1.1	
BIOS / Version	OMNI Series Project(SKU) R2.3(OMSKAM23)(01/09/2017)	
Driver folder	20160812	
CPU Type	Intel Core i5-6300U 2.40GHz	
Memory Type	Transcend DDR4-2400 8GB(SEC 616 K4A4G085WE BCRC)	
SATA HDD	TOSHIBA 2.5" 100GB(MQ01AAD010C)	
USB DVD-ROM	Lite-on 8X(eNAU808)	
LVDS	21.5" TFT LCD	
Operating System	☒ English Ubuntu16.04.2 Kernel 4.8.0-36-generic x86_64	
	☒ Windows 7 Ultimate SP1 32/64Bit	
	☒ Windows 8.1 Enterprise English Version 32/64Bit	
	☒ Windows 10 Enterprise English Version 32/64Bit	
Power Supply	DC Adapter : FSP 19V(FSP120-ABAN2)	
Chipset Information		
PCH Bridge	Intel SkylakeU	
Super IO Chipset	Finteck F81866	
Audio Chipset	Realtek ALC269	
Ethernet Chipset	Intel I210	

Summary Table of contents:

1. Hardware Compatibility

1.1. CPU Compatibility Test

CPU Information (Information and frequency should show correct value)	Result			Note
	Pass	Fail	N/A	
Intel Core i5-6300U 2.40GHz	☒	☐	☐	

1.2. Memory Compatibility Test

Memory Information (a. Information and frequency should show correct value. b. Memtest result should not error or halt)	AAEON P/N	Result			Note
		Pass	Fail	N/A	
DDR4 SO-DIMM					
Transcend DDR4-2133 SO-DIMM 4GB		☒	☐	☐	
Transcend DDR4-2133 SO-DIMM 8GB		☒	☐	☐	
Transcend DDR4-2133 SO-DIMM 16GB		☒	☐	☐	
ADATA DDR4-2133 SO-DIMM 4GB		☒	☐	☐	
Crucial DDR4-2133 SO-DIMM 16GB		☒	☐	☐	
DSL DDR4-2133 SO-DIMM 4GB		☒	☐	☐	
Innodisk DDR4-2133 SO-DIMM4GB		☒	☐	☐	
DSL DDR4-2400 SO-DIMM 16GB		☒	☐	☐	
Transcend DDR4-2400 SO-DIMM 4GB		☒	☐	☐	
Transcend DDR4-2400 SO-DIMM 8GB		☒	☐	☐	
Transcend DDR4-2400 SO-DIMM 16GB		☒	☐	☐	

1.3. SATA Compatibility Test

1.3.1 Onboard SATA(AHCI) Test

SATA Device Information (Information and size should show correct value with IDE and AHCI mode)		AAEON P/N	Result			Note
			Pass	Fail	N/A	
Main Board project test with 80~100cm SATA cable , typical #1709070800						
SATAIII	HGST 2.5" 1TB(HTS541010A9E680)		☒	☐	☐	
SATAIII	HGST 2.5" 320GB(HTE725032A7E630)		☒	☐	☐	
SATAIII	Seagate 2.5" 500GB(ST500LT012)		☒	☐	☐	
SATAIII	WD 2.5" 320GB(WD3200BEVT)		☒	☐	☐	
SSD	Transcend TS32GSSD370 2.5".32GB.SATA III SSD MLC.	968C032G2D	☒	☐	☐	
SSD	Transcend.TS64GSSD370 2.5".64GB. SATA III.SSD.MLC	968C64G003	☒	☐	☐	
SSD	Transcend.TS128GSSD370 2.5" SATA3 SSD.128GB.MLC.	968C128G0W	☒	☐	☐	
SSD	2.5" .16GB 3MG2-P 15nm.SATA III MLC SSD.Innodisk MLC .0℃ ~ +70℃.DGS25-16GD81BC3SC-26	AP-SS968C016G3K	☒	☐	☐	

SSD	(TF)2.5".32GB 3MG2-P 15nm.SATA SSD MLC.0~70°C.HIGH IOPS.innodisk.DGS25-32GD81B C3DC-26	AP-SS968C032 G1P	☒	☐	☐	
SSD	(TF)2.5".64GB.SATA MLC SSD .3MG2-P 15nm.0~70°C.HIGH IOPS.innodisk.DGS25-64GD81B C3QC-26	968C064G39	☒	☐	☐	
SSD	2.5' MLC SSD 128GB 3MG2-P 15nm.SATA 0℃~+70℃.InnoDisk.DGS25-A28 D81BC3QC-26	AP-SS968C128 G1P	☒	☐	☐	
SSD	2.5".256GB.SATA MLC SSD 3MG2-P 15nm.0~70°C.HIGH IOPS.innodisk.DGS25-B56D81BC 3QC-26	AP-SS968C256 G16	☒	☐	☐	

1.4. Monitor Compatibility Test

Monitor Information	Result			Note
a. **Monitor should display under DOS and OS environment.** b. **Monitor should not appear ghost or ripples.**	**Pass**	**Fail**	**N/A**	**Note**
HDMI　(Test with 5M HDMI cable/ Bravo-u)				
*Samsung LU28D	☒	☐	☐	*Must test monitor (Tested 3 monitors at least)
*ASUS VE228	☒	☐	☐	
CHIMEI 22"(22SH-L)	☒	☐	☐	

2. Basic Function Test

2.1. Video Function Test

2.1.1. Single Output Function Test

Configuration	
CPU	Intel Core i5-6300U 2.40GHz
Memory	Transcend DDR4-2400 8GB(SEC 616 K4A4G085WE BCRC)
SATA HDD	TOSHIBA 2.5" 100GB(MQ01AAD010C)
LVDS	21.5" TFT LCD
HDMI	SAMSUNG 28"(U28D590D)
Operating system	Windows 10 Enterprise 64bit
Color Quality	☒16bit ☐24bit ☒32bit

Resolution	HDMI			LVDS									Note
	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	
800X600	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
1024X768	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
1152X864	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
1280X600	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
1280X720	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
1280X768	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
1280X800	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
1280X960	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
1280X1024	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
1360X768	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
1366X768	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
1400X1050	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
1440X900	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
1600X900	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
1600X1200	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	
1680X1050	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
1792X1344	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	
1856X1392	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	
1920X1080	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
1920X1200	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	
1920X1440	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	
2048X1152	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	
2048X1536	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	
2560X1440	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	
2560X1600	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	
2560X1920	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	
2560X2048	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	
3840 X 2160	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	
EDID check	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
Hot plug	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	
Rotation(0/90/180/270)	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	
DOS Display	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	

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	LVDS + HDMI	☒	☐	☐	
Extended Desktop		☒	☐	☐	

2.1.3. Boot up Without Display Test

Process step:
1. BIOS disable LVDS.
2. Power on without inserting any VGA/DVI/HDMI/DP connector until system reaches Windows desktop
3. Plug VGA connector into test machine while system reaches Windows then check Graphics driver and display.
4. Check VGA output Brightness is normal and it shows "Ghost Image" / "Flicker" or not
5. Repeat step2~4 for DVI / HDMI / DP testing.

Test item		Result			Note
		Pass	**Fail**	**N/A**	
Display should working normal in Windows Desktop	HDMI	☒	☐	☐	

2.2. 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 –I 65500 –n 1000								
1000MBps LAN HUB		D-Link DGS-1008D						
100MBps LAN HUB		Accton Desktop-3005						
10MBps LAN HUB		SVEC FD916H						
OnBoard LAN1	Intel I210 Gigabit Network				MAC Address		00-07-32-41-1B-93	
OnBoard LAN2	Intel I211 Gigabit Network				MAC Address		00-07-32-33-16-5B	
OnBoard LAN3	Intel I211 Gigabit Network				MAC Address		00-07-32-33-16-5A	

LAN Speed	Link / Speed LED	Active LED	LAN 1			LAN 2/3			Note
			Pass	Fail	N/A	Pass	Fail	N/A	
1000Mbps Ping loss ≦ 1	▬	▬	☒	☐	☐	☒	☐	☐	
100Mbps Ping loss ≦ 1	▬	▬	☒	☐	☐	☒	☐	☐	
10Mbps Ping loss ≦ 1	▭	▬	☒	☐	☐	☒	☐	☐	
Wake On LAN (WOL should work properly when resume from S3/S4/S5)	S3		☒	☐	☐	☒	☐	☐	
	S4		☒	☐	☐	☒	☐	☐	
	S5		☒	☐	☐	☒	☐	☐	
LAN Boot (PXE) (Boot from LAN should work properly)			☒	☐	☐	☒	☐	☐	
Internet Browser (DHCP Server) (Visit the website should work properly)			☒	☐	☐	☒	☐	☐	
Access 1GB file from ftp. (Access file should not stop or error.)			☒	☐	☐	☒	☐	☐	
Iperf $sudo iperf3 –c xx.xx.xx.xx –i 1 – t 60 (Gigabit LAN bandwidth should > 900Mbps)			☒	☐	☐	☒	☐	☐	

2.3. COM Ports Test

Test Item	Result			Note
	Pass	Fail	N/A	
Serial Modem Dial Out	☒	☐	☐	
Serial Modem Ring In	☒	☐	☐	Test by Modem
Transmission Test <115200bps / 15M>	☒	☐	☐	

2.4. RS-422 / RS-485 Test

Test Item	Result			Note
	Pass	Fail	N/A	
RS-422 for COM1/2	☒	☐	☐	Use loopback and WINSSD.exe to test RS-422 in Windows

	☒	☐	☐	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 3. Test baud rate is 115200bps
RS-485 for COM1/2	☒	☐	☐	Use ICP CON I-7044D D/IO Module in Windows(Support Auto flow control)
	☒	☐	☐	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 3. Test baud rate is 115200bps.

2.5. USB Port Integration Test

Item USB Port		USB2.0 ports (under OS)			USB3.0 ports (under OS)			Note
		Pass	Fail	N/A	Pass	Fail	N/A	
USB HDD:	Transcend TS500GSJ25D3	☐	☐	☒	☒	☐	☐	
USB Flash:	Transcend JetFlash 790	☐	☐	☒	☒	☐	☐	
	Transcend JetFlash 810	☐	☐	☒	☒	☐	☐	
USB DVD ROM:	Lite-on eNAU808	☐	☐	☒	☒	☐	☐	
USB keyboard:	Logitech K200	☐	☐	☒	☒	☐	☐	
USB mouse:	Logitech M-U0026	☐	☐	☒	☒	☐	☐	
USB FDD:	HP FD-05PUB	☐	☐	☒	☒	☐	☐	
USB3.0 HUB:	Transcend USB 3.0 4 port HUB	☐	☐	☒	☒	☐	☐	

Test item	Result			Note
	Pass	Fail	N/A	
USB3.0 ports with power in S3 mode	☒	☐	☐	
USB3.0 ports with power in S5 mode	☒	☐	☐	

2.6. Touch Function Test

Test item		Result			Note
		Pass	Fail	N/A	
The calibrating result is correct.		☒	☐	☐	
After touch panel is calibrated, drawing test result is precise enough.		☒	☐	☐	
Windows icon should work properly when used touch to execute.		☒	☐	☐	
Right-Click function should work properly.		☒	☐	☐	
Multi touch should work properly	Multi draw	☒	☐	☐	For multi touch panel

	zoom	☒	☐	☐	
Touch and right-click should work properly during Burnintest running.		☒	☐	☐	BurninTest test item must include CPU/RAM/2D/3D/Video

3. Expansion card and Application Test

3.1. Expansion Slot Compatibility Test

Test point: Make sure expansion slots are compatible with expansion cards.

Mini PCI Express Card		Result			Note
		Pass	Fail	N/A	
Full size	Quectel UC20 3G Card	☒	☐	☐	If M/B support SIM slot
Full size	Sierra Wireless AirPrime MC7304 Qualcomm 4G	☒	☐	☐	If M/B support SIM slot 1. Ping 168.95.1.1 for 1000 clcyes, loss<2 times. 2. Download 1GB file from website.
Full size	AAEON PER-C11L Gigabit LAN card	☒	☐	☐	
Full size	AAEON PER-C41C-A10 4 port RS-232	☒	☐	☐	
Half size	AzureWave AW-NB159H 802.11b/g/n RTL8723BE combo module	☒	☐	☐	
Half size	AzureWave AW-CB161H 802.11a/b/g/n/ac(PCI-e Wireless+ USB Bluetooth) Realtek RTL8821AE	☒	☐	☐	
Half size	Bointec DPE909-AA WIFI	☒	☐	☐	

3.2. Expansion Card Integration Test

Test Item	Result			Note
	Pass	Fail	N/A	
1. Connect devices to all of expansion slots. 2. No error during OS and driver installation 3. All of expansion cards should work normal.	☒	☐	☐	

4. Power Consumption Test

Configuration	
CPU	Intel Core i5-6300U 2.40GHz
Memory	Transcend DDR4-2400 8GB(SEC 616 K4A4G085WE BCRC)
Storage	TOSHIBA 2.5" 100GB(MQ01AAD010C)
O.S	Windows 10 Enterprise 64bit

4.1. Power Consumption

Test Equipment					
Equipment	DC Power Supply				
Manufacturer	Chroma				
Model name	62012P-600-8				
Test Environment					
AC / DC source	FSP 19V(FSP120-ABAN2)				
Power Supply	**Current**		**P**		**Note**
(Full Loading Mode) Windows with Prime 95 Full Loading Test	(+19V)	1.85 A	35.15	W	Prime95 Version 289
Full Loading Total Watt	35.15(W)				
S3 mode: Measure the current value when system in S3 mode of windows and without running any	(+19V)	0.09 A	1.71	W	
Suspend Total Watt	1.71(W)				
Win. Idle mode: Measure the current value when system in windows mode and without running any program	(+19V)	1.22 A	23.18	W	
Idle Total Watt	23.18(W)				
S5 mode: Measure the current value when system in S5 mode of windows and without running any	(+19V)	0.08 A	1.52	W	Erp disable
Suspend Total Watt	1.52(W)				

4.2. PC Health Status

Test Point:

Voltage deviation: ±5%.

Fan speed deviation: ±10%

CPU DTS Temp deviation: ±15℃

System Temp deviation: ±5℃

H/W monitor	Result			BIOS		Actual		Note
	Pass	Fail	N/A					
(+) 3.3V Actual and monitor must be ±5%	☒	☐	☐	3.360	V	-	V	
(+) 12V Actual and monitor must be ±5%	☒	☐	☐	12.144	V	-	V	
(+) 5V Actual and monitor must be ±5%	☒	☐	☐	5.129	V	-	V	
(+) 5VSB Actual and monitor must be ±5%	☒	☐	☐	5.160	V	-	V	
VCORE Actual and monitor must be ±5%	☒	☐	☐	0.880	V	-	V	
VMEM Actual and monitor must be ±5%	☒	☐	☐	1.216	V	-	V	
VBAT Actual and monitor must be ±5%	☒	☐	☐	3.200	V	-	V	
CPU DTS Temp Actual and monitor must be ±15℃	☒	☐	☐	58	℃	-	℃	
System Temp Actual and monitor must be ±5℃	☒	☐	☐	50	℃	-	℃	

4.3. Wide Voltage Test

4.3.1. Wide Voltage Test

Test Point:

Test voltage range is follow specification.

Test Environment (a. System should boot properly (b. System wasn't halt in following status.)	DC Power (9V~30V)	Current		Note
Windows 10 with Prime 95 Full Loading Test	Min(+9.6V)	3.68	A	
	Max(+30V)	1.25	A	
Windows 10 Without running any Software	Min(+9.6V)	2.41	A	
	Max(+30V)	0.85	A	

4.3.2. DC Adapter Compatibility Test

Test Point:

Confirm each adapter can be compatible with wide voltage design.

Adapter Information (a. System boot to OS should work properly.		AAEON P/N	Result			Note
			Pass	Fail	N/A	
9V	MEANWELL SE-100-9 9V/11.2A	N/A	☒	☐	☐	
12V	FSP084-DIBAN2 84W	1255900841	☒	☐	☐	
12V	FSP084-DMAA1 84W	1757908403	☒	☐	☐	
19V	FSP120-ABAN2 120W	1255901202	☒	☐	☐	
19V	FSP120-AAB 120W	1757912005	☒	☐	☐	
24V	SINPRO MPU100-108 100W	XXXXXXXXXX	☒	☐	☐	

5. Time Accuracy Test

5.1. System Clock & RTC Clock Test

Under Room Temperature:

Item / Function	Time Interval	Criteria	Actual		Result			Note
					Pass	Fail	N/A	
RTC Clock in Power On Mode	24 hrs	+/-2 sec	-1	Sec	☒	☐	☐	
RTC Clock in Power Off Mode	24 hrs	+/-2 sec	0	Sec	☒	☐	☐	

5.2. Booting Timer Test

Installation	Actual		Note
System Booting Time	10.77	Sec	Press the Power Button till "Beep" Sound appears

5.3. Watchdog Timer Test

Use Function as below: Hi-Safexxxx

〔　〕No Support.

Time-Out Interval	Criteria	Actual		Result			Note
				Pass	Fail	N/A	
10 sec	+/- 10%	10	Sec	☒	☐	☐	
60 sec	+/- 10%	60	Sec	☒	☐	☐	
255 sec	+/- 10%	255	Sec	☒	☐	☐	

Note : Under Room Temperature:

6. O.S. Compatibility Test

6.1. English Ubuntu16.04.2 Kernel 4.8.0-36-generic x86_64

Driver Information:

Chipset Software	System default
Graphics Media	System default
Audio Driver	System default
LAN Driver	Igb 5.3.5.3

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Ubuntu16.04.2 Kernel 4.8.0-36-generic x86_64	☒	☐	☐	Type uname -a

Test Result:

Test Item	Result			Note
	Pass	Fail	N/A	
Display Function Test				
HDMI -- Full Screen	☒	☐	☐	
LVDS -- Full Screen	☒	☐	☐	
HDMI + LVDS	☒	☐	☐	
Network Function Test				
Connect to Internet – LAN 1	☒	☐	☐	
Connect to Internet – LAN 2/3	☒	☐	☐	
Audio Function Test				
HDMI audio function Test	☒	☐	☐	
Base Function Test				
Mouse Test	☒	☐	☐	
Keyboard Test	☒	☐	☐	
Console Redirection	☒	☐	☐	
DVD-ROM Test	☒	☐	☐	<IDE / SATA / USB >
USB 2.0/3.0 Removable Devices	☒	☐	☐	
X Windows Application				
Start Button Office	☒	☐	☐	Office function
X-Window	☒	☐	☐	Startx – Desktop in Linux
Command Test On Text Mode: Attention Delay Phenomenon				
uname –a	☒	☐	☐	Show information
Shutdown	☒	☐	☐	Init 0 or shutdown –h now
Restart the Computer	☒	☐	☐	Init 6 or shutdown –r now
ls / clear ……; cd /dev /ls –l	☒	☐	☐	Command instruction

6.2. Windows 7 Ultimate English Version 32/64Bit

32bit Driver Information	
Chipset Software	Intel(R) Chipset Device Software 10.1.1(2015-06-03)
Graphics Media	Intel(R) HD Graphics 520 20.19.15.4454(5/4/2016)
Audio Driver	Intel(R) Display Audio 6.16.0.3196(3/24/2016) Realtek High Definition Audio 6.0.1.7541(6/18/2015)
LAN Driver	Intel(R) I210 Gigabit Network Connection 12.13.27.0 (6/5/2015) Intel(R) I211 Gigabit Network Connection 12.13.27.0 (6/5/2015) Intel(R) I211 Gigabit Network Connection #2 12.13.27.0 (6/5/2015)
64bit Driver Information	
Chipset Software	Intel(R) Chipset Device Software 10.1.1(2015-06-03)
Graphics Media	Intel(R) HD Graphics 520 20.19.15.4454(5/4/2016)
Audio Driver	Intel(R) Display Audio 6.16.0.3196(3/24/2016) Realtek High Definition Audio 6.0.1.7541(6/18/2015)
LAN Driver	Intel(R) I210 Gigabit Network Connection 12.13.27.0 (6/5/2015) Intel(R) I211 Gigabit Network Connection 12.13.27.0 (6/5/2015) Intel(R) I211 Gigabit Network Connection #2 12.13.27.0 (6/5/2015)

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows 7 Ultimate ACPI Mode	☒	☐	☐	

Test Results:

Test Item		Result			Note
		Pass	Fail	N/A	
Single Display					
HDMI -- Full Screen		☒	☐	☐	
LVDS -- Full Screen		☒	☐	☐	
Multi display		☒	☐	☐	
Basic Function Test					
Usable memory	32bit: 2.19GB	☒	☐	☐	BIOS support adjustment
	64bit: 8GB	☒	☐	☐	
USB Mouse and Keyboard		☒	☐	☐	
COM Port Mouse detect		☒	☐	☐	
USB Removable Devices	USB3.0	☒	☐	☐	
	Safe to remove icon	☒	☐	☐	
Touch Function		☒	☐	☐	
LAN Function Test					
LAN1 --- Auto		☒	☐	☐	
LAN2/3 --- Auto		☒	☐	☐	
Audio Function Test					
HDMI Audio		☒	☐	☐	
Start Menu					
Log off User		☒	☐	☐	
Shut down (S5)		☒	☐	☐	
Sleep (S3)		☒	☐	☐	
Restart		☒	☐	☐	
Hibernate (S4)		☒	☐	☐	

6.3. Windows 8.1 Enterprise English Version 32/64Bit

32bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.1.1(2015-06-03)
Graphics Media	Microsoft Basic Display Adapter 6.3.9600.16384(6/21/2006)
Audio Driver	High Definition Audio Device 6.3.9600.16384(8/21/2013) Realtek High Definition Audio 6.0.1.7541(6/18/2015)
LAN Driver	Intel(R) I210 Gigabit Network Connection 12.14.7.0(6/18/2015) Intel(R) I211 Gigabit Network Connection 12.14.7.0(6/18/2015) Intel(R) I211 Gigabit Network Connection #2 12.14.7.0(6/18/2015)
64bit Driver Information	
Chipset Software	Intel Chipset Device Software 10.1.1(2015-06-03)
Graphics Media	Intel(R) HD Graphics 520 20.19.15.4454(5/4/2016)
Audio Driver	Intel(R) Display Audio 8.20.0.922(4/16/2016) Realtek High Definition Audio 6.0.1.7541(6/18/2015)
LAN Driver	Intel(R) I210 Gigabit Network Connection 12.14.7.0(6/18/2015) Intel(R) I211 Gigabit Network Connection 12.14.7.0(6/18/2015) Intel(R) I211 Gigabit Network Connection #2 12.14.7.0(6/18/2015)

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows8.1 Enterprise 32bit	☒	☐	☐	
English Windows8.1 Enterprise 64bit UEFI mode	☒	☐	☐	

Test Results:

Test Item		Result			Note
		Pass	Fail	N/A	
Single Display					
HDMI -- Full Screen		☒	☐	☐	
LVDS -- Full Screen		☒	☐	☐	
Multi display		☒	☐	☐	
Basic Function Test					
Usable memory	32bit: 2.19GB	☒	☐	☐	
	64bit: 8GB	☒	☐	☐	
USB Mouse and Keyboard		☒	☐	☐	
COM Port Mouse detect		☒	☐	☐	
USB Removable Devices	USB3.0	☒	☐	☐	
	Safe to remove icon	☒	☐	☐	
Touch Function		☒	☐	☐	
TPM2.0 BitLocker. (support UEFI only)		☒	☐	☐	
LAN Function Test					
LAN1 --- Auto		☒	☐	☐	
LAN2/3 --- Auto		☒	☐	☐	
Audio Function Test					
HDMI Audio		☒	☐	☐	
Start Menu					
Log off User		☒	☐	☐	
Shut down (S5)		☒	☐	☐	
Sleep (S3)		☒	☐	☐	
Restart		☒	☐	☐	
Hibernate (S4)		☒	☐	☐	

6.4. Windows 10 Enterprise English Version 32/64Bit

32bit Driver Information	
Chipset Software	Intel Chipset Device software 10.1.1(2015-06-03)
Graphics Media	Microsoft Basic Display Adapter 10.0.14393.0(6/21/2006)
Audio Driver	High Definition Audio Device 10.0.14393.0(7/15/2016) Realtek High Definition Audio 6.0.1.7541 (06/18/2015)
LAN Driver	Intel(R) I210 Gigabit Network Connection 12.15.22.6(4/5/2016) Intel(R) I211 Gigabit Network Connection 12.15.22.6(4/5/2016) Intel(R) I211 Gigabit Network Connection #2 12.15.22.6(4/5/2016)
64bit Driver Information	
Chipset Software	Intel Chipset Device software 10.1.1(2015-06-03)
Graphics Media	Intel(R) HD Graphics 520 20.19.15.4454(5/4/2016)
Audio Driver	Intel(R)Display Audio 8.20.0.922(4/16/2016) Realtek High Definition Audio 6.0.1.7541(6/18/2015)
LAN Driver	Intel(R) I210 Gigabit Network Connection 12.12.226.0(5/4/2015) Intel(R) I211 Gigabit Network Connection 12.12.226.0(5/4/2015) Intel(R) I211 Gigabit Network Connection #2 12.22.226.0(5/4/2015)

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows10 Enterprise 32bit	☒	☐	☐	
English Windows10 Enterprise 64bit	☒	☐	☐	

Test Results:

Test Item		Result			Note
		Pass	Fail	N/A	
Single Display					
HDMI -- Full Screen		☒	☐	☐	
LVDS -- Full Screen		☒	☐	☐	
Multi display		☒	☐	☐	
Basic Function Test					
Usable memory	32bit: 2.19GB	☒	☐	☐	
	64bit: 8GB	☒	☐	☐	
USB Mouse and Keyboard		☒	☐	☐	
COM Port Mouse detect		☒	☐	☐	
USB 2.0 Removable Devices	USB3.0	☒	☐	☐	
	Safe to remove icon	☒	☐	☐	
Touch Function		☒	☐	☐	
TPM2.0 BitLocker Feature		☒	☐	☐	
LAN Function Test					
LAN1 --- Auto		☒	☐	☐	
LAN2/3 --- Auto		☒	☐	☐	
Audio Function Test					
HDMI Audio		☒	☐	☐	
Start Menu					
Log off User		☒	☐	☐	
Shut down (S5)		☒	☐	☐	
Sleep (S3)		☒	☐	☐	
Restart		☒	☐	☐	
Hibernate (S4)		☒	☐	☐	

7. BIOS Function Test

Configuration	
CPU	Intel Core i5-6300U 2.40GHz
Memory	Transcend DDR4-2400 8GB(SEC 616 K4A4G085WE BCRC)
Storage	TOSHIBA 2.5" 100GB(MQ01AAD010C)
O.S	Windows 10 Enterprise 64bit

Test Point:
Confirm BIOS control items are working correctly.

7.1. Advanced Test

Test Item (Following item should work properly)	Result			Note
	Pass	Fail	N/A	
CPU Configuration				
Hyper- threading	☒	☐	☐	Enable/Disable
Intel Virtualization Technology	☒	☐	☐	Enable/Disable
Active process	☒	☐	☐	1/2
Intel SpeedStep	☒	☐	☐	
SATA Configuration				
SATA Controller	☒	☐	☐	Enable/Disable
SATA Port 0	☒	☐	☐	Enable/Disable
Hot Plug	☒	☐	☐	Enable/Disable
F81866 Super IO Configuration				
Serial Port 1	☒	☐	☐	Enable/Disable
RS-232	☒	☐	☐	
RS-422	☒	☐	☐	
RS-485	☒	☐	☐	
Serial Port 2	☒	☐	☐	Enable/Disable
RS-232	☒	☐	☐	
RS-422	☒	☐	☐	
RS-485	☒	☐	☐	
Hardware Monitor				
PC Health Status	☒	☐	☐	
USB Configuration				
Legacy USB Support	☒	☐	☐	Enable/Disable
Trusted Computing				
Security Device support	☒	☐	☐	Enable / Disable
TPM State	☒	☐	☐	
TPM Clear	☒	☐	☐	
Power Management				
Power Mode — AT	☒	☐	☐	
Power Mode — ATX	☒	☐	☐	
State After G3 — Always on	☒	☐	☐	
State After G3 — Always off	☒	☐	☐	
State After G3 — Last State	☒	☐	☐	
*S5 RTC Wake up — Wake system with Dynamic time	☒	☐	☐	
*S5 RTC Wake up — Wake system with fixed time	☒	☐	☐	
Resume from PCIE	☒	☐	☐	Enable/Disable
Resume from LAN/RI	☒	☐	☐	Enable/Disable

7.2. Chipset Test

Test Item (Following item should work properly)			Result			Note
			Pass	Fail	N/A	
Graphics Configuration	Primary IGFX Boot Display	VBIOS	☒	☐	☐	
		HDMI	☒	☐	☐	
		LVDS	☒	☐	☐	
	Secondary IGFX Boot Display	Disable	☒	☐	☐	
		HDMI	☒	☐	☐	
	*Memory Configuration		☒	☐	☐	
	LVDS		☒	☐	☐	Enable / Disable
	Panel Type (Auto)		☒	☐	☐	
	Color Depth (Auto)		☒	☐	☐	
	Backlight Level		☒	☐	☐	10~100%
PCH-IO Configuration	HD Audio		☒	☐	☐	(Internal)
Max TOLUD	Dynamic~3GB		☒	☐	☐	

7.3. Boot Test

Test Item (Following item should work properly)	Result			Note
	Pass	Fail	N/A	
Quiet Boot	☒	☐	☐	
PXE OpROM	☒	☐	☐	
Boot From Hard Disk	☒	☐	☐	
Boot From USB HDD	☒	☐	☐	
Boot From USB Floppy	☒	☐	☐	
Boot From USB CD-ROM	☒	☐	☐	
Boot from LAN	☒	☐	☐	
Disable	☒	☐	☐	

7.4. AAEON Tag Check Utility

Test Item (Following item should work properly)	Result			Note
	Pass	Fail	N/A	
Check AAEON BIOS OK	☒	☐	☐	AONCHECK.EXE

7.5. Supervisor / User Password Test

Test Item (Following item should work properly)	Result			Note
	Pass	Fail	N/A	
Administrator Password	☒	☐	☐	
User Password	☒	☐	☐	

7.6. Hi-safe Test

Test Item (Following item should work properly)		Result			Note
		Pass	Fail	N/A	
Version(20160801)		☒	☐	☐	
System Information	CPU Information	☒	☐	☐	
	Model Name	☒	☐	☐	
	Display Information	☒	☐	☐	
	RAM Information	☒	☐	☐	Support single DIMM
H/W Monitor	Info	☒	☐	☐	
	Fan Speed	☒	☐	☐	

	Temperature	☒	☐	☐	
	Voltage	☒	☐	☐	
WatchDog	10sec	☒	☐	☐	Actual 10 sec
	1min	☒	☐	☐	Actual 60sec
	255sec	☒	☐	☐	Actual 255sec
	Auto Reload	☒	☐	☐	
SMBus	Device Address	☒	☐	☐	0xA0
	Read Byte	☒	☐	☐	Recieve Data 0X24
	Read Word	☒	☐	☐	Recieve Data 0X1024
	Result / Read	☒	☐	☐	
Backlight Controller	Brightness	☒	☐	☐	

7.7. Negative Test

7.7.1 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	☒	☐	☐	

7.7.2 Suspend S3 Negative Test

Methods		Result			Note
		Pass	Fail	N/A	
1. Resume from S3. 2. Confirm com ports(RS232/422/485), DIO, smartfan, LVDS backlight control, USB ports, HDMI/DP audio can work properly.	RS232/422/485	☒	☐	☐	
	LVDS Backlight control	☒	☐	☐	
	USB ports	☒	☐	☐	
	HDMI audio	☒	☐	☐	

7.7.3 UEFI Mode Negative Test

Methods	Result			Note
	Pass	Fail	N/A	
1. Install Windows with UEFI mode. 2. Clear CMOS. 3. Confirm BIOS\Boot device was not loss "Windows boot manager" and should boot into Windows properly.	☒	☐	☐	

8. Performance Test

Configuration	
CPU	Intel Core i5-6300U 2.40GHz
Memory	Transcend DDR4-2400 8GB(SEC 616 K4A4G085WE BCRC)
Storage	TOSHIBA 2.5" 100GB(MQ01AAD010C)
O.S	Windows 10 Enterprise 64bit

8.1. System Performance Test

Test Result:　(Display set 1920*1080 test)

Testing Software	Scope		Note
	AAEON	Ref.	
PCMark 8 (Creative)			Windows 10 (64bit)
PCMarks	3573	-	PCMarks
Web Browsing-Jungle Pin	0.316 s	-	
Web Browsing-Amazonia	0.130 s	-	
Video Group Chat v2- Video Group Chat playback1 v2	30.0 fps	-	
Video Group Chat v2- Video Group Chat playback2 v2	30.0 fps	-	
Video Group Chat v2- Video Group Chat playback3 v2	30.0 fps	-	
Video Group Chat v2- Video Group Chat encoding v2	60.0 ms	-	
Photo Editing v2	0.223 s	-	
Batch Photo Editing v2	19.6 s	-	
Video Editing 1 v2	18.4 s	-	
Video Editing 2 v2	27.2 s	-	
Mainstream Gaming part 1	8.2 FPS	-	
Mainstream Gaming part 2	4.4 FPS	-	
Video To Go part 1	12.5 s	-	
Video To Go part 2	17.7 s	-	
Music To Go	42.54 s	-	
Benchmark duration	1h 9min 40s	-	

Testing Software	Scope		Note
	AAEON	Ref.	
3DMark2006 v120			
3DMark Score	5640	-	
SM2.0 Score	1998	-	
HDR/SM3.0 Score	2258	-	
CPU Score	3425	-	
Benchmark (B)	-		
Average Efficiency	-		

3DMark11 Professional Edition			
Performance 1280*720 (Default)			
3DMark 11Score	P1313	-	
Graphics Score	1190	-	
Physics Score	3548	-	
Combined Score	1125	-	

Testing Software	Scope		Note
	AAEON	**Ref.**	
Performance Test 8.0			
PassMark Rating	1443	-	
CPU Mark	3772	-	
2D Graphics Mark	586	-	
3D Graphics Mark	765	-	
Memory Mark	1882	-	
Disk Mark	416.4	-	
CD Mark	-	-	

8.2. Storage Performance Test

SATA Performance				
SATA SSD	Transcend 64GB(TS64GSSD370)			
CPU	Intel Core i5-6300U 2.40GHz			
Memory	Transcend DDR4-2400 8GB(SEC 616 K4A4G085WE BCRC)			
OS	Windows 10 Enterprise 64bit			
Item	Comment / (unit)	Software	Score	Note
SATAIII	Maximum Read	ATTO Disk Benchmark	444MB/s	SATAII 150~300MB SATAIII up 300M/B
	Maximum Write	ATTO Disk Benchmark	79MB/s	

USB3.0 Performance				
USB Flash	Transcend 32GB(JetFlash 810)			
Item	Comment / (unit)	Software	Transfer Rate (MB/s)	Note
USB3.0	Maximum Read	ATTO Disk Benchmark	123MB/s	CN10A
	Maximum Write	ATTO Disk Benchmark	27MB/s	
USB3.0	Maximum Read	ATTO Disk Benchmark	123MB/s	CN10B
	Maximum Write	ATTO Disk Benchmark	27MB/s	
USB3.0	Maximum Read	ATTO Disk Benchmark	123MB/s	CN24B
	Maximum Write	ATTO Disk Benchmark	29MB/s	
USB3.0	Maximum Read	ATTO Disk Benchmark	120MB/s	CN24B
	Maximum Write	ATTO Disk Benchmark	33MB/s	

9. Stability test

Configuration	
CPU	Intel Core i5-6300U 2.40GHz
Memory	Transcend DDR4-2400 8GB(SEC 616 K4A4G085WE BCRC)
Storage	TOSHIBA 2.5" 100GB(MQ01AAD010C)
O.S	Windows 10 Enterprise 64bit

9.1. Run In Test

Under Room Temperature:

OS: Windows 8.1 Enterprise English 64bit

Test Item		Result			Note
		Pass	Fail	N/A	
Burn In Test V8.1(1020 above) Duty: 100 Time: over 12 hours <System should not error or hang during testing.>	CPU	☒	☐	☐	
	RAM	☒	☐	☐	
	COM	☒	☐	☐	
	GPU	☒	☐	☐	
	Video	☒	☐	☐	
	2D	☒	☐	☐	
	3D	☒	☐	☐	
	Disk	☒	☐	☐	
	Network <Advanced>	☒	☐	☐	
	Network <POE>	☒	☐	☐	
	USB 3.0	☒	☐	☐	

Note: COM PORT Speed Set to 115200.

9.2. Reboot Test

Under Room Temperature:

OS: Windows 8.1 Enterprise English 64bit

Test Tool: Passmark rebooter.exe

Test item	Result			Note
	Pass	Fail	N/A	
Reboot test for 500 cycles <a. System should not error or hang during testing.> <b. Device manager should not loss any devices or yellow bang >	☒	☐	☐	

9.3. ACPI G3 Cold Boot Test

Under Room Temperature:

OS: DOS

Test Point:
1. Make sure system boot up is stable.
2. Make sure boot function support AC power restored in short time.

Test item	Result			Note
	Pass	Fail	N/A	
G3(AC loss) cold boot over 1000 cycles	☒	☐	☐	☒BIOS select " power on"

Setting: Power on- 40sec ; Power off-- 20sec. <loss rate: 0 /1000 times>				or ☐Jumper setting auto power button
G3(AC loss) cold boot over 20 cycles Setting: Power on- 40sec ; Power off- 5sec. <loss rate: 0 /20 times>	☒	☐	☐	H/W [auto power button] need to set enable..

9.4. Memory Test

Under room temperature:

OS: DOS

Tool: Passmark Memtest version 7.1 UEFI

Memory information: Transcend DDR4 2400 8GB x 1 (SPEC max support size).

Test item	Result			Note
	Pass	**Fail**	**N/A**	
Memory Test for 4 loops. < Memtest result should not error or hang..>	☒	☐	☐	

Remark:

9.5. System stability after S3 / S4 / S5 cycles

Under Room Temperature:

OS: Windows 10 Enterprise English 64bit

Test item	Criteria	Result			Note
		Pass	**Fail**	**N/A**	
System stability after S3 cycles <Perform S3 cycles 3 times>	1.SUT boots to OS successfully. 2. No yellow bang observed if all the drivers are installed 3.SUT does S3-resume cycles successfully without any issues	☒	☐	☐	
System stability after S4 cycles <Perform S4 cycles 3 times>	1.SUT boots to OS successfully. 2. No yellow bang observed if all the drivers are installed 3.SUT does S4-resume cycles successfully without any issues	☒	☐	☐	
System stability after S5 cycles <Perform S5 cycles 3 times>	1.SUT boots to OS successfully. 2. No yellow bang observed if all the drivers are installed 3.SUT does S5-resume cycles successfully without any issues	☒	☐	☐	

10. Front Panel Button and Mechanical Check

10.1. Front Panel Button Function Test

Test item	Function			Note
	Pass	**Fail**	**N/A**	
LCD Power on/off button	☒	☐	☐	

10.2. Mechanical Check

Test Item	Result			Note
	Pass	**Fail**	**N/A**	
System Case construction check	☒	☐	☐	
I/O symbol check	☒	☐	☐	