Report NO: 14E010007

AQ7-IMX6
Freescale iMX6 platform
Q7 CPU Module

P5 Verification 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	Approval	Test Engineer
2014/4/29	Tom Lin	Louie Lee

Summary Table of contents:

History:		
Item	**Date**	**Description**
1	2014/4/29	P5 test report first release

1. Basic IO Function Test

Rev. 14E010007
Test Date:2014/02/24~2014/03/10

Total	43	Rate
Incomplete	0	0.00%
Pass	40	93.02%
Fail	0	0.00%
N/A	3	6.98%

Test Configuration

OS	Android 4.0.4 Kernel 3.0.35-05524-g8513494-dirty
	Linux Ubuntu 11.10 Kernel 3.0.35-2508-g54750ff
CPU	Onboard Freescale™ i.MX6 Quad 1.0GHz Processor
Memory	Onboard DDR3 1066MHz, 1GB
eMMC	Onboard eMMC
PCB version	AQ7-IMX6 A0.3
Carrier Board version	ECB-970 A0.2
Chipset Software	Freescale™ i.MX6 Quad Processor
Ethernet	1 Gigabit Ethernet by Micrel ® KSZ9021RNI
Audio	I2S(please refer above customer pin-out define)

1.1. Android

1.1.1. Image boot Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
Boot from eMMC.	H/W Jumper SW2 setting boot from eMMC.	Confirm boot function is correct.	Pass		
Boot from SD card.	H/W Jumper SW2 setting boot from SD.	Confirm boot function is correct.	Pass		

1.1.2. CPU Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
CPU information: CPU-z	1. To Install CPU-z.apk and run the APP	Confirm CPU information is correct.	Pass		
Stability Test V2.5	1. To install Stability test.apk 2. To run CPU+GPU Stability test for overnight test	System has not halt or shutdown.	Pass		

1.1.3. Video Resolution and Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
2x LVDS (1x 24 bit) 1024*768	1. Boot to U-boot. command 1(18-bit): setenv bootargs 'console=ttymxc0,115200 androidboot.console=ttymxc0 vmalloc=400M init=/init video=mxcfb0:dev=ldb,LDBXGA,if=RGB666 video=mxcfb1:dev=ldb,LDB-XGA,if=RGB666 ldb=dul1' command 2: setenv bootcmd booti mmc3 command 3: saveenv command 4: boot	Confirm dual display function whether properly.	Pass		
LVDS brightness control icon	Click brighness icon 0~100%	Confirm Action and function whether properly	Pass		
1920x1080(HDMI)	1.Boot to U-boot. command 1: setenv bootargs console=ttymxc0,115200 androidboot.console=ttymxc0 vmalloc=400M init=/init video=mxcfb0:dev=hdmi,1920x1080M@60 fbmem=28M command 2: setenv bootcmd booti mmc3 command 3: saveenv command 4: boot	1.Support 1920x1080 display include audio function 2.Confirm Action and function whether properly	Pass		
Stability Test V2.5	1. To install Stability test.apk. 2. To run CPU+GPU Stability test overnight test	System has not halt or shutdown.	Pass		

1.1.4. Audio Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
Onboard Audio Line out	1. Setting display from LVDS. 2.Connect to earphone 3.Broadcast music	Confirm line out Action and function whether properly	Pass		
Microphone Test	1.Connect Microphone to phone jack. 2.Test recorder and play function.	Confirm Action and function whether properly	Pass		

Test Item	Method	Pass Criteria	Result	Issue ID	Note
HDMI Audio Line out	1. Setting display from HDMI. 2. Connect to HDMI cable 3.Broadcast music	Confirm line out Action and function whether properly	**Pass**		

1.1.5. LAN Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
1G / 100M Link/Speed LED	Onboard LAN 1.To connect 1G or 100MB LAN Switch 2.Transmission packet 3.Check the transmission link / rate lights color is normal	1G/100M Speed LED color is green	**Pass**		
1G / 100M Active LED	Onboard LAN 1.Connect 1G or 100MB LAN Switch 2.Transmission packet 3.Check the transmission process active lights color is normal	LED color is yellow LED and flicker	**Pass**		
Internet Browser (DHCP Server)	1. Connect LAN cable from DHCP server 2. To run the browser.	Confirm Action and function whether properly	**Pass**		(Under Android，Insert x1 LAN Card，onboard LAN no function)
Iperf test.	1.Prepare one PC as Server, turn off the firewall and enter "iperf.exe -s" 2.In AQ7-IMX6, install iperf.apk 3. Enter "–c 192.168.XX.XX –t 1800 –i 1" and turn ON the button	Confirm function whether properly and have not loss.	**Pass**		

1.1.6. USB Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
USB Mouse and Keyboard	1.Connect to USB Mouse and Keyboard 2.A keyboard to enter letters / numbers / symbols 3.Mouse movement / click	Confirm Action and function whether properly	**Pass**		
USB 2.0 Removable Devices	1.Connect to flash drive	Confirm USB flash can be detected, the information display on tera term.	**Pass**		
USB OTG	Connect USB Keyboard, Mouse and USB Flash.	Confirm USB keyboard, mouse and flash function whether properly	**Pass**		

1.1.7. UART Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
UART	PC terminal setting default is 115200bps. After boot-up, you could command to AQ7-IMX6 via Tera Term then show the current status of system • Tera Term Terminal setting Baud rate: 115200bps Data: 8bit Parity: none Stop: 1 bit • Tera Term Utility: Download path: http://sourceforge.jp/projects/ttssh2/downloads/59442/teraterm‐4.79.exe/	Confirm Action and function whether properly	**Pass**		

1.1.8. SPI Flash Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
SPI Flash	SPI Flash Read/Write command under U boot: command 1: sf probe 0 command 2: sf erase 0 0x10000 command 3: mw.l 0x12000000 0x54612354 0x100000 command 4: sf write 0x12000000 0x0 0x1000 command 5: sf read 0x13000000 0x0	In U-boot mode, write a value into flash then read back from Flash and check whether the value are match.	**Pass**		

1.1.9. Camera Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
Camera	1. To connector Camera module. 2. To run the APP "Camera" 3. Take a picture and recorder test.	1.Take a picture and recorder function whether properly. 2.Confirm Action and function whether properly	**Pass**		

1.1.10. SATA Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
SATA HDD (2.5" SATA HDD or 3.5" SATA HDD)	Connect SATA HDD with CN11 SATA port.	Confirm Action and function whether properly	N/A		Android no support.

1.1.11. PCI-Express Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
PCIe x1	1. Connect PCI-e 1X LAN card. 2. Connect LAN cable from DHCP server 3. To run the browser	Confirm Action and function whether properly	Pass		

1.2. Linux
1.2.1. Video Resolution and Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
2x LVDS (1x 24 bit) 1024*768	1. Boot to U-boot.command 1(18-bit): setenv bootargs_mmc 'setenv bootargs ${bootargs} root=/dev/mmcblk1p1 rootwait rw video=mxcfb0:dev=ldb,LDB-XGA,if=RGB666 ldb=sin0' command 2: setenv bootcmd_mmc 'run bootargs_base bootargs_mmc;mmc dev 1;mmc read ${loadaddr} 0x800 0x2000;bootm' command 3: saveenv command 4: boot	Confirm dual display function whether properly.	Pass		
1920x1080(HDMI)	1. Boot to U-boot. command 1: setenv bootargs_mmc 'setenv bootargs ${bootargs} root=/dev/mmcblk1p1 rootwait rw video=mxcfb1:dev=ldb,LDB-XGA,if=RGB666 video=mxcfb0:dev=hdmi,1920x1080M@60,if=RGB24' command 2: setenv bootcmd_mmc 'run bootargs_base bootargs_mmc;mmc dev 1;mmc read ${loadaddr} 0x800 0x2000;bootm' command 3: saveenv command 4: boot	Confirm Action and function whether properly	Pass		

1.2.2. Audio Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
Onboard Audio Line out	1. Setting display from LVDS. 2.Connect to earphone 3.Broadcast music	Confirm line out Action and function whether properly	Pass		
Microphone Test	1.Connect Microphone to phone jack. 2.Test recorder and play function.	Confirm Action and function whether properly	N/A		Image no support.
HDMI Audio Line out	1. Setting display from HDMI. 2. Connect to HDMI cable 3.Broadcast music	Confirm line out Action and function whether properly	Pass		

1.2.3. LAN Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
1G / 100M Link/Speed LED	Onboard LAN 1.To connect 1G or 100MB LAN Switch 2.Transmission packet 3.Check the transmission link / rate lights color is normal	1G/100M Speed LED color is green	Pass		
1G / 100M Active LED	Onboard LAN 1.Connect 1G or 100MB LAN Switch 2.Transmission packet 3.Check the transmission process active lights color is normal	LED color is yellow LED and flicker	Pass		
Internet Browser (DHCP Server)	1. Connect LAN cable from DHCP server 2. To run the browser.	Confirm Action and function whether properly	Pass		(Under Android，Insert x1 LAN Card，onboard LAN no function)
Ping test 1000 times with 100Mbps switch <Accton Desktop-3005 Link 100MB>	1.Connect two computers via 100Mbps speed LAN switch by using "Ping" instruction (1000 times) Linux: ping 192.168.xx.xx -c 1000 -s 65500 Windows: ping 192.168.xx.xx -n 1000 -l 65500	Confirm function whether properly and have not loss.	Pass		

1.2.4. USB Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
USB Mouse and Keyboard	1.Connect to USB Mouse and Keyboard 2.A keyboard to enter letters / numbers / symbols 3.Mouse movement / click	Confirm Action and function whether properly	**Pass**		
USB 2.0 Removable Devices	1.Connect to flash drive	1.Connect to flash drive 2.Confirm Action and function whether properly	**Pass**		

1.2.5. UART Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
UART	PC terminal setting default is 115200bps. After boot-up, you could command to AQ7-IMX6 via Tera Term then show the current status of system • Tera Term Terminal setting Baud rate: 115200bps Data: 8bit Parity: none Stop: 1 bit • Tera Term Utility: Download path: http://sourceforge.jp/projects/ttssh2/downloads/59442/teraterm-4.79.exe/	Confirm Action and function whether properly	**Pass**		

1.2.6. SPI Flash Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
SPI Flash	SPI Flash Read/Write command under U boot: command 1: sf probe 0 command 2: sf erase 0 0x10000 command 3: mw.l 0x12000000 0x54612354 0x100000 command 4: sf write 0x12000000 0x0 0x1000 command 5: sf read 0x13000000 0x0	In U-boot mode, write a value into flash then read back from Flash and check whether the value are match.	**Pass**		

1.2.7. Camera Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
Camera	1. To connector Camera module. 2. To run the APP "Camera" 3. Take a picture and recorder test.	1.Take a picture and recorder function whether properly. 2.Confirm Action and function whether properly	**N/A**		Default image has not support Camera

1.2.8. SATA Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
SATA HDD (2.5" SATA HDD or 3.5" SATA HDD)	Connect SATA HDD with CN11 SATA port.	1. SATA HDD can be as storage. 2. Confirm Action and function whether properly	**Pass**		

1.2.9. Can Bus Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
Can Bus	【Step1】Setup two AQ7-IMX6 with ECB-970; one for transmitter and one for receiver 【Step2】Please connect CN37 to each other, as the figure shows,(CANH to CANH; CANL to CANL; GND to GND) 【Step3】In Linux OS, enter command in receiver side: command 1: canconfig can0 bitrate 500000 command 2: ifconfig can0 up command 3: canecho can0 -v 【Step4】In Linux OS, enter command in transmitter side: command 1: canconfig can0 bitrate 500000 command 2: ifconfig can0 up command 3: cansend can0 -i0x100 0x33 0x22 0x55 0x66	Confirm Receiver side and Transmitter side data are match.	**Pass**		

1.2.10. PCI-Express Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
Intel CT Gigabit LAN card Internet Browser (DHCP Server)	1. To connect PCI-e 1x LAN card. 2. Connect LAN cable from DHCP server 3. To run the browser	Confirm Action and function whether properly	**Pass**		
Intel CT Gigabit LAN card Ping test 1000 times	1. Connect PCI-e 1X LAN card. 2.Connect 1000Mbps LAN siwtch(D-Link DGS-1210-16) by using "Ping" instruction (1000 times) Linux: ping 192.168.xx.xx -c 1000 Windows: ping 192.168.xx.xx -n 1000	Confirm Action and function whether properly	**Pass**		

1.2.11. I2C Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
I2C	1. Boot to U-boot. 2. command: i2c probe	command will show: [Valid chip addresses: 00 4A 68	**Pass**		

1.2.12. GPIO Function Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
GPIO	1. Use image for DIO testing. 2. Measure GPIO pin voltage meet the test AP default setting.	Confirm CN41 GPIO voltage meet with AP default setting.	**Pass**		

2. Compatibility Test

Rev. 14E010007

Test Date:2014/02/24~2014/03/10

Total	42	**Rate**	
Incomplete	0	0.00%	
Pass	34	80.95%	
Fail	0	0.00%	
N/A	8	19.05%	

Test Configuration

OS	Android 4.0.4 Kernel 3.0.35-05524-g8513494-dirty
	Linux Ubuntu 11.10 Kernel 3.0.35-2508-g54750ff
CPU	Onboard Freescale™ i.MX6 Quad 1.0GHz Processor
Memory	Onboard DDR3 1066MHz, 1GB
eMMC	Onboard eMMC
PCB version	AQ7-IMX6 A0.3
Carrier Board version	ECB-970 A0.2
Chipset Software	Freescale™ i.MX6 Quad Processor
Ethernet	1 Gigabit Ethernet by Micrel ® KSZ9021RNI
Audio	I2S(please refer above customer pin-out define)

2.1. Android

2.1.1. USB OTG Compatibility Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
USB Flash	1.Connect USB Flash to OTG port 2.To do read / write / copy / delete action (Test with Adata C802 2GB; Transcend 16GB; Kingston 16GB)	Confirm Action and function whether properly	**Pass**		
USB Mouse	Connect USB mouse to OTG port (Test with Logitech M-U0003; Microsoft MSK-1113B)	Confirm Action and function whether properly	**Pass**		
USB Keyboard	Connect USB Keyboard to OTG port (Test with Logitech K200; Microsoft 1366)	Confirm Action and function whether properly	**Pass**		

2.1.2. USB Compatibility Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
USB Flash	Connect Flash driver to USB port. (Test with Adata C802 2GB; Transcend 16GB; Kingston 16GB)	Confirm USB flash can be detected, the information display on tera term.	**Pass**		
USB Mouse	Connect USB mouse to USB port. (Test with Logitech M-U0003; Microsoft MSK-1113B)	Confirm Action and function whether properly	**Pass**		
USB Keyboard	Connect USB keyboard to USB port. (Test with Logitech K200; Microsoft 1366)	Confirm Action and function whether properly	**Pass**		

2.1.3. PCI-Express Compatibility Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
PCI-e x1 LAN Card	1. Insert PCIe x1 LAN Card. 2. Connect LAN cable from DHCP server. 3. To run the APP "Browser "	Confirm Action and function whether properly	**Pass**		When insert PCIe x1 LAN Card，onboard LAN wiill no function)
PCI-e x1 USB Card	1.Connect to usb Mouse or Keyboard or flash drive 2.A keyboard to enter letters / numbers / symbols 3.Mouse movement / click 4.USB flash drive as storage.	Confirm Action and function whether properly	**N/A**		Basic image support Intel LAN driver only
PCI-e x1 SATA Card	Connect SATA HDD.	Confirm Action and function whether properly	**N/A**		

2.1.4. Storage Compatibility Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
SATA HDD (2.5" SATA HDD or 3.5" SATA HDD)	Connect Transcend SSD TS16GSSD25S-s 16GB	1.CN11 for storage use. 2. Confirm Action and function whether properly	**N/A**		Android can't support SATA HDD

SD Card(CN73)	Connect Transcend 2GB	1.CN73 for system storage. 2.Confirm Action and function whether properly	**Pass**		
	Connect Transcend SDHC 4GB	1.CN73 for system storage. 2.Confirm Action and function	**Pass**		
	Connect Transcend SDHC 8GB	1.CN73 for system storage. 2.Confirm Action and function	**Pass**		
	Connect Transcend SDHC 16GB	1.CN73 for system storage. 2.Confirm Action and function whether properly	**Pass**		
	Connect ATP, 8GB, MLC, x10) [AF8GSD31A1323M02M-10]	1.CN73 for system storage. 2.Confirm Action and function whether properly	**Pass**		

2.1.5. LAN Switch Compatibility Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
1G switch<D-Link DGS-1210-16>	1. Connect LAN cable from 1GB switch. 2. To run the browser.	Confirm Action and function whether properly	**Pass**		
1G switch<D-Link DGS-1008D>	1. Connect LAN cable from 1GB switch. 2. To run the browser.	Confirm Action and function whether properly	**Pass**		
100M switch <D-Link Accton Desktop-3005 Link 100MB>	1. Connect LAN cable from 100MB switch. 2. To run the browser.	Confirm Action and function whether properly	**Pass**		
100M switchASUS: RX3041	1. Connect LAN cable from 100MB switch. 2. To run the browser.	Confirm Action and function whether properly	**Pass**		
100M switch BUFFALO: LSW3-GT-5EP/WH	1. Connect LAN cable from 100MB switch. 2. To run the browser.	Confirm Action and function whether properly	**Pass**		

2.2. Linux

2.2.1. USB Compatibility Test

Test Item		Method	Pass Criteria	Result	Issue ID	Note
USB HDD	Adata C802 2GB	1.Connect to USB HDD 2.In the OS environment , insert the USB HDD, do read / write / copy / delete action	Confirm Action and function whether properly	**Pass**		
	Transcend 16GB			**Pass**		
	Kingston 16GB			**Pass**		
USB FDD		1.Connect to usb FDD 2.In the OS environment , insert the USB FDD, do read / write / copy / delete action	Confirm Action and function whether properly	**N/A**		Basic Linux image no support USB FDD
USB DVD-ROM		1.Connect to usb DVD-ROM 2. In the OS environment , then the USB DVD -ROM , to do the operation of read /	Confirm Action and function whether properly	**N/A**		Basic Linux image no support USB DVD
USB HUB		1.Connect to usb HUB 2.Insert the USB Mouse、Keyboard and flash drive	Confirm Action and function whether properly	**Pass**		

2.2.2. PCI-Express Compatibility Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
PCI-e x1 LAN Card	1. Insert PCIe x1 LAN Card. 2. Connect LAN cable from DHCP server. 3. To run the APP "Browser "	Confirm Action and function whether properly	**Pass**		
PCI-e x1 USB Card	1.Connect to usb Mouse or Keyboard or flash drive 2.A keyboard to enter letters / numbers / symbols 3.Mouse movement / click 4.USB flash drive as storage.	Confirm Action and function whether properly	**N/A**		Basic image support Intel LAN driver only
PCI-e x1 SATA Card	Connect SATA HDD.	Confirm Action and function whether properly	**N/A**		

2.2.3. Storage Compatibility Test

Test Item		Method	Pass Criteria	Result	Issue ID	Note
SATA HDD	Transcend SSD TS16GSSD25S-s 16GB	Connect SATA HDD to SATA port.	1.CN11 for storage use. 2. Confirm Action and function whether properly	**Pass**		
	WD WD3200AAKX 3.5" 320GB	Connect SATA HDD to SATA port.	1.CN11 for storage use. 2. Confirm Action and function whether properly	**Pass**		
SATA DVD	ASUS BW-14D1XT	Connect SATA DVD to SATA port.	Confirm Action and function whether properly	**N/A**		Basic Linux image no support SATA DVD

SD Card(CN73)	Connect Transcend 2GB	1.CN73 for system storage. 2.Confirm Action and function whether properly	**Pass**		
	Connect Transcend SDHC 4GB	1.CN73 for system storage. 2.Confirm Action and function	**Pass**		
	Connect Transcend SDHC 8GB	1.CN73 for system storage. 2.Confirm Action and function	**Pass**		
	Connect Transcend SDHC 16GB	1.CN73 for system storage. 2.Confirm Action and function whether properly	**Pass**		
	Connect ATP, 8GB, MLC, x10) [AF8GSD31A1323M02M-10]	1.CN73 for system storage. 2.Confirm Action and function whether properly	**Pass**		

2.2.4. LAN Switch Compatibility Test

Test Item	Method	Pass Criteria	Result	Issue ID	Note
1G switch<D-Link DGS-1210-16>	1. Connect LAN cable from 1GB switch. 2. To run the browser.	Confirm Action and function whether properly	**Pass**		
1G switch<D-Link DGS-1008D>	1. Connect LAN cable from 1GB switch. 2. To run the browser.	Confirm Action and function whether properly	**Pass**		
100M switch <D-Link Accton Desktop-3005 Link 100MB>	1. Connect LAN cable from 100MB switch. 2. To run the browser.	Confirm Action and function whether properly	**Pass**		
100M switchASUS: RX3041	1. Connect LAN cable from 100MB switch. 2. To run the browser.	Confirm Action and function whether properly	**Pass**		
100M switch BUFFALO: LSW3-GT-5EP/WH	1. Connect LAN cable from 100MB switch. 2. To run the browser.	Confirm Action and function whether properly	**Pass**		

3. Time Accuracy Test

Rev. 14E010007
Test Date:2014/02/24~2014/03/10

Total	8	**Rate**
Incomplete	0	0.00%
Pass	8	100.00%
Fail	0	0.00%
N/A	0	0.00%

Test Configuration

OS	Android 4.0.4 Kernel 3.0.35-05524-g8513494-dirty
	Linux Ubuntu 11.10 Kernel 3.0.35-2508-g54750ff
CPU	Onboard Freescale™ i.MX6 Quad 1.0GHz Processor
Memory	Onboard DDR3 1066MHz, 1GB
eMMC	Onboard eMMC
SD card	Transcend SDHC 4GB
PCB version	AQ7-IMX6 A0.3
Carrier Board version	ECB-970 A0.2
Chipset Software	Freescale™ i.MX6 Quad Processor
Ethernet	1 Gigabit Ethernet by Micrel ® KSZ9021RNI
Audio	I2S(please refer above customer pin-out define)

3.1. System Clock & RTC Clock Test (Under Room Temperature: 26℃) (Test under U-boot)

Test Item		Method	Pass Criteria	Result	Actual	Issue ID
RTC Clock in Power On	Ambient=26℃	1. Setting RTC time under u-boot 2. # i2c mm 68 00 <Keyin time> 3. # i2c md 68 00 <Read time>	+/-2 sec/24hours	**Pass**	0 sec	
RTC Clock in Power Off Mode	Ambient=26℃	1. Setting RTC time under u-boot 2. # i2c mm 68 00 <Keyin time> 3. # i2c md 68 00 <Read time> 4. Power off and AC loss.	+/-2 sec/24hours	**Pass**	-1 sec	

3.2. Watchdog Timer Test (Test under Linux)

Test Item	Method	Pass Criteria	Result	Actual	Issue ID
10 sec	1. In Linux OS serial console, enter command: 2. command 1: cd /unit_tests/	Margin for error：+ / - 10 %	**Pass**	10.2sec	
60 sec	1. In Linux OS serial console, enter command: 2. command 1: cd /unit_tests/	Margin for error：+ / - 10 %	**Pass**	60sec	
128sec	1. In Linux OS serial console, enter command: 2. command 1: cd /unit_tests/	Margin for error：+ / - 10 %	**Pass**	128.5sec	

3.3 Booting Timer Test (Test under Android)

Test Item	Method	Pass Criteria	Result	Actual	Issue ID
Shutdown Time	Press "shutdown icon" under Android	shutdown time<20sec	**Pass**	10sec	
System Booting Time	Press the Power Button till "Beep" Sound appears	Booting time<7sec	**Pass**	1 sec	

3.4 Clear CMOS Test

Test Item	Method	Pass Criteria	Result		Issue ID
Clear CMOS	Remove 3.3V CMOS battery for 20sec.	Confirm RTC time have be cleared.	**Pass**		

4. O.S. Compatibility Test

Rev. 14E010007

Test Date:2014/02/24~2014/03/10

Total	43	Rate
Incomplete	0	0.00%
Pass	39	90.70%
Fail	0	0.00%
N/A	4	9.30%

4.1. Android 4.0 Kernel 3.0.15

OS	Android 4.0.4 Kernel 3.0.35-05524-g8513494-dirty
CPU	Onboard Freescale™ i.MX6 Quad 1.0GHz Processor
Memory	Onboard DDR3 1066MHz, 1GB
eMMC	Onboard eMMC
SD card	Transcend SDHC 4GB
PCB version	AQ7-IMX6 A0.3
Carrier Board version	ECB-970 A0.2
Chipset Software	Freescale™ i.MX6 Quad Processor
Ethernet	1 Gigabit Ethernet by Micrel ® KSZ9021RNI
Audio	I2S(please refer above customer pin-out define)

	Test Item	Method	Pass Criteria	Result	Issue ID	Note
1	Alarms icon	1. Click " Alarms icon" 2. To setting Alarm time.	Confirm Action and function whether properly	Pass		
2	Google search icon	1. Click " Google sarch icon" 2. To test search function.	Confirm Action and function whether properly	Pass		
3	Return icon	Click " Return icon"	Confirm Action and function whether properly	Pass		
4	Home icon	Click " Home icon"	Confirm Action and function whether properly	Pass		
5	Recent Apps icon	Click " Recent Apps icon"	Confirm Action and function whether properly	Pass		
6	Default APP: Browser icon	Click APP " Browser "	Confirm Action and function whether properly	Pass		
7	Default APP: Calculator	Click APP " Calculator "	Confirm Action and function whether properly	Pass		
8	Default APP: Calendar	Click APP " Calendar "	Confirm Action and function whether properly	Pass		
9	Default APP: Camera	Click APP " Camera "	1.Test take the pictures and video features 2.Confirm Action and function whether properly	Pass		
10	Camera "Digital Zoom" icon	1. Click APP " Camera " 2. To use Zoom function	No support. Confirm Action and function whether properly	N/A		No support
11	Default APP: Clock	Click APP " Clock "	Confirm Action and function whether properly	Pass		
12	Default APP: Downloads	Click APP " Downloads "	Confirm Action and function whether properly	Pass		
13	Default APP: Email	Click APP " Email"	Confirm Action and function whether properly	Pass		
14	Default APP: File Manager	Click APP " File manager"	Confirm Action and function whether properly	Pass		
15	Default APP: Gallery	Click APP " Gallery"	Confirm Action and function whether properly	Pass		
16	Default APP: Messaging	Click APP " Messaging"	Confirm Action and function whether properly	Pass		
17	Default APP: Movie Studio	Click APP " Movie Studio"	Confirm Action and function whether properly	Pass		
18	Default APP: Music	Click APP " Music"	Confirm Action and function whether properly	Pass		
19	Default APP: Notepad v3	Click APP " Notepad V3"	Confirm Action and function whether properly	Pass		
20	Default APP: People	Click APP " People"	Confirm Action and function whether properly	Pass		
21	Default APP: Phone	Click APP " Phone"	Confirm Action and function whether properly	N/A		No support
22	Default APP: Search	Click APP " Search"	Confirm Action and function whether properly	Pass		
23	Default APP: Sound Recorder	Click APP " Sound Recorder"	Confirm Action and function whether properly	Pass		
24	Default APP: System Profile	Click APP " system Profile"	Confirm Action and function whether properly	Pass		
25	Default APP: Setting	Click APP " Setting"	Confirm Action and function whether properly	Pass		
26	Sound Volumes icon	Click sound volumes icon,	Confirm Action and function whether properly	Pass		

				Result	Issue ID	Note
27	Stand by	1.Press power button: sleep mode 2.System will show unlock screen when press power button from sleep mode.	Confirm Action and function whether properly under Android	**Pass**		
28	Shutdown	1.Press power button for 2sec，click ok to system shutdown	Confirm Action and function whether properly	**Pass**		

4.2. Linux Linux Ubuntu 11.10 Kernel 3.0.35-2508-g54750ff

OS	Linux Ubuntu 11.10 Kernel 3.0.35-2508-g54750ff
CPU	Onboard Freescale™ i.MX6 Quad 1.0GHz Processor
Memory	Onboard DDR3 1066MHz, 1GB
eMMC	N/A
SD card	Transcend SDHC 4GB
PCB version	AQ7-IMX6 A0.3
Carrier Board version	ECB-970 A0.2
Chipset Software	Freescale™ i.MX6 Quad Processor
Ethernet	1 Gigabit Ethernet by Micrel ® KSZ9021RNI
Audio	I2S(please refer above customer pin-out define)

Test Item		Method	Pass Criteria	Result	Issue ID	Note
1	uname –a	# uname -a	1.Confirm Action and function whether properly (Show information)	**Pass**		
2	Shut down	Click "shutdown" icon.	Confirm Action and function whether properly (Command：Init 0 or shutdown –h now)	**N/A**		support command shutdown only
3	Restart the Computer	Click "Reset" icon.	Confirm Action and function whether properly (Command：Init 6 or shutdown –r now)	**N/A**		support command reset only
4	Log out	Click "log out" icon.	Confirm Action and function whether properly	**Pass**		
5	Lock Screen	Click "Lock Screen" icon.	Confirm Action and function whether properly	**Pass**		
6	Suspend (Stand by)	Click "Suspend" icon.	Confirm Action and function whether properly (Wake up by power button.)	**Pass**		
7	ls / clear ……; cd /dev /ls –l	To test command "ls/clear/cd/dev….." under terminal	Confirm Action and function whether properly (Command instruction)	**Pass**		
8	Icon-search	Click "Icon" icon.	Confirm Action and function whether properly (Command instruction)	**Pass**		
9	Icon-Home Folder	Click "Icon-Home" icon.	Confirm Action and function whether properly (Command instruction)	**Pass**		
10	Icon-Firefox Web Browser	Click "Firefox" icon.	Confirm Action and function whether properly (Command instruction)	**Pass**		
11	Icon-Ubuntu Software Center	Click "Ubuntu Software center" icon.	Confirm Action and function whether properly (Command instruction)	**Pass**		
12	Icon-Ubuntu One	Click "Ubuntu one" icon.	Confirm Action and function whether properly (Command instruction)	**Pass**		
13	Icon-System Settings	Click "System Settings" icon.	Confirm Action and function whether properly (Command instruction)	**Pass**		
14	Icon-Terminal	Click "Terminal" icon.	Confirm Action and function whether properly (Command instruction)	**Pass**		
15	Icon-Workspaces	Click "Workspaces" icon.	Confirm Action and function whether properly (Command instruction)	**Pass**		

5. Performance Test

		Total	31	**Rate**
		Incomplete	0	0.00%
Rev. 14E010007		Pass	31	100.00%
Test Date:2014/02/24~2014/03/10		Fail	0	0.00%
		N/A	0	0.00%

Test Configuration

OS	Android 4.0.4 Kernel 3.0.35-05524-g8513494-dirty
	Linux Ubuntu 11.10 Kernel 3.0.35-2508-g54750ff
CPU	Onboard Freescale™ i.MX6 Quad 1.0GHz Processor
Memory	Onboard DDR3 1066MHz, 1GB
eMMC	Onboard eMMC
SD card	Transcend SDHC 4GB
PCB version	AQ7-IMX6 A0.3
Carrier Board version	ECB-970 A0.2
Chipset Software	Freescale™ i.MX6 Quad Processor
Ethernet	1 Gigabit Ethernet by Micrel ® KSZ9021RNI
Audio	I2S(please refer above customer pin-out define)

5.1. Performance Test for Android

Test Item

Antutu Benchmark (V2.6)	Method	Pass Criteria	Result	Score	Issue ID
RAM Performance			Pass	1790	
CPU Integer Performance			Pass	2889	
CPU Floating-point performance			Pass	2294	
2D Graphics performance			Pass	282	
3D Graphics performance	To run the program.	1. No error massage	Pass	896	
Database IO		2. Program can be finished	Pass	270	
SD card write speed			Pass	8.4MB/s 84	
SD card read speed			Pass	>50MB/s 199	
CPU frequency			Pass	996MHz	
Total score			Pass	8704	

benchmark	Method	Pass Criteria	Result	Score	Issue ID
Graphic			Pass	383.79868	
CPU	To run the program.	1. No error massage	Pass	3133.376	
Memory		2. Program can be finished	Pass	537.09125	
Filesystem			Pass	239.65128	

SD card tester (eMMC)	Method	Pass Criteria	Result	Score	Issue ID
Read	To run the program.	Record	Pass	30.29MB/s	
Write	To run the program.	Record	Pass	6.91MB/s	

An3D Benchmark	Method	Pass Criteria	Result	Score	Issue ID
Fillrate ST/MT:			Pass	11.49/11.49MP/sec	
Higt object count			Pass	45.46fps	
Multiple lights		1. No error massage	Pass	60.13fps	
High polygon count	To run the program.	2. Program can be finished	Pass	60.13fps	
keyframe animation			Pass	60.15fps	
Game level			Pass	60.03fps	
Total score			Pass	7661	

Play movie function nornal (Lag / hang up / blue screen / garbage screen)	Method	Pass Criteria	Result	Score	Issue ID
AVI/MPG/MP4/Mov	To play Video	1. Supported AVI/MPG/MP4/Mov formats video.	Pass	Play video with AVI/MPG/MP4/Mov	

Onboard LAN Speed Test_2.0.9(LAN)	Method	Pass Criteria	Result	Score	Issue ID
PNG	To run the program.	Record	Pass	9ms	
DOWNLOAD	To run the program.	Record	Pass	72.30Mbps	
UPLOAD	To run the program.	Record	Pass	22.56Mbps	

PCI-e LAN card Speed Test_2.0.9(LAN)	Method	Pass Criteria	Result	Score	Issue ID
PNG	To run the program.	Record	**Pass**	11ms	
DOWNLOAD	To run the program.	Record	**Pass**	79.92Mbps	
UPLOAD	To run the program.	Record	**Pass**	22.06Mbps	

5.2. Performance Test for Linux					
Test Item					

Play movie function nornal (Lag / hang up / blue screen / garbage screen)	Method	Pass Criteria	Result	Score	Issue ID
AVI/MPG/MP4/Mov	To play Video	1. Supported AVI/MPG/MP4/Mov formats video.	Pass	Play video with AVI/MPG/MP4/Mov	

6. Stress Test

Rev. 14E010007

Test Date:2014/02/24~2014/03/10

		Rate
Total	4	
Incomplete	0	0.00%
Pass	2	50.00%
Fail	0	0.00%
N/A	2	50.00%

Test Configuration

OS	Android 4.0.4 Kernel 3.0.35-05524-g8513494-dirty
CPU	Onboard Freescale™ i.MX6 Quad 1.0GHz Processor
Memory	Onboard DDR3 1066MHz, 1GB
eMMC	Onboard eMMC
SD card	N/A
PCB version	AQ7-IMX6 A0.3
Carrier Board version	ECB-970 A0.2
Chipset Software	Freescale™ i.MX6 Quad Processor
Ethernet	1 Gigabit Ethernet by Micrel ® KSZ9021RNI
Audio	I2S(please refer above customer pin-out define)

6.1 Android Stress Test

Test Item		Method	Pass Criteria	Result	Issue ID	Note
6.1.1	Stability Test.	1. Install Stability Test V2.5.apk 2. To run CPU+GPU Stability test overnight test	No halt, shutdown, reboot and error message.	**Pass**		
6.1.2	Cold boot on/off test	1. Install ON_OFF_Test.apk 2. AC loss on/off test over 1000 times.	Loss: 0/1000 times	**Pass**		

6.2 Linux Stress Test

Test Item		Method	Pass Criteria	Result	Issue ID	Note
6.2.1	Stability Test.			**N/A**		No AP support.
6.2.2	Cold boot on/off test			**N/A**		No AP support.

7. Power consumption

Rev. 14E010007
Test Date:2014/02/24~2014/03/10

Total	0	Rate
Incomplete	0	#DIV/0!
Pass	0	#DIV/0!
Fail	0	#DIV/0!
N/A	0	#DIV/0!

Test Configuration

OS	Android 4.0.4 Kernel 3.0.35-05524-g8513494-dirty
CPU	Onboard Freescale™ i.MX6 Quad 1.0GHz Processor
Memory	Onboard DDR3 1066MHz, 1GB
eMMC	Onboard eMMC
SD card	N/A
PCB version	AQ7-IMX6 A0.3
Carrier Board version	ECB-970 A0.2
Chipset Software	Freescale™ i.MX6 Quad Processor
Ethernet	1 Gigabit Ethernet by Micrel ® KSZ9021RNI
Audio	I2S(please refer above customer pin-out define)

7.1 Power Consumption test

Test Equipment

Equipment	Digital Multimeter
Manufacturer	Hila
Model name	DM-1240

a. Idle mode

Test Item	Method	Current (A)	Total Watt(W)	Issue ID	Note
ATX 5V	Bootup to Android and have not run any program.	0.313	1.565		

b. Full loading mode

Test Item	Method	Current (A)	Total Watt(W)	Issue ID	Note
ATX 5V	To run test AP: Stability Test V2.5.	1.075	5.375		

c. Suspend

Test Item	Method	Current (A)	Total Watt(W)	Issue ID	Note
ATX 5V	Press power butter to suspend.	0.052	0.26		