Report NO: 18R010002

RTC-700RK

Rugged Tablet Computer

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
2018-09-27	KJ Wang	Anderson Lin

Version Released Records

Date	Version	Change History	Note

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.

Platform Information:

Item	Device Information	Note
Model	RTC-700RK	
Main Board	RICO-3288	
CPU Type	Rockchip RK3288 ARM Cortex™-A17 Quad-core 1.6GHz (up to 1.8GHz)	
Storage	16GB Emmc	
Memory Type	DDR3L 2GB SDRAM	
HDMI Monitor	Dell P2415Qb	
LVDS	7" (1280 x 800) TFT LCD	
Android Version	Android 6.0.1	
Build number	rk3288-user-debug 6.0.1 MXC89Kuser.pp.20180413.113619 test-keys	
Kernel version	3.10.0 pp@pp-BM5242-BM5342-BM5642#32 Tue Apr 24 15:23:43 CST 2018	
Adapter	FSP036-RBBN2,100-240V, 50Hz-60Hz, DC output / 12V, 3A	
Docking	RDS-0310	

Summary:

1. Mechanical Check

(1.1) Mechanism construction check

- Key test point:
  1. Inspect the mechanical appearance

Test Result	Judgment		
No mechanical conflicts, gap, blend, deformed appearance, misalignment	Pass	Fail	Remark
	☒	☐	

(1.2) I/O Connector and Cover check

- Key test point:
  1. Inspect the I/O connector and I/O cover

Test Result	Judgment		
I/O Cover is firm	Pass	Fail	Remark
	☒	☐	

(1.3) DC power outlet / inlet check

- Key test point:
  .1. Inspect DC Power outlet/inlet

Test Result	Judgment		
No mechanical conflicts, gap, blend, deformed appearance, misalignment	Pass	Fail	Remark
	☒	☐	

(1.4) Button and Function Key check

- Key test point:
  1. Inspect appearance of Power button

Test Result	Judgment		
No mechanical conflicts, deformed appearance, misalignment	Pass	Fail	Remark
	☒	☐	N/A

2. Basic Function Test

(2.1) Display Function Test

(2.1.1) Display quality check

- Key test point:
  1. Perform “Display Tester” application->”Display quality”
  2. Check display quality with different patterns (full white / full black / color bar / black white brick) with variant back light

Test Result	Judgment		
No color deviation / No saw-tooth / No flicker / No light leak /No abnormal Uniformity	Pass	Fail	Remark
	☒	☐	

(2.1.2) Auto Brightness Function Test

- Key test point:
  Open a dialog for adjusting the brightness of the screen. You can check Automatic brightness to set the tablet to adjust the brightness automatically, using the tablet’s built-in light sensor. Or uncheck that option to use the slider to set a brightness level you want at all times when using the tablet**.**

Test Result	Judgment		
Brightness of the screen changed automatically	Pass	Fail	Remark
	☒	☐	

(2.1.3) Play Video

- Key test point:
  Play video then check the display quality.

Test Result	Judgment		
No lag / No ghost / No flicker / No color deviation while playing video.	Pass	Fail	Remark
	☒	☐	
4k.mp4	☒	☐	
720P.wmv	☒	☐	
1080p.mp4	☒	☐	
1080p.mov	☒	☐	
350X240.mpg	☒	☐	
640X480.avi	☒	☐	

(2.1.4) LCD Leakage check

- Key test point:
  1. Put UUT under dark environment
  2. Adjust UUT brightness to max then check LCD leakage status

Test Result	Judgment		
	Pass	Fail	Remark
No obvious leakage appeared	☒	☐	

(2.1.5) HDMI Function test

- Key test point:
  1. Plug HDMI cable to connect to HDMI monitor
  2. Check HDMI screen

Test Result		Judgment		
		Pass	Fail	Remark
1.Tablet content can be shown on HDMI monitor 2.Sound can be played on HDMI monitor		☒	☐	
HDMI Monitor compatibility connected with 5M cable	Samsung U28D590D (4K Monitor)	☒	☐	
	DELL P2415Qb(4K Monitor)	☒	☐	
	CHIMEI 22SH-L	☒	☐	

(2.1.6) HDMI Setting under Android

- Key test point:
  1. Plug HDMI cable to connect to HDMI monitor
  2. Check HDMI screen

Test Result		Judgment		
		Pass	Fail	Remark
HDMI enable / disable		☒	☐	
HDMI Resolution	Auto	☒	☐	
	1920X1080p-60	☒	☐	
	1920X1080p-50	☒	☐	
	1920X1080p-30	☒	☐	
	1920X1080p-25	☒	☐	
	1920X1080p-24	☒	☐	
	1280X720p-60	☒	☐	
	1280X720p-50	☒	☐	
	720X576p-50	☒	☐	
	720X480p-60	☒	☐	

(2.2) Audio Function Test

(2.2.1) Internal speaker Function

- Key test point:
  1. Play music track (or ring tones)
  2. Hear the sound quality from internal speaker
  3. Adjust volume bar from minimum to maximum then check sound level is from minimum to maximum.
  4. Adjust volume bar from maximum to minimum then check sound level is from maximum to minimum

Test Result	Judgment		
No noise, no distortion, no background noise .the sound is clean, volume can be changed as we set with internal speaker.	Pass	Fail	Remark
	☒	☐	

(2.2.2) Line-out Function

- Key test point:
  1. Plug earphone.
  2. Play music track (or ring tones).
  3. Hear the sound quality from earphone.
  4. Adjust volume bar from minimum to maximum then check sound level is from minimum to maximum.
  5. Adjust volume bar from maximum to minimum then check sound level is from maximum to minimum

Test Result	Judgment		
No noise, no distortion, the sound is clean, volume can be changed as we set with line-out. Internal speaker will be turned off automatically when we plug in earphone. Sound can be played from left channel or right channel as we set	Pass	Fail	Remark
	☒	☐	

(2.2.3) Microphone Function

- Key test point:
  1. Execute "Sound Recorder" program
  2. Choose "record" button then say something close to internal MIC
  3. Choose "stop" button
  4. Choose "play" button to play recording file
  5. Check recording file
  6. Repeated step 1->5 on earphone MIC

Test Result	Judgment		
No noise and distortion while recording voice.	Pass	Fail	Remark
	☒	☐	

(2.3) Wi-Fi Function Test

(2.3.1) Turn on /off Wi-Fi Function

- Key test point:
  Turn on Wi-Fi function then check the signal strength of Wi-Fi is displayed on system bar.
  Turn off Wi-Fi function then check the signal strength of Wi-Fi is off on system bar.
  Switch Wi-Fi on /off for 5 times then check Wi-Fi function still can work normally.

Test Result	Judgment		
Wi-Fi function can work normally after switch Wi-Fi on /off. The signal strength of Wi-Fi is displayed on system bar.	Pass	Fail	Remark
	☒	☐	

(2.3.2) Connect to internet

- Key test point:
  Turn on Wi-Fi function then execute web browser. Type in website link (ex: www.google.com)

Test Result	Judgment		
We can connect to internet by web browser via Wi-Fi connection. Website shows correctly without any error or crash.	Pass	Fail	Remark
	☒	☐	

(2.3.3) Download files

- Key test point:
  Turn on Wi-Fi function then connect to website to download files

Test Result	Judgment		
We can download files from internet via Wi-Fi connection. The file is complete and not broken.	Pass	Fail	Remark
	☒	☐	

(2.3.4) Check the strength indicator of W-Fi signal

- Key test point:
  Turn on Wi-Fi function then look at the system bar. Check the strength indicator of Wi-Fi signal.

Test Result	Judgment		
Wi-Fi icon is present at the system bar all the time for at least 5	Pass	Fail	Remark

minutes. The indicator of Wi-Fi signal is variable.	☒	☐	

(2.3.5) Wi-Fi performance test

- Key test point:
  Turn on Wi-Fi function then connect to http://speedof.me/m/ Execute download and upload performance test. Record the test result.

Test Result			Judgment		
Run	download	upload	Pass	Fail	Remark
1	7.19 Mbps	4.70 Mbps	☒	☐	
2	6.21 Mbps	4.63 Mbps			
3	7.75 Mbps	7.91Mbps			
4	7.78 Mbps	5.27 Mbps			
5	6.53 Mbps	5.66 Mbps			
Average	**7.09 Mbps**	**5.63 Mbps**			

(2.3.6) Switch on /off between 3G , Wi-Fi , and Airplane mode

- Key test point:
  Switch on /off between 3G, Wi-Fi, and Airplane mode at least 5 times.

Test Result	Judgment		
	Pass	Fail	Remark
Network function is workable while switching between 3G, Wi-Fi, and Airplane mode.	☒	☐	

(2.3.7) Switch on /off between 3G and Wi-Fi

- Key test point:
  Turn on Wi-Fi and 3G connection. Check system should use Wi-Fi connection.
  Turn off Wi-Fi connection. Check network connection will change from Wi-Fi to 3G automatically.

Test Result	Judgment		
	Pass	Fail	Remark
Network connection will change from Wi-Fi to 3G automatically while turning off Wi-Fi.	☒	☐	

(2.3.8) Wake up from sleep mode, check Wi-Fi function

- Key test point:
  Wake up system from sleep mode then check Wi-Fi function is workable.

Test Result	Judgment		
Wi-Fi function still can work correctly after waking up from sleep mode.	Pass	Fail	Remark
	☒	☐	

(2.3.9) Reboot system, check Wi-Fi function

- Key test point:
  Reboot system then check W-Fi function.

Test Result	Judgment		
W-Fi function still can work correctly after reboot.	Pass	Fail	Remark
	☒	☐	

(2.4) 4G Function Test

(2.4.1) Turn on /off 4G Function

- Key test point:
  Turn on 4G function then check the signal strength of 4G is displayed on system bar.
  Turn off 4G function then check the signal strength of 4G is off on system bar.
  Switch 4G on /off for 5 times then check 4G function still can work normally.

Test Result	Judgment		
LTE(4G) icon is displayed on system bar. 4G function can work normally after switch 4G on /off. The signal strength of 4G is displayed on system bar.	Pass	Fail	Remark
	☒	☐	

(2.4.2) Connect to internet

- Key test point:
  Turn on 4G function then execute web browser. Type in website link (ex: www.google.com)

Test Result	Judgment		
We can connect to internet by web browser via 4G connection	Pass	Fail	Remark
	☒	☐	

(2.4.3) Download files

- Key test point:
  Turn on 4G function then connect to website to download files

Test Result	Judgment		
	Pass	Fail	Remark
We can download files from internet via 4G connection. The file is complete and not broken.	☒	☐	Download Ubuntu image

(2.4.4) Check the strength indicator of 4G signal

- Key test point:
  Turn on 4G function then look at the system bar. Check the strength indicator of 4G signal.

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Test Result	Judgment		
	Pass	Fail	Remark
4G icon is present at the system bar all the time for at least 5 minutes. The indicator of 4G signal is variable.	☒	☐	

(2.4.5) 4G performance test

- Key test point:
  Turn on 4G function then connect to http://speedof.me/m/ Execute download and upload performance test. Record the test result.

Test Result			Judgment		
Run	download	upload	Pass	Fail	Remark
1	15.87 Mbps	8.51 Mbps	☒	☐	
2	17.76 Mbps	16.21 Mbps			
3	20.77 Mbps	6.55 Mbps			
4	19.12 Mbps	8.55 Mbps			
5	19.86 Mbps	14.25 Mbps			
Average	**18.67 Mbps**	**10.81 Mbps**			

(2.4.6) Switch on /off between 4G ,Wi-Fi , and Airplane mode

- Key test point:
  Switch on /off between 4G, Wi-Fi, and Airplane mode at least 5 times..

Test Result	Judgment		
Network function is workable while switching between 4G, Wi-Fi, and Airplane mode.	Pass	Fail	Remark
	☒	☐	

(2.4.7) Switch on /off between 4G and Wi-Fi

- Key test point:
  Turn on Wi-Fi and 4G connection. Check system should use Wi-Fi connection.
  Turn off Wi-Fi connection. Check network connection will change from Wi-Fi to 4G automatically.

  .

Test Result	Judgment		
Network connection will change from Wi-Fi to 4G automatically while turning off Wi-Fi.	Pass	Fail	Remark
	☒	☐	

(2.4.8) Wake up from sleep mode, check 4G function

- Key test point:
  Wake up system from sleep mode then check 3G function is workable.

Test Result	Judgment		
4G function still can work correctly after waking up from sleep mode.	Pass	Fail	Remark
	☒	☐	

(2.4.9) Reboot system, check 4G function

- Key test point:
  Reboot system then check4G function.

Test Result	Judgment		
4G function still can work correctly after reboot.	Pass	Fail	Remark
	☒	☐	

(2.5) GPS Function Test

(2.5.1) GPS cold-start TTFF

- Key test point:
  After first boot, executing “GPSTest.apk” to test GPS cold-start TTFF.

Test Result	Judgment		
1.GPS can detect satellite and positioning 2.TTFF: 11 sec less than 3 minutes	Pass	Fail	Remark
	☒	☐	

(2.5.2) GPS performance

- Key test point:
  Execute “GPSTest”.apk to check GPS performance

Test Result	Judgment		
The numbers of receiving satellites:10(GPS) /	Pass	Fail	Remark
	☒	☐	

(2.5.3) Latitude and longitude

- Key test point:
  Execute “GPSTest”.apk to check coordinate

Test Result	Judgment		
24’59.0160’N / 121’33.0588’E	Pass	Fail	Remark
	☒	☐	

(2.6) Bluetooth Function Test

(2.6.1) Bluetooth on /off Function

- Key test point:
  Turn on Bluetooth function then check the Bluetooth icon is displayed on system bar.
  Turn off Bluetooth function then check the Bluetooth icon is not displayed on system bar.
  Switch Bluetooth on /off for 5 times then check Bluetooth function still can work normally.

Test Result	Judgment		
Bluetooth function can work normally after switch Bluetooth on /off. The Bluetooth icon is displayed on system bar.	Pass	Fail	Remark
	☒	☐	

(2.6.2) Search BT Devices

- Key test point:
  Click Apps->Settings->Wireless &networks->Bluetooth settings->Find nearby devices->Scan for devices"

Test Result	Judgment		
We can see other surrounding Bluetooth enabled device in the screen of BT setting.	Pass	Fail	Remark
	☒	☐	

(2.6.3) Data transmission via Bluetooth

- Key test point:
  1. Click "Apps->Settings->Wireless &networks->Bluetooth settings->Discoverable"
  2.Click"Apps->Settings->Wireless &networks->Bluetooth settings-> Find nearby devices"
  3. Pair with other Bluetooth device
  4. Send files (10MB file) to other Bluetooth device. (distance:10Meter)
  5 .Receive files (10MB file) from other Bluetooth device. (distance:10Meter)

Test Result	Judgment		
Send files (2 minute 11 seconds) Receive files(2 minute 6 seconds)	Pass	Fail	Remark
	☒	☐	

(2.6.4) Connect to Bluetooth Devices

- Key test point:
  1. Click "Apps->Settings->Wireless &networks->Bluetooth settings->Discoverable"
  2. Click "Apps->Settings->Wireless &networks->Bluetooth settings->Find nearby devices"
  3. Pair with Bluetooth device (Bluetooth mouse / Keyboard / Earphone)
  4.make sure Bluetooth device can work.

Test Result	Judgment		
1.We can use BT Mouse(Logitech M557) to select APP or execute APP 2.We can use BT Keyboard to(Microsoft Mobile Keyboard 5000) type words as we expected 3. We can hear music by BT Earphone (SONY MW600).	Pass	Fail	Remark
	☒	☐	

(2.6.5) Wake up from sleep mode, check Bluetooth function

- Key test point:
  Wake up system from sleep mode then check Bluetooth function is workable

Test Result	Judgment		
Bluetooth devices still connected after waking up from sleep mode.	Pass	Fail	Remark
	☒	☐	

(2.6.6) Reboot system, check Bluetooth function

- Key test point:
  Reboot system then check Bluetooth function.

Test Result	Judgment		
Bluetooth devices still connected after reboot.	Pass	Fail	Remark
	☒	☐	

(2.7) NFC Function Test

(2.7.1) NFC Card and NFC Tag detection test

- Key test point:
  1. Turn on NFC function then check NFC Card or Tag can be detected via NFCTag APP.
  2. Testing for 10 times

Test Result	Judgment		
NFC Card: Easy Card(ISO 14443 / Mifare) NFC Tag(SONY tag type 2)	Pass	Fail	Remark
	☒	☐	

(2.7.2) Detect distance

- Key test point:
  1. Put/Move a NFC Card on the area of NFC sensor
  2. Check the distance of NFC Card detection.

Test Result	Judgment		
NFC Card can be detected under 2 cm	Pass	Fail	Remark
	☒	☐	

(2.7.3) NFC on /off Function

- Key test point:
  1. Turn on NFC function then check NFC Card or Tag can be detected.
  2. Turn off NFC function then check NFC Card or Tag can ‘t be detected.
  2. Switch NFC on /off for 5 times then check NFC function still can work normally.

Test Result	Judgment		
NFC function works normally while switching NFC on /off for 5 times	Pass	Fail	Remark
	☒	☐	

(2.7.4) Wake up from sleep mode then check NFC Function

- Key test point:
  1. Wake up system from sleep mode then check NFC function is workable

Test Result	Judgment		
NFC function still can work correctly after waking up from sleep mode.	Pass	Fail	Remark
	☒	☐	

(2.7.5) Reboot system then check NFC Function

- Key test point:
  1. Reboot system then check NFC function.

Test Result	Judgment		
NFC function still can work correctly after reboot.	Pass	Fail	Remark
	☒	☐	

2.8 Sensor Test

(2.8.1) Light sensor Function test

- Key test point:
  1. Execute “Z-Device test->Light Sensor”
  2.The value of luxex is changeable according to ambient.

Test Result	Judgment		
1. The value of luxex is changeable according to ambient.	Pass	Fail	Remark
	☒	☐	

(2.8.2) G- sensor (Accelerometer) Function test

- Key test point:
  1. rotate DUT to 90° angle then confirm the screen is upright.
  2. rotate DUT to 180° angle then confirm the screen is upright.
  3. rotate DUT to 270° angle then confirm the screen is upright.

Test Result	Judgment		
1. Rotate DUT then confirm screen will follow correct direction we rotate. 2. Display screen will rotate within 3 seconds when tablet is rotated.	Pass	Fail	Remark
	☒	☐	

(2.8.3) E-Compass Function test

- Key test point:
  1. Perform “Z-DeviceTest” App.
  2. Check the value of E-Compass.

Test Result	Judgment		
The value of E-Compass is changeable	Pass	Fail	Remark
	☒	☐	

(2.8.4) Gyro-sensor Function test

- Key test point:
  1. Perform “Z-DeviceTest” App.
  2. Check the value of Gyro-sensor

Test Result	Judgment		
Rotate DUT then the values of Gyro-sensor is changeable	Pass	Fail	Remark
	☒	☐	

2.9 Touchscreen Function Test

Test case	Key Test Point	Test Criteria	Judgment
(2.9.1) 2-fingers pinch	1. Open picture 2. Pinch out to zoom in 3. Pinch in to zoom out	Picture can be zoomed in and zoomed out by 2-fingers pinch.	Pass
(2.9.2) Swipe Test	swipe page from left to right side / right side to left side / from top to down side / from down to top side	Page move while swiped	Pass
(2.9.3) Press and hold	Press and hold an icon.	Icon can be choosed and hold.	Pass
(2.9.4) Drag and move ICON test	Icon selected and moved with finger	Icon can be Dragged and moved.	Pass
(2.9.5) Wake up from sleep mode	Wake up from sleep mode then check Touch can work.	Touch can work after waking up from sleep mode	Pass
(2.9.6) Multi touch test	Run touch screen APP, use fingers touch screen Follow Product/Touch Screen Spec.	10 Touch points can be recognized	Pass
(2.9.7) Draw 1 Line test	Run touch screen APP at painting status to check Draw 1 line at vertical/ horizontal and X directions	No dash lines found (*note, draw line slowly) No jump during drawing	Pass
(2.9.8) 2-fingers touch and draw line test	Draw 2 lines at vertical/ horizontal and X directions	2 lines can be recognized	Pass
(2.9.10) 3-fingers touch and draw line test	Draw 3 lines at vertical/ horizontal and X directions	3 lines can be recognized	Pass
(2.9.11) Rotate screen	Rotate screen then check Touch works well	1. No delay 2. Touch location is correct.	Pass
(2.9.12) Full loading mode	Running “StabilityTest” App then check Touch works well under full loading mode	1. No delay 2. Touch location is correct.	Pass
(2.9.13) Touch response time	Use calculate APP to input "123456789" +"987654321"=	1. No missing of digit. 2.No late response of input and display 3.The result should be "1111111110"	Pass
(2.9.14) Touch area test	Touch screen thru the edge of touch area to ensure all area can be detected (paint test)	No unreachable area	Pass
(2.9.15)LED noise testing	Near to LED noise then check no ghost touch	1.No ghost touch 2.Touch position is correct	Pass
No Ghost touches	Perform any touch gesture	No Ghost touches appeared while performing any touch gesture	Pass

2.10 Camera Function Test

(2.10.1) Take pictures test

- Key test point:
  1. Use camera APP to take picture.

Test Result	Judgment		
Check the picture is clear, no distortion, no inverse, no critical color deviation. Camera can take pictures despite of bright or dark environment	Pass	Fail	Remark
	☒	☐	

(2.10.2) Auto Focus test

- Key test point:
  Use camera APP to take picture for near and far (infinite) object.

Test Result	Judgment		
Camera can focus fully automatic or on a manually selected point or area.	Pass	Fail	Remark
	☒	☐	

(2.10.3) Flash light test

- Key test point:
  Choose Flash mode ”Auto” ,“On”, “Off” to test

Test Result	Judgment		
Auto mode: Flash mode will be turned on automatically according to ambient environment. Flash mode “On” : Flash will turn on Flash mode “Off” : Flash will turn off	Pass	Fail	Remark
	☒	☐	

(2.10.4) Barcode scan test(not support)

- Key test point:
  Perform barcode APP and scan different barcode type**.**
  1D and 2D barcode can be detected.
  BCR no need APP

Test Result			Judgment		
Barcode format	1D	UPC-A	Pass	Fail	Remark

		UPC-E			
		EAN-8			
		EAN-13			
		Code 39			
	2D	PDF 417			
		Datamatrix			
		QR Code			
		Aztec			

2.11 USB Function Test

(2.11.1.1) USB Compatibility Test

- Key test point:
  1. Connect with USB mouse, USB keyboard, USB Flash, USB Hub.

Test Result		Judgment		
USB mouse: icon can be selected by USB mouse USB keyboard: type words USB Flash: can be detected. Size is correct USB Hub: plug usb mouse, USB keyboard, USB Flash,all devices can be detected	USB 2.0 Type A	Pass	Fail	Remark
		☒	☐	
	Micro USB(OTG)	☒	☐	

(2.11.2) USB Data transmission

- Key test point:
  1. Perform data transmission with USB Flash.

Test Result		Judgment		
Copy 300MB files to USB 3.0 Flash(Write speed)	USB 2.0 Type A: 28sec.	Pass	Fail	Remark
		☒	☐	
	Micro USB(OTG): 49 sec	☒	☐	

(2.11.3) USB ADB Function

- Key test point:
  1. Connect to PC via ADB (mini usb)
  2. Check PC can connect with DUT via ADB (mini usb)

Test Result	Judgment		
Perform “adb devices” command, then we can see DUT id on the	Pass	Fail	Remark

terminal screen	☒	☐	
check adb icon is shown on the top of screen	☒	☐	
Data transmission via ADB command	☒	☐	
DUT can be read/write via Windows File Manager	☒	☐	

2.12 Micro SD Function Test

(2.12.1) Micro SD Compatibility test

- Key test point:
  1. Insert Micro SD.
  2. Check Micro SD size.

Test Result	Judgment		
Micro SD Card can be detected. Size is correct Files can be read and writed Hot-plug Micro SD Card without error or crash Wake up from sleep, Micro SD still work normally	Pass	Fail	Remark
SP SDHC 16GB	☒	☐	
Sandisk SDHC 32GB	☒	☐	
Kingston SDXC 64GB	☒	☐	
Transcend SDXC 64GB	☒	☐	
Kingston SDXC 128GB	☒	☐	

2.13 Battery Basic Function Test

(2.13.1) Battery Charge LED Test(not support)

- Key test point:
  1. Plug and Unplug Adapter then check battery charge LED status.

Test Result	Judgment		
1. Plug Adapter: battery charge LED will turn on 2. Unplug Adapter: battery charge LED will turn off 3. Battery charged to 100%:LED status meet with Spec.	Pass	Fail	Remark
	☐	☐	

(2.13.2) Battery charge status under Android system

- Key test point:
  Check battery status (charge / discharge / full battery (100%) / low battery (15%)

Test Result	Judgment		
1.Battery charge: system shows battery charge 2.Battery discharge: system shows battery discharge 3.Battery full: system shows battery power level:100% 4.Battery low: system shows battery power level:15%(Battery 1-internal battery) and issue alarm event 5. Battery Capacity: 1.) Master BAT/Hard pack: 7.4V 1530mAH 2.) Slave BAT/Soft pack:7.4V 1530mAH	Pass	Fail	Remark
	☒	☐	

(2.13.3) Battery charge and discharge time test

- Key test point:
  test battery charge and discharge time

`Test Result	Judgment		
	Pass	Fail	Remark
Battery Charge time: 2 hrs 12 min. (Wi-Fi on / BT on / Brightness: 50% / Sound: 50%)(Idle mode)	☒	☐	Charging to 97%
Battery Charge time: 2 hrs 37 min. (Wi-Fi on / BT on / Brightness: 50% / Sound: 50%)(Idle mode)	☒	☐	Charging to 100%
Battery Discharge time: 5 hrs 16 min. (Wi-Fi on / BT on / Brightness: 40% / Sound: 50%/ Playback video(Motion Test Youtube HD 720p mov h.264)	☒	☐	Spec:5hrs
Battery can be charged under power-off mode	☒	☐	
Battery can be charged under sleep mode	☒	☐	
Battery can be charged under full loading mode(execute StabilityTest App)	☒	☐	
Battery can be charged under low capacity(3% or lower)	☒	☐	

(2.13.4) Swappable Battery test

- Key test point:
  2 battery can be detected

Test Result	Judgment		
	Pass	Fail	Remark
2 battery can be detected under android system	☒	☐	
The priority of battery discharging is : swappable battery then internal battery	☒	☐	
2 battery can be charged at the same time	☒	☐	

Swappable battery can be hot-plug	☒	☐	

2.14. Ethernet Function Test

(2.14.1) DHCP Function Test

- Key test point:
  1. Plug RJ-45 Cable then connect to internet via DHCP.

Test Result	Judgment		
connect to internet via DHCP	Pass	Fail	Remark
	☒	☐	

(2.14.2) LAN LED status Test

- Key test point:
  1. Check LAN led color under different LAN speed.

Test Result	Judgment		
	Pass	Fail	Remark
Not support			AAEON board standard: Link led: 10MB->no light 100MB->green color 1 GB->orange color

(2.14.3) WOL Function Test

- Key test point:
  1. Execute “Magicpacket” App to test WOL function

Test Result	Judgment		
Not support	Pass	Fail	Remark

(2.14.4) LAN Bandwidth Test

- Key test point:
  1. Connect DUT and PC via different speed LAN HUB(10MB / 100MB / 1000MB) by using “iPerf” App
  2. Run iPerf APP then execute command:
     iperf –c 192.168.x.x –w 100M –t 1800 –i 60

Test Result		Judgment		
Bandwidth :589 Mbits /sec (30 minutes.)	1000MB LAN HUB	Pass	Fail	Remark
		☒	☐	
Bandwidth :93.9 Mbits /sec (30 minutes.)	100MB LAN HUB	☒	☐	
Bandwidth :9.24 Mbits /sec (30 minutes.)	10MB LAN HUB	☒	☐	

2.15. COM Port Function Test

(2.15.1) COM Port Loopback Test

- Key test point:
  1. Plug COM Port loopback then executing App to test.

Test Result	Judgment		
	Pass	Fail	Remark
Running “Serial Port API sample” shows data loss	☒	☐	TtyS3 (rk_serial) 115200

2.16. Vibrator Function Test

(2.15.1) Vibrator function Test

- Key test point:
  1. Executing “Z-DeviceTest” App to test vibrator function.

Test Result	Judgment		
We can feel vibration by finger	Pass	Fail	Remark
	☒	☐	

2.17. Buttons and LED Function Test

(2.17.1) Buttons function Test

- Key test point:

1. Press Function key and Power button to check behavior (meet Spec.) is correct.

Test Result		Judgment		
Power button (physical)	Sleep	☒	☐	Press for 1 sec
	Wake up system from slee mode	☒	☐	Press for 1 sec: suspend to resume
	Shut down	☒	☐	Press for 3 sec: pop power off menu
	Shut down(force shutdown)	☒	☐	Press for 6 sec: power on/off automatically
	Power on	☒	☐	Press 2 sec

(2.17.2) LED function Test (not support)

- interval timKey test point:
  1. Check Power status LED.
  2. Check Message LED.

Test Result	Judgment		
	Pass	Fail	Remark
Power LED			System shows Green light while booting

2.18. Function Key Test

(2.18) Function Key Test

- Key test point:
  1. Function key for mute / increase sound / decrease sound

Test Result		Judgment		
		Pass	Fail	Remark
Function key	Return to Button	☒	☐	Return to the previous operation step or the previous operation interface.
	Home Button	☒	☐	This key can help you return to main function page from any page or application.
	Recent App Button	☒	☐	If you press this key, opens a list of thumbnail images of apps you've worked With recently; touch an app to open

2.19 Accessory Function Test

(2.19.1) Docking Function Test

- Key test point:
  Check Docking function is workable.

Ethernet Function		**Function**			**Note**
		Pass	**Fail**	**N/A**	
Enable / disable		☒	☐	☐	Switch on/off
Connect to internet(DHCP Server)		☒	☐	☐	Connect to www.google.com
Performance Test		☒	☐	☐	(www.bandwidthplace.com) Download speed:88.64 Mbps Upload speed:94.46 Mbps
Connect two computers via different speed LAN HUB by using “Ping” instruction (1000 times) Command: ping xxx.xxx.xx.xx –l 65500 –1000		☒	☐	☐	No packet loss
Download 1 GB file from internet		☒	☐	☐	
Wake up from s3,Ethernet works well		☒	☐	☐	
Front side(2 port) / Rear side(2 port)		**Function**			**Note**
		Pass	**Fail**	**N/A**	
USB Flash		☒	☐	☐	Transcend 64 GB / A-DATA USB 3.0 32GB
USB Keyboard		☒	☐	☐	Microsoft Wired Keyboard 600
USB Mouse		☒	☐	☐	Microsoft Mouse 1133
COM Port Function		**Function**			**Note**
		Pass	**Fail**	**N/A**	
COM port loopback		☒	☐	☐	TtyUSB0/ Baud rate:115200
Battery charging		**Function**			**Note**
		Pass	**Fail**	**N/A**	
Charging function	Idle mode	☒	☐	☐	Shows charging icon while plugging adapter into Docking DC Jack
	Sleep mode	☒	☐	☐	Charging under sleep mode
	Power off mode	☒	☐	☐	Charging under power-off mode
Hot-plug 700-RK from Docking		☒	☐	☐	System no crash or hang
Docking LED	Mount 700-RK	☒	☐	☐	Blue color
	Remove 700-RK	☒	☐	☐	Orange color

2.20. Configuration Check

(2.20) Configuration check

- Key test point:
  1. confirm CPU / Memory / Storage information meet with Spec.

Test Result	Judgment		
CPU: Rockchip RK3288 Memory:2GB Storage: 16GB eMMC	Pass	Fail	Remark
	☒	☐	

2.21. Quick Launch Test

(2.21) Quick Launch Test

- Key test point:
  1. Quick Launch function is workable

Test Result	Judgment		
Wi-Fi enable / disable	Pass	Fail	Remark
	☒	☐	
Bluetooth enable / disable	☒	☐	
4G enable / disable	☒	☐	
Airplane mode enable / disable	☒	☐	
Auto-rotate enable / disable	☒	☐	

3. Power Consumption Test

3.1. Power Consumption

Test Equipment						
Equipment	DC Source					
Manufacturer	Chroma					
Model name	62012P-600-8					
Test Environment						
Adapter / power supply	AOEM:A048112—TD2(12V~4.0A)					
Power Supply		**Current**		**P**		**Note**
(Full Loading Mode) Android System with StabilityTest	(+ 12 V)	0.68	A	8.16	W	StabilityTest V2.7
Full Loading Total Watt	8.16 (W)					
(Sleep mode): Measure the current value when system in Sleep mode	(+ 12 V)	0.08	A	0.96	W	
Sleep Total Watt	0.96 (W)					

(Idle mode): Measure the current value under Android and without running any program	(+ 12 V)	0.43	A	5.16	W	
Idle Total Watt	5.16 (W)					
(S5 mode): Measure the current value when system in S5 mode	(+ 12 V)	0.06	A	0.72	W	
Suspend Total Watt	0.72 (W)					

4. Time Accuracy Test

(4.1) System Clock & RTC Clock Test

- Key test point:
  Check RTC Clock in Power On Mode.
  Check RTC Clock in Power Off Mode.

Test Result	Judgment		
1. Power On Mode: time interval 24 hrs. Criteria: +/-1 min. 2. Power Off Mode: time interval 24 hrs. Criteria: +/-1 min.	Pass	Fail	Remark
	☒	☐	

5. Benchmark Test

(5.1) Benchmark Test

- Key test point:
  Run benchmarking test to get benchmark value.

Test Result of Benchmark		
An3DBench		
Test item	Score	Note
Fillrates ST/MT	11.74/11.79MP/sec	A 3d benchmark based on the Android version of the jPCT 3d engine. Runs 7 tests from fill rate to complex scenes.
High object count	62.28 fps	
Multiple lights	65.93fps	
High polygon count	65.98 fps	

Keyframe animation	65.83fps	
Game level	65.98 fps	
Total scores	8736	
Geekbench 4		
Test item	Score	Note
Single-Core scores	671	Benchmark App for Android device
Multi-Core scores	1563	
AnTuTu Benchmark V 6.3.3		
Test item	Score	Note
3D	6354	Quadrant is a CPU, I/O and 3D graphics benchmark.
UX	15094	
CPU	13414	
RAM	4557	
Total scores	39419	

(5.2) Storage Performance Test

Onboard eMMC Performance				
eMMC	16GB eMMC			
Item	Comment / (unit)	Software	Score	Note
Onboard eMMC	Read	A1 SD Bench(2.4.0)	31.39MB/s	
	Write	A1 SD Bench(2.4.0)	25.55MB/s	

USB Performance				
USB Flash				
Item	Comment / (unit)	Software	Transfer Rate (MB/s)	Note
USB 2.0 TYPE A	Read	A1 SD Bench(2.4.0)	18.05 MB/s	Sony USB3.0 64GB
	Write	A1 SD Bench(2.4.0)	10.04 MB/s	
	Read	A1 SD Bench(2.4.0)	24.94 MB/s	Sony USB3.0 128GB
	Write	A1 SD Bench(2.4.0)	10.64 MB/s	
USB 2.0 TYPE A (Mini USB)	Read	A1 SD Bench(2.4.0)	19.58 MB/s	Sony USB3.0 64GB
	Write	A1 SD Bench(2.4.0)	8.86 MB/s	

MicroSD performance				
MicroSD	32GB / 128GB			
Item	Comment / (unit)	Software	Transfer Rate (MB/s)	Note
MicroSD (Kingston / SDHC / 64GB)	Read	A1 SD Bench(2.4.0)	19.29MB/s	
	Write	A1 SD Bench(2.4.0)	9.28MB/s	
MicroSD (Kingston / SDXC / 128GB)	Read	A1 SD Bench(2.4.0)	19.70MB/s	
	Write	A1 SD Bench(2.4.0)	10.76MB/s	

6. Run in Test

(6.1) StabilityTest

- Key test point:
  Execute “Stability Test” App to do run in test.

Test Result	Judgment		
DUT can work normally .No crash or pop up error message after running overnight test.	Pass	Fail	Remark
	☒	☐	V2.7

(6.2) Playback video for overnight test

- Key test point:
  Playback video for overnight test

Test Result	Judgment		
DUT can work normally .No crash or pop up error message after running playback video for 12 hours.	Pass	Fail	Remark
	☒	☐	1080P video

(6.3) Sleep and Wake up overnight test

- Key test point:
  Perform “Wake up” App to proceed sleep and wake up for overnight test for 12 hours

Test Result	Judgment		
DUT can work normally. No crash or pop up error message after proceed sleep and wake up for overnight test for 12 hours.	Pass	Fail	Remark
	☒	☐	Sleeptime in min:1 Playtime in min:6