RF TEST REPORT

Report No.: 16070501-FCC-R3

Supersede Report No.: N/A

Applicant	Borqs BeiJing Ltd.
Product Name	6 inch Tablet Remote
Model No.	XR6
Serial No.	N/A
Test Standard	FCC Part 15.407: 2015, ANSI C63.10: 2013
Test Date	May 07 to May 22, 2016
Issue Date	May 24, 2016
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Winnie Zhang	David Huang	
Winnie Zhang **Test Engineer**	David Huang **Checked By**	

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Test result presented in this test report is applicable to the tested sample only

Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

Zone A, Floor 1, Building 2 Wan Ye Long Technology Park

South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108

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Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.

In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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1. Report Revision History

Report No.	Report Version	Description	Issue Date
16070501-FCC-R3	NONE	Original	May 24, 2016

2. Customer information

Applicant Name	Borqs BeiJing Ltd.
Applicant Add	Tower A, Building B23, Universal Business Park, No. 10 Jiuxianqiao Road, Chaoyang District Beijing, 100015 China
Manufacturer	Borqs BeiJing Ltd.
Manufacturer Add	Tower A, Building B23, Universal Business Park, No. 10 Jiuxianqiao Road, Chaoyang District Beijing, 100015 China

3. Test site information

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	718246
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0

4. Equipment under Test (EUT) Information

Description of EUT:	6 inch Tablet Remote
Main Model:	XR6
Serial Model:	N/A
Date EUT received:	May 06, 2016
Test Date(s):	May 07 to May 22, 2016
Equipment Category：	DTS
Antenna Gain:	Bluetooth: 1.0dBi WIFI (2.4G): 1.0dBi WIFI (5G): 1.0dBi
Type of Modulation:	802.11b/g/n: DSSS, OFDM WIFI(802.11a): OFDM Bluetooth: GFSK, π /4DQPSK, 8DPSK
RF Operating Frequency (ies):	WIFI:802.11b/g/n(20M): 2412-2462 MHz WIFI:802.11n(40M): 2422-2452 MHz WIFI (5G 802.11a/n(HT20):5180-5240 MHz; WIFI (802.11n(HT40):5190-5230 MHz; Bluetooth: 2402-2480 MHz
Number of Channels:	WIFI :802.11b/g/n(20M): 11CH WIFI :802.11n(40M): 7CH WIFI 5.19-5.23G(a):7CH WIFI 5.755-5.795G(a):8CH Bluetooth: 79CH
Port:	Earphone Port, USB Port

Input Power:	Adapter : Model: ASUC72a-050120 Input: AC 100-240V~50/60Hz,0.2A Output: DC 5.0V,1.2A Battery: Spec:3.8V, 10.412Wh Battery Capacity:2470mAh
Trade Name :	VIZIO
FCC ID:	2ABDK-XR6

Note: The difference between the new revision and old revision of XR6 is Antenna, all above were explained in the attached Declaration Letter. And based on the letter the difference, these items " Bandedg , the spurious radiated emissions and unwanted emission restricted frequency band" is re-evaluated.

5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

Test Results Summary

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliance
§15.407(b)(1) & 15.407(b)(4)	Band Edge & Restricted Band	Compliance
§15.205, §15.209	Radiated Emissions& Restricted Band	Compliance

6. Measurements, Examination And Derived Results

6.1 Antenna Requirement

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited.
The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.
And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has 1 antennas:
A permanently attached PIFA antenna for Bluetooth and WIFI, the gain is 1.0dBi.

The antenna meets up with the ANTENNA REQUIREMENT.

Result: Compliance.

6.2 §15.407b(1) and b(4) Bandedge

Temperature	23℃
Relative Humidity	54%
Atmospheric Pressure	1030mbar
Test date :	May 30, 2016
Tested By :	Winnie Zhang

1. Conducted Measurement
   EUT was set for low, mid, high channel with modulated mode and highest RF output power.
   The spectrum analyzer was connected to the antenna terminal.
2. Conducted Emissions Measurement Uncertainty
   All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 40GHz is ±1.5dB.

Standard Requirement:

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:
(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

Procedures:
Measurement Procedure Peak power spectral density (PPSD) :

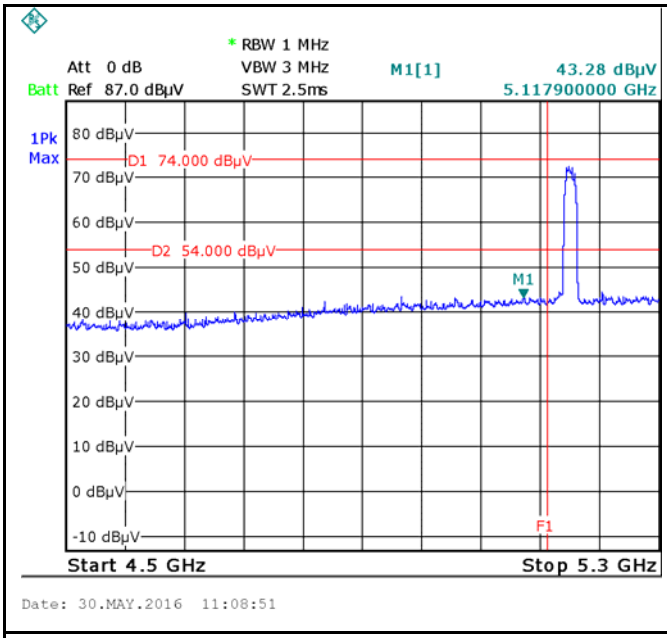
Bandedge are measured by setting the analyzer as follows:
(i) RBW = 1 MHz.
(ii) VBW ≥ 3 MHz.
(iii) Detector = Peak.
(iv) Sweep time = auto.
(v) Trace mode = max hold.
(vi) Allow sweeps to continue until the trace stabilizes. Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately 1/x, where x is the duty cycle. For example, at 50 percent duty cycle, the measurement time will increase by a factor of two relative to measurement time for continuous transmission.

Test Result: Pass.
Please refer to the following tables and plots.

Test Plots

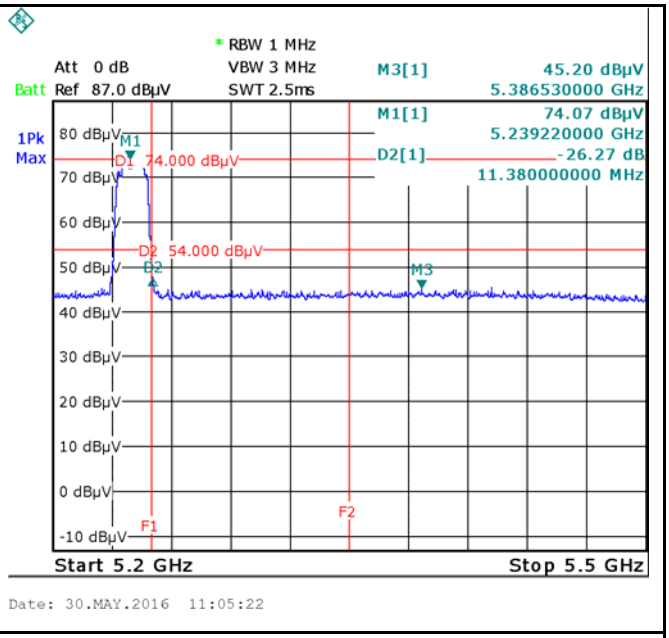
Band Edge measurement result

802.11a



Band Edge, Left Side (Peak) - 802.11a

Note: F1 is frequency 5150MHz



Band Edge, Right Side (Peak) - 802.11a

Note: F1 is frequency 5250MHz

F2 is frequency 5350MHz

Remark: According to KDB 789033 D02 section H) d) (iii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

EIRP[dBm] = E[dBµ V/m] - 95.2

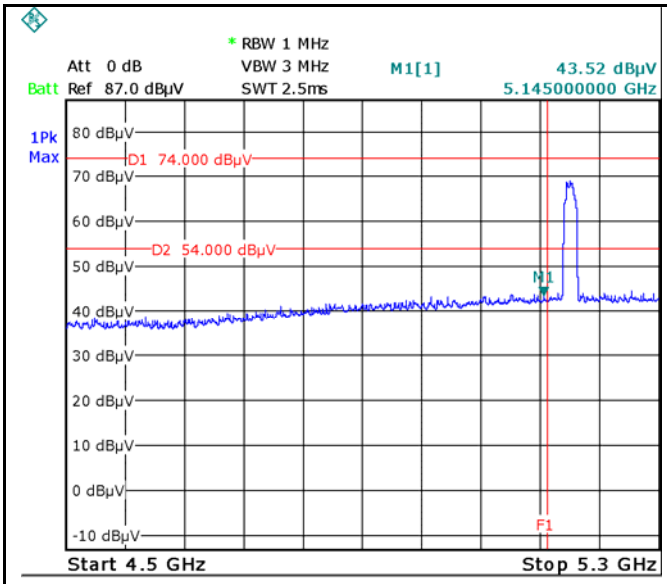
E[dBµ V/m]=43.28 dBµ V/m,

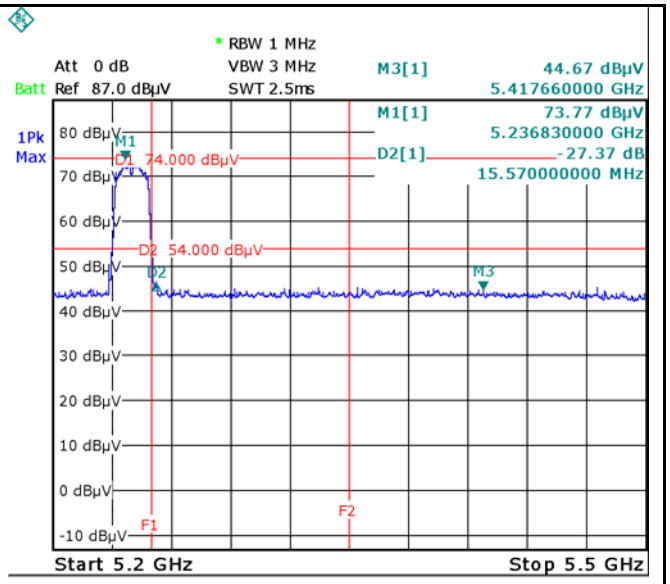
EIRP[dBm] = E[dBµ V/m] -95.2=43.28-95.2=-51.92dBm the limit is -27dBm/MHz

E[dBµ V/m]=45.20 dBµ V/m,

EIRP[dBm] = E[dBµ V/m] -95.2=45.20-95.2=-50.00dBm the limit is -27dBm/MHz

802.11N20





Band Edge, Left Side (Peak) - 802.11N20 Note: F1 is frequency 5150MHz	Band Edge, Right Side (Peak) - 802.11N20 Note: F1 is frequency 5250MHz F2 is frequency 5350MHz

Remark: According to KDB 789033 D02 section H) d) (iii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

EIRP[dBm] = E[dBµ V/m] - 95.2

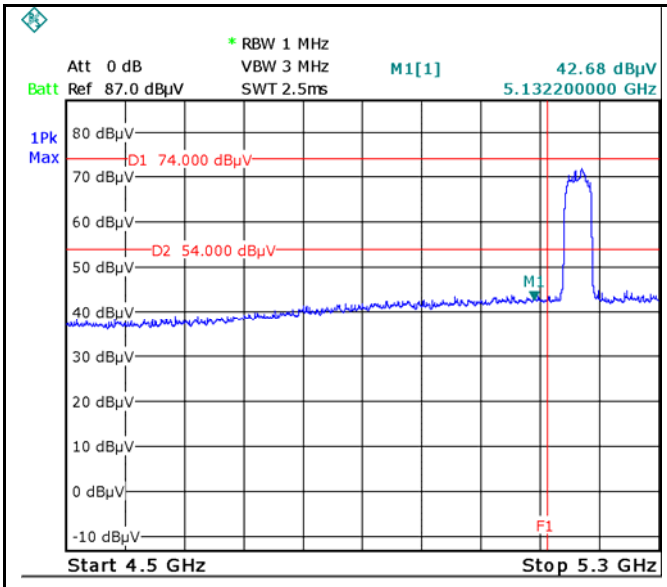
E[dBµ V/m]=43.52 dBµ V/m,

EIRP[dBm] = E[dBµ V/m] -95.2=43.52-95.2=-51.68dBm the limit is -27dBm/MHz

E[dBµ V/m]=44.67 dBµ V/m,

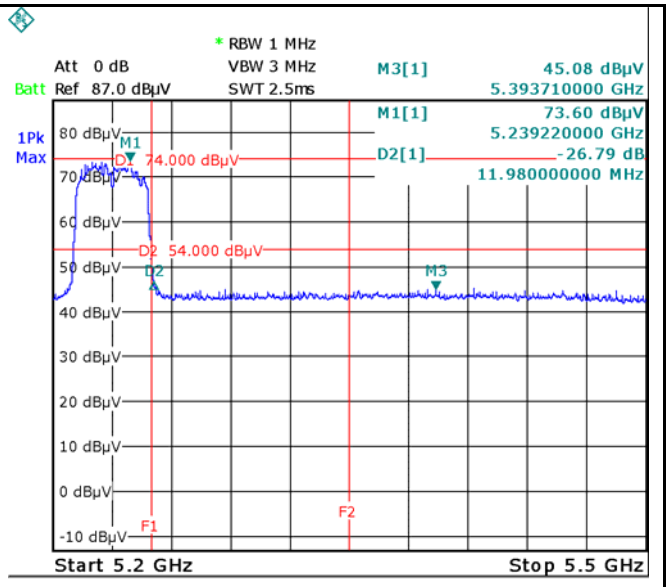
EIRP[dBm] = E[dBµ V/m] -95.2=44.67-95.2=-50.53dBm the limit is -27dBm/MHz

802.11N40



Band Edge, Left Side (Peak) - 802.11N40

Note: F1 is frequency 5150MHz



Band Edge, Right Side (Peak) - 802.11N40

Note: F1 is frequency 5250MHz

F2 is frequency 5350MHz

Remark: According to KDB 789033 D02 section H) d) (iii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

EIRP[dBm] = E[dBµ V/m] - 95.2

E[dBµ V/m]=42.68 dBµ V/m,

EIRP[dBm] = E[dBµ V/m] -95.2=42.68-95.2=-52.52dBm the limit is -27dBm/MHz

E[dBµ V/m]=45.08 dBµ V/m,

EIRP[dBm] = E[dBµ V/m] -95.2=45.08-95.2=-50.12dBm the limit is -27dBm/MHz

6.3 Radiated Emissions & Restricted Band

Temperature	25℃
Relative Humidity	53%
Atmospheric Pressure	1020mbar
Test date :	May 20, 2016
Tested By :	Winnie Zhang

1. All possible modes of operation were investigated. Only the 6 worst case emissions measured, using the correct CISPR detectors, are reported. All other emissions were relatively insignificant.
2. A "-ve" margin indicates a PASS as it refers to the margin present below the limit line at the particular frequency.
3. Radiated Emissions Measurement Uncertainty
   All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 1GHz & 1GHz above (3m & 10m) is +/-6dB.

Requirement: §15.407(b) specifies that emissions which fall in the restricted bands, as defined in **§15.205(a)**, must comply with the radiated emission limits specified in **§15.209(a)**.

Procedures:

Radiated Spurious Emissions Measurement

An additional consideration when performing conducted measurements of restricted band emissions is that unwanted emissions radiating from the EUT cabinet, control circuits, power leads, or intermediate circuit elements will likely go undetected in a conducted measurement configuration. To address this concern, a radiated test shall be performed to ensure that emissions emanating from the EUT cabinet (rather than the antenna port) also comply with the applicable limits.

For these radiated spurious emission measurements the EUT transmit antenna may be replaced with a termination matching the nominal impedance of the antenna. Established procedures for performing radiated measurements shall be used (see C63.10). All detected emissions must comply with the applicable limits.

Measurement Detectors

§15.35(a) specifies that on frequencies less than and below 1000 MHz, the radiated emissions limits assume the use of a CISPR quasi-peak detector function and related measurement bandwidths. **§15.35(b)** specifies that on frequencies above 1000 MHz, the radiated emissions limits assume the use of an average detector and a minimum resolution bandwidth of 1 MHz. In addition, **§15.35(b)** that when average radiated emissions measurements are specified there is also a limit on the peak emissions level which is 20 dB above the applicable maximum permitted average emission limit. These specifications also apply to conducted emissions measurements.

1. CISPR Quasi-Peak Measurement

The specifications for the measuring instrument using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Frequency Interference (CISPR) of the International Electrotechnical Commission.

As an alternative to CISPR quasi-peak measurement, compliance can be demonstrated to the applicable emission limits using a peak detector.

2. Peak Power Measurement Procedure

Utilize the peak power measurement procedure specified in Section 8.1.1 with the following modifications:

Set analyzer center frequency to the frequency associated with the restricted band emission under examination.

Set RBW = 1 MHz.

Note that if the peak measured value complies with the average limit, it is not necessary to perform a separate average measurement. If this option is exercised, it should be so noted in the test report.

3. Average Power Measurement Procedures

The average restricted band emission levels must be measured with the EUT transmitting continuously (≥ 98% duty cycle) at its maximum power control level. Optionally, video triggering/signal gating can be used to ensure that measurements are performed only when the EUT is transmitting at its maximum power control level.

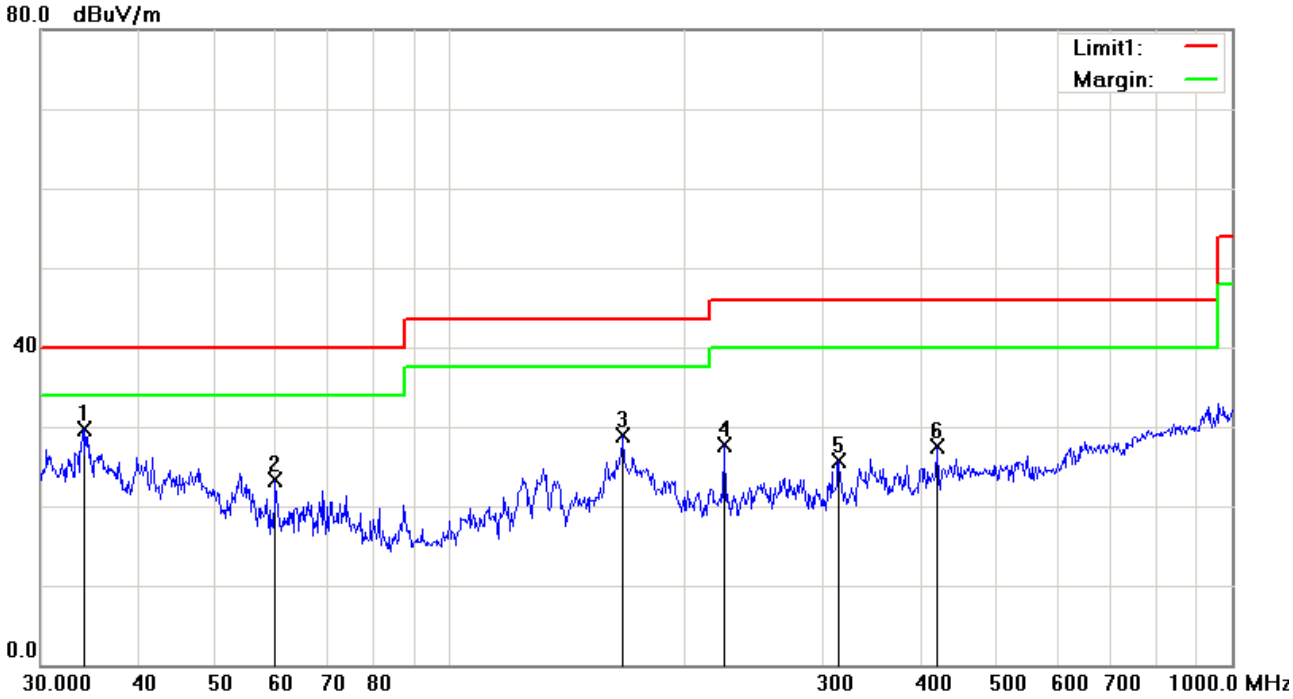
The average power measurement procedures described in Section 8.2 shall be used with the following modifications:
Set analyzer center frequency to the frequency associated with the restricted band emission.
Set span to at least 1 MHz.
Use peak marker function to determine the highest amplitude within the RBW (1 MHz).

Test Data ☑ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☑ N/A

Test Mode:	Transmitting Mode

Below 1GHz

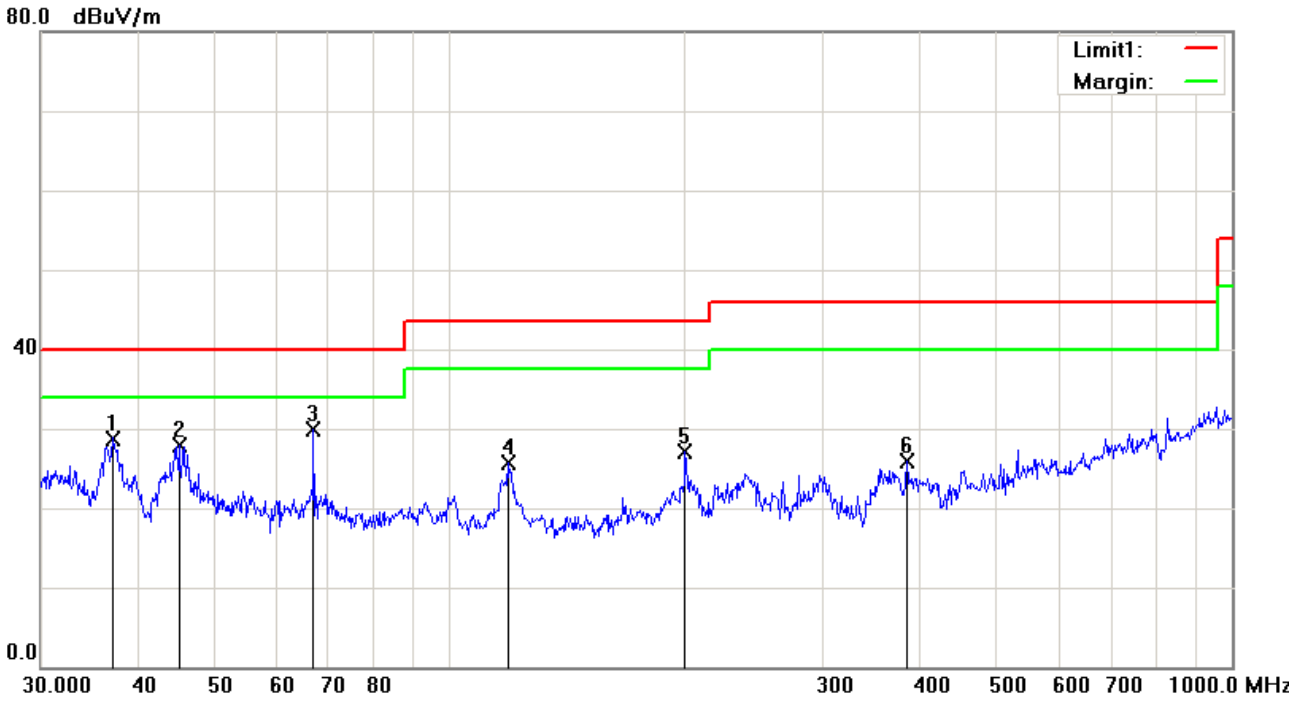


Test Data

Horizontal Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)
1	H	34.0365	33.02	peak	-3.24	29.78	40.00	-10.22	100	138
2	H	59.8588	37.55	peak	-14.34	23.21	40.00	-16.79	100	181
3	H	166.6514	37.74	peak	-8.82	28.92	43.50	-14.58	100	229
4	H	224.5193	36.70	peak	-8.96	27.74	46.00	-18.26	100	145
5	H	314.3765	32.23	peak	-6.49	25.74	46.00	-20.26	100	30
6	H	419.1081	31.27	peak	-3.83	27.44	46.00	-18.56	100	128

Below 1GHz



Test Data

Vertical Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)
1	V	37.1550	34.25	peak	-5.51	28.74	40.00	-11.26	100	149
2	V	45.0583	38.80	peak	-10.97	27.83	40.00	-12.17	100	230
3	V	66.9669	43.75	peak	-13.82	29.93	40.00	-10.07	100	157
4	V	118.6014	33.32	peak	-7.54	25.78	43.50	-17.72	100	241
5	V	199.9856	35.87	peak	-8.74	27.13	43.50	-16.37	100	167
6	V	383.9318	30.59	peak	-4.67	25.92	46.00	-20.08	100	192

Test Mode:	Transmitting Mode

Above 1GHz

Low Channel (5180 MHz)(a mode worst case)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10360	32.49	AV	V	39.86	10.25	32.51	50.09	54	-3.91
10360	32.24	AV	H	39.86	10.25	32.51	49.84	54	-4.16
10360	45.53	PK	V	39.86	10.25	32.51	63.13	74	-10.87
10360	46.18	PK	H	39.86	10.25	32.51	63.78	74	-10.22
17853	27.36	AV	V	40.93	12.67	31.28	49.68	54	-4.32
17853	27.25	AV	H	40.93	12.67	31.28	49.57	54	-4.43
17853	44.19	PK	V	40.93	12.67	31.28	66.51	74	-7.49
17853	44.53	PK	H	40.93	12.67	31.28	66.85	74	-7.15

Middle Channel (5200 MHz) (a mode worst case)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10400	32.61	AV	V	39.86	10.25	32.51	50.21	54	-3.79
10400	32.18	AV	H	39.86	10.25	32.51	49.78	54	-4.22
10400	45.35	PK	V	39.86	10.25	32.51	62.95	74	-11.05
10400	46.02	PK	H	39.86	10.25	32.51	63.62	74	-10.38
17829	27.51	AV	V	40.73	12.55	31.38	49.41	54	-4.59
17829	27.38	AV	H	40.73	12.55	31.38	49.28	54	-4.72
17829	44.35	PK	V	40.73	12.55	31.38	66.25	74	-7.75
17829	44.22	PK	H	40.73	12.55	31.38	66.12	74	-7.88

High Channel (5240 MHz) (a mode worst case)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10480	32.37	AV	V	39.86	10.25	32.51	49.97	54	-4.03
10480	32.05	AV	H	39.86	10.25	32.51	49.65	54	-4.35
10480	45.21	PK	V	39.86	10.25	32.51	62.81	74	-11.19
10480	45.63	PK	H	39.86	10.25	32.51	63.23	74	-10.77
17835	27.59	AV	V	40.76	12.52	31.29	49.58	54	-4.42
17835	27.42	AV	H	40.76	12.52	31.29	49.41	54	-4.59
17835	44.35	PK	V	40.76	12.52	31.29	66.34	74	-7.66
17835	44.19	PK	H	40.76	12.52	31.29	66.18	74	-7.82

Note:

*1, The testing has been conformed to 10*5240MHz=52,400MHz*
2, All other emissions more than 30 dB below the limit
3, X-Axis, Y-Axis and –Axis were investigated. The results above show only the worst case.
4.All modes (a,no20,no40) were investigated. The results above show only the worst case.

Annex A. TEST INSTRUMENT

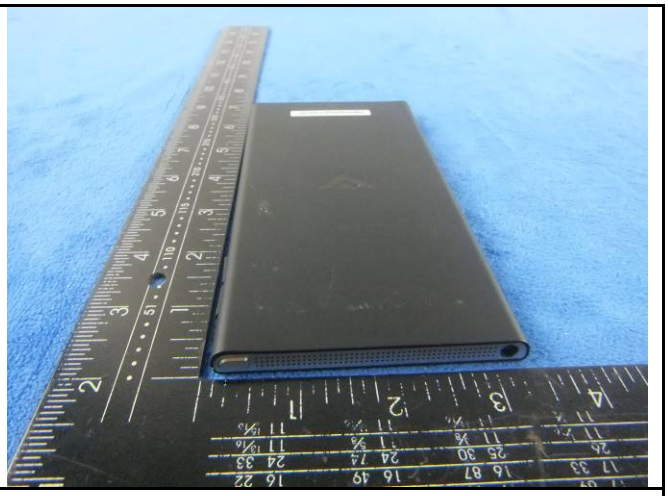
Instrument	Model	Serial #	Cal Date	Cal Due	In use
AC Line Conducted					
EMI test receiver	ESCS30	8471241027	09/17/2015	09/16/2016	☐
Line Impedance	LI-125A	191106	09/25/2015	09/24/2016	☐
Line Impedance	LI-125A	191107	09/25/2015	09/24/2016	☐
LISN	ISN T800	34373	09/25/2015	09/24/2016	☐
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71283	09/24/2015	09/23/2016	☐
Transient Limiter	LIT-153	531118	09/01/2015	08/31/2016	☐
RF conducted test					
Agilent ESA-E SERIES	E4407B	MY45108319	09/17/2015	09/16/2016	☐
Power Splitter	1#	1#	09/01/2015	08/31/2016	☐
DC Power Supply	E3640A	MY40004013	09/17/2015	09/16/2016	☐
Radiated Emissions					
EMI test receiver	ESL6	100262	09/17/2015	09/16/2016	☑
Positioning Controller	UC3000	MF780208282	11/19/2015	11/18/2016	☑
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	09/01/2015	08/31/2016	☑
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/24/2016	03/23/2017	☑
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/21/2015	09/20/2016	☑
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71283	09/24/2015	09/23/2016	☑
Universal Radio Communication Tester	CMU200	121393	09/25/2015	09/24/2016	☑

Annex B. EUT and Test Setup Photographs

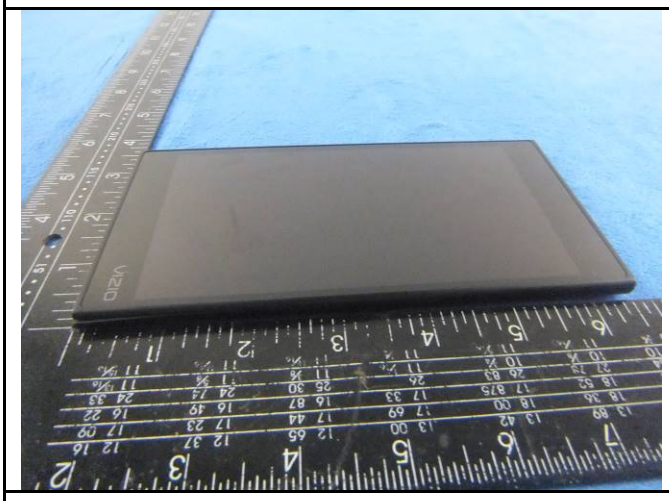
Annex B.i. Photograph: EUT External Photo

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Whole Package View</td><td>Adapter - Front View</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>EUT - Front View</td><td>EUT - Rear View</td></tr>
</table>

EUT - Top View



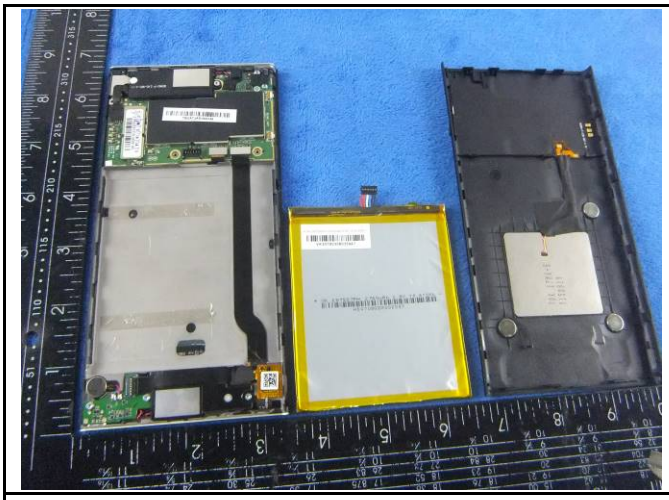
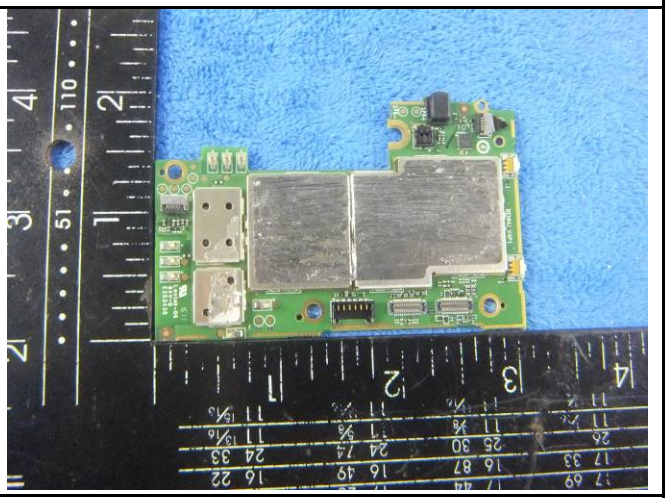
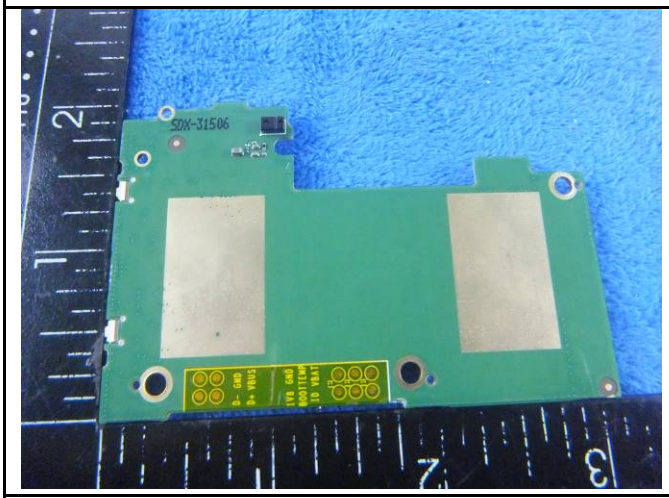
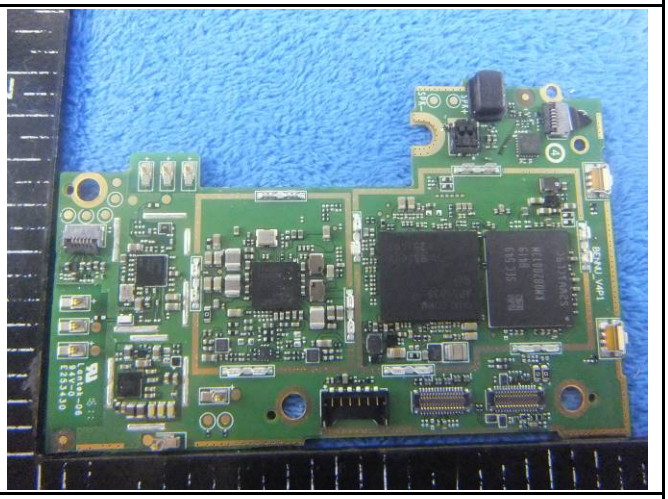
EUT - Bottom View

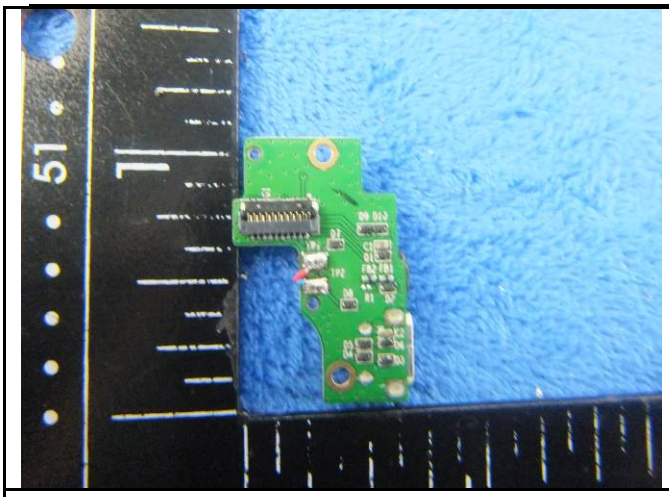


EUT - Left View

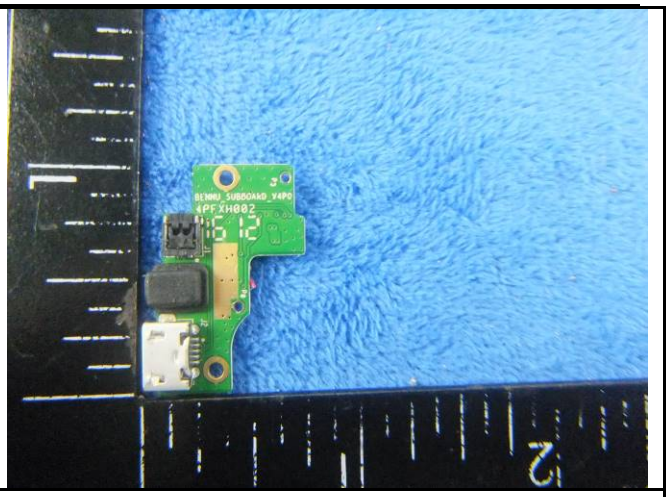
EUT - Right View

Annex B.ii. Photograph: EUT Internal Photo

	
Cover Off - Top View 1	Battery - Front View
	
Battery - Rear View	Mainboard with Shielding - Front View
	
Mainboard - Rear View	Mainbard without Shielding - Front View



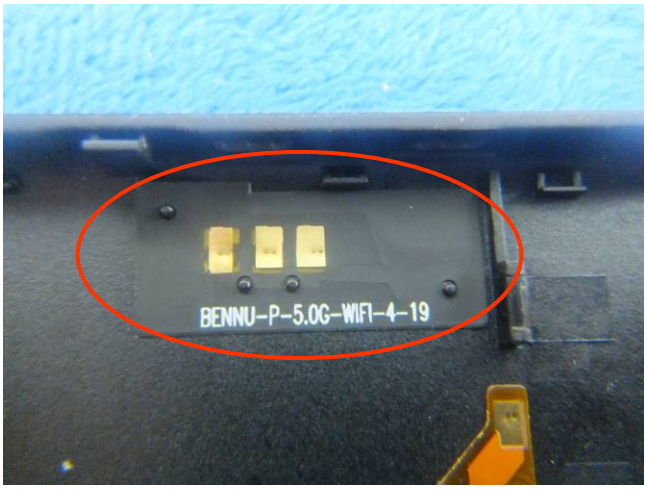
Sub Mainbard - Front View



Sub Mainbard – Rear View

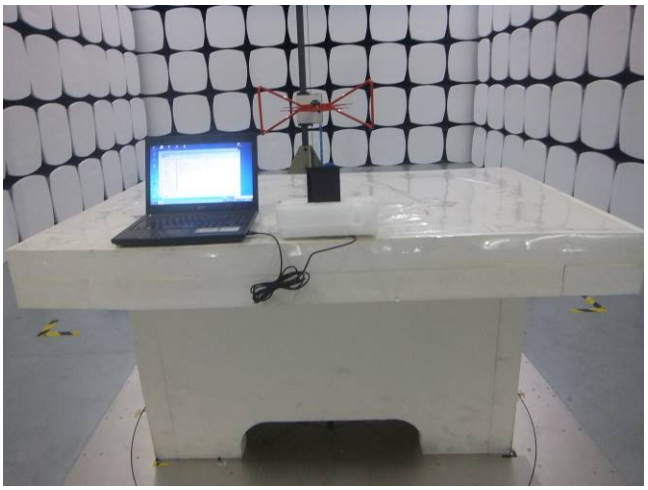
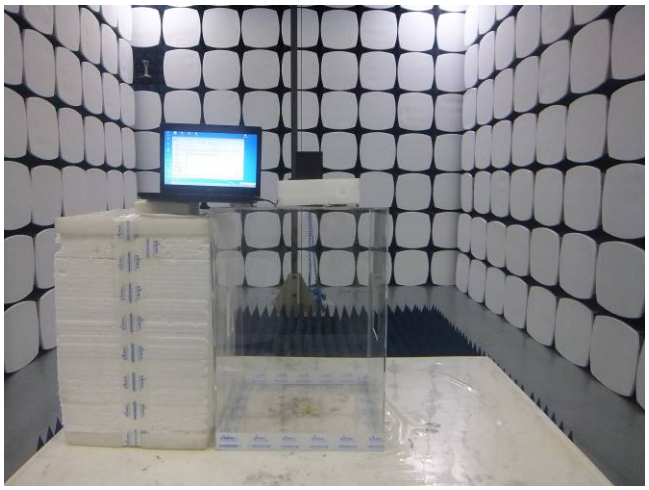
LCD – Front View

LCD – Rear View



WIFI/BT - Antenna View

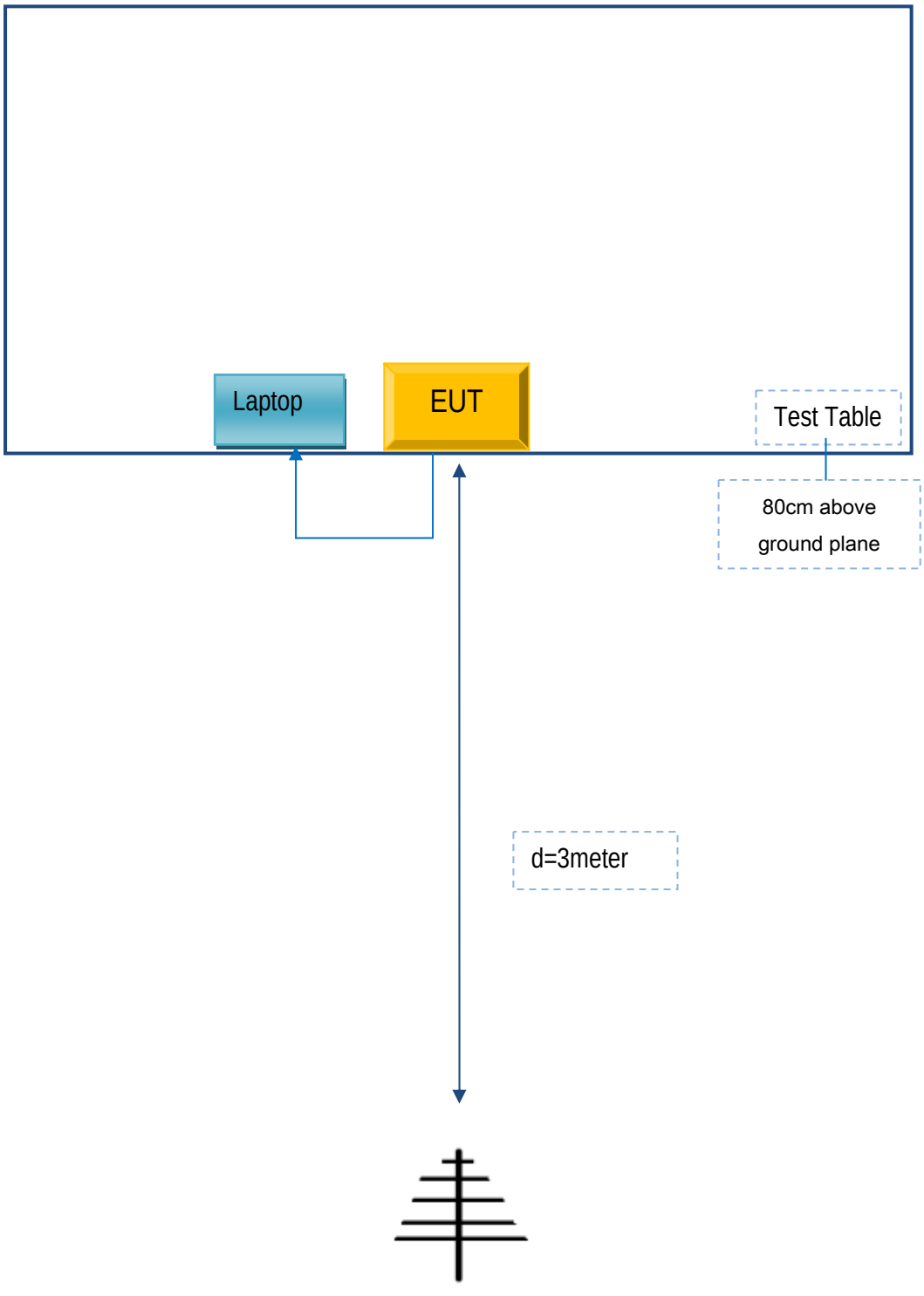
Annex B.iii. Photograph: Test Setup Photo

	
Radiated Spurious Emissions Test Setup Below 1GHz	Radiated Spurious Emissions Test Setup Above 1GHz

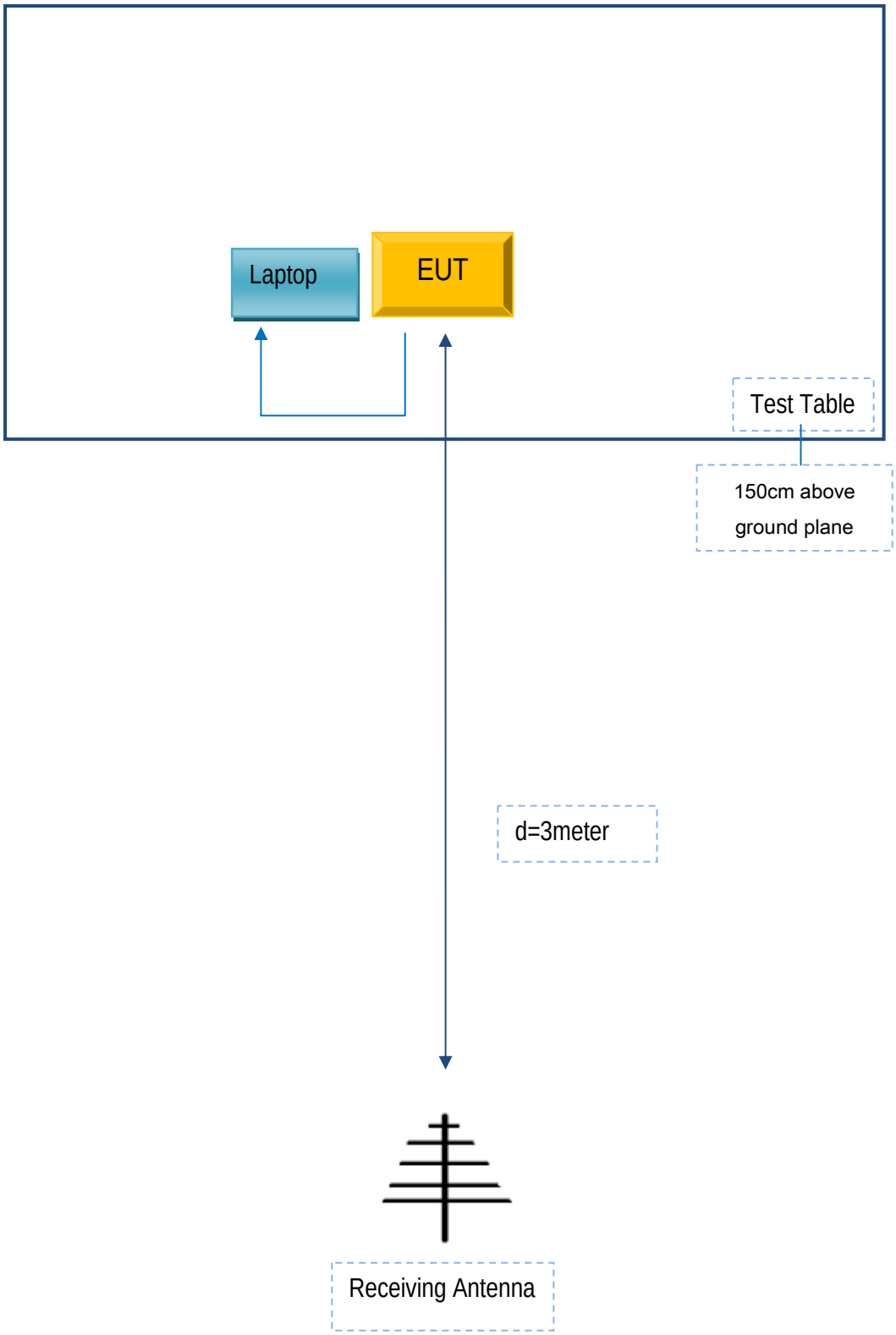
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

Block Configuration Diagram for Radiated Emissions (Below 1GHz) .



Block Configuration Diagram for Radiated Emissions （Above 1GHz）.



Annex C. il. SUPPORTING EQUIPMENT DESCRIPTION

The following is a description of supporting equipment and details of cables used with the EUT.

Supporting Equipment:

Manufacturer	Equipment Description	Model	Serial No
Lenovo	Lenovo Laptop	E40	LR-1EHRX
Borqs BeiJing Ltd.	Adapter	ASUC41a-050120	A15302

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
USB Cable	Un-shielding	No	0.8m	P010253

Annex D. User Manual / Block Diagram / Schematics / Partlist

N/A

Annex E. DECLARATION OF SIMILARITY

Borqs BeiJing Ltd.

FCC Class II Permissive Change Request Letter

Date: 2016-05-26

To FCC:

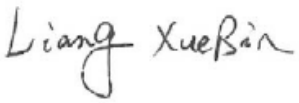
RE: FCC Permissive II Change Request for Company: Borqs BeiJing Ltd. **FCC ID:** 2ABDK-XR6

We are submitting an application for a class II permissive change to the FCC approval of the Company name: Borqs BeiJing Ltd., product description: 6" Tablet Remote (FCC: 2ABDK-XR6, Original Grant Date: 2015-03-13). The transmitter module itself has not changed. Here are the changes:

Change the antenna

Sincerely,

Signature



name / title : xuebin Liang / QA directo
information / address: Tower A, Building B23, Universal
Business Park, No. 10 Jiuxianqiao Road, Chaoyang District Beijing, 100015 China