

EMC TEST REPORT



Report No.: 15070823-FCC-E

Supersede Report No.:N/A

Applicant	NEG TECHNOLOGY CO., LIMITED	
Product Name	Mobile Phone	
Model No.	F1009D	
Serial No.	N/A	
Test Standard	FCC Part 15 Subpart B Class B:2014, ANSI C63.4: 2014	
Test Date	September 10 to September 24, 2015	
Issue Date	September 29, 2015	
Test Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Equipment complied with the specification <input checked="" type="checkbox"/>		
Equipment did not comply with the specification <input type="checkbox"/>		
Winnie Zhang	David Huang	
Winnie Zhang Test Engineer	David Huang Checked By	
This test report may be reproduced in full only		
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

Phone: +86 0755 2601 4629801 Email: China@siemic.com.cn

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

Test Report	15070823-FCC-E
Page	3 of 29

This page has been left blank intentionally.

CONTENTS

1. REPORT REVISION HISTORY	5
2. CUSTOMER INFORMATION	5
3. TEST SITE INFORMATION.....	5
4. EQUIPMENT UNDER TEST (EUT) INFORMATION	6
5. TEST SUMMARY	8
6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS	9
6.1 AC POWER LINE CONDUCTED EMISSIONS.....	9
6.2 RADIATED EMISSIONS.....	15
ANNEX A. TEST INSTRUMENT.....	19
ANNEX B. EUT AND TEST SETUP PHOTOGRAPHS.....	20
ANNEX C. TEST SETUP AND SUPPORTING EQUIPMENT.....	25
ANNEX D. USER MANUAL / BLOCK DIAGRAM / SCHEMATICS / PARTLIST	28
ANNEX E. DECLARATION OF SIMILARITY	29

1. Report Revision History

Report No.	Report Version	Description	Issue Date
15070823-FCC-E	NONE	Original	September 29, 2015

2. Customer information

Applicant Name	NEG TECHNOLOGY CO., LIMITED
Applicant Add	Rm 1406, Block B, Jinsejiari, Jingtian south road, Futian district, Shenzhen, China
Manufacturer	NEG TECHNOLOGY CO., LIMITED
Manufacturer Add	Rm 1406, Block B, Jinsejiari, Jingtian south road, Futian district, Shenzhen, 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:	Mobile Phone
Main Model:	F1009D
Serial Model:	N/A
Antenna Gain:	GSM850:0.3dBi PCS1900:0.35dBi Bluetooth:0.1dBi
Input Power:	AC Adapter: Model:F1009D Input: AC 100-240V; 50/60Hz;150mA Output: DC5.0V; 500mA
	Battery: Model:F1009D Bateria Li-on:2.59Wh Voltaje de carga limite:4.2V Capacidad de bateria:700mAh
Trade Name :	OWN
FCC ID:	2AAZ8-F1009D
Date EUT received:	September 09, 2015
Equipment Category :	JBP
Type of Modulation:	GSM / GPRS: GMSK Bluetooth: GFSK, π /4DQPSK, 8DPSK
RF Operating Frequency (ies):	GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz Bluetooth: 2402-2480 MHz

Test Report	15070823-FCC-E
Page	7 of 29

GSM 850: 124CH

Number of Channels: PCS1900: 299CH

Bluetooth: 79CH

Port: Power Port, Earphone Port, USB Port

GPRS Multi-slot class 8/10/12

5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

FCC Rules	Description of Test	Result
§15.107; ANSI C63.4: 2014	AC Power Line Conducted Emissions	Compliance
§15.109; ANSI C63.4: 2014	Radiated Emissions	Compliance

Measurement Uncertainty

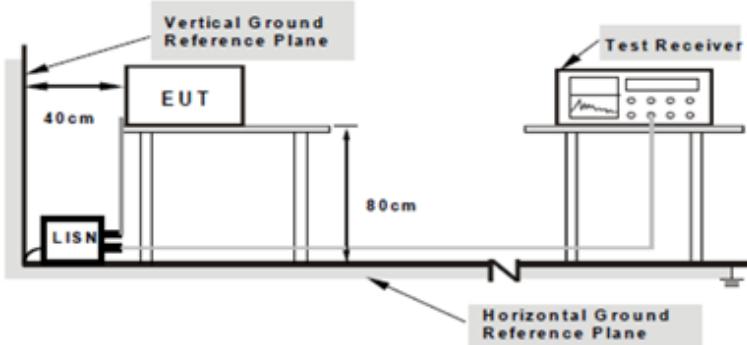
Emissions		
Test Item	Description	Uncertainty
Band Edge and Radiated Spurious Emissions	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
-	-	-

6. Measurements, Examination And Derived Results

6.1 AC Power Line Conducted Emissions

Temperature	22°C
Relative Humidity	59%
Atmospheric Pressure	1017mbar
Test date :	September 17, 2015
Tested By :	Winnie Zhang

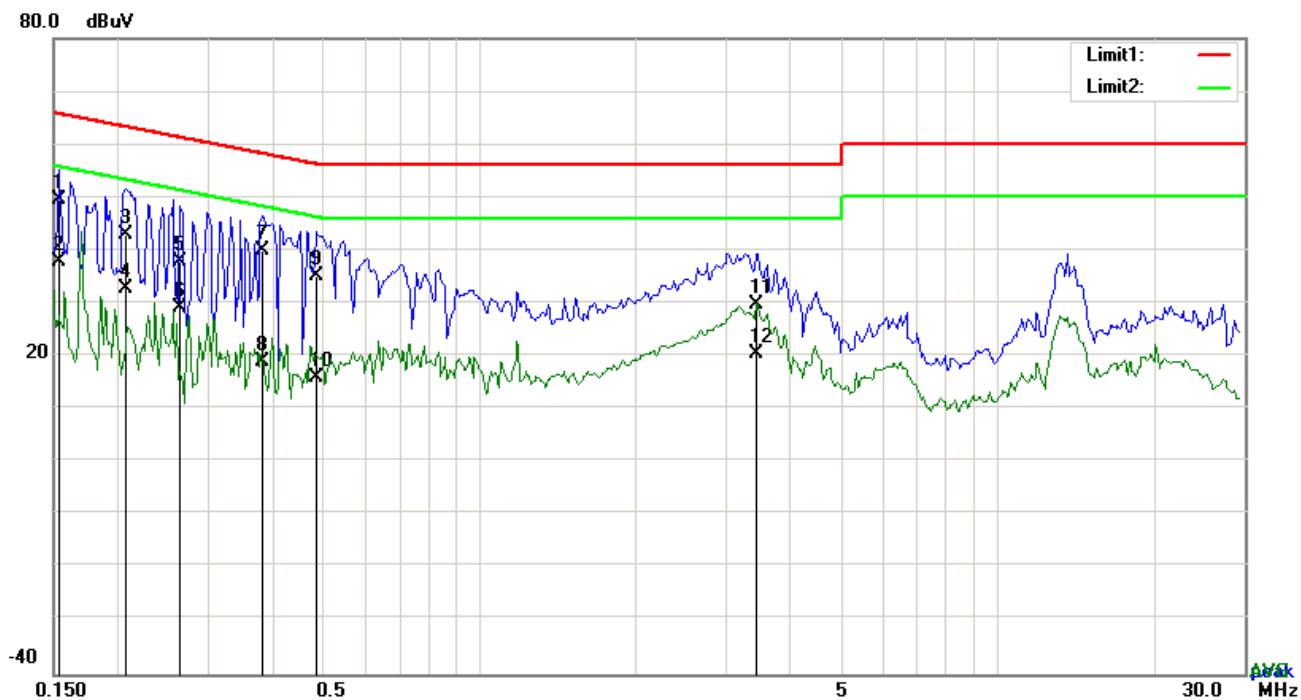
Requirement(s):

Spec	Item	Requirement	Applicable														
47CFR§15. 107	a)	<p>For Low-power radio-frequency devices that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 [mu] H/50 ohms line impedance stabilization network (LISN). The lower limit applies at the boundary between the frequencies ranges.</p> <table border="1"> <thead> <tr> <th rowspan="2">Frequency ranges (MHz)</th> <th colspan="2">Limit (dBμV)</th> </tr> <tr> <th>QP</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>0.15 ~ 0.5</td> <td>66 – 56</td> <td>56 – 46</td> </tr> <tr> <td>0.5 ~ 5</td> <td>56</td> <td>46</td> </tr> <tr> <td>5 ~ 30</td> <td>60</td> <td>50</td> </tr> </tbody> </table>	Frequency ranges (MHz)	Limit (dB μ V)		QP	Average	0.15 ~ 0.5	66 – 56	56 – 46	0.5 ~ 5	56	46	5 ~ 30	60	50	<input checked="" type="checkbox"/>
Frequency ranges (MHz)	Limit (dB μ V)																
	QP	Average															
0.15 ~ 0.5	66 – 56	56 – 46															
0.5 ~ 5	56	46															
5 ~ 30	60	50															
Test Setup	 <p>The diagram illustrates the test setup. An EUT (Equipment Under Test) is placed on a table. A LISN (Line Impedance Stabilization Network) is connected between the EUT and the power source. A Test Receiver is connected to the LISN. The setup is positioned on a horizontal ground reference plane. The distance between the LISN and the EUT is 40 cm, and the distance between the LISN and the Test Receiver is 80 cm. A vertical ground reference plane is also indicated.</p> <p>Note: 1. Support units were connected to second LISN. 2. Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.</p>																
Procedure	<ol style="list-style-type: none"> The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table. The power supply for the EUT was fed through a 50Ω /50mH EUT LISN, connected to filtered mains. 																

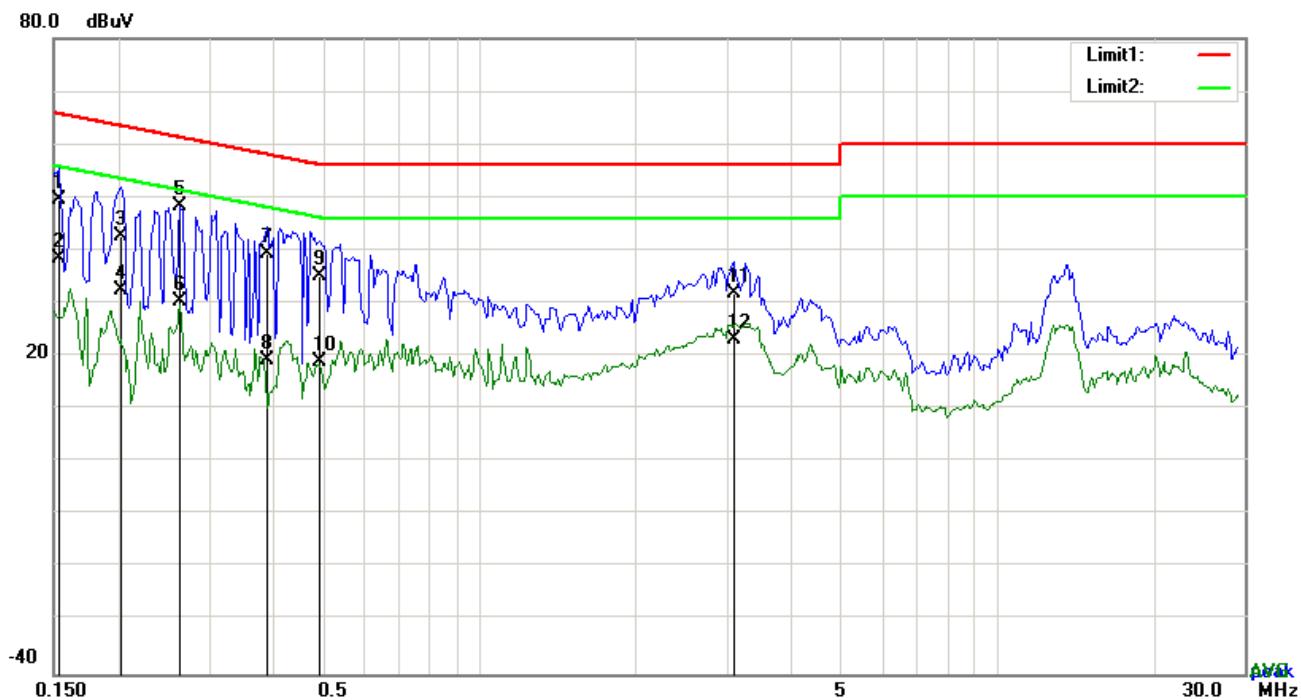
	<ol style="list-style-type: none"> 3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable. 4. All other supporting equipment were powered separately from another main supply. 5. The EUT was switched on and allowed to warm up to its normal operating condition. 6. A scan was made on the NEUTRAL line (for AC mains) or Earth line (for DC power) over the required frequency range using an EMI test receiver. 7. High peaks, relative to the limit line, The EMI test receiver was then tuned to the selected frequencies and the necessary measurements made with a receiver bandwidth setting of 10 kHz. 8. Step 7 was then repeated for the LIVE line (for AC mains) or DC line (for DC power).
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data Yes N/A

Test Plot Yes (See below) N/A

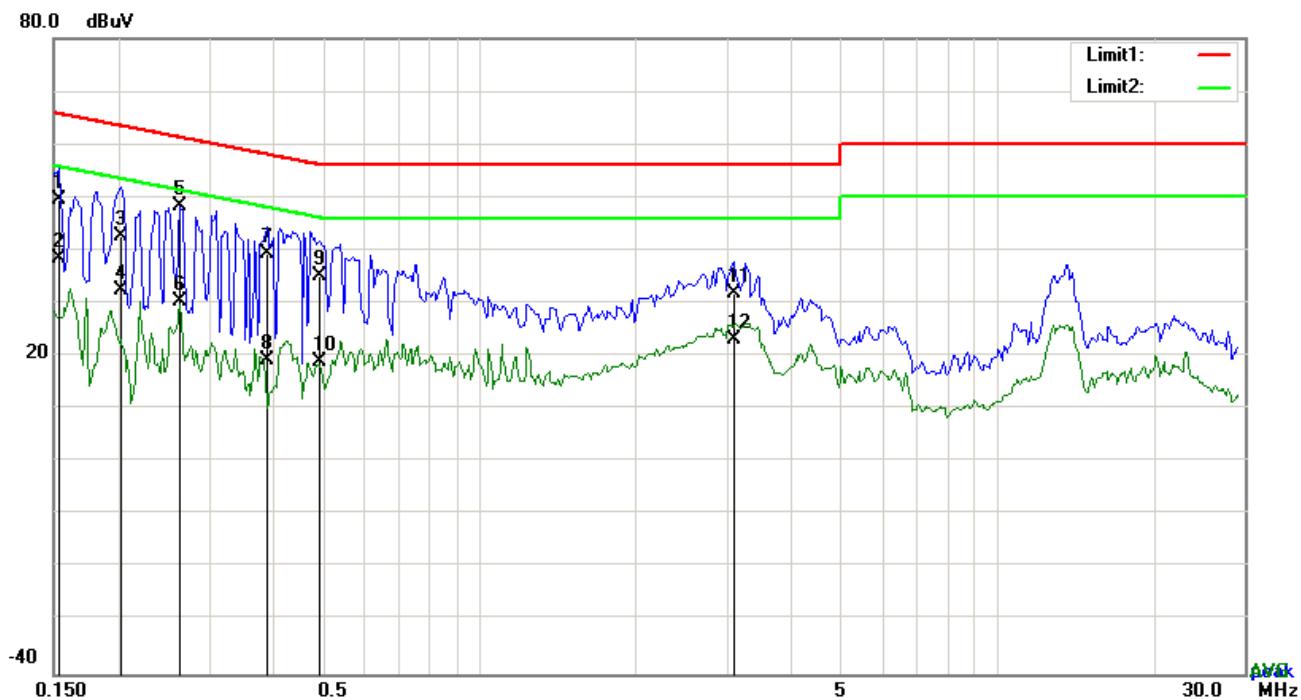
Test Mode 1 : USB Mode

Test Data
Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	L1	0.1539	39.39	QP	10.03	49.42	65.79	-16.37
2	L1	0.1539	27.69	AVG	10.03	37.72	55.79	-18.07
3	L1	0.2072	32.78	QP	10.03	42.81	63.32	-20.51
4	L1	0.2072	22.84	AVG	10.03	32.87	53.32	-20.45
5	L1	0.2631	27.92	QP	10.03	37.95	61.33	-23.38
6	L1	0.2631	19.16	AVG	10.03	29.19	51.33	-22.14
7	L1	0.3801	30.00	QP	10.03	40.03	58.28	-18.25
8	L1	0.3801	9.06	AVG	10.03	19.09	48.28	-29.19
9	L1	0.4815	25.27	QP	10.03	35.30	56.31	-21.01
10	L1	0.4815	5.85	AVG	10.03	15.88	46.31	-30.43
11	L1	3.4329	19.54	QP	10.06	29.60	56.00	-26.40
12	L1	3.4329	10.42	AVG	10.06	20.48	46.00	-25.52

Test Mode : USB Mode

Test Data
Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	N	0.1539	39.46	QP	10.02	49.48	65.79	-16.31
2	N	0.1539	28.52	AVG	10.02	38.54	55.79	-17.25
3	N	0.2029	32.71	QP	10.02	42.73	63.49	-20.76
4	N	0.2029	22.41	AVG	10.02	32.43	53.49	-21.06
5	N	0.2631	38.45	QP	10.02	48.47	61.33	-12.86
6	N	0.2631	20.32	AVG	10.02	30.34	51.33	-20.99
7	N	0.3879	29.41	QP	10.02	39.43	58.11	-18.68
8	N	0.3879	9.13	AVG	10.02	19.15	48.11	-28.96
9	N	0.4893	25.24	QP	10.02	35.26	56.18	-20.92
10	N	0.4893	9.02	AVG	10.02	19.04	46.18	-27.14
11	N	3.0936	21.82	QP	10.05	31.87	56.00	-24.13
12	N	3.0936	13.19	AVG	10.05	23.24	46.00	-22.76

Test Mode : USB Mode

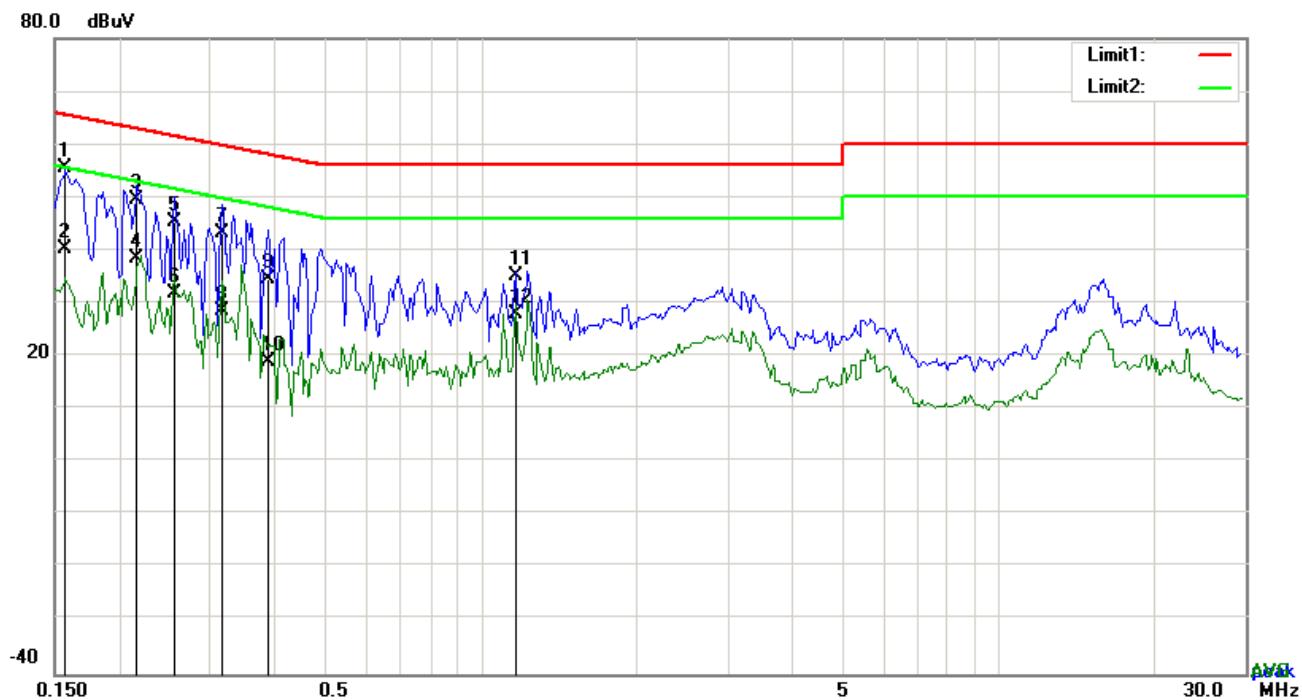


Test Data

Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	L1	0.1539	39.46	QP	10.02	49.48	65.79	-16.31
2	L1	0.1539	28.52	AVG	10.02	38.54	55.79	-17.25
3	L1	0.2029	32.71	QP	10.02	42.73	63.49	-20.76
4	L1	0.2029	22.41	AVG	10.02	32.43	53.49	-21.06
5	L1	0.2631	38.45	QP	10.02	48.47	61.33	-12.86
6	L1	0.2631	20.32	AVG	10.02	30.34	51.33	-20.99
7	L1	0.3879	29.41	QP	10.02	39.43	58.11	-18.68
8	L1	0.3879	9.13	AVG	10.02	19.15	48.11	-28.96
9	L1	0.4893	25.24	QP	10.02	35.26	56.18	-20.92
10	L1	0.4893	9.02	AVG	10.02	19.04	46.18	-27.14
11	L1	3.0936	21.82	QP	10.05	31.87	56.00	-24.13
12	L1	3.0936	13.19	AVG	10.05	23.24	46.00	-22.76

Test Mode : **USB Mode**



Test Data

Phase Neutral Plot at 240Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	N	0.1578	45.54	QP	10.02	55.56	65.58	-10.02
2	N	0.1578	30.35	AVG	10.02	40.37	55.58	-15.21
3	N	0.2163	39.68	QP	10.02	49.70	62.96	-13.26
4	N	0.2163	28.44	AVG	10.02	38.46	52.96	-14.50
5	N	0.2562	35.29	QP	10.02	45.31	61.55	-16.24
6	N	0.2562	21.70	AVG	10.02	31.72	51.55	-19.83
7	N	0.3177	33.17	QP	10.02	43.19	59.77	-16.58
8	N	0.3177	18.49	AVG	10.02	28.51	49.77	-21.26
9	N	0.3879	24.46	QP	10.02	34.48	58.11	-23.63
10	N	0.3879	8.88	AVG	10.02	18.90	48.11	-29.21
11	N	1.1679	25.00	QP	10.03	35.03	56.00	-20.97
12	N	1.1679	17.81	AVG	10.03	27.84	46.00	-18.16

6.2 Radiated Emissions

Temperature	22°C
Relative Humidity	59%
Atmospheric Pressure	1017mbar
Test date :	September 17, 2015
Tested By :	Winnie Zhang

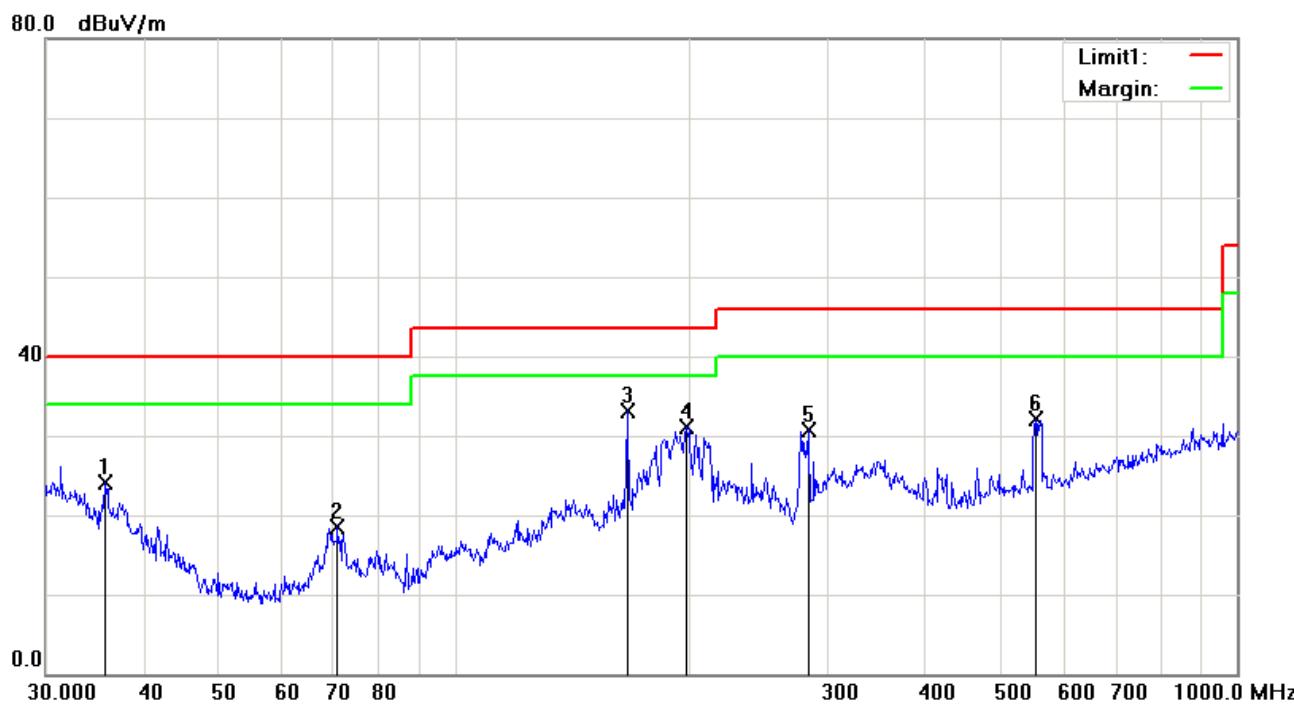
Requirement(s):

Spec	Item	Requirement	Applicable										
47CFR§15.109(d)	a)	<p>Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges</p> <table border="1"> <thead> <tr> <th>Frequency range (MHz)</th> <th>Field Strength (μV/m)</th> </tr> </thead> <tbody> <tr> <td>30 – 88</td> <td>100</td> </tr> <tr> <td>88 – 216</td> <td>150</td> </tr> <tr> <td>216 – 960</td> <td>200</td> </tr> <tr> <td>Above 960</td> <td>500</td> </tr> </tbody> </table>	Frequency range (MHz)	Field Strength (μ V/m)	30 – 88	100	88 – 216	150	216 – 960	200	Above 960	500	<input checked="" type="checkbox"/>
Frequency range (MHz)	Field Strength (μ V/m)												
30 – 88	100												
88 – 216	150												
216 – 960	200												
Above 960	500												
Test Setup		 <p>The diagram illustrates the test setup. A 'Turn Table' is positioned on a 'Ground Plane'. An 'EUT & Support Units' assembly is mounted on the turn table, with a vertical height of 80cm indicated. A 'Test Receiver' is connected to the turn table. A vertical 'Ant. Tower' is mounted on the turn table, with a height of 1-4m indicated as 'Variable'. A horizontal distance of 3m is marked between the EUT and the Ant. Tower.</p>											
Procedure		<ol style="list-style-type: none"> The EUT was switched on and allowed to warm up to its normal operating condition. The test was carried out at the selected frequency points obtained from the EUT characterization. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner: <ol style="list-style-type: none"> Vertical or horizontal polarization (whichever gave the higher emission level) 											

	<p>over a full rotation of the EUT) was chosen.</p> <p>b. The EUT was then rotated to the direction that gave the maximum emission.</p> <p>c. Finally, the antenna height was adjusted to the height that gave the maximum emission.</p> <p>3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasiy Peak detection at frequency below 1GHz.</p> <p>4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz with Peak detection for Peak measurement at frequency above 1GHz.</p> <p>The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth with Peak detection for Average Measurement as below at frequency above 1GHz.</p> <ul style="list-style-type: none"> ■ 1 kHz (Duty cycle < 98%) <input type="checkbox"/> 10 Hz (Duty cycle > 98%) <p>5. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.</p>
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data Yes N/A

Test Plot Yes (See below) N/A

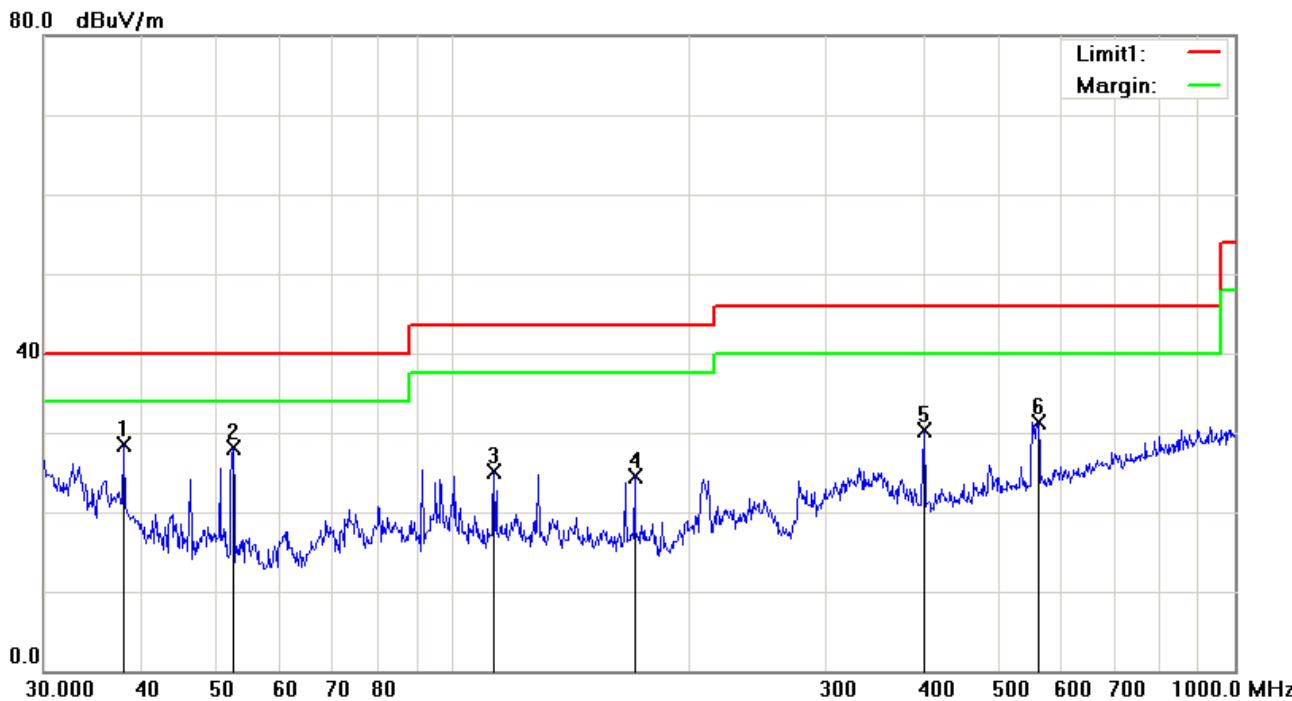
Test Mode 1: USB Mode
Below 1GHz

Test Data
Horizontal Polarity Plot @3m

No.	P/L	Frequency (MHz)	Reading (dBuV/ m)	Detector	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree
1	H	35.7491	28.54	peak	-4.49	24.05	40.00	-15.95	100	333
2	H	70.8315	32.05	peak	-13.62	18.43	40.00	-21.57	100	153
3	H	166.0680	41.87	peak	-8.78	33.09	43.50	-10.41	100	145
4	H	197.8928	39.97	peak	-8.85	31.12	43.50	-12.38	100	108
5	H	282.9852	38.36	peak	-7.68	30.68	46.00	-15.32	100	104
6	H	552.8833	32.87	peak	-0.77	32.10	46.00	-13.90	100	153

Above 1GHz

Note: The frequency that above 1GHz is mainly from the environment noise.

Below 1GHz



Test Data

Vertical Polarity Plot @3m

No.	P/L	Frequency (MHz)	Readin g (dBuV/ m)	Detector	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree
1	V	37.9450	34.60	peak	-6.09	28.51	40.00	-11.49	100	150
2	V	52.3913	41.61	peak	-13.46	28.15	40.00	-11.85	100	206
3	V	112.9196	33.54	peak	-8.52	25.02	43.50	-18.48	100	203
4	V	170.7926	33.63	peak	-9.16	24.47	43.50	-19.03	100	199
5	V	400.4319	34.68	peak	-4.29	30.39	46.00	-15.61	100	277
6	V	560.6928	32.03	peak	-0.64	31.39	46.00	-14.61	100	161

Above 1GHz

Note: The frequency that above 1GHz is mainly from the environment noise.

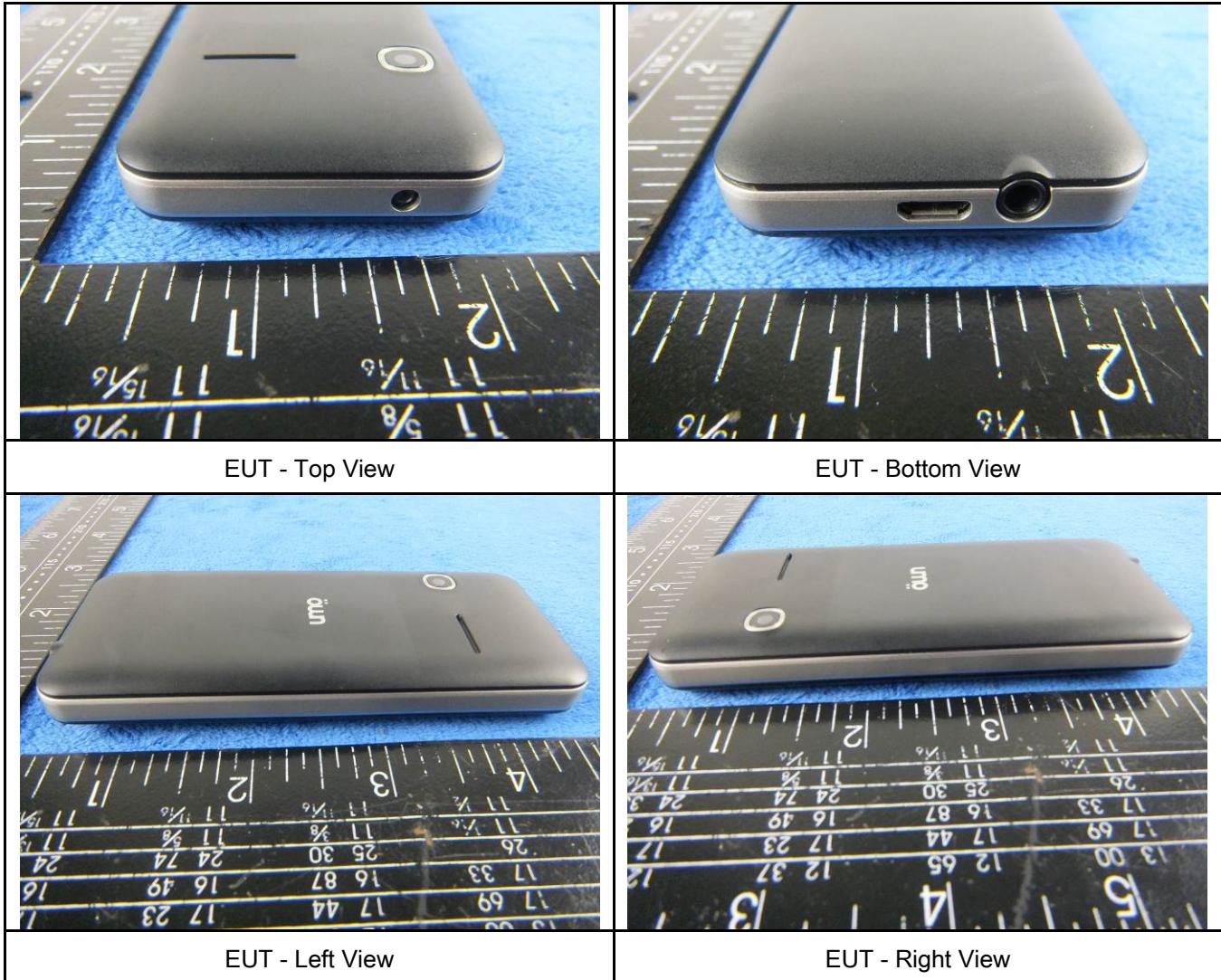
Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Due	In use
AC Line Conducted Emissions					
EMI test receiver	ESCS30	8471241027	09/18/2014	09/17/2015	<input checked="" type="checkbox"/>
Line Impedance Stabilization Network	LI-125A	191106	09/26/2014	09/25/2015	<input checked="" type="checkbox"/>
Line Impedance Stabilization Network	LI-125A	191107	09/26/2014	09/25/2015	<input checked="" type="checkbox"/>
LISN	ISN T800	34373	09/26/2014	09/25/2015	<input checked="" type="checkbox"/>
Transient Limiter	LIT-153	531118	09/01/2015	08/31/2016	<input checked="" type="checkbox"/>
Radiated Emissions					
EMI test receiver	ESL6	100262	09/18/2014	09/17/2015	<input checked="" type="checkbox"/>
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	09/01/2015	08/31/2016	<input checked="" type="checkbox"/>
Microwave Preamplifier (1~26.5GHz)	8449B	3008A02402	03/25/2015	03/24/2016	<input checked="" type="checkbox"/>
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/22/2014	09/21/2015	<input checked="" type="checkbox"/>
Double Ridge Horn Antenna	AH-118	71259	09/25/2014	09/24/2015	<input checked="" type="checkbox"/>

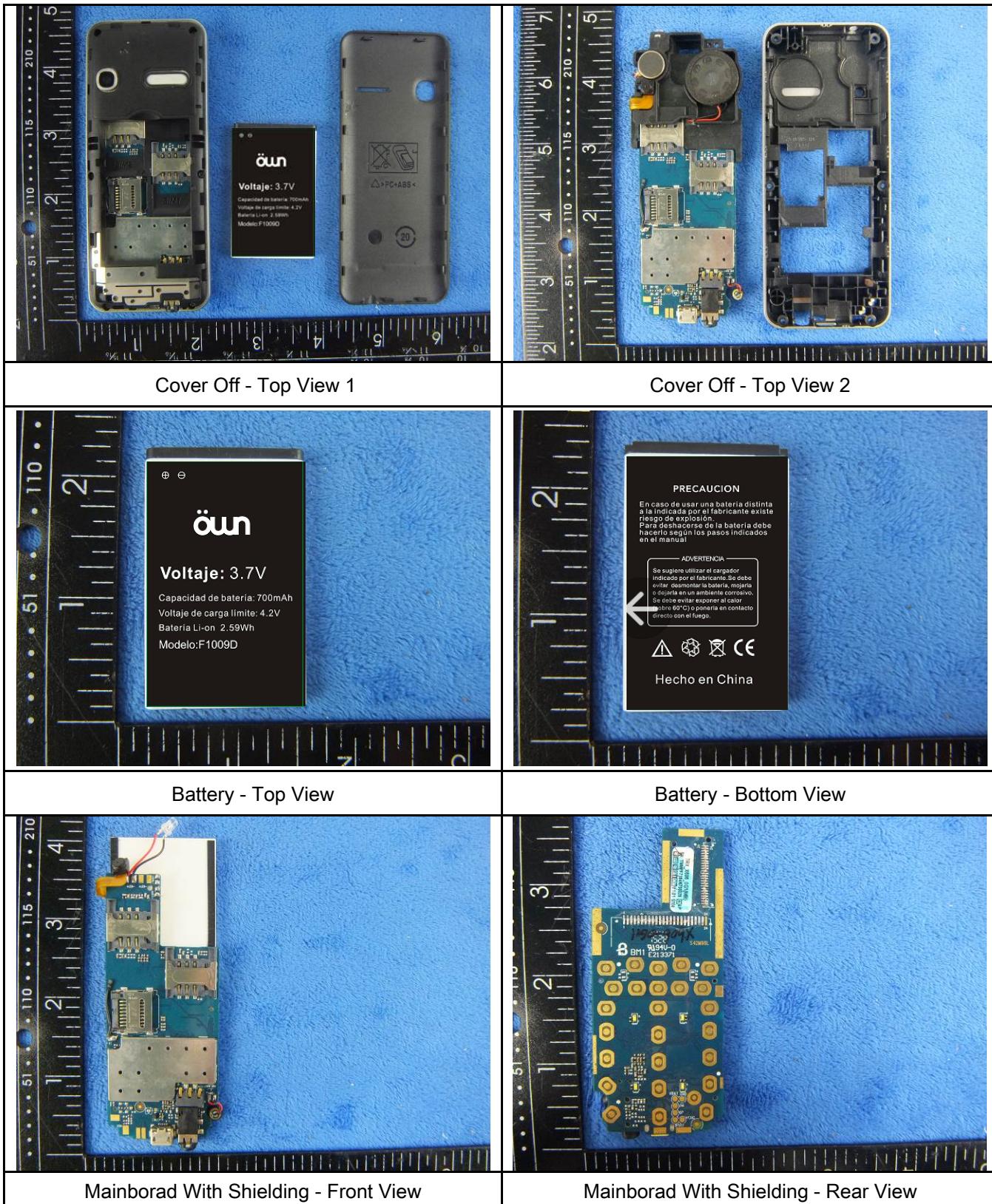
Annex B. EUT And Test Setup Photographs

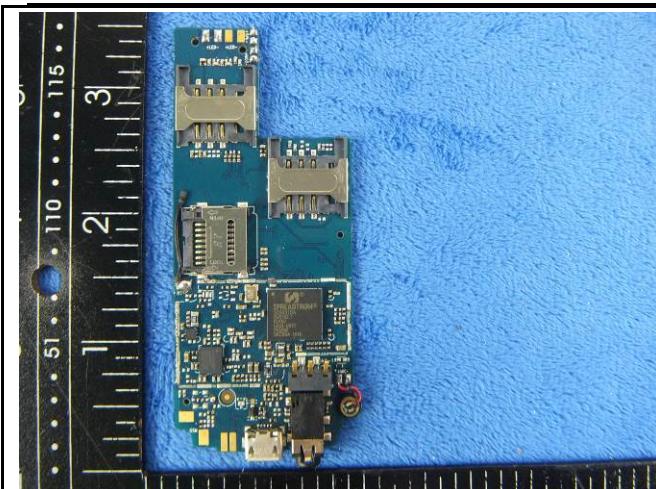
Annex B.i. Photograph: EUT External Photo



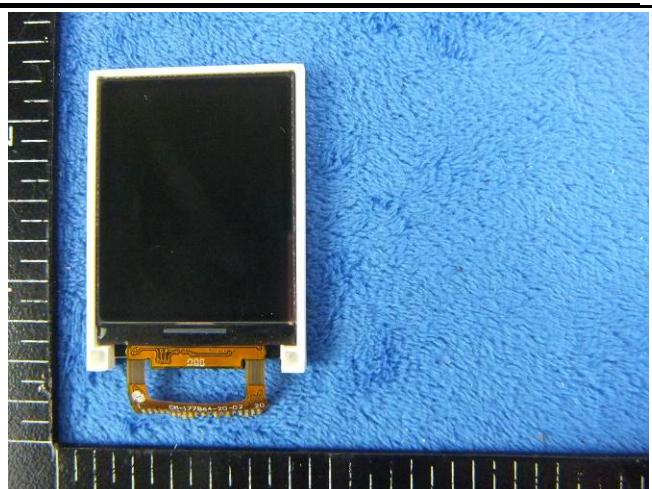


Annex B.ii. Photograph: EUT Internal Photo

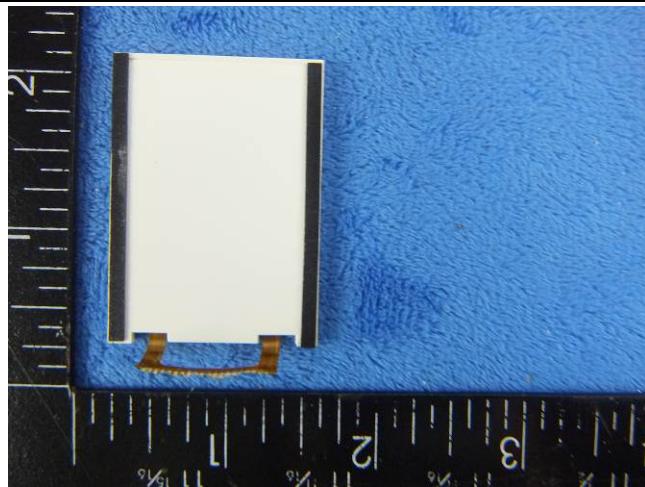




Mainborad Without Shielding - Front View



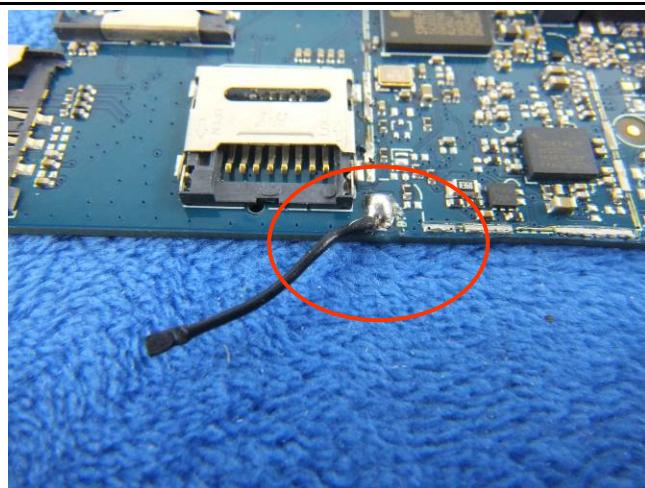
LCD – Front View



LCD – Rear View

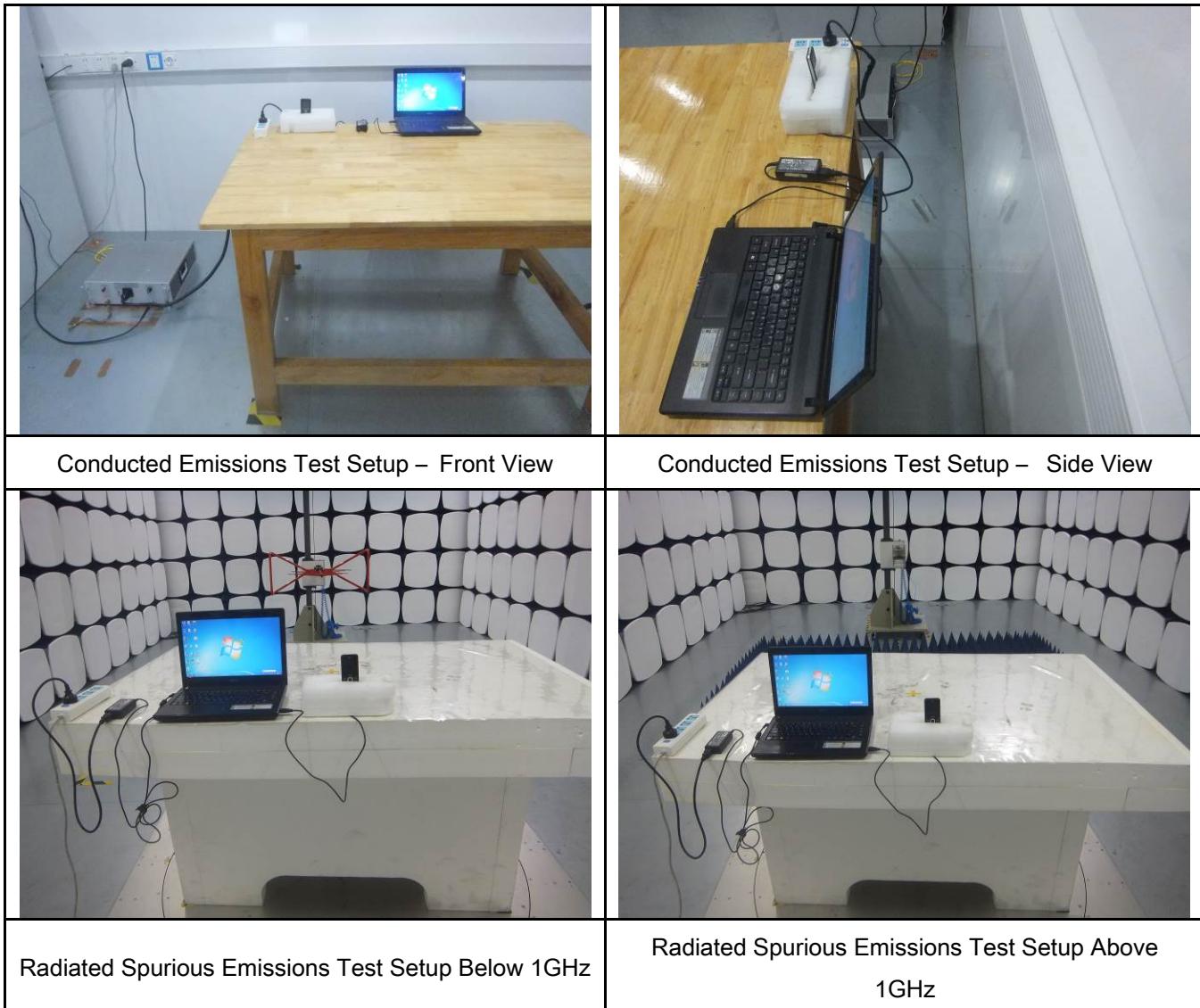


GSM/PCS Antenna View



BT - Antenna View

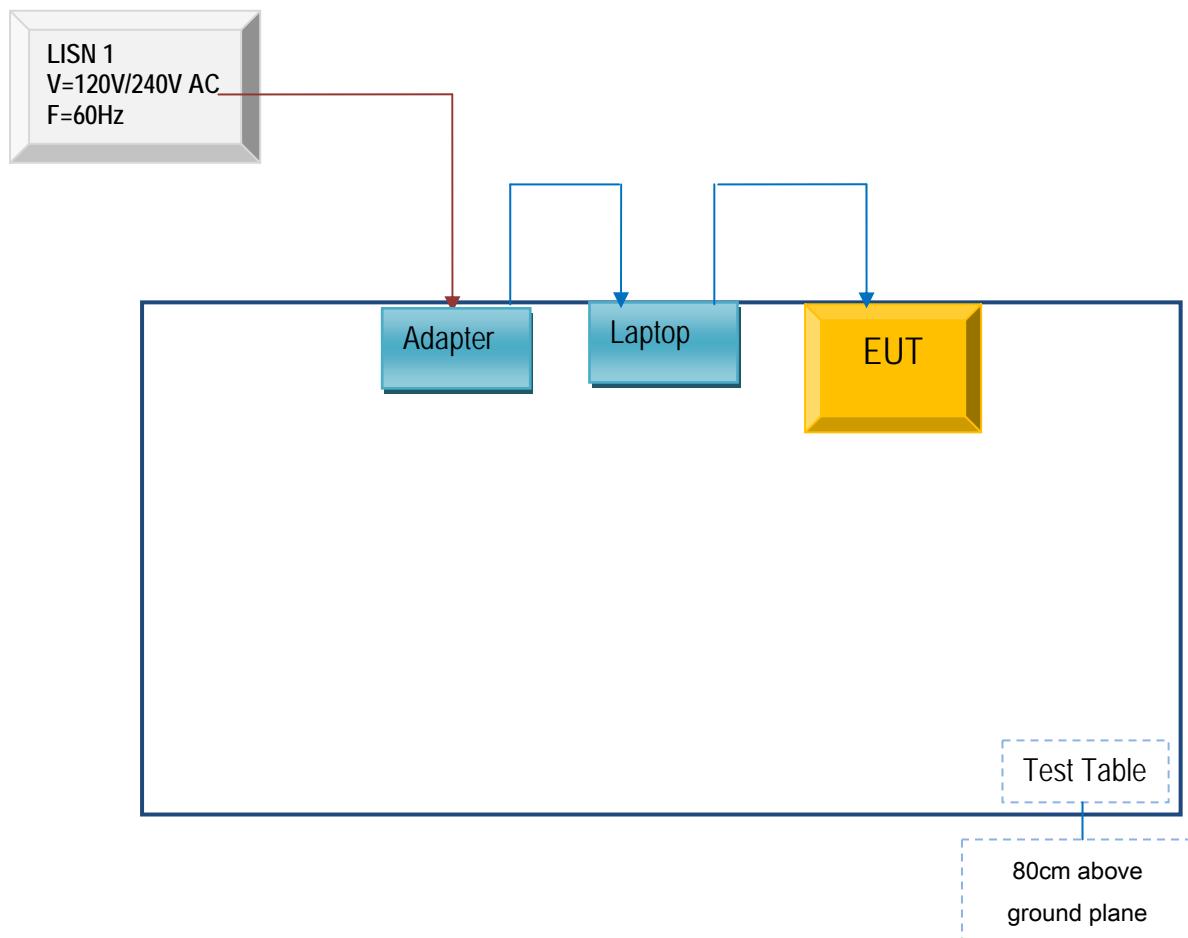
Annex B.iii. Photograph: Test Setup Photo



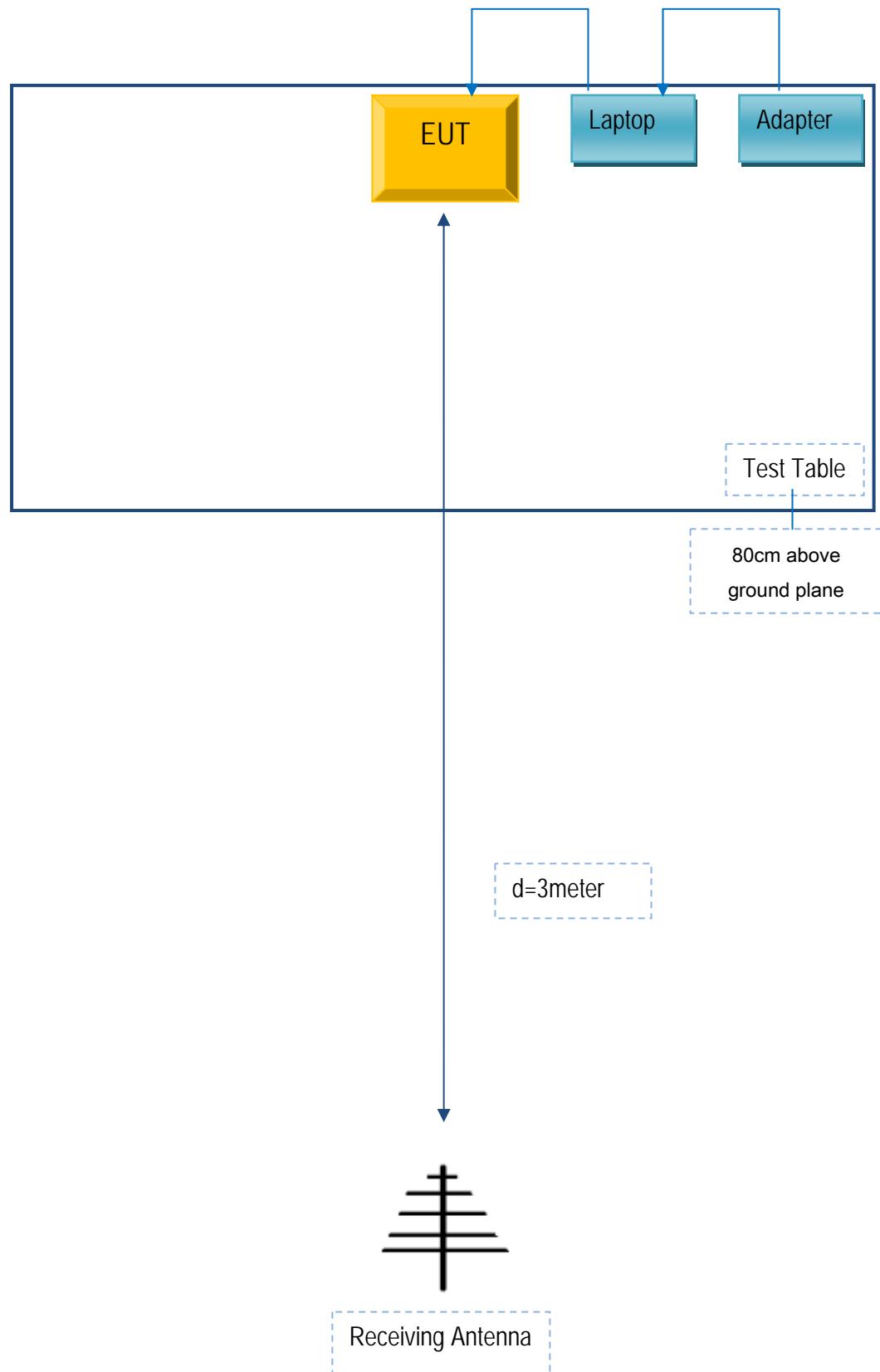
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

Block Configuration Diagram for Conducted Emissions



Block Configuration Diagram for Radiated Emissions



Annex C. ii. SUPPORTING EQUIPMENT DESCRIPTION

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

Manufacturer	Equipment Description	Model	Calibration Date	Calibration Due Date
Lenovo	Lenovo Laptop	E40& 0579A52	N/A	N/A

Test Report	15070823-FCC-E
Page	28 of 29

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

Please see Attachment

Annex E. DECLARATION OF SIMILARITY

N/A