
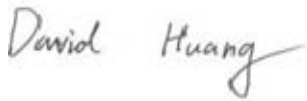



EMC TEST REPORT



Report No.: 16071334-FCC-E

Supersede Report No: N/A

Applicant	BLU Products, Inc.	
Product Name	Mobile Phone	
Model No.	Grand Energy	
Serial No.	N/A	
Test Standard	FCC Part 15 Subpart B Class B:2015, ANSI C63.4: 2014	
Test Date	Dec 14 to Dec 21, 2016	
Issue Date	Dec 22, 2016	
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"/>		
		
Loren Luo 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	16071334-FCC-E
Page	3 of 30

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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.....	20
ANNEX B. EUT AND TEST SETUP PHOTOGRAPHS.....	21
ANNEX C. TEST SETUP AND SUPPORTING EQUIPMENT.....	26
ANNEX D. USER MANUAL / BLOCK DIAGRAM / SCHEMATICS / PARTLIST	29
ANNEX E. DECLARATION OF SIMILARITY	30

1. Report Revision History

Report No.	Report Version	Description	Issue Date
16071334-FCC-E	NONE	Original	Dec 22, 2016

2. Customer information

Applicant Name	BLU Products, Inc.
Applicant Add	10814 NW 33rd St # 100 Doral, FL 33172
Manufacturer	BLU Products, Inc.
Manufacturer Add	10814 NW 33rd St # 100 Doral, FL 33172

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:	Grand Energy
Serial Model:	N/A
Antenna Gain:	GSM850: -1.0dBi PCS1900:-0.6dBi UMTS-FDD Band V: -0.6dBi UMTS-FDD Band IV: -1.0dBi UMTS-FDD Band II: -1.0dBi WIFI: -1.0dBi Bluetooth/BLE: -1.0dBi GPS: -1.0dBi
Antenna Type:	GSM/PCS/UMTS-FDD :PIFA antenna WIFI/BT/BLE/GPS : Metallic Antenna
Input Power:	Adapter: Model: US-SP-1500 Input: AC100-240V~50/60Hz,0.2A Output: DC 5.0V,1.5A Battery: Model:C796253400P Spec: 3.8V,4000mAh, 15.2Wh
Equipment Category :	JBP
Type of Modulation:	GSM / GPRS: GMSK EGPRS: GMSK,8PSK UMTS-FDD: QPSK 802.11b/g/n: DSSS, OFDM Bluetooth: GFSK, π /4DQPSK, 8DPSK BLE: GFSK GPS:BPSK

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
UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz
UMTS-FDD Band IV TX:1712.4 ~ 1752.6 MHz;
RX : 2112.4 ~ 2152.6 MHz

RF Operating Frequency (ies): UMTS-FDD Band II TX:1852.4 ~ 1907.6 MHz;
RX: 1932.4 ~ 1987.6 MHz
WIFI: 802.11b/g/n(20M): 2412-2462 MHz
WIFI: 802.11n(40M): 2422-2452 MHz
Bluetooth& BLE: 2402-2480 MHz
GPS: 1575.42 MHz

Number of Channels: GSM 850: 124CH
PCS1900: 299CH
UMTS-FDD Band V: 102CH
UMTS-FDD Band IV: 202CH
UMTS-FDD Band II: 277CH
WIFI :802.11b/g/n(20M): 11CH
WIFI :802.11n(40M): 7CH
Bluetooth: 79CH
BLE: 40CH
GPS:1CH

Port: USB Port, Earphone Port

Trade Name : BLU

FCC ID: YHLBLUGRANDEY

Date EUT received: Dec 13, 2016

Test Date(s): Dec 14 to Dec 21, 2016

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	24 °C
Relative Humidity	57%
Atmospheric Pressure	1015mbar
Test date :	Dec 15, 2016
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable														
47CFR§15.107	a)	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.															
		<table><tr><th rowspan="2">Frequency ranges (MHz)</th><th colspan="2">Limit (dBµV)</th></tr><tr><th>QP</th><th>Average</th></tr><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></table>	Frequency ranges (MHz)	Limit (dBµV)		QP	Average	0.15 ~ 0.5	66 – 56	56 – 46	0.5 ~ 5	56	46	5 ~ 30	60	50	
Frequency ranges (MHz)	Limit (dBµV)																
	QP	Average															
0.15 ~ 0.5	66 – 56	56 – 46															
0.5 ~ 5	56	46															
5 ~ 30	60	50															

Test Setup	 <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>
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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.
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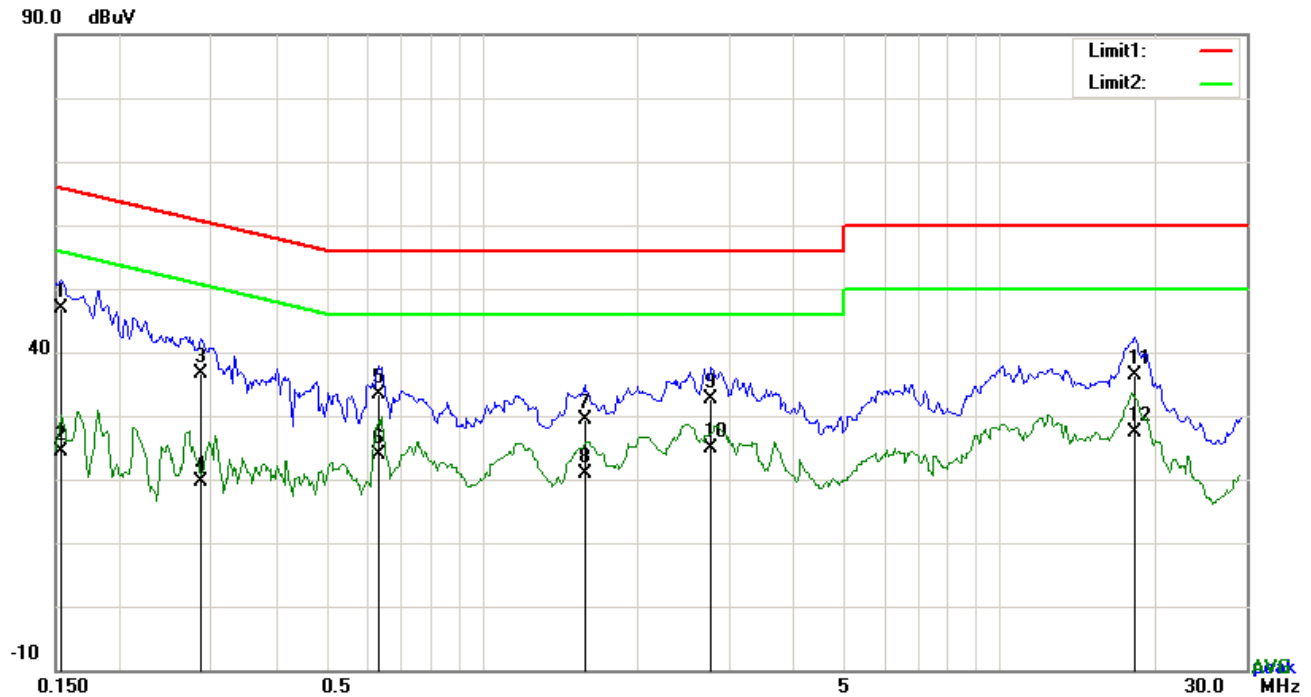
Test Report	16071334-FCC-E
Page	10 of 30

	<p>3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable.</p> <p>4. All other supporting equipment were powered separately from another main supply.</p> <p>5. The EUT was switched on and allowed to warm up to its normal operating condition.</p> <p>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.</p> <p>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.</p> <p>8. Step 7 was then repeated for the LIVE line (for AC mains) or DC line (for DC power).</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 : USB Mode

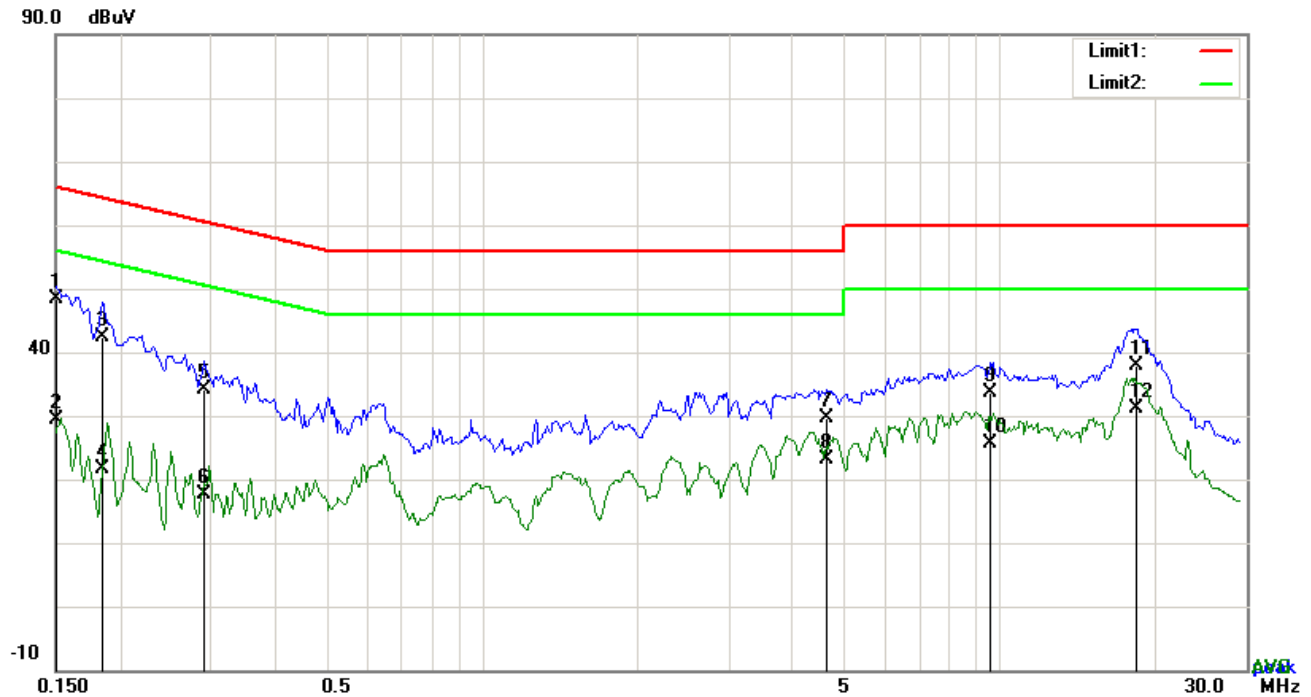


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)
1	L1	0.1539	36.93	QP	10.03	46.96	65.79	-18.83
2	L1	0.1539	14.43	AVG	10.03	24.46	55.79	-31.33
3	L1	0.2865	26.71	QP	10.03	36.74	60.63	-23.89
4	L1	0.2865	9.70	AVG	10.03	19.73	50.63	-30.90
5	L1	0.6336	23.25	QP	10.03	33.28	56.00	-22.72
6	L1	0.6336	13.79	AVG	10.03	23.82	46.00	-22.18
7	L1	1.5813	19.37	QP	10.04	29.41	56.00	-26.59
8	L1	1.5813	10.87	AVG	10.04	20.91	46.00	-25.09
9	L1	2.7669	22.56	QP	10.05	32.61	56.00	-23.39
10	L1	2.7669	14.81	AVG	10.05	24.86	46.00	-21.14
11	L1	18.2373	26.18	QP	10.27	36.45	60.00	-23.55
12	L1	18.2373	17.09	AVG	10.27	27.36	50.00	-22.64

Test Mode : USB Mode

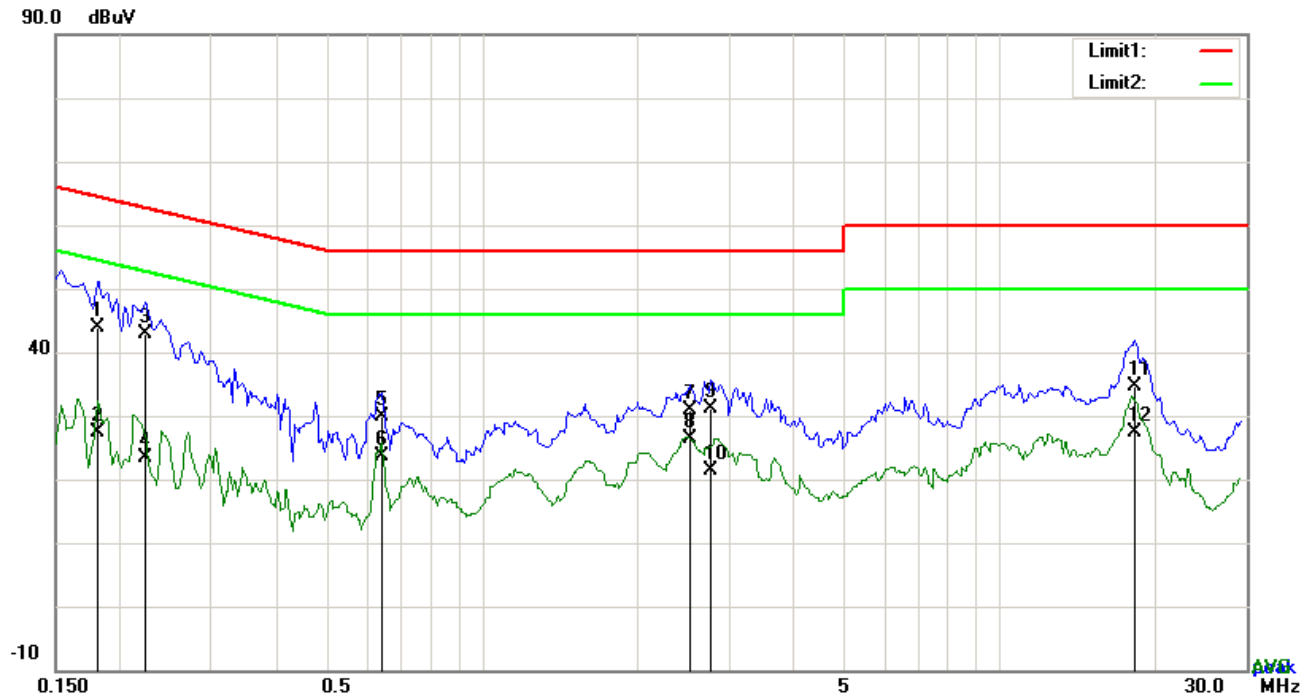


Test Data

Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)
1	N	0.1500	38.27	QP	10.02	48.29	66.00	-17.71
2	N	0.1500	19.25	AVG	10.02	29.27	56.00	-26.73
3	N	0.1851	32.33	QP	10.02	42.35	64.25	-21.90
4	N	0.1851	11.54	AVG	10.02	21.56	54.25	-32.69
5	N	0.2904	24.14	QP	10.02	34.16	60.51	-26.35
6	N	0.2904	7.56	AVG	10.02	17.58	50.51	-32.93
7	N	4.6223	19.56	QP	10.07	29.63	56.00	-26.37
8	N	4.6223	12.98	AVG	10.07	23.05	46.00	-22.95
9	N	9.6105	23.56	QP	10.13	33.69	60.00	-26.31
10	N	9.6105	15.52	AVG	10.13	25.65	50.00	-24.35
11	N	18.3816	27.56	QP	10.24	37.80	60.00	-22.20
12	N	18.3816	20.90	AVG	10.24	31.14	50.00	-18.86

Test Mode : USB Mode

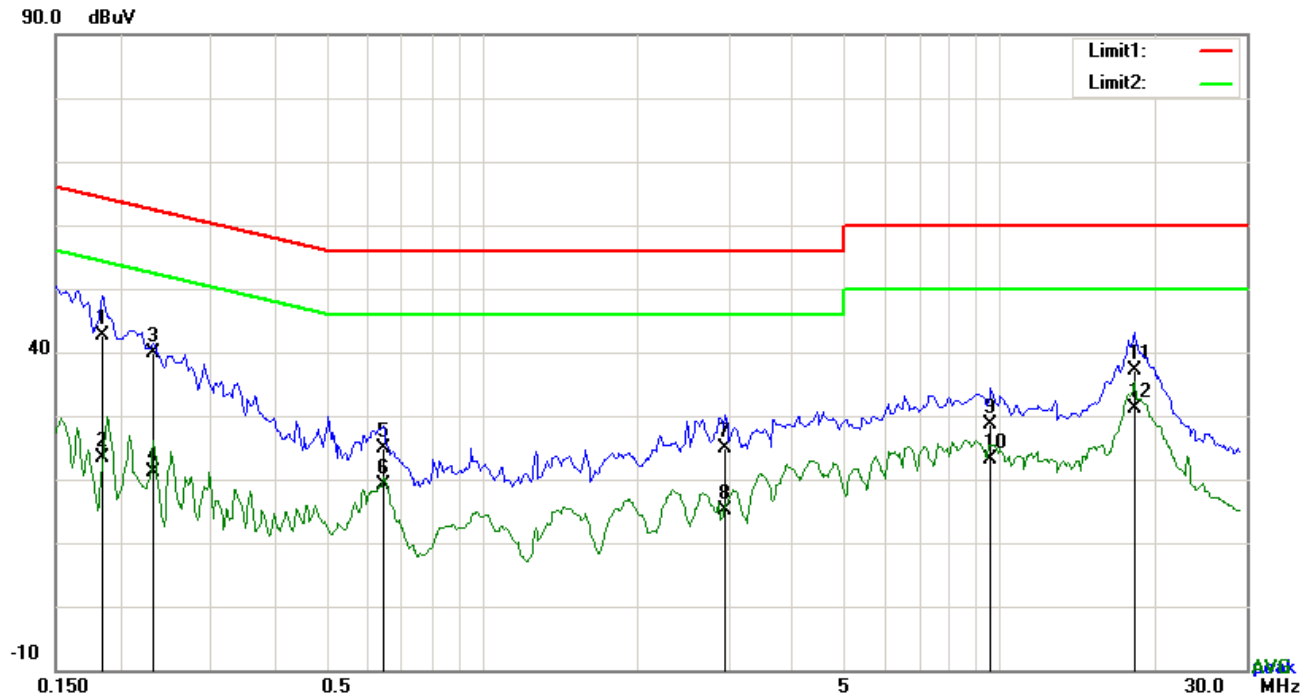


Test Data

Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.1812	33.80	QP	10.03	43.83	64.43	-20.60
2	L1	0.1812	17.47	AVG	10.03	27.50	54.43	-26.93
3	L1	0.2241	32.79	QP	10.03	42.82	62.67	-19.85
4	L1	0.2241	13.27	AVG	10.03	23.30	52.67	-29.37
5	L1	0.6414	19.73	QP	10.03	29.76	56.00	-26.24
6	L1	0.6414	13.72	AVG	10.03	23.75	46.00	-22.25
7	L1	2.5251	20.77	QP	10.05	30.82	56.00	-25.18
8	L1	2.5251	16.21	AVG	10.05	26.26	46.00	-19.74
9	L1	2.7669	21.17	QP	10.05	31.22	56.00	-24.78
10	L1	2.7669	11.32	AVG	10.05	21.37	46.00	-24.63
11	L1	18.2373	24.42	QP	10.27	34.69	60.00	-25.31
12	L1	18.2373	17.19	AVG	10.27	27.46	50.00	-22.54

Test Mode : USB Mode



Test Data


Phase Neutral Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)
1	N	0.1851	32.61	QP	10.02	42.63	64.25	-21.62
2	N	0.1851	13.47	AVG	10.02	23.49	54.25	-30.76
3	N	0.2319	29.75	QP	10.02	39.77	62.38	-22.61
4	N	0.2319	11.18	AVG	10.02	21.20	52.38	-31.18
5	N	0.6453	14.77	QP	10.02	24.79	56.00	-31.21
6	N	0.6453	9.01	AVG	10.02	19.03	46.00	-26.97
7	N	2.9580	14.75	QP	10.05	24.80	56.00	-31.20
8	N	2.9580	5.09	AVG	10.05	15.14	46.00	-30.86
9	N	9.6105	18.40	QP	10.13	28.53	60.00	-31.47
10	N	9.6105	13.00	AVG	10.13	23.13	50.00	-26.87
11	N	18.2997	26.77	QP	10.24	37.01	60.00	-22.99
12	N	18.2997	20.84	AVG	10.24	31.08	50.00	-18.92

6.2 Radiated Emissions

Temperature	24 °C
Relative Humidity	57%
Atmospheric Pressure	1015mbar
Test date :	Dec 15, 2016
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable	
47CFR§15.109(d)	a)	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		
		Frequency range (MHz)		Field Strength (µV/m)
		30 – 88		100
		88 – 216		150
		216 960		200
		Above 960		500

Test Setup	
------------	--

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
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Test Report	16071334-FCC-E
Page	16 of 30

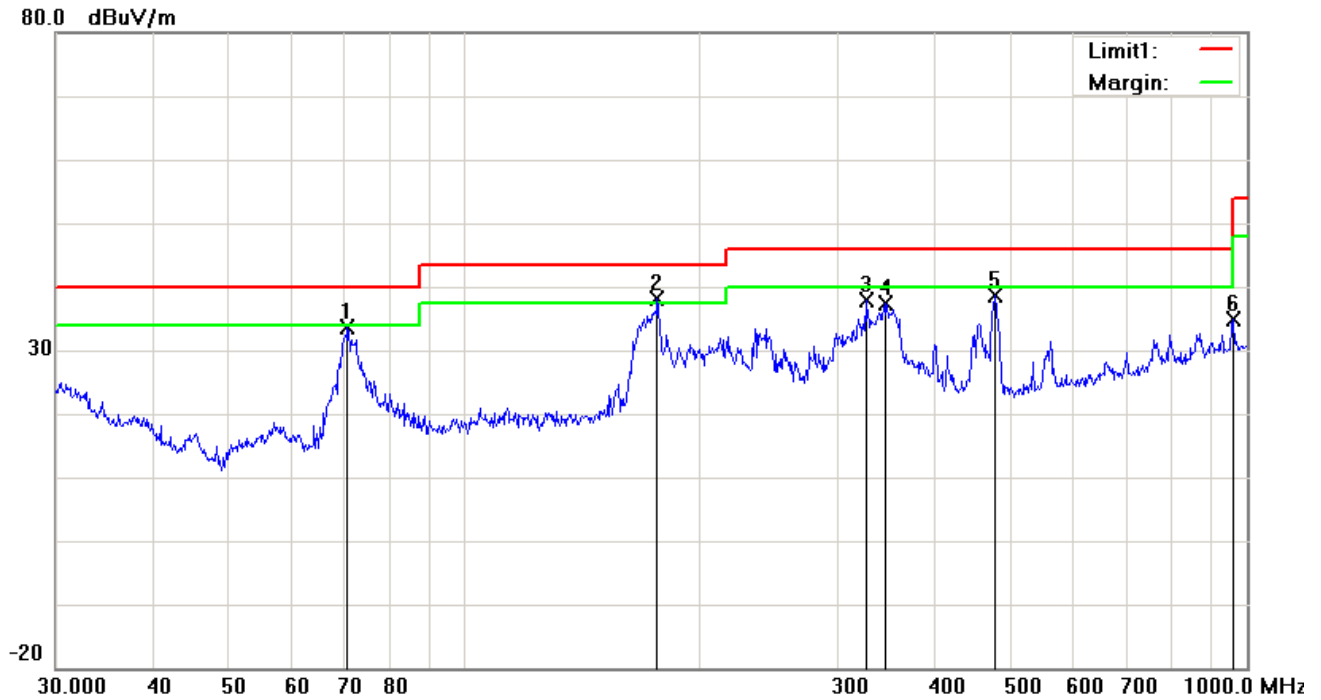
	<p>over a full rotation of the EUT) was chosen.</p> <p>b. The EUT was then rotated to the direction that gave the maximum emission.</p> <p>c. Finally, the antenna height was adjusted to the height that gave the maximum emission.</p> <p>3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi 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> <p>■ 1 kHz (Duty cycle < 98%) □ 10 Hz (Duty cycle > 98%)</p> <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 : USB Mode

Below 1GHz

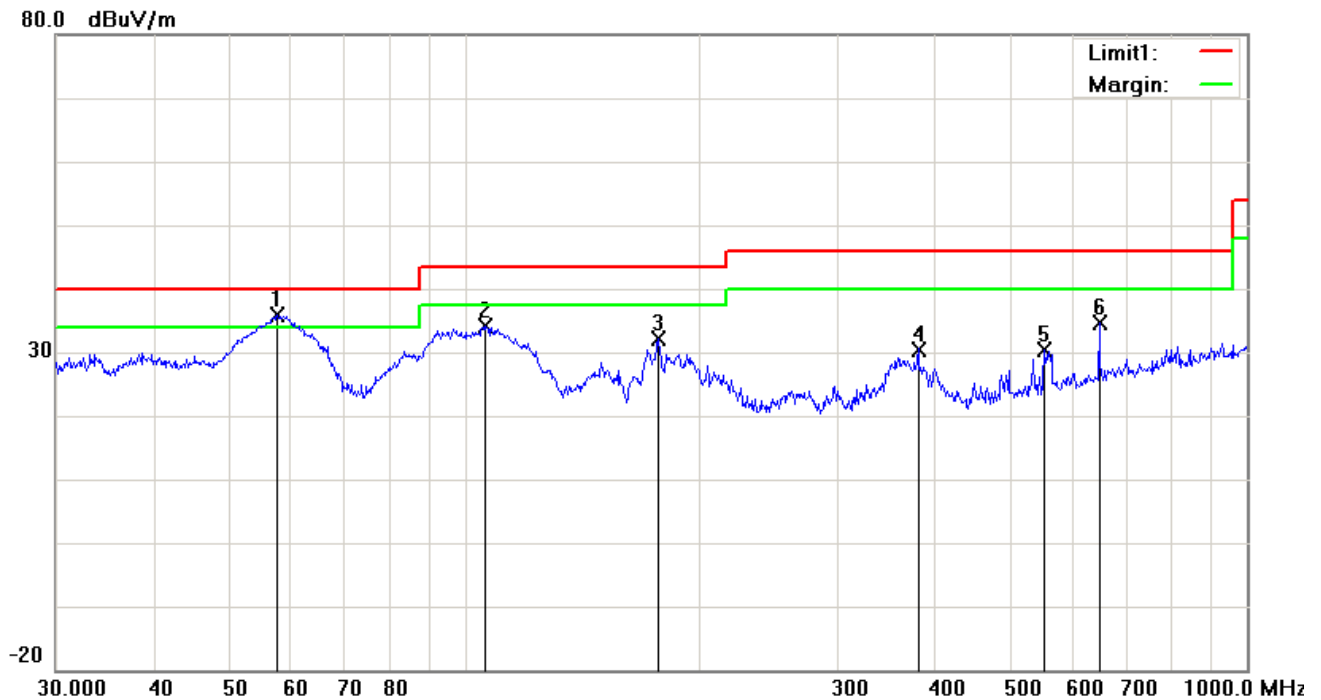


Test Data

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	70.8315	47.24	QP	-13.62	33.62	40.00	-6.38	100	57
2	H	176.2686	47.81	QP	-9.59	38.22	43.50	-5.28	100	162
3	H	325.5958	43.94	peak	-6.16	37.78	46.00	-8.22	100	138
4	H	345.5952	42.85	peak	-5.58	37.27	46.00	-8.73	100	251
5	H	477.1694	40.86	peak	-2.33	38.53	46.00	-7.47	100	91
6	H	958.7943	29.70	peak	5.24	34.94	46.00	-11.06	100	228

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	57.5939	49.87	QP	-14.08	35.79	40.00	-4.21	100	357
2	V	106.0126	43.97	peak	-9.73	34.24	43.50	-9.26	100	72
3	V	176.8878	41.66	peak	-9.64	32.02	43.50	-11.48	100	116
4	V	379.9141	35.27	peak	-4.77	30.50	46.00	-15.50	100	20
5	V	550.9480	31.10	peak	-0.80	30.30	46.00	-15.70	100	132
6	V	647.3856	33.84	peak	0.76	34.60	46.00	-11.40	100	43

Above 1GHz

Frequency (MHz)	Amplitude (dBμV/m)	Azimuth	Height (cm)	Polarity (H/V)	Factors (dB)	Limit (dBμV/m)	Margin (dB)	Detector (PK/AV)
1543.71	50.69	80	143	V	-22.75	74	-23.31	PK
2059.62	50.24	72	124	V	-21.68	74	-23.76	PK
1684.77	49.15	53	110	V	-22.89	74	-24.85	PK
2166.89	50.37	69	135	H	-22.45	74	-23.63	PK
2857.18	49.67	47	108	H	-22.63	74	-24.33	PK
1879.18	50.82	77	110	H	-22.49	74	-23.18	PK

Note1: The highest frequency of the EUT is 2480 MHz, so the testing has been conformed to $5 \times 2480 \text{ MHz} = 12,400 \text{ MHz}$.

Note2: The frequency that above 3GHz is mainly from the environment noise.

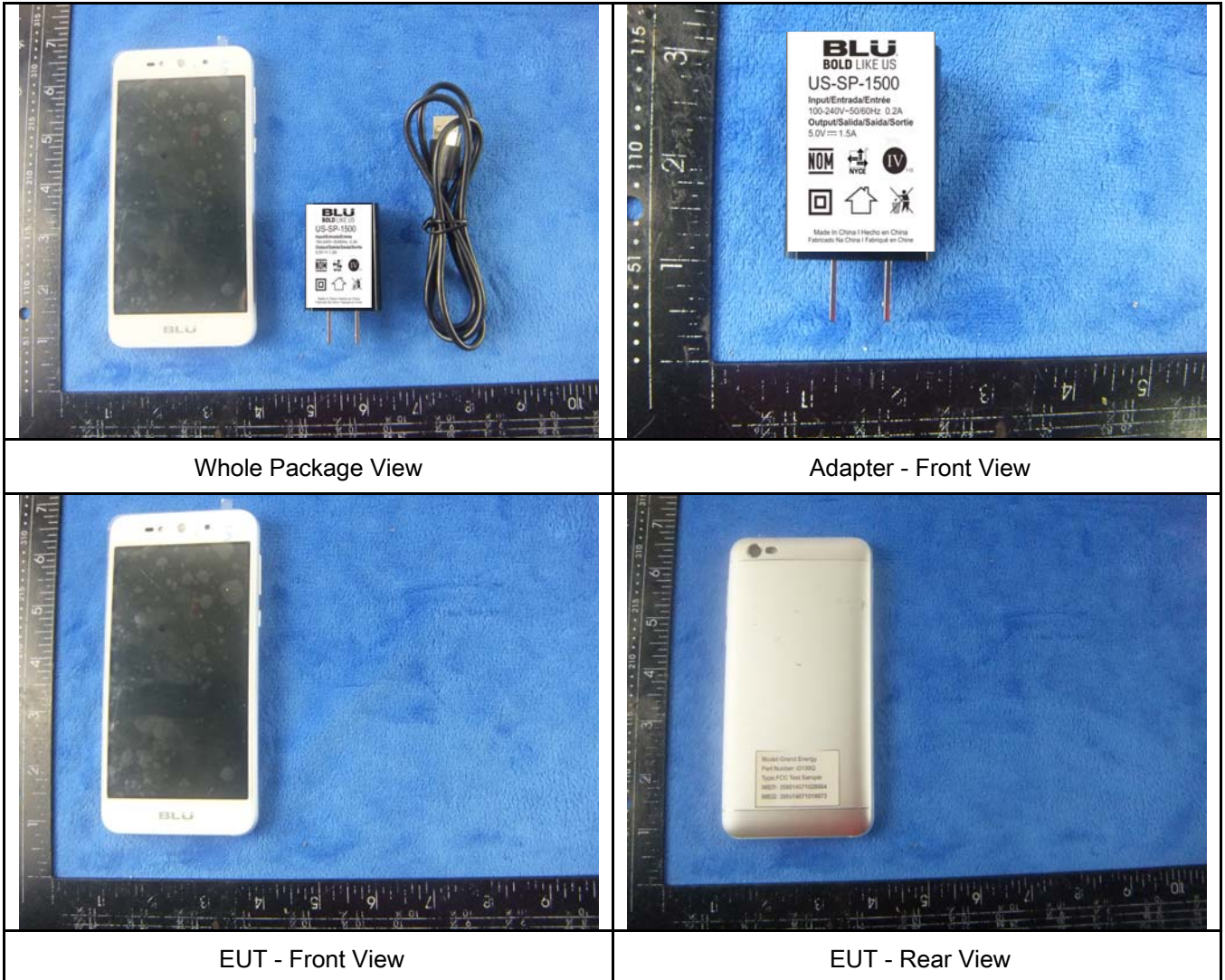
Note3: The AV measurement performed, more than 20dB below limit so AV test data was not presented.

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Due	In use
AC Line Conducted Emissions					
EMI test receiver	ESCS30	8471241027	09/16/2016	09/15/2017	<input checked="" type="checkbox"/>
Line Impedance Stabilization Network	LI-125A	191106	09/24/2016	09/23/2017	<input checked="" type="checkbox"/>
Line Impedance Stabilization Network	LI-125A	191107	09/24/2016	09/23/2017	<input checked="" type="checkbox"/>
LISN	ISN T800	34373	09/24/2016	09/23/2017	<input checked="" type="checkbox"/>
Transient Limiter	LIT-153	531118	08/31/2016	08/30/2017	<input checked="" type="checkbox"/>
Radiated Emissions					
EMI test receiver	ESL6	100262	09/16/2016	09/15/2017	<input checked="" type="checkbox"/>
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	08/31/2016	08/30/2017	<input checked="" type="checkbox"/>
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/24/2016	03/23/2017	<input checked="" type="checkbox"/>
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/20/2016	09/19/2017	<input checked="" type="checkbox"/>
Double Ridge Horn Antenna	AH-118	71259	09/23/2016	09/22/2017	<input checked="" type="checkbox"/>

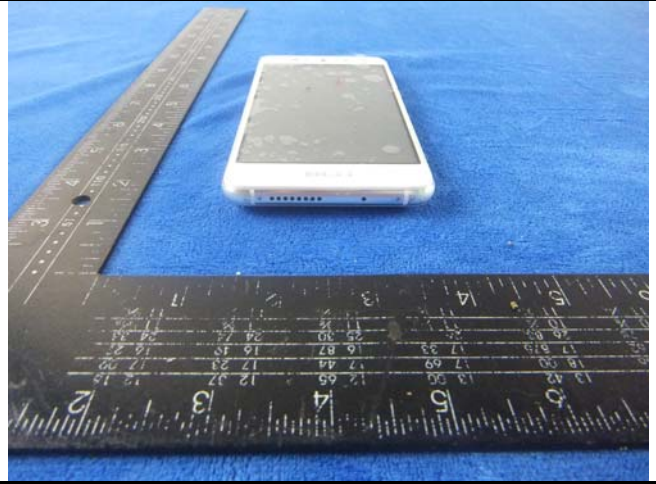
Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph: EUT External Photo





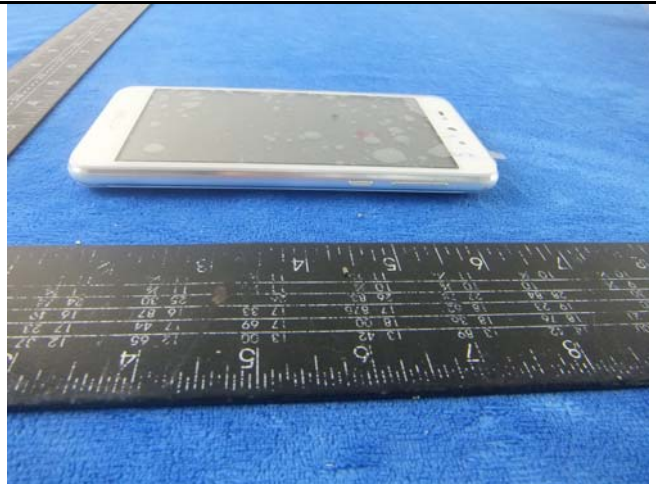
EUT - Top View



EUT - Bottom View



EUT - Left View



EUT - Right View

Annex B.ii. Photograph: EUT Internal Photo



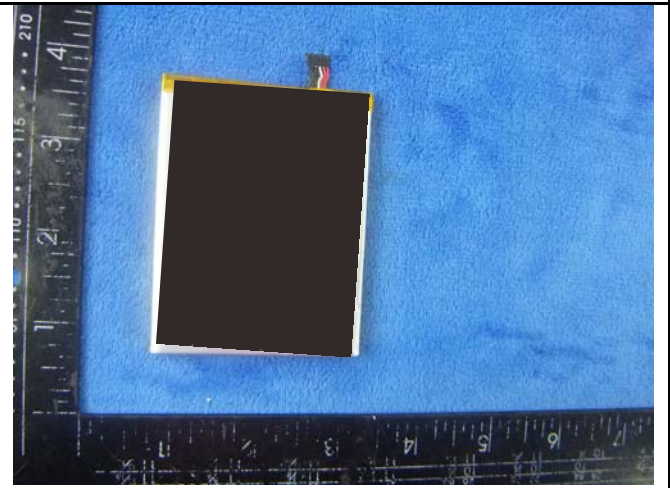
Cover Off - Top View 1



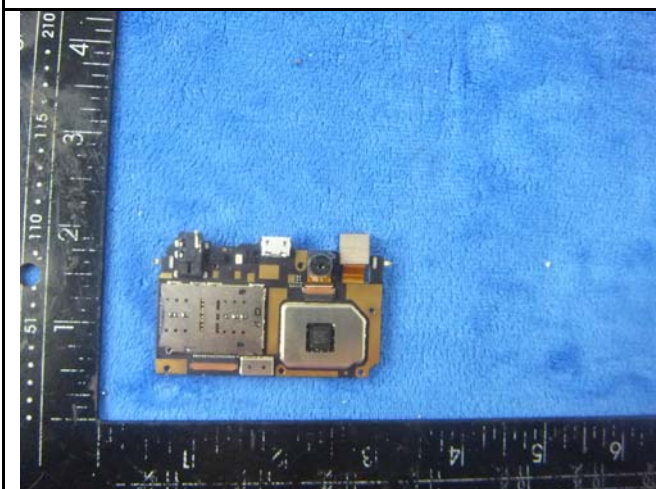
Cover Off - Top View 2



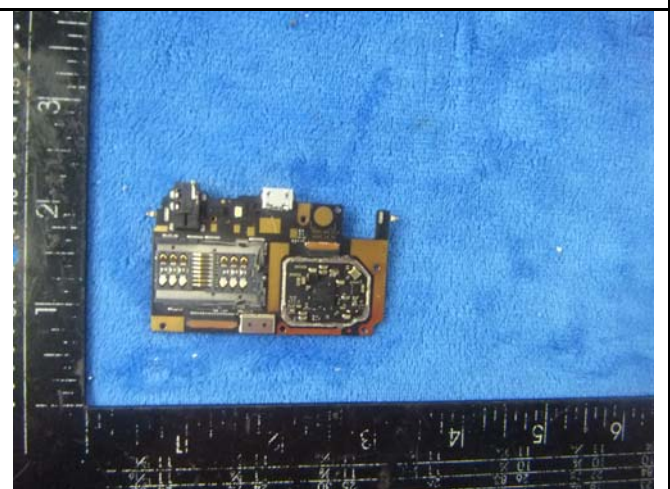
Battery - Front View



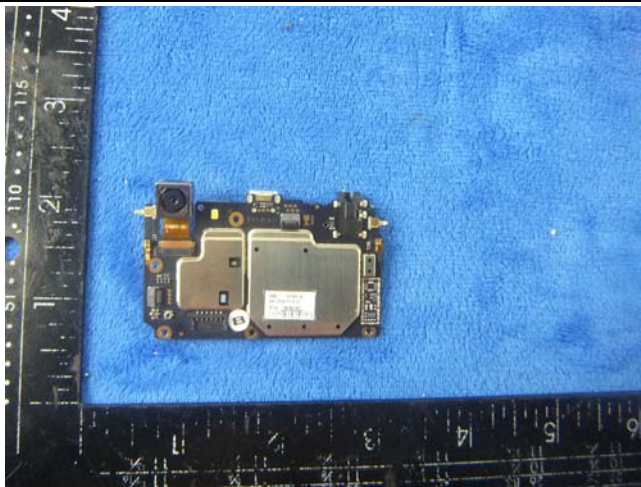
Battery - Rear View



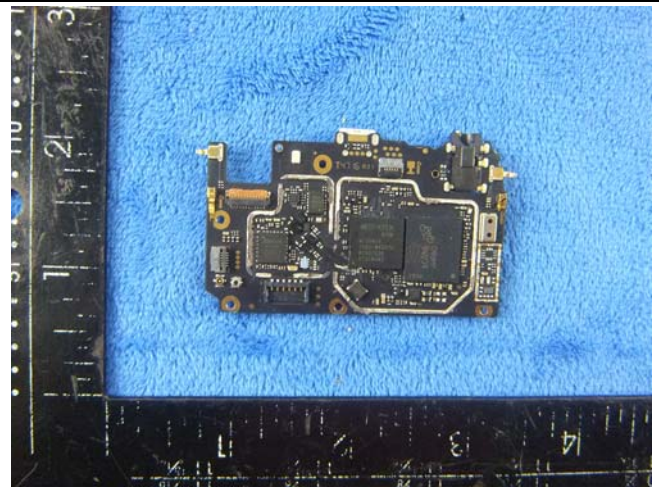
Mainboard with Shielding - Front View



Mainboard without Shielding - Front View



Mainboard with Shielding – Rear View



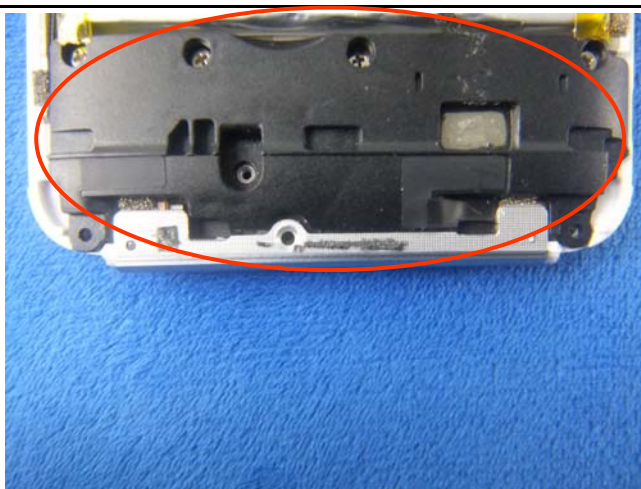
Mainboard without Shielding - Rear View



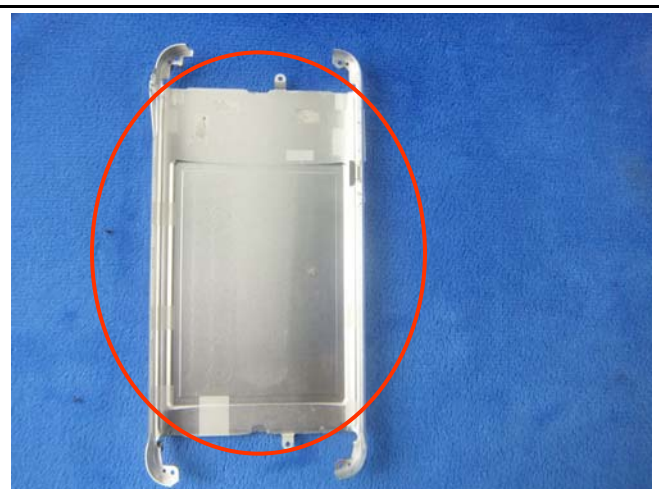
LCD – Front View



LCD – Rear View



GSM/PCS/UMTS-FDD Antenna View

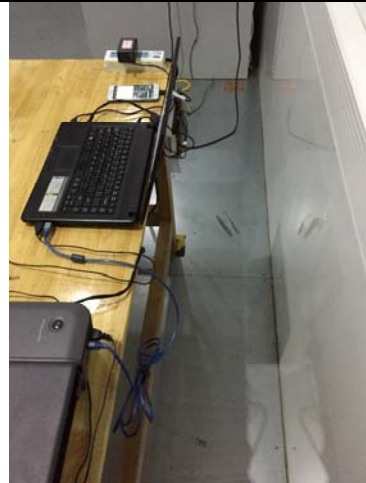


WIFI/BT/BLE/GPS – Metallic Antenna View

Annex B.iii. Photograph: Test Setup Photo



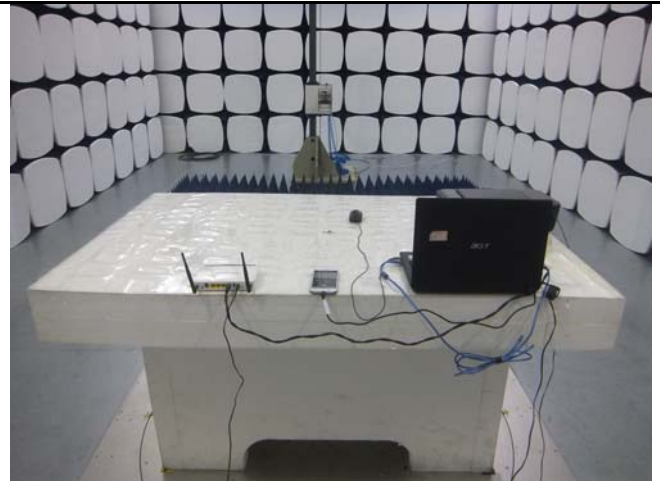
Conducted Emissions Test Setup – Front View



Conducted Emissions Test Setup – Side View



Radiated Emissions Test Setup Below 1GHz

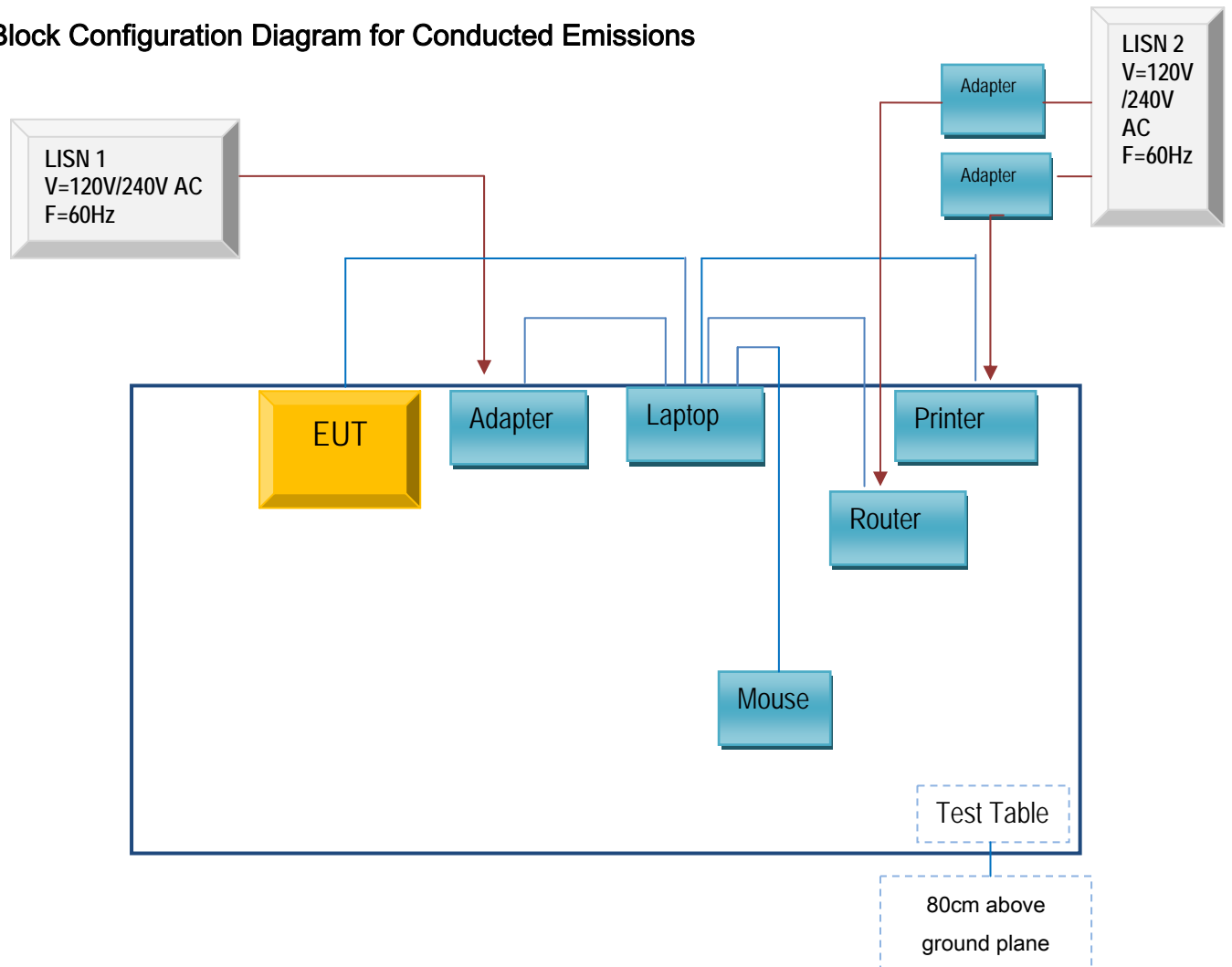


Radiated Emissions Test Setup Above 1GHz

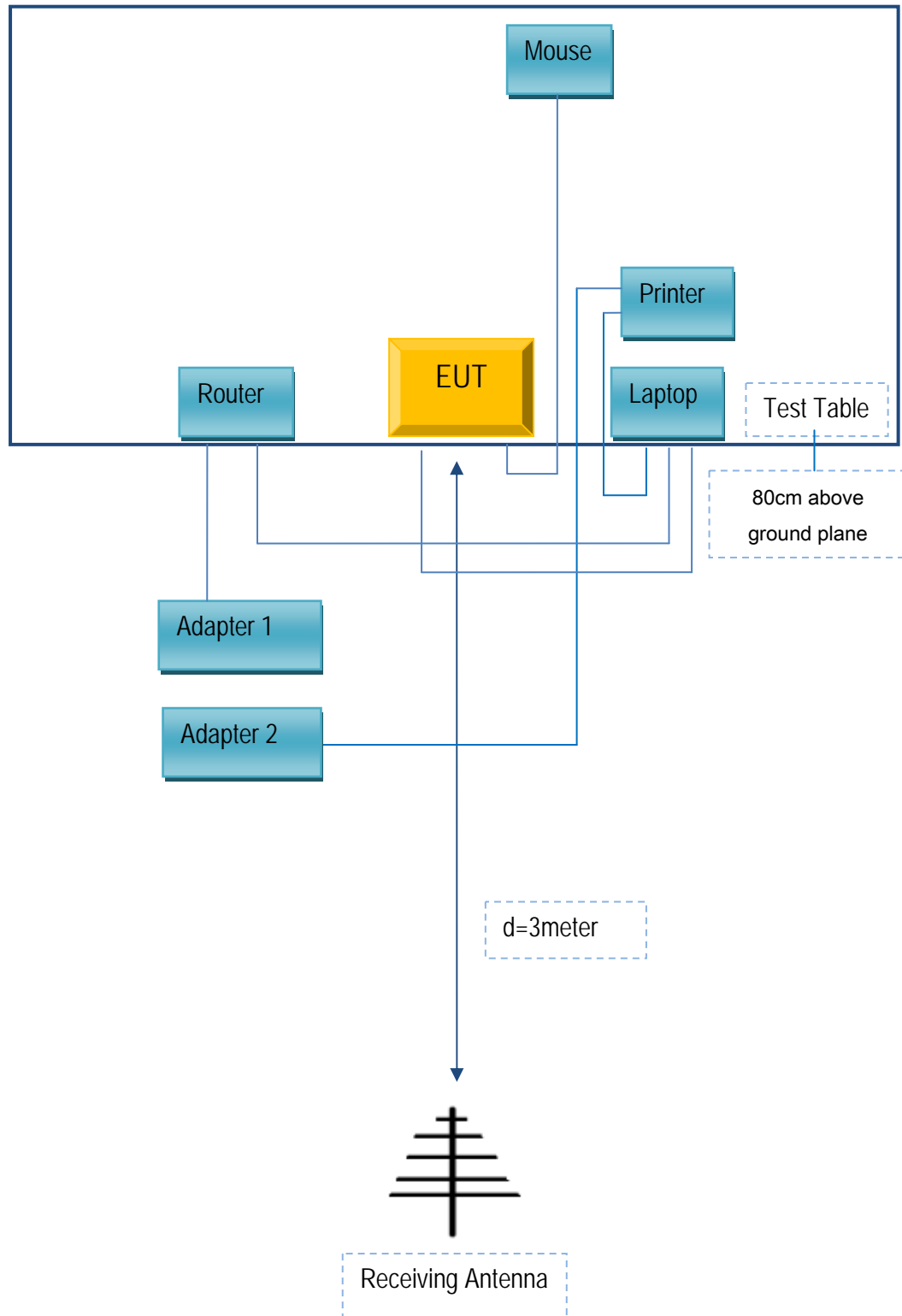
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

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.

Supporting Equipment:

Manufacturer	Equipment Description	Model	Serial No
Lenovo	Laptop	E40	LR-1EHRX
GOLDWEB	Router	R102	1202032094
Lenovo	AC Adapter	42T4416	21D9JU
HP	Printer	VCVRA-1003	CN36M19JWX
DELL	Mouse	E100	912NMTUT41481
BULL	Socket	GN-403	GN201203

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
USB Cable	Un-shielding	No	2m	JX120051274
USB Cable	Un-shielding	No	2m	CBA3000AH0C1
RJ45 Cable	Un-shielding	No	2m	KX156327541
Router Power cable	Un-shielding	No	2m	13274630Z
Printer Power cable	Un-shielding	No	2m	127581031
Power Cable	Un-shielding	No	0.8m	GT211032

Test Report	16071334-FCC-E
Page	29 of 30

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

Please see the attachment

Test Report	16071334-FCC-E
Page	30 of 30

Annex E. DECLARATION OF SIMILARITY

N/A