

EMC TEST REPORT



Report No.: 15070185-FCC-E1

Supersede Report No.: N/A

Applicant	Mobiwire Mobile(NingBo) Co.,Ltd	
Product Name	2G mobile phone	
Model No.	A1	
Serial No.	N/A	
Test Standard	FCC Part 15 Subpart B Class B:2013, ANSI C63.4: 2009	
Test Date	March 30 to April 01, 2015	
Issue Date	June 09, 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"/>	
<i>Lili Xia</i>	<i>Chris You</i>	
LiLi Xia Test Engineer	Chris You 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

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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
15070185-FCC-E1	NONE	Original	June 09, 2015

2. Customer information

Applicant Name	Mobiwire Mobile(NingBo) Co.,Ltd
Applicant Add	No.999 Dacheng East Road, Fenghua, Zhejiang, China
Manufacturer	Mobiwire Mobile(NingBo) Co.,Ltd
Manufacturer Add	No.999 Dacheng East Road, Fenghua, Zhejiang, 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:	2G mobile phone
Main Model:	A1
Serial Model:	N/A
Date EUT received:	March 30, 2015
Test Date(s):	March 30 to April 01, 2015
Equipment Category :	JBP
Antenna Gain:	GSM850: -4 dBi PCS1900: -4 dBi Bluetooth: 0 dBi
Type of Modulation:	GPRS: GMSK EGPRS: GMSK Bluetooth: GFSK
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
Number of Channels:	GSM 850: 124CH PCS1900: 299CH Bluetooth: 79CH
Port:	Power Port, Earphone Port, USB Port
Input Power:	Battery: Model: BT-P30 Spec: 3.7V 700mAh 2.59Wh Adapter: Model: A31-500550 Input: AC 100-240V; 50/60Hz 0.15A

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Output: DC 5.0V; 550mA

Trade Name : Polaroid

GPRS/EGPRS Multi-slot class N/A

FCC ID: 2ADA4XB56

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: 2009	AC Power Line Conducted Emissions	Compliance
§15.109; ANSI C63.4: 2009	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
-	-	-

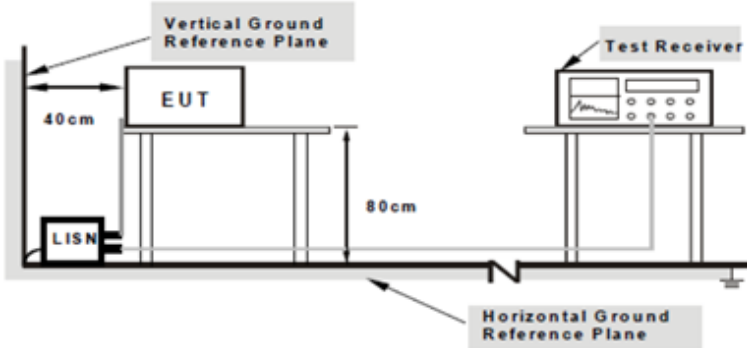
6. Measurements, Examination And Derived Results

6.1 AC Power Line Conducted Emissions

Temperature	21°C
Relative Humidity	52%
Atmospheric Pressure	1011mbar
Test date :	March 30, 2015
Tested By :	LiLi Xia

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 (dBµV)		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 (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 50W/50mH EUT LISN, connected to filtered mains.
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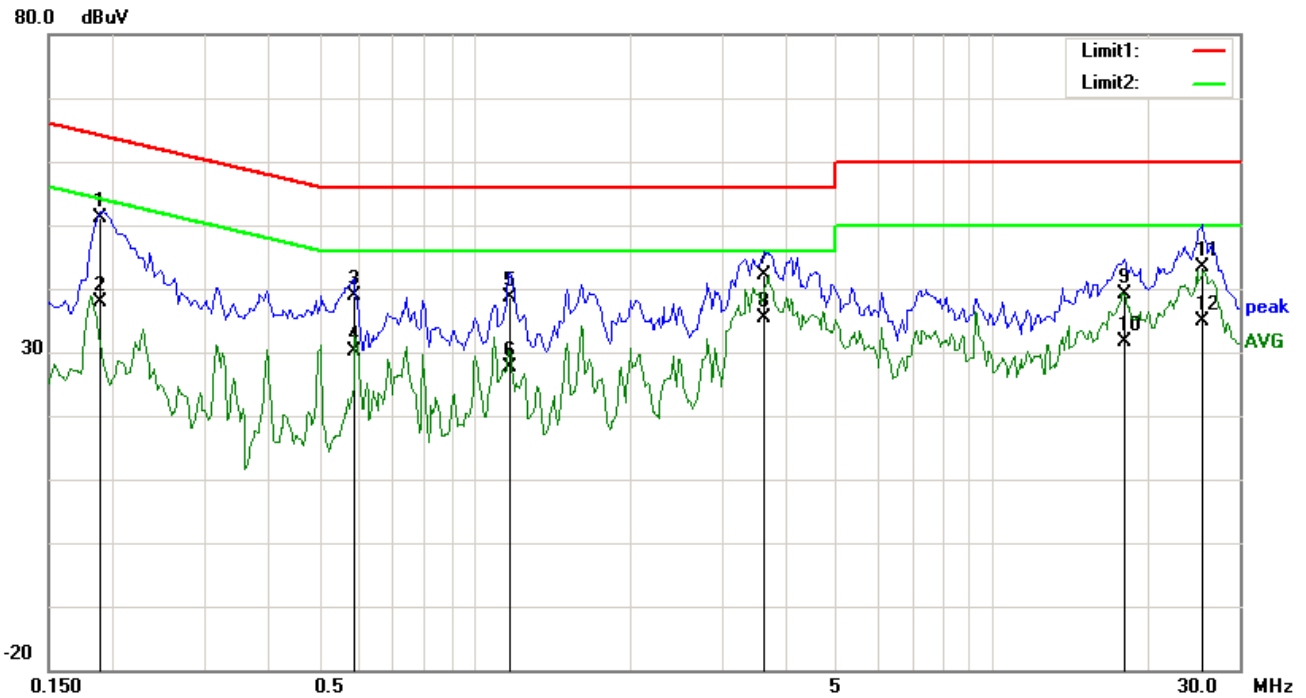
	<ol style="list-style-type: none"> 3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable. 4. All other supporting equipment were powered separately from another main supply. 5. The EUT was switched on and allowed to warm up to its normal operating condition. 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
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Peak Detector ▲ Quasi Peak Limit ▲
Average Detector ▲ Average Limit ▲



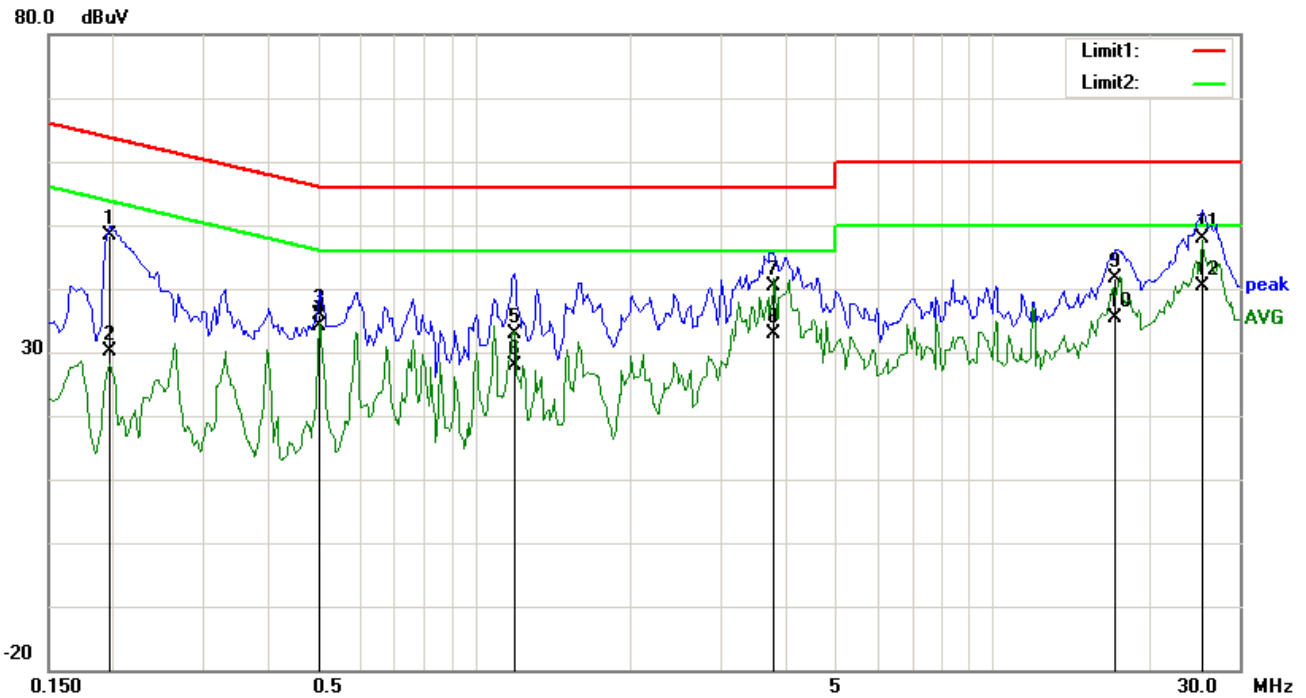
Test Data

Phase Line Plot at 230Vac, 50Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Comment
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)	
1	L1	0.1891	39.80	QP	11.28	51.08	64.08	-13.00	
2	L1	0.1891	26.53	AVG	11.28	37.81	54.08	-16.27	
3	L1	0.5836	27.79	QP	11.10	38.89	56.00	-17.11	
4	L1	0.5836	19.05	AVG	11.10	30.15	46.00	-15.85	
5	L1	1.1695	27.84	QP	10.90	38.74	56.00	-17.26	
6	L1	1.1695	16.84	AVG	10.90	27.74	46.00	-18.26	
7	L1	3.6328	31.25	QP	10.90	42.15	56.00	-13.85	
8	L1	3.6328	24.57	AVG	10.90	35.47	46.00	-10.53	
9	L1	17.9492	28.18	QP	10.88	39.06	60.00	-20.94	
10	L1	17.9492	20.70	AVG	10.88	31.58	50.00	-18.42	
11	L1	25.4648	32.59	QP	10.90	43.49	60.00	-16.51	
12	L1	25.4648	24.07	AVG	10.90	34.97	50.00	-15.03	

Test Mode 1:	USB Mode
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Peak Detector  Quasi Peak Limit 
 Average Detector  Average Limit 



Test Data

Phase Neutral Plot at 230Vac, 50Hz

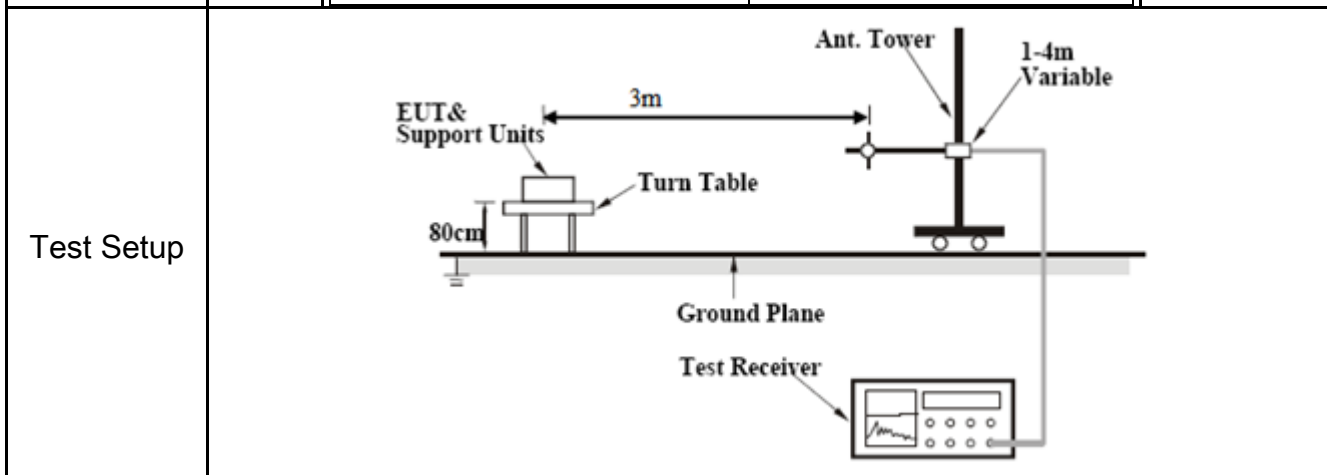
No.	P/L	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB}	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
1	N	0.1969	48.37	QP	0.00	48.37	63.74	-15.37	
2	N	0.1969	30.04	AVG	0.00	30.04	53.74	-23.70	
3	N	0.5016	35.87	QP	0.00	35.87	56.00	-20.13	
4	N	0.5016	34.01	AVG	0.00	34.01	46.00	-11.99	
5	N	1.1930	33.00	QP	0.00	33.00	56.00	-23.00	
6	N	1.1930	27.90	AVG	0.00	27.90	46.00	-18.10	
7	N	3.7891	40.30	QP	0.00	40.30	56.00	-15.70	
8	N	3.7891	32.84	AVG	0.00	32.84	46.00	-13.16	
9	N	17.2734	41.56	QP	0.00	41.56	60.00	-18.44	
10	N	17.2734	35.40	AVG	0.00	35.40	50.00	-14.60	
11	N	25.4375	47.94	QP	0.00	47.94	60.00	-12.06	
12	N	25.4375	40.31	AVG	0.00	40.31	50.00	-9.69	

6.2 Radiated Emissions

Temperature	20°C
Relative Humidity	50%
Atmospheric Pressure	1001mbar
Test date :	April 01, 2015
Tested By :	LiLi Xia

Requirement(s):

Spec	Item	Requirement	Applicable										
47CFR§15.107(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	<input checked="" type="checkbox"/>										
		<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 (µV/m)	30 – 88	100	88 – 216	150	216 960	200	Above 960	500
		Frequency range (MHz)		Field Strength (µV/m)									
		30 – 88		100									
		88 – 216		150									
216 960	200												
Above 960	500												



Procedure	<ol style="list-style-type: none"> 1. The EUT was switched on and allowed to warm up to its normal operating condition. 2. 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"> a. Vertical or horizontal polarization (whichever gave the higher emission level
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	<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. 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. ■ 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

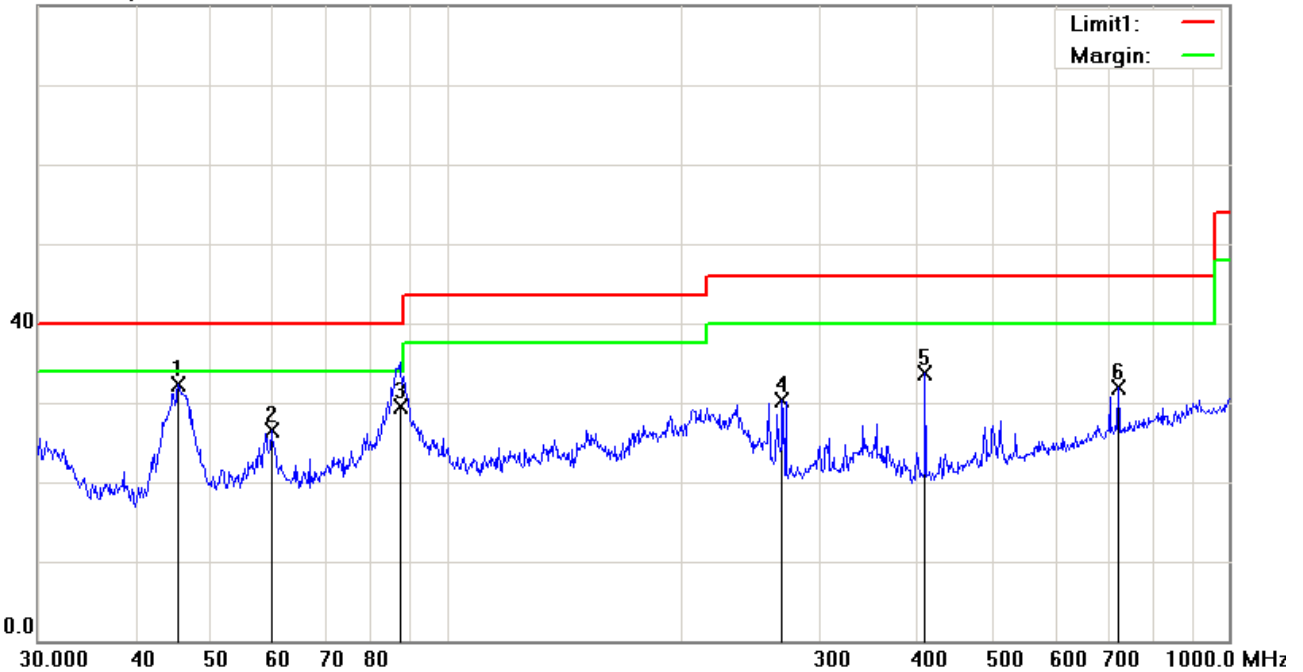
Test Plot Yes (See below) N/A

Test Mode: USB Mode

Below 1GHz

Peak Detector 
Quasi Peak Limit 

80.0 dBuV/m



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 ()	Comment
1	H	45.3755	33.66	peak	-1.31	32.35	40.00	-7.65	200	196	
2	H	59.6493	40.83	peak	-14.32	26.51	40.00	-13.49	200	173	
3	H	87.5619	43.03	QP	-13.43	29.60	40.00	-10.40	175	178	
4	H	268.4853	38.65	peak	-8.35	30.30	46.00	-15.70	110	360	
5	H	408.9460	37.76	peak	-4.08	33.68	46.00	-12.32	100	217	
6	H	721.7259	30.10	peak	1.83	31.93	46.00	-14.07	103	360	

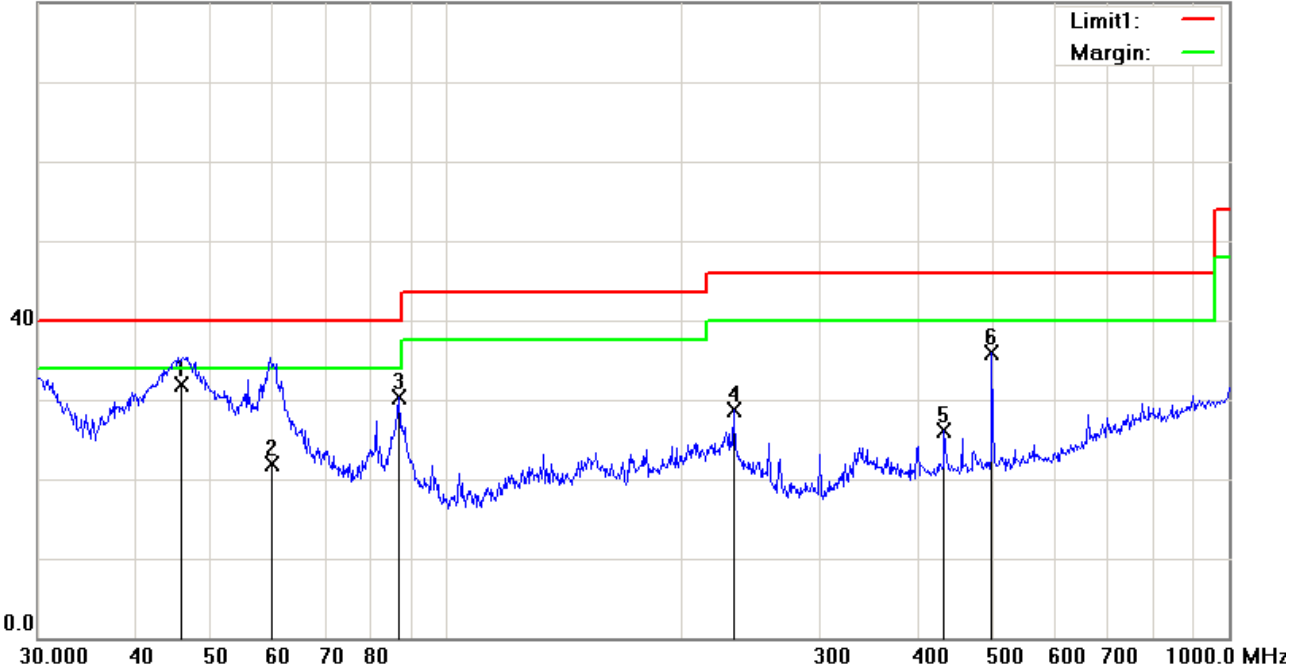
Above 1GHz

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

Below 1GHz

Peak Detector 
Quasi Peak Limit 

80.0 dBuV/m



Test Data

Vertical 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 ()	Comment
1	V	45.6088	43.78	QP	-11.84	31.94	40.00	-8.06	100	109	
2	V	59.9827	36.08	QP	-14.16	21.92	40.00	-18.08	100	101	
3	V	86.8068	44.14	peak	-13.79	30.35	40.00	-9.65	200	94	
4	V	232.5318	36.24	peak	-7.46	28.78	46.00	-17.22	200	199	
5	V	432.5457	29.46	peak	-3.39	26.07	46.00	-19.93	100	199	
6	V	497.6765	38.29	peak	-2.42	35.87	46.00	-10.13	200	139	

Above 1GHz

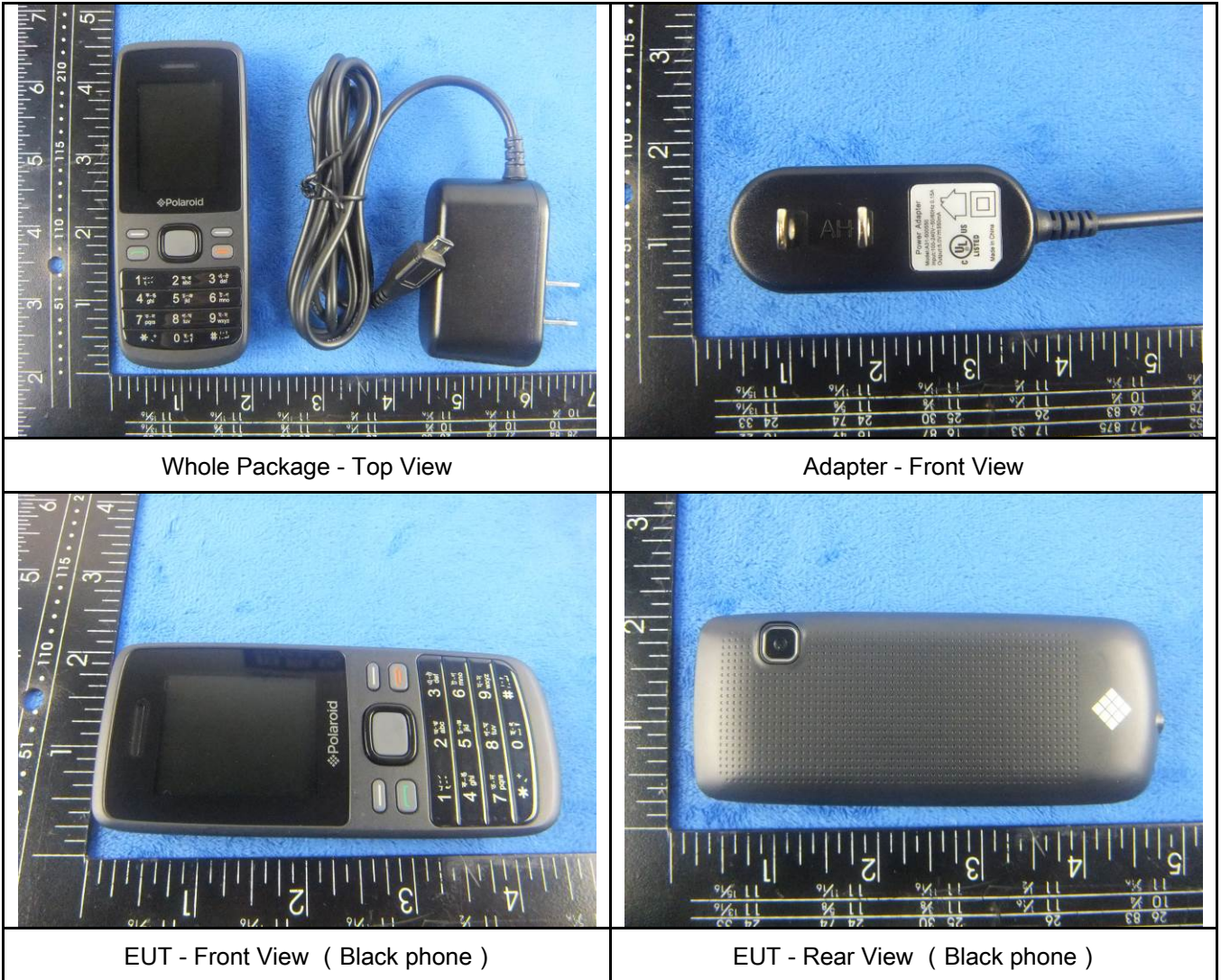
Note: The frequency that above 1GHz is mainly from the environment noise.

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	09/02/2014	09/01/2015	<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	09/02/2014	09/01/2015	<input checked="" type="checkbox"/>
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	10/04/2015	10/04/2016	<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





EUT - Top View



EUT - Bottom View



EUT - Left View



EUT - Right View



EUT - Front View (White phone)



EUT - Rear View (White phone)

Annex B.ii. Photograph: EUT Internal Photo



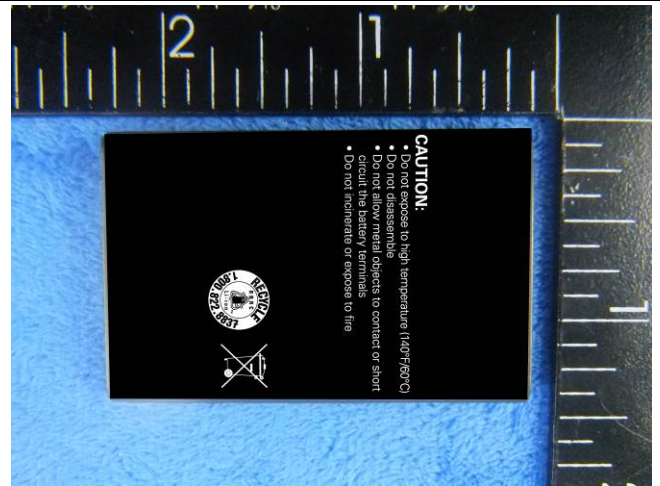
Cover Off - Top View 1



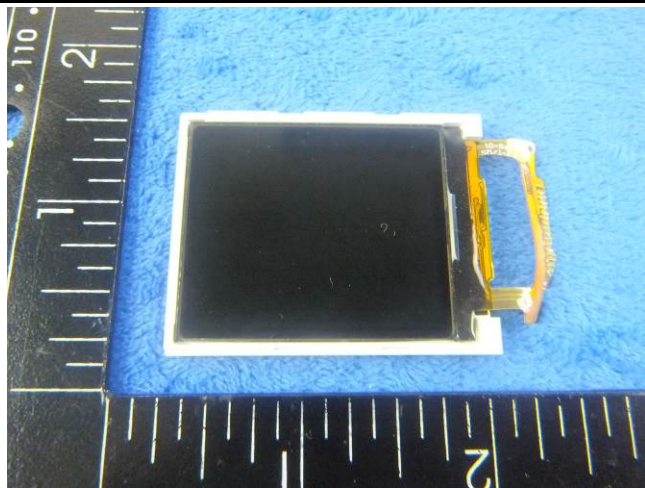
Cover Off - Top View 2



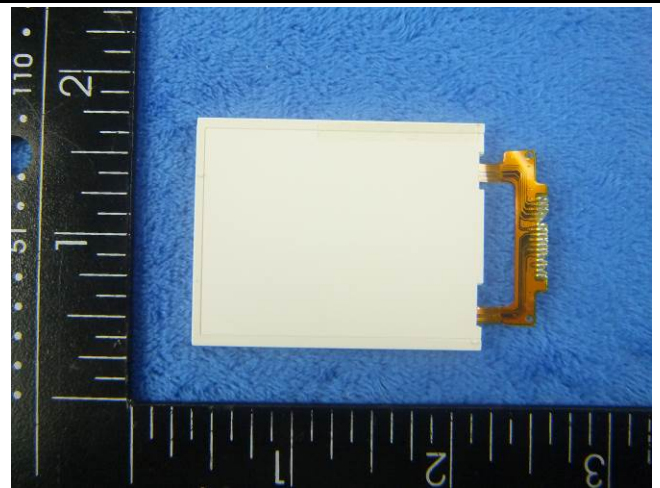
Battery - Top View



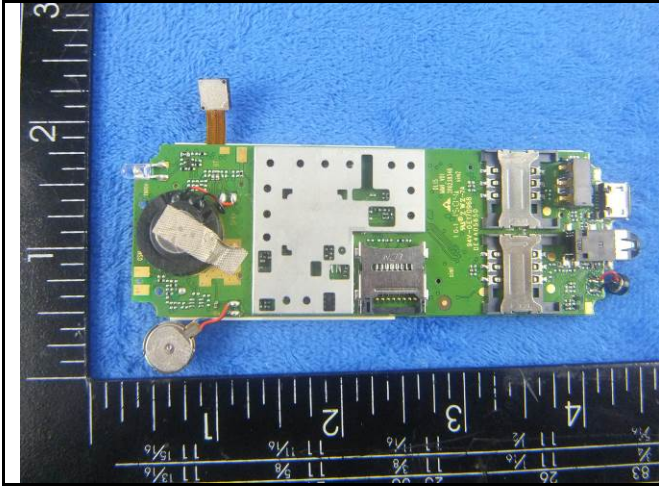
Battery - Bottom View



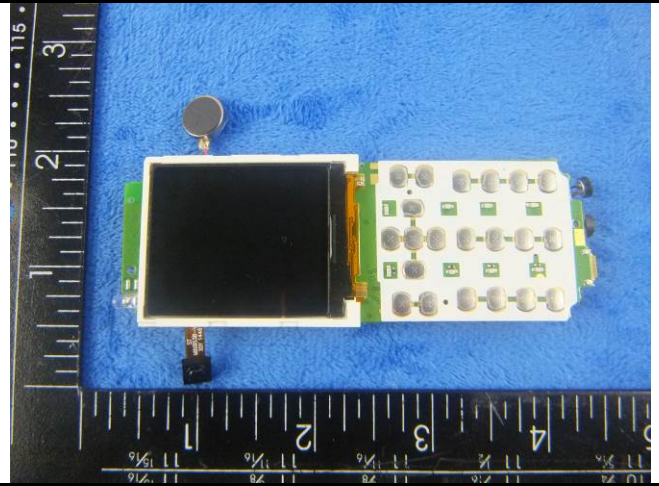
LCD - Front View



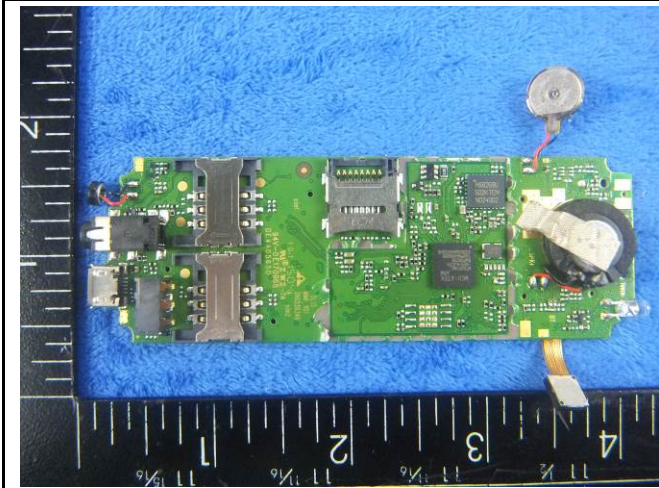
LCD - Rear View



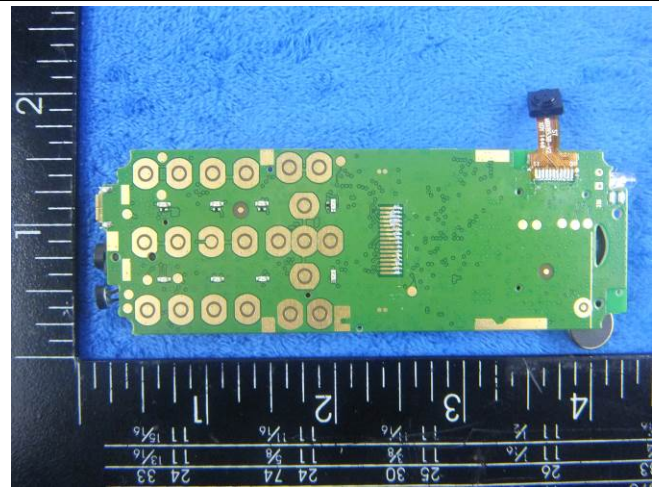
Mainboard With Shielding - Front View



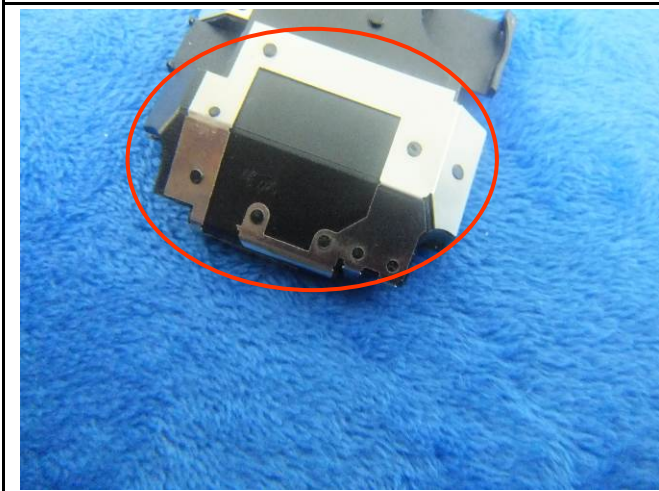
Mainboard With Shielding - rear View



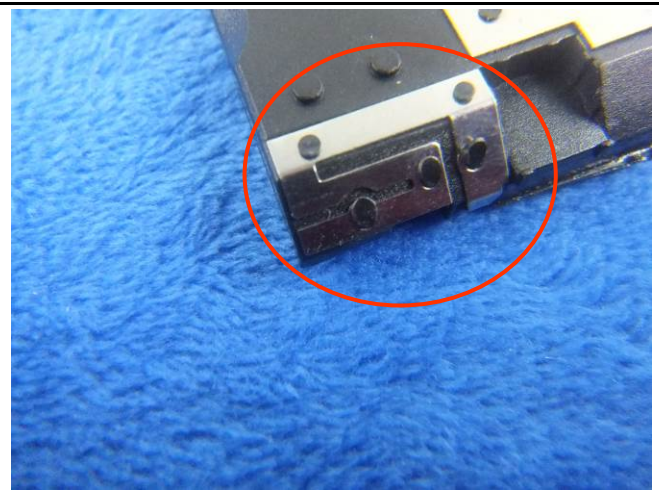
Mainboard Without Shielding - Front View



Mainboard Without Shielding - rear View



GSM/PCS Antenna View



Bluetooth Antenna View

Annex B.iii. Photograph: Test Setup Photo



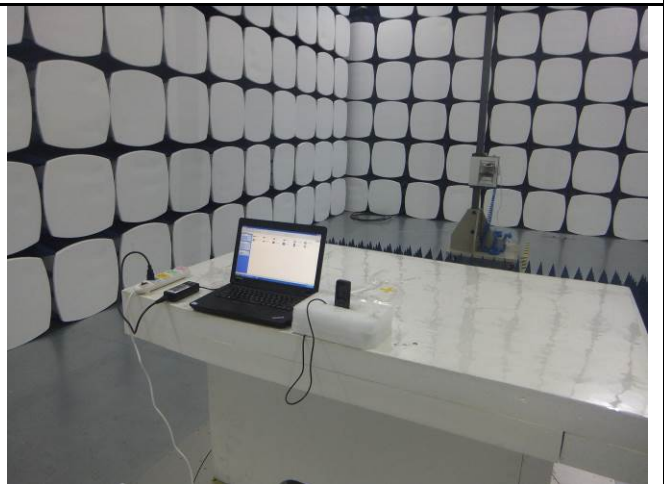
Conducted Emissions Test Setup – Front View



Conducted Emissions Test Setup – Side View



Radiated Spurious Emissions Test Setup Below 1GHz

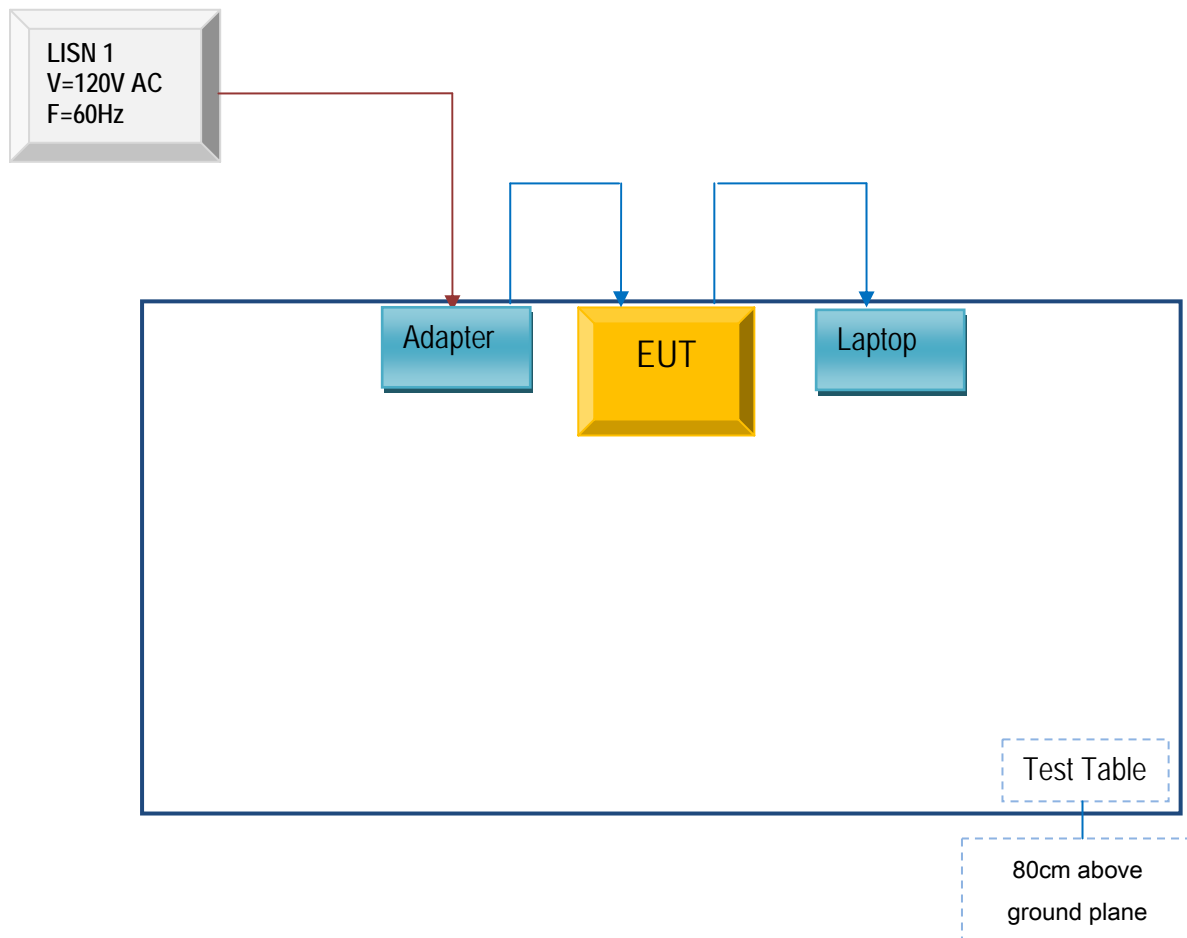


Radiated Spurious Emissions Test Setup Above 1GHz

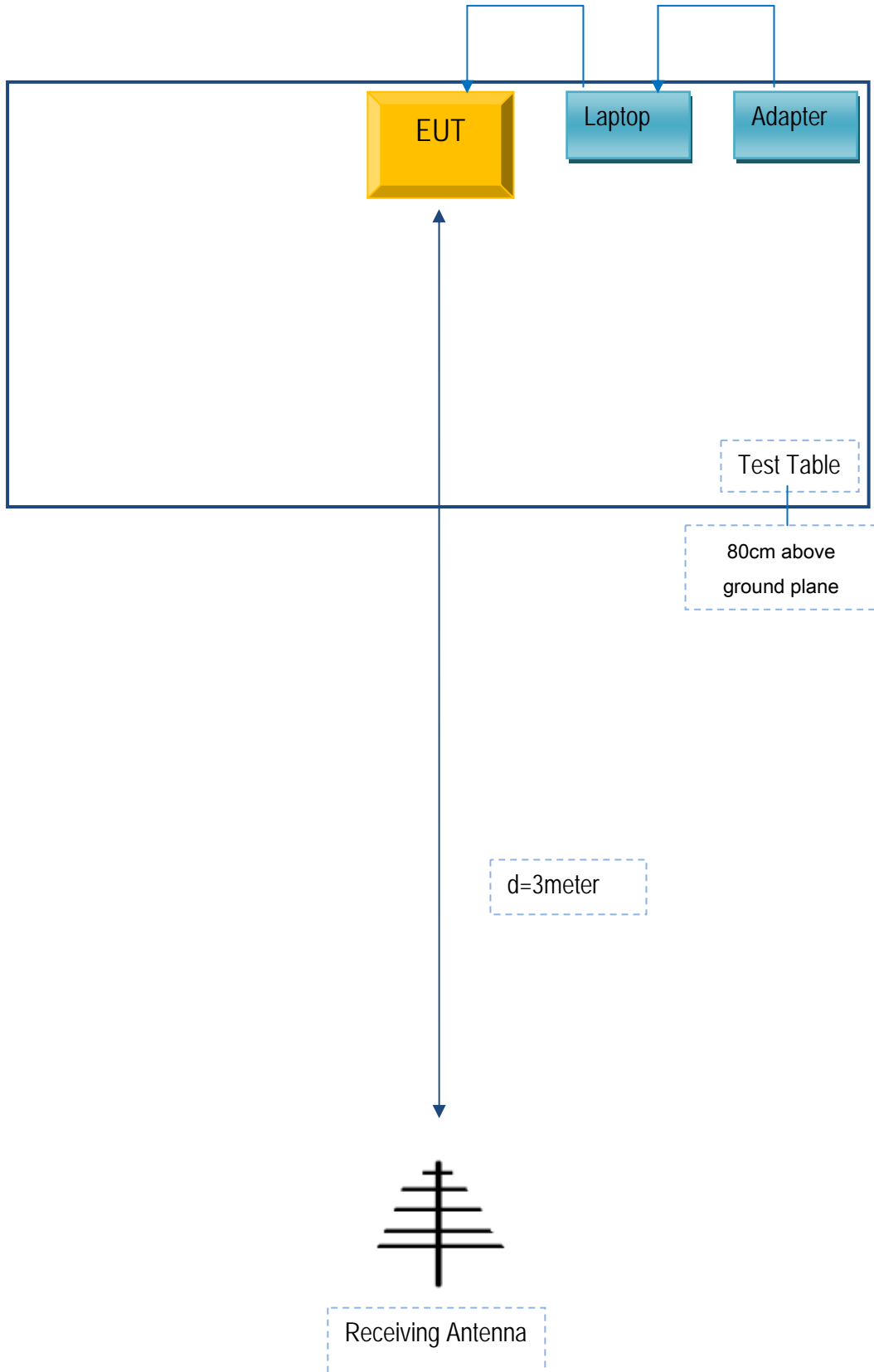
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

Block Configuration Diagram for Conducted Emissions



Block Configuration Diagram for Radiated Emissions



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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

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

Please see Attachment

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Annex E. DECLARATION OF SIMILARITY

N/A