EMC TEST REPORT

SIEMIC
GLOBAL TESTING & CERTIFICATIONS
YOUR CHOICE FOR- TCB FCB CB NB CAB RCB

Report No.: 15050005-FCC-E1

Supersede Report No.: N/A

Applicant	NINGBO BIRD CO., LTD
Product Name	Mobile phone
Model No.	A5005
Serial No.	N/A
Test Standard	FCC Part 15 Subpart B Class B:2014, ANSI C63.4: 2014
Test Date	Apr. 02 to Apr. 03, 2015
Issue Date	Apr. 14, 2015
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Kahn.Yang	Chris You	
Kahn Yang Test Engineer	Chris You 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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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 13

ANNEX A. TEST INSTRUMENT 17

ANNEX B. EUT AND TEST SETUP PHOTOGRAPHS 18

ANNEX C. TEST SETUP AND SUPPORTING EQUIPMENT 24

ANNEX D. USER MANUAL / BLOCK DIAGRAM / SCHEMATICS / PARTLIST 27

ANNEX E. DECLARATION OF SIMILARITY 28

1. Report Revision History

Report No.	Report Version	Description	Issue Date
15050005-FCC-E1	NONE	Original	Apr. 14, 2015

2. Customer information

Applicant Name	NINGBO BIRD CO., LTD
Applicant Add	No.999, Dacheng East Road, Fenghua City, Zhejiang Province
Manufacturer	NINGBO BIRD CO., LTD
Manufacturer Add	No.999, Dacheng East Road, Fenghua City, Zhejiang Province

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:	A5005
Serial Model:	N/A
Date EUT received:	Apr. 01, 2015
Test Date(s):	Apr. 02 to Apr. 03, 2015
Equipment Category :	JBP
Antenna Gain:	GSM850: -2.2 dBi PCS1900: -1.8 dBi UMTS-FDD Band 5/ Band 2/ Band 4: -2 dBi Bluetooth: -1 dBi WIFI: -3 dBi
Type of Modulation:	GSM / GPRS: GMSK EGPRS: GMSK, 8PSK UMTS-FDD: QPSK 802.11b/g/n: DSSS, OFDM 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 UMTS-FDD Band 5 TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz UMTS-FDD Band 2 TX:1852.4 ~ 1907.6 MHz; RX: 1932.4 ~ 1987.6 MHz UMTS-FDD Band 4 TX :1712.4 ~ 1752.6 MHz; RX : 2112.4 ~ 2152.6 MHz WIFI:802.11b/g/n(20M): 2412-2462 MHz WIFI: 802.11n(40M): 2422-2452 MHz Bluetooth: 2402-2480 MHz

Number of Channels:	GSM 850: 124CH PCS1900: 299CH UMTS-FDD Band V : 102CH UMTS-FDD Band II : 277CH UMTS-FDD Band IV: 202CH WIFI :802.11b/g/n(20M): 11CH WIFI :802.11n(40M): 7CH Bluetooth: 79CH
Port:	Power Port, Earphone Port, USB Port
Input Power:	Battery: Model: A5005 Spec: 3.7V 1900mAh Limited charger voltage: 4.2V Adapter: Model: BIRD Input: AC 100-240V; 50/60Hz 0.15A Output: DC 5.0V; 500mA
Trade Name :	BIRD
GPRS/EGPRS Multi-slot class	8/10/12
FCC ID:	SNM-5005

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

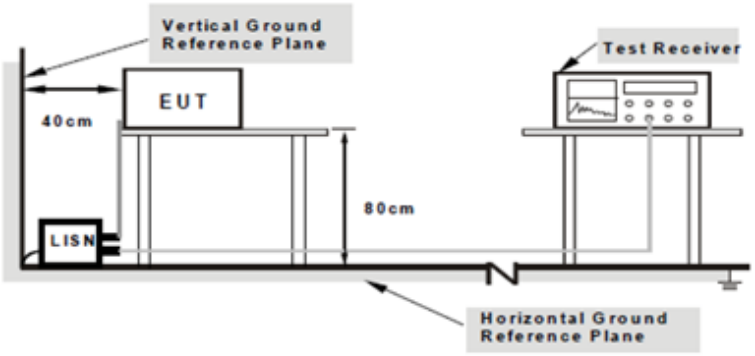
Emissions		
Test Item	**Description**	**Uncertainty**
Band Edge and Radiated Spurious Emissions	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
-	-	-

6. Measurements, Examination And Derived Results

6.1 AC Power Line Conducted Emissions

Temperature:	24°C
Relative Humidity:	58%
Atmospheric Pressure:	1009mbar
Test date:	Apr. 02, 2015
Tested By:	Kahn Yang

Requirement(s):

<table>
<tr><th>Spec</th><th>Item</th><th>Requirement</th><th>Applicable</th></tr>
<tr><td>47CFR§15.107</td><td>a)</td><td>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></td><td>☑</td></tr>
<tr><td>Test Setup</td><td colspan="3"> 

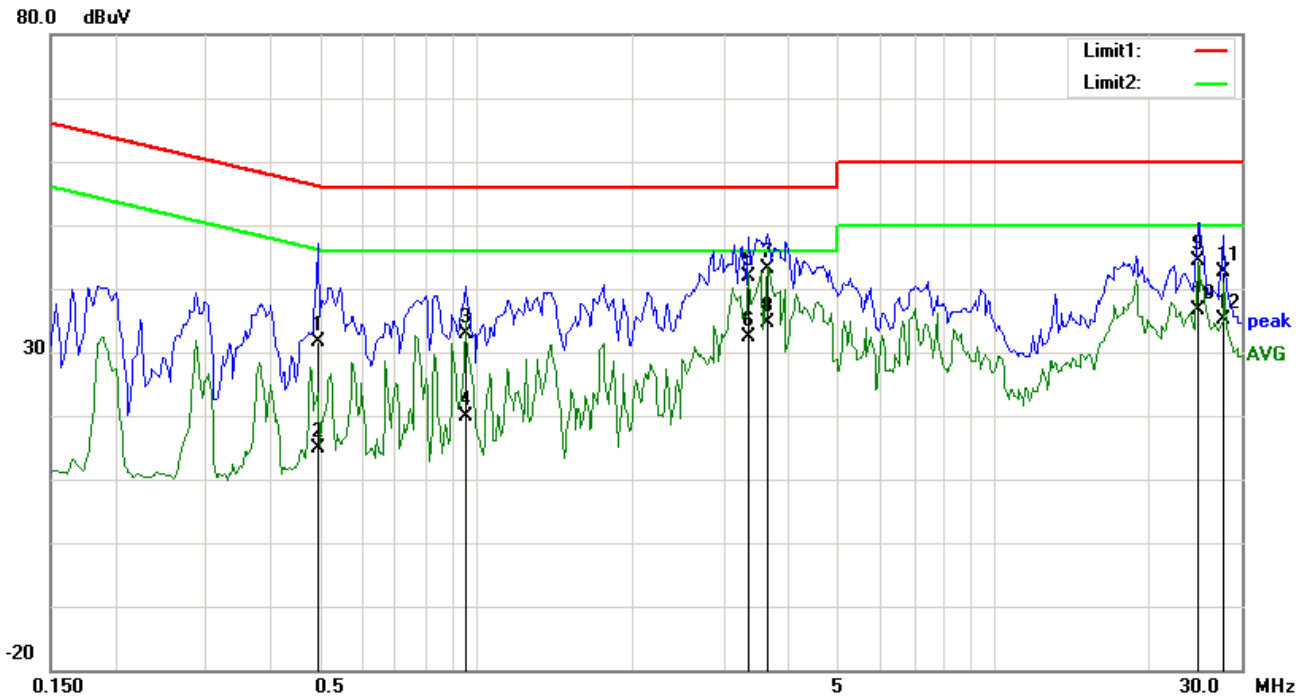
Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.</td></tr>
<tr><td>Procedure</td><td colspan="3">1. The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table.
2. The power supply for the EUT was fed through a 50W/50mH EUT LISN, connected to filtered mains.</td></tr>
</table>

	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	☑ Pass ☐ Fail

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

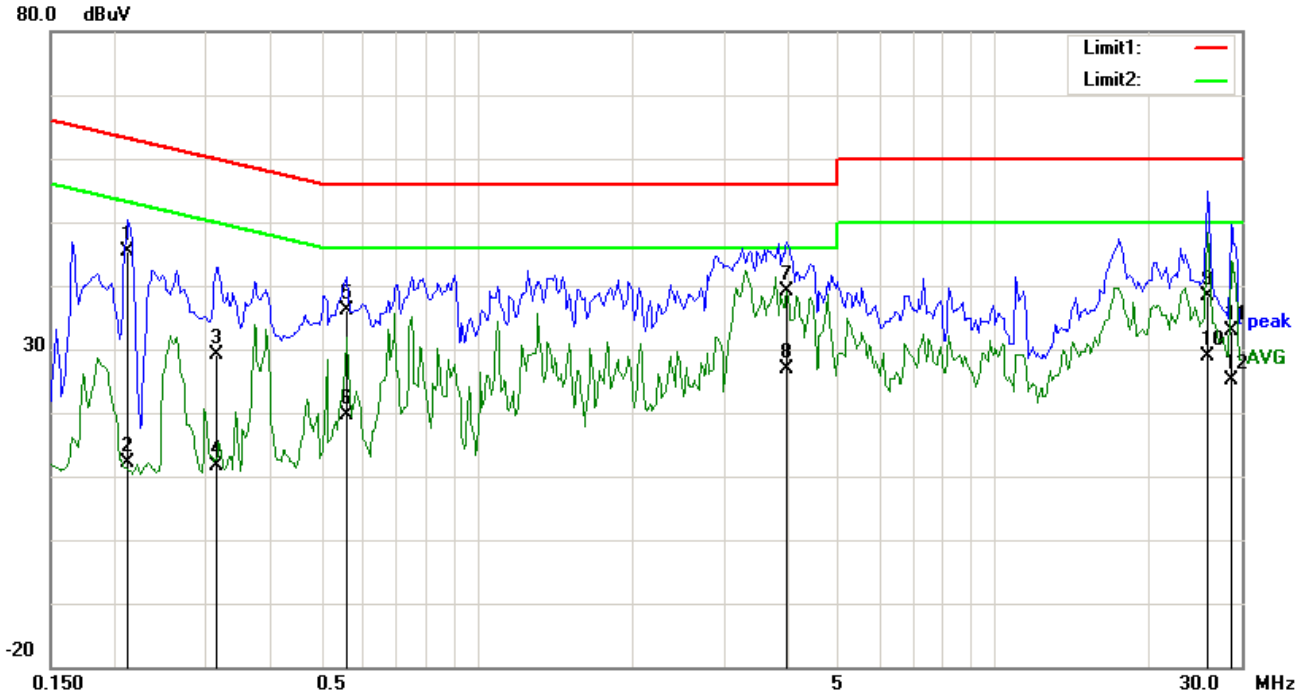
Test Mode:	USB Mode



Test Data

Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBµV/m)	Detector	Corrected (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1	L1	0.4938	20.39	QP	11.14	31.53	56.10	-24.57
2	L1	0.4938	3.86	AVG	11.14	15.00	46.10	-31.10
3	L1	0.9508	21.84	QP	10.92	32.76	56.00	-23.24
4	L1	0.9508	9.07	AVG	10.92	19.99	46.00	-26.01
5	L1	3.3633	30.92	QP	10.90	41.82	56.00	-14.18
6	L1	3.3633	21.44	AVG	10.90	32.34	46.00	-13.66
7	L1	3.6484	32.28	QP	10.90	43.18	56.00	-12.82
8	L1	3.6484	23.82	AVG	10.90	34.72	46.00	-11.28
9	L1	24.7734	33.54	QP	10.90	44.44	60.00	-15.56
10	L1	24.7734	25.66	AVG	10.90	36.56	50.00	-13.44
11	L1	27.6992	31.77	QP	10.90	42.67	60.00	-17.33
12	L1	27.6992	24.31	AVG	10.90	35.21	50.00	-14.79



Test Data

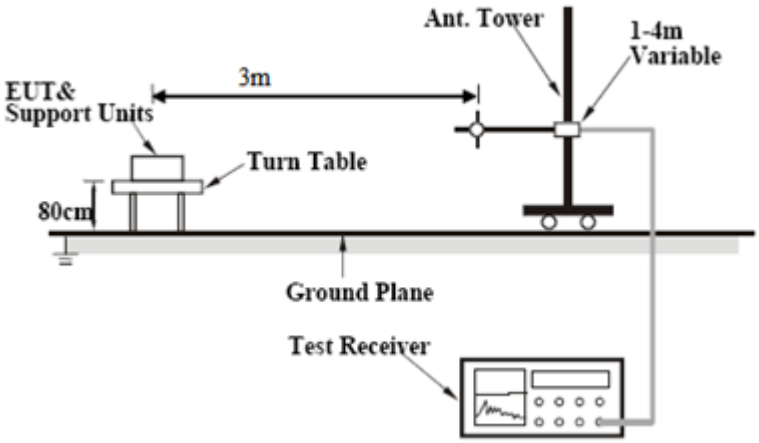
Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBµV/m)	Detector	Corrected (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1	N	0.2125	45.38	QP	0.00	45.38	63.11	-17.73
2	N	0.2125	12.02	AVG	0.00	12.02	53.11	-41.09
3	N	0.3141	29.24	QP	0.00	29.24	59.86	-30.62
4	N	0.3141	11.51	AVG	0.00	11.51	49.86	-38.35
5	N	0.5602	36.24	QP	0.00	36.24	56.00	-19.76
6	N	0.5602	19.63	AVG	0.00	19.63	46.00	-26.37
7	N	3.9648	39.12	QP	0.00	39.12	56.00	-16.88
8	N	3.9648	26.84	AVG	0.00	26.84	46.00	-19.16
9	N	25.7891	38.46	QP	0.00	38.46	60.00	-21.54
10	N	25.7891	28.76	AVG	0.00	28.76	50.00	-21.24
11	N	28.7031	32.78	QP	0.00	32.78	60.00	-27.22
12	N	28.7031	25.17	AVG	0.00	25.17	50.00	-24.83

6.2 Radiated Emissions

Temperature	23°C
Relative Humidity	58%
Atmospheric Pressure	1009mbar
Test date :	Apr. 03, 2015
Tested By :	Kahn Yang

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 Frequency range (MHz) / Field Strength (μV/m) 30 – 88 / 100 88 – 216 / 150 216 960 / 200 Above 960 / 500	☑
Test Setup			
Procedure	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: a. Vertical or horizontal polarization (whichever gave the higher emission level		

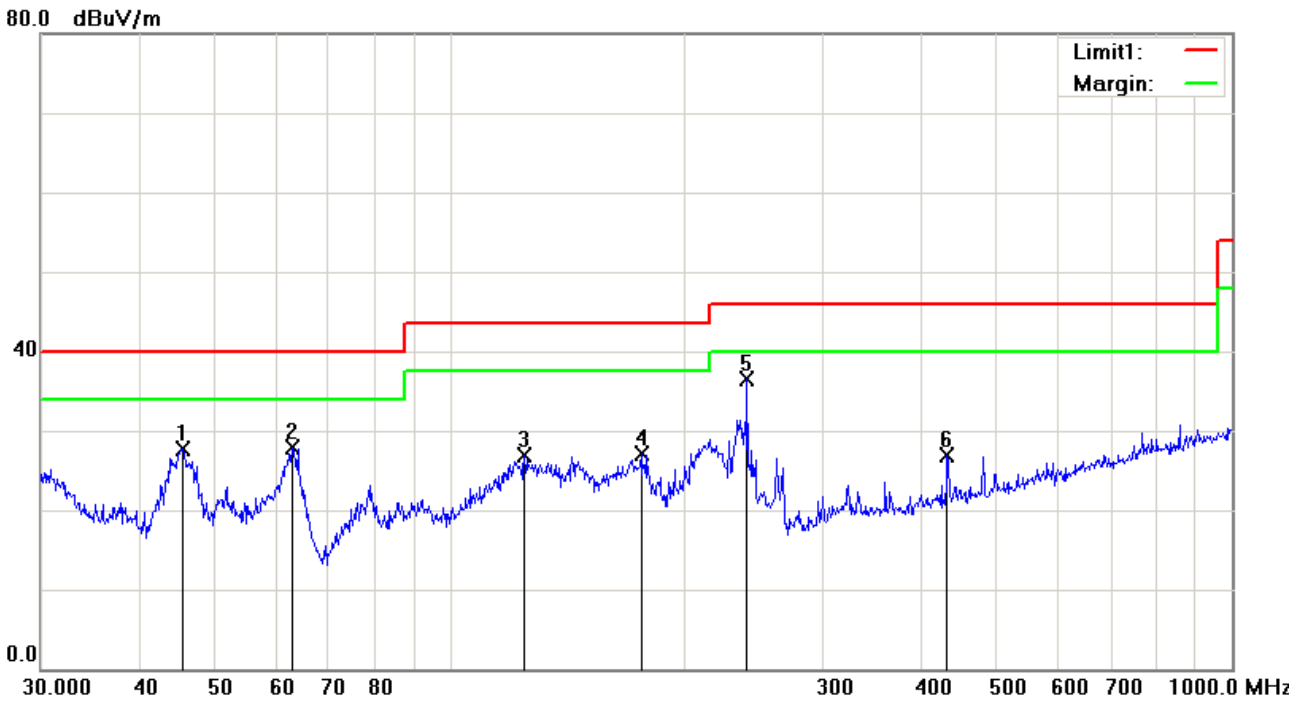
	over a full rotation of the EUT) was chosen. b. The EUT was then rotated to the direction that gave the maximum emission. c. Finally, the antenna height was adjusted to the height that gave the maximum emission. 3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasiy Peak detection at frequency below 1GHz. 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%) 5. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.
Remark	
Result	☑ Pass ☐ Fail

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

Test Mode:	USB Mode

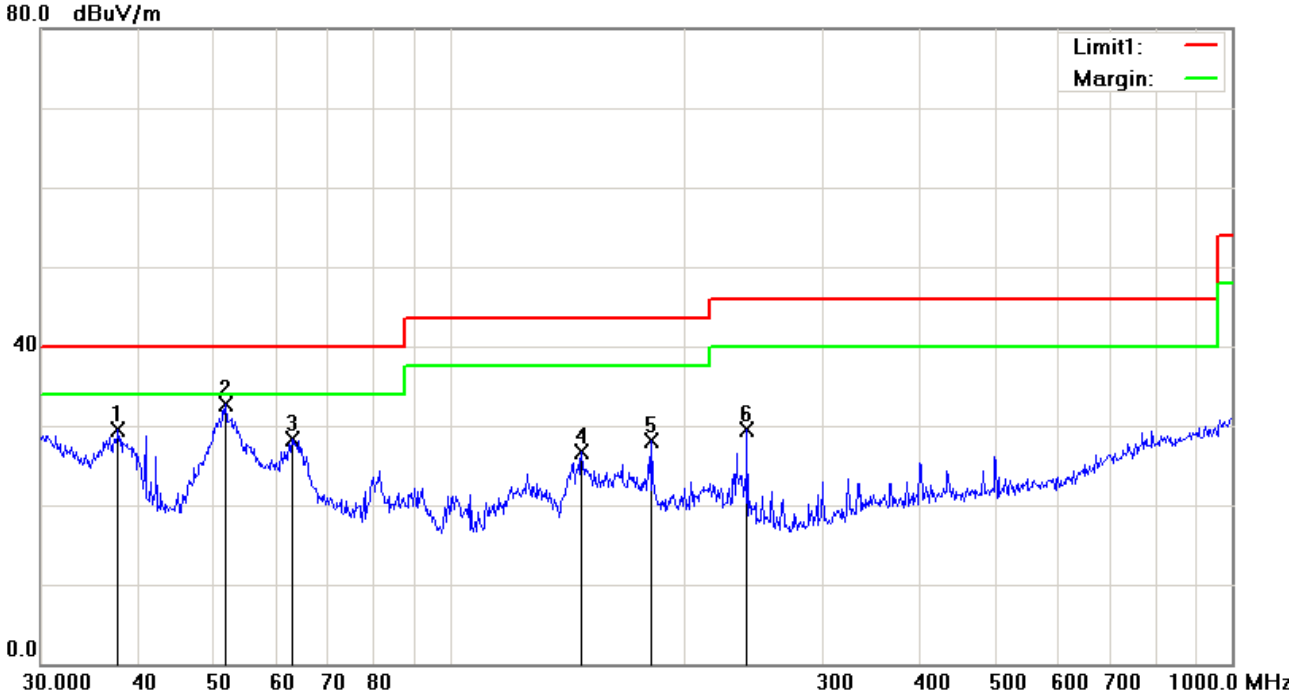
Below 1GHz



Test Data

Horizontal Polarity Plot @3m

No.	P/L	Frequency (MHz)	Reading (dBμV/m)	Detector	Corrected (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)
1	H	45.5348	29.47	peak	-1.71	27.76	40.00	-12.24	200	147
2	H	62.8708	41.98	peak	-14.14	27.84	40.00	-12.16	200	174
3	H	124.5690	34.43	peak	-7.59	26.84	43.50	-16.66	200	102
4	H	175.6516	36.68	peak	-9.54	27.14	43.50	-16.36	100	145
5	H	239.9873	45.55	peak	-9.10	36.45	46.00	-9.55	100	163
6	H	432.5457	30.33	peak	-3.50	26.83	46.00	-19.17	100	201



Test Data

Vertical Polarity Plot @3m

No.	P/L	Frequency (MHz)	Reading (dBμV/m)	Detector	Corrected (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Degree (°)
1	V	37.6798	35.42	peak	-5.87	29.55	40.00	-10.45	100	173
2	V	51.6616	46.86	peak	-14.09	32.77	40.00	-7.23	100	222
3	V	62.8708	42.23	peak	-13.99	28.24	40.00	-11.76	200	254
4	V	147.4036	34.10	peak	-7.42	26.68	43.50	-16.82	200	182
5	V	181.2834	36.95	peak	-8.84	28.11	43.50	-15.39	200	190
6	V	239.9873	36.85	peak	-7.30	29.55	46.00	-16.45	100	121

Note: The above 1GHz frequency was pre-scanned and the result which was 20dB lower than the limit line per 15.109 was not recorded.

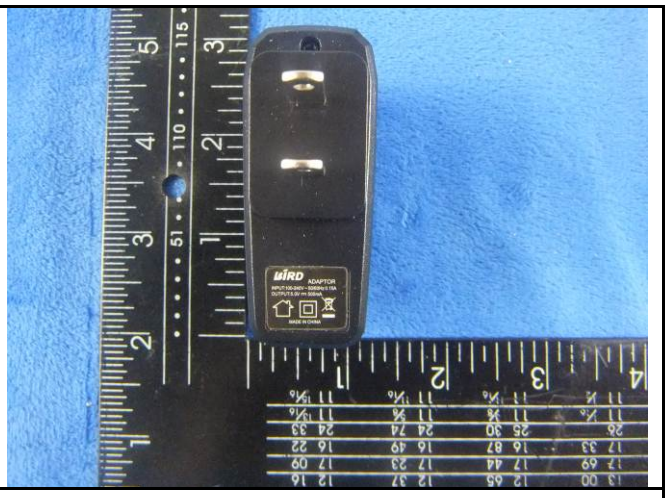
Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Due	In use
AC Line Conducted Emissions					
EMI test receiver	ESCS30	8471241027	09/18/2014	09/17/2015	☑
Line Impedance Stabilization Network	LI-125A	191106	09/26/2014	09/25/2015	☑
Line Impedance Stabilization Network	LI-125A	191107	09/26/2014	09/25/2015	☑
LISN	ISN T800	34373	09/26/2014	09/25/2015	☑
Transient Limiter	LIT-153	531118	09/02/2014	09/01/2015	☑
Radiated Emissions					
EMI test receiver	ESL6	100262	09/18/2014	09/17/2015	☑
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	09/02/2014	09/01/2015	☑
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	10/04/2015	10/04/2016	☑
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/22/2014	09/21/2015	☑
Double Ridge Horn Antenna	AH-118	71259	09/25/2014	09/24/2015	☑

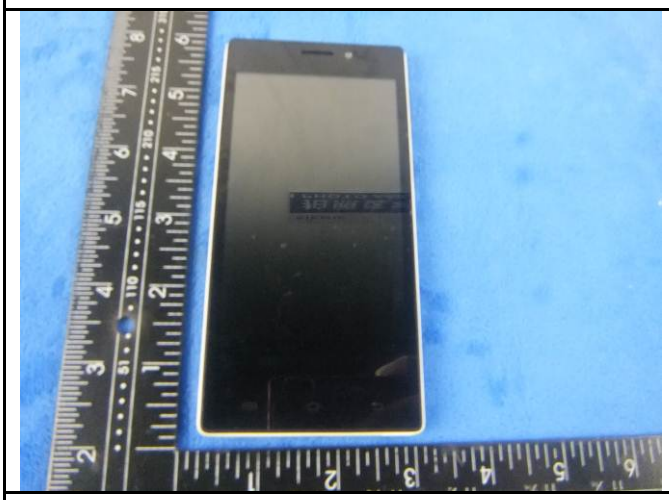
Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph: EUT External Photo

Whole Package - Top View



Adapter - Front View

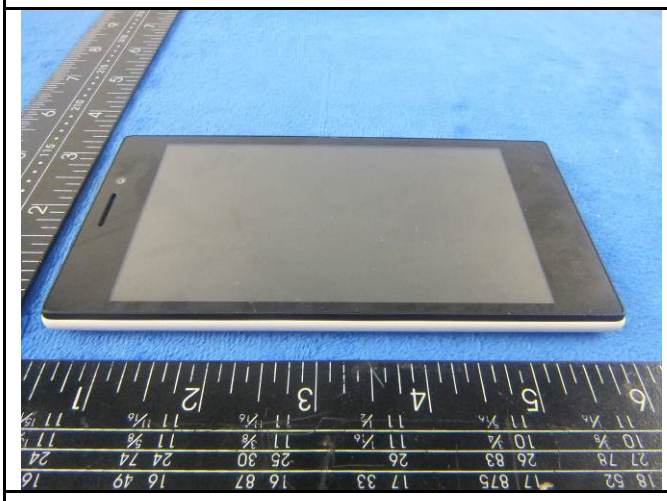


EUT - Front View

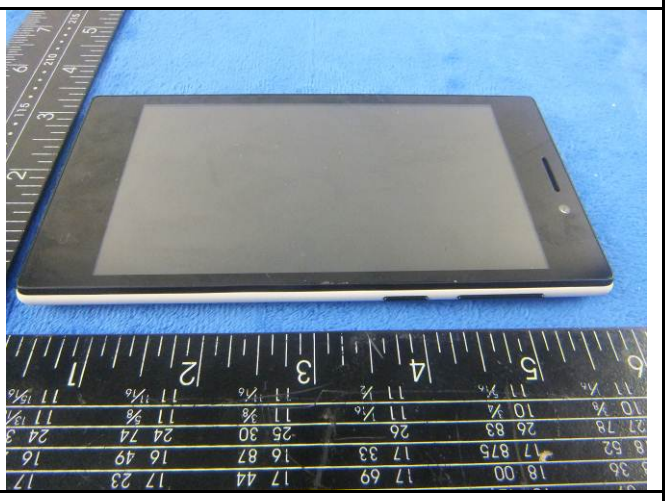
EUT - Rear View

EUT - Top View

EUT - Bottom View



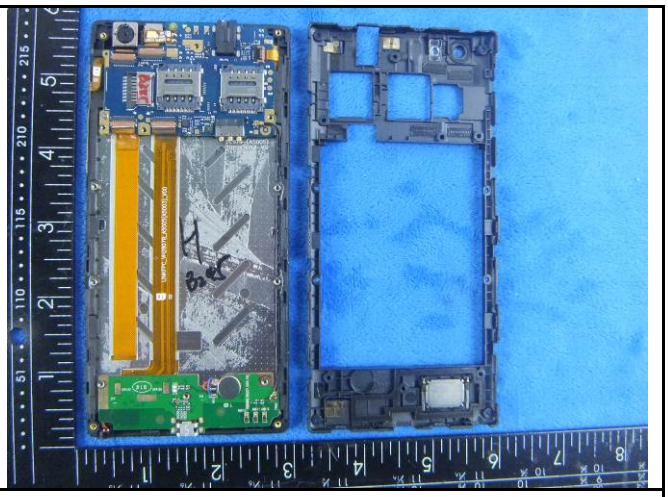
EUT - Left View



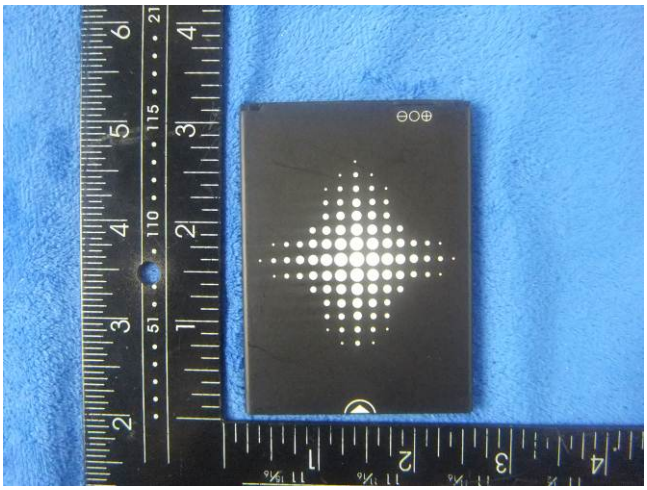
EUT - Right View

Annex B.ii. Photograph: EUT Internal Photo

Cover Off - Top View 1

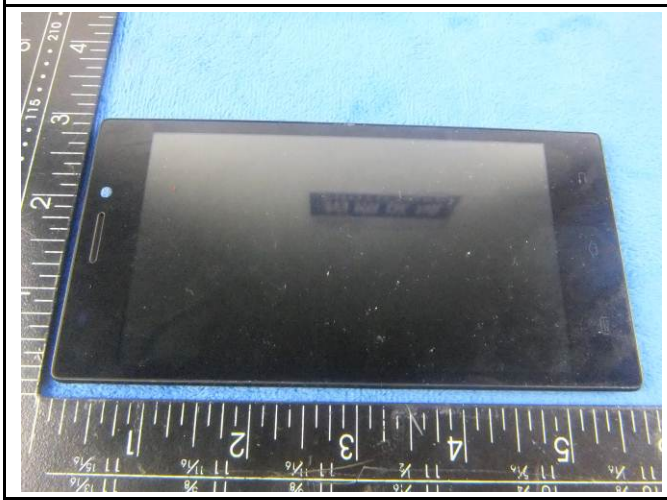


Cover Off - Top View 2

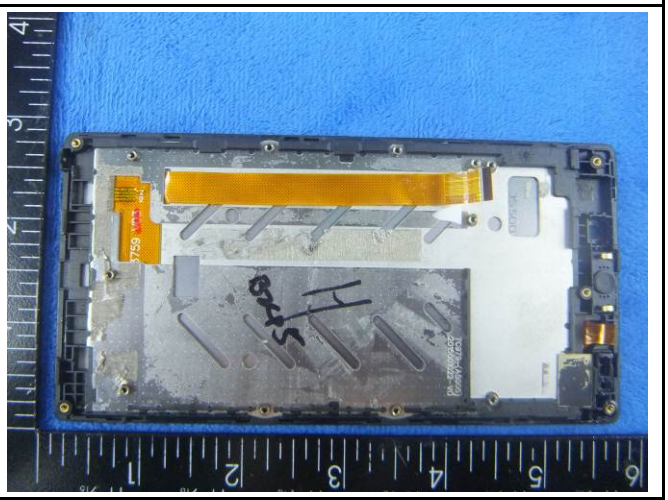


Battery - Top View

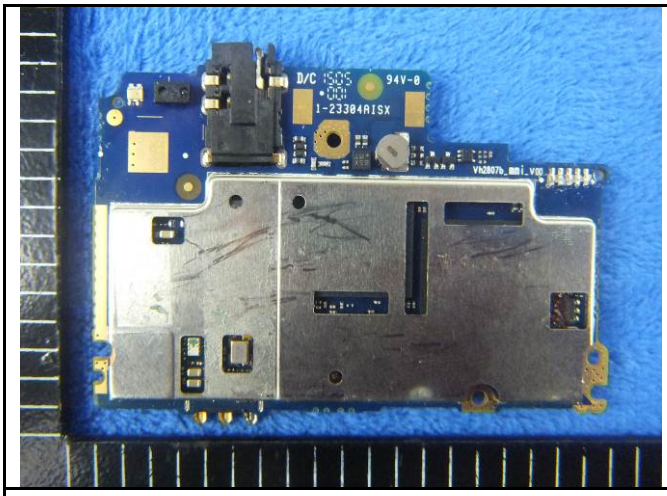
Battery - Bottom View



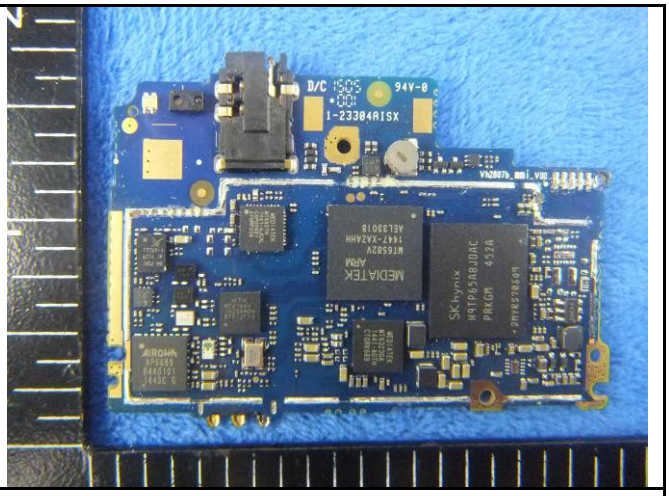
LCD - Front View



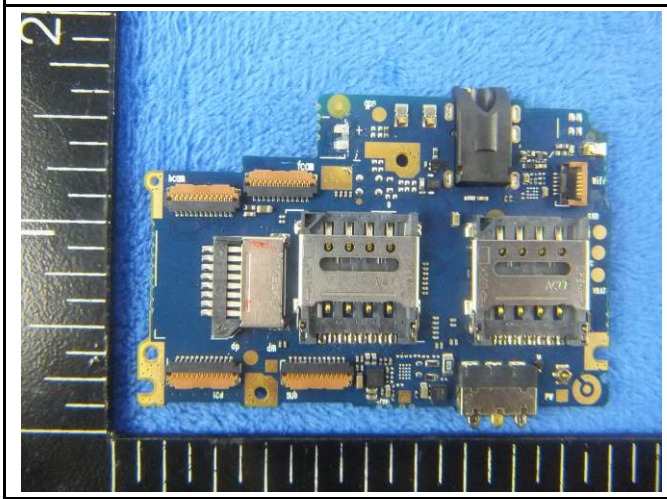
LCD - Rear View



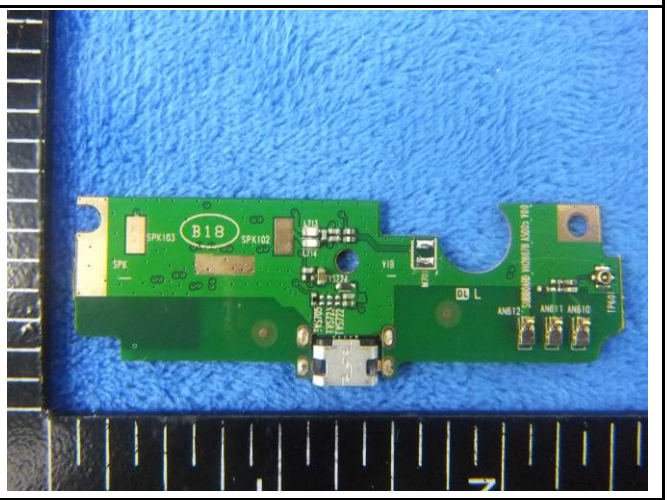
Mainborad With Shielding - Front View



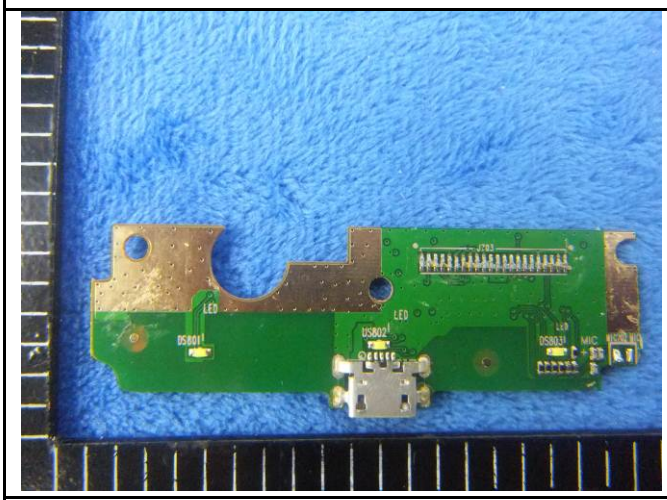
Mainborad Without Shielding - Front View



Mainborad - Rear View



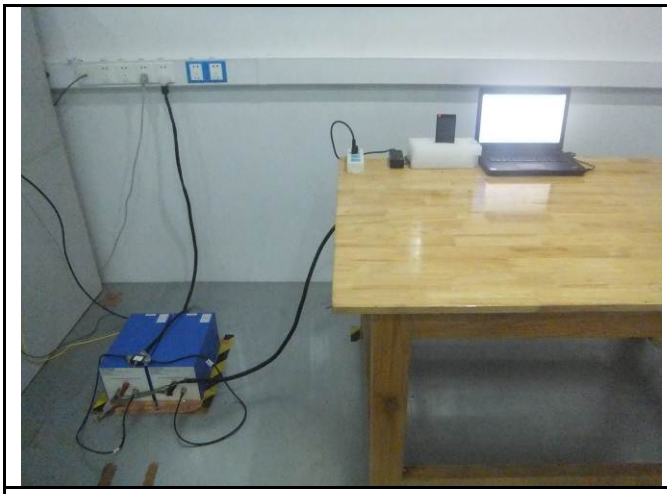
Connect borad - Front View



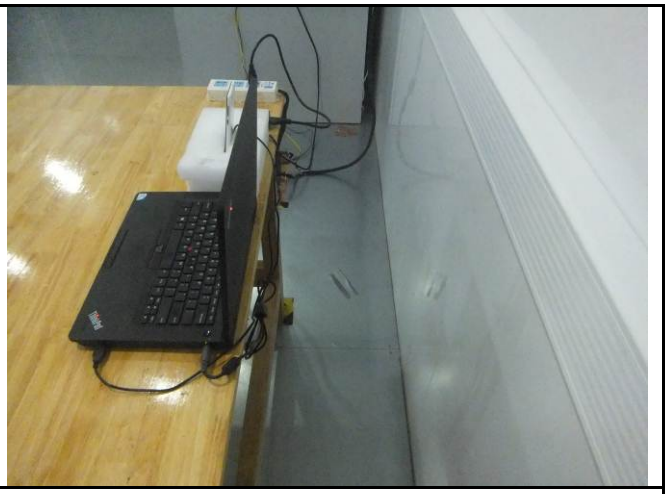
Connect borad - Rear View

GSM/PCS/UMTS-FDD Antenna View	BT/ WIFI Antenna View

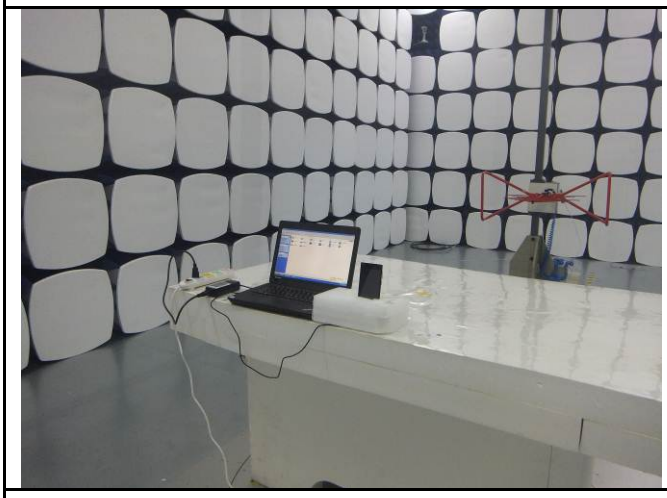
Annex B.iii. Photograph: Test Setup Photo



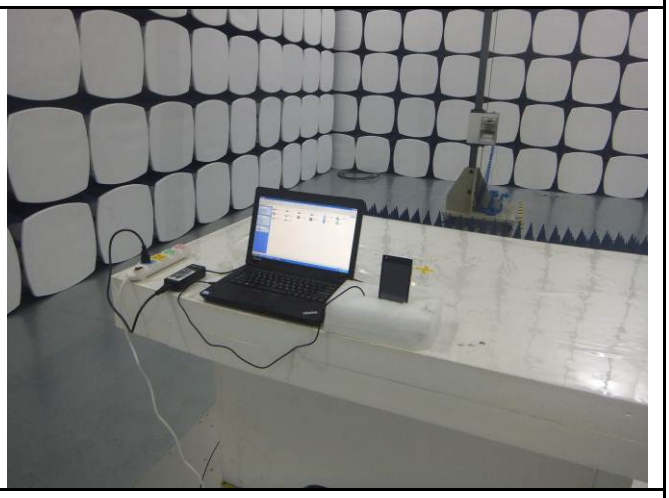
Conducted Emissions Test Setup Front View



Conducted Emissions Test Setup Side View



Radiated Spurious Emissions Test Setup Below 1GHz

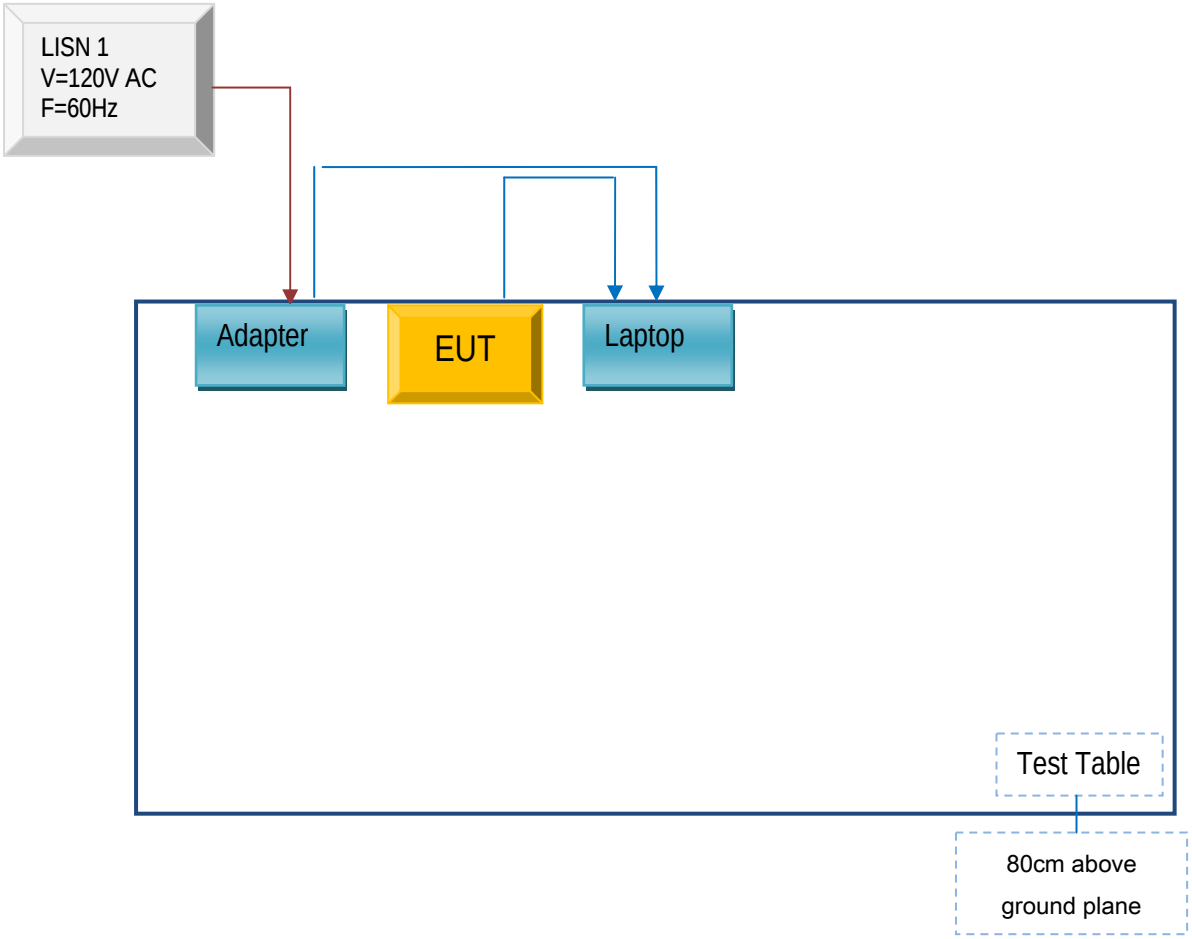


Radiated Spurious Emissions Test Setup Above 1GHz

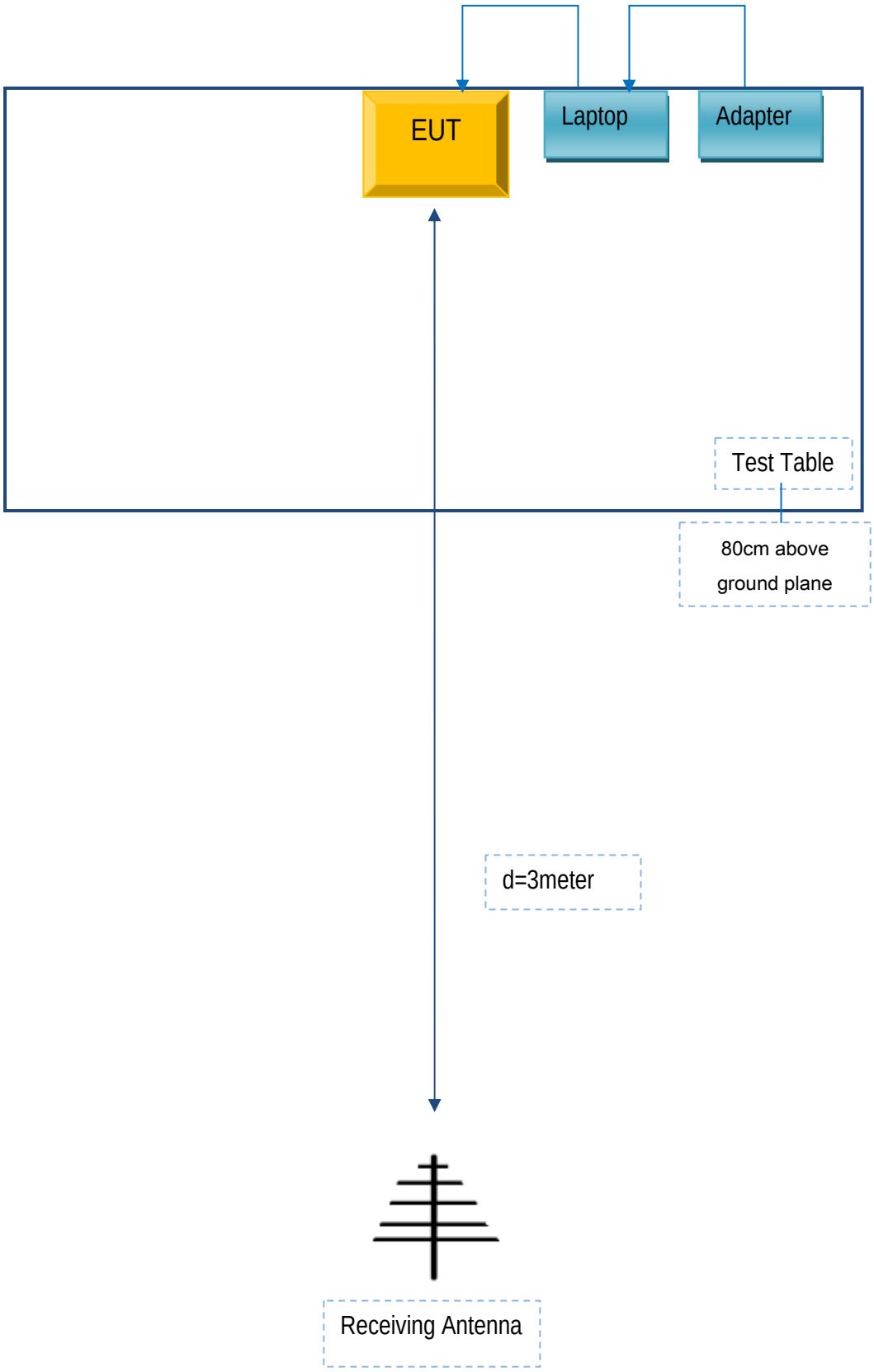
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

Block Configuration Diagram for Conducted Emissions



Block Configuration Diagram for Radiated Emissions



Annex C. il. 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

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

Please see Attachment

Annex E. DECLARATION OF SIMILARITY

N/A