
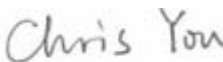



EMC TEST REPORT



Report No.: 15070302-FCC-E1

Supersede Report No.: N/A

Applicant	Verykool USA Inc	
Product Name	Mobile Phone	
Model No.	s5017	
Serial No.	N/A	
Test Standard	FCC Part 15 Subpart B Class B:2014, ANSI C63.4: 2014	
Test Date	April 24 to May 11, 2015	
Issue Date	May 12, 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"/>		
		
Kahn Yang 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

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	15070302-FCC-E1
Page	3 of 27

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	13
ANNEX A. TEST INSTRUMENT	17
ANNEX B. EUT AND TEST SETUP PHOTOGRAPHS	18
ANNEX C. TEST SETUP AND SUPPORTING EQUIPMENT	23
ANNEX D. USER MANUAL / BLOCK DIAGRAM / SCHEMATICS / PARTLIST	26
ANNEX E. DECLARATION OF SIMILARITY	27

1. Report Revision History

Report No.	Report Version	Description	Issue Date
15070302-FCC-E1	NONE	Original	May 12, 2015

2. Customer information

Applicant Name	Verykool USA Inc
Applicant Add	3636 Nobel Drive, Suite 325, San Diego, CA 92122 USA
Manufacturer	Zechin Communications Co.,Ltd.
Manufacturer Add	Unit804,8th Floor Desay Tech Building Gaoxin, Road South, Nanshan 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: s5017

Serial Model: N/A

Date EUT received: April 23, 2015

Test Date(s): April 24 to May 11, 2015

Equipment Category : JBP

Antenna Gain:

GSM850: 1.6dBi
PCS1900: 3.8dBi
UMTS-FDD Band V:1.7 dBi
UMTS-FDD Band IV:3.7 dBi
UMTS-FDD Band II: 1.75 dBi
Bluetooth/BLE: 3 dBi
WIFI: 2.9 dBi
GPS: 1.6 dBi

Type of Modulation:

GSM / GPRS: GMSK
EGPRS: GMSK, 8PSK
UMTS-FDD: QPSK, 16QAM
802.11b/g/n: DSSS, OFDM
Bluetooth: GFSK, π /4DQPSK, 8DPSK
BLE: 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
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
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

Test Report	15070302-FCC-E1
Page	7 of 27

Bluetooth& BLE: 2402-2480 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
Bluetooth: 79CH
BLE: 40CH

Port: Power Port, Earphone Port, USB Port

Input Power:

Battery:
Model: 344786A
Spec: 3.8V 1850mAh 7.03Wh
Limited charger voltage:4.35V
Adapter:
Model: S0500100-US
Input: AC 100-240V; 50/60Hz 0.4A Max
Output: 5.0V; 1A

Trade Name : verykool

GPRS/EGPRS Multi-slot class 8/10/12

FCC ID: WA6S5017

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	33°C
Relative Humidity	57%
Atmospheric Pressure	1007mbar
Test date :	May 04, 2015
Tested By :	Kahn Yang

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>
------------	---

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.
-----------	---

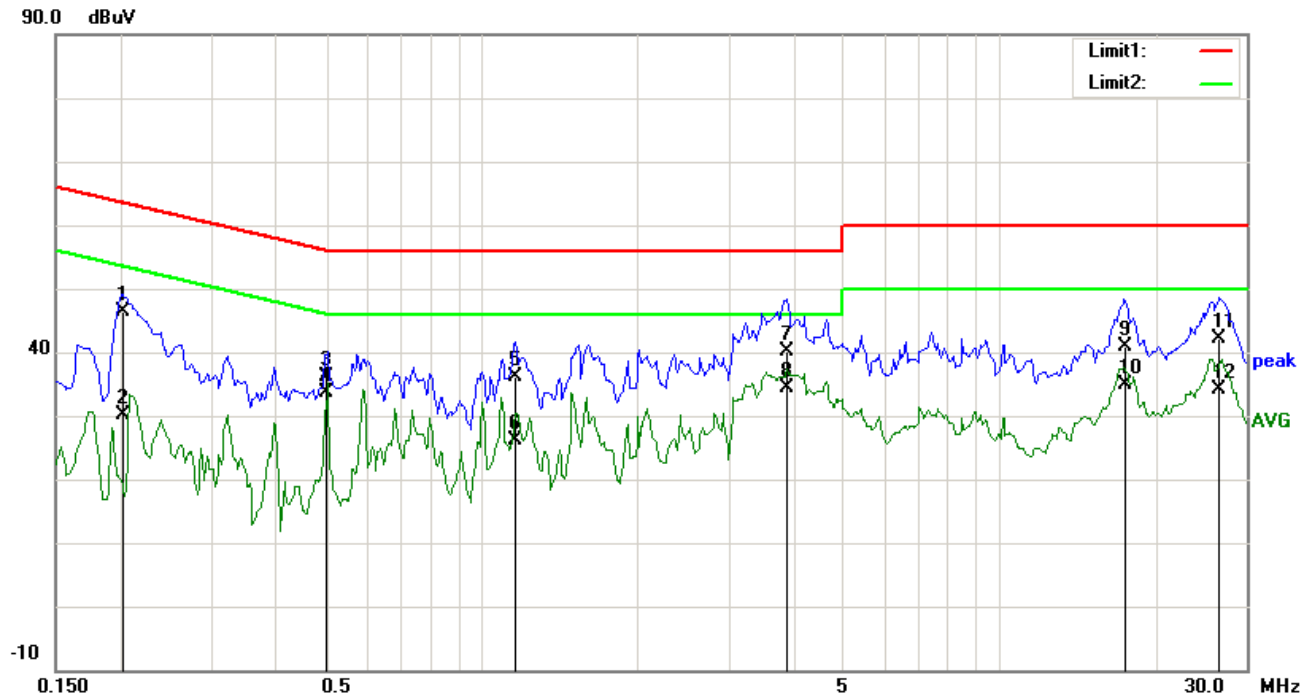
Test Report	15070302-FCC-E1
Page	10 of 27

	<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 1: USB Mode

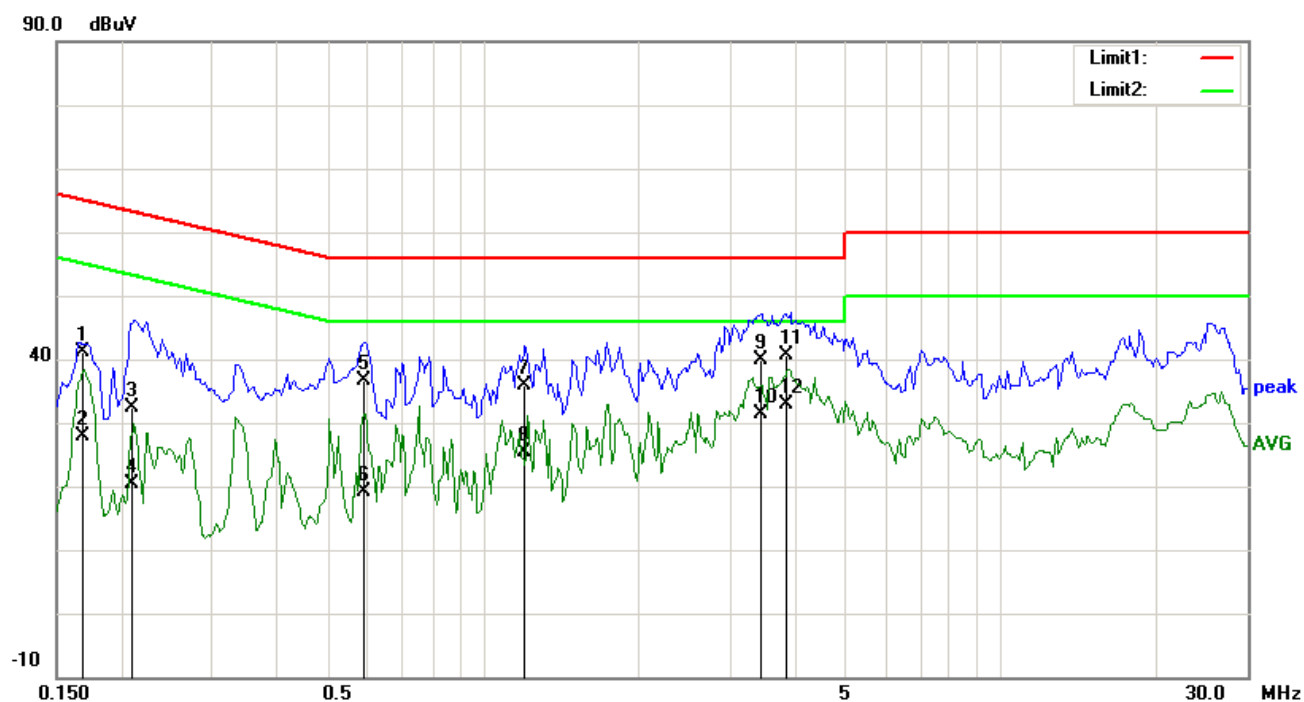


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Comment
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)	
1	L1	0.2029	33.36	QP	13.00	46.36	63.49	-17.13	
2	L1	0.2029	17.08	AVG	13.00	30.08	53.49	-23.41	
3	L1	0.4994	24.12	QP	11.90	36.02	56.01	-19.99	
4	L1	0.4994	21.81	AVG	11.90	33.71	46.01	-12.30	
5	L1	1.1617	24.70	QP	11.40	36.10	56.00	-19.90	
6	L1	1.1617	14.73	AVG	11.40	26.13	46.00	-19.87	
7	L1	3.8984	28.64	QP	11.40	40.04	56.00	-15.96	
8	L1	3.8984	23.04	AVG	11.40	34.44	46.00	-11.56	
9	L1	17.4750	26.30	QP	14.62	40.92	60.00	-19.08	
10	L1	17.4750	20.21	AVG	14.62	34.83	50.00	-15.17	
11	L1	26.5742	27.94	QP	14.25	42.19	60.00	-17.81	
12	L1	26.5742	20.00	AVG	14.25	34.25	50.00	-15.75	

Test Mode 1: USB Mode



Test Data


Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Comment
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)	
1	N	0.1695	27.94	QP	13.13	41.07	64.98	-23.91	
2	N	0.1695	14.73	AVG	13.13	27.86	54.98	-27.12	
3	N	0.2094	19.52	QP	12.98	32.50	63.23	-30.73	
4	N	0.2094	7.30	AVG	12.98	20.28	53.23	-32.95	
5	N	0.5914	24.88	QP	11.81	36.69	56.00	-19.31	
6	N	0.5914	7.22	AVG	11.81	19.03	46.00	-26.97	
7	N	1.2086	24.37	QP	11.43	35.80	56.00	-20.20	
8	N	1.2086	13.88	AVG	11.43	25.31	46.00	-20.69	
9	N	3.4356	28.30	QP	11.70	40.00	56.00	-16.00	
10	N	3.4356	19.63	AVG	11.70	31.33	46.00	-14.67	
11	N	3.8603	28.85	QP	11.76	40.61	56.00	-15.39	
12	N	3.8603	21.12	AVG	11.76	32.88	46.00	-13.12	

6.2 Radiated Emissions

Temperature	33°C
Relative Humidity	57%
Atmospheric Pressure	1007mbar
Test date :	May 04, 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	<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
-----------	--

Test Report	15070302-FCC-E1
Page	14 of 27

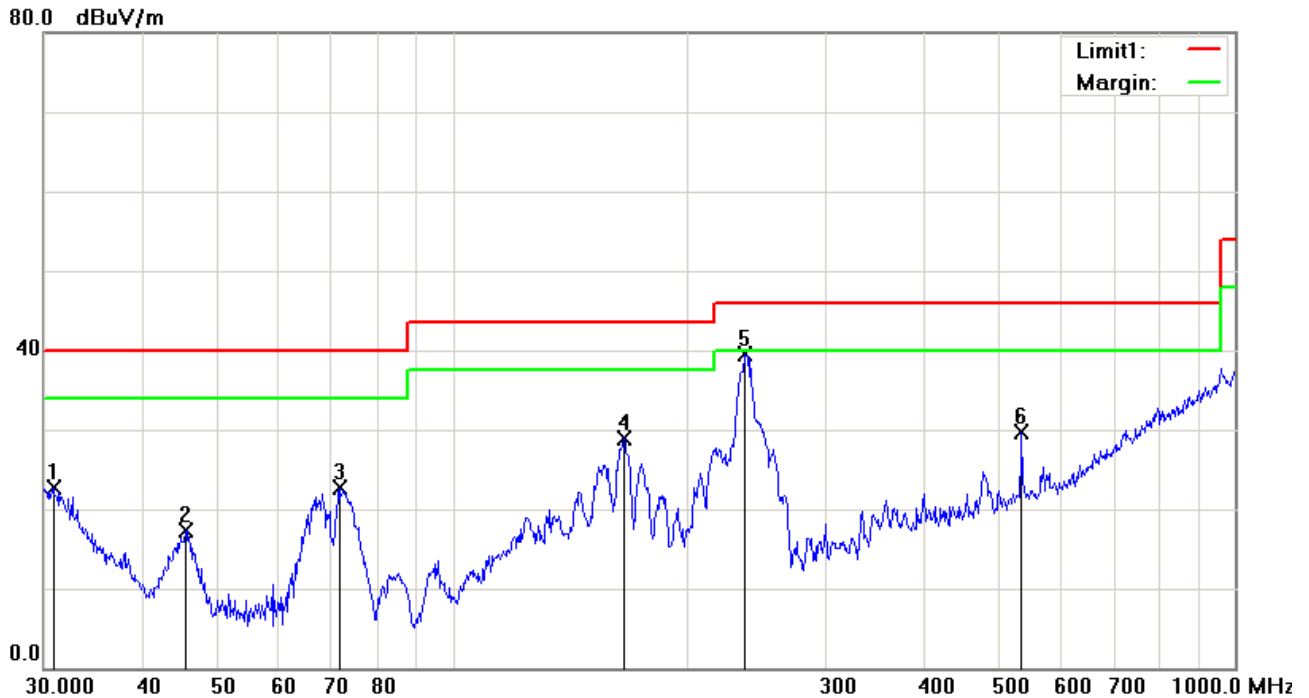
	<p>over a full rotation of the EUT) was chosen.</p> <p>b. The EUT was then rotated to the direction that gave the maximum emission.</p> <p>c. Finally, the antenna height was adjusted to the height that gave the maximum emission.</p> <p>3. The resolution bandwidth and video bandwidth of test receiver/spectrum 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 1: USB Mode

Below 1GHz



Test Data

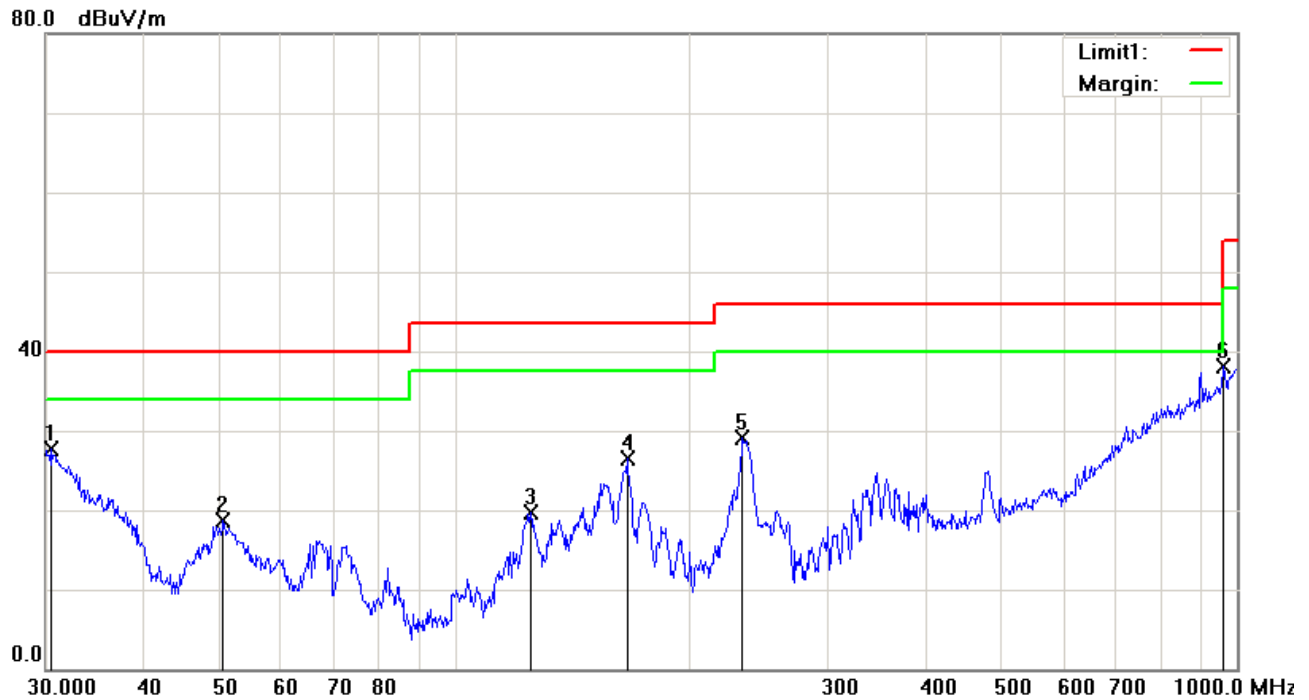
Horizontal Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Height	Degree	Comment
		(MHz)	(dBuV/m)		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	()	
1	H	30.8535	23.54	peak	-0.89	22.65	40.00	-17.35	100	68	
2	H	45.5348	18.96	peak	-1.71	17.25	40.00	-22.75	200	156	
3	H	71.5806	36.42	peak	-13.65	22.77	40.00	-17.23	200	164	
4	H	165.4867	37.73	peak	-8.73	29.00	43.50	-14.50	200	145	
5	H	235.8164	48.50	peak	-9.07	39.43	46.00	-6.57	100	136	
6	H	533.8321	30.81	peak	-1.10	29.71	46.00	-16.29	200	59	

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	Reading	Detector	Corrected	Result	Limit	Margin	Height	Degree	Comment
		(MHz)	(dBuV/m)		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	()	
1	V	30.5306	29.58	peak	-1.92	27.66	40.00	-12.34	100	307	
2	V	50.5860	32.76	peak	-14.08	18.68	40.00	-21.32	100	321	
3	V	125.0066	27.54	peak	-7.76	19.78	43.50	-23.72	100	156	
4	V	166.0680	34.88	peak	-8.33	26.55	43.50	-16.95	200	225	
5	V	233.3487	36.48	peak	-7.44	29.04	46.00	-16.96	100	138	
6	V	962.1623	32.29	peak	5.75	38.04	54.00	-15.96	100	292	

Above 1GHz

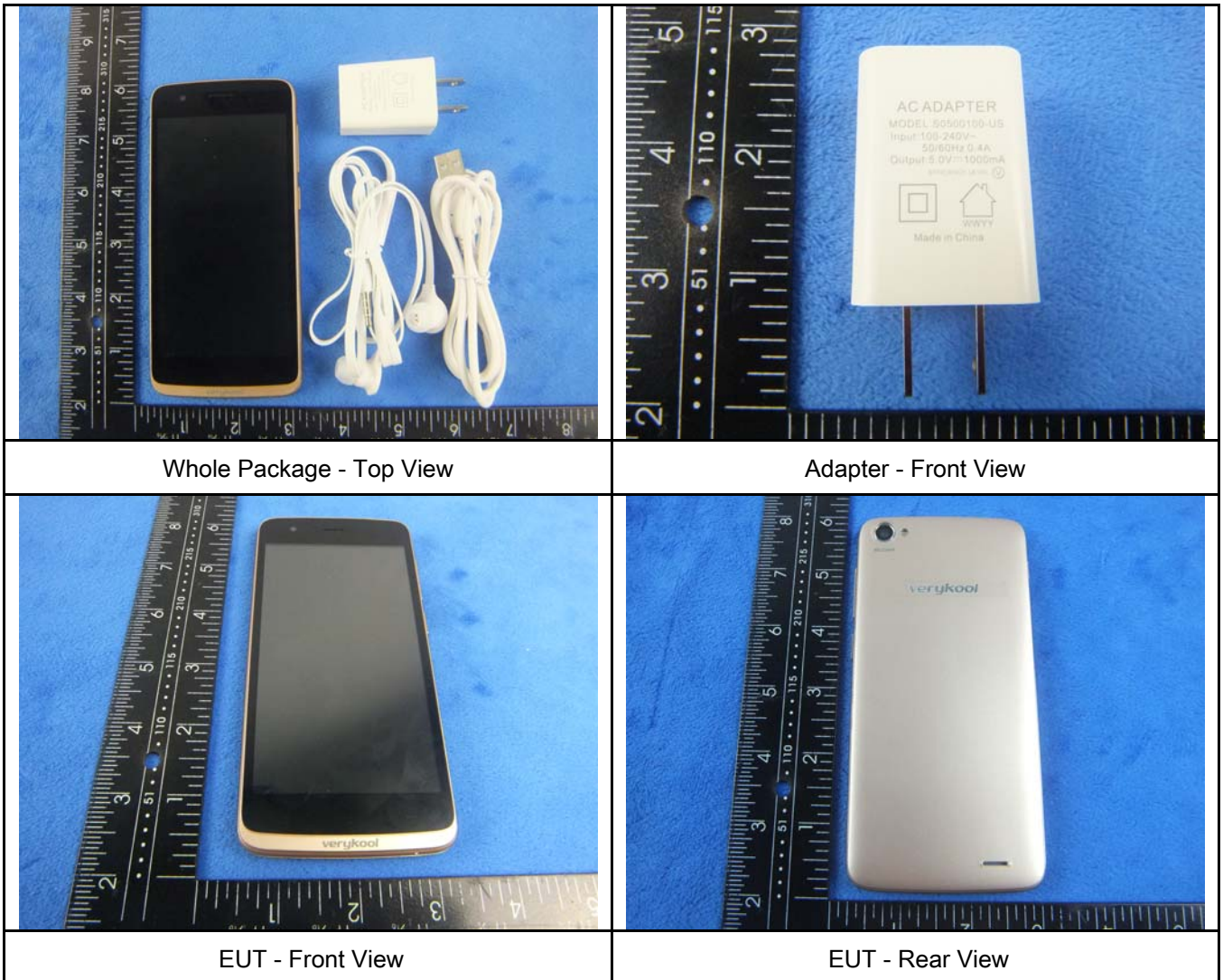
Note: The frequency that above 1GHz is mainly from the environment noise.

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	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





EUT - Top View



EUT - Bottom View



EUT - Left View



EUT - Right View

Annex B.ii. Photograph: EUT Internal Photo



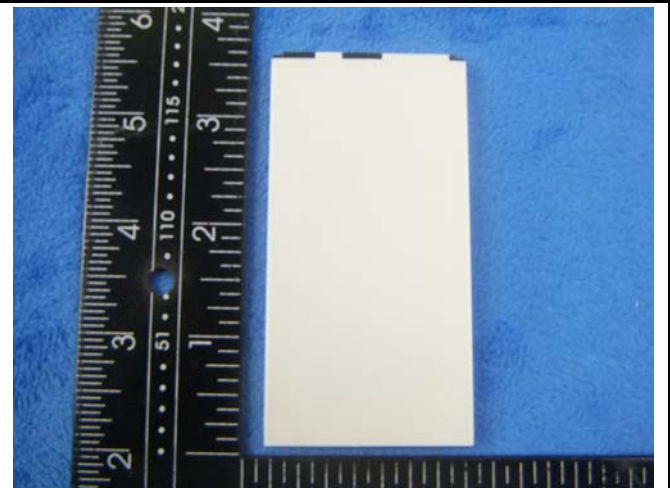
Cover Off - Top View 1



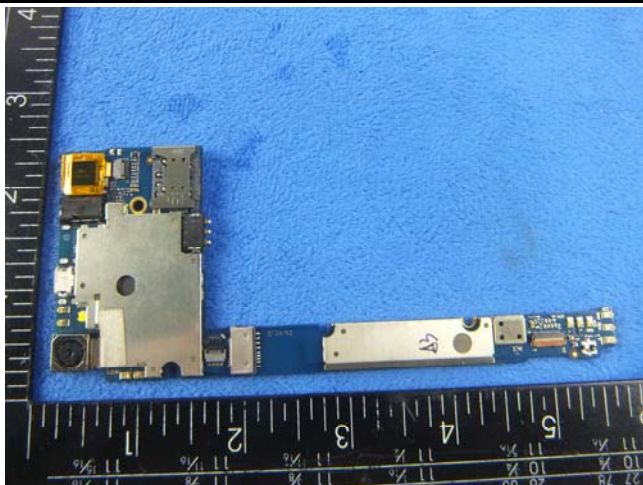
Cover Off - Top View 2



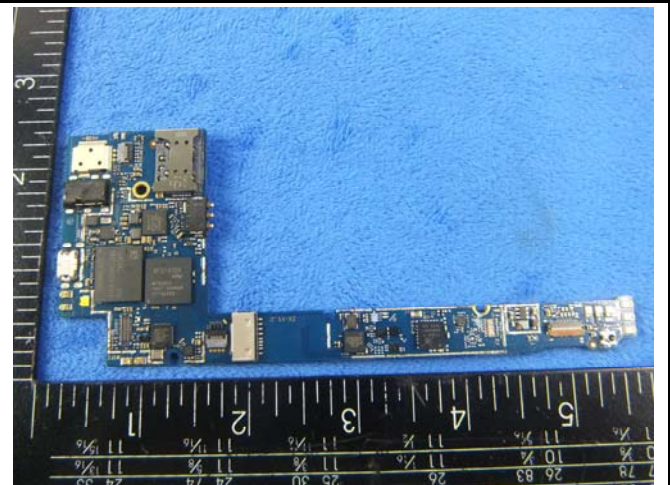
Battery - Top View



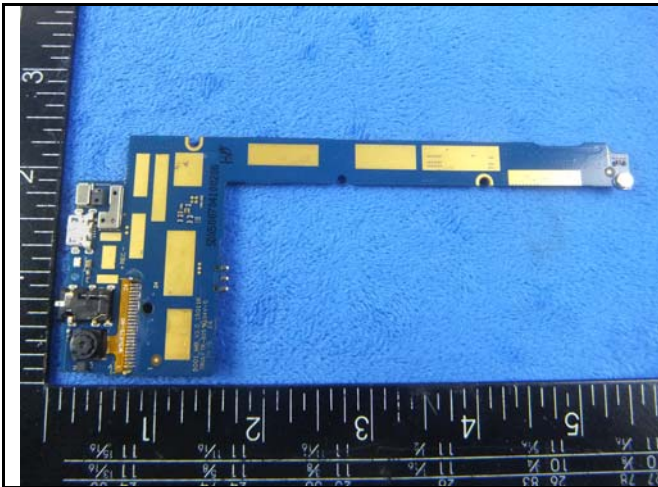
Battery - Bottom View



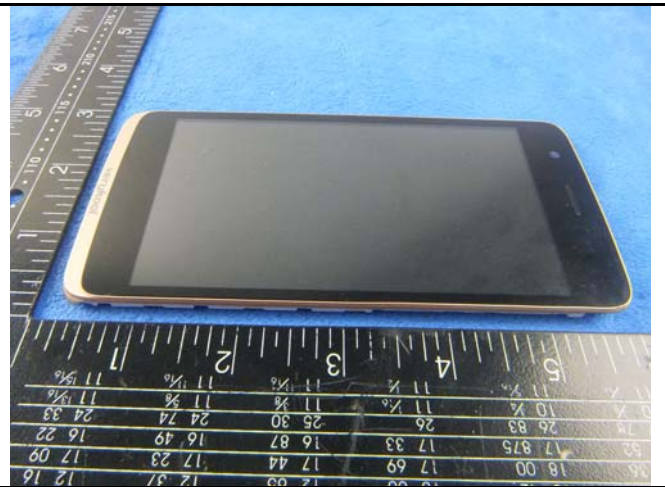
Main board - Front View



Main uncovered board - Front View



Mainboard - rear View



LCD - Front View



LCD - Rear View



GSM/PCS/UMTS-FDD Antenna View



WIFI/BT/BLE - Antenna View

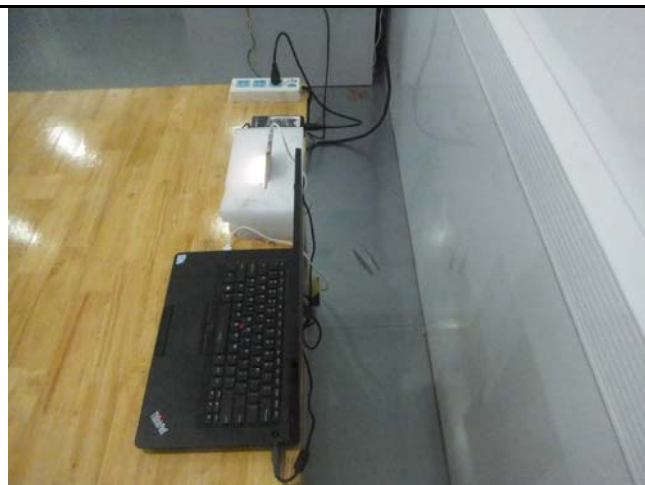


GPS - Antenna View

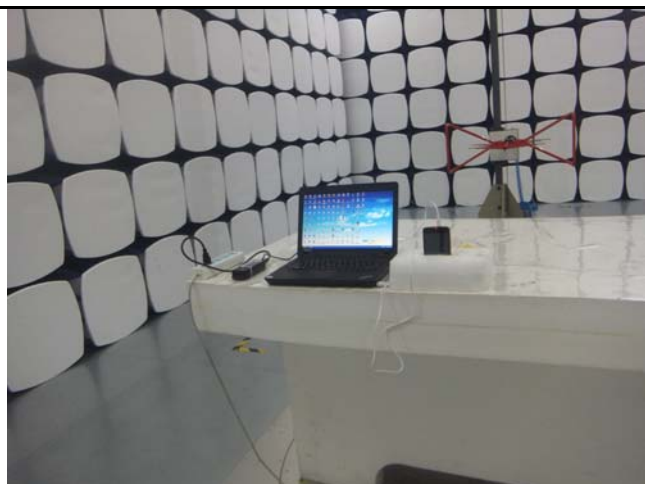
Annex B.iii. Photograph: Test Setup Photo



Conducted Emissions Test Setup – Front View



Conducted Emissions Test Setup – Side View



Radiated Spurious Emissions Test Setup Below 1GHz

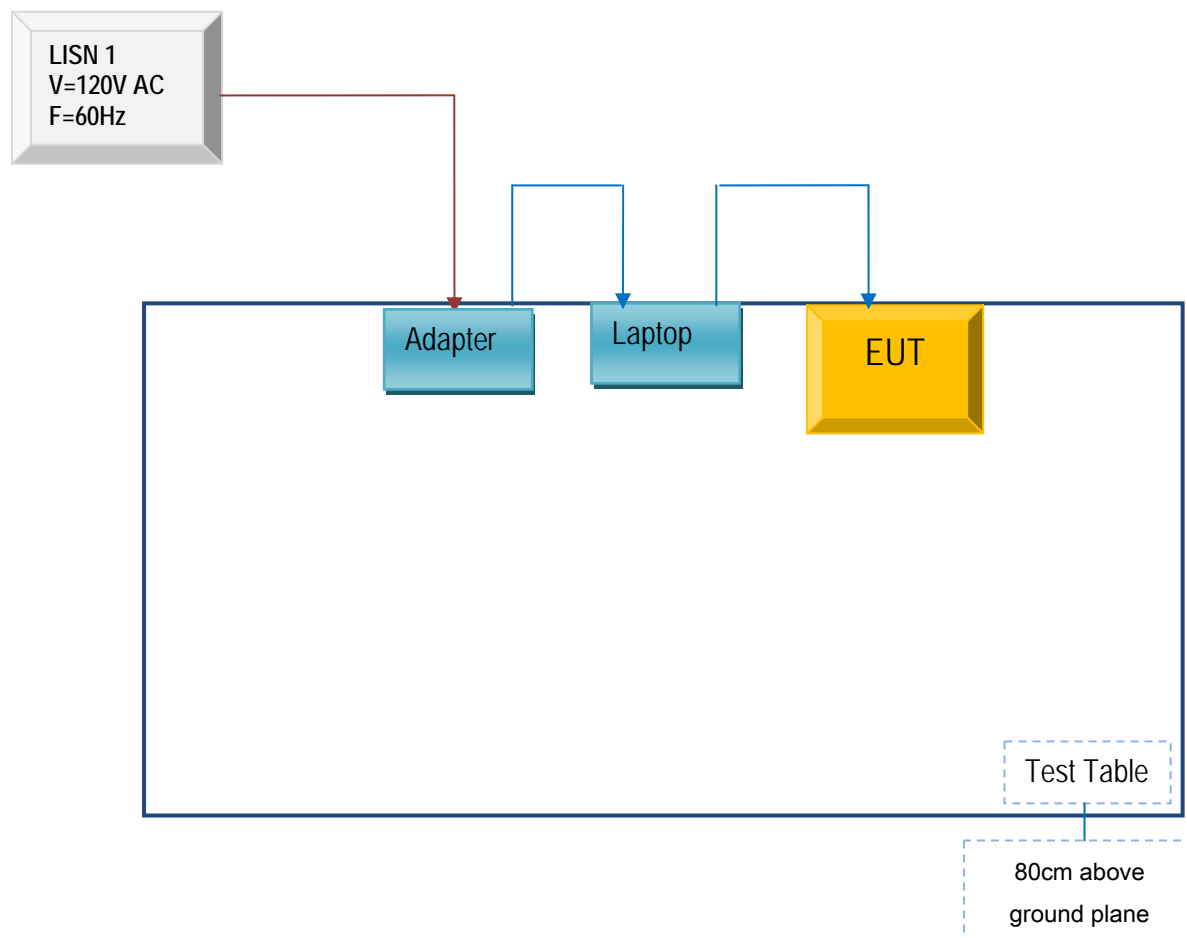


Radiated Spurious Emissions Test Setup Above
1GHz

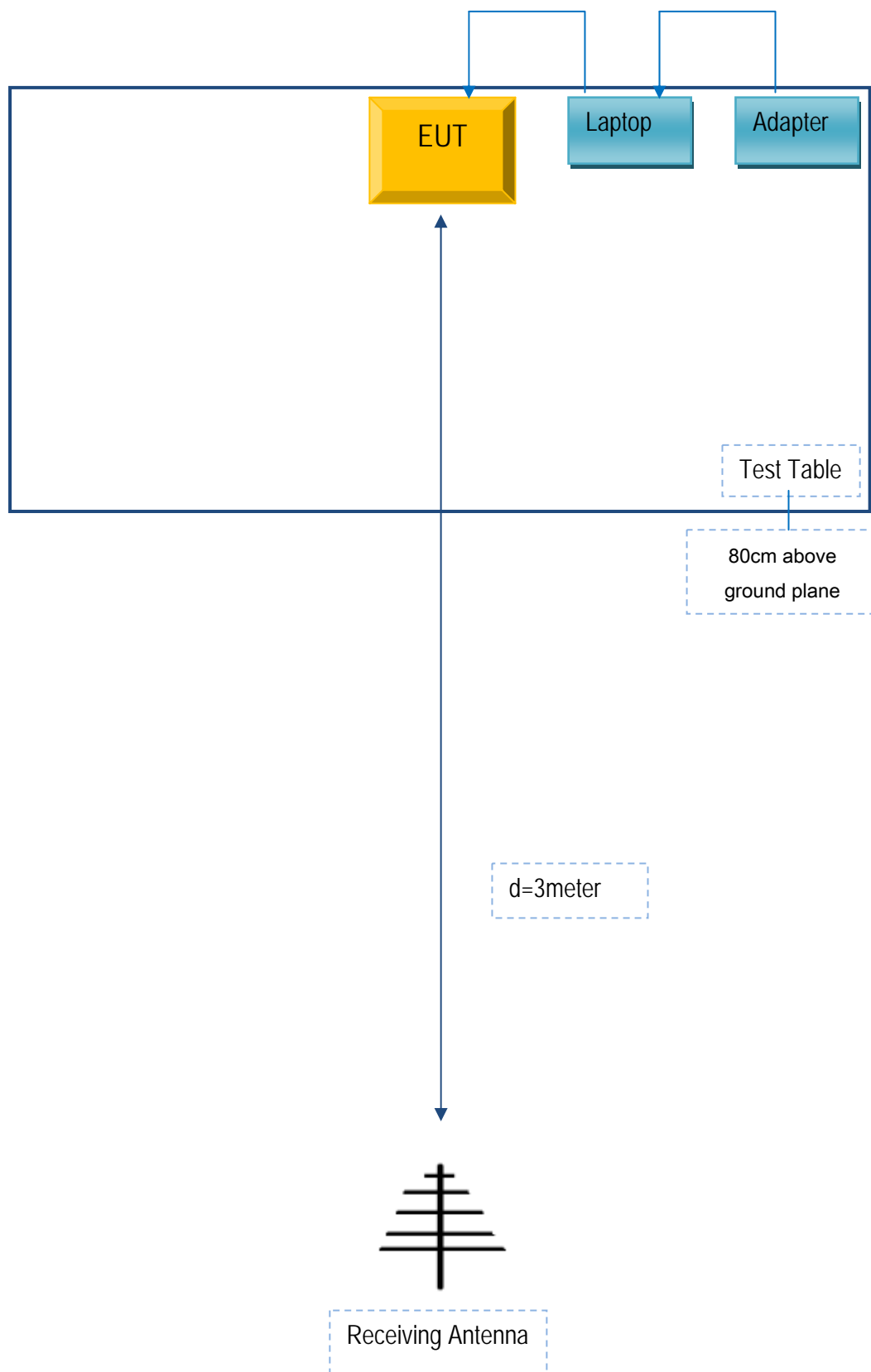
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

Block Configuration Diagram for Conducted Emissions



Block Configuration Diagram for Radiated Emissions



Test Report	15070302-FCC-E1
Page	25 of 27

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	15070302-FCC-E1
Page	26 of 27

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

Please see Attachment

Test Report	15070302-FCC-E1
Page	27 of 27

Annex E. DECLARATION OF SIMILARITY