
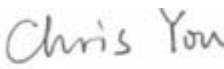



# EMC TEST REPORT



Report No.: 15070253-FCC-E1

Supersede Report No.: N/A

Applicant	Verykool USA Inc	
Product Name	Mobile Phone	
Model No.	s5013	
Serial No.	s5002	
Test Standard	FCC Part 15 Subpart B Class B:2014, ANSI C63.4: 2014	
Test Date	April 09 to April 20, 2015	
Issue Date	April 21, 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](mailto: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	15070253-FCC-E1
Page	3 of 28

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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
15070253-FCC-E1	NONE	Original	April 21, 2015

## 2. Customer information

Applicant Name	Verykool USA Inc
Applicant Add	3636 Nobel Drive, Suite 325, San Diego, CA 92122 USA
Manufacturer	HUIZHOU QIAOXING ELECTRONICS TECHNOLOGY CO.,LTD
Manufacturer Add	Room -611, TianAn High-Tech Plaza II , Futian District, Shenzhen, China, 518040

## 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:	s5013
Serial Model:	s5002
Date EUT received:	April 8, 2015
Test Date(s):	April 09 to April 20, 2015
Equipment Category :	JBP
Antenna Gain:	GSM850: 0 dBi PCS1900: 0 dBi UMTS-FDD Band V: 0 dBi UMTS-FDD Band II: 0 dBi Bluetooth/BLE: 0 dBi WIFI: 0 dBi
Type of Modulation:	GSM / GPRS: GMSK EGPRS: GMSK, 8PSK UMTS-FDD: QPSK, 16QAM 802.11b/g/n: DSSS, OFDM Bluetooth: GFSK, $\pi$ /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 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

---

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

Port: Power Port, Earphone Port, USB Port

Input Power: Battery:  
Model: Q500  
Spec: 3.7V 2000mAh 7.40Wh  
Adapter:  
Model: Q500  
Input: AC 100-240V; 50/60Hz 0.2A Max  
Output: DC 5.0V; 1A

Trade Name : verykool

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

FCC ID: WA6S5013

## 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
-	-	-



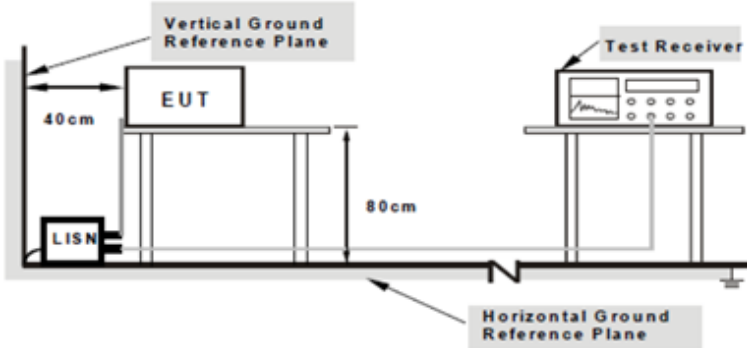
## 6. Measurements, Examination And Derived Results

### 6.1 AC Power Line Conducted Emissions

Temperature	20°C
Relative Humidity	55%
Atmospheric Pressure	1015mbar
Test date :	April 20, 2015
Tested By :	Kahn Yang

#### 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 [μ] 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>
------------	---

Procedure	<ol style="list-style-type: none"> <li>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.</li> <li>The power supply for the EUT was fed through a 50W/50mH EUT LISN, connected to filtered mains.</li> </ol>
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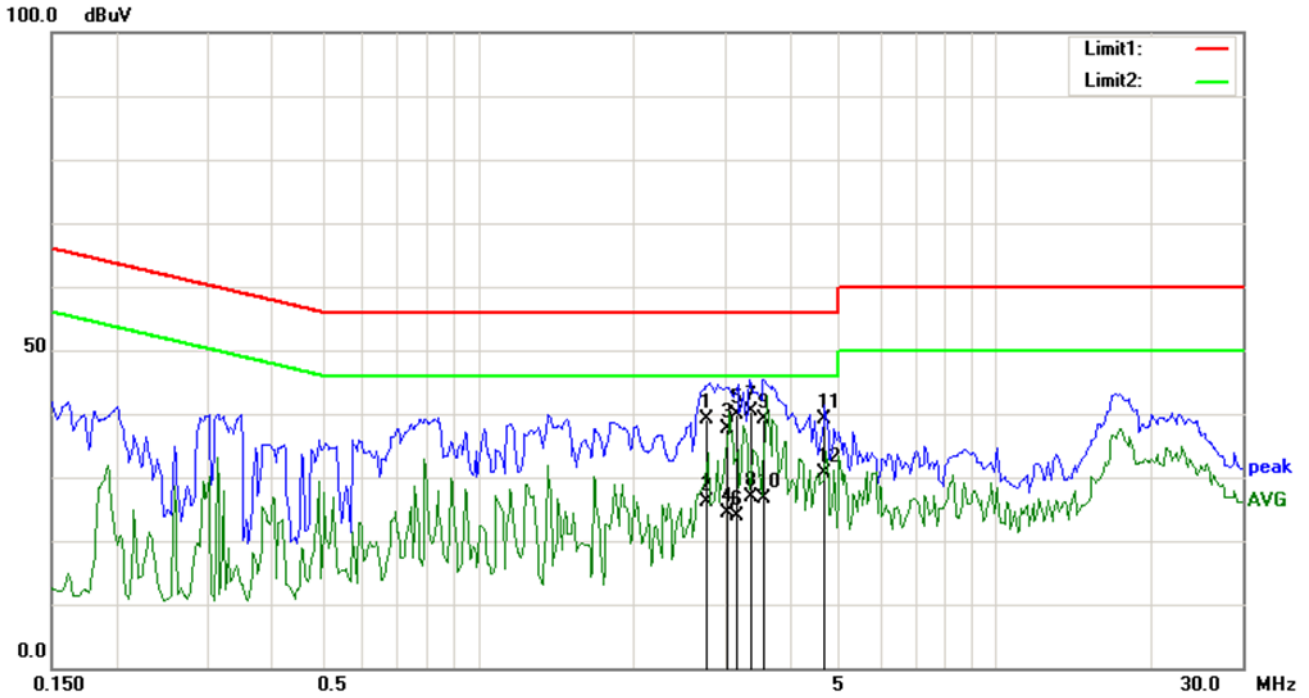
Test Report	15070253-FCC-E1
Page	10 of 28

	<ol style="list-style-type: none"> <li>3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable.</li> <li>4. All other supporting equipment were powered separately from another main supply.</li> <li>5. The EUT was switched on and allowed to warm up to its normal operating condition.</li> <li>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.</li> <li>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.</li> <li>8. Step 7 was then repeated for the LIVE line (for AC mains) or DC line (for DC power).</li> </ol>
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data     Yes                       N/A

Test Plot     Yes (See below)             N/A

<b>Test Mode 1:</b>	<b>USB Mode</b>
---------------------	-----------------

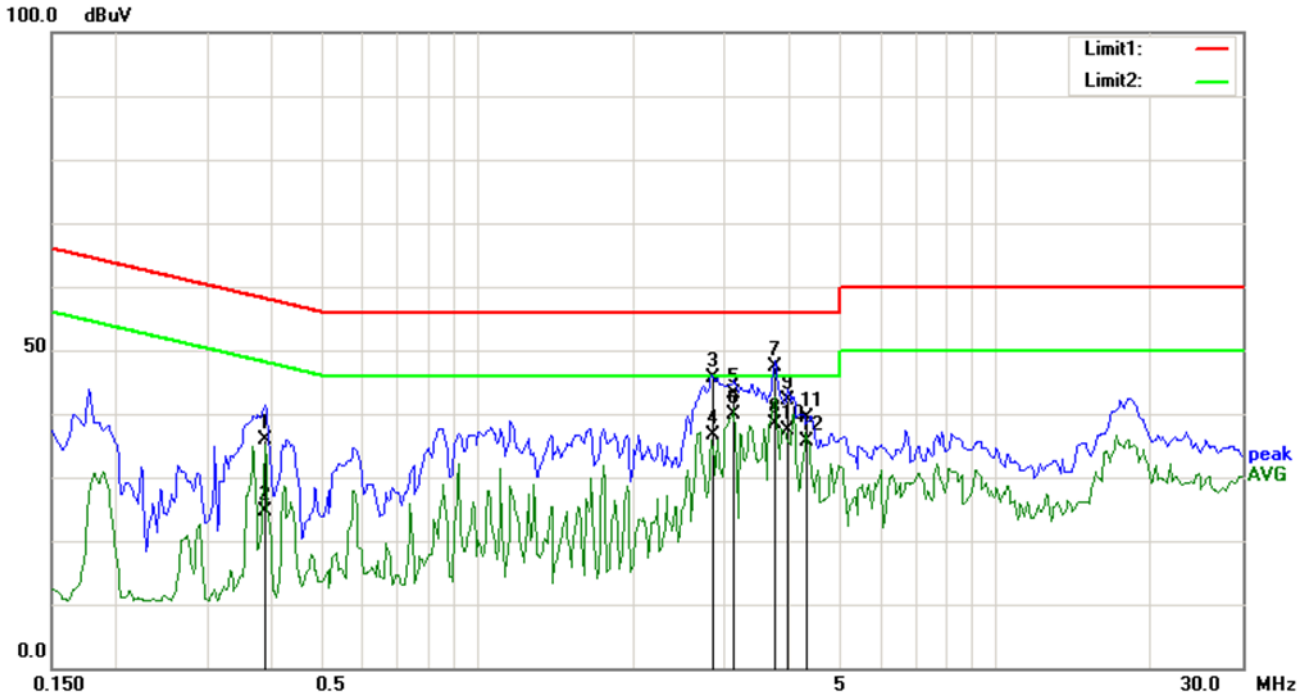


**Test Data**

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	2.7648	28.34	QP	10.90	39.24	56.00	-16.76	
2	L1	2.7648	15.13	AVG	10.90	26.03	46.00	-19.97	
3	L1	3.0253	26.68	QP	10.90	37.58	56.00	-18.42	
4	L1	3.0253	13.37	AVG	10.90	24.27	46.00	-21.73	
5	L1	3.1563	28.97	QP	10.90	39.87	56.00	-16.13	
6	L1	3.1563	12.89	AVG	10.90	23.79	46.00	-22.21	
7	L1	3.3635	29.43	QP	10.90	40.33	56.00	-15.67	
8	L1	3.3635	15.86	AVG	10.90	26.76	46.00	-19.24	
9	L1	3.5654	28.20	QP	10.90	39.10	56.00	-16.90	
10	L1	3.5654	15.66	AVG	10.90	26.56	46.00	-19.44	
11	L1	4.6953	28.21	QP	10.90	39.11	56.00	-16.89	
12	L1	4.6953	19.73	AVG	10.90	30.63	46.00	-15.37	

**Test Mode 1: USB Mode**



**Test Data**

**Phase Neutral Plot at 120Vac, 60Hz**

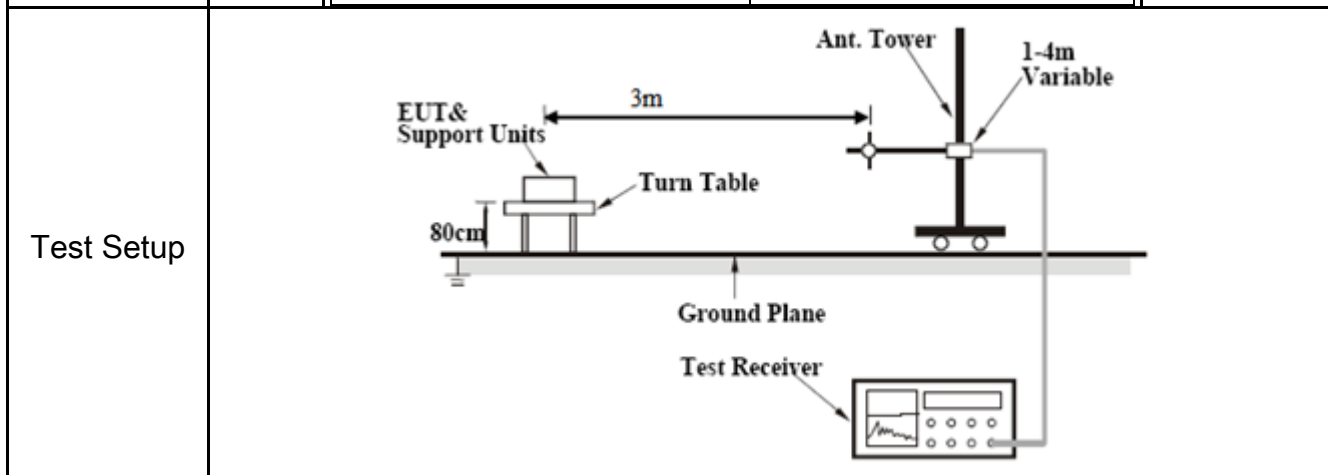
No.	P/L	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
1	N	0.3883	35.99	QP	0.00	35.99	58.10	-22.11	
2	N	0.3883	24.53	AVG	0.00	24.53	48.10	-23.57	
3	N	2.8390	45.57	QP	0.00	45.57	56.00	-10.43	
4	N	2.8390	36.66	AVG	0.00	36.66	46.00	-9.34	
5	N	3.1250	43.25	QP	0.00	43.25	56.00	-12.75	
6	N	3.1250	39.77	AVG	0.00	39.77	46.00	-6.23	
7	N	3.7539	47.41	QP	0.00	47.41	56.00	-8.59	
8	N	3.7539	38.41	AVG	0.00	38.41	46.00	-7.59	
9	N	3.9688	42.25	QP	0.00	42.25	56.00	-13.75	
10	N	3.9688	37.27	AVG	0.00	37.27	46.00	-8.73	
11	N	4.3146	39.44	QP	0.00	39.44	56.00	-16.56	
12	N	4.3146	35.69	AVG	0.00	35.69	46.00	-10.31	

## 6.2 Radiated Emissions

Temperature	20°C
Relative Humidity	55%
Atmospheric Pressure	1015mbar
Test date :	April 15, 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	<input checked="" type="checkbox"/>										
		<table border="1"> <thead> <tr> <th>Frequency range (MHz)</th> <th>Field Strength (<math>\mu\text{V/m}</math>)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">30 – 88</td> <td style="text-align: center;">100</td> </tr> <tr> <td style="text-align: center;">88 – 216</td> <td style="text-align: center;">150</td> </tr> <tr> <td style="text-align: center;">216 960</td> <td style="text-align: center;">200</td> </tr> <tr> <td style="text-align: center;">Above 960</td> <td style="text-align: center;">500</td> </tr> </tbody> </table>		Frequency range (MHz)	Field Strength ( $\mu\text{V/m}$ )	30 – 88	100	88 – 216	150	216 960	200	Above 960	500
		Frequency range (MHz)		Field Strength ( $\mu\text{V/m}$ )									
		30 – 88		100									
		88 – 216		150									
216 960	200												
Above 960	500												



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

Test Report	15070253-FCC-E1
Page	14 of 28

	<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 &lt; 98%) □ 10 Hz (Duty cycle &gt; 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

<b>Test Mode:</b>	<b>USB Mode</b>
-------------------	-----------------

**Below 1GHz**



**Test Data**

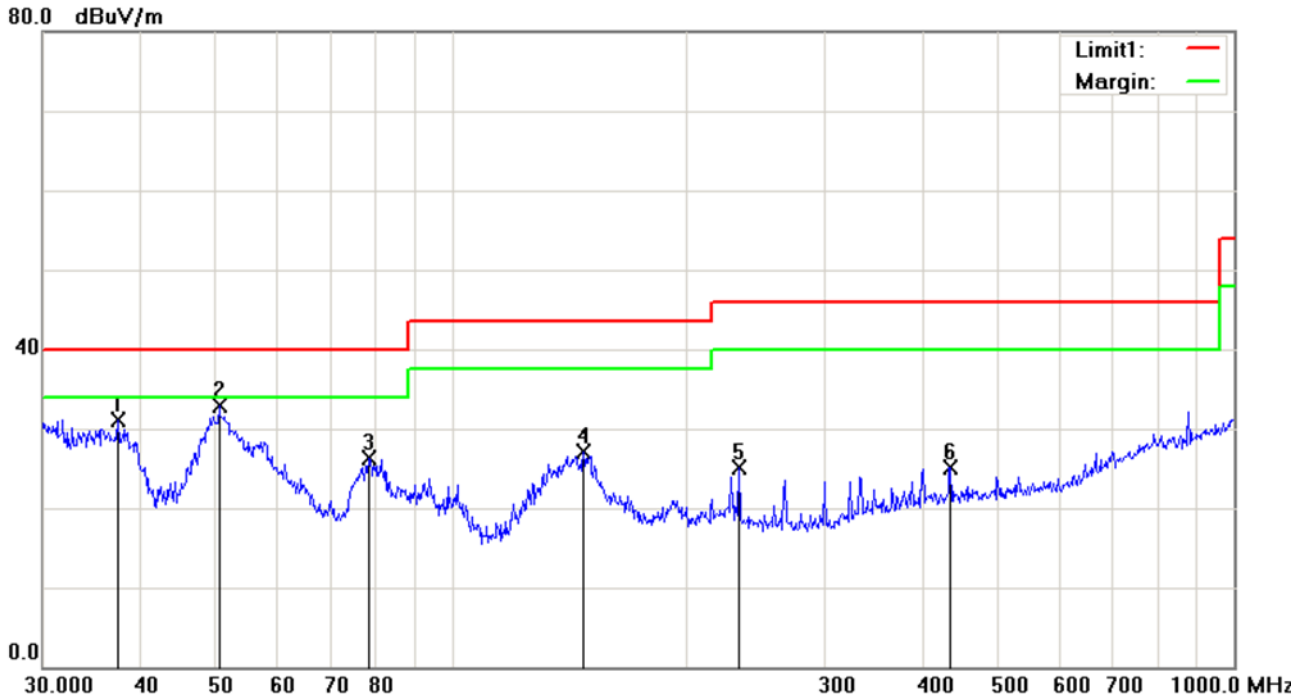
**Horizontal Polarity Plot @3m**

No.	P/L	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree ( )	Comment
1	H	31.7313	25.86	peak	-1.53	24.33	40.00	-15.67	200	215	
2	H	45.5348	30.88	peak	-1.71	29.17	40.00	-10.83	200	157	
3	H	135.9822	40.27	peak	-8.30	31.97	43.50	-11.53	200	190	
4	H	203.5228	35.23	peak	-8.77	26.46	43.50	-17.04	100	31	
5	H	265.6757	36.13	peak	-8.47	27.66	46.00	-18.34	100	10	
6	H	400.4319	30.89	peak	-4.29	26.60	46.00	-19.40	100	360	

**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)	Reading (dBuV/m)	Detector	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree ( )	Comment
1	V	37.4165	36.76	peak	-5.68	31.08	40.00	-8.92	100	128	
2	V	50.4089	46.94	peak	-14.08	32.86	40.00	-7.14	100	190	
3	V	78.4134	40.09	peak	-13.76	26.33	40.00	-13.67	100	80	
4	V	147.4036	34.45	peak	-7.42	27.03	43.50	-16.47	200	111	
5	V	233.3487	32.59	peak	-7.44	25.15	46.00	-20.85	100	161	
6	V	434.0651	28.53	peak	-3.38	25.15	46.00	-20.85	100	233	

**Above 1GHz**

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

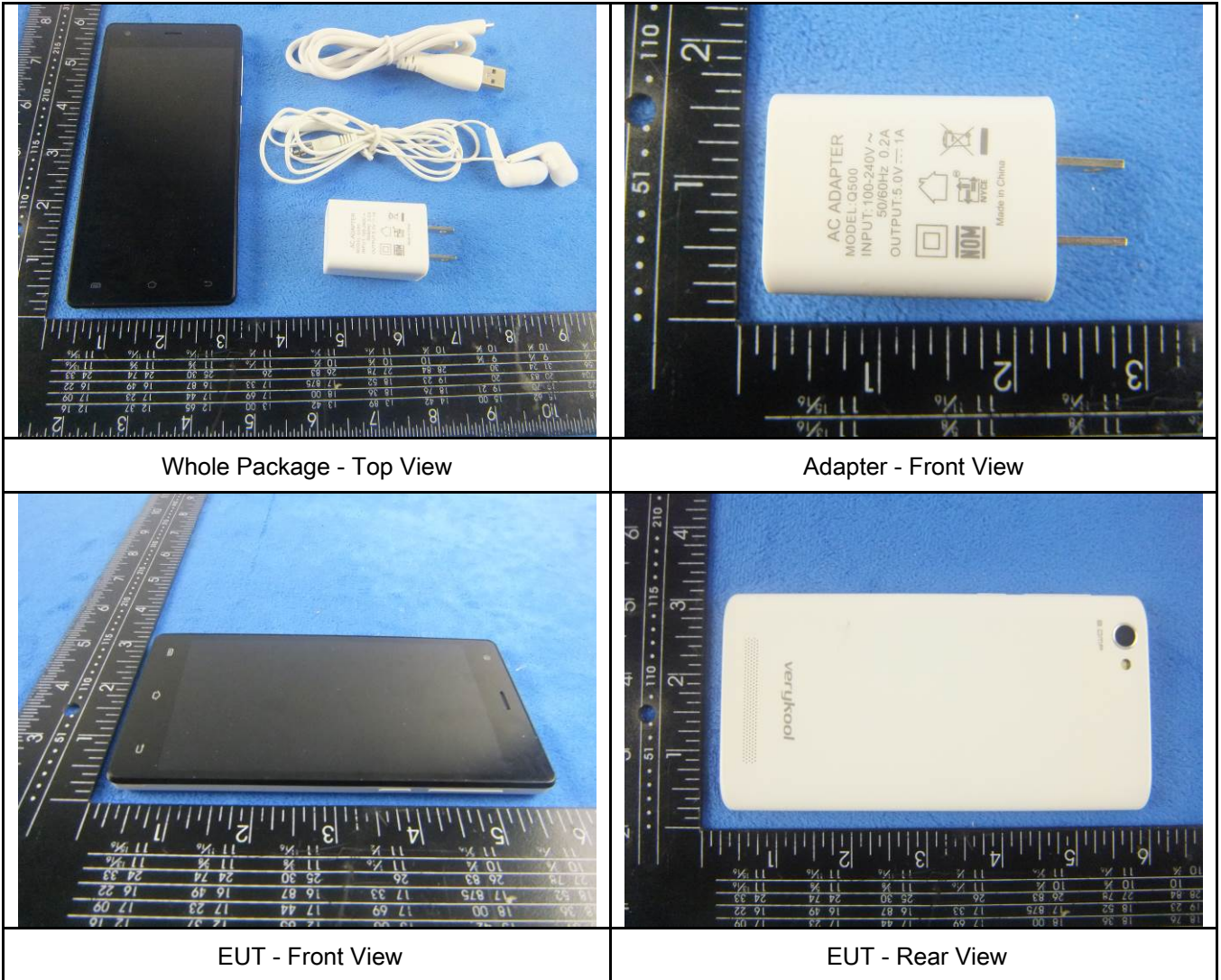


## Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Due	In use
<b>AC Line Conducted Emissions</b>					
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"/>
<b>Radiated Emissions</b>					
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**

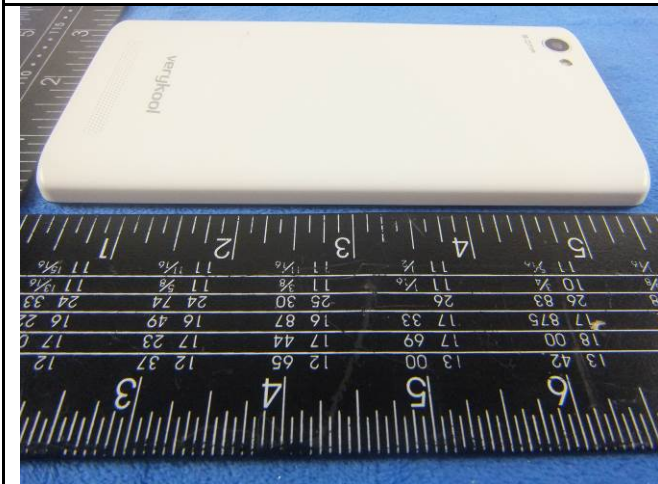




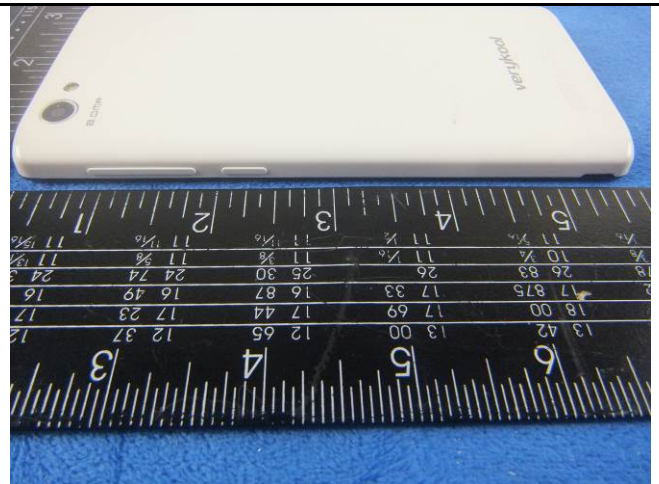
EUT - Top View



EUT - Bottom View



EUT - Left View



EUT - Right View



**Annex B.ii. Photograph: EUT Internal Photo**



Cover Off - Top View 1



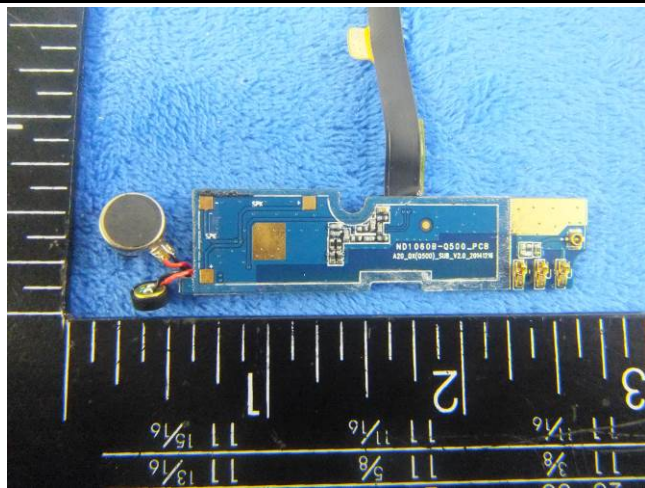
Cover Off - Top View 2



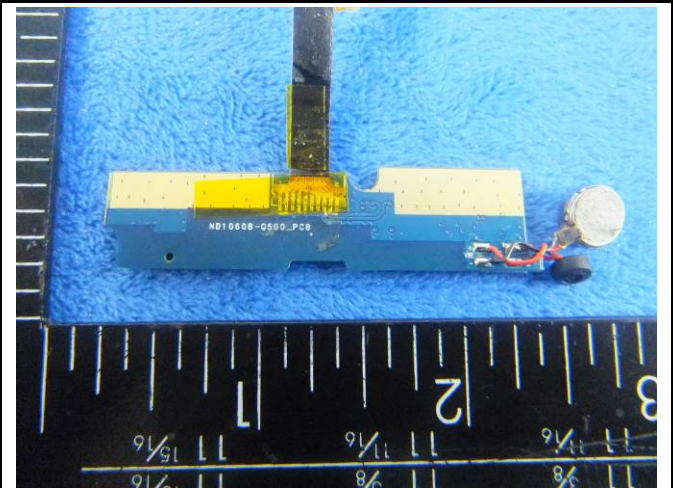
Battery - Top View



Battery - Bottom View



RF connect board - Front View



RF connect board - Rear View

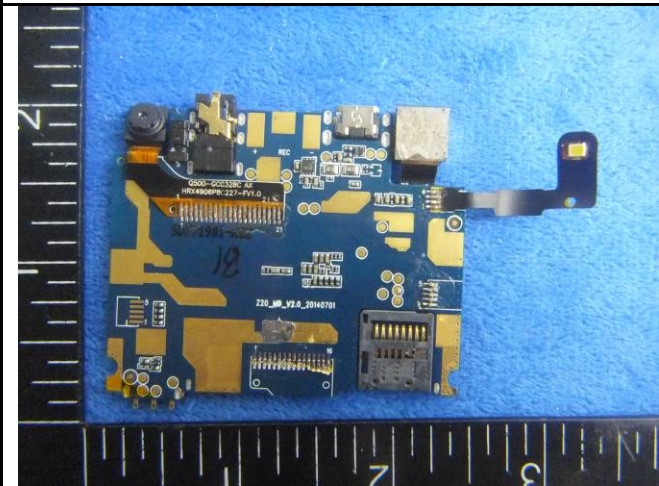




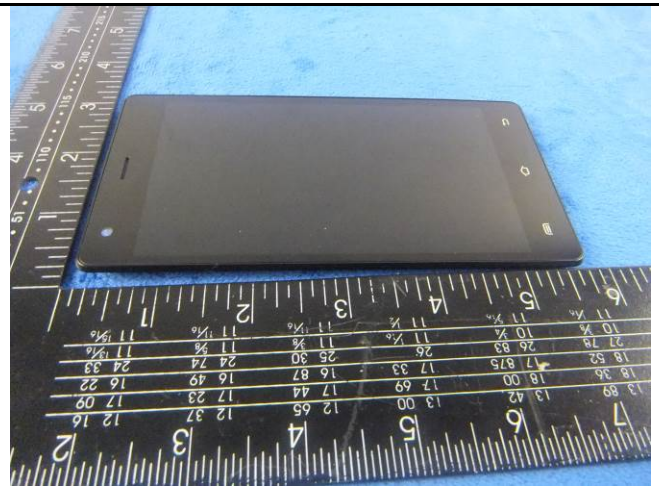
Mainboard With Shielding - Front View



Mainboard Without Shielding - Front View



Mainboard With Shielding - rear View



LCD - Front View



LCD - Rear View



GSM/PCS/UMTS-FDD Antenna View



WIFI/BT/BLE - Antenna View



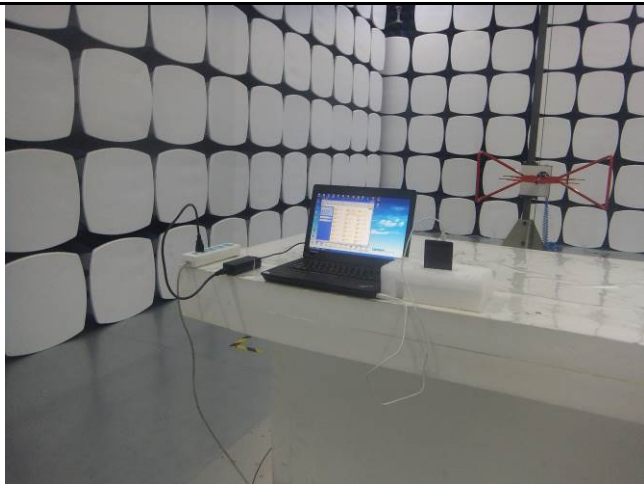
**Annex B.iii. Photograph: Test Setup Photo**



Conducted Emissions Test Setup – Front View



Conducted Emissions Test Setup – Side View



Radiated Spurious Emissions Test Setup Below 1GHz

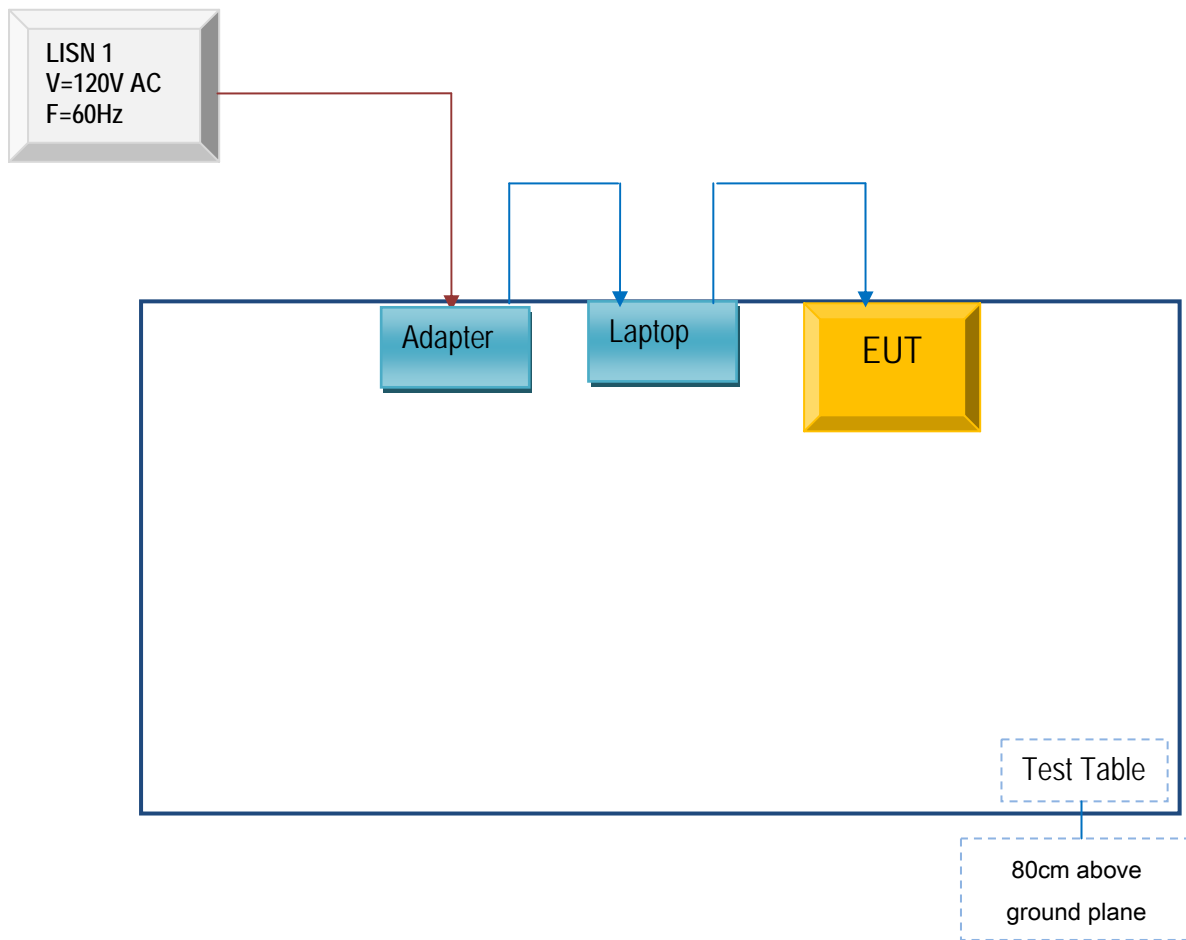


Radiated Spurious Emissions Test Setup Above 1GHz

## Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

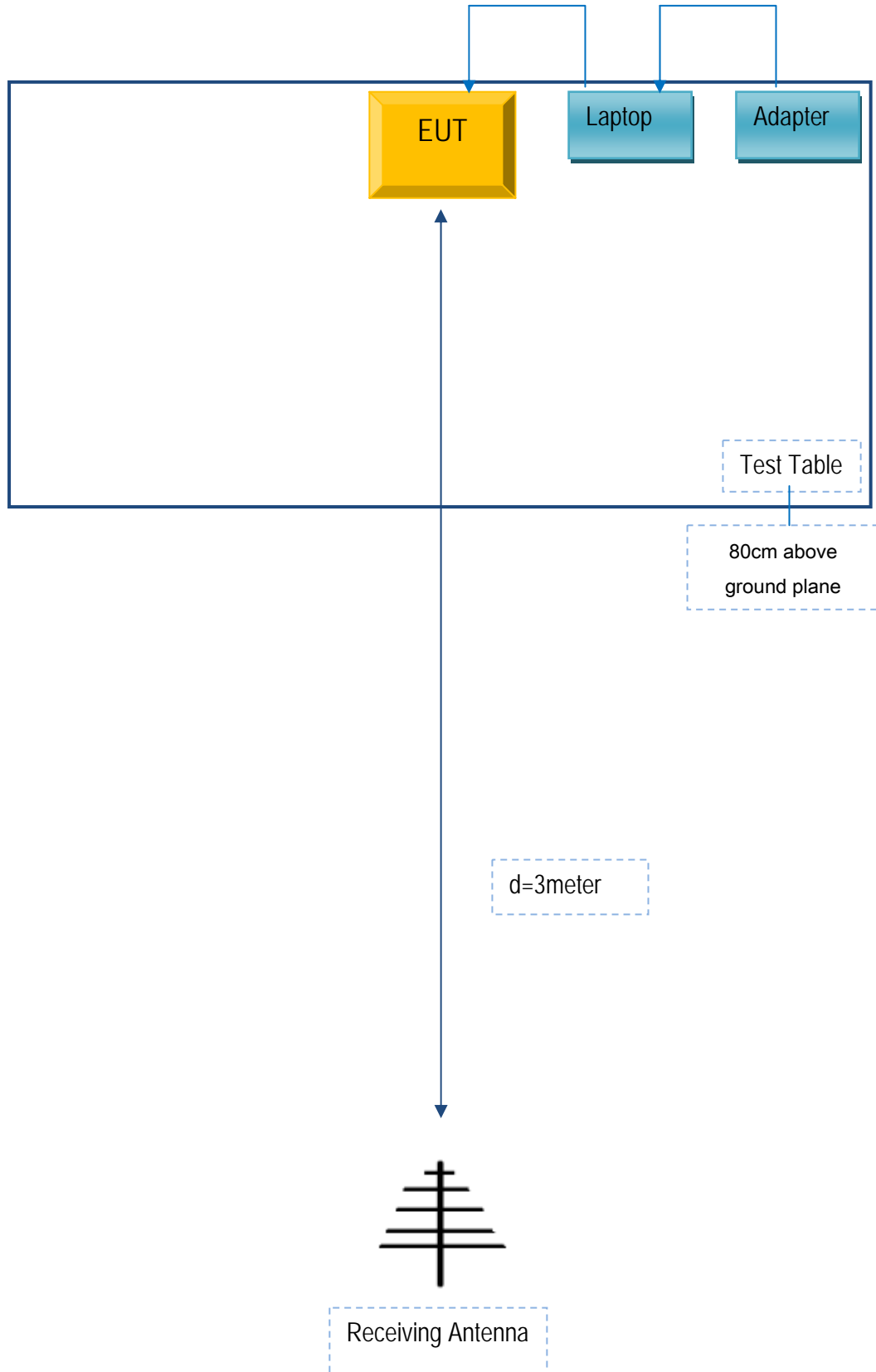
### Annex C.ii. TEST SET UP BLOCK

#### Block Configuration Diagram for Conducted Emissions





### Block Configuration Diagram for Radiated Emissions



**Annex C. 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	15070253-FCC-E1
Page	27 of 28

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

Please see Attachment

**Annex E. DECLARATION OF SIMILARITY**



**Declaration Letter**

For our business issue and marketing requirement, we would like to list 2 models on these reports, as following:

Model No: s5013, s5002

We Verykool USA Inc, hereby declare that our products s5013 and s5002 ,the difference between these two models are listed as below:

Main Model No.	Series Model No.	Difference
s5013	s5002	Rear camera changes from 8MP to 5MP. Front camera changes from 5MP to 2MP

Thank you!

Sincerely

Signature:

Job Title: