

EMC TEST REPORT



Report No.: 16071505-FCC-E V2

Supersede Report No: N/A

Applicant	Cedar Kingdom Corporation Limited	
Product Name	Feature phone	
Model No.	V105	
Serial No.	N/A	
Test Standard	FCC Part 15 Subpart B Class B:2016, ANSI C63.4: 2014	
Test Date	Dec 31, 2016 to Jan 04, 2017	
Issue Date	Jan 16, 2017	
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	David Huang	
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

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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
16071505-FCC-E	NONE	Original	Jan 05, 2017
16071505-FCC-E V1	V1	Updated the test date	Jan 13, 2017
16071505-FCC-E V2	V2	Updated the product name	Jan 16, 2017

2. Customer information

Applicant Name	Cedar Kingdom Corporation Limited
Applicant Add	11/F,AXA Centre 151 Gloucester Road,Wanchai
Manufacturer	Cedar Kingdom Corporation Limited
Manufacturer Add	11/F,AXA Centre 151 Gloucester Road,Wanchai

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:	Feature phone
Main Model:	V105
Serial Model:	N/A
Antenna Gain:	GSM850: -0.21dBi PCS1900: -0.39dBi Bluetooth:-5.7dBi
Antenna Type:	GSM: PIFA antenna BT: Monopole antenna
Input Power:	Adapter: Model: V105 Input: AC100-240V~50/60Hz,0.15A Output: DC 5.0V,500mA Battery: Model: V105 Spec: 3.7V,800mAh(2.96Wh) Voltage: 4.2V
Equipment Category :	JBP
Type of Modulation:	GSM / GPRS: GMSK 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 Bluetooth: 2402-2480 MHz
Number of Channels:	GSM 850: 124CH PCS1900: 299CH Bluetooth: 79CH
Port:	USB Port, Earphone Port

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Trade Name : VIRZO

FCC ID: 2AKQUVZCK105

Date EUT received: Dec 30, 2016

Test Date(s): Dec 31, 2016 to Jan 04, 2017

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

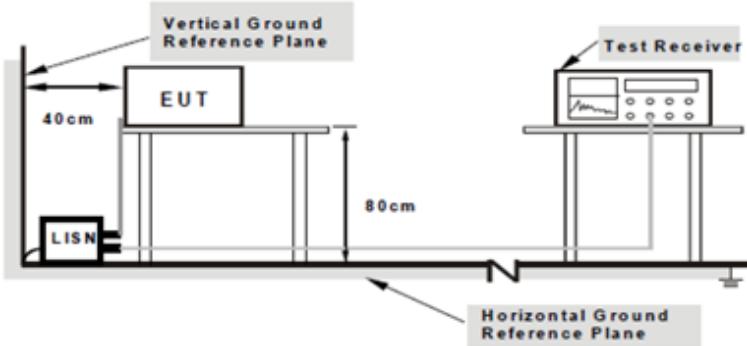
Emissions		
Test Item	Description	Uncertainty
AC Power Line Conducted Emissions and Radiated Emissions	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
-	-	-

6. Measurements, Examination And Derived Results

6.1 AC Power Line Conducted Emissions

Temperature	22°C
Relative Humidity	54%
Atmospheric Pressure	1002mbar
Test date :	Jan 04, 2017
Tested By :	Loren Luo

Requirement(s):

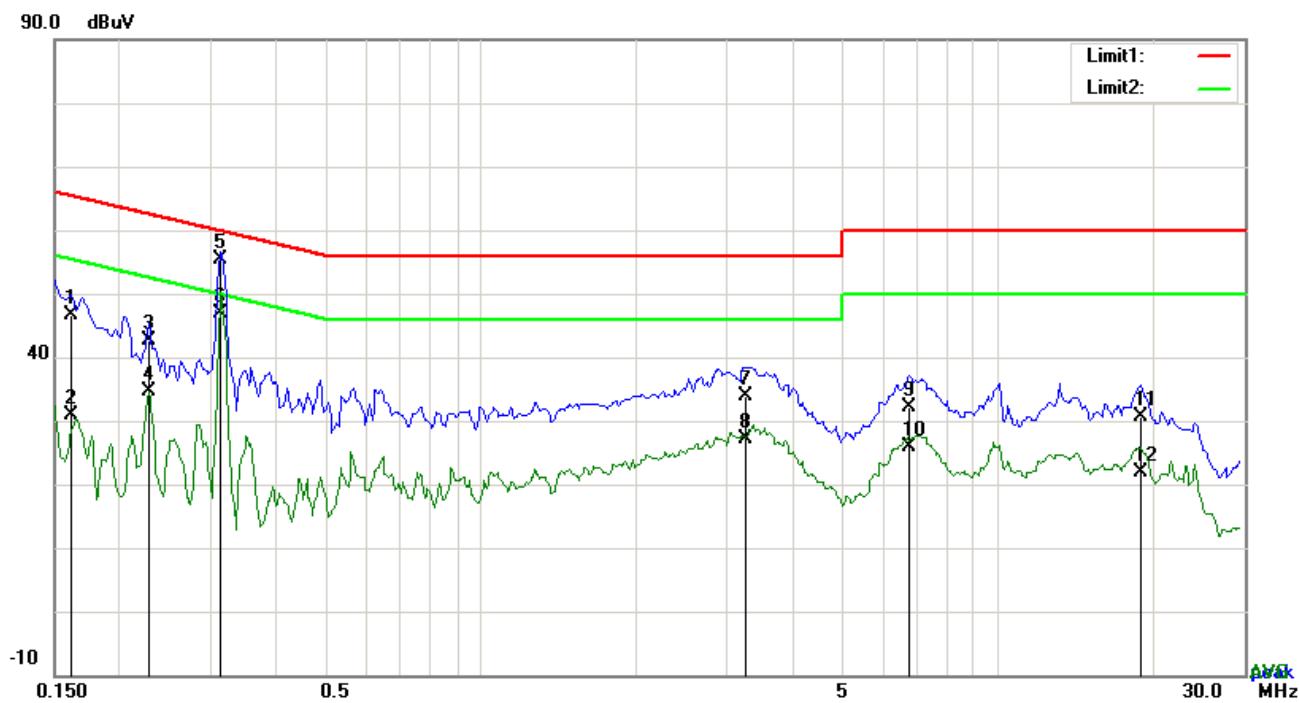
Spec	Item	Requirement	Applicable														
47CFR§15.107	a)	<p>For Low-power radio-frequency devices that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 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 (dB μ V)		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 (dB μ V)																
	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 50Ω /50mH EUT LISN, connected to filtered mains. 																

	<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

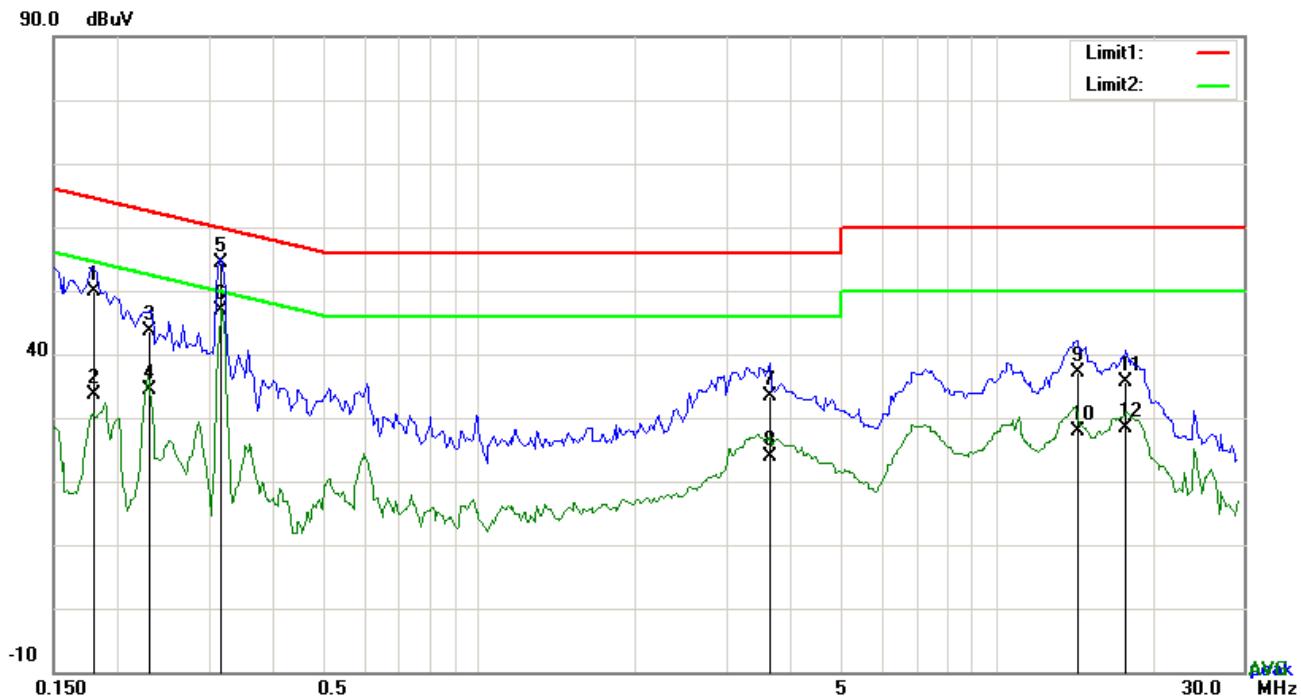
Test Mode : USB Mode



Test Data

Phase Line Plot at 120Vac, 60Hz

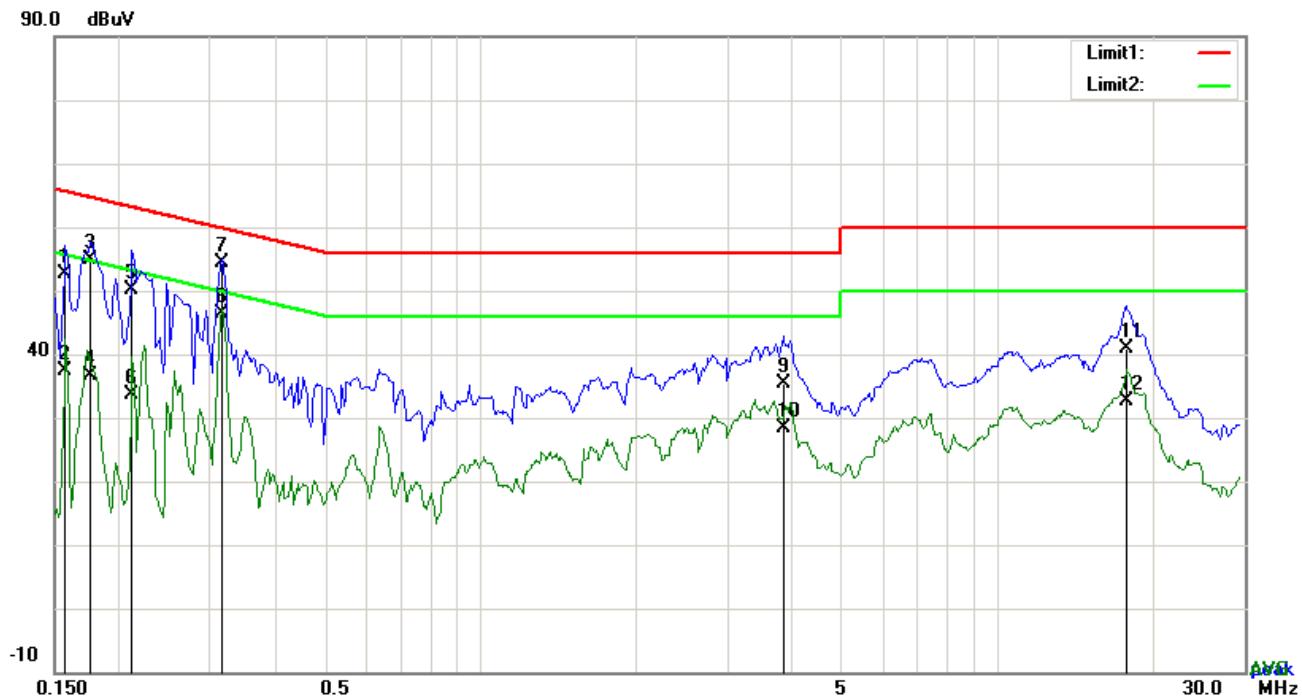
No.	P/L	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	L1	0.1617	36.65	QP	10.03	46.68	65.38	-18.70
2	L1	0.1617	20.96	AVG	10.03	30.99	55.38	-24.39
3	L1	0.2280	32.61	QP	10.03	42.64	62.52	-19.88
4	L1	0.2280	24.48	AVG	10.03	34.51	52.52	-18.01
5	L1	0.3138	45.45	QP	10.03	55.48	59.87	-4.39
6	L1	0.3138	36.81	AVG	10.03	46.84	49.87	-3.03
7	L1	3.2613	23.89	QP	10.06	33.95	56.00	-22.05
8	L1	3.2613	17.03	AVG	10.06	27.09	46.00	-18.91
9	L1	6.7557	22.14	QP	10.10	32.24	60.00	-27.76
10	L1	6.7557	15.88	AVG	10.10	25.98	50.00	-24.02
11	L1	18.8496	20.39	QP	10.28	30.67	60.00	-29.33
12	L1	18.8496	11.63	AVG	10.28	21.91	50.00	-28.09

Test Mode : USB Mode


Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	N	0.1796	39.78	QP	10.02	49.80	64.50	-14.70
2	N	0.1796	23.57	AVG	10.02	33.59	54.50	-20.91
3	N	0.2304	33.57	QP	10.02	43.59	62.44	-18.85
4	N	0.2304	24.36	AVG	10.02	34.38	52.44	-18.06
5	N	0.3177	44.38	QP	10.02	54.40	59.77	-5.37
6	N	0.3177	36.83	AVG	10.02	46.85	49.77	-2.92
7	N	3.6513	23.40	QP	10.06	33.46	56.00	-22.54
8	N	3.6513	13.84	AVG	10.06	23.90	46.00	-22.10
9	N	14.3529	26.84	QP	10.19	37.03	60.00	-22.97
10	N	14.3529	17.62	AVG	10.19	27.81	50.00	-22.19
11	N	17.7888	25.49	QP	10.23	35.72	60.00	-24.28
12	N	17.7888	18.19	AVG	10.23	28.42	50.00	-21.58

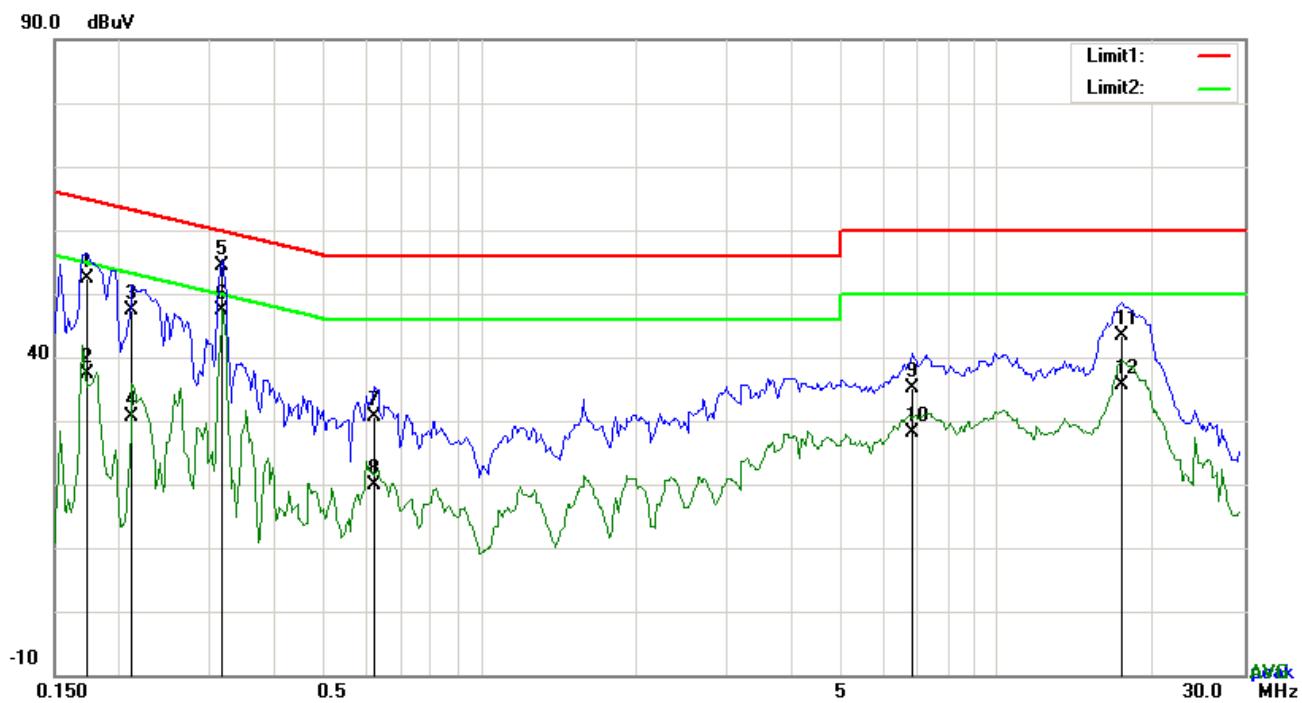
Test Mode : **USB Mode**



Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	L1	0.1578	42.53	QP	10.03	52.56	65.58	-13.02
2	L1	0.1578	27.32	AVG	10.03	37.35	55.58	-18.23
3	L1	0.1758	44.88	QP	10.03	54.91	64.68	-9.77
4	L1	0.1758	26.63	AVG	10.03	36.66	54.68	-18.02
5	L1	0.2124	40.10	QP	10.03	50.13	63.11	-12.98
6	L1	0.2124	23.55	AVG	10.03	33.58	53.11	-19.53
7	L1	0.3177	44.23	QP	10.03	54.26	59.77	-5.51
8	L1	0.3177	36.30	AVG	10.03	46.33	49.77	-3.44
9	L1	3.8424	25.37	QP	10.07	35.44	56.00	-20.56
10	L1	3.8424	18.39	AVG	10.07	28.46	46.00	-17.54
11	L1	17.6952	30.49	QP	10.27	40.76	60.00	-19.24
12	L1	17.6952	22.24	AVG	10.27	32.51	50.00	-17.49

Test Mode : USB Mode



Test Data

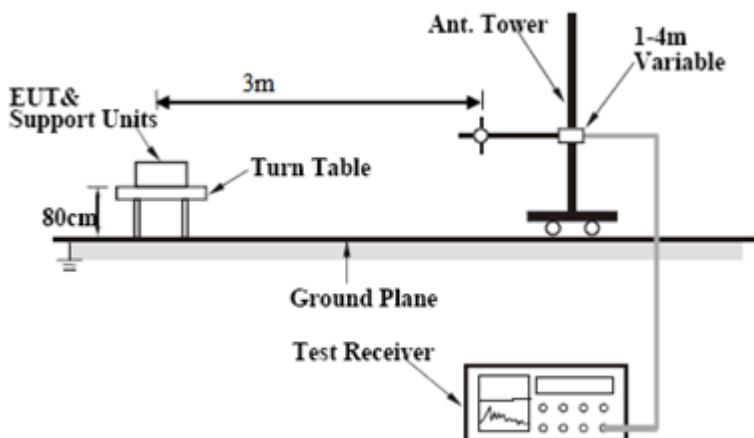
Phase Neutral Plot at 240Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	N	0.1734	42.39	QP	10.02	52.41	64.80	-12.39
2	N	0.1734	27.27	AVG	10.02	37.29	54.80	-17.51
3	N	0.2124	37.47	QP	10.02	47.49	63.11	-15.62
4	N	0.2124	20.58	AVG	10.02	30.60	53.11	-22.51
5	N	0.3177	44.32	QP	10.02	54.34	59.77	-5.43
6	N	0.3177	37.31	AVG	10.02	47.33	49.77	-2.44
7	N	0.6219	20.71	QP	10.02	30.73	56.00	-25.27
8	N	0.6219	9.79	AVG	10.02	19.81	46.00	-26.19
9	N	6.8103	24.98	QP	10.10	35.08	60.00	-24.92
10	N	6.8103	18.11	AVG	10.10	28.21	50.00	-21.79
11	N	17.3754	33.13	QP	10.23	43.36	60.00	-16.64
12	N	17.3754	25.28	AVG	10.23	35.51	50.00	-14.49

6.2 Radiated Emissions

Temperature	22°C
Relative Humidity	54%
Atmospheric Pressure	1002mbar
Test date :	Jan 04, 2017
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable										
47CFR§15.109(d)	a)	<p>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</p> <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 (μ V/m)	30 – 88	100	88 – 216	150	216 – 960	200	Above 960	500	<input checked="" type="checkbox"/>
Frequency range (MHz)	Field Strength (μ V/m)												
30 – 88	100												
88 – 216	150												
216 – 960	200												
Above 960	500												
Test Setup		 <p>The diagram illustrates the test setup. A 'Turn Table' is positioned on a 'Ground Plane'. An 'EUT & Support Units' assembly is mounted on the turn table, with a vertical distance of '80cm' indicated. A '3m' horizontal distance is marked between the EUT and a 'Ant. Tower'. The 'Ant. Tower' is mounted on a vertical post and is labeled '1-4m Variable' to indicate its height adjustment range. A 'Test Receiver' is connected to the system, likely for signal processing or measurement.</p>											
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) 											

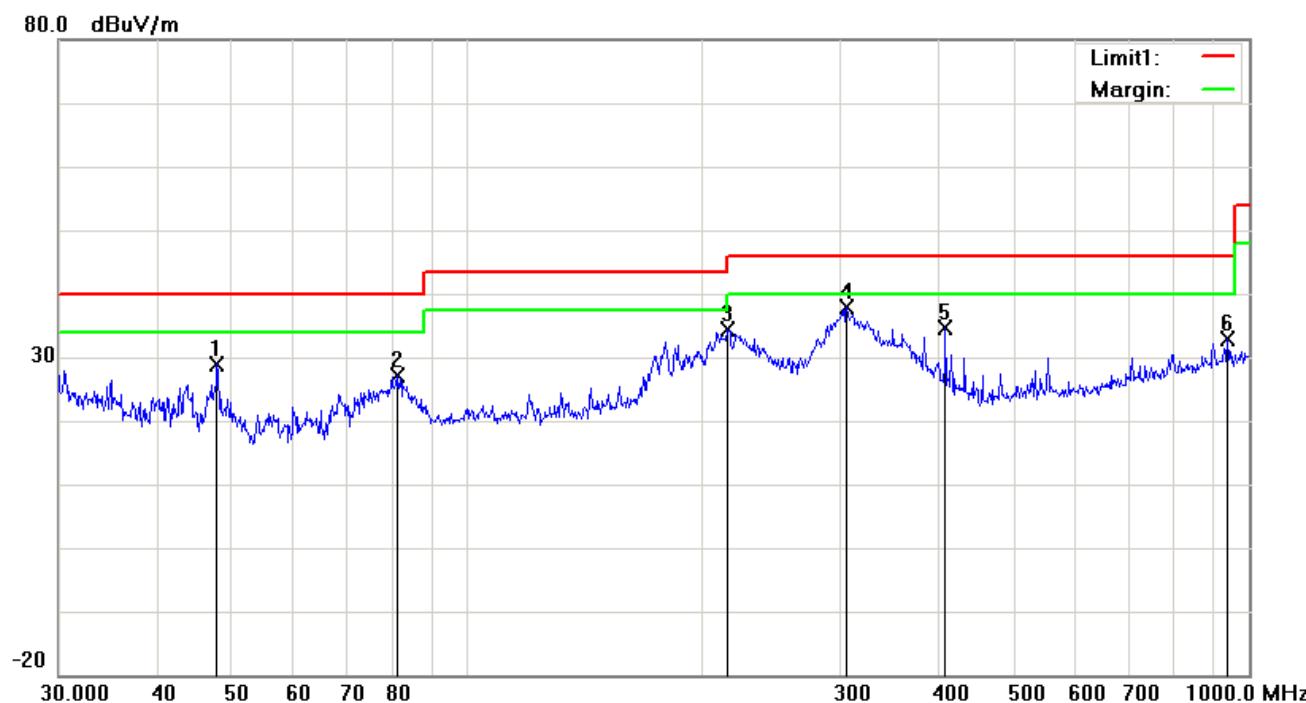
	<p>over a full rotation of the EUT) was chosen.</p> <p>b. The EUT was then rotated to the direction that gave the maximum emission.</p> <p>c. Finally, the antenna height was adjusted to the height that gave the maximum emission.</p> <p>3. The resolution bandwidth and video bandwidth of test receiver/spectrum 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.</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> <ul style="list-style-type: none"> ■ 1 kHz (Duty cycle < 98%) <input type="checkbox"/> 10 Hz (Duty cycle > 98%) <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 (MHz)	Reading (dBuV/ m)	Detector	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	H	47.8260	41.02	peak	-12.20	28.82	40.00	-11.18	110	99
2	H	81.2117	40.77	peak	-13.71	27.06	40.00	-12.94	150	136
3	H	215.2678	43.22	peak	-8.87	34.35	43.50	-9.15	200	227
4	H	305.6800	44.73	peak	-6.73	38.00	46.00	-8.00	100	168
5	H	408.9460	38.72	peak	-4.08	34.64	46.00	-11.36	120	302
6	H	938.8326	27.92	peak	5.03	32.95	46.00	-13.05	100	155

Below 1GHz



Test Data

Vertical Polarity Plot @3m

No.	P/L	Frequency (MHz)	Readin g (dBuV/ m)	Detector	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	V	32.4059	34.03	peak	-2.03	32.00	40.00	-8.00	100	67
2	V	56.5929	47.32	peak	-13.96	33.36	40.00	-6.64	150	158
3	V	99.5281	46.16	peak	-10.92	35.24	43.50	-8.26	120	234
4	V	216.0240	41.51	peak	-8.88	32.63	46.00	-13.37	100	196
5	V	408.9460	35.28	peak	-4.08	31.20	46.00	-14.80	200	215
6	V	758.0408	27.99	peak	2.54	30.53	46.00	-15.47	150	322

Above 1GHz

Frequency (MHz)	Amplitude (dB μ V/m)	Azimuth	Height (cm)	Polarity (H/V)	Factors (dB)	Limit (dB μ V/m)	Margin (dB)	Detector (PK/AV)
1557.68	50.57	88	128	V	-22.35	74	-23.43	PK
2082.42	50.33	67	132	V	-21.57	74	-23.67	PK
1688.62	49.64	38	142	V	-22.65	74	-24.36	PK
2193.57	50.33	66	110	H	-22.32	74	-23.67	PK
2882.45	49.21	46	130	H	-22.44	74	-24.79	PK
1876.35	50.43	92	105	H	-22.65	74	-23.57	PK

*Note1: The highest frequency of the EUT is 2480 MHz, so the testing has been conformed to 5*2480MHz=12,400MHz.*

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

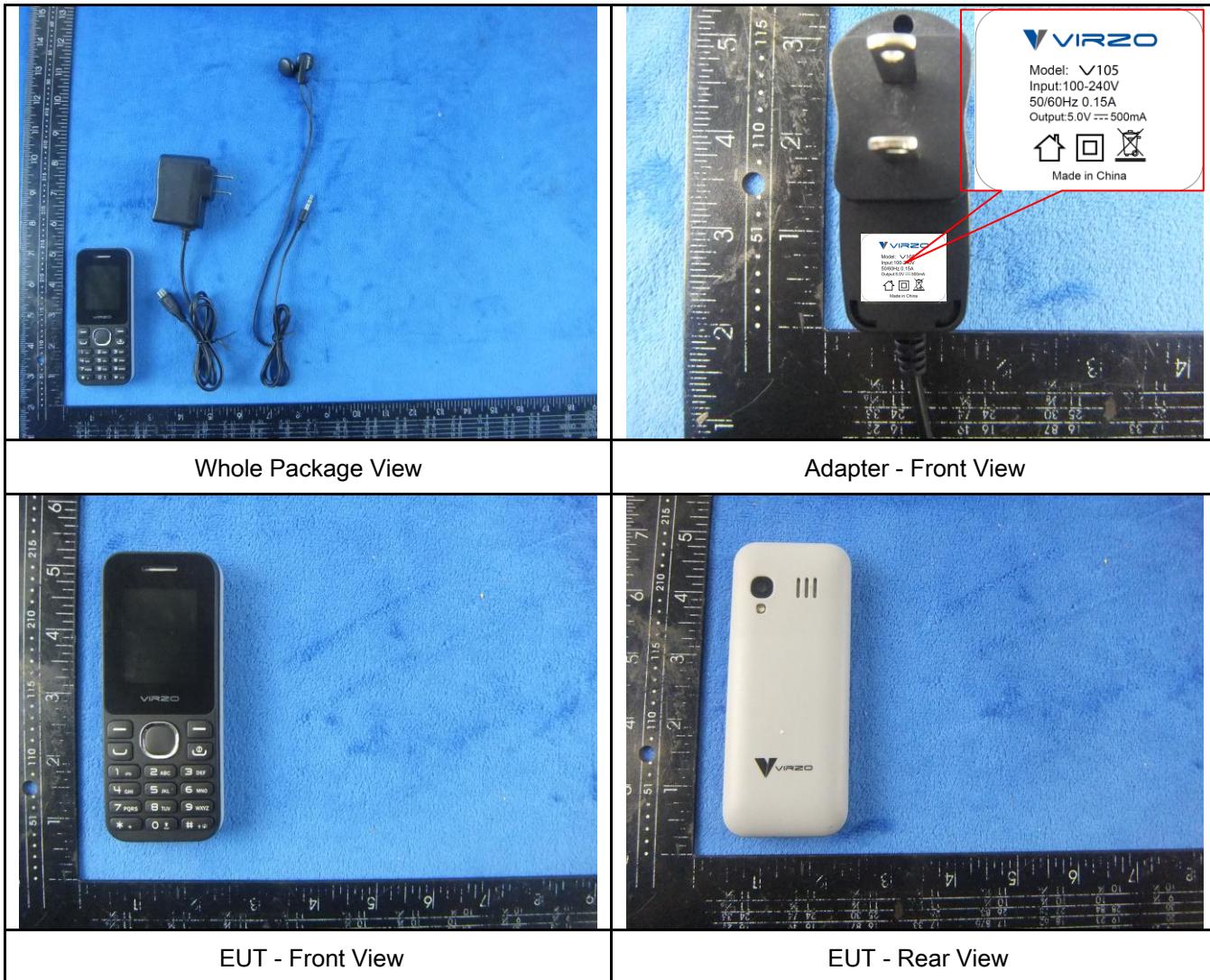
Note3: The AV measurement performed, more than 20dB below limit so AV test data was not presented.

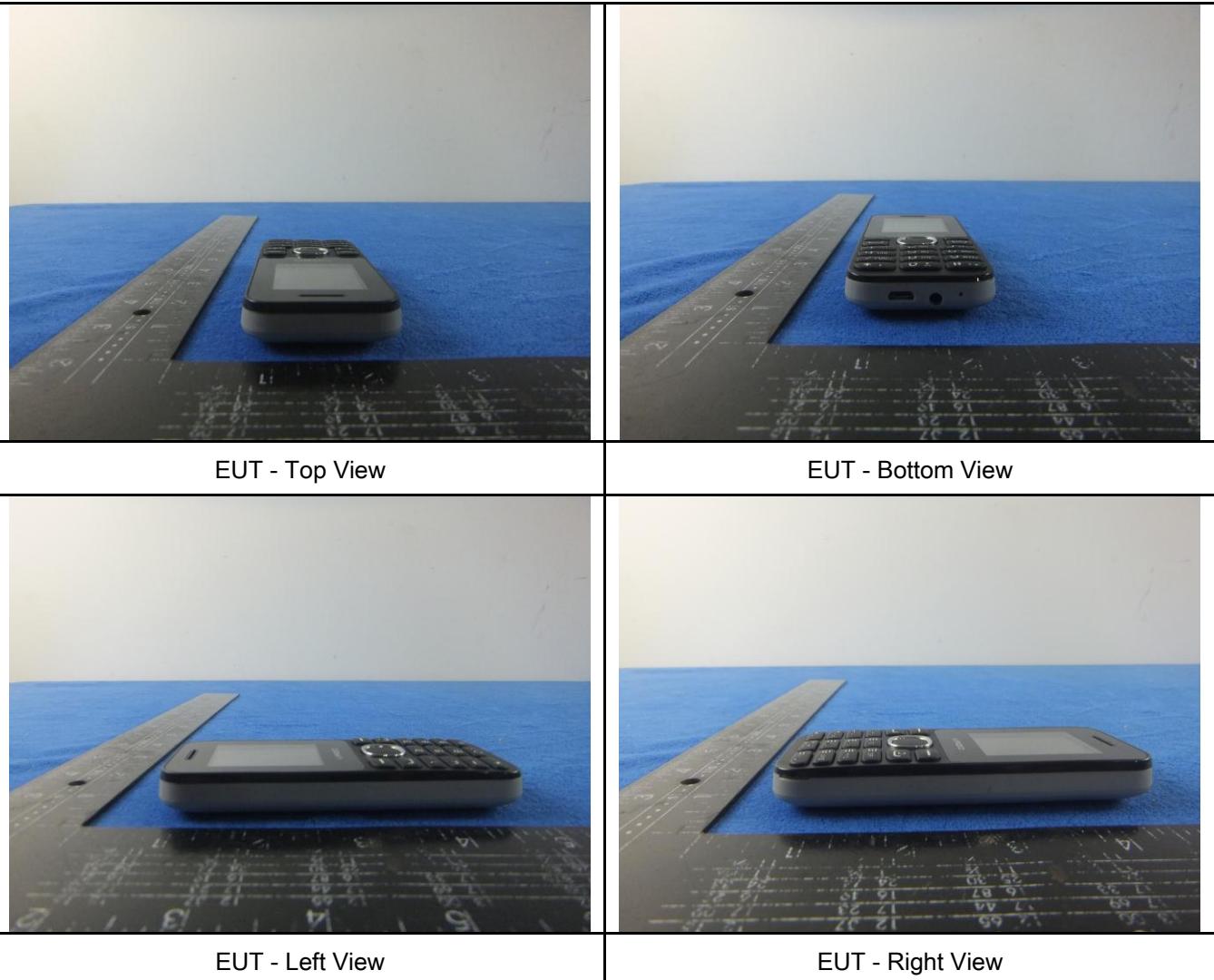
Annex A. TEST INSTRUMENT

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"/>

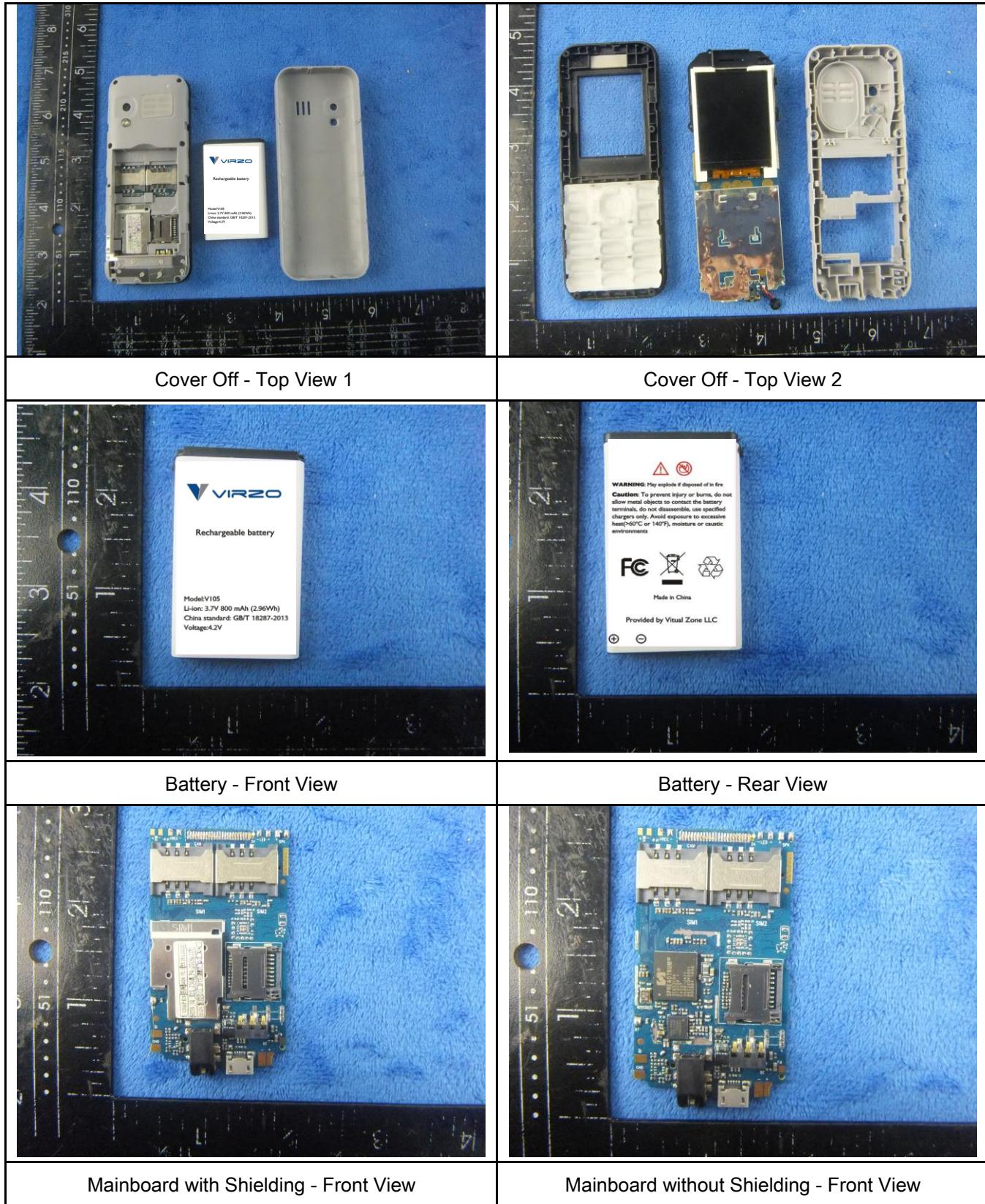
Annex B. EUT And Test Setup Photographs

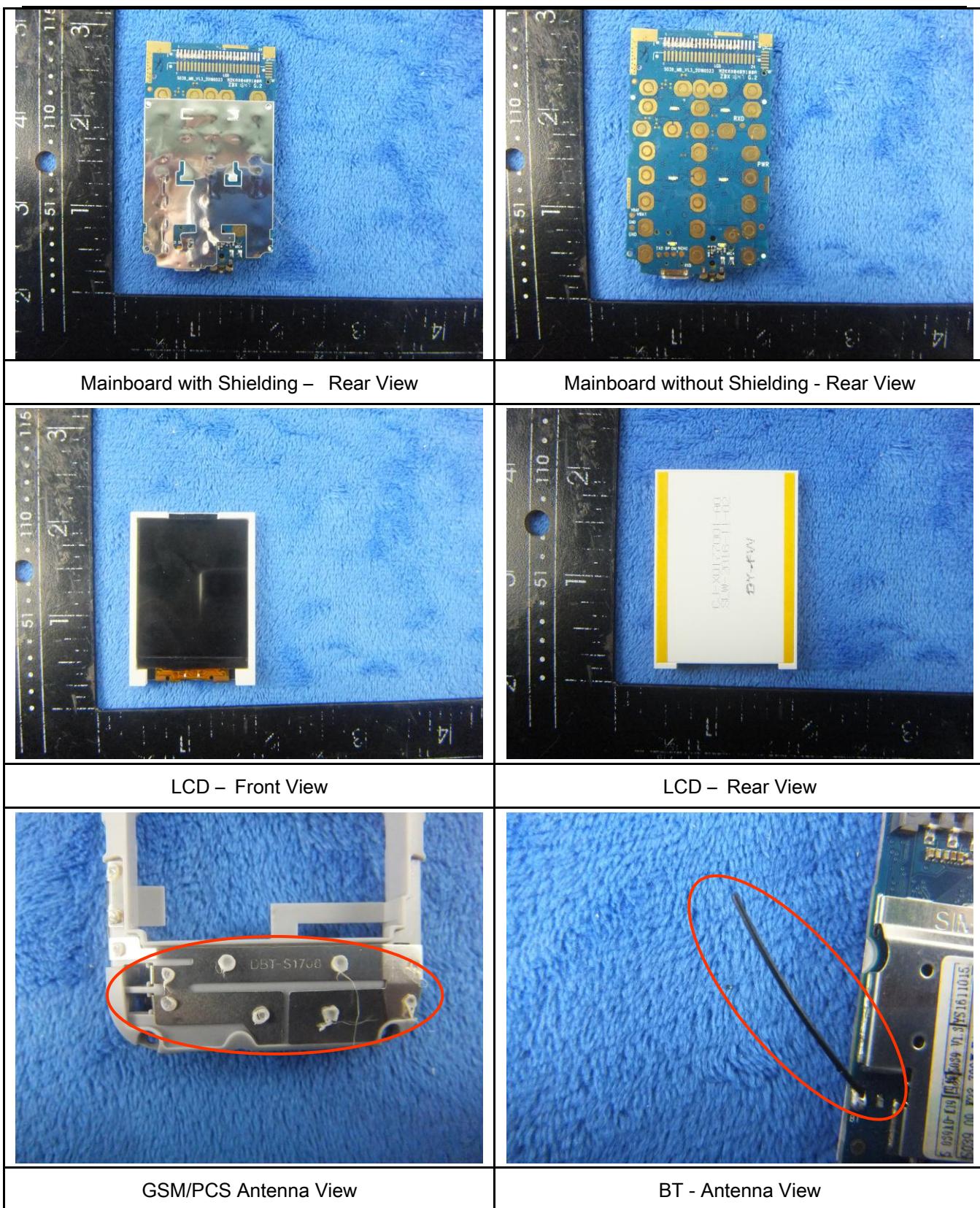
Annex B.i. Photograph: EUT External Photo



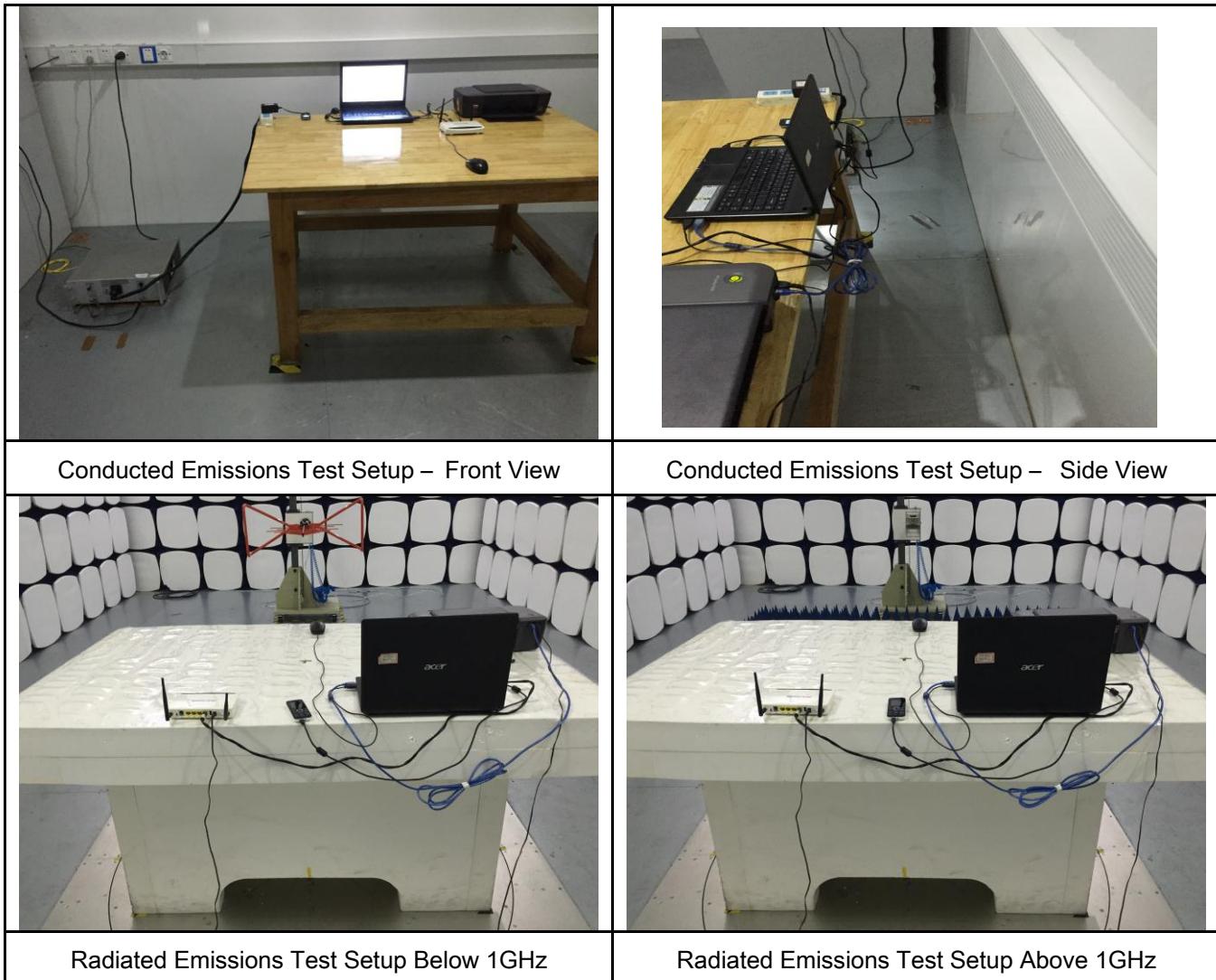


Annex B.ii. Photograph: EUT Internal Photo





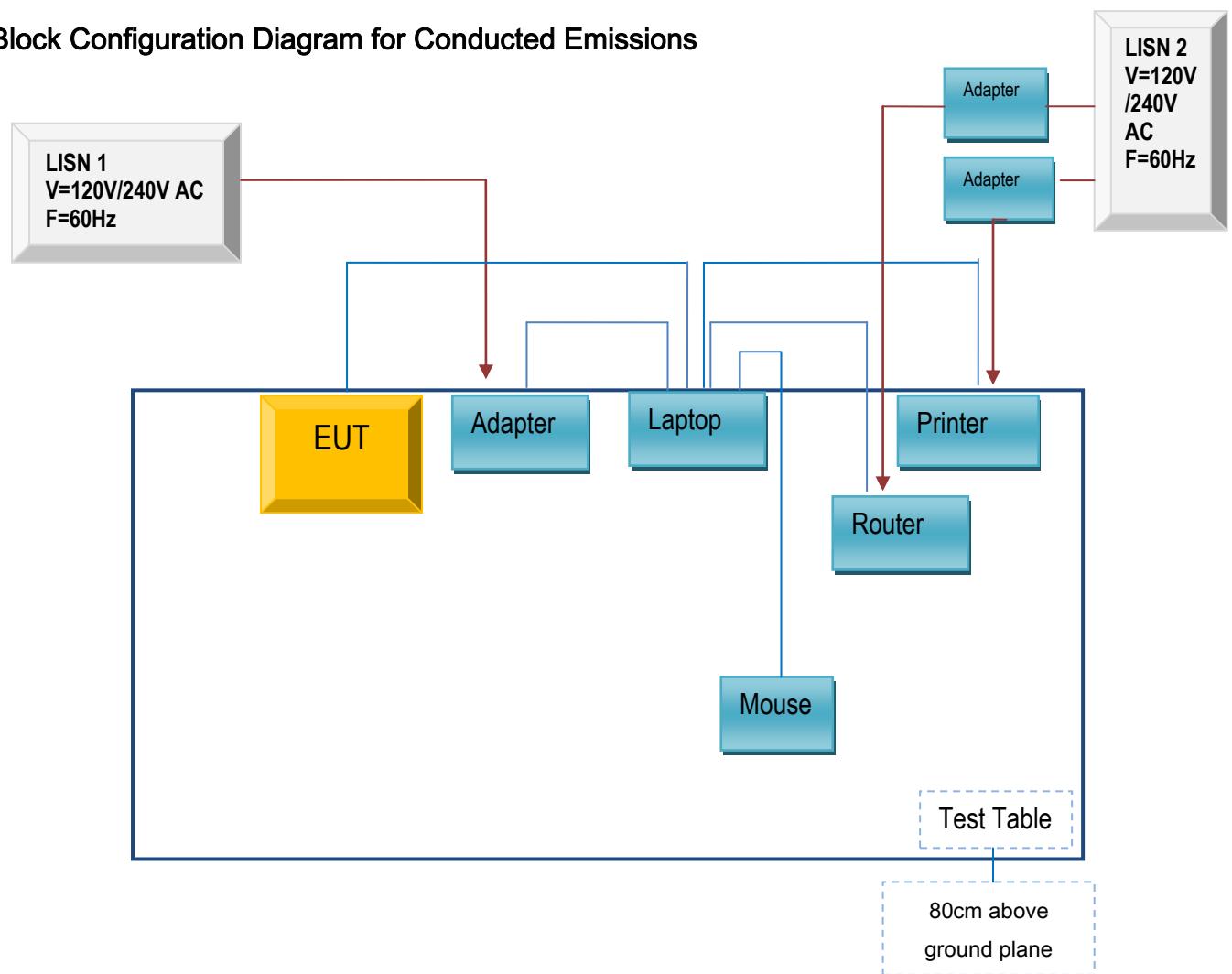
Annex B.iii. Photograph: Test Setup Photo



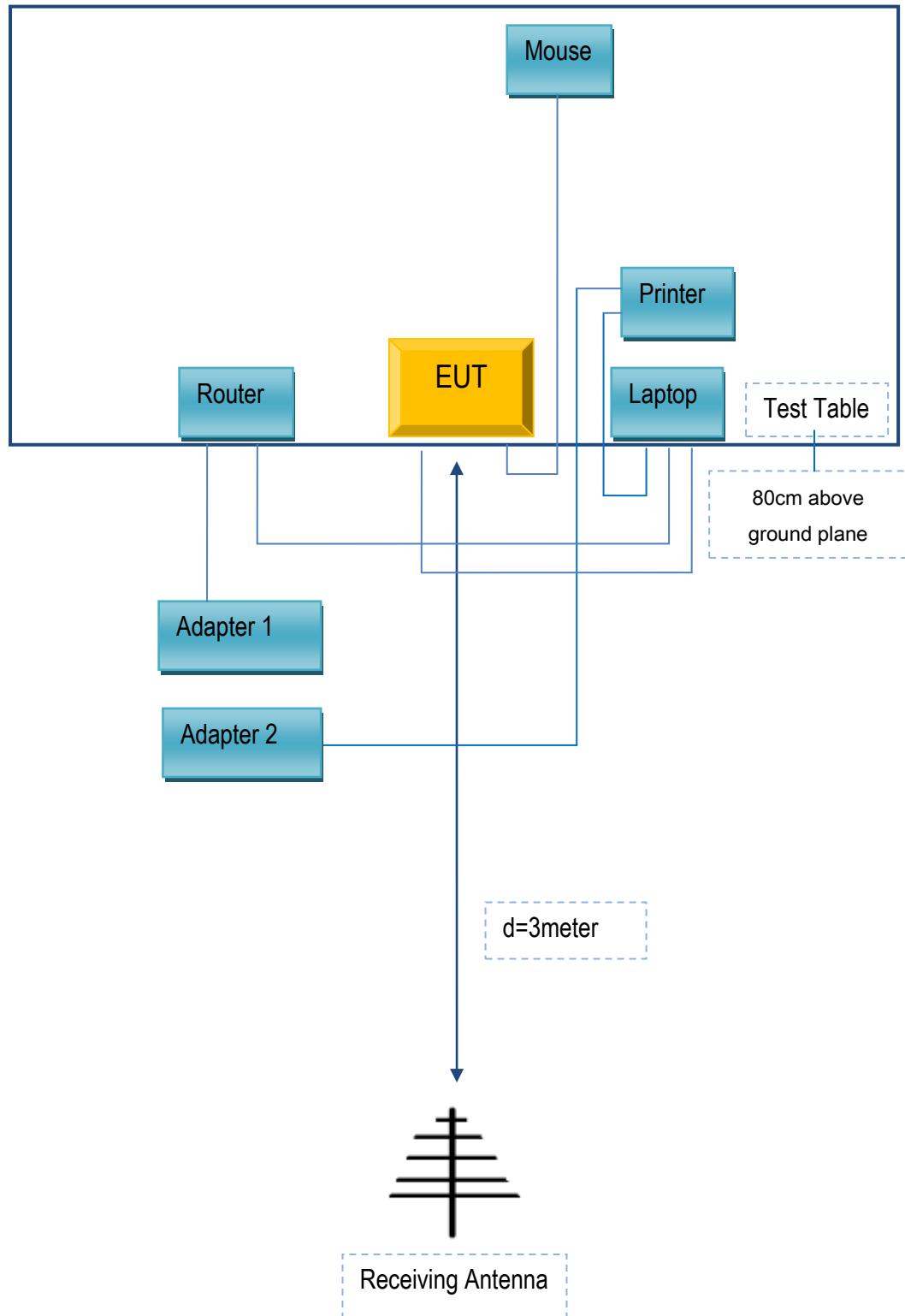
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

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

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

Please see the attachment

Annex E. DECLARATION OF SIMILARITY

N/A