EMC TEST REPORT

Report No.: 15071045-FCC-E

Supersede Report No.:N/A

Applicant	Unimax Communications
Product Name	3G Mobile Phone
Model No.	MXW1
Serial No.	N/A
Test Standard	FCC Part 15 Subpart B Class B:2014, ANSI C63.4: 2014
Test Date	November 10 to December 02, 2015
Issue Date	December 08, 2015
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Winnie Zhang	David Huang	
Winnie Zhang 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

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

This page has been left blank intentionally.

CONTENTS

1. Report Revision History

Report No.	Report Version	Description	Issue Date
15071045-FCC-E	NONE	Original	December 08, 2015
15071045-FCC-E	V1	Change the test setup photos	December 08, 2015

2. Customer information

Applicant Name	Unimax Communications
Applicant Add	18201 McDurmott Street West Suite E Irvine, CA 92614
Manufacturer	Shenzhen Fortuneship Technology Co., Ltd
Manufacturer Add	Room 701-716, 7th Floor, Kanghesheng Building, No.1 ChuangSheng Road, Nanshan District, Shenzhen, Guangdong, P. R. 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:	3G Mobile Phone
Main Model:	MXW1
Serial Model:	N/A
Antenna Gain:	GSM850: -1.6dBi PCS1900: 1.0 dBi UMTS-FDD Band V: -0.4 dBi UMTS-FDD Band II: 0.9 dBi Bluetooth: -0.7 dBi WIFI: -0.7 dBi GPS: -0.5 dBi
Input Power:	Adapter: Model: MXW1CHG Input: AC 100-240V; 50/60Hz;0.15A Output: DC 5.0V,500mA Battery: Model: MXW1BAT Spec:3.7V,1150mAh,4.255Wh
Equipment Category：	JBP
Type of Modulation:	GSM / GPRS: GMSK EGPRS: GMSK ,8PSK UMTS-FDD: QPSK, 16QAM 802.11b/g/n: DSSS, OFDM Bluetooth: GFSK, π /4DQPSK, 8DPSK GPS:BPSK
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 Bluetooth: 2402-2480 MHz GPS RX:1575.42 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 Bluetooth: 79CH GPS:1CH
Port:	Power Port, Earphone Port, USB Port
Trade Name :	UMX
FCC ID:	P46-MXW1
Date EUT received:	November 09, 2015
Test Date(s):	November 10 to November 30, 2015

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

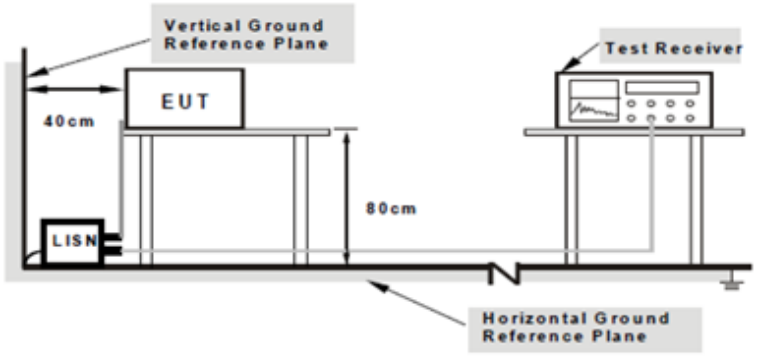
Emissions		
Test Item	**Description**	**Uncertainty**
Band Edge and Radiated Spurious Emissions	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
-	-	-

6. Measurements, Examination And Derived Results

6.1 AC Power Line Conducted Emissions

Temperature	28℃
Relative Humidity	52%
Atmospheric Pressure	1028mbar
Test date :	November 28, 2015
Tested By :	Winnie Zhang

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"> 

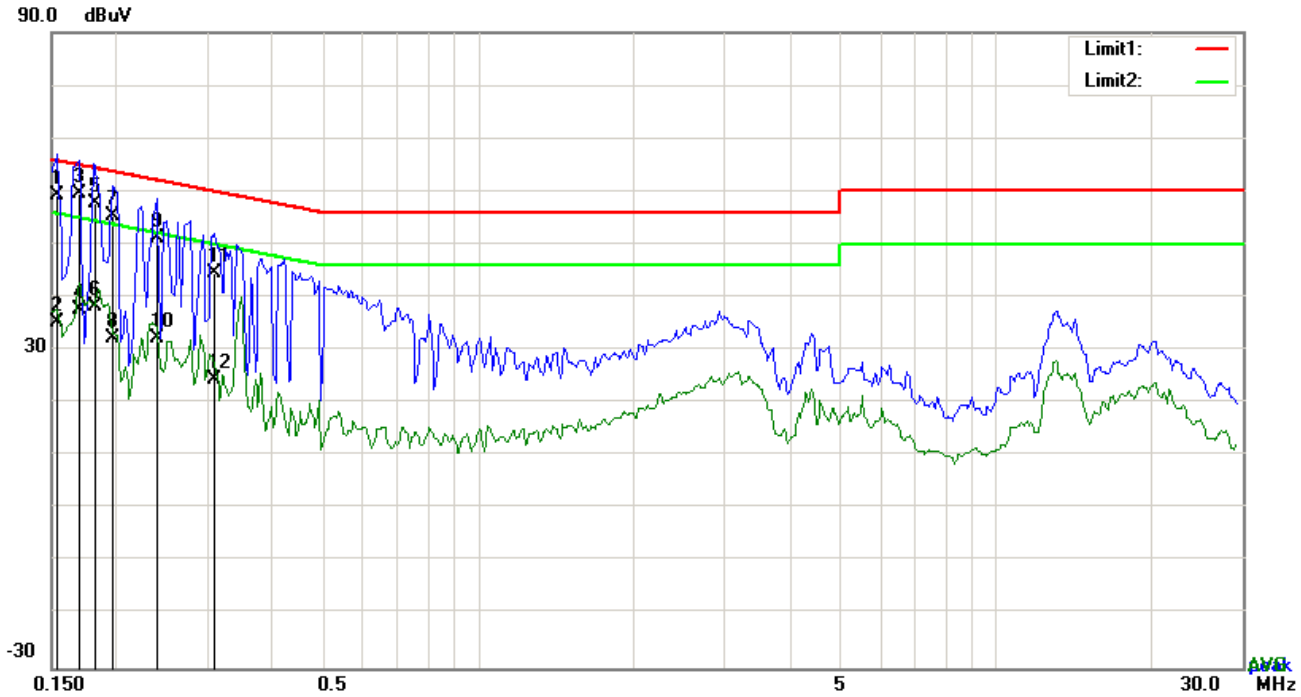
Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.</td></tr>
<tr><td>Procedure</td><td colspan="3">1. The EUT and supporting equipment were set up in accordance with the requirements of 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 50Ω /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

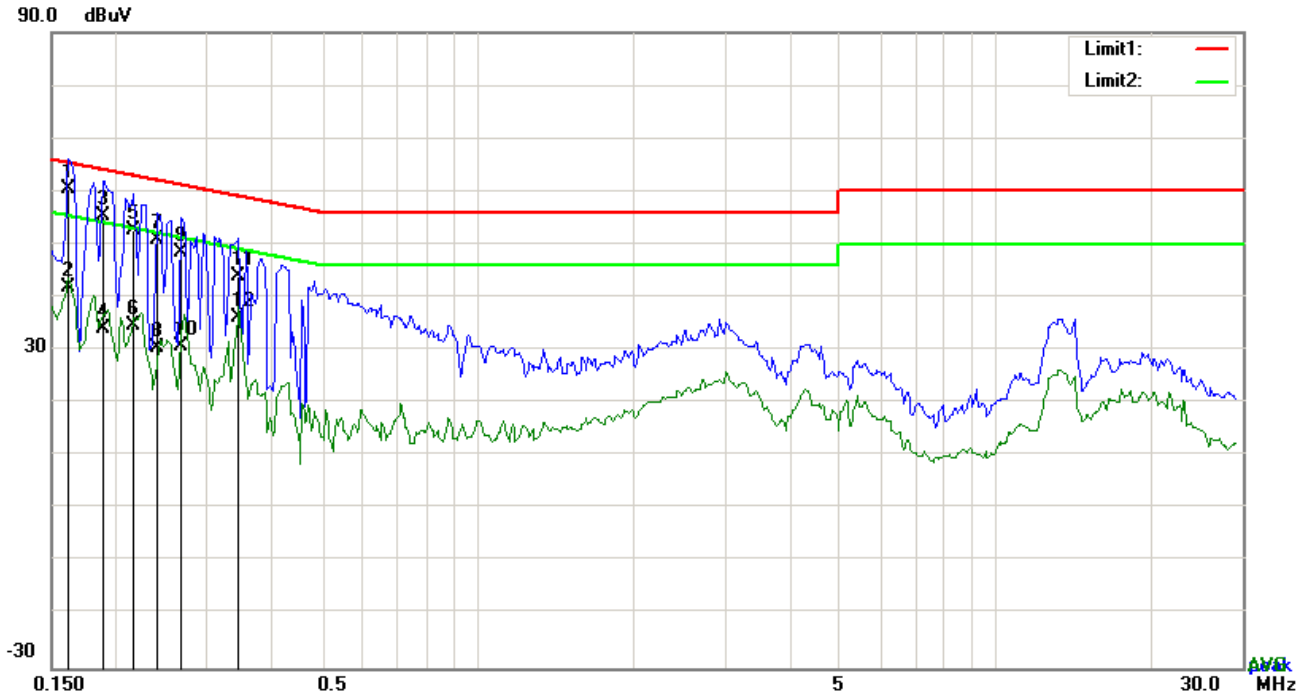


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.1539	49.28	QP	10.03	59.31	65.79	-6.48
2	L1	0.1539	25.17	AVG	10.03	35.20	55.79	-20.59
3	L1	0.1695	49.66	QP	10.03	59.69	64.98	-5.29
4	L1	0.1695	27.62	AVG	10.03	37.65	54.98	-17.33
5	L1	0.1825	47.69	QP	10.03	57.72	64.37	-6.65
6	L1	0.1825	28.32	AVG	10.03	38.35	54.37	-16.02
7	L1	0.1968	45.45	QP	10.03	55.48	63.74	-8.26
8	L1	0.1968	22.08	AVG	10.03	32.11	53.74	-21.63
9	L1	0.2397	41.12	QP	10.03	51.15	62.11	-10.96
10	L1	0.2397	22.17	AVG	10.03	32.20	52.11	-19.91
11	L1	0.3099	34.54	QP	10.03	44.57	59.97	-15.40
12	L1	0.3099	14.53	AVG	10.03	24.56	49.97	-25.41

Test Mode :	USB Mode

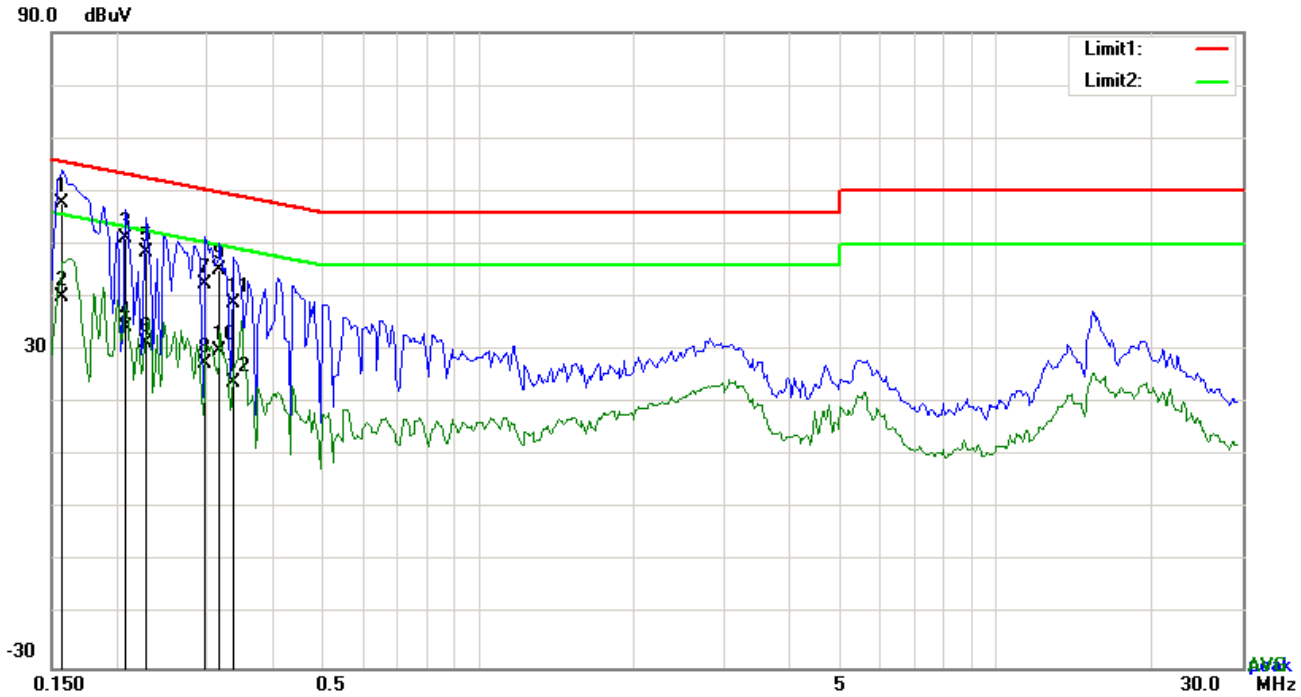


Test Data

Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.1617	50.44	QP	10.02	60.46	65.38	-4.92
2	N	0.1617	31.92	AVG	10.02	41.94	55.38	-13.44
3	N	0.1890	45.27	QP	10.02	55.29	64.08	-8.79
4	N	0.1890	24.15	AVG	10.02	34.17	54.08	-19.91
5	N	0.2163	42.77	QP	10.02	52.79	62.96	-10.17
6	N	0.2163	24.71	AVG	10.02	34.73	52.96	-18.23
7	N	0.2397	40.76	QP	10.02	50.78	62.11	-11.33
8	N	0.2397	20.34	AVG	10.02	30.36	52.11	-21.75
9	N	0.2670	38.35	QP	10.02	48.37	61.21	-12.84
10	N	0.2670	20.70	AVG	10.02	30.72	51.21	-20.49
11	N	0.3450	33.90	QP	10.02	43.92	59.08	-15.16
12	N	0.3450	26.14	AVG	10.02	36.16	49.08	-12.92

Test Mode :	USB Mode

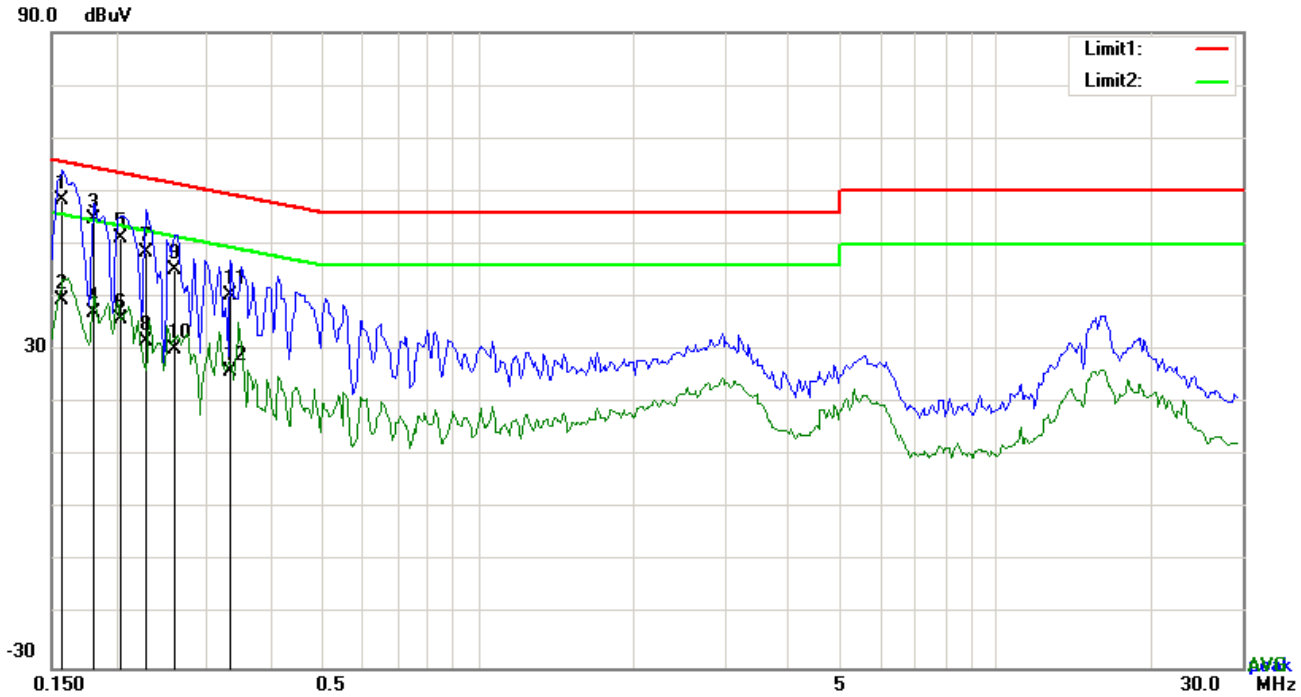


Test Data

Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.1578	47.64	QP	10.03	57.67	65.58	-7.91
2	L1	0.1578	30.07	AVG	10.03	40.10	55.58	-15.48
3	L1	0.2085	41.18	QP	10.03	51.21	63.26	-12.05
4	L1	0.2085	24.43	AVG	10.03	34.46	53.26	-18.80
5	L1	0.2280	38.57	QP	10.03	48.60	62.52	-13.92
6	L1	0.2280	21.46	AVG	10.03	31.49	52.52	-21.03
7	L1	0.2982	32.49	QP	10.03	42.52	60.29	-17.77
8	L1	0.2982	17.56	AVG	10.03	27.59	50.29	-22.70
9	L1	0.3177	35.06	QP	10.03	45.09	59.77	-14.68
10	L1	0.3177	19.95	AVG	10.03	29.98	49.77	-19.79
11	L1	0.3372	28.85	QP	10.03	38.88	59.27	-20.39
12	L1	0.3372	13.81	AVG	10.03	23.84	49.27	-25.43

Test Mode :	USB Mode



Test Data

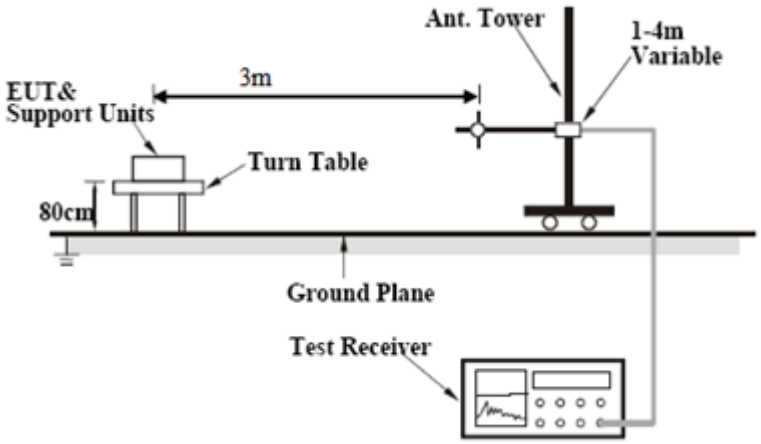
Phase Neutral Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.1578	48.44	QP	10.02	58.46	65.58	-7.12
2	N	0.1578	29.55	AVG	10.02	39.57	55.58	-16.01
3	N	0.1812	44.63	QP	10.02	54.65	64.43	-9.78
4	N	0.1812	26.97	AVG	10.02	36.99	54.43	-17.44
5	N	0.2046	41.23	QP	10.02	51.25	63.42	-12.17
6	N	0.2046	25.74	AVG	10.02	35.76	53.42	-17.66
7	N	0.2280	38.36	QP	10.02	48.38	62.52	-14.14
8	N	0.2280	21.72	AVG	10.02	31.74	52.52	-20.78
9	N	0.2592	34.99	QP	10.02	45.01	61.46	-16.45
10	N	0.2592	20.16	AVG	10.02	30.18	51.46	-21.28
11	N	0.3333	30.43	QP	10.02	40.45	59.37	-18.92
12	N	0.3333	15.83	AVG	10.02	25.85	49.37	-23.52

6.2 Radiated Emissions

Temperature	28℃
Relative Humidity	52%
Atmospheric Pressure	1028mbar
Test date :	November 28, 2015
Tested By :	Winnie Zhang

Requirement(s):

<table>
<tr><th>Spec</th><th>Item</th><th>Requirement</th><th>Applicable</th></tr>
<tr><td>47CFR§15.109(d)</td><td>a)</td><td>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
<table>
<tr><th>Frequency range (MHz)</th><th>Field Strength (μV/m)</th></tr>
<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>
</table></td><td>☑</td></tr>
<tr><td>Test Setup</td><td colspan="3"> 
</td></tr>
<tr><td>Procedure</td><td colspan="3">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</td></tr>
</table>

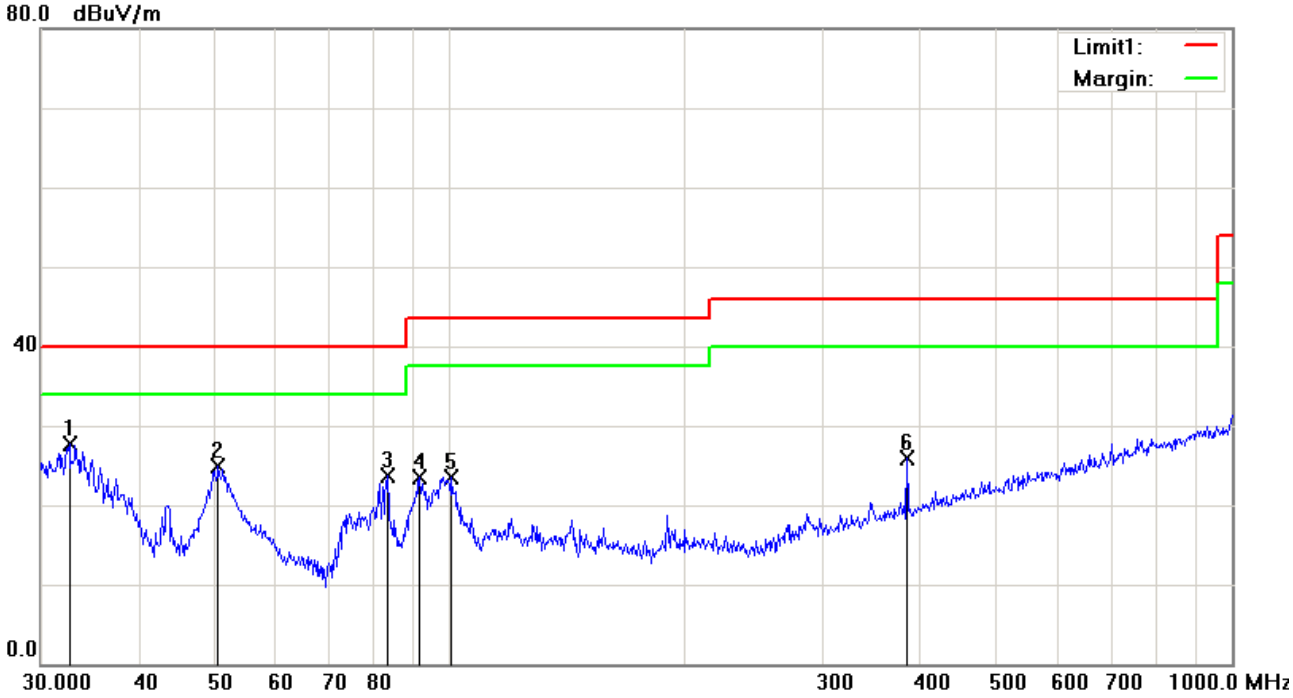
	over a full rotation of the EUT) was chosen. b. The EUT was then rotated to the direction that gave the maximum emission. c. Finally, the antenna height was adjusted to the height that gave the maximum emission. 3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 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

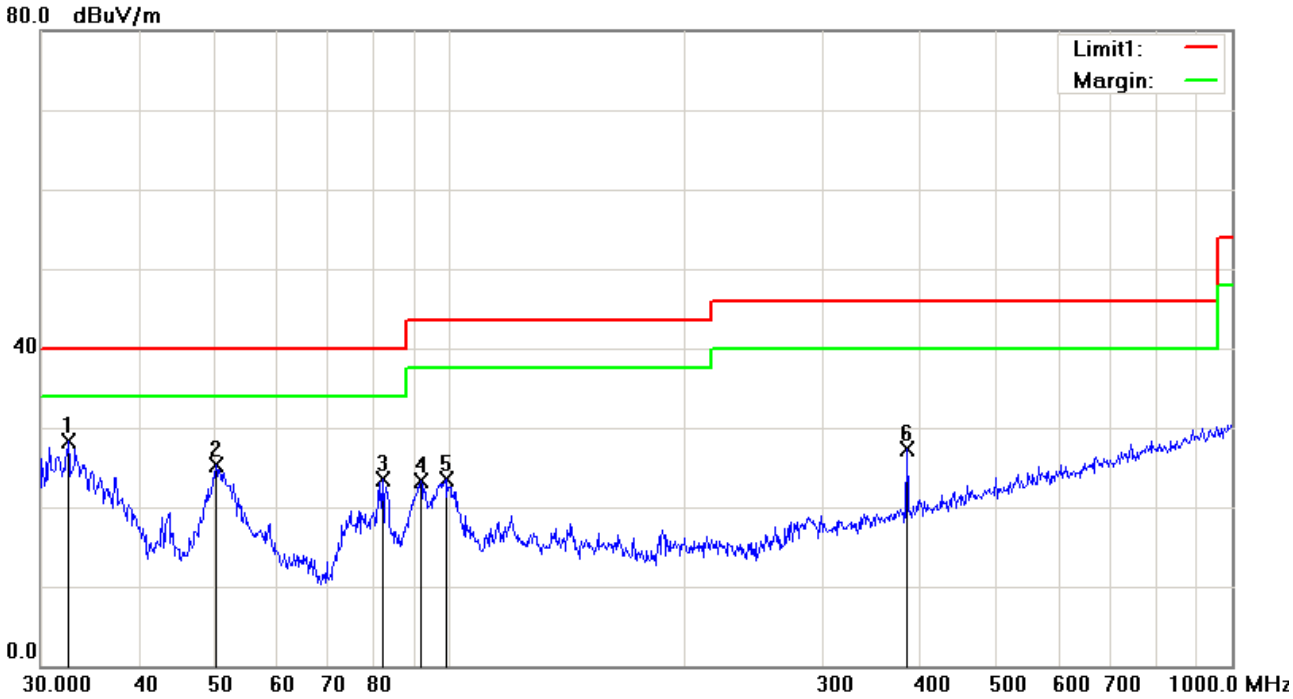


Test Data

Horizontal Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	( )
1	H	32.6340	29.93	peak	-2.20	27.73	40.00	-12.27	100	168
2	H	50.5860	38.11	peak	-13.24	24.87	40.00	-15.13	100	108
3	H	83.2298	37.35	peak	-13.60	23.75	40.00	-16.25	100	0
4	H	91.4949	36.43	peak	-13.00	23.43	43.50	-20.07	100	179
5	H	100.5806	34.17	peak	-10.70	23.47	43.50	-20.03	100	239
6	H	383.9318	30.58	peak	-4.67	25.91	46.00	-20.09	100	115

Below 1GHz



Test Data

Vertical Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	( )
1	V	32.5198	30.46	peak	-2.11	28.35	40.00	-11.65	100	199
2	V	50.2325	38.47	peak	-13.21	25.26	40.00	-14.74	100	131
3	V	82.0706	37.08	peak	-13.66	23.42	40.00	-16.58	100	356
4	V	91.8163	36.31	peak	-12.92	23.39	43.50	-20.11	100	221
5	V	98.8326	34.58	peak	-11.11	23.47	43.50	-20.03	100	240
6	V	383.9318	32.03	peak	-4.67	27.36	46.00	-18.64	100	116

Above 1GHz

Frequency (MHz)	Amplitude (dBμV/m)	Azimuth	Height (cm)	Polarity (H/V)	Factors (dB)	Limit (dBμV/m)	Margin (dB)	Detector (PK/AV)
1565.75	49.13	48	160	V	-22.13	74	-24.87	PK
2133.42	50.23	134	172	V	-22.45	74	-23.77	PK
1663.71	49.75	64	134	V	-21.11	74	-24.25	PK
2157.41	48.47	38	240	H	-23.56	74	-25.53	PK
2643.78	50.65	123	182	H	-22.52	74	-23.35	PK
1858.18	50.03	45	160	H	-23.74	74	-23.97	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	09/17/2015	09/16/2016	☑
Line Impedance Stabilization Network	LI-125A	191106	09/25/2015	09/24/2016	☑
Line Impedance Stabilization Network	LI-125A	191107	09/25/2015	09/24/2016	☑
LISN	ISN T800	34373	09/25/2015	09/24/2016	☑
Transient Limiter	LIT-153	531118	09/01/2015	08/31/2016	☑
Radiated Emissions					
EMI test receiver	ESL6	100262	09/17/2015	09/16/2016	☑
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	09/01/2015	08/31/2016	☑
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/25/2015	03/24/2016	☑
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/21/2015	09/20/2016	☑
Double Ridge Horn Antenna	AH-118	71259	09/24/2015	09/23/2016	☑

Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph: EUT External Photo

<table>
<tr><td>  </td><td> 
</td></tr>
<tr><td>Whole Package View</td><td>Adapter - Front View</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>EUT - Front View</td><td>EUT - Rear View</td></tr>
</table>

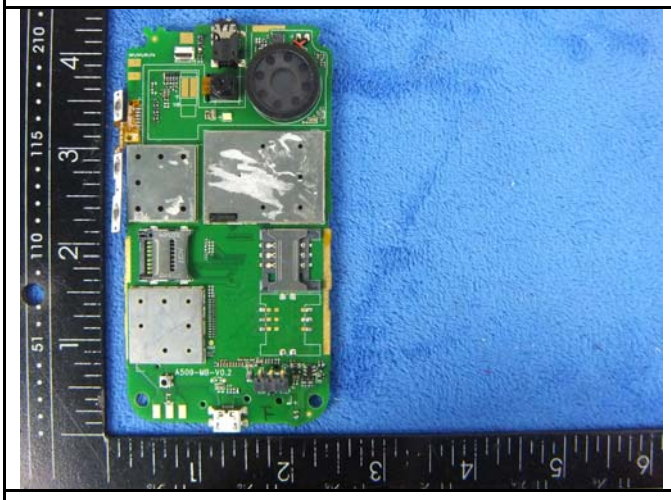
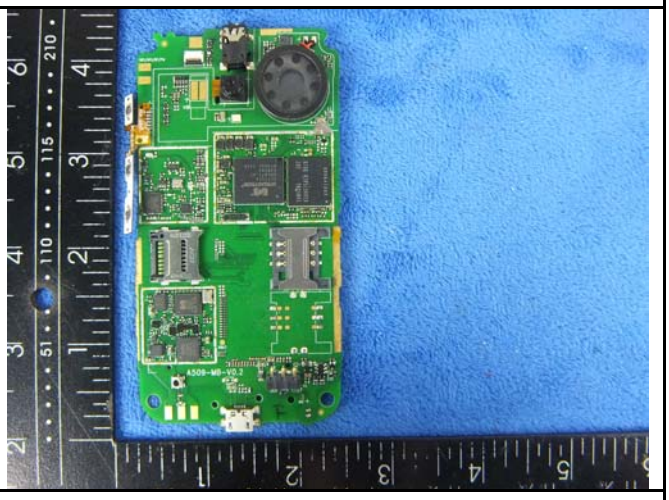
EUT - Top View

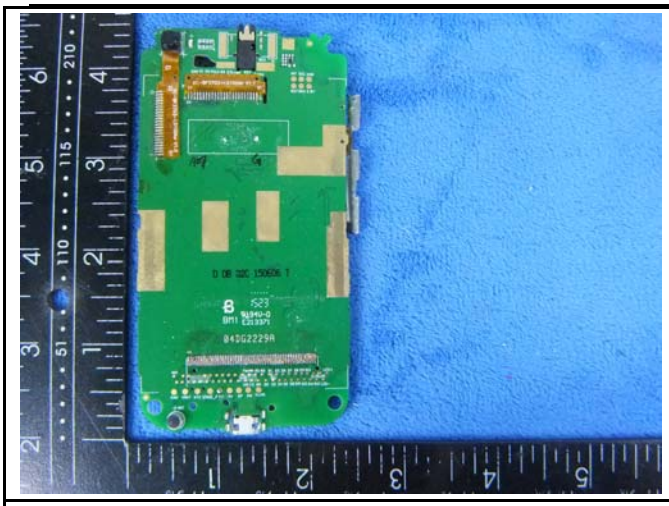
EUT - Bottom View

EUT - Left View

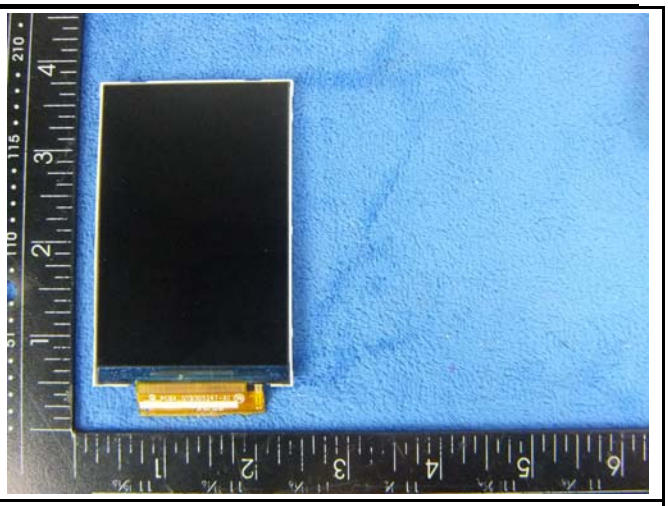
EUT - Right View

Annex B.ii. Photograph: EUT Internal Photo

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Cover Off - Top View 1</td><td>Cover Off - Top View 2</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>Battery - Front View</td><td>Battery - Rear View</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Mainbard with Shielding - Front View</td><td>Mainbard without Shielding - Front View</td></tr>
</table>

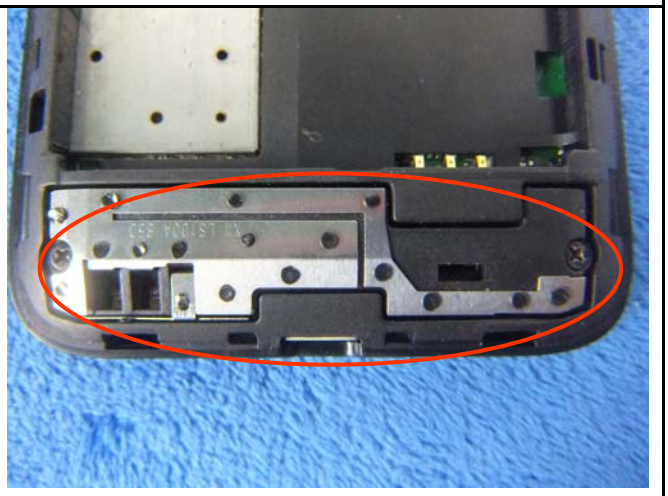


Mainbard – Rear View

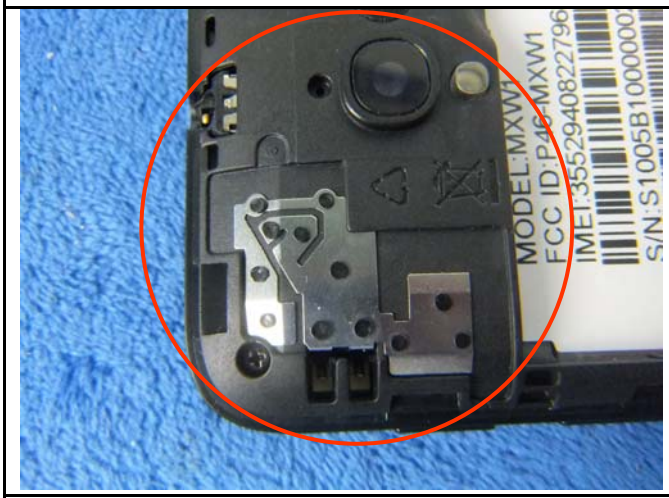


LCD – Front View

LCD – Rear View

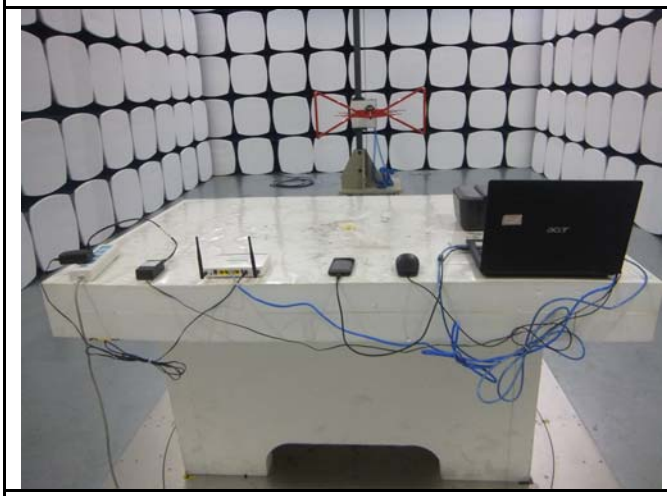
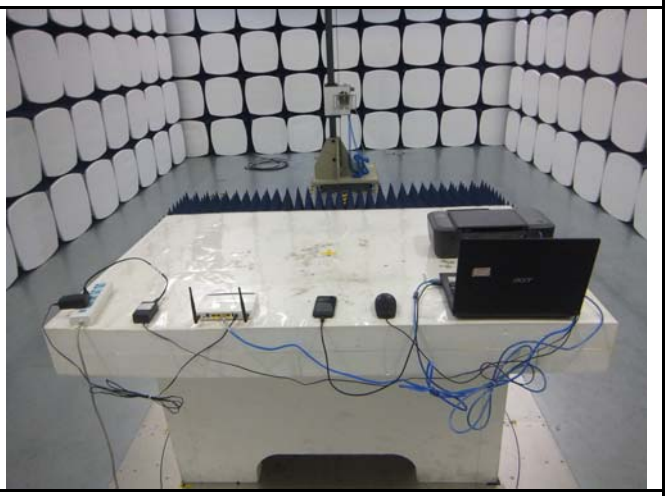


GSM/PCS/UMTS-FDD Antenna View



WIFI/BT/GPS - Antenna View

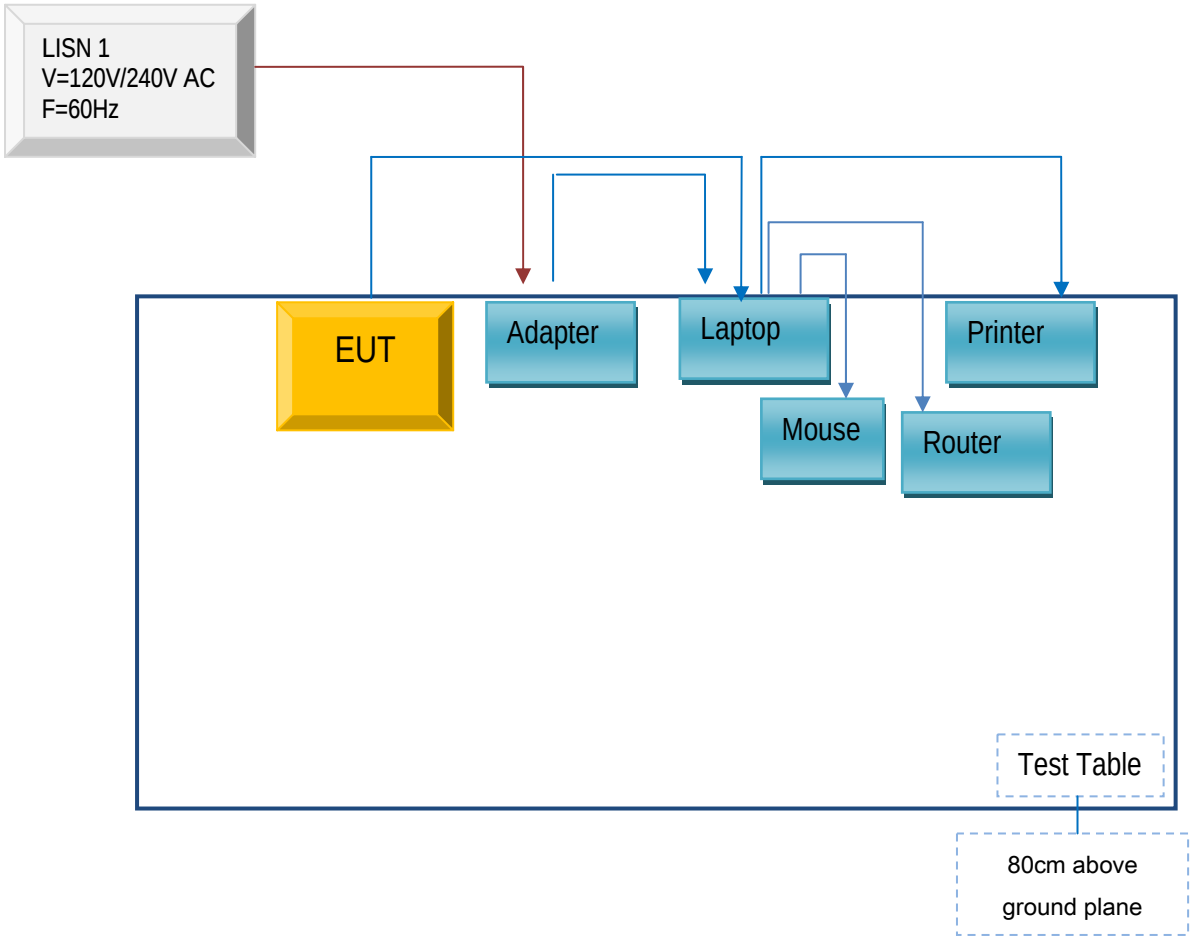
Annex B.iii. Photograph: Test Setup Photo

	
Conducted Emissions Test Setup – Front View	Conducted Emissions Test Setup – Side View
	
Radiated Emissions Test Setup Below 1GHz	Radiated Emissions Test Setup Above 1GHz

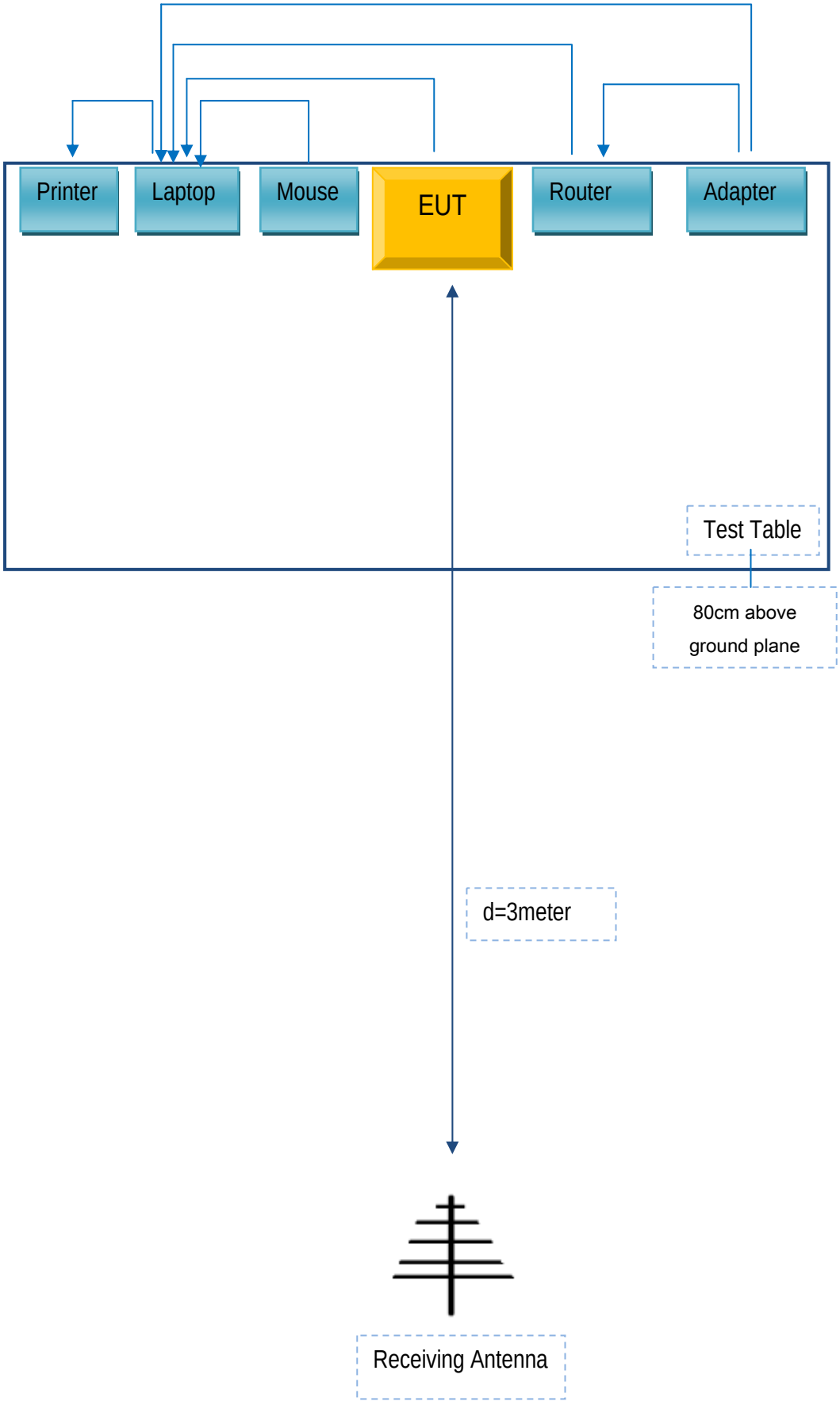
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

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.

Supporting Euquipment:

Manufacturer	Equipment Description	Model	Calibration Date	Calibration Due Date
Lenovo	Lenovo Laptop	E40& 0579A52	N/A	N/A

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Calibration Date	Calibration Due Date
USB Cable	Un-shielding	No	2m	N/A	N/A
RJ45 Cable	Un-shielding	No	2m	N/A	N/A
Router Power cable	Un-shielding	No	2m	N/A	N/A
Printer Power cable	Un-shielding	No	2m	N/A	N/A

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

Please see Attachment

Annex E. DECLARATION OF SIMILARITY

N/A