EMC TEST REPORT

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

Report No.: 15070468-FCC-E

Applicant	Swagtek
Product Name	Feature phone
Model No.	LO-M1222
Serial No.	LO-M1122
Test Standard	FCC Part 15 Subpart B Class B:2014, ANSI C63.4: 2014
Test Date	June 23 to June 27, 2015
Issue Date	June 27, 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 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 15

ANNEX A. TEST INSTRUMENT 19

ANNEX B. EUT AND TEST SETUP PHOTOGRAPHS 20

ANNEX C. TEST SETUP AND SUPPORTING EQUIPMENT 26

ANNEX D. USER MANUAL / BLOCK DIAGRAM / SCHEMATICS / PARTLIST 29

ANNEX E. DECLARATION OF SIMILARITY 31

1. Report Revision History

Report No.	Report Version	Description	Issue Date
15070468-FCC-E	NONE	Original	June 27, 2015

2. Customer information

Applicant Name	Swagtek
Applicant Add	10205 NW 19th Street, STE101, Miami, FL 33172 USA
Manufacturer	Swagtek
Manufacturer Add	10205 NW 19th Street, STE101, Miami, FL 33172 USA

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:	LO-M1222
Serial Model:	LO-M1122
Date EUT received:	June 23, 2015
Test Date(s):	June 23 to June 27, 2015
Equipment Category :	JBP
Antenna Gain:	GSM850: -3 dBi PCS1900: -2dBi Bluetooth: -2 dBi
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 Bluetooth2402-2480 MHz
Number of Channels:	GSM 850: 124CH PCS1900: 299CH Bluetooth: 79CH
Port:	Power Port, Earphone Port, USB Port

Input Power:	Battery: Model: LOGIC M1 Spec: 3.7V 800mAh 2.96Wh Adapter: Model: LOGIC M1 Input: AC 100-240V; 50/60Hz 150mA Output: DC 5.0V; 500mA
Trade Name :	LOGIC makes sense
GPRS/EGPRS Multi-slot class	8/10/12
FCC ID:	055M112X2

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

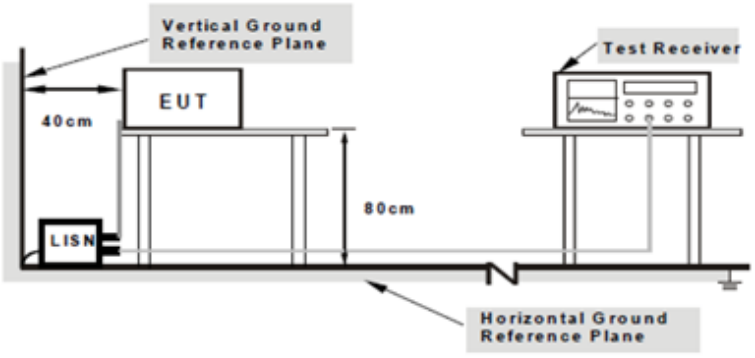
Emissions		
Test Item	**Description**	**Uncertainty**
Band Edge and Radiated Spurious Emissions	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
-	-	-

6. Measurements, Examination And Derived Results

6.1 AC Power Line Conducted Emissions

Temperature	24°C
Relative Humidity	54%
Atmospheric Pressure	1025mbar
Test date :	June 25, 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 50W/50mH EUT LISN, connected to filtered mains.</td></tr>
</table>

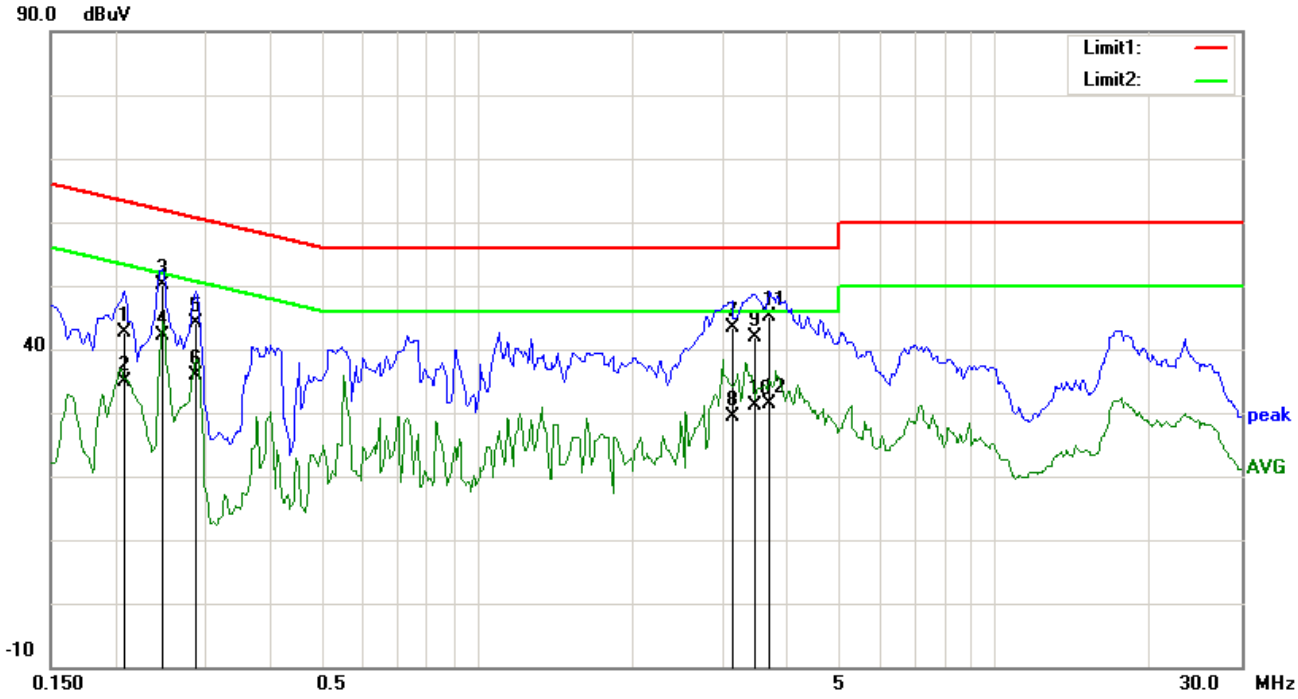
	3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable. 4. All other supporting equipment were powered separately from another main supply. 5. The EUT was switched on and allowed to warm up to its normal operating condition. 6. A scan was made on the NEUTRAL 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 1:	USB Mode

120V/60Hz

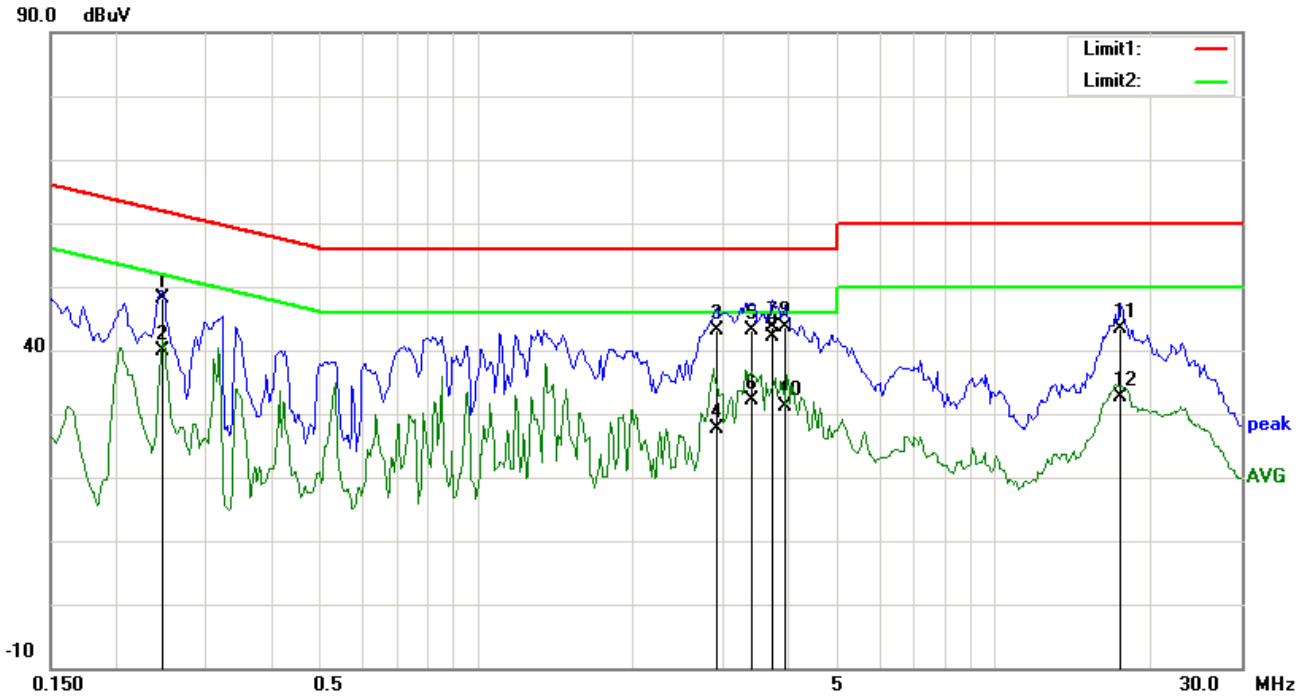


Test Data

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	0.2086	29.69	QP	12.98	42.67	63.26	-20.59	
2	L1	0.2086	21.90	AVG	12.98	34.88	53.26	-18.38	
3	L1	0.2477	37.35	QP	12.84	50.19	61.83	-11.64	
4	L1	0.2477	29.25	AVG	12.84	42.09	51.83	-9.74	
5	L1	0.2867	31.44	QP	12.69	44.13	60.62	-16.49	
6	L1	0.2867	23.29	AVG	12.69	35.98	50.62	-14.64	
7	L1	3.1094	31.89	QP	11.40	43.29	56.00	-12.71	
8	L1	3.1094	17.91	AVG	11.40	29.31	46.00	-16.69	
9	L1	3.4375	30.44	QP	11.40	41.84	56.00	-14.16	
10	L1	3.4375	19.62	AVG	11.40	31.02	46.00	-14.98	
11	L1	3.6641	33.66	QP	11.40	45.06	56.00	-10.94	
12	L1	3.6641	19.86	AVG	11.40	31.26	46.00	-14.74	

Test Mode 1:	USB Mode



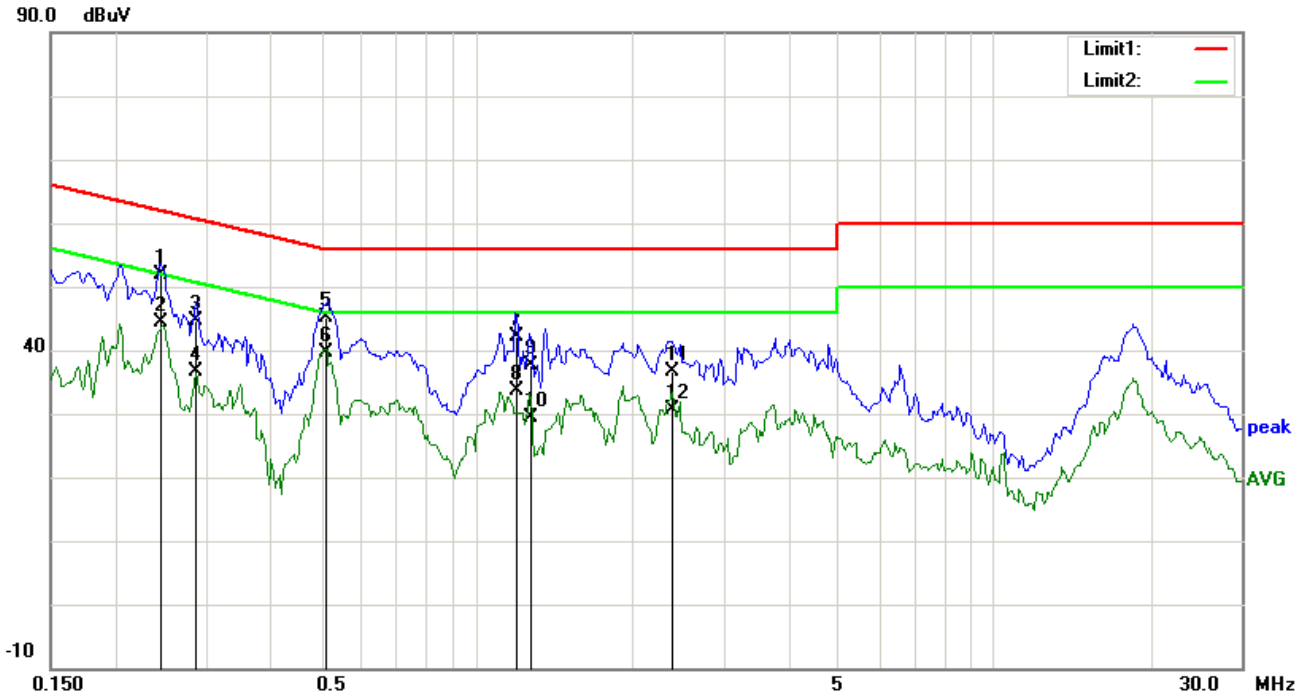
Test Data

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	0.2477	35.21	QP	12.84	48.05	61.83	-13.78	
2	N	0.2477	27.02	AVG	12.84	39.86	51.83	-11.97	
3	N	2.9039	31.61	QP	11.64	43.25	56.00	-12.75	
4	N	2.9039	16.07	AVG	11.64	27.71	46.00	-18.29	
5	N	3.3828	31.54	QP	11.70	43.24	56.00	-12.76	
6	N	3.3828	20.45	AVG	11.70	32.15	46.00	-13.85	
7	N	3.7227	31.77	QP	11.74	43.51	56.00	-12.49	
8	N	3.7227	30.37	AVG	11.74	42.11	46.00	-3.89	
9	N	3.9531	31.92	QP	11.77	43.69	56.00	-12.31	
10	N	3.9531	19.36	AVG	11.77	31.13	46.00	-14.87	
11	N	17.5391	28.66	QP	14.63	43.29	60.00	-16.71	
12	N	17.5391	17.91	AVG	14.63	32.54	50.00	-17.46	

Test Mode 1:	USB Mode

240V/60Hz

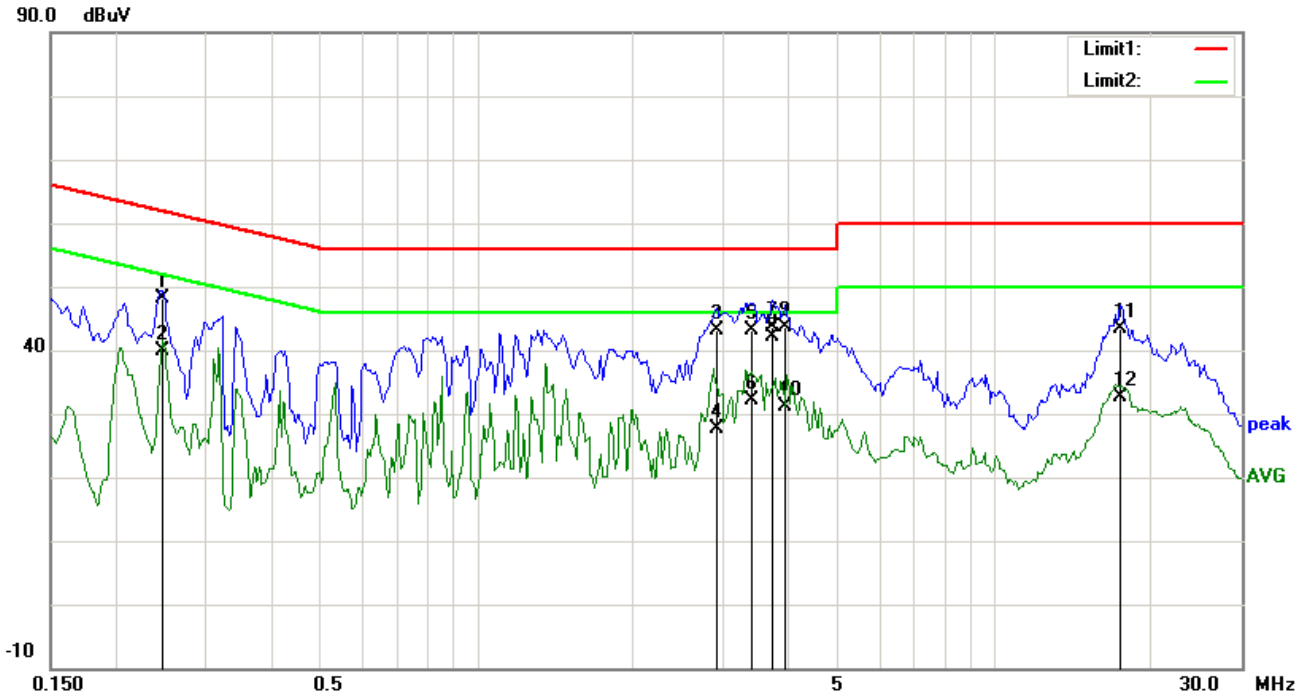


Test Data

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	0.2455	38.95	QP	12.85	51.80	61.91	-10.11	
2	L1	0.2455	31.43	AVG	12.85	44.28	51.91	-7.63	
3	L1	0.2867	31.93	QP	12.69	44.62	60.62	-16.00	
4	L1	0.2867	23.83	AVG	12.69	36.52	50.62	-14.10	
5	L1	0.5101	33.16	QP	11.89	45.05	56.00	-10.95	
6	L1	0.5101	27.63	AVG	11.89	39.52	46.00	-6.48	
7	L1	1.1907	30.80	QP	11.40	42.20	56.00	-13.80	
8	L1	1.1907	22.11	AVG	11.40	33.51	46.00	-12.49	
9	L1	1.2688	26.32	QP	11.40	37.72	56.00	-18.28	
10	L1	1.2688	17.86	AVG	11.40	29.26	46.00	-16.74	
11	L1	2.3844	25.33	QP	11.40	36.73	56.00	-19.27	
12	L1	2.3844	19.19	AVG	11.40	30.59	46.00	-15.41	

Test Mode 1:	USB Mode



Test Data

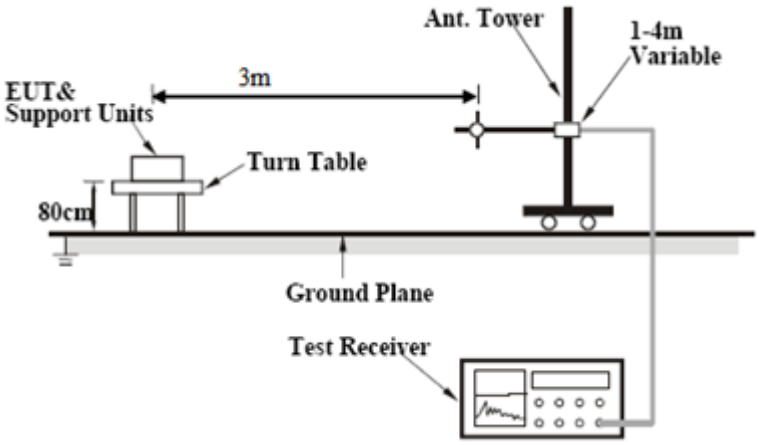
Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Comment
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)	
1	N	0.1773	34.26	QP	13.10	47.36	64.61	-17.25	
2	N	0.1773	24.39	AVG	13.10	37.49	54.61	-17.12	
3	N	0.2047	36.55	QP	13.00	49.55	63.42	-13.87	
4	N	0.2047	28.80	AVG	13.00	41.80	53.42	-11.62	
5	N	0.5172	32.40	QP	11.88	44.28	56.00	-11.72	
6	N	0.5172	26.54	AVG	11.88	38.42	46.00	-7.58	
7	N	1.1891	33.37	QP	11.42	44.79	56.00	-11.21	
8	N	1.1891	24.41	AVG	11.42	35.83	46.00	-10.17	
9	N	1.2711	27.82	QP	11.43	39.25	56.00	-16.75	
10	N	1.2711	19.54	AVG	11.43	30.97	46.00	-15.03	
11	N	1.3492	30.28	QP	11.44	41.72	56.00	-14.28	
12	N	1.3492	19.93	AVG	11.44	31.37	46.00	-14.63	

6.2 Radiated Emissions

Temperature	24°C
Relative Humidity	54%
Atmospheric Pressure	1025mbar
Test date :	June 25, 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(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>

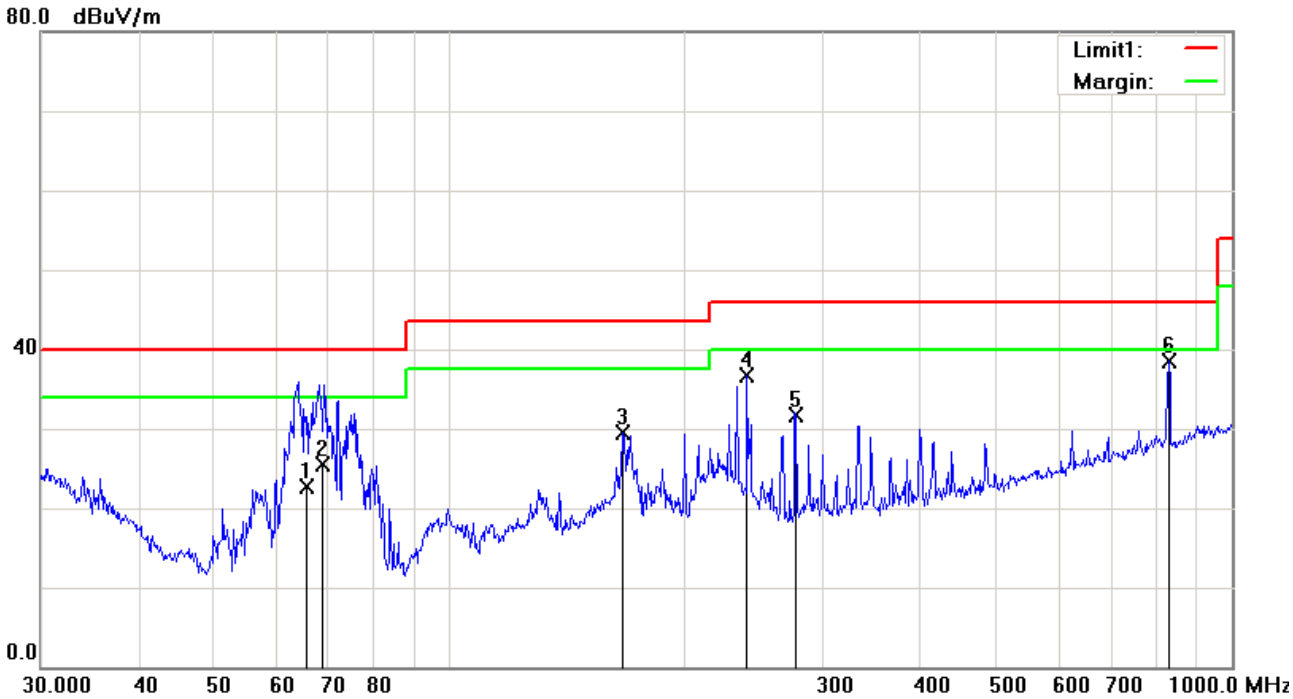
	over a full rotation of the EUT) was chosen. b. The EUT was then rotated to the direction that gave the maximum emission. c. Finally, the antenna height was adjusted to the height that gave the maximum emission. 3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120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

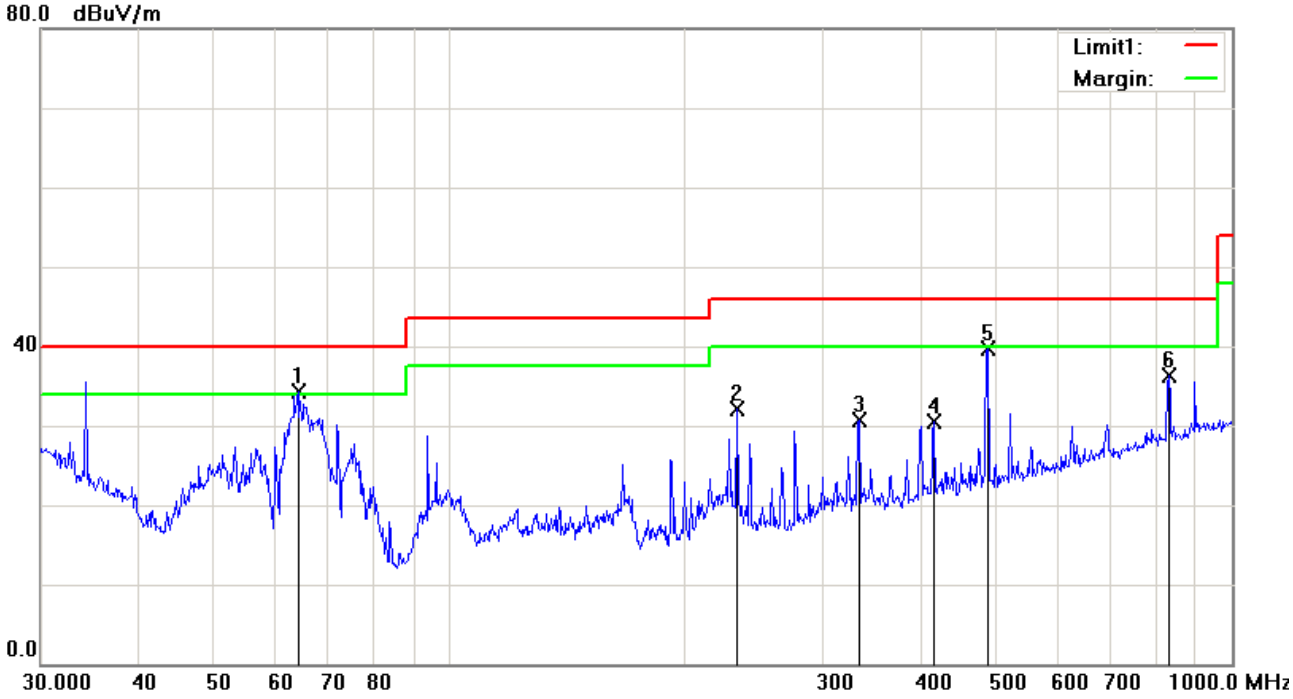
Horizontal Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Height	Degree	Comment
		(MHz)	(dBuV/m)		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	( )	
1	H	65.5407	36.65	QP	-13.92	22.73	40.00	-17.27	200	0	
2	H	68.7345	39.16	QP	-13.69	25.47	40.00	-14.53	200	0	
3	H	166.6514	38.32	peak	-8.82	29.50	43.50	-14.00			
4	H	239.9873	45.71	peak	-9.10	36.61	46.00	-9.39			
5	H	277.0935	39.75	peak	-7.95	31.80	46.00	-14.20			
6	H	830.4002	34.85	peak	3.57	38.42	46.00	-7.58			

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	63.9828	48.27	peak	-14.05	34.22	40.00	-5.78			
2	V	232.5318	41.08	peak	-9.04	32.04	46.00	-13.96			
3	V	333.6867	36.55	peak	-5.93	30.62	46.00	-15.38			
4	V	416.1791	34.48	peak	-3.91	30.57	46.00	-15.43			
5	V	487.3151	41.67	peak	-2.04	39.63	46.00	-6.37			
6	V	830.4002	32.68	peak	3.57	36.25	46.00	-9.75			

Above 1GHz

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

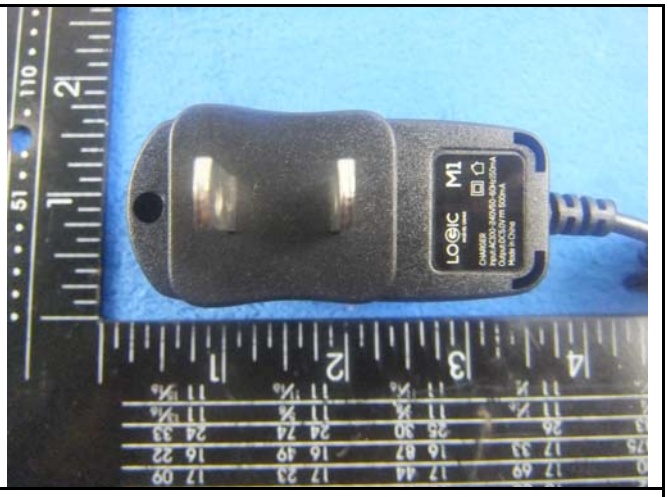
Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Due	In use
AC Line Conducted Emissions					
EMI test receiver	ESCS30	8471241027	09/18/2014	09/17/2015	☑
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	03/25/2015	03/24/2016	☑
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



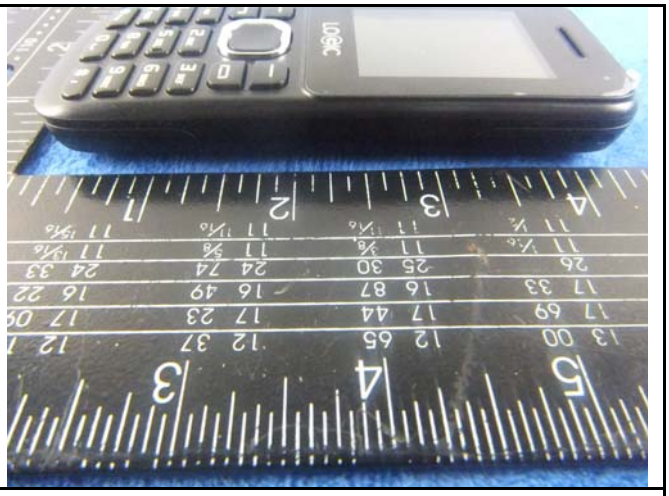
Adapter - Front View

EUT - Front View

EUT - Rear View

EUT - Top View

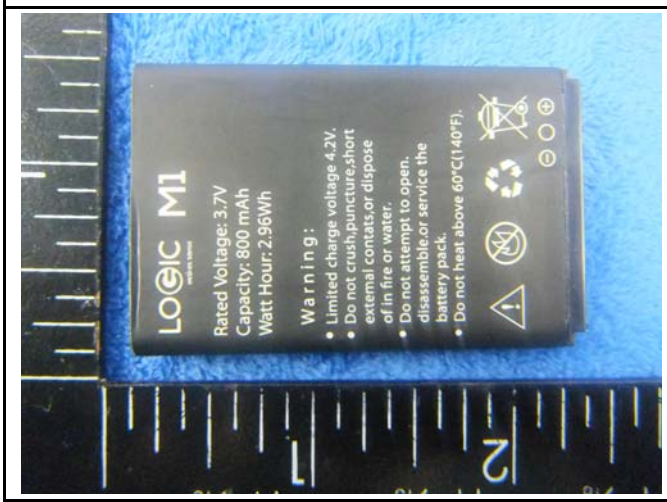
EUT - Bottom View

	
EUT - Left View	EUT - Right View

Annex B.ii. Photograph: EUT Internal Photo

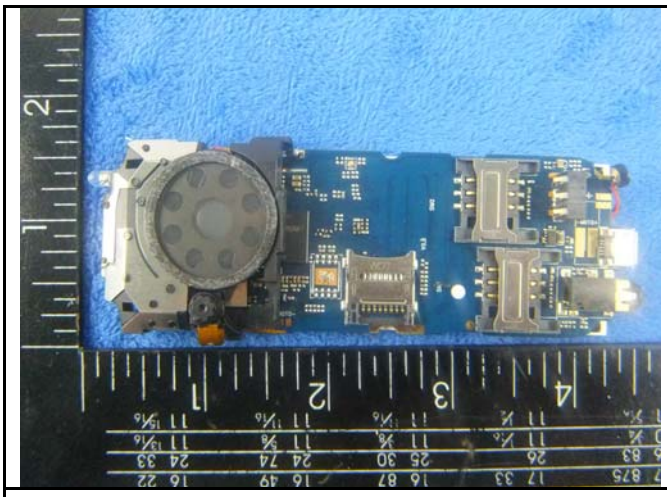
Cover Off - Top View 1

Cover Off - Top View 2

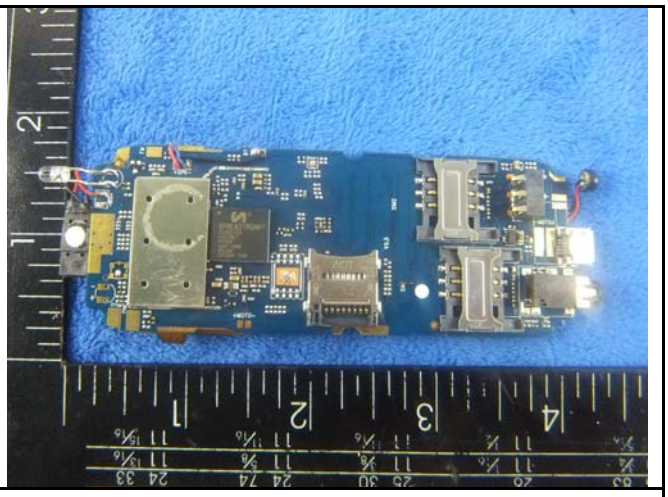


Battery – Top View

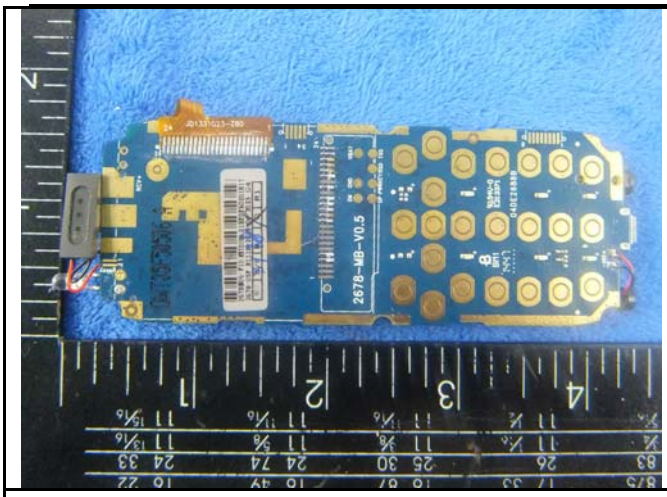
Battery - Bottom View



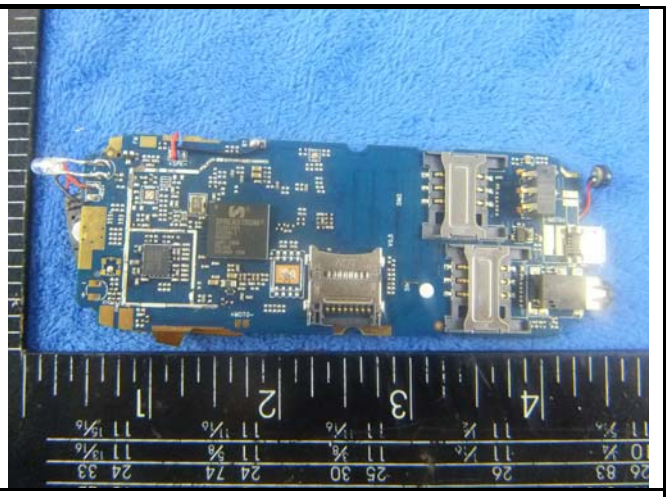
Mainborad With Shielding - Front View 1



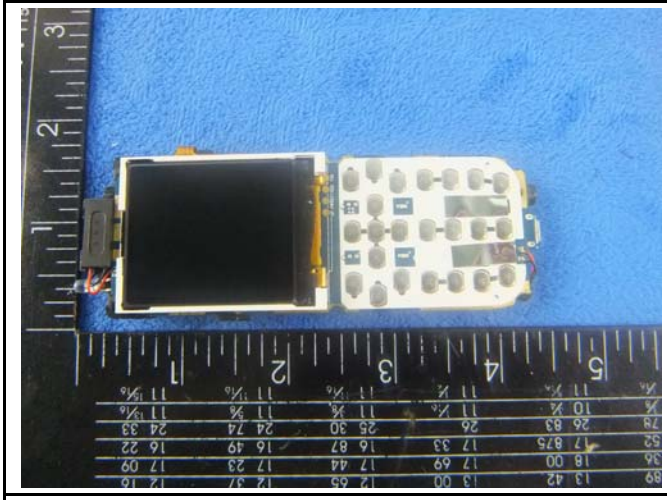
Mainborad With Shielding - Front View 2



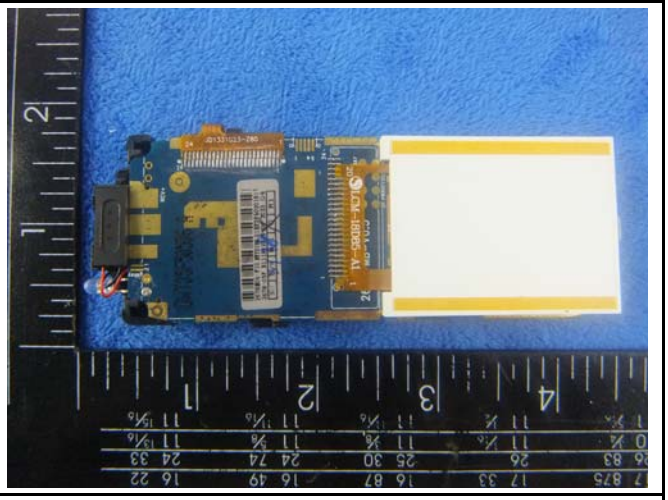
Mainborad With Shielding - rear View



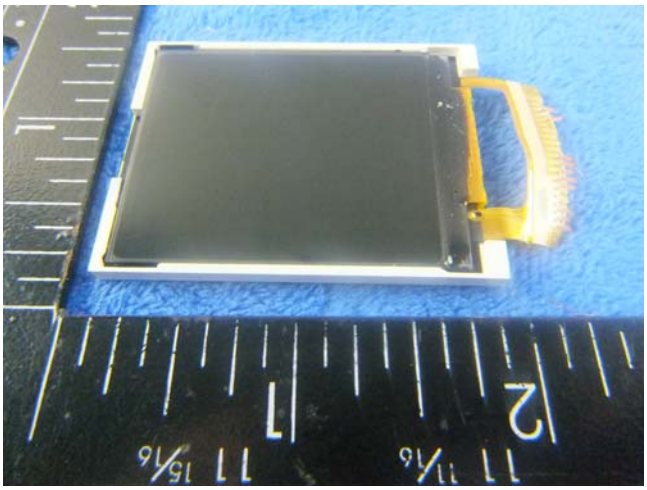
Mainborad Without Shielding - Front View



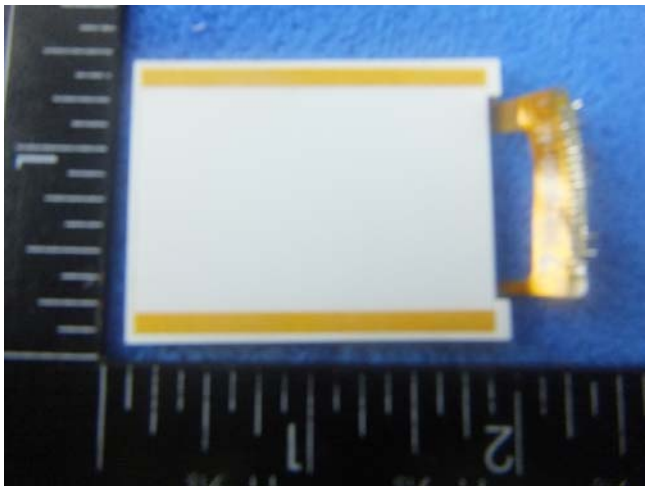
LCD – Front View 1



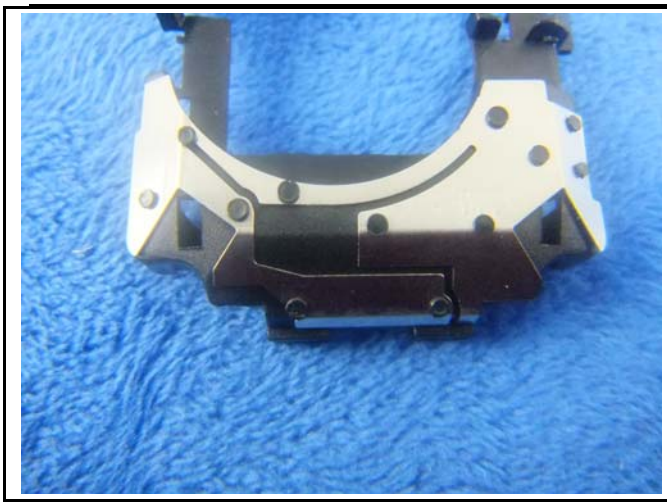
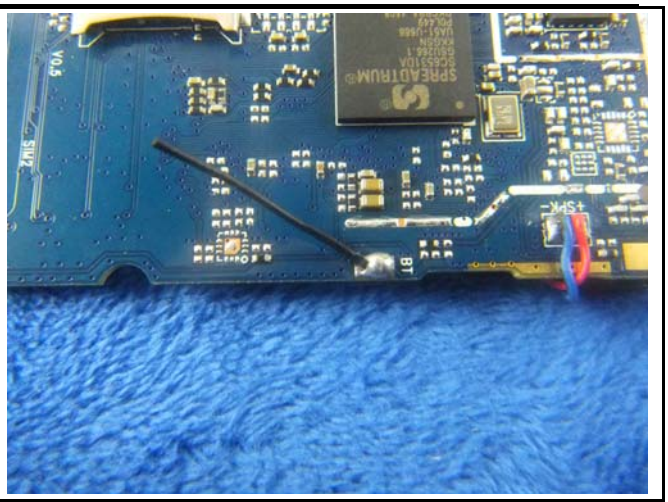
LCD - Rear View 1



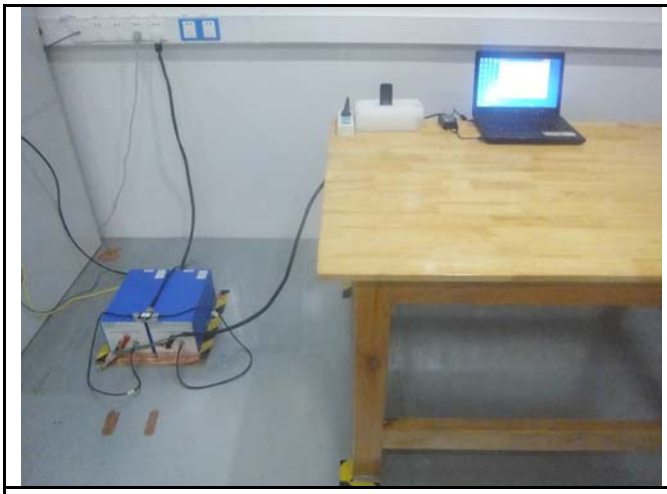
LCD – Front View 2



LCD - Rear View 2

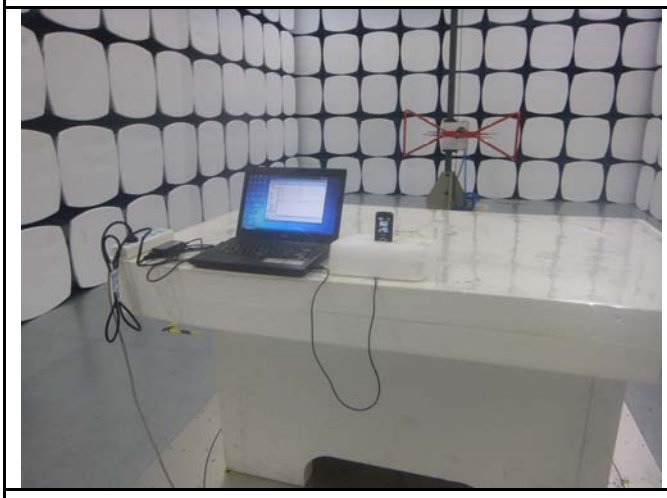
	
GSM Antenna View	BT Antenna View

Annex B.iii. Photograph: Test Setup Photo

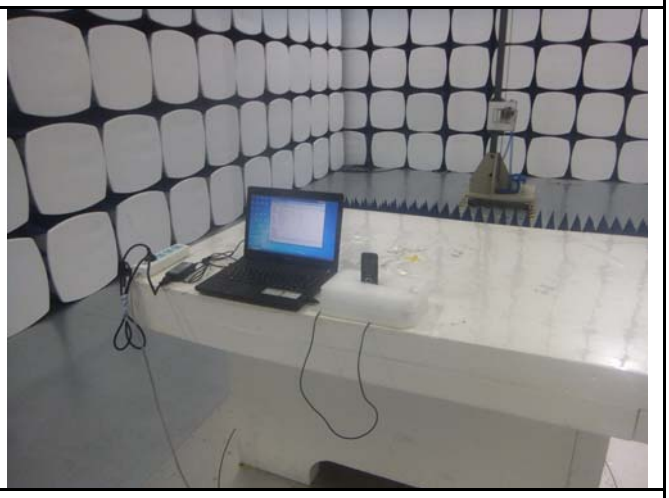


Conducted Emissions Test Setup – Front View

Conducted Emissions Test Setup – Side View



Radiated Spurious Emissions Test Setup Below 1GHz

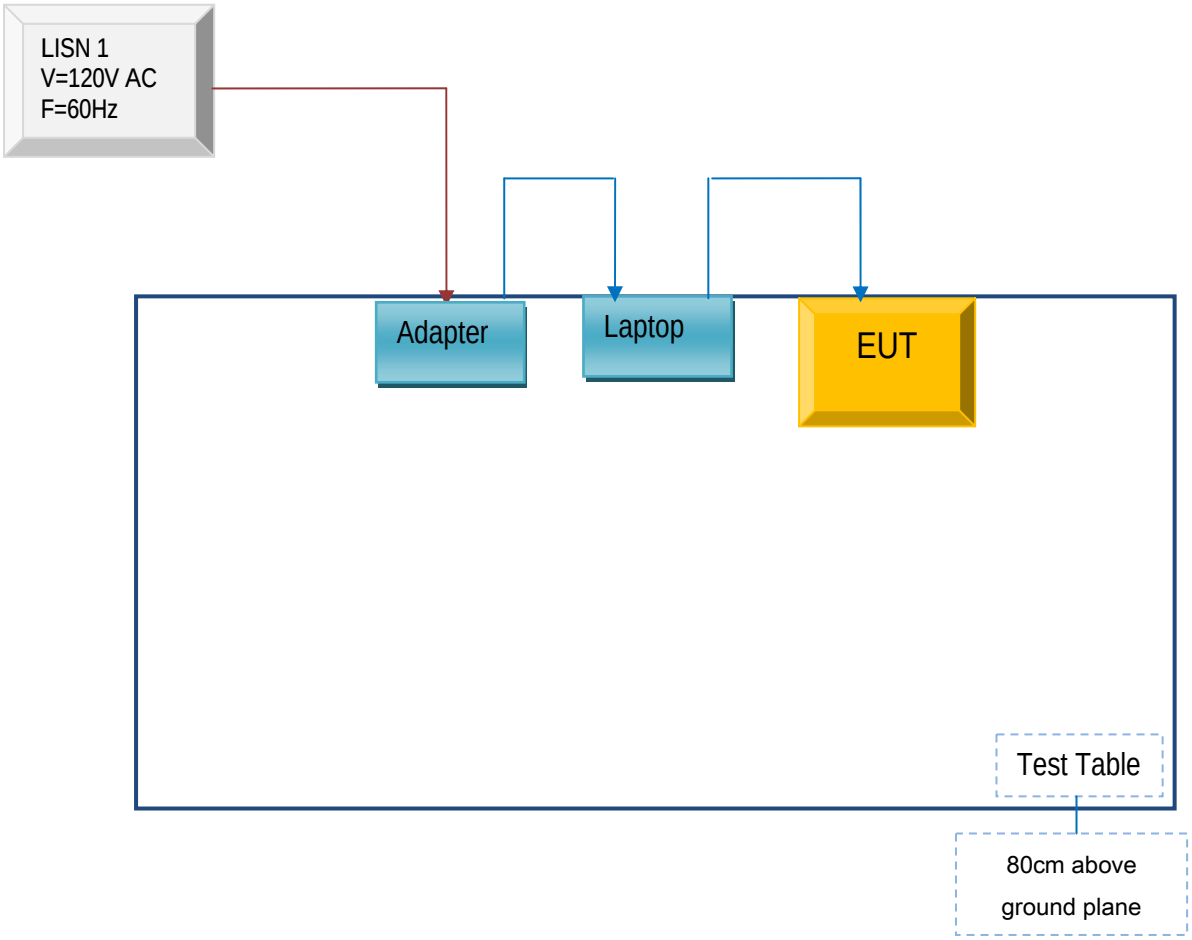


Radiated Spurious Emissions Test Setup Above 1GHz

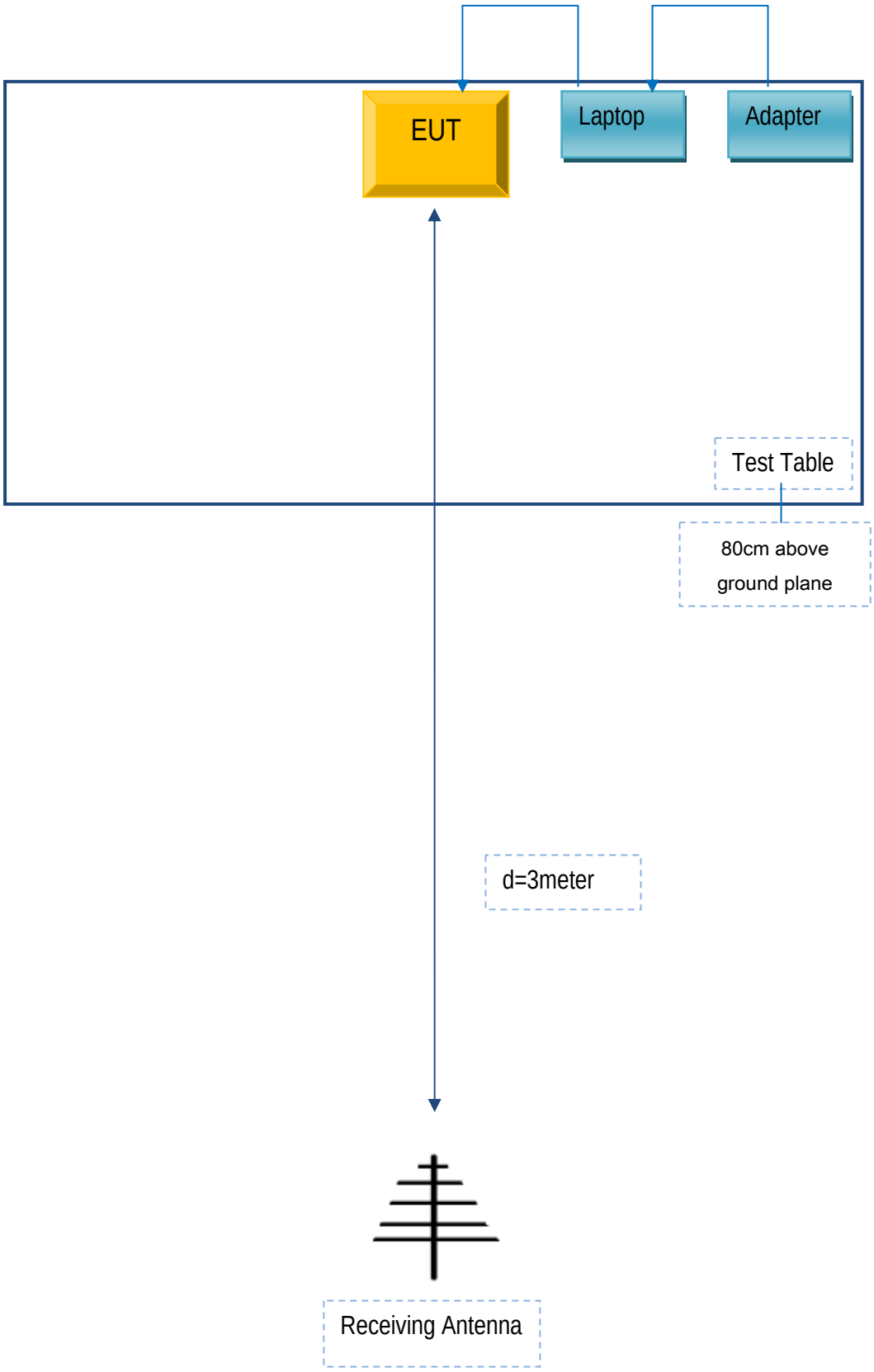
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

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

Swagtek

To：775 Montague Expressway Mlpitas,CA 95035,USA

Declaration Letter

Dear Sir，

For our business issue and marketing requirement, we would like to list 2 model numbers on The FCC reports, as following:

Model No.: LO-M1222, LO-M1122

We declare that : LO-M1222, LO-M1122, All models the same PCB and Appearance shape, accessories .the difference of these is listed as below:

Main Model No	Serial Model No	Difference
LO-M1222	LO-M1122	LO-M1222 (Dual SIM card); LO-M1122 (Single SIM card)

Thank you!

Sincerely,

Client's signature：

Client's name / title：Charles Cheng/ Manager
Contact information : 1-305 421 9938

Address : 10205 NW 19th Street, STE101, Miami, FL 33172 USA