

EMC TEST REPORT



Report No.: 17070182-FCC-E

Supersede Report No: N/A

Applicant	Jethro Trading LTD.	
Product Name	Jethro 3G Senior Cell Phone	
Model No.	SC318	
Serial No.	N/A	
Test Standard	FCC Part 15 Subpart B Class B:2015, ANSI C63.4: 2014	
Test Date	March 15 to March 21, 2017	
Issue Date	March 22, 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"/>		
Evans He 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

Test Report	17070182-FCC-E
Page	3 of 38

Test Report	17070182-FCC-E
Page	4 of 38

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CONTENTS

1. REPORT REVISION HISTORY	6
2. CUSTOMER INFORMATION	6
3. TEST SITE INFORMATION	6
4. EQUIPMENT UNDER TEST (EUT) INFORMATION	7
5. TEST SUMMARY	9
6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS	11
6.1 AC POWER LINE CONDUCTED EMISSIONS.....	11
6.2 RADIATED EMISSIONS	17
ANNEX A. TEST INSTRUMENT	22
ANNEX B. EUT AND TEST SETUP PHOTOGRAPHS	23
ANNEX C. TEST SETUP AND SUPPORTING EQUIPMENT	34
ANNEX D. USER MANUAL / BLOCK DIAGRAM / SCHEMATICS / PARTLIST	37
ANNEX E. DECLARATION OF SIMILARITY.....	38

1. Report Revision History

Report No.	Report Version	Description	Issue Date
17070182-FCC-E	NONE	Original	March 22, 2017

2. Customer information

Applicant Name	Jethro Trading LTD.
Applicant Add	505 - 8840 210TH STREET, #231 Langley, Canada V1M2Y2
Manufacturer	Shenzhen Bayuda Technologies,co.,ltd
Manufacturer Add	Room A433 A Block,Shenzhen Industrial products exhibition procurement center the baoyuan road baoan distric

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 of Radiated Emission	Radiated Emission Program-To Shenzhen v2.0
Test Software of Conducted Emission	EZ-EMC(ver.lcp-03A1)

4. Equipment under Test (EUT) Information

Description of EUT:	Jethro 3G Senior Cell Phone
Main Model:	SC318
Serial Model:	N/A
Antenna Gain:	GSM850: 0.5dBi PCS1900: 1.0dBi UMTS-FDD Band V: 1.0dBi UMTS-FDD Band II: 1.0dBi Bluetooth: 0.5dBi
Antenna Type:	GSM/PCS/UMTS-FDD :PIFA antenna BT : Monopole antenna
Input Power:	Adapter: Model: HJ-050050-US Input: AC100-240V~50/60Hz,0.1A Output: DC 5.0V,500mA Battery: Model:SC318 Spec: 3.7V,800mAh,2.96Wh Voltage: 4.2V
Equipment Category :	JBP
Type of Modulation:	GSM / GPRS: GMSK EGPRS: GMSK UMTS-FDD: QPSK Bluetooth: GFSK, $\pi/4$ DQPSK, 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 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 Bluetooth: 2402-2480 MHz

Test Report	17070182-FCC-E
Page	8 of 38

Number of Channels: GSM 850: 124CH
PCS1900: 299CH
UMTS-FDD Band V: 102CH
UMTS-FDD Band II: 277CH
Bluetooth: 79CH

Port: USB Port, Earphone Port

Trade Name : Jethro

FCC ID: 2AAWJSC318

Date EUT received: March 14, 2017

Test Date(s): March 15 to March 21, 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


Parameter	Uncertainty
AC Power Line Conducted Emissions (150kHz~30MHz)	$\pm 3.71\text{dB}$
Radiated Emission(30MHz~1GHz)	$\pm 5.12\text{dB}$
Radiated Emission(1GHz~6GHz)	$\pm 5.34\text{dB}$

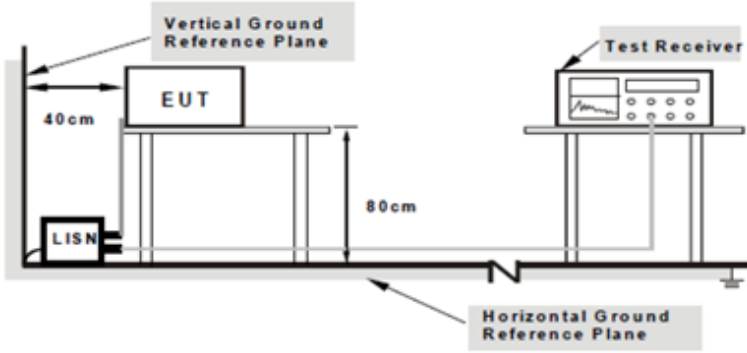
6. Measurements, Examination And Derived Results

6.1 AC Power Line Conducted Emissions

Temperature	25 °C
Relative Humidity	58%
Atmospheric Pressure	1016mbar
Test date :	March 16, 2017
Tested By :	Evans He

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>
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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.
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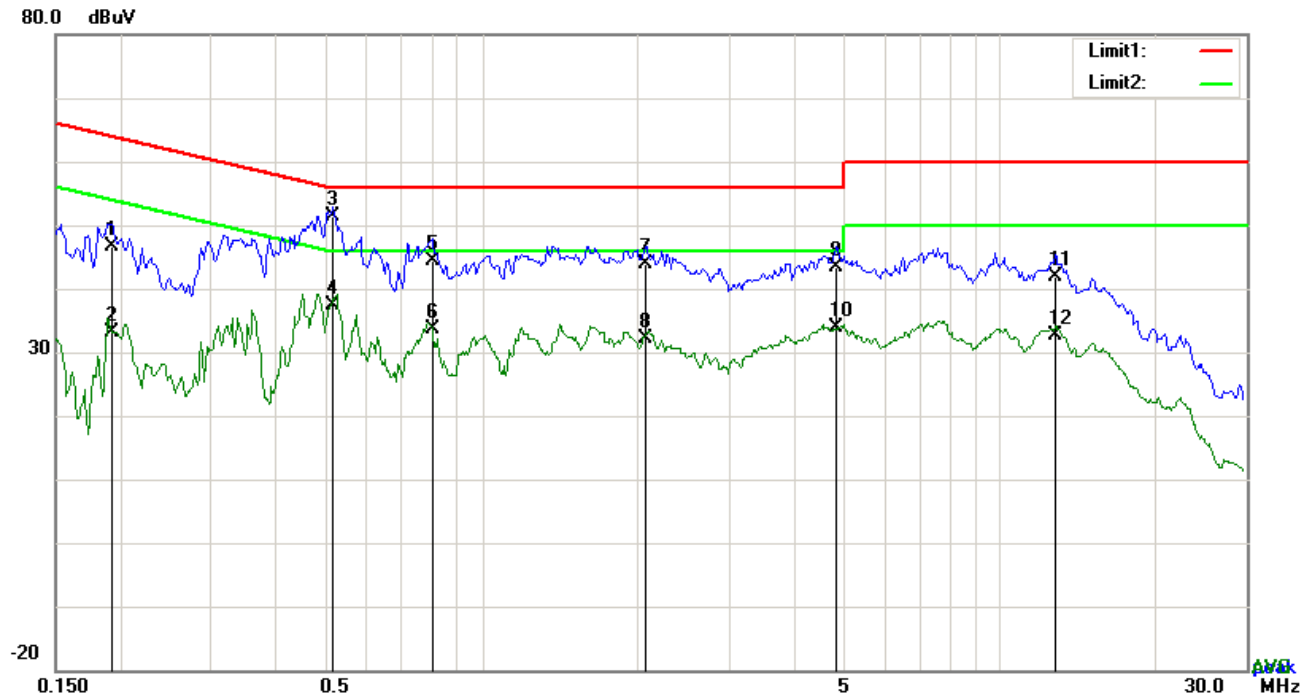
Test Report	17070182-FCC-E
Page	12 of 38

	<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 : USB Mode

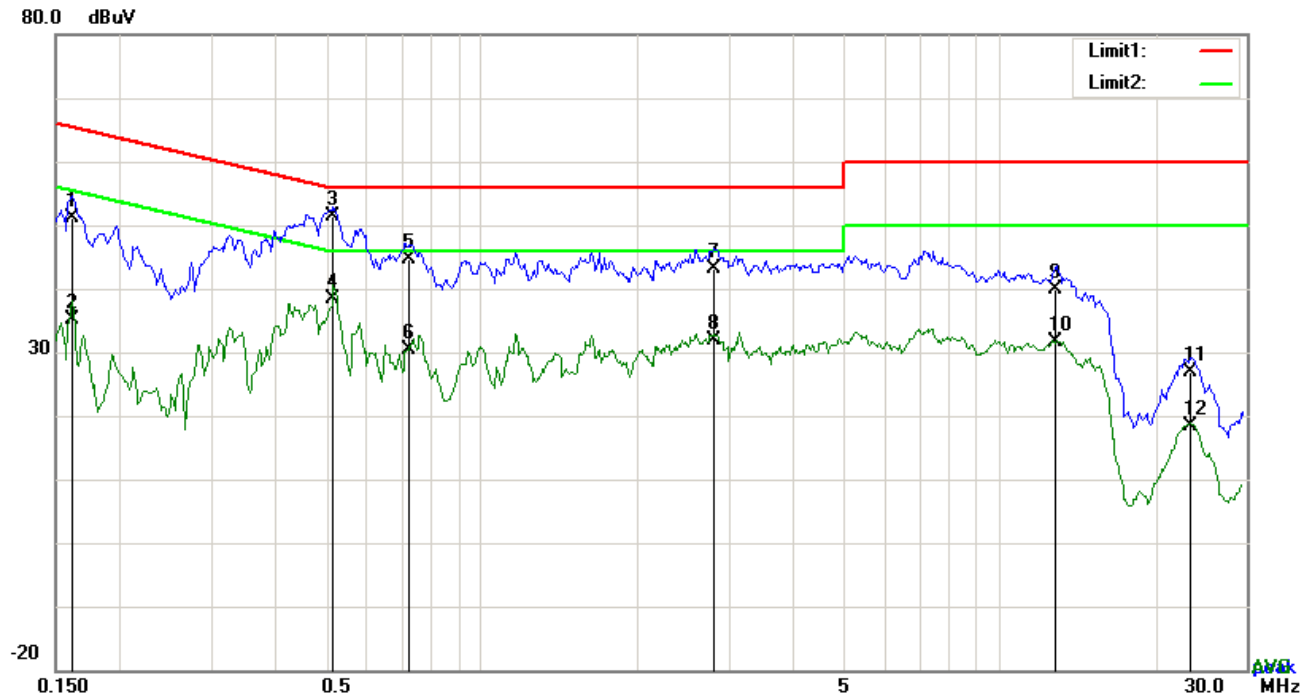


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)
1	L1	0.1929	36.71	QP	10.03	46.74	63.91	-17.17
2	L1	0.1929	23.20	AVG	10.03	33.23	53.91	-20.68
3	L1	0.5166	41.36	QP	10.03	51.39	56.00	-4.61
4	L1	0.5166	27.40	AVG	10.03	37.43	46.00	-8.57
5	L1	0.8013	34.32	QP	10.03	44.35	56.00	-11.65
6	L1	0.8013	23.50	AVG	10.03	33.53	46.00	-12.47
7	L1	2.0688	33.88	QP	10.04	43.92	56.00	-12.08
8	L1	2.0688	22.08	AVG	10.04	32.12	46.00	-13.88
9	L1	4.8408	33.27	QP	10.08	43.35	56.00	-12.65
10	L1	4.8408	23.85	AVG	10.08	33.93	46.00	-12.07
11	L1	12.8085	31.71	QP	10.19	41.90	60.00	-18.10
12	L1	12.8085	22.35	AVG	10.19	32.54	50.00	-17.46

Test Mode : USB Mode

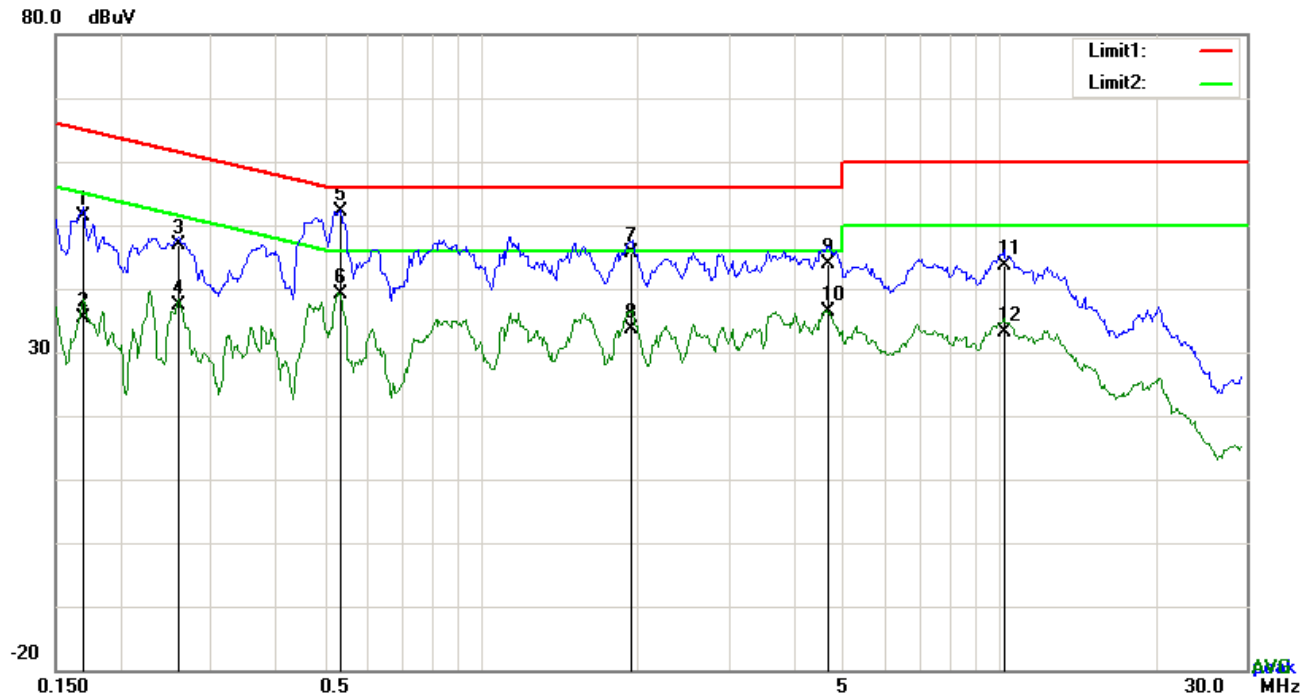


Test Data

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	41.02	QP	10.02	51.04	65.38	-14.34
2	N	0.1617	25.01	AVG	10.02	35.03	55.38	-20.35
3	N	0.5166	41.36	QP	10.02	51.38	56.00	-4.62
4	N	0.5166	28.43	AVG	10.02	38.45	46.00	-7.55
5	N	0.7272	34.55	QP	10.02	44.57	56.00	-11.43
6	N	0.7272	20.36	AVG	10.02	30.38	46.00	-15.62
7	N	2.8098	33.00	QP	10.05	43.05	56.00	-12.95
8	N	2.8098	21.91	AVG	10.05	31.96	46.00	-14.04
9	N	12.8202	29.82	QP	10.17	39.99	60.00	-20.01
10	N	12.8202	21.36	AVG	10.17	31.53	50.00	-18.47
11	N	23.3385	16.58	QP	10.31	26.89	60.00	-33.11
12	N	23.3385	7.97	AVG	10.31	18.28	50.00	-31.72

Test Mode : USB Mode

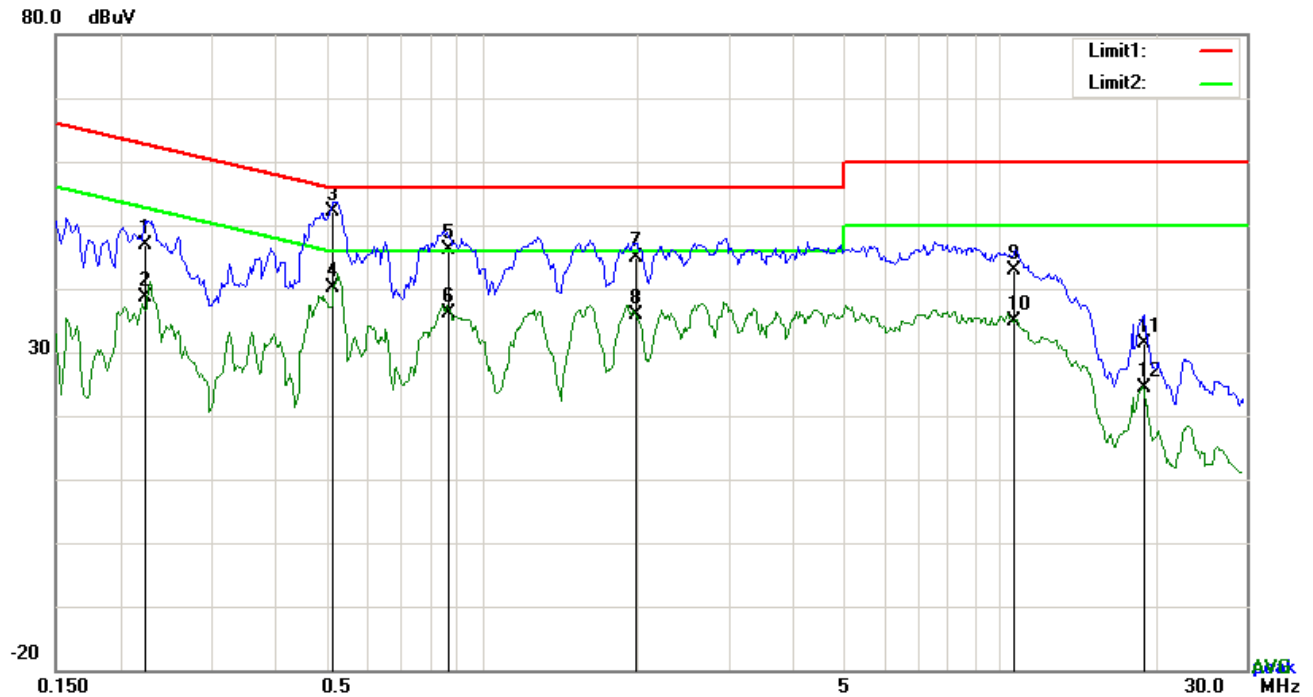


Test Data

Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.1695	41.33	QP	10.03	51.36	64.98	-13.62
2	L1	0.1695	25.31	AVG	10.03	35.34	54.98	-19.64
3	L1	0.2592	36.85	QP	10.03	46.88	61.46	-14.58
4	L1	0.2592	27.39	AVG	10.03	37.42	51.46	-14.04
5	L1	0.5322	42.02	QP	10.03	52.05	56.00	-3.95
6	L1	0.5322	29.12	AVG	10.03	39.15	46.00	-6.85
7	L1	1.9386	35.61	QP	10.04	45.65	56.00	-10.35
8	L1	1.9386	23.63	AVG	10.04	33.67	46.00	-12.33
9	L1	4.6653	33.73	QP	10.08	43.81	56.00	-12.19
10	L1	4.6653	26.21	AVG	10.08	36.29	46.00	-9.71
11	L1	10.2306	33.48	QP	10.15	43.63	60.00	-16.37
12	L1	10.2306	23.09	AVG	10.15	33.24	50.00	-16.76

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	0.2241	36.86	QP	10.02	46.88	62.67	-15.79
2	N	0.2241	28.50	AVG	10.02	38.52	52.67	-14.15
3	N	0.5166	42.07	QP	10.02	52.09	56.00	-3.91
4	N	0.5166	30.18	AVG	10.02	40.20	46.00	-5.80
5	N	0.8637	36.15	QP	10.03	46.18	56.00	-9.82
6	N	0.8637	26.07	AVG	10.03	36.10	46.00	-9.90
7	N	1.9869	34.72	QP	10.04	44.76	56.00	-11.24
8	N	1.9869	25.85	AVG	10.04	35.89	46.00	-10.11
9	N	10.7025	32.84	QP	10.15	42.99	60.00	-17.01
10	N	10.7025	24.77	AVG	10.15	34.92	50.00	-15.08
11	N	19.1070	21.13	QP	10.25	31.38	60.00	-28.62
12	N	19.1070	14.17	AVG	10.25	24.42	50.00	-25.58

6.2 Radiated Emissions

Temperature	22 °C
Relative Humidity	59%
Atmospheric Pressure	1017mbar
Test date :	March 17, 2017
Tested By :	Evans He

Requirement(s):

Spec	Item	Requirement	Applicable	
47CFR§15.109(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	
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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
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Test Report	17070182-FCC-E
Page	18 of 38

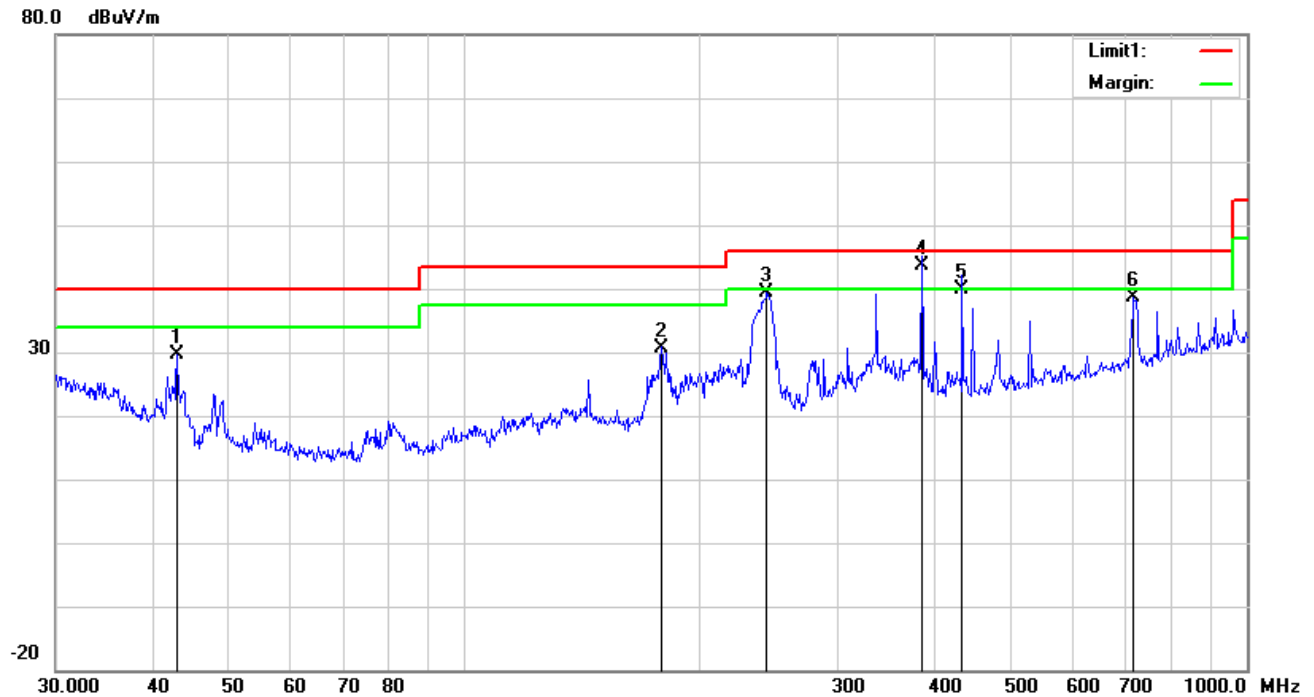
	<p>over a full rotation of the EUT) was chosen.</p> <p>b. The EUT was then rotated to the direction that gave the maximum emission.</p> <p>c. Finally, the antenna height was adjusted to the height that gave the maximum emission.</p> <p>3. The resolution bandwidth and video bandwidth of test receiver/spectrum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

Below 1GHz

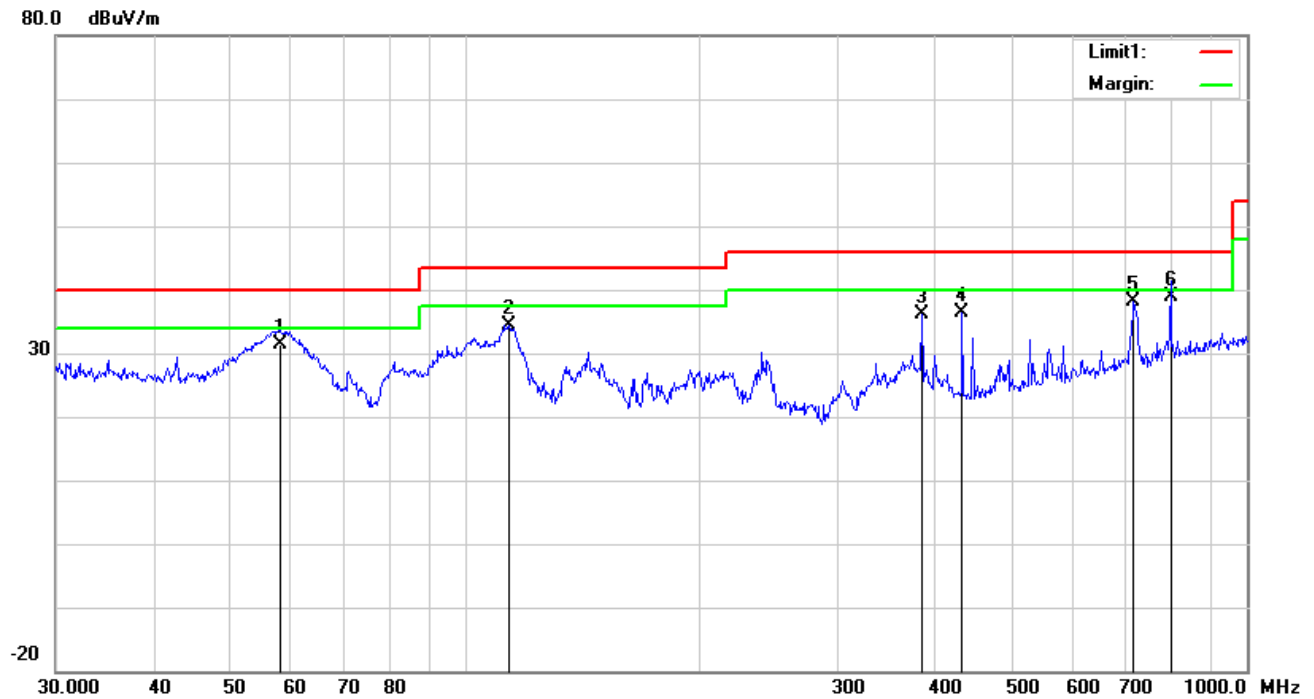


Test Data

Horizontal Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)
1	H	42.8998	39.13	peak	11.99	22.29	0.77	29.60	40.00	-10.40	300	259
2	H	178.1327	40.49	peak	11.15	22.25	1.36	30.75	43.50	-12.75	200	157
3	H	243.3772	48.42	peak	11.49	22.30	1.68	39.29	46.00	-6.71	300	346
4	H	383.9318	48.37	QP	15.36	22.05	2.02	43.70	46.00	-2.30	100	34
5	H	432.5457	43.30	QP	16.35	21.94	2.09	39.80	46.00	-6.20	100	223
6	H	716.6820	36.96	peak	20.40	21.32	2.65	38.69	46.00	-7.31	200	145

Below 1GHz



Test Data

Vertical Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)
1	V	58.2030	45.64	QP	7.50	22.40	0.76	31.50	40.00	-8.50	100	143
2	V	113.7143	42.85	peak	12.80	22.35	1.17	34.47	43.50	-9.03	200	67
3	V	383.9318	40.71	peak	15.36	22.05	2.02	36.04	46.00	-9.96	100	288
4	V	432.5457	39.80	peak	16.35	21.94	2.09	36.30	46.00	-9.70	100	23
5	V	716.6820	36.31	peak	20.40	21.32	2.65	38.04	46.00	-7.96	200	306
6	V	798.9797	35.70	QP	21.39	21.15	2.96	38.90	46.00	-7.10	100	176

Above 1GHz

Frequency (MHz)	Amplitude (dBμV/m)	Azimuth	Height (cm)	Polarity (H/V)	Factors (dB)	Limit (dBμV/m)	Margin (dB)	Detector (PK/AV)
1365.47	51.33	55	100	V	-21.26	74	-22.67	PK
1900.23	53.21	197	100	V	-20.57	74	-20.79	PK
2216.85	53.77	224	200	V	-19.86	74	-20.23	PK
1418.69	51.83	318	200	H	-21.11	74	-22.17	PK
2488.71	54.05	155	100	H	-19.45	74	-19.95	PK
1893.56	53.14	286	200	H	-20.46	74	-20.86	PK

Note1: The highest frequency of the EUT is 2480 MHz, so the testing has been conformed to $5 \times 2480 \text{ MHz} = 12,400 \text{ MHz}$.

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

Whole Package View



Adapter - Front View



Test Report	17070182-FCC-E
Page	24 of 38

EUT - Front View



EUT - Rear View



Test Report	17070182-FCC-E
Page	25 of 38

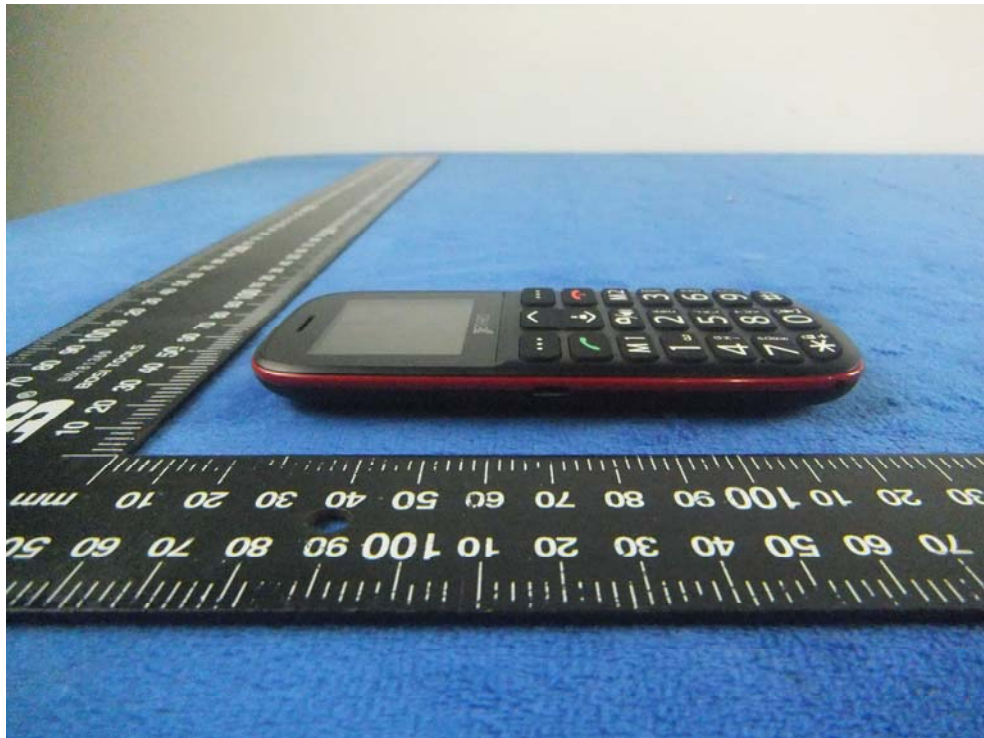
EUT - Top View



EUT - Bottom View



EUT - Left View



EUT - Right View



Annex B.ii. Photograph: EUT Internal Photo

Cover Off - Top View 1

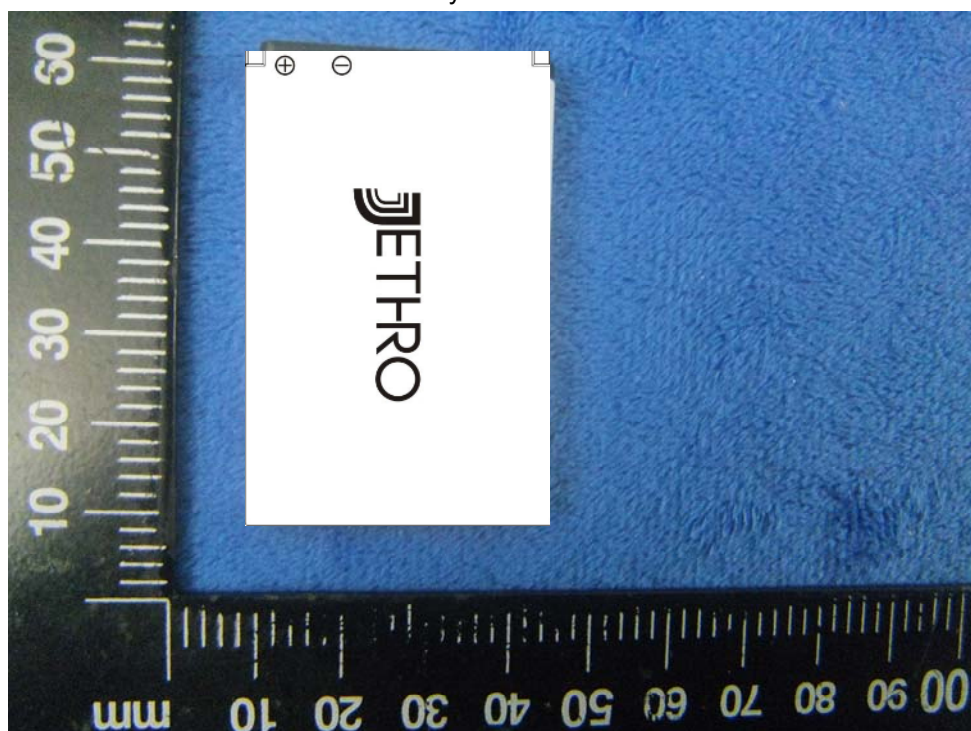


Cover Off - Top View 2



Test Report	17070182-FCC-E
Page	28 of 38

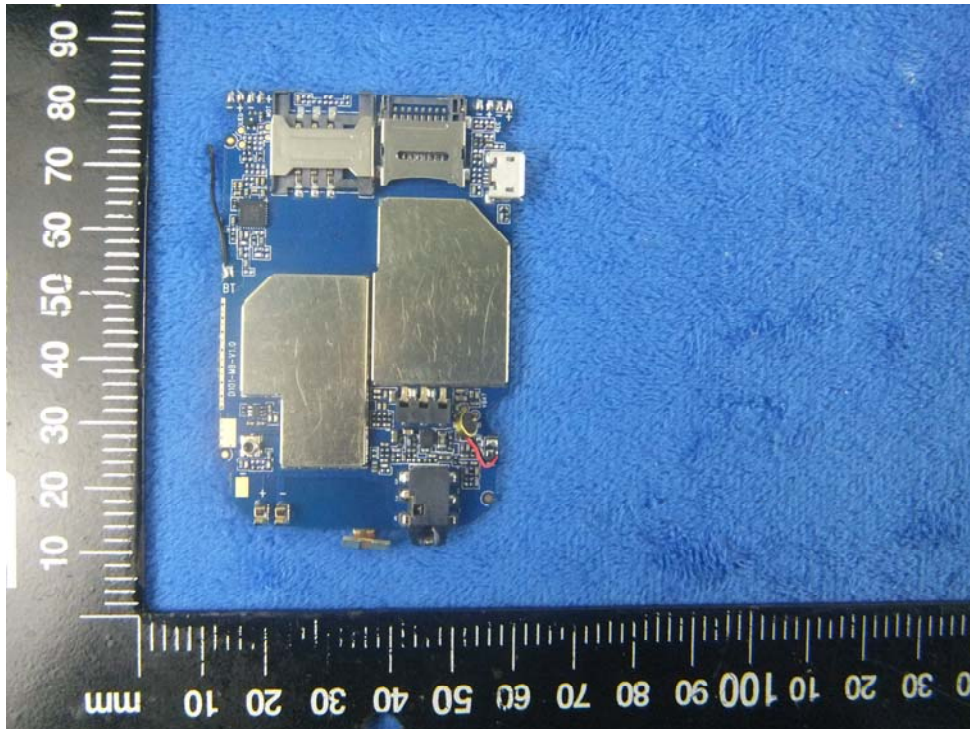
Battery - Front View



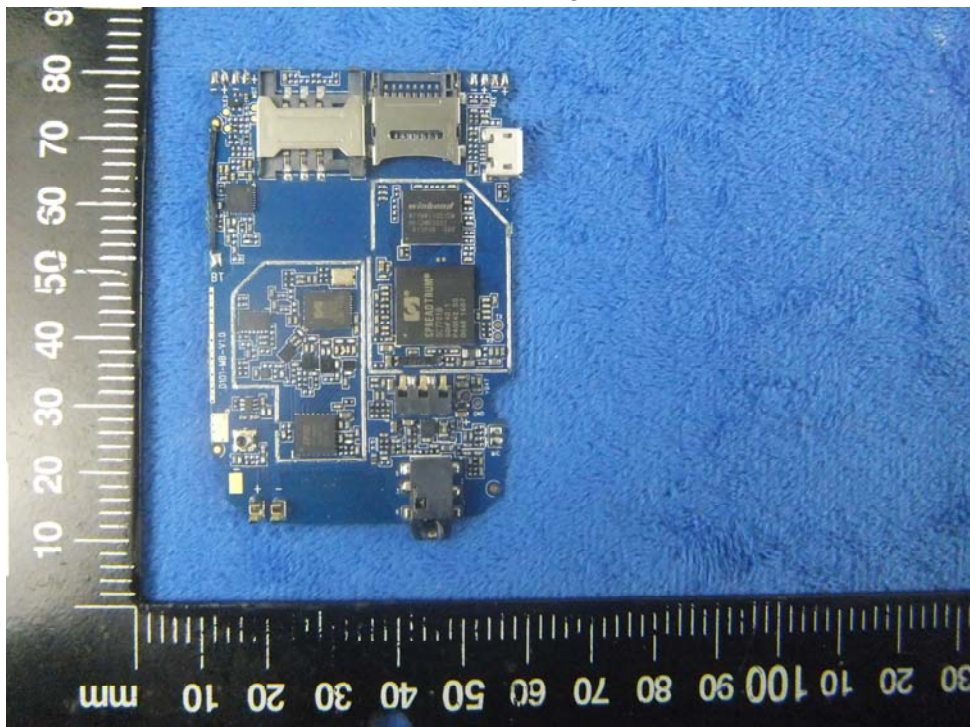
Battery - Rear View



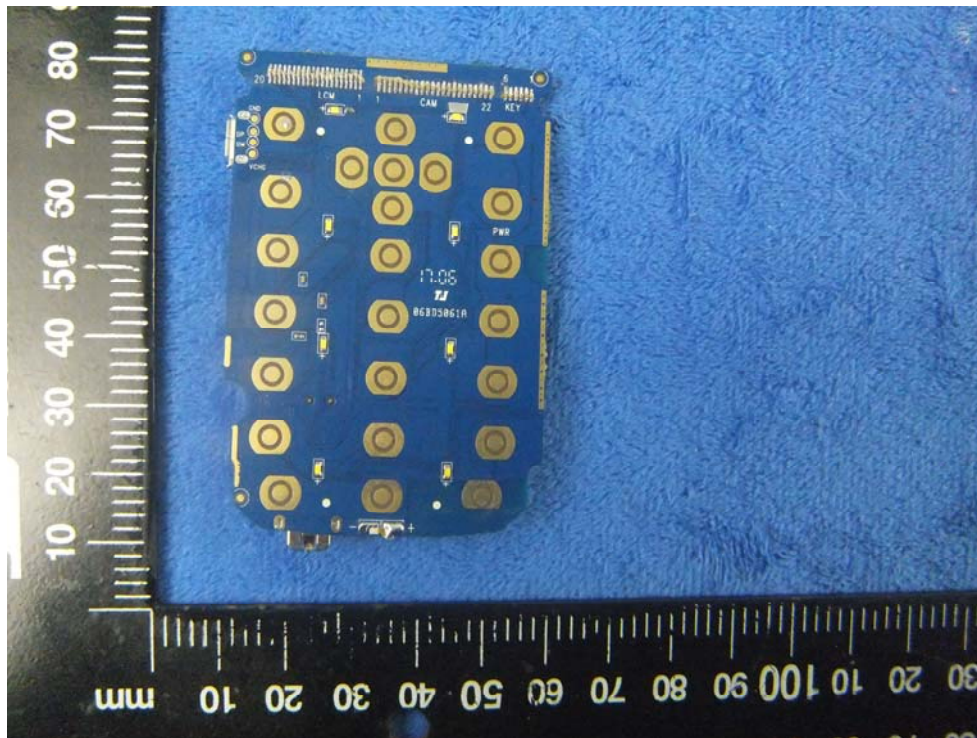
Mainboard with Shielding - Front View



Mainboard without Shielding - Front View



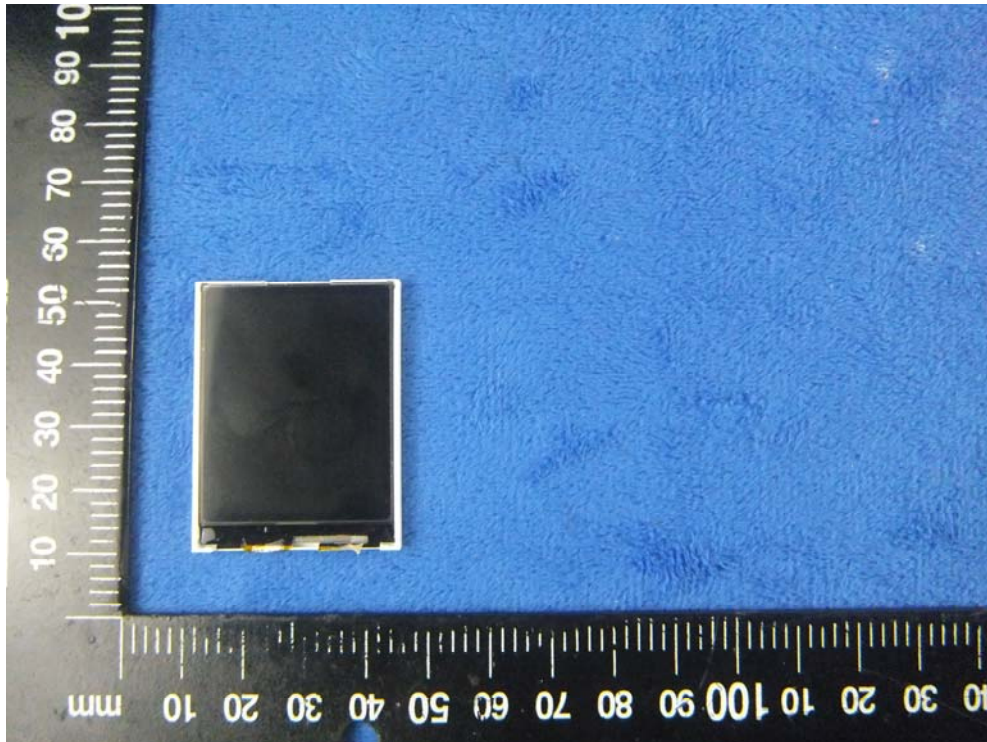
Remove the Key Board – Front View



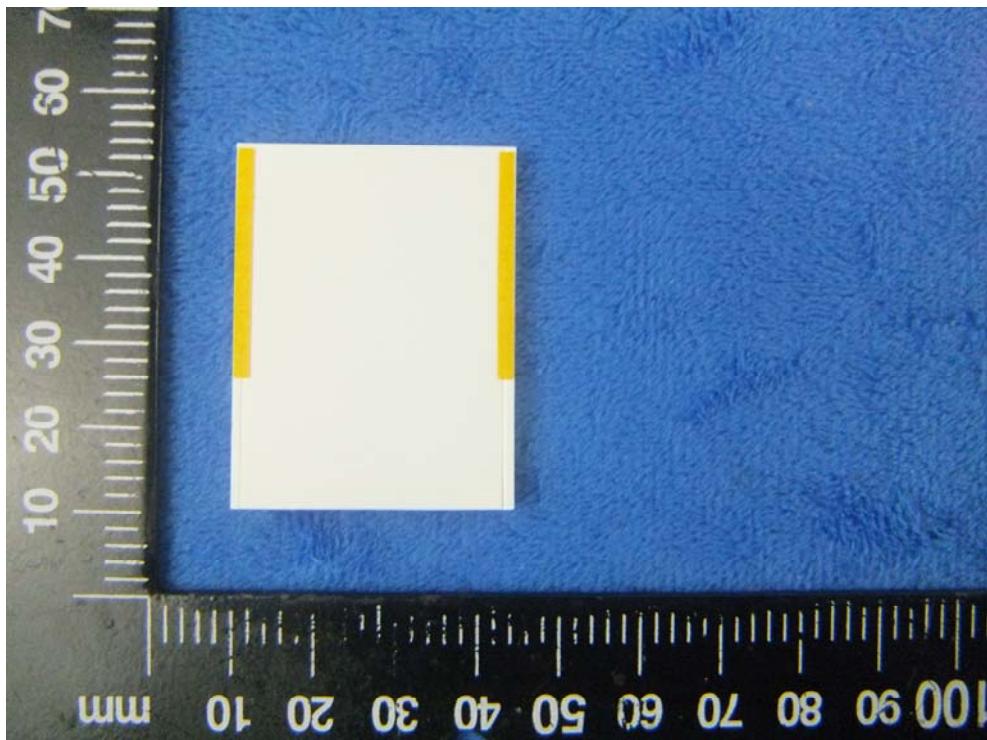
Remove the Key Board - Rear View



LCD – Front View



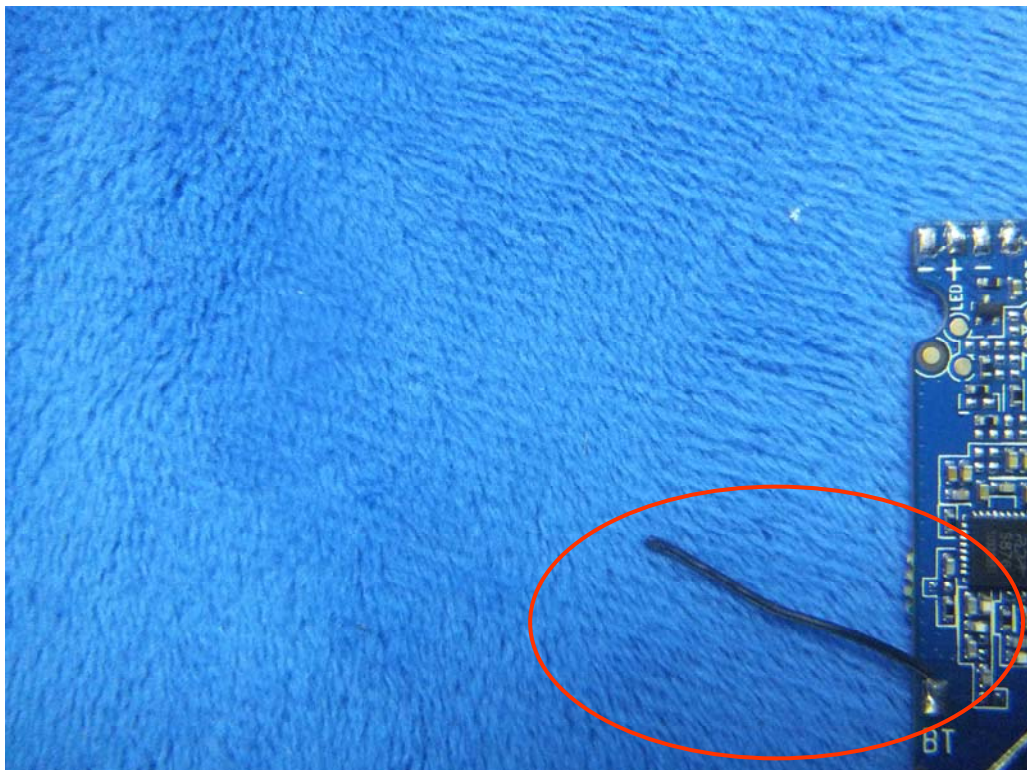
LCD – Rear View



GSM/PCS/UMTS-FDD Antenna View



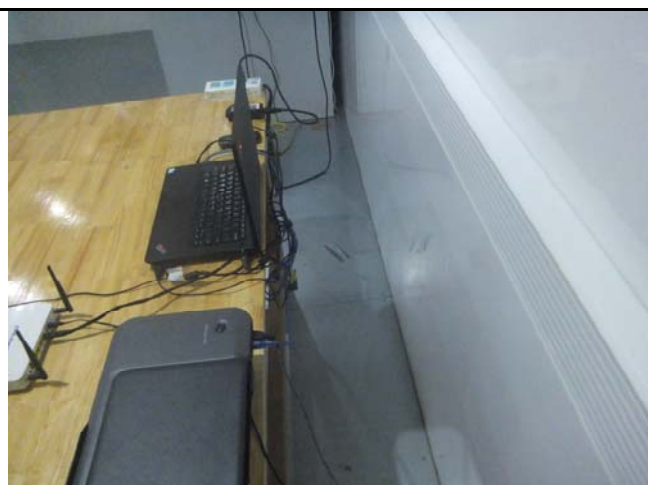
BT-FDD Antenna View



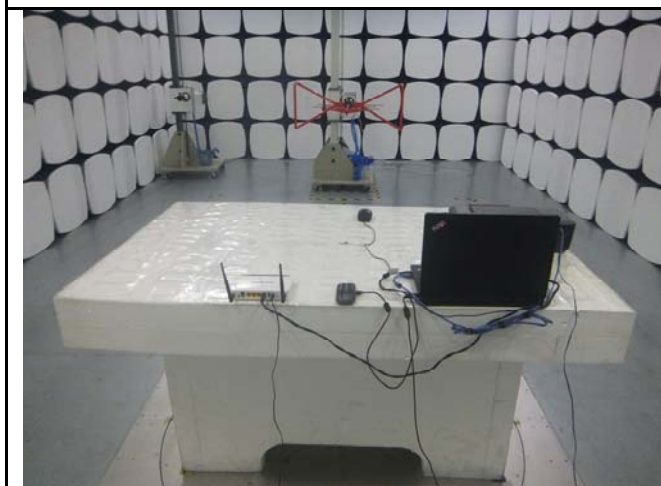
Annex B.iii. Photograph: Test Setup Photo



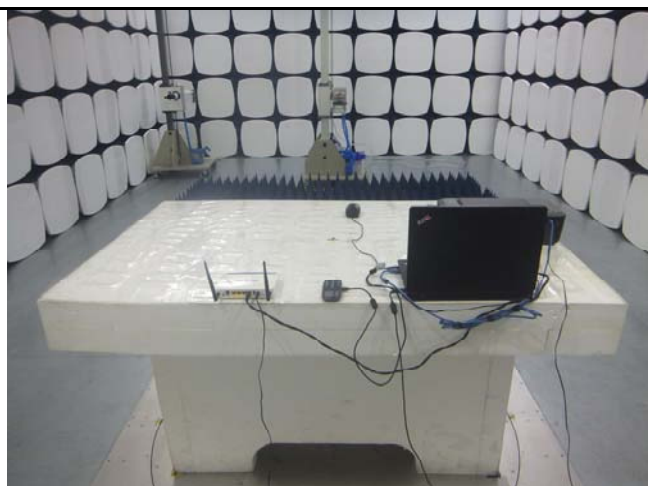
Conducted Emissions Test Setup – Front View



Conducted Emissions Test Setup – Side View



Radiated Emissions Test Setup Below 1GHz

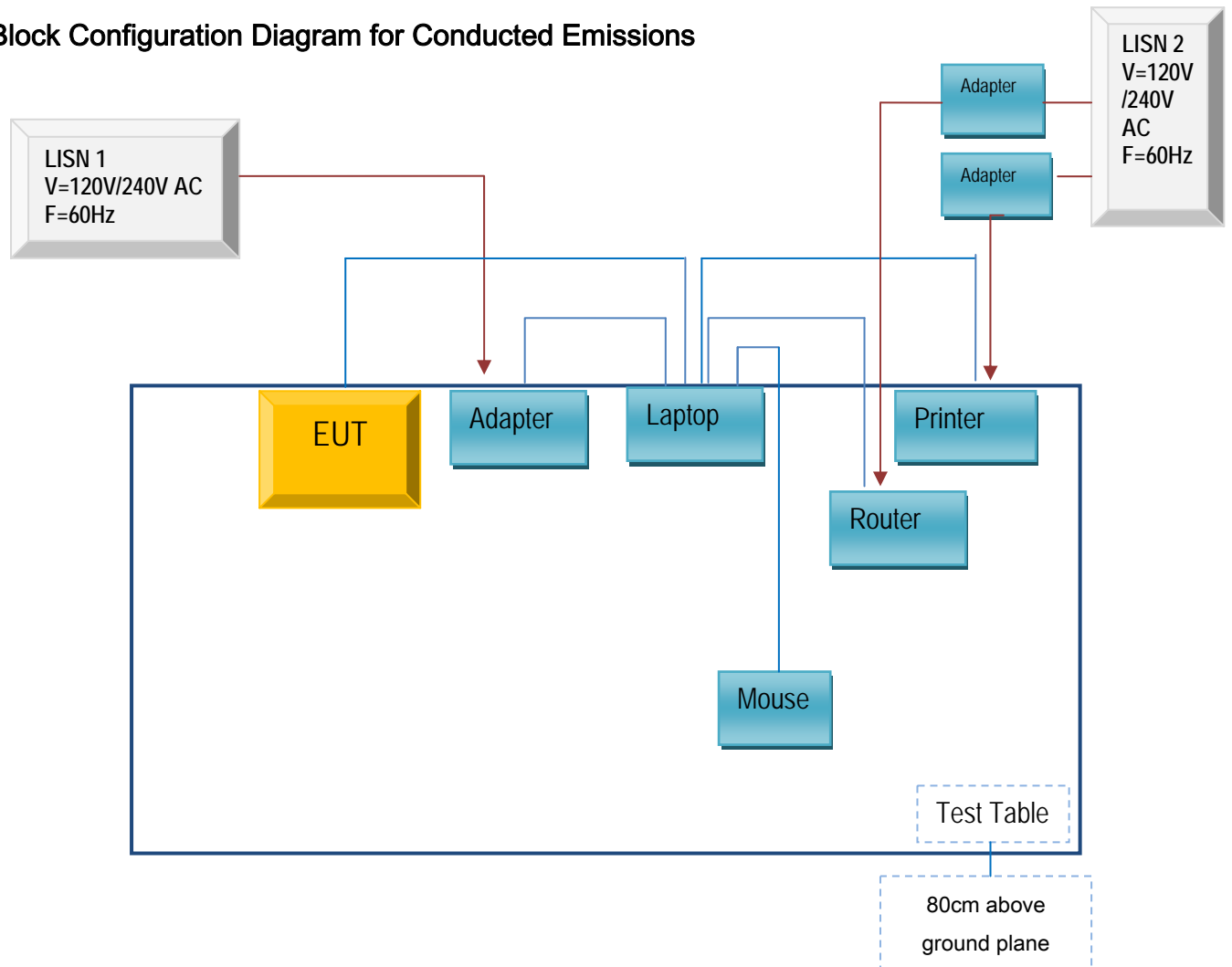


Radiated Emissions Test Setup Above 1GHz

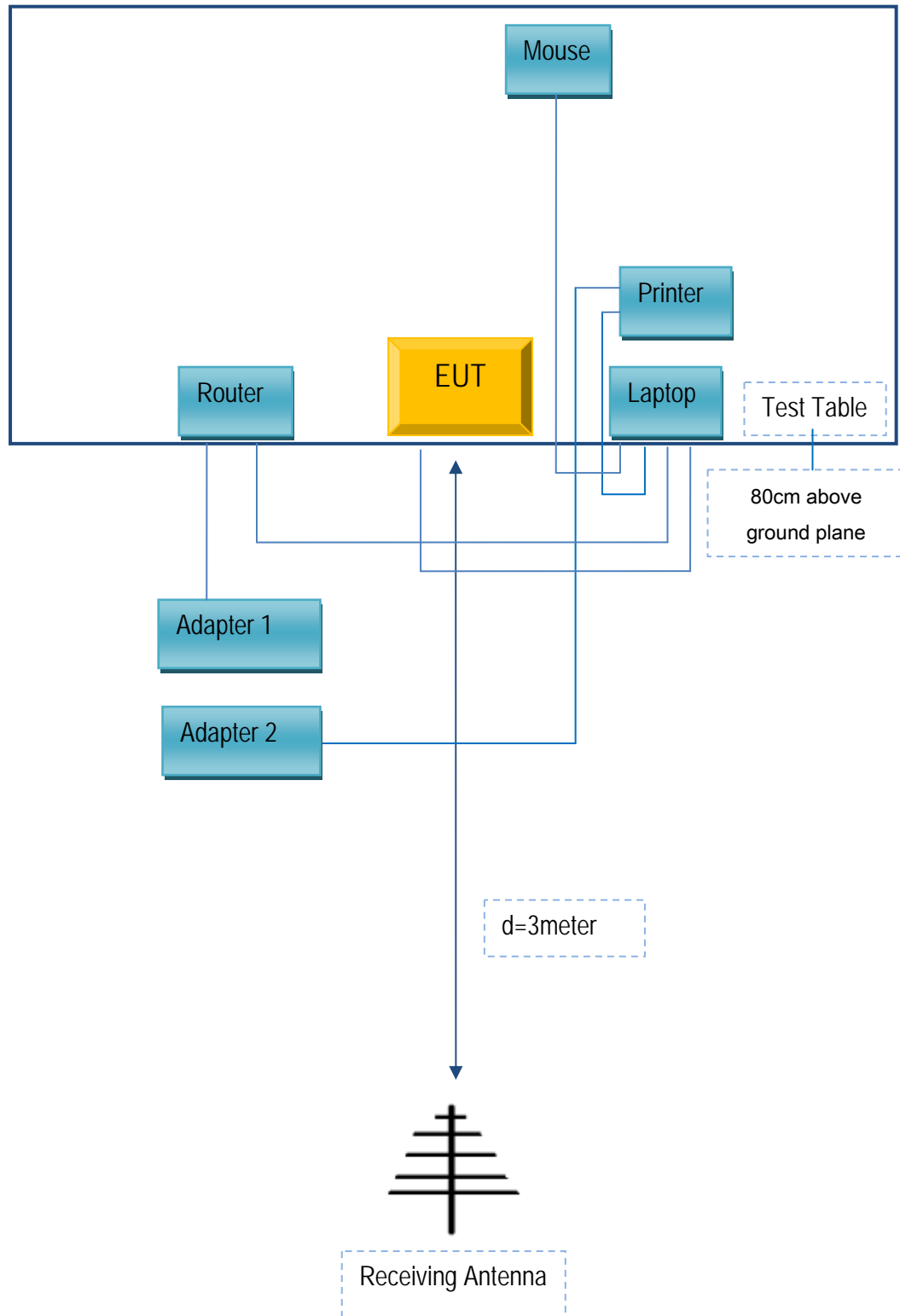
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

Block Configuration Diagram for Conducted Emissions



Block Configuration Diagram for Radiated Emissions



Annex C. 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

Test Report	17070182-FCC-E
Page	37 of 38

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

Please see the attachment

Test Report	17070182-FCC-E
Page	38 of 38

Annex E. DECLARATION OF SIMILARITY

N/A