EMC TEST REPORT

Report No.: 15071175-FCC-E

Supersede Report No.:N/A

Applicant	NEG TECHNOLOGY CO., LIMITED
Product Name	Mobile Phone
Model No.	S3000D
Serial No.	N/A
Test Standard	FCC Part 15 Subpart B Class B:2014, ANSI C63.4: 2014
Test Date	December 05 to December 16, 2015
Issue Date	December 22, 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	

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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

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CONTENTS

1. Report Revision History

Report No.	Report Version	Description	Issue Date
15071175-FCC-E	NONE	Original	December 16, 2015
15071175-FCC-E	V1	Delete Calibration date	December 22, 2015

2. Customer information

Applicant Name	NEG TECHNOLOGY CO., LIMITED
Applicant Add	Rm 1406, Block B, Jinsejiari, Jingtian south road, Futian district, Shenzhen, China
Manufacturer	NEG TECHNOLOGY CO., LIMITED
Manufacturer Add	Rm 1406, Block B, Jinsejiari, Jingtian south road, Futian district, Shenzhen, 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:	Mobile Phone
Main Model:	S3000D
Serial Model:	N/A
Antenna Gain:	GSM850: 0.8 dBi PCS1900: 1 dBi UMTS-FDD Band V: 1 dBi UMTS-FDD Band II: 1 dBi Bluetooth/BLE: 1 dBi WIFI: 1 dBi GPS:1 dBi
Input Power:	Adapter: Model: S3000D Input: AC 100-240V; 50/60Hz;150mA Output: DC 5.0V,500mA Battery: Model: S3000D Standard: 3.7V,1100mAh,4.07Wh Limited charge voltage:4.2V
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 BLE: GFSK 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 WIFI:802.11n(40M): 2422-2452 MHz Bluetooth& BLE: 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 WIFI :802.11n(40M): 7CH Bluetooth: 79CH BLE: 40CH GPS:1CH
Port:	Power Port, Earphone Port, USB Port
Trade Name :	OWN
FCC ID:	2AAZ8-S3000D
Date EUT received:	December 04, 2015
Test Date(s):	December 05 to December 16, 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

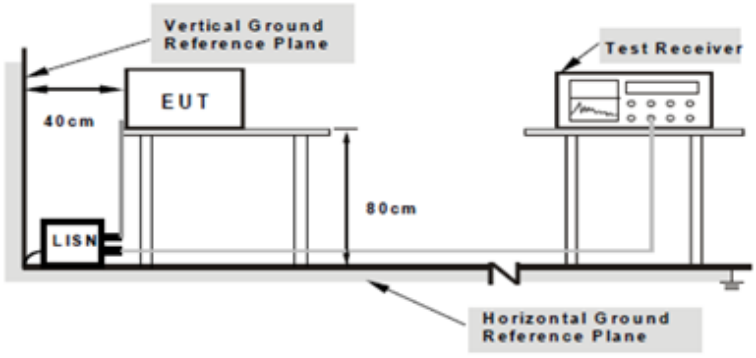
Emissions		
Test Item	**Description**	**Uncertainty**
Band Edge and Radiated Spurious Emissions	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
-	-	-

6. Measurements, Examination And Derived Results

6.1 AC Power Line Conducted Emissions

Temperature	25℃
Relative Humidity	57%
Atmospheric Pressure	1015mbar
Test date :	December 15, 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"> 

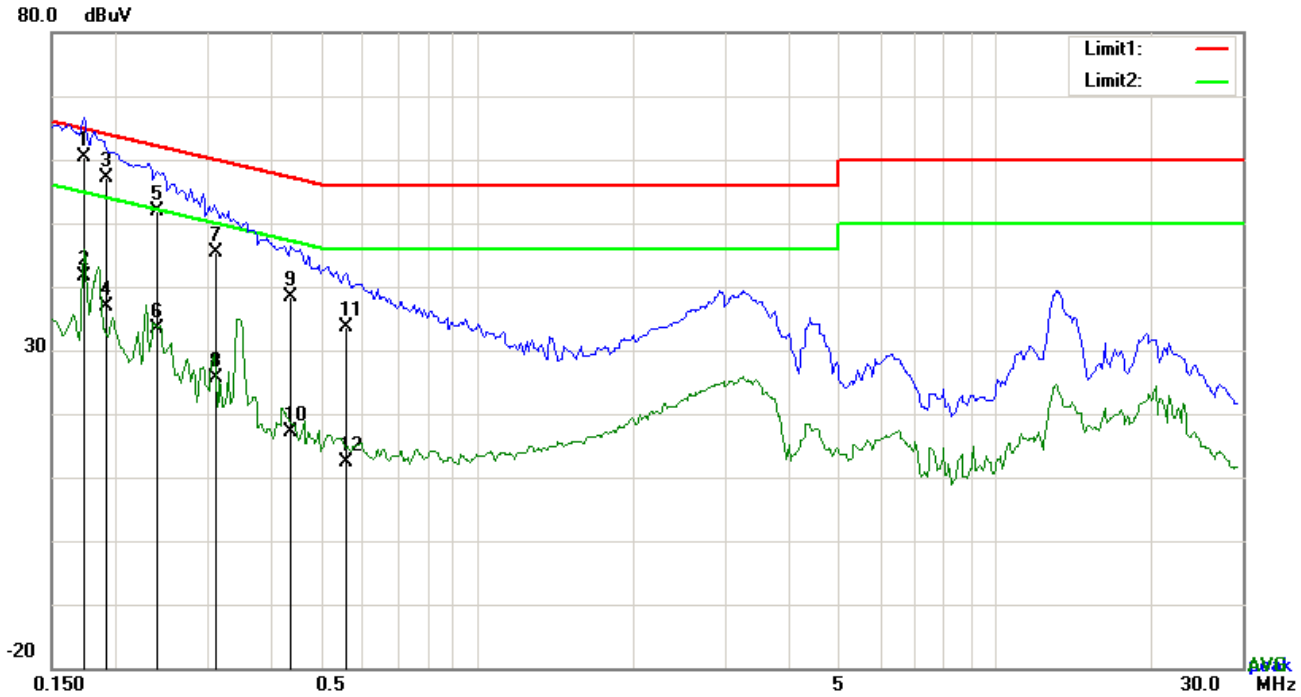
Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.</td></tr>
<tr><td>Procedure</td><td colspan="3">1. The EUT and supporting equipment were set up in accordance with the requirements of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

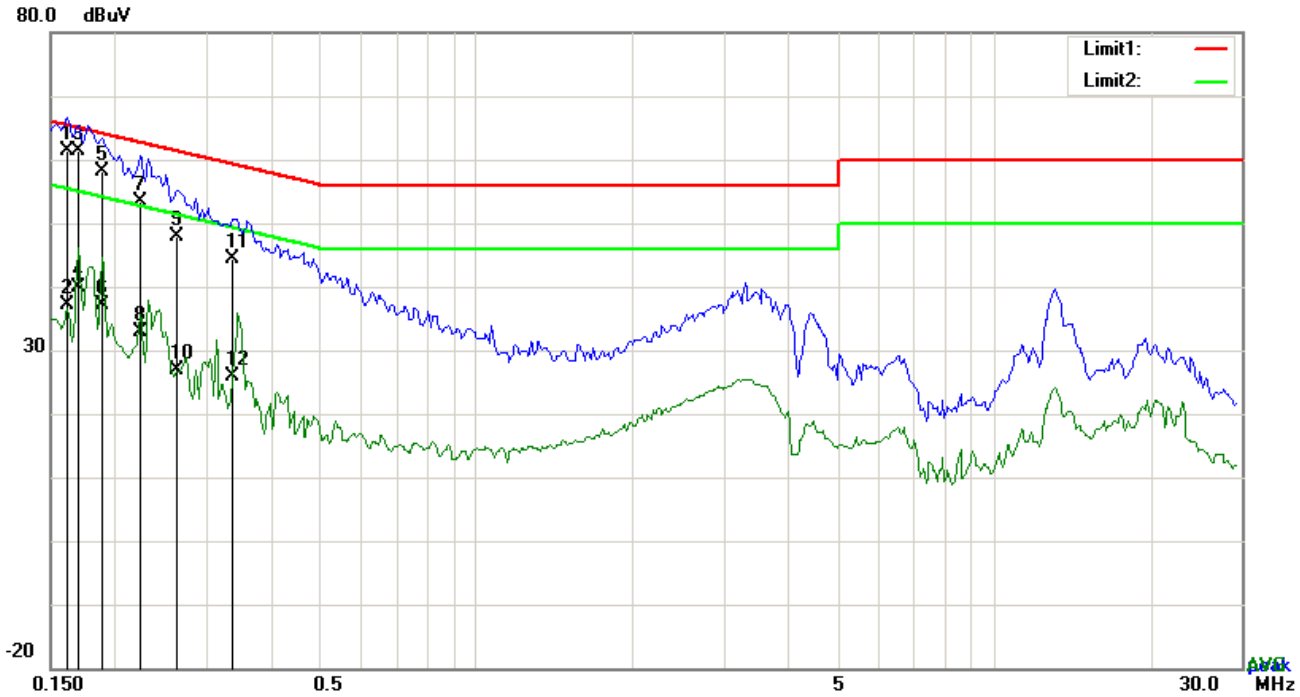


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.1734	50.47	QP	10.03	60.50	64.80	-4.30
2	L1	0.1734	31.55	AVG	10.03	41.58	54.80	-13.22
3	L1	0.1914	47.00	QP	10.03	57.03	63.98	-6.95
4	L1	0.1914	26.91	AVG	10.03	36.94	53.98	-17.04
5	L1	0.2397	41.87	QP	10.03	51.90	62.11	-10.21
6	L1	0.2397	23.35	AVG	10.03	33.38	52.11	-18.73
7	L1	0.3116	35.40	QP	10.03	45.43	59.93	-14.50
8	L1	0.3116	15.71	AVG	10.03	25.74	49.93	-24.19
9	L1	0.4347	28.24	QP	10.03	38.27	57.16	-18.89
10	L1	0.4347	7.18	AVG	10.03	17.21	47.16	-29.95
11	L1	0.5556	23.52	QP	10.03	33.55	56.00	-22.45
12	L1	0.5556	2.42	AVG	10.03	12.45	46.00	-33.55

Test Mode :	USB Mode

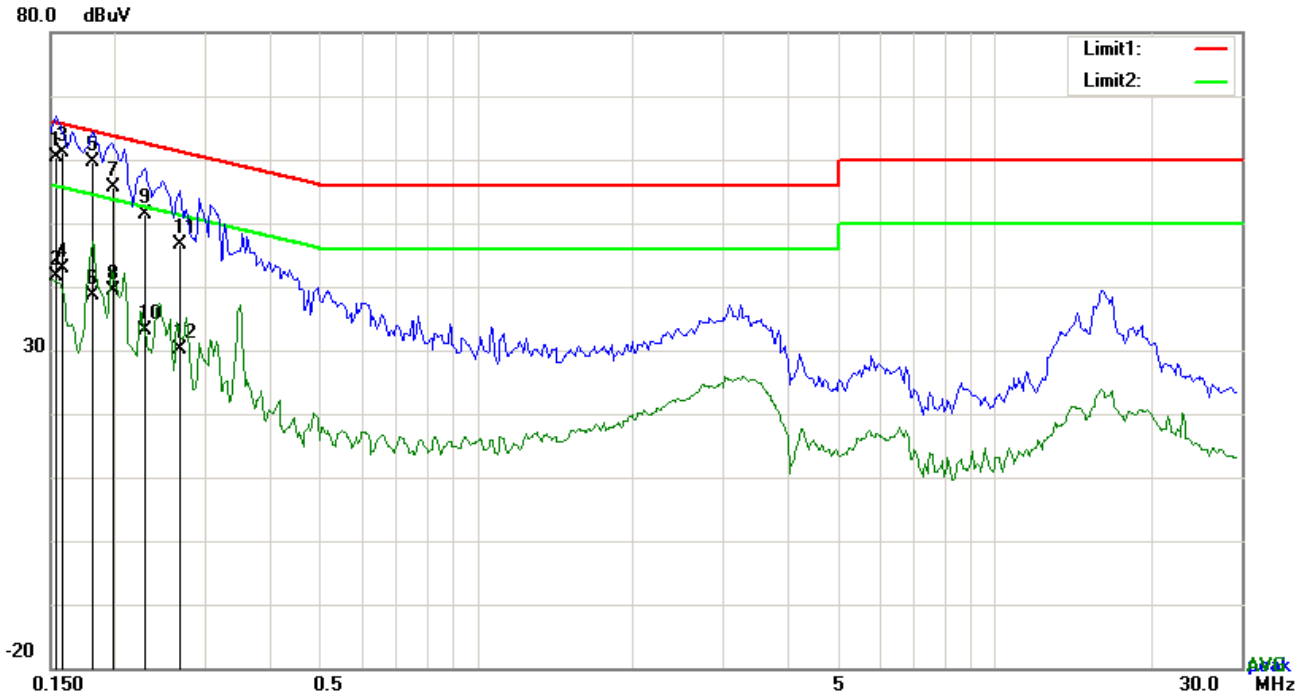


Test Data

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	51.41	QP	10.02	61.43	65.38	-3.95
2	N	0.1617	27.18	AVG	10.02	37.20	55.38	-18.18
3	N	0.1695	51.29	QP	10.02	61.31	64.98	-3.67
4	N	0.1695	29.93	AVG	10.02	39.95	54.98	-15.03
5	N	0.1890	48.23	QP	10.02	58.25	64.08	-5.83
6	N	0.1890	27.07	AVG	10.02	37.09	54.08	-16.99
7	N	0.2241	43.48	QP	10.02	53.50	62.67	-9.17
8	N	0.2241	22.74	AVG	10.02	32.76	52.67	-19.91
9	N	0.2631	37.95	QP	10.02	47.97	61.33	-13.36
10	N	0.2631	16.93	AVG	10.02	26.95	51.33	-24.38
11	N	0.3372	34.48	QP	10.02	44.50	59.27	-14.77
12	N	0.3372	15.77	AVG	10.02	25.79	49.27	-23.48

Test Mode :	USB Mode

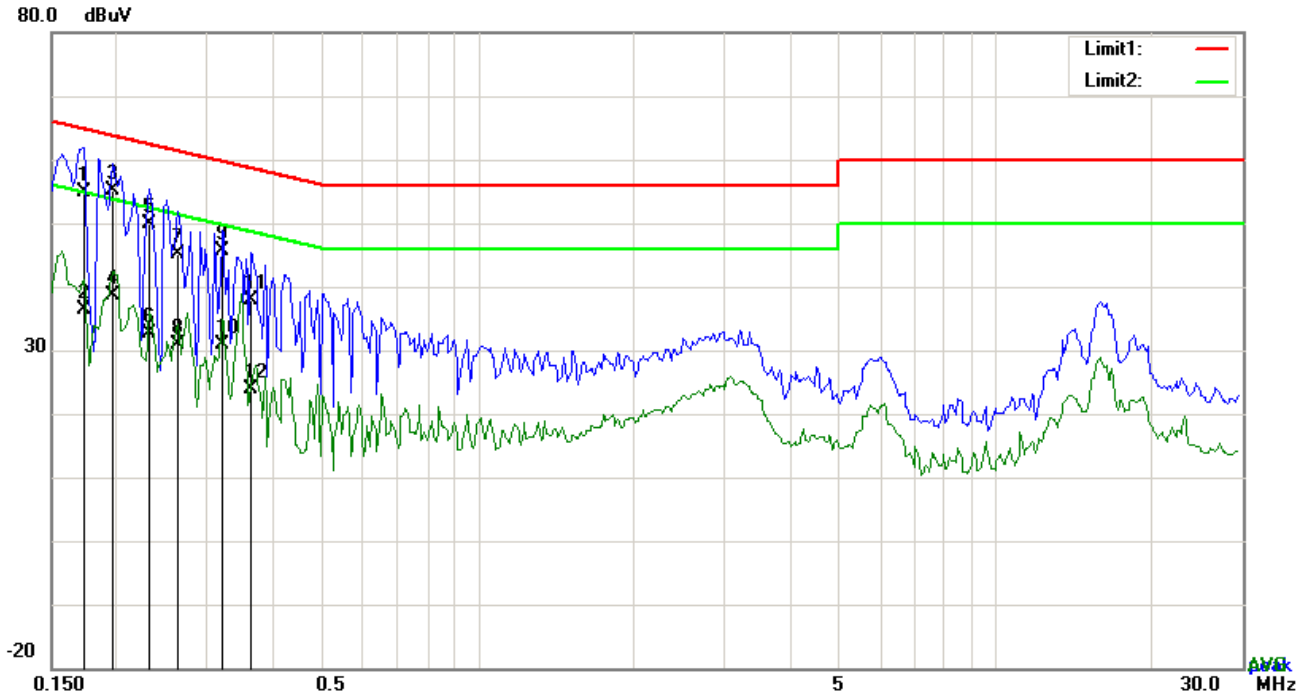


Test Data

Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.1539	50.35	QP	10.03	60.38	65.79	-5.41
2	L1	0.1539	31.67	AVG	10.03	41.70	55.79	-14.09
3	L1	0.1582	51.02	QP	10.03	61.05	65.56	-4.51
4	L1	0.1582	32.81	AVG	10.03	42.84	55.56	-12.72
5	L1	0.1812	49.51	QP	10.03	59.54	64.43	-4.89
6	L1	0.1812	28.62	AVG	10.03	38.65	54.43	-15.78
7	L1	0.1986	45.53	QP	10.03	55.56	63.67	-8.11
8	L1	0.1986	29.29	AVG	10.03	39.32	53.67	-14.35
9	L1	0.2280	41.42	QP	10.03	51.45	62.52	-11.07
10	L1	0.2280	23.20	AVG	10.03	33.23	52.52	-19.29
11	L1	0.2670	36.60	QP	10.03	46.63	61.21	-14.58
12	L1	0.2670	20.04	AVG	10.03	30.07	51.21	-21.14

Test Mode :	USB Mode



Test Data

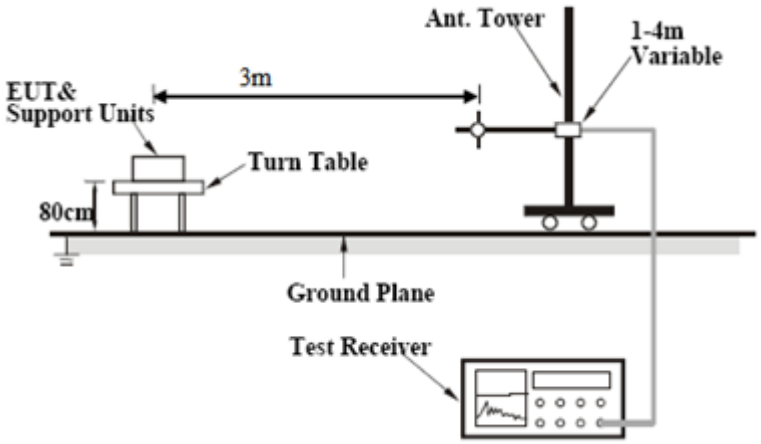
Phase Neutral Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.1734	44.86	QP	10.02	54.88	64.80	-9.92
2	N	0.1734	26.44	AVG	10.02	36.46	54.80	-18.34
3	N	0.1968	45.07	QP	10.02	55.09	63.74	-8.65
4	N	0.1968	28.55	AVG	10.02	38.57	53.74	-15.17
5	N	0.2319	39.96	QP	10.02	49.98	62.38	-12.40
6	N	0.2319	22.53	AVG	10.02	32.55	52.38	-19.83
7	N	0.2631	35.09	QP	10.02	45.11	61.33	-16.22
8	N	0.2631	20.97	AVG	10.02	30.99	51.33	-20.34
9	N	0.3216	35.61	QP	10.02	45.63	59.67	-14.04
10	N	0.3216	20.95	AVG	10.02	30.97	49.67	-18.70
11	N	0.3645	27.96	QP	10.02	37.98	58.63	-20.65
12	N	0.3645	13.88	AVG	10.02	23.90	48.63	-24.73

6.2 Radiated Emissions

Temperature	25℃
Relative Humidity	57%
Atmospheric Pressure	1015mbar
Test date :	December 15, 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>

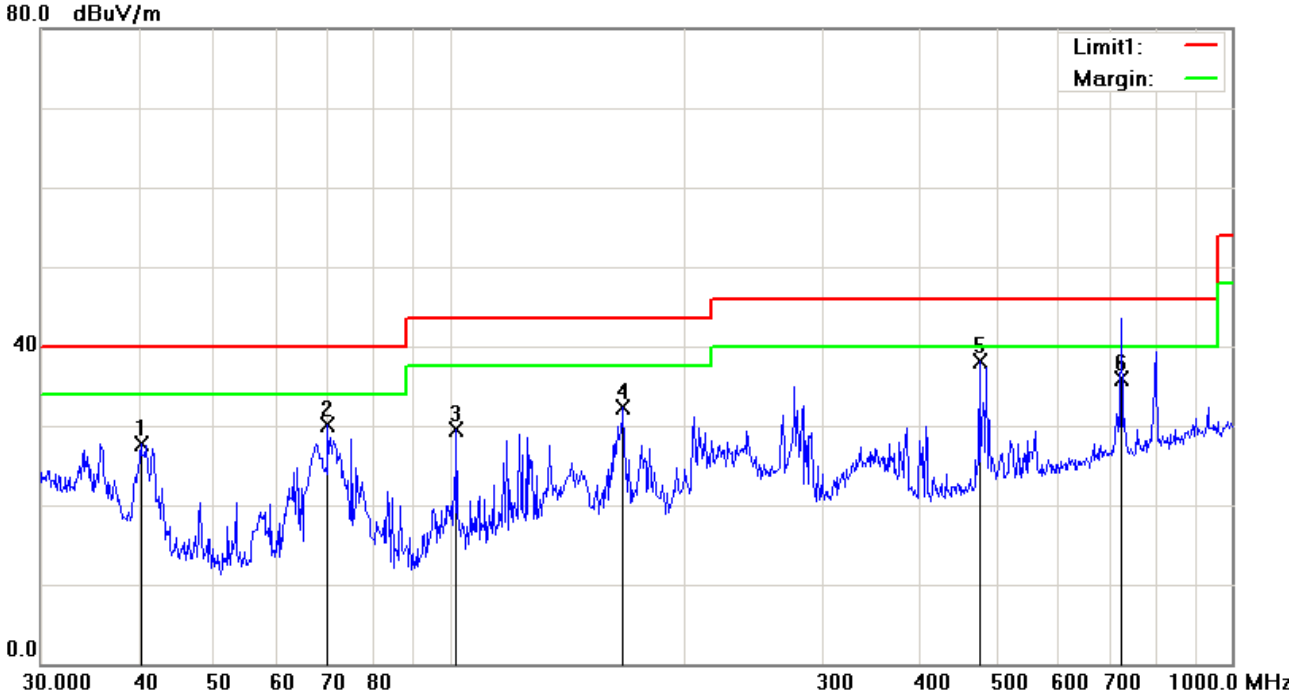
	over a full rotation of the EUT) was chosen. b. The EUT was then rotated to the direction that gave the maximum emission. c. Finally, the antenna height was adjusted to the height that gave the maximum emission. 3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120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

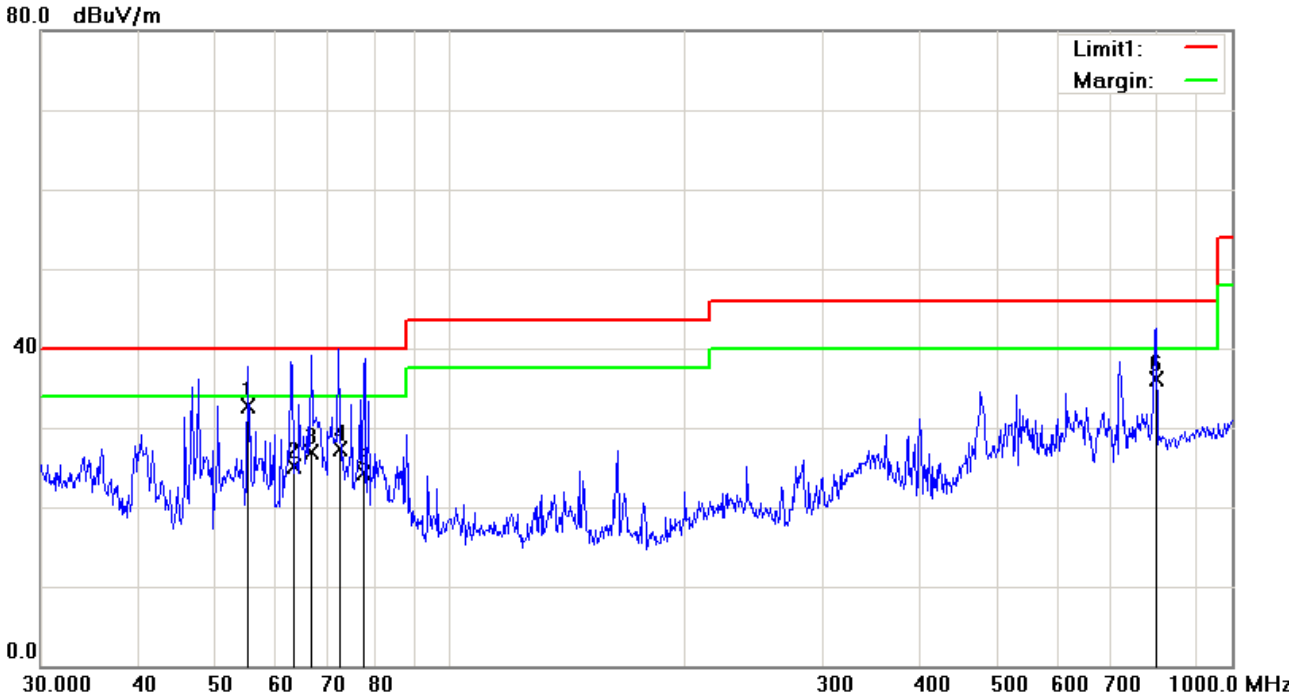


Test Data

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	40.2757	35.42	peak	-7.77	27.65	40.00	-12.35	100	196
2	H	69.8450	43.71	peak	-13.61	30.10	40.00	-9.90	100	162
3	H	102.0014	40.02	peak	-10.44	29.58	43.50	-13.92	100	196
4	H	166.6514	41.12	peak	-8.82	32.30	43.50	-11.20	100	282
5	H	475.4991	40.49	peak	-2.37	38.12	46.00	-7.88	100	233
6	H	722.3433	34.06	QP	1.85	35.91	46.00	-10.09	100	34

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	55.2926	46.54	QP	-13.80	32.74	40.00	-7.26	100	220
2	V	63.4879	39.25	QP	-14.09	25.16	40.00	-14.84	100	186
3	V	66.4849	40.83	QP	-13.86	26.97	40.00	-13.03	100	167
4	V	72.5788	40.89	QP	-13.67	27.22	40.00	-12.78	100	171
5	V	77.5297	38.14	QP	-13.75	24.39	40.00	-15.61	100	152
6	V	798.0946	32.99	QP	3.19	36.18	46.00	-9.82	100	358

Above 1GHz

Frequency (MHz)	Amplitude (dBμV/m)	Azimuth	Height (cm)	Polarity (H/V)	Factors (dB)	Limit (dBμV/m)	Margin (dB)	Detector (PK/AV)
1420.01	48.46	46	180	V	-21.23	74	-25.54	PK
2852.12	46.12	125	160	V	-22.75	74	-27.88	PK
1764.25	50.45	75	210	V	-23.12	74	-23.55	PK
2677.38	49.98	65	230	H	-23.33	74	-24.02	PK
2984.15	50.63	96	150	H	-22.86	74	-23.37	PK
2188.02	50.12	85	170	H	-22.46	74	-23.88	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.

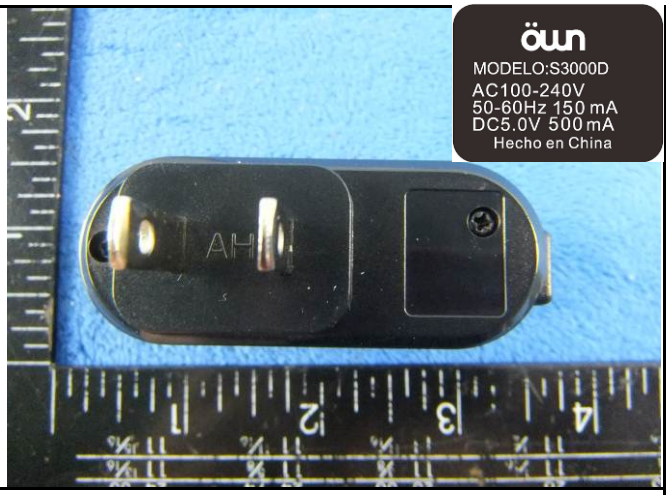
Annex A. TEST INSTRUMENT

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

Whole Package View



Adapter - Front View

EUT - Front View

EUT - Rear View

EUT - Top View

EUT - Bottom View

EUT - Left View

EUT - Right View

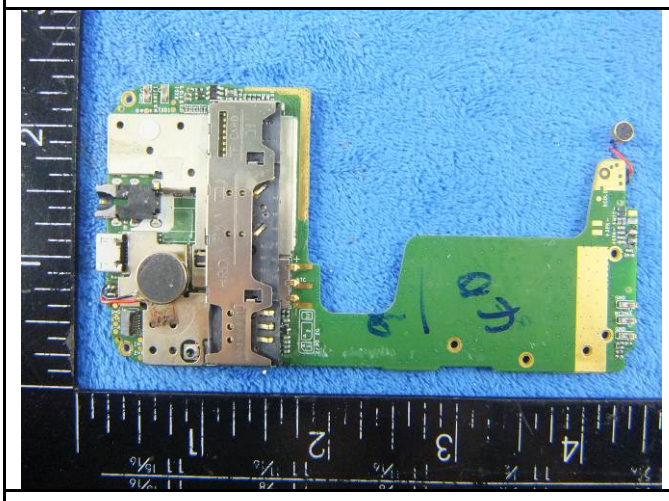
Annex B.ii. Photograph: EUT Internal Photo

Cover Off - Top View 1

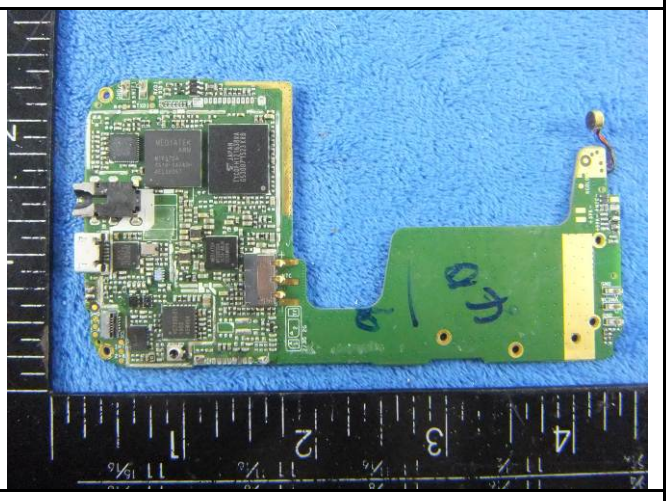
Cover Off - Top View 2

Battery - Front View

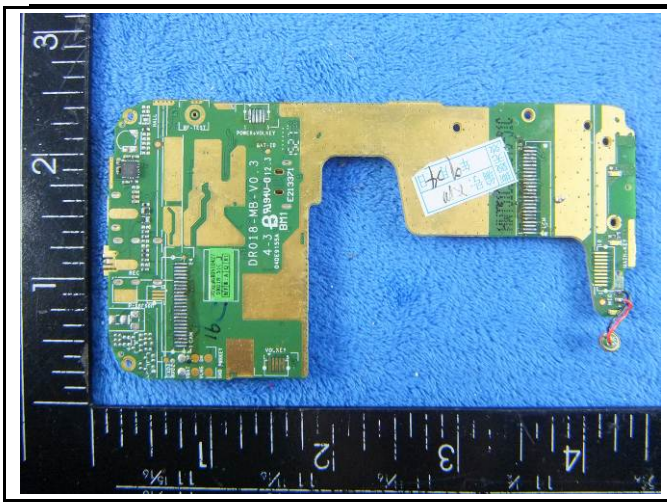
Battery - Rear View



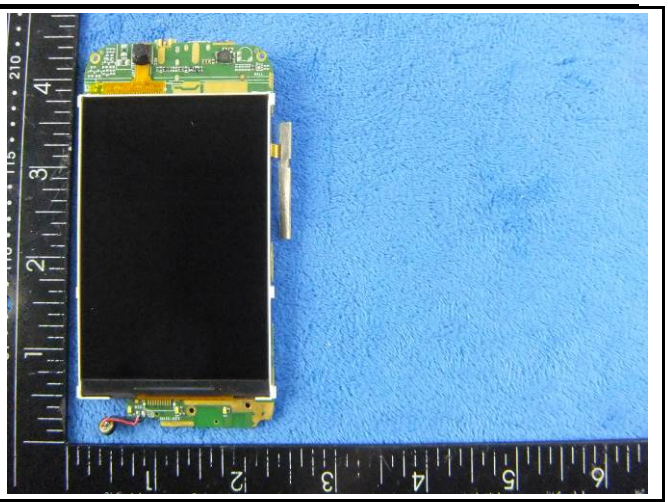
Mainbard with Shielding - Front View



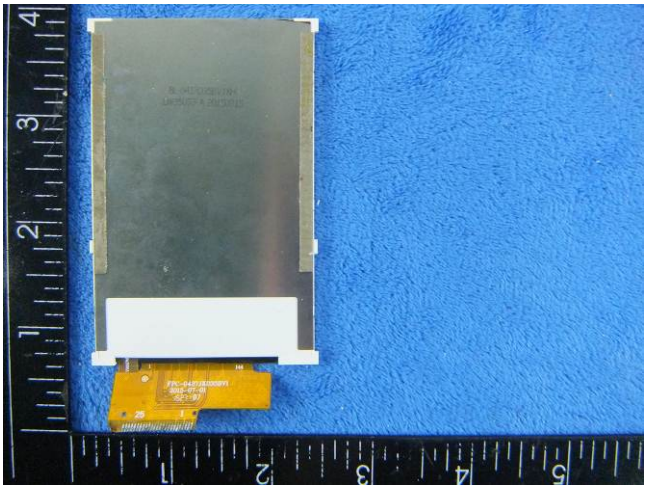
Mainbard without Shielding - Front View



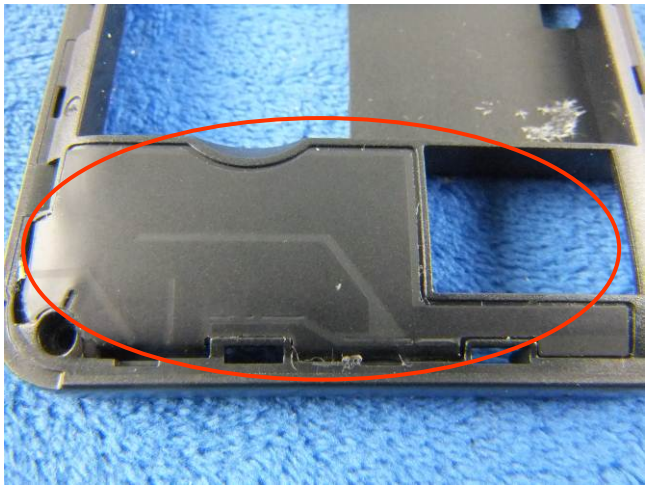
Mainbard – Rear View



LCD – Front View



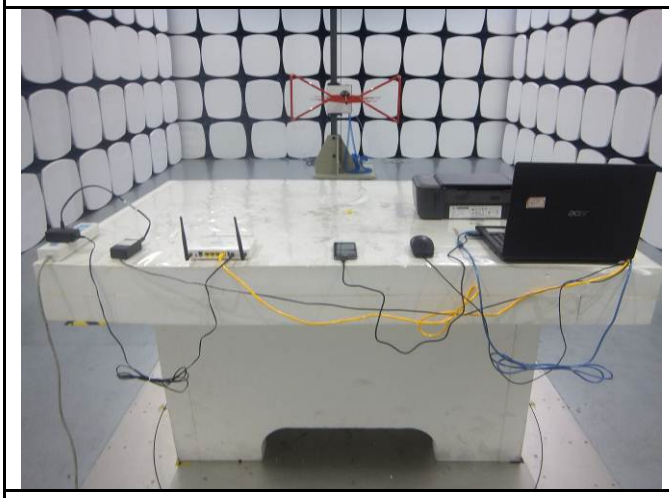
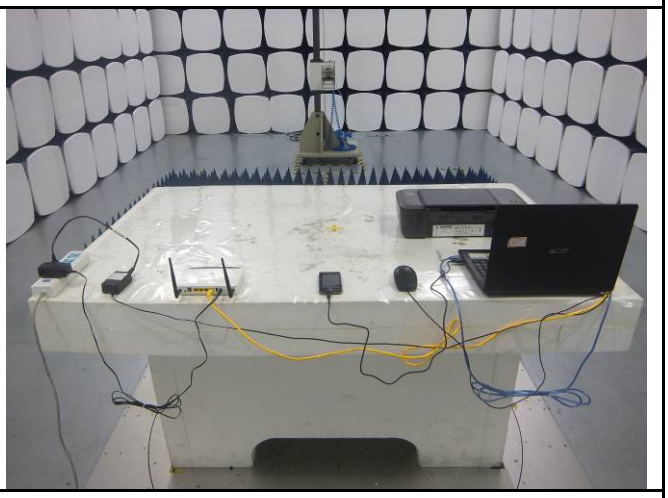
LCD – Rear View



GSM/PCS/UMTS-FDD Antenna View

WIFI/BT/BLE/GPS - Antenna View

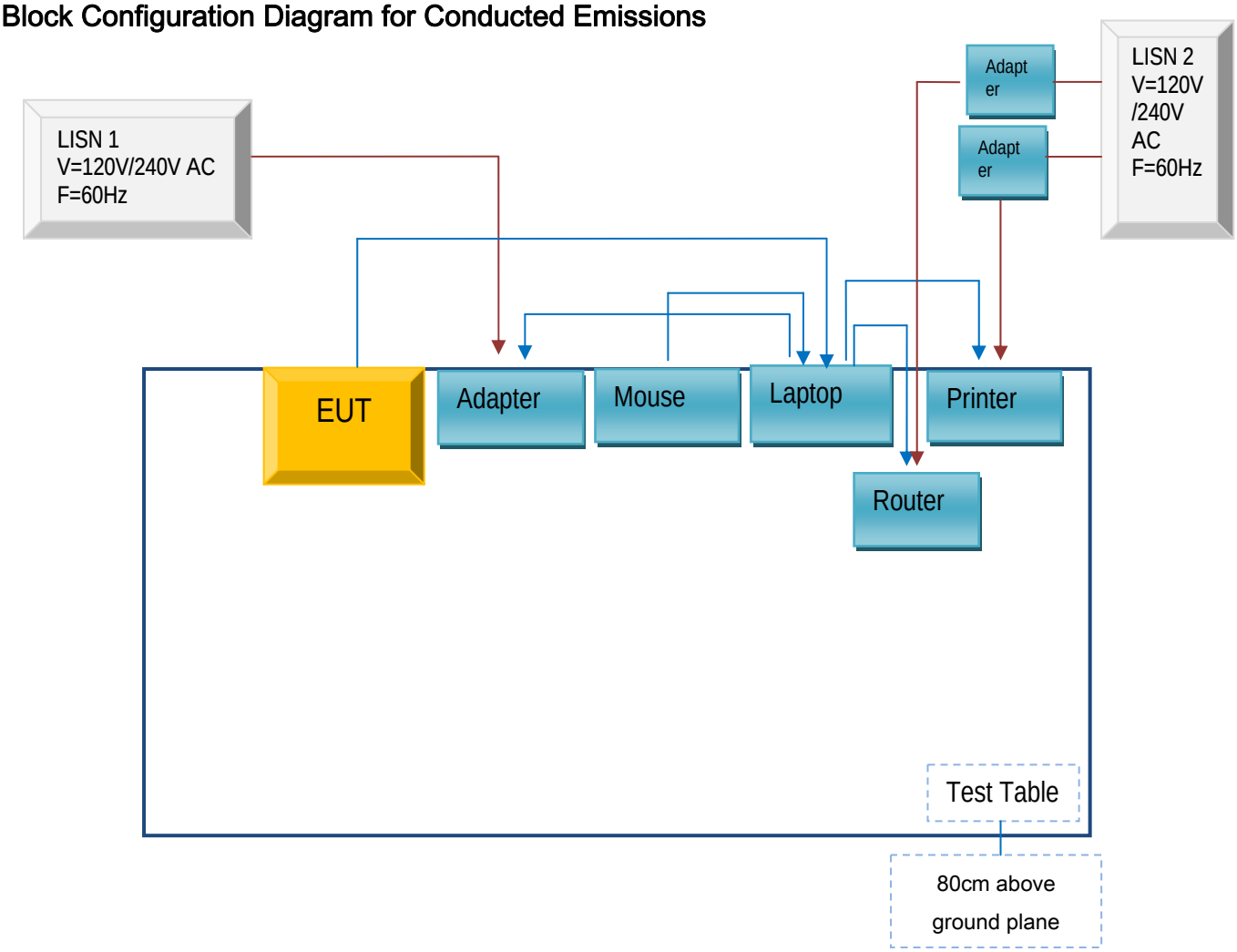
Annex B.iii. Photograph: Test Setup Photo

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

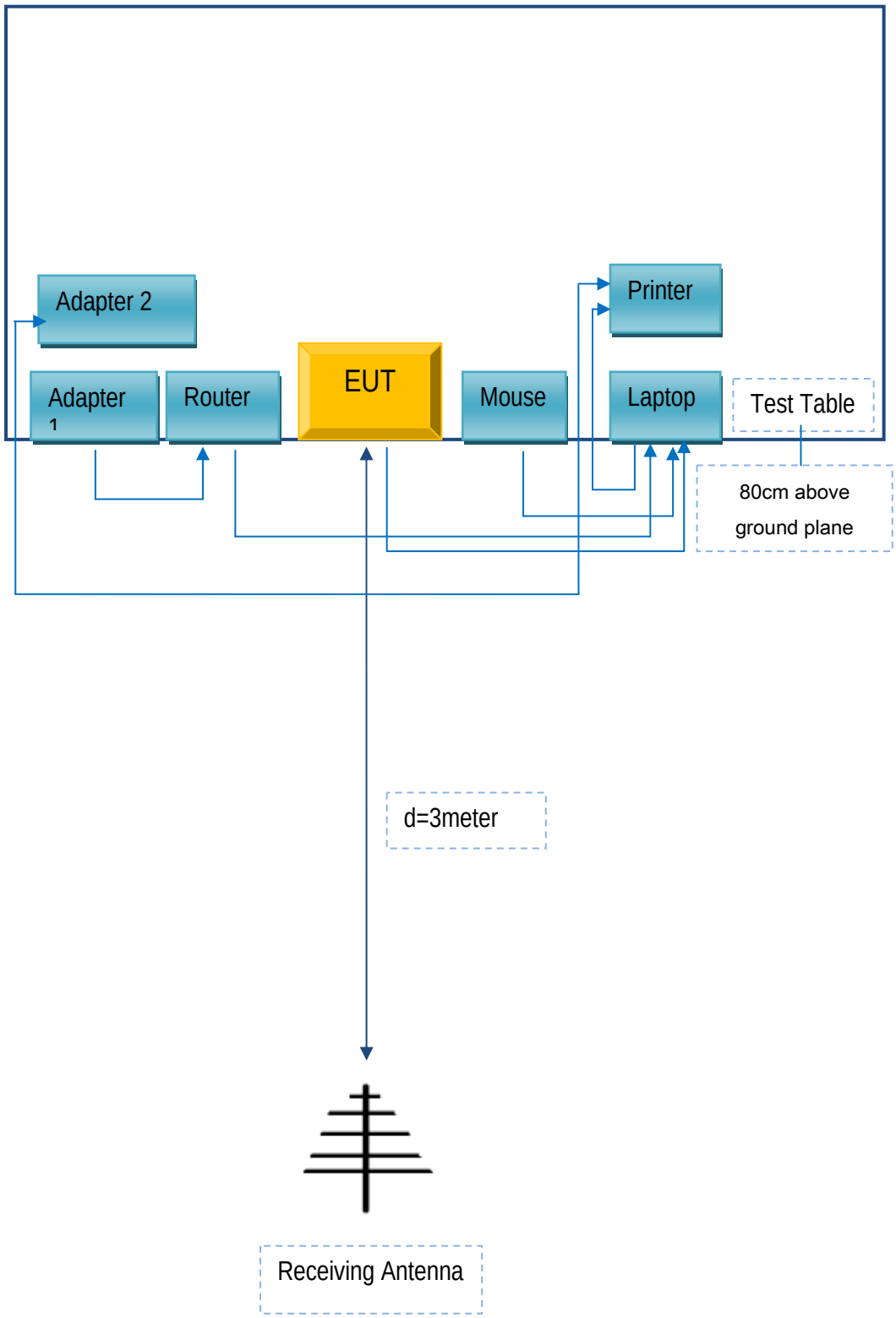
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

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 Equipment:

Manufacturer	Equipment Description	Model	Serial No
Lenovo	Laptop	E40	LR-1EHRX
GOLDWEB	Router	R102	1202032094
HP	Printer	VCVRA-1003	CN36M19JWX
DELL	Mouse	E100	912NMTUT41481

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
USB Cable	Un-shielding	No	2m	JX120051274
RJ45 Cable	Un-shielding	No	2m	KX156327541
Router Power cable	Un-shielding	No	2m	13274630Z
Printer Power cable	Un-shielding	No	2m	127581031

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

Please see Attachment

Annex E. DECLARATION OF SIMILARITY

N/A