

EMC TEST REPORT



Report No.: 16070220-FCC-E

Supersede Report No.:N/A

Applicant	NEG TECHNOLOGY CO., LIMITED	
Product Name	Mobile Phone	
Model No.	F1009	
Serial No.	N/A	
Test Standard	FCC Part 15 Subpart B Class B:2015, ANSI C63.4: 2014	
Test Date	March 31, 2016	
Issue Date	March 31, 2016	
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"/>		
<i>Winnie Zhang</i>	<i>David Huang</i>	
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

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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
16070220-FCC-E	NONE	Original	March 16, 2016
16070220-FCC-E	V1	Retest data	March 31, 2016

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:	F1009
Serial Model:	N/A
Antenna Gain:	GSM850:0.3dBi PCS1900:0.35dBi Bluetooth:0.1dBi
Input Power:	AC Adapter: Model:F1009 Input: AC 100-240V; 50/60Hz;150mA Output: DC5.0V; 500mA Battery: Model:F1009 Bateria Li-on:2.59Wh Voltaje de carga limite:4.2V Capacidad de bacteria:3.7V , 700mAh
Trade Name :	OWN
FCC ID:	2AAZ8-F1009
Date EUT received:	September 09, 2015
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

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Number of Channels:	GSM 850: 124CH PCS1900: 299CH Bluetooth: 79CH
Port:	Power Port, Earphone Port, USB Port
GPRS Multi-slot class	8/10/12

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	23°C
Relative Humidity	55%
Atmospheric Pressure	1031mbar
Test date :	March 31, 2016
Tested By :	Winnie Zhang

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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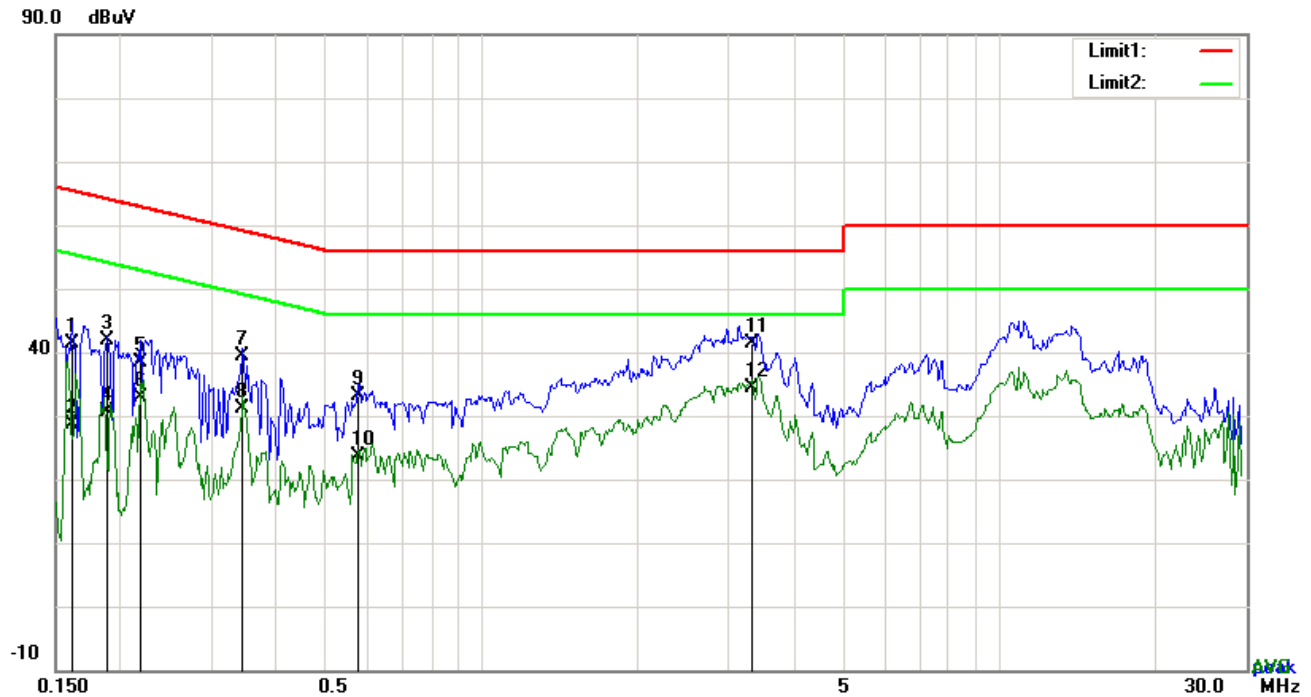
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	<p>3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable.</p> <p>4. All other supporting equipment were powered separately from another main supply.</p> <p>5. The EUT was switched on and allowed to warm 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 1 : USB Mode

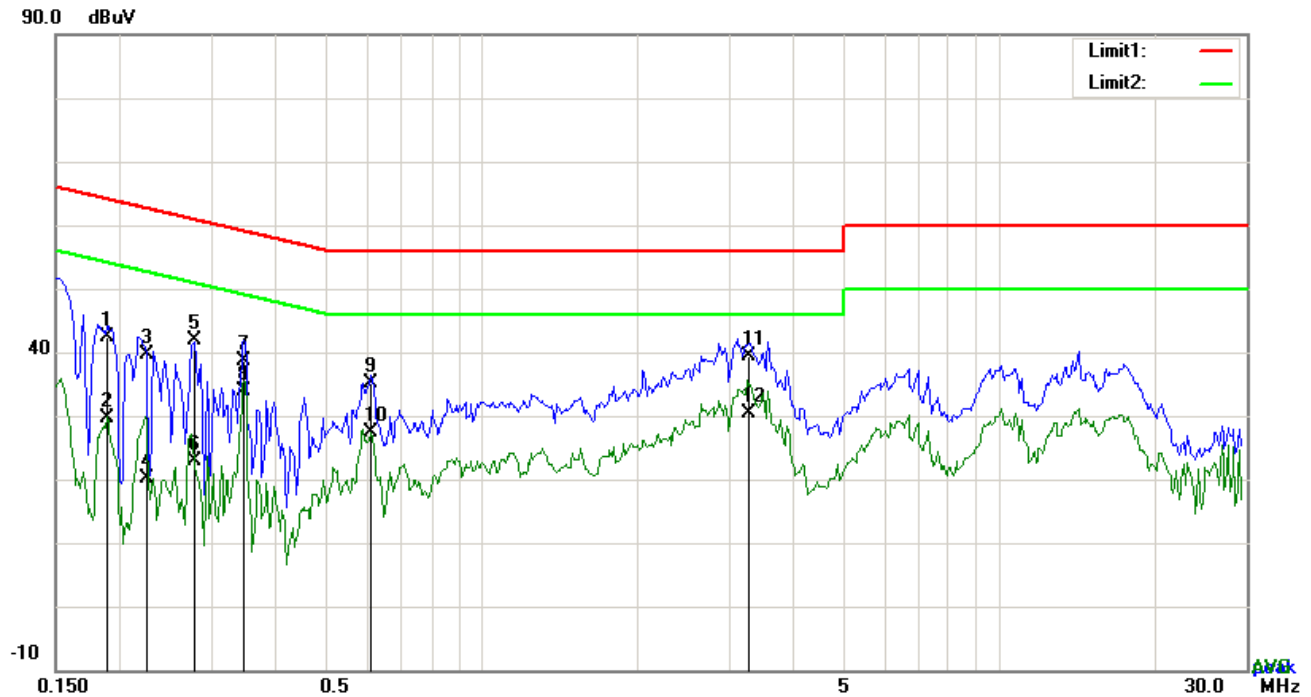


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.1617	28.28	QP	13.16	41.44	65.38	-23.94
2	L1	0.1617	15.52	AVG	13.16	28.68	55.38	-26.70
3	L1	0.1890	28.88	QP	13.06	41.94	64.08	-22.14
4	L1	0.1890	17.54	AVG	13.06	30.60	54.08	-23.48
5	L1	0.2185	25.46	QP	12.95	38.41	62.88	-24.47
6	L1	0.2185	20.01	AVG	12.95	32.96	52.88	-19.92
7	L1	0.3450	26.80	QP	12.48	39.28	59.08	-19.80
8	L1	0.3450	18.55	AVG	12.48	31.03	49.08	-18.05
9	L1	0.5790	21.40	QP	11.82	33.22	56.00	-22.78
10	L1	0.5790	11.91	AVG	11.82	23.73	46.00	-22.27
11	L1	3.3276	29.93	QP	11.40	41.33	56.00	-14.67
12	L1	3.3276	22.88	AVG	11.40	34.28	46.00	-11.72

Test Mode : USB Mode

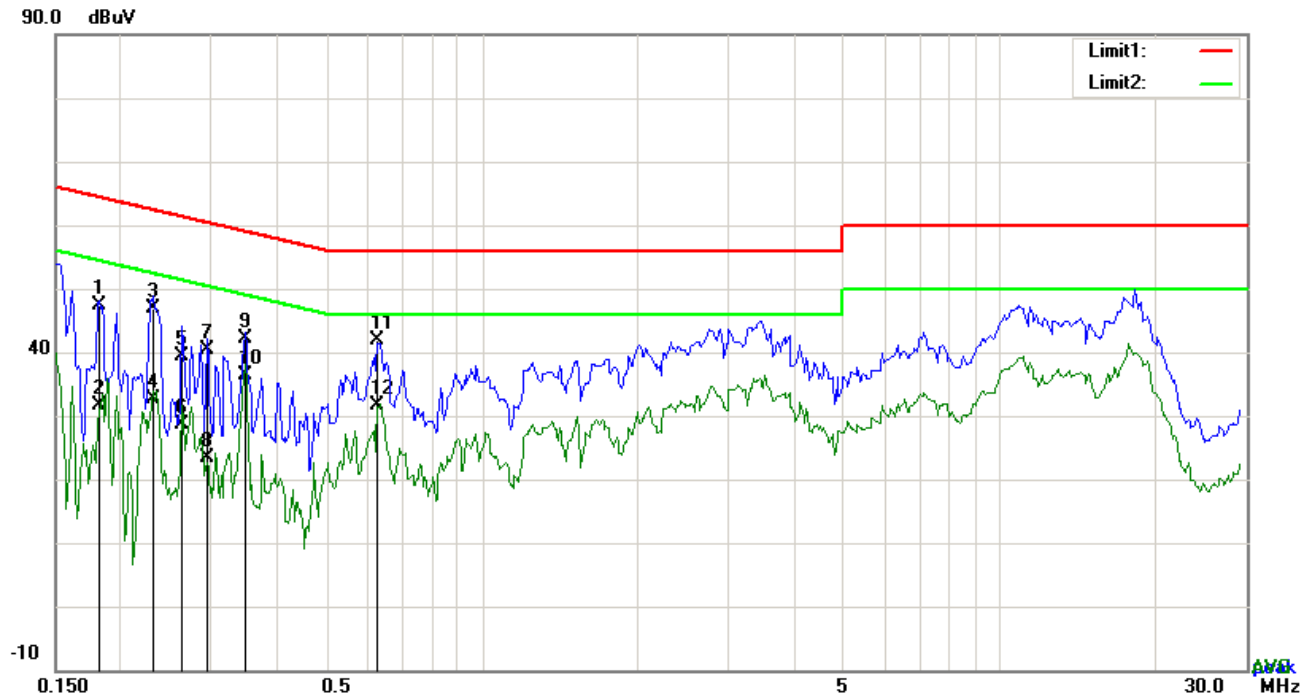


Test Data

Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.1890	29.41	QP	13.06	42.47	64.08	-21.61
2	N	0.1890	16.54	AVG	13.06	29.60	54.08	-24.48
3	N	0.2256	26.66	QP	12.92	39.58	62.61	-23.03
4	N	0.2256	7.10	AVG	12.92	20.02	52.61	-32.59
5	N	0.2787	29.05	QP	12.72	41.77	60.85	-19.08
6	N	0.2787	10.21	AVG	12.72	22.93	50.85	-27.92
7	N	0.3465	26.09	QP	12.47	38.56	59.05	-20.49
8	N	0.3465	21.40	AVG	12.47	33.87	49.05	-15.18
9	N	0.6102	23.27	QP	11.79	35.06	56.00	-20.94
10	N	0.6102	15.57	AVG	11.79	27.36	46.00	-18.64
11	N	3.2925	27.59	QP	11.69	39.28	56.00	-16.72
12	N	3.2925	18.66	AVG	11.69	30.35	46.00	-15.65

Test Mode : USB Mode

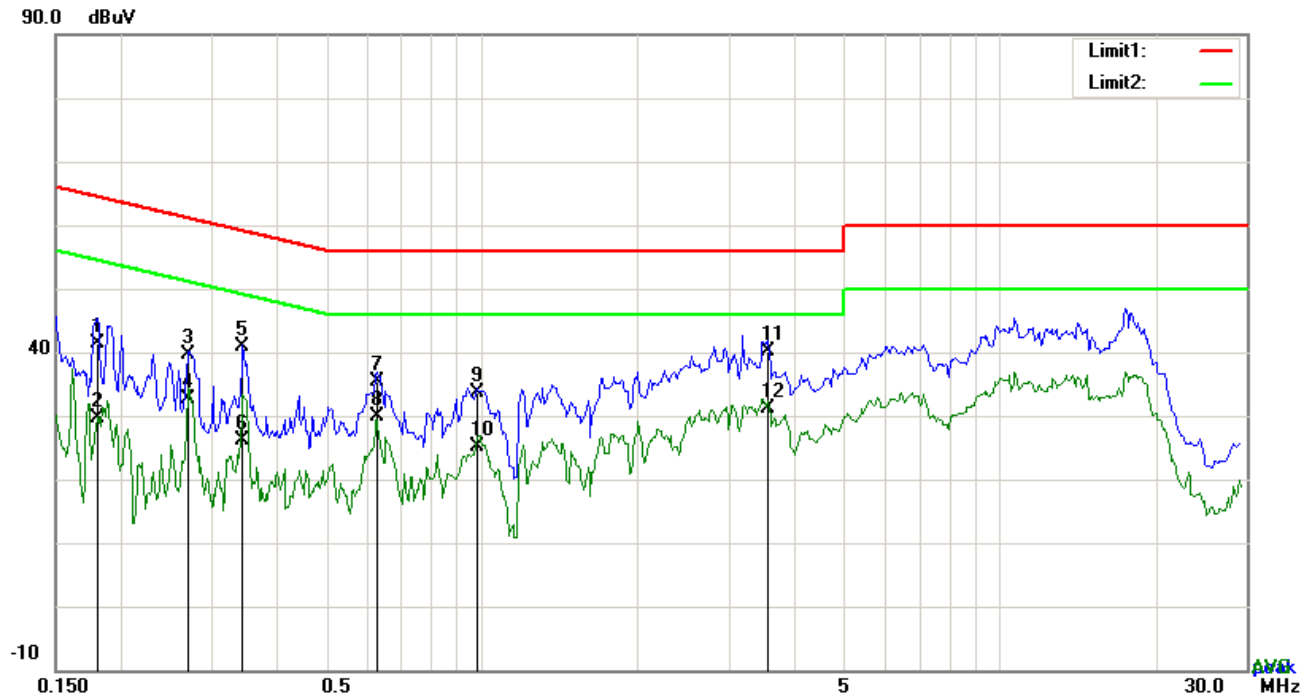


Test Data

Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)
1	L1	0.1825	34.37	QP	13.08	47.45	64.37	-16.92
2	L1	0.1825	18.67	AVG	13.08	31.75	54.37	-22.62
3	L1	0.2319	33.95	QP	12.90	46.85	62.38	-15.53
4	L1	0.2319	19.84	AVG	12.90	32.74	52.38	-19.64
5	L1	0.2631	26.68	QP	12.78	39.46	61.33	-21.87
6	L1	0.2631	15.73	AVG	12.78	28.51	51.33	-22.82
7	L1	0.2943	27.63	QP	12.66	40.29	60.40	-20.11
8	L1	0.2943	10.84	AVG	12.66	23.50	50.40	-26.90
9	L1	0.3489	29.58	QP	12.46	42.04	58.99	-16.95
10	L1	0.3489	24.03	AVG	12.46	36.49	48.99	-12.50
11	L1	0.6297	30.04	QP	11.77	41.81	56.00	-14.19
12	L1	0.6297	19.88	AVG	11.77	31.65	46.00	-14.35

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	0.1812	28.23	QP	13.08	41.31	64.43	-23.12
2	N	0.1812	16.52	AVG	13.08	29.60	54.43	-24.83
3	N	0.2709	26.85	QP	12.75	39.60	61.09	-21.49
4	N	0.2709	19.90	AVG	12.75	32.65	51.09	-18.44
5	N	0.3450	28.30	QP	12.48	40.78	59.08	-18.30
6	N	0.3450	13.55	AVG	12.48	26.03	49.08	-23.05
7	N	0.6271	23.51	QP	11.77	35.28	56.00	-20.72
8	N	0.6271	18.03	AVG	11.77	29.80	46.00	-16.20
9	N	0.9807	22.30	QP	11.42	33.72	56.00	-22.28
10	N	0.9807	13.66	AVG	11.42	25.08	46.00	-20.92
11	N	3.5655	28.43	QP	11.72	40.15	56.00	-15.85
12	N	3.5655	19.52	AVG	11.72	31.24	46.00	-14.76

6.2 Radiated Emissions

Temperature	23°C
Relative Humidity	55%
Atmospheric Pressure	1031mbar
Test date :	March 31, 2016
Tested By :	Winnie Zhang

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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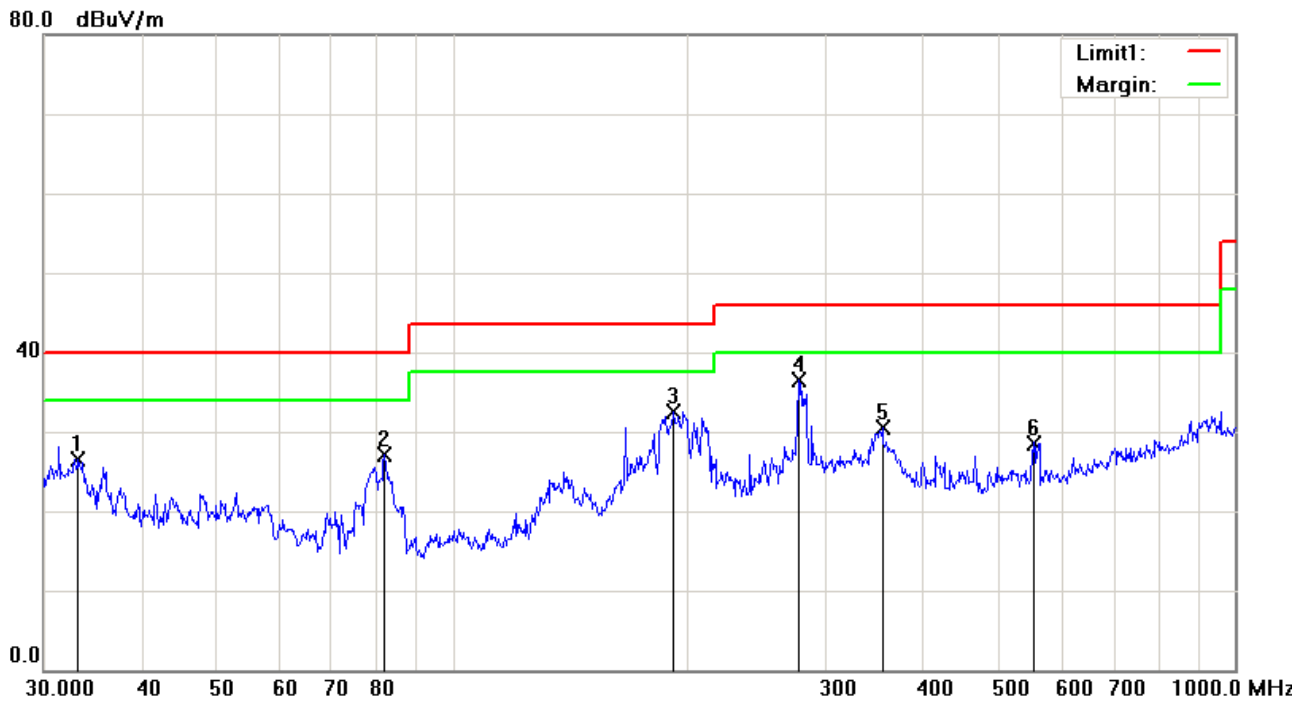
	<p>over a full rotation of the EUT) was chosen.</p> <p>b. The EUT was then rotated to the direction that gave the maximum emission.</p> <p>c. Finally, the antenna height was adjusted to the height that gave the maximum emission.</p> <p>3. The resolution bandwidth and video bandwidth of test receiver/spectrum 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 1: USB Mode

Below 1GHz

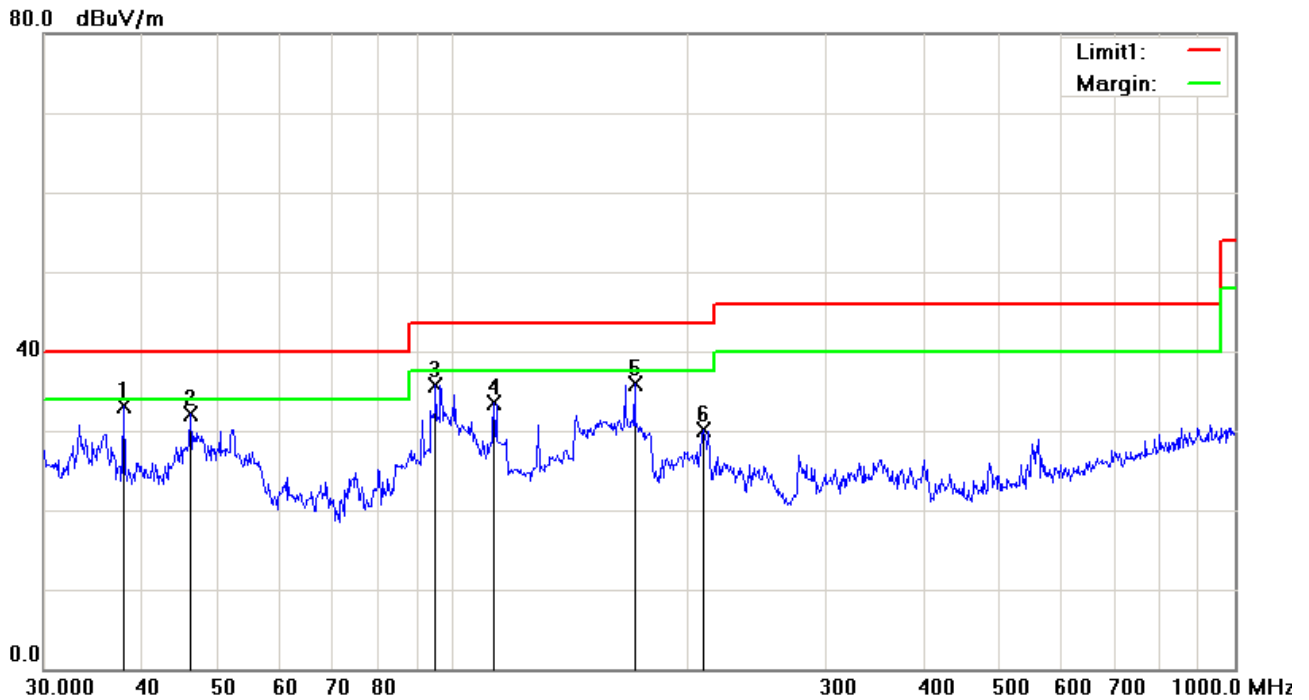


Test Data

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	33.2112	29.20	peak	-2.62	26.58	40.00	-13.42	100	249
2	H	81.7833	40.73	peak	-13.67	27.06	40.00	-12.94	100	123
3	H	191.7450	41.62	peak	-9.14	32.48	43.50	-11.02	100	40
4	H	277.0935	44.49	peak	-7.95	36.54	46.00	-9.46	100	177
5	H	354.1831	35.81	peak	-5.36	30.45	46.00	-15.55	100	344
6	H	552.8833	29.37	peak	-0.77	28.60	46.00	-17.40	100	218

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	37.9450	39.10	peak	-6.09	33.01	40.00	-6.99	100	99
2	V	46.1780	43.63	peak	-11.47	32.16	40.00	-7.84	100	127
3	V	95.0930	47.84	peak	-12.11	35.73	43.50	-7.77	100	205
4	V	112.9196	42.04	peak	-8.52	33.52	43.50	-9.98	100	199
5	V	170.7926	45.13	peak	-9.16	35.97	43.50	-7.53	100	301
6	V	209.3129	38.89	peak	-8.82	30.07	43.50	-13.43	100	252

Above 1GHz

Frequency (MHz)	Amplitude (dBμV/m)	Azimuth	Height (cm)	Polarity (H/V)	Factors (dB)	Limit (dBμV/m)	Margin (dB)	Detector (PK/AV)
1214.08	50.27	80	130	V	-22.21	74	-23.73	PK
1332.65	50.38	77	120	V	-22.36	74	-23.62	PK
1654.32	49.96	120	150	V	-24.37	74	-24.04	PK
1167.25	49.83	62	200	H	-21.25	74	-24.17	PK
1533.69	48.33	135	180	H	-22.62	74	-25.67	PK
1672.13	50.01	72	160	H	-21.82	74	-23.99	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	09/17/2015	09/16/2016	<input checked="" type="checkbox"/>
Line Impedance Stabilization Network	LI-125A	191106	09/25/2015	09/24/2016	<input checked="" type="checkbox"/>
Line Impedance Stabilization Network	LI-125A	191107	09/25/2015	09/24/2016	<input checked="" type="checkbox"/>
LISN	ISN T800	34373	09/25/2015	09/24/2016	<input checked="" type="checkbox"/>
Transient Limiter	LIT-153	531118	09/01/2015	08/31/2016	<input checked="" type="checkbox"/>
Radiated Emissions					
EMI test receiver	ESL6	100262	09/17/2015	09/16/2016	<input checked="" type="checkbox"/>
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	09/01/2015	08/31/2016	<input checked="" type="checkbox"/>
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/25/2015	03/24/2016	<input checked="" type="checkbox"/>
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/21/2015	09/20/2016	<input checked="" type="checkbox"/>
Double Ridge Horn Antenna	AH-118	71259	09/24/2015	09/23/2016	<input checked="" type="checkbox"/>

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

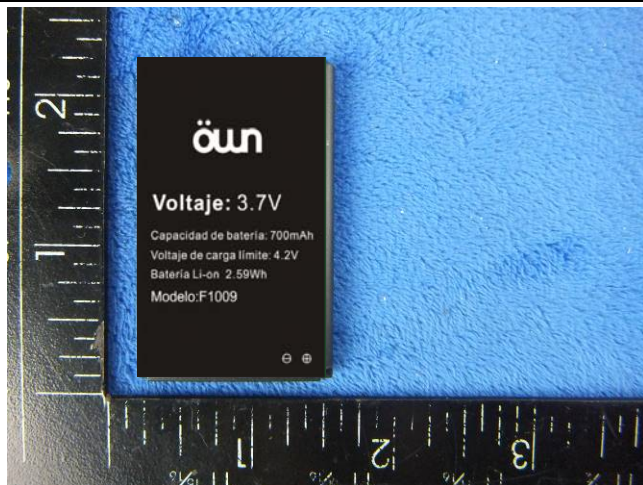
Annex B.ii. Photograph: EUT Internal Photo



Cover Off - Top View 1



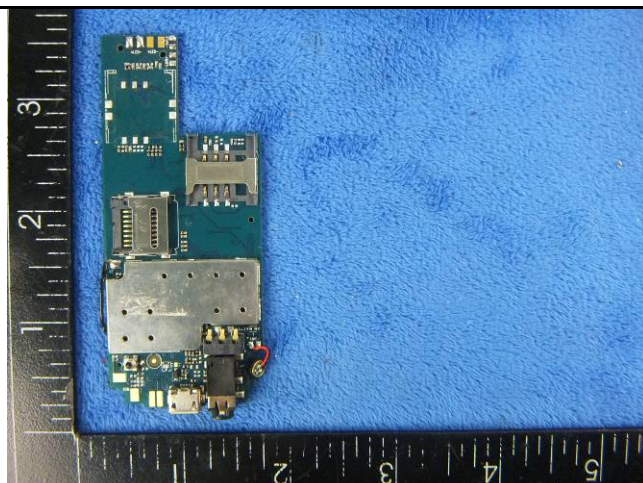
Cover Off - Top View 2



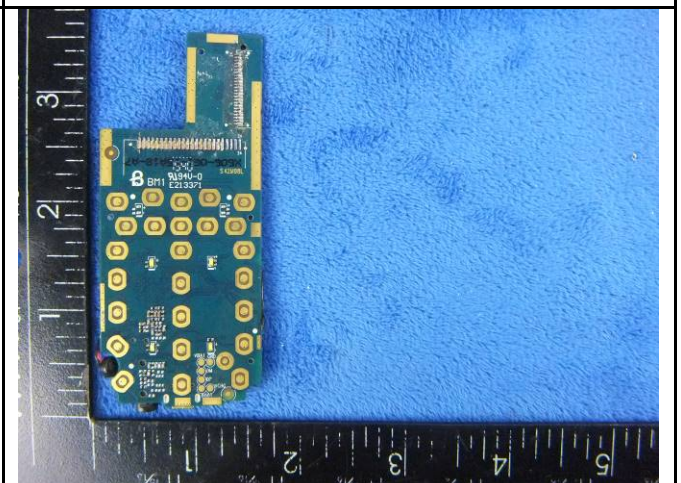
Battery - Top View



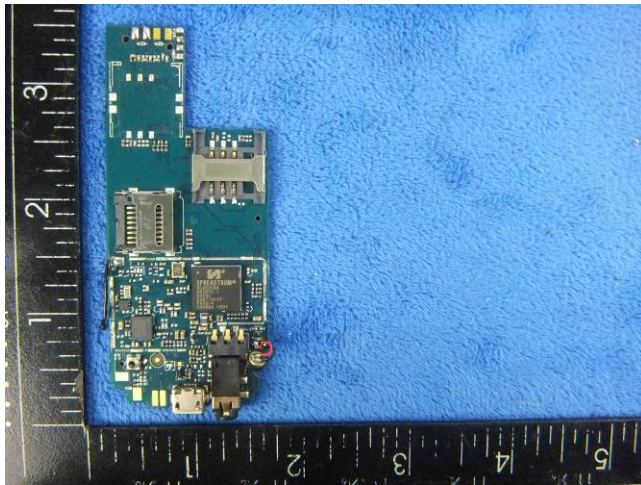
Battery - Bottom View



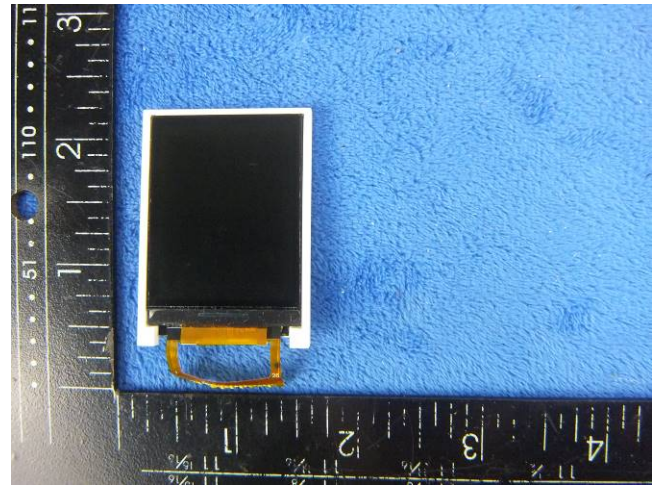
Mainboard With Shielding - Front View



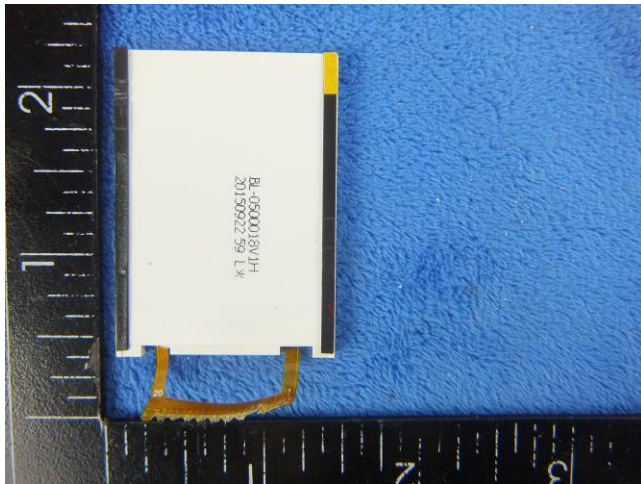
Mainboard With Shielding - Rear View



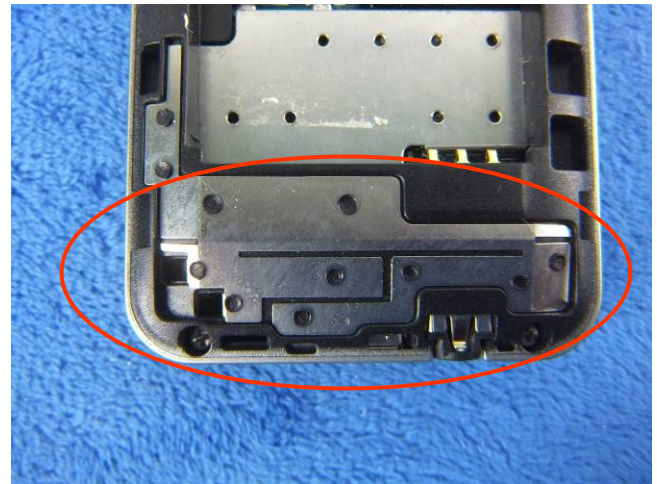
Mainboard Without Shielding - Front View



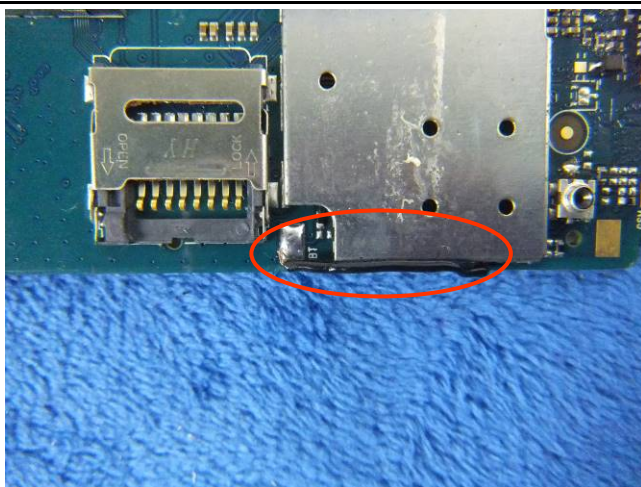
LCD - Front View



LCD - Rear View



GSM/PCS Antenna View



BT - Antenna View

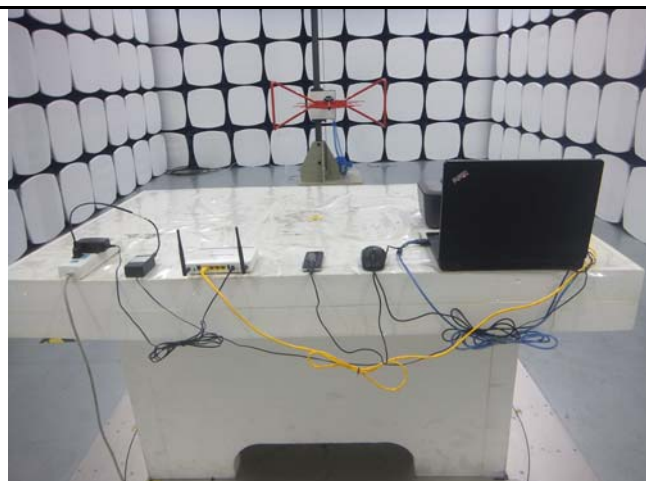
Annex B.iii. Photograph: Test Setup Photo



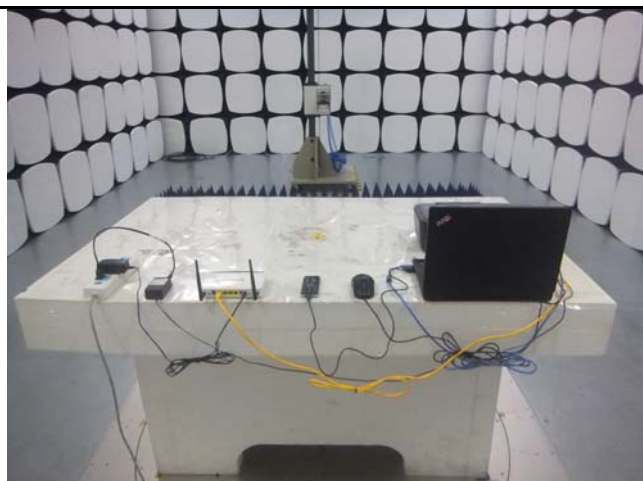
Conducted Emissions Test Setup – Front View



Conducted Emissions Test Setup – Side View



Radiated Spurious Emissions Test Setup Below 1GHz

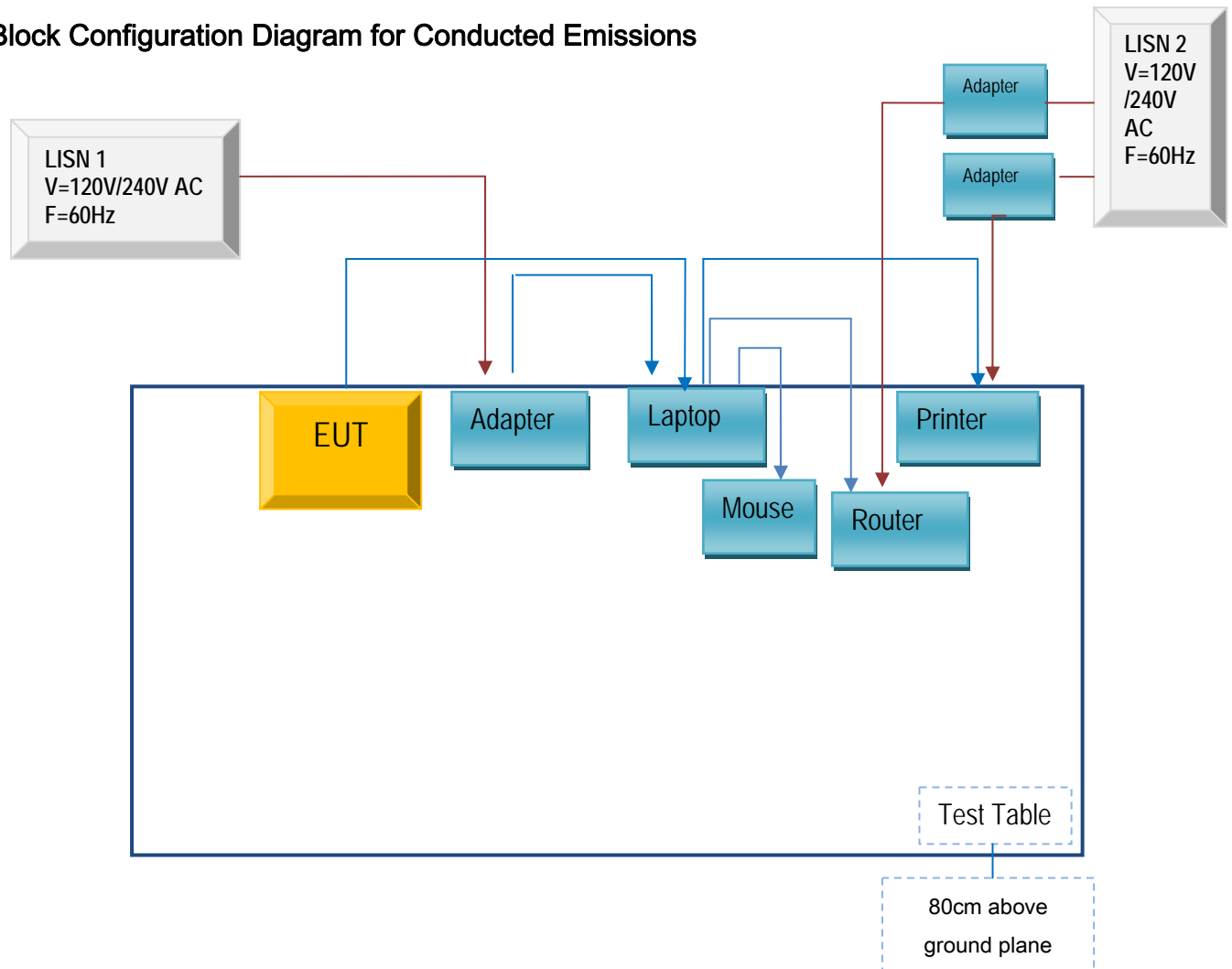


Radiated Spurious Emissions Test Setup Above
1GHz

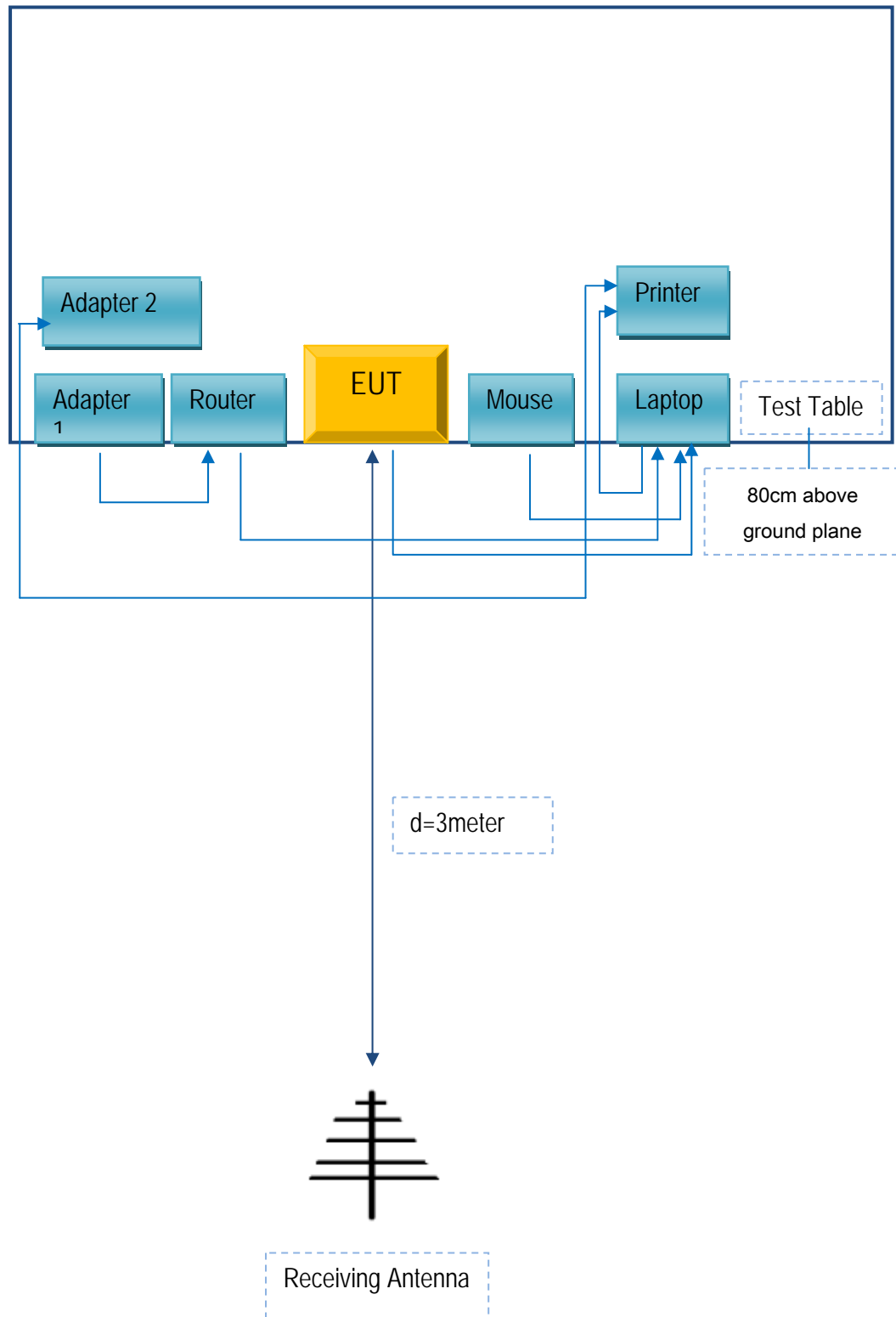
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

Block Configuration Diagram for Conducted Emissions



Block Configuration Diagram for Radiated Emissions



Annex C. 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	Lenovo Laptop	E40& 0579A52	LR-1EHRX
GOLDWEB	Router	R102	1202032094
TENGE	Adapter	DH-5033	JX10325
HP	Printer	VCVRA-1003	CN36M19JWX
DELL	Mouse	E100	912NMTUT41481
NEG TECHNOLOGY CO.,LIMITED	Adapter	F1009	C0709

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
USB Cable	Un-shielding	No	2m	N/A
RJ45 Cable	Un-shielding	No	2m	N/A
Router Power cable	Un-shielding	No	2m	N/A
Printer Power cable	Un-shielding	No	2m	N/A
USB Cable	Un-shielding	No	0.8m	ST1274111

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

Please see Attachment

Annex E. DECLARATION OF SIMILARITY

Authorization Using TCF

(Original approval holder)

Company name	NEG TECHNOLOGY CO., LIMITED
Address	Rm 1406, Block B, Jinsejiari, Jingtian south road, Futian district, ShenZhen , China

Declare that the following company:

(New approval holder)

Company name	NEG TECHNOLOGY CO., LIMITED
Address	Rm 1406, Block B, Jinsejiari, Jingtian south road, Futian district, Shenzhen, China

is hereby authorized to use our documentation and test reports, tested by SIEMIC, job No. 15070823.

(Difference from original approval holder's)

	Model	Difference
Original	F1009D	double SIM slot
New	F1009	single SIM slot

and apply for own approval or certificate.

Attestation:

Date:	Name: (this must be a person)	Function:	Signature: (or official company stamp)
2016-3-15	Eking. liu	Manager	Eking Liu