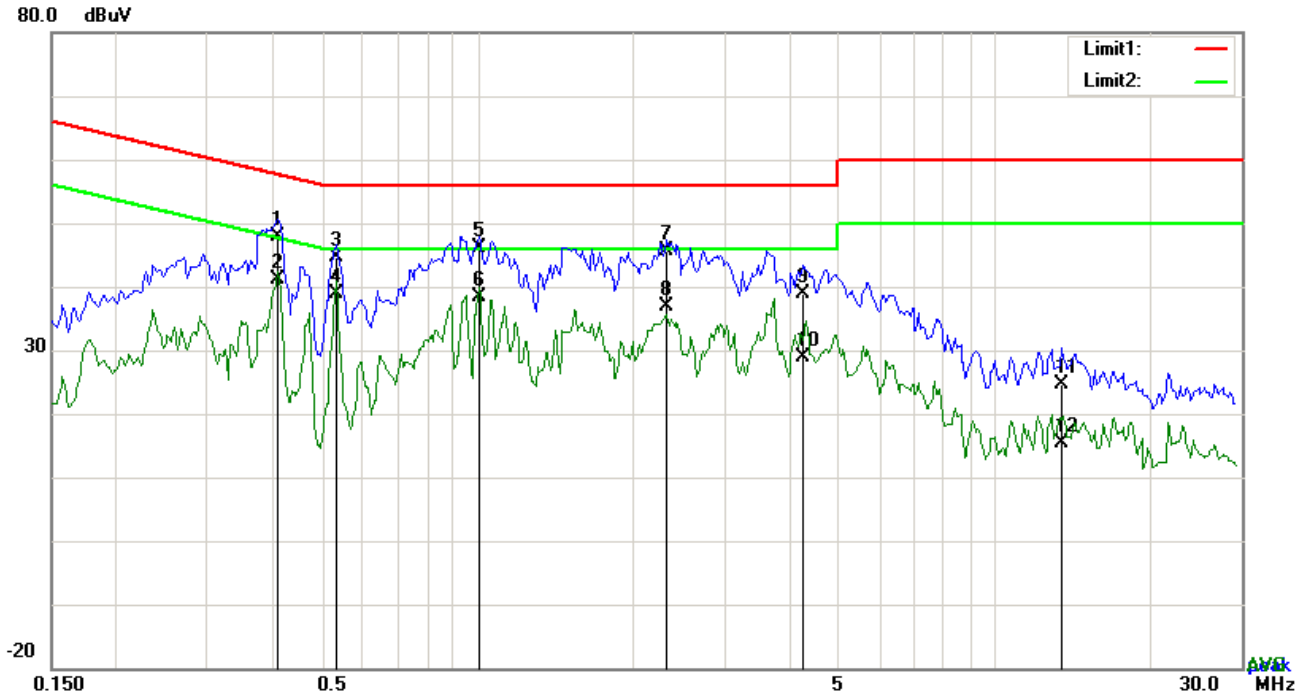
Test Mode:	Bluetooth Mode

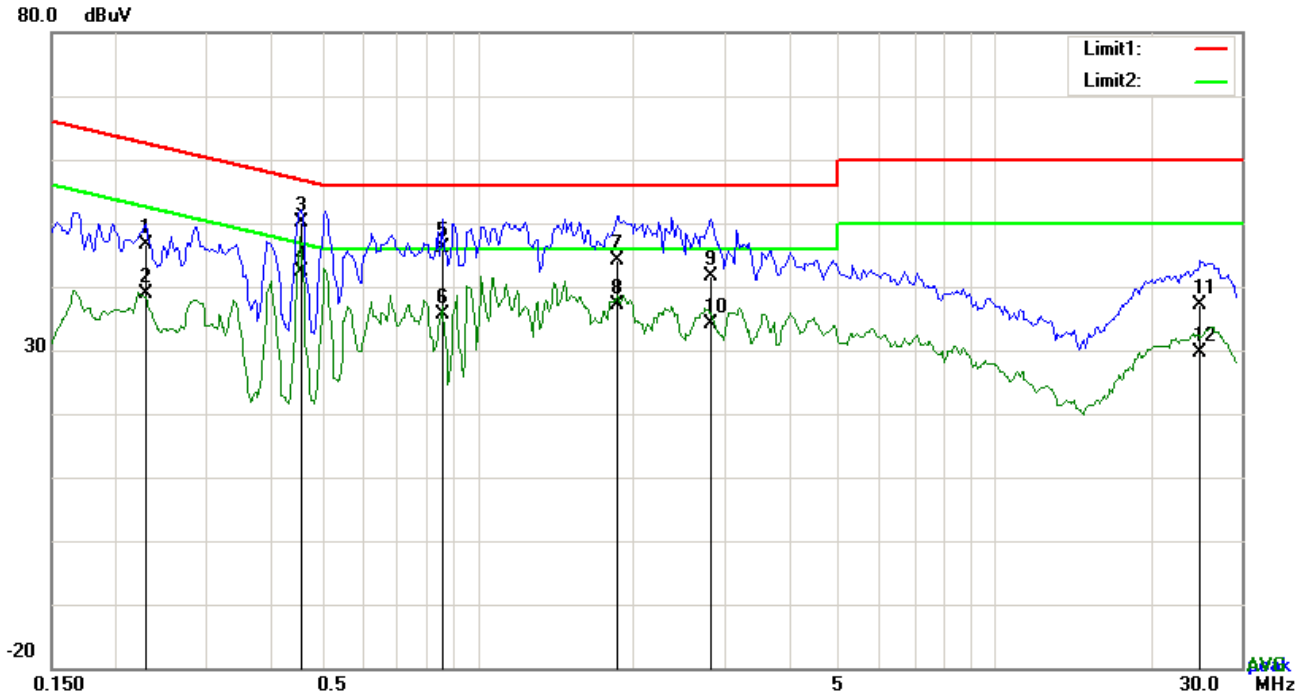


Test Data

Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.4113	37.90	QP	10.03	47.93	57.62	-9.69
2	L1	0.4113	31.02	AVG	10.03	41.05	47.62	-6.57
3	L1	0.5322	34.71	QP	10.03	44.74	56.00	-11.26
4	L1	0.5322	28.84	AVG	10.03	38.87	46.00	-7.13
5	L1	1.0080	36.12	QP	10.03	46.15	56.00	-9.85
6	L1	1.0080	28.33	AVG	10.03	38.36	46.00	-7.64
7	L1	2.3145	35.67	QP	10.05	45.72	56.00	-10.28
8	L1	2.3145	26.90	AVG	10.05	36.95	46.00	-9.05
9	L1	4.2480	28.90	QP	10.07	38.97	56.00	-17.03
10	L1	4.2480	18.85	AVG	10.07	28.92	46.00	-17.08
11	L1	13.4754	14.41	QP	10.20	24.61	60.00	-35.39
12	L1	13.4754	5.07	AVG	10.20	15.27	50.00	-34.73

Test Mode:	Bluetooth 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	0.2280	36.68	QP	10.03	46.71	62.52	-15.81
2	N	0.2280	28.85	AVG	10.03	38.88	52.52	-13.64
3	N	0.4581	39.98	QP	10.03	50.01	56.73	-6.72
4	N	0.4581	32.45	AVG	10.03	42.48	46.73	-4.25
5	N	0.8559	36.05	QP	10.03	46.08	56.00	-9.92
6	N	0.8559	25.54	AVG	10.03	35.57	46.00	-10.43
7	N	1.8660	34.21	QP	10.04	44.25	56.00	-11.75
8	N	1.8660	27.18	AVG	10.04	37.22	46.00	-8.78
9	N	2.8254	31.70	QP	10.05	41.75	56.00	-14.25
10	N	2.8254	24.20	AVG	10.05	34.25	46.00	-11.75
11	N	25.0116	26.81	QP	10.40	37.21	60.00	-22.79
12	N	25.0116	19.12	AVG	10.40	29.52	50.00	-20.48

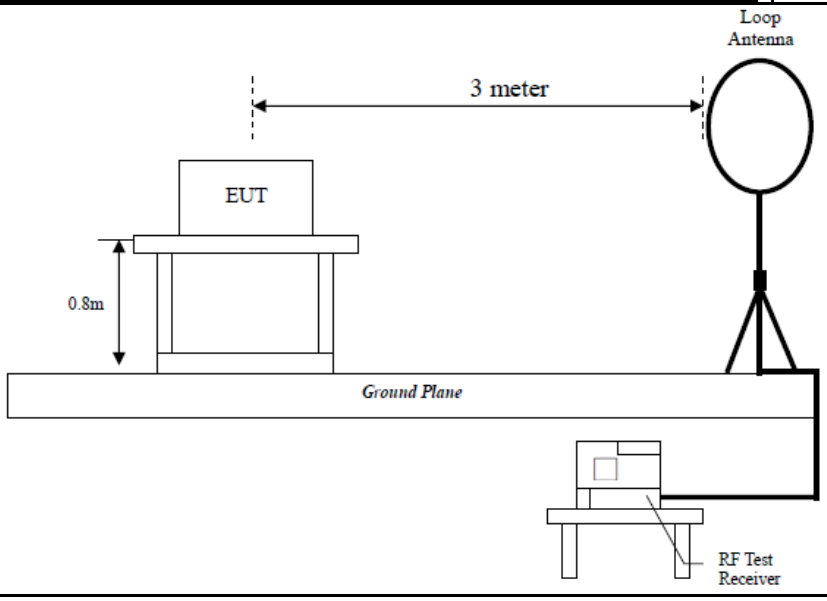
6.9 Radiated Emissions & Restricted Band

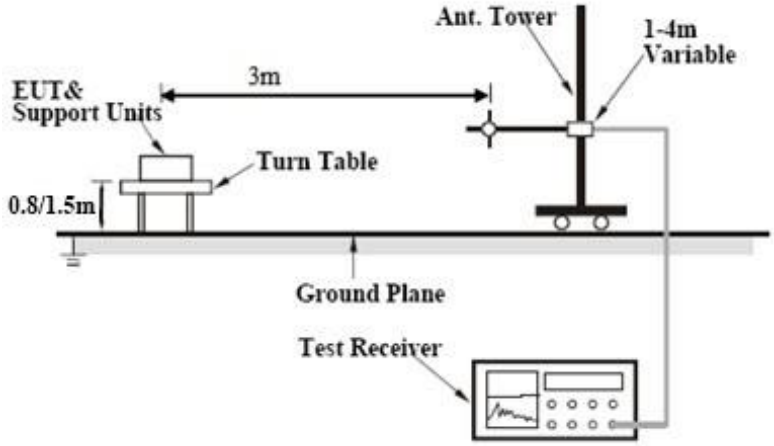
Temperature	25 °C
Relative Humidity	55%
Atmospheric Pressure	1017mbar
Test date :	November 23, 2017
Tested By :	Aaron Liang

Requirement(s):

Spec	Item	Requirement	Applicable
47CFR§15.205, §15.209, §15.247(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)
0.009~0.490	2400/F(KHz)
0.490~1.705	24000/F(KHz)
1.705~30.0	30
30 – 88	100
88 – 216	150
216 960	200
Above 960	500

Test Setup	



Procedure

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 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 is 10Hz with Peak detection for Average Measurement as below at frequency above 1GHz.
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 Result:

Test Mode:	Transmitting Mode

Frequency range: 9KHz - 30MHz

Freq. (MHz)	Detection value	Factor (dB/m)	Reading (dBuV/m)	Result (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)
--	--	--	--	--	--	>20
--	--	--	--	--	--	>20

Note:

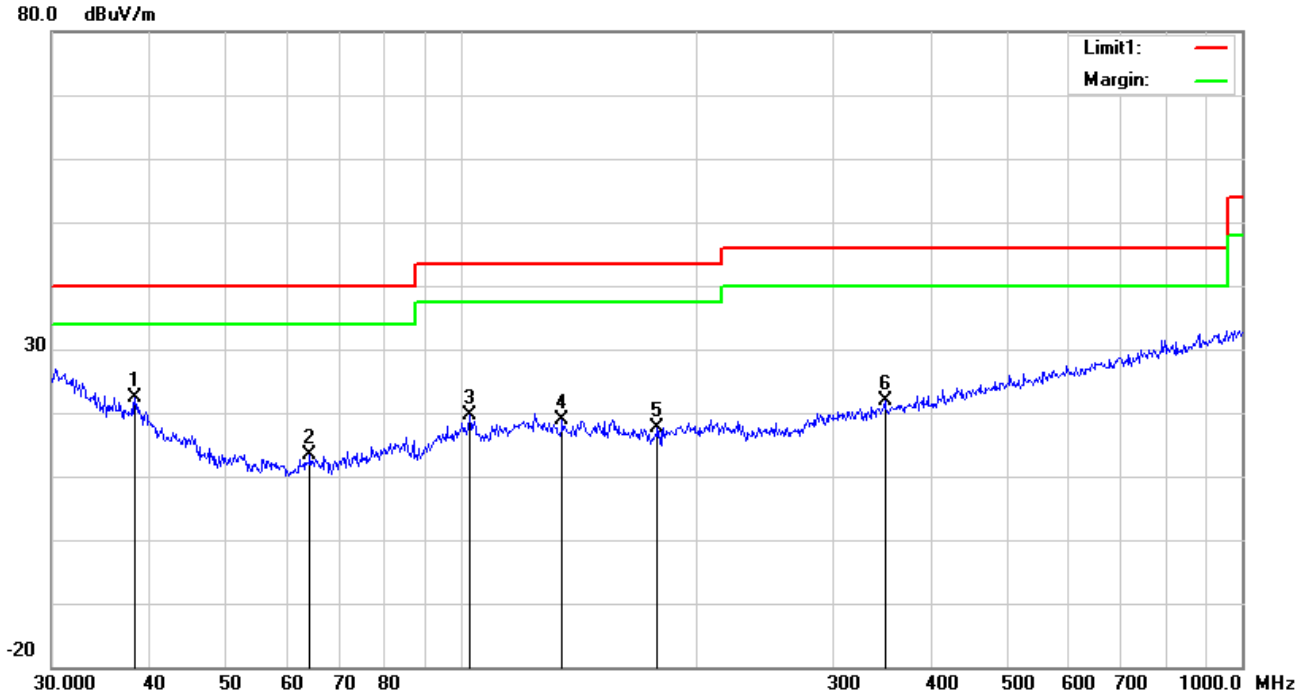
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.

Test Mode:	Bluetooth Mode

30MHz -1GHz

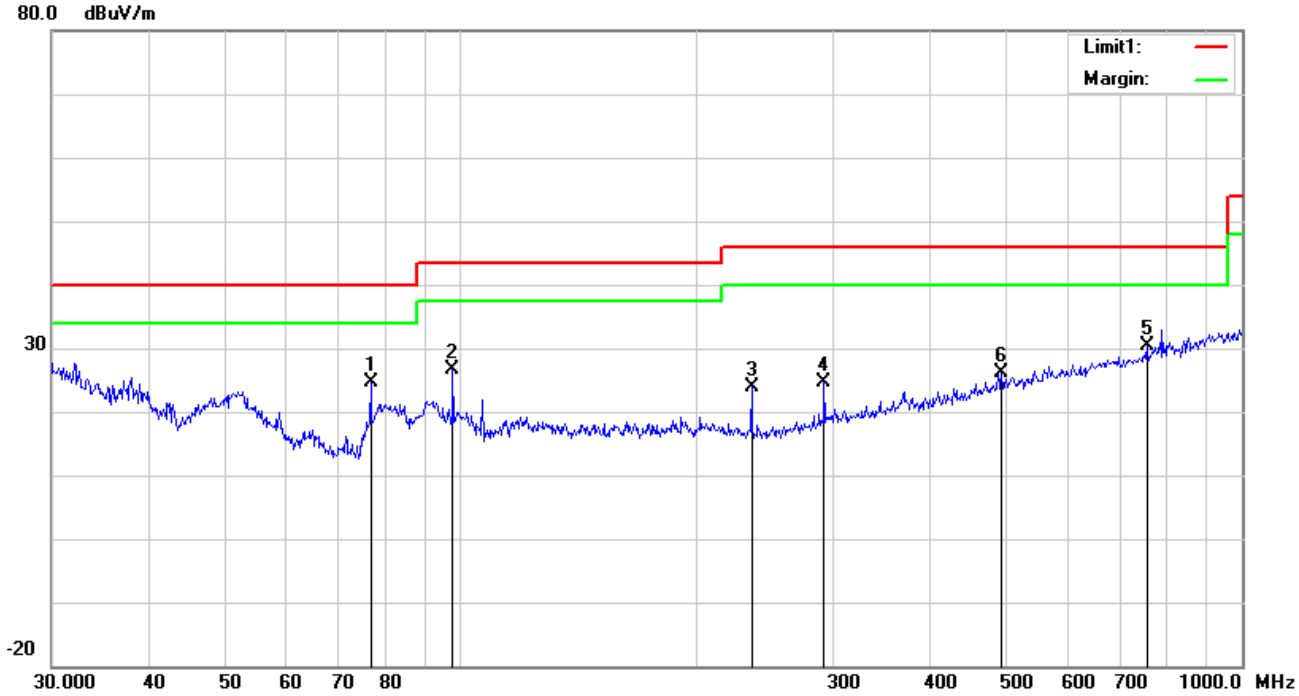


Test Data

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	38.3462	28.85	peak	15.11	22.27	0.78	22.47	40.00	-17.53	100	169
2	H	64.2075	27.41	peak	7.51	22.40	0.86	13.38	40.00	-26.62	100	276
3	H	102.7192	29.94	peak	10.88	22.33	1.13	19.62	43.50	-23.88	100	230
4	H	135.0319	27.23	peak	12.92	22.40	1.24	18.99	43.50	-24.51	100	55
5	H	178.7584	27.53	peak	11.10	22.25	1.36	17.74	43.50	-25.76	100	250
6	H	349.2500	27.36	peak	14.63	22.15	2.04	21.88	46.00	-24.12	100	297

30MHz -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	76.7808	38.46	QP	7.66	22.41	0.99	24.70	40.00	-15.30	100	316
2	V	97.7983	38.03	peak	9.87	22.32	1.06	26.64	43.50	-16.86	100	193
3	V	235.8164	32.91	peak	11.60	22.32	1.65	23.84	46.00	-22.16	100	92
4	V	292.0583	31.82	peak	13.25	22.29	1.78	24.56	46.00	-21.44	100	353
5	V	755.3873	27.77	peak	20.86	21.24	2.88	30.27	46.00	-15.73	100	190
6	V	492.4685	27.96	peak	17.55	21.83	2.38	26.06	46.00	-19.94	100	303

Above 1GHz

Test Mode:	Transmitting Mode

Low Channel: GFSK Mode (Worst Case) (2402 MHz)

Frequency (MHz)	S.A. Reading (dBµV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
4804	49.28	AV	V	33.39	7.22	48.46	41.43	54	-12.57
4804	45.16	AV	H	33.39	7.22	48.46	37.31	54	-16.69
4804	69.47	PK	V	33.39	7.22	48.46	61.62	74	-12.38
4804	65.91	PK	H	33.39	7.22	48.46	58.06	74	-15.94
12495	19.02	AV	V	41.25	12.46	46.43	26.3	54	-27.7
12495	20.34	AV	H	41.25	12.46	46.43	27.62	54	-26.38
12495	41.23	PK	V	41.25	12.46	46.43	48.51	74	-25.49
12495	41.53	PK	H	41.25	12.46	46.43	48.81	74	-25.19

Middle Channel: GFSK Mode (Worst Case) (2441 MHz)

Frequency (MHz)	S.A. Reading (dBµV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
4882	46.09	AV	V	33.62	7.53	48.36	38.88	54	-15.12
4882	47.02	AV	H	33.62	7.53	48.36	39.81	54	-14.19
4882	70.36	PK	V	33.62	7.53	48.36	63.15	74	-10.85
4882	65.03	PK	H	33.62	7.53	48.36	57.82	74	-16.18
8023	29.05	AV	V	38.69	6.99	46.47	28.26	54	-25.74
8023	28.23	AV	H	38.69	6.99	46.47	27.44	54	-26.56
8023	46.21	PK	V	38.69	6.99	46.47	45.42	74	-28.58
8023	47.48	PK	H	38.69	6.99	46.47	46.69	74	-27.31

High Channel: GFSK Mode (Worst Case) (2480 MHz)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4960	42.34	AV	V	33.89	7.86	48.31	35.78	54	-18.22
4960	49.19	AV	H	33.89	7.86	48.31	42.63	54	-11.37
4960	65.75	PK	V	33.89	7.86	48.31	59.19	74	-14.81
4960	66.92	PK	H	33.89	7.86	48.31	60.36	74	-13.64
17769	19.49	AV	V	42.15	17.79	45.51	33.92	54	-20.08
17769	18.23	AV	H	42.15	17.79	45.51	32.66	54	-21.34
17769	39.18	PK	V	42.15	17.79	45.51	53.61	74	-20.39
17769	41.9	PK	H	42.15	17.79	45.51	56.33	74	-17.67

Note:

*1, The testing has been conformed to 10*2480MHz=24,800MHz*
2, All other emissions more than 30 dB below the limit
3, X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.
4, The radiated spurious test above 18GHz is subcontracted to SIEMIC (Nanjing-China) Laboratories. and found 30dB below the limit at least.

Annex A. TEST INSTRUMENT

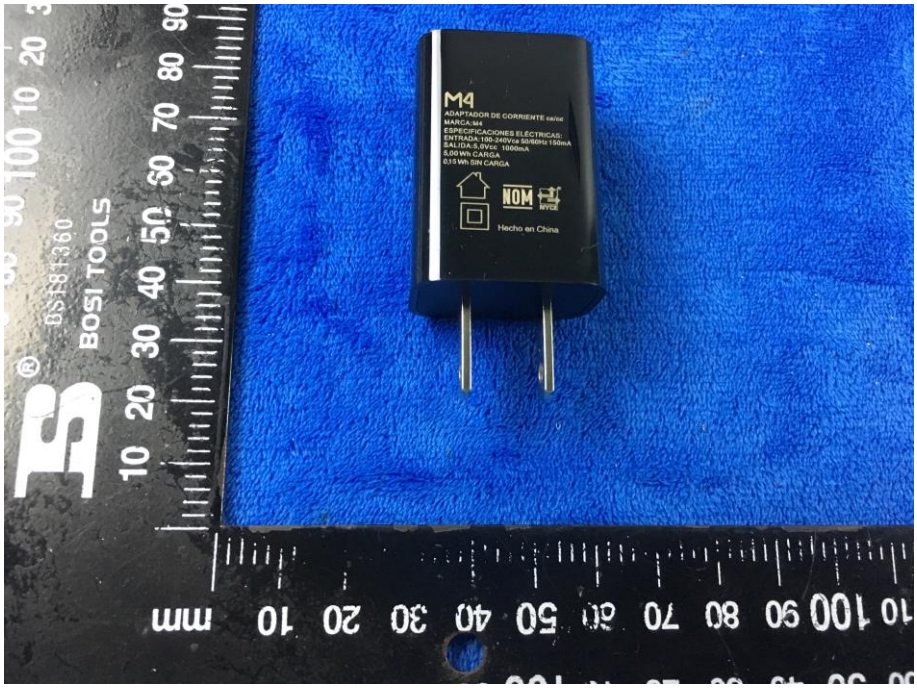
Instrument	Model	Serial #	Cal Date	Cal Due	In use
AC Line Conducted					
EMI test receiver	ESCS30	8471241027	09/15/2017	09/14/2018	☑
Line Impedance	LI-125A	191106	09/23/2017	09/22/2018	☑
Line Impedance	LI-125A	191107	09/23/2017	09/22/2018	☑
ISN	ISN T800	34373	09/23/2017	09/22/2018	☐
Transient Limiter	LIT-153	531118	08/30/2017	08/29/2018	☐
RF conducted test					
Agilent ESA-E SERIES	E4407B	MY45108319	09/15/2017	09/14/2018	☑
Power Splitter	1#	1#	08/30/2017	08/29/2018	☑
DC Power Supply	E3640A	MY40004013	09/15/2017	09/14/2018	☑
Radiated Emissions					
EMI test receiver	ESL6	100262	09/15/2017	09/14/2018	☑
Positioning Controller	UC3000	MF780208282	11/17/2017	11/16/2018	☑
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	08/30/2017	08/29/2018	☑
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/23/2017	03/22/2018	☑
Horn Antenna	BBHA9170	3145226D1	09/27/2017	09/26/2018	☑
Active Antenna (9kHz-30MHz)	AL-130	121031	10/12/2017	10/11/2018	☑
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/19/2017	09/18/2018	☑
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71283	09/22/2017	09/21/2018	☑
Universal Radio Communication Tester	CMU200	121393	09/23/2017	09/22/2018	☑

Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph: EUT External Photo

Whole Package View

Adapter - Lable View

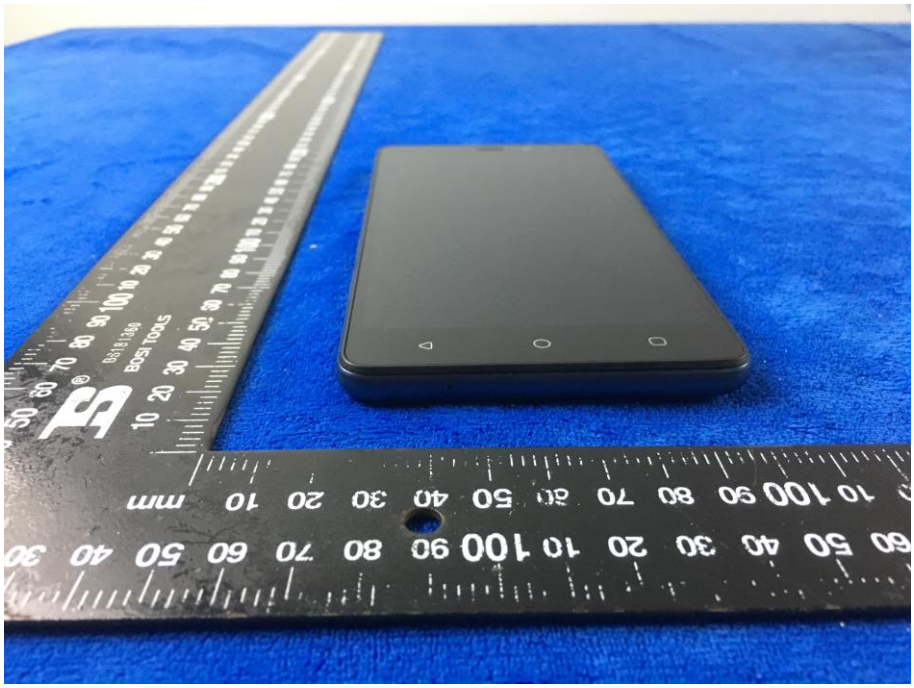


EUT - Front View

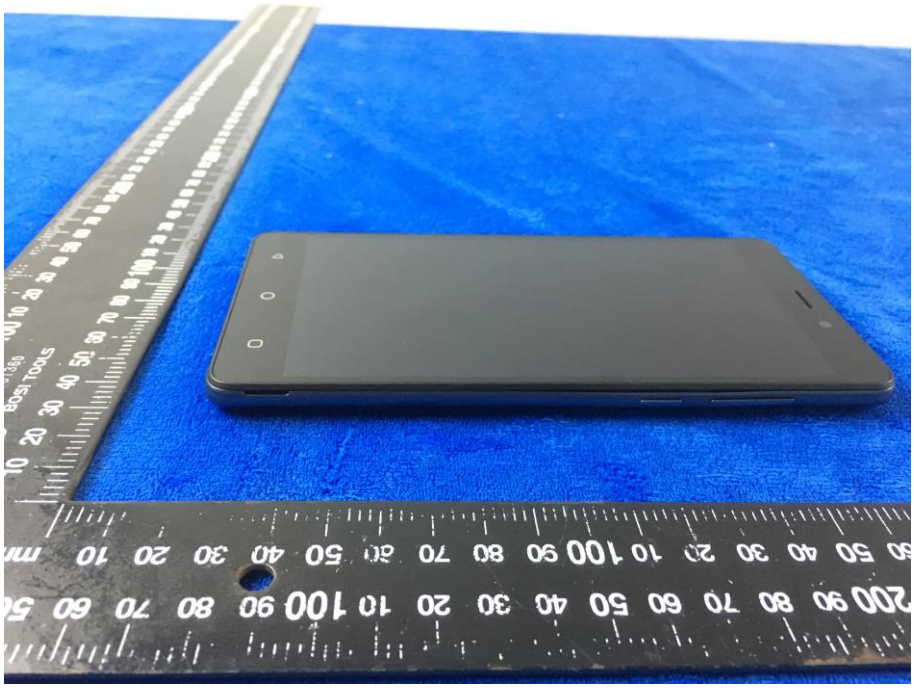
EUT - Rear View

EUT - Top View

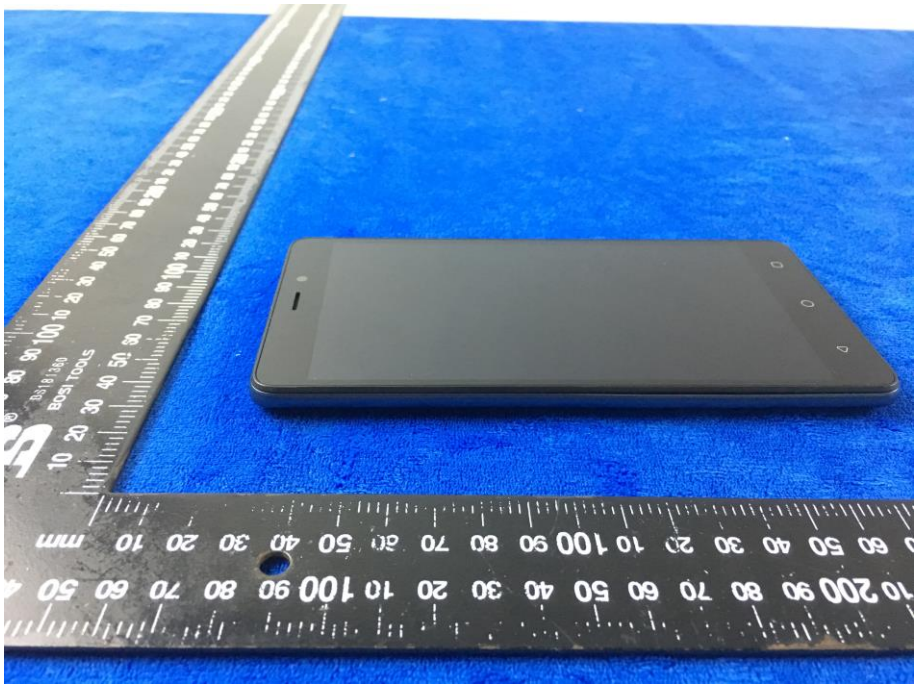
EUT - Bottom View



EUT - Left View



EUT - Right View



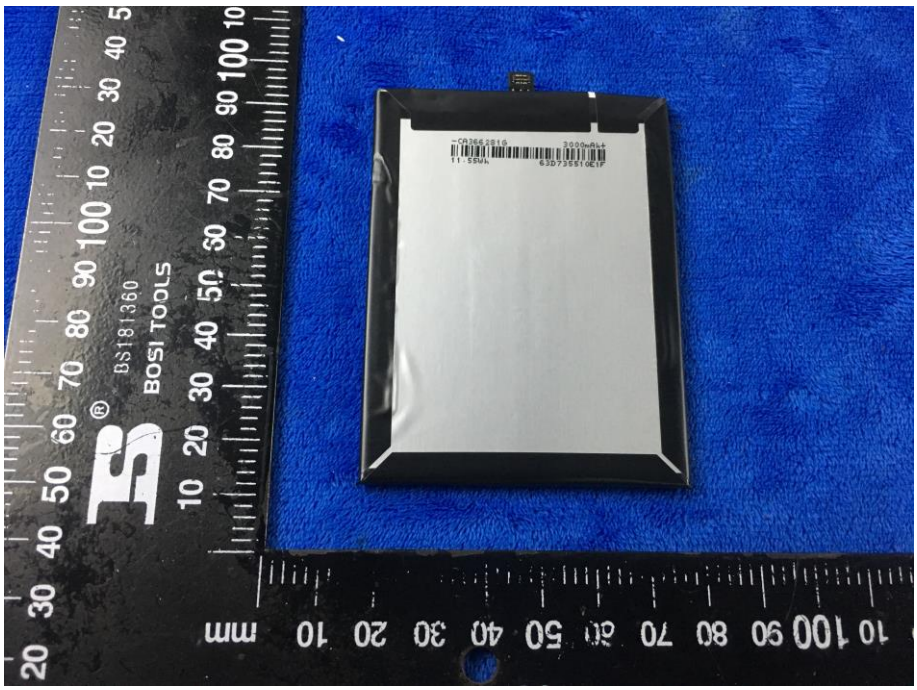
Annex B.ii. Photograph: EUT Internal Photo

Cover Off - Top View 1

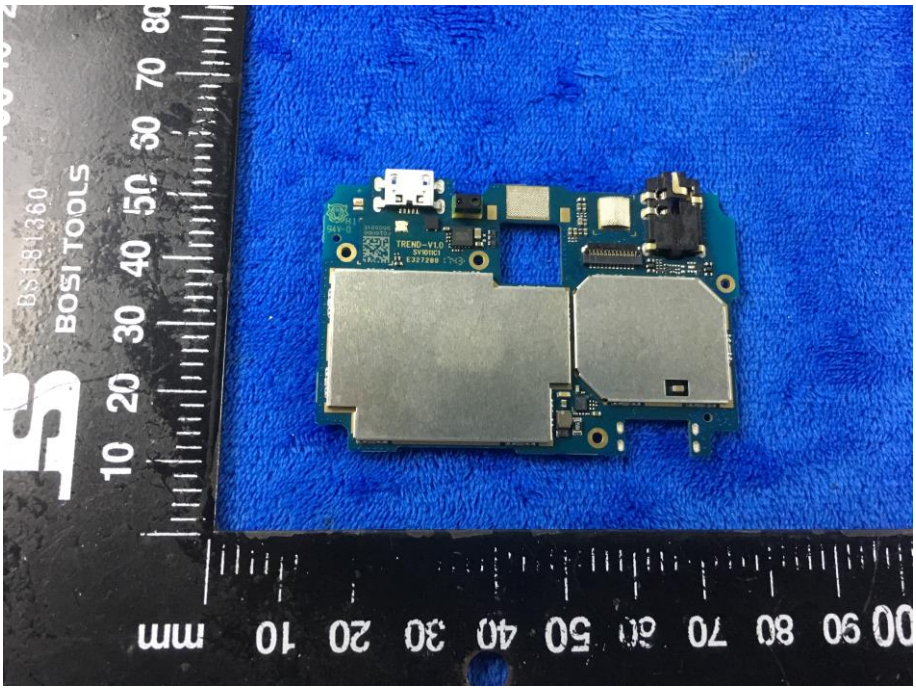
Cover Off - Top View 2

Battery - Front View

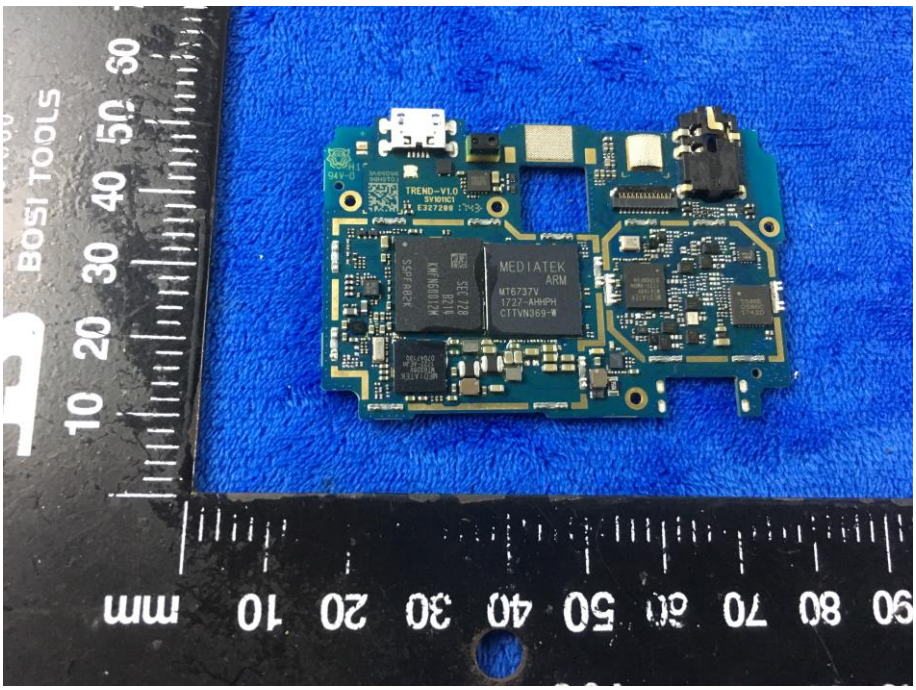
Battery - Rear View



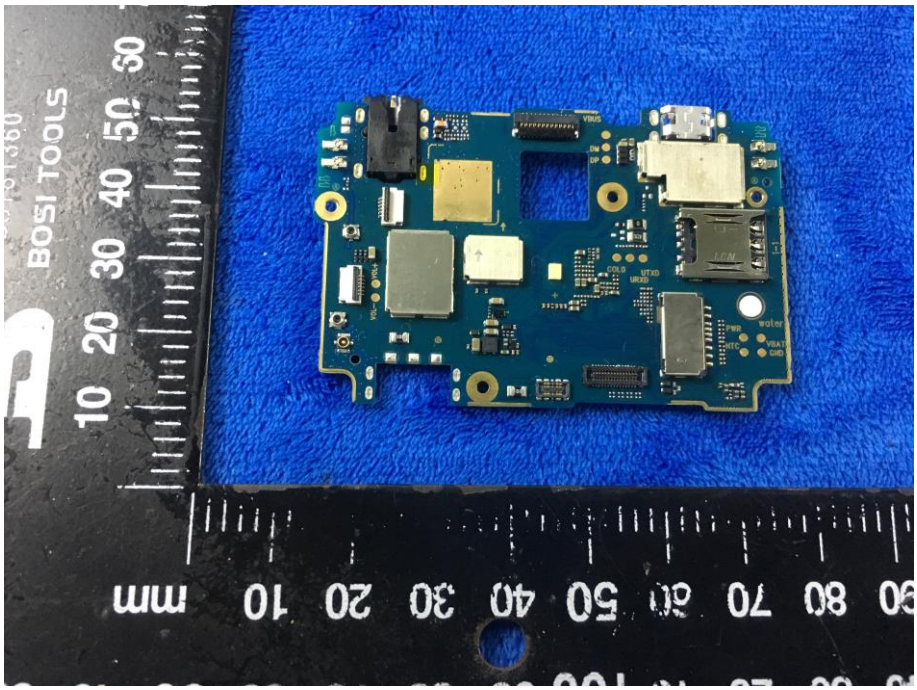
Mainboard with Shielding - Front View



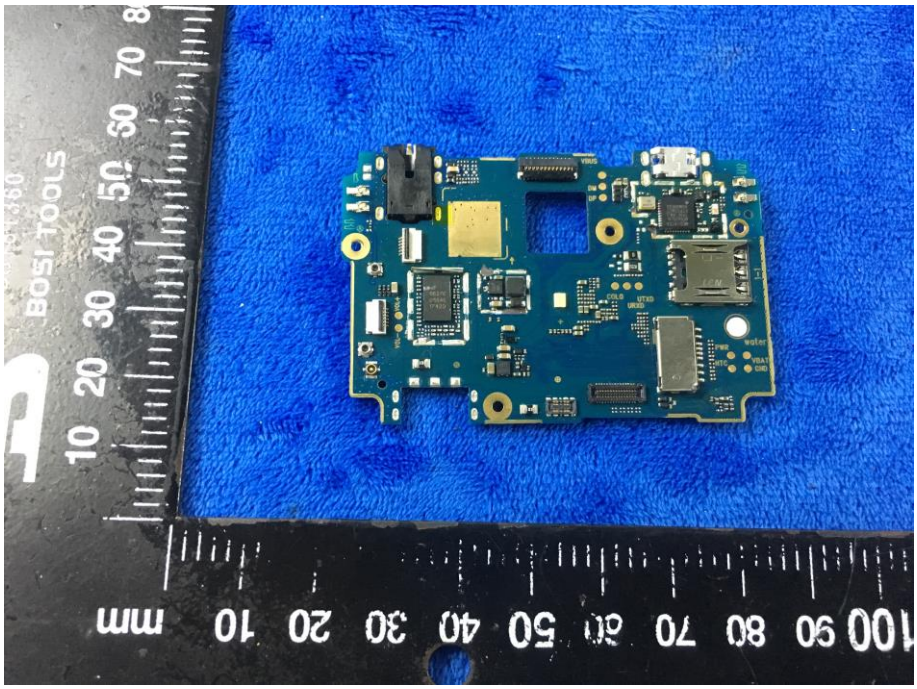
Mainboard with Shielding - Rear View



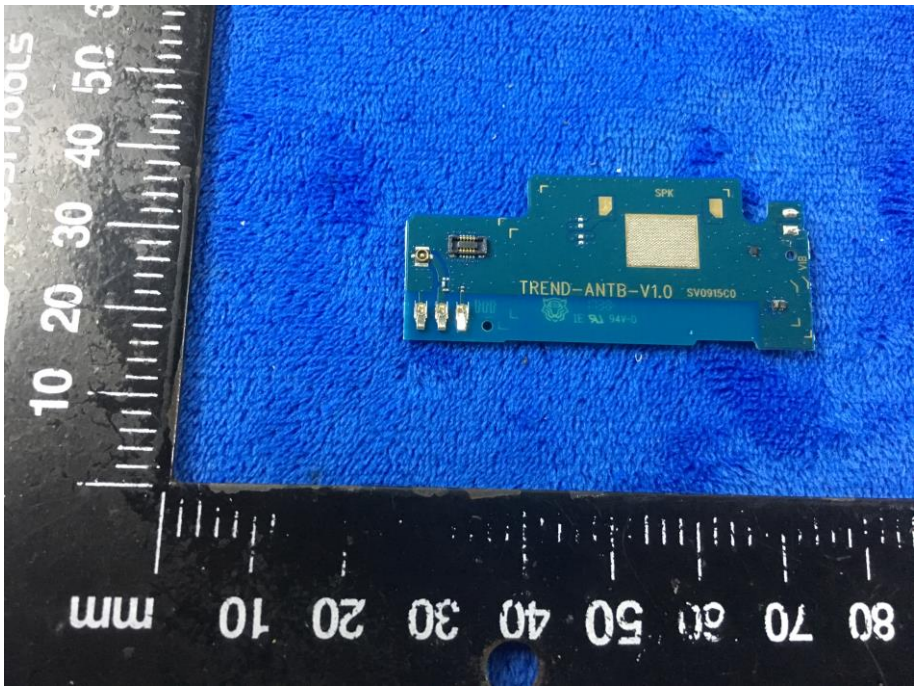
Mainboard without Shielding – Front View



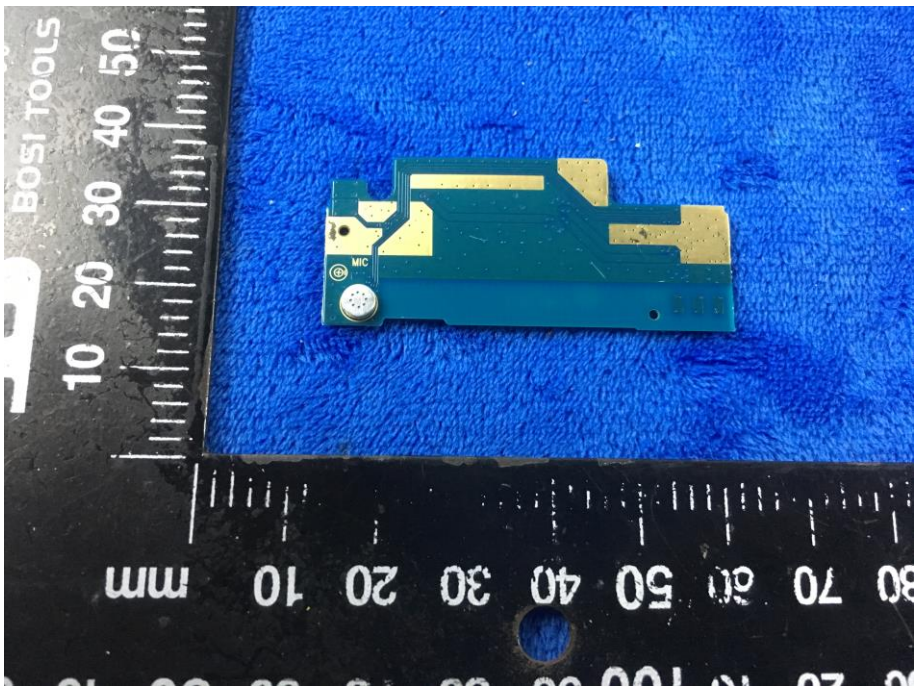
Mainboard without Shielding – Rear View



Smallboard – Front View



Smallboard – Rear View



LCD – Front View

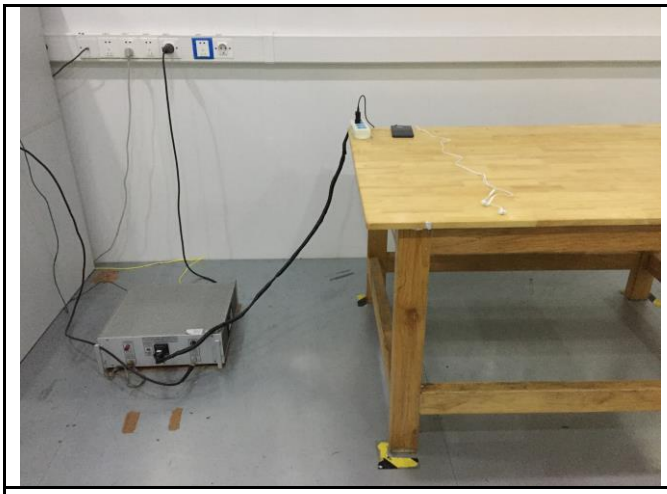
LCD – Rear View

GSM/PCS/UMTS-FDD/LTE Antenna View

WIFI/BT/BLE/GPS - Antenna View

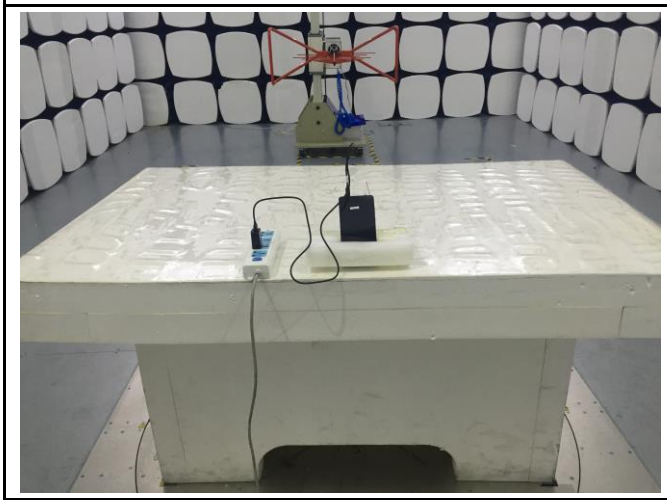
RXD- Antenna View

Annex B.iii. Photograph: Test Setup Photo

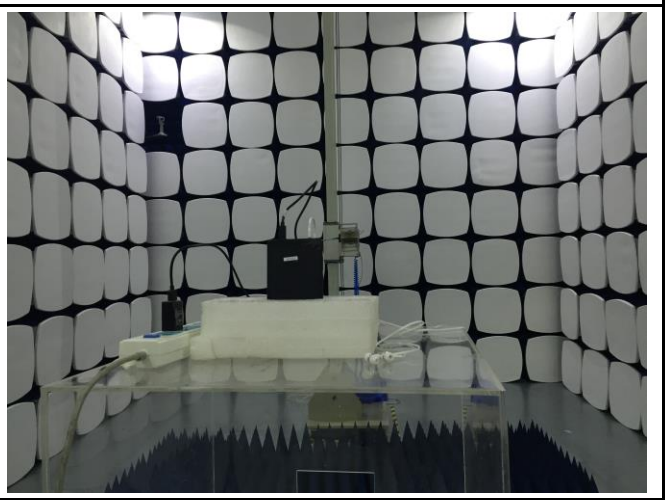


Conducted Emissions Test Setup Front View

Conducted Emissions Test Setup Side View



Radiated Spurious Emissions Test Setup Below 1GHz

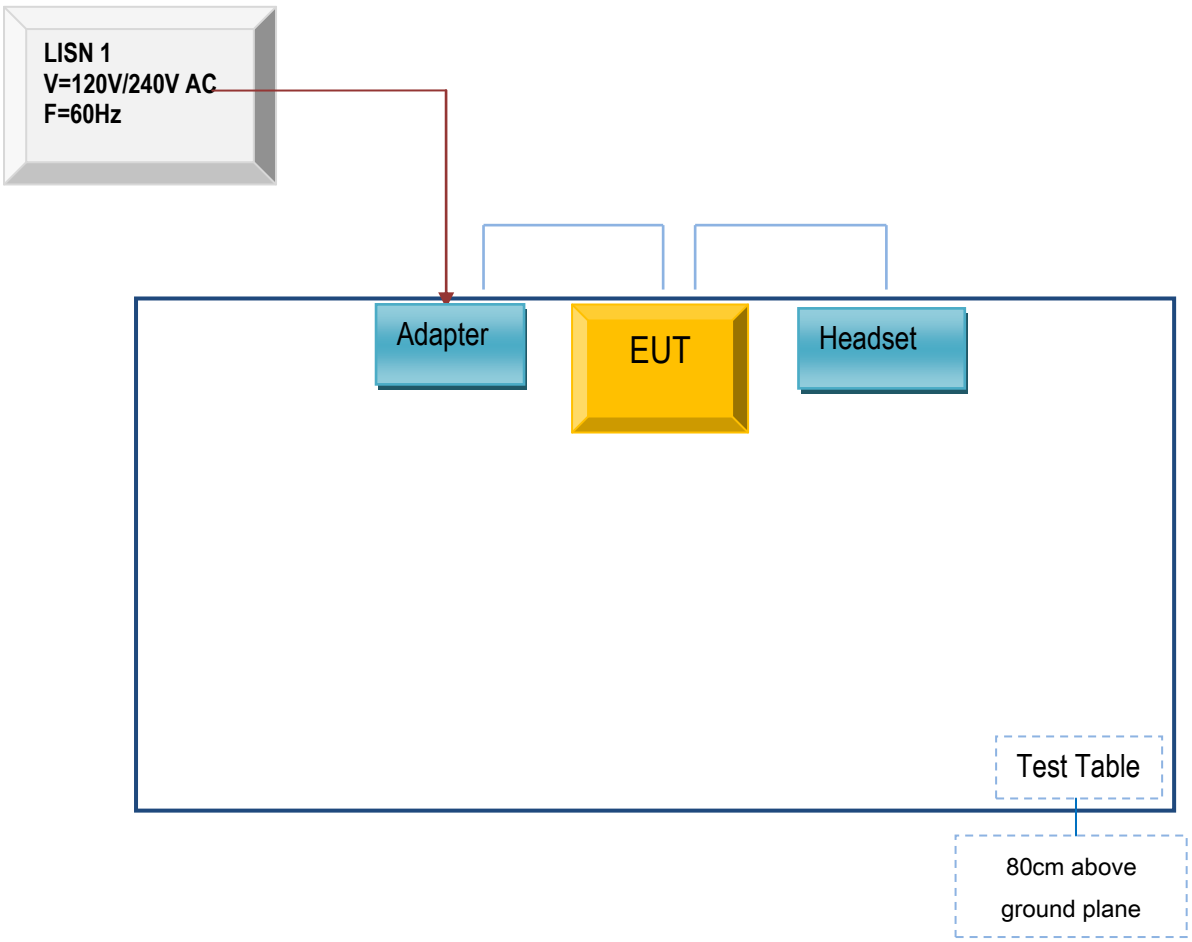


Radiated Spurious Emissions Test Setup Above 1GHz

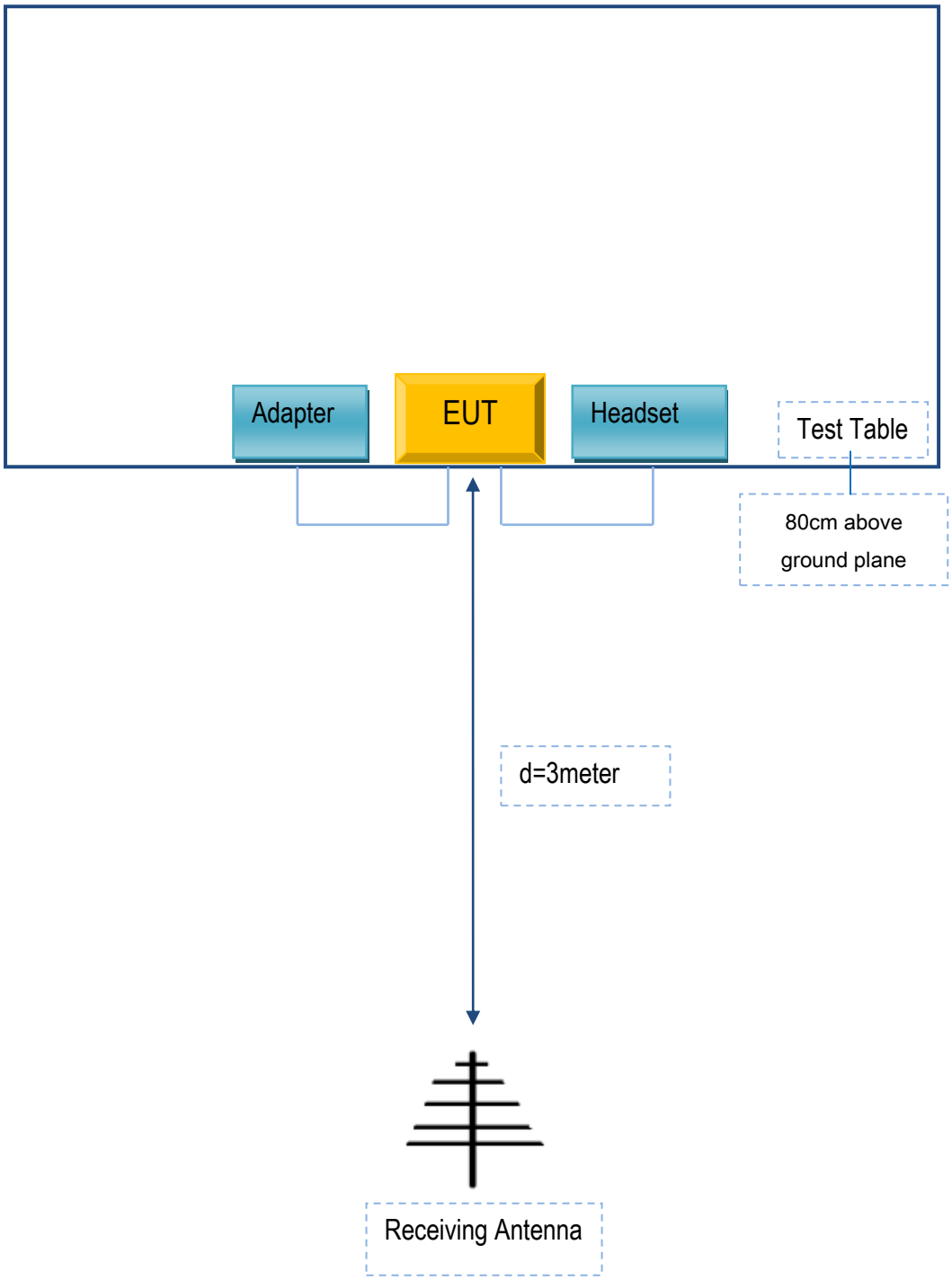
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

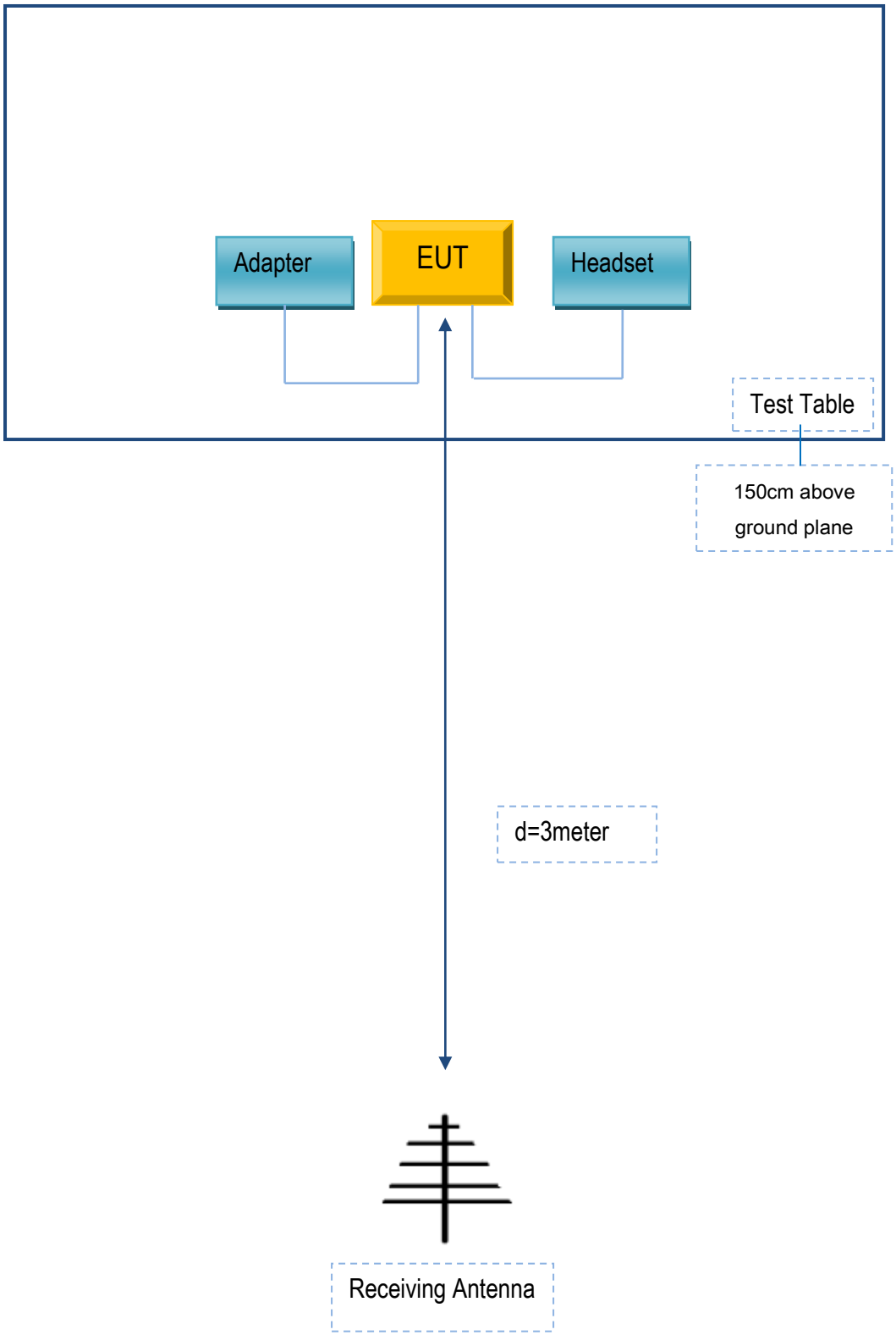
Block Configuration Diagram for AC Line Conducted Emissions



Block Configuration Diagram for Radiated Emissions （Below 1GHz）.



Block Configuration Diagram for Radiated Emissions （Above 1GHz）.



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
MFOURTEL MEXICO S.A. DE C.V.	Adapter	M4	N/A
MFOURTEL MEXICO S.A. DE C.V.	headset	M4	N/A

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
USB Cable	Un-shielding	No	0.8m	N/A

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

Please see the attachment

Annex E. DECLARATION OF SIMILARITY

N/A