

	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	Different RF configuration has been evaluated but not much difference was found. The data presented here is the worst case data with EUT under 802.11n – HT20-2437MHz mode.
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.	Detection	Factor	Reading	Result	Limit@3m	Margin
(MHz)	value	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
--	--	--	--	--	--	>20
--	--	--	--	--	--	>20

Note:

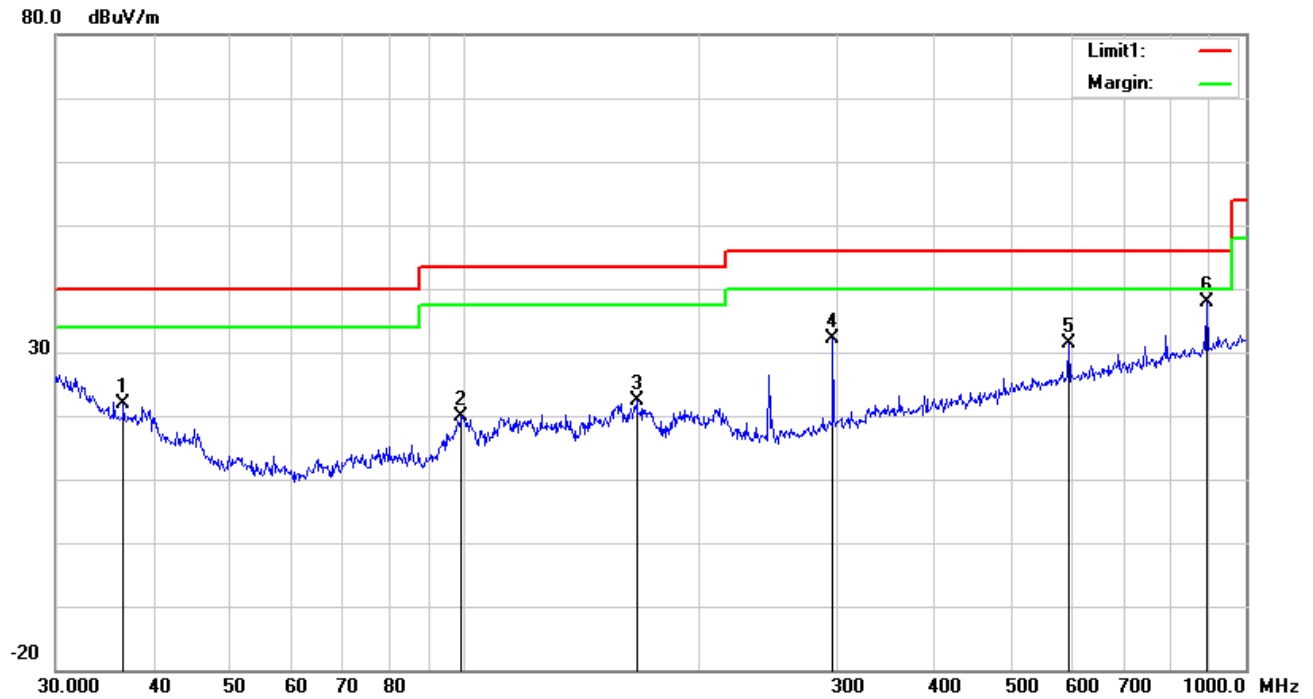
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance}/\text{test distance})$ (dB);

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

Test Mode: Transmitting Mode

30MHz -1GHz

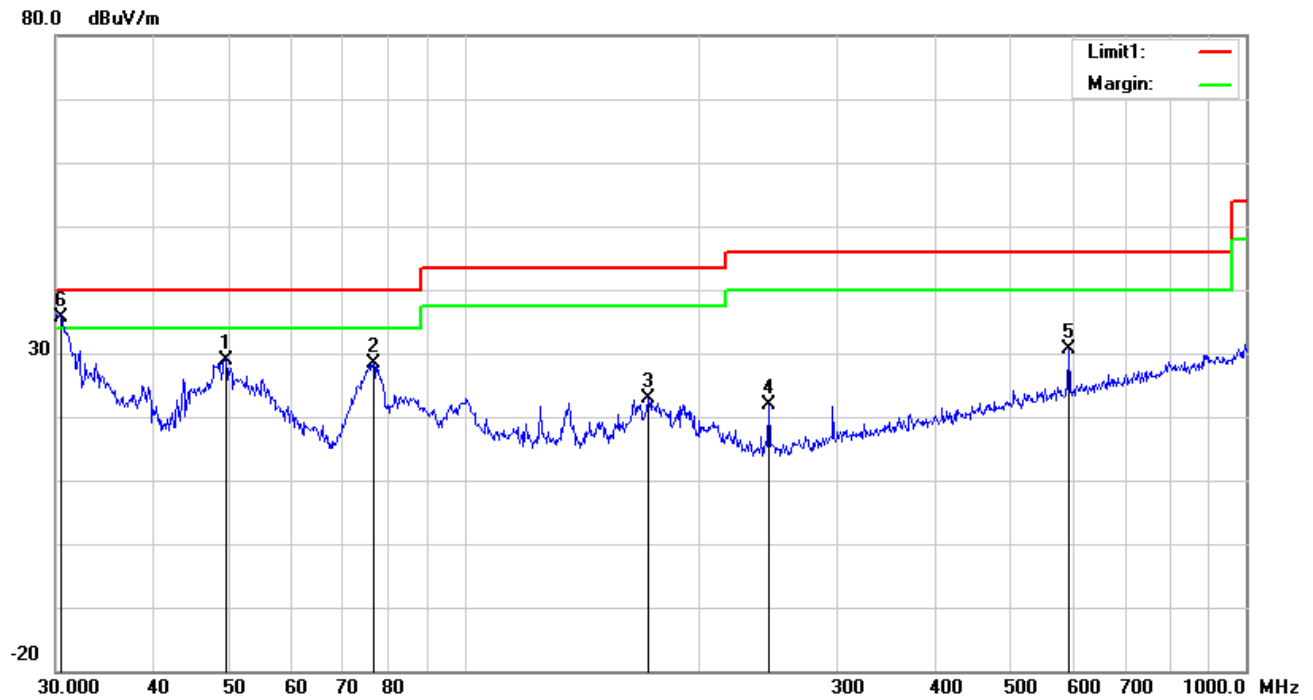


Test Data

Vertical Polarity Plot @3m

No.	P/L	Frequency	Reading	Detect or	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degr ee
		(MHz)	(dBuV/m)		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)
1	H	36.6375	26.90	peak	16.35	22.26	0.77	21.76	40.00	-18.24	100	235
2	H	99.1797	30.98	peak	10.20	22.32	1.10	19.96	43.50	-23.54	100	154
3	H	166.0680	31.17	peak	12.11	22.26	1.37	22.39	43.50	-21.11	100	16
4	H	296.1836	39.26	peak	13.43	22.29	1.78	32.18	46.00	-13.82	100	234
5	H	593.0497	31.56	peak	19.00	21.60	2.49	31.45	46.00	-14.55	100	266
6	H	890.7278	33.26	peak	22.40	20.91	3.03	37.78	46.00	-8.22	100	224

30MHz -1GHz



Test Data

Horizontal Polarity Plot @3m

N o.	P/ L	Frequency (MHz)	Reading (dBuV/m)	Detect or	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degr ee (°)
1	V	49.5328	41.91	peak	8.61	22.37	0.80	28.95	40.00	-11.05	100	75
2	V	76.5121	42.02	peak	7.67	22.41	0.99	28.27	40.00	-11.73	200	25
3	V	171.9946	32.06	peak	11.64	22.26	1.36	22.80	43.50	-20.70	100	92
4	V	245.0900	31.06	peak	11.47	22.30	1.68	21.91	46.00	-24.09	100	248
5	V	593.0497	30.77	peak	19.00	21.60	2.49	30.66	46.00	-15.34	100	197
6	V	30.5306	36.32	QP	20.99	22.28	0.63	35.66	40.00	-4.34	100	278

Above 1GHz

Test Mode:	Transmitting Mode
------------	-------------------

Low Channel (2412 MHz) (b mode worst case)

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)
4824	46.32	AV	V	33.39	7.22	48.46	38.47	54	-15.53
4824	44.29	AV	H	33.39	7.22	48.46	36.44	54	-17.56
4824	65.1	PK	V	33.39	7.22	48.46	57.25	74	-16.75
4824	66.92	PK	H	33.39	7.22	48.46	59.07	74	-14.93
8930	37.87	AV	V	38.17	9.16	48.91	36.29	54	-17.71
8930	34.42	AV	H	38.17	9.16	48.91	32.84	54	-21.16
8930	53.54	PK	V	38.17	9.16	48.91	51.96	74	-22.04
8930	57.67	PK	H	38.17	9.16	48.91	56.09	74	-17.91

Middle Channel (2437 MHz) (b mode worst case)

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)
4874	43.79	AV	V	33.62	7.53	48.36	36.58	54	-17.42
4874	47.78	AV	H	33.62	7.53	48.36	40.57	54	-13.43
4874	65.82	PK	V	33.62	7.53	48.36	58.61	74	-15.39
4874	66.78	PK	H	33.62	7.53	48.36	59.57	74	-14.43
10471	28.43	AV	V	39.92	12.5	47.01	33.84	54	-20.16
10471	25	AV	H	39.92	12.5	47.01	30.41	54	-23.59
10471	45.63	PK	V	39.92	12.5	47.01	51.04	74	-22.96
10471	46.45	PK	H	39.92	12.5	47.01	51.86	74	-22.14

High Channel (2462 MHz) (b mode worst case)

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)
4924	49.12	AV	V	33.74	7.78	48.34	42.3	54	-11.7
4924	45.73	AV	H	33.74	7.78	48.34	38.91	54	-15.09
4924	70.37	PK	V	33.74	7.78	48.34	63.55	74	-10.45
4924	68.84	PK	H	33.74	7.78	48.34	62.02	74	-11.98
17812	22.29	AV	V	41.9	17.04	46.25	34.98	54	-19.02
17812	19.19	AV	H	41.9	17.04	46.25	31.88	54	-22.12
17812	41.52	PK	V	41.9	17.04	46.25	54.21	74	-19.79
17812	43.6	PK	H	41.9	17.04	46.25	56.29	74	-17.71

Note:

- 1, The testing has been conformed to $10 \times 2462 \text{ MHz} = 24,620 \text{ MHz}$
- 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	03/22/2018	03/21/2019	☒
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	☒

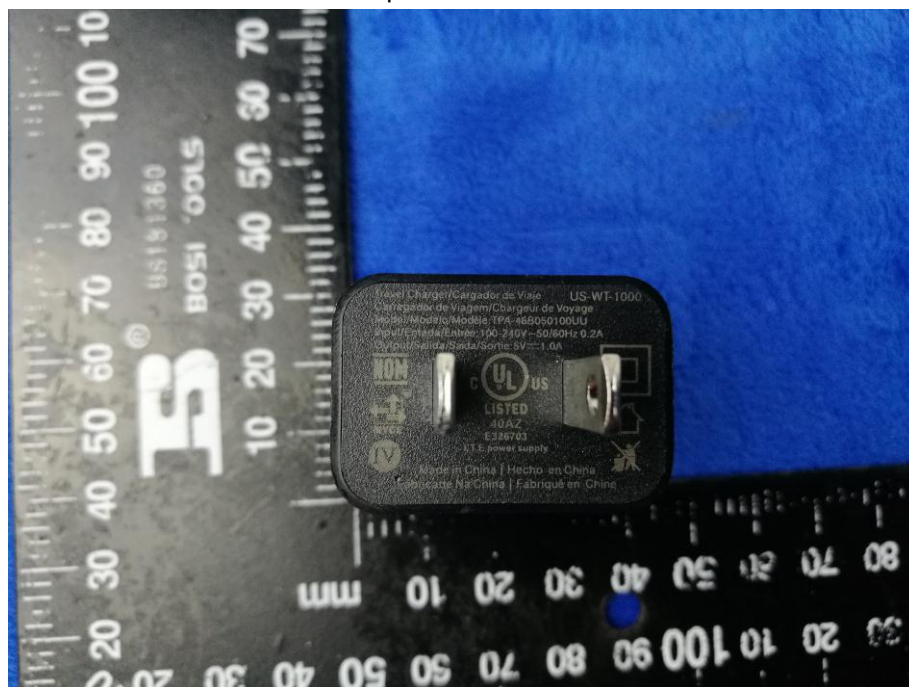
Annex B. EUT and Test Setup Photographs

Annex B.i. Photograph: EUT External Photo

Whole Package View



Adapter - Label View



EUT - Front View



EUT - Rear View



EUT - Top View



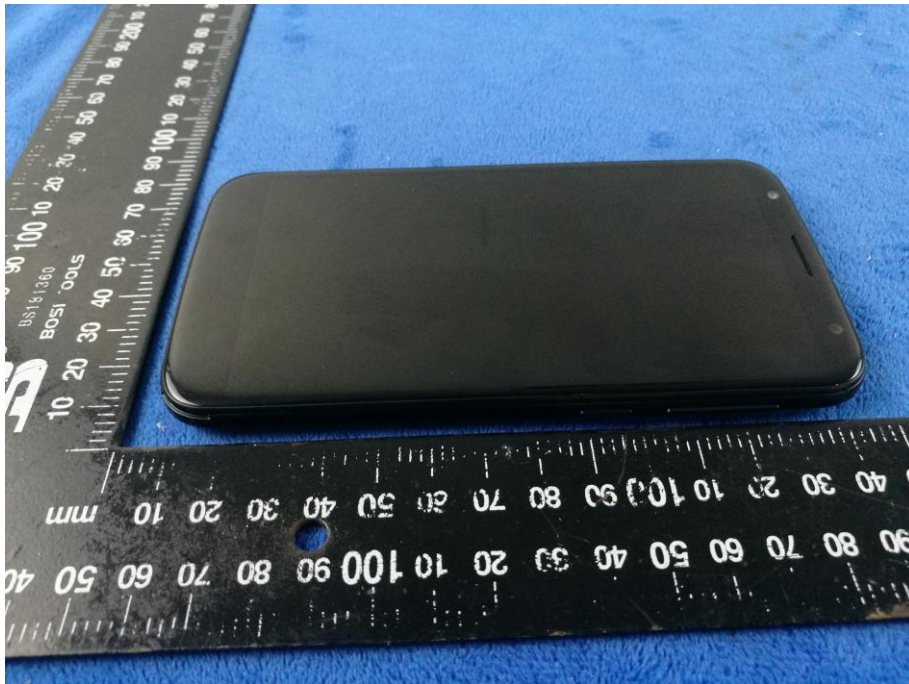
EUT - Bottom View



EUT - Left View



EUT - Right View



Annex B.ii. Photograph: EUT Internal Photo

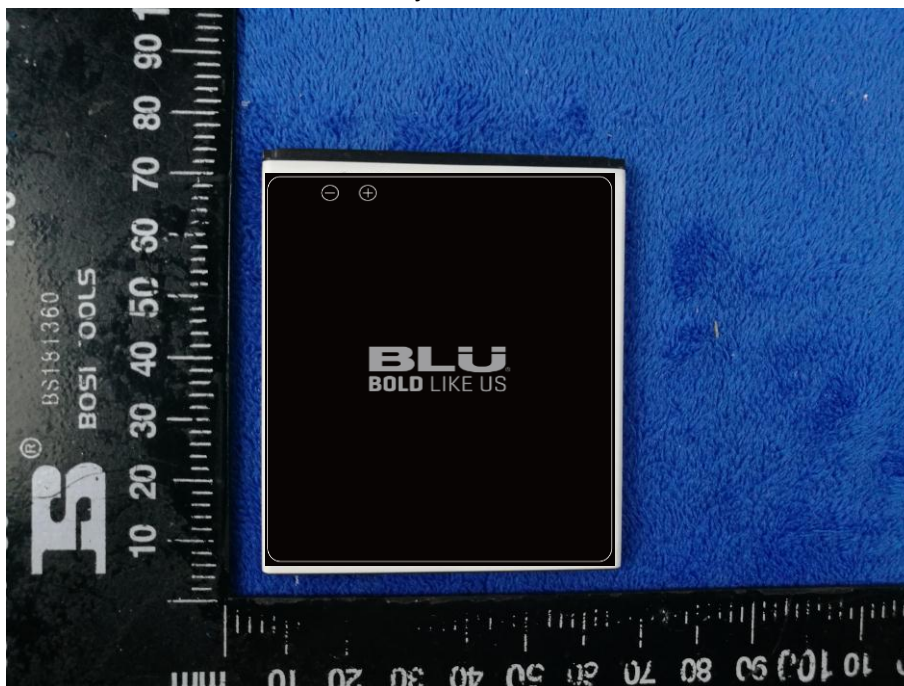
Cover Off - Top View 1



Cover Off - Top View 2



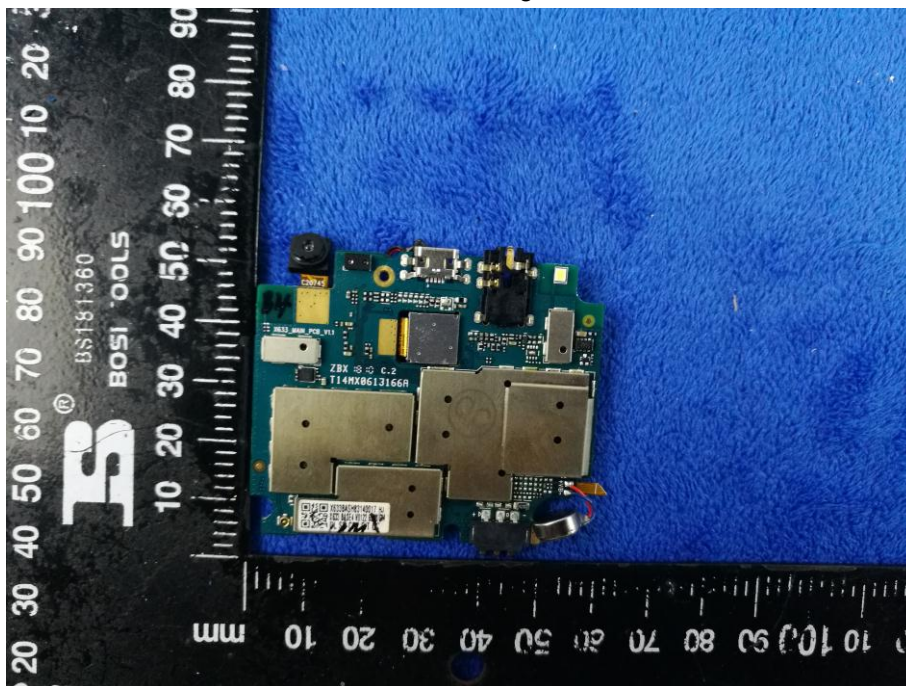
Battery - Front View



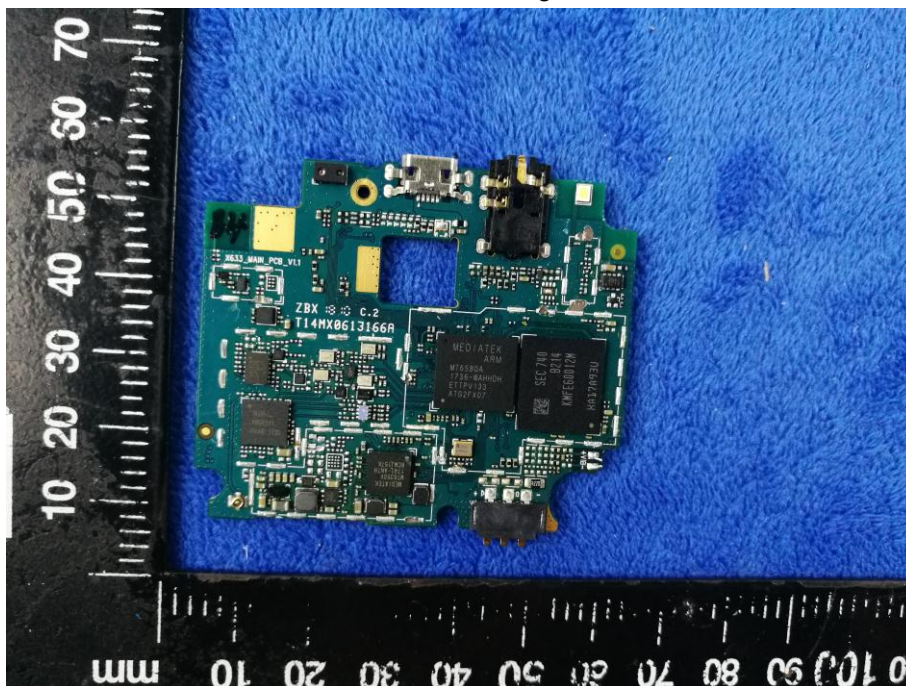
Battery - Rear View



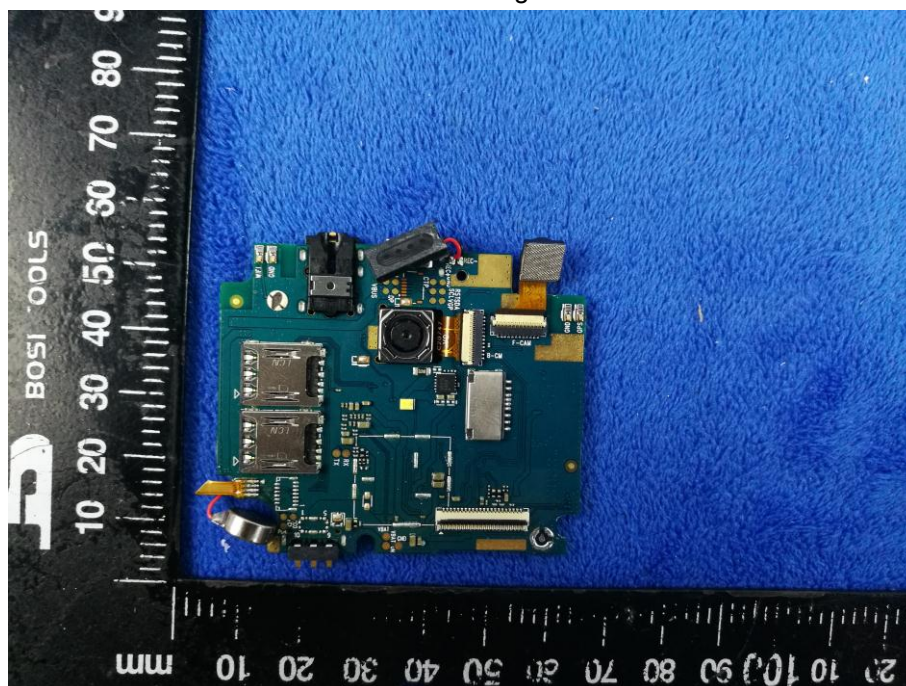
Mainboard with Shielding - Front View



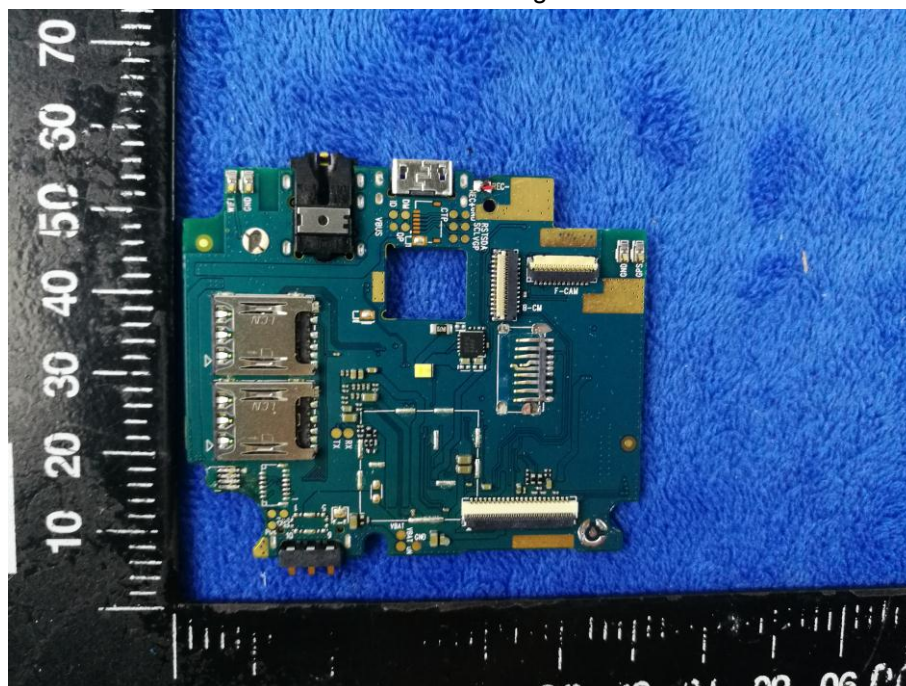
Mainboard without Shielding - Front View



Mainboard with Shielding – Rear View



Mainboard without Shielding – Rear View



LCD – Front View



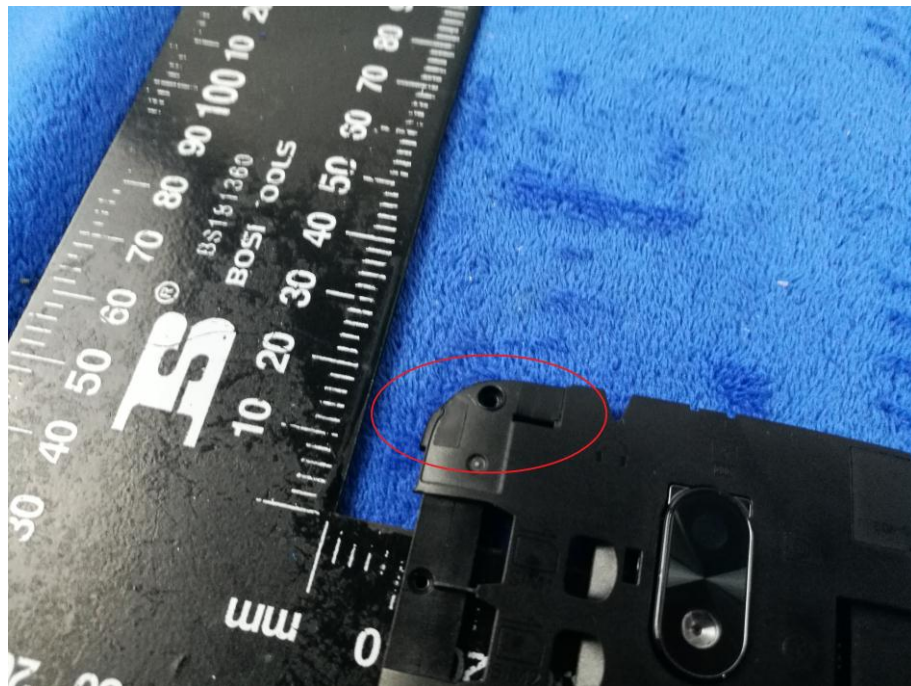
LCD – Rear View



GSM/PCS/UMTS-FDD Antenna View



WIFI/BT/BLE/GPS - Antenna View



RXD - Antenna View



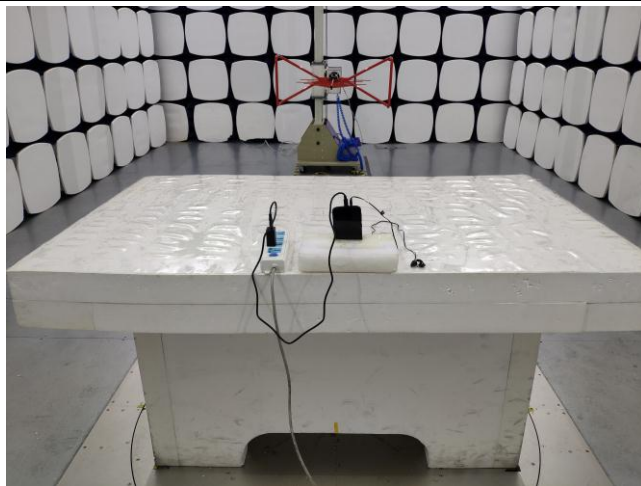
Annex B.iii. Photograph: Test Setup Photo



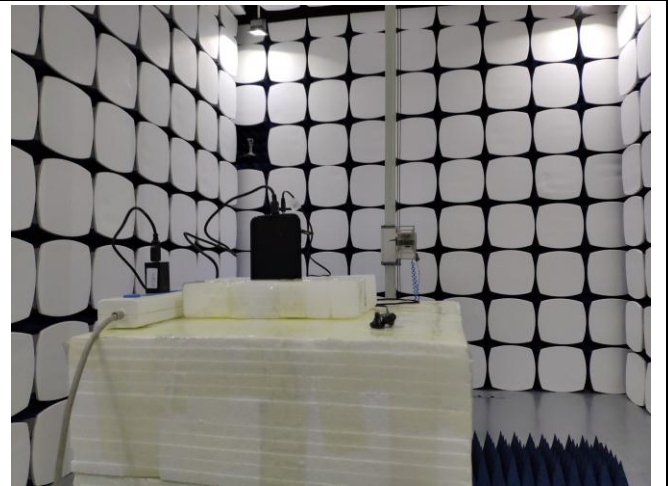
Conducted Emissions Test Setup Front View



Conducted Emissions Test Setup Side View



Radiated Spurious Emissions Test Setup Below 1GHz

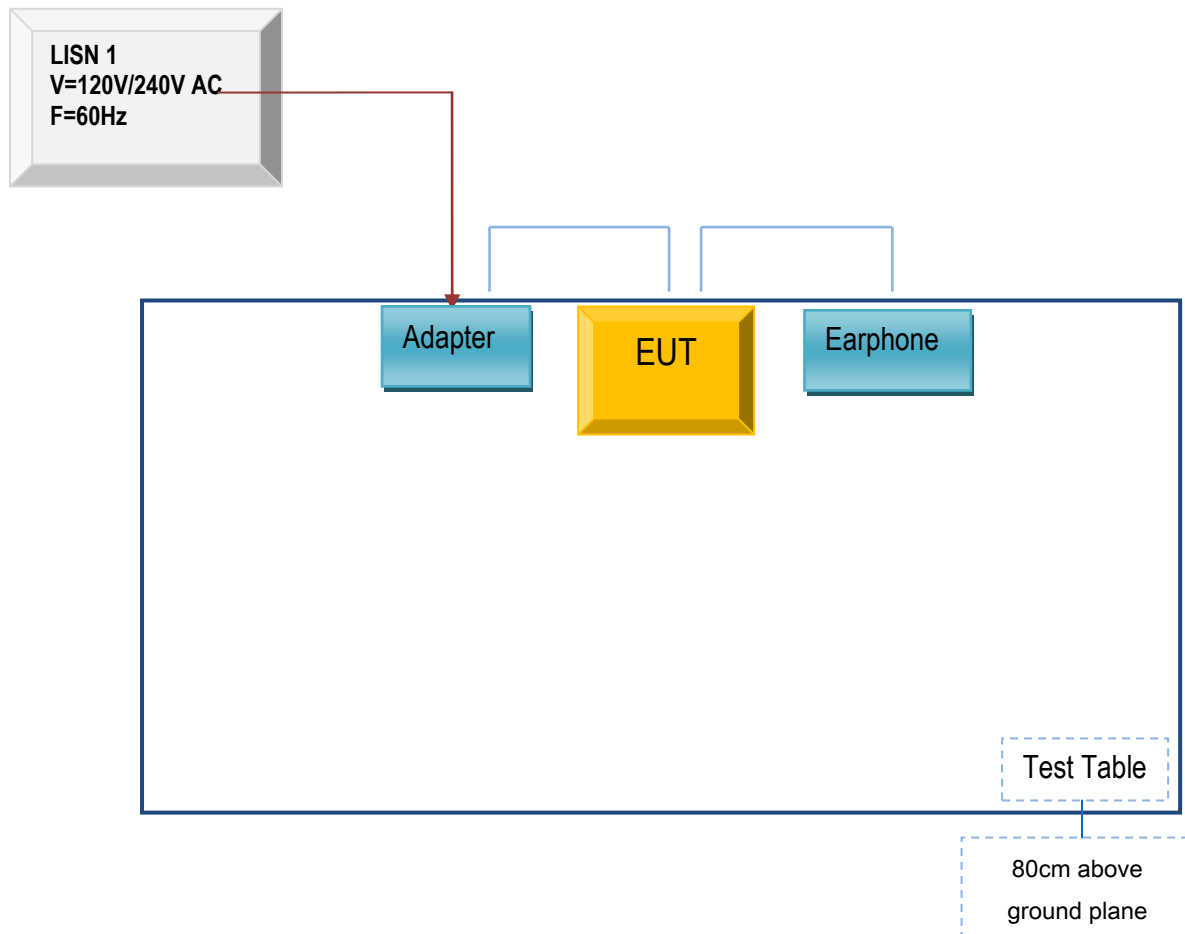


Radiated Spurious Emissions Test Setup Above
1GHz

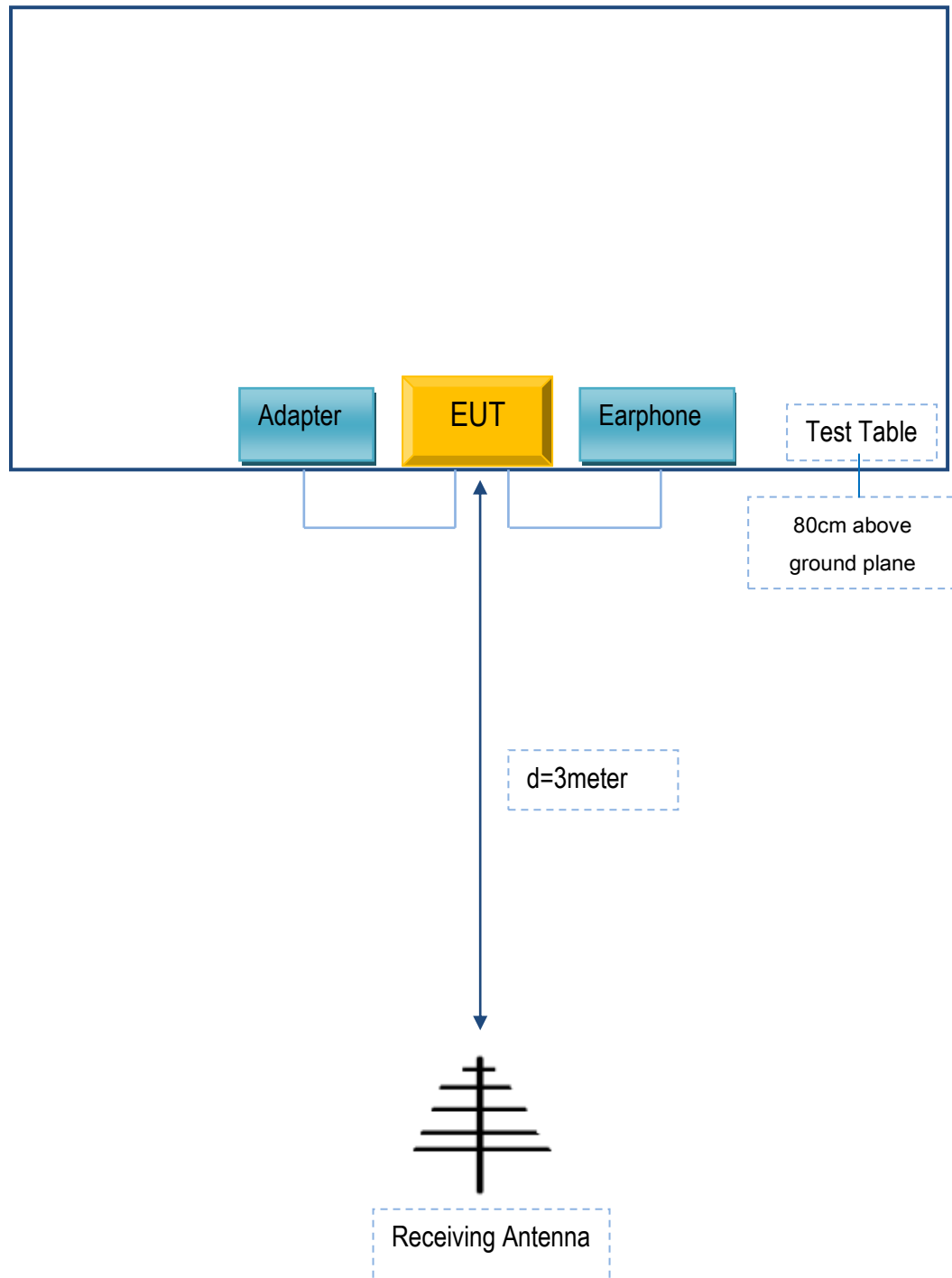
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

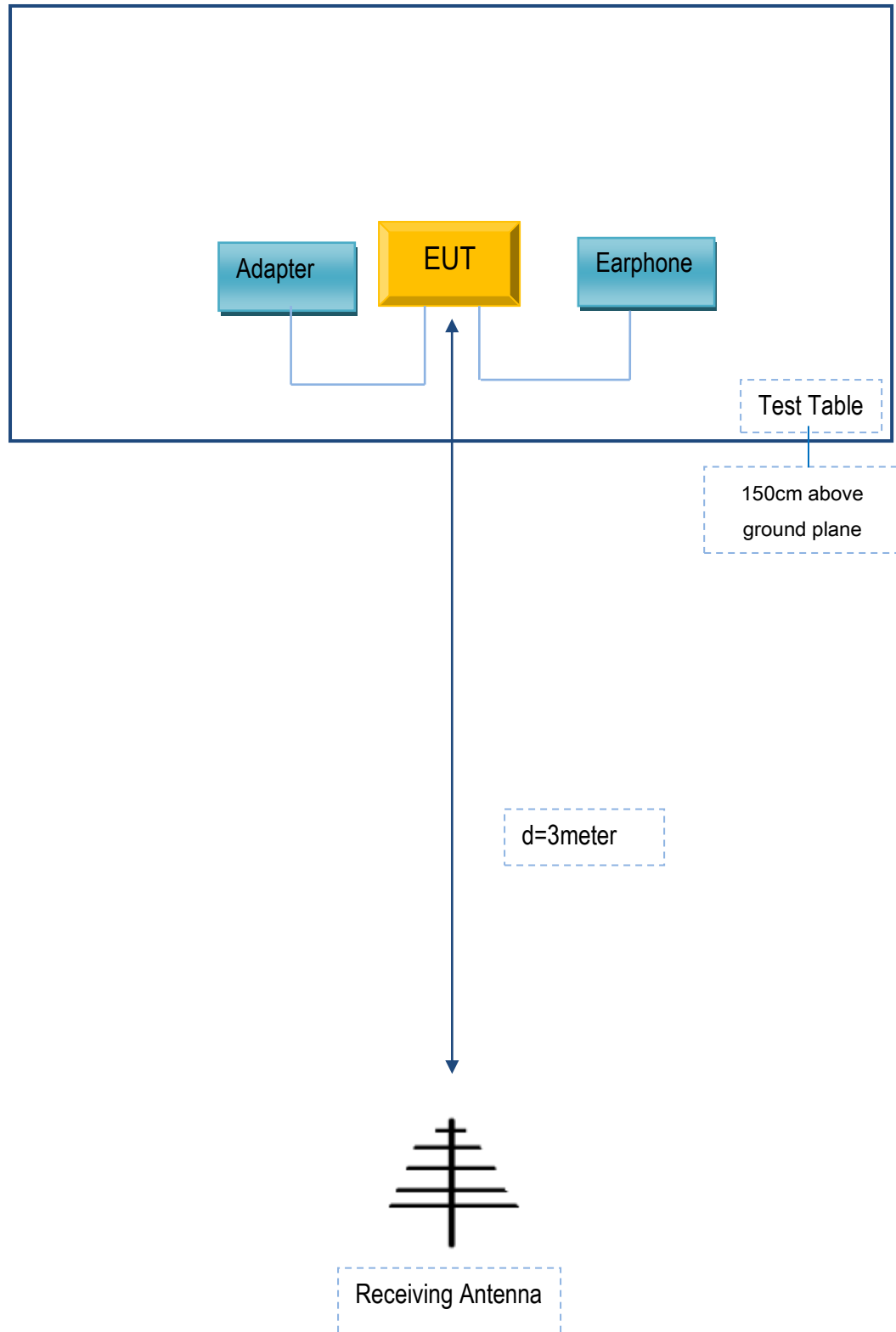
Block Configuration Diagram for AC Line Conducted Emissions



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



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



Annex C. 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
BLU Products, Inc.	Adapter	TPA-46B050100UU	N/A
N/A	Earphone	N/A	N/A

Supporting Cable:

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

Test Report No.	18070322-FCC-R2
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Annex D. User Manual / Block Diagram / Schematics / Partlist

Please see the attachment

Annex E. DECLARATION OF SIMILARITY

N/A