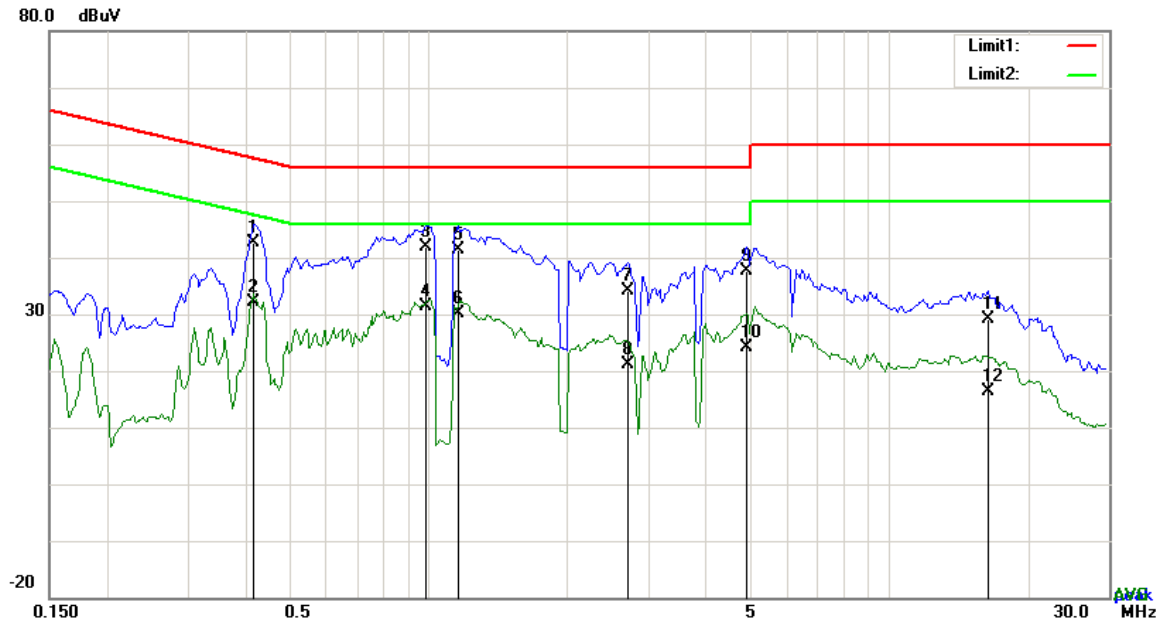


Test Mode: Transmitting Mode

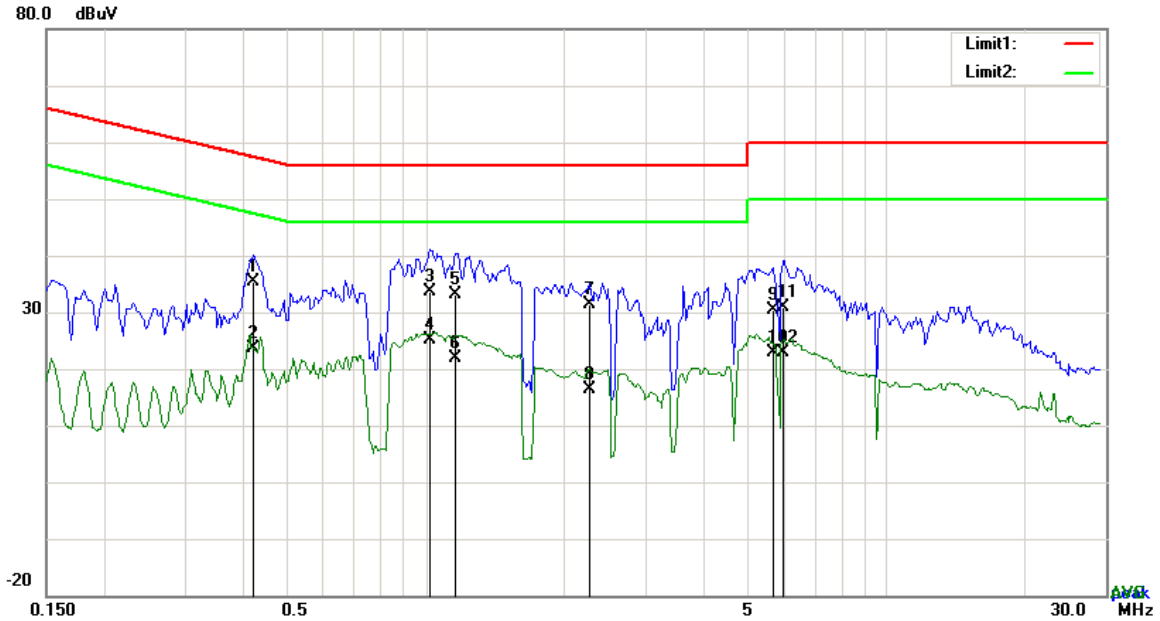


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
1	L1	0.4191	32.50	QP	10.03	42.53	57.47	-14.94
2	L1	0.4191	22.02	AVG	10.03	32.05	47.47	-15.42
3	L1	0.9846	31.76	QP	10.03	41.79	56.00	-14.21
4	L1	0.9846	21.38	AVG	10.03	31.41	46.00	-14.59
5	L1	1.1640	31.44	QP	10.03	41.47	56.00	-14.53
6	L1	1.1640	20.15	AVG	10.03	30.18	46.00	-15.82
7	L1	2.7162	24.04	QP	10.05	34.09	56.00	-21.91
8	L1	2.7162	11.02	AVG	10.05	21.07	46.00	-24.93
9	L1	4.9227	27.47	QP	10.08	37.55	56.00	-18.45
10	L1	4.9227	14.08	AVG	10.08	24.16	46.00	-21.84
11	L1	16.4394	18.94	QP	10.25	29.19	60.00	-30.81
12	L1	16.4394	6.07	AVG	10.25	16.32	50.00	-33.68

Test Mode: Transmitting Mode

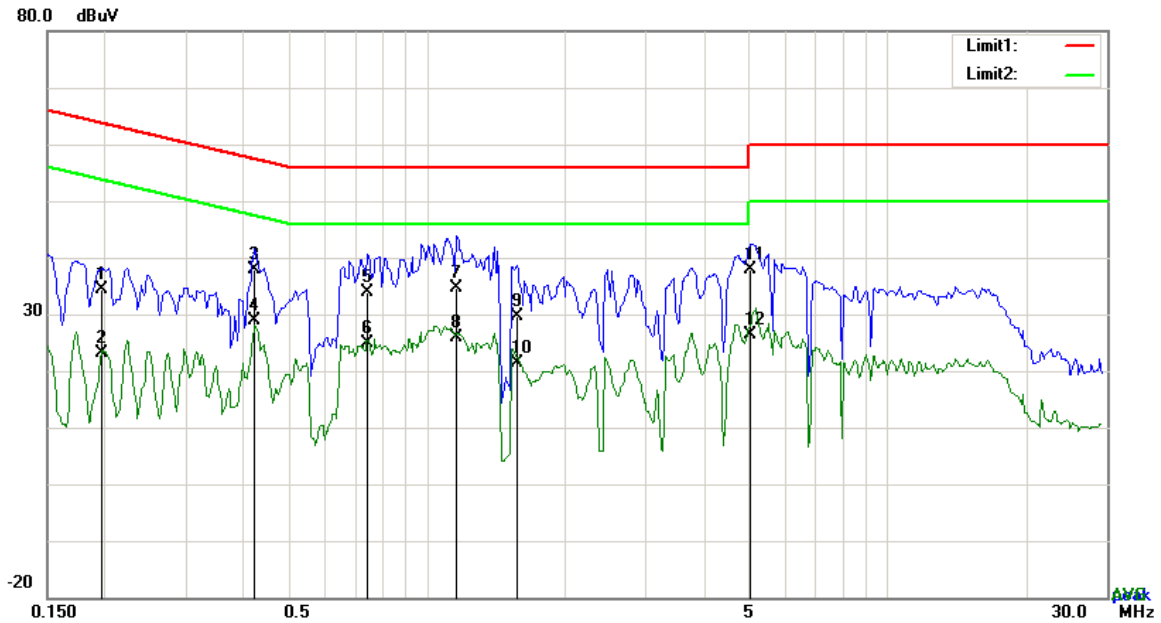


Test Data

Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
1	N	0.4230	25.46	QP	10.02	35.48	57.39	-21.91
2	N	0.4230	13.53	AVG	10.02	23.55	47.39	-23.84
3	N	1.0236	23.58	QP	10.03	33.61	56.00	-22.39
4	N	1.0236	15.06	AVG	10.03	25.09	46.00	-20.91
5	N	1.1601	22.98	QP	10.03	33.01	56.00	-22.99
6	N	1.1601	11.81	AVG	10.03	21.84	46.00	-24.16
7	N	2.2677	21.22	QP	10.04	31.26	56.00	-24.74
8	N	2.2677	6.28	AVG	10.04	16.32	46.00	-29.68
9	N	5.6871	20.31	QP	10.08	30.39	60.00	-29.61
10	N	5.6871	12.72	AVG	10.08	22.80	50.00	-27.20
11	N	5.9796	20.82	QP	10.08	30.90	60.00	-29.10
12	N	5.9796	12.72	AVG	10.08	22.80	50.00	-27.20

Test Mode: Transmitting Mode

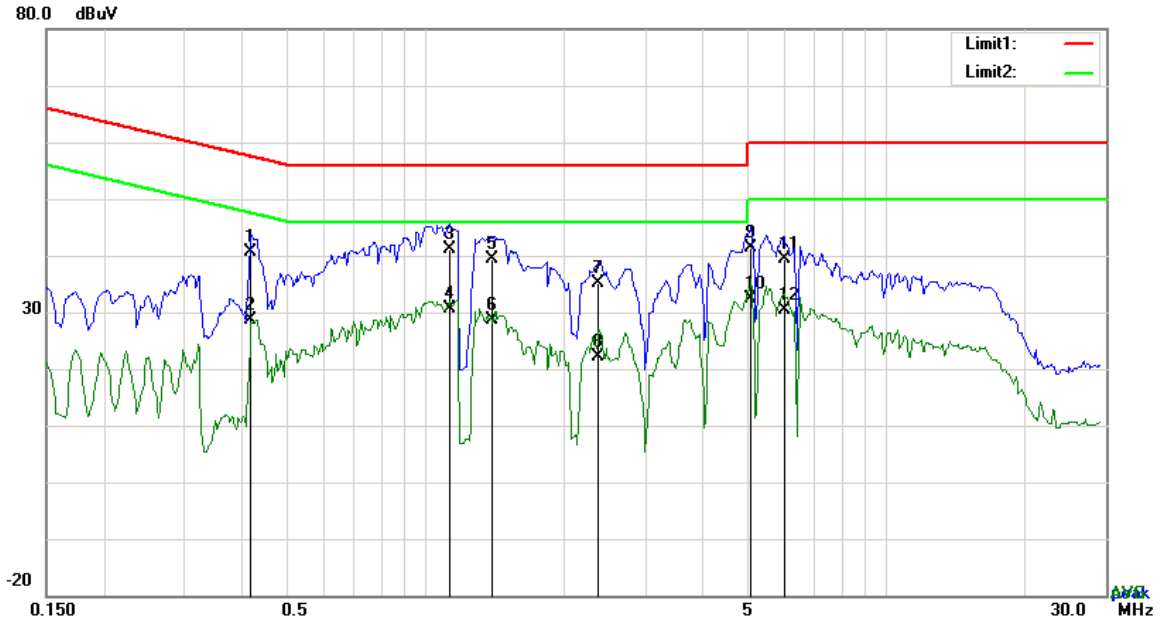


Test Data

Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
1	L1	0.1968	24.33	QP	10.03	34.36	63.74	-29.38
2	L1	0.1968	13.02	AVG	10.03	23.05	53.74	-30.69
3	L1	0.4230	27.74	QP	10.03	37.77	57.39	-19.62
4	L1	0.4230	18.84	AVG	10.03	28.87	47.39	-18.52
5	L1	0.7467	23.97	QP	10.03	34.00	56.00	-22.00
6	L1	0.7467	14.78	AVG	10.03	24.81	46.00	-21.19
7	L1	1.1640	24.57	QP	10.03	34.60	56.00	-21.40
8	L1	1.1640	15.96	AVG	10.03	25.99	46.00	-20.01
9	L1	1.5735	19.59	QP	10.04	29.63	56.00	-26.37
10	L1	1.5735	11.38	AVG	10.04	21.42	46.00	-24.58
11	L1	5.0436	27.80	QP	10.08	37.88	60.00	-22.12
12	L1	5.0436	16.27	AVG	10.08	26.35	50.00	-23.65

Test Mode: Transmitting Mode



Test Data

Phase Neutral Plot at 240Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
1	N	0.4191	30.71	QP	10.02	40.73	57.47	-16.74
2	N	0.4191	18.51	AVG	10.02	28.53	47.47	-18.94
3	N	1.1250	31.22	QP	10.03	41.25	56.00	-14.75
4	N	1.1250	20.55	AVG	10.03	30.58	46.00	-15.42
5	N	1.4019	29.33	QP	10.03	39.36	56.00	-16.64
6	N	1.4019	18.59	AVG	10.03	28.62	46.00	-17.38
7	N	2.3808	25.10	QP	10.04	35.14	56.00	-20.86
8	N	2.3808	12.05	AVG	10.04	22.09	46.00	-23.91
9	N	5.1021	31.20	QP	10.07	41.27	60.00	-18.73
10	N	5.1021	22.32	AVG	10.07	32.39	50.00	-17.61
11	N	5.9952	29.42	QP	10.08	39.50	60.00	-20.50
12	N	5.9952	20.18	AVG	10.08	30.26	50.00	-19.74

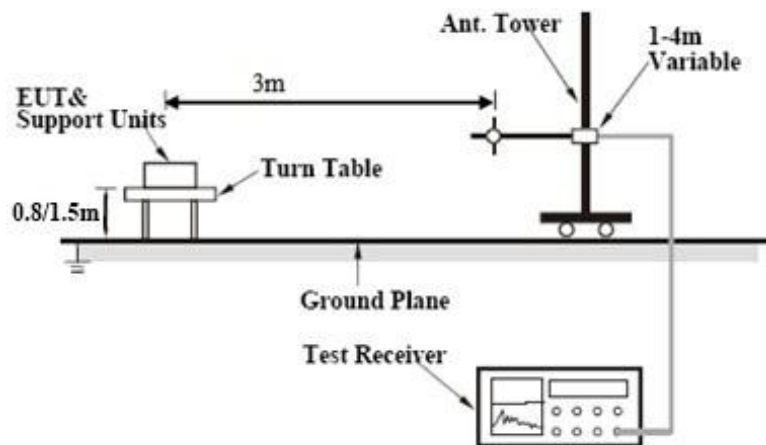
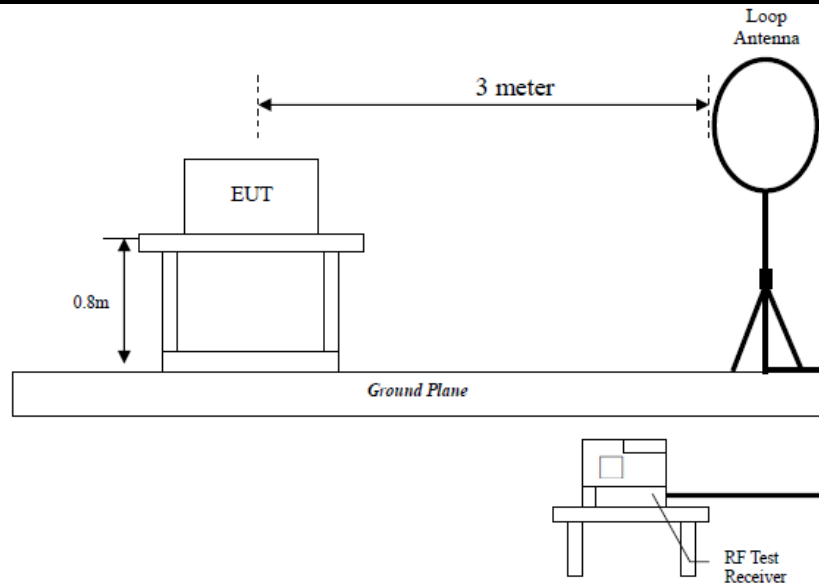
6.7 Radiated Spurious Emissions & Restricted Band

Temperature	24 °C
Relative Humidity	55%
Atmospheric Pressure	1008mbar
Test date :	June 13, 2017
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable																
47CFR§15.247(d), RSS210 (A8.5)	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	<input checked="" type="checkbox"/>																
		<table><tr><th>Frequency range (MHz)</th><th>Field Strength (µV/m)</th></tr><tr><td>0.009~0.490</td><td>2400/F(KHz)</td></tr><tr><td>0.490~1.705</td><td>24000/F(KHz)</td></tr><tr><td>1.705~30.0</td><td>30</td></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>		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
		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																	
b)	For non-restricted band, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB or 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, determined by the measurement method on output power to be used. Attenuation below the general limits specified in § 15.209(a) is not required <input checked="" type="checkbox"/> 20 dB down <input type="checkbox"/> 30 dB down	<input checked="" type="checkbox"/>																	
	c)		or restricted band, emission must also comply with the radiated emission limits specified in 15.209	<input checked="" type="checkbox"/>															

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 Quasi 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.

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	<p>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.</p> <p>5. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.</p>
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	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test Result:

Test Mode:	Transmitting Mode
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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:

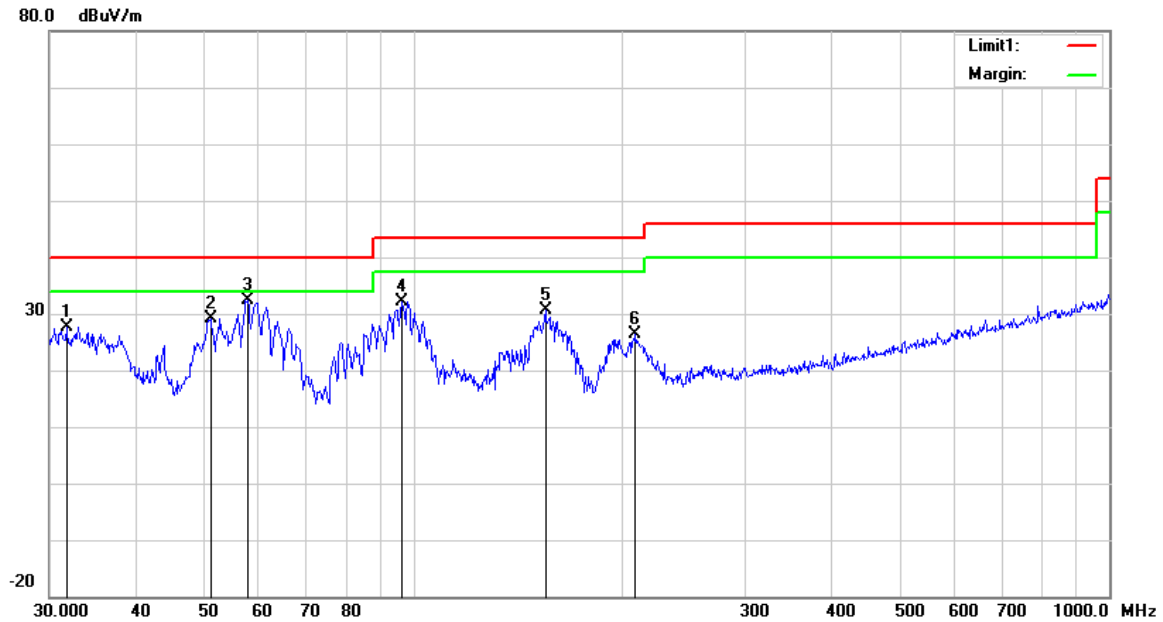
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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

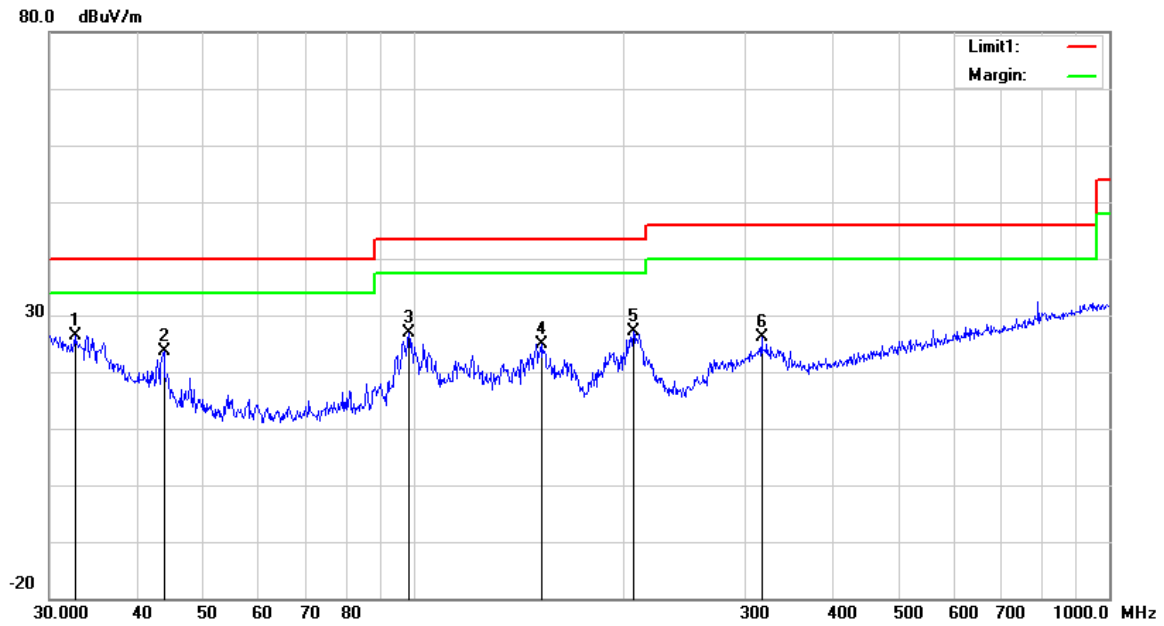


Test Data

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	31.7313	29.21	peak	20.07	22.27	0.67	27.68	40.00	-12.32	100	19
2	H	51.1209	42.45	peak	8.28	22.38	0.80	29.15	40.00	-10.85	100	221
3	H	57.7962	46.47	peak	7.54	22.40	0.76	32.37	40.00	-7.63	100	281
4	H	96.0986	44.02	peak	9.46	22.32	1.02	32.18	43.50	-11.32	100	334
5	H	154.8205	38.87	peak	12.60	22.31	1.36	30.52	43.50	-12.98	100	172
6	H	208.5803	35.17	peak	11.98	22.36	1.57	26.36	43.50	-17.14	100	359

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	32.6340	28.62	peak	19.37	22.26	0.69	26.42	40.00	-13.58	100	161
2	V	43.8119	33.79	peak	11.38	22.29	0.76	23.64	40.00	-16.36	100	201
3	V	98.4866	38.09	peak	10.04	22.32	1.08	26.89	43.50	-16.61	100	41
4	V	152.6641	33.29	peak	12.60	22.32	1.35	24.92	43.50	-18.58	100	155
5	V	207.1226	35.90	peak	12.00	22.37	1.56	27.09	43.50	-16.41	200	127
6	V	316.5890	32.59	peak	13.95	22.24	1.87	26.17	46.00	-19.83	100	94

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	39.58	AV	V	33.8	6.86	32.69	47.55	54	-6.45
4824	38.68	AV	H	33.8	6.86	32.69	46.65	54	-7.35
4824	47.56	PK	V	33.8	6.86	32.69	55.53	74	-18.47
4824	47.53	PK	H	33.8	6.86	32.69	55.5	74	-18.5
17905	23.68	AV	V	45.12	11.57	32.11	48.26	54	-5.74
17905	23.02	AV	H	45.12	11.57	32.11	47.6	54	-6.4
17905	39.94	PK	V	45.12	11.57	32.11	64.52	74	-9.48
17905	39.02	PK	H	45.12	11.57	32.11	63.6	74	-10.4

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	38.72	AV	V	33.6	6.82	32.71	46.43	54	-7.57
4874	39.61	AV	H	33.6	6.82	32.71	47.32	54	-6.68
4874	48.11	PK	V	33.6	6.82	32.71	55.82	74	-18.18
4874	48.24	PK	H	33.6	6.82	32.71	55.95	74	-18.05
17935	24.62	AV	V	45.17	11.63	32.18	49.24	54	-4.76
17935	22.16	AV	H	45.17	11.63	32.18	46.78	54	-7.22
17935	40.16	PK	V	45.17	11.63	32.18	64.78	74	-9.22
17935	39.03	PK	H	45.17	11.63	32.18	63.65	74	-10.35

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	39.61	AV	V	33.83	6.95	32.79	47.6	54	-6.4
4924	38.64	AV	H	33.83	6.95	32.79	46.63	54	-7.37
4924	47.82	PK	V	33.83	6.95	32.79	55.81	74	-18.19
4924	48.26	PK	H	33.83	6.95	32.79	56.25	74	-17.75
17921	22.56	AV	V	45.19	11.61	32.24	47.12	54	-6.88
17921	23.02	AV	H	45.19	11.61	32.24	47.58	54	-6.42
17921	40.42	PK	V	45.19	11.61	32.24	64.98	74	-9.02
17921	39.19	PK	H	45.19	11.61	32.24	63.75	74	-10.25

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	09/16/2016	09/15/2017	<input checked="" type="checkbox"/>
Line Impedance	LI-125A	191106	09/24/2016	09/23/2017	<input checked="" type="checkbox"/>
Line Impedance	LI-125A	191107	09/24/2016	09/23/2017	<input checked="" type="checkbox"/>
ISN	ISN T800	34373	09/24/2016	09/23/2017	<input type="checkbox"/>
Transient Limiter	LIT-153	531118	08/31/2016	08/30/2017	<input checked="" type="checkbox"/>
RF conducted test					
Agilent ESA-E SERIES	E4407B	MY45108319	09/16/2016	09/15/2017	<input checked="" type="checkbox"/>
Power Splitter	1#	1#	08/31/2016	08/30/2017	<input checked="" type="checkbox"/>
DC Power Supply	E3640A	MY40004013	09/16/2016	09/15/2017	<input checked="" type="checkbox"/>
Radiated Emissions					
EMI test receiver	ESL6	100262	09/16/2016	09/15/2017	<input checked="" type="checkbox"/>
Positioning Controller	UC3000	MF780208282	11/18/2016	11/17/2017	<input checked="" type="checkbox"/>
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	08/31/2016	08/30/2017	<input checked="" type="checkbox"/>
Horn Antenna	BBHA9170	3145226D1	09/28/2016	09/27/2017	<input checked="" type="checkbox"/>
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/23/2017	03/22/2018	<input checked="" type="checkbox"/>
Active Antenna (9kHz-30MHz)	AL-130	121031	10/13/2016	10/12/2017	<input checked="" type="checkbox"/>
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/20/2016	09/19/2017	<input checked="" type="checkbox"/>
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71283	09/23/2016	09/22/2017	<input checked="" type="checkbox"/>
Universal Radio Communication Tester	CMU200	121393	09/24/2016	09/23/2017	<input checked="" type="checkbox"/>

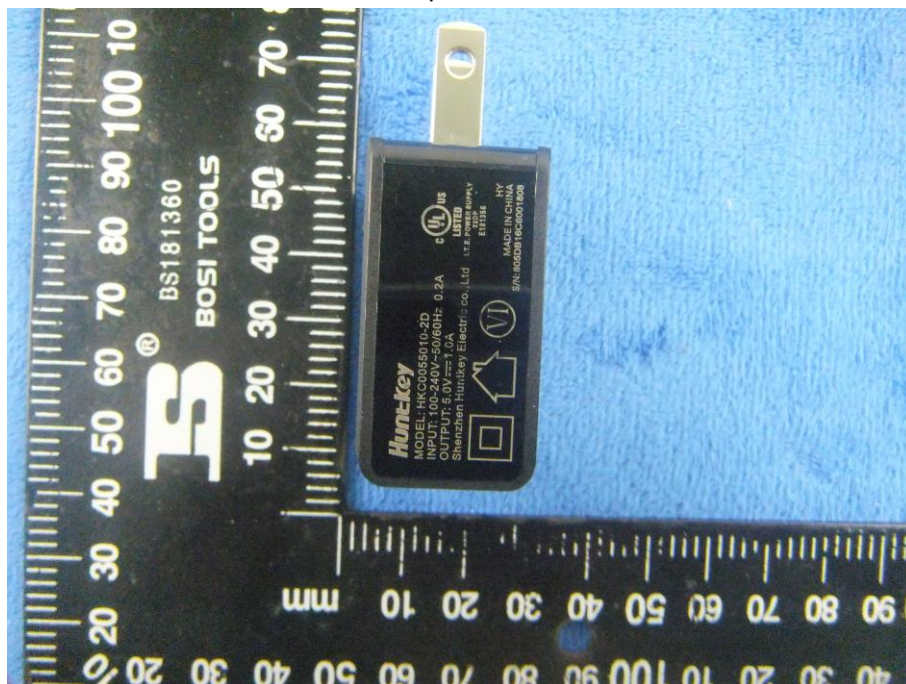
Annex B. EUT and Test Setup Photographs

Annex B.i. Photograph: EUT External Photo

Whole Package View



Adapter View



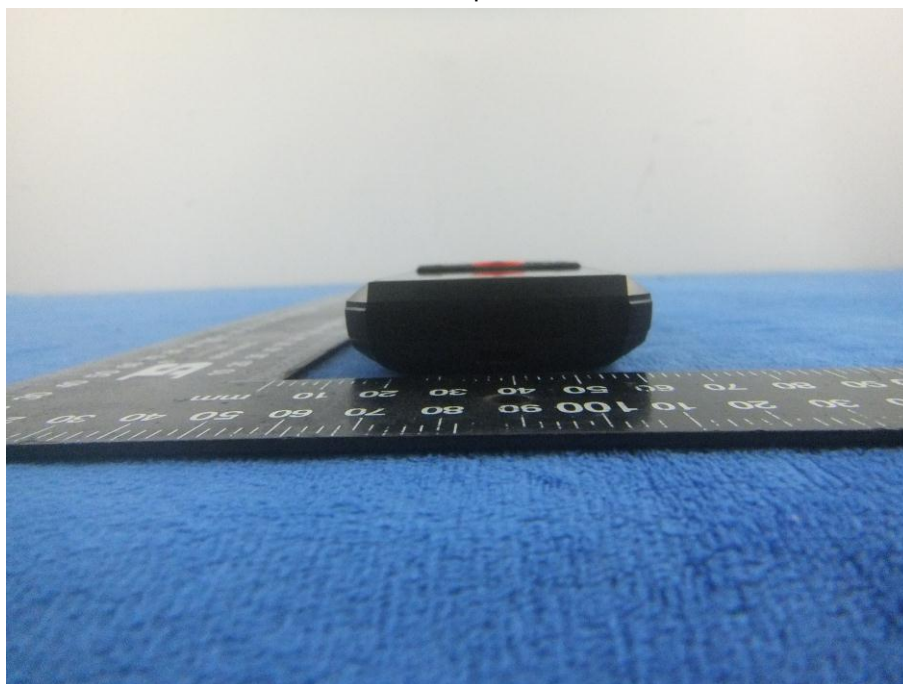
EUT - Front View



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

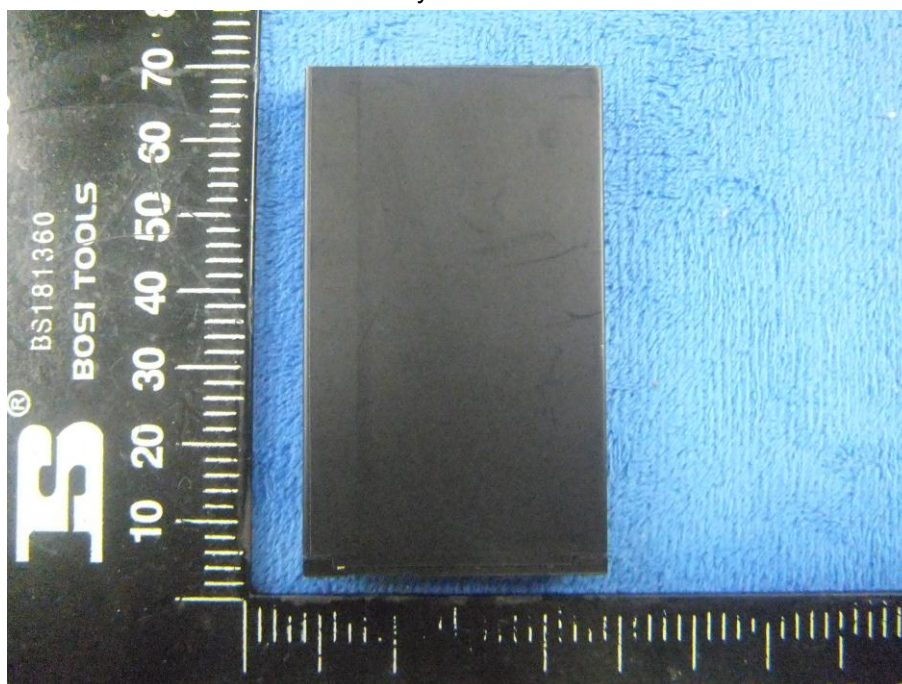


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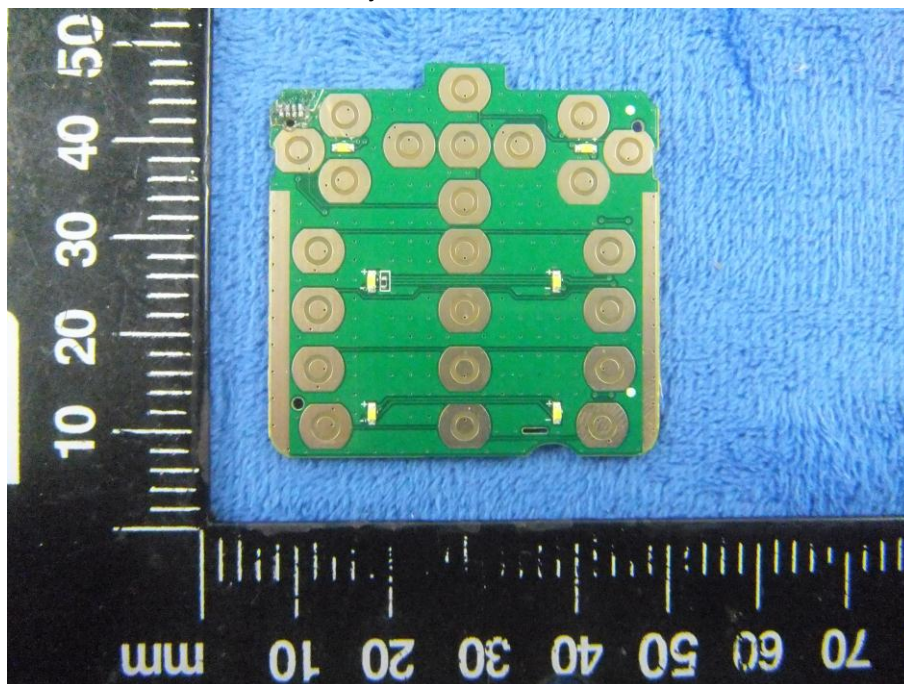
Battery - Front View



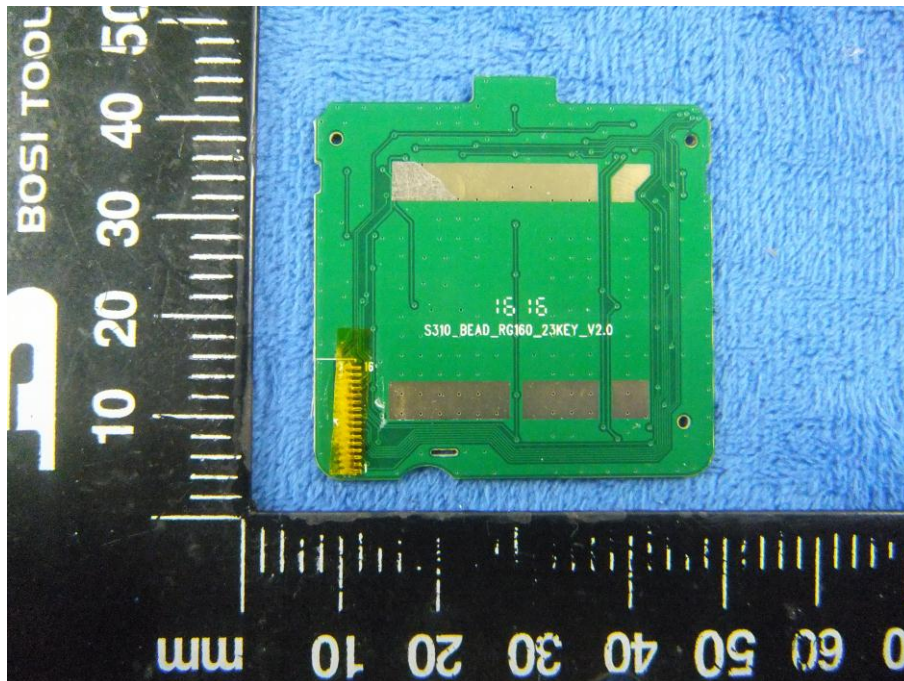
Battery - Rear View



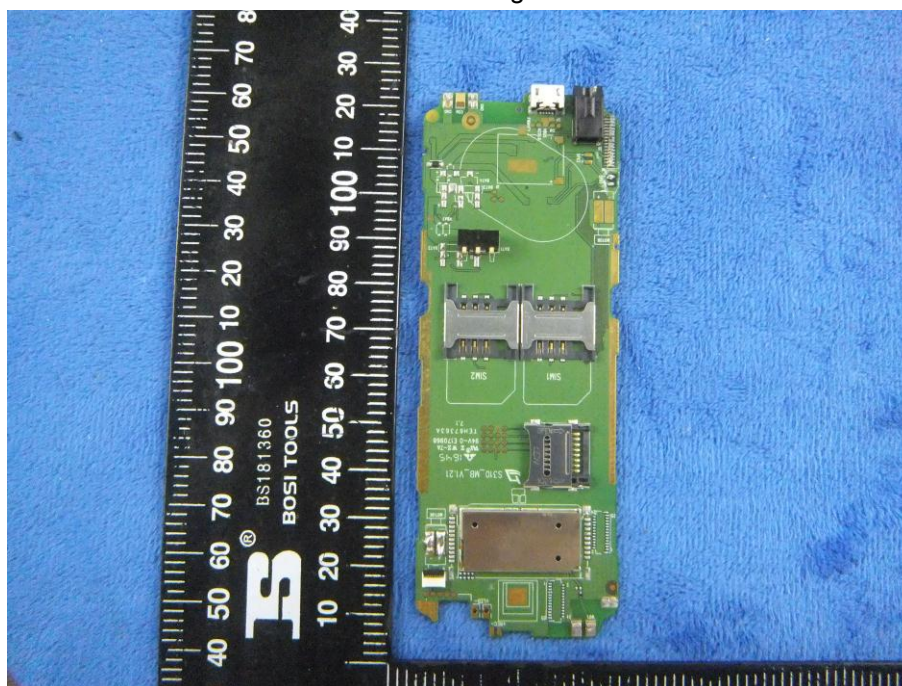
Keyboard-Front View



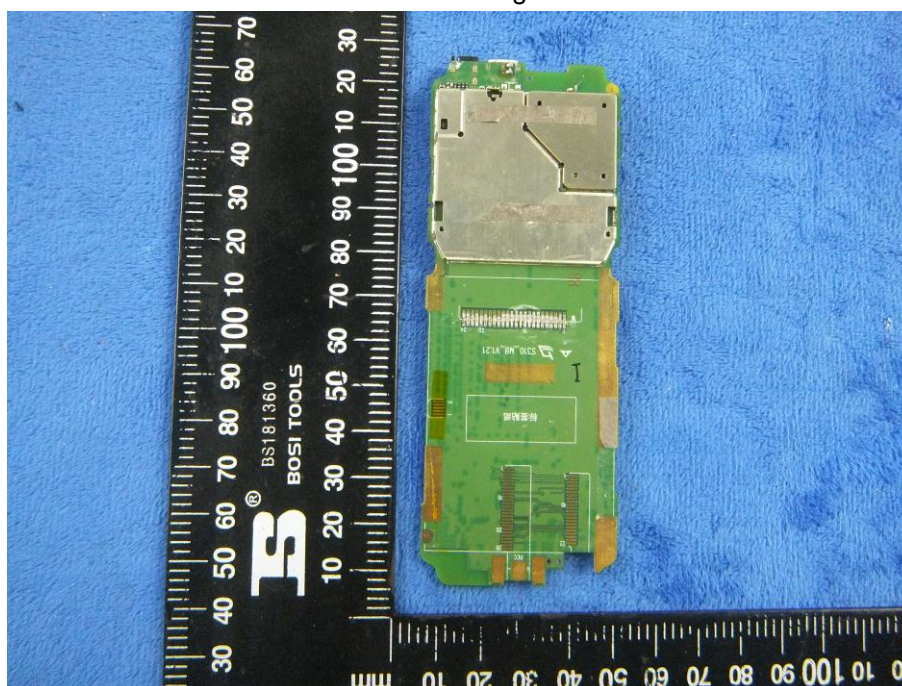
Keyboard- Rear View



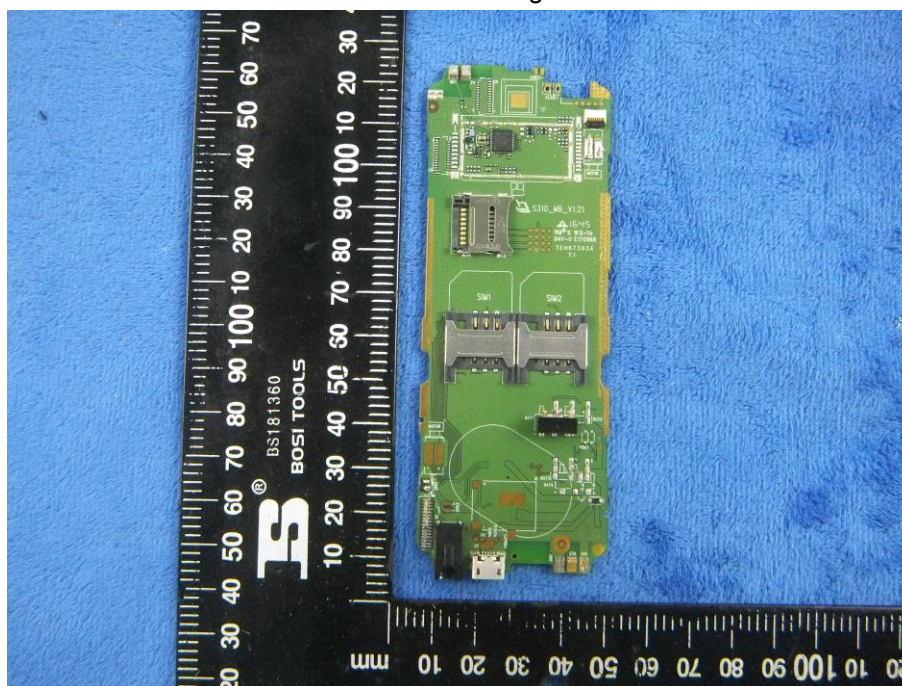
Mainboard with Shielding – Front View



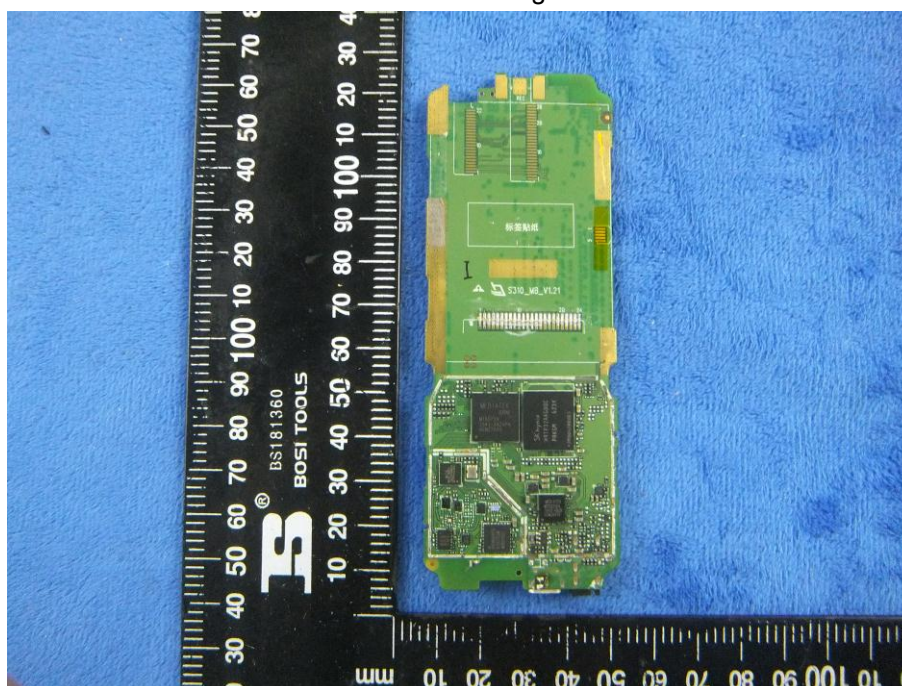
Mainboard with Shielding – Rear View



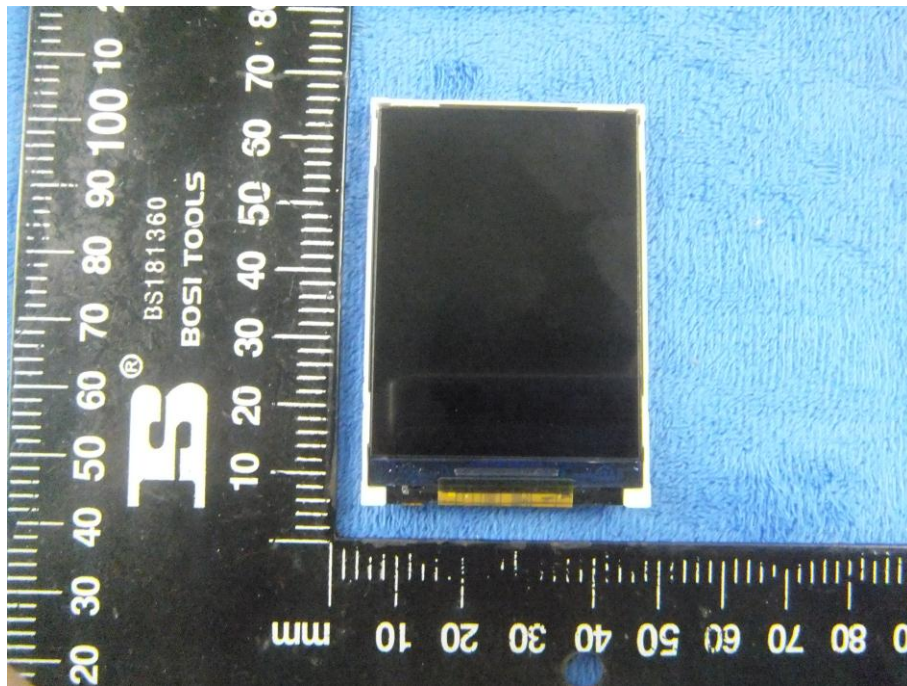
Mainboard without Shielding – Front View



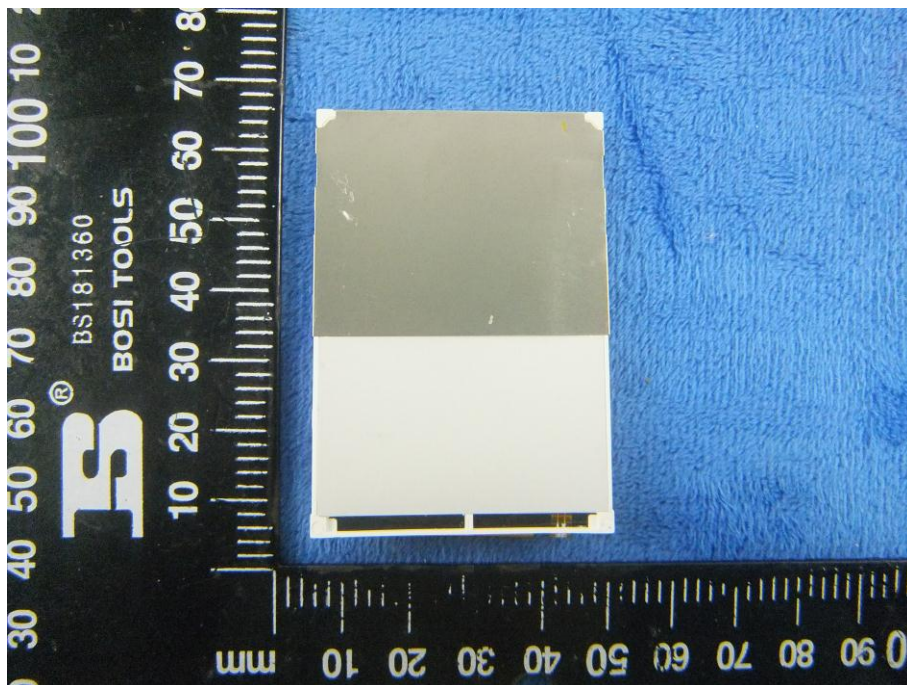
Mainboard without Shielding – Rear View



LCD – Front View



LCD – Rear View



GSM/PCS/UMTS-FDD Antenna View



WIFI/BT/BLE/GPS - Antenna View



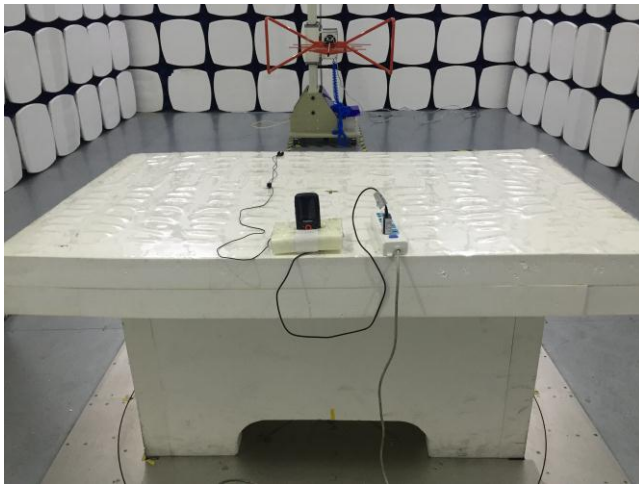
Annex B.iii. Photograph: Test Setup Photo



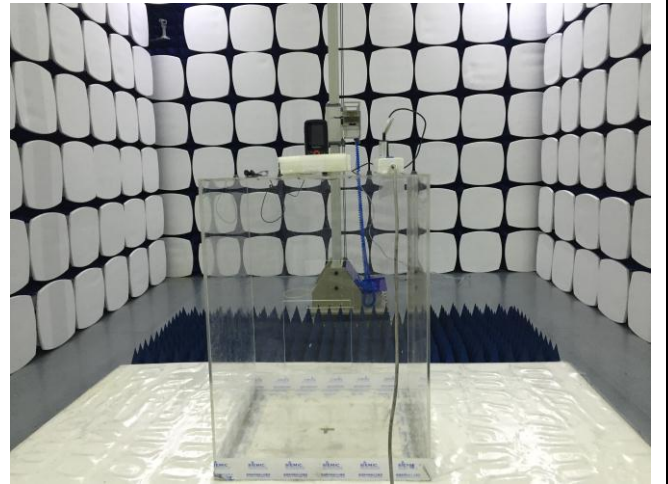
Conducted Emissions Test Setup Front View



Conducted Emissions Test Setup Side View



Radiated Spurious Emissions Test Setup Below 1GHz

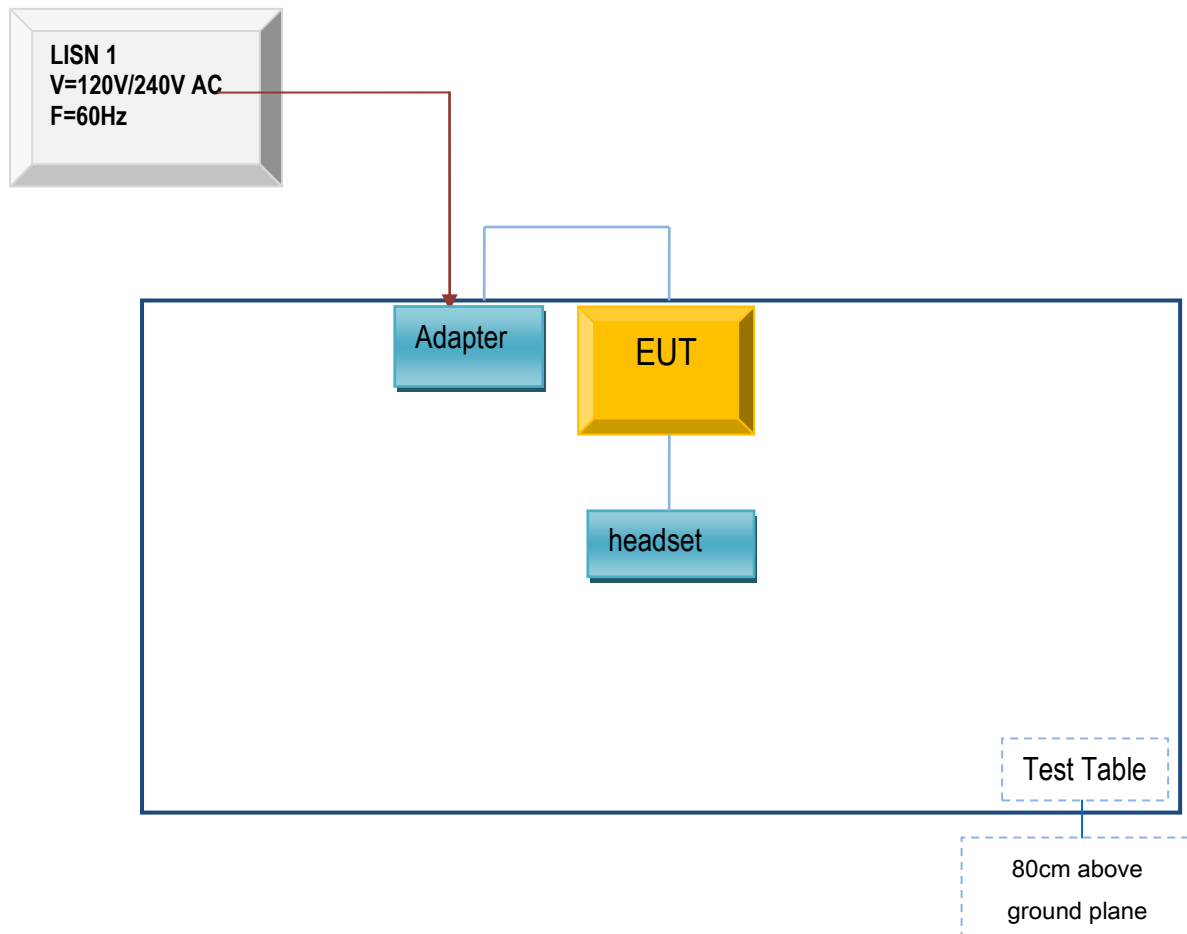


Radiated Spurious Emissions Test Setup Above
1GHz

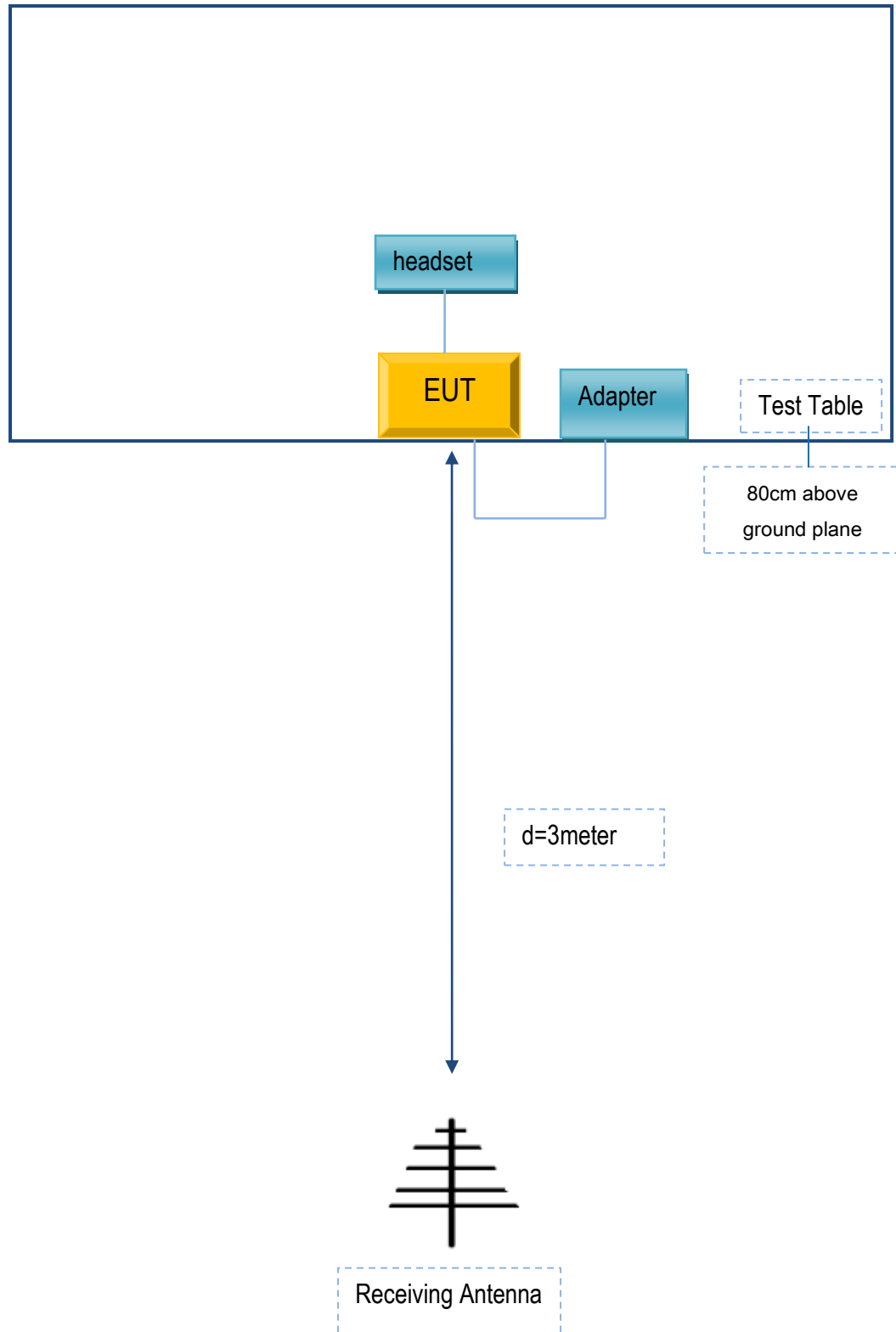
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

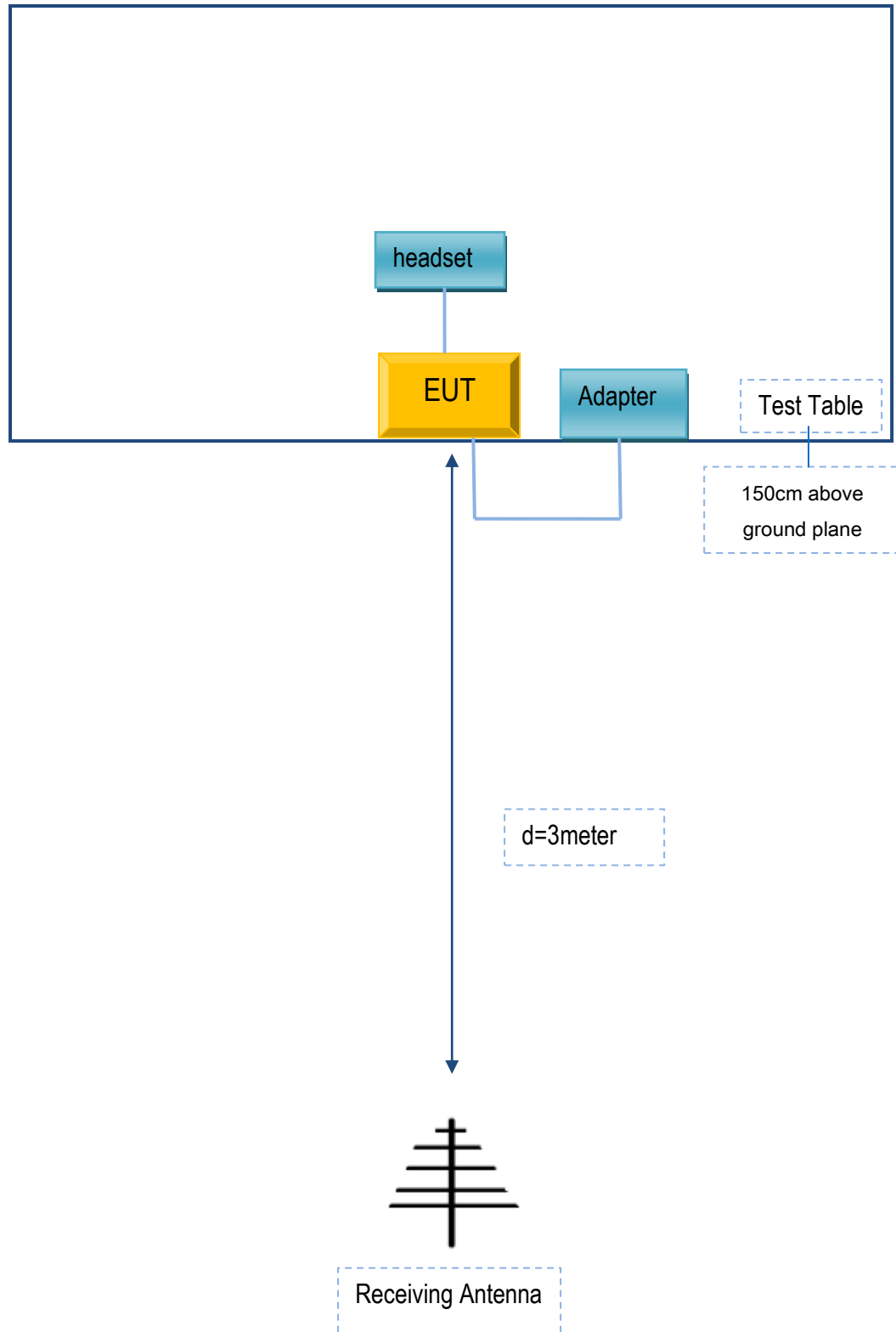
Block Configuration Diagram for AC Line Conducted Emissions



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
Power Idea Technology (Shenzhen) Co., Ltd.	Adapter	HKC0055010-2D	N/A
Power Idea Technology (Shenzhen) Co., Ltd.	headset	RG160	N/A

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
Power 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