RF TEST REPORT

Report No.: 16021089-FCC-R1
Supersede Report No.: N/A

Applicant	Nanjing Kuailun Intelligent Technology Co. Ltd
Product Name	Electric Scooter
Model No.	F0
Serial No.	F0-0210-RD; F0-0210-BL; F0-0210-BK; F0-0210-WH; F0-0160-RD; F0-0160-BL; F0-0160-BK; F0-0160-WH; S1
Test Standard	FCC Part 15.247: 2015, ANSI C63.10: 2013
Test Date	August 24 to August 31, 2016
Issue Date	August 31, 2016
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Amos. Xia	Miro Bao	
Amos Xia Test Engineer	Miro Bao Checked By	

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Test result presented in this test report is applicable to the tested sample only

Issued by:
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Laboratories Introduction

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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
16021089-FCC-R1	NONE	Original	August 31, 2016

2. Customer information

Applicant Name	Nanjing Kuailun Intelligent Technology Co. Ltd
Applicant Add	15 Floor,Block B,Xingzhi science and technology Park,Economic Development Zone,Nanjing City,China
Manufacturer	Nanjing Kuailun Intelligent Technology Co. Ltd
Manufacturer Add	15 Floor,Block B,Xingzhi science and technology Park,Economic Development Zone,Nanjing City,China

3. Test site information

Lab performing tests	SIEMIC (Nanjing-China) Laboratories
Lab Address	2-1 Longcang Avenue Yuhua Economic and Technology Development Park, Nanjing, China
FCC Test Site No.	986914
IC Test Site No.	4842B-1
Test Software	EZ_EMC

4. Equipment under Test (EUT) Information

Description of EUT:	Electric Scooter
Main Model:	F0
Serial Model:	F0-0210-RD; F0-0210-BL; F0-0210-BK; F0-0210-WH; F0-0160-RD; F0-0160-BL; F0-0160-BK; F0-0160-WH; S1
Date EUT received:	August 17, 2016
Test Date(s):	August 24 to August 31, 2016
Equipment Category ：	DTS
Antenna Gain:	BLE:2 dBi
Type of Modulation:	BLE: GFSK
RF Operating Frequency (ies):	Bluetooth& BLE: 2402-2480 MHz
Max. Output Power:	-3.882dBm
Number of Channels:	BLE: 40CH
Port:	Power Port, USB Port
Trade Name :	N/A
Input Power:	Adapter: Model: HLT-180-4201500 Input: AC 100-240V~50/60Hz;2A MAX Output: DC 42V,1.5A Battery: Model: LG MF1 Spec: 36/4.4Ah
FCC ID:	2AJIEF0

Channel List

Type		Channel No.	Frequency (MHz)	Available (Y/N)
BLE	2402-2480MHz	0	2402	Y
		1	2404	Y
		2	2406	Y
		3	2408	Y
		4	2410	Y
		5	2412	Y
		6	2414	Y
		7	2416	Y
		8	2418	Y
		9	2420	Y
		10	2422	Y
		11	2424	Y
		12	2426	Y
		13	2428	Y
		14	2430	Y
		15	2432	Y
		16	2434	Y
		17	2436	Y
		18	2438	Y
		19	2440	Y
		20	2442	Y
		21	2444	Y
		22	2446	Y
		23	2448	Y
		24	2450	Y
		25	2452	Y
		26	2454	Y
		27	2456	Y
		28	2458	Y
		29	2460	Y
		30	2462	Y
		31	2464	Y
		32	2466	Y
		33	2468	Y
		34	2470	Y
		35	2472	Y
		36	2474	Y
		37	2476	Y
		38	2478	Y
		39	2480	Y

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
§15.203	Antenna Requirement	Compliance
§15.247 (a)(2)	DTS (6 dB) CHANNEL BANDWIDTH	Compliance
§15.247(b)(3)	Conducted Maximum Output Power	Compliance
§15.247(e)	Power Spectral Density	Compliance
§15.247(d)	Band-Edge & Unwanted Emissions into Restricted Frequency Bands	Compliance
§15.207 (a),	AC Power Line Conducted Emissions	Compliance
§15.205, §15.209, §15.247(d)	Radiated Spurious Emissions & Unwanted Emissions into Restricted Frequency Bands	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 Antenna Requirement

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit. And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

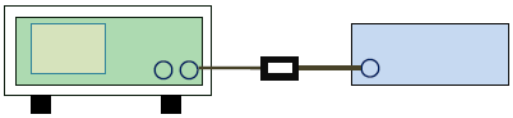
The EUT has 1 antenna:
A permanently attached PIFA antenna for BLE, the gain is 2dBi

The antenna meets up with the ANTENNA REQUIREMENT.

Result: Compliance.

6.2 DTS (6 dB) Channel Bandwidth

Temperature	23℃
Relative Humidity	55%
Atmospheric Pressure	1003mbar
Test date :	August 24, 2016
Tested By :	Amos Xia

Spec	Item	Requirement	Applicable
§ 15.247(a)(2) RSS Gen(4.6.1)	a)	6dB BW≥500kHz;	☑
	b)	99% BW: For FCC reference only; required by IC.	☑
Test Setup			
Test Procedure	558074 D01 DTS MEAS Guidance v03r05, 8.1 DTS bandwidth 6dB Emission bandwidth measurement procedure - Set RBW = 100 kHz. - Set the video bandwidth (VBW) ≥ 3 RBW. - Detector = Peak. - Trace mode = max hold. - Sweep = auto couple. - Allow the trace to stabilize. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.		
Remark			
Result	☑ Pass ☐ Fail		

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

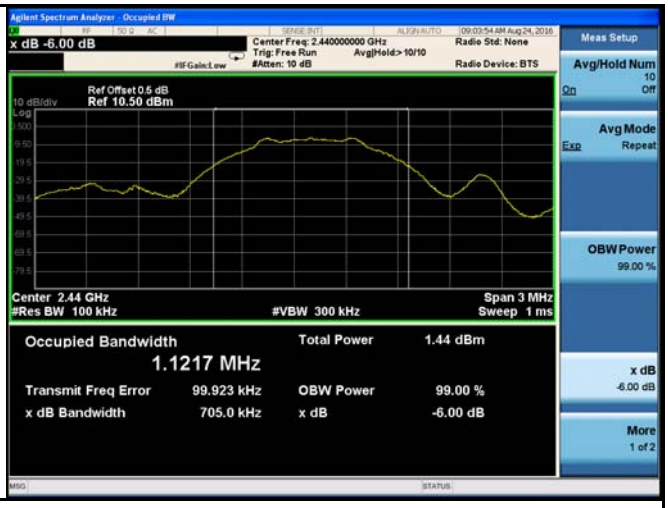
6dB Bandwidth measurement result

Test Data

CH	Frequency (MHz)	6dB Bandwidth (kHz)	99% Occupied Bandwidth (MHz)
Low	2402	692.3	1.1371
Mid	2440	705.0	1.1217
High	2480	669.4	1.0958

Test Plots

6dB Bandwidth - Low CH 2402



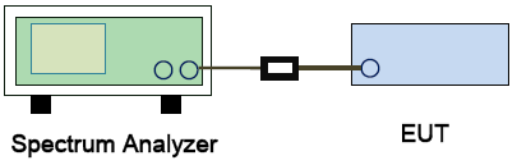
6dB Bandwidth - Mid CH 2440

6dB Bandwidth - High CH 2480

6.3 Maximum Output Power

Temperature	23℃
Relative Humidity	55%
Atmospheric Pressure	1003mbar
Test date :	August 24, 2016
Tested By :	Amos Xia

Requirement(s):

Spec	Item	Requirement	Applicable
§15.247(b)(3),RSS210 (A8.4)	a)	FHSS in 2400-2483.5MHz with ≥ 75 channels: ≤1 Watt	☐
	b)	FHSS in 5725-5850MHz: ≤1 Watt	☐
	c)	For all other FHSS in the 2400-2483.5MHz band: ≤0.125 Watt.	☐
	d)	FHSS in 902-928MHz with ≥ 50 channels: ≤1 Watt	☐
	e)	FHSS in 902-928MHz with ≥ 25 & <50 channels: ≤0.25 Watt	☐
	f)	DTS in 902-928MHz, 2400-2483.5MHz: ≤1 Watt	☑
Test Setup			
Test Procedure	558074 D01 DTS MEAS Guidance v03r05, 9.1.2 Integrated band power method Maximum output power measurement procedure a) Set the RBW ≥ DTS bandwidth. b) Set VBW ≥ 3 × RBW. c) Set span ≥ 3 x RBW d) Sweep time = auto couple. e) Detector = peak. f) Trace mode = max hold. g) Allow trace to fully stabilize. h) Use peak marker function to determine the peak amplitude level.		
Remark			
Result	☑ Pass ☐ Fail		

Test Data ☑ Yes ☐ N/A

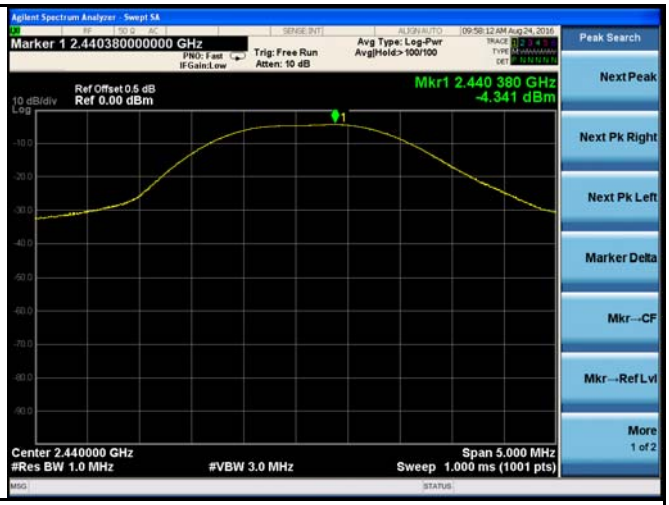
Test Plot ☑ Yes (See below) ☐ N/A

Output Power measurement result
Test Data

Type	CH	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Result
Output power	Low	2402	-3.882	30	Pass
	Mid	2440	-4.341	30	Pass
	High	2480	-4.827	30	Pass

Test Plots

Output power - Low CH 2402

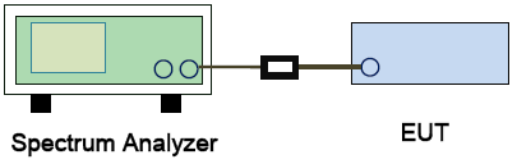


Output power - Mid CH 2440

Output power - High CH 2480

6.4 Power Spectral Density

Temperature	23℃
Relative Humidity	55%
Atmospheric Pressure	1003mbar
Test date :	August 24, 2016
Tested By :	Amos Xia

Spec	Item	Requirement	Applicable
§15.247(e)	a)	The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.	☑
Test Setup			
Test Procedure	558074 D01 DTS MEAS Guidance v03r05, 10.2 power spectral density method power spectral density measurement procedure - a) Set analyzer center frequency to DTS channel center frequency. - b) Set the span to 1.5 times the DTS bandwidth. - c) Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz. - d) Set the VBW ≥ 3 × RBW. - e) Detector = peak. - f) Sweep time = auto couple. - g) Trace mode = max hold. - h) Allow trace to fully stabilize. - i) Use the peak marker function to determine the maximum amplitude level within the RBW. - j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.		
Remark			
Result	☑ Pass ☐ Fail		

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

Power Spectral Density measurement result

Test Data

Type	CH	Freq (MHz)	Reading (dBm)	Factor (dB)	Result (dBm)	Limit (dBm)	Result
PSD	Low	2402	-11.210	-5.23	-16.440	8	Pass
	Mid	2440	-11.097	-5.23	-16.327	8	Pass
	High	2480	-11.964	-5.23	-17.194	8	Pass

Note: factor=10log(3/10)=-5.23

Test Plots

PSD - Low CH 2402

PSD - Mid CH 2440

PSD - High CH 2480

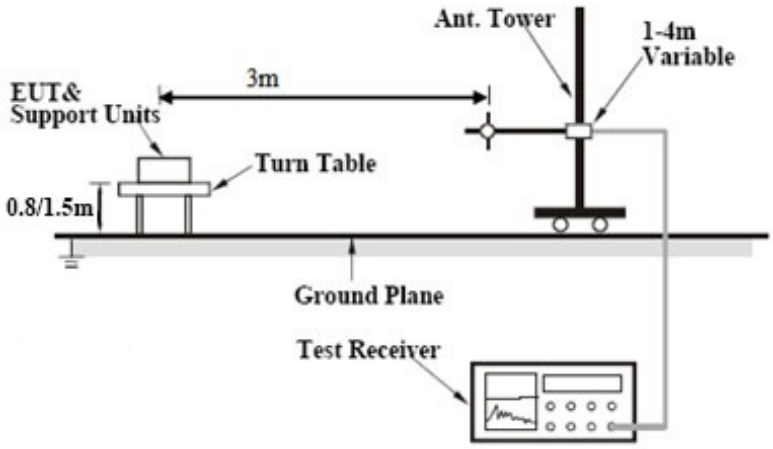
6.5 Band-Edge & Unwanted Emissions into Restricted Frequency Bands

Temperature	22℃
Relative Humidity	55%
Atmospheric Pressure	1013mbar
Test date :	August 30, 2016
Tested By :	Amos Xia

Requirement(s):

Spec	Item	Requirement	Applicable
§15.247(d)	a)	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 below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.	☑

Test Setup



Test Procedure

Radiated Method Only

- 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- 2. Position the EUT without connection to measurement instrument. Put it on the Rotated table and turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.
- 3. First, set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100kHz bandwidth from band edge, check the emission of EUT, if pass then set Spectrum Analyzer as below:
  a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasiy Peak detection at frequency below 1GHz.
  b. 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.
  c. 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.
- 4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
- 5. Repeat above procedures until all measured frequencies were complete.

Remark

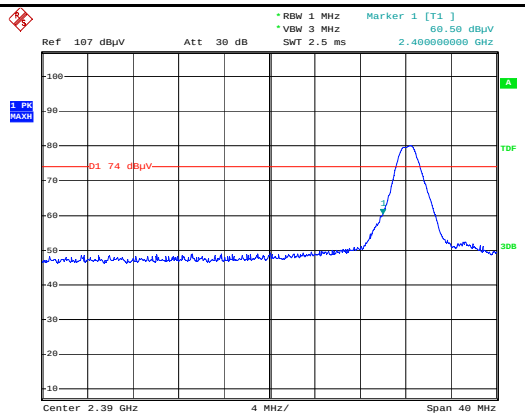
Result

☑ Pass ☐ Fail

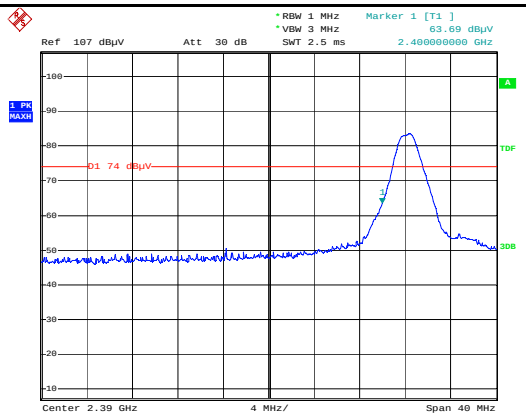
Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

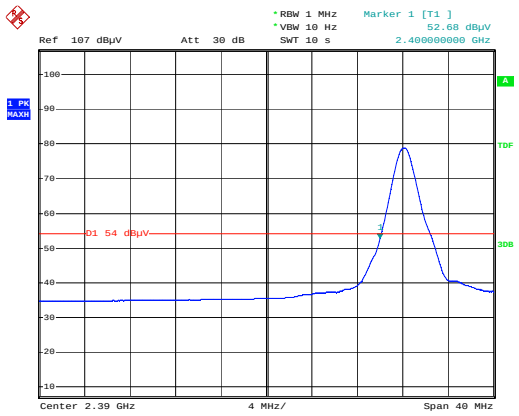
Test Plots
Band Edge measurement result



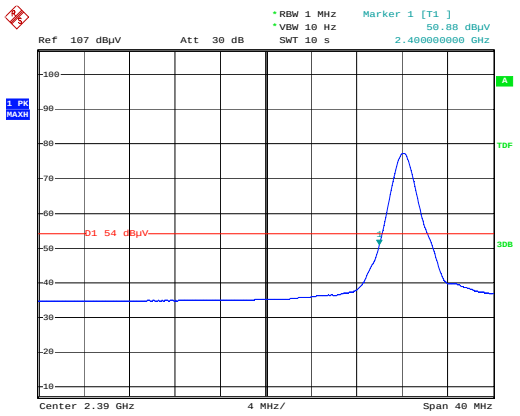
Band Edge, Left Side (Peak)-V



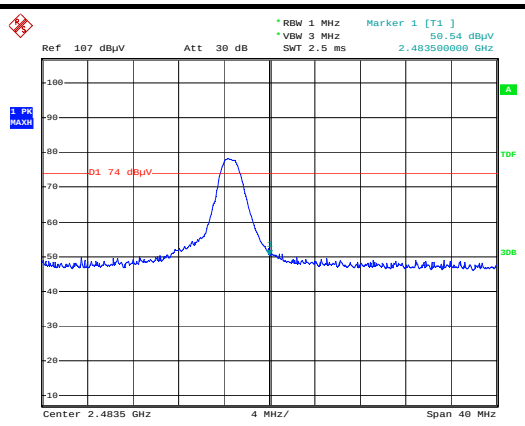
Band Edge, Left Side (Peak)-H



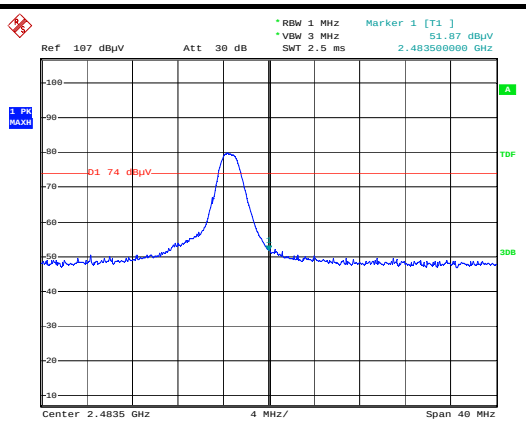
Band Edge, Left Side (AV)-V



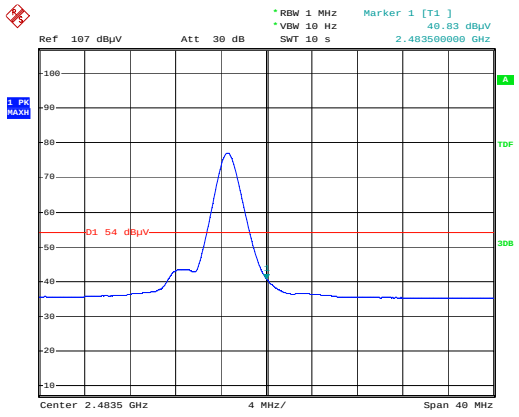
Band Edge, Left Side (AV)-H



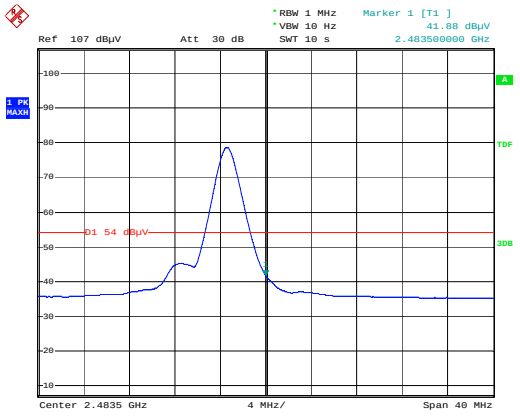
Band Edge, Right Side (Peak)-V



Band Edge, Right Side (Peak)-H



Band Edge, Right Side (AV)-V



Band Edge, Right Side (AV)-H

6.6 AC Power Line Conducted Emissions

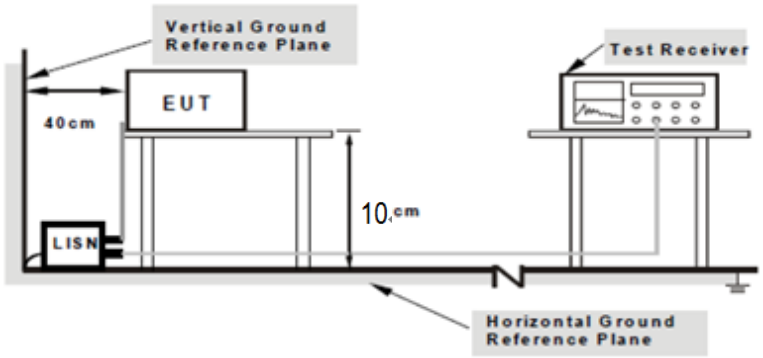
Temperature	22℃
Relative Humidity	55%
Atmospheric Pressure	1013mbar
Test date :	August 31, 2016
Tested By :	Amos Xia

Requirement(s):

Spec	Item	Requirement	Applicable
47CFR§15.207, RSS210 (A8.1)	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.	☑

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



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.

Procedure

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 0.1m high, non-metallic table.
2. The power supply for the EUT was fed through a 50W/50mH EUT LISN, connected to filtered mains.
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).

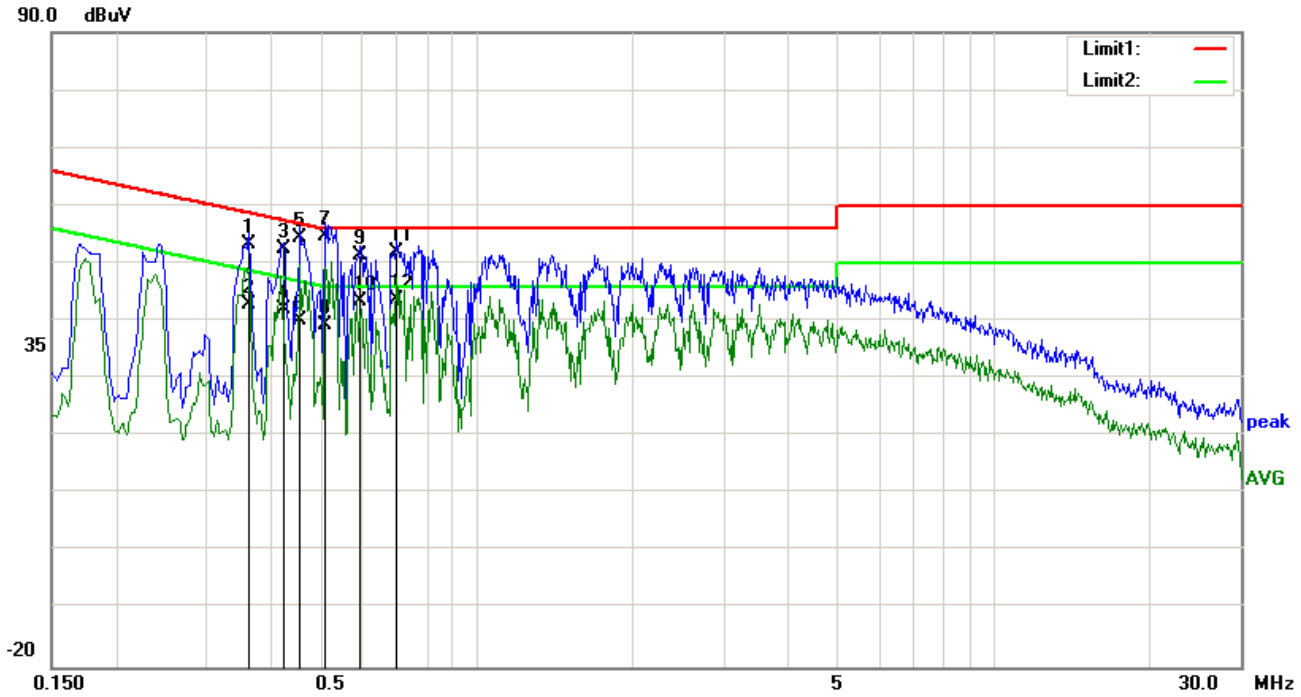
Remark

Result ☑ Pass ☐ Fail

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

Test Mode:	Transmitting Mode

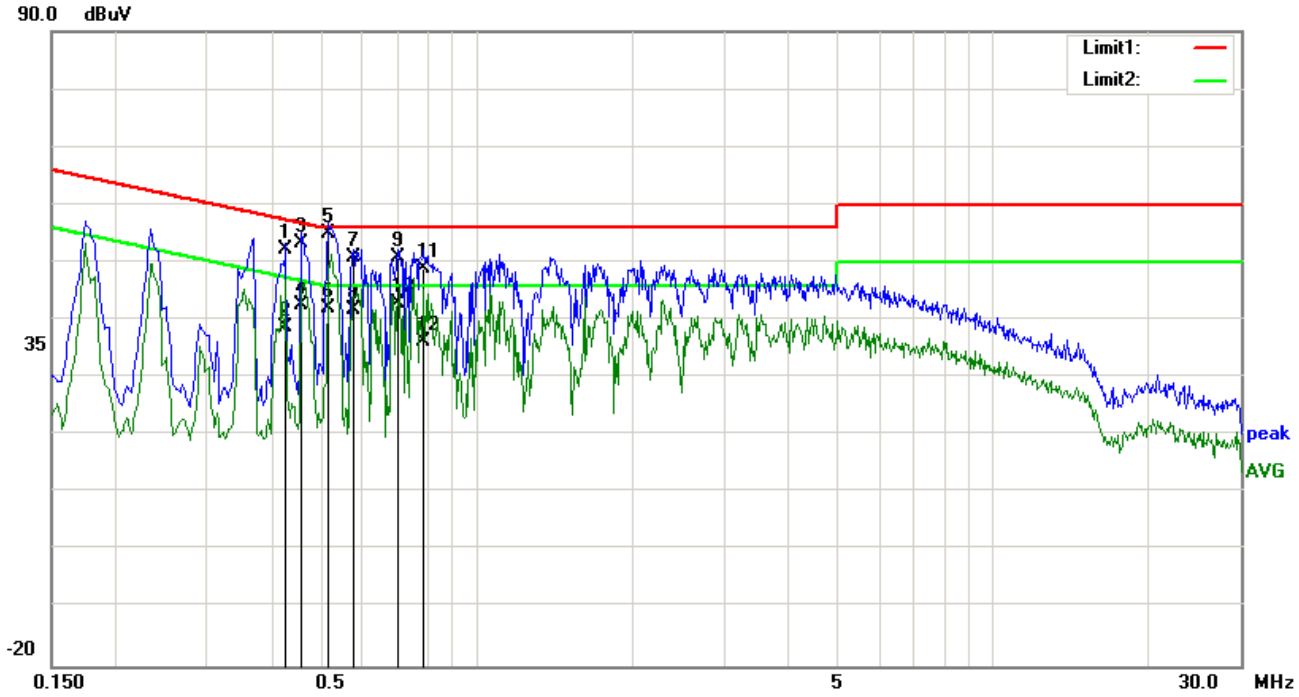


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	Frequency (MHz)	Reading (dBuV)	Detector	Lisn/Isn (dB}	Ps_Lmt (dB)	Cab_L (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.3620	42.92	QP	0.11	-10.00	0.20	53.23	58.68	-5.45
2	0.3620	32.57	AVG	0.11	-10.00	0.20	42.88	48.68	-5.80
3	0.4220	42.18	QP	0.11	-10.00	0.21	52.50	57.41	-4.91
4	0.4220	31.75	AVG	0.11	-10.00	0.21	42.07	47.41	-5.34
5	0.4540	43.97	QP	0.12	-10.00	0.21	54.30	56.80	-2.50
6	0.4540	29.72	AVG	0.12	-10.00	0.21	40.05	46.80	-6.75
7	0.5100	44.41	QP	0.12	-10.00	0.21	54.74	56.00	-1.26
8	0.5100	29.01	AVG	0.12	-10.00	0.21	39.34	46.00	-6.66
9	0.5940	41.14	QP	0.12	-10.00	0.21	51.47	56.00	-4.53
10	0.5940	32.94	AVG	0.12	-10.00	0.21	43.27	46.00	-2.73
11	0.6980	41.45	QP	0.13	-10.00	0.20	51.78	56.00	-4.22
12	0.6980	33.21	AVG	0.13	-10.00	0.20	43.54	46.00	-2.46

Test Mode:	Transmitting Mode

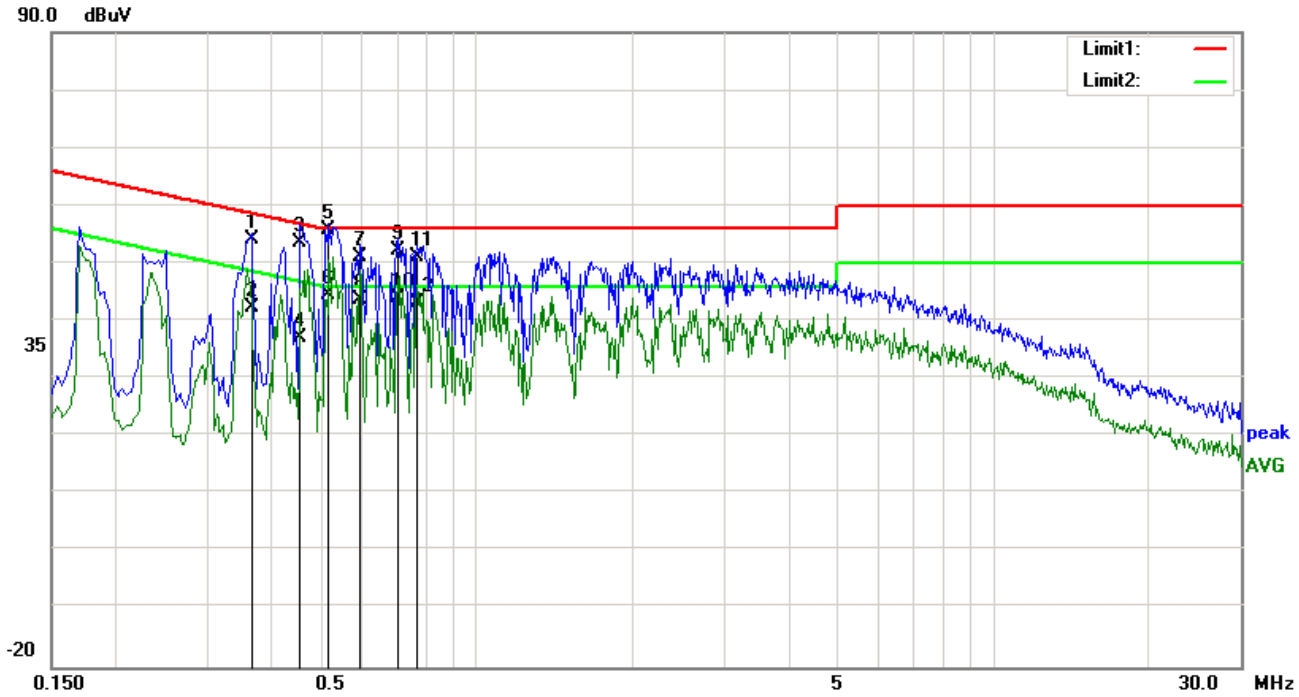


Test Data

Phase Neutral Plot at 120Vac, 60Hz

No.	Frequency (MHz)	Reading (dBuV)	Detector	Lisn/Isn (dB}	Ps_Lmt (dB)	Cab_L (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.4260	41.92	QP	0.11	-10.00	0.21	52.24	57.33	-5.09
2	0.4260	28.32	AVG	0.11	-10.00	0.21	38.64	47.33	-8.69
3	0.4580	43.01	QP	0.11	-10.00	0.21	53.33	56.73	-3.40
4	0.4580	32.30	AVG	0.11	-10.00	0.21	42.62	46.73	-4.11
5	0.5140	44.67	QP	0.11	-10.00	0.21	54.99	56.00	-1.01
6	0.5140	31.65	AVG	0.11	-10.00	0.21	41.97	46.00	-4.03
7	0.5780	40.39	QP	0.11	-10.00	0.21	50.71	56.00	-5.29
8	0.5780	31.43	AVG	0.11	-10.00	0.21	41.75	46.00	-4.25
9	0.7020	40.36	QP	0.12	-10.00	0.20	50.68	56.00	-5.32
10	0.7020	32.52	AVG	0.12	-10.00	0.20	42.84	46.00	-3.16
11	0.7900	38.63	QP	0.12	-10.00	0.20	48.95	56.00	-7.05
12	0.7900	25.88	AVG	0.12	-10.00	0.20	36.20	46.00	-9.80

Test Mode:	Transmitting Mode

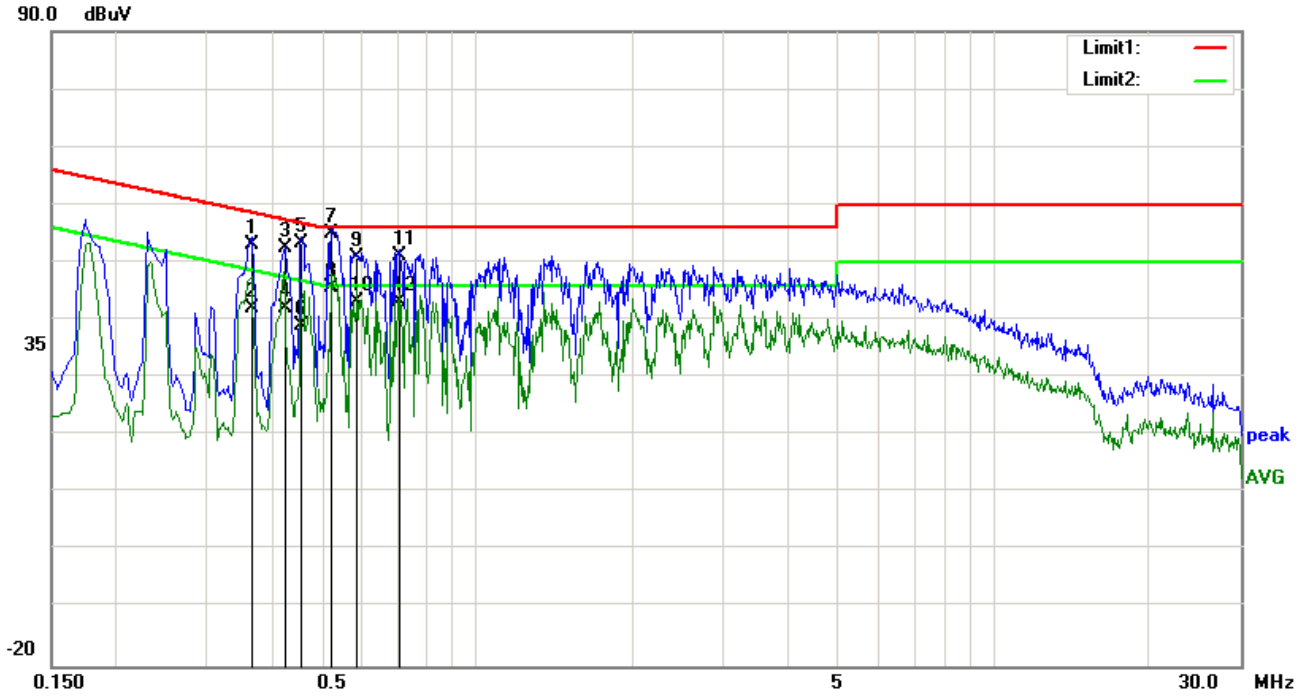


Test Data

Phase Line Plot at 240Vac, 60Hz

No.	Frequency (MHz)	Reading (dBuV)	Detector	Lisn/Isn (dB}	Ps_Lmt (dB)	Cab_L (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.3660	43.79	QP	0.11	-10.00	0.20	54.10	58.59	-4.49
2	0.3660	31.88	AVG	0.11	-10.00	0.20	42.19	48.59	-6.40
3	0.4540	43.17	QP	0.12	-10.00	0.21	53.50	56.80	-3.30
4	0.4540	26.64	AVG	0.12	-10.00	0.21	36.97	46.80	-9.83
5	0.5180	45.55	QP	0.12	-10.00	0.21	55.88	56.00	-0.12
6	0.5180	34.11	AVG	0.12	-10.00	0.21	44.44	46.00	-1.56
7	0.5940	40.75	QP	0.12	-10.00	0.21	51.08	56.00	-4.92
8	0.5940	33.26	AVG	0.12	-10.00	0.21	43.59	46.00	-2.41
9	0.7020	41.96	QP	0.13	-10.00	0.20	52.29	56.00	-3.71
10	0.7020	33.59	AVG	0.13	-10.00	0.20	43.92	46.00	-2.08
11	0.7660	40.66	QP	0.13	-10.00	0.20	50.99	56.00	-5.01
12	0.7660	32.83	AVG	0.13	-10.00	0.20	43.16	46.00	-2.84

Test Mode:	Transmitting Mode



Test Data

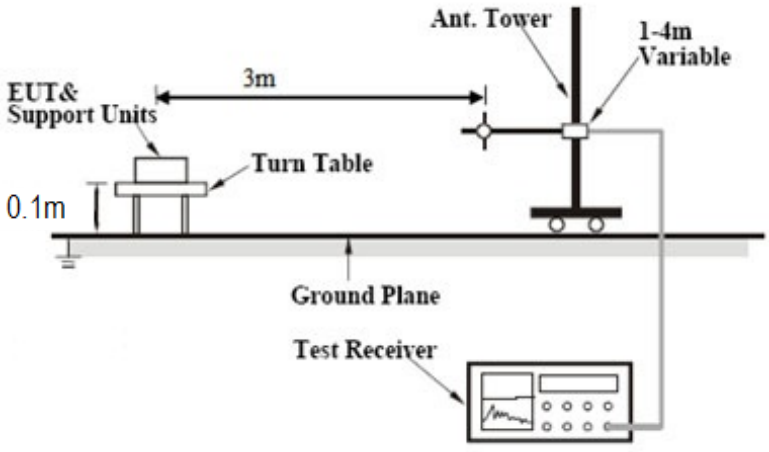
Phase Neutral Plot at 240Vac, 60Hz

No.	Frequency (MHz)	Reading (dBuV)	Detector	Lisn/Isn (dB}	Ps_Lmt (dB)	Cab_L (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.3660	42.58	QP	0.11	-10.00	0.20	52.89	58.59	-5.70
2	0.3660	31.64	AVG	0.11	-10.00	0.20	41.95	48.59	-6.64
3	0.4260	42.09	QP	0.11	-10.00	0.21	52.41	57.33	-4.92
4	0.4260	31.62	AVG	0.11	-10.00	0.21	41.94	47.33	-5.39
5	0.4580	42.90	QP	0.11	-10.00	0.21	53.22	56.73	-3.51
6	0.4580	28.69	AVG	0.11	-10.00	0.21	39.01	46.73	-7.72
7	0.5220	44.64	QP	0.11	-10.00	0.21	54.96	56.00	-1.04
8	0.5220	35.37	AVG	0.11	-10.00	0.21	45.69	46.00	-0.31
9	0.5860	40.36	QP	0.11	-10.00	0.21	50.68	56.00	-5.32
10	0.5860	32.73	AVG	0.11	-10.00	0.21	43.05	46.00	-2.95
11	0.7060	40.68	QP	0.12	-10.00	0.20	51.00	56.00	-5.00
12	0.7060	32.70	AVG	0.12	-10.00	0.20	43.02	46.00	-2.98

6.7 Radiated Spurious Emissions & Restricted Band

Temperature	22℃
Relative Humidity	55%
Atmospheric Pressure	1013mbar
Test date :	August 31, 2016
Tested By :	Amos Xia

Requirement(s):

<table>
<tr><th>Spec</th><th>Item</th><th>Requirement</th><th>Applicable</th></tr>
<tr><td rowspan="3">47CFR§15.247(d), RSS210 (A8.5)</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>b)</td><td>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
☒ 20 dB down ☐ 30 dB down</td><td>☑</td></tr>
<tr><td>c)</td><td>or restricted band, emission must also comply with the radiated emission limits specified in 15.209</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 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</td></tr>
</table>

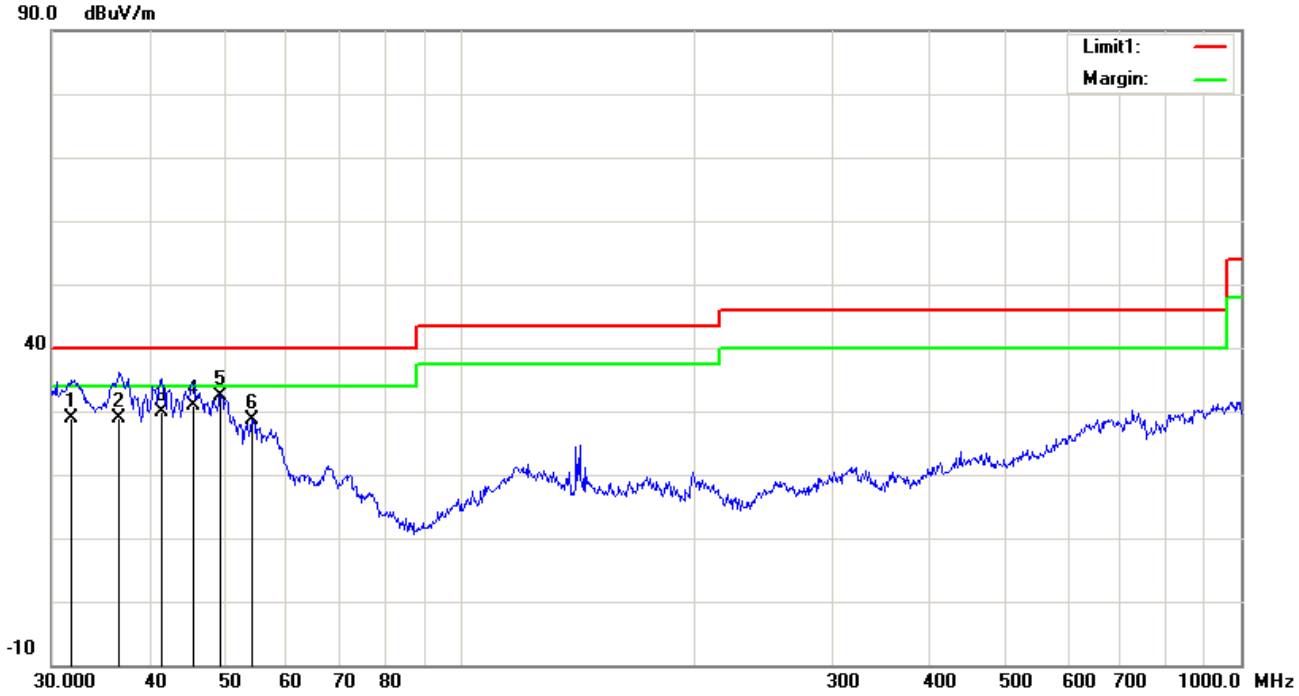
	Peak detection at frequency below 1GHz. 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz with Peak detection for Peak measurement at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz 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 Mode:	Transmitting Mode

Below 1GHz

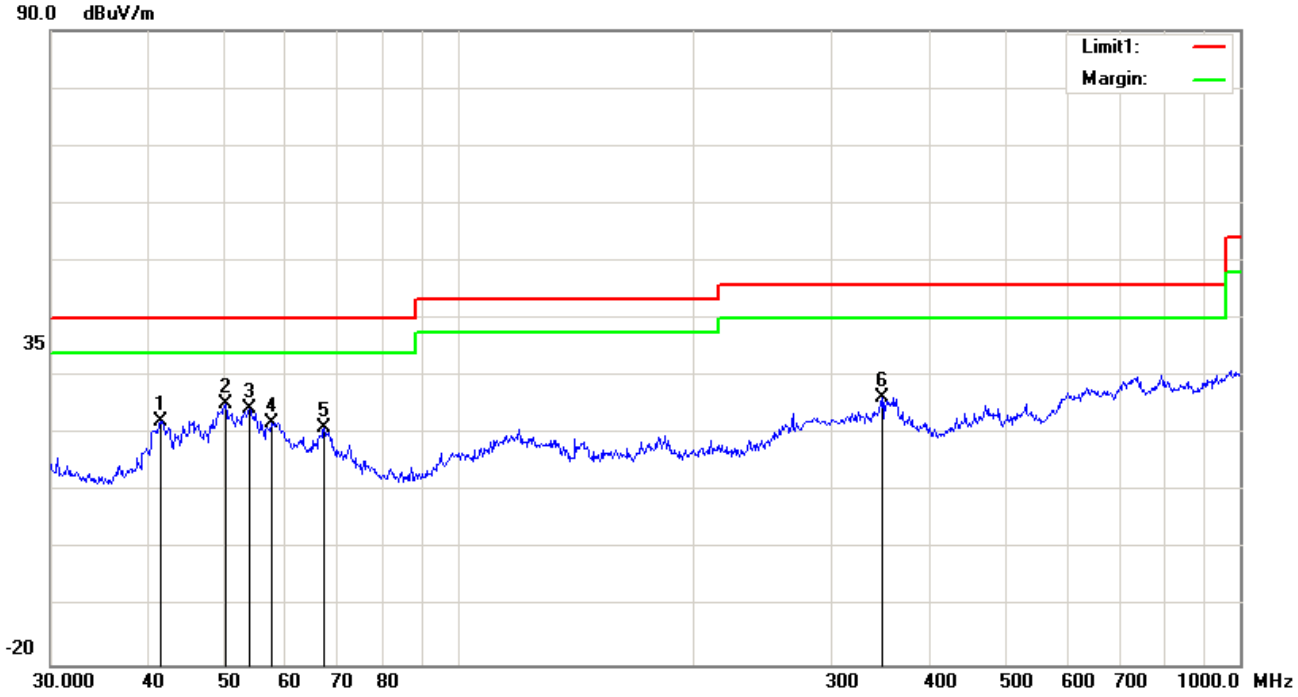


Test Data

Vertical Polarity Plot @3m

No.	Frequency	Reading	Detector	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree
	(MHz)	(dBµV/m)		(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	(cm)	( )
1	31.7313	47.42	QP	26.15	45.67	0.90	28.80	40.00	-11.20	100	147
2	36.6375	53.39	QP	20.11	45.65	0.99	28.84	40.00	-11.16	100	97
3	41.5670	59.38	QP	15.11	45.80	1.08	29.77	40.00	-10.23	100	302
4	45.5348	63.07	QP	12.61	46.06	1.16	30.78	40.00	-9.22	100	234
5	49.3594	68.40	peak	9.24	46.39	1.24	32.49	40.00	-7.51	100	158
6	54.2610	66.01	peak	8.08	46.66	1.27	28.70	40.00	-11.30	100	17

Below 1GHz



Test Data

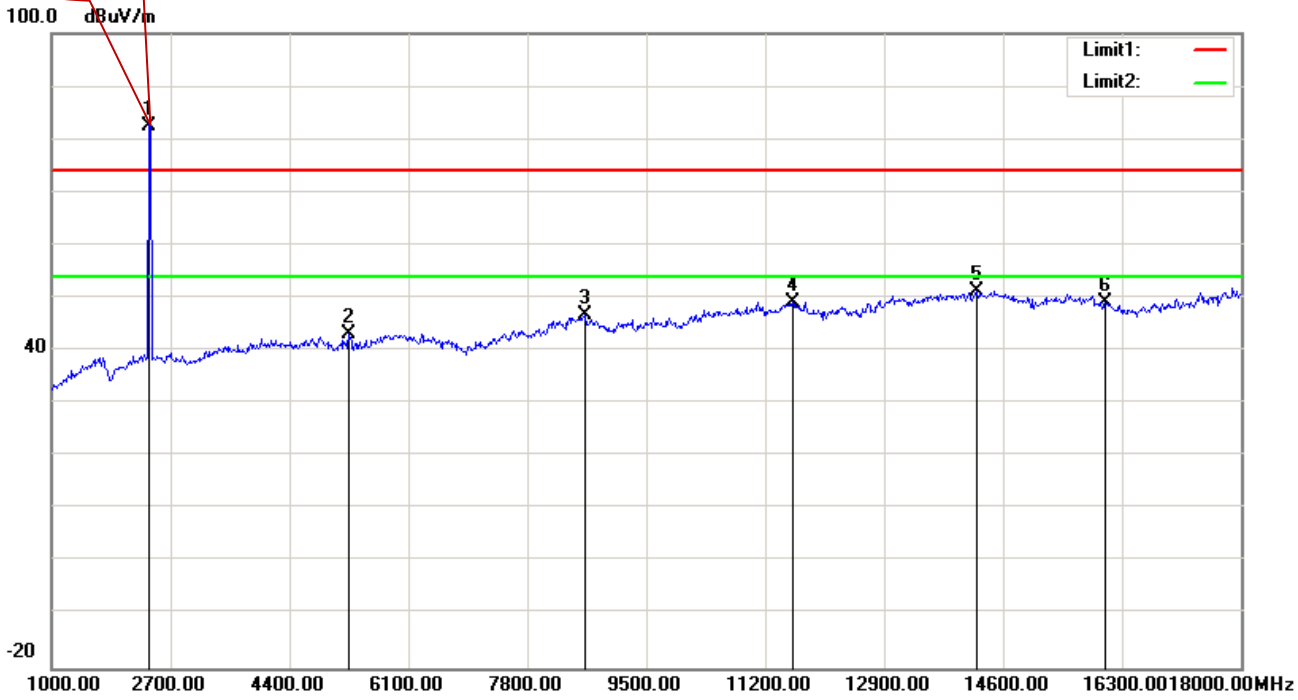
Horizontal Polarity Plot @3m

No.	Frequency	Reading	Detector	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree
	(MHz)	(dBµV/m)		(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	(cm)	( )
1	41.4215	56.36	peak	10.65	45.79	1.08	22.30	40.00	-17.70	200	236
2	50.2325	61.04	peak	9.43	46.46	1.25	25.26	40.00	-14.74	200	254
3	53.8818	61.92	peak	7.96	46.64	1.27	24.51	40.00	-15.49	200	243
4	57.5939	59.22	peak	8.56	47.00	1.29	22.07	40.00	-17.93	200	229
5	67.2022	56.19	peak	11.20	47.75	1.40	21.04	40.00	-18.96	200	223
6	348.0274	54.25	peak	17.86	48.85	2.99	26.25	46.00	-19.75	100	190

Test Mode:	Transmitting Mode

Low Channel (2402 MHz)

Above 1GHz



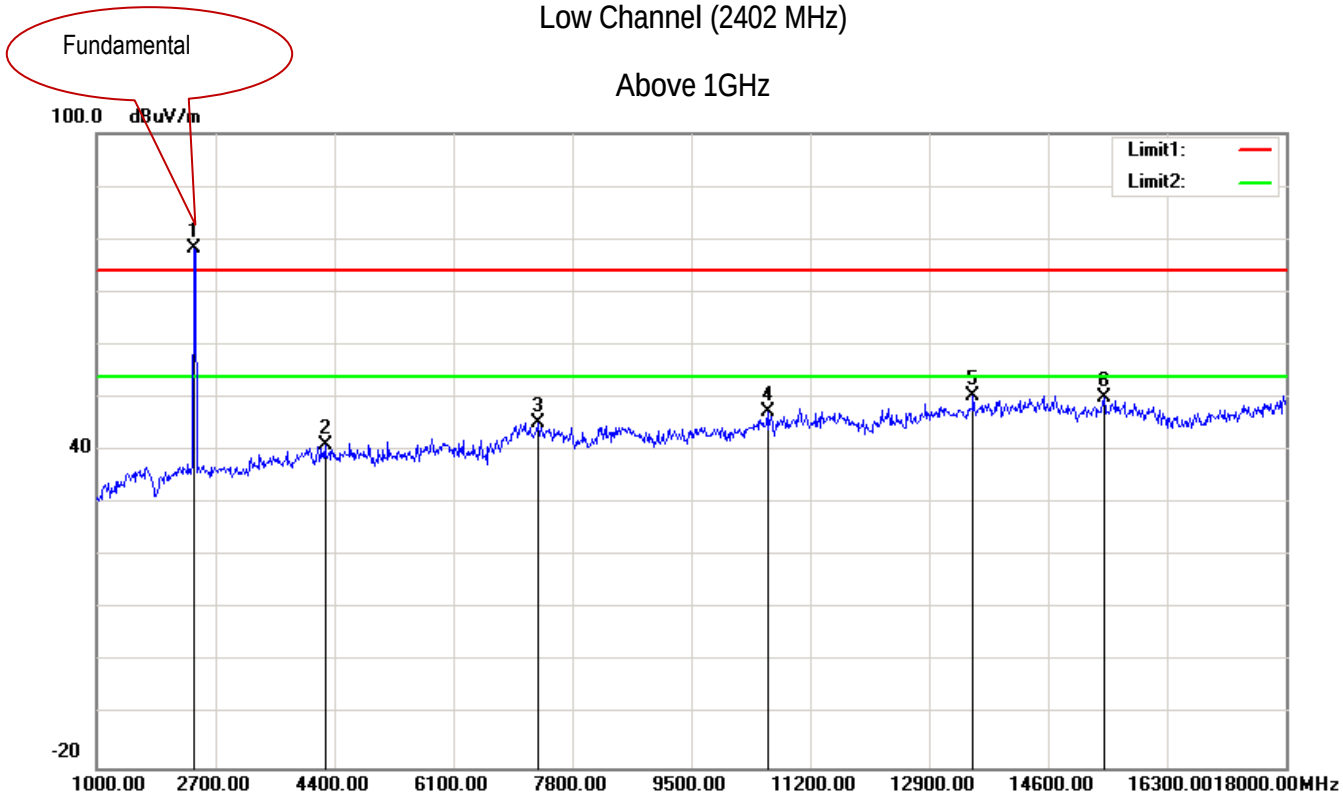
Test Data

Vertical Polarity Plot @3m

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree ( )
1	2402.000	102.23	peak	28.87	35.14	4.01	82.57	74.00	8.57	100	359
2	5250.000	56.95	peak	33.75	37.26	6.26	43.20	74.00	-30.80	100	335
3	8633.000	55.08	peak	37.35	35.02	8.29	46.70	74.00	-27.30	100	4
4	11591.000	53.88	peak	38.40	34.30	10.07	49.05	74.00	-24.95	100	359
5	14226.000	53.77	peak	40.51	33.32	9.20	51.16	74.00	-22.84	100	349
6	16062.000	53.69	peak	37.36	33.05	10.46	49.21	74.00	-24.79	100	135

Low Channel (2402 MHz)

Above 1GHz



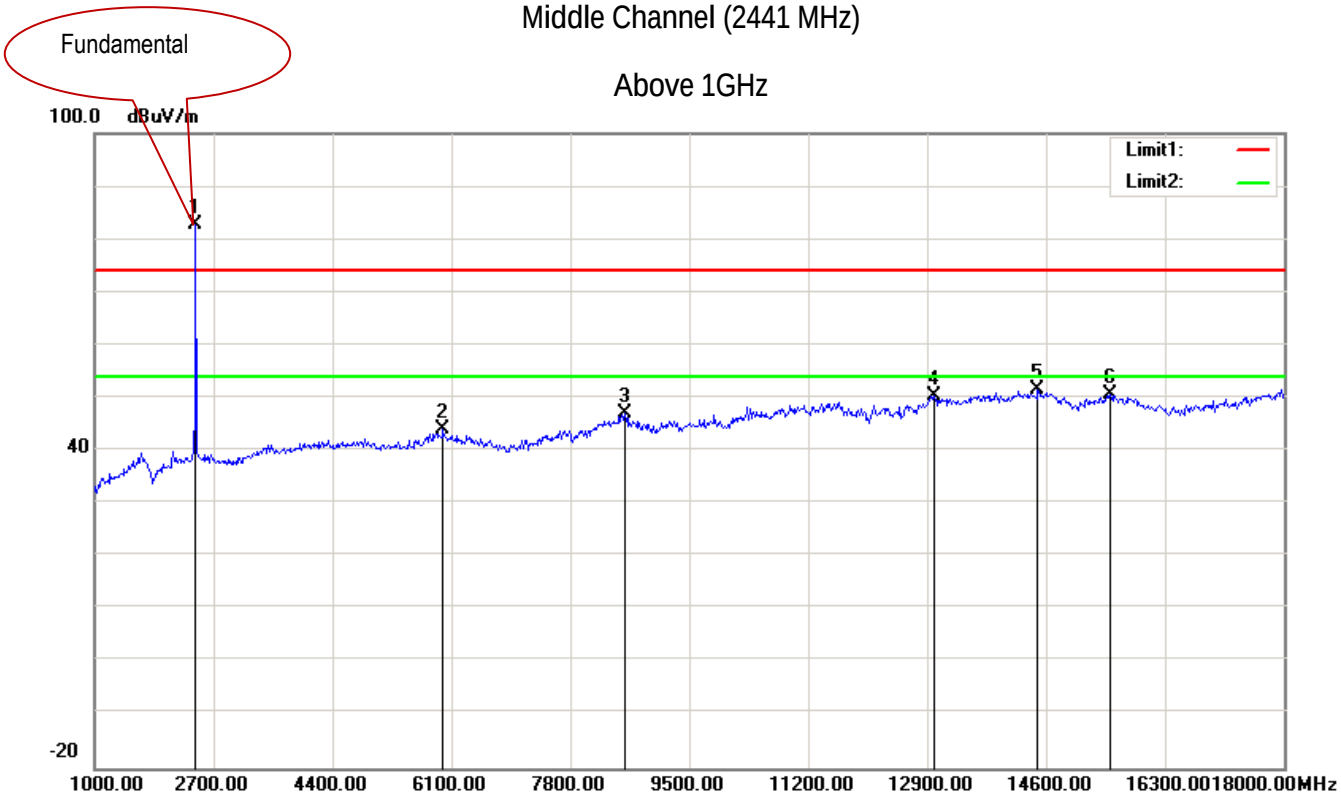
Test Data

Horizontal Polarity Plot @3m

No.	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	2402.000	98.02	peak	28.87	35.14	4.01	78.36	74.00	4.36	100	14
2	4264.000	55.23	peak	32.25	34.69	6.01	40.92	74.00	-33.08	100	284
3	7307.000	53.46	peak	35.69	36.06	7.12	45.37	74.00	-28.63	100	279
4	10588.000	52.91	peak	38.02	34.07	9.38	47.24	74.00	-26.76	100	186
5	13529.000	53.46	peak	39.53	32.98	9.38	50.39	74.00	-23.61	100	141
6	15399.000	53.20	peak	37.43	33.99	10.00	50.03	74.00	-23.97	100	135

Middle Channel (2441 MHz)

Above 1GHz



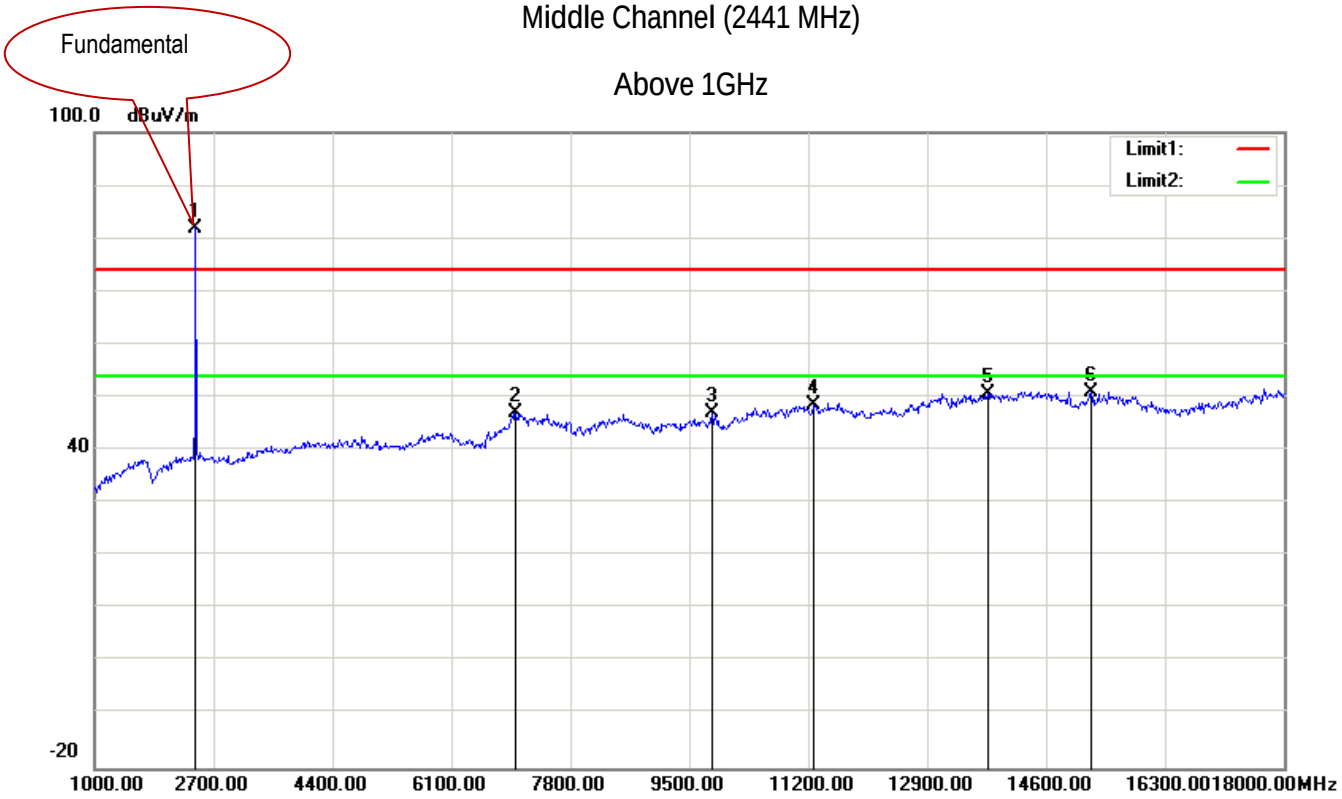
Test Data

Vertical Polarity Plot @3m

No.	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	2441.000	102.50	peak	29.04	35.24	4.03	82.89	74.00	8.89	100	354
2	5981.000	55.24	peak	34.18	36.30	5.87	43.95	74.00	-30.05	100	92
3	8582.000	55.25	peak	37.37	34.91	8.33	47.04	74.00	-26.96	100	131
4	13002.000	53.60	peak	38.90	32.80	9.65	50.35	74.00	-23.65	100	136
5	14481.000	53.62	peak	40.97	33.52	9.38	51.45	74.00	-22.55	100	3
6	15518.000	53.51	peak	36.91	33.97	10.18	50.52	74.00	-23.48	100	165

Middle Channel (2441 MHz)

Above 1GHz



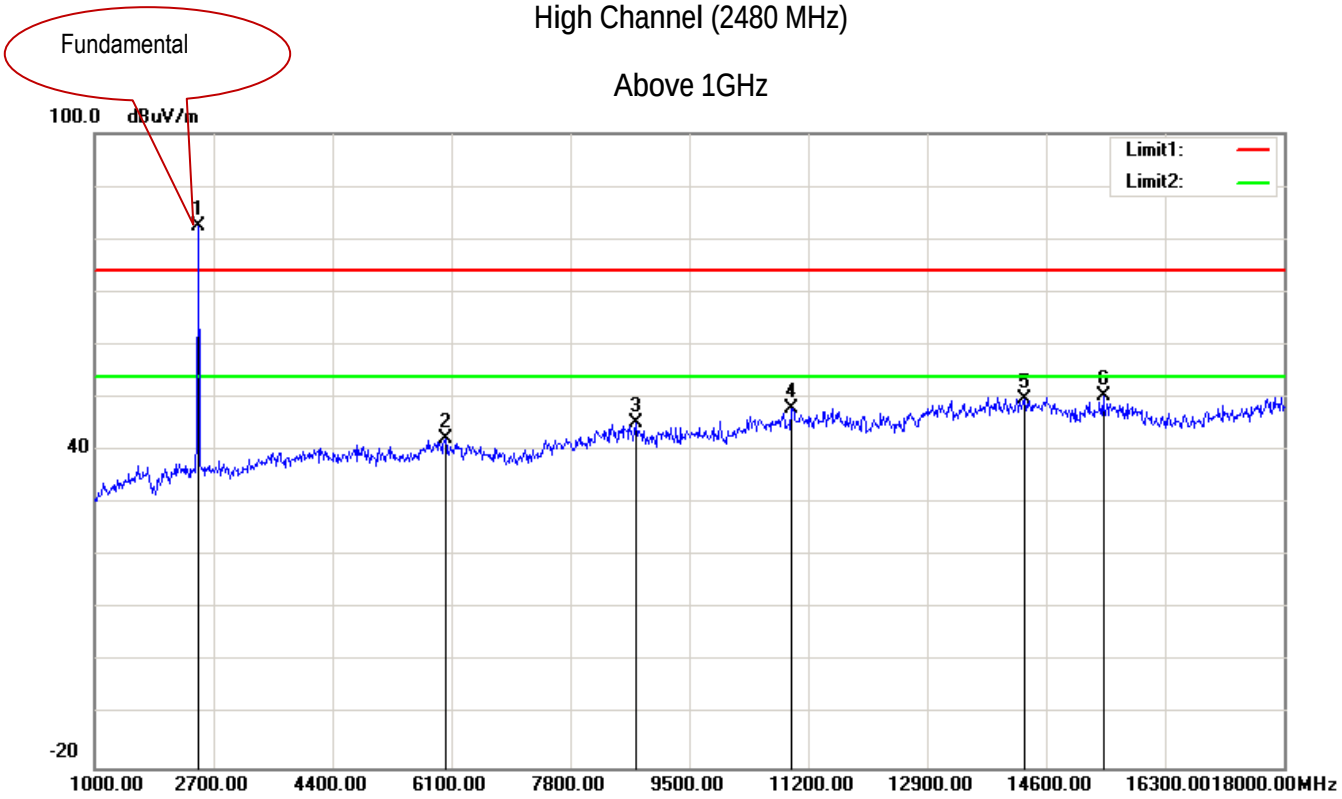
Test Data

Horizontal Polarity Plot @3m

No.	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	2441.000	101.60	peak	29.04	35.24	4.03	81.99	74.00	7.99	100	16
2	7018.000	54.62	peak	35.23	36.47	6.68	46.95	74.00	-27.05	100	263
3	9823.000	54.57	peak	37.49	34.99	9.11	47.18	74.00	-26.82	100	278
4	11268.000	53.74	peak	38.26	34.18	9.82	48.64	74.00	-25.36	100	65
5	13767.000	53.55	peak	39.82	33.06	9.21	50.52	74.00	-23.48	100	252
6	15246.000	54.61	peak	38.22	33.96	9.74	51.09	74.00	-22.91	100	255

High Channel (2480 MHz)

Above 1GHz



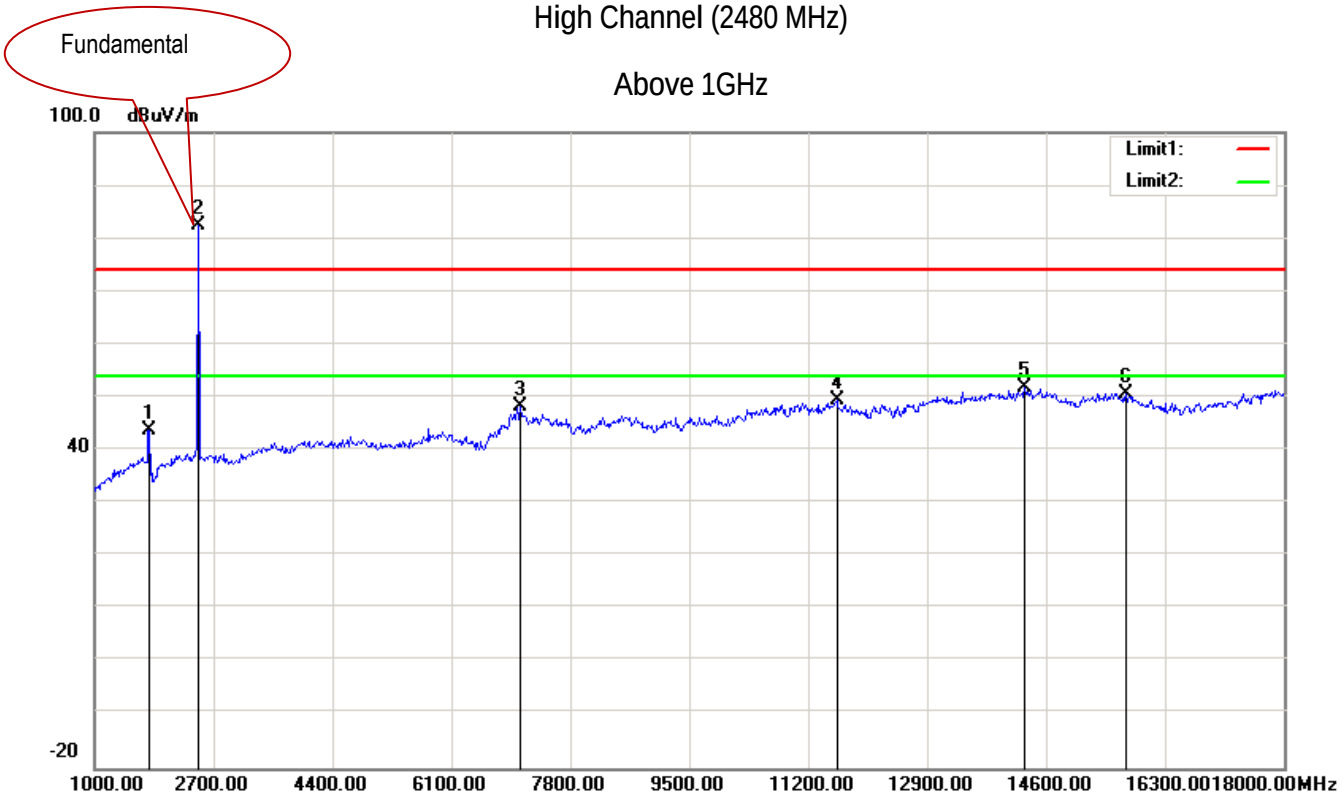
Test Data

Vertical Polarity Plot @3m

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree ( )
1	2479.000	101.87	peak	29.21	35.24	4.06	82.42	74.00	8.42	100	355
2	6015.000	53.42	peak	34.21	36.39	5.85	42.15	74.00	-31.85	100	352
3	8735.000	53.93	peak	37.31	35.24	8.22	45.22	74.00	-28.78	100	268
4	10962.000	53.70	peak	38.09	34.21	9.49	48.07	74.00	-25.93	100	48
5	14294.000	52.39	peak	40.63	33.37	9.25	49.90	74.00	-24.10	100	206
6	15416.000	53.36	peak	37.34	33.99	10.03	50.24	74.00	-23.76	100	341

High Channel (2480 MHz)

Above 1GHz



Test Data

Horizontal Polarity Plot @3m

No.	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	1782.000	62.63	peak	26.18	35.03	4.01	43.67	74.00	-30.33	200	352
2	2480.000	101.86	peak	29.21	35.24	4.06	82.41	74.00	8.41	100	11
3	7086.000	55.90	peak	35.34	36.38	6.78	48.12	74.00	-25.88	100	77
4	11608.000	54.41	peak	38.40	34.33	10.06	49.54	74.00	-24.46	200	189
5	14294.000	54.35	peak	40.63	33.37	9.25	51.86	74.00	-22.14	200	14
6	15739.000	54.14	peak	37.04	33.52	10.30	50.53	74.00	-23.47	100	185

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 data for above18G which is below 20dB is not recorded.

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Due	In use
AC Line Conducted Emissions					
R&S EMI Test Receiver	ESPI3	101216	03/31/2016	03/31/2017	☑
V-LISN	ESH3-Z5	838979/005	03/31/2016	03/31/2017	☑
SIEMIC Conducted Emissions software	EZ_EMC (Ver.ICP-03A1)	N/A	N/A	N/A	☑
RF conducted test					
R&S EMI Receiver	ESPI3	101216	03/31/2016	03/31/2017	☑
Radiated Emissions					
Agilent Technologies Spectrum Analyzer	N9010A	MY47191130	03/11/2016	03/10/2017	☑
R&S EMI Receiver	ESPI3	101216	03/31/2016	03/31/2017	☑
Antenna (30MHz~6GHz)	JB6	A121411	10/31/2015	10/31/2016	☑
EMCO Horn Antenna (1 ~18GHz)	3115	N/A	10/09/2015	10/08/2016	☑
Hp Agilent Pre-Amplifier	8447F	1937A01160	10/30/2015	10/30/2016	☑
Pre-Amplifier	8449B	3008A02224	10/30/2015	10/30/2016	☑
SIEMIC Radiated Emissions software	EZ_EMC (Ver.ICP-03A1)	N/A	N/A	N/A	☑

Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph: EUT External Photo

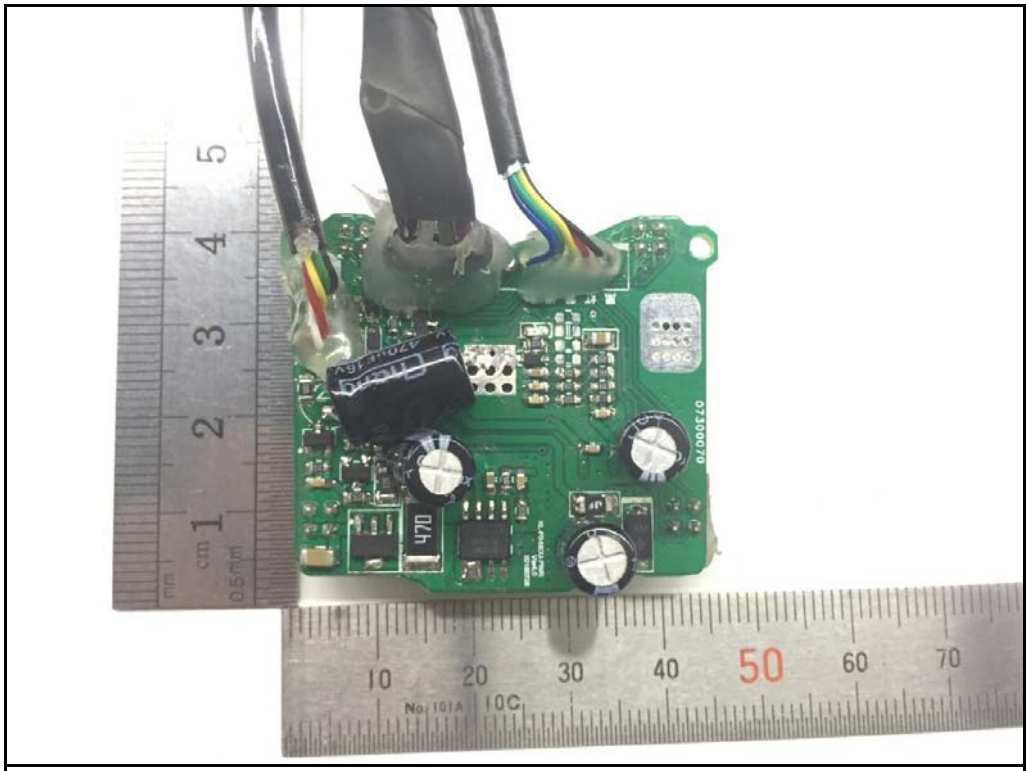
EUT- Front View

EUT- Rear View

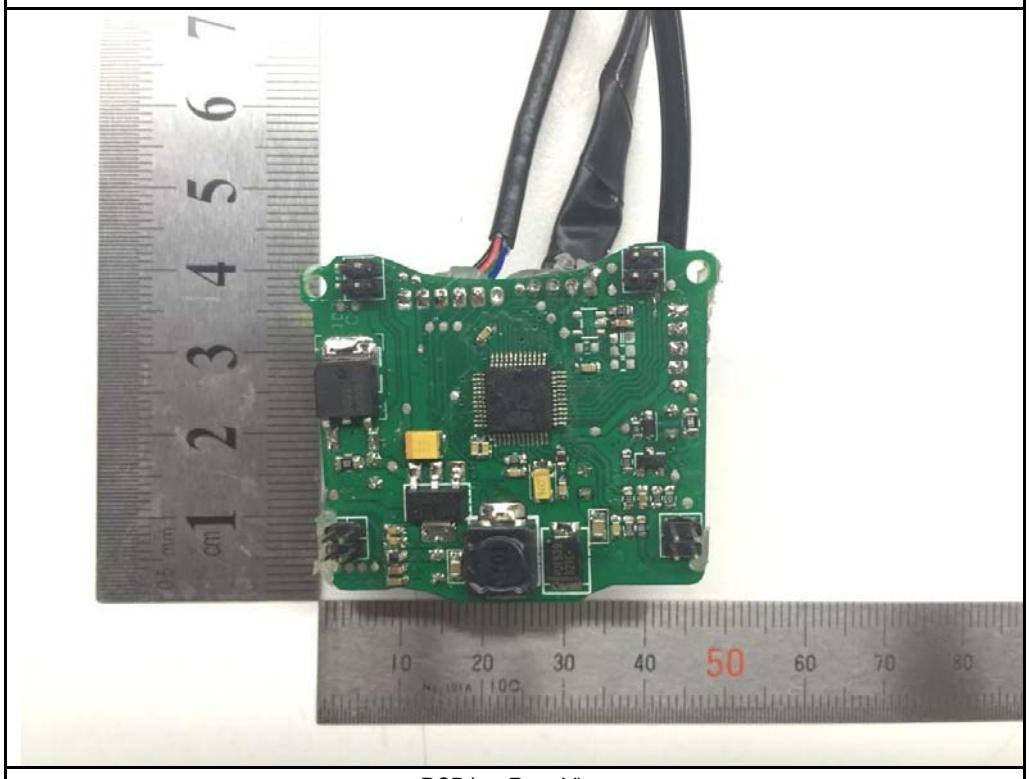
EUT- Left View

EUT- Right View

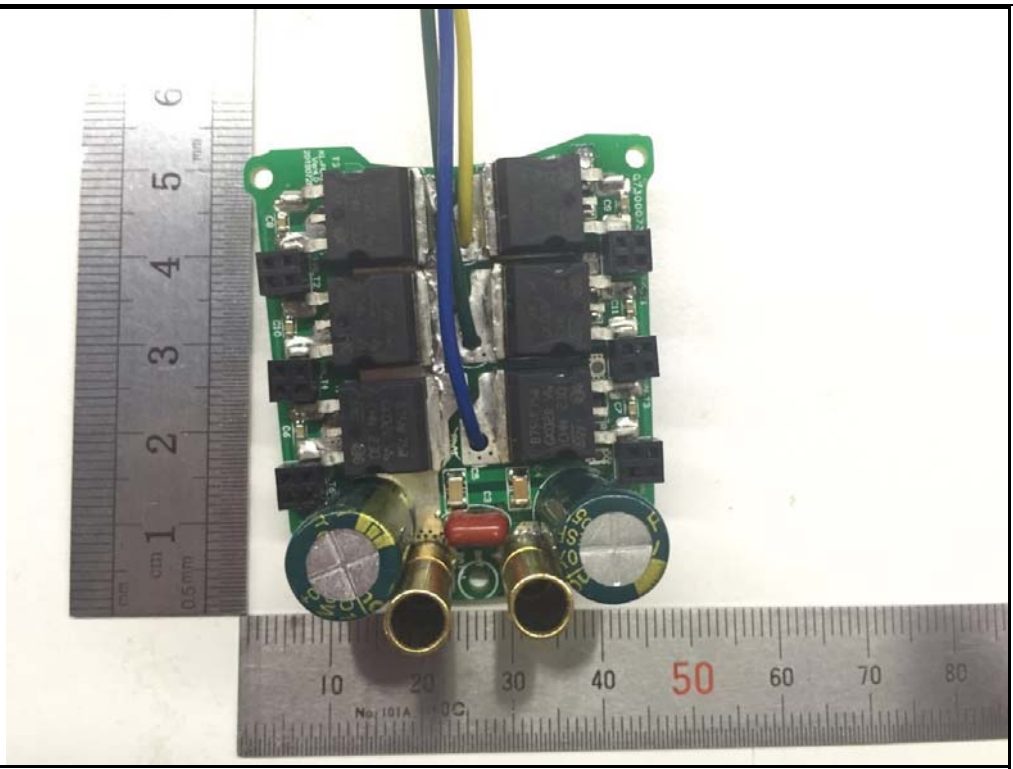
Annex B.ii. Photograph: EUT Internal Photo



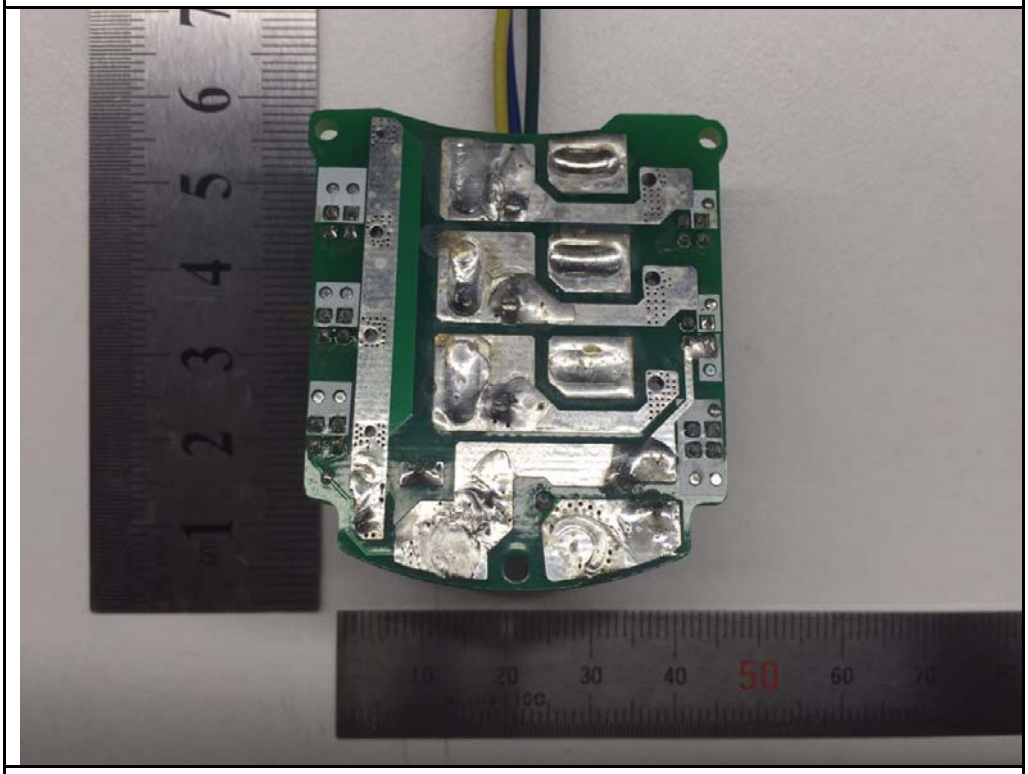
PCB1 – Front View



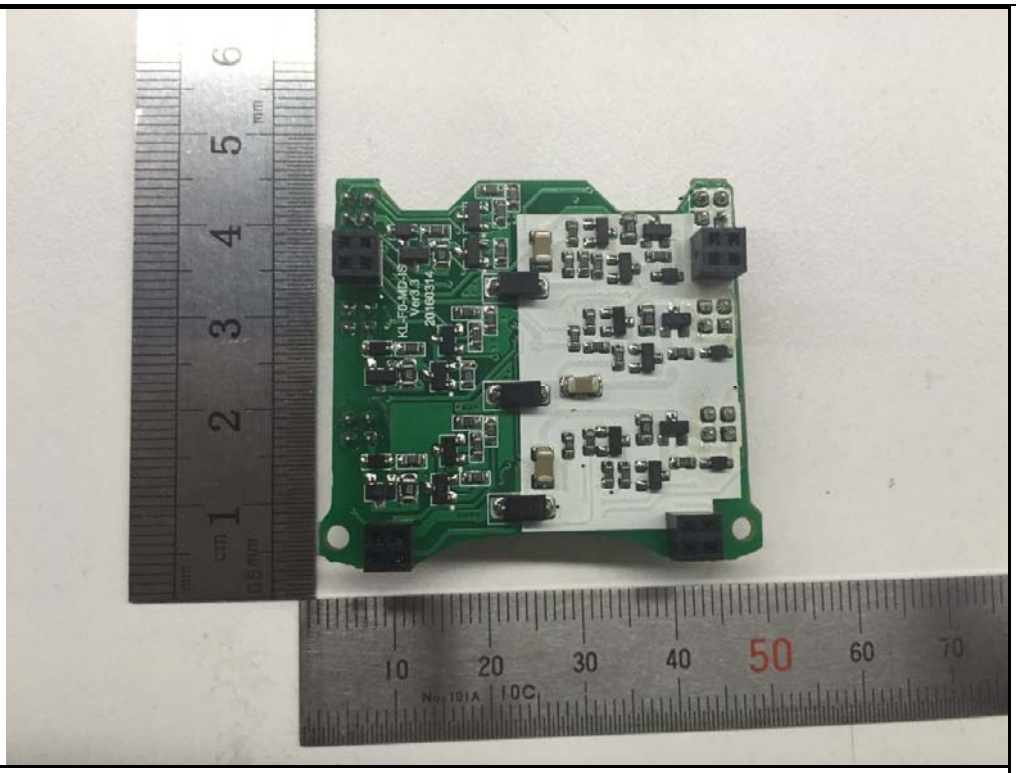
PCB1 – Rear View



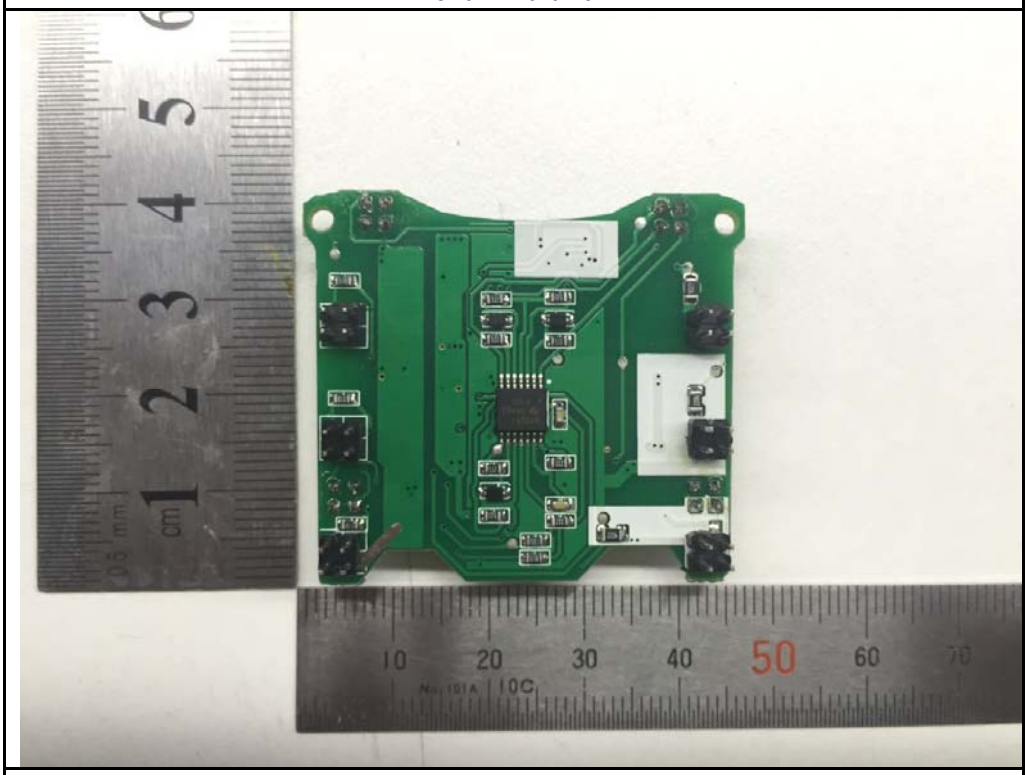
PCB2 – Front View



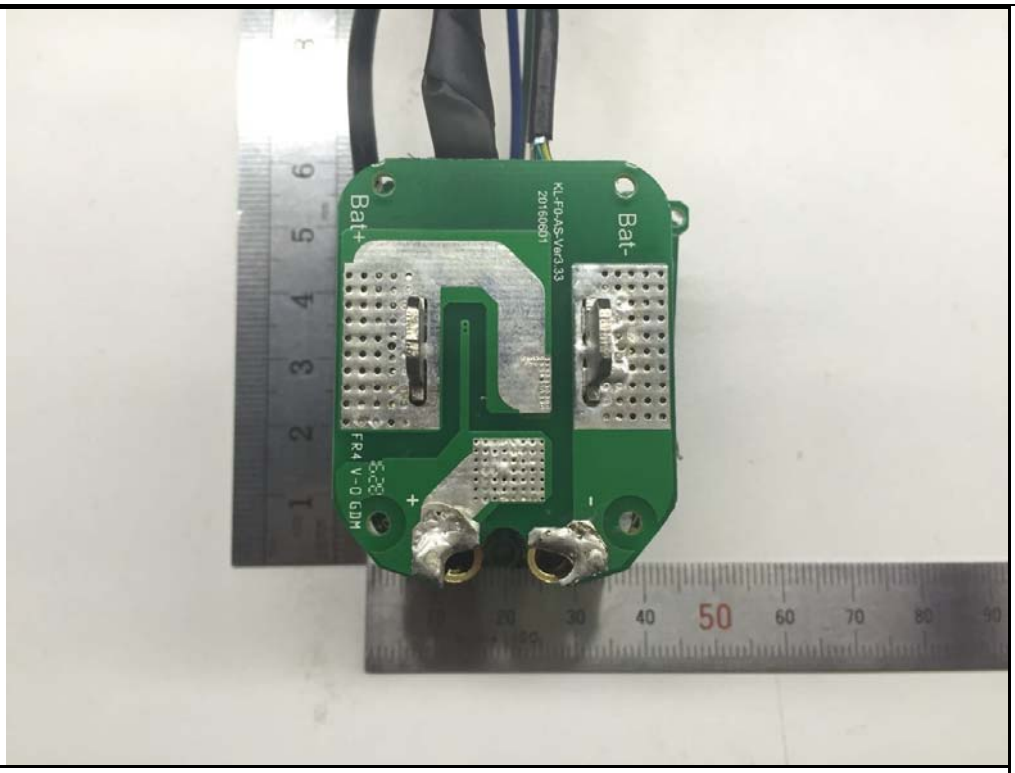
PCB2 – Rear View



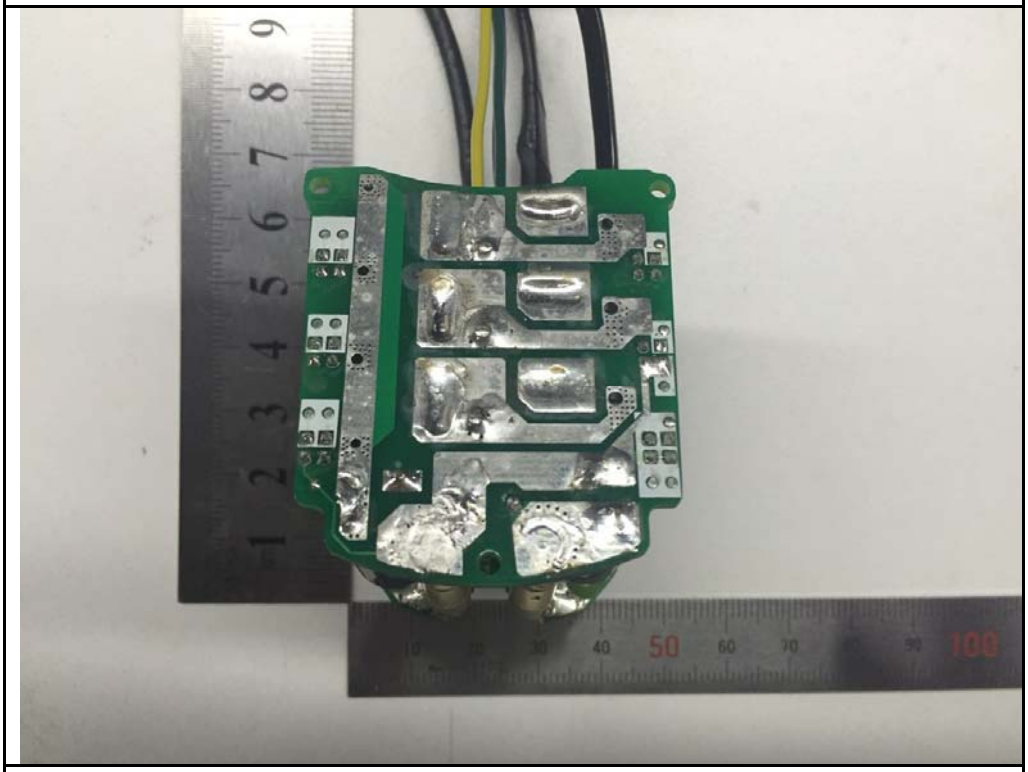
PCB3 – Front View



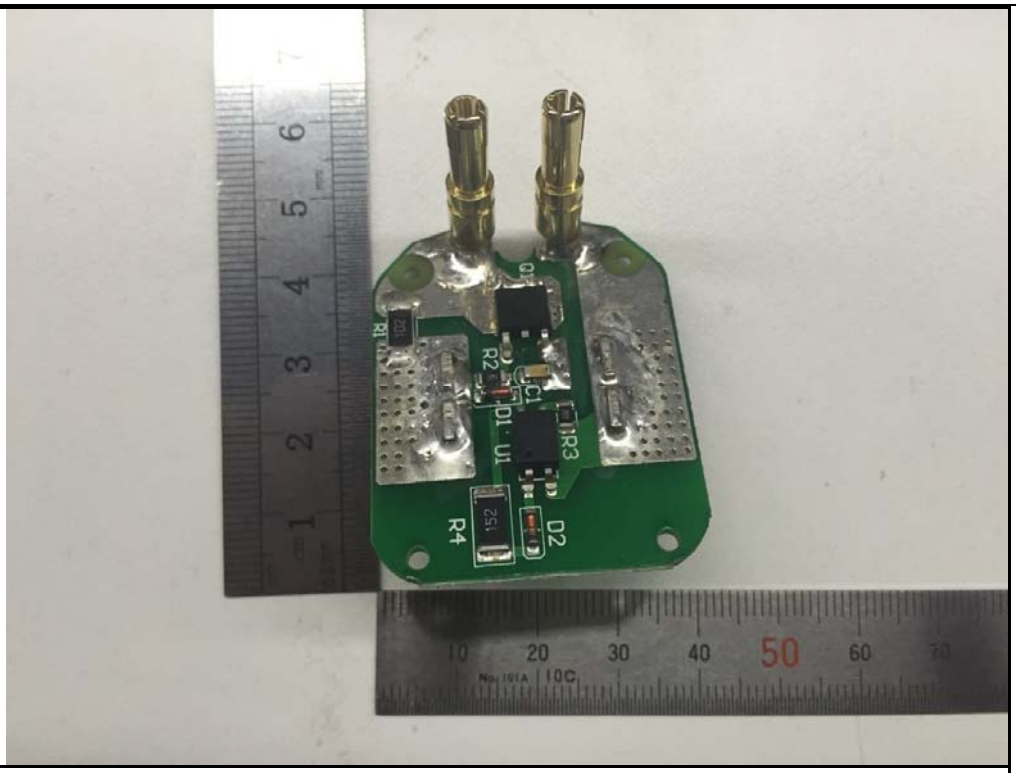
PCB3 – Rear View



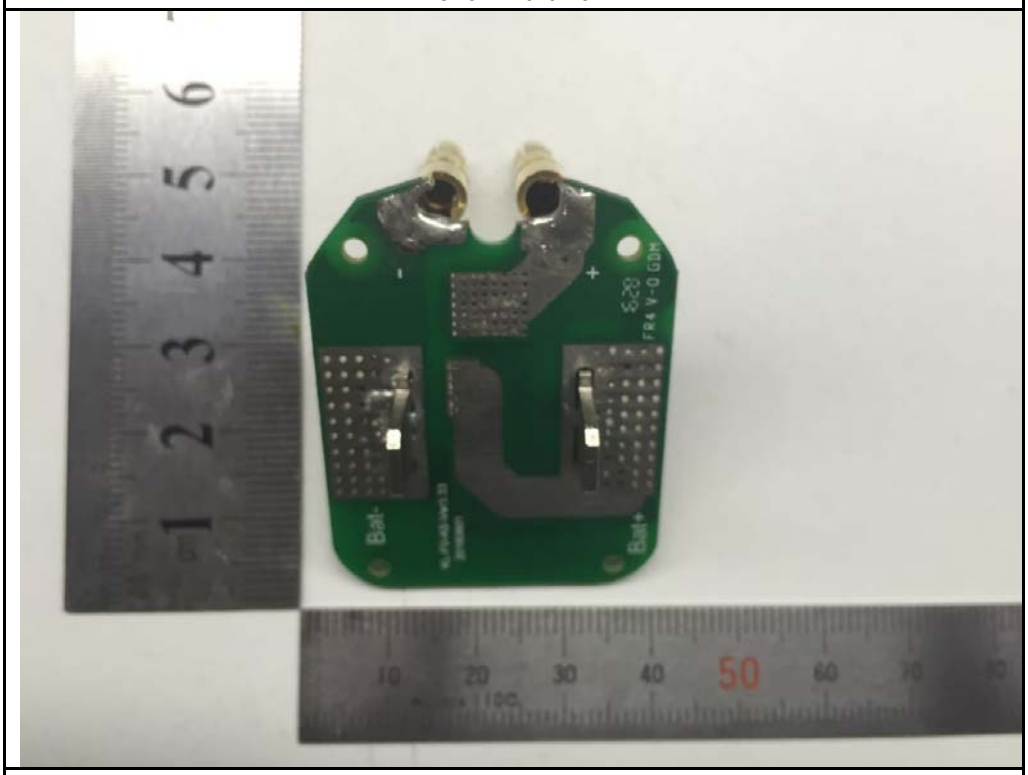
PCB4 – Front View



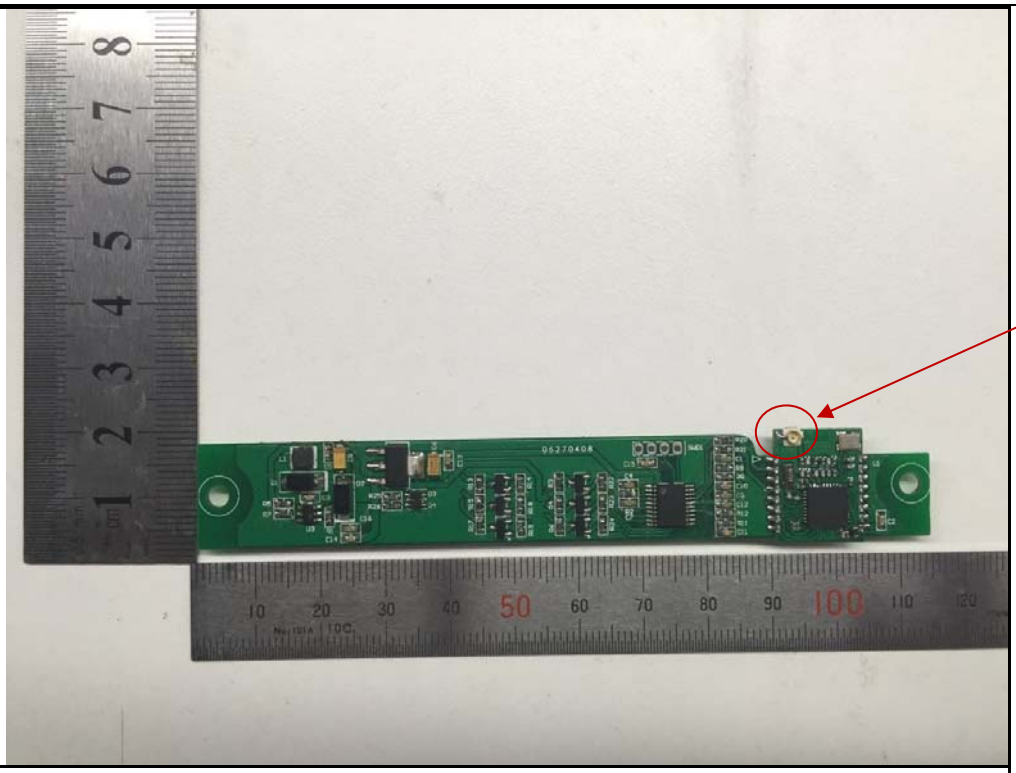
PCB4 – Rear View



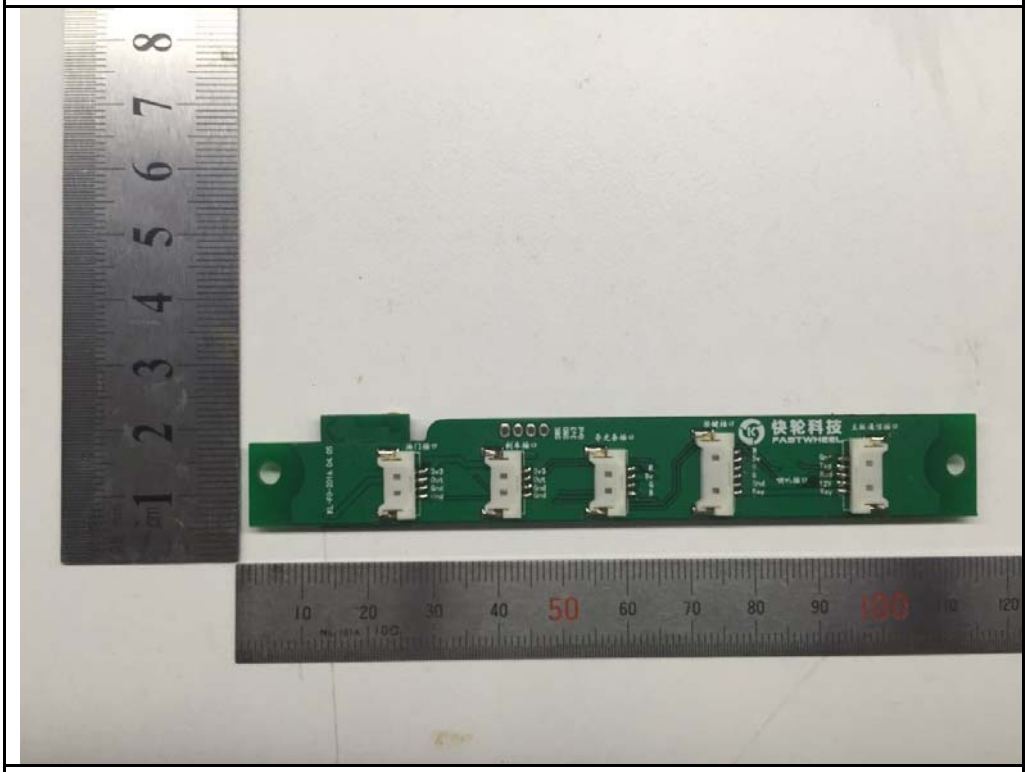
PCB5 – Front View



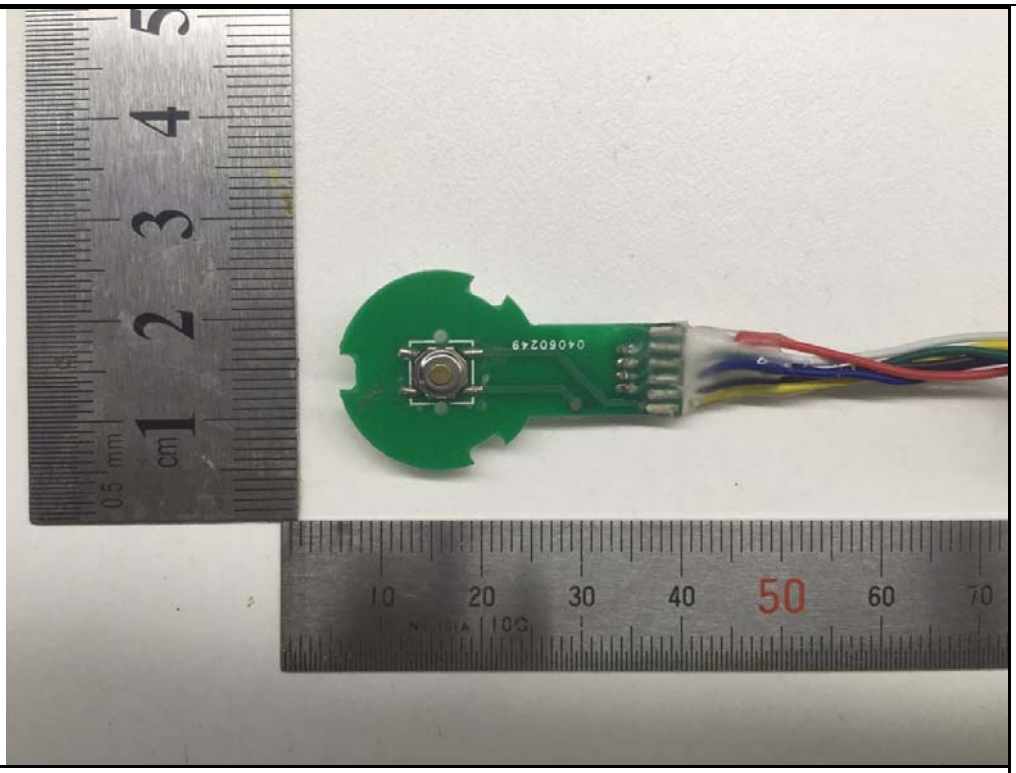
PCB5 – Rear View



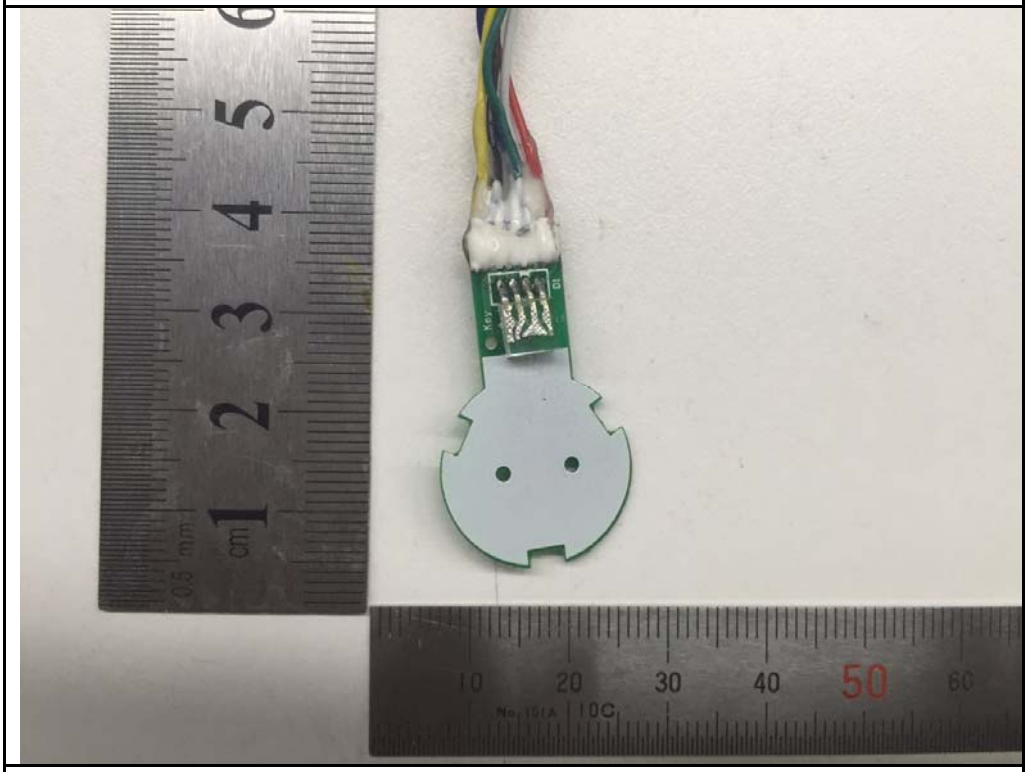
PCB6 – Front View



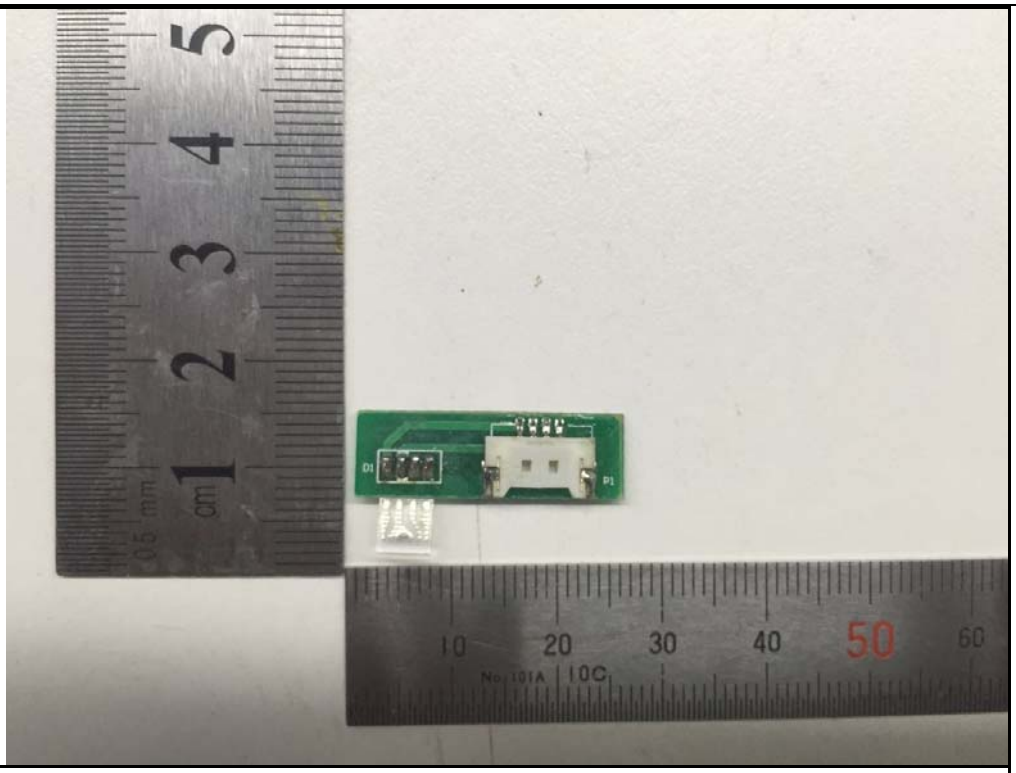
PCB6 – Rear View



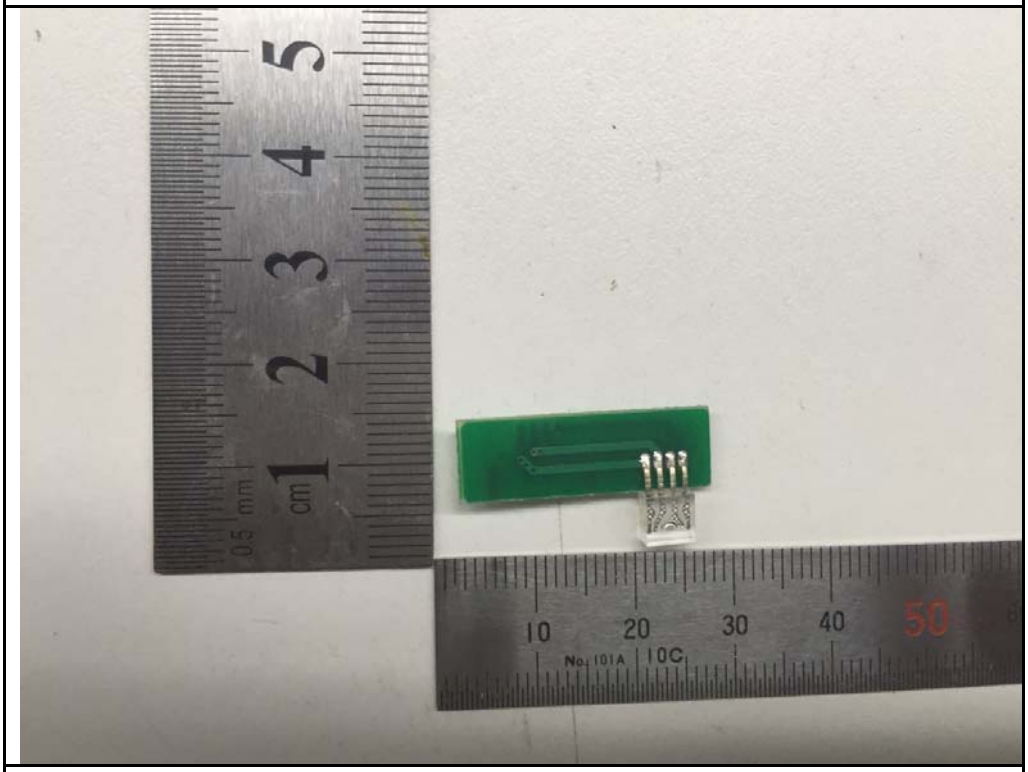
PCB7 – Front View



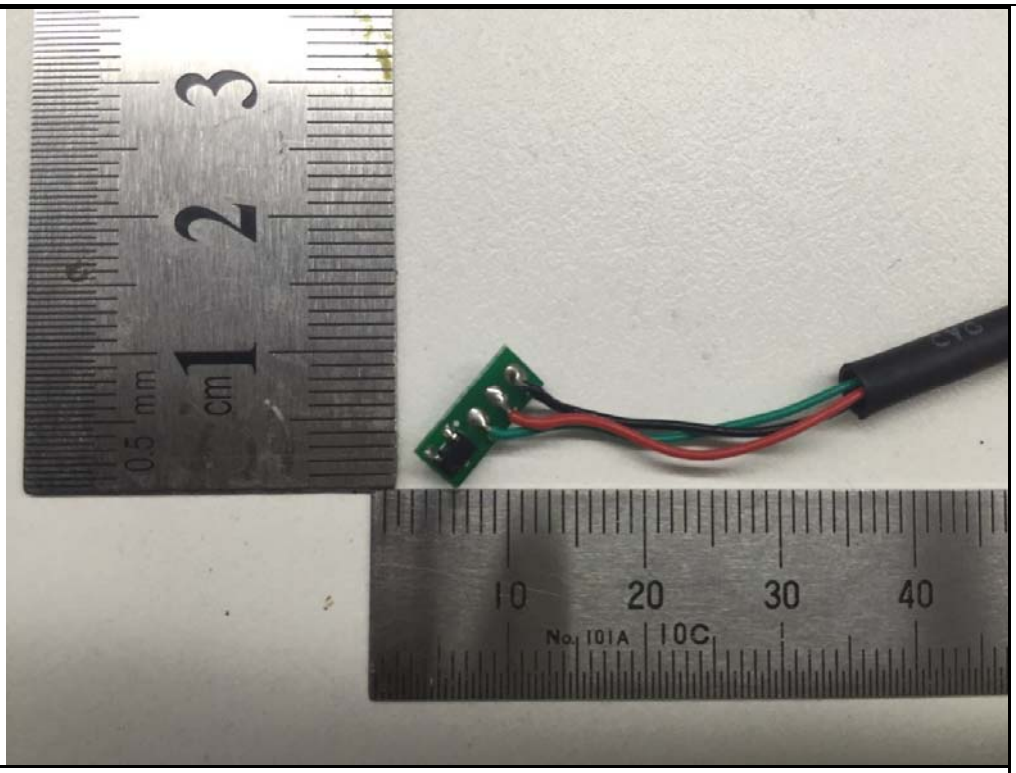
PCB7 – Rear View



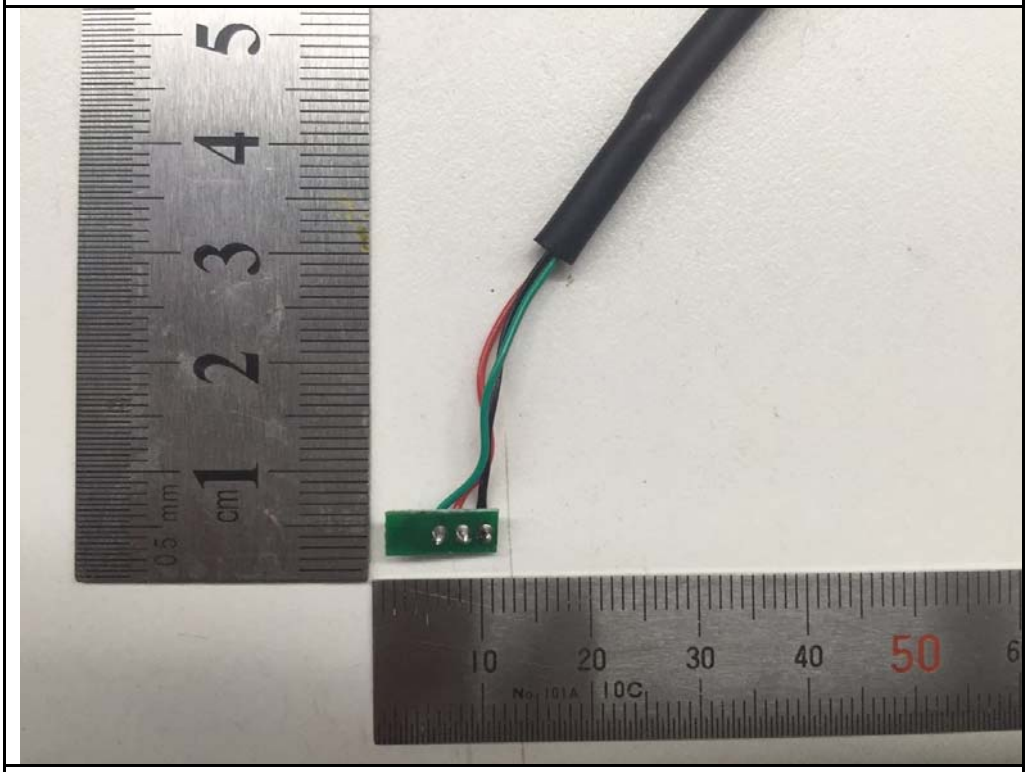
PCB8 – Front View



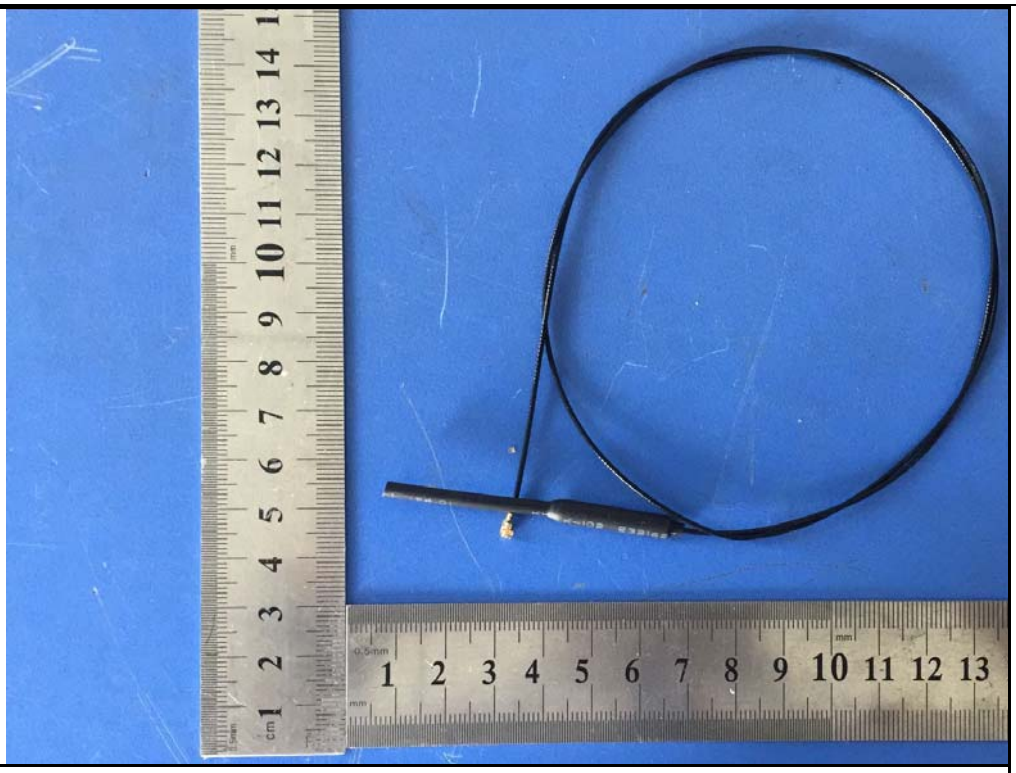
PCB8 – Rear View



PCB9 – Front View

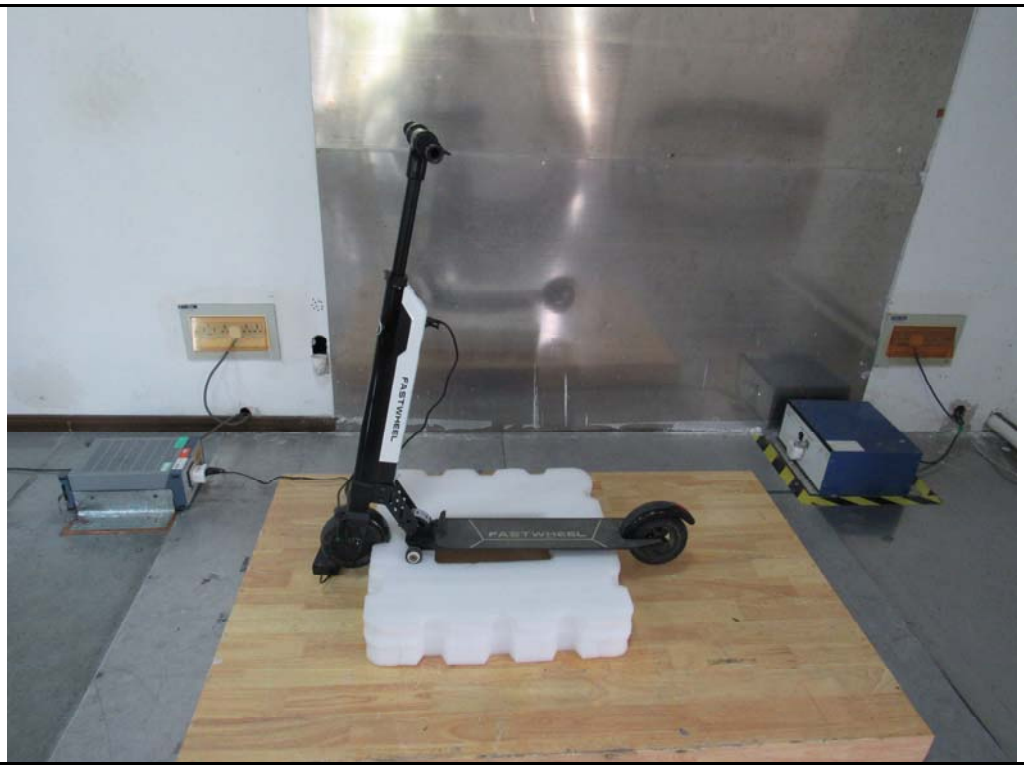


PCB9 – Rear View



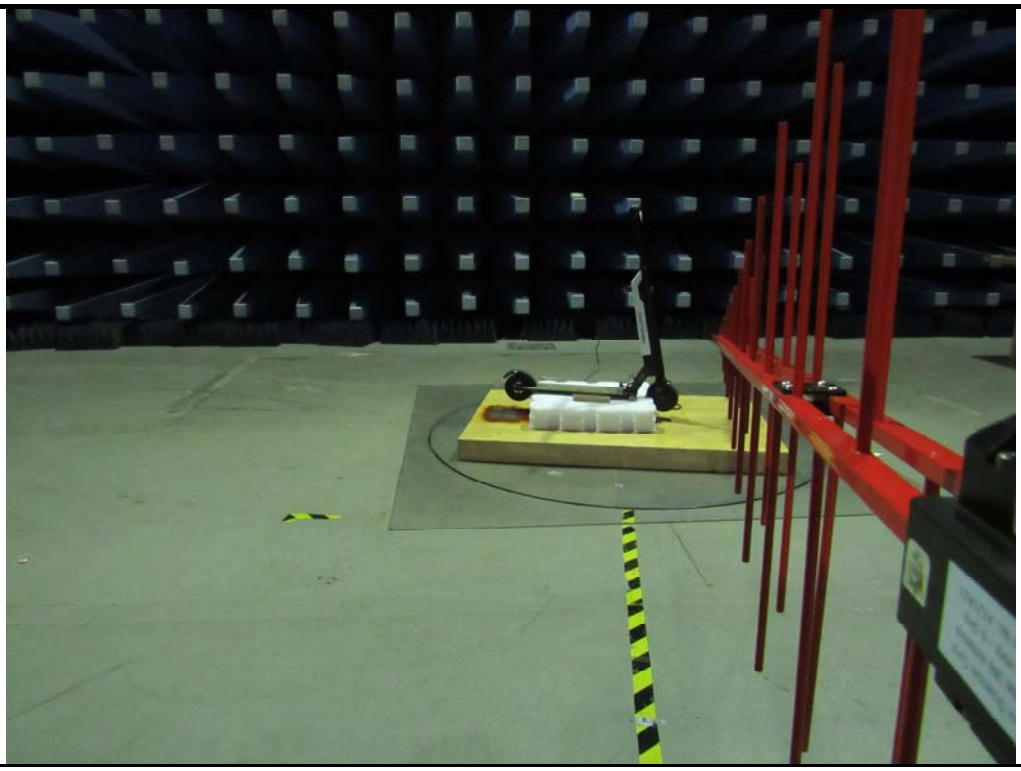
Antenna – Front View

Annex B.iii. Photograph: Test Setup Photo

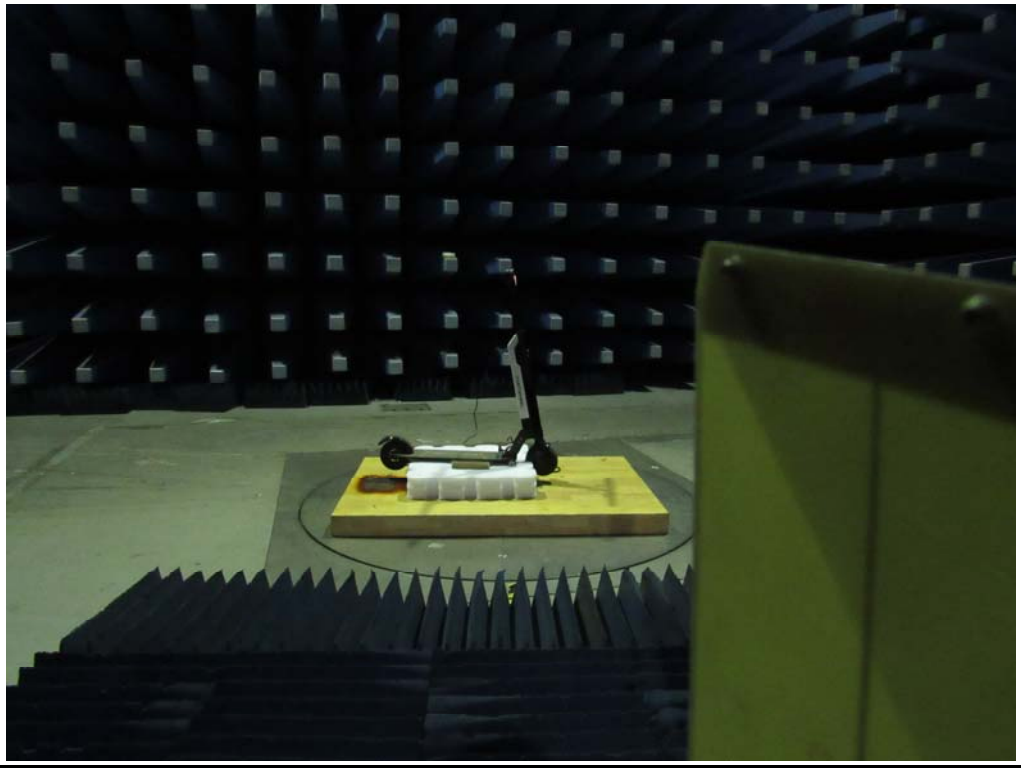


Conducted Emissions Test Setup Front View

Conducted Emissions Test Setup Side View



Radiated Spurious Emissions Test Setup Below 1GHz

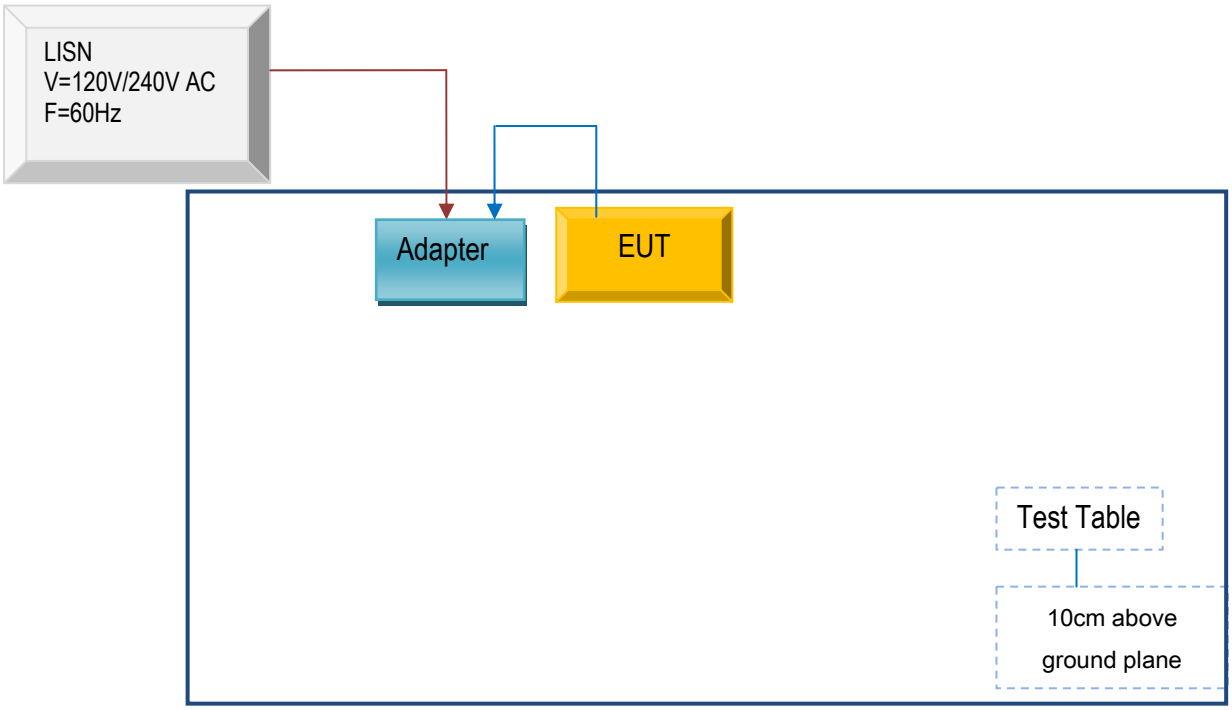


Radiated Spurious Emissions Test Setup Above 1GHz

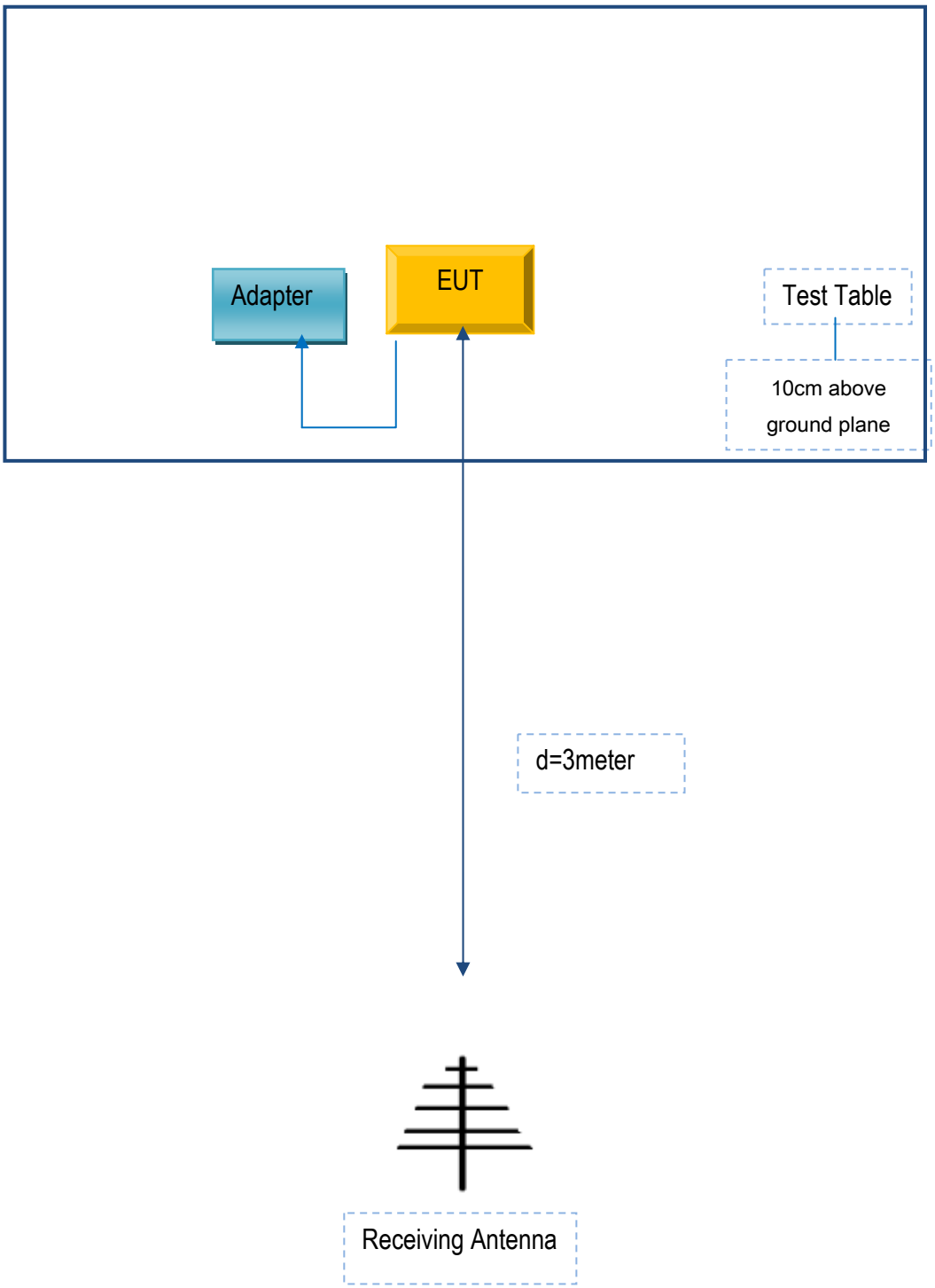
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

Block Configuration Diagram for AC Line Conducted Emissions



Block Configuration Diagram for Radiated Emissions.



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
N/A	N/A	N/A	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 attachment

Annex E. DECLARATION OF SIMILARITY

Nanjing Kuailun Intelligent Technology Co. Ltd

To：SIEMIC INC.

Declaration letter

Dear Sir,

For our business issue and marketing requirement, we would like to list different models numbers on the FCC certificates and reports, as following:

Model No.: F0
S1
F0-0160-RD
F0-0160-WH
F0-0160-BL
F0-0160-BK
F0-0210-RD
F0-0210-WH
F0-0210-BL
F0-0210-BK

The difference between the four models F0-0160-RD and F0-0160-WH and F0-0160-BL and F0-0160-BKare as follows:

The Serial Model Name: Different color only, like all the other.

The difference between the four models F0-0210-RD and F0-0210-WH and F0-0210-BL and F0-0210-BKare as follows:

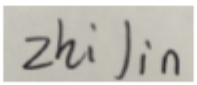
The Serial Model Name: Different color only, like all the other.

The difference between models F0-0160-RD F0-0160-WH F0-0160-BL F0-0160-BK and F0-0210-RD F0-0210-WH F0-0210-BL F0-0210-BKare as follows:

The Serial Model Name: Different battery capacity only, like all the other.

Thank you!

FCC ID：2AJIEF0

Signature: 

Printed name/title: zhiJin / IP Engineer

Address: 15 Floor,Block B,Xingzhi science and technology Park,Economic Development Zone, Nanjing, China