

FCC TEST REPORT

Client Name : Lumen Labs(HK) Limited
Address : 25/F, Two Harbour Square, 180 Wai Yip Street, Kwun
Tong, Hong Kong
Product Name : Lumos Remote
Date : Mar. 06, 2019

Shenzhen Anbotech Compliance Laboratory Limited

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TEST REPORT

Applicant : Lumen Labs(HK) Limited
Manufacturer : Lumen Labs(HK) Limited
Product Name : Lumos Remote
Model No. : LRELRN-A0
Trade Mark : N.A.
Rating(s) : Input:DC 5V, 500mA(with DC 3.7V, 90 mAh Battery inside)

Test Standard(s) : FCC Part15 Subpart C, Paragraph 15.249

Test Method(s) : ANSI C63.10: 2013

The device described above is tested by Shenzhen Anbotech Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotech Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotech Compliance Laboratory Limited.

Date of Receipt

Feb. 22, 2019

Date of Test

Feb. 22~Mar. 06, 2019

Prepared by



(Engineer / Oliay Yang)

Reviewer

(Supervisor / Snowy Meng)

Approved & Authorized Signer

(Manager / Sally Zhang)

Shenzhen Anbotech Compliance Laboratory Limited

Code:AB-RF-05-a

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1. General Information

1.1. Client Information

Applicant	:	Lumen Labs(HK) Limited
Address	:	25/F, Two Harbour Square, 180 Wai Yip Street, Kwun Tong, Hong Kong
Manufacturer	:	Lumen Labs(HK) Limited
Address	:	25/F, Two Harbour Square, 180 Wai Yip Street, Kwun Tong, Hong Kong
Factory	:	Lumen Labs(HK) Limited
Address	:	25/F, Two Harbour Square, 180 Wai Yip Street, Kwun Tong, Hong Kong

1.2. Description of Device (EUT)

Product Name	:	Lumos Remote
Model No.	:	LRELRN-A0
Trade Mark	:	N.A.
Test Power Supply	:	DC 3.7V battery inside
Test Sample No.	:	S1(Normal Sample), S2(Engineering Sample)
Product Description	Operation Frequency:	2455.5MHz
	Number of Channel:	1 Channel
	Modulation Type:	FSK
	Antenna Type:	PCB Antenna
	Antenna Gain(Peak):	1 dBi
Remark: 1)For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.		

1.3. Auxiliary Equipment Used During Test

Adapter	:	Manufacturer: ZTE M/N: STC-A2050I1000USBA-C S/N: 201202102100876 Input: 100-240V~ 50/60Hz, 0.3A Output: DC 5V, 1000mA
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1.4. Description of Test Modes

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	CH01(TX+ Charging Mode/TX Only)

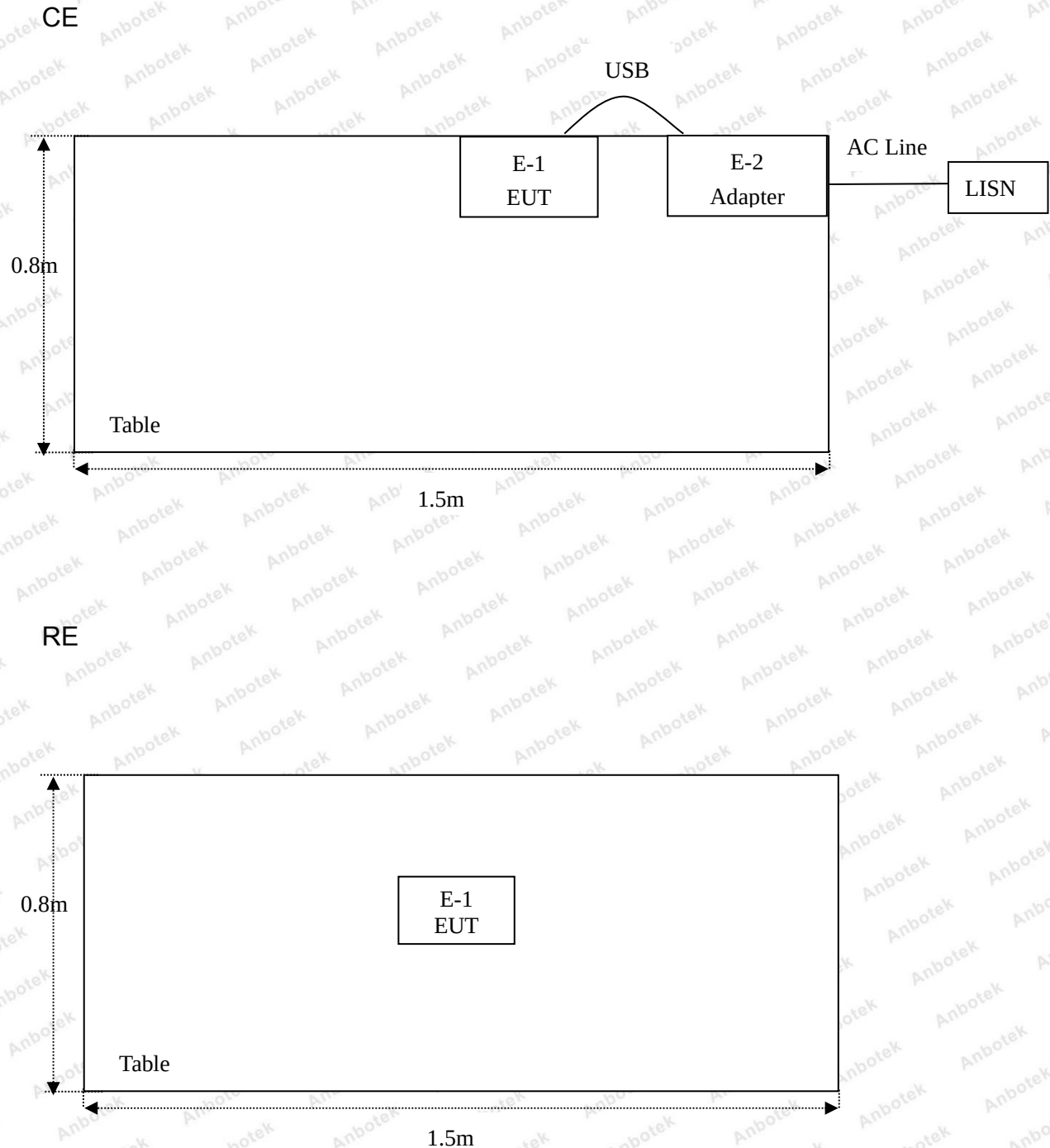
Note:

1. The engineering test program was provided and the EUT was programmed to be in continuously transmitting mode.
2. EUT built-in battery-powered, fully-charged battery use of the test battery.

1.5. List of Channels

Channel	Freq.(MHz)
01	2455.5

1.6. Description of Test Setup



1.7. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	Nov. 05, 2018	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESPI3	101604	Nov. 05, 2018	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Nov. 05, 2018	1 Year
4.	Spectrum Analysis	Agilent	E4407B	US39390582	Nov. 05, 2018	1 Year
5.	MAX Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 05, 2018	1 Year
6.	Preamplifier	SKET Electronic	BK1G18G30 D	KD17503	Nov. 05, 2018	1 Year
7.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Nov. 20, 2018	1 Year
8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Nov. 19, 2018	1 Year
9.	Loop Antenna	Schwarzbeck	FMZB1519B	00053	Nov. 20, 2018	1 Year
10.	Horn Antenna	A-INFO	LB-180400-K F	J211060628	Nov. 20, 2018	1 Year
11.	Pre-amplifier	SONOMA	310N	186860	Nov. 05, 2018	1 Year
12.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
13.	RF Test Control System	YIHENG	YH3000	2017430	Nov. 05, 2018	1 Year
14.	Power Sensor	DAER	RPR3006W	15I00041SN045	Nov. 05, 2018	1 Year
15.	Power Sensor	DAER	RPR3006W	15I00041SN046	Nov. 05, 2018	1 Year
16.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 05, 2018	1 Year
17.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Nov. 05, 2018	1 Year
18.	Signal Generator	Agilent	E4421B	MY41000743	Nov. 05, 2018	1 Year
19.	DC Power Supply	IVYTECH	IV3605	1804D360510	Apr. 02, 2018	1 Year
20.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80 B	N/A	Nov. 01, 2018	1 Year

1.8. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 184111

Shenzhen Anbotech Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 184111, July 31, 2017.

ISED-Registration No.: 8058A-1

Shenzhen Anbotech Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A-1, June 13, 2016.

Test Location

Shenzhen Anbotech Compliance Laboratory Limited.

1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518102

2. Summary of Test Results

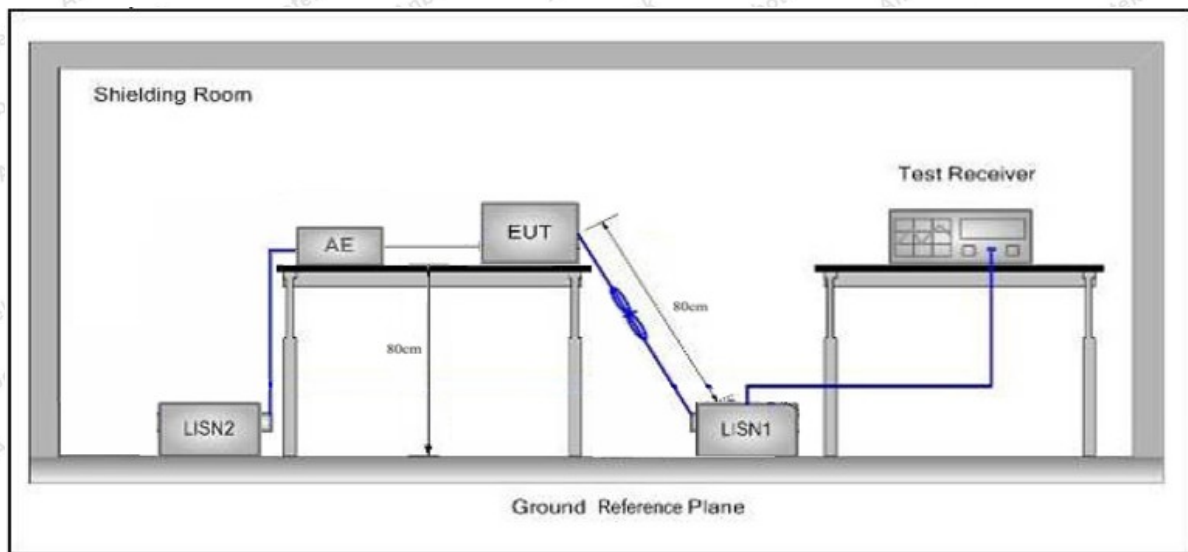
Standard Section	Test Item	Result
15.203	Antenna Requirement	PASS
15.207	Conducted Emission	PASS
15.249	Radiated Emission	PASS
15.215(c)	20dB Bandwidth	PASS
15.249(c)	Band Edge	PASS
Remark: "N/A" is an abbreviation for Not Applicable.		

3. Conducted Emission Test

3.1. Test Standard and Limit

Test Standard	FCC Part15 Section 15.207		
Test Limit	Frequency	Maximum RF Line Voltage (dBuV)	
		Quasi-peak Level	Average Level
	150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
	500kHz~5MHz	56	46
	5MHz~30MHz	60	50
Remark: (1) *Decreasing linearly with logarithm of the frequency. (2) The lower limit shall apply at the transition frequency.			

3.2. Test Setup



3.3. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.10-2013 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9kHz.

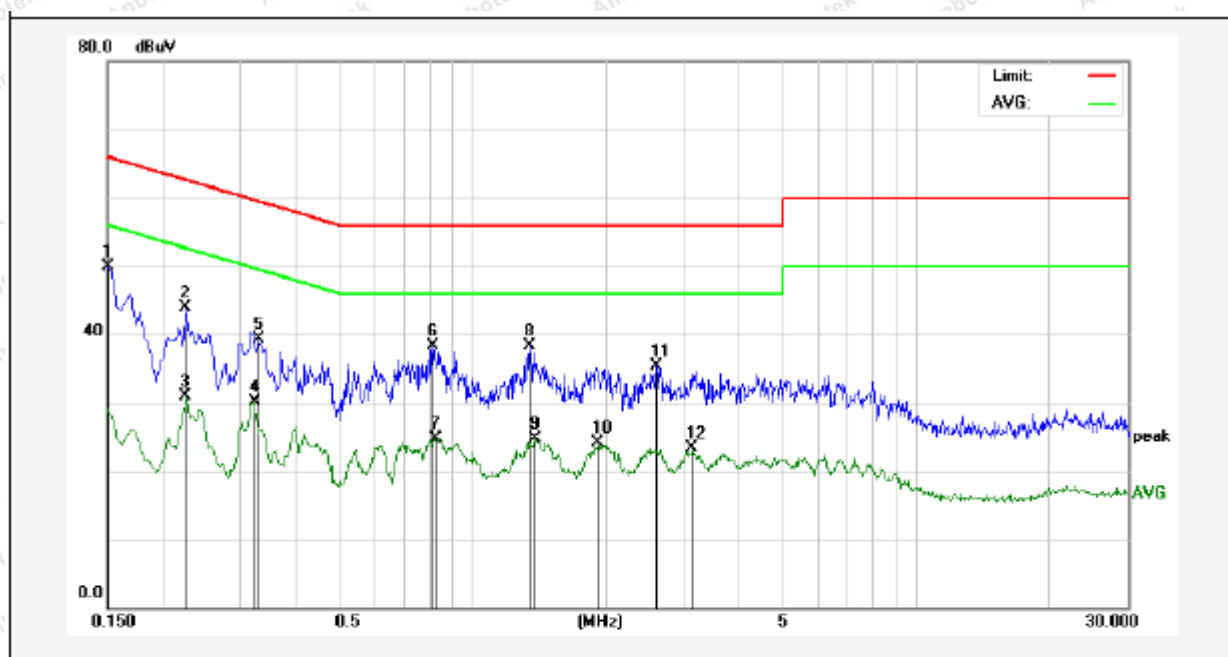
The frequency range from 150kHz to 30MHz is checked.

3.4. Test Data

Please to see the following pages.

Conducted Emission Test Data

Test Site: 1# Shielded Room
Operating Condition: CH01
Test Specification: AC 240V, 60Hz for adapter
Comment: Live Line
Tem.: 20.0°C Hum.: 65%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1500	30.10	19.90	50.00	65.99	-15.99	QP	
2	0.2260	24.04	19.89	43.93	62.59	-18.66	QP	
3	0.2260	11.09	19.89	30.98	52.59	-21.61	AVG	
4	0.3220	10.23	19.90	30.13	49.65	-19.52	AVG	
5	0.3300	19.46	19.90	39.36	59.45	-20.09	QP	
6	0.8139	18.18	20.07	38.25	56.00	-17.75	QP	
7	0.8300	4.70	20.07	24.77	46.00	-21.23	AVG	
8	1.3500	18.12	20.13	38.25	56.00	-17.75	QP	
9	1.3860	4.67	20.13	24.80	46.00	-21.20	AVG	
10	1.9260	3.94	20.14	24.08	46.00	-21.92	AVG	
11	2.6060	15.13	20.15	35.28	56.00	-20.72	QP	
12	3.1340	3.22	20.16	23.38	46.00	-22.62	AVG	

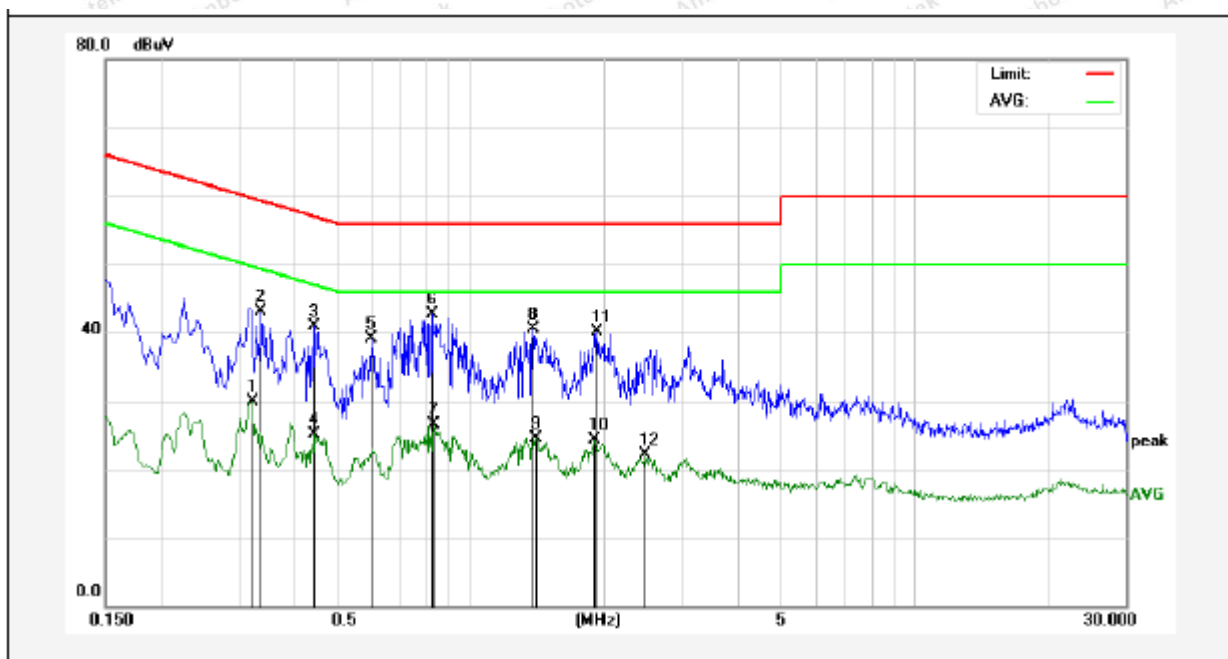
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Conducted Emission Test Data

Test Site: 1# Shielded Room
Operating Condition: CH01
Test Specification: AC 240V, 60Hz for adapter
Comment: Neutral Line
Tem.: 20.0°C Hum.: 65%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.3220	9.95	19.90	29.85	49.65	-19.80	AVG	
2	0.3379	23.20	19.91	43.11	59.25	-16.14	QP	
3	0.4460	20.88	19.96	40.84	56.95	-16.11	QP	
4	0.4460	5.23	19.96	25.19	46.95	-21.76	AVG	
5	0.5980	19.02	20.01	39.03	56.00	-16.97	QP	
6	0.8260	22.58	20.07	42.65	56.00	-13.35	QP	
7	0.8300	6.34	20.07	26.41	46.00	-19.59	AVG	
8	1.3820	20.32	20.13	40.45	56.00	-15.55	QP	
9	1.4100	4.33	20.13	24.46	46.00	-21.54	AVG	
10	1.9060	4.15	20.14	24.29	46.00	-21.71	AVG	
11	1.9380	20.04	20.14	40.18	56.00	-15.82	QP	
12	2.4820	1.91	20.15	22.06	46.00	-23.94	AVG	

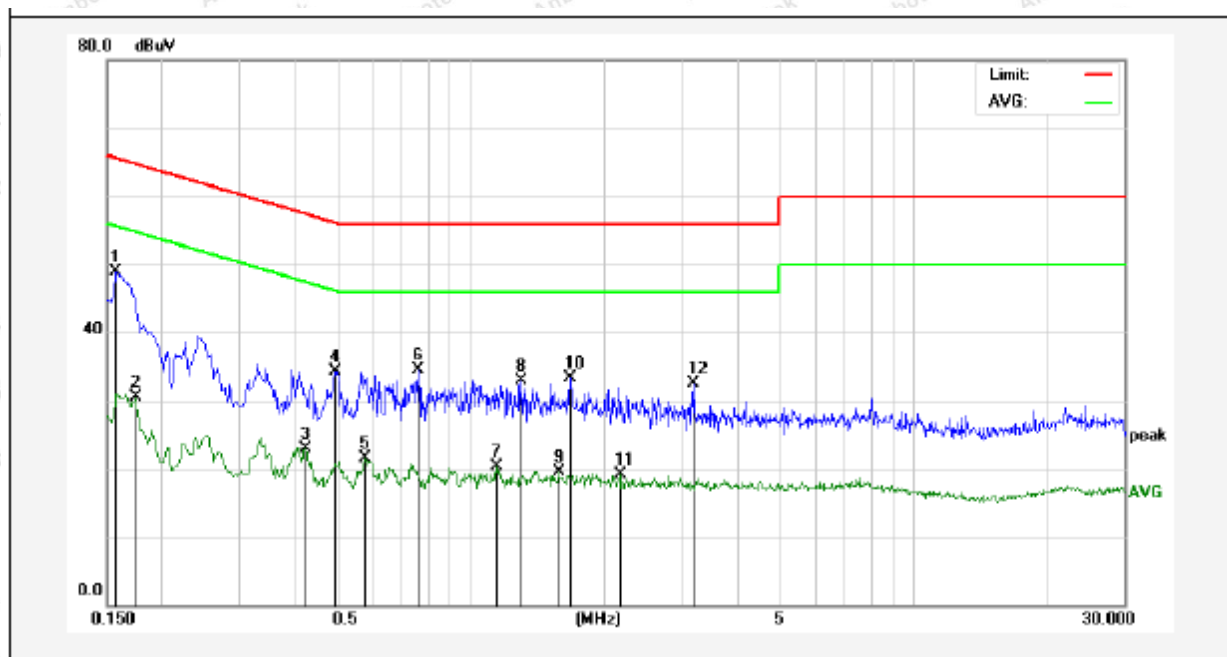
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Conducted Emission Test Data

Test Site: 1# Shielded Room
Operating Condition: CH01
Test Specification: AC 120V, 60Hz for adapter
Comment: Live Line
Tem.: 20.0°C Hum.: 65%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1580	28.95	19.90	48.85	65.56	-16.71	QP	
2	0.1740	10.62	19.90	30.52	54.76	-24.24	AVG	
3	0.4220	3.04	19.94	22.98	47.41	-24.43	AVG	
4	0.4940	14.31	19.98	34.29	56.10	-21.81	QP	
5	0.5780	1.56	20.00	21.56	46.00	-24.44	AVG	
6	0.7620	14.51	20.06	34.57	56.00	-21.43	QP	
7	1.1460	0.22	20.12	20.34	46.00	-25.66	AVG	
8	1.3020	12.87	20.13	33.00	56.00	-23.00	QP	
9	1.5780	-0.71	20.13	19.42	46.00	-26.58	AVG	
10	1.6740	13.11	20.13	33.24	56.00	-22.76	QP	
11	2.1740	-0.98	20.14	19.16	46.00	-26.84	AVG	
12	3.2020	12.37	20.16	32.53	56.00	-23.47	QP	

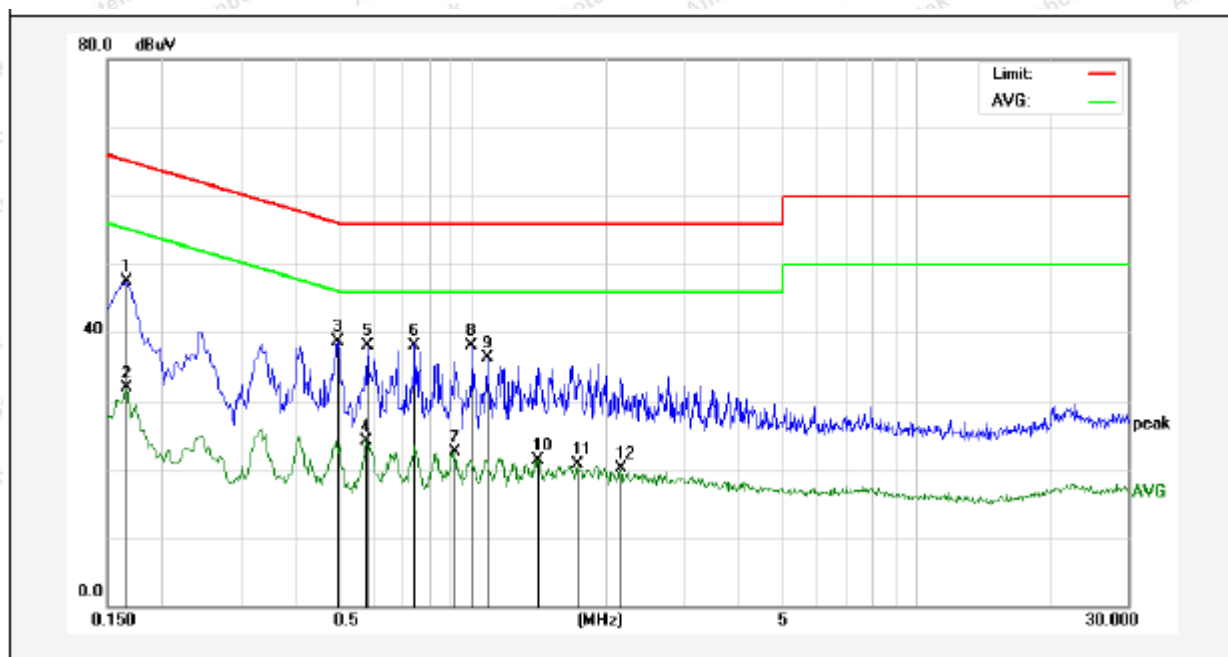
Report No.: SZAWW190222006-01

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Conducted Emission Test Data

Test Site: 1# Shielded Room
Operating Condition: CH01
Test Specification: AC 120V, 60Hz for adapter
Comment: Neutral Line
Tem.: 20.0°C Hum.: 65%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1660	27.55	19.90	47.45	65.15	-17.70	QP	
2	0.1660	11.98	19.90	31.88	55.15	-23.27	AVG	
3	0.4980	18.77	19.98	38.75	56.03	-17.28	QP	
4	0.5780	4.14	20.00	24.14	46.00	-21.86	AVG	
5	0.5820	18.12	20.00	38.12	56.00	-17.88	QP	
6	0.7420	18.15	20.05	38.20	56.00	-17.80	QP	
7	0.9140	2.37	20.10	22.47	46.00	-23.53	AVG	
8	0.9980	17.95	20.12	38.07	56.00	-17.93	QP	
9	1.0780	16.09	20.12	36.21	56.00	-19.79	QP	
10	1.4060	1.14	20.13	21.27	46.00	-24.73	AVG	
11	1.7220	0.60	20.13	20.73	46.00	-25.27	AVG	
12	2.1580	-0.12	20.14	20.02	46.00	-25.98	AVG	

4. Radiated Emission and Band Edge

4.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.209 and 15.205				
Test Limit	Frequency (MHz)	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz~0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz~88MHz	100	40.0	Quasi-peak	3
	88MHz~216MHz	150	43.5	Quasi-peak	3
	216MHz~960MHz	200	46.0	Quasi-peak	3
	Above 1000MHz	500	54.0	Average	3
		-	74.0	Peak	3

Remark:

(1) The lower limit shall apply at the transition frequency.

(2) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

Test Standard	FCC Part15 C Section 15.249					
Test Limit	Frequency (MHz)	Field Strength of fundamental ((millivolts /meter)	Field Strength of Harmonics (microvolts/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	2400~2483.5	50	-	114.0	Peak	3
	2400~2483.5	50	-	94.0	Average	3
	2400~2483.5	-	500	74.0	Peak	3
	2400~2483.5	-	500	54.0	Average	3

Remark:

(1) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

4.2. Test Setup

Figure 1. Below 30MHz

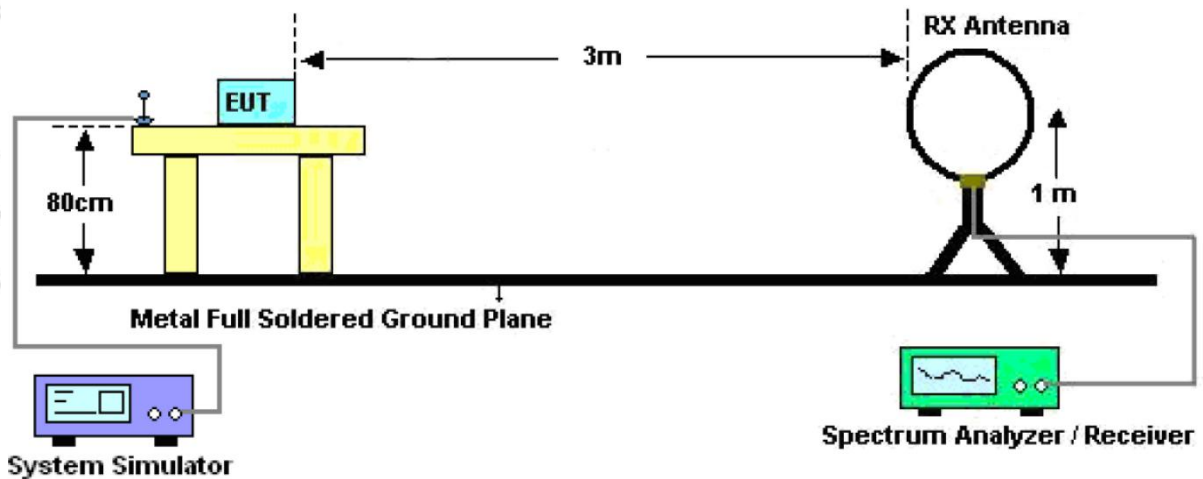


Figure 2. 30MHz to 1GHz

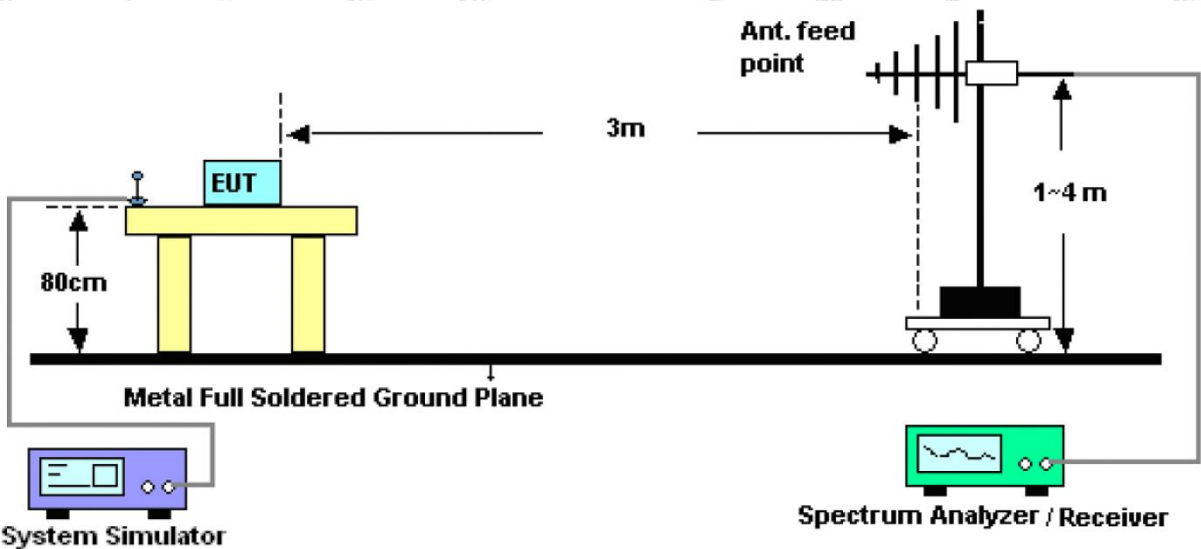
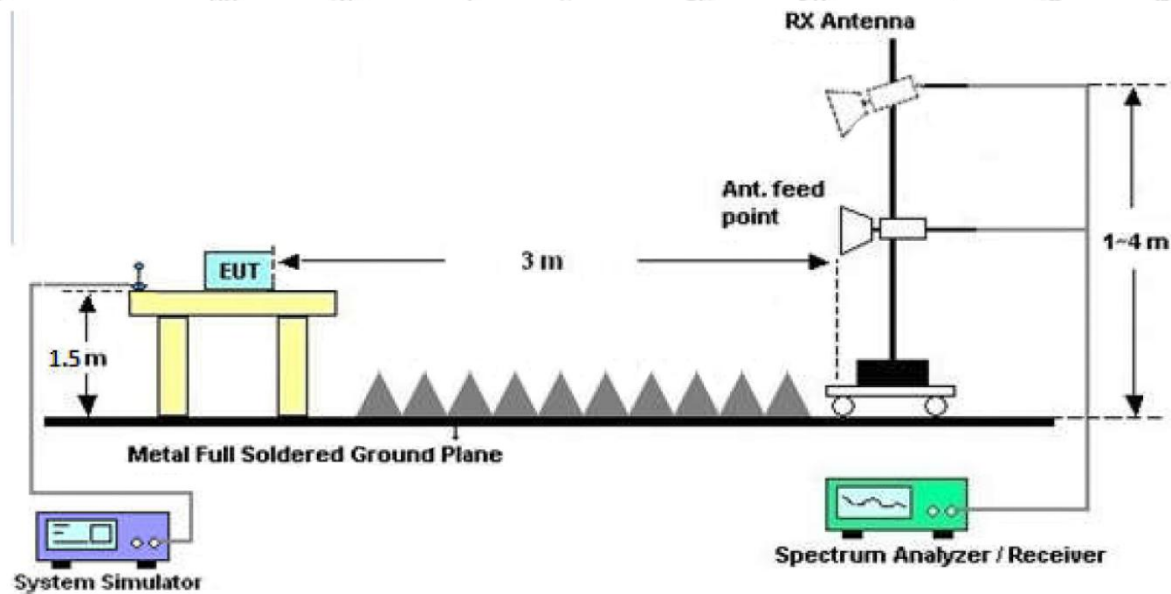


Figure 3. Above 1 GHz



4.3. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane.

For above 1GHz: The EUT is placed on a turntable, which is 1.5m above the ground plane.

The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Rotated the EUT through three orthogonal axes to determine the maximum emissions, both horizontal and vertical polarization of the antenna are set on test. The EUT is tested in 9*6*6 Chamber. The device is evaluated in xyz orientation.

For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

For 9kHz to 150kHz, Set the spectrum analyzer as:

RBW = 200Hz, VBW = 1kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 150kHz to 30MHz, Set the spectrum analyzer as:

RBW = 9KHz, VBW = 30kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 30MHz to 1000MHz, Set the spectrum analyzer as:

RBW = 100kHz, VBW = 300kHz, Detector = Quasi-Peak, Trace mode = Max hold, Sweep = auto couple.

For above 1GHz, Set the spectrum analyzer as:

RBW = 1MHz, VBW = 1MHz, Detector = Peak, Trace mode = Max hold, Sweep = auto couple.

RBW = 1MHz, VBW = 10Hz, Detector = Average, Trace mode = Max hold, Sweep = auto couple.

4.4. Test Data

PASS

During the test, Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the X-axis is the worst case.

The test results of 9kHz-30MHz was attenuated more than 20dB below the permissible limits, so the results don't record in the report.

During the test, pre-scan all the mode, and found the TX only Mode which is the worst case, only the worst case is recorded in the report.

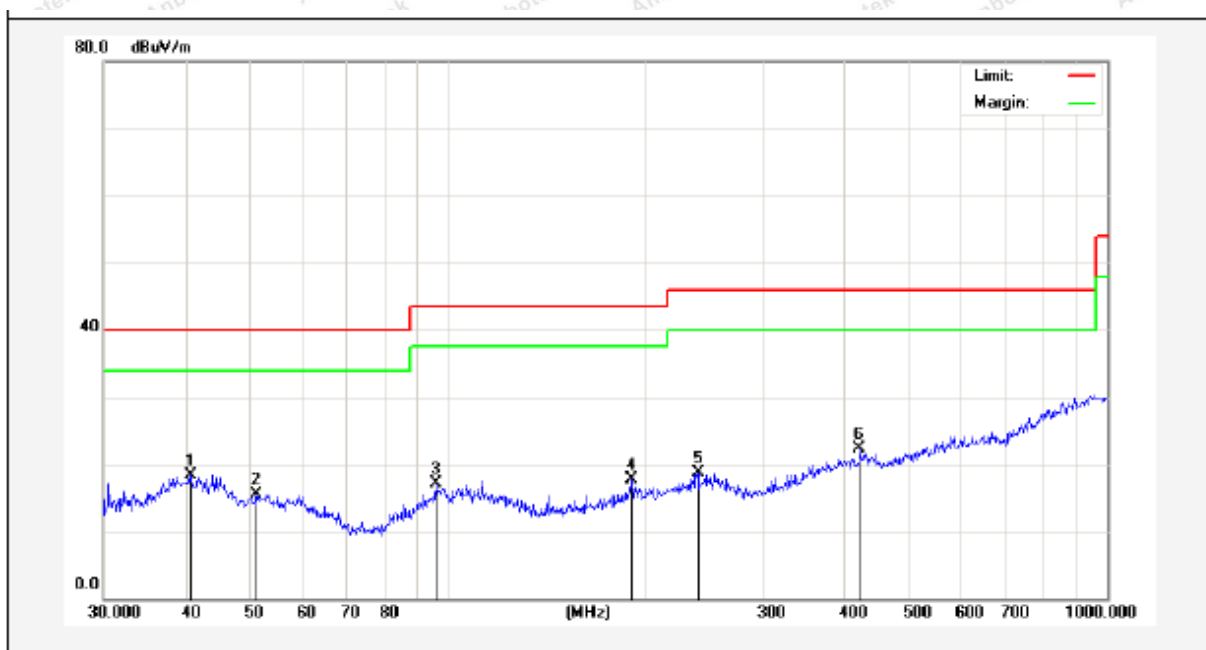
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Test Results (30~1000MHz)

Job No.: SZAWW190222006 -01 Temp.(°C)/Hum.(%RH): 24.6°C/55%RH
Standard: FCC PART 15C Power Source: DC 3.7V battery inside
Test Mode: Mode 1 Polarization: Horizontal



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	40.7016	32.79	-14.57	18.22	40.00	-21.78	QP	300	0	
2	51.1209	33.08	-17.60	15.48	40.00	-24.52	QP	300	73	
3	95.7622	39.33	-22.15	17.18	43.50	-26.32	QP	300	142	
4	189.7385	38.60	-20.93	17.67	43.50	-25.83	QP	300	213	
5	239.1473	37.33	-18.56	18.77	46.00	-27.23	QP	300	283	
6	420.5803	34.59	-12.38	22.21	46.00	-23.79	QP	300	360	



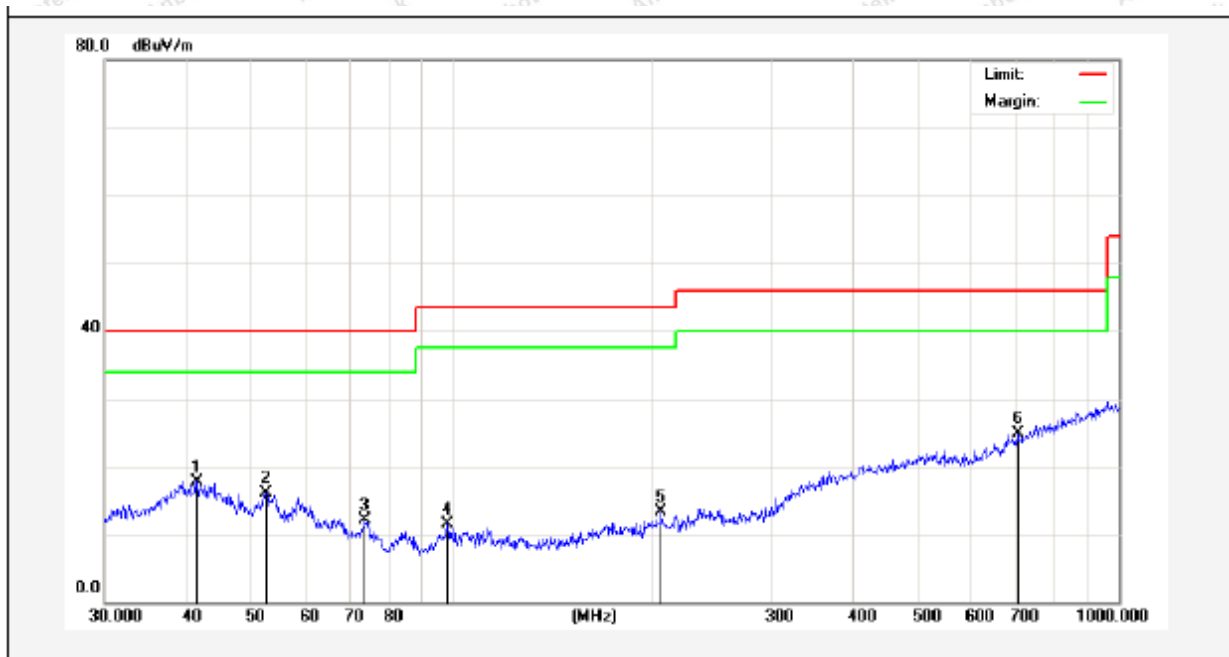
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Test Results (30~1000MHz)

Job No.: SZAWW190222006-01 Temp.(°C)/Hum.(%RH): 24.6°C/55%RH
Standard: FCC PART 15C Power Source: DC 3.7V battery inside
Test Mode: Mode 1 Polarization: Vertical



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	41.2764	31.42	-13.74	17.68	40.00	-22.32	QP	300	0	
2	52.3912	32.83	-16.65	16.18	40.00	-23.82	QP	300	72	
3	73.8756	33.53	-21.42	12.11	40.00	-27.89	QP	300	143	
4	98.1419	27.41	-15.94	11.47	43.50	-32.03	QP	300	201	
5	205.6750	29.08	-15.71	13.37	43.50	-30.13	QP	300	283	
6	704.2260	33.18	-8.35	24.83	46.00	-21.17	QP	300	360	



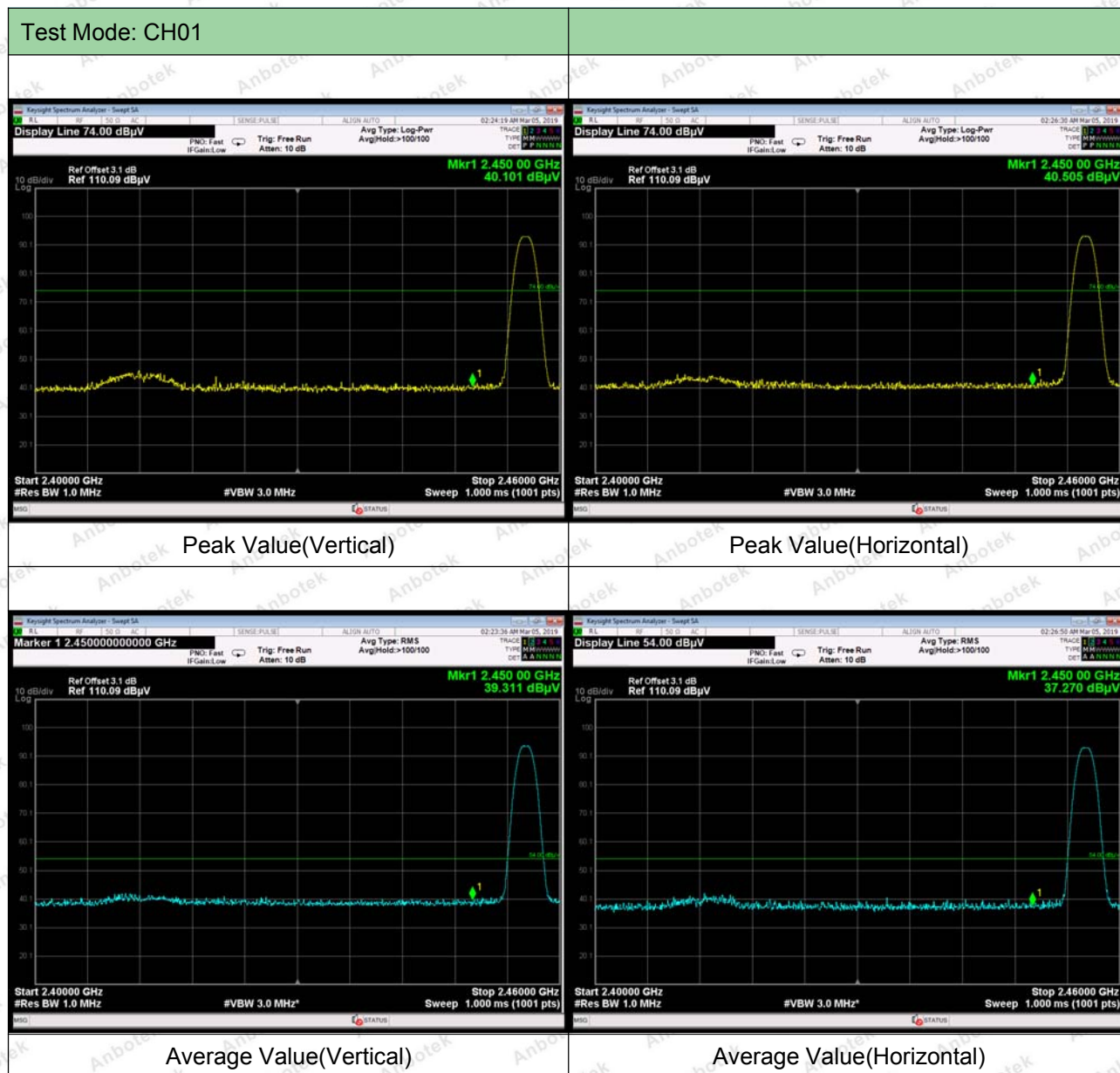
Test Results (1GHz-25GHz)

Test Mode: CH01									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Detector
2455.5000	95.16	31.12	2.20	34.51	93.97	114.00	-20.03	V	Peak
2455.5000	84.57	31.22	2.20	34.51	83.48	94.00	-10.52	V	AVG
4911.0000	50.80	34.98	2.49	34.14	54.13	74.00	-19.87	V	Peak
4911.0000	38.43	34.98	2.49	34.14	41.76	54.00	-12.24	V	AVG
7366.5000	47.22	36.01	3.01	34.56	51.68	74.00	-22.32	V	Peak
7366.5000	38.54	36.01	3.01	34.56	43.00	54.00	-11.00	V	AVG
9822.0000	*								
12277.5000	*								
14733.0000	*								
17188.5000	*								
2455.5000	95.77	31.12	2.20	34.51	94.58	114.00	-19.42	H	Peak
2455.5000	84.61	31.12	2.20	34.51	83.42	94.00	-10.58	H	AVG
4911.0000	47.27	34.98	2.49	34.14	50.60	74.00	-23.40	H	Peak
4911.0000	41.65	34.98	2.49	34.14	44.98	54.00	-9.02	H	AVG
7366.5000	48.79	36.01	3.01	34.56	53.25	74.00	-20.75	H	Peak
7366.5000	36.06	36.01	3.01	34.56	40.52	54.00	-13.48	H	AVG
9822.0000	*								
12277.5000	*								
14733.0000	*								
17188.5000	*								

Note:

1. Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “*” means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.

Radiated Band Edge:



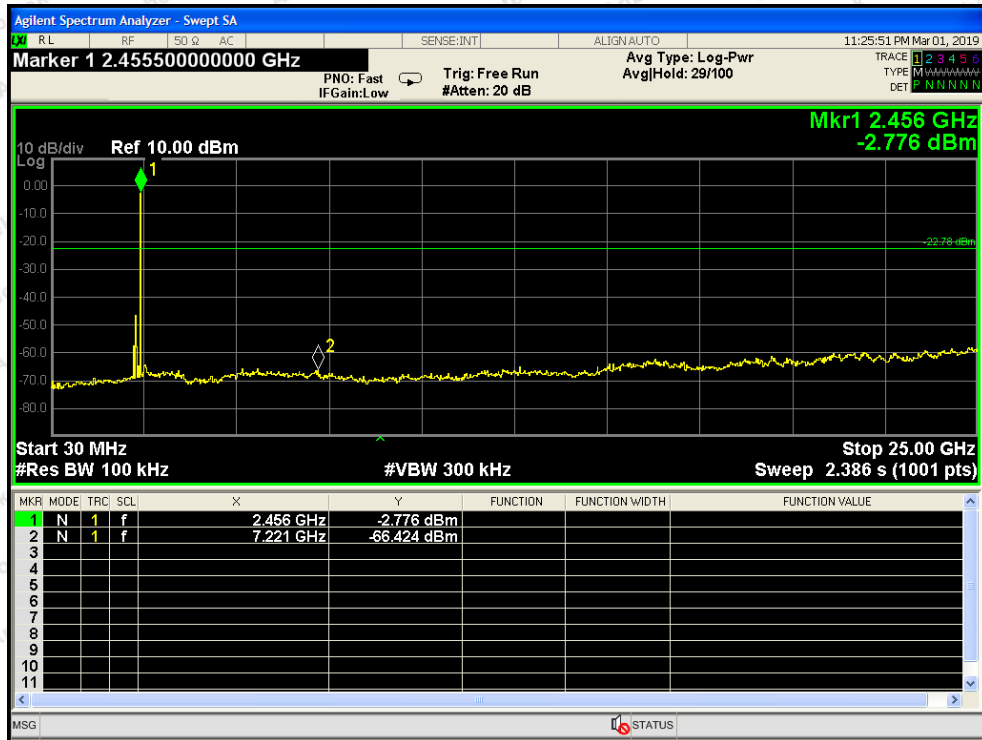
Remark:

1. Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor



Remark:

1. Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor



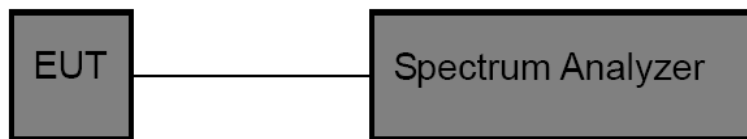
CH 01

5. 20dB Bandwidth Test

5.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.249
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5.2. Test Setup



5.3. Test Procedure

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as:
RBW = 100kHz, VBW $\geq$ 3*RBW =300kHz,
Detector= Average
Trace mode= Max hold.
Sweep- auto couple.
4. Mark the peak frequency and -20dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

5.4. Test Data

Test Item : 20dB Bandwidth

Test Voltage : DC 3.7V battery inside

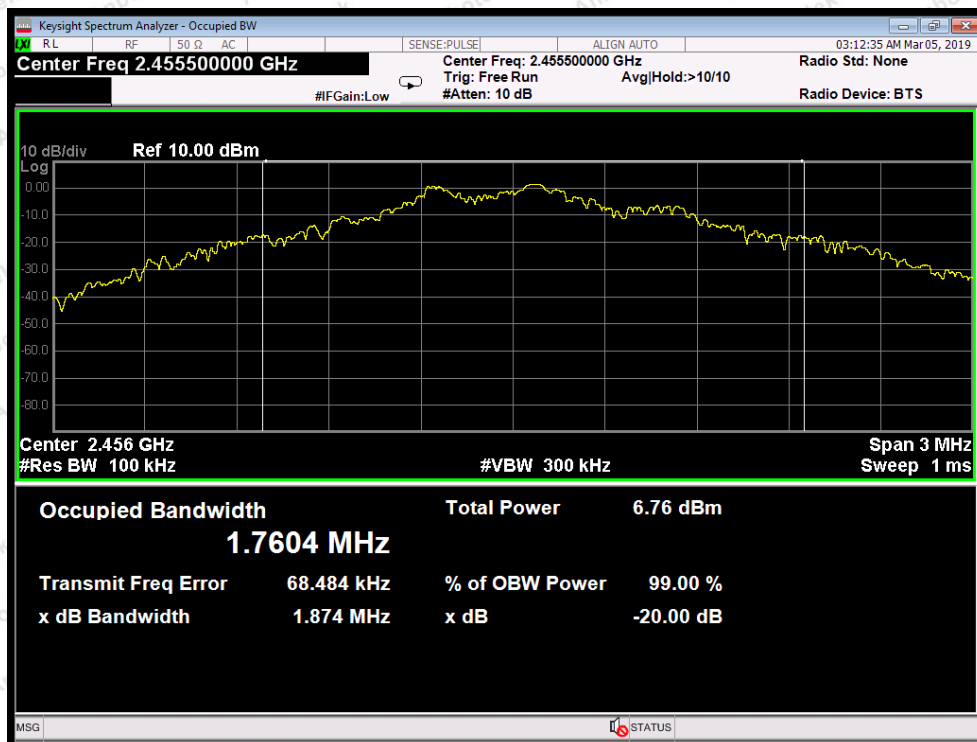
Test Result : PASS

Test Mode : Mode 1

Temperature : 22.9℃

Humidity : 53%RH

Frequency (MHz)	Bandwidth (kHz)	Result
2455.5MHZ	1874	PASS



Test Mode: CH 01

6. Antenna Requirement

6.1. Test Standard and Requirement

Test Standard	FCC Part15 Section 15.203
Requirement	1) 15.203 requirement: 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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

6.2. Antenna Connected Construction

The antenna is a PCB Antenna which permanently attached, and the best case gain of the antenna is 1 dBi. It complies with the standard requirement.



Antenna

APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Conducted Emission Measurement

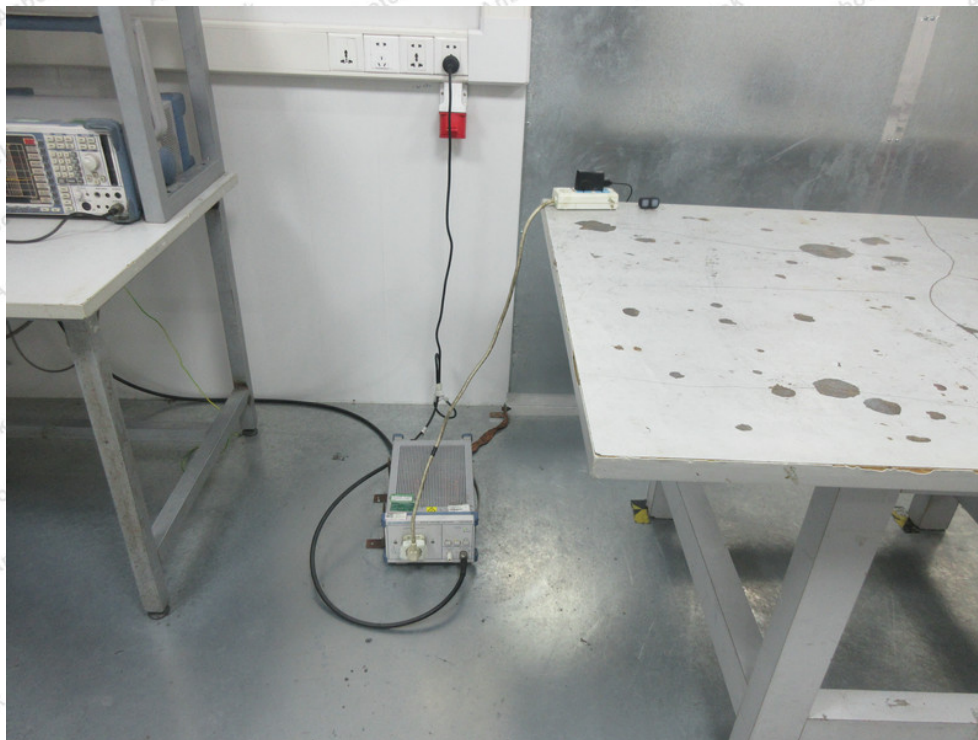
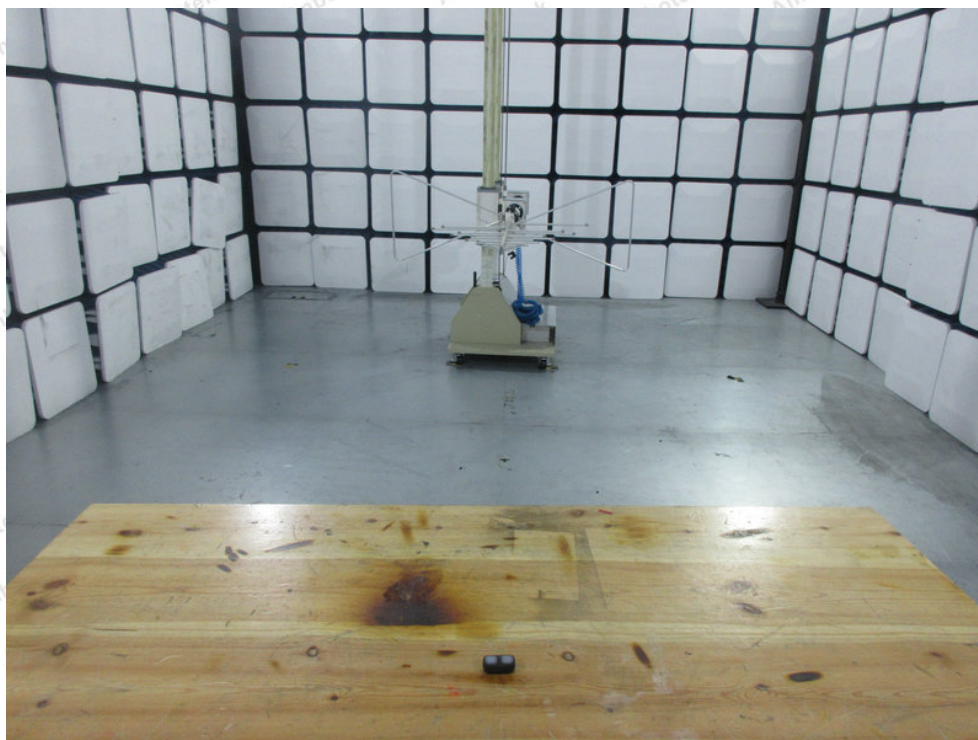
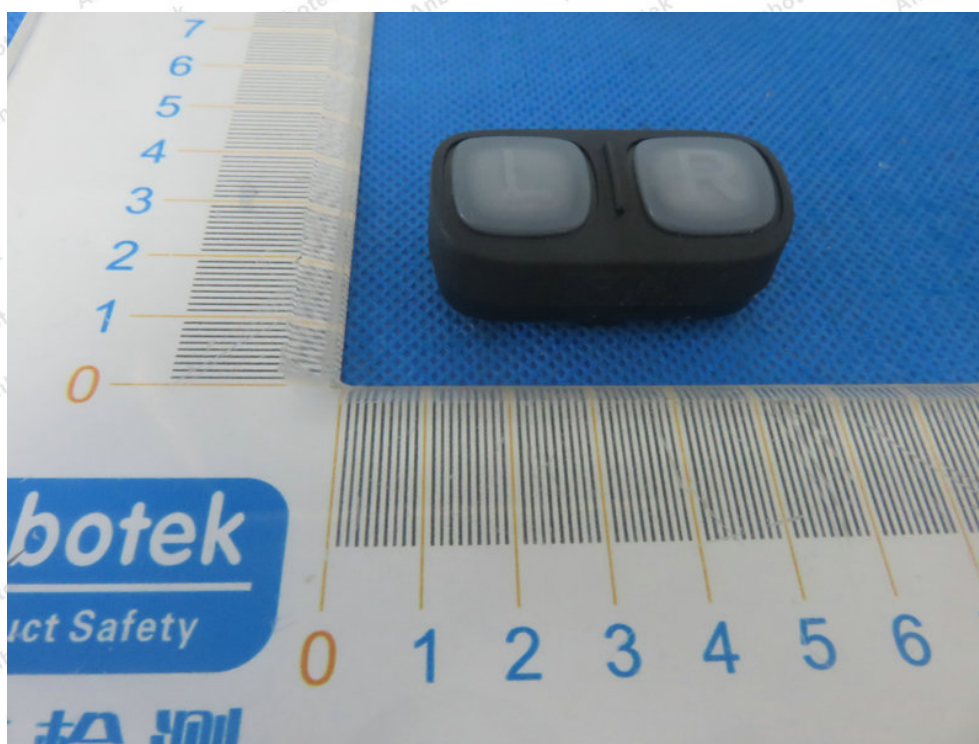
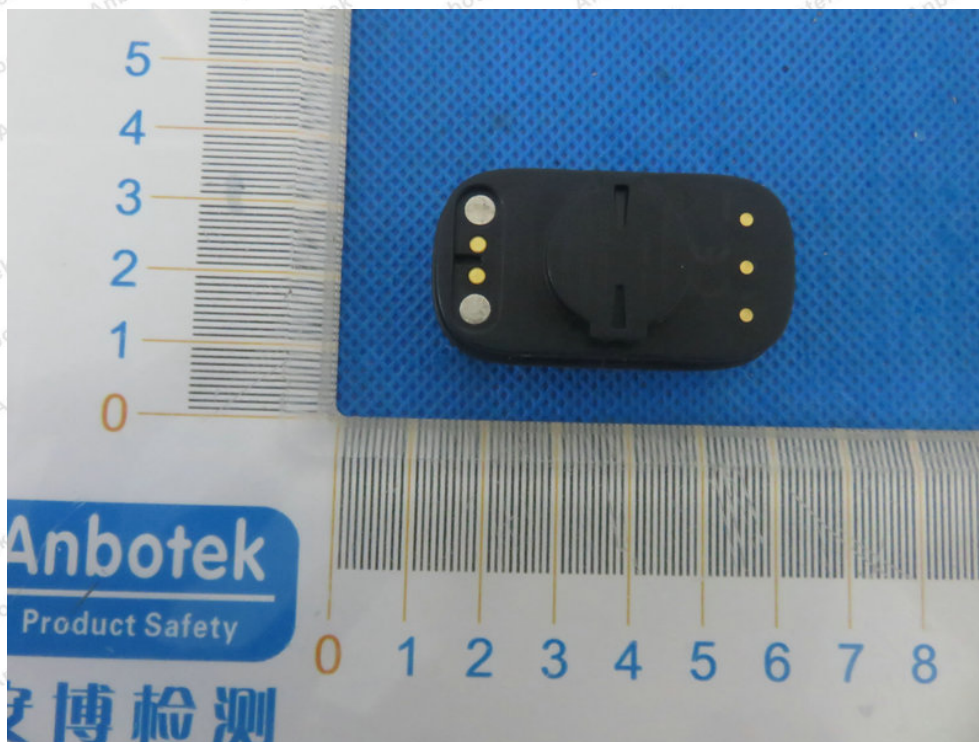


Photo of Radiation Emission Test

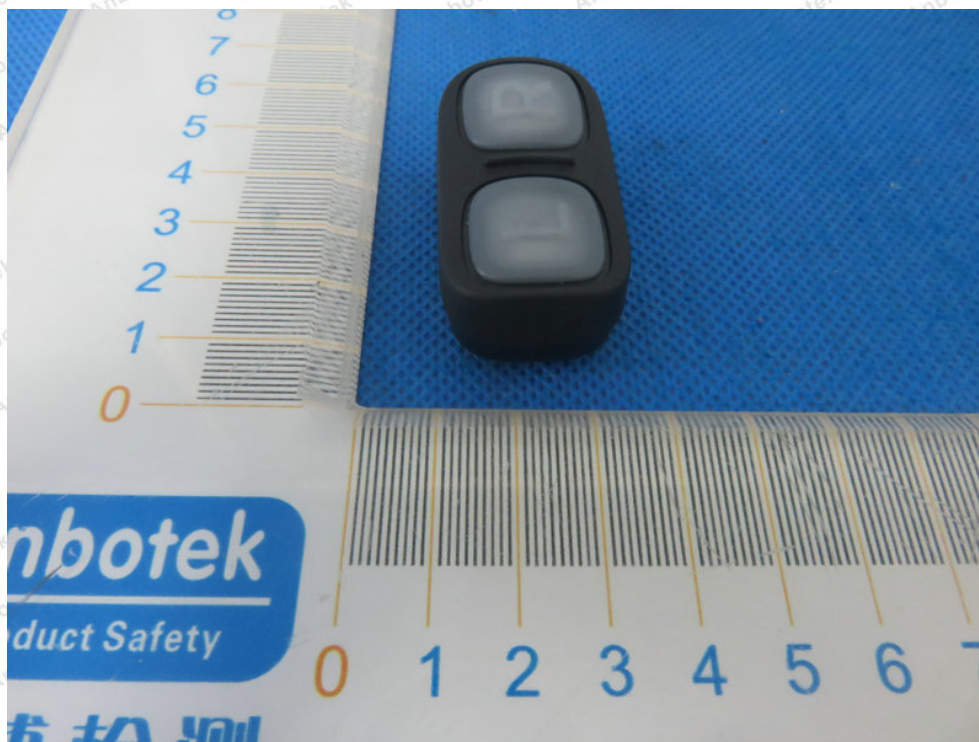


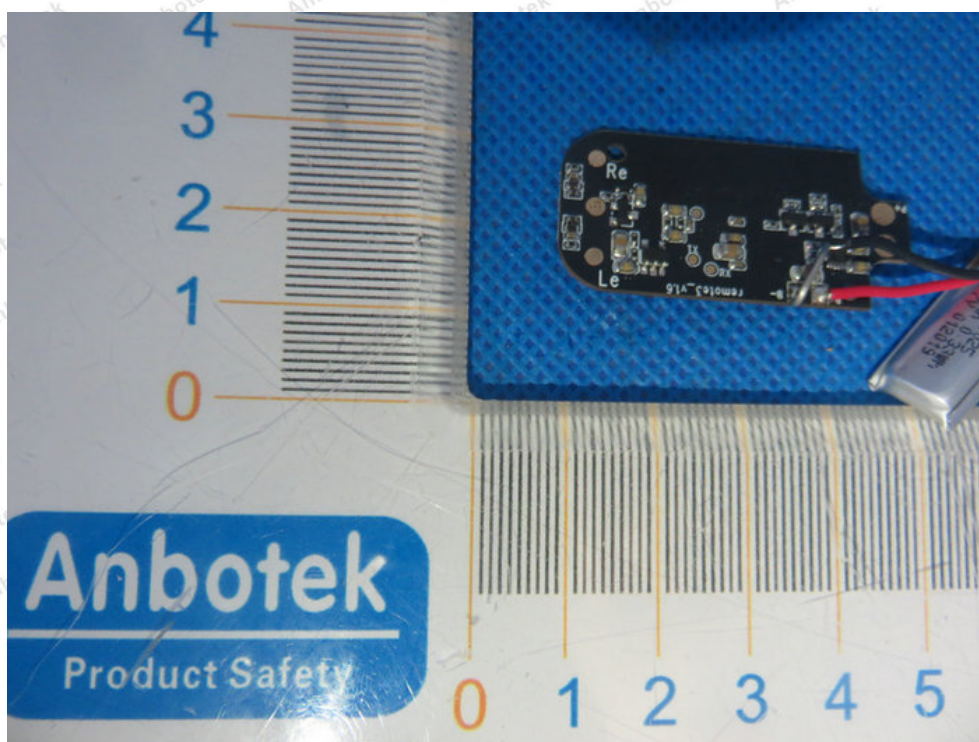


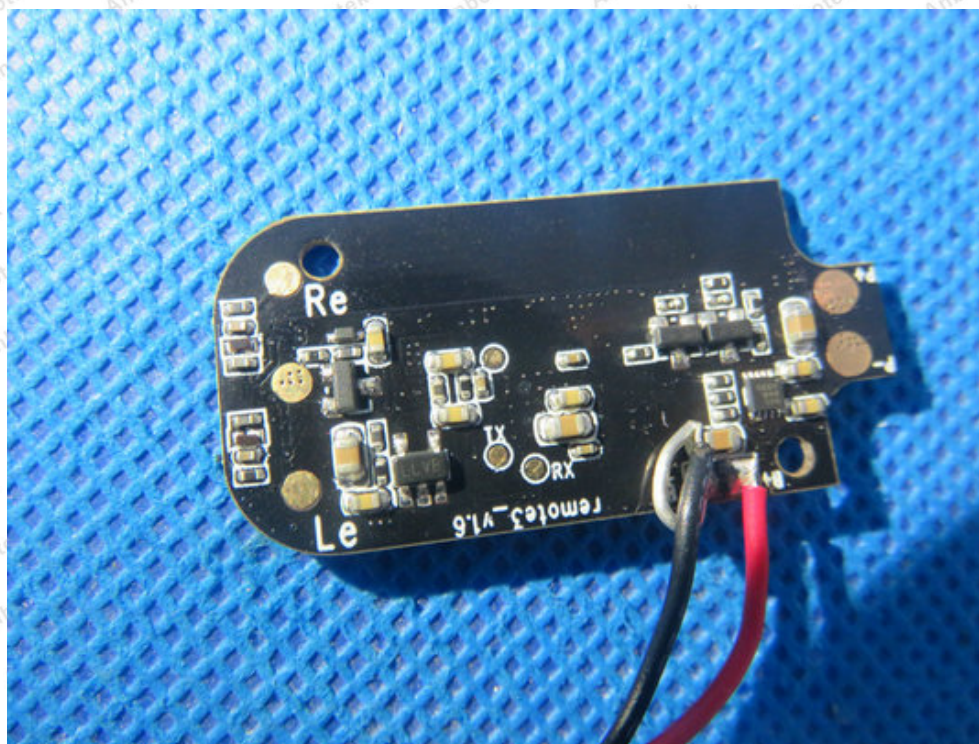
APPENDIX II -- EXTERNAL PHOTOGRAPH

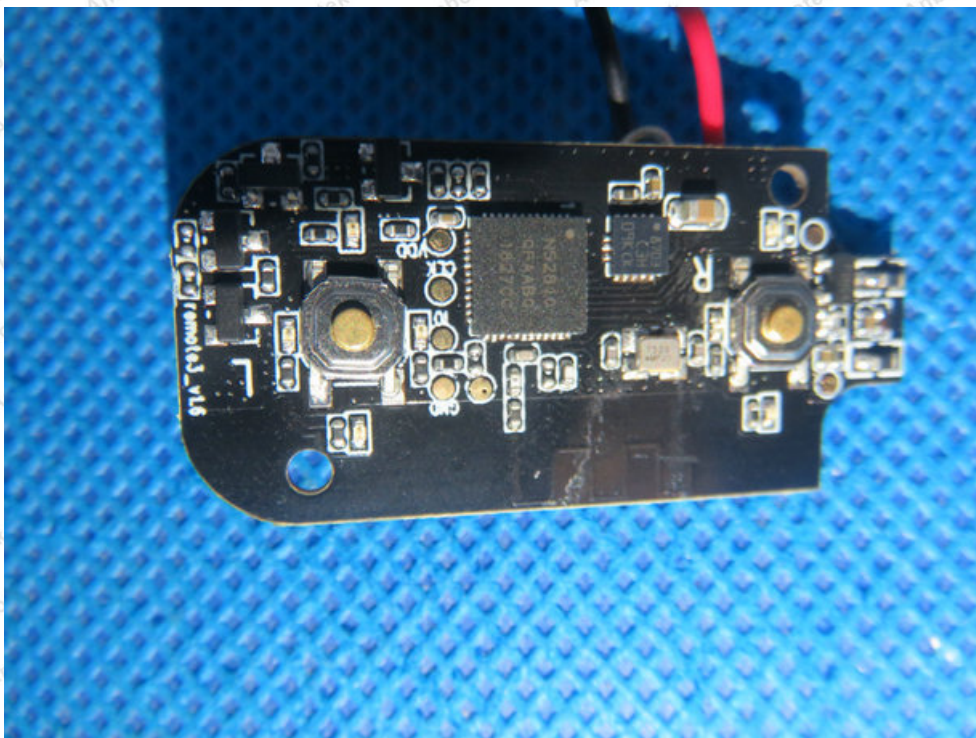






APPENDIX III -- INTERNAL PHOTOGRAPH





----- End of Report -----