

FCC TEST REPORT

Client Name : Elwing TECH SAS

Address : 87 Quai des Queyries, 33100 Bordeaux, France

Product Name : Remote

Date : Jul. 09, 2020



Shenzhen Anbotech Compliance Laboratory Limited



Contents

1. General Information.....	4
1.1. Client Information.....	4
1.2. Description of Device (EUT).....	4
1.3. Auxiliary Equipment Used During Test.....	5
1.4. Description of Test Modes.....	5
1.5. List of Channels.....	6
1.6. Description of Test Setup.....	7
1.7. Test Equipment List.....	8
1.8. Measurement Uncertainty.....	9
1.9. Description of Test Facility.....	9
2. Summary of Test Results.....	10
3. Conducted Emission Test.....	11
3.1. Test Standard and Limit.....	11
3.2. Test Setup.....	11
3.3. Test Procedure.....	11
3.4. Test Data.....	12
4. Radiated Emission and Band Edge.....	15
4.1. Test Standard and Limit.....	15
4.2. Test Setup.....	16
4.3. Test Procedure.....	17
4.4. Test Data.....	18
5. 20dB Bandwidth Test.....	28
5.1. Test Standard and Limit.....	28
5.2. Test Setup.....	28
5.3. Test Procedure.....	28
5.4. Test Data.....	28
6. Antenna Requirement.....	31
6.1. Test Standard and Requirement.....	31
6.2. Antenna Connected Construction.....	31
APPENDIX I -- TEST SETUP PHOTOGRAPH.....	32
APPENDIX II -- EXTERNAL PHOTOGRAPH.....	34
APPENDIX III -- INTERNAL PHOTOGRAPH.....	37



TEST REPORT

Applicant : Elwing TECH SAS
Manufacturer : SHENZHEN ZHONGYINGDONG TECHNOLOGY CO.,LTD
Product Name : Remote
Model No. : Remote city, HW6123
Trade Mark : Elwing
Rating(s) : Input: DC 5V, 0.5A (with DC 3.7V, 400 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

Apr. 20, 2020

Date of Test

Apr. 20~Jun. 02, 2020

Prepared by

Dolly mo

(Engineer / Dolly Mo)

Reviewer

Bibo Zhang

(Supervisor / Bibo Zhang)

Approved & Authorized Signer

Tom Chen

(Manager / Tom Chen)

1. General Information

1.1. Client Information

Applicant	:	Elwing TECH SAS
Address	:	87 Quai des Queyries, 33100 Bordeaux, France
Manufacturer	:	SHENZHEN ZHONGYINGDONG TECHNOLOGY CO.,LTD
Address	:	Yasen Industrial Park, Chengxin Road, Baolong Community, Longgang District, Shenzhen,Guangdong
Factory	:	SHENZHEN ZHONGYINGDONG TECHNOLOGY CO.,LTD
Address	:	Yasen Industrial Park, Chengxin Road, Baolong Community, Longgang District, Shenzhen,Guangdong

1.2. Description of Device (EUT)

Product Name	:	Remote	
Model No.	:	Remote city, HW6123 (Note: All samples are the same except the model name and appearance, so we prepare "Remote city" for test only.)	
Trade Mark	:	Elwing	
Test Power Supply	:	AC 120V, 60Hz for adapter / AC 240V, 60Hz for adapter DC 3.7V Battery inside	
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)	
Product Description	:	Operation Frequency:	2410~2470MHz
	:	Number of Channel:	55 Channels
	:	Modulation Type:	GFSK/FSK
	:	Antenna Type:	FPCB antenna
	:	Antenna Gain(Peak):	2 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

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
Mode 2	CH28
Mode 3	CH55

For Conducted Emission	
Final Test Mode	Description
Mode 1	CH01
Mode 2	CH28
Mode 3	CH55

For Radiated Emission	
Final Test Mode	Description
Mode 1	CH01
Mode 2	CH28
Mode 3	CH55

Note:

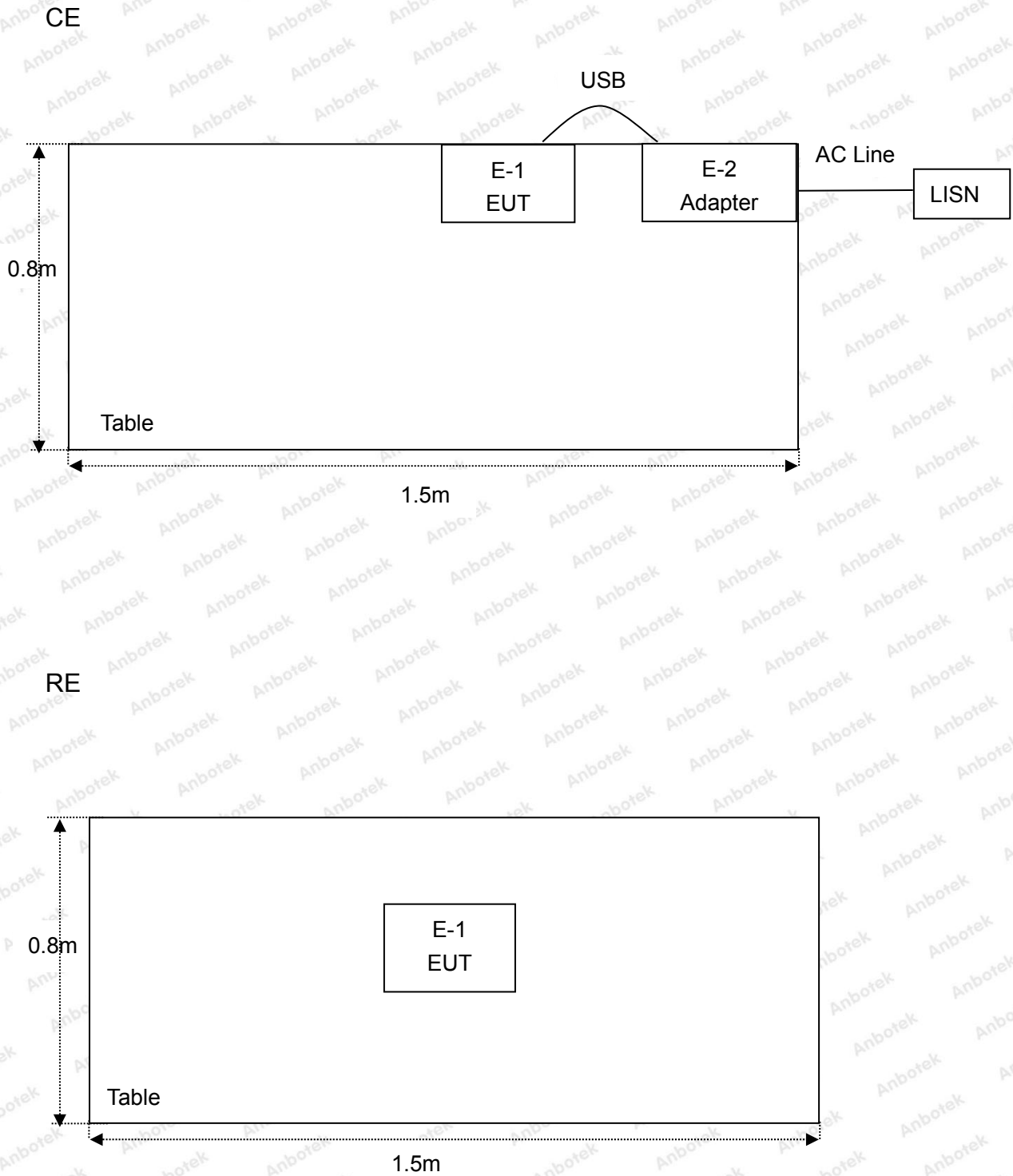
1. The engineering test program was provided and the EUT was programmed to be in continuously transmitting mode.

1.5. List of Channels

Channel	Freq.	Channel	Freq.	Channel	Freq.	Channel	Freq.
	(MHz)		(MHz)		(MHz)		(MHz)
01	2410	02	2411	03	2412	04	2413
05	2414	06	2415	07	2416	08	2417
09	2418	10	2421	11	2422	12	2423
13	2424	14	2425	15	2426	16	2427
17	2428	18	2429	19	2430	20	2431
21	2432	22	2433	23	2434	24	2435
25	2436	26	2437	27	2438	28	2439
29	2442	30	2443	31	2444	32	2445
33	2446	34	2447	35	2448	36	2449
37	2450	38	2451	39	2452	40	2453
41	2454	42	2455	43	2456	44	2457
45	2458	46	2459	47	2460	48	2463
49	2464	50	2465	51	2466	52	2467
53	2468	54	2469	55	2470	/	/



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. 04, 2019	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESPI3	101604	Nov. 04, 2019	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Nov. 04, 2019	1 Year
4.	MAX Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 04, 2019	1 Year
5.	Preamplifier	SKET Electronic	BK1G18G30 D	KD17503	Nov. 04, 2019	1 Year
6.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Nov. 01, 2019	1 Year
7.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Nov. 01, 2019	1 Year
8.	Loop Antenna	Schwarzbeck	FMZB1519B	00053	Nov. 01, 2019	1 Year
9.	Horn Antenna	A-INFO	LB-180400-K F	J211060628	Nov. 01, 2019	1 Year
10.	Pre-amplifier	SONOMA	310N	186860	Nov. 04, 2019	1 Year
11.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
12.	RF Test Control System	YIHENG	YH3000	2017430	Nov. 04, 2019	1 Year
13.	Power Sensor	DAER	RPR3006W	15I00041SN045	Nov. 04, 2019	1 Year
14.	Power Sensor	DAER	RPR3006W	15I00041SN046	Nov. 04, 2019	1 Year
15.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 04, 2019	1 Year
16.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Nov. 04, 2019	1 Year
17.	Signal Generator	Agilent	E4421B	MY41000743	Nov. 04, 2019	1 Year
18.	DC Power Supply	LW	TPR-6420D	374470	Nov. 04, 2019	1 Year
19.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80 B	N/A	Nov. 04, 2019	1 Year

1.8. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 3.9 dB (Horizontal)
		Ur = 3.8 dB (Vertical)
Conduction Uncertainty	:	Uc = 3.4 dB

1.9. 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, September 27, 2019.

ISED-Registration No.: 8058A

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, March 07, 2019.

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.		



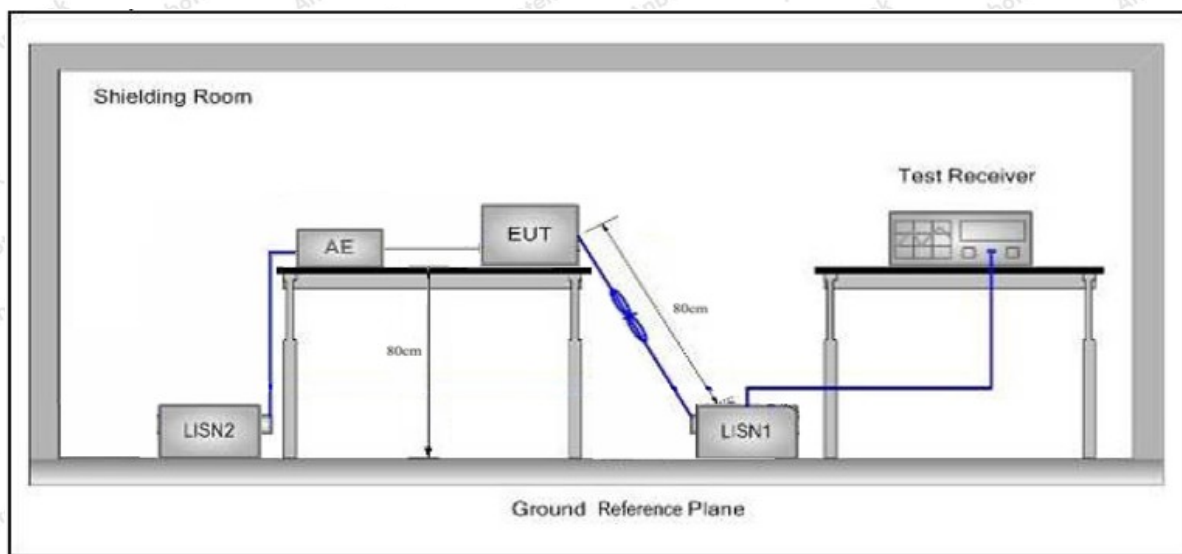
3. Conducted Emission Test

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 Remote (ESCI) set at 9kHz.

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

3.4. Test Data

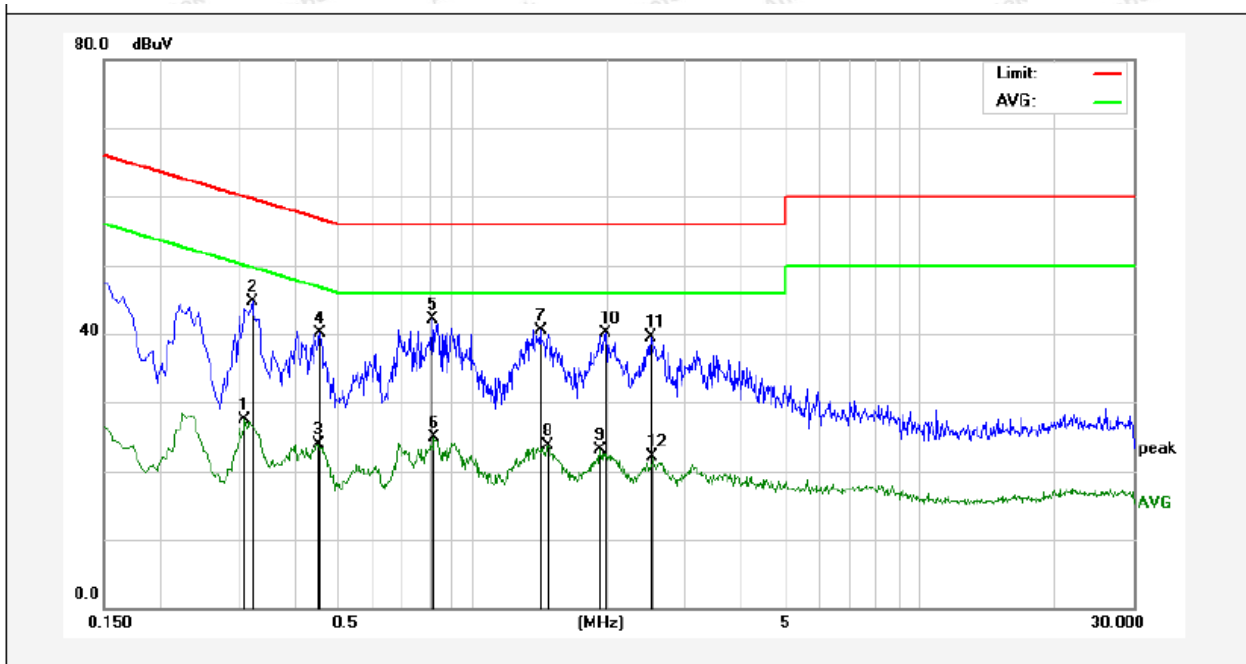
PASS

During the test, pre-scan all the modes, and found the Low channel which is the worst case, only the worst case is recorded in the report.



Conducted Emission Test Data

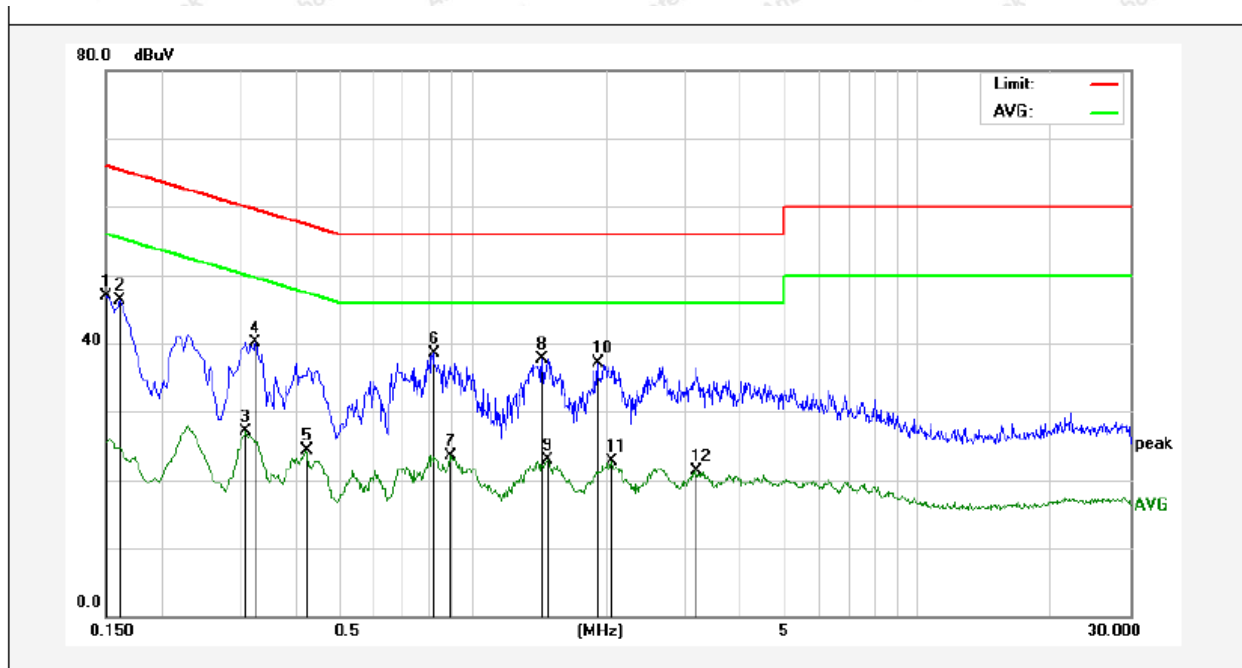
Test Site: 1# Shielded Room
 Operating Condition: CH 01
 Test Specification: AC 120V, 60Hz for adapter
 Comment: Live Line
 Tem.: 24.6°C Hum.: 57%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.3100	7.66	19.89	27.55	49.97	-22.42	AVG	
2	0.3220	24.77	19.90	44.67	59.65	-14.98	QP	
3	0.4540	3.96	19.96	23.92	46.80	-22.88	AVG	
4	0.4580	20.19	19.96	40.15	56.73	-16.58	QP	
5	0.8139	22.10	20.07	42.17	56.00	-13.83	QP	
6	0.8260	4.87	20.07	24.94	46.00	-21.06	AVG	
7	1.4220	20.41	20.13	40.54	56.00	-15.46	QP	
8	1.4740	3.51	20.13	23.64	46.00	-22.36	AVG	
9	1.9380	3.06	20.14	23.20	46.00	-22.80	AVG	
10	1.9860	19.95	20.14	40.09	56.00	-15.91	QP	
11	2.5100	19.26	20.15	39.41	56.00	-16.59	QP	
12	2.5380	1.97	20.15	22.12	46.00	-23.88	AVG	

Conducted Emission Test Data

Test Site: 1# Shielded Room
 Operating Condition: CH 01
 Test Specification: AC 120V, 60Hz for adapter
 Comment: Neutral Line
 Tem.: 24.6°C Hum.: 57%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1499	26.95	19.90	46.85	66.00	-19.15	QP	
2	0.1620	26.33	19.90	46.23	65.36	-19.13	QP	
3	0.3100	7.12	19.89	27.01	49.97	-22.96	AVG	
4	0.3260	20.27	19.90	40.17	59.55	-19.38	QP	
5	0.4220	4.27	19.94	24.21	47.41	-23.20	AVG	
6	0.8180	18.51	20.07	38.58	56.00	-17.42	QP	
7	0.8940	3.42	20.09	23.51	46.00	-22.49	AVG	
8	1.4340	17.66	20.13	37.79	56.00	-18.21	QP	
9	1.4780	2.70	20.13	22.83	46.00	-23.17	AVG	
10	1.9140	16.89	20.14	37.03	56.00	-18.97	QP	
11	2.0579	2.62	20.14	22.76	46.00	-23.24	AVG	
12	3.1940	1.16	20.16	21.32	46.00	-24.68	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
	960MHz~1000MHz	500	54.0	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

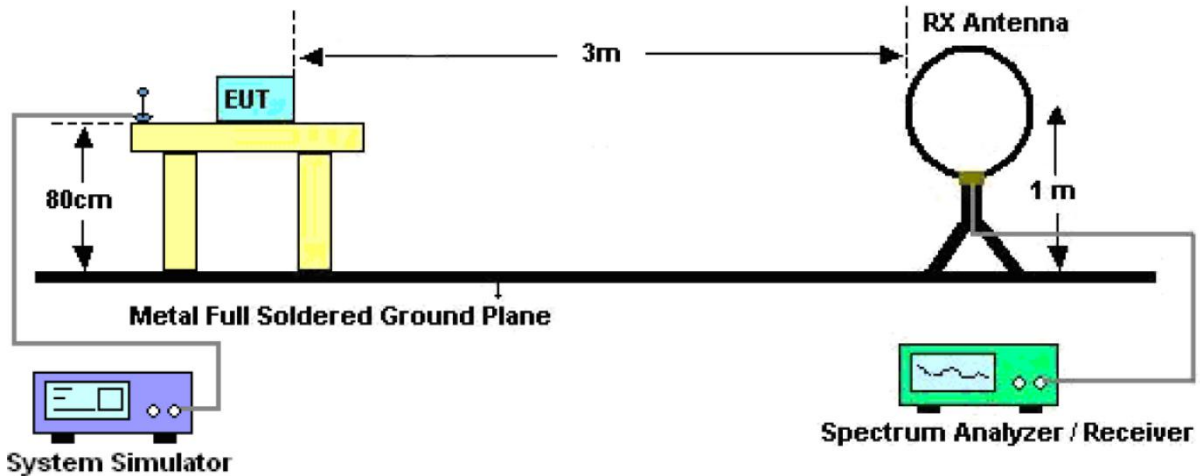


Figure 2. 30MHz to 1GHz

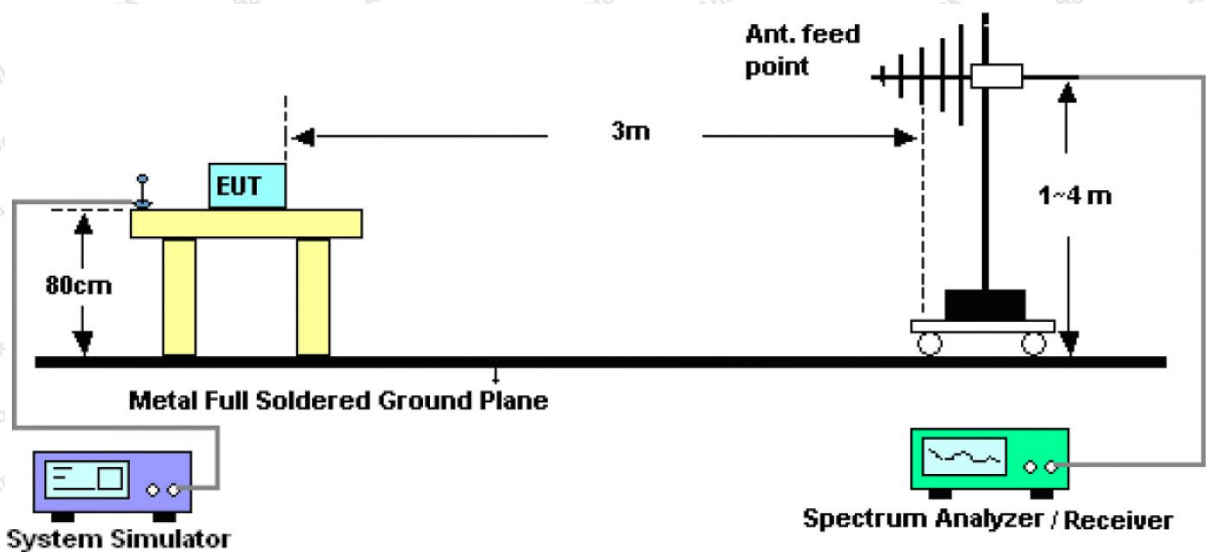
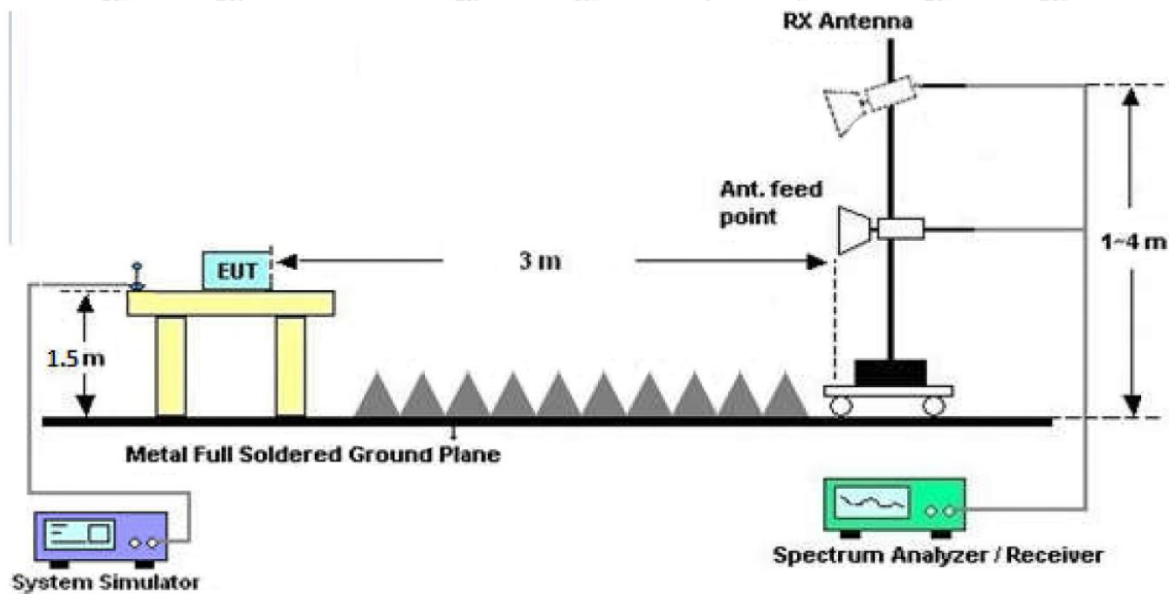


Figure 3. Above 1 GHz



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.

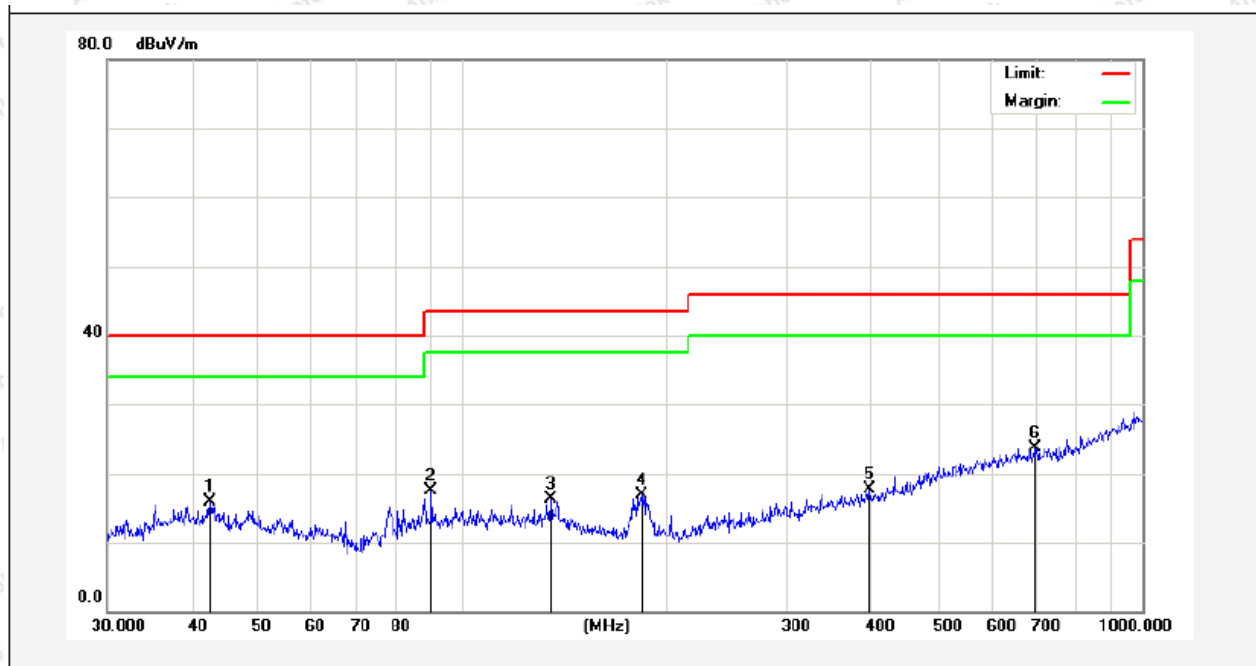
The test results of 9kHz-30MHz was attenuated more than 20dB below the permissible limits, so the results don't record in the report.

During the test, pre-scan all the modes, and found the Middle channel which is the worst case, only the worst case is recorded in the report



Test Results (30~1000MHz)

Test Mode: Mode 2
Power Source: DC 3.7V Battery inside
Polarization: Vertical
Temp.(°C)/Hum.(%RH): 22.6°C/56%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	42.4508	30.65	-14.83	15.82	40.00	-24.18	QP	100	0	
2	89.9047	34.42	-16.92	17.50	43.50	-26.00	QP	100	360	
3	135.0319	37.40	-21.10	16.30	43.50	-27.20	QP	100	0	
4	183.2005	36.54	-19.65	16.89	43.50	-26.61	QP	100	360	
5	396.2415	31.17	-13.51	17.66	46.00	-28.34	QP	100	0	
6	696.8567	32.62	-9.00	23.62	46.00	-22.38	QP	100	360	



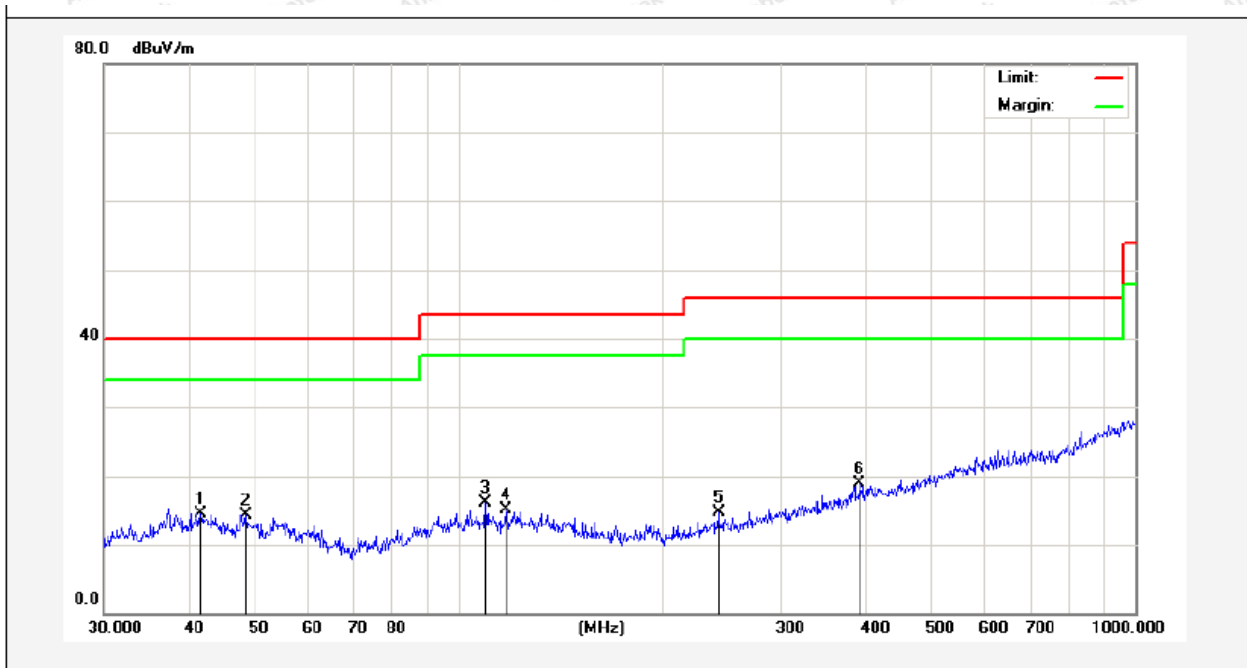
Report No.: 18220WC00039201

FCC ID: 2AWKS-RETECITY

Page20 of 39

Test Results (30~1000MHz)

Test Mode: Mode 2
Power Source: DC 3.7V Battery inside
Polarization: Horizontal
Temp.(°C)/Hum.(%RH): 22.6°C/56%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	41.7129	30.32	-15.77	14.55	40.00	-25.45	QP	100	360	
2	48.6719	30.00	-15.61	14.39	40.00	-25.61	QP	100	0	
3	109.7960	38.57	-22.46	16.11	43.50	-27.39	QP	100	360	
4	117.7725	38.23	-23.08	15.15	43.50	-28.35	QP	100	0	
5	242.5253	35.45	-20.82	14.63	46.00	-31.37	QP	100	360	
6	392.0951	34.02	-15.17	18.85	46.00	-27.15	QP	100	0	



Test Results (1GHz-25GHz)

Test Mode: CH01 (Low channel)									
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
2410.0000	95.09	31.12	2.18	35.33	93.06	114.00	-20.94	V	Peak
2410.0000	85.84	31.12	2.18	35.33	83.81	94.00	-10.19	V	AVG
4820.0000	50.69	34.01	2.58	34.65	52.63	74.00	-21.37	V	Peak
4820.0000	41.92	34.01	2.58	34.65	43.86	54.00	-10.14	V	AVG
7230.0000	48.08	36.16	2.97	35.07	52.14	74.00	-21.86	V	Peak
7230.0000	36.28	36.16	2.97	35.07	40.34	54.00	-13.66	V	AVG
9640.0000	*								
12050.0000	*								
14460.0000	*								
16870.0000	*								
2410.0000	93.27	31.12	2.18	35.33	91.24	114.00	-22.76	H	Peak
2410.0000	85.73	31.12	2.18	35.33	83.70	94.00	-10.30	H	AVG
4820.0000	50.99	34.01	2.58	34.65	52.93	74.00	-21.07	H	Peak
4820.0000	40.45	34.01	2.58	34.65	42.39	54.00	-11.61	H	AVG
7230.0000	46.77	36.16	2.97	35.07	50.83	74.00	-23.17	H	Peak
7230.0000	35.41	36.16	2.97	35.07	39.47	54.00	-14.53	H	AVG
9640.0000	*								
12050.0000	*								
14460.0000	*								
16870.0000	*								

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.



Test Mode: CH28(Middle channel)									
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
2439.0000	96.66	31.12	2.20	34.51	95.47	114.00	-18.53	V	Peak
2439.0000	83.92	31.22	2.20	34.51	82.83	94.00	-11.17	V	AVG
4878.0000	49.59	34.98	2.49	34.14	52.92	74.00	-21.08	V	Peak
4878.0000	41.88	34.98	2.49	34.14	45.21	54.00	-8.79	V	AVG
7317.0000	48.53	36.01	3.01	34.56	52.99	74.00	-21.01	V	Peak
7317.0000	36.82	36.01	3.01	34.56	41.28	54.00	-12.72	V	AVG
9756.0000	*								
12195.0000	*								
14634.0000	*								
17073.0000	*								
2439.0000	95.79	31.12	2.20	34.51	94.60	114.00	-19.40	H	Peak
2439.0000	83.73	31.12	2.20	34.51	82.54	94.00	-11.46	H	AVG
4878.0000	49.58	34.98	2.49	34.14	52.91	74.00	-21.09	H	Peak
4878.0000	40.01	34.98	2.49	34.14	43.34	54.00	-10.66	H	AVG
7317.0000	46.25	36.01	3.01	34.56	50.71	74.00	-23.29	H	Peak
7317.0000	36.12	36.01	3.01	34.56	40.58	54.00	-13.42	H	AVG
9756.0000	*								
12195.0000	*								
14634.0000	*								
17073.0000	*								

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.



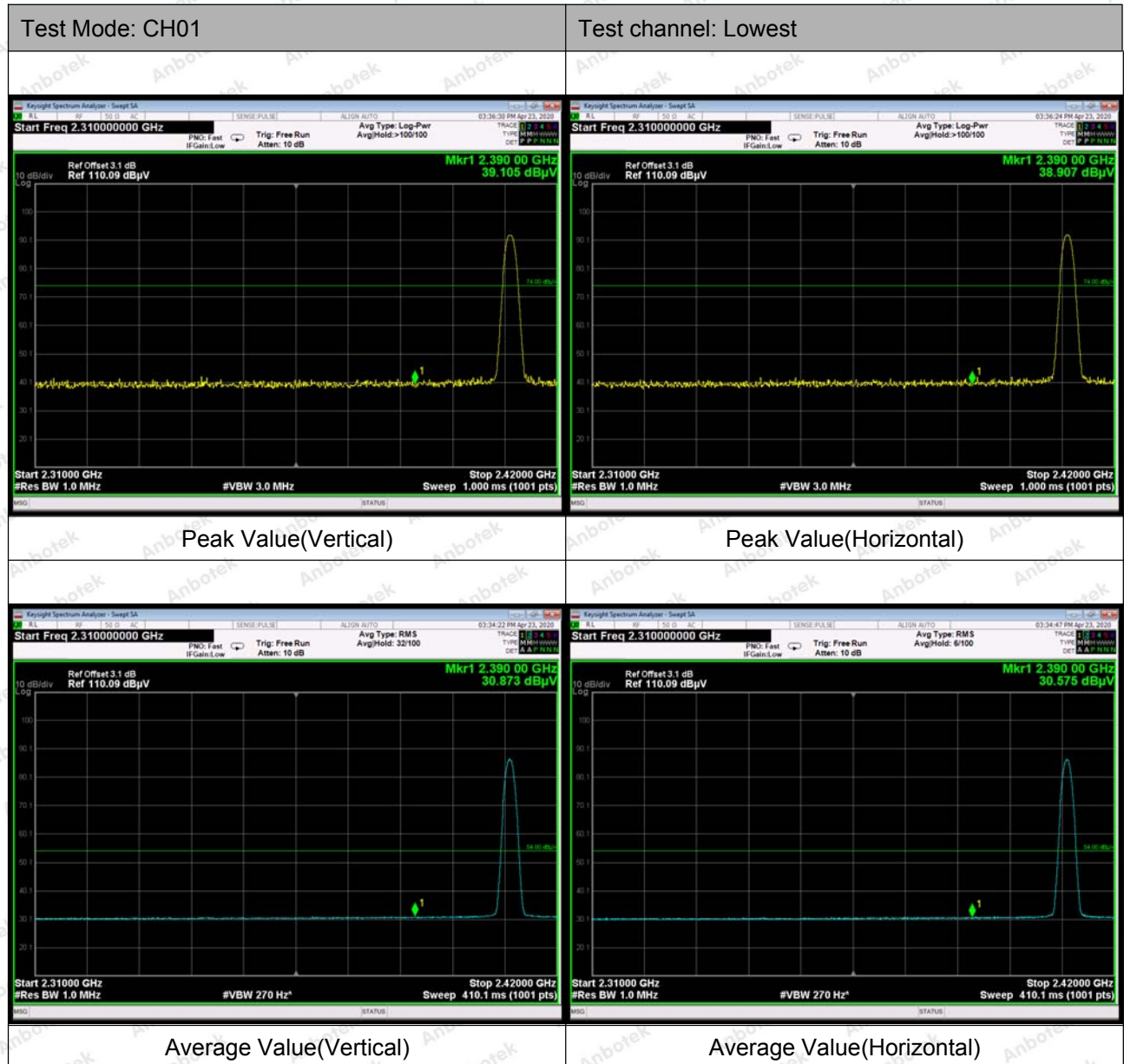
Test Mode: CH55(High channel)									
Frequency (MHz)	Read Level (dBUV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBUV/m)	Limit (dBUV/m)	Over Limit (dB)	Pol.	Detector
2470.0000	96.76	31.65	2.23	36.07	94.57	114.00	-19.43	V	Peak
2470.0000	83.32	31.65	2.23	36.07	81.13	94.00	-12.87	V	AVG
4940.0000	48.25	35.06	2.60	34.93	50.98	74.00	-23.02	V	Peak
4940.0000	40.10	35.06	2.60	34.93	42.83	54.00	-11.17	V	AVG
7410.0000	48.73	36.19	3.12	35.11	52.93	74.00	-21.07	V	Peak
7410.0000	35.07	36.19	3.12	35.11	39.27	54.00	-14.73	V	AVG
9880.0000	*								
12350.0000	*								
14820.0000	*								
17290.0000	*								
2470.0000	96.14	31.65	2.23	36.07	93.95	114.00	-20.05	H	Peak
2470.0000	82.37	31.65	2.23	36.07	80.18	94.00	-13.82	H	AVG
4940.0000	50.75	35.06	2.60	34.93	53.48	74.00	-20.52	H	Peak
4940.0000	40.78	35.06	2.60	34.93	43.51	54.00	-10.49	H	AVG
7410.0000	45.18	36.19	3.12	35.11	49.38	74.00	-24.62	H	Peak
7410.0000	35.33	36.19	3.12	35.11	39.53	54.00	-14.47	H	AVG
9880.0000	*								
12350.0000	*								
14820.0000	*								
17290.0000	*								

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:



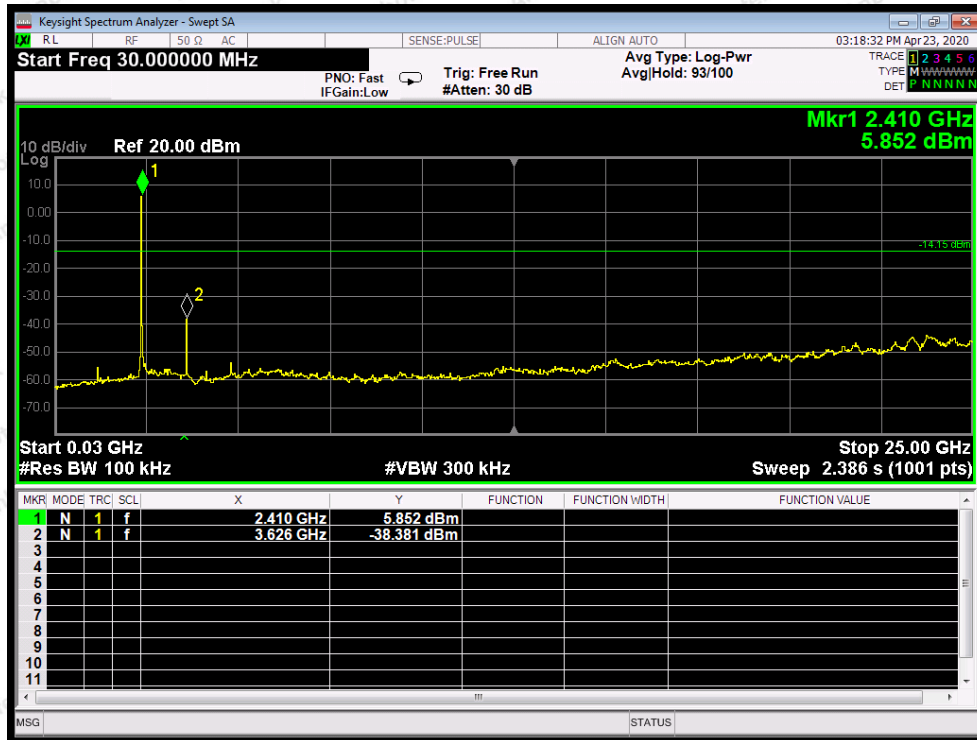


Remark:

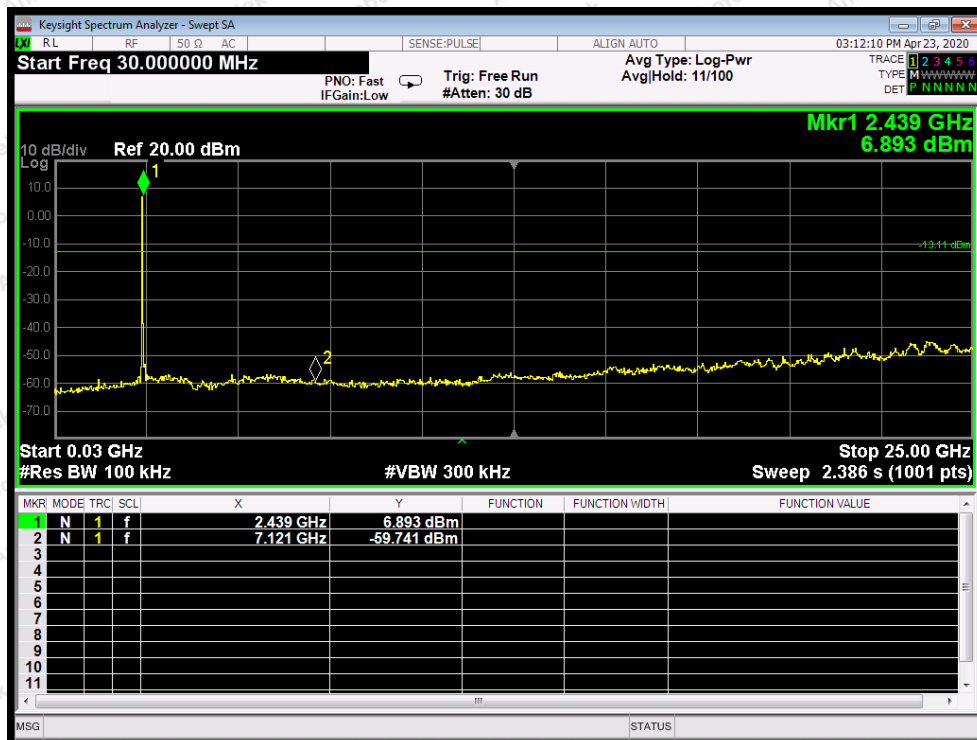
1. Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor



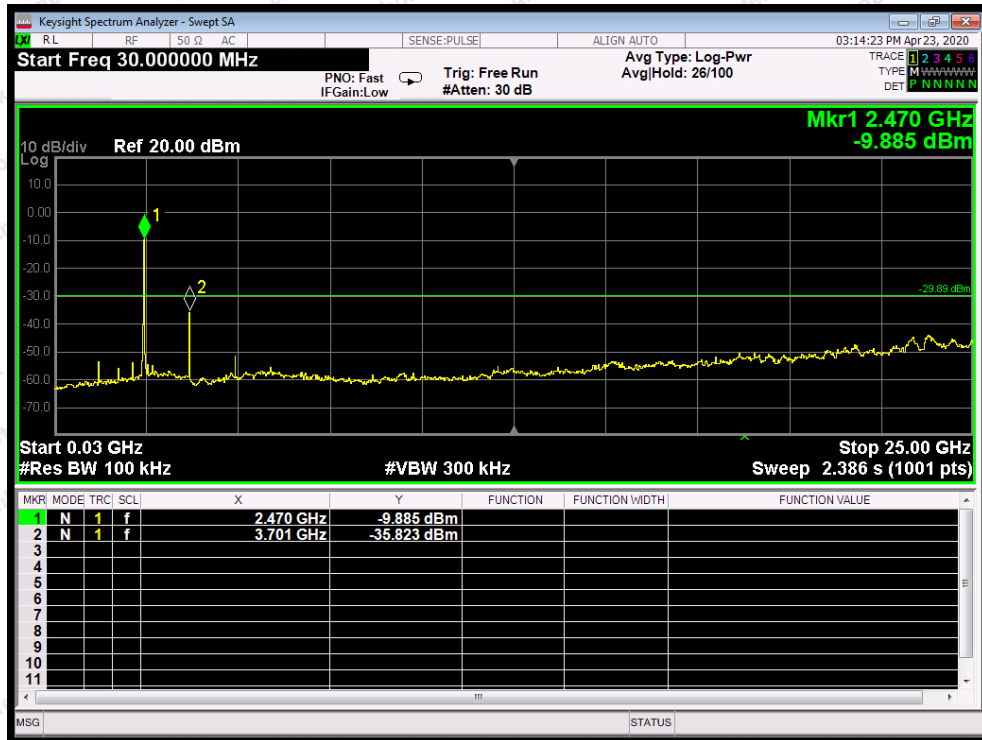
Conducted Emission Method



CH: Low



CH: Middle



CH: High

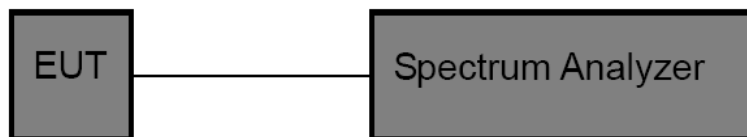


5. 20dB Bandwidth Test

5.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.249
---------------	-----------------------------

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 = 30kHz, VBW $\geq$ 3*RBW =100kHz,
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 : AC 120V, 60Hz for adapter

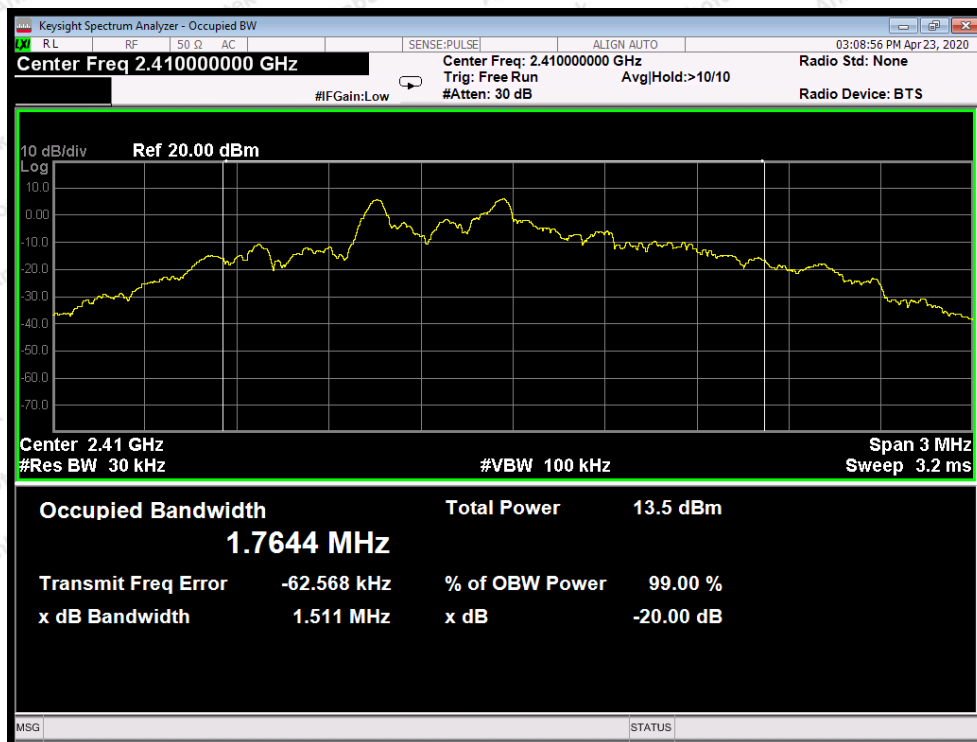
Test Result : PASS

Test Mode : Mode 1

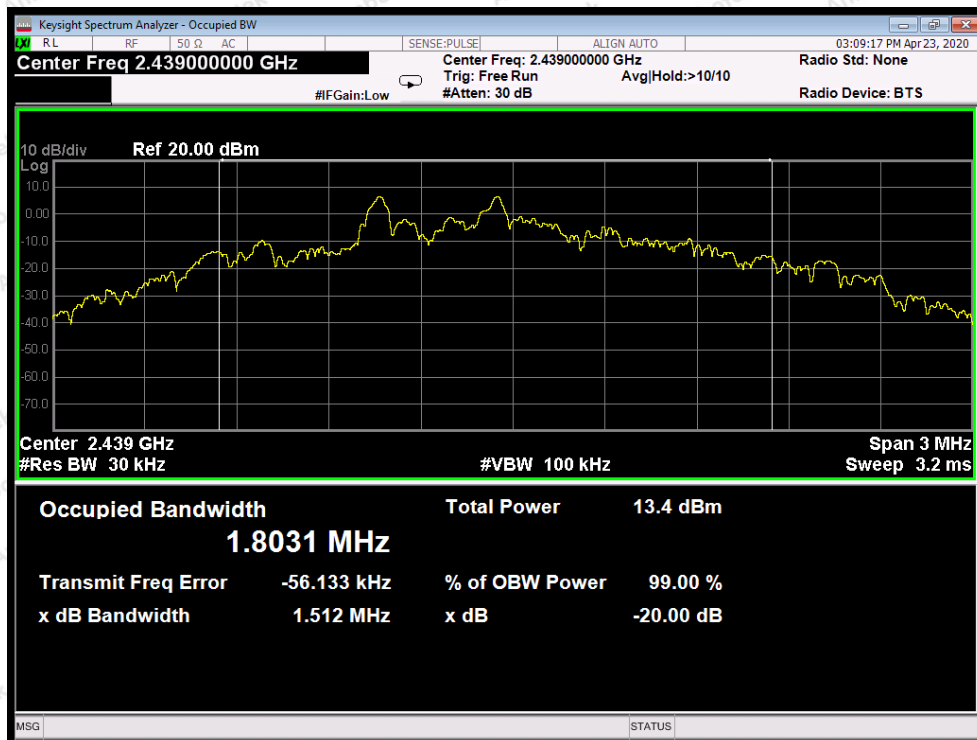
Temperature : 22.4℃

Humidity : 55%RH

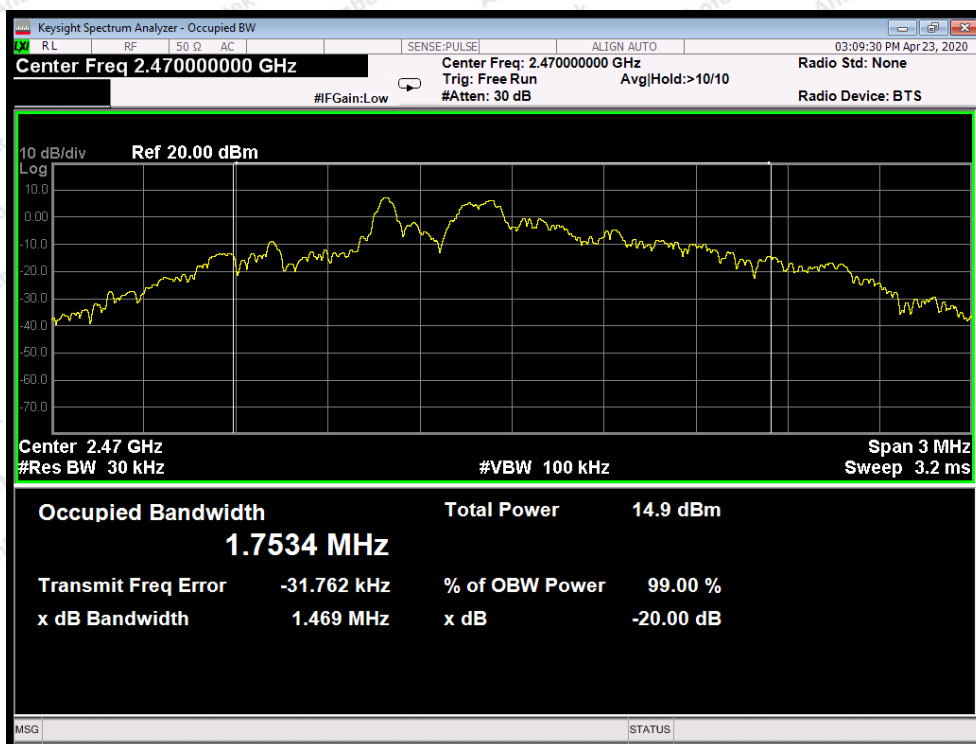
Frequency (MHz)	Bandwidth (KHz)	Result
2410	1511	PASS
2439	1512	PASS
2470	1469	PASS



Test Mode: Low



Test Mode: Middle



Test Mode: High



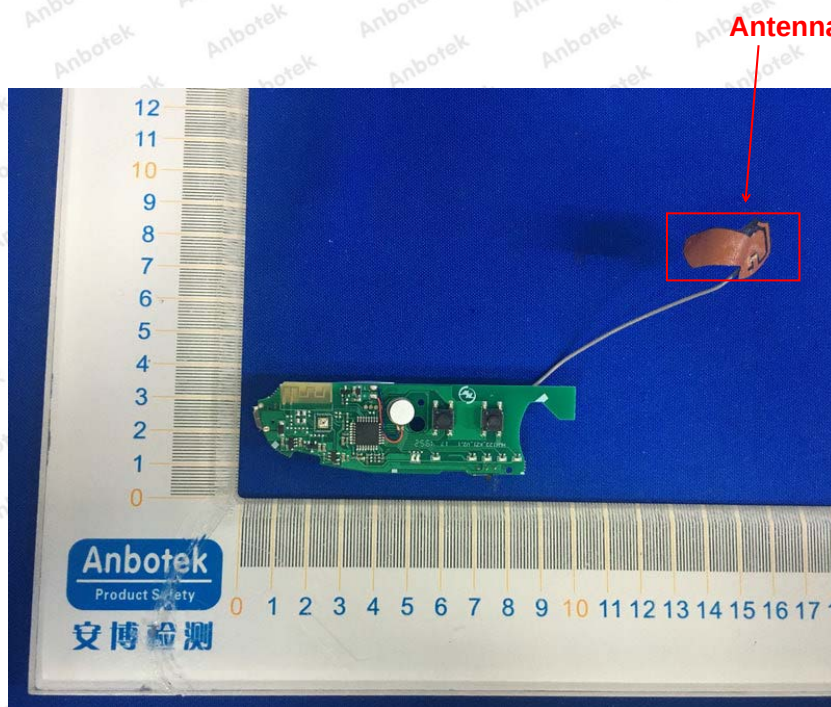
6. Antenna Requirement

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 FPCB Antenna which permanently attached, and the best case gain of the antenna is 2 dBi. It complies with the standard requirement.



APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Conducted Emission Test



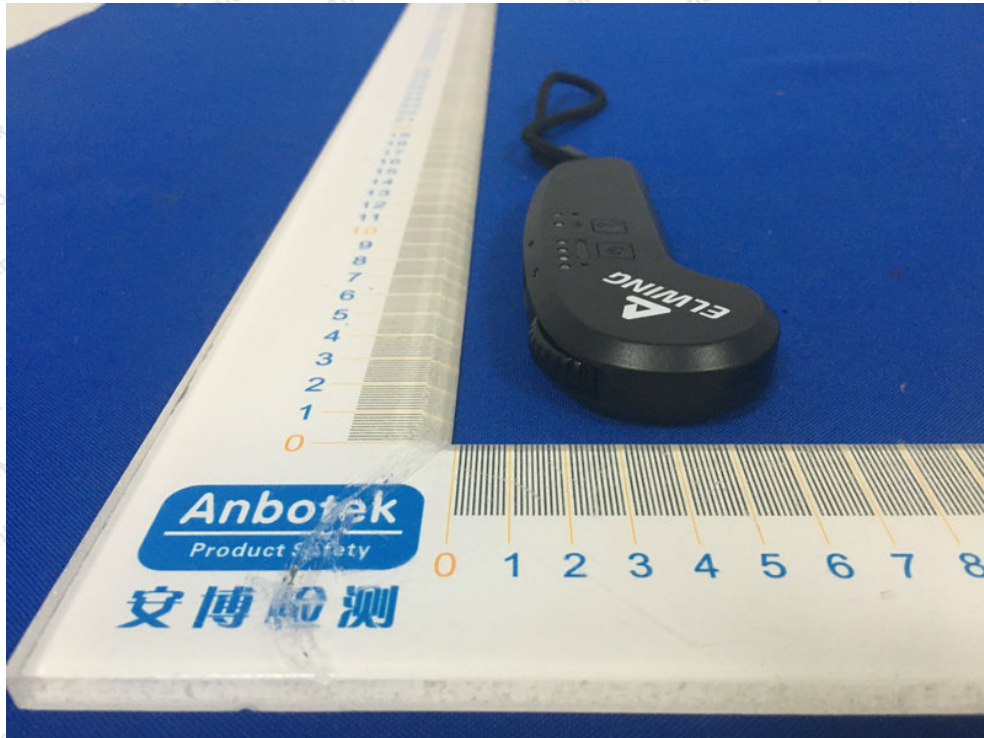
Photo of Radiation Emission Test



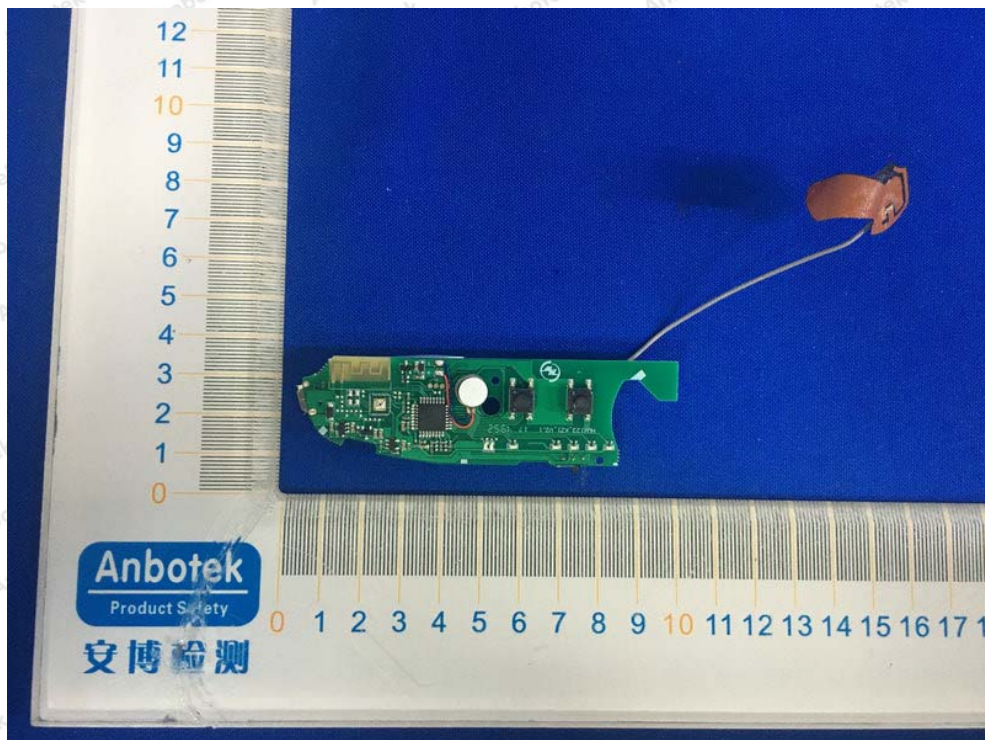
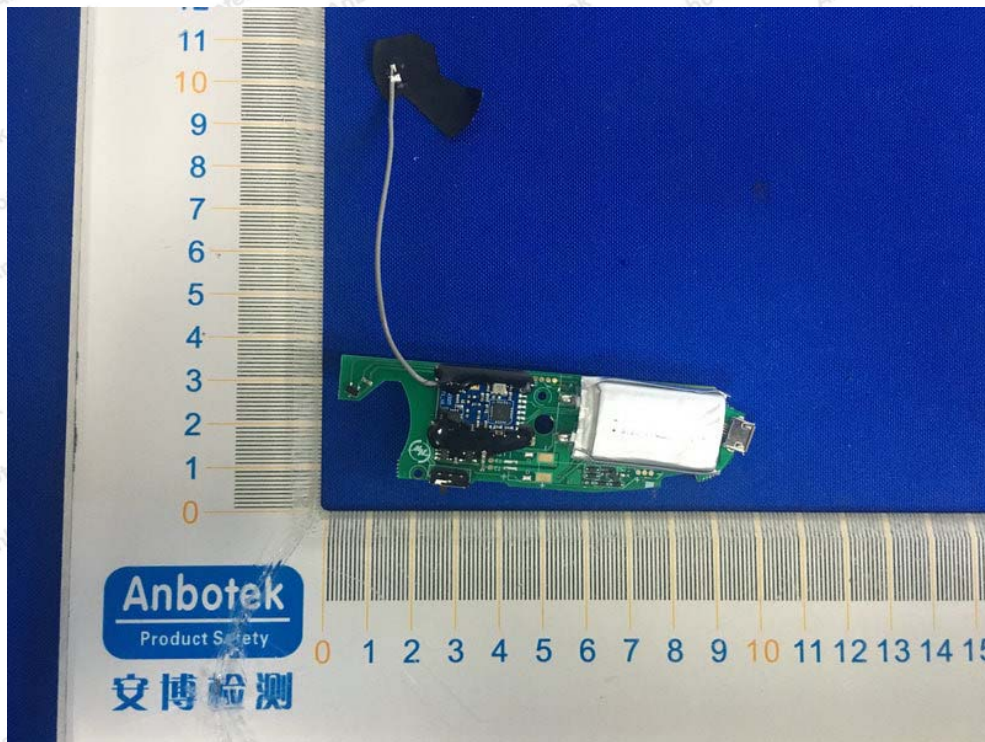


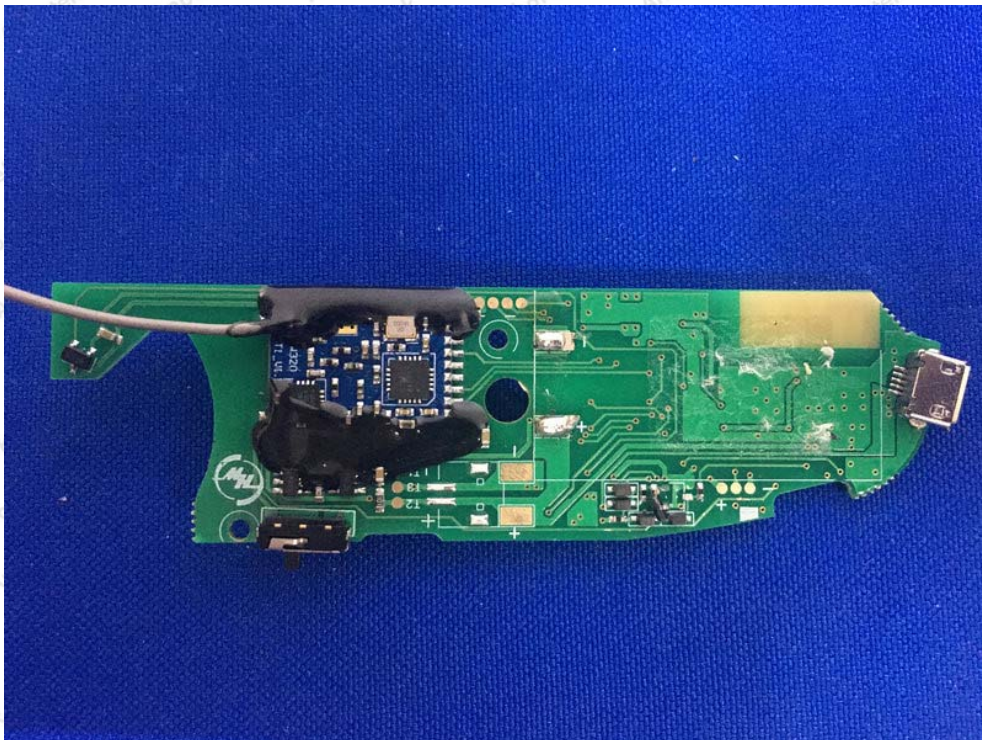
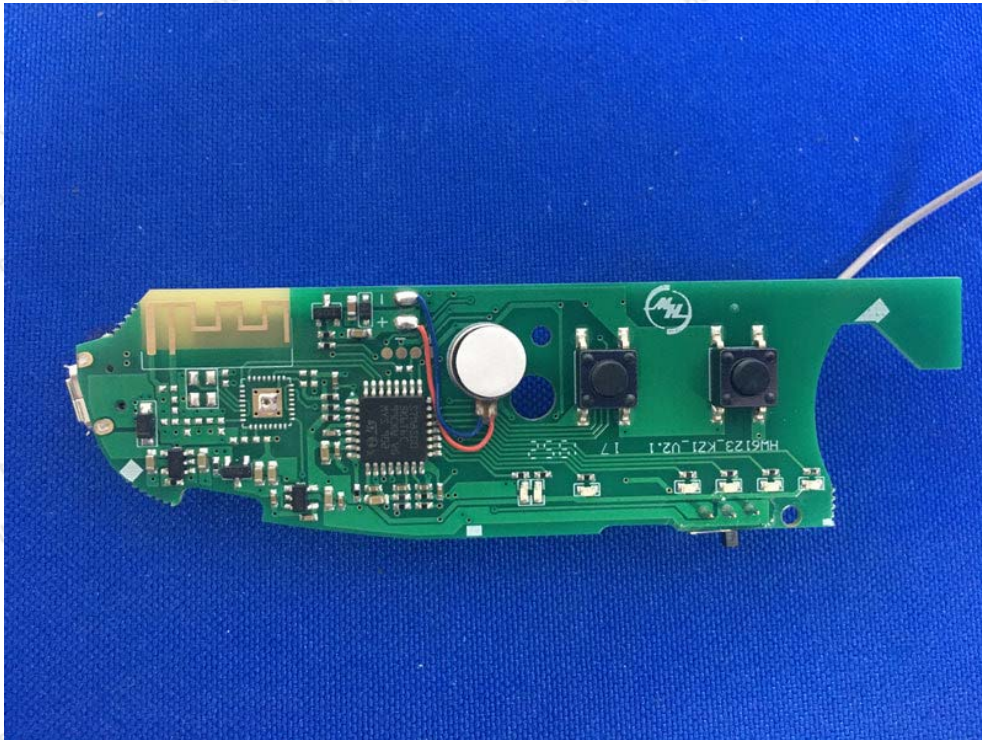
APPENDIX II -- EXTERNAL PHOTOGRAPH





APPENDIX III -- INTERNAL PHOTOGRAPH





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

Shenzhen Anbotek Compliance Laboratory Limited

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

Tel: (86) 755-26066440 Fax: (86) 755-26014772 Email: service@anbotek.com

Code: AB-RF-05-a



Hotline

400-003-0500

www.anbotek.com