

FCC TEST REPORT

Client Name : Adept Industries Limited

Address : 9-10.20/F, Mega Trade Center, 1Mei Wan St..Tsuen Wan,
Hongkong, China

Product Name : Remote Control Unit For Battery

Date : Jul. 14, 2020



Shenzhen Anbotech Compliance Laboratory Limited



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TEST REPORT

Applicant : Adept Industries Limited
Manufacturer : Guangzhou Prominent Industrial Co., LTD.
Product Name : Remote Control Unit For Battery
Model No. : Club Booster V2 remote
Trade Mark : ALPHARD
Rating(s) : Input: DC 5V, 0.5A (with DC 3.7V, 470 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

May 14, 2020

Date of Test

May 14~Jul. 08, 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	:	Adept Industries Limited
Address	:	9-10.20/F, Mega Trade Center, 1Mei Wan St..Tsuen Wan, Hongkong, China
Manufacturer	:	Guangzhou Prominent Industrial Co., LTD.
Address	:	Room 401, NO.21 Jin Keng Industrial Park, NanCun Town, Panyu, 511442 Guangzhou, China
Factory	:	Guangzhou Prominent Industrial Co., LTD.
Address	:	Room 401, NO.21 Jin Keng Industrial Park, NanCun Town, Panyu, 511442 Guangzhou, China

1.2. Description of Device (EUT)

Product Name	:	Remote Control Unit For Battery	
Model No.	:	Club Booster V2 remote	
Trade Mark	:	ALPHARD	
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:	2405~2480MHZ
		Number of Channel:	67 Channels
		Modulation Type:	GFSK
		Antenna Type:	PCB Antenna
		Antenna Gain(Peak):	0 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 generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly 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	CH34
Mode 3	CH67

For Conducted Emission	
Final Test Mode	Description
Mode 1	CH01
Mode 2	CH34
Mode 3	CH67

For Radiated Emission	
Final Test Mode	Description
Mode 1	CH01
Mode 2	CH34
Mode 3	CH67

Note:

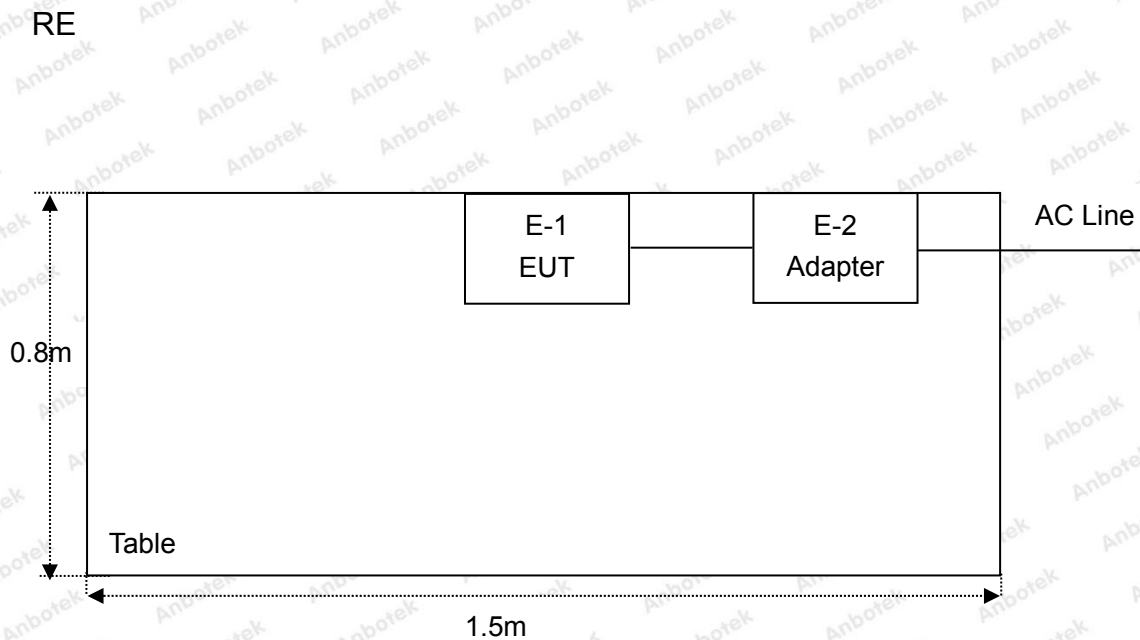
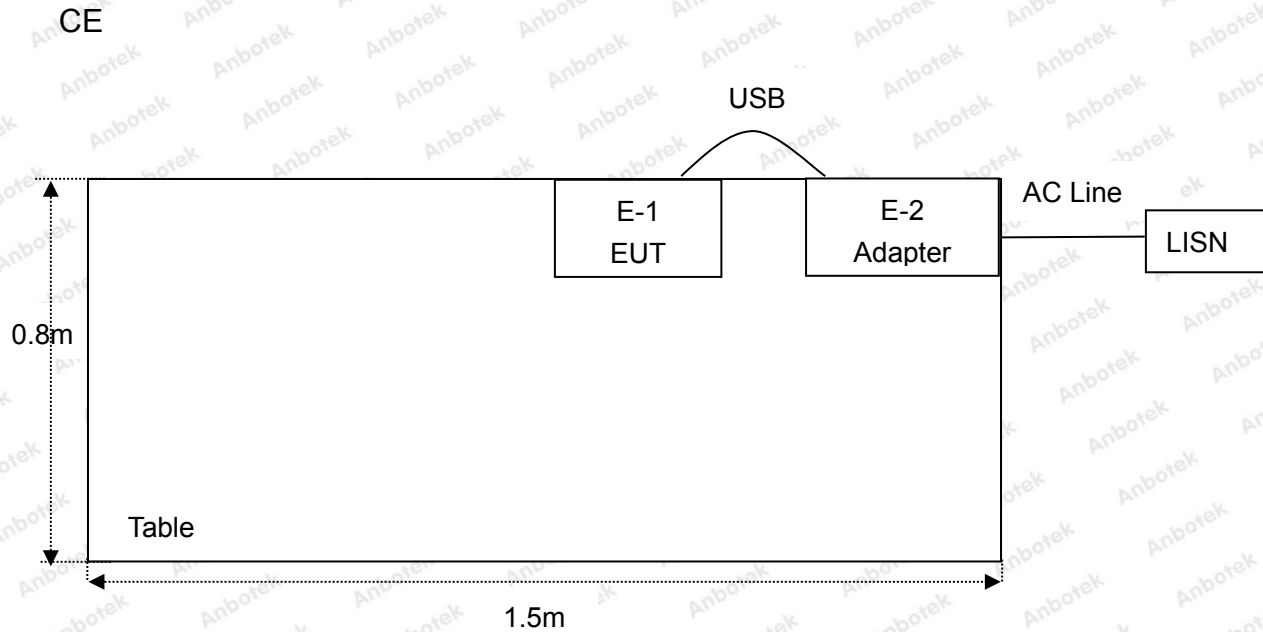
- The engineering test program was provided and the EUT was programmed to be in continuously transmitting mode.

1.5. List of Channels

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	2405	18	2422	35	2439	52	2456
2	2406	19	2423	36	2440	53	2457
3	2407	20	2424	37	2441	54	2458
4	2408	21	2425	38	2442	55	2459
5	2409	22	2426	39	2443	56	2460
6	2410	23	2427	40	2444	57	2461
7	2411	24	2428	41	2445	58	2462
8	2412	25	2429	42	2446	59	2463
9	2413	26	2430	43	2447	60	2464
10	2414	27	2431	44	2448	61	2465
11	2415	28	2432	45	2449	62	2466
12	2416	29	2433	46	2450	63	2467
13	2417	30	2434	47	2451	64	2468
14	2418	31	2435	48	2452	65	2469
15	2419	32	2436	49	2453	66	2470
16	2420	33	2437	50	2454	67	2480
17	2421	34	2438	51	2455	/	/



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.		



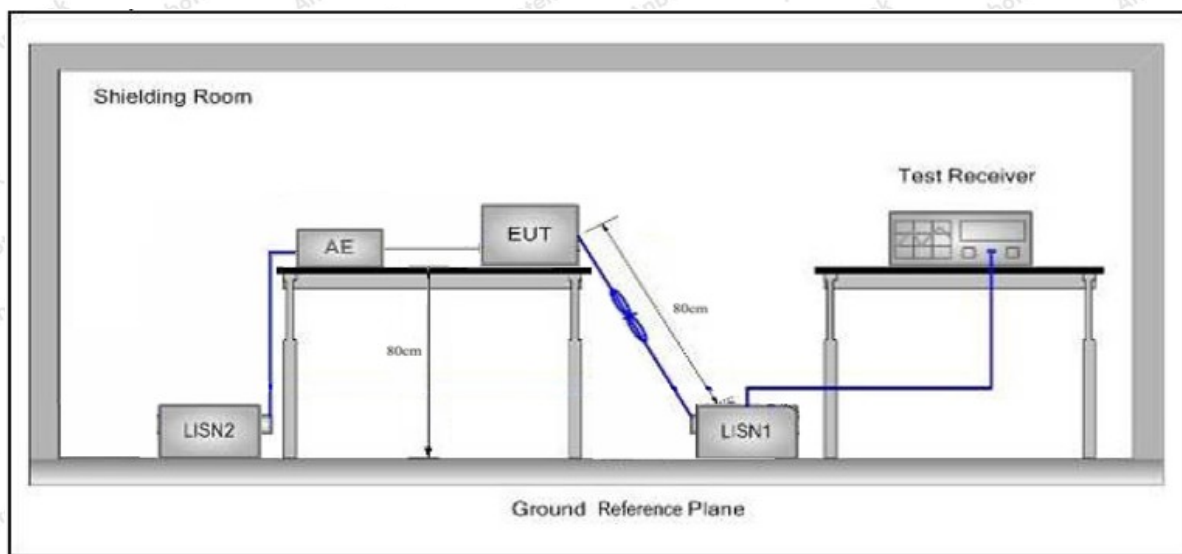
3. Conducted Emission Test

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 receiver (ESCI) set at 9kHz.

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

3.4. Test Data

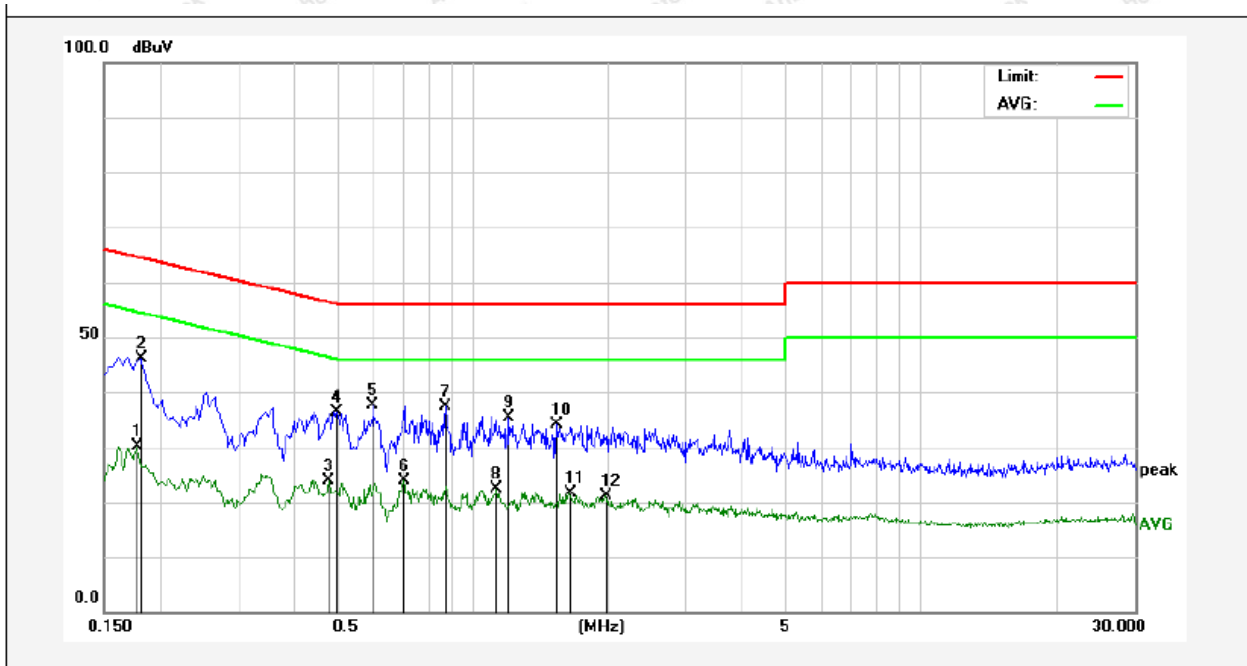
PASS

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.: 23.6℃ Hum.: 56%

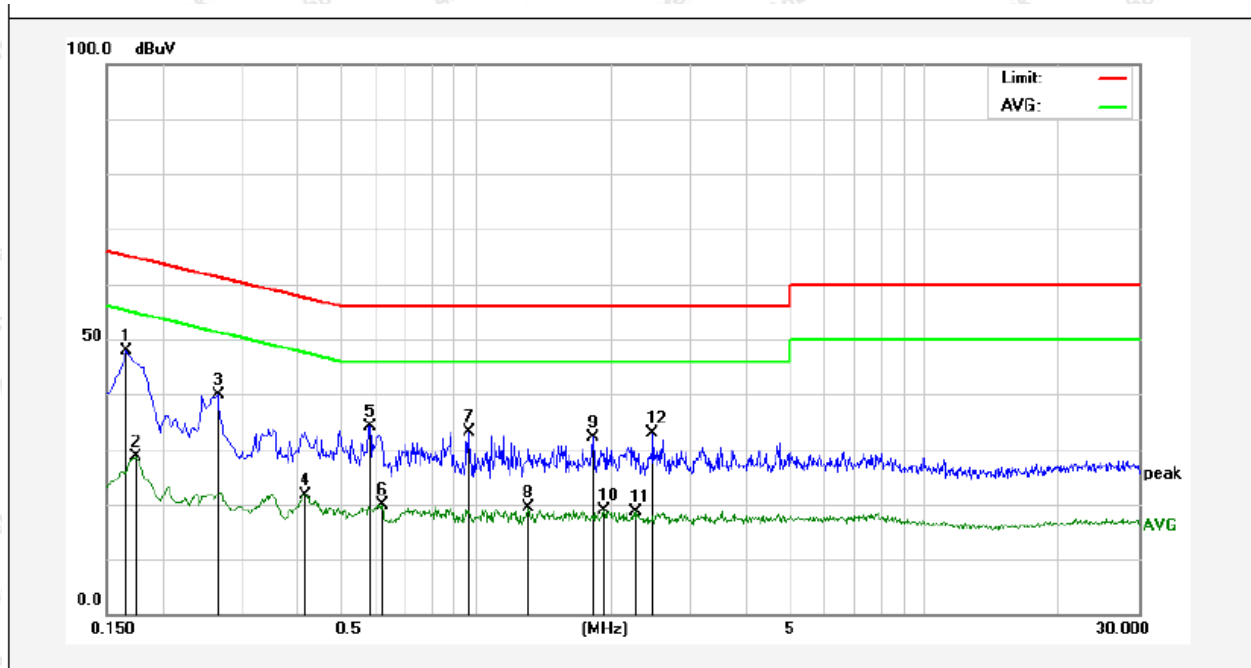


No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1780	10.33	19.90	30.23	54.57	-24.34	AVG	
2	0.1819	26.25	19.90	46.15	64.39	-18.24	QP	
3	0.4780	3.94	19.97	23.91	46.37	-22.46	AVG	
4	0.4980	16.50	19.98	36.48	56.03	-19.55	QP	
5	0.5980	17.52	20.01	37.53	56.00	-18.47	QP	
6	0.7019	3.79	20.04	23.83	46.00	-22.17	AVG	
7	0.8700	17.22	20.09	37.31	56.00	-18.69	QP	
8	1.1300	2.28	20.12	22.40	46.00	-23.60	AVG	
9	1.2059	15.31	20.12	35.43	56.00	-20.57	QP	
10	1.5380	14.10	20.13	34.23	56.00	-21.77	QP	
11	1.6420	1.61	20.13	21.74	46.00	-24.26	AVG	
12	1.9700	0.97	20.14	21.11	46.00	-24.89	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.: 23.6°C Hum.: 56%

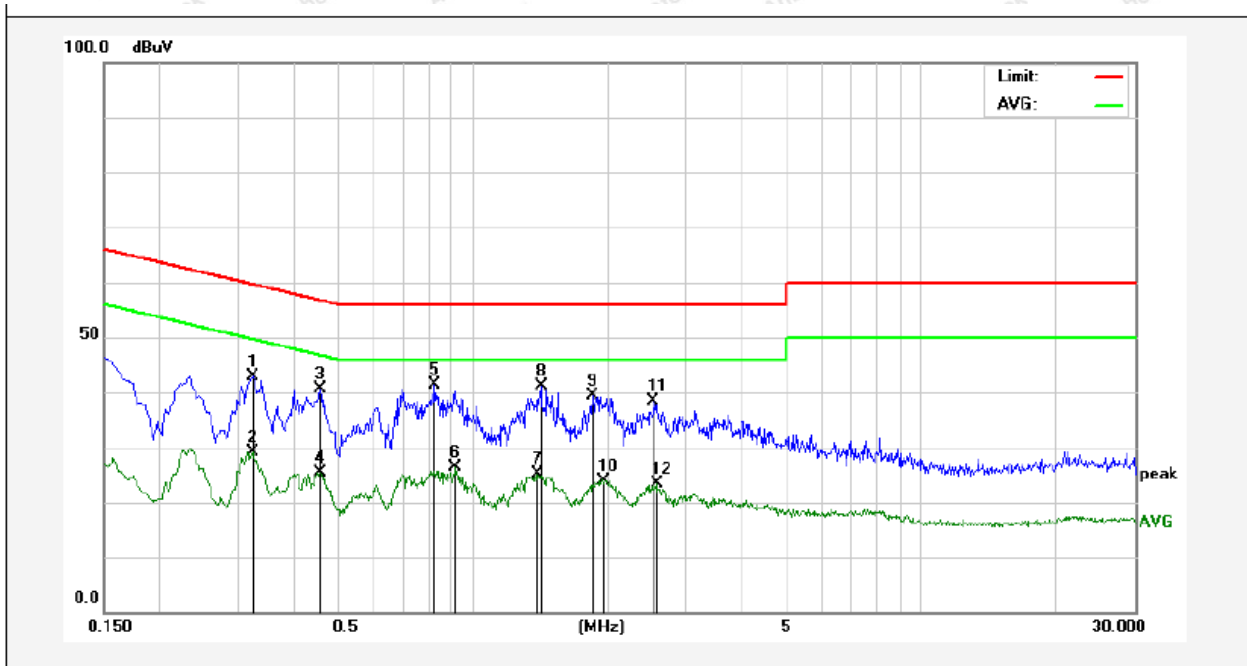


No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1660	27.98	19.90	47.88	65.15	-17.27	QP	
2	0.1740	8.61	19.90	28.51	54.76	-26.25	AVG	
3	0.2660	19.95	19.89	39.84	61.24	-21.40	QP	
4	0.4140	1.65	19.94	21.59	47.57	-25.98	AVG	
5	0.5820	14.02	20.00	34.02	56.00	-21.98	QP	
6	0.6180	-0.04	20.02	19.98	46.00	-26.02	AVG	
7	0.9660	12.91	20.11	33.02	56.00	-22.98	QP	
8	1.3099	-0.86	20.13	19.27	46.00	-26.73	AVG	
9	1.8260	12.01	20.14	32.15	56.00	-23.85	QP	
10	1.9380	-1.34	20.14	18.80	46.00	-27.20	AVG	
11	2.2820	-1.54	20.15	18.61	46.00	-27.39	AVG	
12	2.4780	12.64	20.15	32.79	56.00	-23.21	QP	



Conducted Emission Test Data

Test Site: 1# Shielded Room
Operating Condition: CH 01
Test Specification: AC 240V, 60Hz for adapter
Comment: Live Line
Tem.: 23.6°C Hum.: 56%

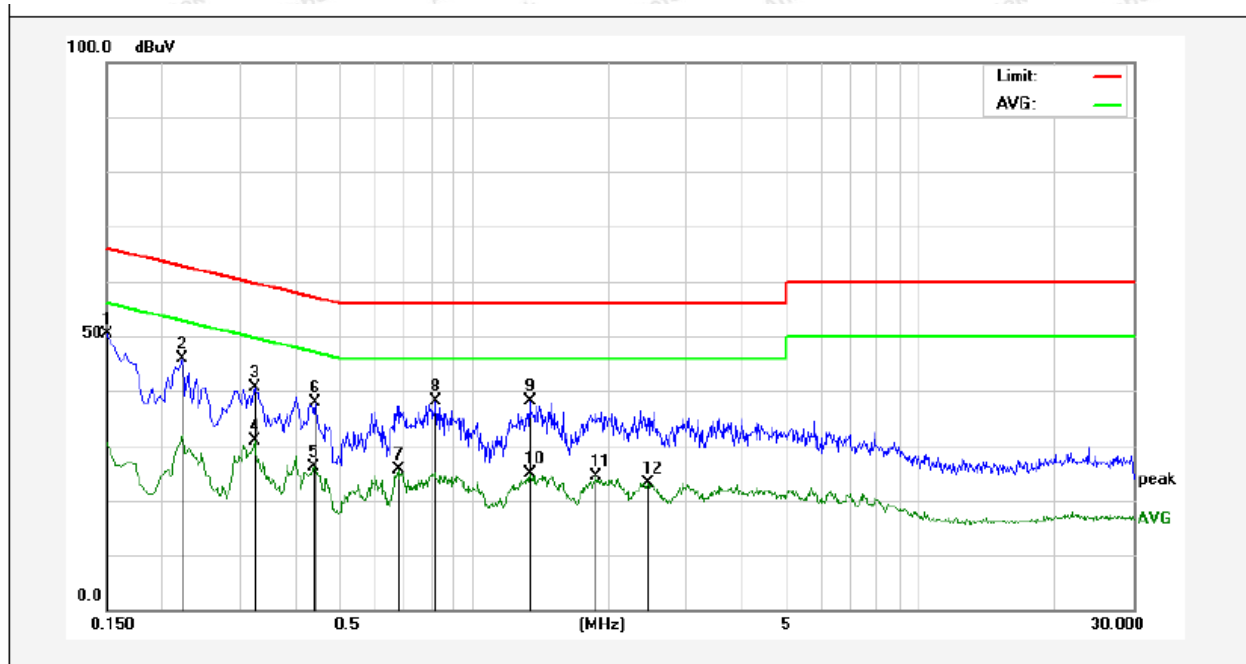


No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.3220	22.92	19.90	42.82	59.65	-16.83	QP	
2	0.3220	9.17	19.90	29.07	49.65	-20.58	AVG	
3	0.4580	20.70	19.96	40.66	56.73	-16.07	QP	
4	0.4580	5.35	19.96	25.31	46.73	-21.42	AVG	
5	0.8260	21.21	20.07	41.28	56.00	-14.72	QP	
6	0.9180	6.26	20.10	26.36	46.00	-19.64	AVG	
7	1.3940	5.07	20.13	25.20	46.00	-20.80	AVG	
8	1.4220	21.00	20.13	41.13	56.00	-14.87	QP	
9	1.8580	19.14	20.14	39.28	56.00	-16.72	QP	
10	1.9420	3.86	20.14	24.00	46.00	-22.00	AVG	
11	2.5340	18.21	20.15	38.36	56.00	-17.64	QP	
12	2.5780	3.13	20.15	23.28	46.00	-22.72	AVG	



Conducted Emission Test Data

Test Site: 1# Shielded Room
 Operating Condition: CH 01
 Test Specification: AC 240V, 60Hz for adapter
 Comment: Neutral Line
 Tem.: 23.6°C Hum.: 56%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1500	30.58	19.90	50.48	65.99	-15.51	QP	
2	0.2220	26.01	19.90	45.91	62.74	-16.83	QP	
3	0.3220	20.83	19.90	40.73	59.65	-18.92	QP	
4	0.3220	10.90	19.90	30.80	49.65	-18.85	AVG	
5	0.4380	6.13	19.95	26.08	47.10	-21.02	AVG	
6	0.4420	17.82	19.95	37.77	57.02	-19.25	QP	
7	0.6820	5.57	20.03	25.60	46.00	-20.40	AVG	
8	0.8220	17.95	20.07	38.02	56.00	-17.98	QP	
9	1.3340	18.07	20.13	38.20	56.00	-17.80	QP	
10	1.3340	4.65	20.13	24.78	46.00	-21.22	AVG	
11	1.8820	4.30	20.14	24.44	46.00	-21.56	AVG	
12	2.4500	3.08	20.15	23.23	46.00	-22.77	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

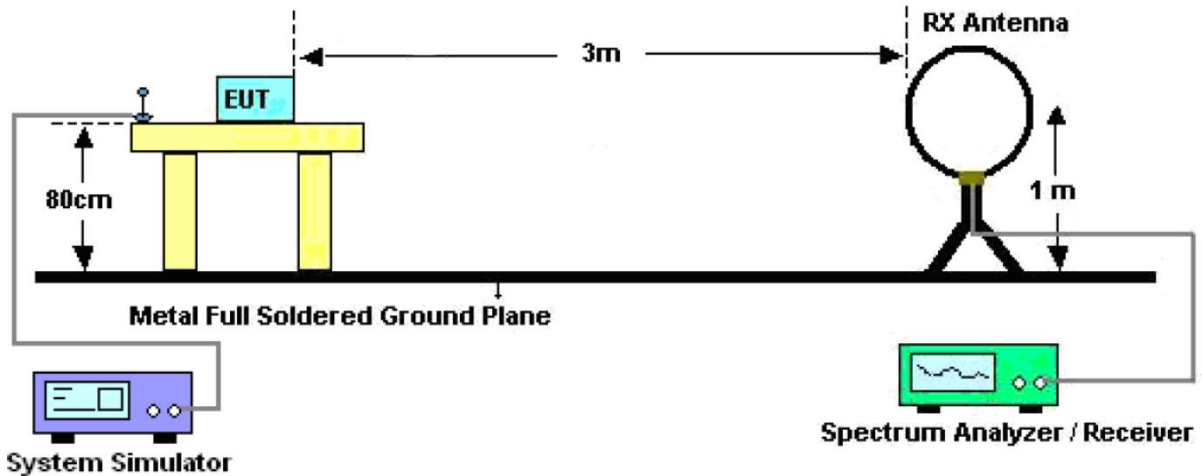


Figure 2. 30MHz to 1GHz

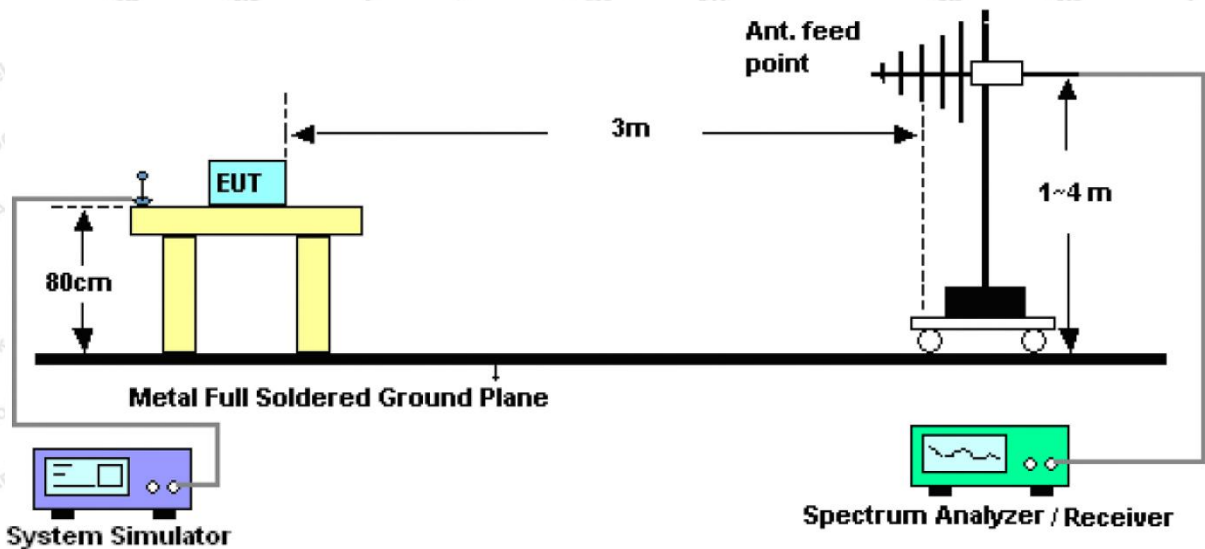
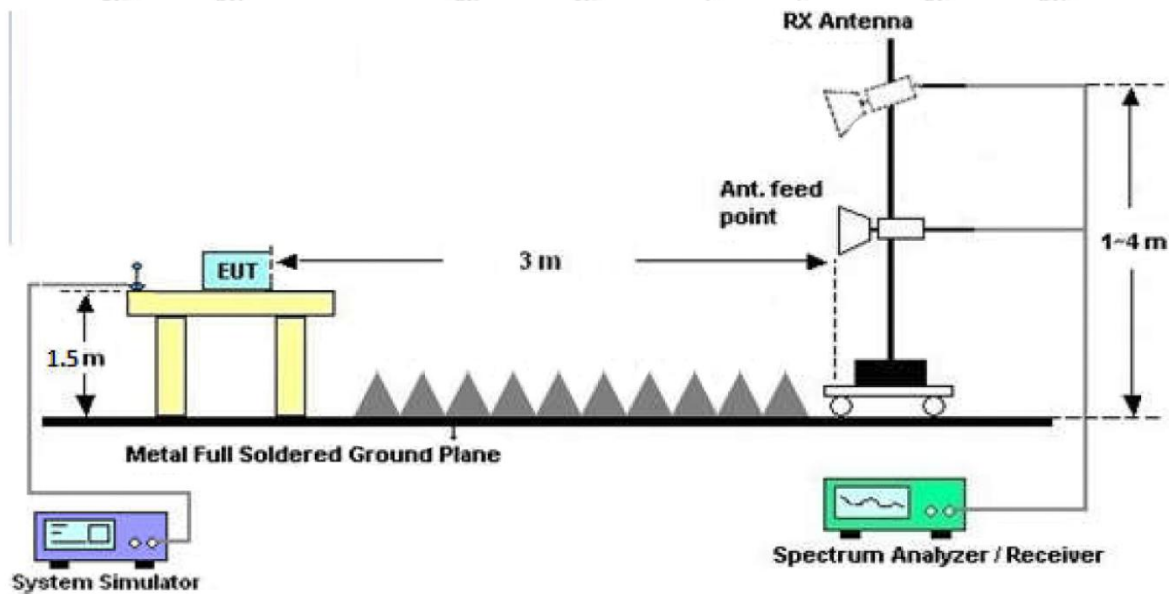


Figure 3. Above 1 GHz



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



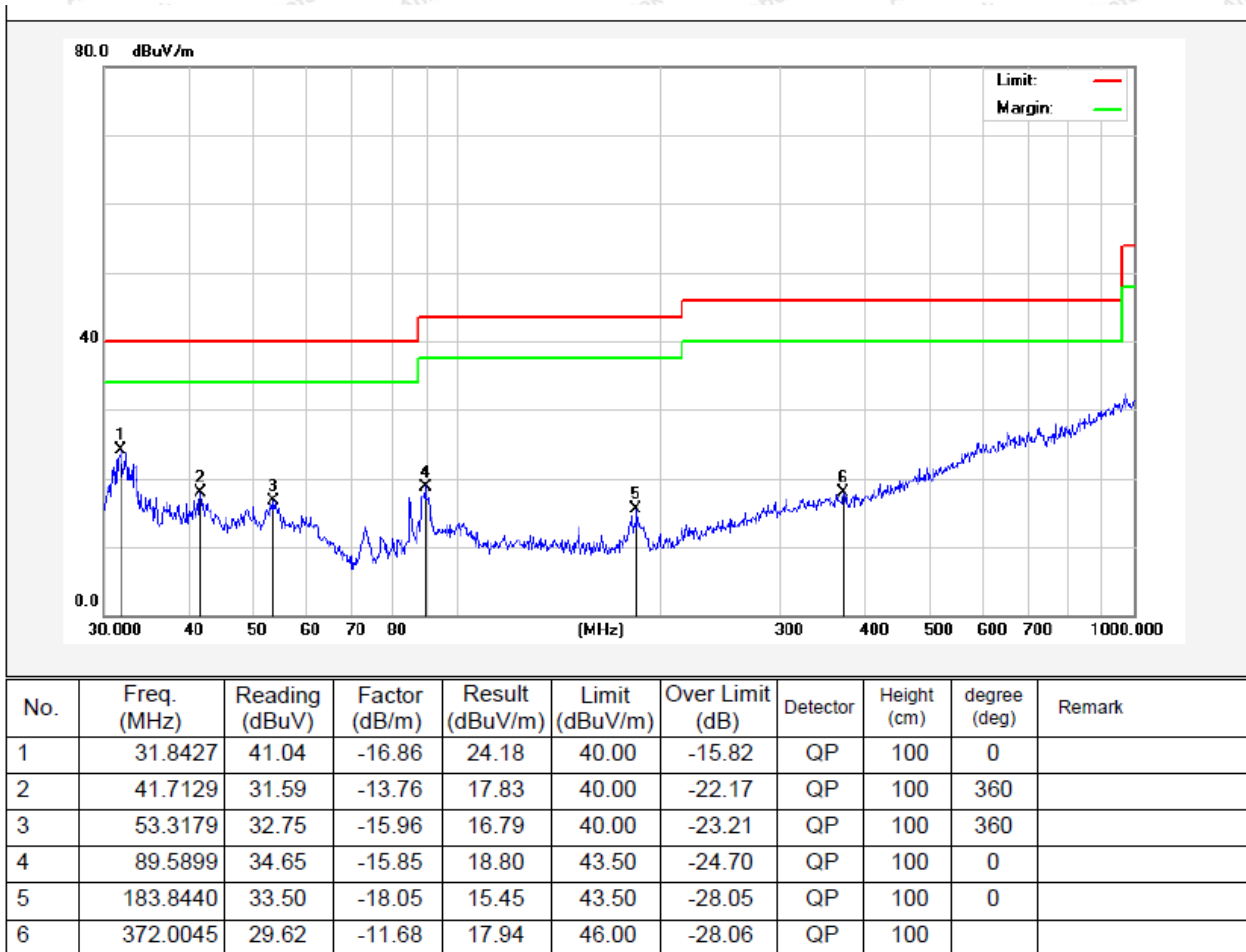
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Test Results (30~1000MHz)

Test Mode: Mode 2
Power Source: DC 3.7V battery inside
Polarization: Vertical
Temp.(°C)/Hum.(%RH): 24.7°C/48%RH



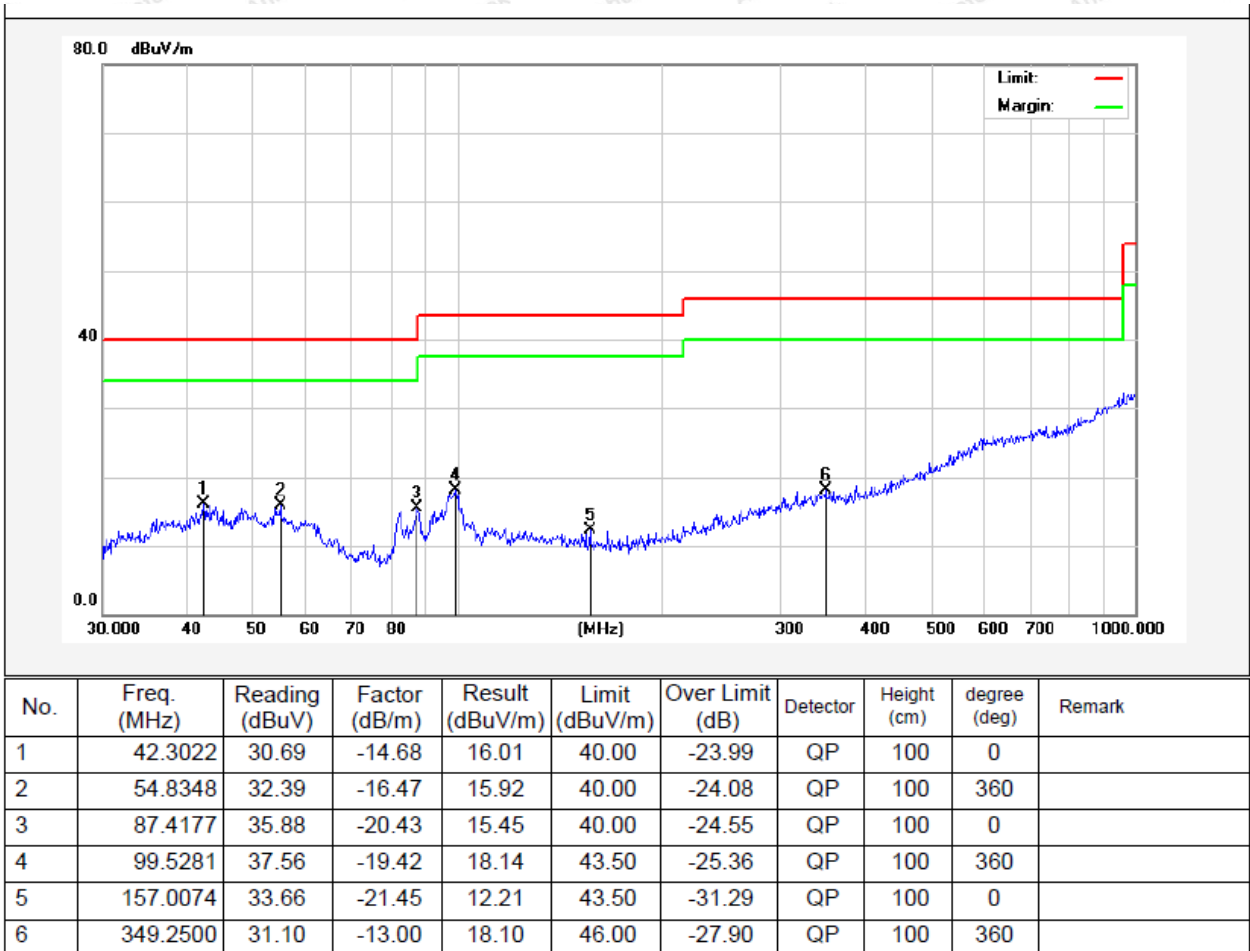
Report No.: 18220WC00053601

FCC ID: 2ANDF-REMOTE

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Test Results (30~1000MHz)

Test Mode: Mode 2
Power Source: DC 3.7V battery inside
Polarization: Horizontal
Temp.(°C)/Hum.(%RH): 24.7°C/48%RH



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
2405.0000	93.73	31.12	2.18	35.33	91.70	114.00	-22.30	V	Peak
2405.0000	85.15	31.12	2.18	35.33	83.12	94.00	-10.88	V	AVG
4810.0000	49.32	34.01	2.58	34.65	51.26	74.00	-22.74	V	Peak
4810.0000	41.25	34.01	2.58	34.65	43.19	54.00	-10.81	V	AVG
7215.0000	47.85	36.16	2.97	35.07	51.91	74.00	-22.09	V	Peak
7215.0000	35.57	36.16	2.97	35.07	39.63	54.00	-14.37	V	AVG
9620.0000	*								
12025.0000	*								
14430.0000	*								
16835.0000	*								
2405.0000	93.79	31.12	2.18	35.33	91.76	114.00	-22.24	H	Peak
2405.0000	83.19	31.12	2.18	35.33	81.16	94.00	-12.84	H	AVG
4810.0000	48.63	34.01	2.58	34.65	50.57	74.00	-23.43	H	Peak
4810.0000	39.13	34.01	2.58	34.65	41.07	54.00	-12.93	H	AVG
7215.0000	47.85	36.16	2.97	35.07	51.91	74.00	-22.09	H	Peak
7215.0000	37.87	36.16	2.97	35.07	41.93	54.00	-12.07	H	AVG
9620.0000	*								
12025.0000	*								
14430.0000	*								
16835.0000	*								

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: CH34 (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
2438.0000	94.75	31.12	2.20	34.51	93.56	114.00	-20.44	V	Peak
2438.0000	85.82	31.22	2.20	34.51	84.73	94.00	-9.27	V	AVG
4876.0000	47.52	34.98	2.49	34.14	50.85	74.00	-23.15	V	Peak
4876.0000	40.40	34.98	2.49	34.14	43.73	54.00	-10.27	V	AVG
7314.0000	48.97	36.01	3.01	34.56	53.43	74.00	-20.57	V	Peak
7314.0000	36.58	36.01	3.01	34.56	41.04	54.00	-12.96	V	AVG
9752.0000	*								
12190.0000	*								
14628.0000	*								
17066.0000	*								
2438.0000	94.33	31.12	2.20	34.51	93.14	114.00	-20.86	H	Peak
2438.0000	83.10	31.12	2.20	34.51	81.91	94.00	-12.09	H	AVG
4876.0000	49.21	34.98	2.49	34.14	52.54	74.00	-21.46	H	Peak
4876.0000	39.35	34.98	2.49	34.14	42.68	54.00	-11.32	H	AVG
7314.0000	47.21	36.01	3.01	34.56	51.67	74.00	-22.33	H	Peak
7314.0000	36.06	36.01	3.01	34.56	40.52	54.00	-13.48	H	AVG
9752.0000	*								
12190.0000	*								
14628.0000	*								
17066.0000	*								

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.



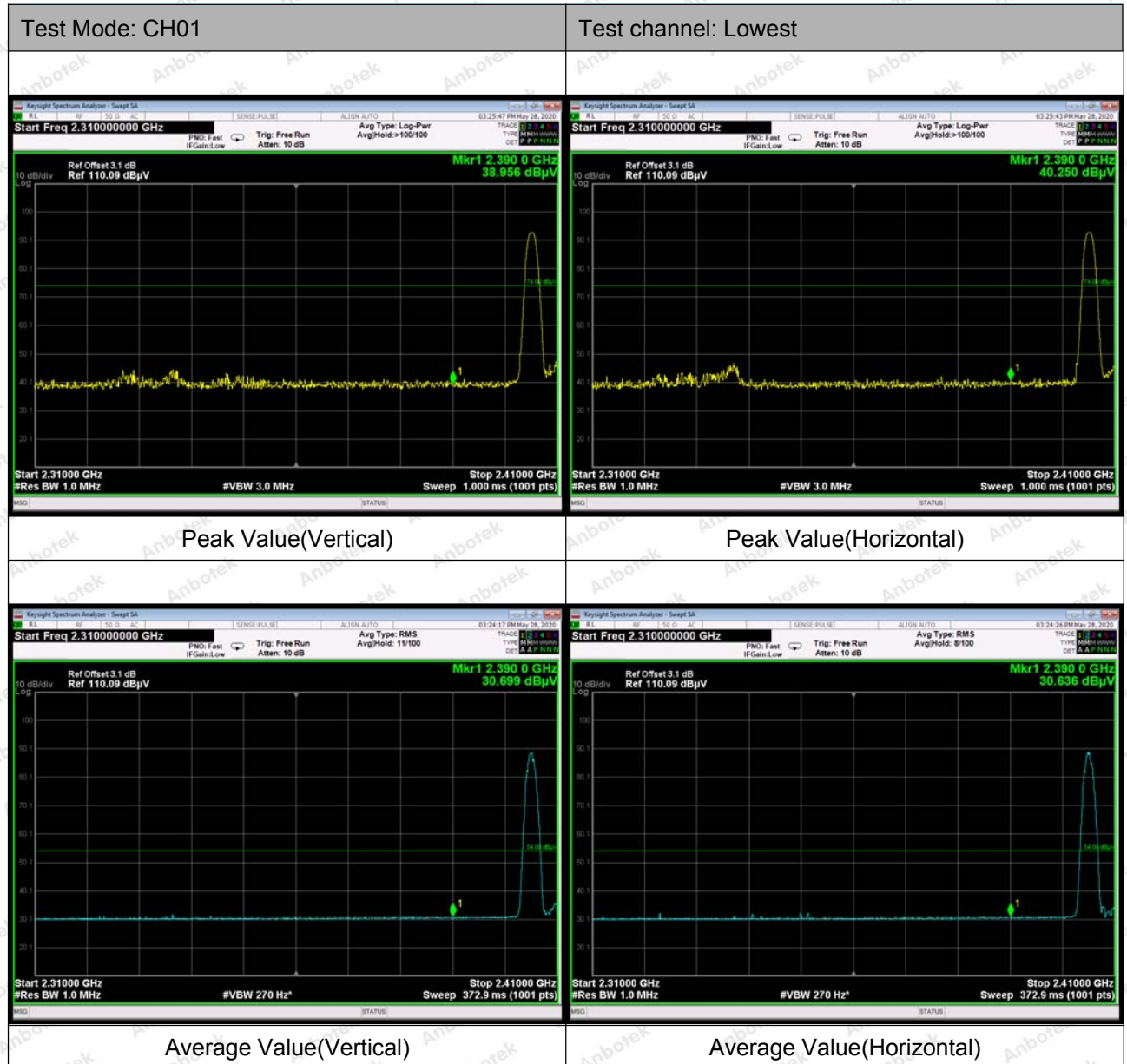
Test Mode: CH67(High channel)									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Detector
2480.0000	93.08	31.65	2.23	36.07	90.89	114.00	-23.11	V	Peak
2480.0000	83.60	31.65	2.23	36.07	81.41	94.00	-12.59	V	AVG
4960.0000	50.26	35.06	2.60	34.93	52.99	74.00	-21.01	V	Peak
4960.0000	39.54	35.06	2.60	34.93	42.27	54.00	-11.73	V	AVG
7440.0000	46.98	36.19	3.12	35.11	51.18	74.00	-22.82	V	Peak
7440.0000	36.37	36.19	3.12	35.11	40.57	54.00	-13.43	V	AVG
9920.0000	*								
12400.0000	*								
14880.0000	*								
17360.0000	*								
2480.0000	96.00	31.65	2.23	36.07	93.81	114.00	-20.19	H	Peak
2480.0000	85.94	31.65	2.23	36.07	83.75	94.00	-10.25	H	AVG
4960.0000	47.41	35.06	2.60	34.93	50.14	74.00	-23.86	H	Peak
4960.0000	41.14	35.06	2.60	34.93	43.87	54.00	-10.13	H	AVG
7440.0000	45.91	36.19	3.12	35.11	50.11	74.00	-23.89	H	Peak
7440.0000	36.90	36.19	3.12	35.11	41.10	54.00	-12.90	H	AVG
9920.0000	*								
12400.0000	*								
14880.0000	*								
17360.0000	*								

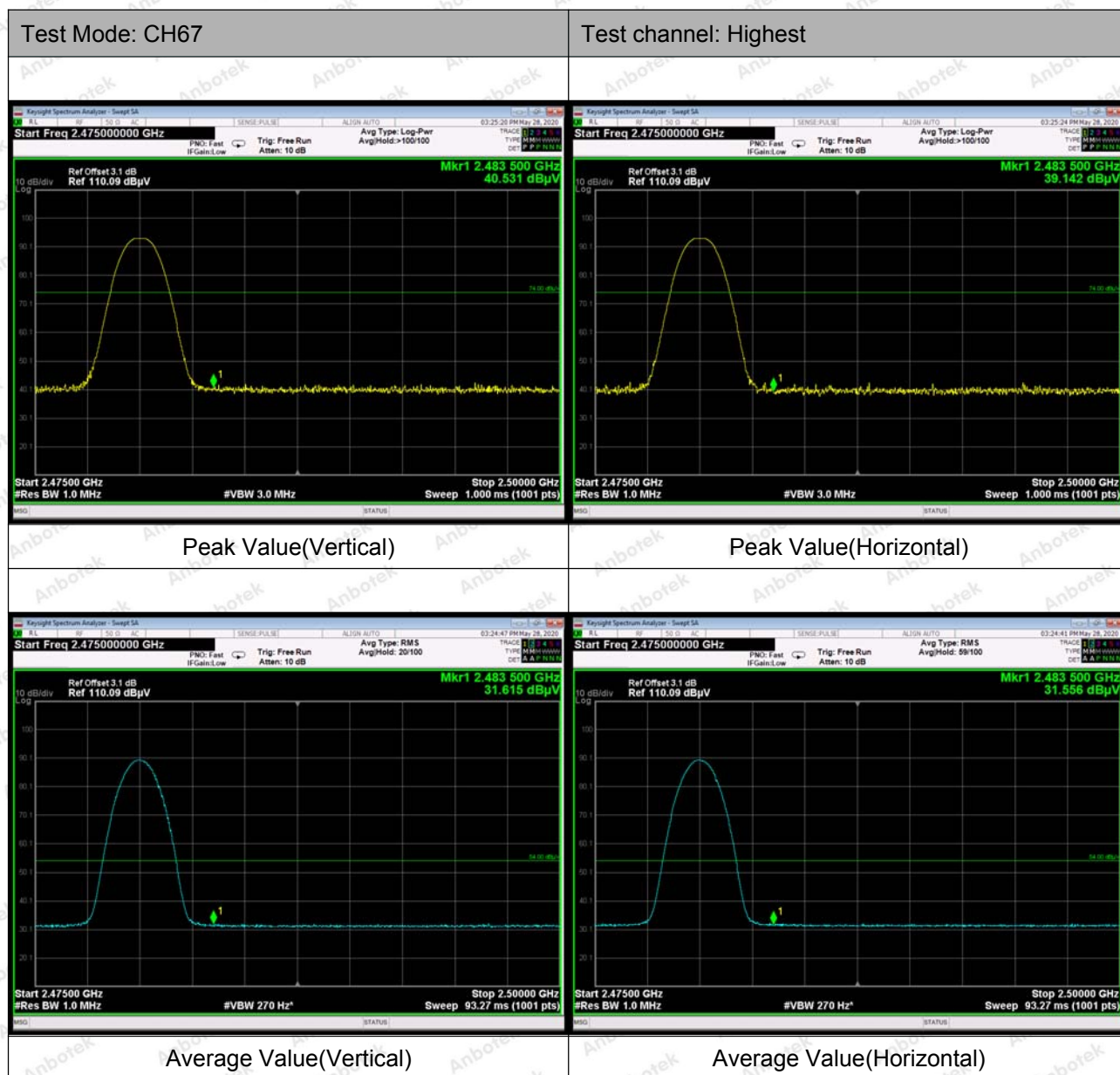
Note:

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:



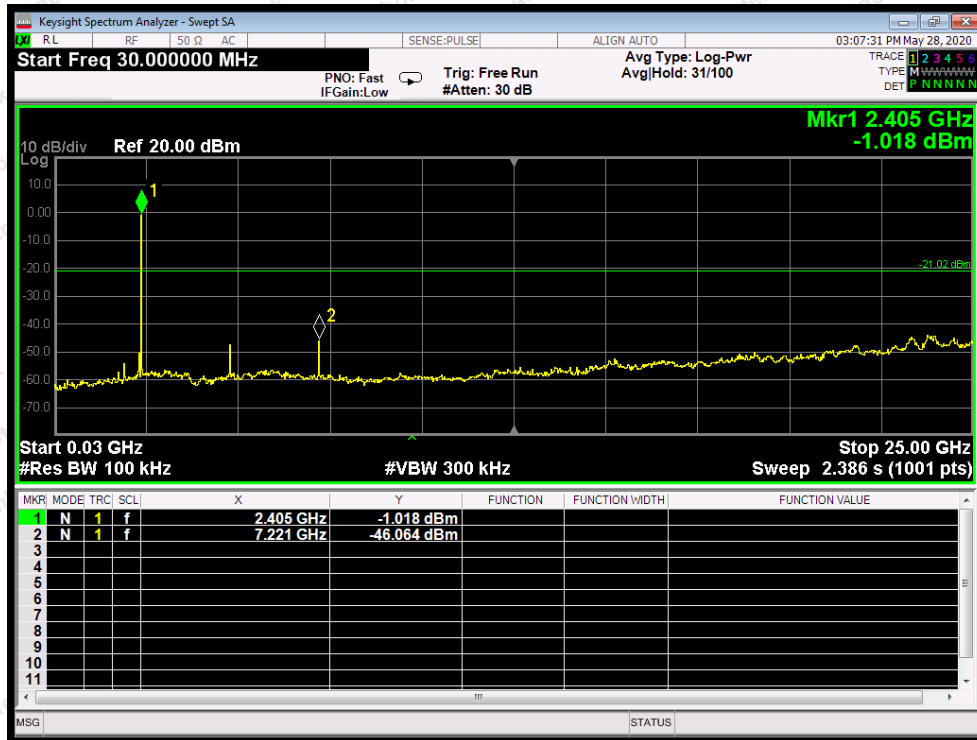


Remark:

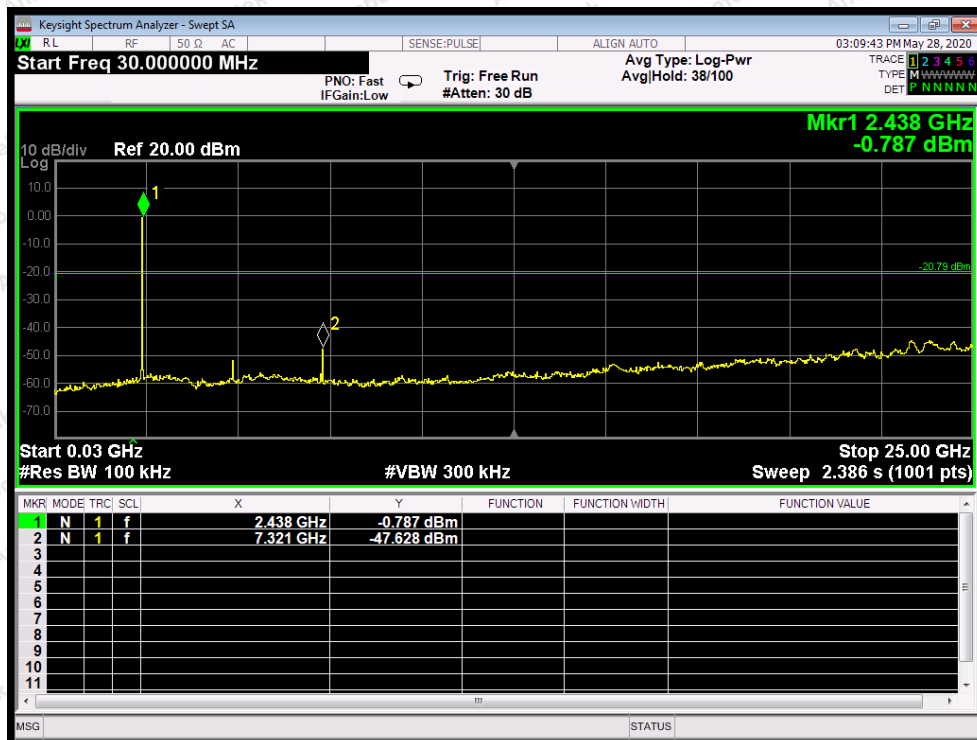
1. Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor



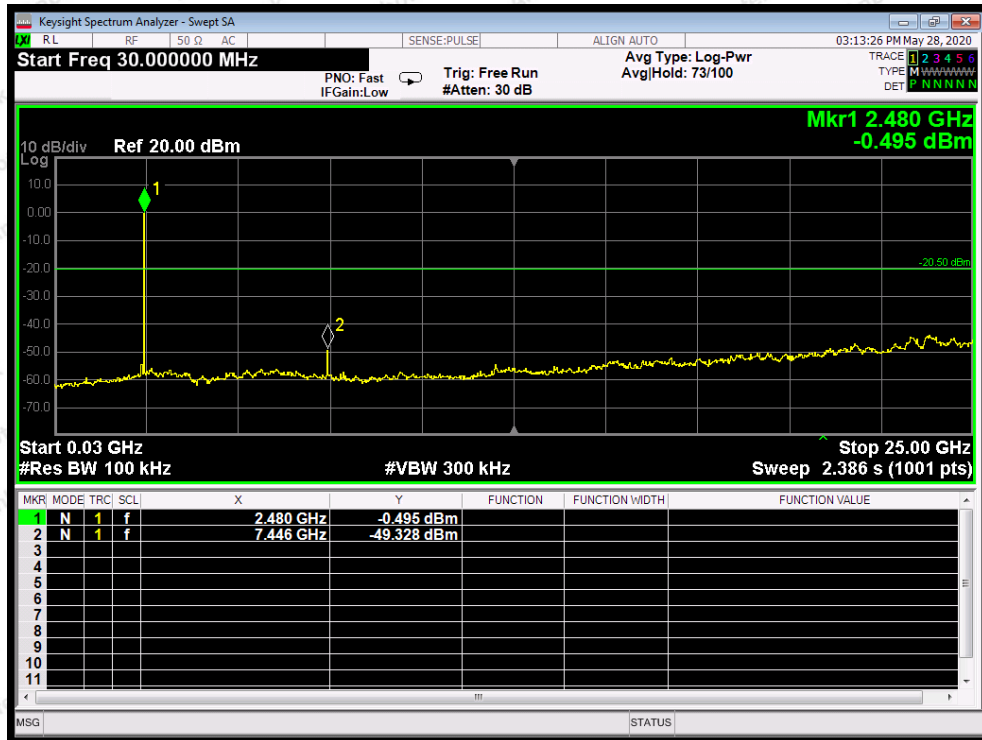
Conducted Emission Method



CH: Low



CH: Middle



CH: High

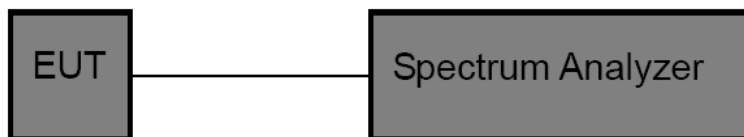


5. 20dB Bandwidth Test

5.1. Test Standard and Limit

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

5.2. Test Setup



5.3. Test Procedure

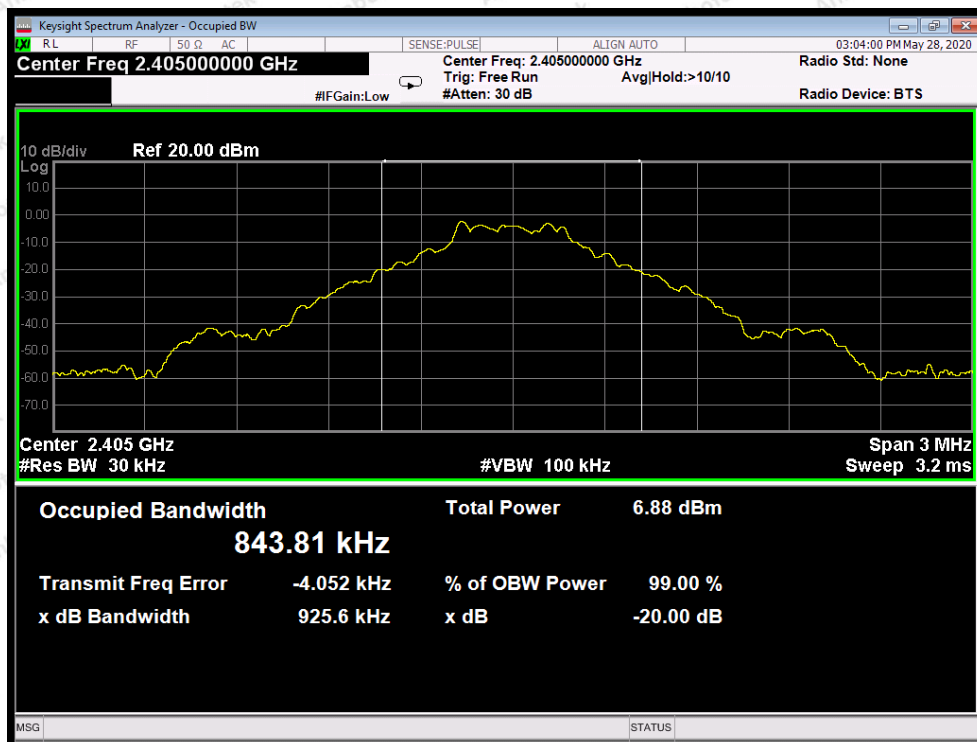
1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as:
RBW = 30kHz, VBW $\geq$ 3*RBW =100kHz,
Detector= Average
Trace mode= Max hold.
Sweep- 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

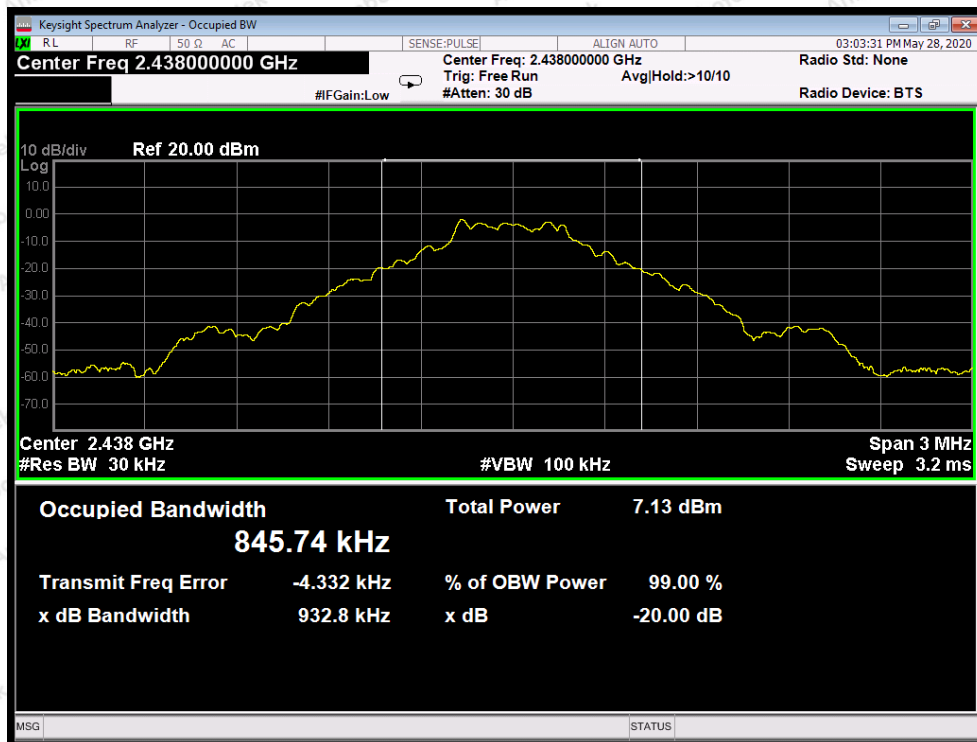
Test Item	:	20dB Bandwidth
Test Voltage	:	DC 3.7V battery inside
Test Result	:	PASS

Test Mode	:	Mode 1
Temperature	:	22.4℃
Humidity	:	55%RH

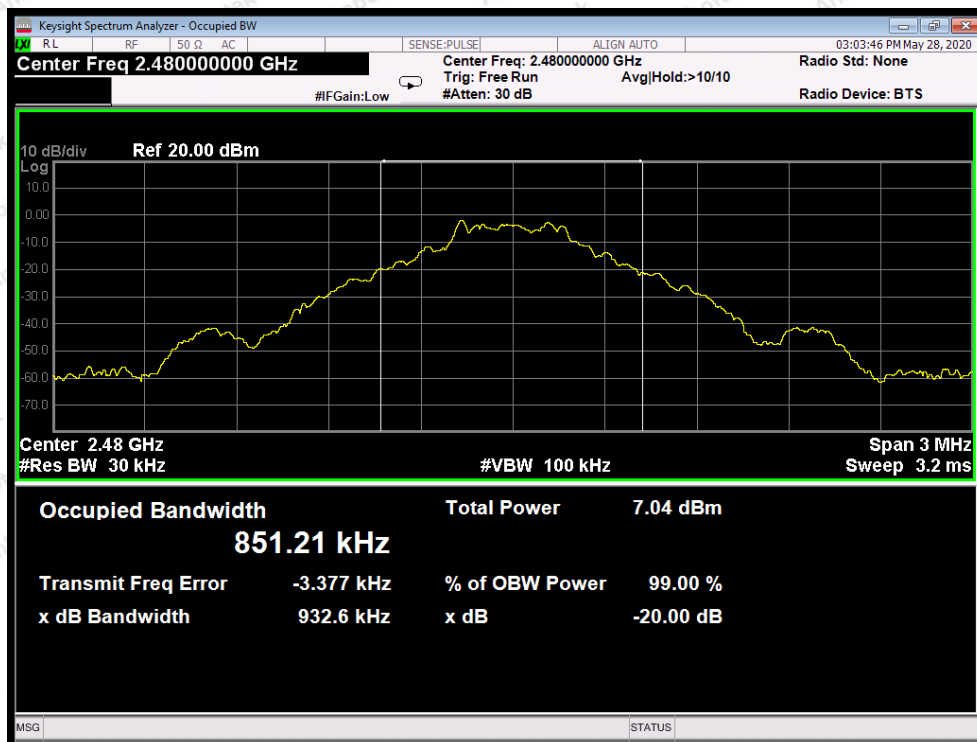
Frequency (MHz)	Bandwidth (kHz)	Result
2405MHz	925.6	PASS
2438MHz	932.8	PASS
2480MHz	932.6	PASS



Test Mode: Low



Test Mode: Middle



Test Mode: High



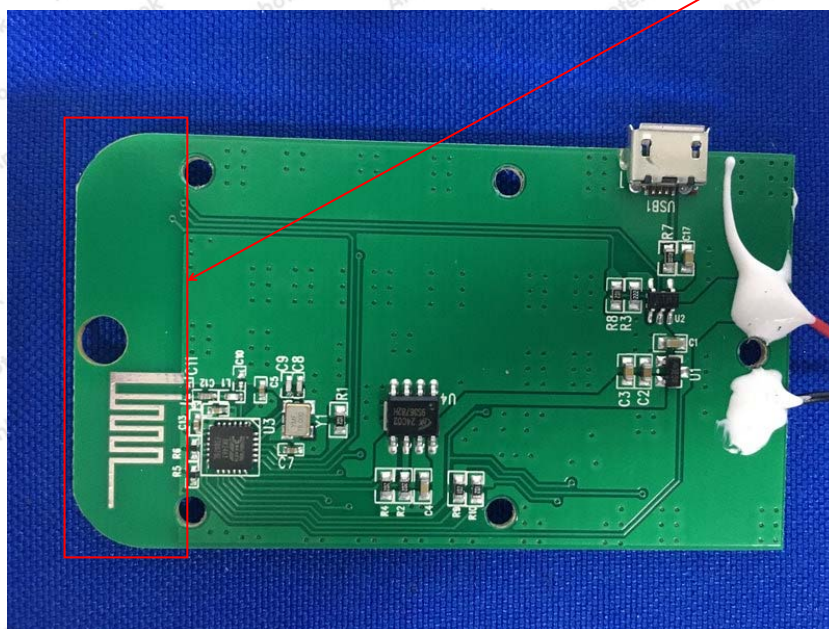
6. Antenna Requirement

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 PCB Antenna which permanently attached, and the best case gain of the antenna is 0 dBi. It complies with the standard requirement.



Antenna

APPENDIX I -- TEST SETUP PHOTOGRAPH

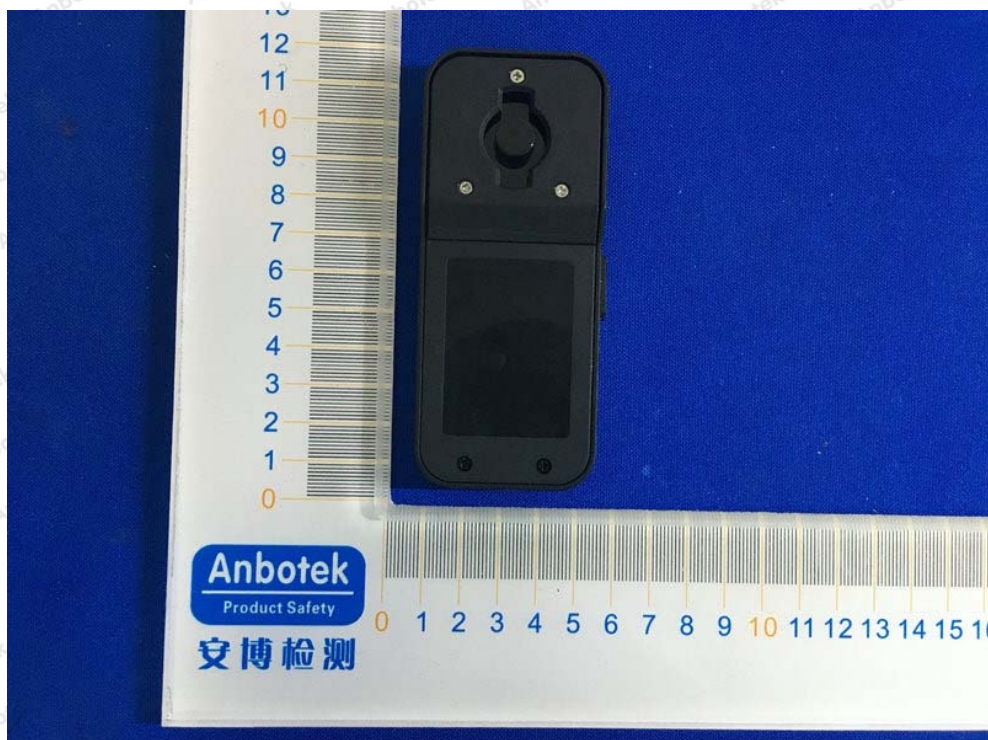
Photo of Conducted Emission Test

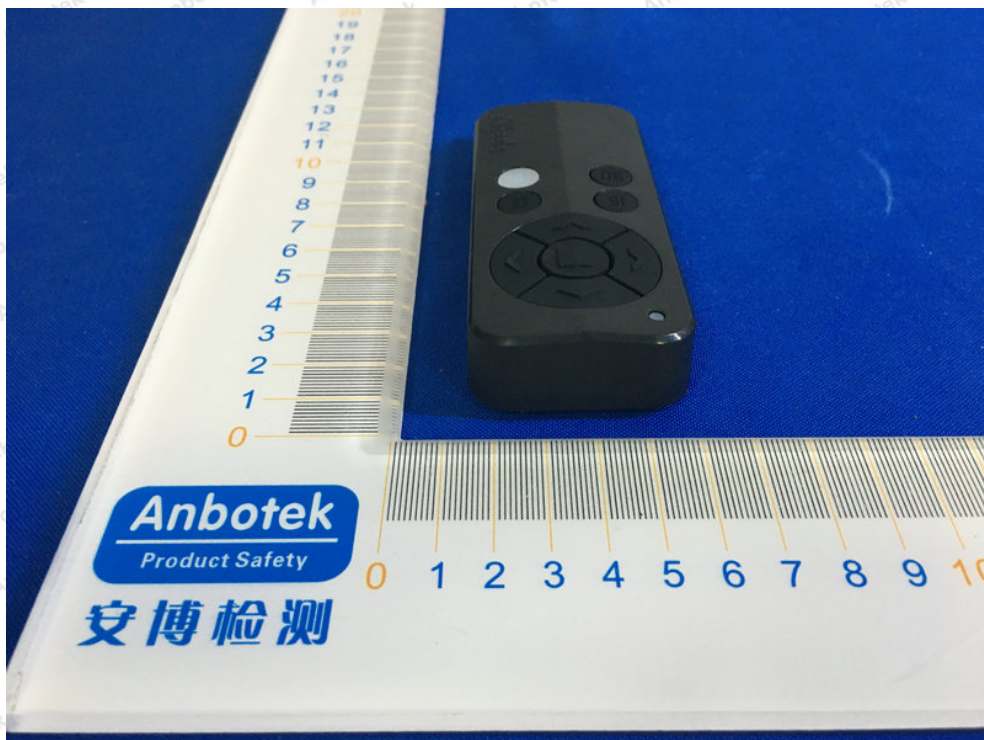
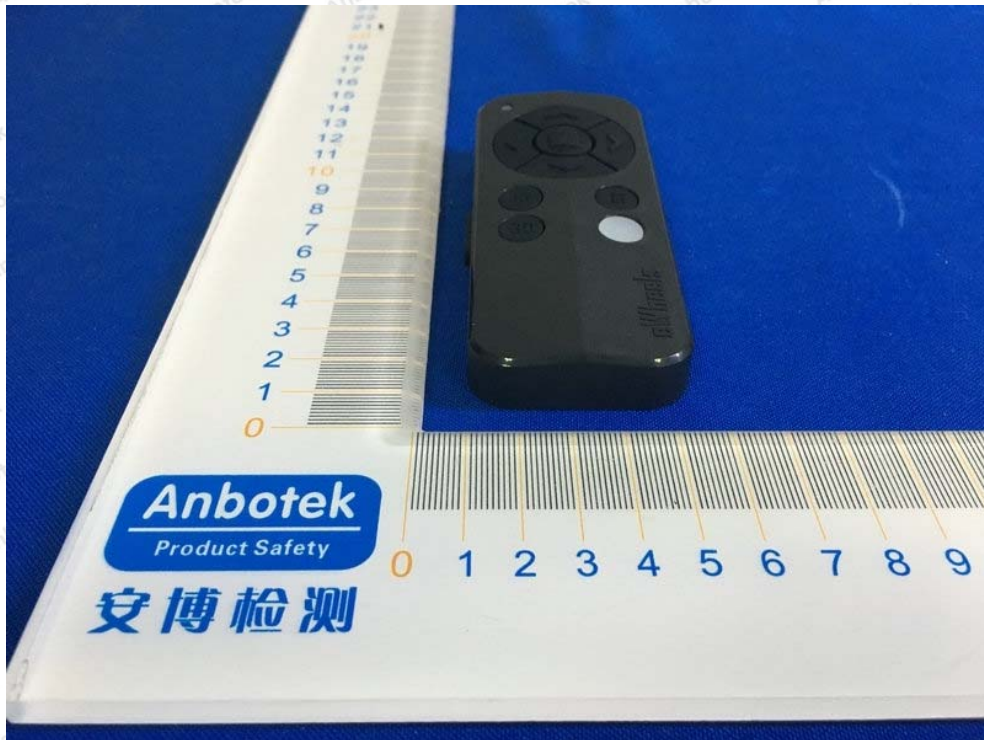


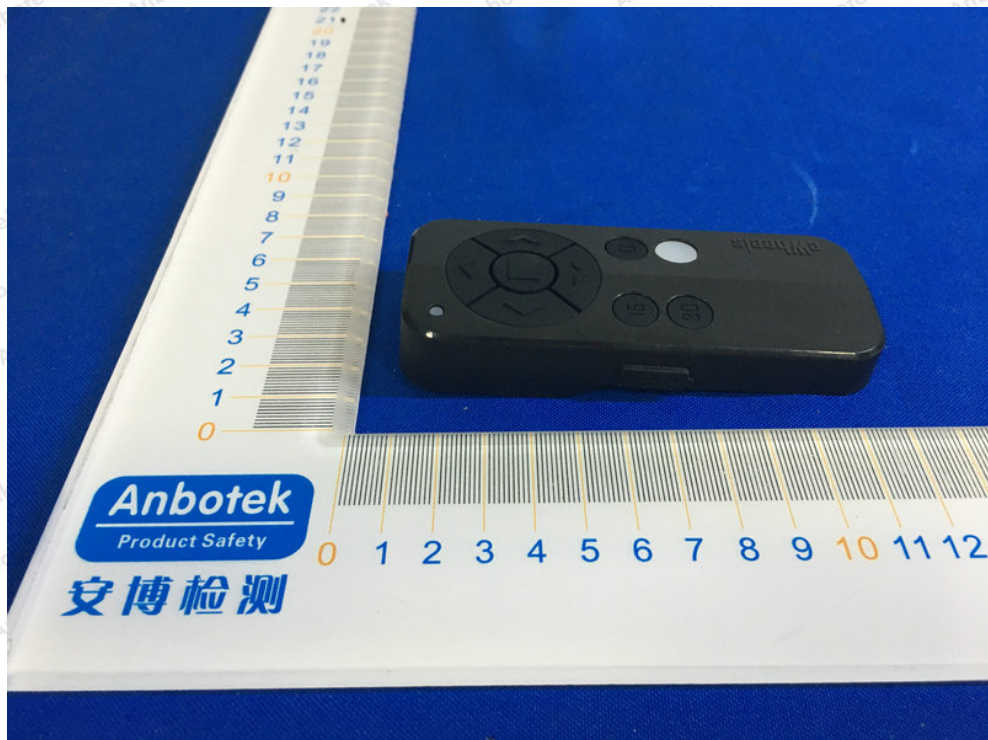
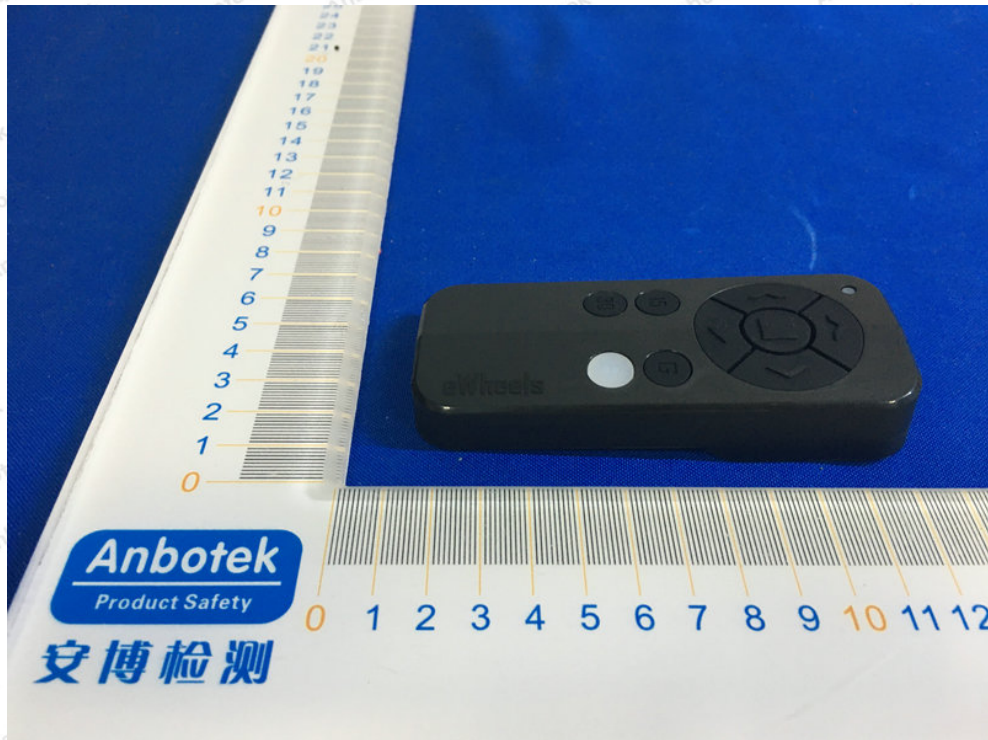
Photo of Radiation Emission Test

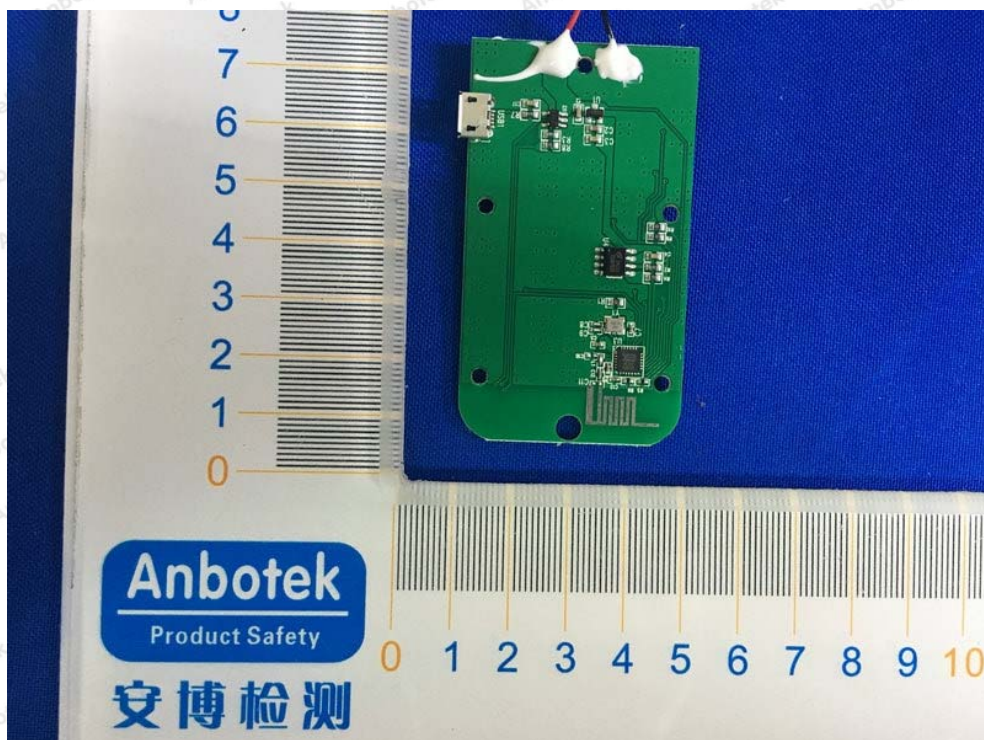


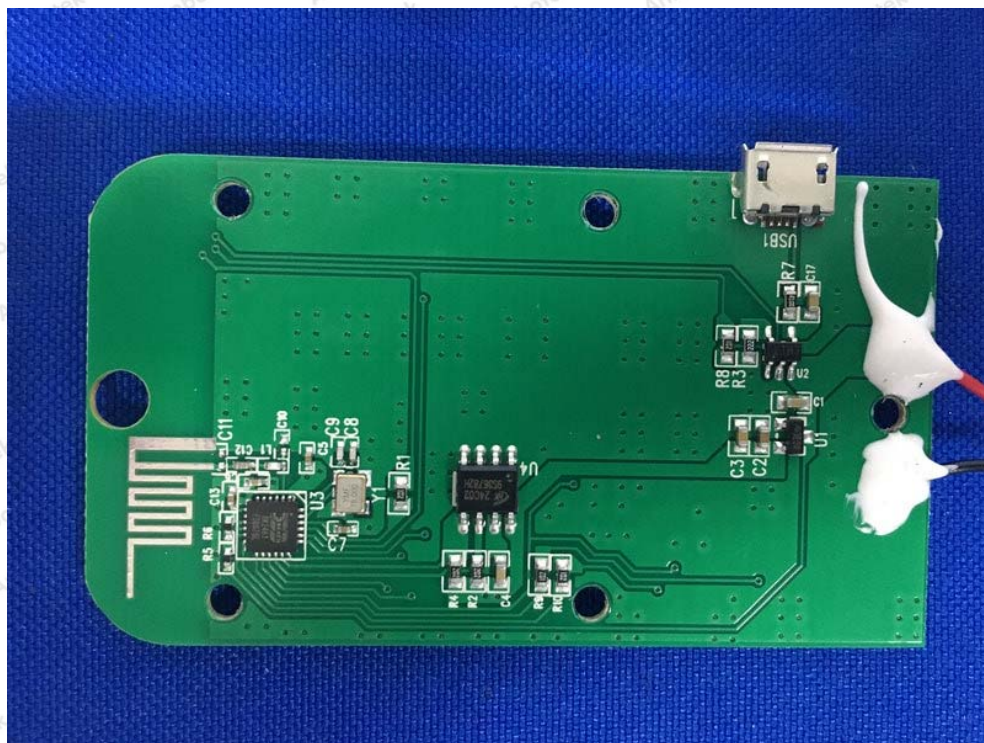


APPENDIX II -- EXTERNAL PHOTOGRAPH





APPENDIX III -- INTERNAL PHOTOGRAPH





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

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