

FCC TEST REPORT

Client Name : Shenzhen Jiayz photo industrial.,Ltd
Address : A16 Building,Intelligent Terminal Industrial Park of Silicon Valley Power,Guanlan, Longhua District,Shenzhen, China
Product Name : 5.8GHz Digital Wireless Microphone System
Date : Dec. 24, 2021

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.....	17
4.1. Test Standard and Limit.....	17
4.2. Test Setup.....	18
4.3. Test Procedure.....	19
4.4. Test Data.....	20
5. 20dB Bandwidth Test.....	27
5.1. Test Standard and Limit.....	27
5.2. Test Setup.....	27
5.3. Test Procedure.....	27
5.4. Test Data.....	27
6. Antenna Requirement.....	30
6.1. Test Standard and Requirement.....	30
6.2. Antenna Connected Construction.....	30
APPENDIX I -- TEST SETUP PHOTOGRAPH.....	31
APPENDIX II -- EXTERNAL PHOTOGRAPH.....	33
APPENDIX III -- INTERNAL PHOTOGRAPH.....	37



TEST REPORT

Applicant : Shenzhen Jiayz photo industrial.,Ltd
Manufacturer : Shenzhen Jiayz photo industrial.,Ltd
Product Name : 5.8GHz Digital Wireless Microphone System
Model No. : Blink800 TX-XLR, Blink800 TX-635, Blink800 B2, Blink800 B3
Trade Mark : Saramonic
Rating(s) : Input: DC 5V, 800mA(with DC 3.7 V, 600mAh 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

Nov. 18, 2021

Date of Test

Nov. 18~Dec. 24, 2021

Prepared by



(Ella Liang)

Approved & Authorized Signer



(Kingkong Jin)

1. General Information

1.1. Client Information

Applicant	:	Shenzhen Jiayz photo industrial.,Ltd
Address	:	A16 Building,Intelligent Terminal Industrial Park of Silicon Valley Power, Guanlan, Longhua District,Shenzhen, China
Manufacturer	:	Shenzhen Jiayz photo industrial.,Ltd
Address	:	A16 Building,Intelligent Terminal Industrial Park of Silicon Valley Power, Guanlan, Longhua District,Shenzhen, China
Factory	:	Shenzhen Jiayz photo industrial.,Ltd
Address	:	A16 Building,Intelligent Terminal Industrial Park of Silicon Valley Power, Guanlan, Longhua District,Shenzhen, China

1.2. Description of Device (EUT)

Product Name	:	5.8GHz Digital Wireless Microphone System
Model No.	:	Blink800 TX-XLR, Blink800 TX-635, Blink800 B2, Blink800 B3 (Note: All samples are the same except the model number, so we prepare "Blink800 TX-XLR" for test only.)
Trade Mark	:	Saramonic
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:	5727~5848MHz
	Number of Channel:	62 Channels
	Modulation Type:	GFSK
	Antenna Type:	PIFA Antenna
	Antenna Gain(Peak):	1.46 dBi (Provided by customer)
	Adapter:	N/A
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	:	M/N: A2023
		Input: AC 100-240V 0.7A 50-60Hz
		USB1 Output: DC 5V 2.4A
		USB1 Output: DC 5V 2.4A

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.

TEST MODE:

Mode 1	GFSK	CH01	TX+ Charging Mode/TX Only
Mode 2		CH27	
Mode 3		CH62	

Note:

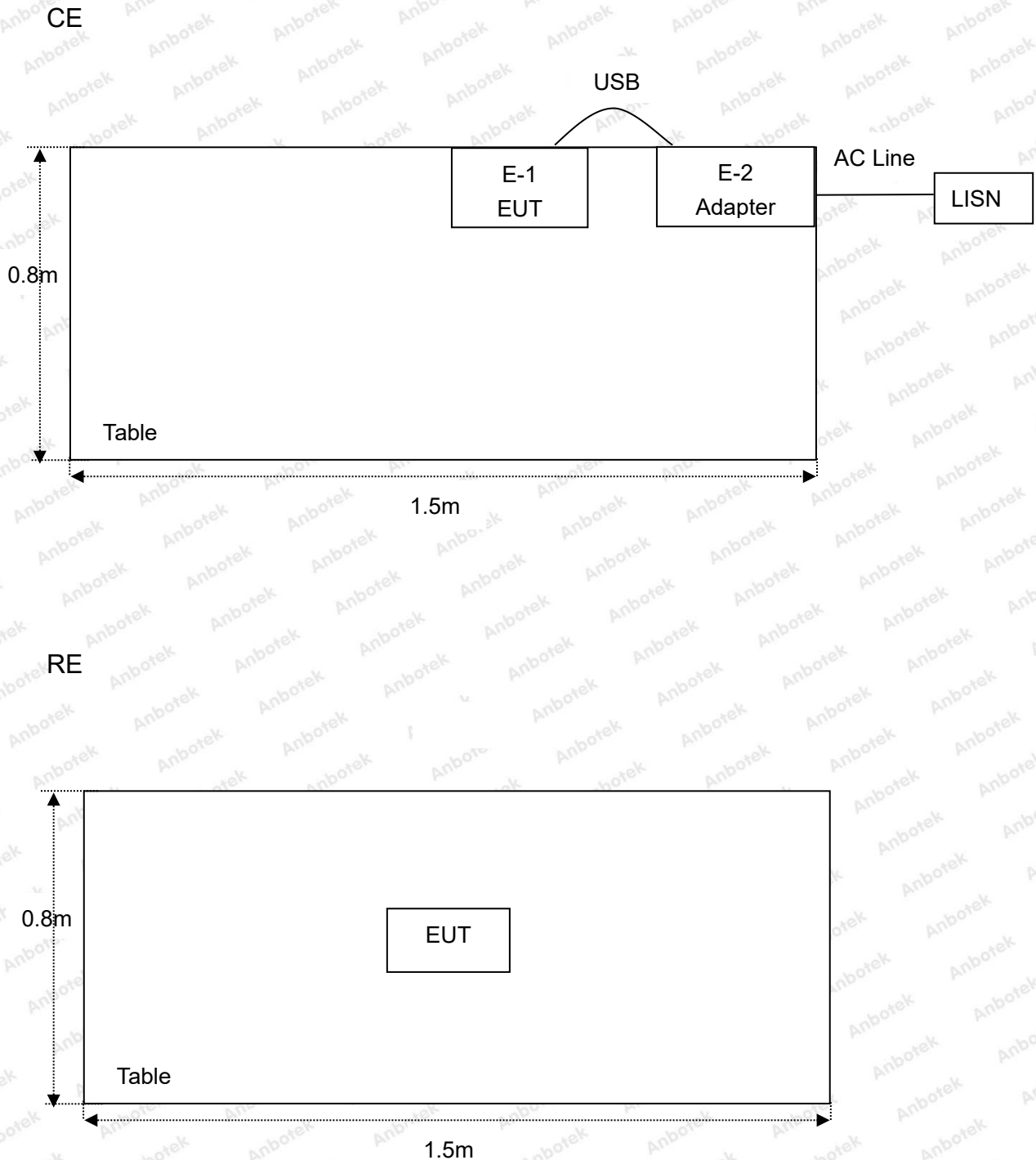
1. The engineering test program was provided and the EUT was programmed to be in continuously transmitting mode.

1.5. List of Channels

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
01	5727	14	5753	27	5780	40	5805	53	5831
02	5729	15	5755	28	5781	41	5807	54	5833
03	5731	16	5757	29	5783	42	5809	55	5835
04	5733	17	5759	30	5785	43	5811	56	5837
05	5735	18	5761	31	5787	44	5813	57	5839
06	5737	19	5763	32	5789	45	5815	58	5841
07	5739	20	5765	33	5791	46	5817	59	5843
08	5741	21	5767	34	5793	47	5819	60	5845
09	5743	22	5769	35	5795	48	5821	61	5847
10	5745	23	5771	36	5797	49	5823	62	5848
11	5747	24	5773	37	5799	50	5825		
12	5749	25	5775	38	5801	51	5827		
13	5751	26	5777	39	5803	52	5829		



1.6. Description of Test Setup



1.7. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Three Phase V-type Artificial Power Network	CYBERTEK	EM5040DT	E215040DT001	Jul 05, 2021	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Oct. 22, 2021	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	Oct. 22, 2021	1 Year
4.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Oct. 22, 2021	1 Year
5.	MAX Spectrum Analysis	Agilent	N9020A	MY51170037	Oct. 22, 2021	1 Year
6.	Preamplifier	SKET Electronic	BK1G18G30 D	KD17503	Oct. 22, 2021	1 Year
7.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Oct. 22, 2021	2 Year
8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Oct. 22, 2021	2 Year
9.	Loop Antenna	Schwarzbeck	FMZB1519B	00053	Oct. 22, 2021	2 Year
10.	Horn Antenna	A-INFO	LB-180400-K F	J211060628	Oct. 22, 2021	2 Year
11.	Pre-amplifier	SONOMA	310N	186860	Oct. 22, 2021	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	Oct. 22, 2021	1 Year
14.	Power Sensor	DAER	RPR3006W	15I00041SN045	Oct. 22, 2021	1 Year
15.	Power Sensor	DAER	RPR3006W	15I00041SN046	Oct. 22, 2021	1 Year
16.	MXA Spectrum Analysis	KEYSIGHT	N9020A	MY53280032	Oct. 22, 2021	1 Year
17.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Oct. 22, 2021	1 Year
18.	Signal Generator	Agilent	E4421B	MY41000743	Oct. 22, 2021	1 Year
19.	DC Power Supply	IVYTECH	IV3605	1804D360510	Oct. 22, 2021	1 Year
20.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80 B	N/A	Oct. 22, 2021	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.

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.

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
15.205/15.209/15.249	Radiated Emission	PASS
15.249(d)	Band Edge	PASS
15.215(c)	20dB Bandwidth	PASS
Remark: "N/A" is an abbreviation for Not Applicable.		



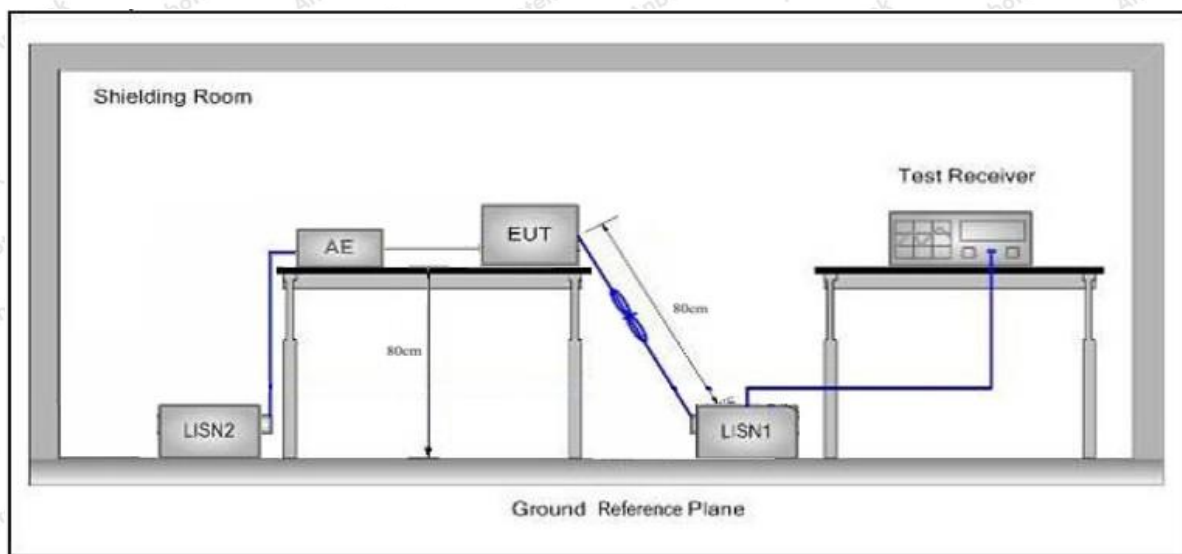
3. Conducted Emission Test

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

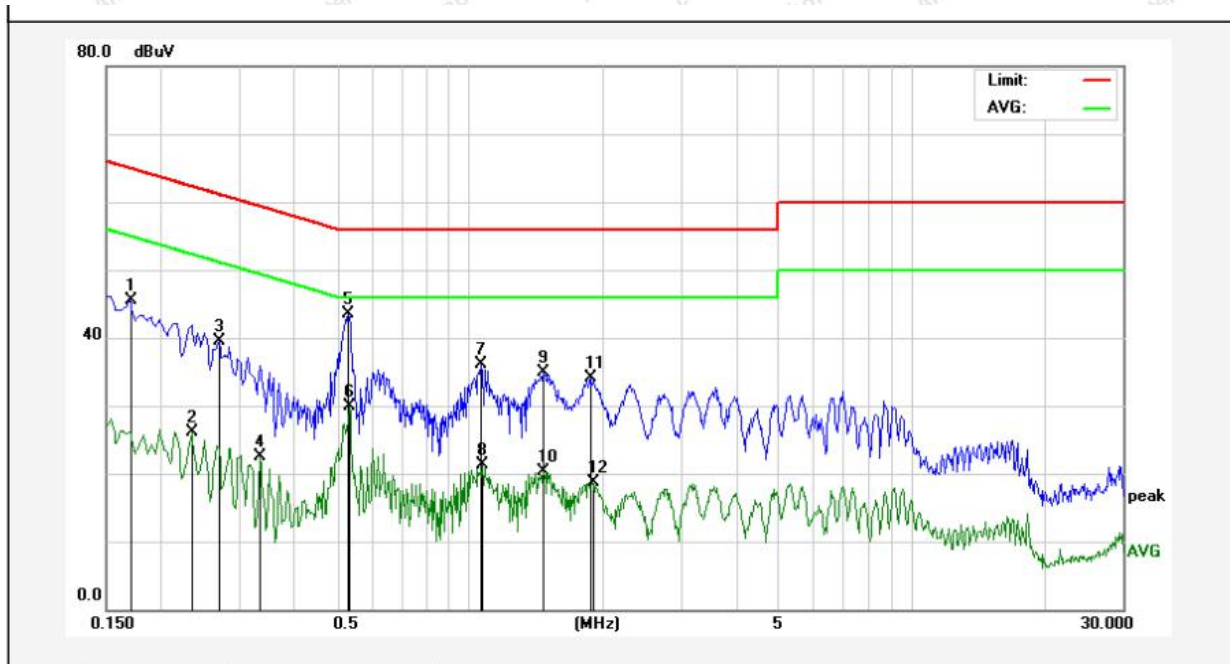
During the test, pre-scan the Low, Middle, High channel, and found the Low channel(TX+Charging Mode) which is the worst case, only the worst case is recorded in the report.

Please to see the following pages.



Conducted Emission Test Data

Test Site: 1# Shielded Room
Operating Condition: Mode 1
Test Specification: AC 120V, 60Hz for adapter
Comment: Live Line
Tem.: 22.4℃ Hum.: 47%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1701	45.34	0.12	45.46	64.95	-19.49	QP	
2	0.2341	25.99	0.12	26.11	52.30	-26.19	AVG	
3	0.2701	39.29	0.13	39.42	61.11	-21.69	QP	
4	0.3341	22.40	0.12	22.52	49.35	-26.83	AVG	
5	0.5301	43.28	0.15	43.43	56.00	-12.57	QP	
6	0.5341	29.77	0.15	29.92	46.00	-16.08	AVG	
7	1.0580	35.89	0.15	36.04	56.00	-19.96	QP	
8	1.0701	21.17	0.15	21.32	46.00	-24.68	AVG	
9	1.4701	34.75	0.14	34.89	56.00	-21.11	QP	
10	1.4701	20.24	0.14	20.38	46.00	-25.62	AVG	
11	1.8701	33.91	0.12	34.03	56.00	-21.97	QP	
12	1.8941	18.63	0.12	18.75	46.00	-27.25	AVG	

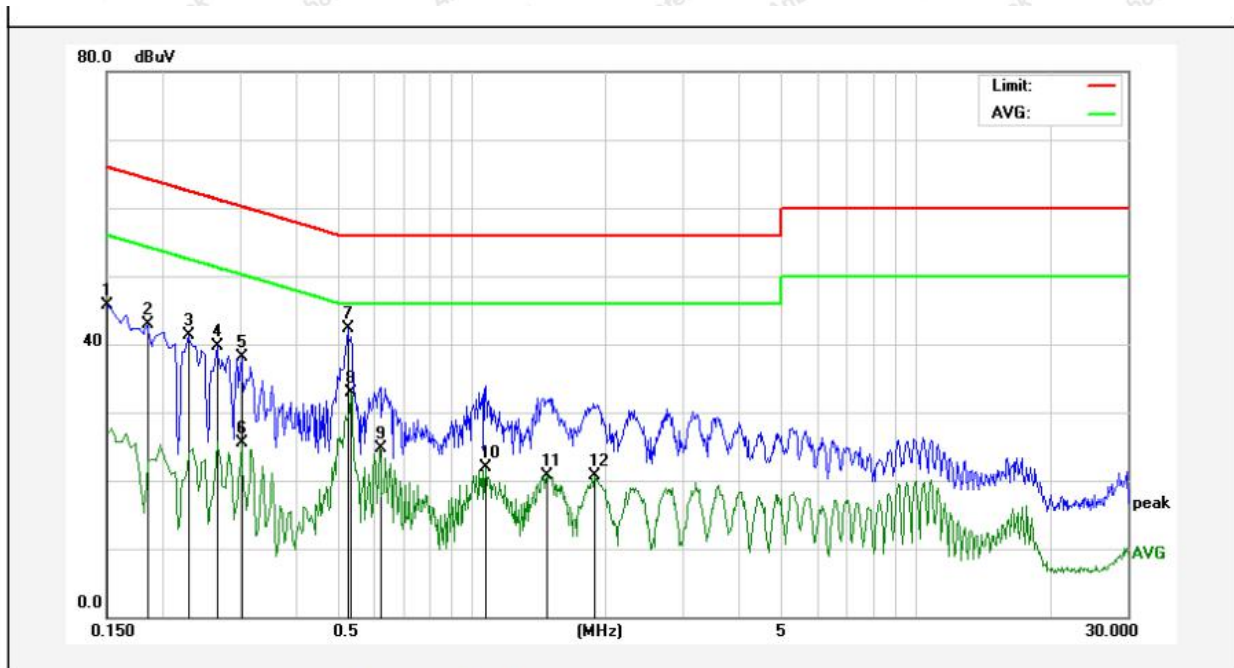
Report No.: 18220WC10254801

FCC ID: 2ARN3-032201TX

Page14 of 40

Conducted Emission Test Data

Test Site: 1# Shielded Room
Operating Condition: Mode 1
Test Specification: AC 120V, 60Hz for adapter
Comment: Neutral Line
Tem.: 22.4℃ Hum.: 47%

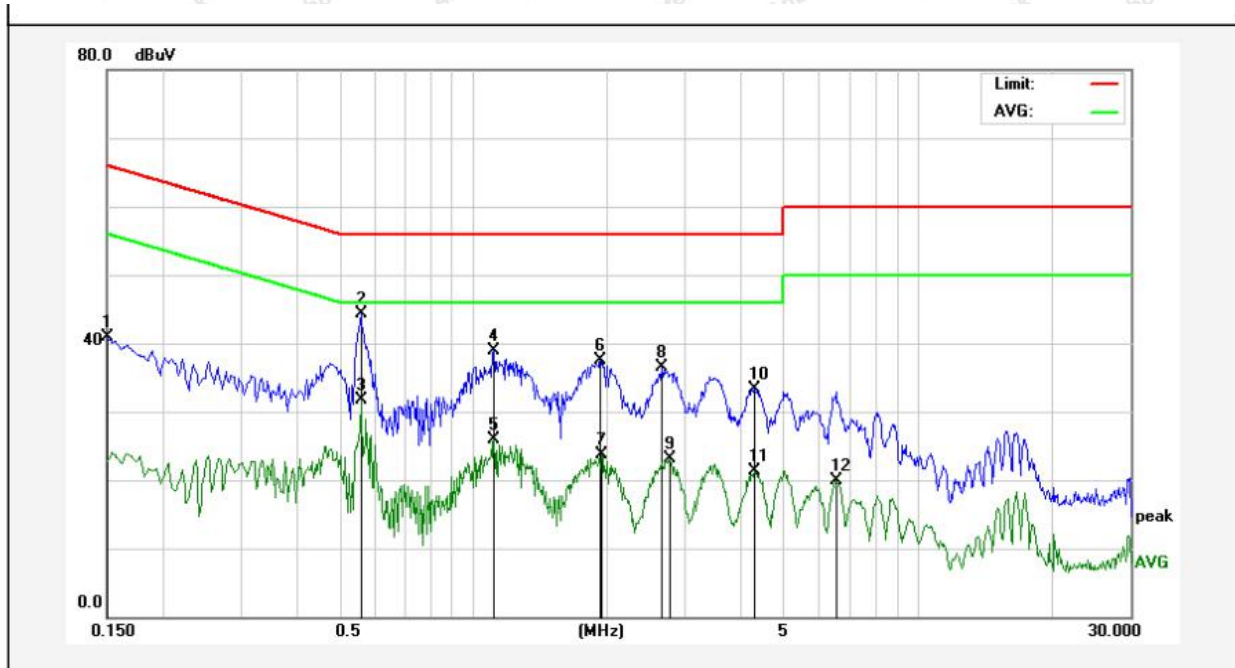


No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1499	45.54	0.11	45.65	66.00	-20.35	QP	
2	0.1861	42.77	0.12	42.89	64.20	-21.31	QP	
3	0.2301	41.13	0.12	41.25	62.44	-21.19	QP	
4	0.2661	39.55	0.13	39.68	61.24	-21.56	QP	
5	0.3021	37.96	0.13	38.09	60.18	-22.09	QP	
6	0.3021	25.28	0.13	25.41	50.18	-24.77	AVG	
7	0.5261	42.16	0.15	42.31	56.00	-13.69	QP	
8	0.5341	32.78	0.15	32.93	46.00	-13.07	AVG	
9	0.6181	24.64	0.15	24.79	46.00	-21.21	AVG	
10	1.0741	21.68	0.15	21.83	46.00	-24.17	AVG	
11	1.4741	20.62	0.14	20.76	46.00	-25.24	AVG	
12	1.8941	20.49	0.12	20.61	46.00	-25.39	AVG	



Conducted Emission Test Data

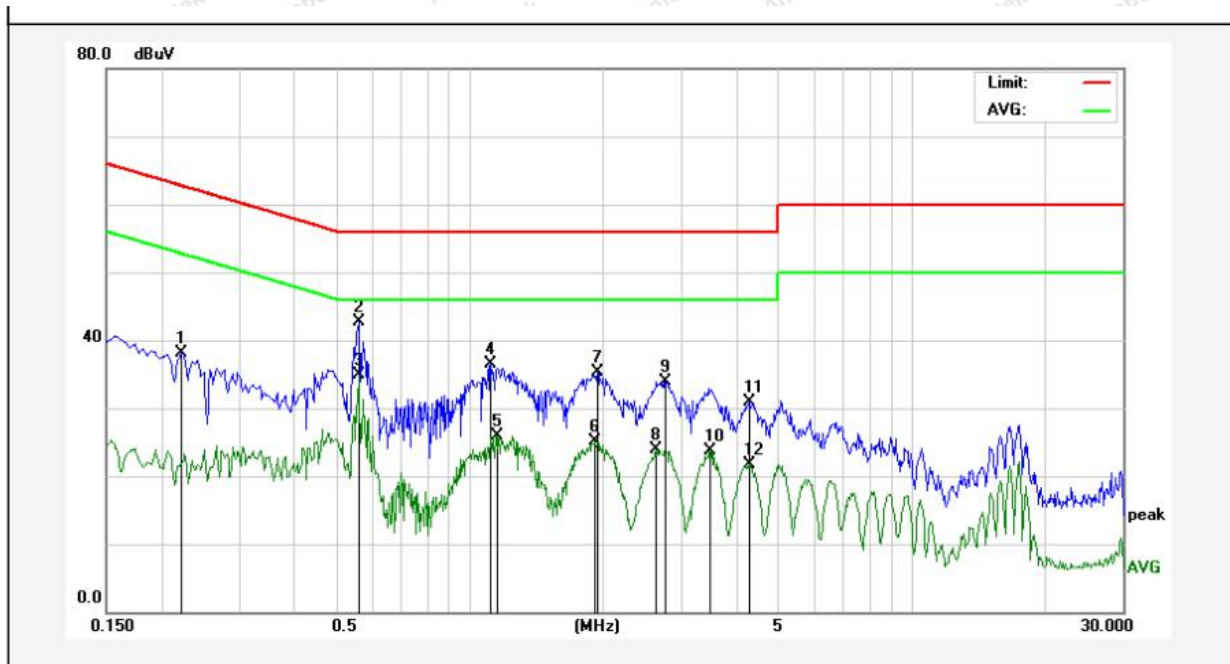
Test Site: 1# Shielded Room
 Operating Condition: Mode 1
 Test Specification: AC 240V, 60Hz for adapter
 Comment: Live Line
 Tem.: 22.4℃ Hum.: 47%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1499	40.71	0.11	40.82	66.00	-25.18	QP	
2	0.5581	44.08	0.15	44.23	56.00	-11.77	QP	
3	0.5581	31.64	0.15	31.79	46.00	-14.21	AVG	
4	1.1141	38.80	0.15	38.95	56.00	-17.05	QP	
5	1.1141	25.75	0.15	25.90	46.00	-20.10	AVG	
6	1.9301	37.40	0.12	37.52	56.00	-18.48	QP	
7	1.9381	23.53	0.12	23.65	46.00	-22.35	AVG	
8	2.6621	36.43	0.12	36.55	56.00	-19.45	QP	
9	2.7740	22.90	0.12	23.02	46.00	-22.98	AVG	
10	4.2700	33.24	0.11	33.35	56.00	-22.65	QP	
11	4.2700	21.12	0.11	21.23	46.00	-24.77	AVG	
12	6.5141	19.82	0.11	19.93	50.00	-30.07	AVG	

Conducted Emission Test Data

Test Site: 1# Shielded Room
 Operating Condition: Mode 1
 Test Specification: AC 240V, 60Hz for adapter
 Comment: Neutral Line
 Tem.: 22.4℃ Hum.: 47%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.2221	38.01	0.12	38.13	62.74	-24.61	QP	
2	0.5581	42.52	0.15	42.67	56.00	-13.33	QP	
3	0.5581	34.84	0.15	34.99	46.00	-11.01	AVG	
4	1.1141	36.43	0.15	36.58	56.00	-19.42	QP	
5	1.1461	25.85	0.15	26.00	46.00	-20.00	AVG	
6	1.9261	24.99	0.12	25.11	46.00	-20.89	AVG	
7	1.9461	35.14	0.12	35.26	56.00	-20.74	QP	
8	2.6301	23.86	0.12	23.98	46.00	-22.02	AVG	
9	2.7781	33.87	0.12	33.99	56.00	-22.01	QP	
10	3.4781	23.67	0.12	23.79	46.00	-22.21	AVG	
11	4.2821	30.78	0.11	30.89	56.00	-25.11	QP	
12	4.2821	21.62	0.11	21.73	46.00	-24.27	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)
	5725~5875	50	-	114.0	Peak	3
	5725~5875	50	-	94.0	Average	3
	5725~5875	-	500	74.0	Peak	3
	5725~5875	-	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

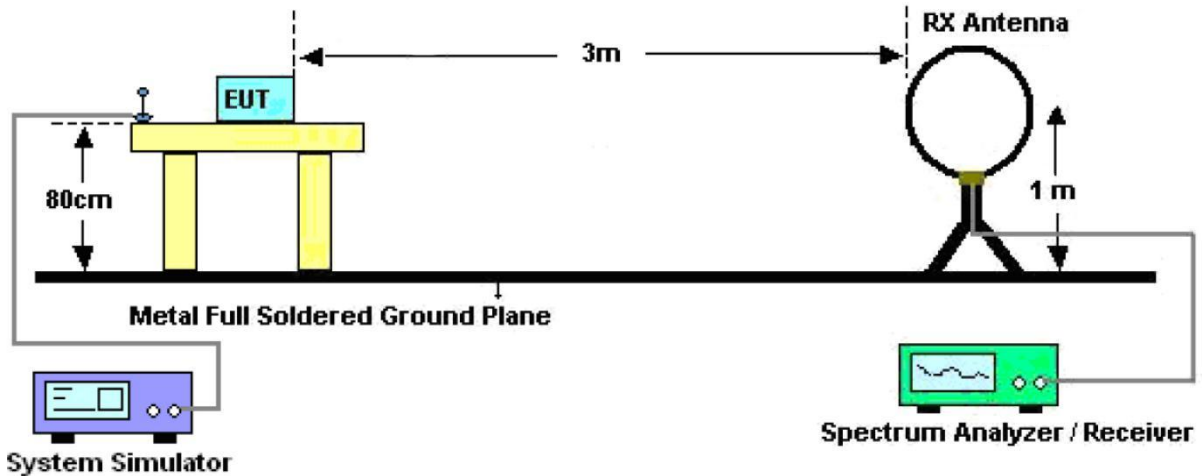


Figure 2. 30MHz to 1GHz

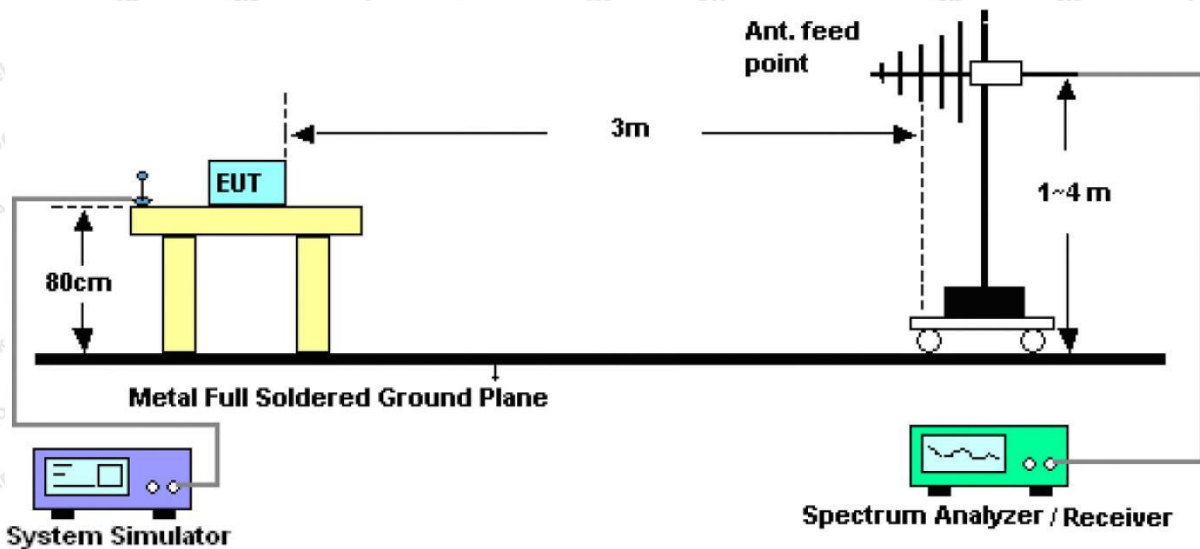
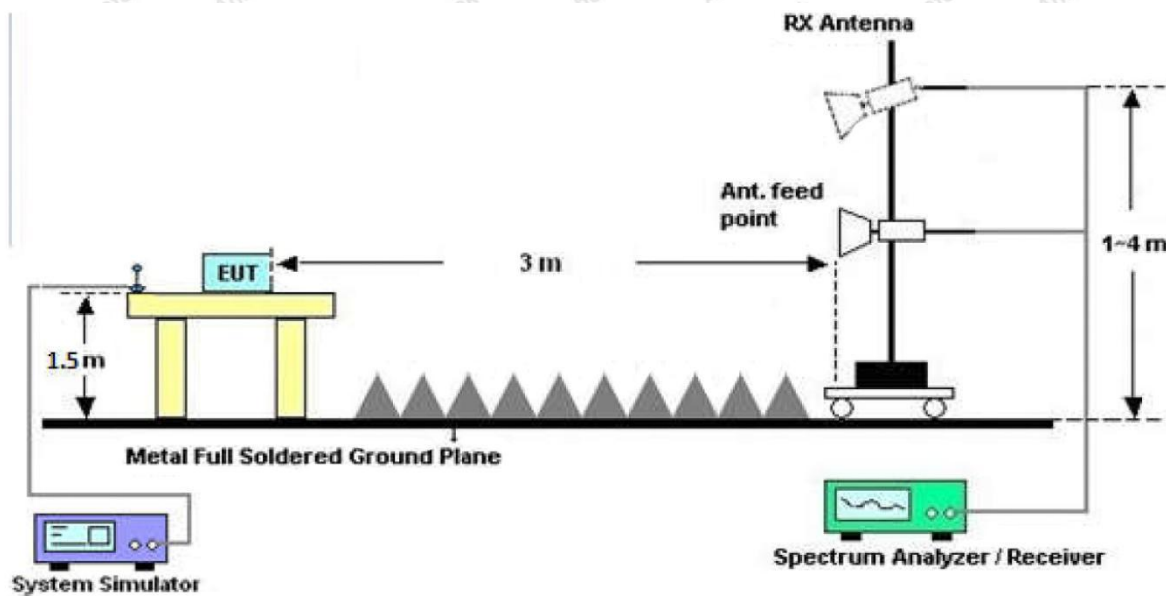


Figure 3. Above 1 GHz



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 Low channel(TX+Charging Mode) which is the worst case, only the worst case is recorded in the report



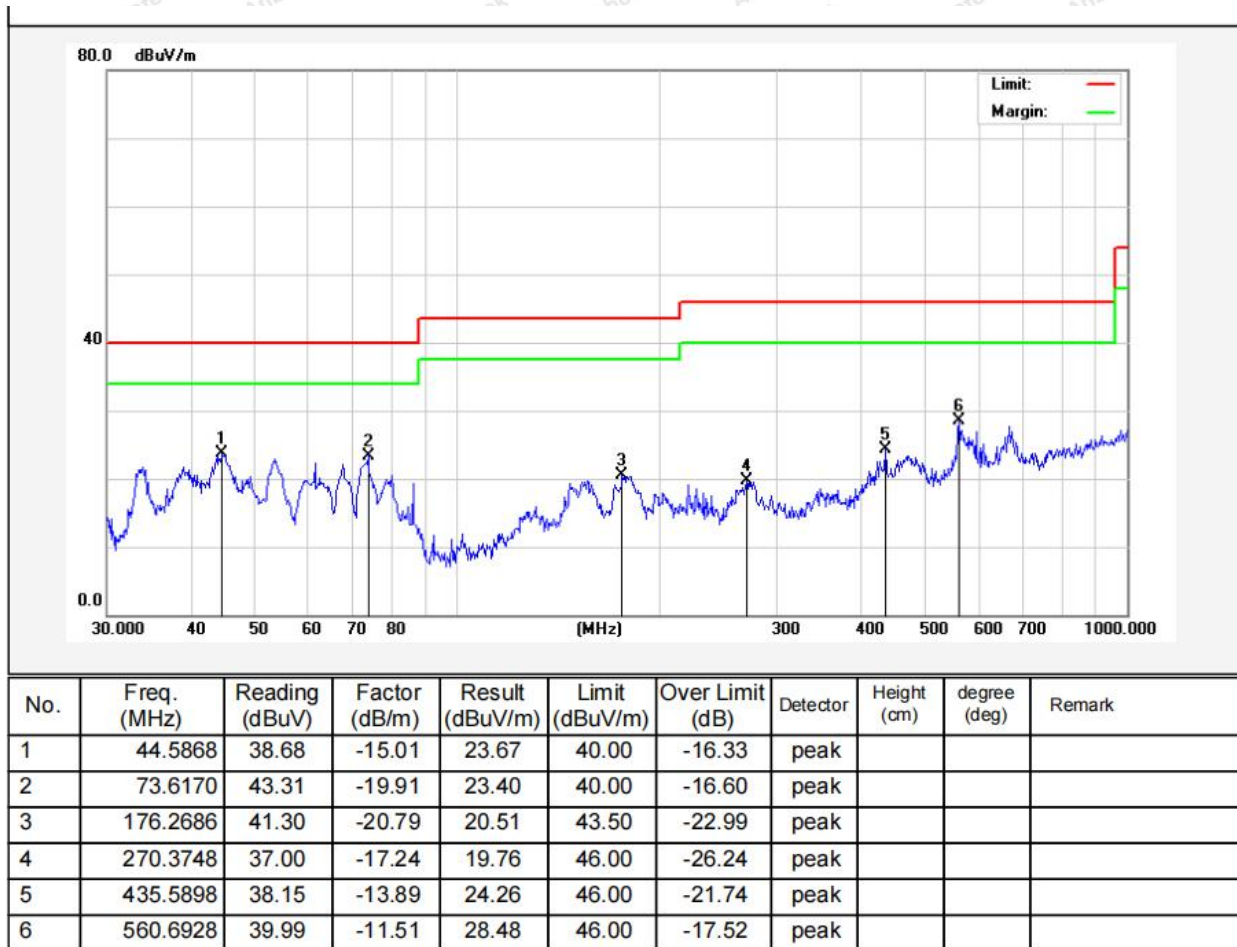
Report No.: 18220WC10254801

FCC ID: 2ARN3-032201TX

Page 21 of 40

Test Results (30~1000MHz)

Test Mode: Mode 1
Power Source: AC 120V, 60Hz for adapter
Polarization: Vertical
Temp.(°C)/Hum.(%RH): 23.4°C/50%RH



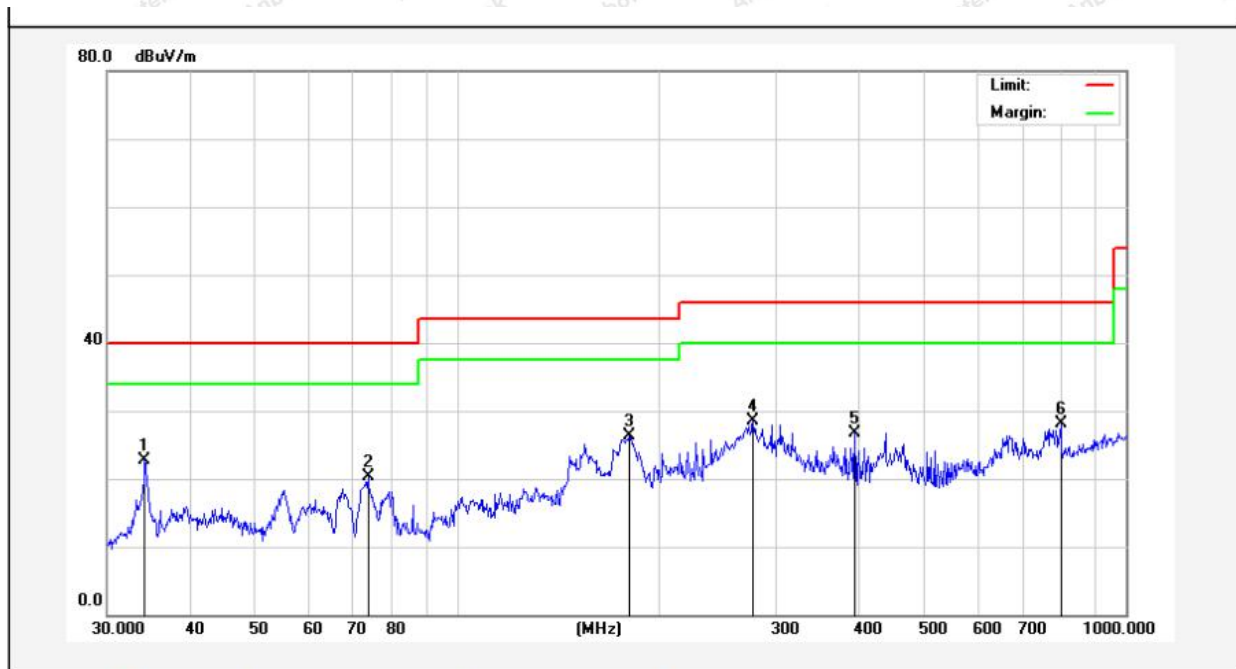
Report No.: 18220WC10254801

FCC ID: 2ARN3-032201TX

Page22 of 40

Test Results (30~1000MHz)

Test Mode: Mode 1
Power Source: AC 120V, 60Hz for adapter
Polarization: Horizontal
Temp.(°C)/Hum.(%RH): 23.4°C/50%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	34.1561	41.37	-18.75	22.62	40.00	-17.38	QP			
2	73.6170	42.28	-22.06	20.22	40.00	-19.78	QP			
3	180.6488	49.39	-23.15	26.24	43.50	-17.26	QP			
4	277.0935	47.57	-19.14	28.43	46.00	-17.57	QP			
5	393.4723	42.91	-16.12	26.79	46.00	-19.21	QP			
6	798.9797	36.47	-8.27	28.20	46.00	-17.80	QP			



Test Results (1GHz-25GHz)

Test Mode: Low channel									
Frequency (MHz)	Read Level (dBUV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBUV/m)	Limit (dBUV/m)	Over Limit (dB)	Pol.	Detector
5727.00	74.52	28.65	13.58	31.04	85.71	114.00	-28.29	V	Peak
5727.00	58.66	28.65	13.58	31.04	69.85	94.00	-24.15	V	AVG
11454.00	39.79	31.98	17.08	33.91	54.94	74.00	-19.06	V	Peak
11454.00	25.36	32.65	20.03	34.85	43.19	54.00	-10.81	V	AVG
17181.00	36.53	31.98	17.08	33.91	51.68	74.00	-22.32	V	Peak
17181.00	23.34	32.65	20.03	34.85	41.17	54.00	-12.83	V	AVG
22908.00	*								
28635.00	*								
34362.00	*								
40089.00	*								
5727.00	73.06	28.65	13.58	31.04	84.25	114.00	-29.75	H	Peak
5727.00	58.43	28.65	13.58	31.04	69.62	94.00	-24.38	H	AVG
11454.00	39.93	31.98	17.08	33.91	55.08	74.00	-18.92	H	Peak
11454.00	25.86	32.65	20.03	34.85	43.69	54.00	-10.31	H	AVG
17181.00	38.09	31.98	17.08	33.91	53.24	74.00	-20.76	H	Peak
17181.00	22.29	32.65	20.03	34.85	40.12	54.00	-13.88	H	AVG
22908.00	*								
28635.00	*								
34362.00	*								
40089.00	*								

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: 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
5780.00	75.18	28.95	14.02	31.53	86.62	114.00	-27.38	V	Peak
5780.00	61.75	28.95	14.02	31.53	73.19	94.00	-20.81	V	AVG
11560.00	38.09	32.44	17.18	33.91	53.80	74.00	-20.20	V	Peak
11560.00	25.96	32.78	20.12	34.86	44.00	54.00	-10.00	V	AVG
17340.00	35.06	32.44	17.18	33.91	50.77	74.00	-23.23	V	Peak
17340.00	21.08	32.78	20.12	34.86	39.12	54.00	-14.88	V	AVG
23120.00	*								
28900.00	*								
34680.00	*								
40460.00	*								
5780.00	74.67	28.95	14.02	31.53	86.11	114.00	-27.89	H	Peak
5780.00	58.21	28.95	14.02	31.53	69.65	94.00	-24.35	H	AVG
11560.00	38.28	32.44	17.18	33.91	53.99	74.00	-20.01	H	Peak
11560.00	27.20	32.78	20.12	34.86	45.24	54.00	-8.76	H	AVG
17340.00	38.55	32.44	17.18	33.91	54.26	74.00	-19.74	H	Peak
17340.00	24.53	32.78	20.12	34.86	42.57	54.00	-11.43	H	AVG
23120.00	*								
28900.00	*								
34680.00	*								
40460.00	*								

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: High channel									
Frequency (MHz)	Read Level (dBUV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBUV/m)	Limit (dBUV/m)	Over Limit (dB)	Pol.	Detector
5848.00	76.32	29.16	14.68	31.96	88.20	114.00	-25.80	V	Peak
5848.00	58.52	29.16	14.68	31.96	70.40	94.00	-23.60	V	AVG
11696.00	39.30	32.59	18.02	33.92	55.99	74.00	-18.01	V	Peak
11696.00	27.18	32.87	20.15	34.88	45.32	54.00	-8.68	V	AVG
17544.00	36.42	32.59	18.02	33.92	53.11	74.00	-20.89	V	Peak
17544.00	21.29	32.87	20.15	34.88	39.43	54.00	-14.57	V	AVG
23392.00	*								
29240.00	*								
35088.00	*								
40936.00	*								
5848.00	74.26	29.16	14.68	31.96	86.14	114.00	-27.86	H	Peak
5848.00	61.73	29.16	14.68	31.96	73.61	94.00	-20.39	H	AVG
11696.00	37.48	32.59	18.02	33.92	54.17	74.00	-19.83	H	Peak
11696.00	27.17	32.87	20.15	34.88	45.31	54.00	-8.69	H	AVG
17544.00	35.31	32.59	18.02	33.92	52.00	74.00	-22.00	H	Peak
17544.00	23.60	32.87	20.15	34.88	41.74	54.00	-12.26	H	AVG
23392.00	*								
29240.00	*								
35088.00	*								
40936.00	*								

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:

Test Mode: GFSK					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
5725.00	47.49	28.65	13.58	31.04	58.68	74.00	-15.32	H
5725.00	45.38	28.65	13.58	31.04	56.57	74.00	-17.43	V
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
5725.00	33.06	28.65	13.58	31.04	44.25	54.00	-9.75	H
5725.00	32.22	28.65	13.58	31.04	43.41	54.00	-10.59	V

Test Mode: GFSK					Test channel: Highest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
5875.00	47.88	29.16	14.68	31.96	59.76	74.00	-14.24	H
5875.00	47.09	29.16	14.68	31.96	58.97	74.00	-15.03	V
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
5875.00	32.78	29.16	14.68	31.96	44.66	54.00	-9.34	H
5875.00	34.97	29.16	14.68	31.96	46.85	54.00	-7.15	V

Remark:

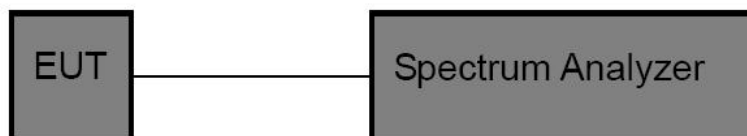
1. Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

5. 20dB Bandwidth Test

5.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.215(c)
---------------	--------------------------------

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

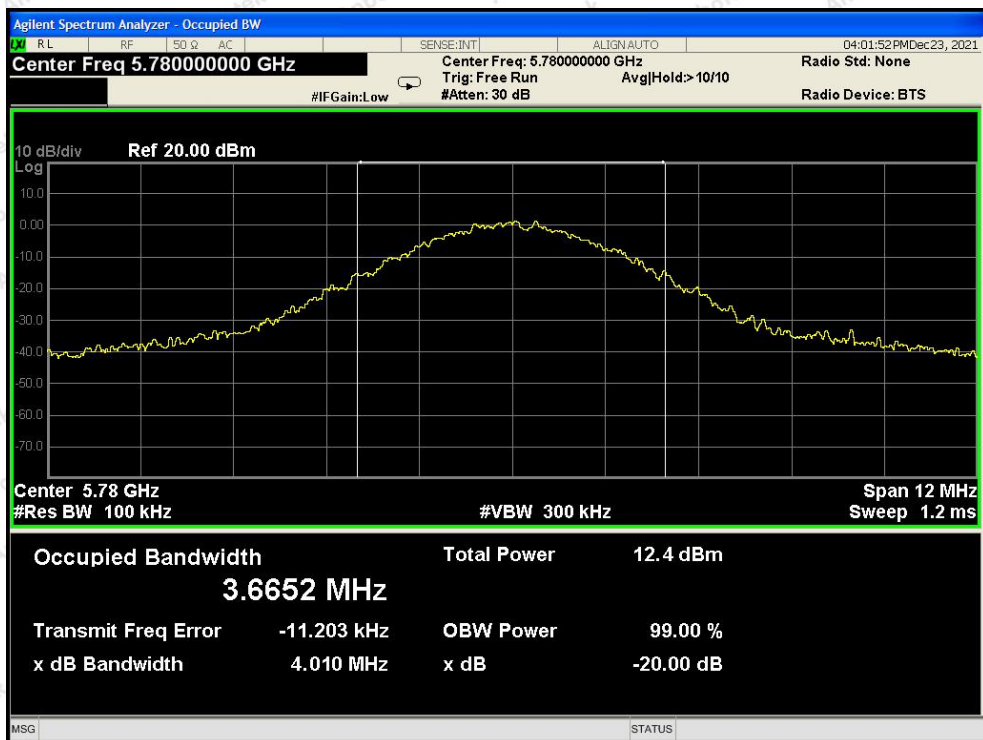
Test Voltage : DC 3.7V battery inside
Test Result : PASS

Temperature : 22.5℃
Humidity : 54%RH

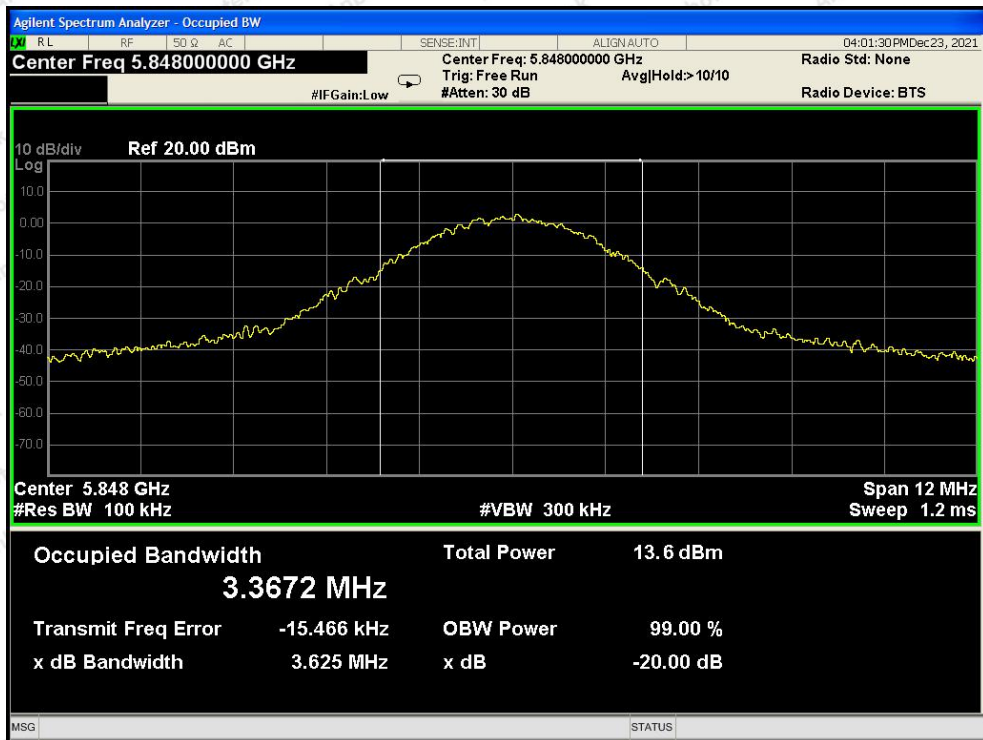
Frequency (MHz)	Bandwidth (MHz)	Result
5727MHZ	3.708	PASS
5780MHZ	4.010	PASS
5848MHZ	3.625	PASS



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 PIFA Antenna which permanently attached, and the best case gain of the antenna is 1.46 dBi. It complies with the standard requirement.

APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Conducted Emission Measurement

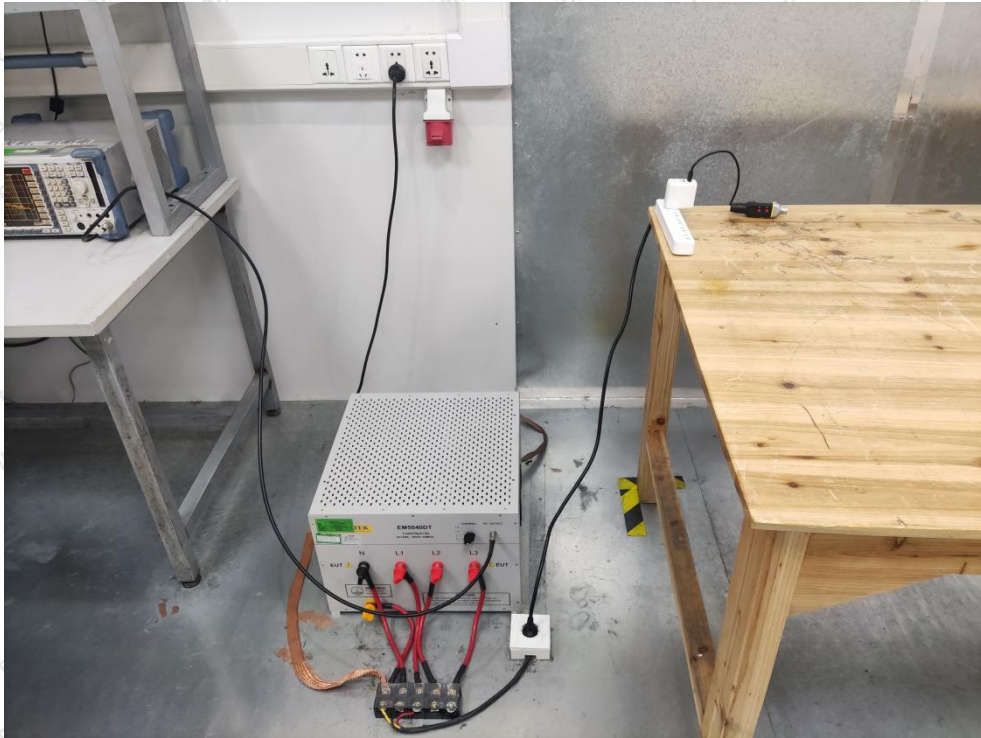
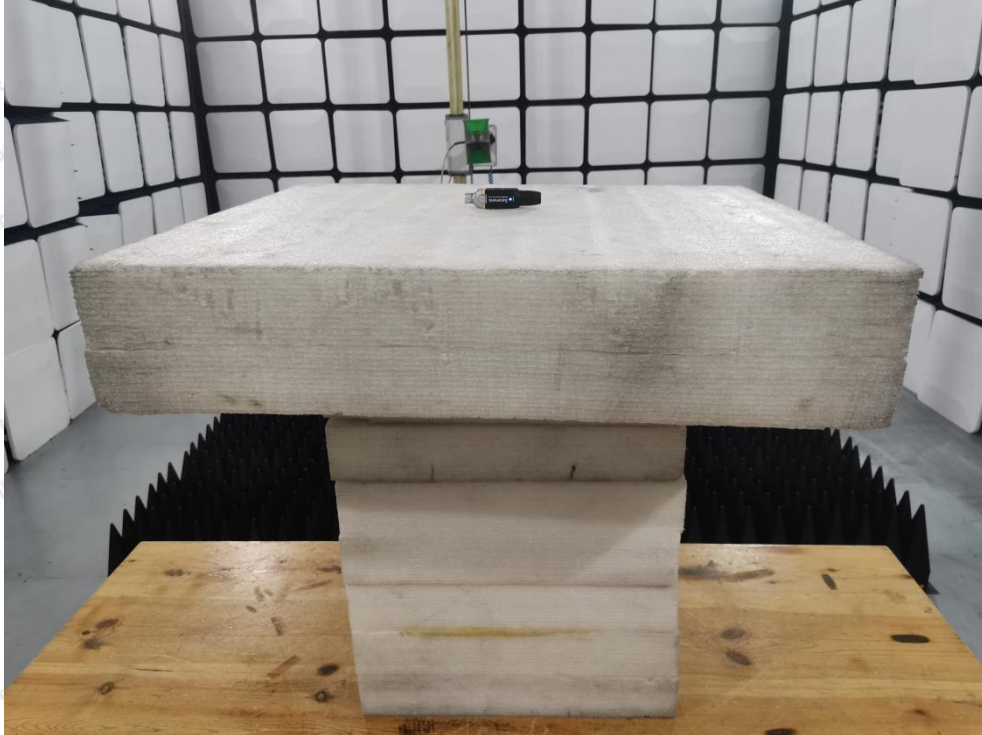


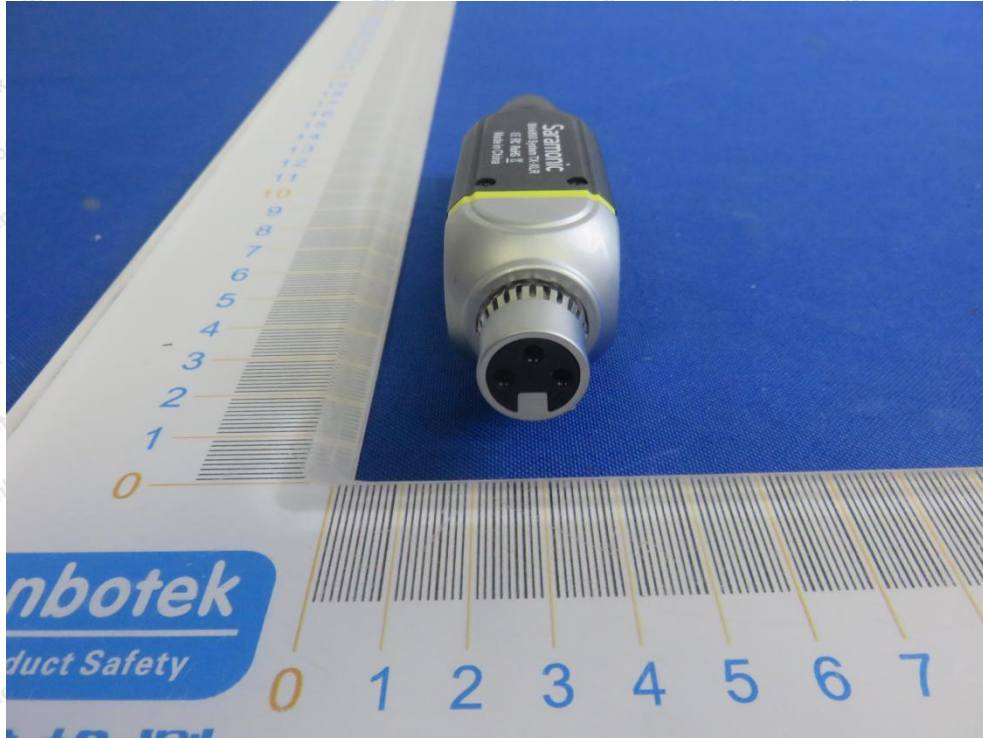
Photo of Radiation Emission Test





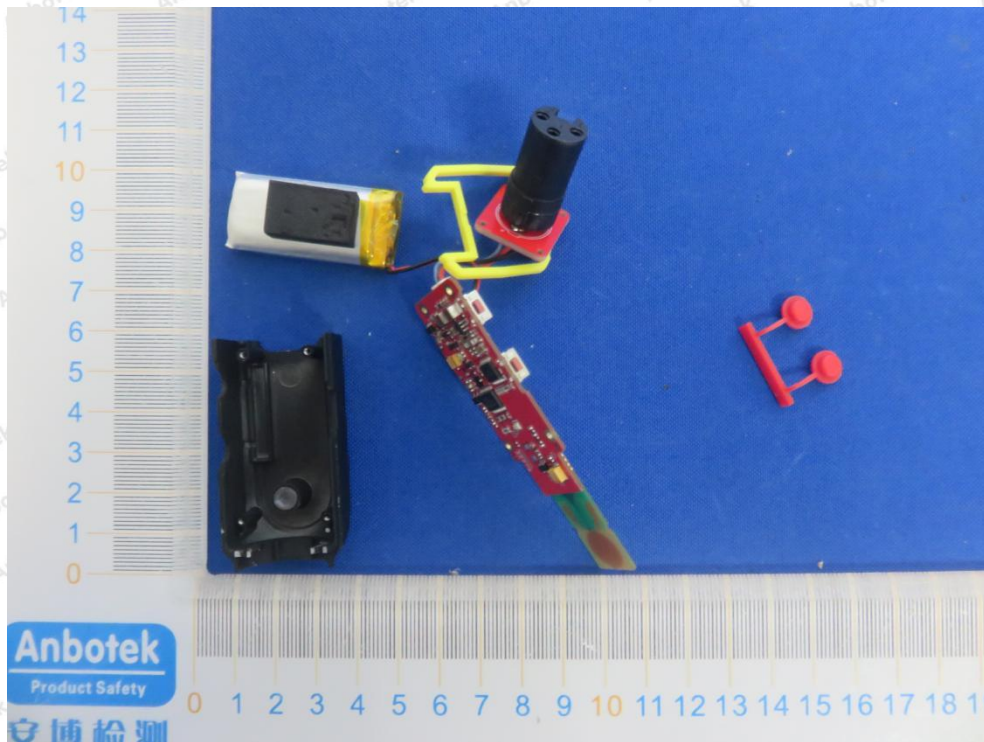
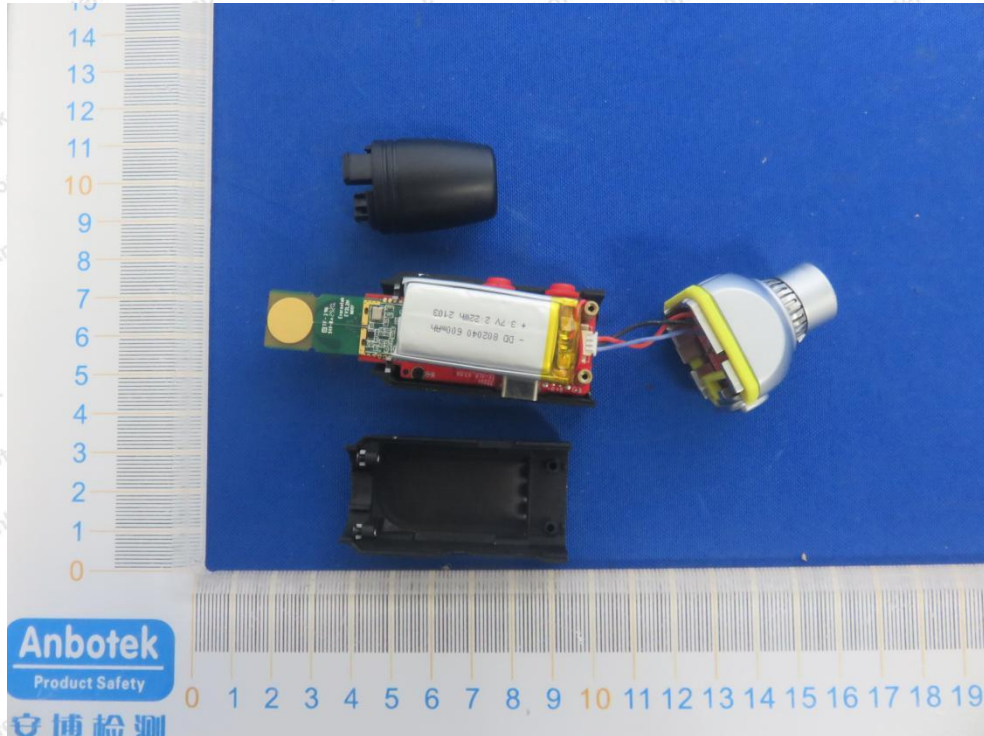
APPENDIX II -- EXTERNAL PHOTOGRAPH

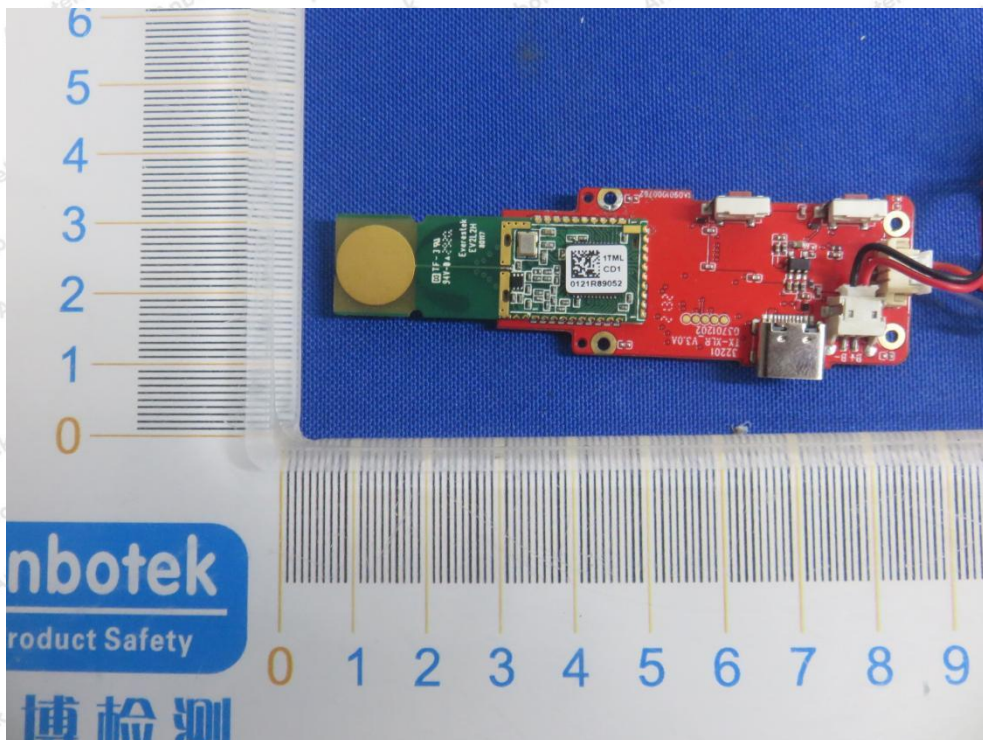
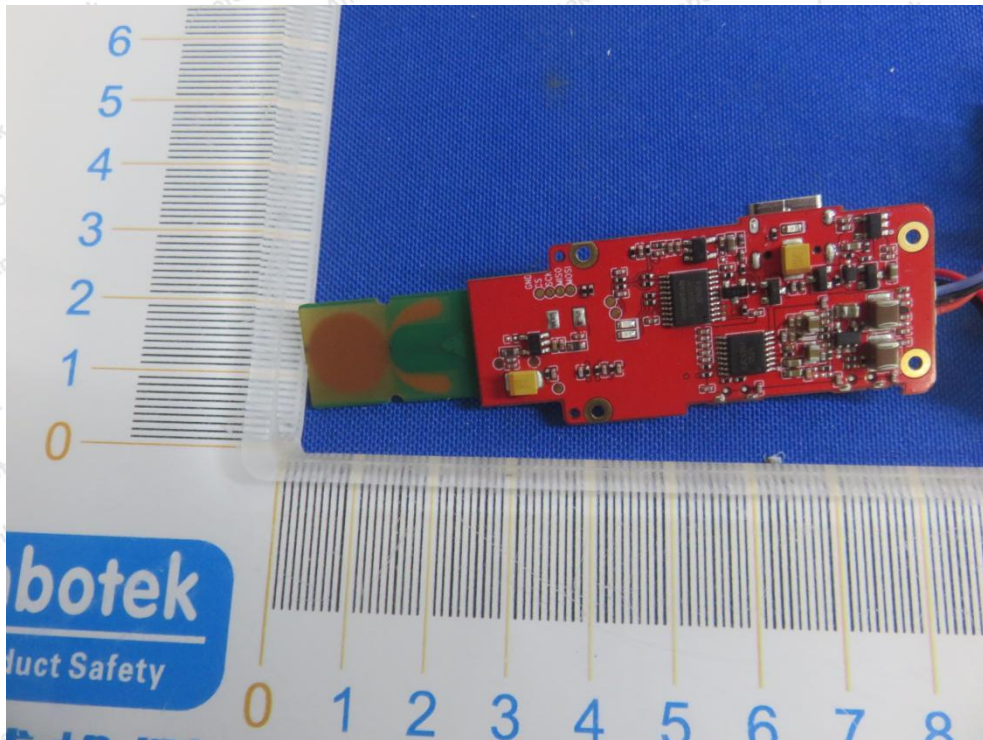




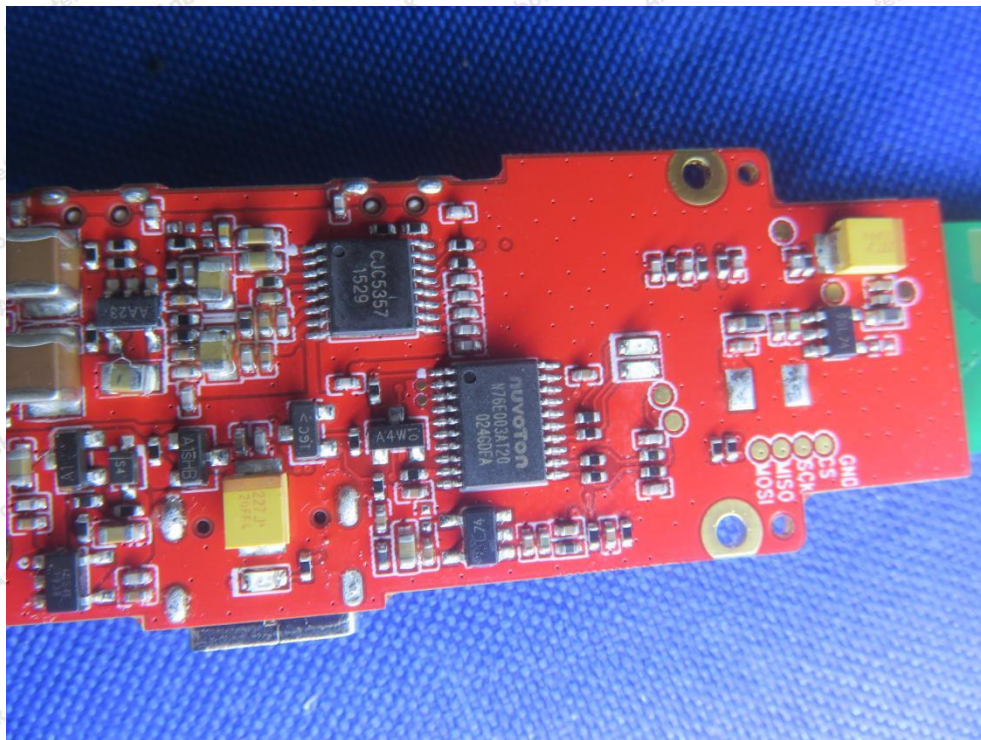
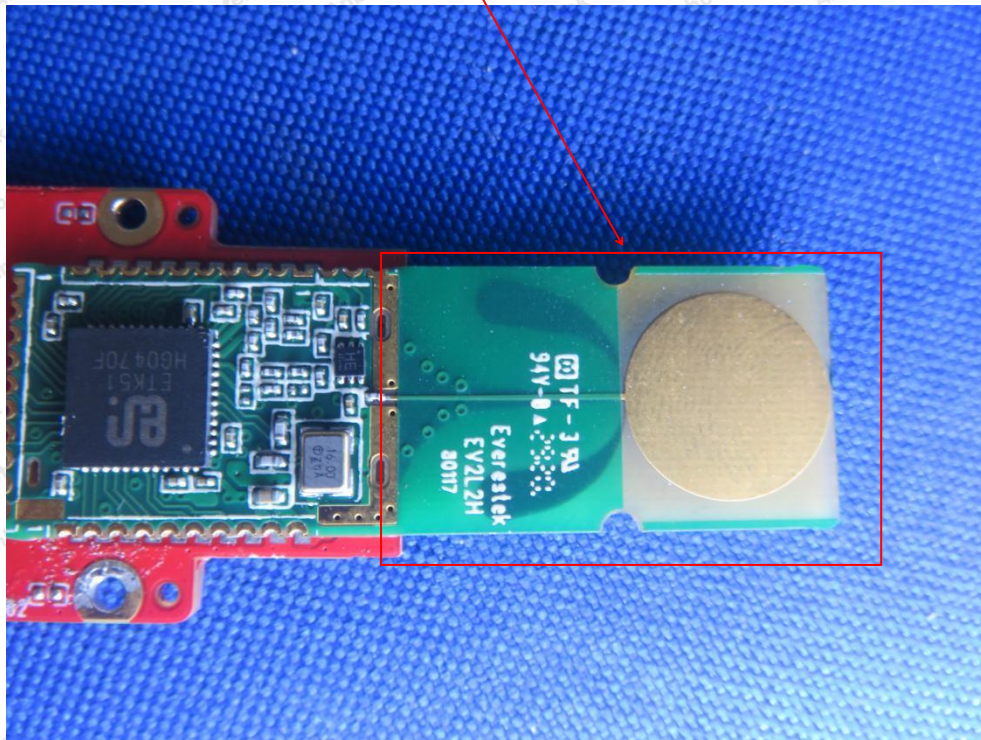


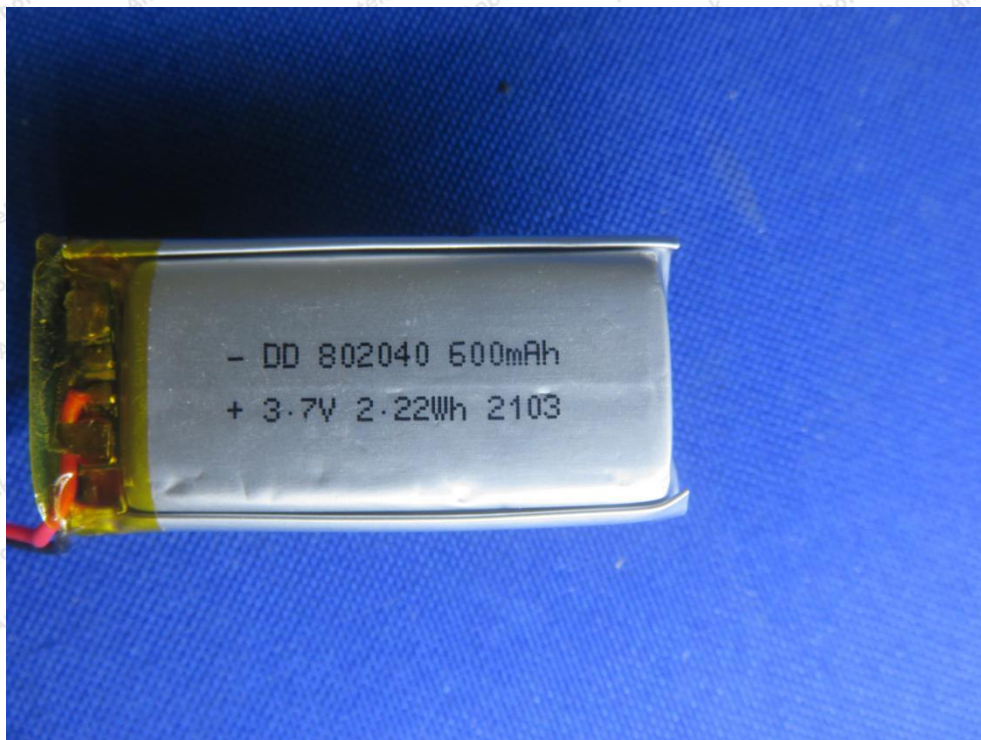
APPENDIX III -- INTERNAL PHOTOGRAPH





ANT





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

Shenzhen Anbotech 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@anbotech.com

Code:AB-RF-05-a



Hotline

400-003-0500

www.anbotech.com