FCC TEST REPORT

Client Name	:	Casper Sleep Inc.
Address	:	3 World Trade Center, 175 Greenwich St., 39th Floor, New York, NY 10007 USA
Product Name	:	Glow Night Light
Date	:	Jul. 16, 2021

Shenzhen Anbotek Compliance Laboratory Limited

Contents

TEST REPORT

Applicant	:	Casper Sleep Inc.
Manufacturer	:	Casper Sleep Inc.
Product Name	:	Glow Night Light
Model No.	:	NL01A
Trade Mark	:	Casper
Rating(s)	:	Input: AC 120V, 60Hz, 2.3W

Test Standard(s)	:	**FCC Part15 Subpart C, Paragraph 15.249**
Test Method(s)	:	**ANSI C63.10: 2020**

The device described above is tested by Shenzhen Anbotek 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 Anbotek 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 Anbotek Compliance Laboratory Limited.

Date of Receipt	Jun. 11, 2021
Date of Test	Jun. 11~Jul. 14, 2021

Prepared by

(Ella Liang)

Approved & Authorized Signer

(Kingkong Jin)

1. General Information

1.1. Client Information

Applicant	:	Casper Sleep Inc.
Address	:	3 World Trade Center, 175 Greenwich St., 39th Floor, New York, NY 10007 USA
Manufacturer	:	Casper Sleep Inc.
Address	:	3 World Trade Center, 175 Greenwich St., 39th Floor, New York, NY 10007 USA
Factory	:	Huizhou Light Engine Limited
Address	:	No. 9 Yuanhui Road, Chenjiang street, Zhongkai Hi-tech Industrial Development Zone, Huizhou, Guangdong Province, P.R.China

1.2. Description of Device (EUT)

Product Name	:	Glow Night Light	
Model No.	:	NL01A	
Trade Mark	:	Casper	
Test Power Supply	:	AC 120V/60Hz	
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)	
Product Description	:	Operation Frequency:	5850-5870MHz
		Number of Channel:	251 Channels
		Channel Spacing:	80KHz
		Modulation Type:	ASK
		Antenna Type:	PCB 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

N/A		

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	ASK	CH01	TX Only
Mode 2		CH126	
Mode 3		CH251	

Note:

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

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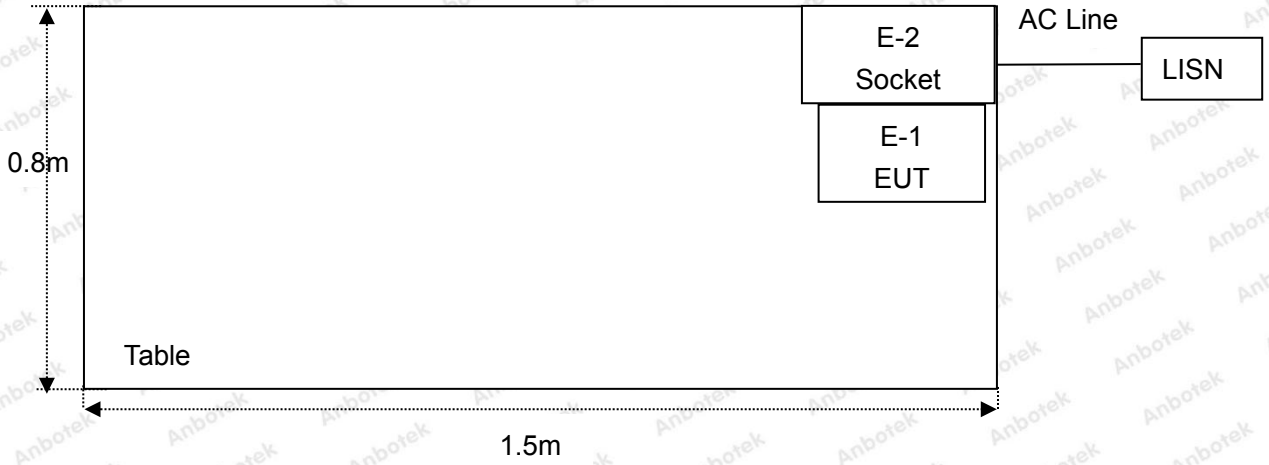
1.5. List of Channels

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	5850	52	5854.08	103	5858.16	154	5862.24	205	5866.32
2	5850.08	53	5854.16	104	5858.24	155	5862.32	206	5866.4
3	5850.16	54	5854.24	105	5858.32	156	5862.4	207	5866.48
4	5850.24	55	5854.32	106	5858.4	157	5862.48	208	5866.56
5	5850.32	56	5854.4	107	5858.48	158	5862.56	209	5866.64
6	5850.4	57	5854.48	108	5858.56	159	5862.64	210	5866.72
7	5850.48	58	5854.56	109	5858.64	160	5862.72	211	5866.8
8	5850.56	59	5854.64	110	5858.72	161	5862.8	212	5866.88
9	5850.64	60	5854.72	111	5858.8	162	5862.88	213	5866.96
10	5850.72	61	5854.8	112	5858.88	163	5862.96	214	5867.04
11	5850.8	62	5854.88	113	5858.96	164	5863.04	215	5867.12
12	5850.88	63	5854.96	114	5859.04	165	5863.12	216	5867.2
13	5850.96	64	5855.04	115	5859.12	166	5863.2	217	5867.28
14	5851.04	65	5855.12	116	5859.2	167	5863.28	218	5867.36
15	5851.12	66	5855.2	117	5859.28	168	5863.36	219	5867.44
16	5851.2	67	5855.28	118	5859.36	169	5863.44	220	5867.52
17	5851.28	68	5855.36	119	5859.44	170	5863.52	221	5867.6
18	5851.36	69	5855.44	120	5859.52	171	5863.6	222	5867.68
19	5851.44	70	5855.52	121	5859.6	172	5863.68	223	5867.76
20	5851.52	71	5855.6	122	5859.68	173	5863.76	224	5867.84
21	5851.6	72	5855.68	123	5859.76	174	5863.84	225	5867.92
22	5851.68	73	5855.76	124	5859.84	175	5863.92	226	5868
23	5851.76	74	5855.84	125	5859.92	176	5864	227	5868.08
24	5851.84	75	5855.92	126	5860	177	5864.08	228	5868.16
25	5851.92	76	5856	127	5860.08	178	5864.16	229	5868.24
26	5852	77	5856.08	128	5860.16	179	5864.24	230	5868.32
27	5852.08	78	5856.16	129	5860.24	180	5864.32	231	5868.4
28	5852.16	79	5856.24	130	5860.32	181	5864.4	232	5868.48
29	5852.24	80	5856.32	131	5860.4	182	5864.48	233	5868.56
30	5852.32	81	5856.4	132	5860.48	183	5864.56	234	5868.64
31	5852.4	82	5856.48	133	5860.56	184	5864.64	235	5868.72
32	5852.48	83	5856.56	134	5860.64	185	5864.72	236	5868.8
33	5852.56	84	5856.64	135	5860.72	186	5864.8	237	5868.88
34	5852.64	85	5856.72	136	5860.8	187	5864.88	238	5868.96
35	5852.72	86	5856.8	137	5860.88	188	5864.96	239	5869.04
36	5852.8	87	5856.88	138	5860.96	189	5865.04	240	5869.12
37	5852.88	88	5856.96	139	5861.04	190	5865.12	241	5869.2

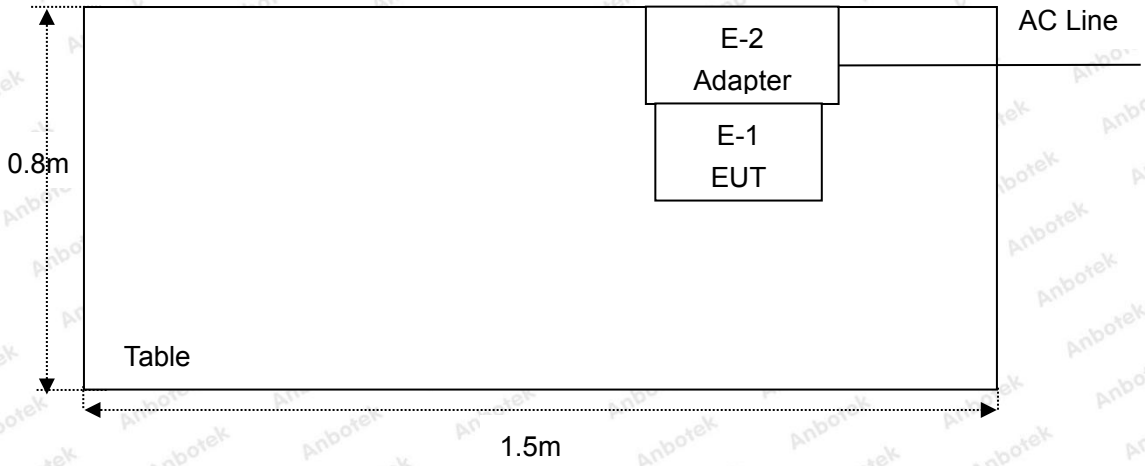
38	5852.96	89	5857.04	140	5861.12	191	5865.2	242	5869.28
39	5853.04	90	5857.12	141	5861.2	192	5865.28	243	5869.36
40	5853.12	91	5857.2	142	5861.28	193	5865.36	244	5869.44
41	5853.2	92	5857.28	143	5861.36	194	5865.44	245	5869.52
42	5853.28	93	5857.36	144	5861.44	195	5865.52	246	5869.6
43	5853.36	94	5857.44	145	5861.52	196	5865.6	247	5869.68
44	5853.44	95	5857.52	146	5861.6	197	5865.68	248	5869.76
45	5853.52	96	5857.6	147	5861.68	198	5865.76	249	5869.84
46	5853.6	97	5857.68	148	5861.76	199	5865.84	250	5869.92
47	5853.68	98	5857.76	149	5861.84	200	5865.92	251	5870
48	5853.76	99	5857.84	150	5861.92	201	5866		
49	5853.84	100	5857.92	151	5862	202	5866.08		
50	5853.92	101	5858	152	5862.08	203	5866.16		
51	5854	102	5858.08	153	5862.16	204	5866.24		

1.6. Description of Test Setup

CE



RE



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	Oct. 26, 2020	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Oct. 26, 2020	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	Oct. 26, 2020	1 Year
4.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Oct. 26, 2020	1 Year
5.	MAX Spectrum Analysis	Agilent	N9020A	MY51170037	Oct. 26, 2020	1 Year
6.	Preamplifier	SKET Electronic	BK1G18G30D	KD17503	Oct. 26, 2020	1 Year
7.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Nov. 02, 2020	2 Year
8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Nov. 02, 2020	2 Year
9.	Loop Antenna	Schwarzbeck	FMZB1519B	00053	Nov. 02, 2020	2 Year
10.	Horn Antenna	A-INFO	LB-180400-KF	J211060628	Nov. 02, 2020	2 Year
11.	Pre-amplifier	SONOMA	310N	186860	Oct. 26, 2020	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. 26, 2020	1 Year
14.	Power Sensor	DAER	RPR3006W	15I00041SN045	Oct. 26, 2020	1 Year
15.	Power Sensor	DAER	RPR3006W	15I00041SN046	Oct. 26, 2020	1 Year
16.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Oct. 26, 2020	1 Year
17.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Oct. 26, 2020	1 Year
18.	Signal Generator	Agilent	E4421B	MY41000743	Oct. 26, 2020	1 Year
19.	DC Power Supply	IVYTECH	IV3605	1804D360510	Oct. 26, 2020	1 Year
20.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80B	N/A	Oct. 26, 2020	1 Year

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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 Anbotek 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 30, 2020.

ISED-Registration No.: 8058A

Shenzhen Anbotek 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, September 30, 2020.

Test Location

Shenzhen Anbotek 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

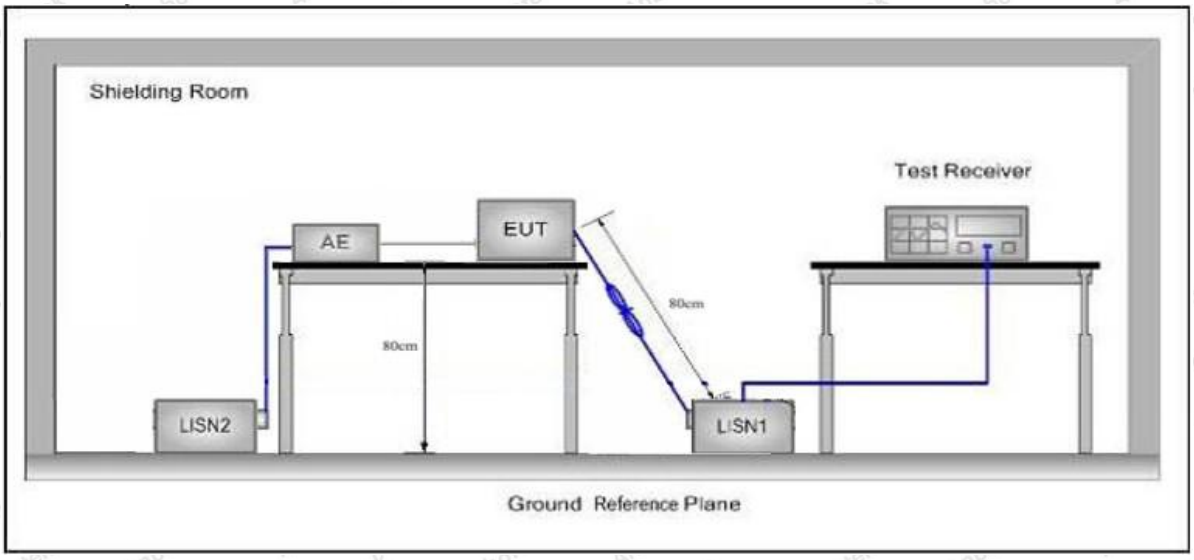
Standard Section	Test Item	Result
15.203	Antenna Requirement	PASS
15.207	Conducted Emission	PASS
15.249	Radiated Emission	PASS
15.215(c)	20dB Bandwidth	PASS
15.249(c)	Band Edge	PASS
Remark: "N/A" is an abbreviation for Not Applicable.		

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: 2020 on Conducted Emission Measurement.

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

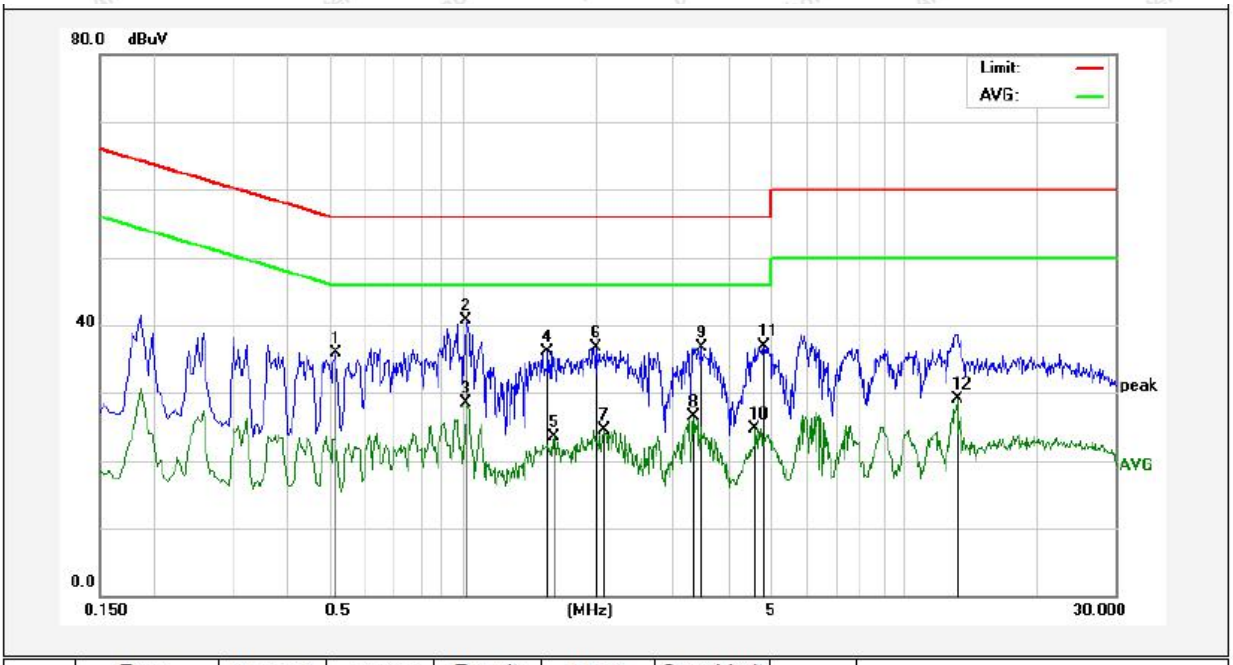
The frequency range from 150kHz to 30MHz is checked.

3.4. Test Data

During the test, pre-scan the Low, Middle, High channel, and found the Low channel(TX 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

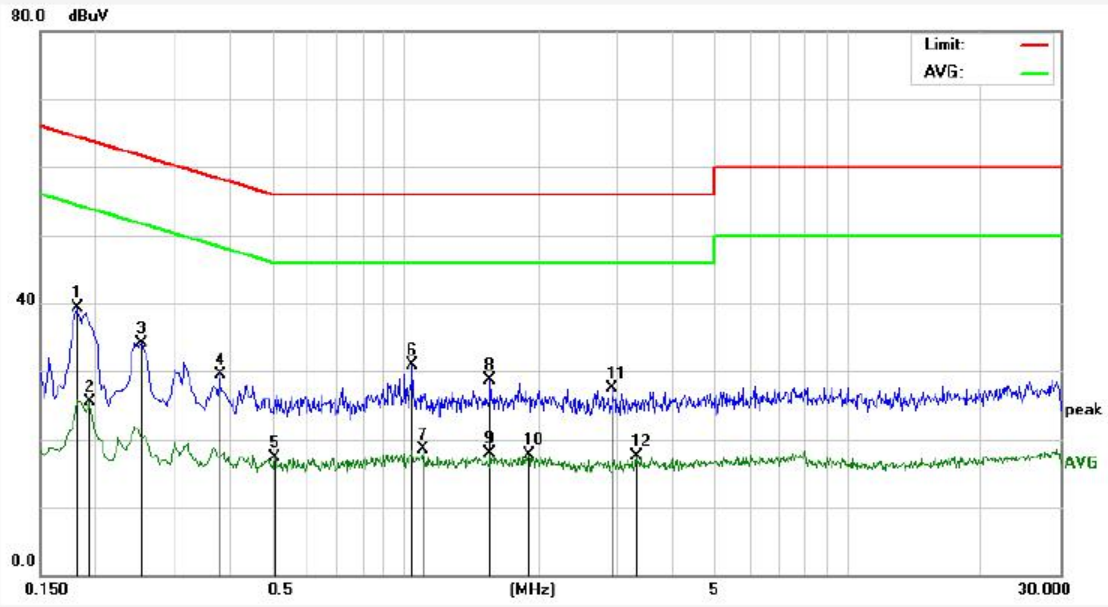
Test Site: 1# Shielded Room
Operating Condition: Mode 1
Test Specification: AC 120V/60Hz
Comment: Live Line
Tem.: 21.6℃ Hum.: 50%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.5140	15.89	19.98	35.87	56.00	-20.13	QP	
2	1.0180	20.60	20.12	40.72	56.00	-15.28	QP	
3	1.0180	8.34	20.12	28.46	46.00	-17.54	AVG	
4	1.5580	15.97	20.13	36.10	56.00	-19.90	QP	
5	1.6100	3.34	20.13	23.47	46.00	-22.53	AVG	
6	2.0059	16.66	20.14	36.80	56.00	-19.20	QP	
7	2.0980	4.42	20.14	24.56	46.00	-21.44	AVG	
8	3.3300	6.39	20.17	26.56	46.00	-19.44	AVG	
9	3.4580	16.51	20.17	36.68	56.00	-19.32	QP	
10	4.5939	4.51	20.20	24.71	46.00	-21.29	AVG	
11	4.8220	16.68	20.20	36.88	56.00	-19.12	QP	
12	13.1420	8.85	20.29	29.14	50.00	-20.86	AVG	

Conducted Emission Test Data

Test Site: 1# Shielded Room
Operating Condition: Mode 1
Test Specification: AC 120V/60Hz
Comment: Neutral Line
Tem.: 21.6℃ Hum.: 50%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1819	19.44	19.90	39.34	64.39	-25.05	QP	
2	0.1940	5.56	19.90	25.46	53.86	-28.40	AVG	
3	0.2540	14.18	19.89	34.07	61.62	-27.55	QP	
4	0.3820	9.67	19.93	29.60	58.23	-28.63	QP	
5	0.5100	-2.74	19.98	17.24	46.00	-28.76	AVG	
6	1.0420	10.79	20.12	30.91	56.00	-25.09	QP	
7	1.0980	-1.58	20.12	18.54	46.00	-27.46	AVG	
8	1.5540	8.57	20.13	28.70	56.00	-27.30	QP	
9	1.5540	-2.29	20.13	17.84	46.00	-28.16	AVG	
10	1.8980	-2.49	20.14	17.65	46.00	-28.35	AVG	
11	2.9460	7.29	20.16	27.45	56.00	-28.55	QP	
12	3.3140	-2.68	20.17	17.49	46.00	-28.51	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

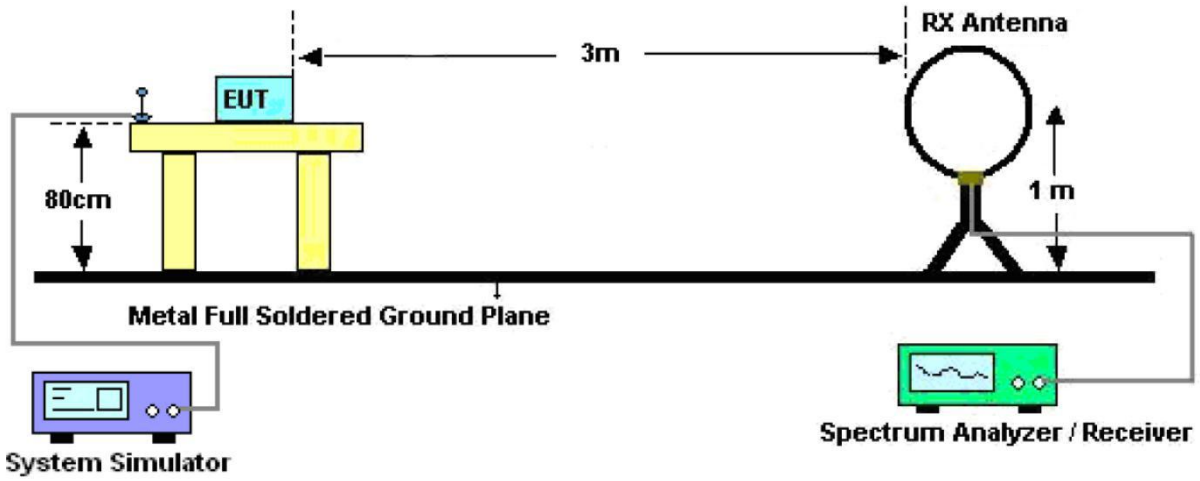


Figure 2. 30MHz to 1GHz

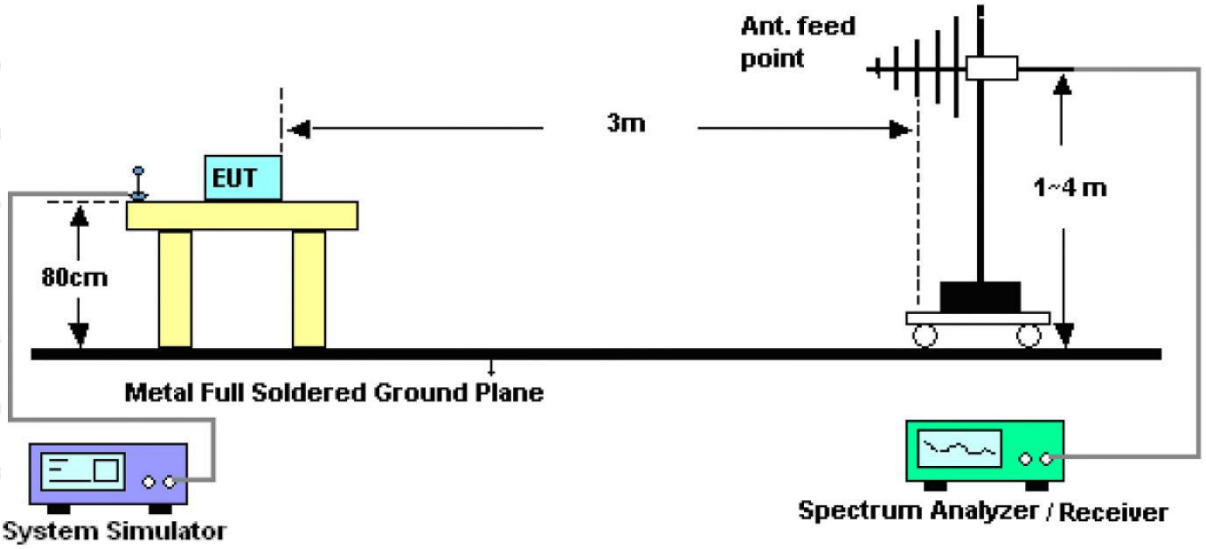
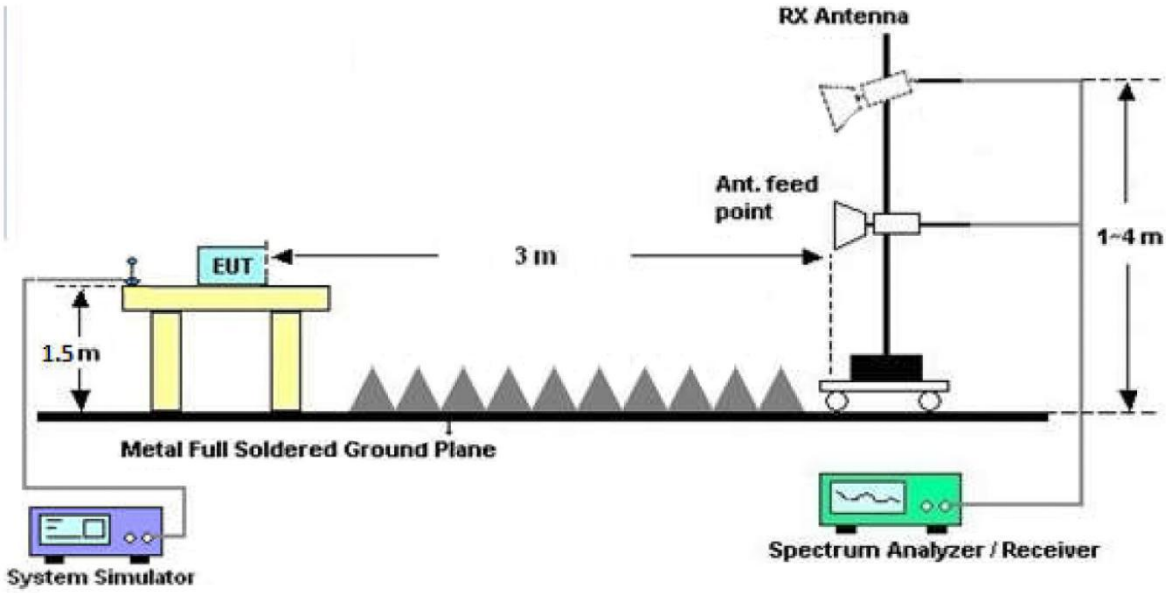


Figure 3. Above 1 GHz



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 Mode) 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 1
Power Source:	AC 120V/60Hz
Polarization:	Vertical
Temp.(℃)/Hum.(%RH):	22.5℃/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	40.9881	40.75	-13.68	27.07	40.00	-12.93	QP	100	0	
2	48.3318	37.59	-14.60	22.99	40.00	-17.01	QP	100	360	
3	146.8877	41.81	-19.95	21.86	43.50	-21.64	QP	100	0	
4	222.9502	40.33	-16.32	24.01	46.00	-21.99	QP	100	360	
5	300.3672	38.89	-13.39	25.50	46.00	-20.50	QP	100	0	
6	547.0977	30.46	-8.05	22.41	46.00	-23.59	QP	100	360	

Test Results (30~1000MHz)

Test Mode:	Mode 1
Power Source:	AC 120V/60Hz
Polarization:	Horizontal
Temp.(℃)/Hum.(%RH):	22.5℃/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	55.2207	33.36	-16.51	16.85	40.00	-23.15	QP	100	0	
2	144.8418	36.92	-20.81	16.11	43.50	-27.39	QP	100	360	
3	213.7634	39.94	-19.58	20.36	43.50	-23.14	QP	100	0	
4	316.5890	38.38	-13.86	24.52	46.00	-21.48	QP	100	360	
5	520.8882	30.51	-9.23	21.28	46.00	-24.72	QP	100	0	
6	729.3583	32.11	-5.56	26.55	46.00	-19.45	QP	100	360	

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
5850.00	83.73	28.65	13.58	31.04	94.92	114.00	-19.08	V	Peak
5850.00	69.36	28.65	13.58	31.04	80.55	94.00	-13.45	V	AVG
11700.00	38.16	31.98	17.08	33.91	53.31	74.00	-20.69	V	Peak
11700.00	24.61	32.65	20.03	34.85	42.44	54.00	-11.56	V	AVG
17550.00	38.16	31.98	17.08	33.91	53.31	74.00	-20.69	V	Peak
17550.00	24.80	32.65	20.03	34.85	42.63	54.00	-11.37	V	AVG
23400.00	*								
29250.00	*								
35100.00	*								
40950.00	*								
5850.00	83.67	28.65	13.58	31.04	94.86	114.00	-19.14	H	Peak
5850.00	69.39	28.65	13.58	31.04	80.58	94.00	-13.42	H	AVG
11700.00	37.11	31.98	17.08	33.91	52.26	74.00	-21.74	H	Peak
11700.00	26.21	32.65	20.03	34.85	44.04	54.00	-9.96	H	AVG
17550.00	38.08	31.98	17.08	33.91	53.23	74.00	-20.77	H	Peak
17550.00	24.41	32.65	20.03	34.85	42.24	54.00	-11.76	H	AVG
23400.00	*								
29250.00	*								
35100.00	*								
40950.00	*								

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)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Detector
5860.00	84.79	28.95	14.02	31.53	96.23	114.00	-17.77	V	Peak
5860.00	70.51	28.95	14.02	31.53	81.95	94.00	-12.05	V	AVG
11720.00	40.38	32.44	17.18	33.91	56.09	74.00	-17.91	V	Peak
11720.00	25.80	32.78	20.12	34.86	43.84	54.00	-10.16	V	AVG
17580.00	37.07	32.44	17.18	33.91	52.78	74.00	-21.22	V	Peak
17580.00	23.86	32.78	20.12	34.86	41.90	54.00	-12.10	V	AVG
23440.00	*								
29300.00	*								
35160.00	*								
41020.00	*								
5860.00	85.72	28.95	14.02	31.53	97.16	114.00	-16.84	H	Peak
5860.00	69.10	28.95	14.02	31.53	80.54	94.00	-13.46	H	AVG
11720.00	39.64	32.44	17.18	33.91	55.35	74.00	-18.65	H	Peak
11720.00	24.15	32.78	20.12	34.86	42.19	54.00	-11.81	H	AVG
17580.00	36.29	32.44	17.18	33.91	52.00	74.00	-22.00	H	Peak
17580.00	23.70	32.78	20.12	34.86	41.74	54.00	-12.26	H	AVG
23440.00	*								
29300.00	*								
35160.00	*								
41020.00	*								

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
5870.00	83.13	29.16	14.68	31.96	95.01	114.00	-18.99	V	Peak
5870.00	70.40	29.16	14.68	31.96	82.28	94.00	-11.72	V	AVG
11740.00	39.61	32.59	18.02	33.92	56.30	74.00	-17.70	V	Peak
11740.00	24.10	32.87	20.15	34.88	42.24	54.00	-11.76	V	AVG
17610.00	37.98	32.59	18.02	33.92	54.67	74.00	-19.33	V	Peak
17610.00	21.38	32.87	20.15	34.88	39.52	54.00	-14.48	V	AVG
23480.00	*								
29350.00	*								
35220.00	*								
41090.00	*								
5870.00	86.94	29.16	14.68	31.96	98.82	114.00	-15.18	H	Peak
5870.00	68.37	29.16	14.68	31.96	80.25	94.00	-13.75	H	AVG
11740.00	40.21	32.59	18.02	33.92	56.90	74.00	-17.10	H	Peak
11740.00	26.10	32.87	20.15	34.88	44.24	54.00	-9.76	H	AVG
17610.00	36.32	32.59	18.02	33.92	53.01	74.00	-20.99	H	Peak
17610.00	21.65	32.87	20.15	34.88	39.79	54.00	-14.21	H	AVG
23480.00	*								
29350.00	*								
35220.00	*								
41090.00	*								

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.

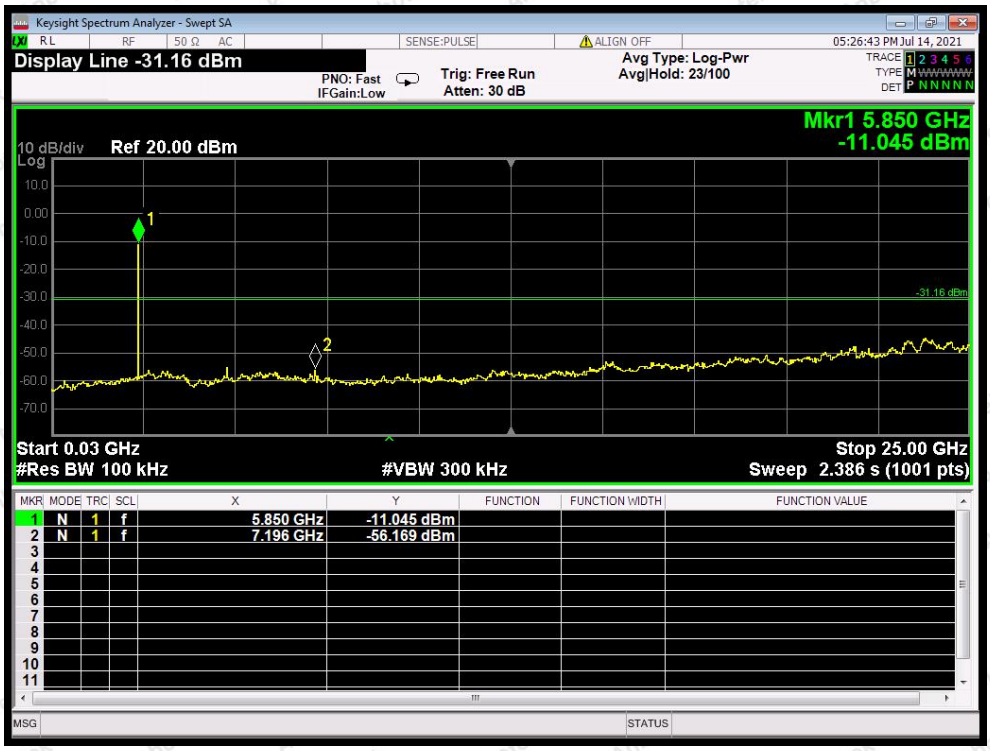
Radiated Band Edge:

Test Mode: ASK								
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	46.48	28.65	13.58	31.04	57.67	74.00	-16.33	H
5875.00	45.95	29.16	14.68	31.96	57.83	74.00	-16.17	H
5725.00	46.66	28.65	13.58	31.04	57.85	74.00	-16.15	V
5875.00	47.22	29.16	14.68	31.96	59.10	74.00	-14.90	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	32.92	28.65	13.58	31.04	44.11	54.00	-9.89	H
5875.00	32.91	29.16	14.68	31.96	44.79	54.00	-9.21	H
5725.00	32.07	28.65	13.58	31.04	43.26	54.00	-10.74	V
5875.00	33.84	29.16	14.68	31.96	45.72	54.00	-8.28	V

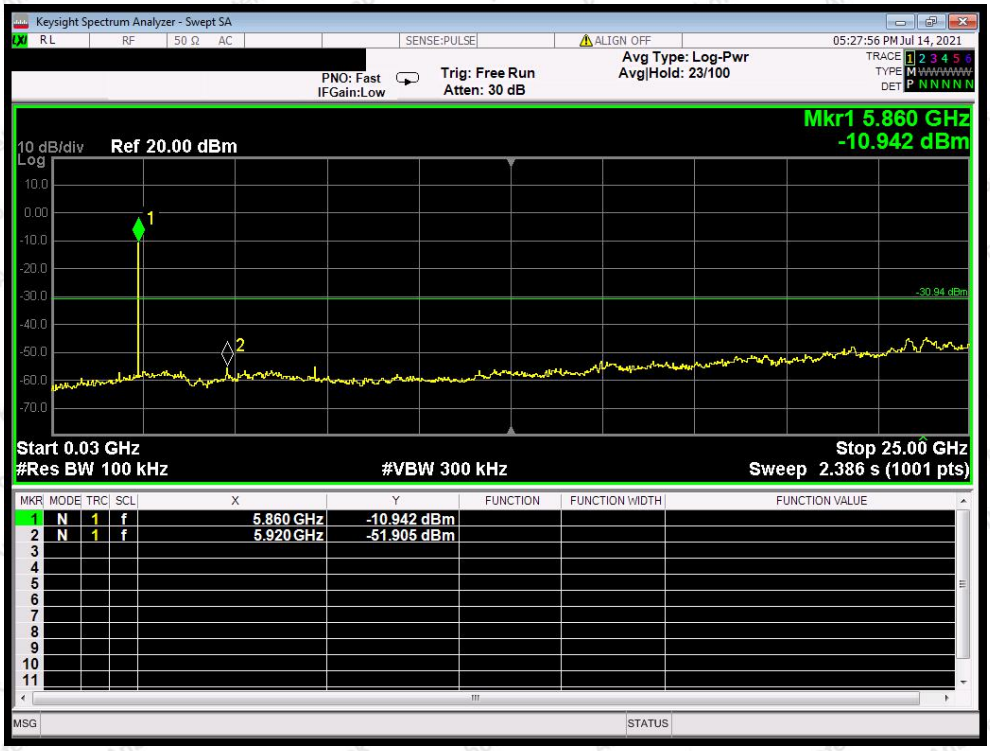
Remark:

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

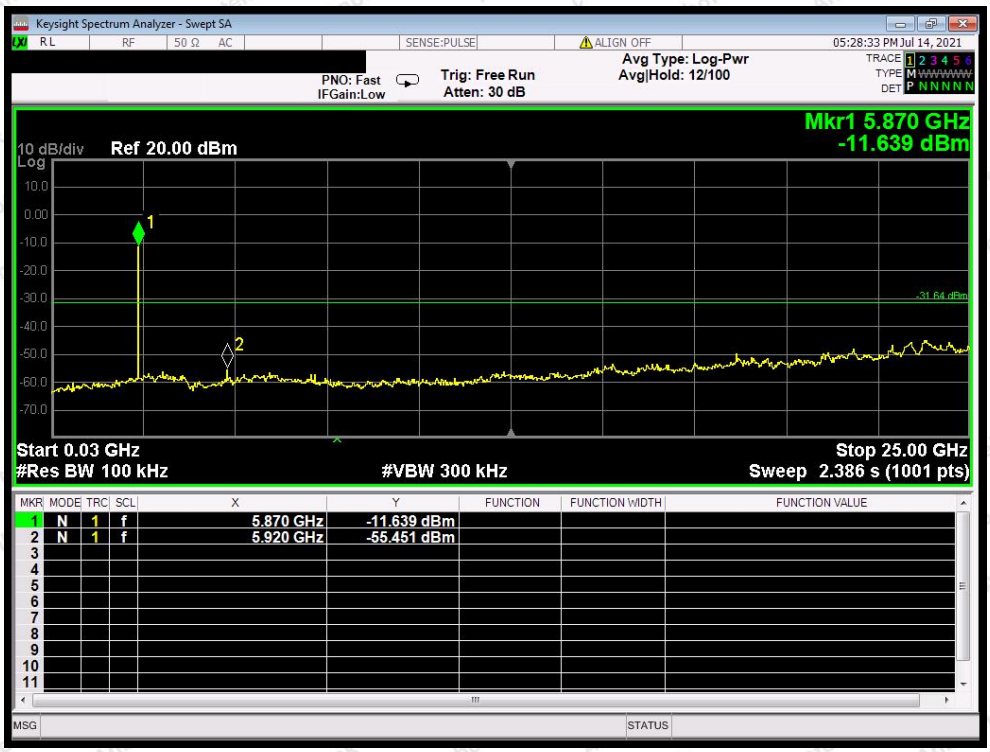
Conducted Emission Method



CH: Low



CH: Middle


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:PULSE
ALIGN OFF
05:28:33 PM Jul 14, 2021
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 12/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 5.870 GHz
-11.639 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-31.64 dBm
Start 0.03 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.386 s (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 5.870 GHz -11.639 dBm
2 N 1 f 5.920 GHz -55.451 dBm
MSG
STATUS

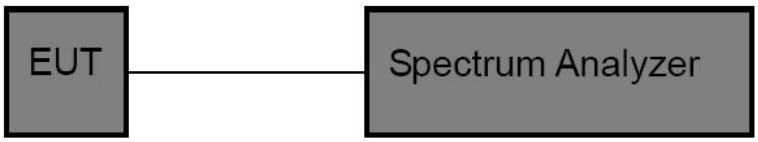
CH: High

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 = 100kHz, VBW≥3*RBW =300kHz,

Detector= Average

Trace mode= Max hold.

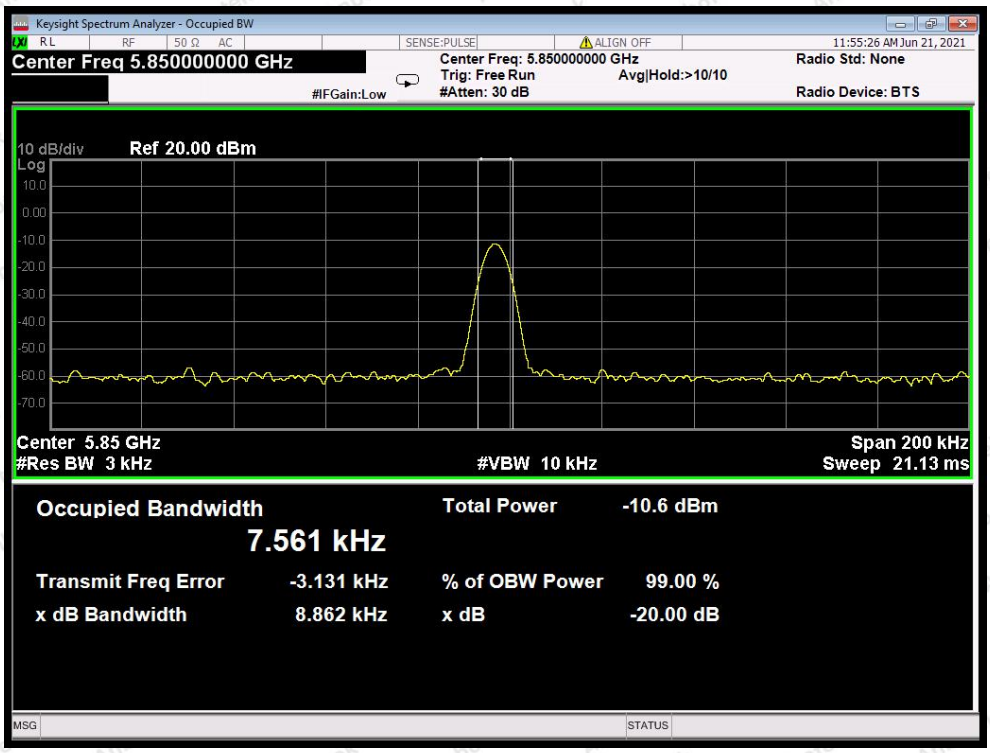
Sweep- auto couple.

4. Mark the peak frequency and –20dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

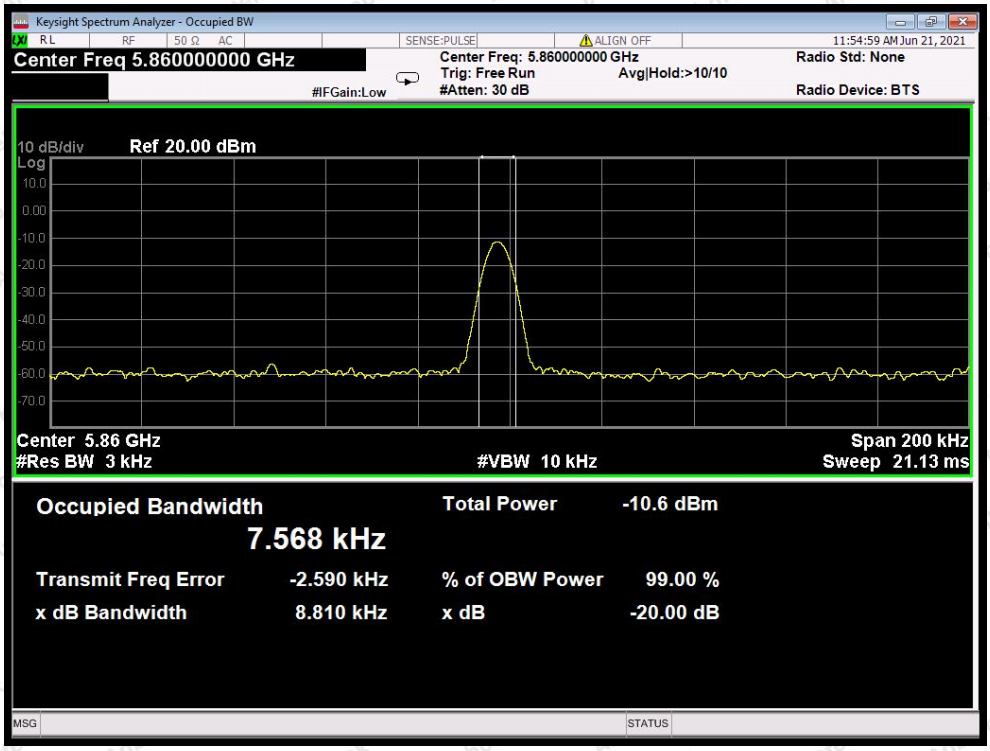
5.4. Test Data

Test Voltage	:	AC 120V/60Hz	Temperature	:	22.5℃
Test Result	:	PASS	Humidity	:	54%RH

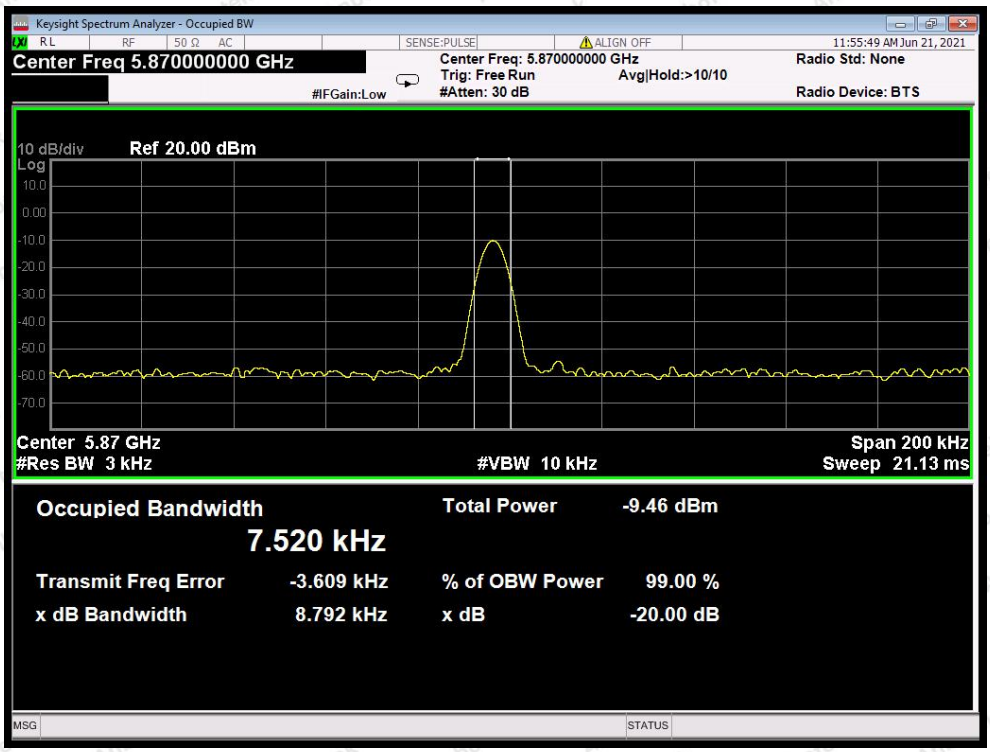
Frequency (MHz)	Bandwidth (KHz)	Result
5850	8.862	PASS
5860	8.810	PASS
5870	8.792	PASS



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.

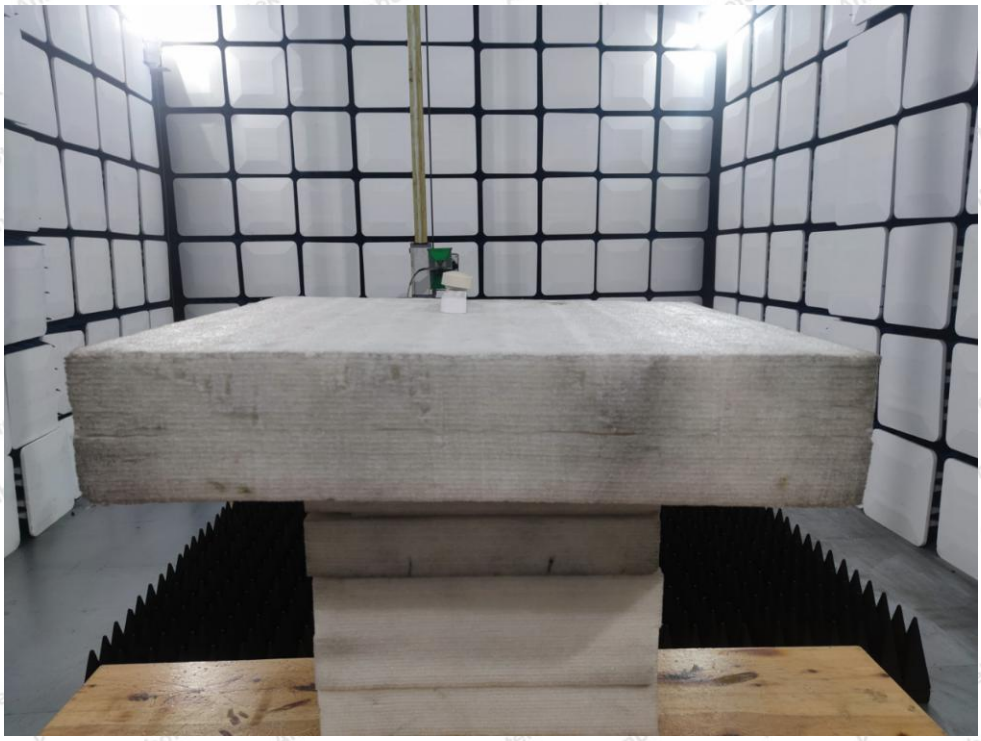
6.2. Antenna Connected Construction

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

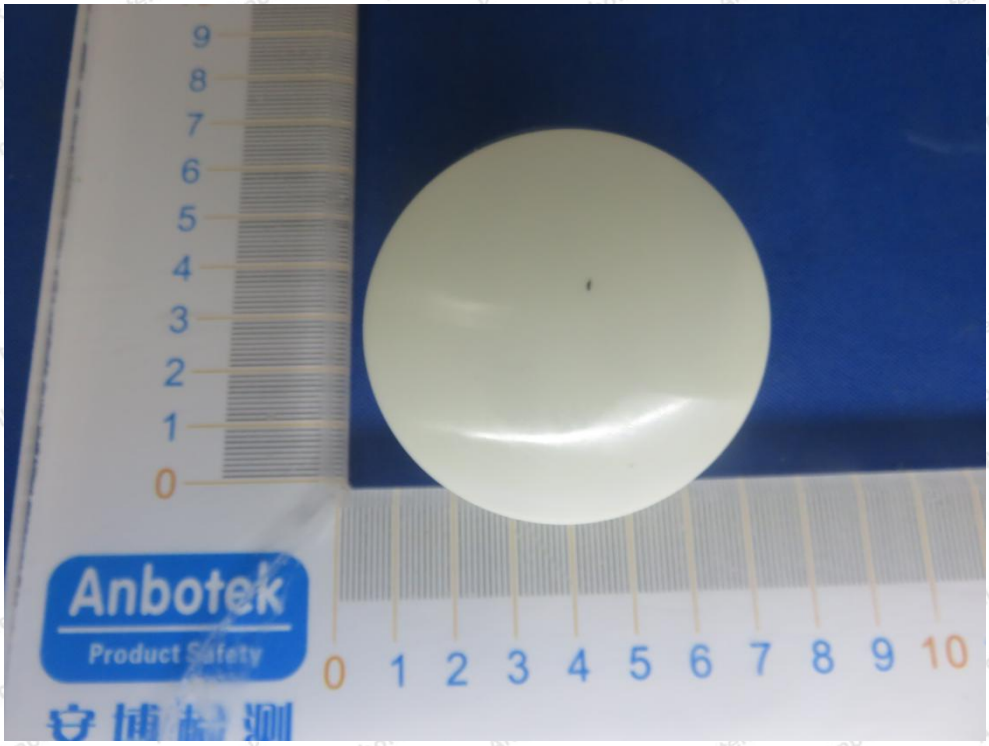
APPENDIX I -- TEST SETUP PHOTOGRAPH

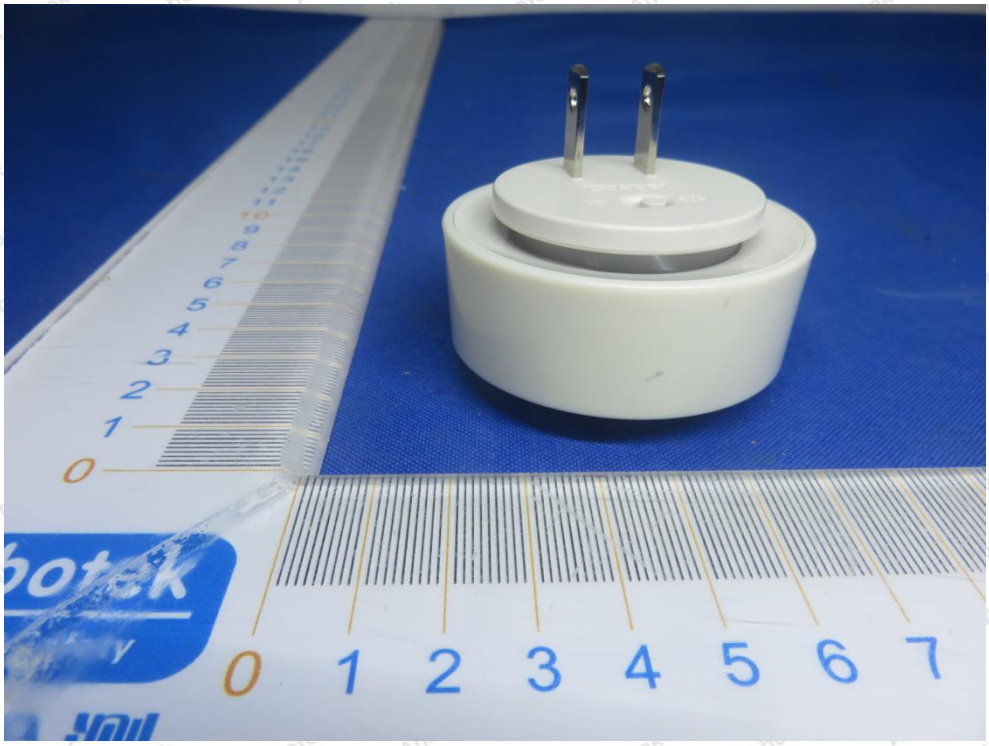
Photo of Conducted Emission Measurement

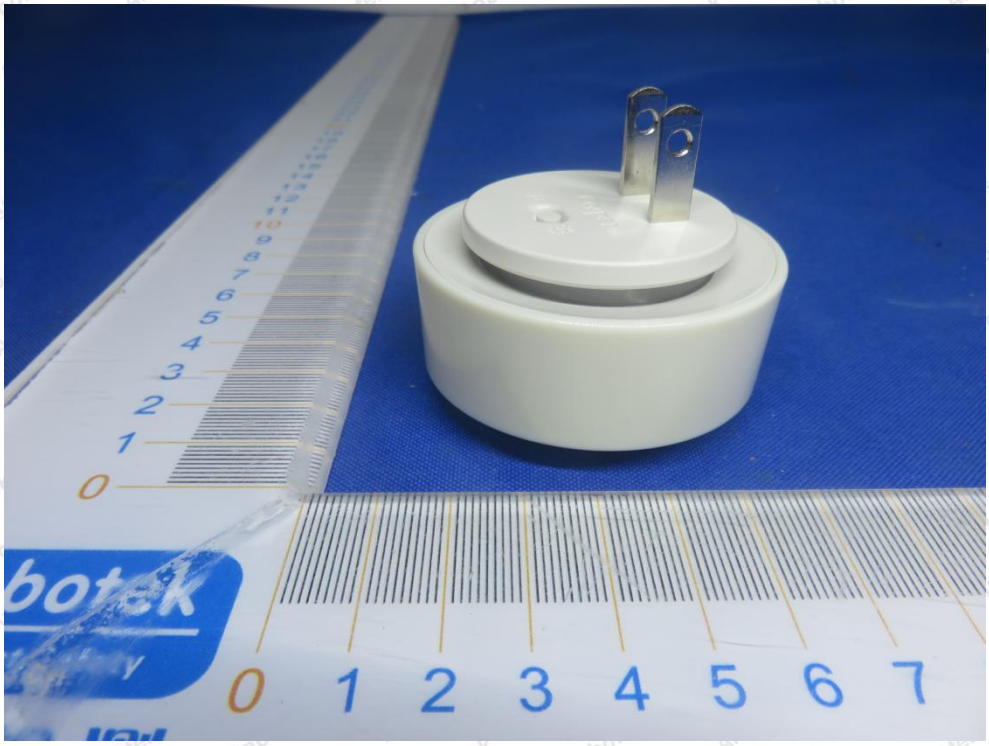
Photo of Radiation Emission Test

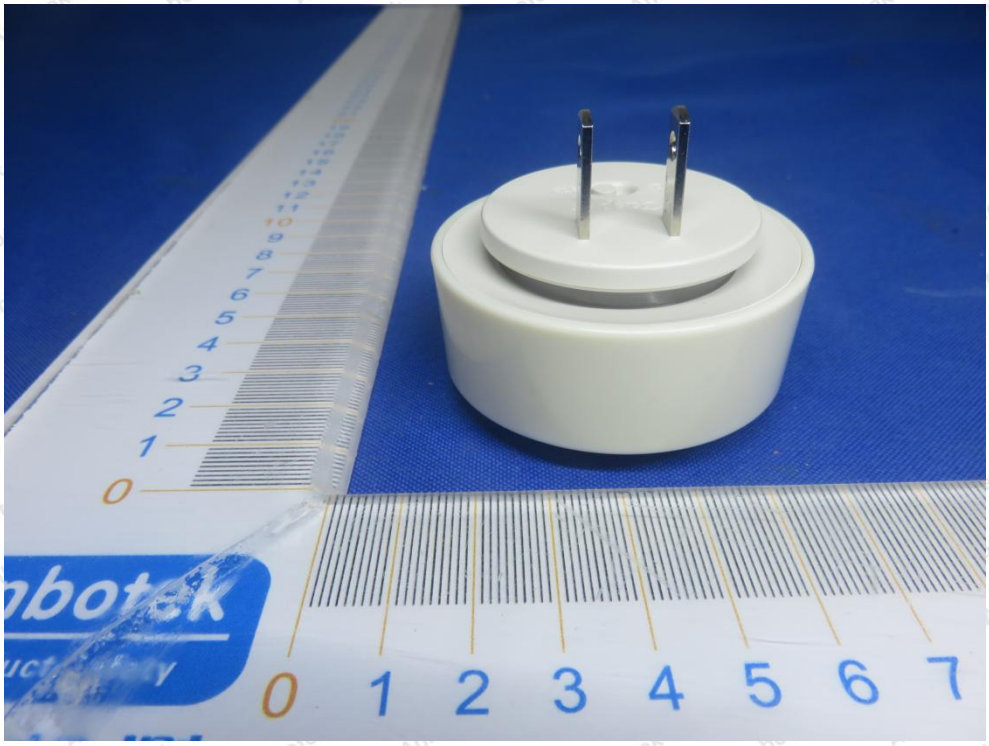


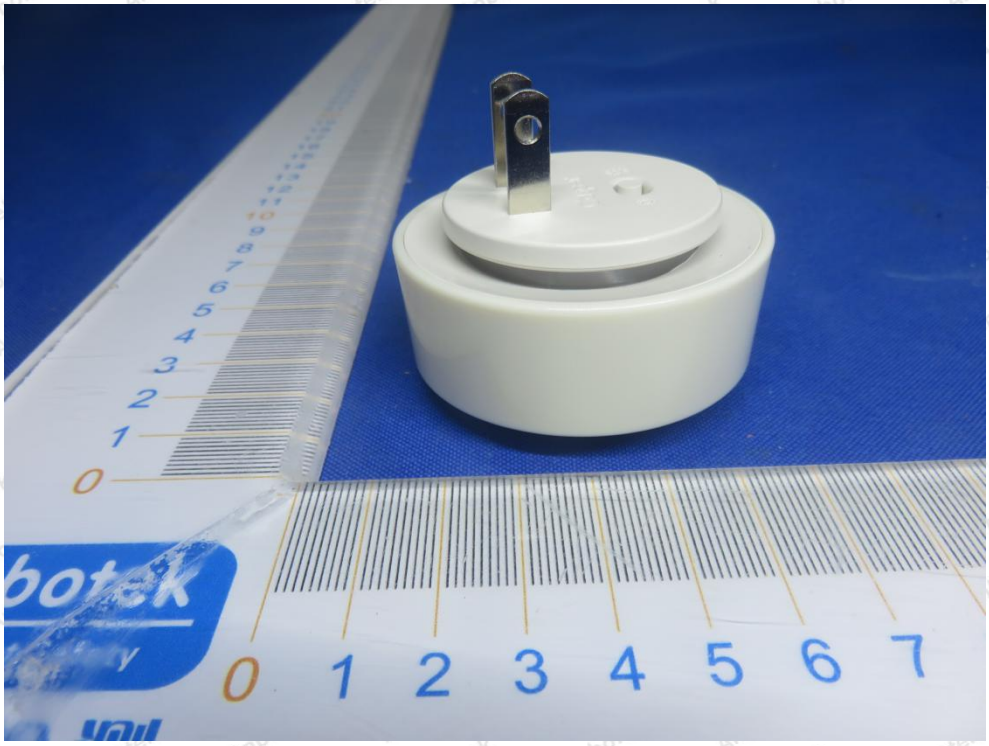
APPENDIX II -- EXTERNAL PHOTOGRAPH



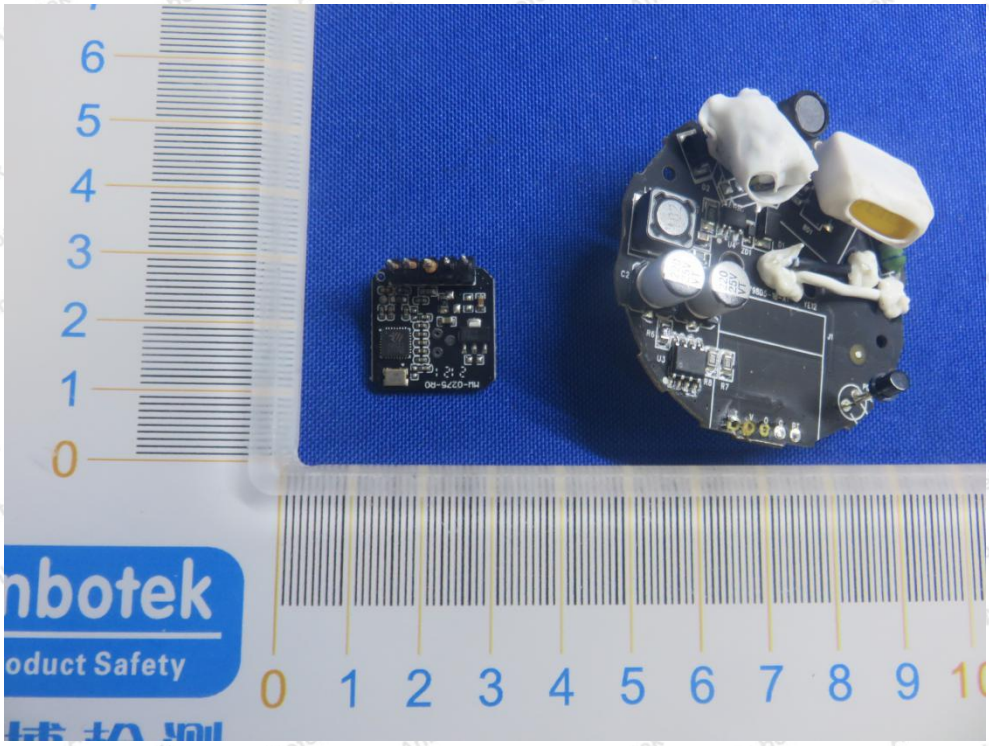


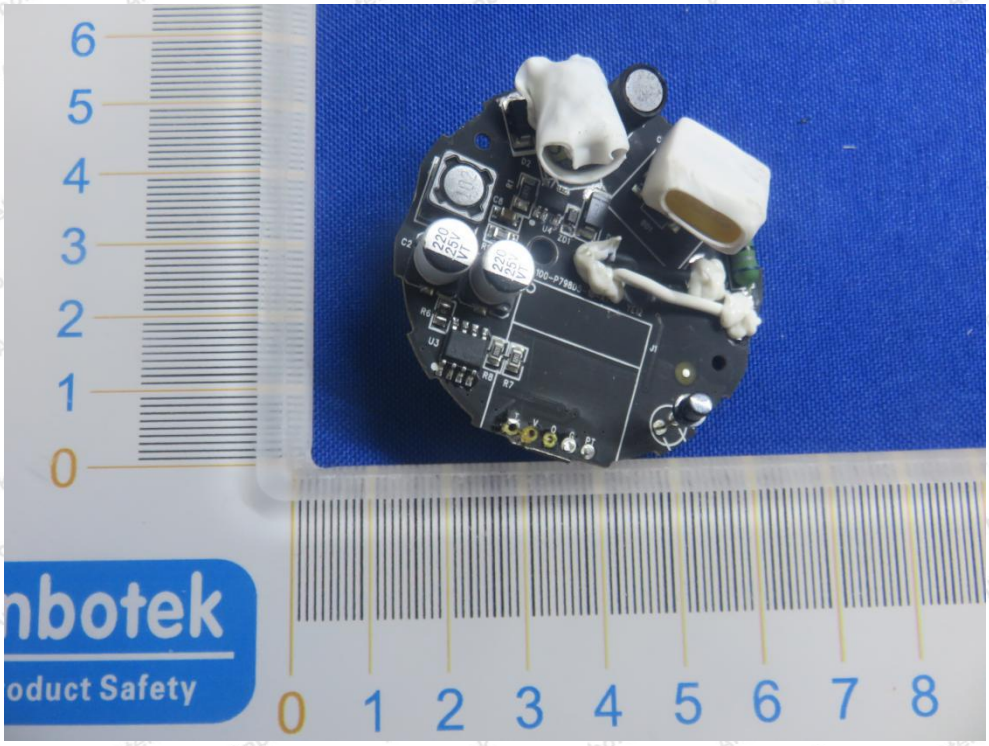




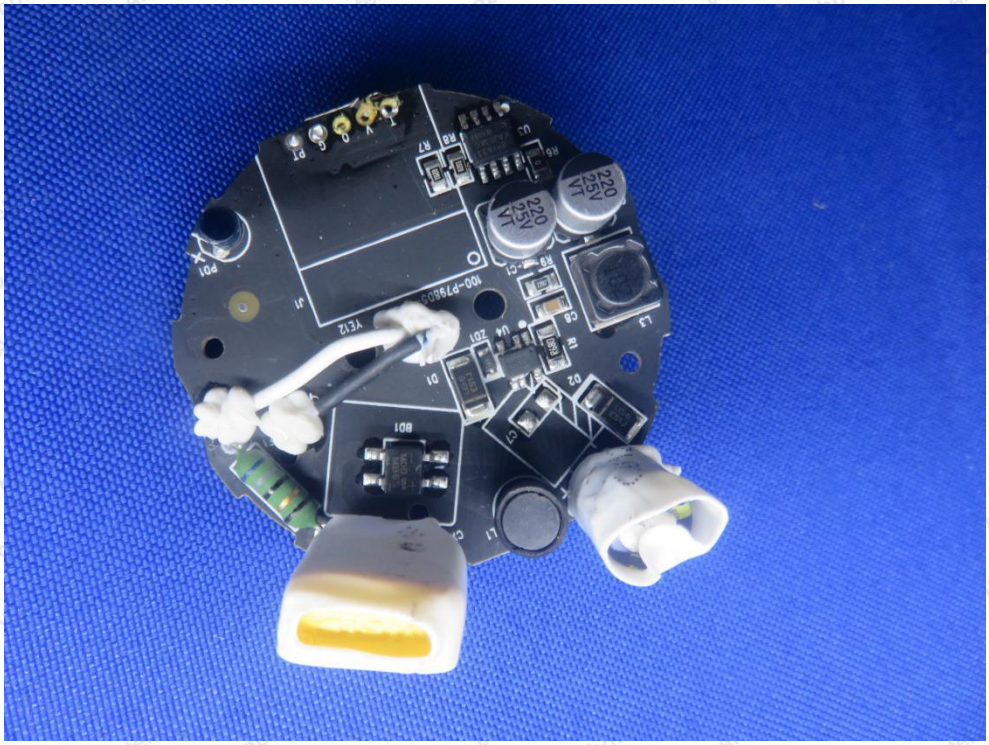


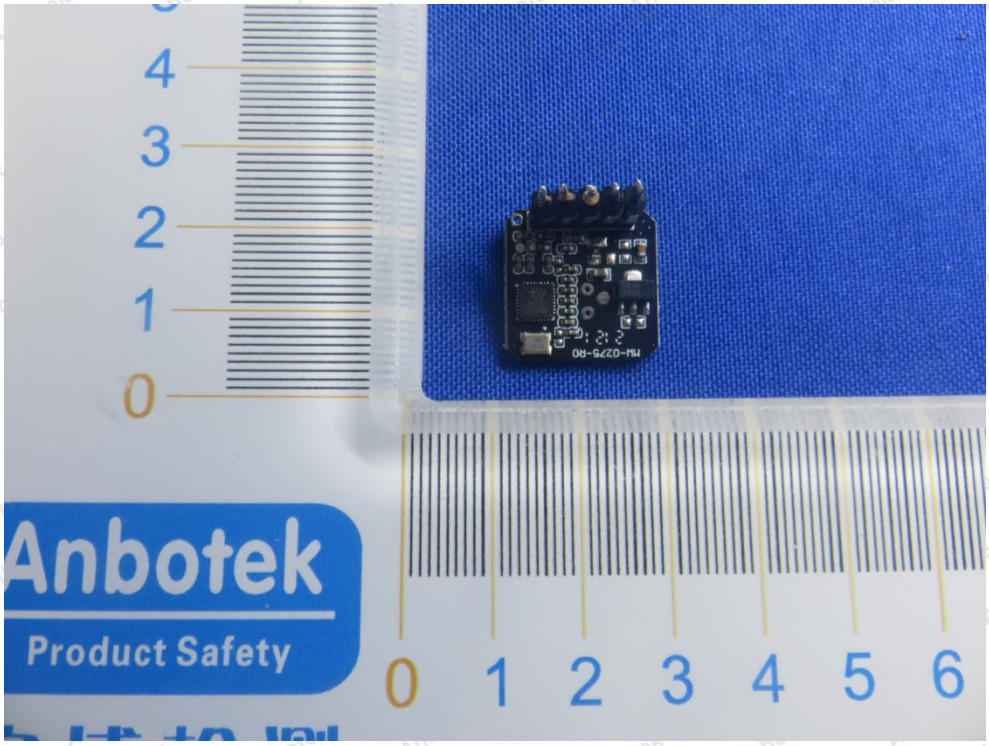
APPENDIX III -- INTERNAL PHOTOGRAPH

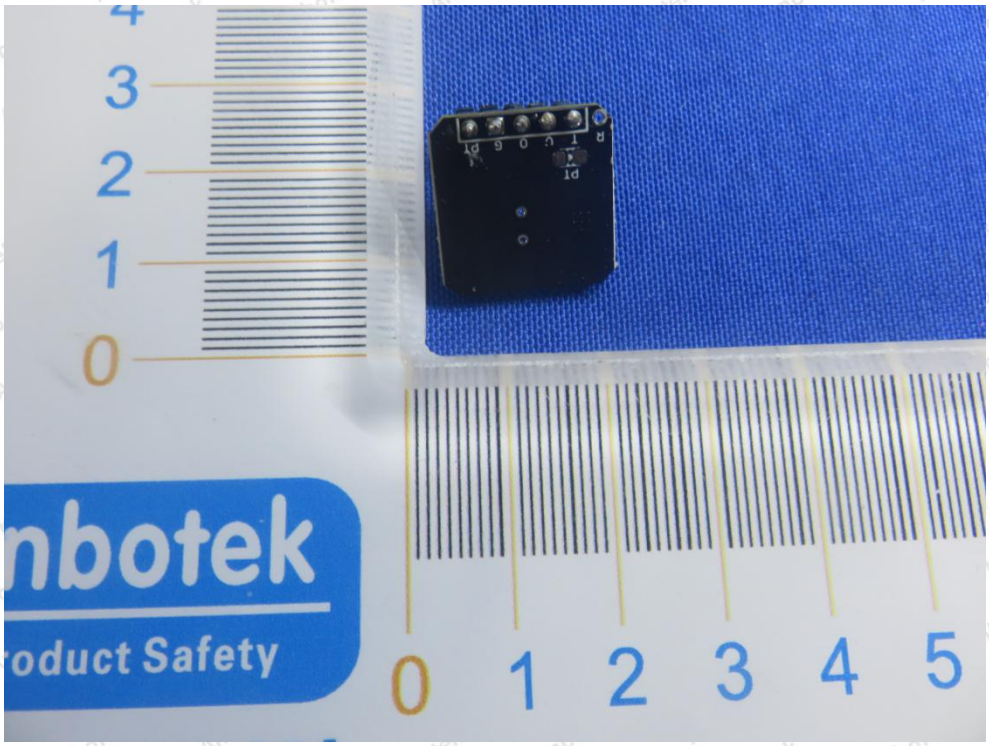





Anbotek
Product Safety




Anbotek
Product Safety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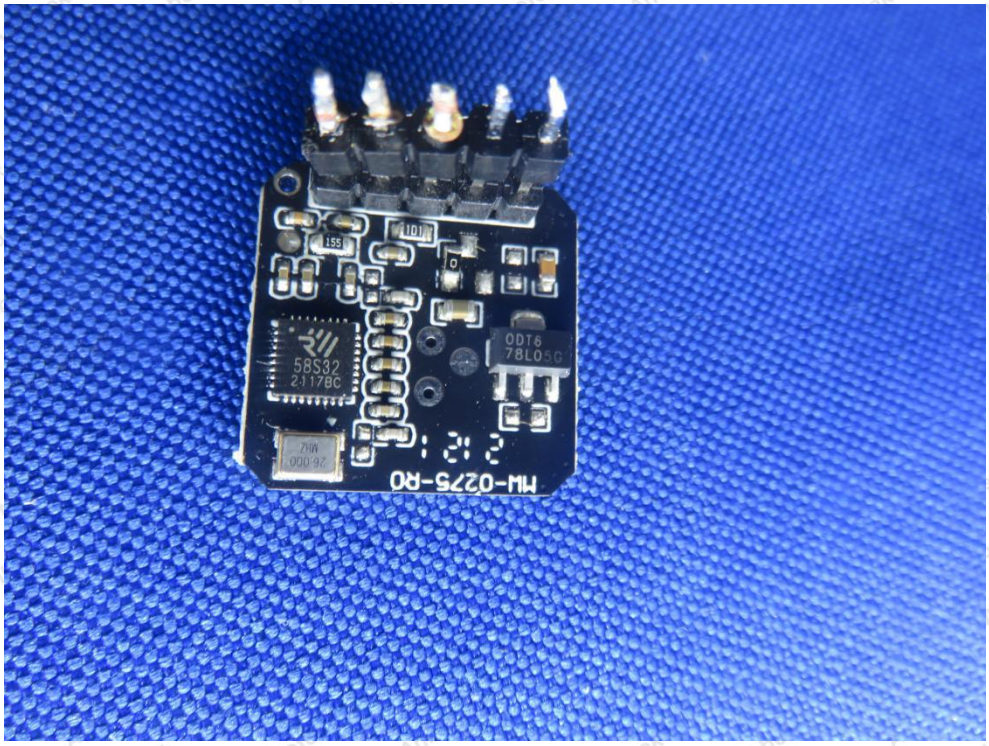

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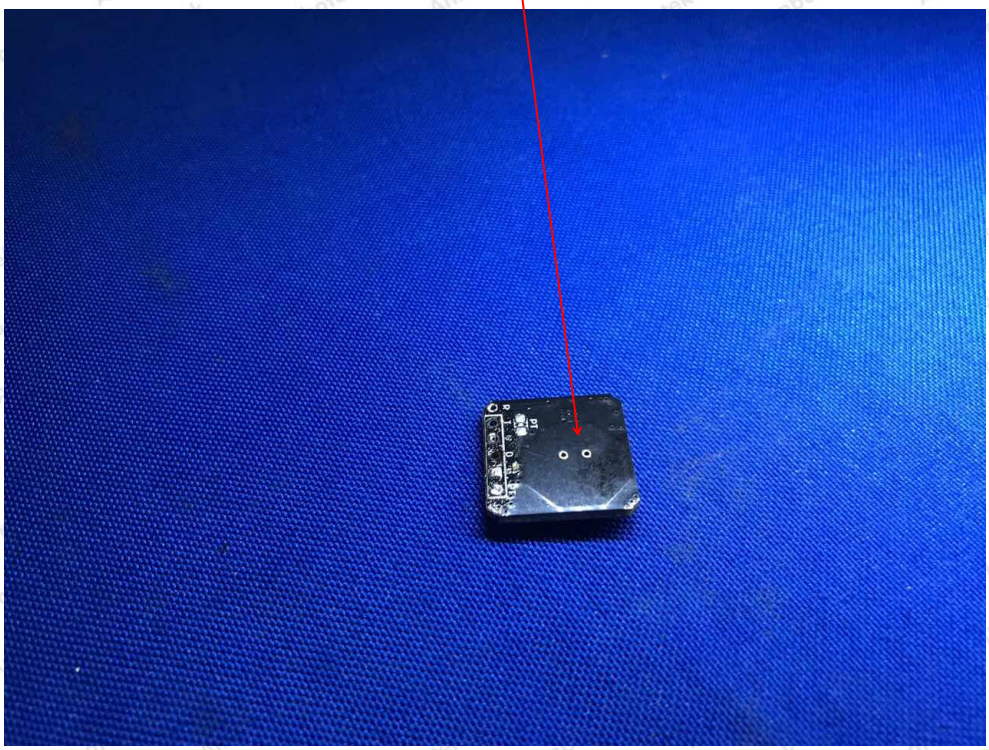

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