FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

TCL Technoly Electronics (Huizhou) Co.,Ltd

Levitation Bluetooth Speaker
（Mars Base）

Model Number: L141

FCC ID: ZVAPS000020

Prepared for : TCL Technoly Electronics (Huizhou) Co.,Ltd
Section 37, Zhongkai High-tech Development Zone,
Huizhou City, Guang Dong Province, China, 516006

Prepared By : EST Technology Co., Ltd.
Santun(guantai Road), Houjie Town, DongGuan City,
GuangDong, China.

Tel: 86-769-83081888-808

Report Number: ESTE-R1509028
Date of Test : August 15~ September 09,2015
Date of Report: September 11,2015

TABLE OF CONTENTS

Test Report Verification

Applicant: **Address:**	TCL Technoly Electronics (Huizhou) Co.,Ltd Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province, China, 516006		
Manufacturer **Address:**	Crazybaby Inc. 175 South Main Suite,500 Salt Lake City,UT 84111,United States.		
E.U.T:	Levitation Bluetooth Speaker		
Model Number:	L141		
Power Supply:	DC 7.4V From Internal Battery DC 12V From Adapter Input AC 100~240V-50/60Hz		
Test Voltage:	AC 120V/240V		
Trade Name:	Mars by crazybaby	Serial No.:	------
Date of Receipt:	August 11, 2015	Date of Test:	August 15~ September 09,2015
Test Specification:	FCC Rules and Regulations Part 15 Subpart C:2014 ANSI C63.10:2013		
Test Result:	The device described above is tested by EST Technology Co., Ltd.. The measurement results were contained in this test report and EST Technology Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the FCC Rules and Regulations Part 15 Subpart C requirements. This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd. Date: September 11,2015		

Prepared by:	Tested by:	Approved by:
Ada / Assistant	Tony.Tang/ Engineer	IcemanHu / Manager

Other Aspects:

None.

Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested

This test report is based on a single evaluation of one sample of above mentioned products ,It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Product Name : Levitation Bluetooth Speaker

Model Number : L141

FCC ID : ZVAPS000020

Operation frequency : 5730-5824 MHz

Number of channel : 48

Antenna : Integrated antenna, 3.05 dBi gain

Modulation : GFSK

2. SUMMARY OF TEST

2.1. Summary of test result

Description of Test Item	Standard	Results
Power Line Conducted Emissions	FCC Part 15C: 15.207 ANSI C63.10-2013	PASS
Radiated Emission Test	FCC Part 15C: 15.209 FCC Part 15C: 15.249 ANSI C63.10-2013	PASS
20 dB Bandwidth Test	FCC Part 15: 15.249 ANSI C63.10-2013	PASS
Band Edge Compliance Test	FCC Part 15: 15.215 ANSI C63.10-2013	PASS
Antenna requirement	FCC Part 15: 15.203	PASS

2.2. Test Facilities

EMC Lab : Certificated by CNAL, CHINA
Registration No.: L5288
Date of registration: Nov 23, 2014

Certificated by FCC, USA
Registration No.: 989591
Date of registration: November 20, 2013

Certificated by Industry Canada
Registration No.: 9405A-1
Date of registration: January 03, 2013

Certificated by VCCI, Japan
Registration No.: R-3663 & C-4103
Date of registration: July 25, 2011

Certificated by TUV Rheinland, Germany
Registration No.: UA 50195514 0001
Date of registration: January 07, 2011

Certificated by TUV/PS, Shenzhen
Registration No.: SCN1017
Date of registration: January 27, 2011

Certificated by Intertek ETL SEMKO
Registration No.: 2011-RTL-L1-18
Date of registration: April 28, 2011

Certificated by Siemic, Inc.
Registration No.: SLCN021
Date of registration: November 8, 2011

Certificated by Nemko, Hong Kong
Registration No.: 175193
Date of registration: May 4, 2011

Name of Firm : EST Technology Co., Ltd.

Site Location : San Tun Management Zone, Houjie District, Dongguan, Guangdong, China

2.3. Measurement uncertainty

Test Item	Uncertainty
Uncertainty for Conduction emission test	2.54dB
Uncertainty for Radiation Emission test (30MHz-1GHz)	3.62
Uncertainty for Radiation Emission test (1GHz to 18GHz)	4.86
Uncertainty for radio frequency	7×10-8
Uncertainty for conducted RF Power	0.20dB
Uncertainty for Power density test	0.26dB

Note：This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

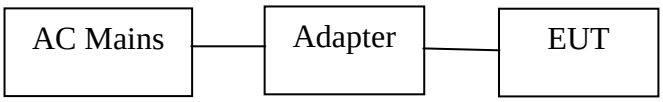
2.4. Assistant equipment used for test

2.4.1. Adapter

M / N : 1MUA120200A
Manufacturer : TCL Technoly Electronics (Huizhou) Co.,Ltd
INPUT : AC 100~240V-50/60Hz, 1.0A Max.
OUTPUT : DC 12.0V, 2.0A

2.5. Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 (or 1.5) meter high above ground. EUT was be set into BT test mode by software before test.



(EUT: Levitation Bluetooth Speaker)

2.6. Test mode

The test software was used to control EUT work in Continuous TX mode, and select test channel, wireless mode

Mode	Channel	Frequency
TX	Low	5730MHz
	Middle	5776MHz
	High	5824MHz

2.7. Channel List for GFSK

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	5730	2	5732	3	5734	4	5736
5	5738	6	5740	7	5742	8	5744
9	5746	10	5748	11	5750	12	5752
13	5754	14	5756	15	5758	16	5760
17	5762	18	5764	19	5766	20	5768
21	5770	22	5772	23	5774	24	5776
25	5778	26	5780	27	5782	28	5784
29	5786	30	5788	31	5790	32	5792
33	5794	34	5796	35	5798	36	5800
37	5802	38	5804	39	5806	40	5808
41	5810	42	5812	43	5814	44	5816
45	5818	46	5820	47	5822	48	5824

2.8. Test Equipment

2.8.1. For conducted emission test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESHS30	832354	June,28,15	1 Year
Artificial Mains Networ	Rohde & Schwarz	ENV216	101260	June,28,15	1 Year
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	101100	June,28,15	1 Year

2.8.2. For radiated emission test(30-1000MHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESVS10	100004	June,28,15	1 Year
Spectrum Analyzer	Agilent	E4411B	MY50140697	June,28,15	1 Year
Bilog Antenna	Teseq	CBL 6111D	27090	June,28,15	1 Year
Signal Amplifier	Agilent	310N	187037	June,28,15	1 Year

2.8.3. For radiated emission test(above 1GHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA9120D1002	June,28,15	1 Year
Signal Amplifier	SCHWARZBECK	BBV9718	9718-212	June,28,15	1 Year
Spectrum Analyzer	Agilent	E4408B	MY44211139	June,28,15	1 Year

3. POWER LINE CONDUCTED EMISSION TEST

3.1. Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.2. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#). This provides a 50 ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs). The 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 ANSI C63.10: 2013 on Conducted Emission Test.

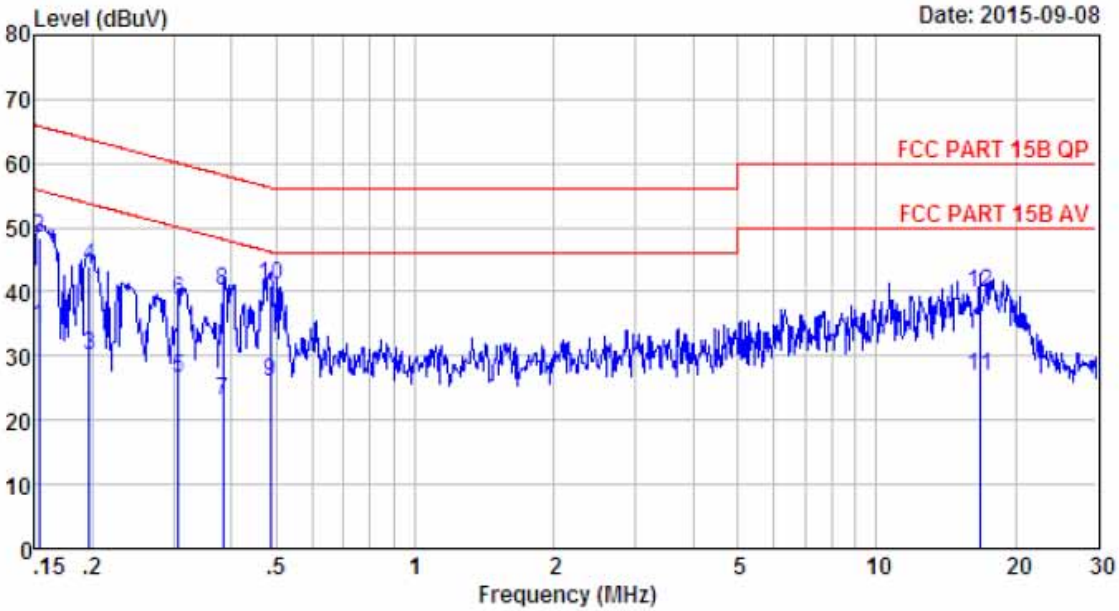
The bandwidth of test receiver (R & S ESHS30) is set at 10kHz.

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

3.3. Test Result

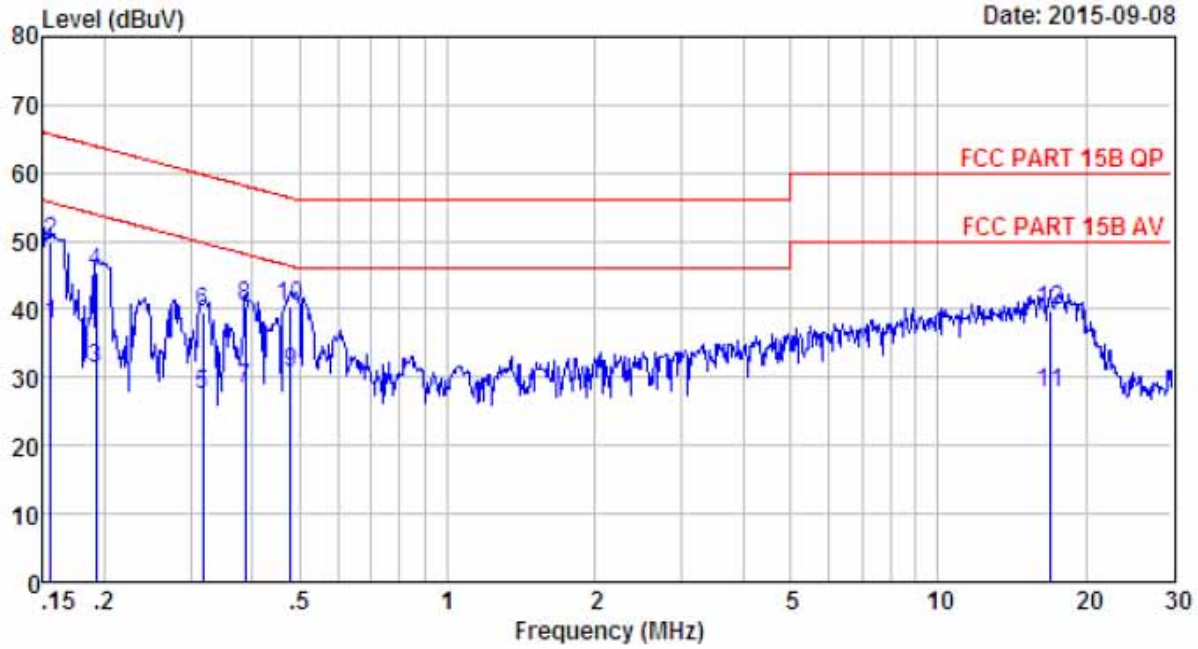
PASS. (The testing data was attached in the next pages.)

3.4. Test Data



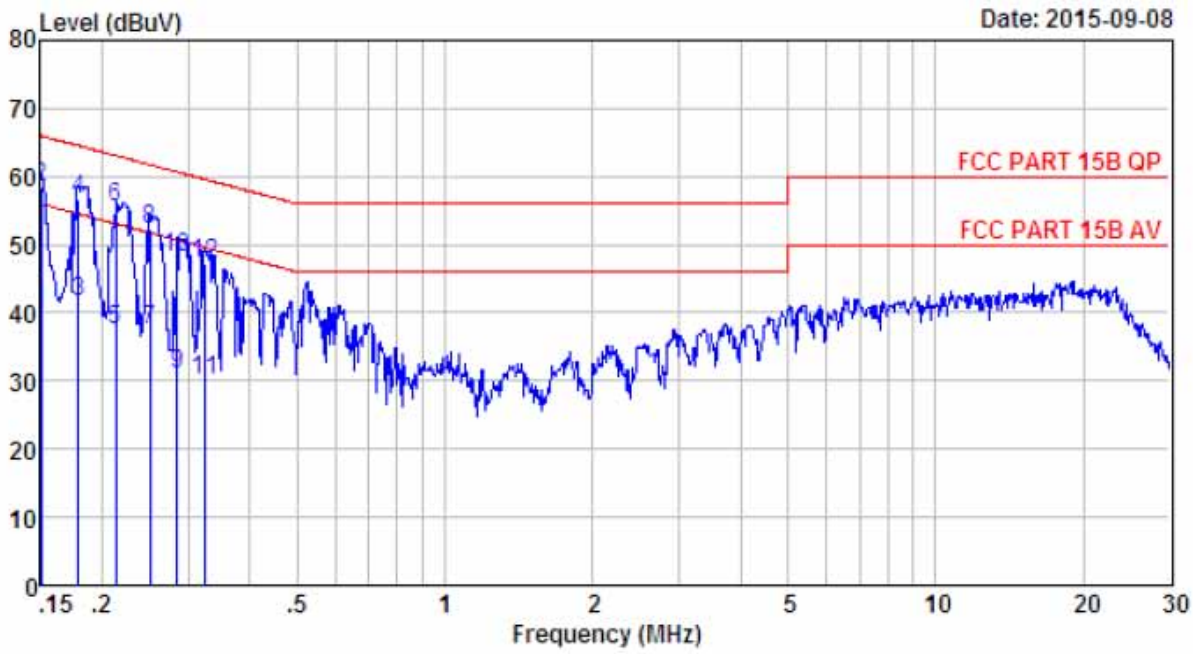
Site no : 844 Shield Room
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa NEUTRAL
Limit : FCC PART 15B QP
Engineer : Tony
EUT : Levitation Bluetooth Speaker
Power : DC 12V From Adapter Input AC 120V/60Hz
M/N : L141
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv)	Limits (dBuv)	Margin (dB)	Remark
1	0.15	9.47	9.81	15.19	34.47	55.82	21.35	Average
2	0.15	9.47	9.81	29.19	48.47	65.82	17.35	QP
3	0.20	9.59	9.80	10.70	30.09	53.76	23.67	Average
4	0.20	9.59	9.80	24.70	44.09	63.76	19.67	QP
5	0.31	9.60	9.83	7.14	26.57	50.06	23.49	Average
6	0.31	9.60	9.83	19.14	38.57	60.06	21.49	QP
7	0.38	9.59	9.82	3.71	23.12	48.21	25.09	Average
8	0.38	9.59	9.82	20.71	40.12	58.21	18.09	QP
9	0.49	9.59	9.81	6.65	26.05	46.23	20.18	Average
10	0.49	9.59	9.81	21.65	41.05	56.23	15.18	QP
11	16.75	9.75	9.94	7.13	26.82	50.00	23.18	Average
12	16.75	9.75	9.94	20.13	39.82	60.00	20.18	QP



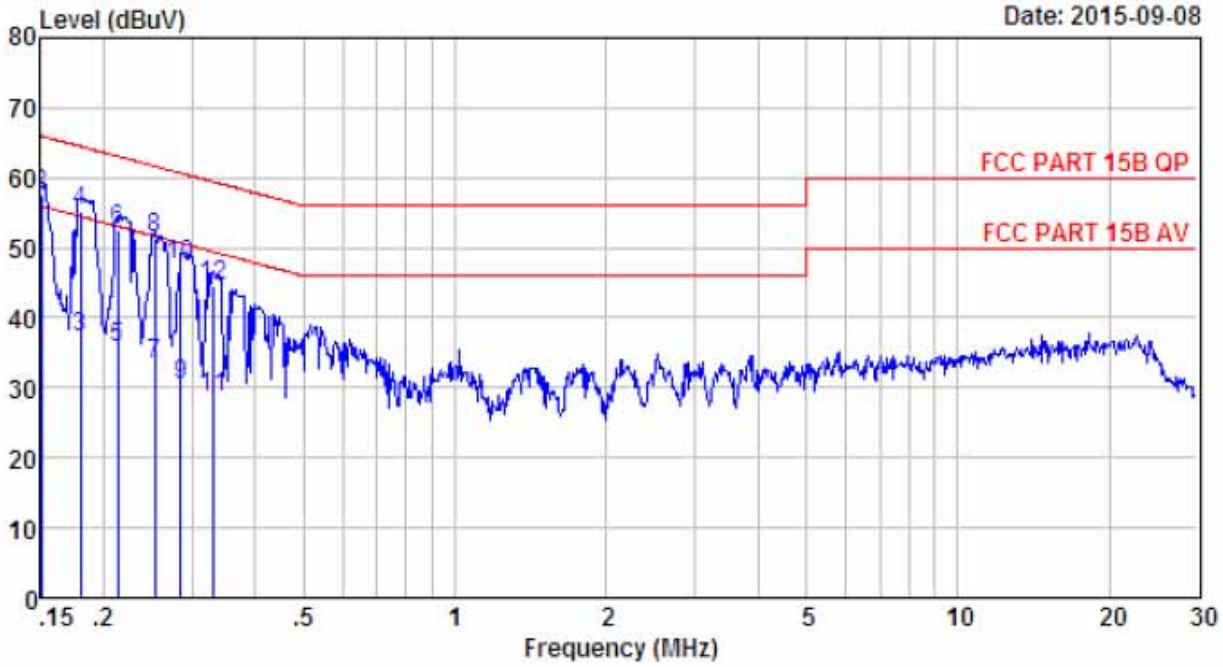
Site no : 844 Shield Room
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa LINE
Limit : FCC PART 15B QP
Engineer : Tony
EUT : Levitation Bluetooth Speaker
Power : DC 12V From Adapter Input AC 120V/60Hz
M/N : L141
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv)	Limits (dBuv)	Margin (dB)	Remark
1	0.16	9.61	9.81	18.51	37.93	55.69	17.76	Average
2	0.16	9.61	9.81	30.51	49.93	65.69	15.76	QP
3	0.19	9.61	9.80	12.01	31.42	53.93	22.51	Average
4	0.19	9.61	9.80	26.01	45.42	63.93	18.51	QP
5	0.32	9.61	9.83	7.98	27.42	49.80	22.38	Average
6	0.32	9.61	9.83	19.98	39.42	59.80	20.38	QP
7	0.39	9.61	9.82	8.89	28.32	48.12	19.80	Average
8	0.39	9.61	9.82	20.89	40.32	58.12	17.80	QP
9	0.48	9.61	9.81	11.16	30.58	46.36	15.78	Average
10	0.48	9.61	9.81	21.16	40.58	56.36	15.78	QP
11	16.93	9.70	9.94	8.24	27.88	50.00	22.12	Average
12	16.93	9.70	9.94	20.24	39.88	60.00	20.12	QP



Site no : 844 Shield Room
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa LINE
Limit : FCC PART 15B QP
Engineer : Tony
EUT : Levitation Bluetooth Speaker
Power : DC 12V From Adapter Input AC 240V/60Hz
M/N : L141
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv)	Limits (dBuv)	Margin (dB)	Remark
1	0.15	9.61	9.81	21.05	40.47	56.00	15.53	Average
2	0.15	9.61	9.81	39.05	58.47	66.00	7.53	QP
3	0.18	9.61	9.80	22.25	41.66	54.55	12.89	Average
4	0.18	9.61	9.80	37.25	56.66	64.55	7.89	QP
5	0.21	9.61	9.80	18.00	37.41	53.10	15.69	Average
6	0.21	9.61	9.80	36.00	55.41	63.10	7.69	QP
7	0.25	9.61	9.82	17.96	37.39	51.73	14.34	Average
8	0.25	9.61	9.82	32.96	52.39	61.73	9.34	QP
9	0.28	9.61	9.83	11.56	31.00	50.68	19.68	Average
10	0.28	9.61	9.83	28.56	48.00	60.68	12.68	QP
11	0.32	9.61	9.83	10.80	30.24	49.62	19.38	Average
12	0.32	9.61	9.83	27.80	47.24	59.62	12.38	QP



Site no : 844 Shield Room
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa NEUTRAL
Limit : FCC PART 15B QP
Engineer : Tony
EUT : Levitation Bluetooth Speaker
Power : DC 12V From Adapter Input AC 240V/60Hz
M/N : L141
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv)	Limits (dBuv)	Margin (dB)	Remark
1	0.15	9.46	9.81	19.17	38.44	56.00	17.56	Average
2	0.15	9.46	9.81	38.17	57.44	66.00	8.56	QP
3	0.18	9.55	9.80	17.87	37.22	54.50	17.28	Average
4	0.18	9.55	9.80	35.87	55.22	64.50	9.28	QP
5	0.21	9.60	9.80	16.27	35.67	53.10	17.43	Average
6	0.21	9.60	9.80	33.27	52.67	63.10	10.43	QP
7	0.25	9.60	9.82	13.84	33.26	51.64	18.38	Average
8	0.25	9.60	9.82	31.84	51.26	61.64	10.38	QP
9	0.28	9.60	9.83	11.00	30.43	50.68	20.25	Average
10	0.28	9.60	9.83	28.00	47.43	60.68	13.25	QP
11	0.33	9.59	9.83	9.23	28.65	49.44	20.79	Average
12	0.33	9.59	9.83	25.23	44.65	59.44	14.79	QP

4. RADIATED EMISSIONS

4.1. Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

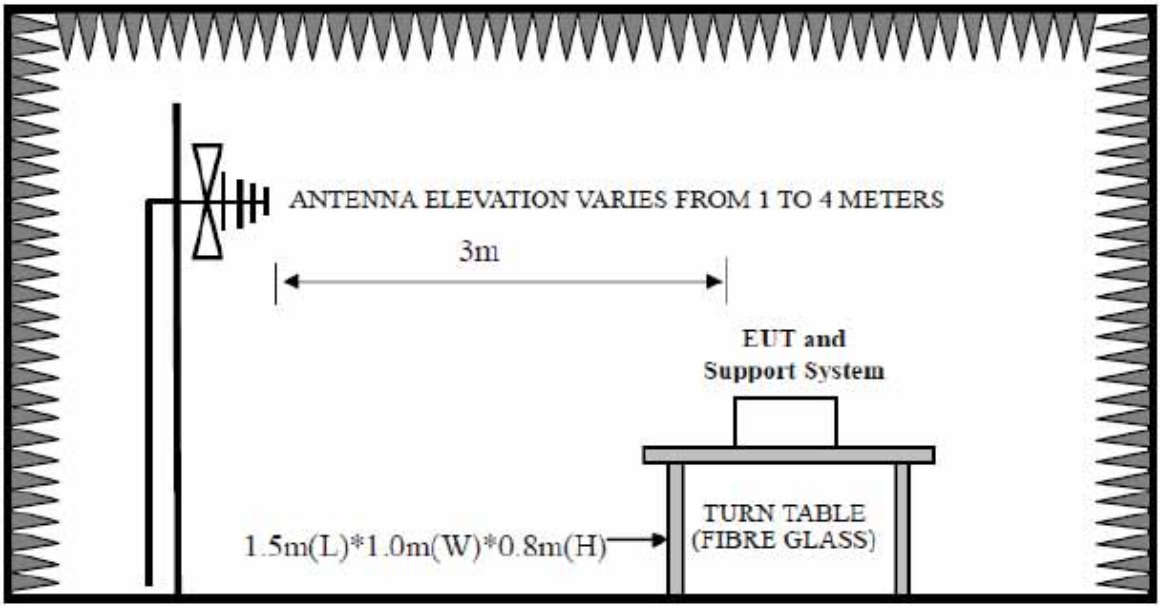
Remark：(1) Emission level dBμV = 20 log Emission level μV/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

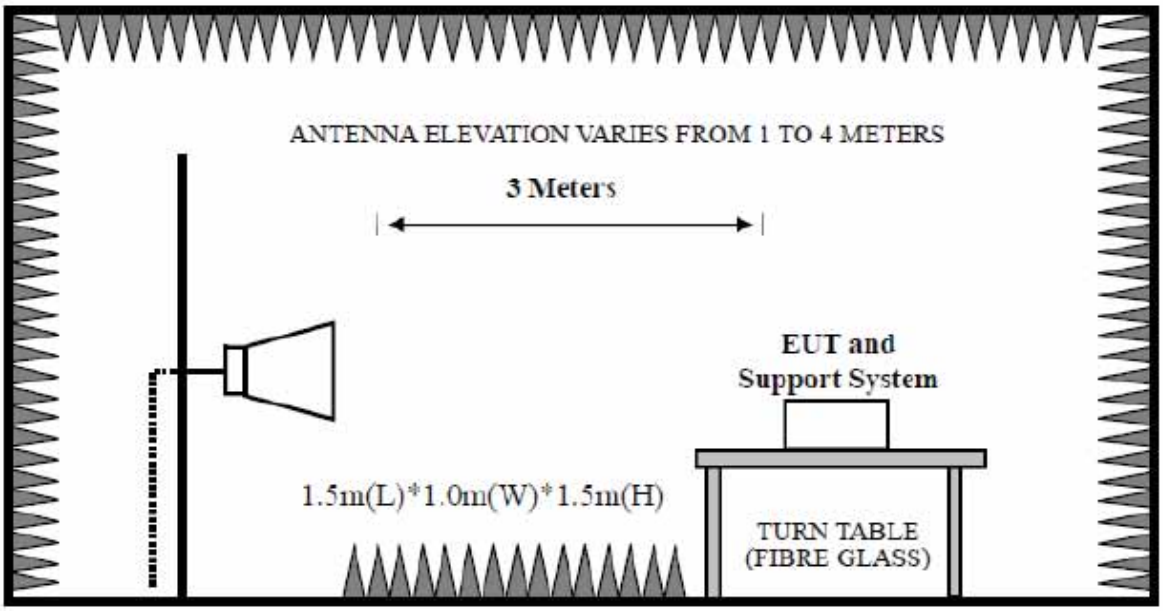
(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system

4.2. Block Diagram of Test setup

30~1000MHz



Above 1GHz



4.3. Test Procedure

EUT was placed on a turn table, which is 0.8 meter high above ground for 30~1000MHz test, and which is 1.5 meter high above ground for above 1GHz test. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. 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 between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 1MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

PEAK detector, 1MHz/1MHz for PAEK measurement,
PEAK detector, 1MHz/10Hz for Average measurement

The frequency range from 30MHz to 10th harmonic (40GHz) are checked. and no any emissions were found from 18GHz to 40 GHz, So the radiated emissions from 18GHz to 40GHz were not record.

4.4. Test Result

PASS.

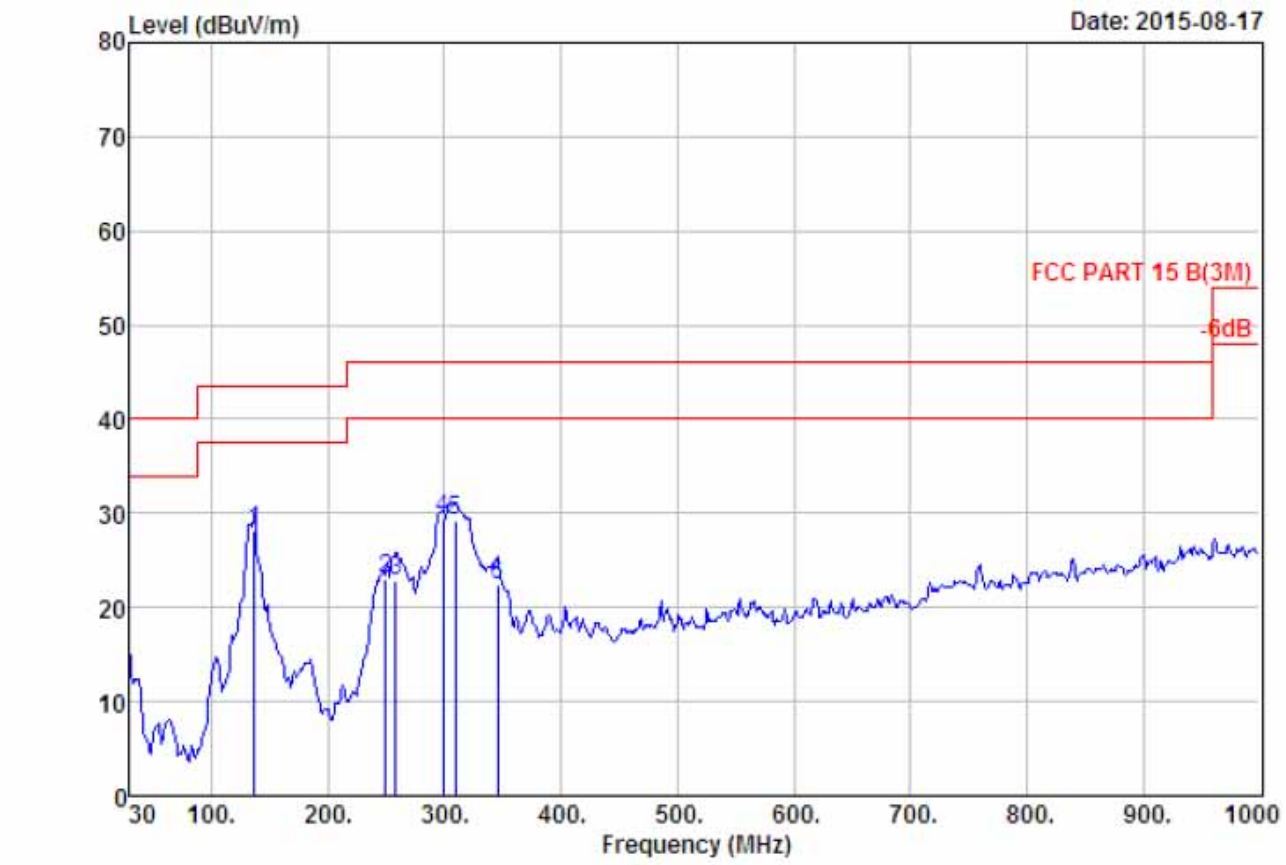
All the emissions from 30MHz to 40 GHz were comply with 15.209 limits.

Note: 1、For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.

2、The frequency 5730MHz 、5776MHz and 5824MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

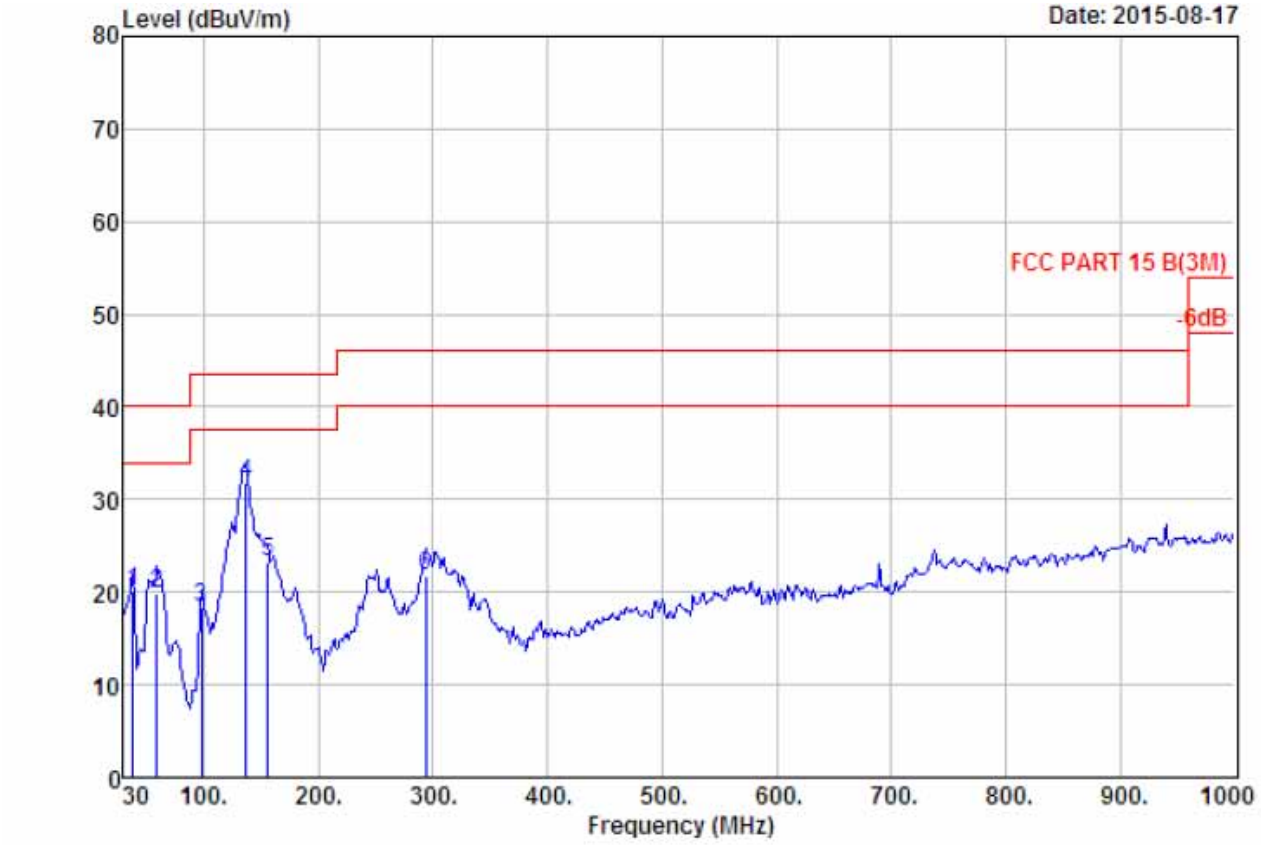
4.5. Test Data

30 MHz – 1000 MHz



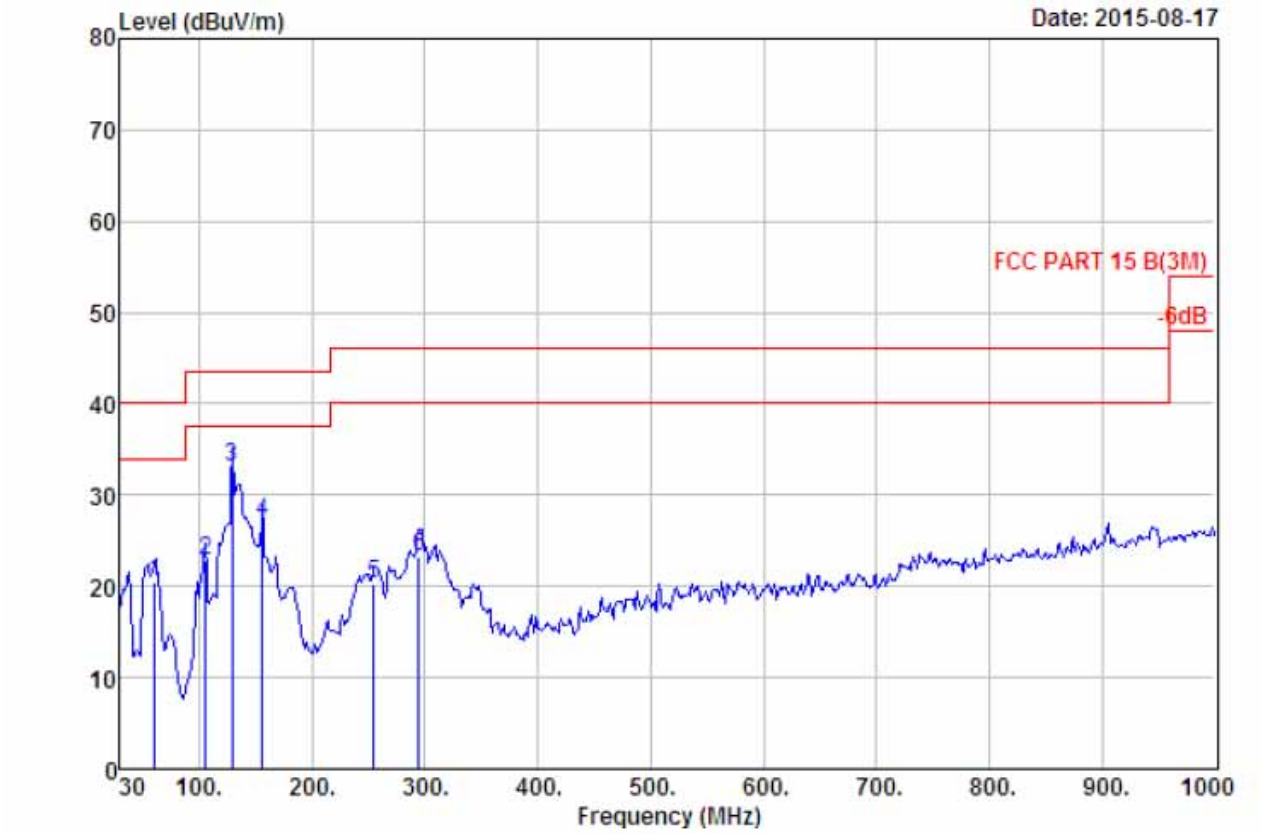
Site no. : 966 1# chamber Data no. : 27
Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 B(3M)
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Levitation Bluetooth Speaker
Power : DC 12V From Adapter Input AC 120V/60Hz
M/N : L141
Test Mode : GFSK TX 5730MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	136.70	11.39	1.57	15.11	28.07	43.50	15.43	QP
2	249.22	11.67	2.12	9.15	22.94	46.00	23.06	QP
3	257.95	12.75	2.19	7.94	22.88	46.00	23.12	QP
4	298.69	13.00	2.40	13.95	29.35	46.00	16.65	QP
5	309.36	13.18	2.36	13.66	29.20	46.00	16.80	QP
6	345.25	14.32	2.54	5.45	22.31	46.00	23.69	QP



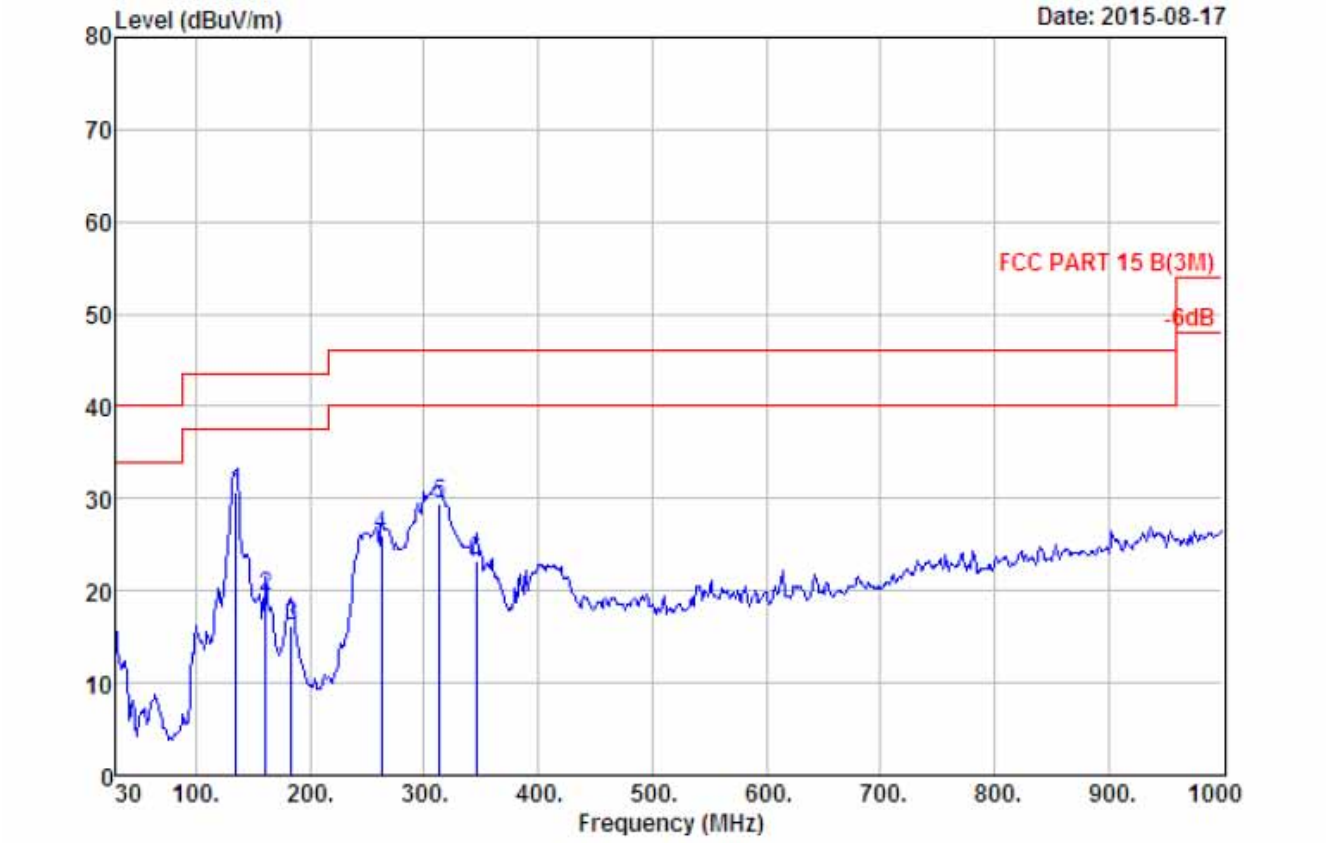

```
Site no.        : 966 1# chamber              Data no.  : 28
Dis. / Ant.     : 3m   27137                  Ant. pol. : VERTICAL
Limit           : FCC PART 15 B(3M)
Env. / Ins.     : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer        : Tony
EUT             : Levitation Bluetooth Speaker
Power           : DC 12V From Adapter Input AC 120V/60Hz
M/N             : L141
Test Mode       : GFSK TX 5730MHz
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	37.76	14.05	0.79	5.24	20.08	40.00	19.92	QP
2	59.10	4.80	1.00	14.00	19.80	40.00	20.20	QP
3	97.90	9.13	1.33	7.85	18.31	43.50	25.19	QP
4	136.70	11.39	1.57	18.91	31.87	43.50	11.63	QP
5	156.10	10.61	1.67	10.88	23.16	43.50	20.34	QP
6	293.84	12.92	2.33	6.46	21.71	46.00	24.29	QP



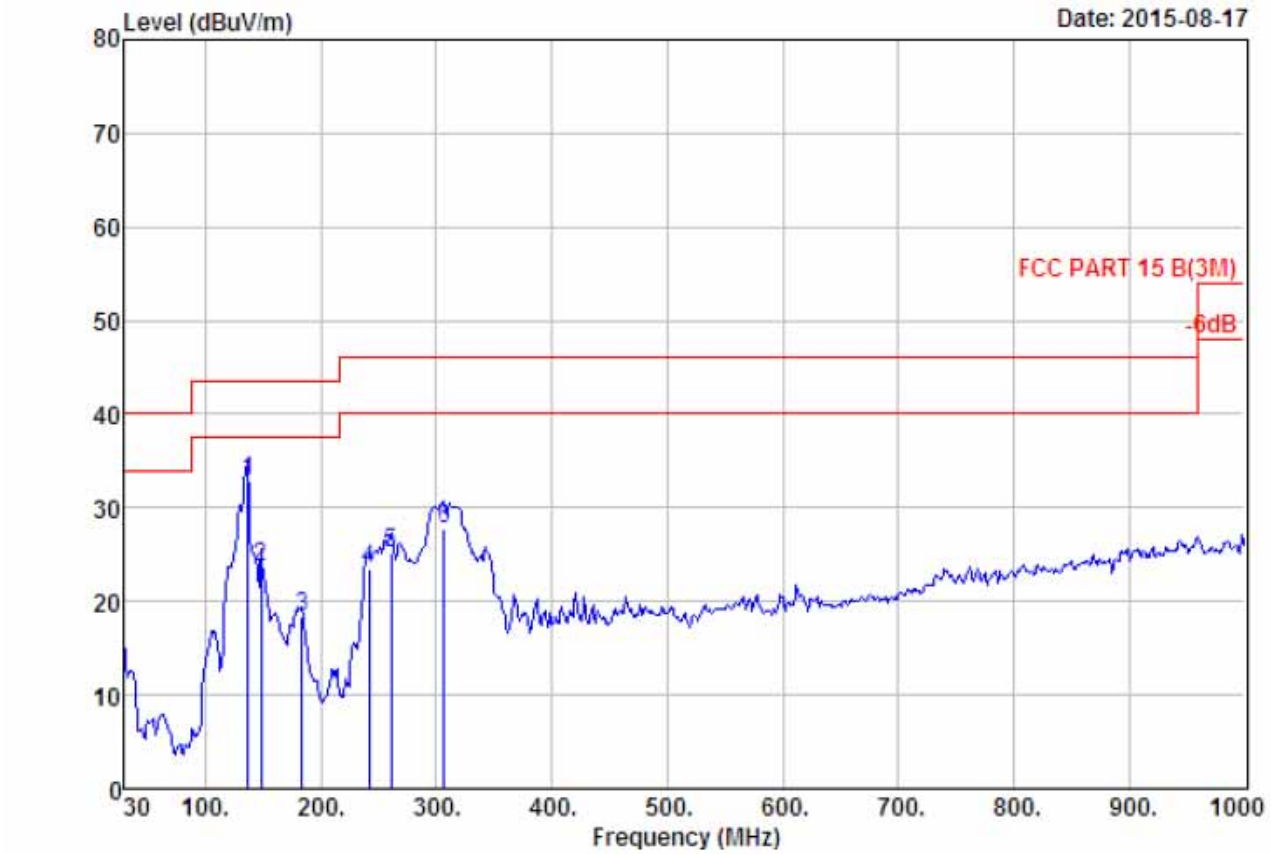

```
Site no.        : 966 1# chamber              Data no.   : 29
Dis. / Ant.     : 3m   27137                  Ant. pol.  : VERTICAL
Limit           : FCC PART 15 B(3M)
Env. / Ins.     : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer        : Tony
EUT             : Levitation Bluetooth Speaker
Power           : DC 12V From Adapter Input AC 120V/60Hz
M/N             : L141
Test Mode       : GFSK TX 5776MHz
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	61.04	4.74	0.94	14.85	20.53	40.00	19.47	QP
2	105.66	10.05	1.41	11.36	22.82	43.50	20.68	QP
3	128.94	11.33	1.47	20.36	33.16	43.50	10.34	QP
4	156.10	10.61	1.67	14.72	27.00	43.50	16.50	QP
5	255.04	12.41	2.13	5.74	20.28	46.00	25.72	QP
6	294.81	12.97	2.31	7.92	23.20	46.00	22.80	QP



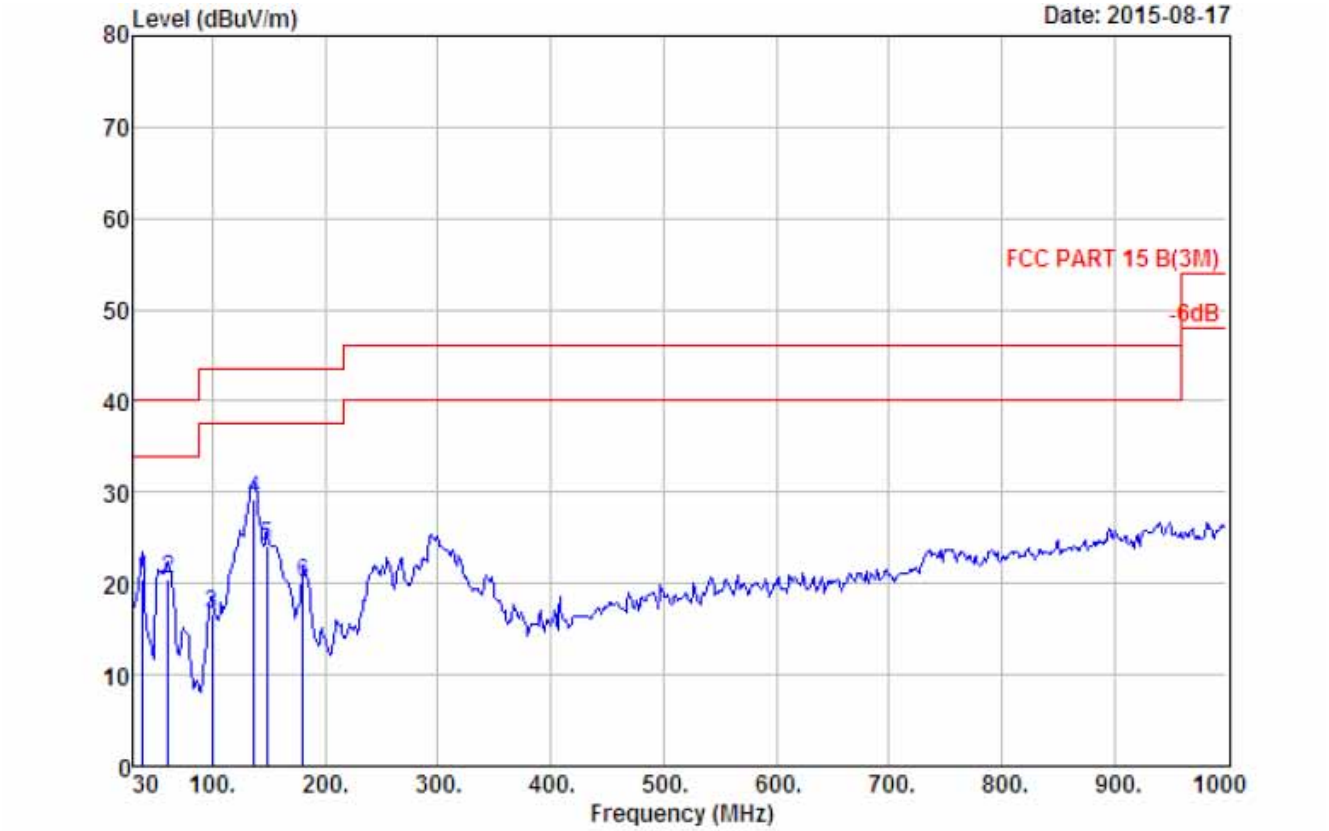
Site no. : 966 1# chamber Data no. : 30
Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 B(3M)
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Levitation Bluetooth Speaker
Power : DC 12V From Adapter Input AC 120V/60Hz
M/N : L141
Test Mode : GFSK TX 5776MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	134.76	11.37	1.57	17.77	30.71	43.50	12.79	QP
2	160.95	10.24	1.70	7.53	19.47	43.50	24.03	QP
3	183.26	8.67	1.69	5.85	16.21	43.50	27.29	QP
4	262.80	12.95	2.22	10.88	26.05	46.00	19.95	QP
5	313.24	13.31	2.44	13.67	29.42	46.00	16.58	QP
6	345.25	14.32	2.54	6.30	23.16	46.00	22.84	QP




```
Site no.        : 966 1# chamber              Data no.  : 31
Dis. / Ant.     : 3m   27137                  Ant. pol. : HORIZONTAL
Limit           : FCC PART 15 B(3M)
Env. / Ins.     : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer        : Tony
EUT             : Levitation Bluetooth Speaker
Power           : DC 12V From Adapter Input AC 120V/60Hz
M/N             : L141
Test Mode       : GFSK TX 5824MHz
```

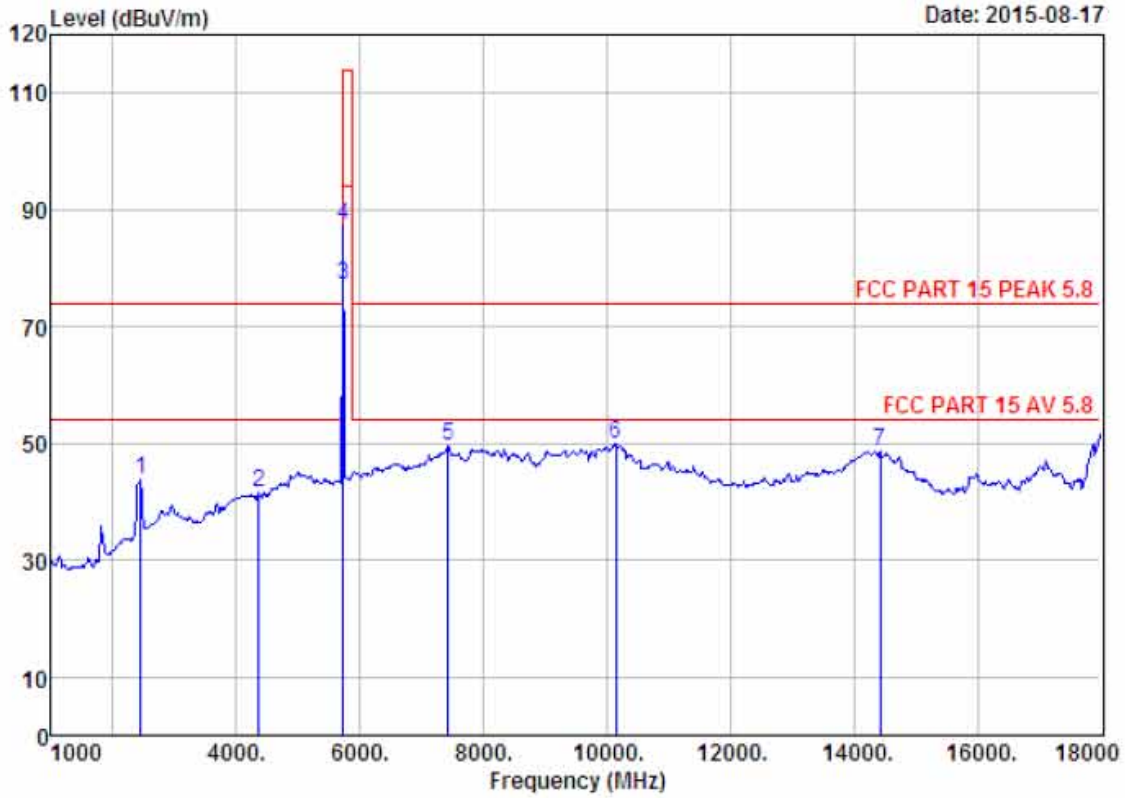
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	136.70	11.39	1.57	19.95	32.91	43.50	10.59	QP
2	148.34	11.00	1.69	10.96	23.65	43.50	19.85	QP
3	183.26	8.67	1.69	8.03	18.39	43.50	25.11	QP
4	241.46	10.50	2.14	10.82	23.46	46.00	22.54	QP
5	260.86	12.96	2.22	10.07	25.25	46.00	20.75	QP
6	306.45	13.13	2.35	12.19	27.67	46.00	18.33	QP



Site no. : 966 1# chamber Data no. : 32
Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
Limit : FCC PART 15 B(3M)
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Levitation Bluetooth Speaker
Power : DC 12V From Adapter Input AC 120V/60Hz
M/N : L141
Test Mode : GFSK TX 5824MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	37.76	14.05	0.79	5.63	20.47	40.00	19.53	QP
2	61.04	4.74	0.94	14.73	20.41	40.00	19.59	QP
3	99.84	9.45	1.34	5.83	16.62	43.50	26.88	QP
4	136.70	11.39	1.57	16.19	29.15	43.50	14.35	QP
5	148.34	11.00	1.69	11.33	24.02	43.50	19.48	QP
6	180.35	8.95	1.70	9.33	19.98	43.50	23.52	QP

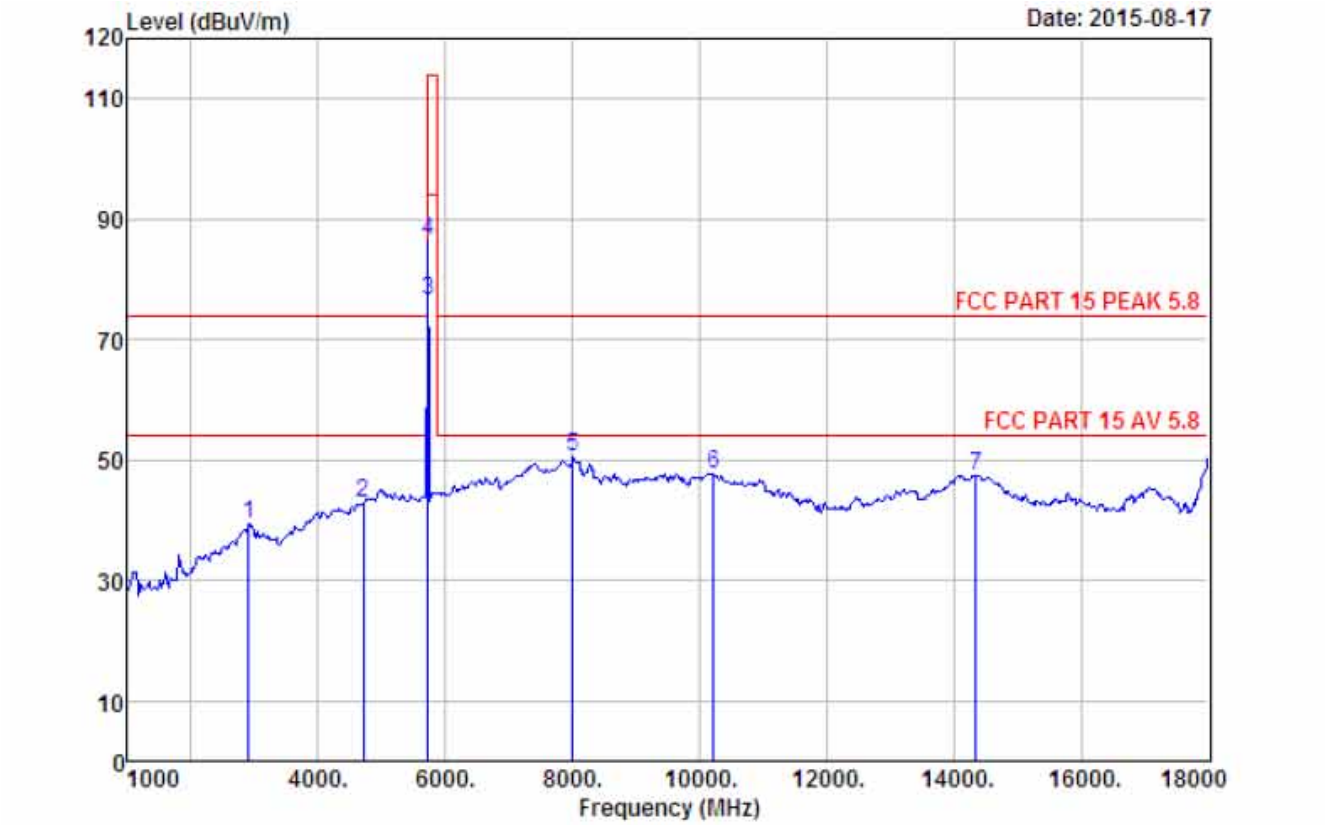
1000-18000MHz



Site no. : 1# 966 chamber Data no. : 95
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 5.8
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Levitation Bluetooth Speaker
Power : DC 12V From Adapter Input AC 120V/60Hz
M/N : L141
Test Mode : GFSK TX 5730MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2445.00	27.59	6.67	34.09	43.59	43.76	74.00	30.24	Peak
2	4366.00	30.30	10.55	31.88	32.65	41.62	74.00	32.38	Peak
3	5730.00	32.27	12.05	32.54	65.35	77.13	94.00	16.87	Average
4	5730.00	32.27	12.05	32.54	75.60	87.38	114.00	26.62	Peak
5	7426.00	36.56	11.60	31.95	33.46	49.67	74.00	24.33	Peak
6	10146.00	38.36	11.51	32.05	32.00	49.82	74.00	24.18	Peak
7	14430.00	41.82	10.93	32.84	28.86	48.77	74.00	25.23	Peak

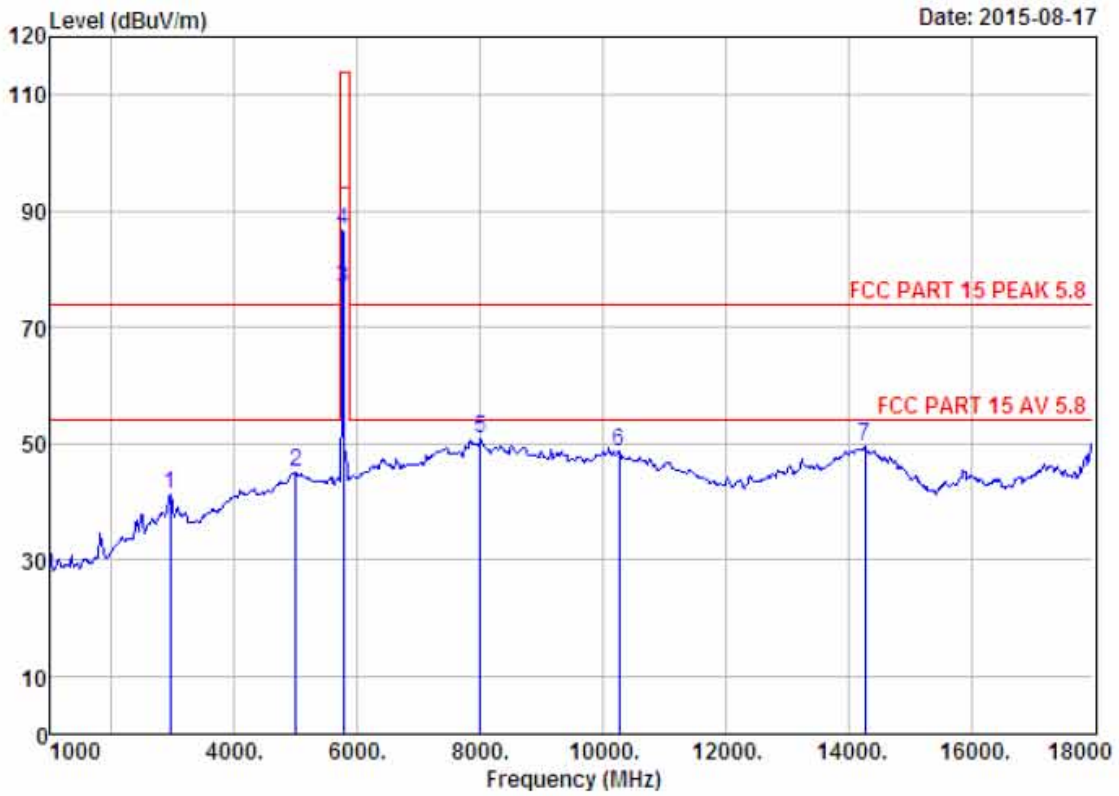
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 1# 966 chamber Data no. : 96
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 5.8
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Levitation Bluetooth Speaker
Power : DC 12V From Adapter Input AC 120V/60Hz
M/N : L141
Test Mode : GFSK TX 5730MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2904.00	28.01	8.59	33.66	36.32	39.26	74.00	34.74	Peak
2	4706.00	31.09	11.32	31.75	32.07	42.73	74.00	31.27	Peak
3	5730.00	32.27	12.05	32.54	64.77	76.55	94.00	17.45	Average
4	5730.00	32.27	12.05	32.54	74.61	86.39	114.00	27.61	Peak
5	8004.00	37.01	11.40	31.22	33.42	50.61	74.00	23.39	Peak
6	10214.00	38.48	11.47	32.17	29.87	47.65	74.00	26.35	Peak
7	14345.00	41.76	10.92	32.93	27.70	47.45	74.00	26.55	Peak

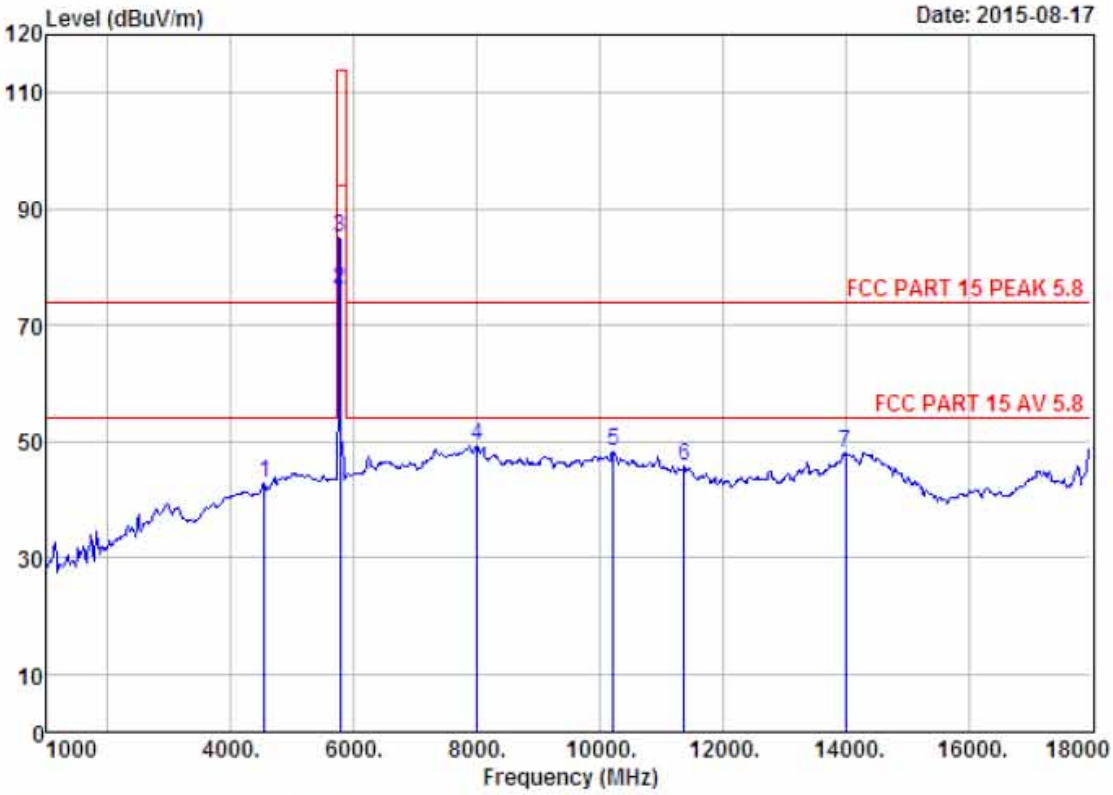
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 1# 966 chamber Data no. : 99
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 5.8
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Levitation Bluetooth Speaker
Power : DC 12V From Adapter Input AC 120V/60Hz
M/N : L141
Test Mode : GFSK TX 5776MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2955.00	28.12	8.82	33.61	38.03	41.36	74.00	32.64	Peak
2	4995.00	31.54	12.59	32.00	32.84	44.97	74.00	29.03	Peak
3	5776.00	32.33	12.06	32.49	65.03	76.93	94.00	17.07	Average
4	5776.00	32.33	12.06	32.49	74.93	86.83	114.00	27.17	Peak
5	8004.00	37.01	11.40	31.22	33.69	50.88	74.00	23.12	Peak
6	10265.00	38.56	11.44	32.27	31.01	48.74	74.00	25.26	Peak
7	14277.00	41.70	10.92	33.14	30.20	49.68	74.00	24.32	Peak

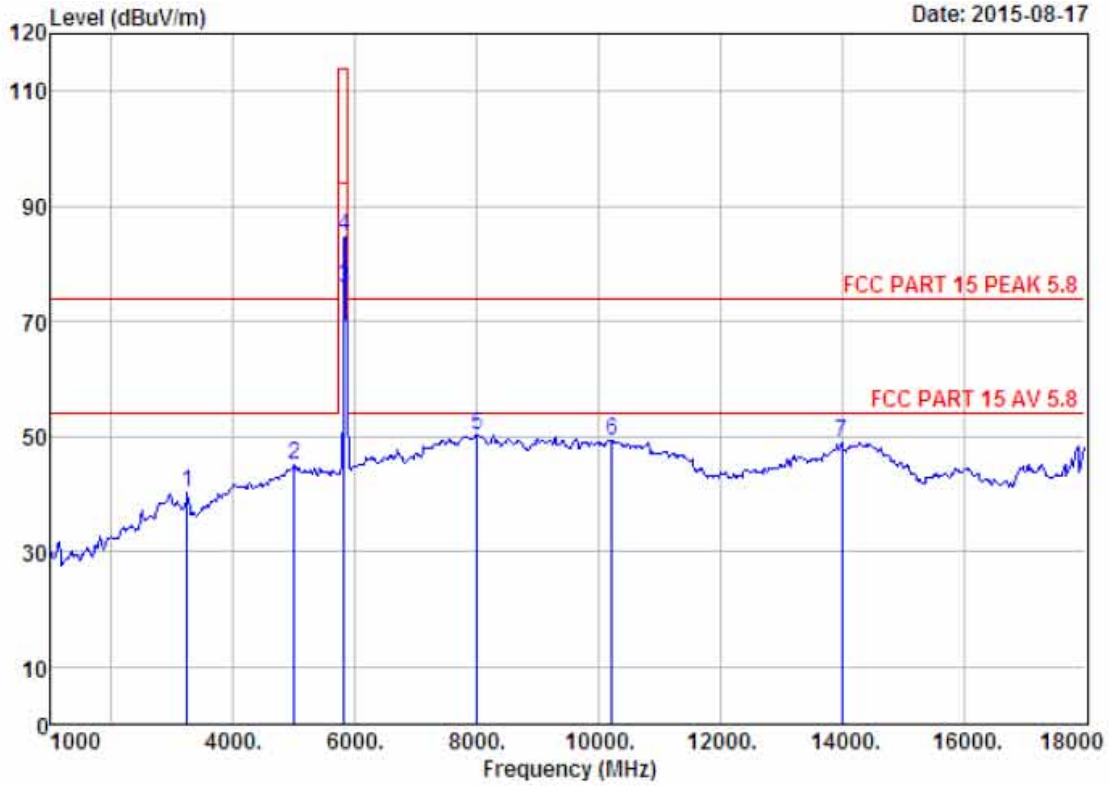
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 1# 966 chamber Data no. : 100
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 5.8
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Levitation Bluetooth Speaker
Power : DC 12V From Adapter Input AC 120V/60Hz
M/N : L141
Test Mode : GFSK TX 5776MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4536.00	30.67	10.57	31.74	33.36	42.86	74.00	31.14	Peak
2	5776.00	32.33	12.06	32.49	64.33	76.23	94.00	17.77	Average
3	5776.00	32.33	12.06	32.49	73.27	85.17	114.00	28.83	Peak
4	8004.00	37.01	11.40	31.22	32.24	49.43	74.00	24.57	Peak
5	10214.00	38.48	11.47	32.17	30.53	48.31	74.00	25.69	Peak
6	11370.00	39.28	11.02	34.36	29.89	45.83	74.00	28.17	Peak
7	14005.00	41.46	10.90	33.95	29.64	48.05	74.00	25.95	Peak

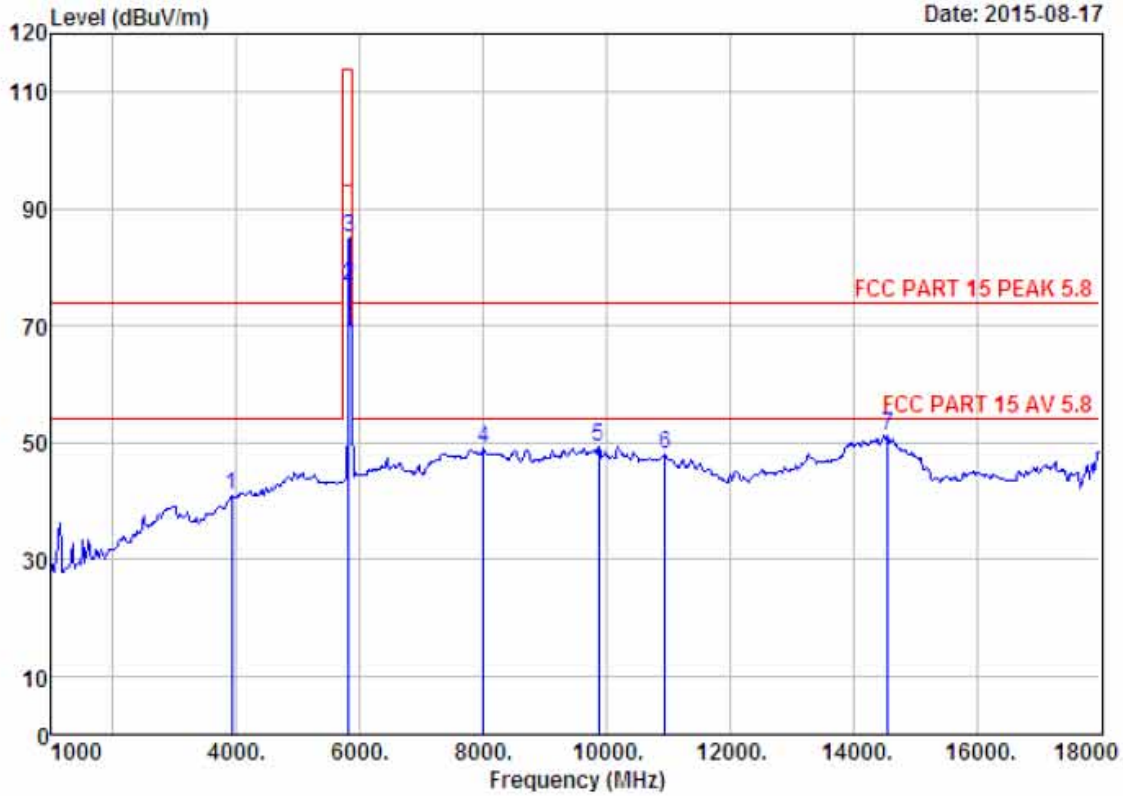
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 1# 966 chamber Data no. : 107
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 5.8
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Levitation Bluetooth Speaker
Power : DC 12V From Adapter Input AC 120V/60Hz
M/N : L141
Test Mode : GFSK TX 5824MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	3244.00	28.04	8.88	33.14	36.39	40.17	74.00	33.83	Peak
2	4995.00	31.54	12.59	32.00	32.93	45.06	74.00	28.94	Peak
3	5824.00	32.42	12.08	32.42	63.66	75.74	94.00	18.26	Average
4	5824.00	32.42	12.08	32.42	72.69	84.77	114.00	29.23	Peak
5	8004.00	37.01	11.40	31.22	33.17	50.36	74.00	23.64	Peak
6	10214.00	38.48	11.47	32.17	31.64	49.42	74.00	24.58	Peak
7	14005.00	41.46	10.90	33.95	30.68	49.09	74.00	24.91	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 1# 966 chamber Data no. : 108
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 5.8
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Levitation Bluetooth Speaker
Power : DC 12V From Adapter Input AC 120V/60Hz
M/N : L141
Test Mode : GFSK TX 5824MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	3924.00	29.46	10.59	32.42	33.47	41.10	74.00	32.90	Peak
2	5824.00	32.42	12.08	32.42	64.88	76.96	94.00	17.04	Average
3	5824.00	32.42	12.08	32.42	73.17	85.25	114.00	28.75	Peak
4	8004.00	37.01	11.40	31.22	31.81	49.00	74.00	25.00	Peak
5	9874.00	38.15	11.62	31.77	31.34	49.34	74.00	24.66	Peak
6	10945.00	39.46	11.29	33.55	30.78	47.98	74.00	26.02	Peak
7	14566.00	41.71	10.92	33.32	31.80	51.11	74.00	22.89	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

5. 20 DB BANDWIDTH

5.1. Test Procedure

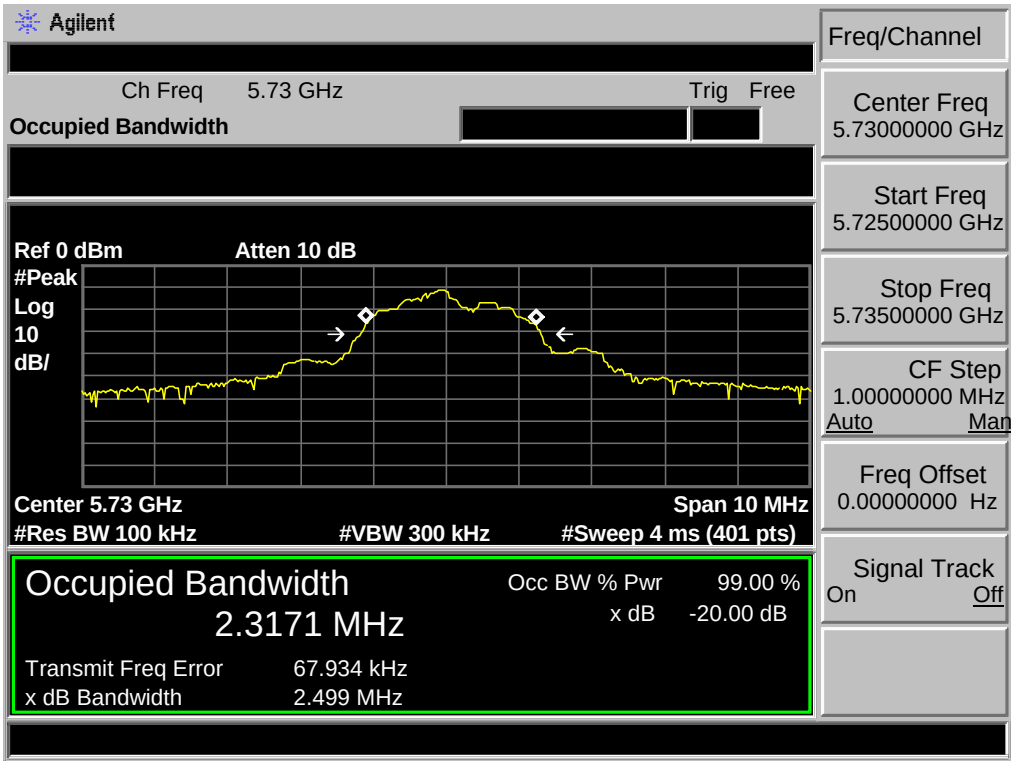
The transmitter output was coupled to a spectrum analyzer via a antenna. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 300kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

5.2. Test Result

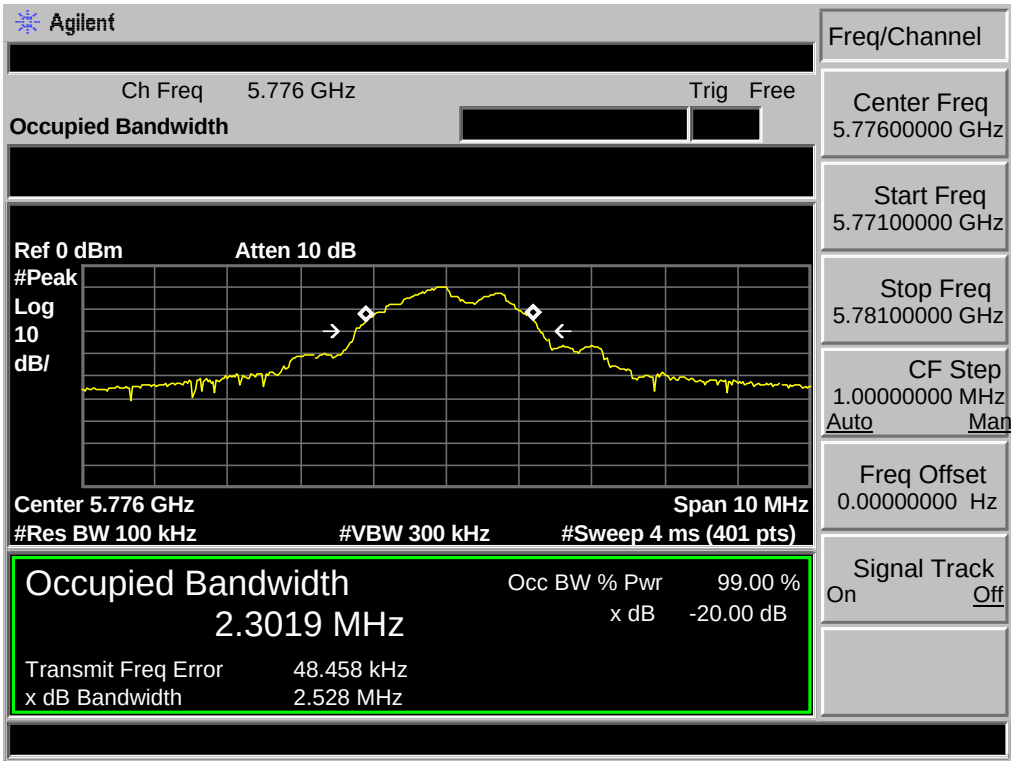
EUT: Levitation Bluetooth Speaker M/N: L141				
Test date: 2015-08-22		Test site: RF site		Tested by: Tony Tang
Mode	Freq (MHz)	20dB Bandwidth (MHz)	Limit (kHz)	Conclusion
TX	5730	2.499	/	PASS
	5776	2.528	/	PASS
	5824	2.539	/	PASS

5.3. Test Data

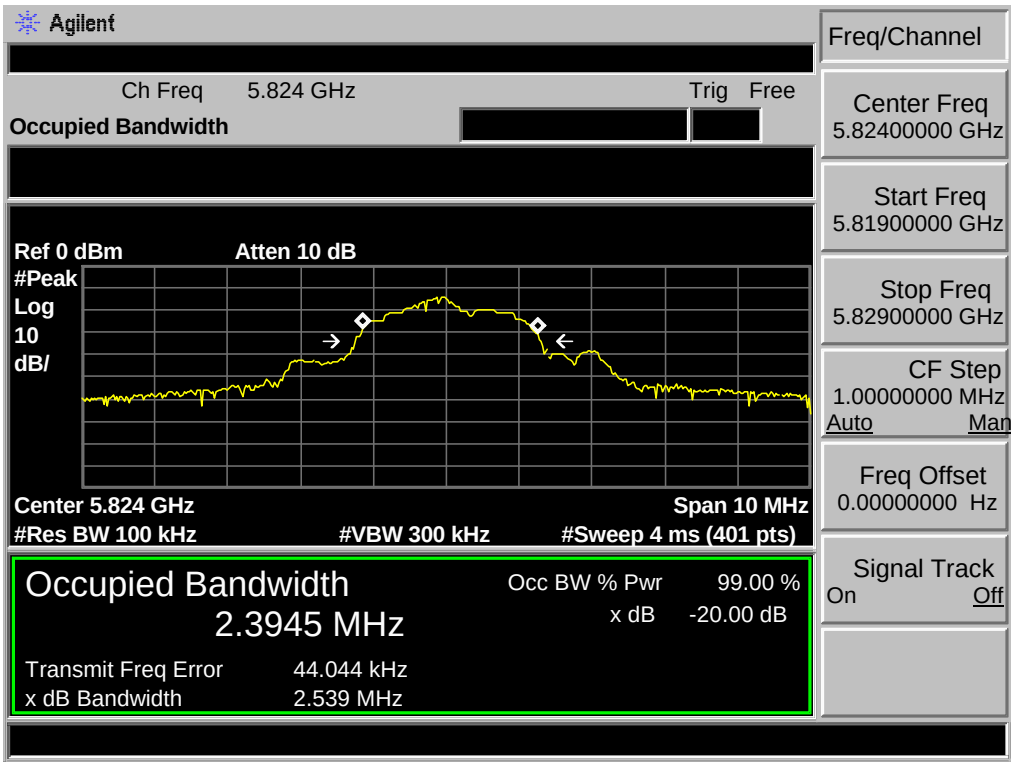
GFSK TX 5730 MHz



GFSK TX 5776 MHz

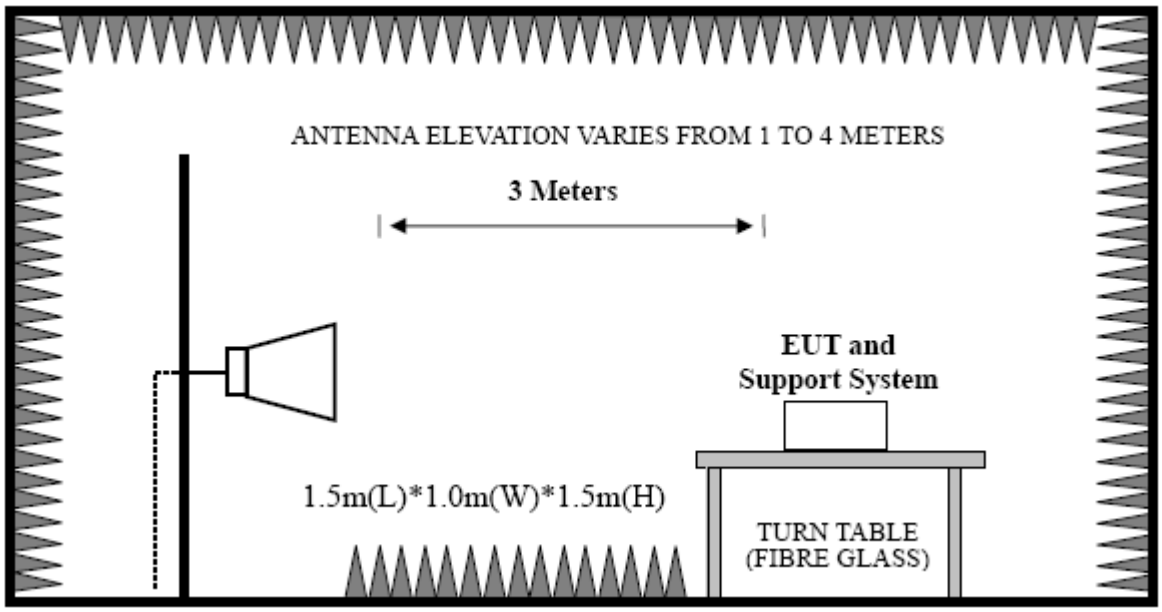


GFSK TX 5776 MHz



6. BAND EDGE COMPLIANCE

6.1. Block Diagram of Test setup



6.2. Test Procedure

EUT was placed on a turn table, which is 1.5 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. 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 between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of emissions

Peak : RBW = 1MHz, VBW = 1MHz, Detector=PEAK detector, Sweep time = auto.

AV : RBW = 1MHz, VBW = 10Hz, Detector=PEAK detector, Sweep time = auto .

6.3. Test Result

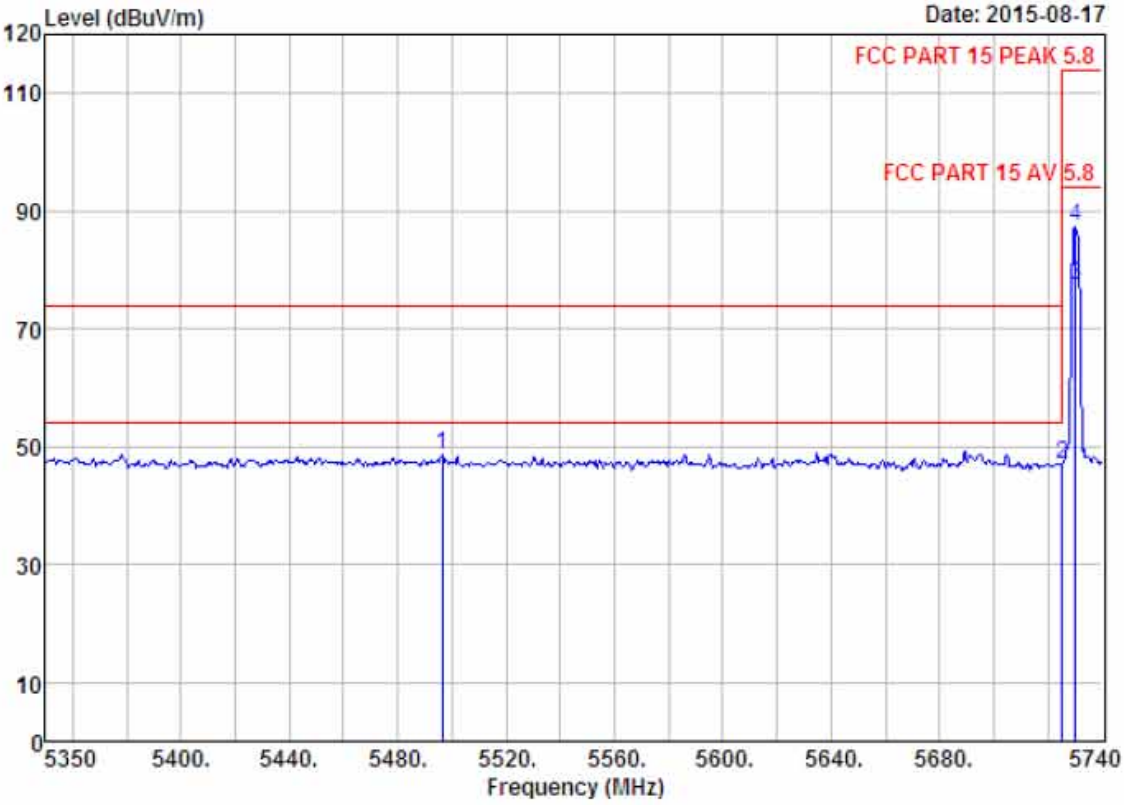
Pass (The testing data was attached in the next pages.)

Note: 1、For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.

2、The frequency 5730MHz 、5776MHz and 5824MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

.

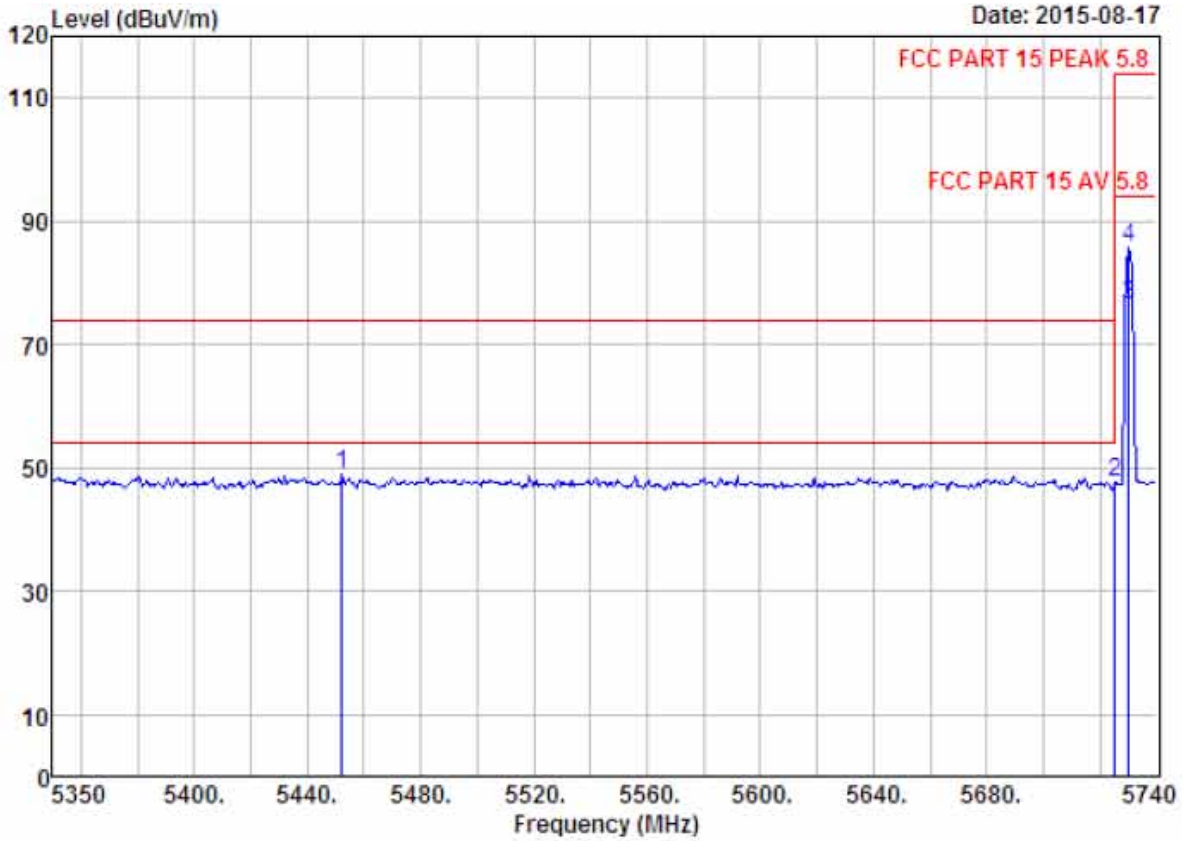
6.4. Test Data



Site no. : 1# 966 chamber Data no. : 97
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 5.8
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Levitation Bluetooth Speaker
Power : DC 12V From Adapter Input AC 120V/60Hz
M/N : L141
Test Mode : GFSK TX 5730MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5496.25	31.87	12.01	32.57	37.33	48.64	74.00	25.36	Peak
2	5725.18	32.24	12.05	32.56	35.29	47.02	114.00	66.98	Peak
3	5730.25	32.27	12.05	32.54	65.76	77.54	94.00	16.46	Average
4	5730.25	32.27	12.05	32.54	75.73	87.51	114.00	26.49	Peak

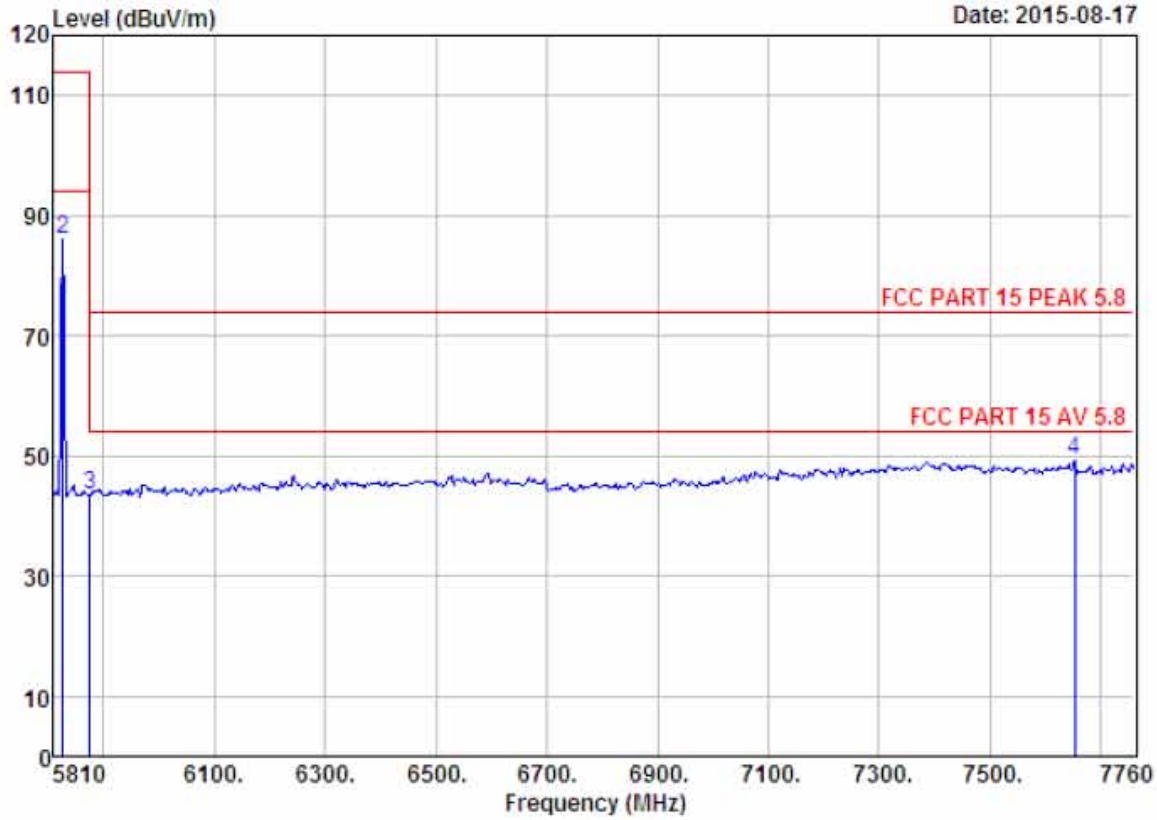
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 1# 966 chamber Data no. : 98
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 5.8
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Levitation Bluetooth Speaker
Power : DC 12V From Adapter Input AC 120V/60Hz
M/N : L141
Test Mode : GFSK TX 5730MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5452.18	31.80	12.05	32.50	37.53	48.88	74.00	25.12	Peak
2	5725.18	32.24	12.05	32.56	36.04	47.77	114.00	66.23	Peak
3	5730.25	32.27	12.05	32.54	64.65	76.43	94.00	17.57	Average
4	5730.25	32.27	12.05	32.54	73.85	85.63	114.00	28.37	Peak

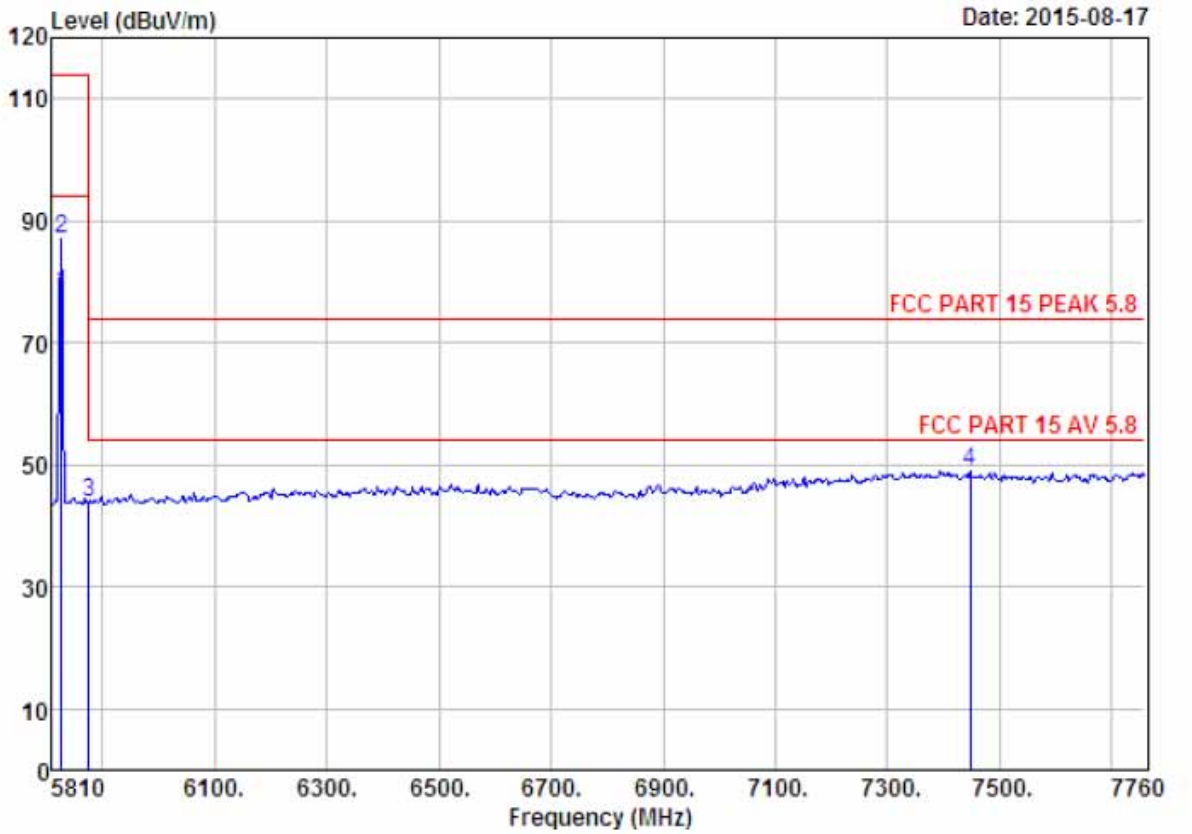
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.




```
Site no.        : 1# 966 chamber              Data no.  : 109
Dis. / Ant.     : 3m   ANT 1-18G              Ant. pol. : VERTICAL
Limit           : FCC PART 15 PEAK 5.8
Env. / Ins.     : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer        : Tony
EUT             : Levitation Bluetooth Speaker
Power           : DC 12V From Adapter Input AC 120V/60Hz
M/N             : L141
Test Mode       : GFSK TX 5824MHz
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5825.60	32.42	12.08	32.42	64.05	76.13	94.00	17.87	Average
2	5825.60	32.42	12.08	32.42	73.99	86.07	114.00	27.93	Peak
3	5874.35	32.53	12.09	32.36	31.25	43.51	114.00	70.49	Peak
4	7652.75	36.43	11.55	31.65	32.79	49.12	74.00	24.88	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.




```
Site no.        : 1# 966 chamber              Data no.  : 110
Dis. / Ant.     : 3m   ANT 1-18G              Ant. pol. : HORIZONTAL
Limit           : FCC PART 15 PEAK 5.8
Env. / Ins.     : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer        : Tony
EUT             : Levitation Bluetooth Speaker
Power           : DC 12V From Adapter Input AC 120V/60Hz
M/N             : L141
Test Mode       : GFSK TX 5824MHz
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5825.60	32.42	12.08	32.42	66.09	78.17	94.00	15.83	Average
2	5825.60	32.42	12.08	32.42	75.04	87.12	114.00	26.88	Peak
3	5874.35	32.53	12.09	32.36	31.57	43.83	114.00	70.17	Peak
4	7448.00	36.52	11.61	31.91	32.67	48.89	74.00	25.11	Peak

```
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
         2. The emission levels that are 20dB below the official
            limit are not reported.
```

7. ANTENNA REQUIREMENTS

7.1. Limit

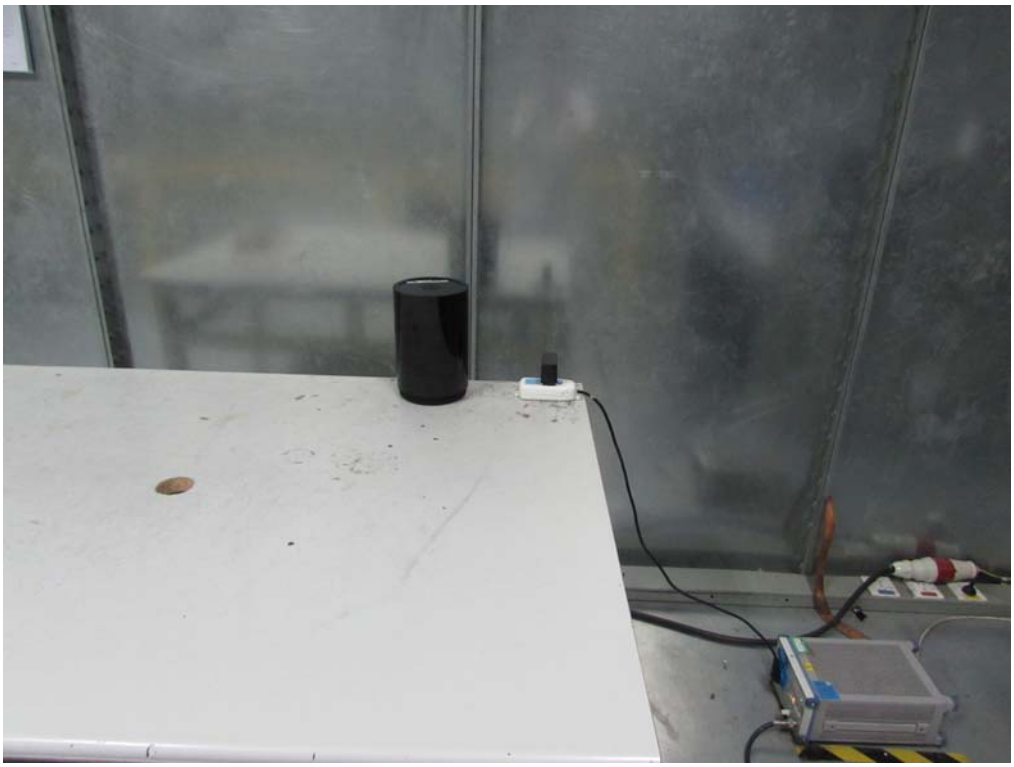
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.249 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

7.2. Result

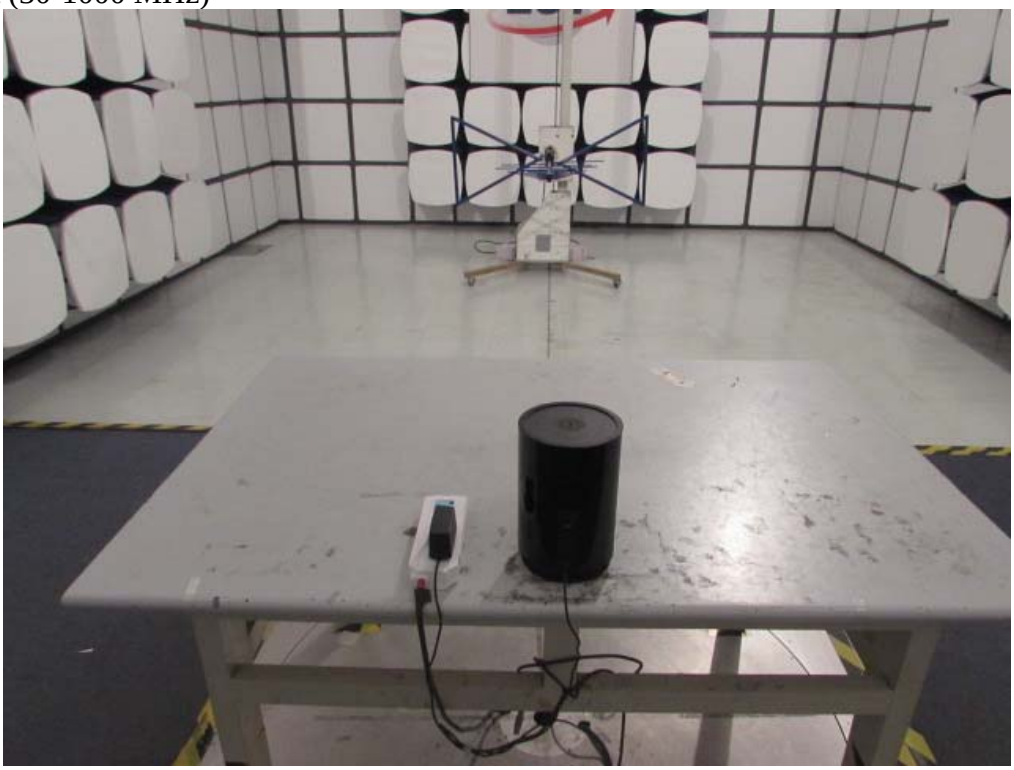
The antennas used for this product are ceramic chip antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 3.05dBi.

8. TEST SETUP PHOTO

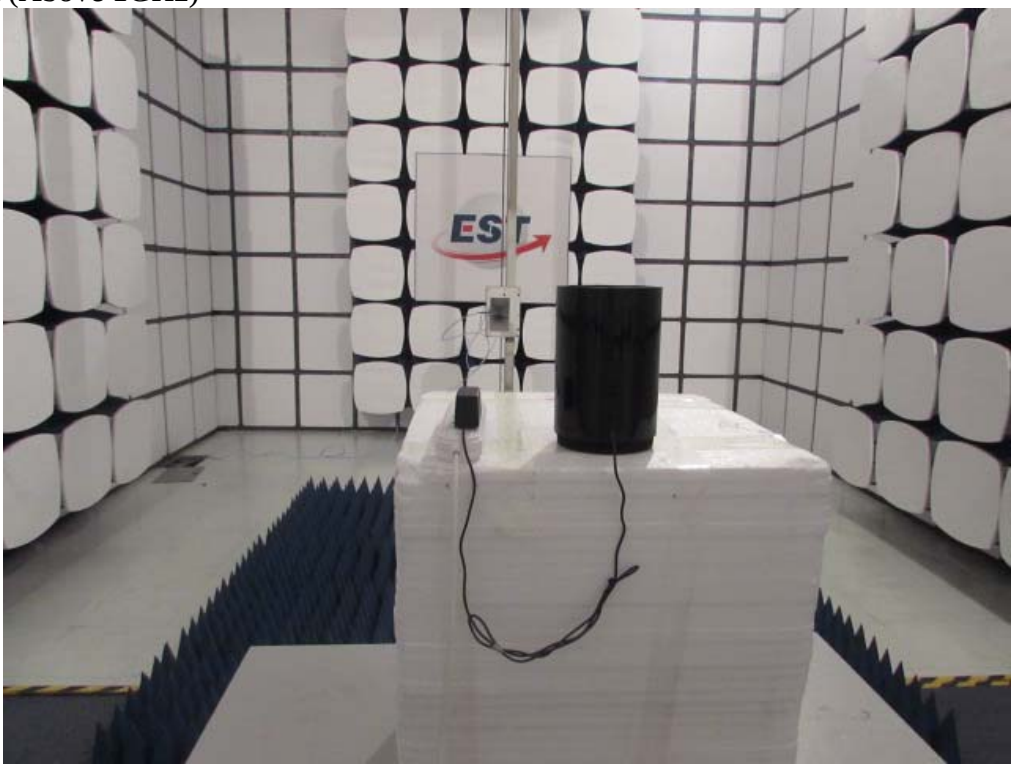
Conducted Test



Radiated Test (30-1000 MHz)



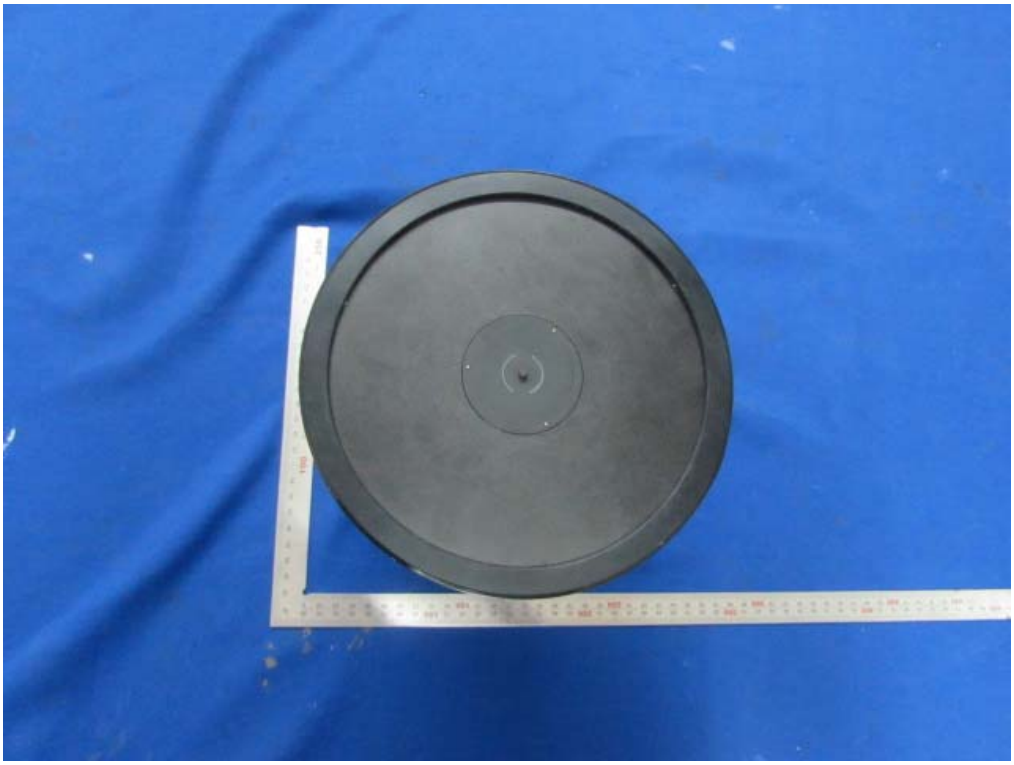
Radiated Test (Above 1GHz)



9. PHOTOS OF EUT

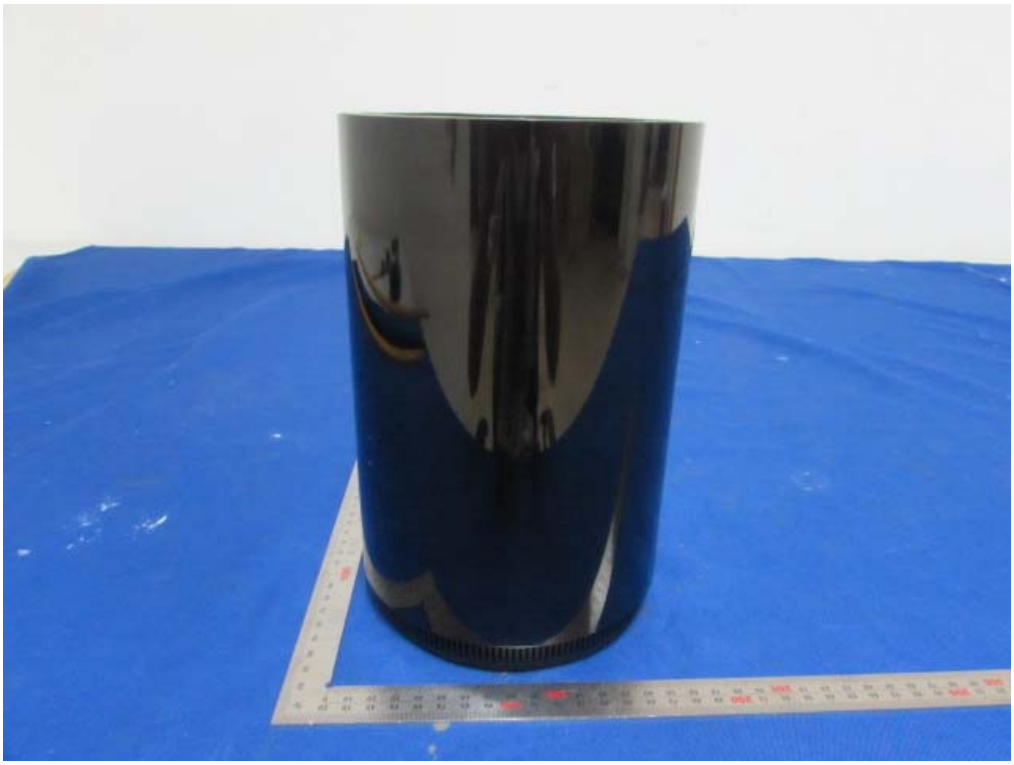
External Photos

M/N: L141



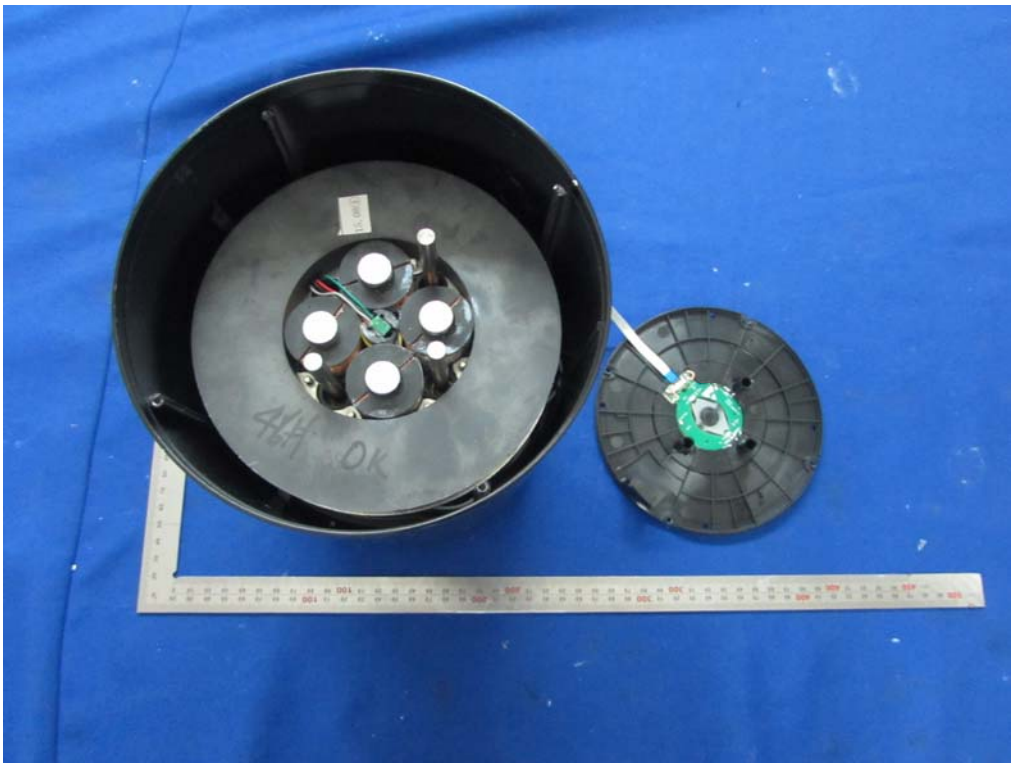
External Photos

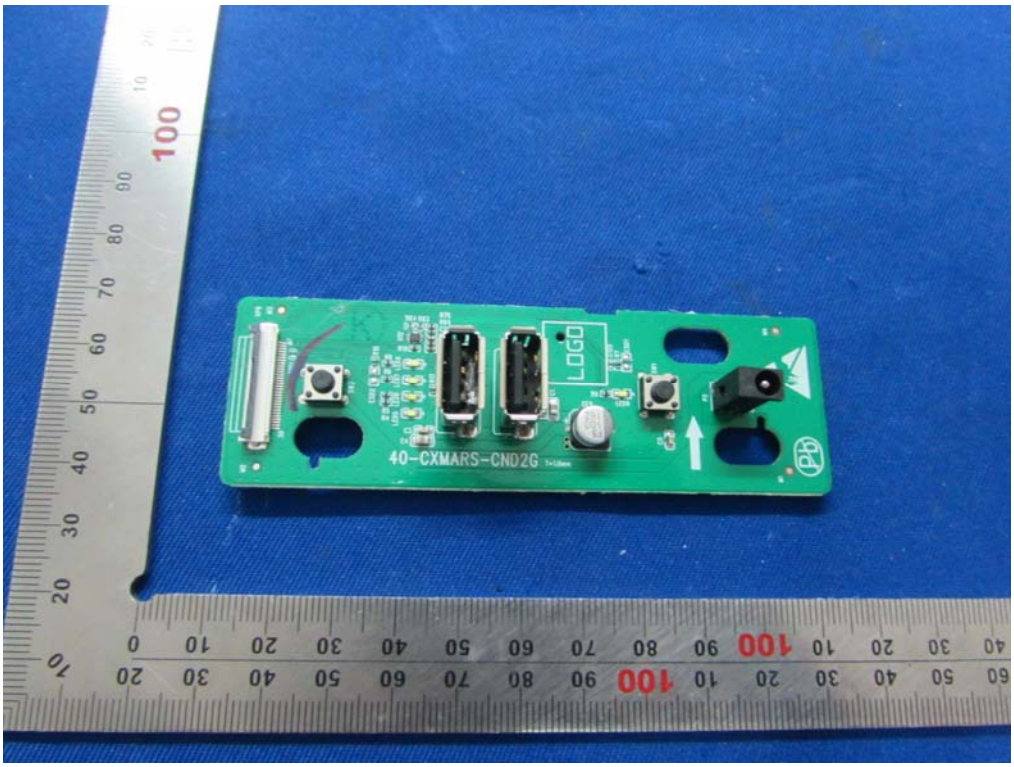
M/N: L141



Internal Photos

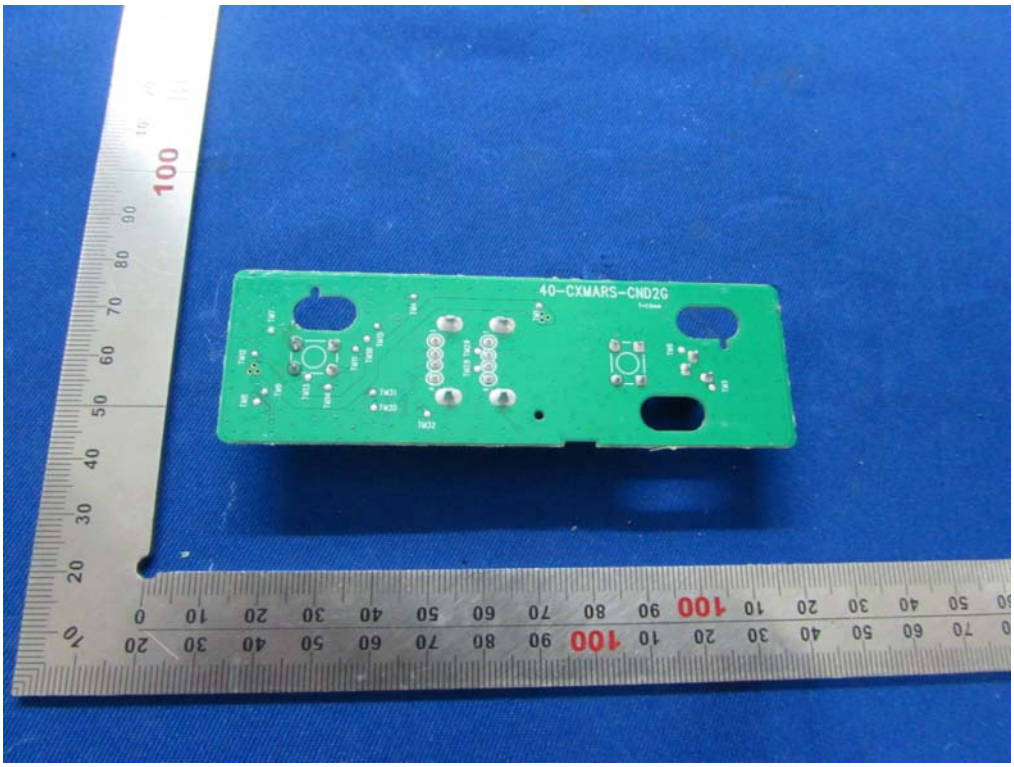
M/N: L141

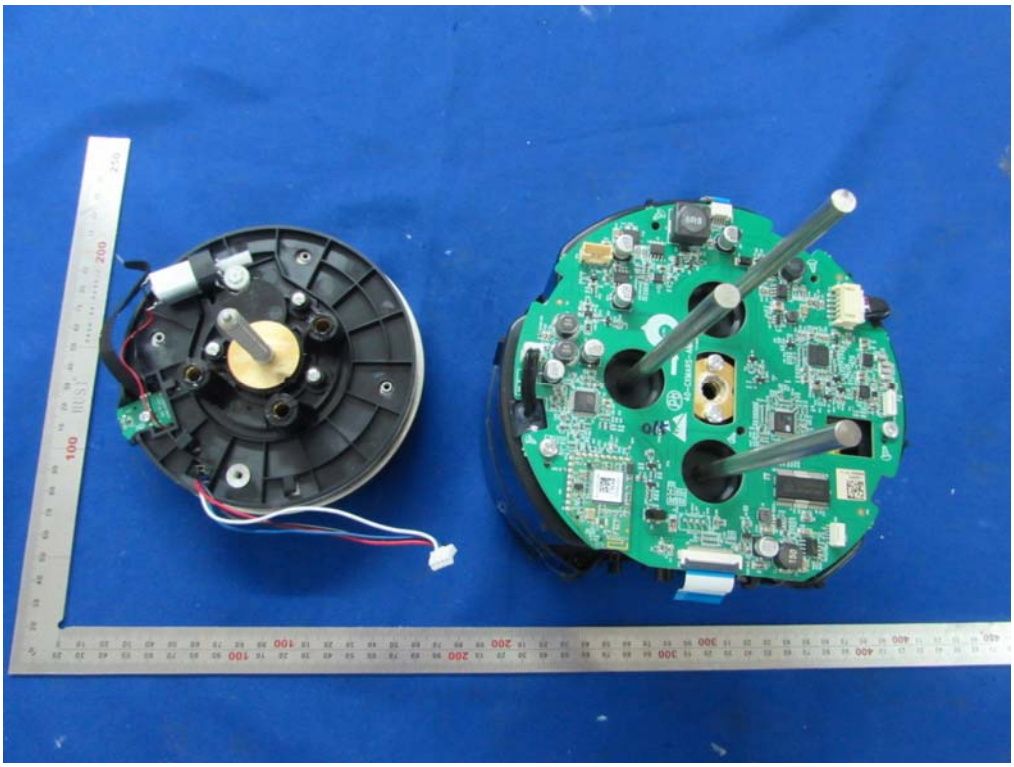




Internal Photos

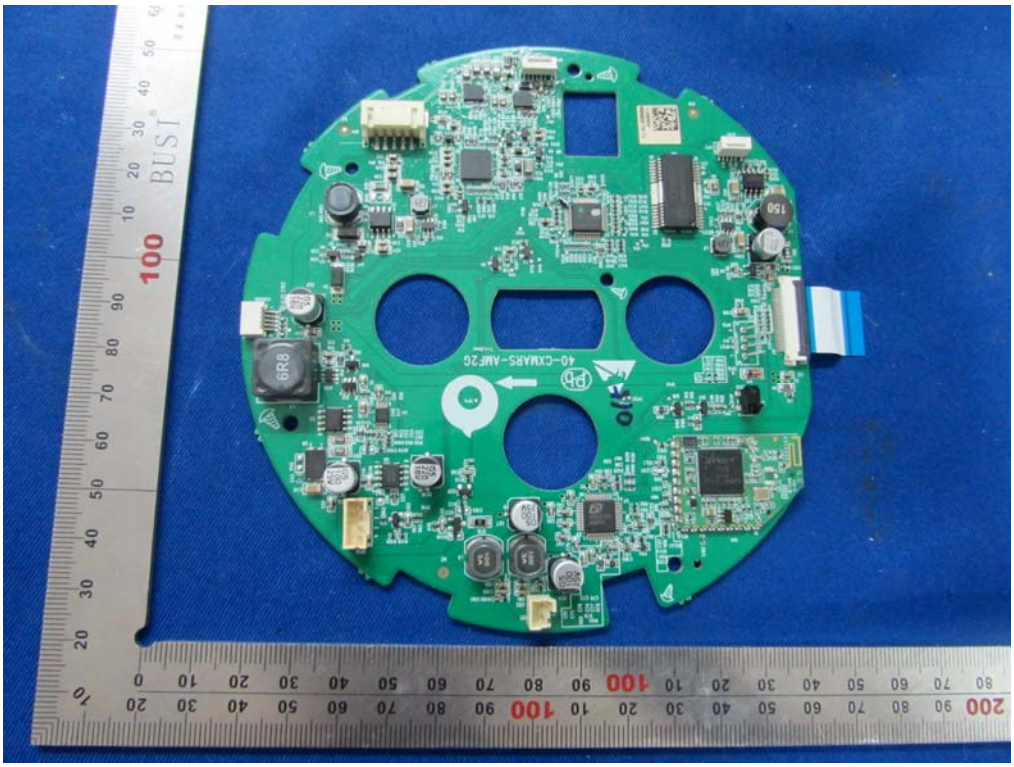
M/N: L141

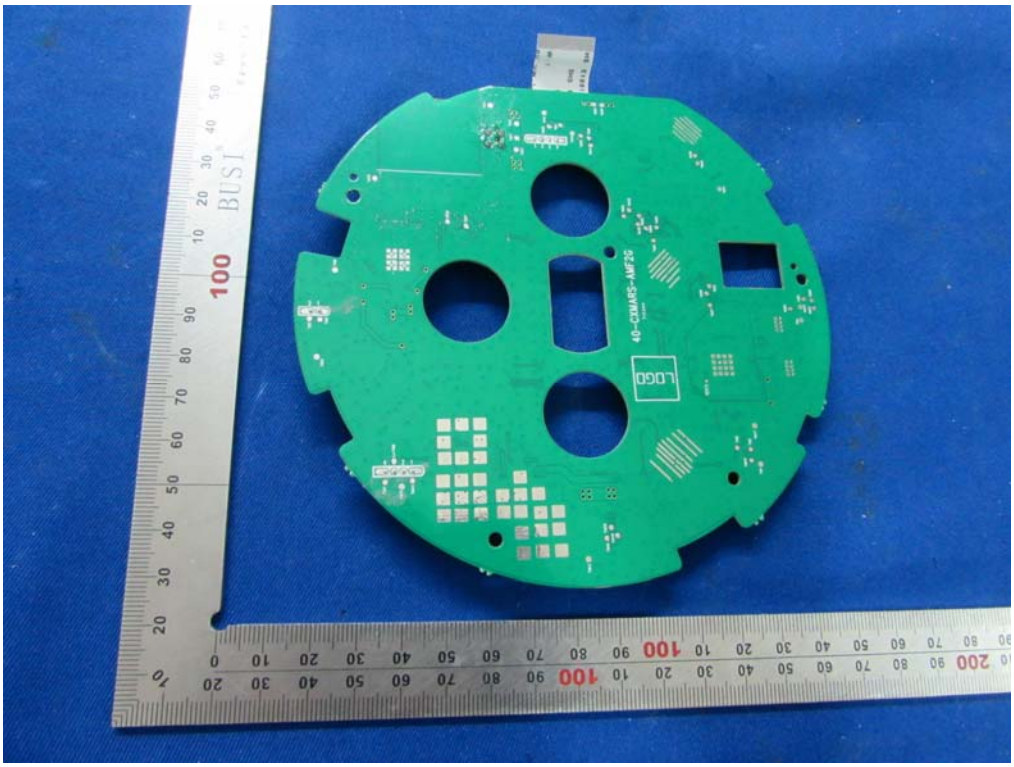




Internal Photos

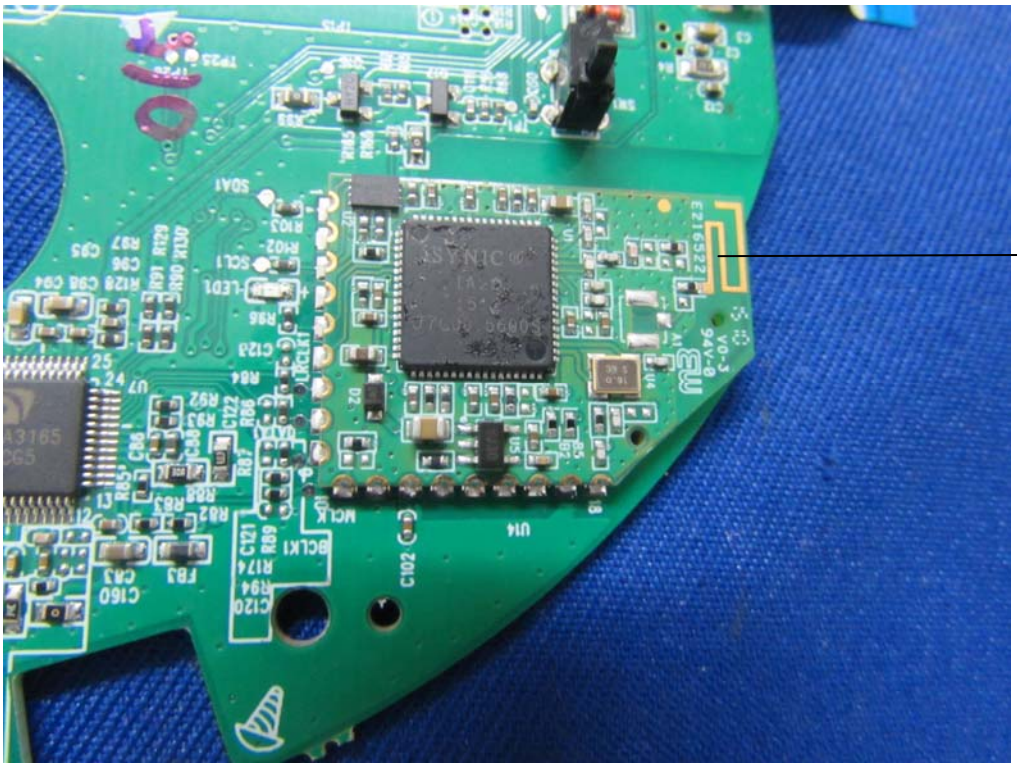
M/N: L141





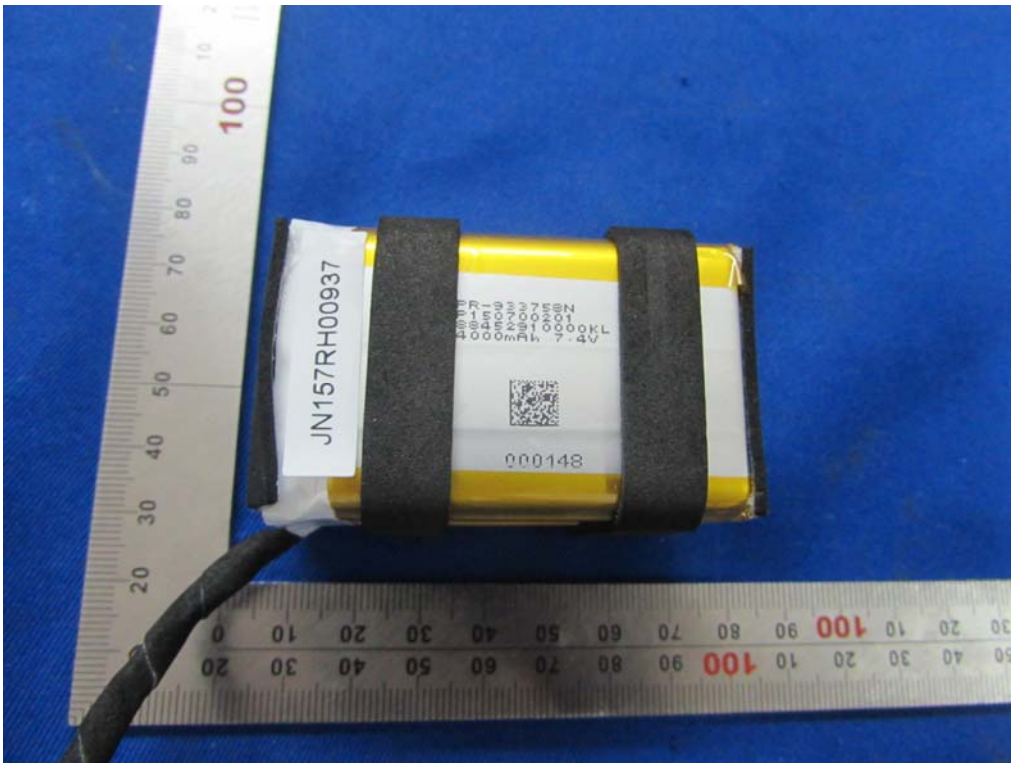
Internal Photos

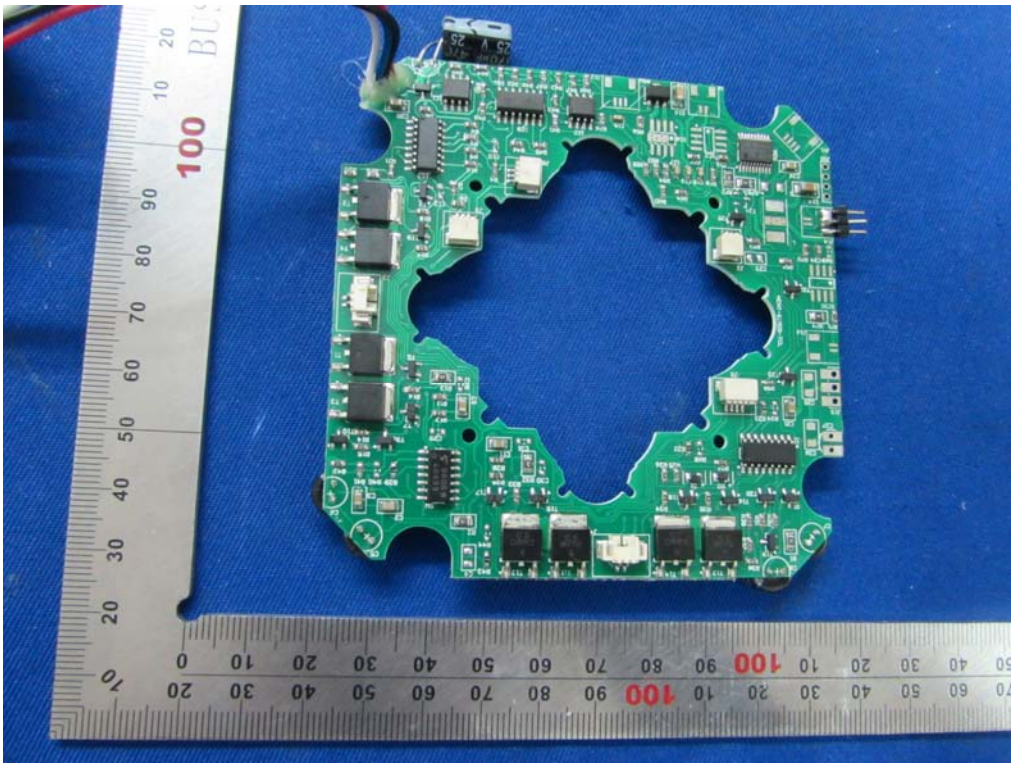
M/N: L141



Internal Photos

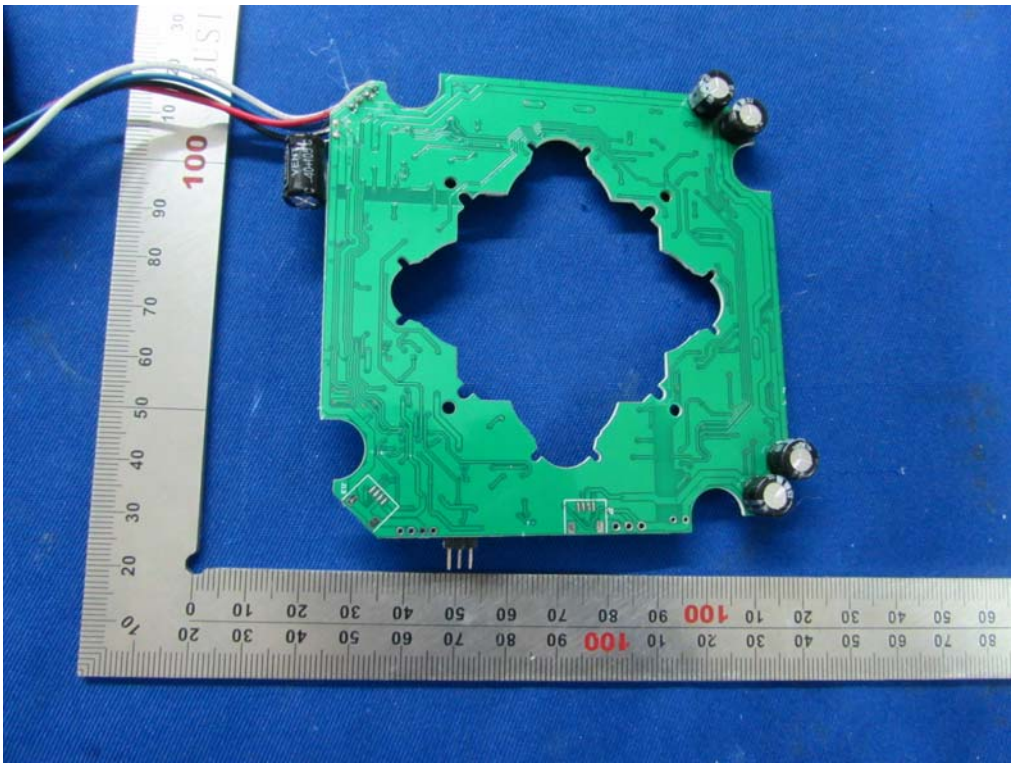
M/N: L141

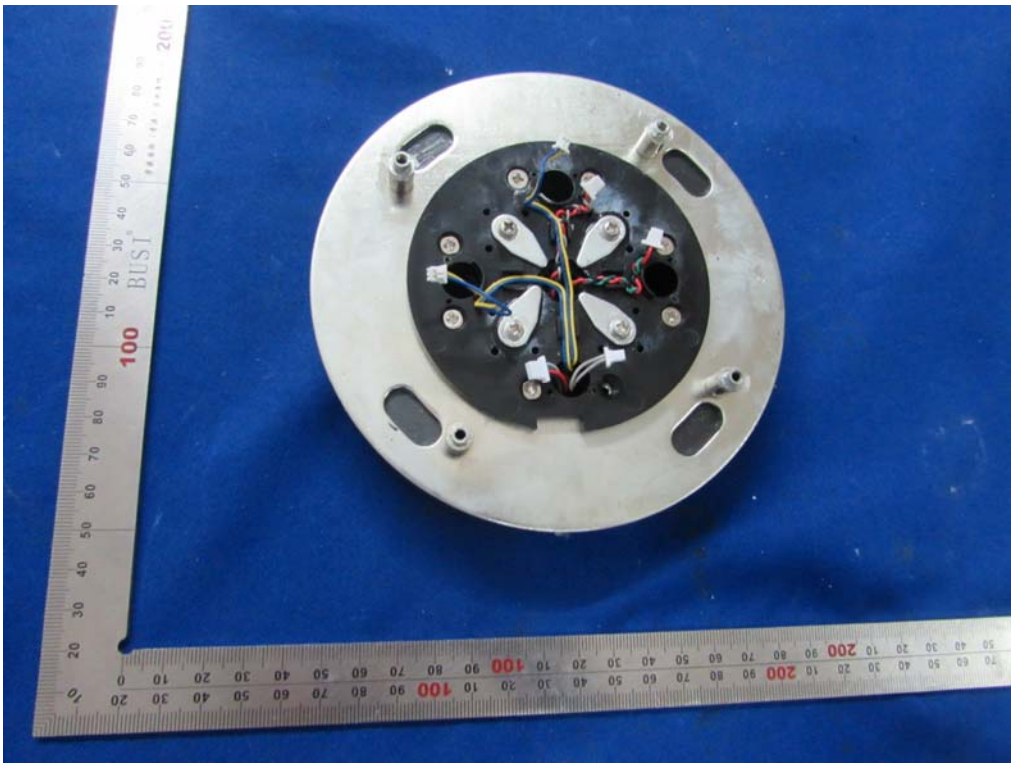




Internal Photos

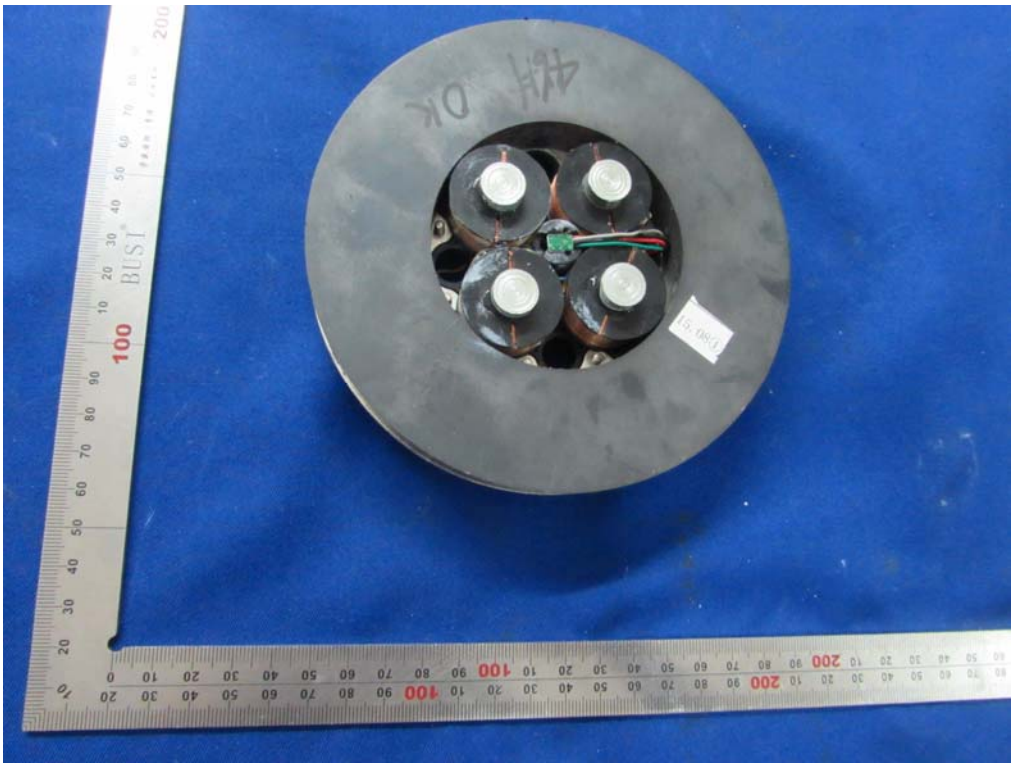
M/N: L141

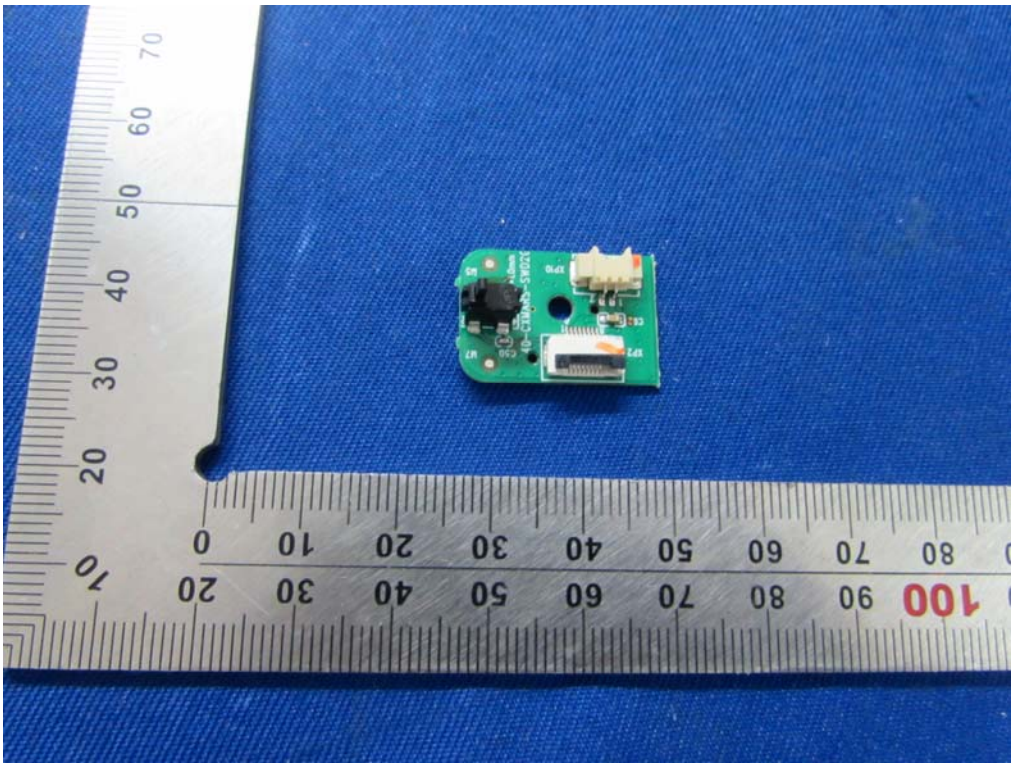




Internal Photos

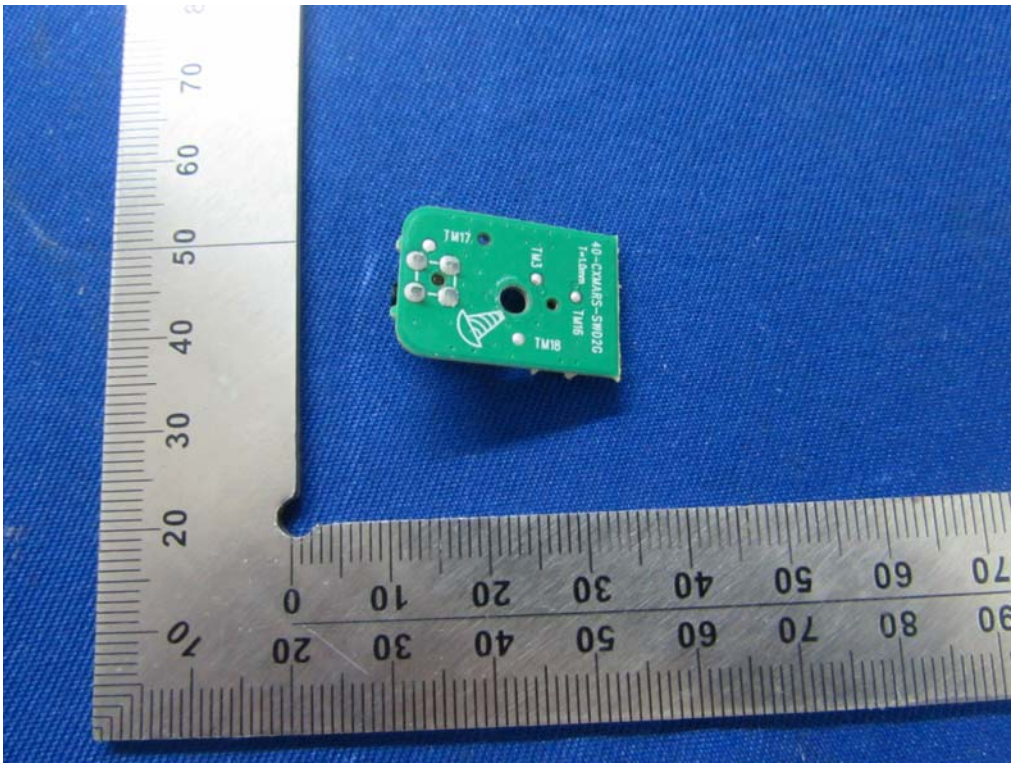
M/N: L141

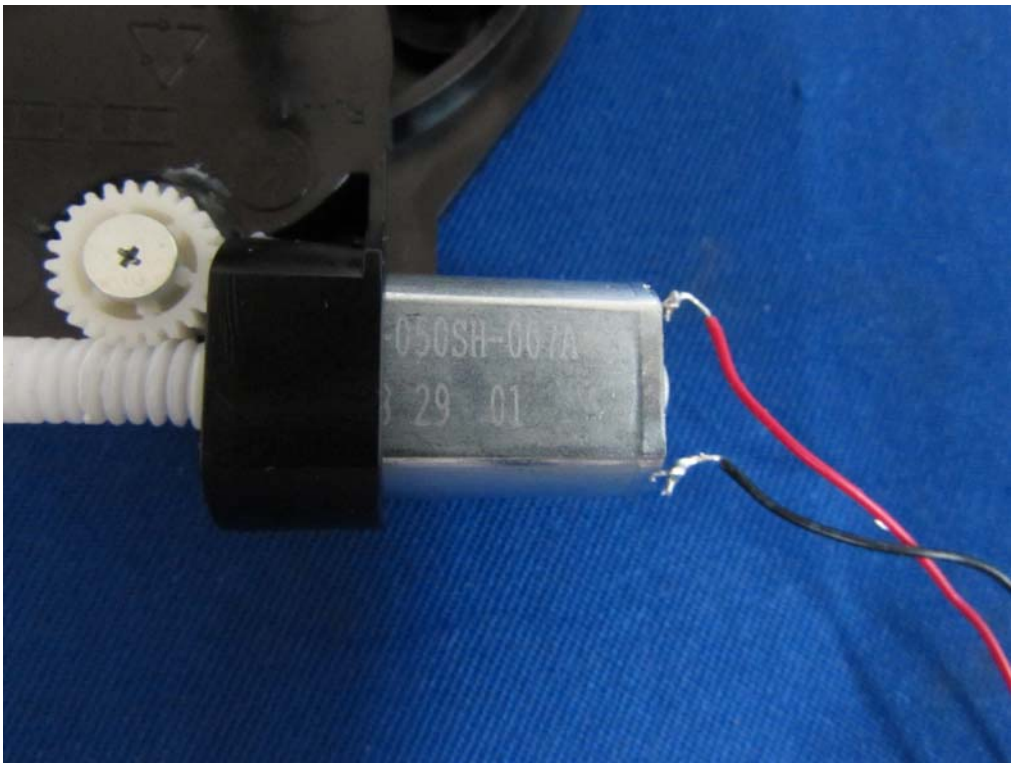




Internal Photos

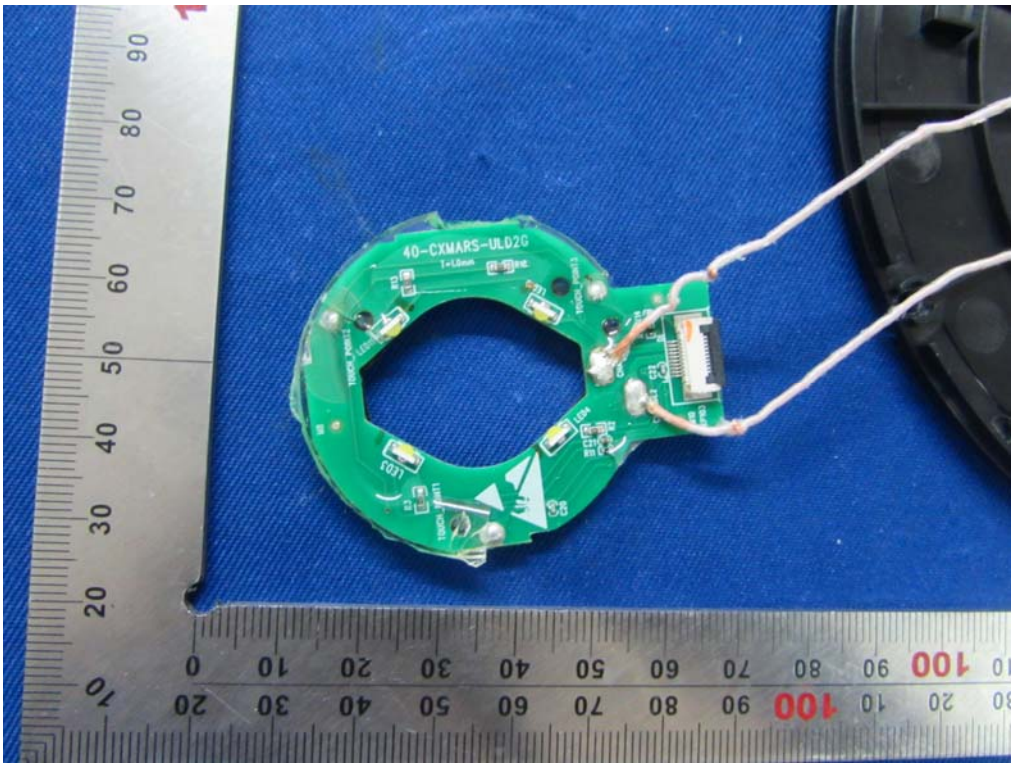
M/N: L141

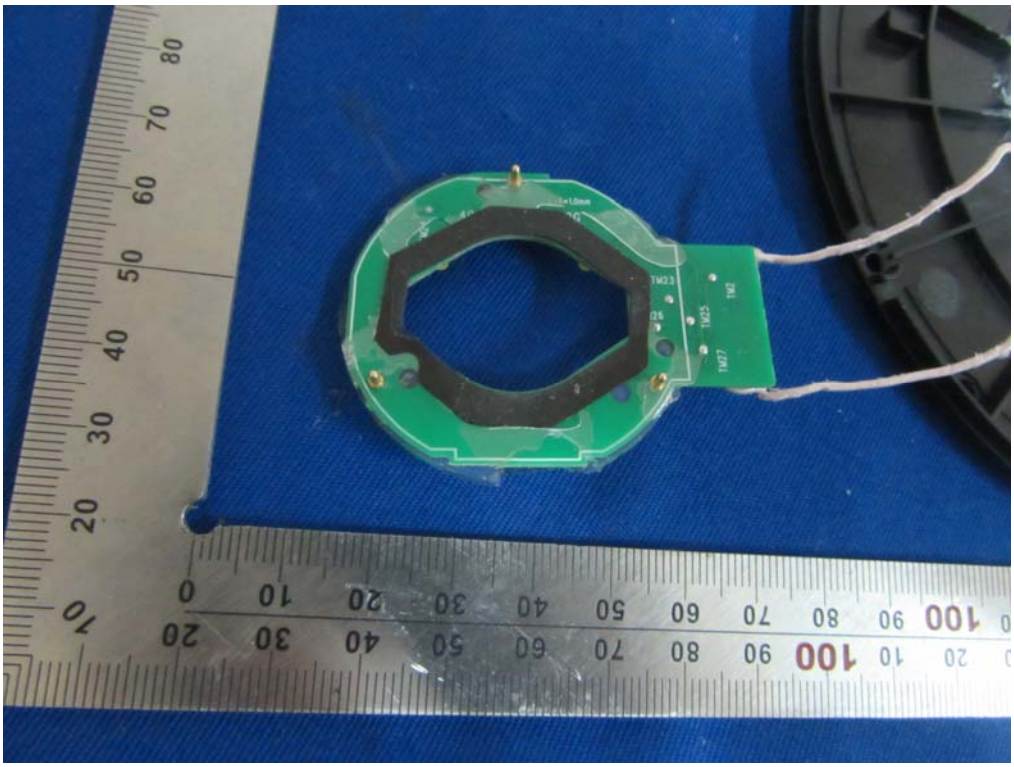




Internal Photos

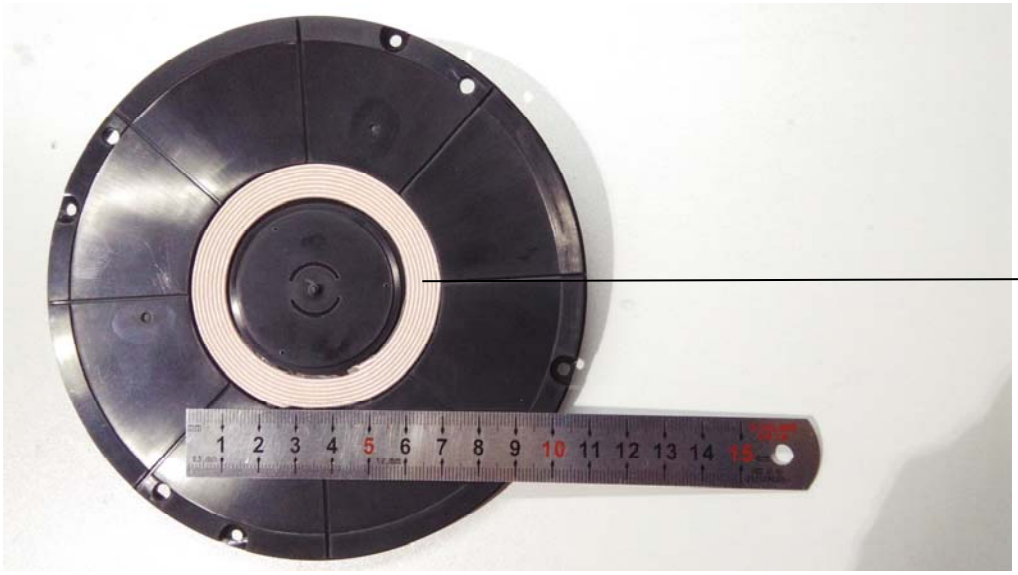
M/N: L141





Internal Photos

M/N: L141



Adapter Photos