APPLICATION CERTIFICATION FCC Part 15C
On Behalf of
CLEVER BRIGHT INTERNATIONAL (H.K.) LTD.

Light-Up Sound Storm Speaker

Model No.: CB-335080, 74465, CB-3350116
CB-335092, CB-335093

FCC ID: 2AD42-CB-335080

Prepared for	:	CLEVER BRIGHT INTERNATIONAL (H.K.) LTD.
Address	:	Rm 1701, Zhuoyue Building, Fuhua Yi Rd., Futian Central Zone, Shenzhen, P.R.China.
Prepared by	:	ACCURATE TECHNOLOGY CO., LTD
Address	:	F1, Bldg. A&D, Chan Yuan New Material Port, Keyuan Rd. Science & Industry Park, Nan Shan, Shenzhen, Guangdong P.R. China Tel: (0755) 26503290 Fax: (0755) 26503396

Report No.	:	ATE20170422
Date of Test	:	May 4-May 5, 2017
Date of Report	:	May 5, 2017

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Description Page

Test Report Certification

Applicant	:	CLEVER BRIGHT INTERNATIONAL (H.K.) LTD.
Manufacturer	:	CLEVER BRIGHT INTERNATIONAL (H.K.) LTD.
EUT Description	:	Light-Up Sound Storm Speaker
Model No.	:	CB-335080,74465,CB-3350116,CB-335092,CB-335093 (Note: these models are identical in schematic, structure and critical components except for model name. So we prepare CB-335080 for test only.)
Trade Name	:	N/A

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247: 2016
ANSI C63.10: 2013

The EUT was tested according to DTS test procedure of Apr 05, 2017 KDB558074 D01 DTS Meas Guidance v04 for compliance to FCC 47CFR 15.247 requirements

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test : May 4-May 5, 2017
Date of Report: May 5, 2017

Prepared by : (Stanley Yang, Engineer)

Approved & Authorized Signer : (Sean Liu, Manager)

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT	:	Light-Up Sound Storm Speaker
Model Number	:	CB-335080,74465,CB-3350116,CB-335092, CB-335093
Bluetooth version	:	BT V4.1 LE
Frequency Range	:	2402MHz-2480MHz
Number of Channels	:	40
Antenna Gain	:	0dBi
Antenna type	:	Integral antenna
Power Supply	:	DC 3.7V(powered by battery) Or DC 5V(powered by USB port)
Modulation mode	:	GFSK
Applicant Address	: :	CLEVER BRIGHT INTERNATIONAL (H.K.) LTD Rm 1701, Zhuoyue Building, Fuhua Yi Rd., Futian Central Zone, Shenzhen, P.R.China.
Manufacturer Address	: :	CLEVER BRIGHT INTERNATIONAL (H.K.) LTD Rm 1701, Zhuoyue Building, Fuhua Yi Rd., Futian Central Zone, Shenzhen, P.R.China.
Date of sample received	:	Apr. 26, 2017
Date of Test	:	May 4-May 5, 2017
Sample Number	:	1700454

1.2.Carrier Frequency of Channels

Channel	Frequceny (MHz)	Channel	Frequceny (MHz)	Channel	Frequceny (MHz)	Channe l	Frequceny (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

1.3.Special Accessory and Auxiliary Equipment

AC/DC Power Adapter ： (provided by laboratory)	Model: MX12X6-0502000VU INPUT: 100-120V 60Hz 0.35A OUTPUT: 5V/1A

1.4.Description of Test Facility

EMC Lab	:	Accredited by TUV Rheinland Shenzhen Listed by FCC The Registration Number is 752051 Listed by Industry Canada The Registration Number is 5077A-2 Accredited by China National Accreditation Committee for Laboratories The Certificate Registration Number is L3193
Name of Firm	:	ACCURATE TECHNOLOGY CO. LTD
Site Location	:	F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China

1.5.Measurement Uncertainty

Conducted Emission Expanded Uncertainty	=	2.23dB, k=2
Radiated emission expanded uncertainty (9kHz-30MHz)	=	3.08dB, k=2
Radiated emission expanded uncertainty (30MHz-1000MHz)	=	4.42dB, k=2
Radiated emission expanded uncertainty (Above 1GHz)	=	4.06dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Type	S/N	Calibrated dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 07, 2017	1 Year
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 07, 2017	1 Year
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 07, 2017	1 Year
Pre-Amplifier	Rohde&Schwarz	CBLU1183540-01	3791	Jan. 07, 2017	1 Year
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 13, 2017	1 Year
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 13, 2017	1 Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 13, 2017	1 Year
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 13, 2017	1 Year
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 07, 2017	1 Year
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 07, 2017	1 Year
Highpass Filter	Wainwright Instruments	WHKX3.6/18G-10SS	N/A	Jan. 07, 2017	1 Year
Band Reject Filter	Wainwright Instruments	WRCG2400/2485-2375/2510-60/11SS	N/A	Jan. 07, 2017	1 Year

3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

The mode is used: **BLE Transmitting mode**
Low Channel: 2402MHz
Middle Channel: 2440MHz
High Channel: 2480MHz

3.2.Configuration and peripherals

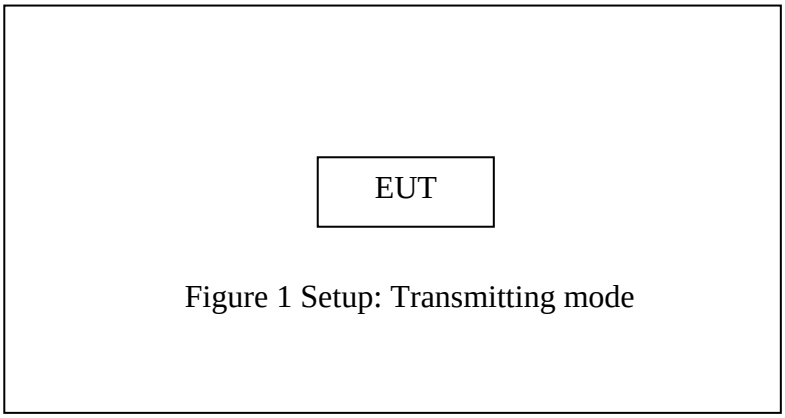


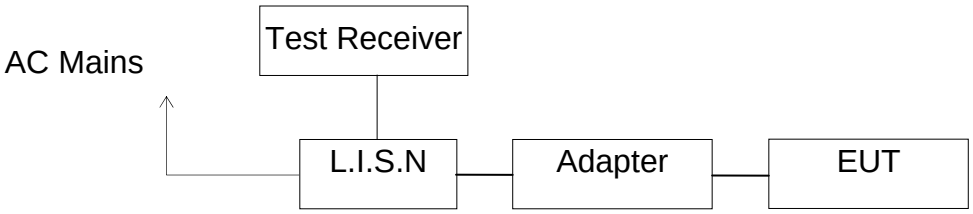
Figure 1 Setup: Transmitting mode

4. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.247(a)(2)	6dB Bandwidth Test	Compliant
Section 15.247(e)	Power Spectral Density Test	Compliant
Section 15.247(b)(3)	Maximum Peak Output Power Test	Compliant
Section 15.247(d)	Band Edge Compliance Test	Compliant
Section 15.247(d) Section 15.209	Radiated Spurious Emission Test	Compliant
Section 15.247(d)	Conducted Spurious Emission Test	Compliant
Section 15.207	AC Power Line Conducted Emission Test	Compliant
Section 15.203	Antenna Requirement	Compliant

5. POWER LINE CONDUCTED MEASUREMENT

5.1.Block Diagram of Test Setup



(EUT: Light-Up Sound Storm Speaker)

5.2.Power Line Conducted Emission Measurement Limits

Frequency (MHz)	Limit dB(μV)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0
NOTE1: The lower limit shall apply at the transition frequencies. NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.		

5.3.Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

5.4.Operating Condition of EUT

5.4.1.Setup the EUT and simulator as shown as Section 5.1.

5.4.2.Turn on the power of all equipment.

5.4.3.Let the EUT work in test mode and measure it.

5.5.Test Procedure

The EUT is put on the plane 0.8 m high above the ground by insulating support and 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 lines 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 Measurement.
The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

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

5.6.Power Line Conducted Emission Measurement Results

PASS.

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

Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are attached as below.

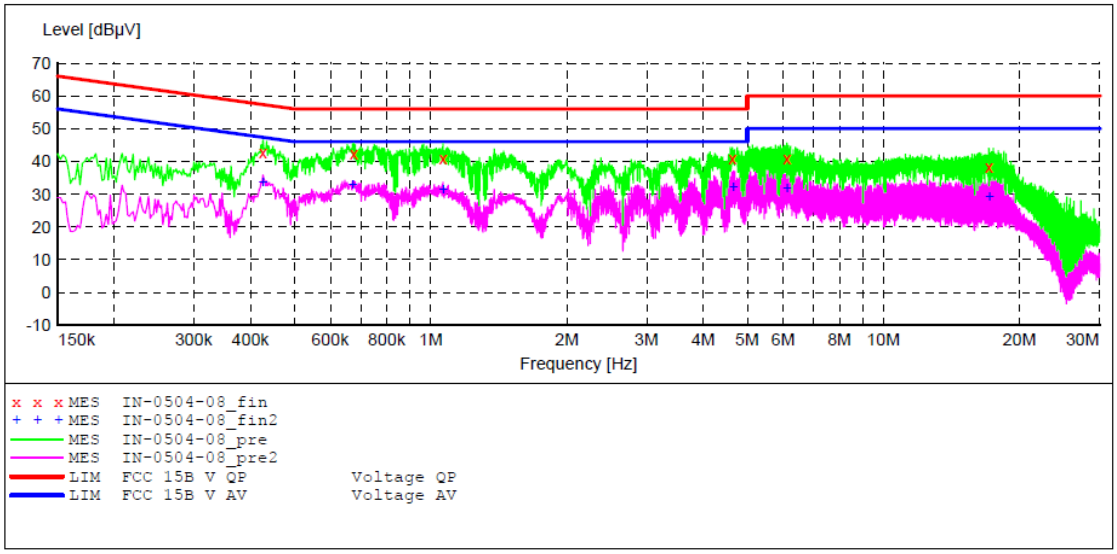
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART15B

```
EUT:                 Light-Up Sound Storm Speaker   M/N:CB-335080
Manufacturer:        CLEVER BRIGHT
Operating Condition: BT Operation
Test Site:           2#Shielding Room
Operator:            Star
Test Specification:  L   120V/60Hz
Comment:             Report NO.:ATE20170422
Start of Test:       2017-5-4 / 10:43:53
```

SCAN TABLE: "V 150K-30MHz fin"

```
  Short Description:          _SUB_STD_VTERM2 1.70
  Start      Stop       Step      Detector  Meas.     IF      Transducer
  Frequency  Frequency  Width               Time      Bandw.
  150.0 kHz  30.0 MHz   4.5 kHz   QuasiPeak 1.0 s     9 kHz   NSLK8126 2008
                                  Average
```



MEASUREMENT RESULT: "IN-0504-08_fin"

2017-5-4 10:46

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.426000	42.70	10.6	57	14.6	QP	L1	GND
0.676000	42.50	10.7	56	13.5	QP	L1	GND
1.064000	40.90	10.8	56	15.1	QP	L1	GND
4.635000	40.80	11.1	56	15.2	QP	L1	GND
6.115000	41.00	11.1	60	19.0	QP	L1	GND
17.110000	38.50	11.3	60	21.5	QP	L1	GND

MEASUREMENT RESULT: "IN-0504-08_fin2"

2017-5-4 10:46

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.426000	33.80	10.6	47	13.5	AV	L1	GND
0.672000	33.10	10.7	46	12.9	AV	L1	GND
1.064000	31.60	10.8	46	14.4	AV	L1	GND
4.655000	32.30	11.1	46	13.7	AV	L1	GND
6.115000	31.90	11.1	50	18.1	AV	L1	GND
17.145000	29.50	11.3	50	20.5	AV	L1	GND

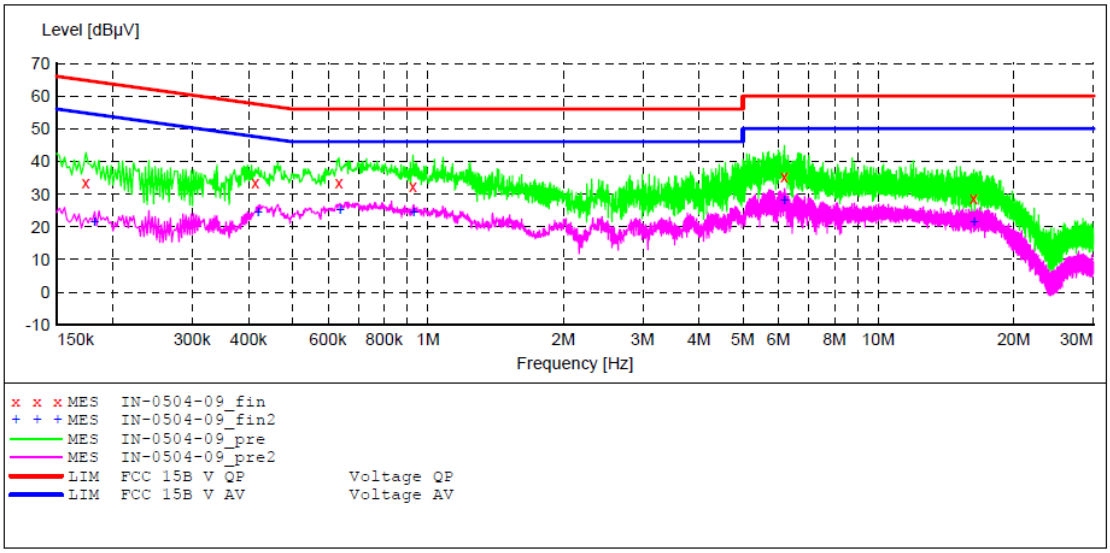
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART15B

```
EUT:                  Light-Up Sound Storm Speaker   M/N:CB-335080
Manufacturer:         CLEVER BRIGHT
Operating Condition:  BT Operation
Test Site:            2#Shielding Room
Operator:             Star
Test Specification:   N   120V/60Hz
Comment:              Report NO.:ATE20170422
Start of Test:        2017-5-4 / 10:46:48
```

SCAN TABLE: "V 150K-30MHz fin"

```
  Short Description:            _SUB_STD_VTERM2 1.70
  Start      Stop       Step      Detector  Meas.     IF      Transducer
  Frequency  Frequency  Width               Time      Bandw.
  150.0 kHz  30.0 MHz   4.5 kHz   QuasiPeak 1.0 s     9 kHz   NSLK8126 2008
                                  Average
```



MEASUREMENT RESULT: "IN-0504-09_fin"

2017-5-4 10:49

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.174000	33.50	10.4	65	31.3	QP	N	GND
0.414000	33.60	10.6	58	24.0	QP	N	GND
0.634000	33.60	10.7	56	22.4	QP	N	GND
0.926000	32.50	10.8	56	23.5	QP	N	GND
6.185000	35.50	11.1	60	24.5	QP	N	GND
16.265000	28.80	11.3	60	31.2	QP	N	GND

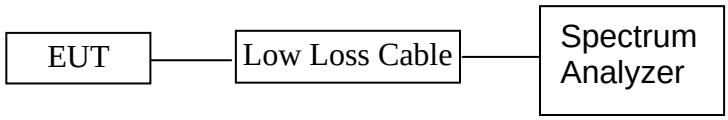
MEASUREMENT RESULT: "IN-0504-09_fin2"

2017-5-4 10:49

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.182000	21.80	10.4	54	32.6	AV	N	GND
0.420000	24.80	10.6	47	22.6	AV	N	GND
0.638000	25.50	10.7	46	20.5	AV	N	GND
0.930000	24.80	10.8	46	21.2	AV	N	GND
6.185000	28.20	11.1	50	21.8	AV	N	GND
16.290000	21.70	11.3	50	28.3	AV	N	GND

6. 6DB BANDWIDTH MEASUREMENT

6.1.Block Diagram of Test Setup



(EUT: Light-Up Sound Storm Speaker)

6.2.The Requirement For Section 15.247(a)(2)

Section 15.247(a)(2): Systems using digital modulation techniques may operate in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

6.3.EUT Configuration on Measurement

The equipment is installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.4.Operating Condition of EUT

6.4.1.Setup the EUT and simulator as shown as Section 6.1.

6.4.2.Turn on the power of all equipment.

6.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2440MHz, and 2480MHz TX frequency to transmit.

6.5.Test Procedure

6.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.

6.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz.

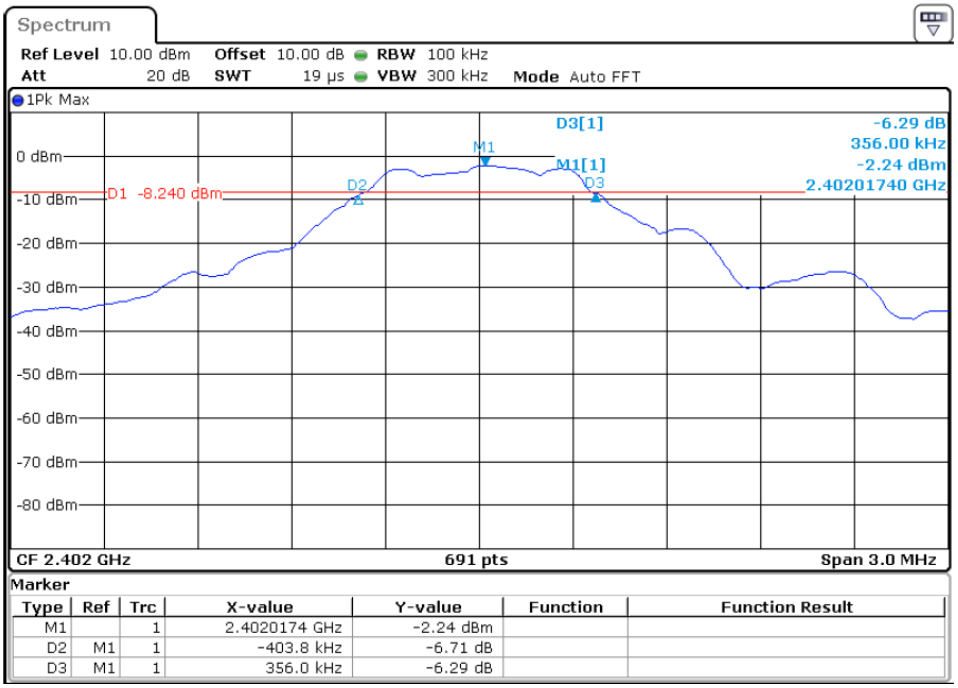
6.5.3.The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

6.6.Test Result

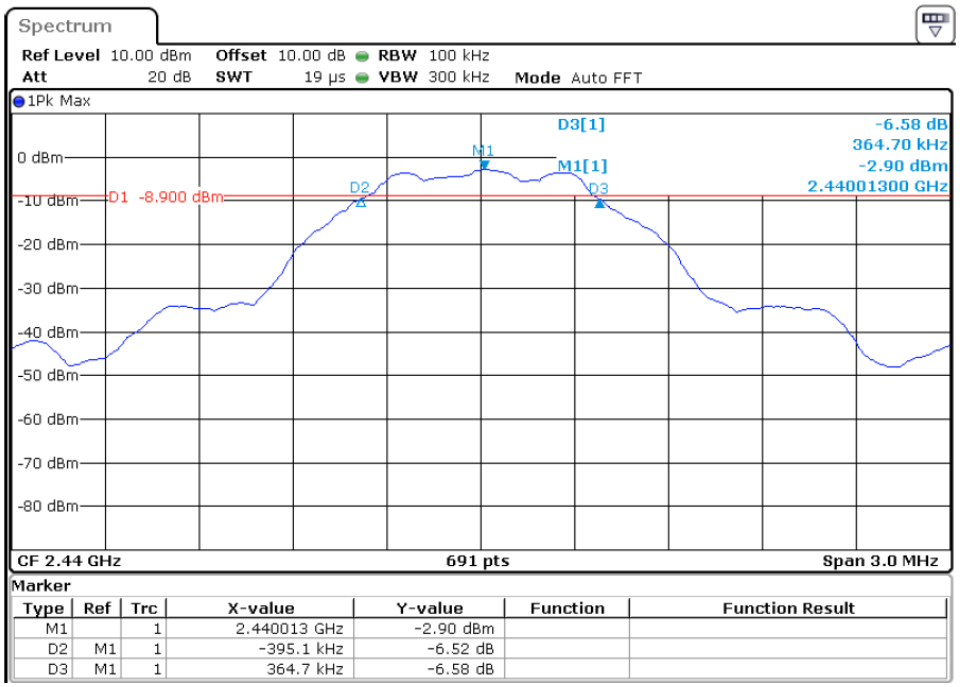
Channel	Frequency (MHz)	6 dB Bandwith (MHz)	Minimum Limit(MHz)	PASS/FAIL
0	2402	0.760	0.5	PASS
19	2440	0.760	0.5	PASS
39	2480	0.747	0.5	PASS

The spectrum analyzer plots are attached as below.

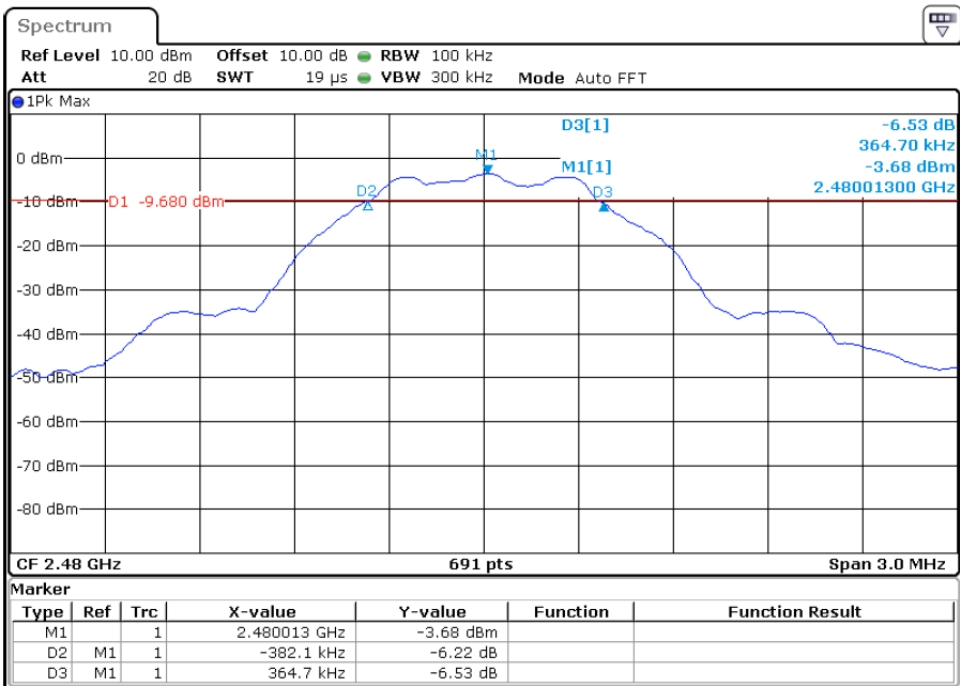
channel 0



channel 19

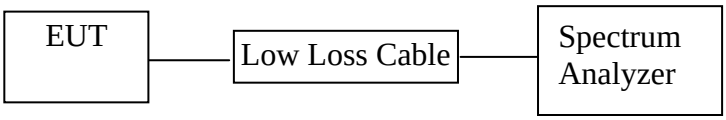


channel 39



7. MAXIMUM PEAK OUTPUT POWER

7.1.Block Diagram of Test Setup



(EUT: Light-Up Sound Storm Speaker)

7.2.The Requirement For Section 15.247(b)(3)

Section 15.247(b)(3): For systems using digital modulation in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands: 1 Watt.

7.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

7.4.Operating Condition of EUT

7.4.1.Setup the EUT and simulator as shown as Section 7.1.

7.4.2.Turn on the power of all equipment.

7.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2440MHz, and 2480MHz TX frequency to transmit.

7.5.Test Procedure

7.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.

7.5.2.Set RBW of spectrum analyzer to 1 MHz and VBW to 3MHz.

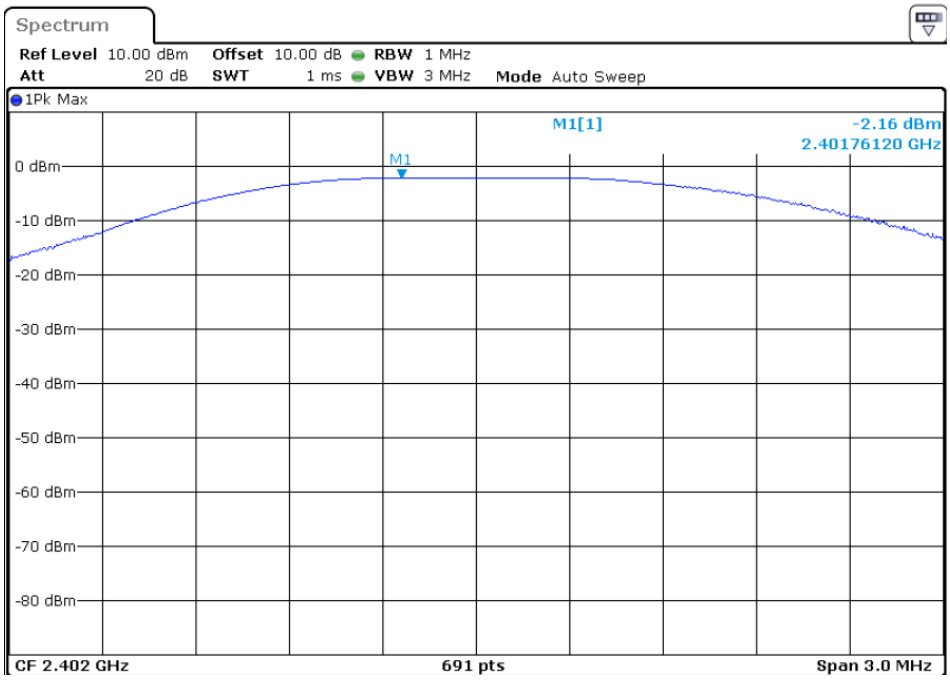
7.5.3.Measurement the maximum peak output power.

7.6.Test Result

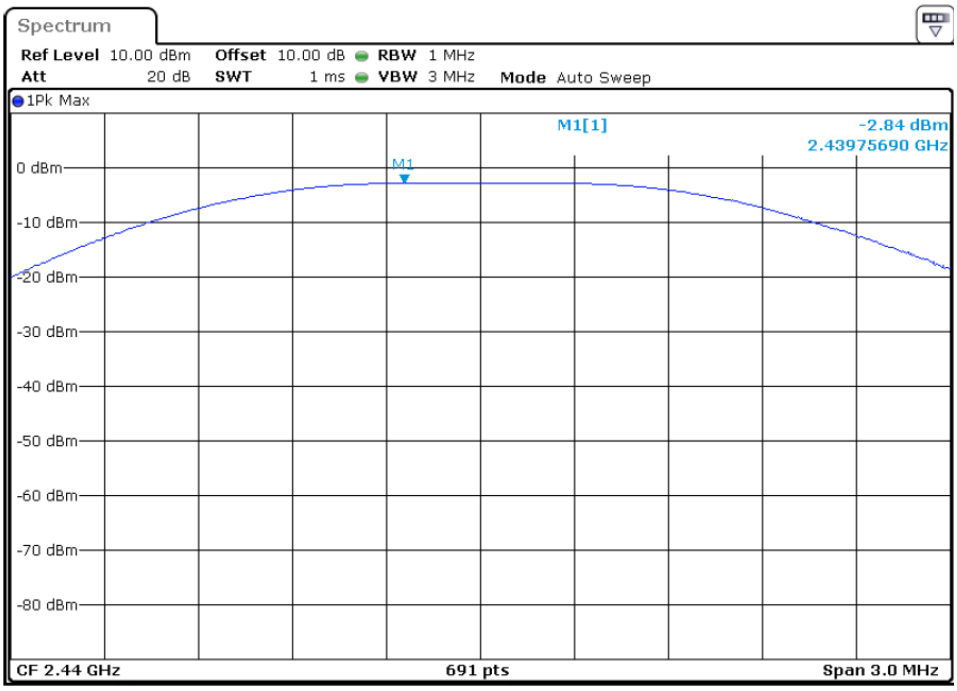
Channel	Frequency (MHz)	Peak Power Output (dBm)	Peak Power Limit (dBm)	Pass / Fail
0	2402	-2.16	30	PASS
19	2440	-2.84	30	PASS
39	2480	-3.58	30	PASS

The spectrum analyzer plots are attached as below.

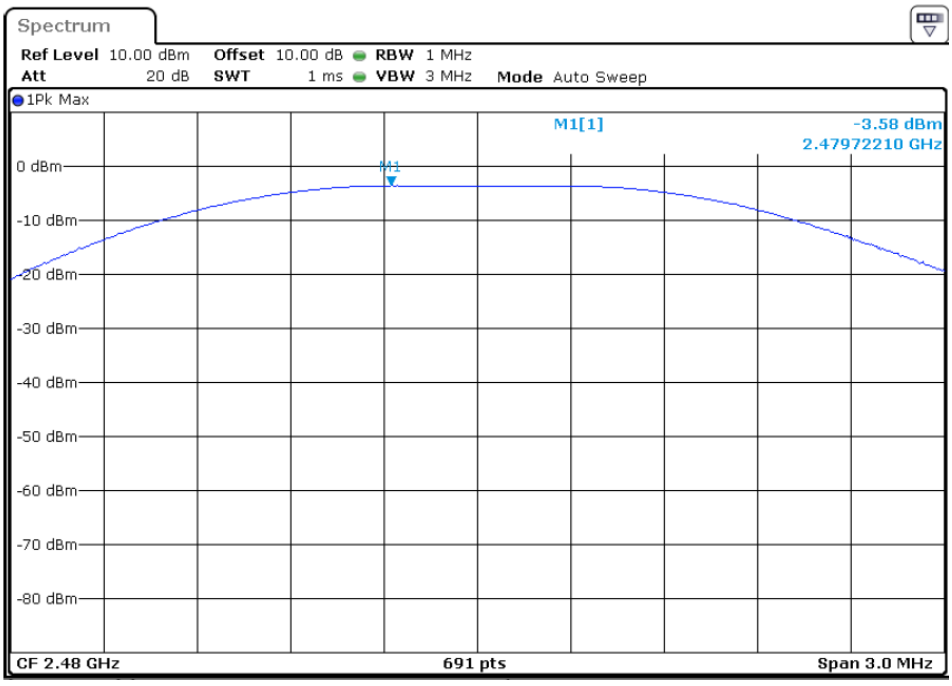
channel 0



channel 19

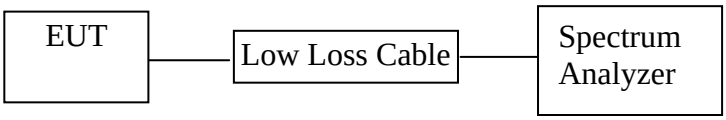


channel 39



8. POWER SPECTRAL DENSITY MEASUREMENT

8.1.Block Diagram of Test Setup



(EUT: Light-Up Sound Storm Speaker)

8.2.The Requirement For Section 15.247(e)

Section 15.247(e): For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

8.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

8.4.Operating Condition of EUT

8.4.1.Setup the EUT and simulator as shown as Section 8.1.

8.4.2.Turn on the power of all equipment.

8.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2440MHz, and 2480MHz TX frequency to transmit.

8.5.Test Procedure

8.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.

8.5.2.Measurement Procedure PKPSD:

8.5.3.This procedure must be used if maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit, and is optional if the maximum (average) conducted output power was used to demonstrate compliance.

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
4. Set the VBW ≥ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3kHz) and repeat.

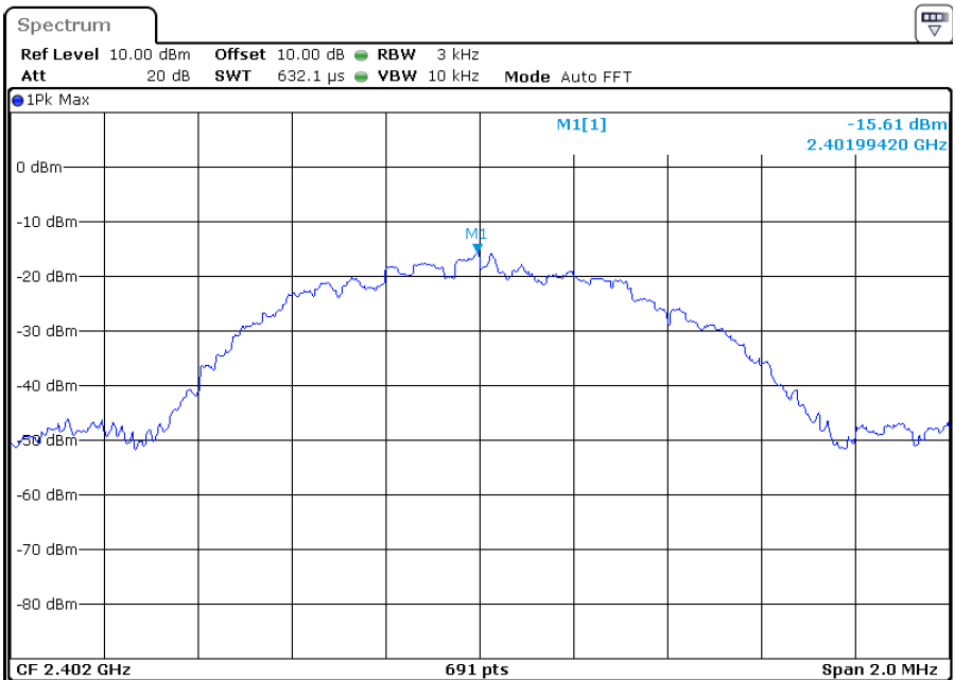
8.5.4.Measurement the maximum power spectral density.

8.6.Test Result

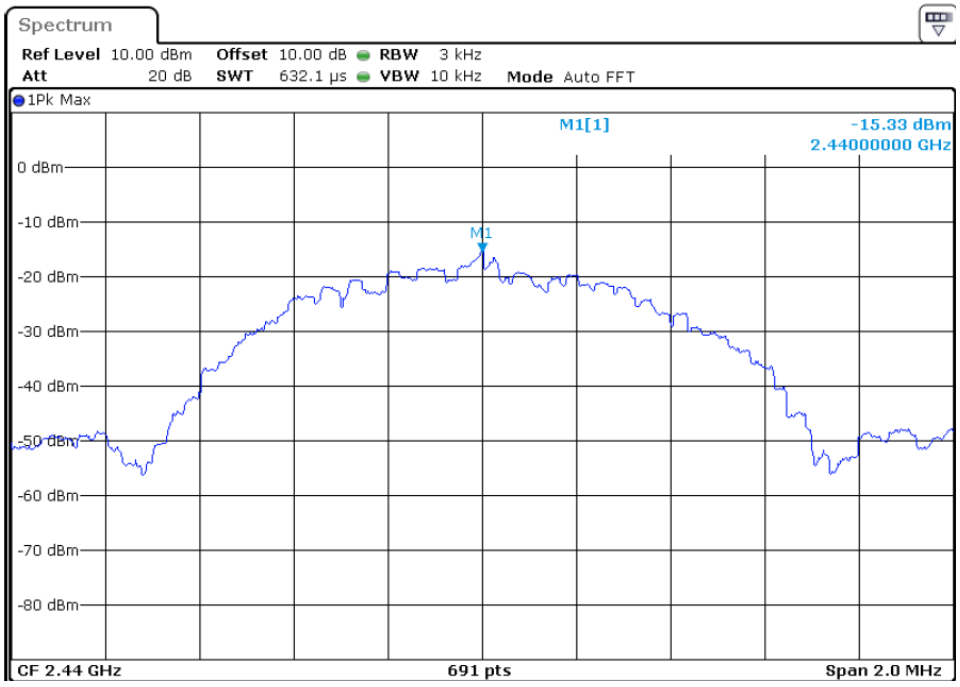
CHANNEL NUMBER	FREQUENCY (MHz)	PSD (dBm/3KHz)	LIMIT (dBm/3KHz)	PASS/FAIL
0	2402	-15.61	8	PASS
19	2440	-15.33	8	PASS
39	2480	-14.19	8	PASS

The spectrum analyzer plots are attached as below.

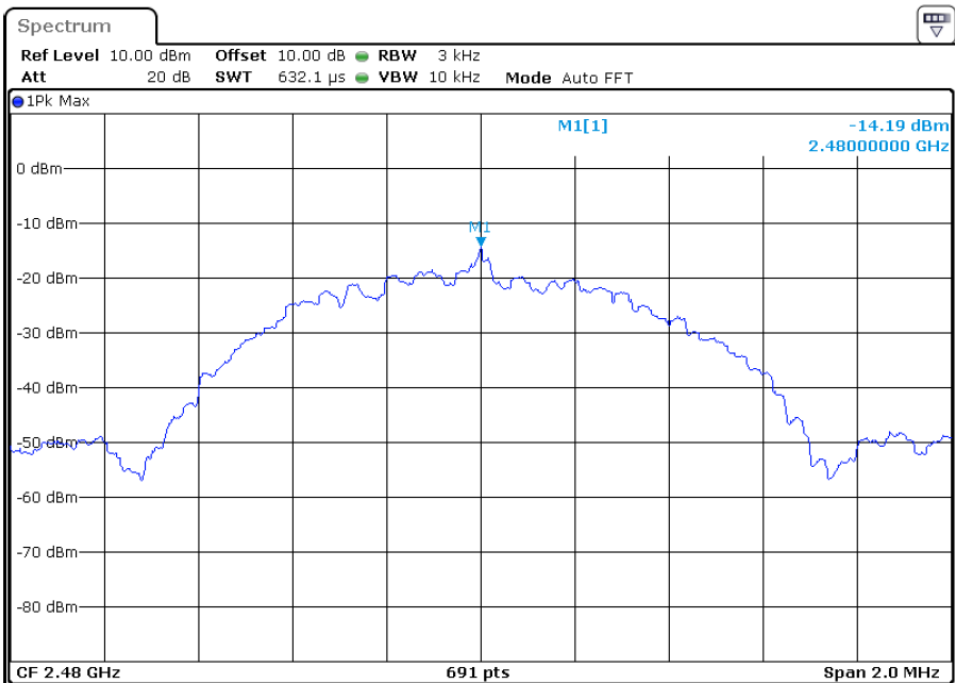
channel 0



channel 19

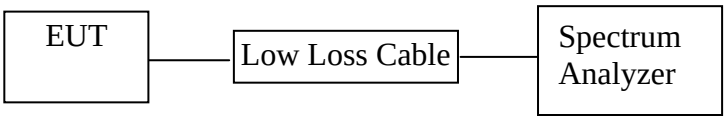


channel 39



9. BAND EDGE COMPLIANCE TEST

9.1.Block Diagram of Test Setup



(EUT: Light-Up Sound Storm Speaker)

9.2.The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

9.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

9.4.Operating Condition of EUT

9.4.1.Setup the EUT and simulator as shown as Section 9.1.

9.4.2.Turn on the power of all equipment.

9.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2480MHz TX frequency to transmit.

9.5.Test Procedure

Conducted Band Edge:

9.5.1.The transmitter output was connected to the spectrum analyzer via a low loss cable.

9.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz.

9.5.3. Radiate Band Edge:

9.5.4.The EUT is placed on a turntable, which is 1.5m above the ground plane and worked at highest radiated power.

9.5.5.The turntable was rotated for 360 degrees to determine the position of maximum emission level.

9.5.6.EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

9.5.7.Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

9.5.8.RBW=1MHz, VBW=1MHz

9.5.9.The band edges was measured and recorded.

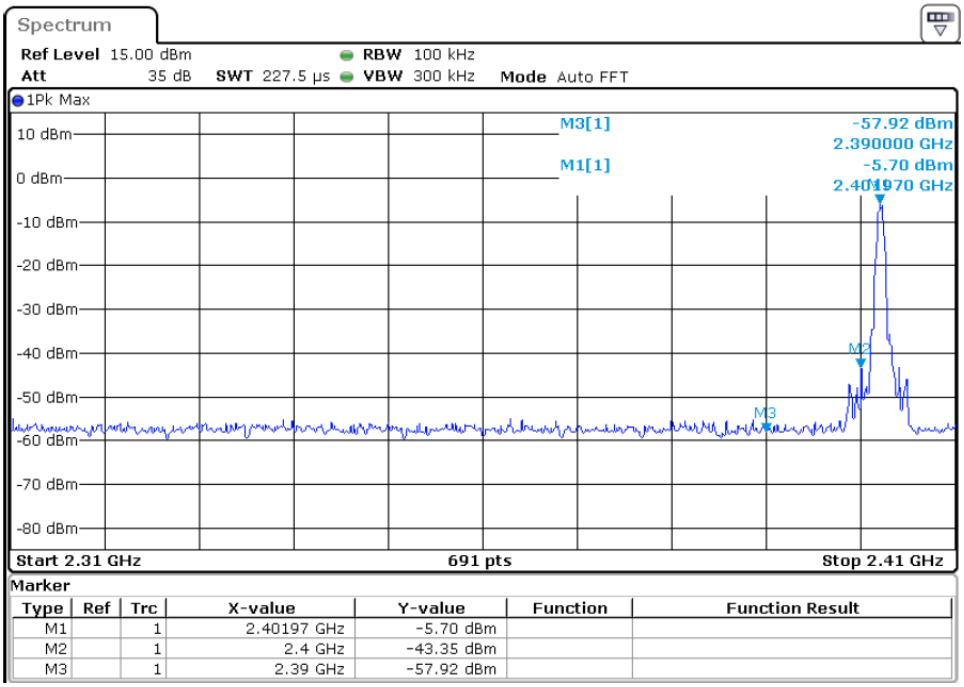
9.6.Test Result

Pass

Conducted Band Edge Result

Channel	Frequency	Delta peak to band emission	Limit(dBc)
0	2.4GHz	37.65	20
39	2.4835GHz	56.35	20

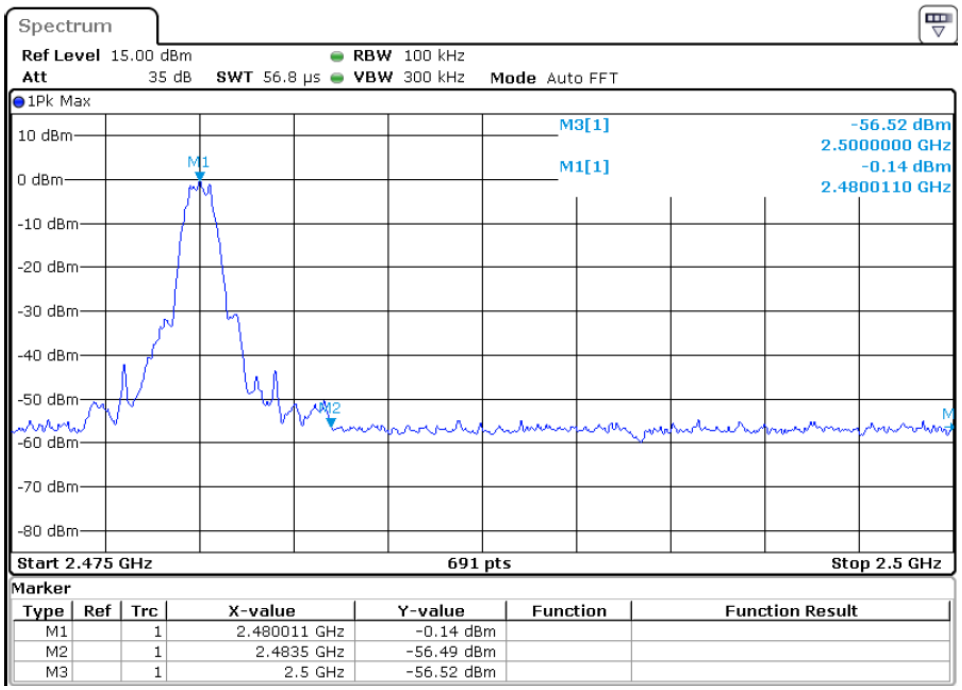
channel 0



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40197 GHz	-5.70 dBm		
M2		1	2.4 GHz	-43.35 dBm		
M3		1	2.39 GHz	-57.92 dBm		

channel 39



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.480011 GHz	-0.14 dBm		
M2		1	2.4835 GHz	-56.49 dBm		
M3		1	2.5 GHz	-56.52 dBm		

Radiated Band Edge Result

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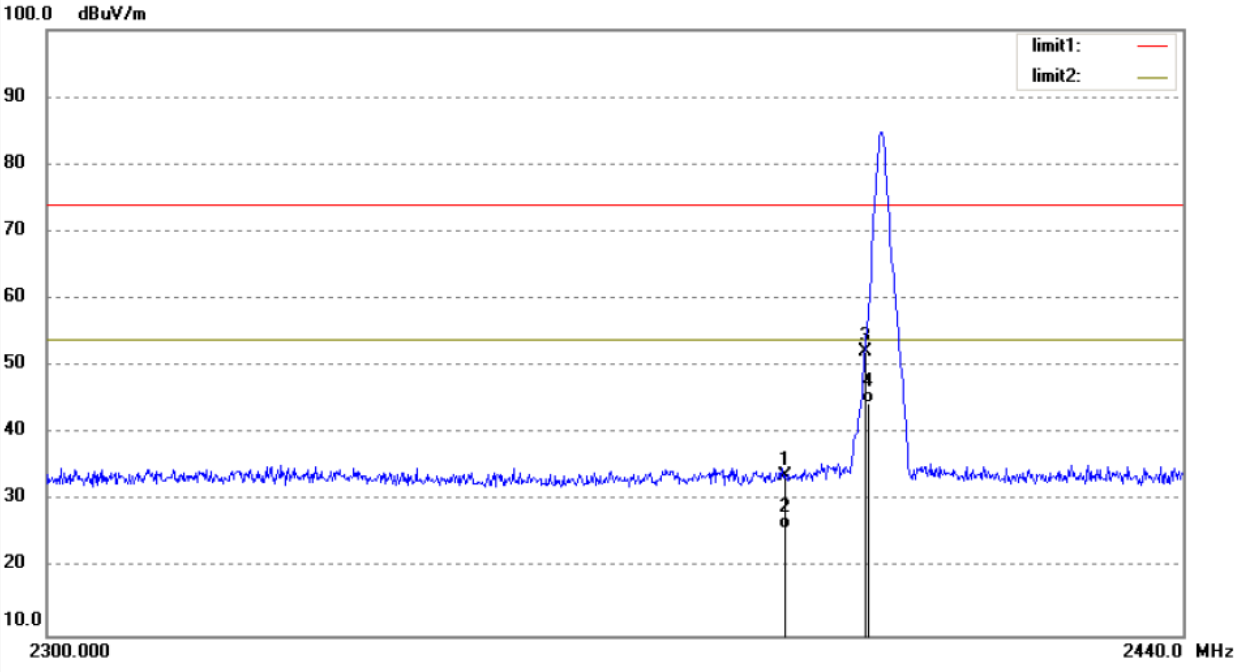
Job No.: star2017 #751
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Light-Up Sound Storm Speaker
Mode: TX 2402MHz
Model: CB-335080
Manufacturer: CLEVER BRIGHT

Polarization: Horizontal
Power Source: DC 3.7V
Date: 17/05/05/
Time: 10/59/54
Engineer Signature: star
Distance: 3m

Note: Report No.:ATE20170422



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	41.67	-8.00	33.67	74.00	-40.33	peak			
2	2390.000	33.78	-8.00	25.78	54.00	-28.22	AVG			
3	2400.000	60.15	-7.97	52.18	74.00	-21.82	peak			
4	2400.000	52.60	-7.97	44.63	54.00	-9.37	AVG			

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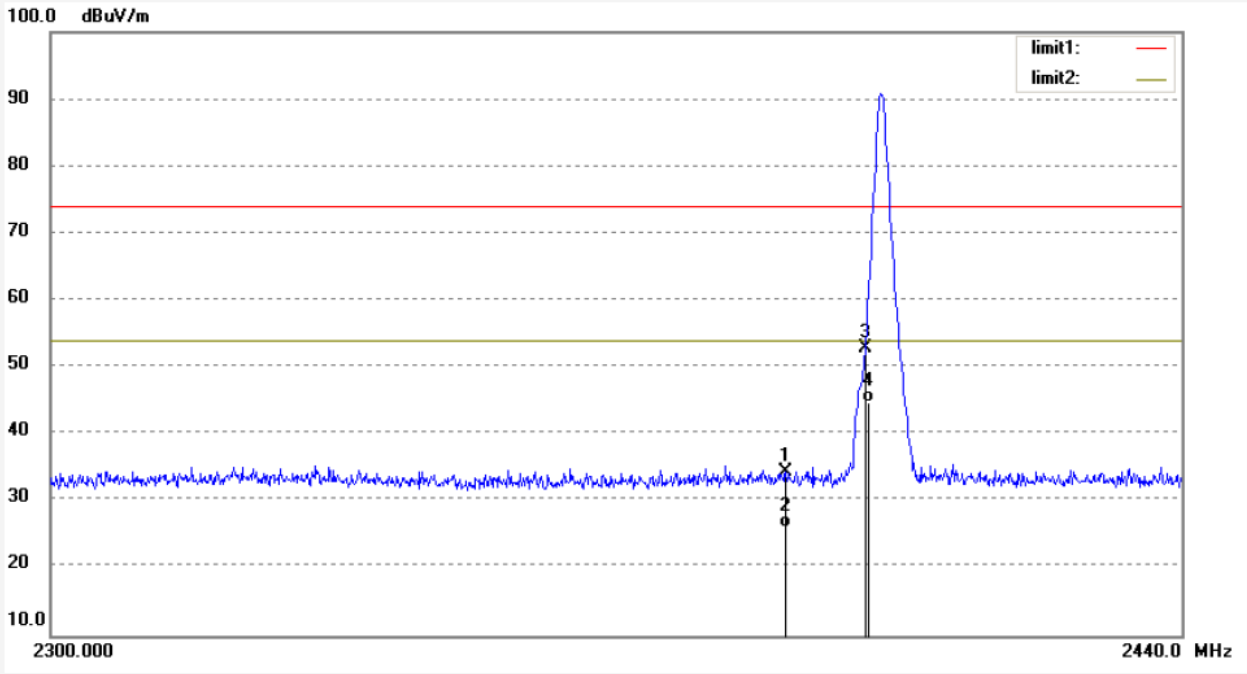
Job No.: star2017 #752
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Light-Up Sound Storm Speaker
Mode: TX 2402MHz
Model: CB-335080
Manufacturer: CLEVER BRIGHT

Polarization: Vertical
Power Source: DC 3.7V
Date: 17/05/05/
Time: 11/05/00
Engineer Signature: star
Distance: 3m

Note: Report No.:ATE20170422



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	42.45	-8.00	34.45	74.00	-39.55	peak			
2	2390.000	34.14	-8.00	26.14	54.00	-27.86	AVG			
3	2400.000	60.75	-7.97	52.78	74.00	-21.22	peak			
4	2400.000	52.77	-7.97	44.80	54.00	-9.20	AVG			

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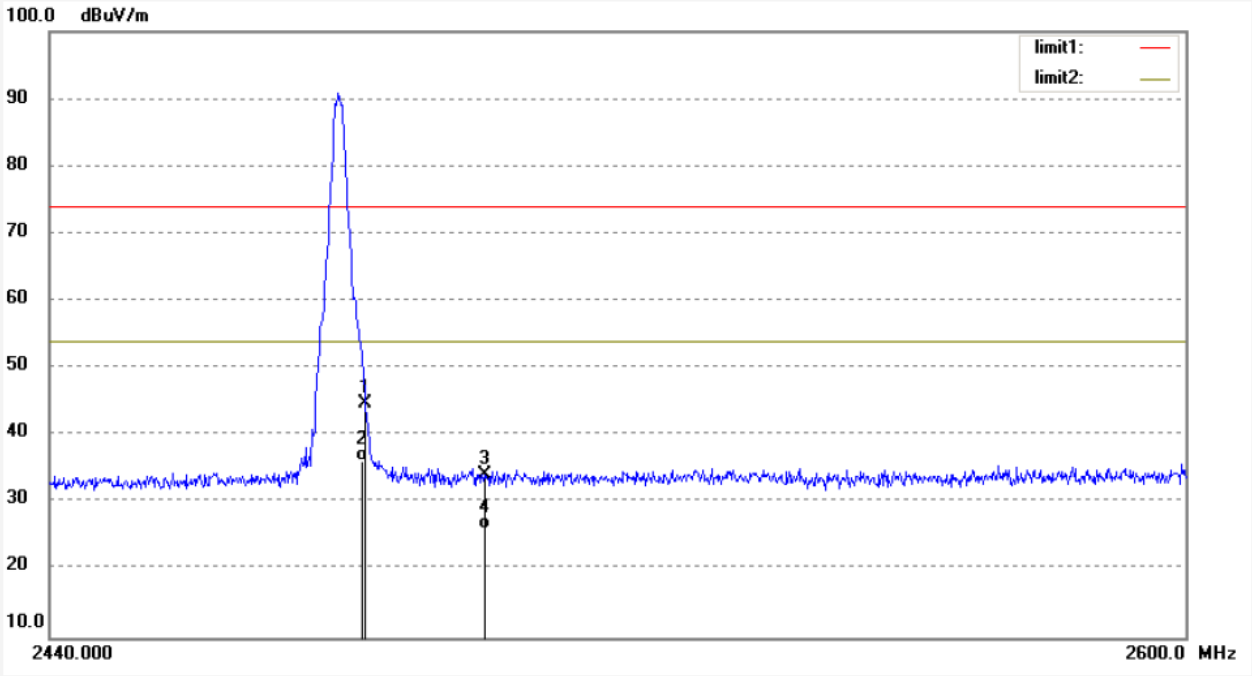
Job No.: star2017 #753
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Light-Up Sound Storm Speaker
Mode: TX 2480MHz
Model: CB-335080
Manufacturer: CLEVER BRIGHT

Polarization: Vertical
Power Source: DC 3.7V
Date: 17/05/05/
Time: 11/11/07
Engineer Signature: star
Distance: 3m

Note: Report No.:ATE20170422



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	52.53	-7.76	44.77	74.00	-29.23	peak			
2	2483.500	44.06	-7.76	36.30	54.00	-17.70	AVG			
3	2500.000	41.97	-7.71	34.26	74.00	-39.74	peak			
4	2500.000	33.69	-7.71	25.98	54.00	-28.02	AVG			

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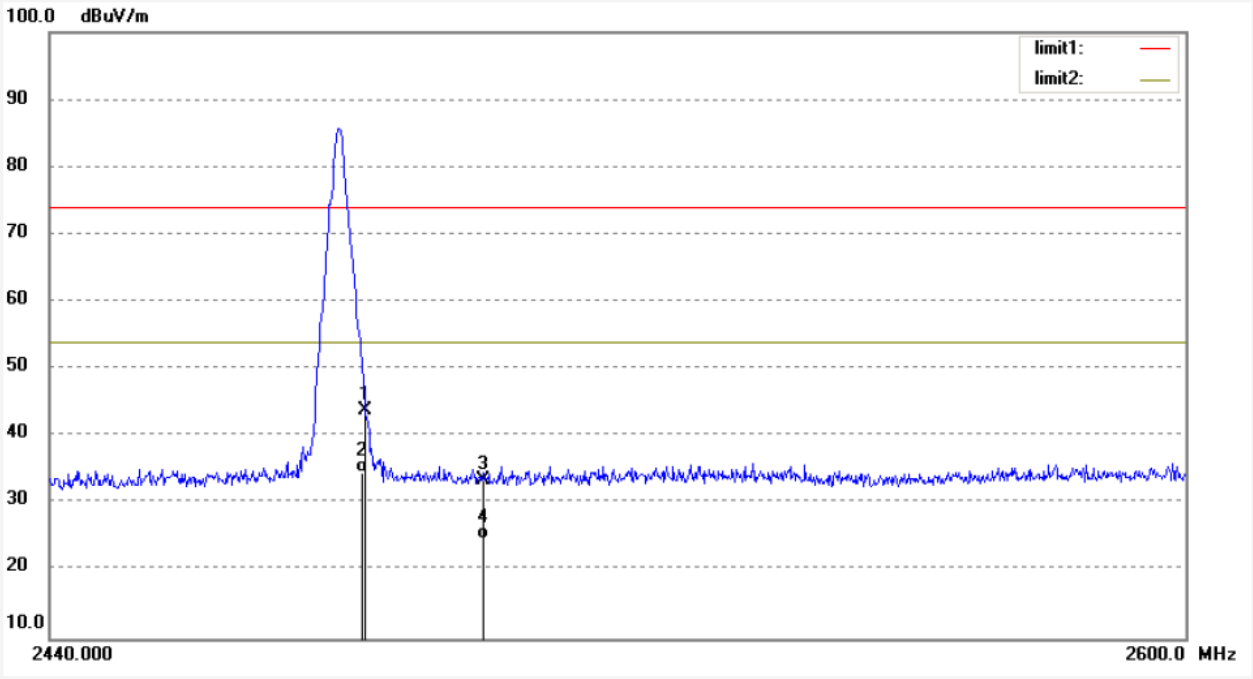
Job No.: star2017 #754	Polarization: Horizontal
Standard: FCC PK	Power Source: DC 3.7V
Test item: Radiation Test	Date: 17/05/05/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 11/17/14
EUT: Light-Up Sound Storm Speaker	Engineer Signature: star
Mode: TX 2480MHz	Distance: 3m
Model: CB-335080	
Manufacturer: CLEVER BRIGHT	

Note: Report No.:ATE20170422



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	51.63	-7.76	43.87	74.00	-30.13	peak			
2	2483.500	42.45	-7.76	34.69	54.00	-19.31	AVG			
3	2500.000	41.29	-7.71	33.58	74.00	-40.42	peak			
4	2500.000	32.55	-7.71	24.84	54.00	-29.16	AVG			

Note:

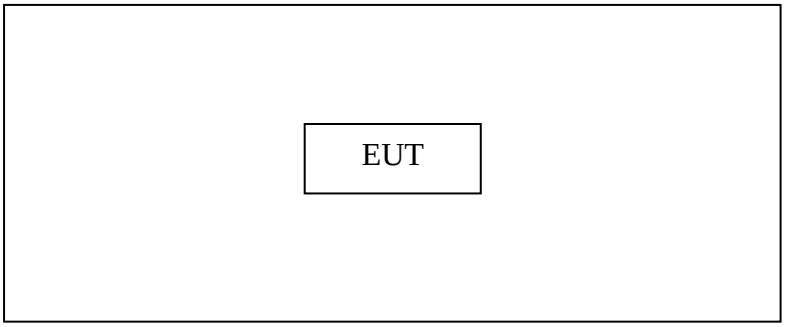
1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

   Result = Reading + Corrected Factor

10.RADIATED SPURIOUS EMISSION TEST

10.1.Block Diagram of Test Setup

10.1.1.Block diagram of connection between the EUT and peripherals

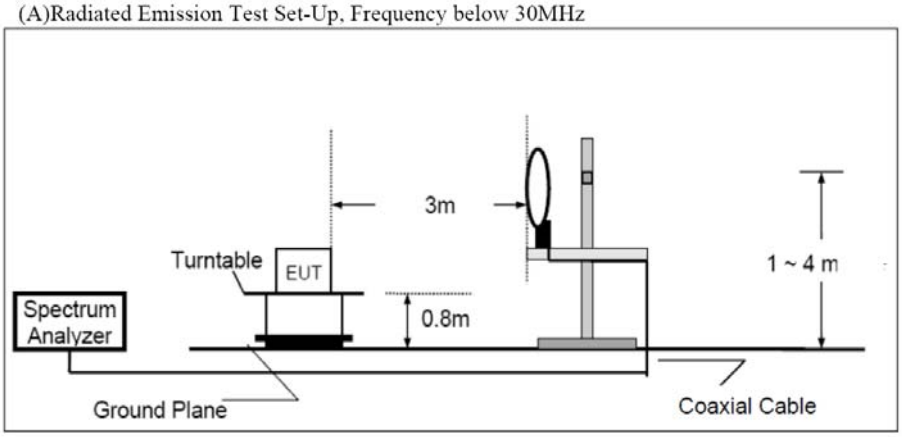


Setup: Transmitting mode

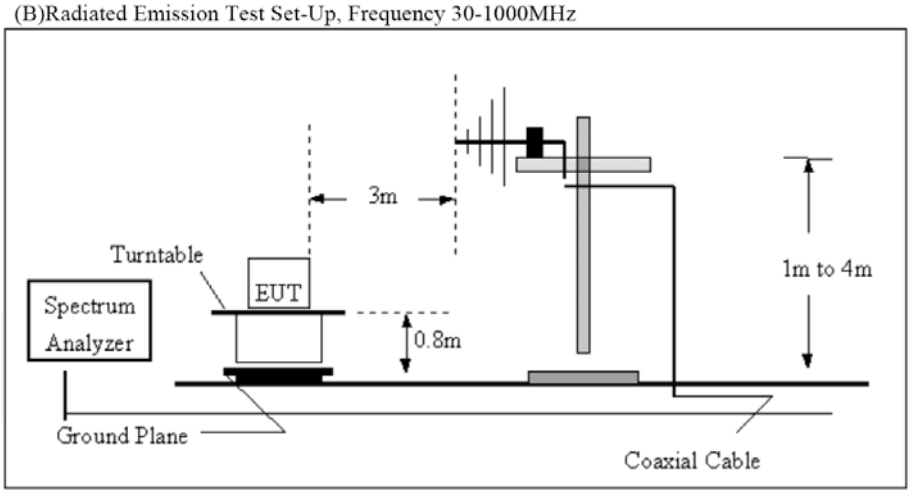
(EUT: Light-Up Sound Storm Speaker)

10.1.2.Semi-Anechoic Chamber Test Setup Diagram

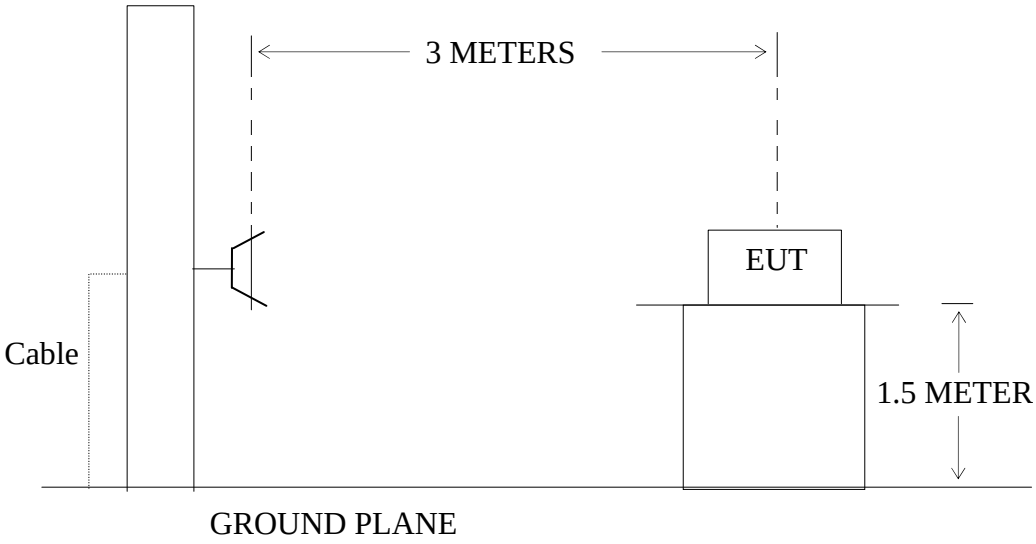
(A)Radiated Emission Test Set-Up, Frequency below 30MHz



(B)Radiated Emission Test Set-Up, Frequency 30-1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1GHz



10.2.The Limit For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

10.3.Restricted bands of operation

10.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510
[2]Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

10.4.Configuration of EUT on Measurement

The equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

10.5.Operating Condition of EUT

10.5.1.Setup the EUT and simulator as shown as Section 10.1.

10.5.2.Turn on the power of all equipment.

10.5.3.Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2440MHz, and 2480MHz TX frequency to transmit.

10.6.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground(Below 1GHz). The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 9 kHz in below 30MHz. and set at 120 kHz in 30-1000MHz, and 1MHz in above 1000MHz.

The frequency range from 9 kHz to 25GHz is checked.
The final measurement in band 9-90 kHz, 110-490 kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.
The field strength is calculated by adding the antenna factor, and cable loss, and subtracting the amplifier gain from the measured reading. The basic equation calculation is as follows:
Result = Reading + Corrected Factor
Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

10.7.The Field Strength of Radiation Emission Measurement Results

PASS.

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. *: Denotes restricted band of operation.

3. The radiation emissions from 9kHz-30MHz and 18-25GHz are not reported, because the test values lower than the limits of 20dB.

Below 1GHz

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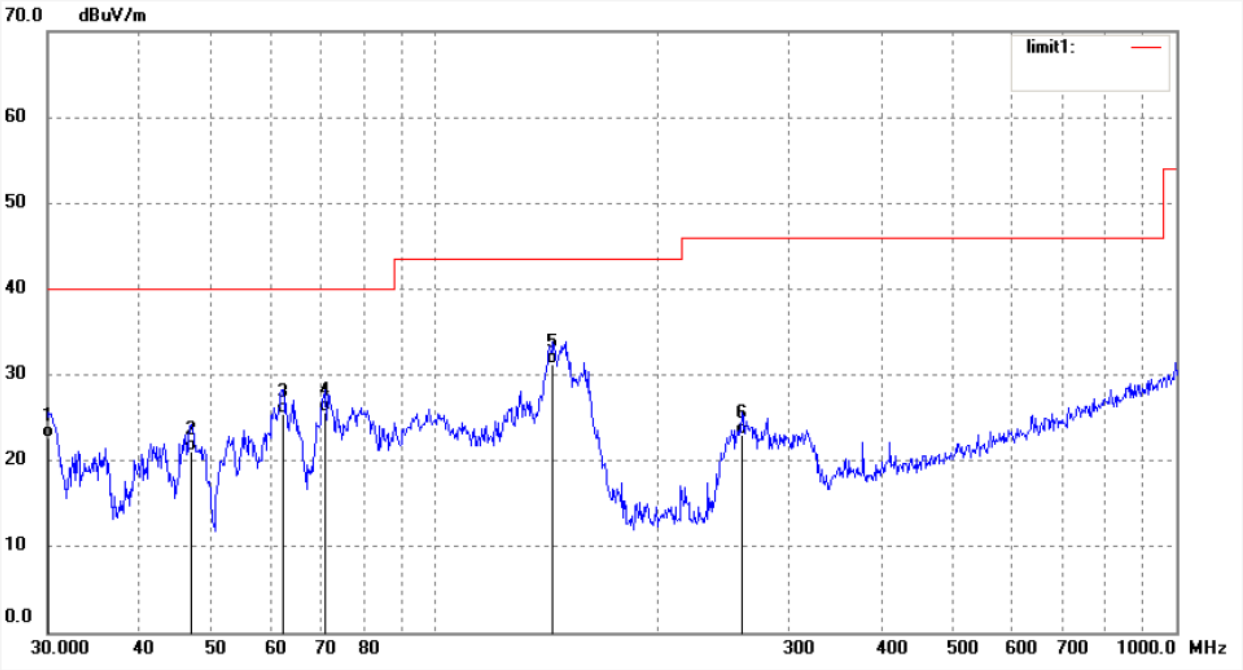
Job No.: star2017 #739	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: DC 3.7V
Test item: Radiation Test	Date: 17/05/04/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/40/24
EUT: Light-Up Sound Storm Speaker	Engineer Signature: star
Mode: TX 2402MHz	Distance: 3m
Model: CB-335080	
Manufacturer: CLEVER BRIGHT	

Note: Report No.:ATE20170422



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	30.1056	37.42	-14.73	22.69	40.00	-17.31	QP			
2	46.8721	40.77	-19.61	21.16	40.00	-18.84	QP			
3	62.3038	47.25	-21.85	25.40	40.00	-14.60	QP			
4	70.9536	47.69	-22.12	25.57	40.00	-14.43	QP			
5	144.2820	53.67	-22.36	31.31	43.50	-12.19	QP			
6	259.4433	40.52	-17.57	22.95	46.00	-23.05	QP			

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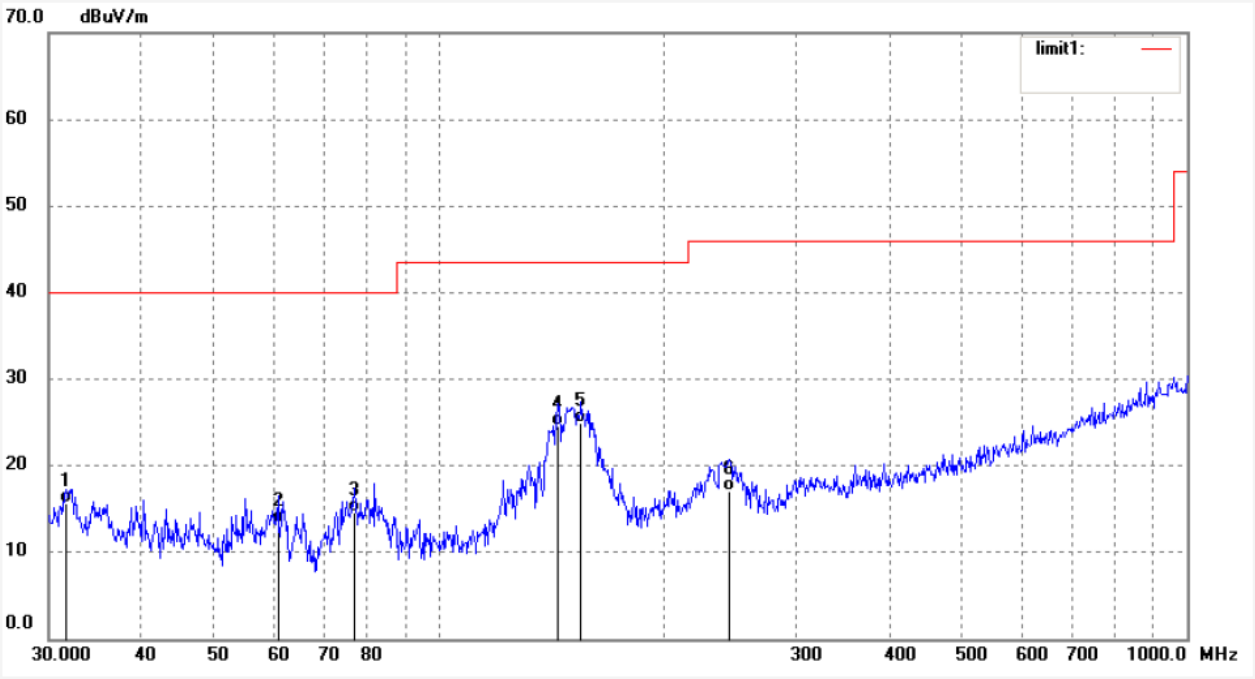
Job No.: star2017 #740
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Light-Up Sound Storm Speaker
Mode: TX 2402MHz
Model: CB-335080
Manufacturer: CLEVER BRIGHT

Polarization: Horizontal
Power Source: DC 3.7V
Date: 17/05/04/
Time: 10/57/21
Engineer Signature: star
Distance: 3m

Note: Report No.:ATE20170422



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	31.6234	30.71	-15.10	15.61	40.00	-24.39	QP			
2	60.7901	35.20	-21.81	13.39	40.00	-26.61	QP			
3	76.9256	36.84	-22.18	14.66	40.00	-25.34	QP			
4	144.2820	47.01	-22.36	24.65	43.50	-18.85	QP			
5	154.7856	46.90	-21.94	24.96	43.50	-18.54	QP			
6	244.4003	35.17	-18.15	17.02	46.00	-28.98	QP			

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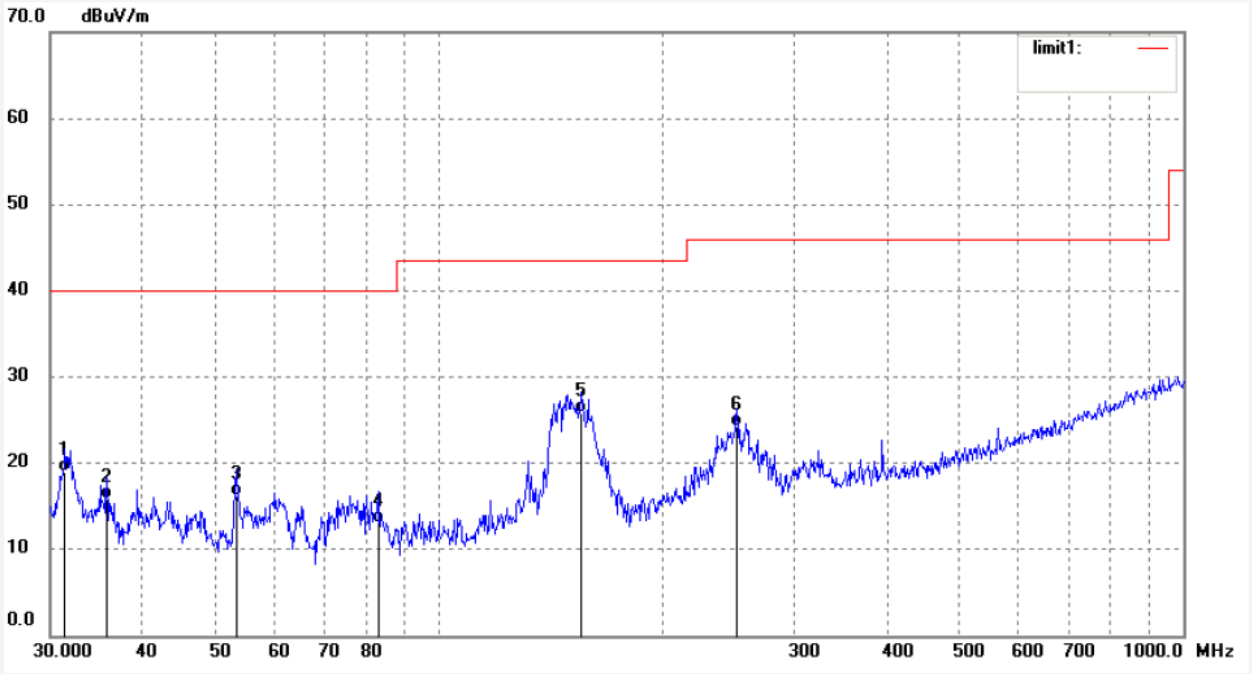
Job No.: star2017 #741
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Light-Up Sound Storm Speaker
Mode: TX 2440MHz
Model: CB-335080
Manufacturer: CLEVER BRIGHT

Polarization: Horizontal
Power Source: DC 3.7V
Date: 17/05/04/
Time: 11/07/56
Engineer Signature: star
Distance: 3m

Note: Report No.:ATE20170422



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	31.4021	33.97	-15.05	18.92	40.00	-21.08	QP			
2	35.7616	32.04	-16.27	15.77	40.00	-24.23	QP			
3	53.3793	37.57	-21.36	16.21	40.00	-23.79	QP			
4	82.8161	35.09	-21.98	13.11	40.00	-26.89	QP			
5	155.3305	47.63	-21.88	25.75	43.50	-17.75	QP			
6	251.3676	42.31	-18.05	24.26	46.00	-21.74	QP			

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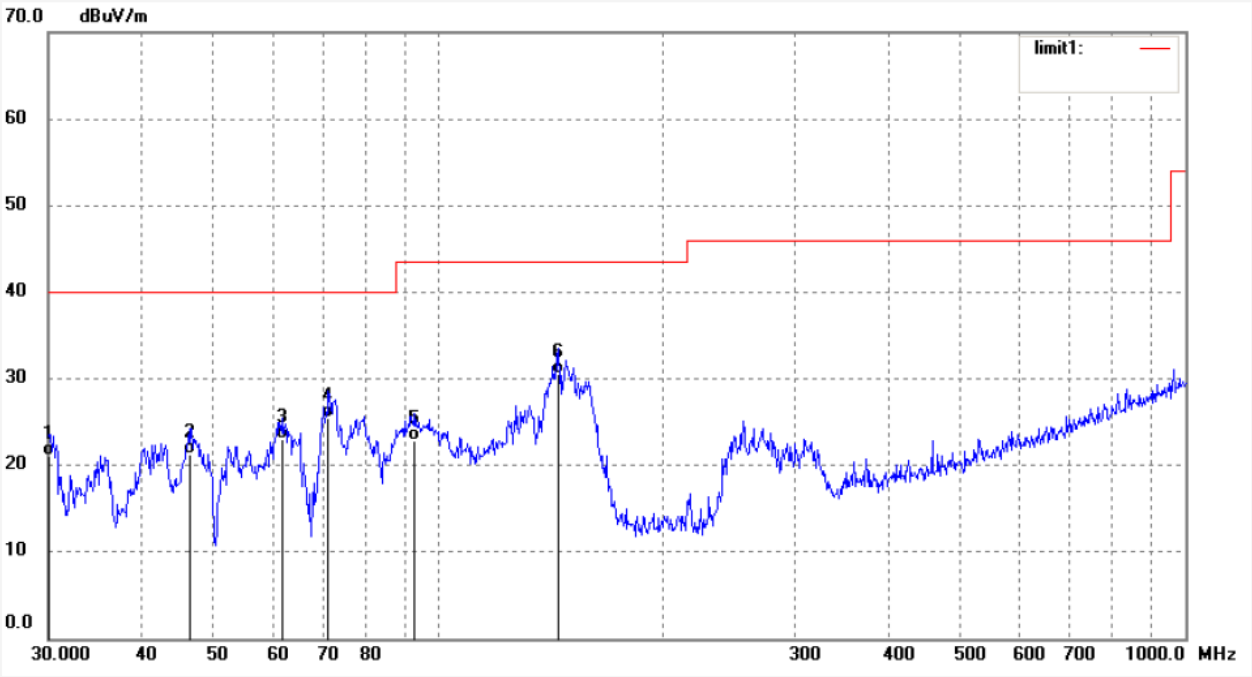
Job No.: star2017 #742
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Light-Up Sound Storm Speaker
Mode: TX 2440MHz
Model: CB-335080
Manufacturer: CLEVER BRIGHT

Polarization: Vertical
Power Source: DC 3.7V
Date: 17/05/04/
Time: 11/14/12
Engineer Signature: star
Distance: 3m

Note: Report No.:ATE20170422



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	30.1055	35.90	-14.73	21.17	40.00	-18.83	QP			
2	46.3806	40.78	-19.44	21.34	40.00	-18.66	QP			
3	61.8676	44.92	-21.84	23.08	40.00	-16.92	QP			
4	71.2032	47.58	-22.14	25.44	40.00	-14.56	QP			
5	92.9973	44.77	-21.92	22.85	43.50	-20.65	QP			
6	144.7898	52.91	-22.38	30.53	43.50	-12.97	QP			

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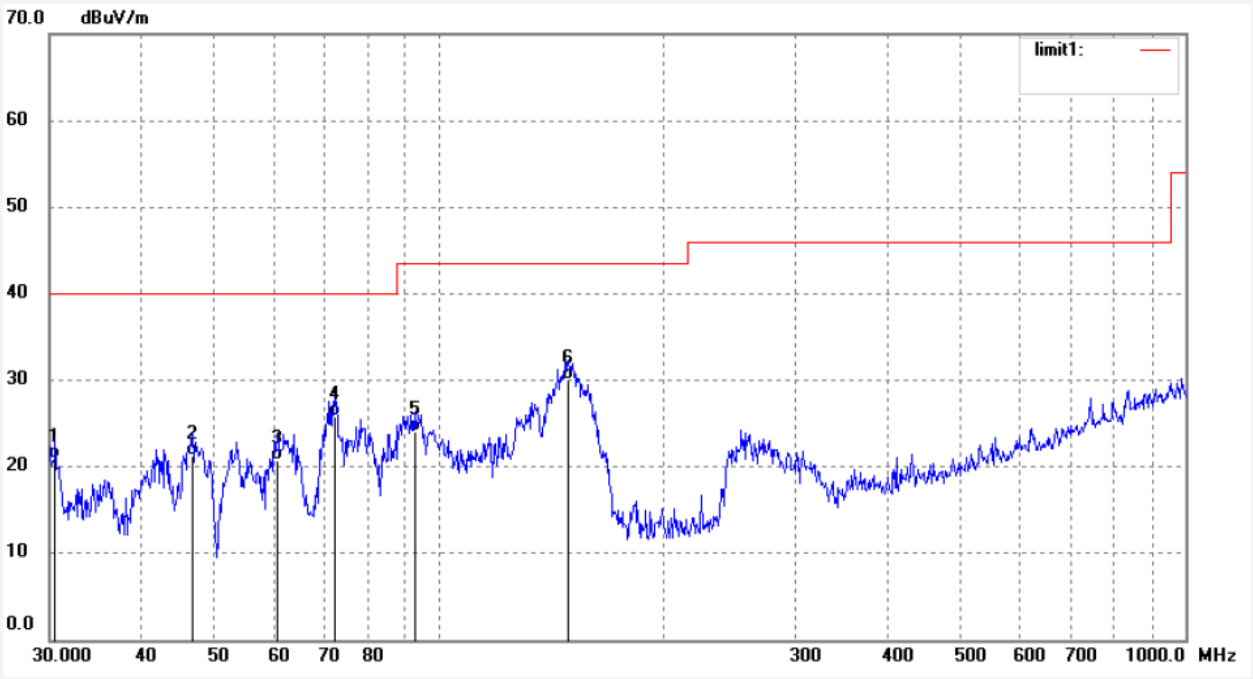
Fax:+86-0755-26503396

Job No.: star2017 #743	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: DC 3.7V
Test item: Radiation Test	Date: 17/05/04/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 11/20/47
EUT: Light-Up Sound Storm Speaker	Engineer Signature: star
Mode: TX 2480MHz	Distance: 3m
Model: CB-335080	
Manufacturer: CLEVER BRIGHT	

Note: Report No.:ATE20170422



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	30.5317	35.70	-14.83	20.87	40.00	-19.13	QP			
2	46.7077	40.74	-19.55	21.19	40.00	-18.81	QP			
3	60.5769	42.51	-21.81	20.70	40.00	-19.30	QP			
4	72.4651	47.99	-22.19	25.80	40.00	-14.20	QP			
5	92.6710	45.97	-21.92	24.05	43.50	-19.45	QP			
6	148.9173	52.41	-22.36	30.05	43.50	-13.45	QP			

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Site: 1# Chamber
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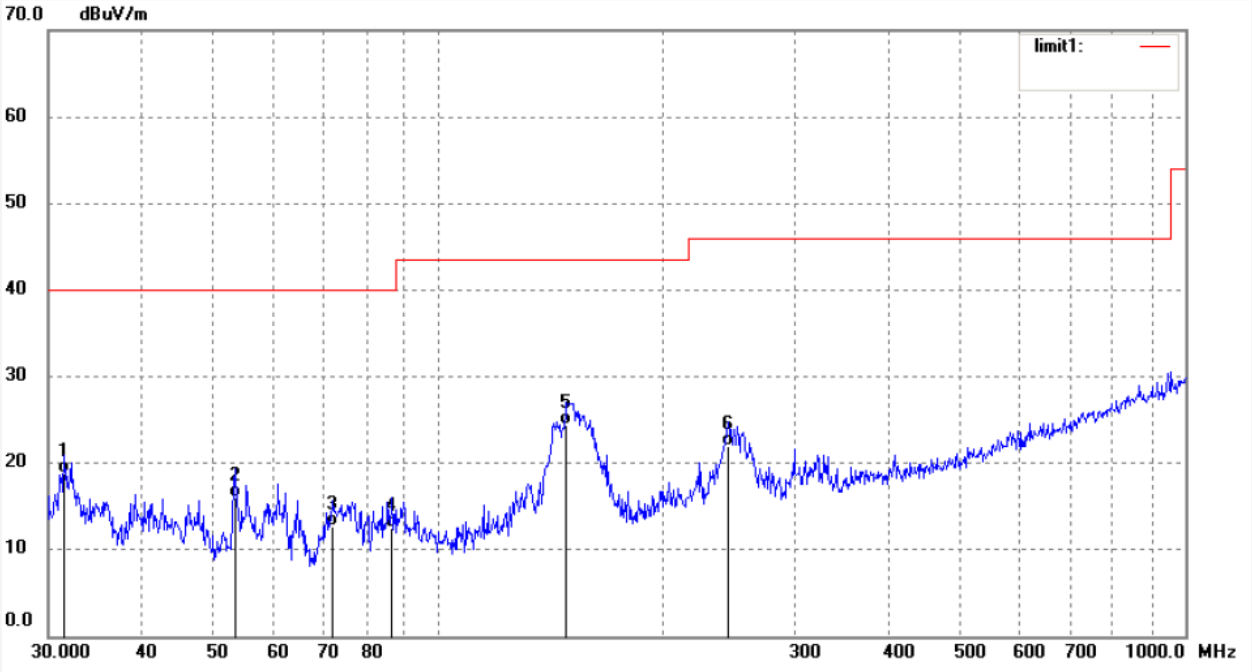
Fax:+86-0755-26503396

Job No.: star2017 #744
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Light-Up Sound Storm Speaker
Mode: TX 2480MHz
Model: CB-335080
Manufacturer: CLEVER BRIGHT

Polarization: Horizontal
Power Source: DC 3.7V
Date: 17/05/04/
Time: 11/26/06
Engineer Signature: star
Distance: 3m

Note: Report No.:ATE20170422



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	31.5126	33.96	-15.07	18.89	40.00	-21.11	QP			
2	53.5673	37.40	-21.38	16.02	40.00	-23.98	QP			
3	72.2111	34.79	-22.18	12.61	40.00	-27.39	QP			
4	86.6867	34.52	-21.95	12.57	40.00	-27.43	QP			
5	148.3951	46.84	-22.36	24.48	43.50	-19.02	QP			
6	244.4004	40.04	-18.15	21.89	46.00	-24.11	QP			

Above 1GHz

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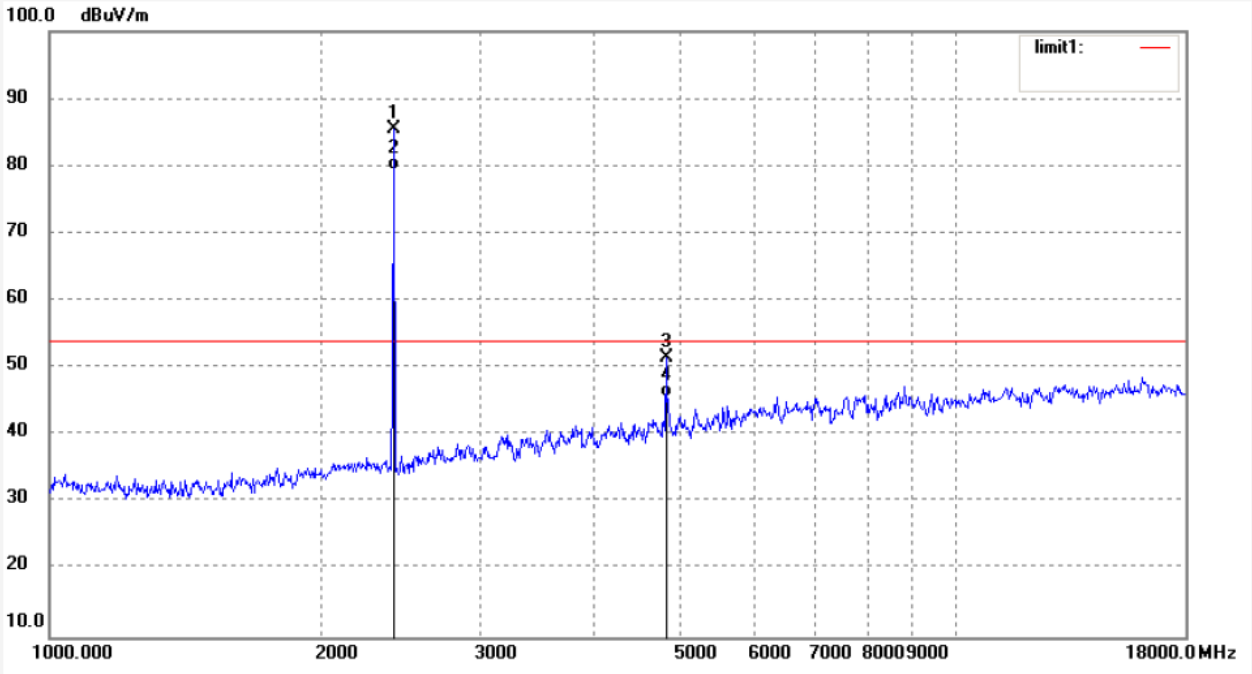
Job No.: star2017 #745	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 3.7V
Test item: Radiation Test	Date: 17/05/05/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/17/26
EUT: Light-Up Sound Storm Speaker	Engineer Signature: star
Mode: TX 2402MHz	Distance: 3m
Model: CB-335080	
Manufacturer: CLEVER BRIGHT	

Note: Report No.:ATE20170422



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.599	91.74	-6.25	85.49			peak			
2	2402.599	85.60	-6.25	79.35			AVG			
3	4804.328	50.41	1.02	51.43	54.00	-2.57	peak			
4	4804.328	44.67	1.02	45.69	54.00	-8.31	AVG			

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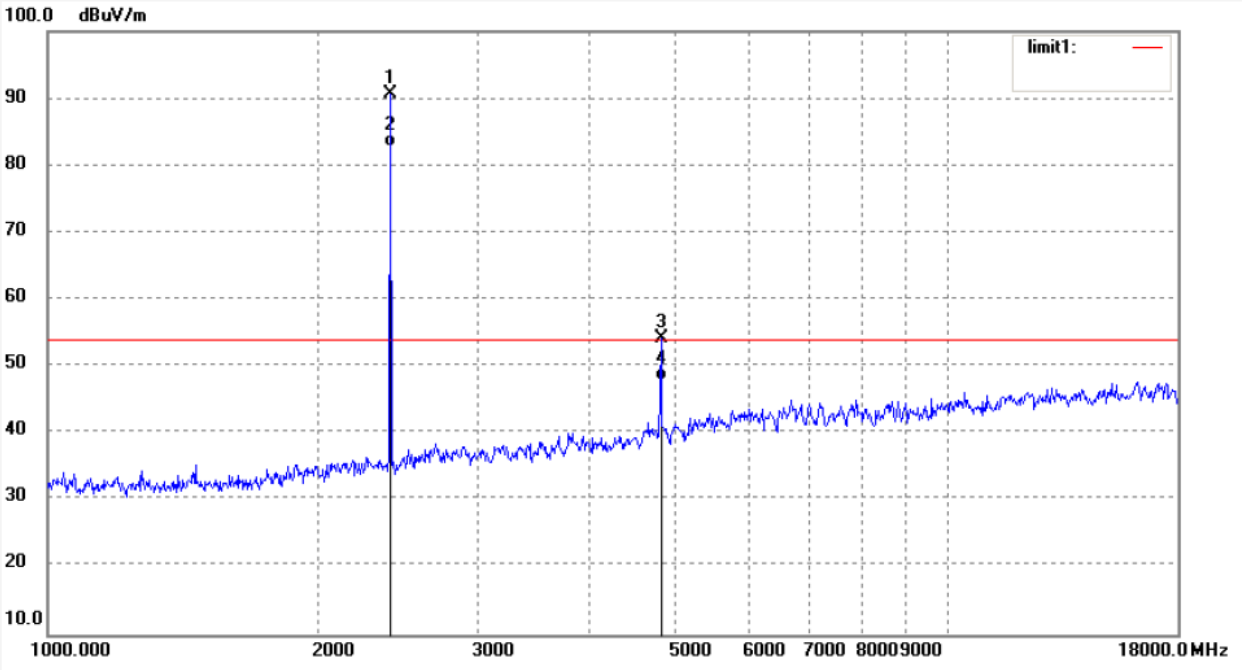
Job No.: star2017 #746
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Light-Up Sound Storm Speaker
Mode: TX 2402MHz
Model: CB-335080
Manufacturer: CLEVER BRIGHT

Polarization: Vertical
Power Source: DC 3.7V
Date: 17/05/05/
Time: 10/21/19
Engineer Signature: star
Distance: 3m

Note: Report No.:ATE20170422



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.599	96.82	-6.25	90.57			peak			
2	2402.599	88.98	-6.25	82.73			AVG			
3	4804.328	53.25	1.02	54.27	54.00	0.27	peak			
4	4804.328	46.98	1.02	48.00	54.00	-6.00	AVG			

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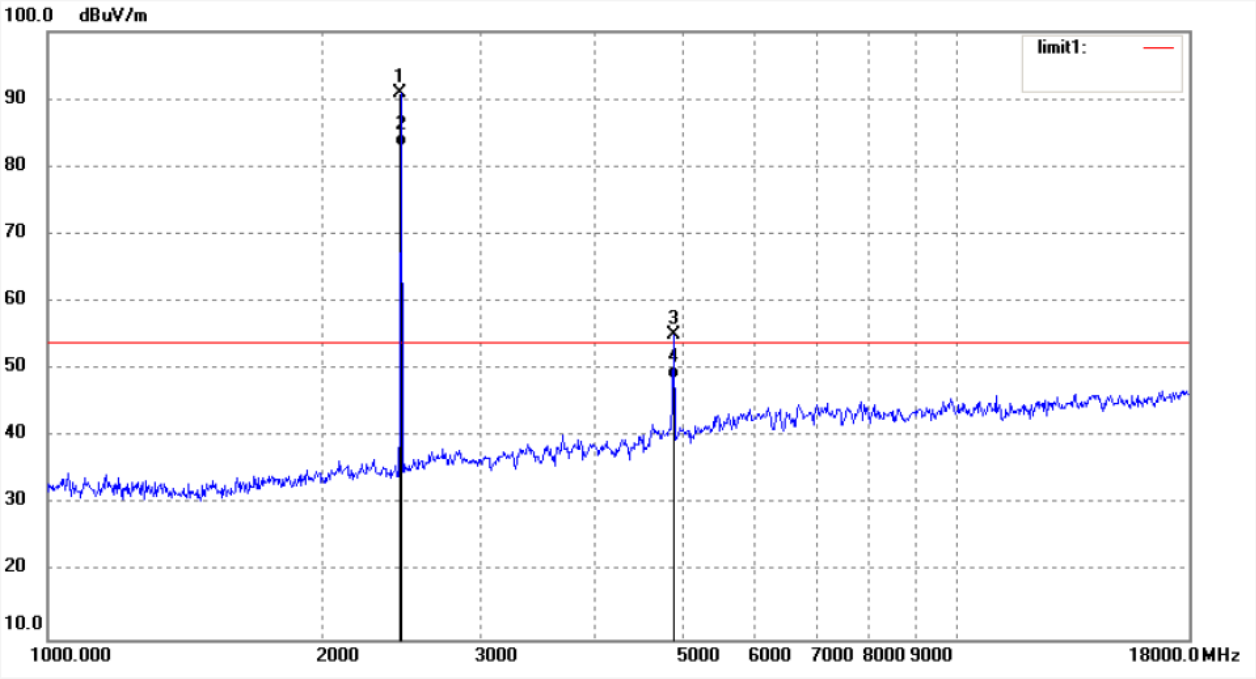
Job No.: star2017 #747
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Light-Up Sound Storm Speaker
Mode: TX 2440MHz
Model: CB-335080
Manufacturer: CLEVER BRIGHT

Polarization: Vertical
Power Source: DC 3.7V
Date: 17/05/05/
Time: 10/27/25
Engineer Signature: star
Distance: 3m

Note: Report No.:ATE20170422



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2440.034	96.93	-6.09	90.84			peak			
2	2440.034	89.14	-6.09	83.05			AVG			
3	4880.217	53.73	1.34	55.07	54.00	1.07	peak			
4	4880.217	47.28	1.34	48.62	54.00	-5.38	AVG			

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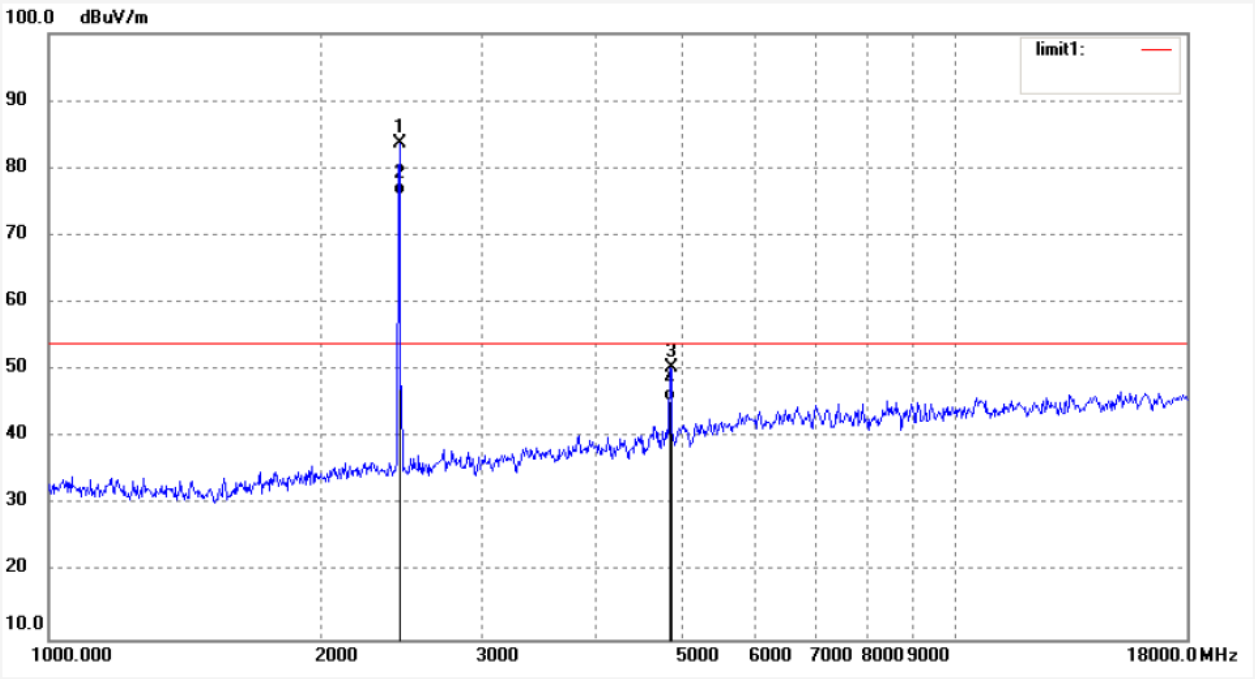
Job No.: star2017 #748	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 3.7V
Test item: Radiation Test	Date: 17/05/05/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/32/20
EUT: Light-Up Sound Storm Speaker	Engineer Signature: star
Mode: TX 2440MHz	Distance: 3m
Model: CB-335080	
Manufacturer: CLEVER BRIGHT	

Note: Report No.:ATE20170422



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2440.107	89.76	-6.09	83.67			peak			
2	2440.107	82.17	-6.09	76.08			AVG			
3	4880.338	49.13	1.34	50.47	54.00	-3.53	peak			
4	4880.338	44.03	1.34	45.37	54.00	-8.63	AVG			

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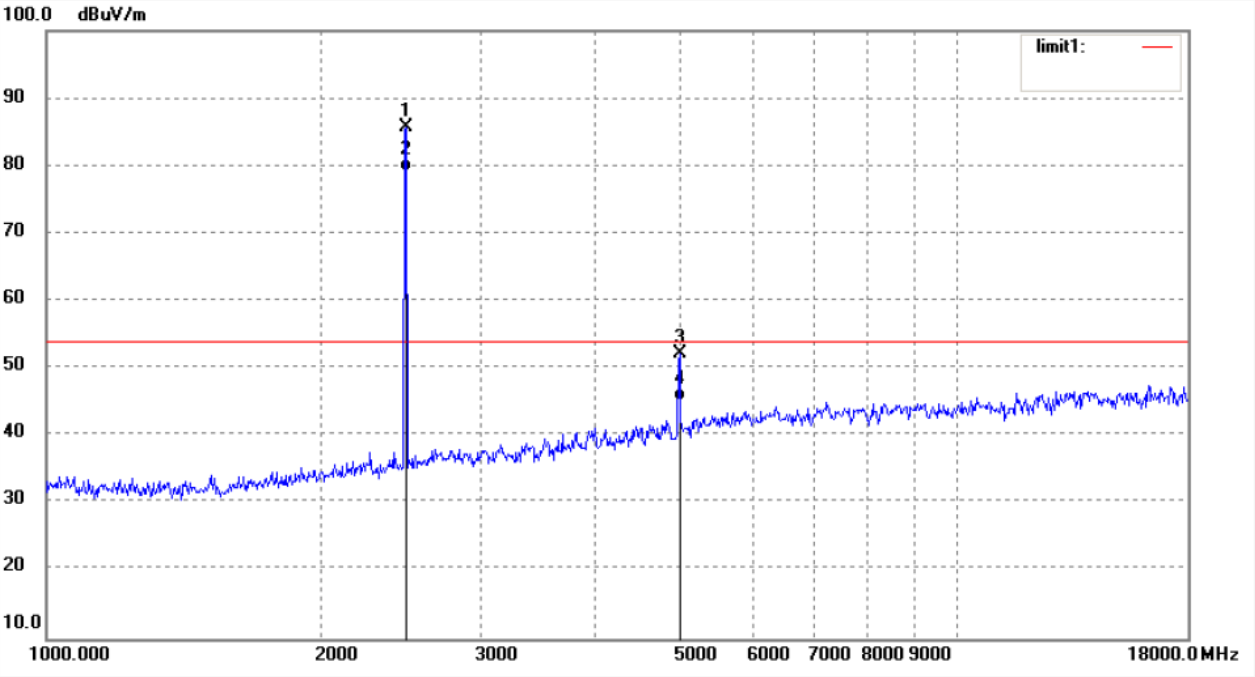
Job No.: star2017 #749
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Light-Up Sound Storm Speaker
Mode: TX 2480MHz
Model: CB-335080
Manufacturer: CLEVER BRIGHT

Polarization: Horizontal
Power Source: DC 3.7V
Date: 17/05/05/
Time: 10/37/15
Engineer Signature: star
Distance: 3m

Note: Report No.:ATE20170422



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.067	91.61	-5.90	85.71			peak			
2	2480.067	85.14	-5.90	79.24			AVG			
3	4960.197	50.56	1.70	52.26	54.00	-1.74	peak			
4	4960.197	43.62	1.70	45.32	54.00	-8.68	AVG			

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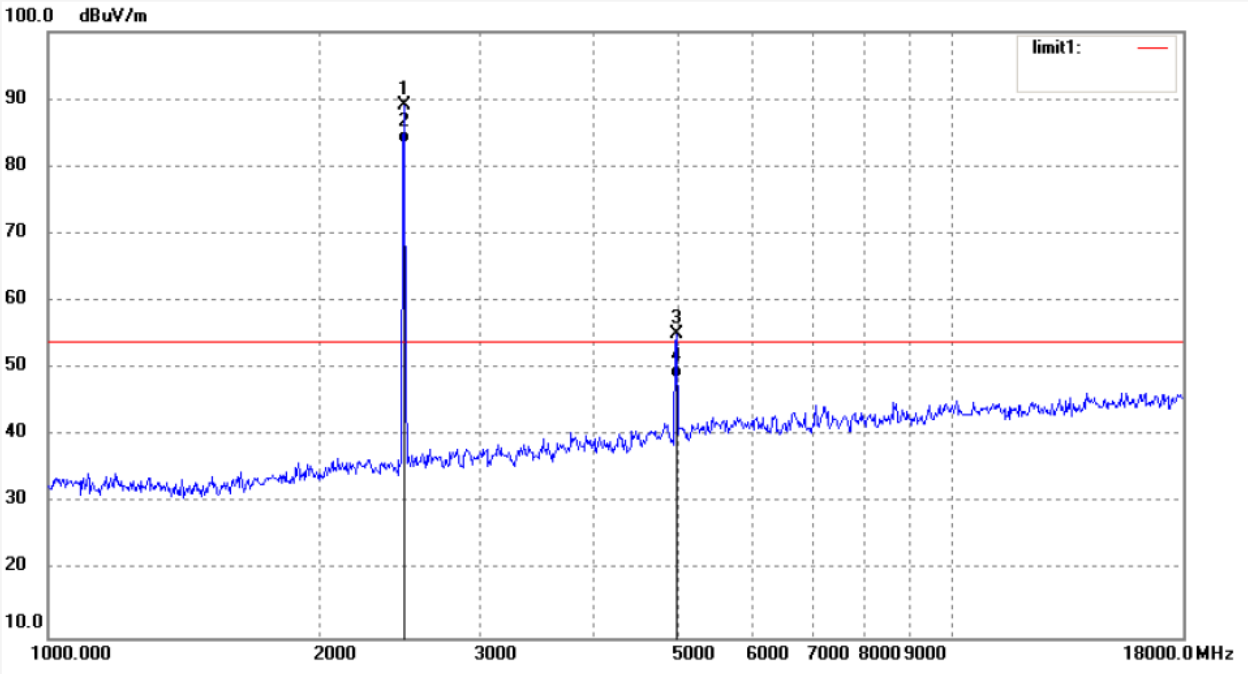
Job No.: star2017 #750
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Light-Up Sound Storm Speaker
Mode: TX 2480MHz
Model: CB-335080
Manufacturer: CLEVER BRIGHT

Polarization: Vertical
Power Source: DC 3.7V
Date: 17/05/05/
Time: 10/42/12
Engineer Signature: star
Distance: 3m

Note: Report No.:ATE20170422



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.038	95.08	-5.90	89.18			peak			
2	2480.038	89.41	-5.90	83.51			AVG			
3	4960.546	53.32	1.70	55.02	54.00	1.02	peak			
4	4960.546	46.79	1.70	48.49	54.00	-5.51	AVG			

11. ANTENNA REQUIREMENT

11.1. The Requirement

According to 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.

11.2. Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 0dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.

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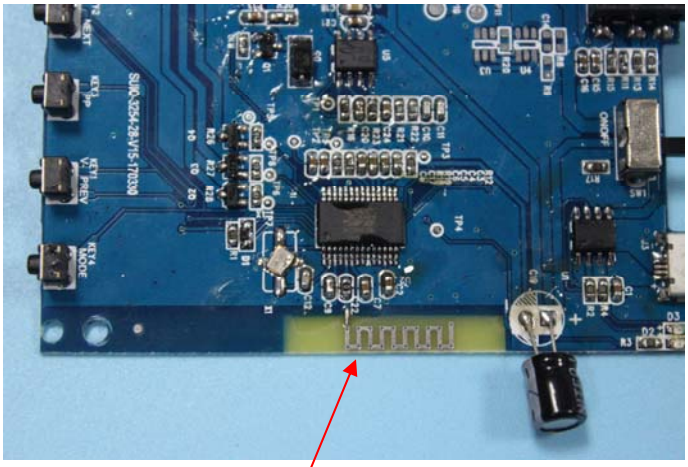
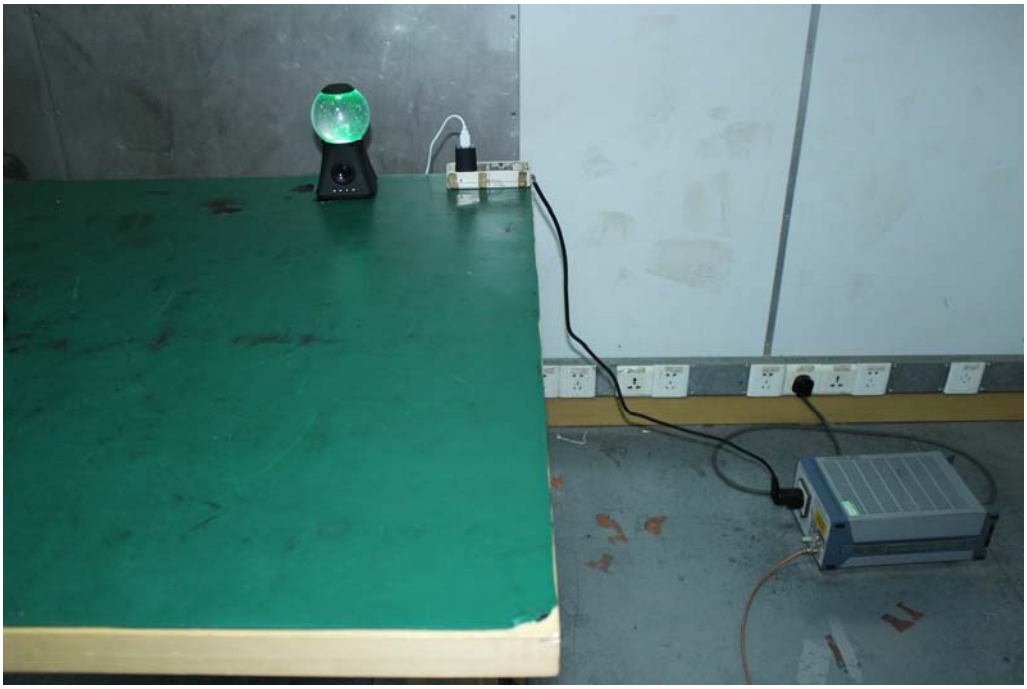
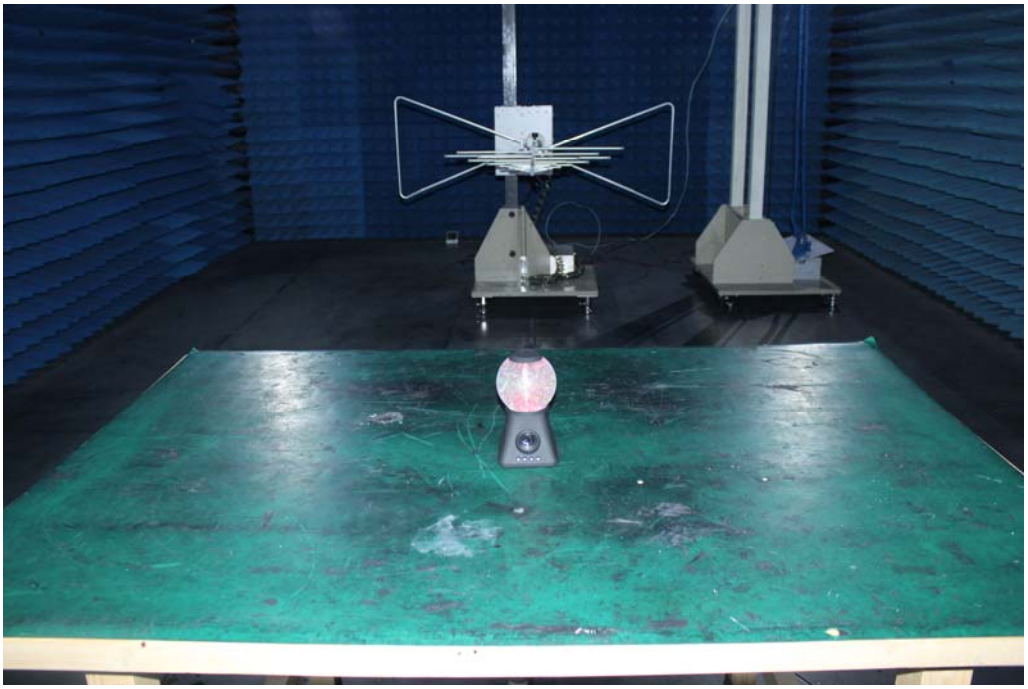


12. TEST PHOTOGRAPHS

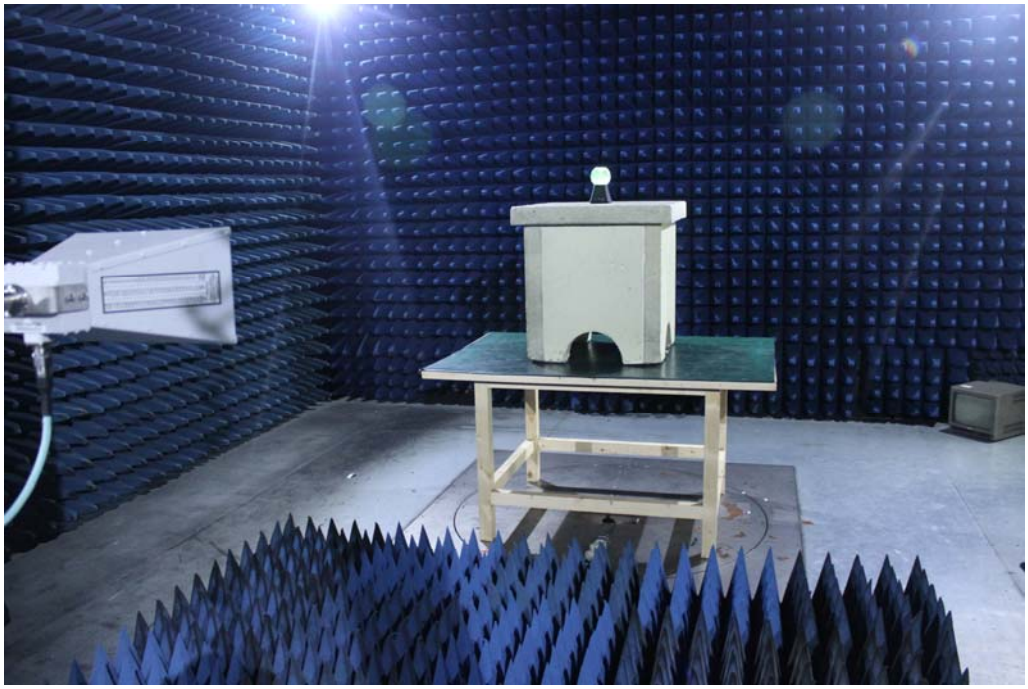
12.1. Photograph of set-up for Mains Terminal Disturbance Voltage



12.2. Photograph of set-up for Radiation Measurement Below 1GHz

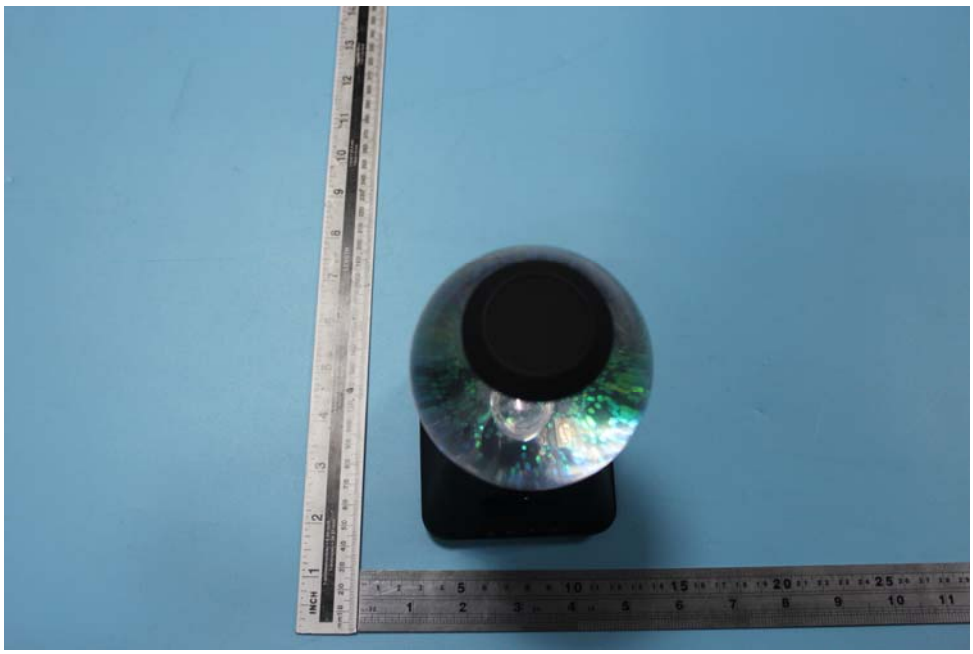


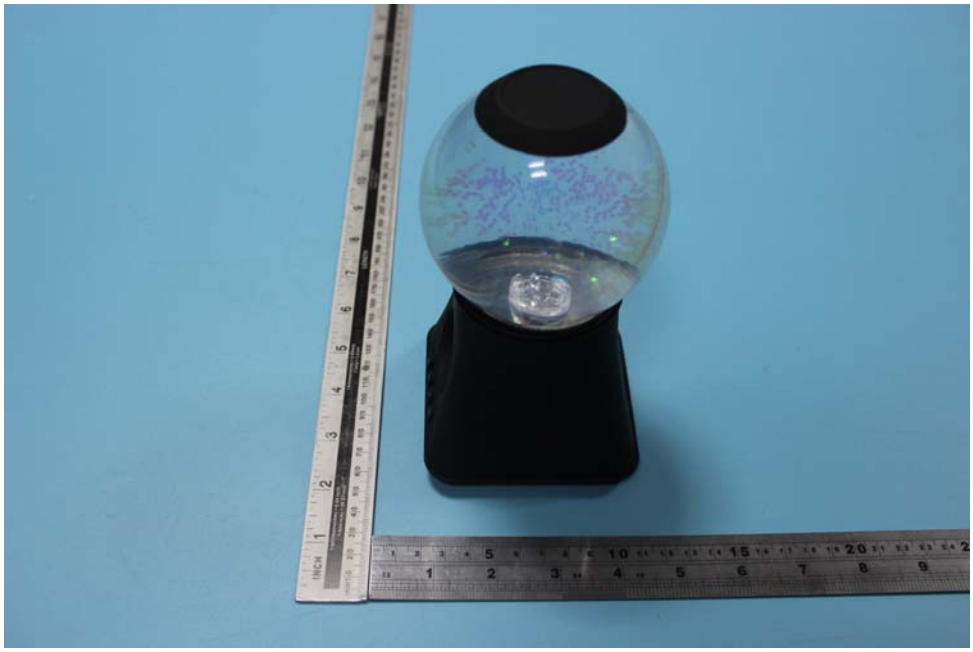
12.3.Photograph of set-up for Radiation Measurement above 1GHz

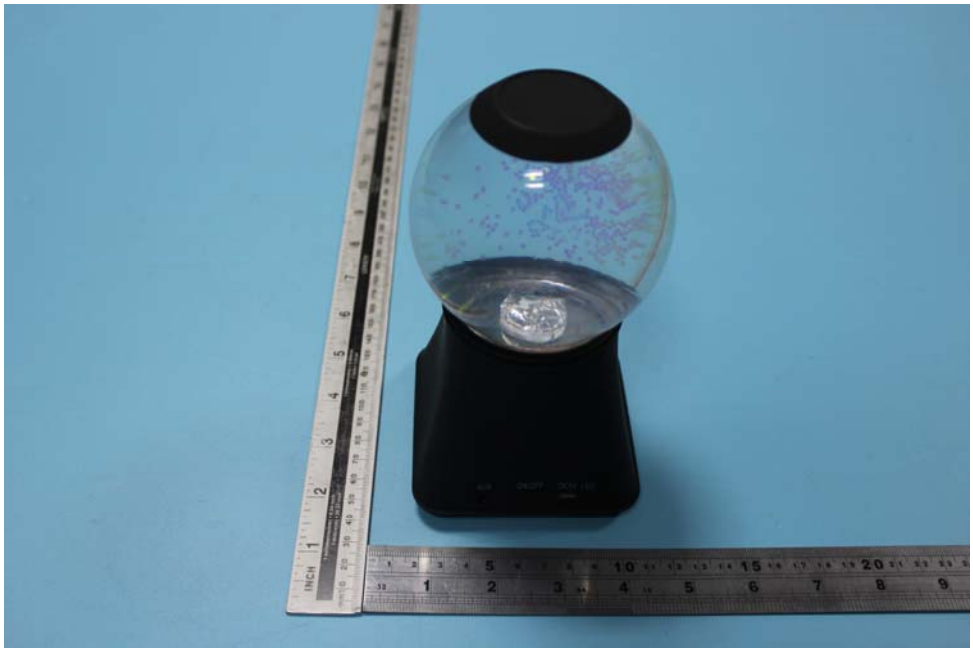


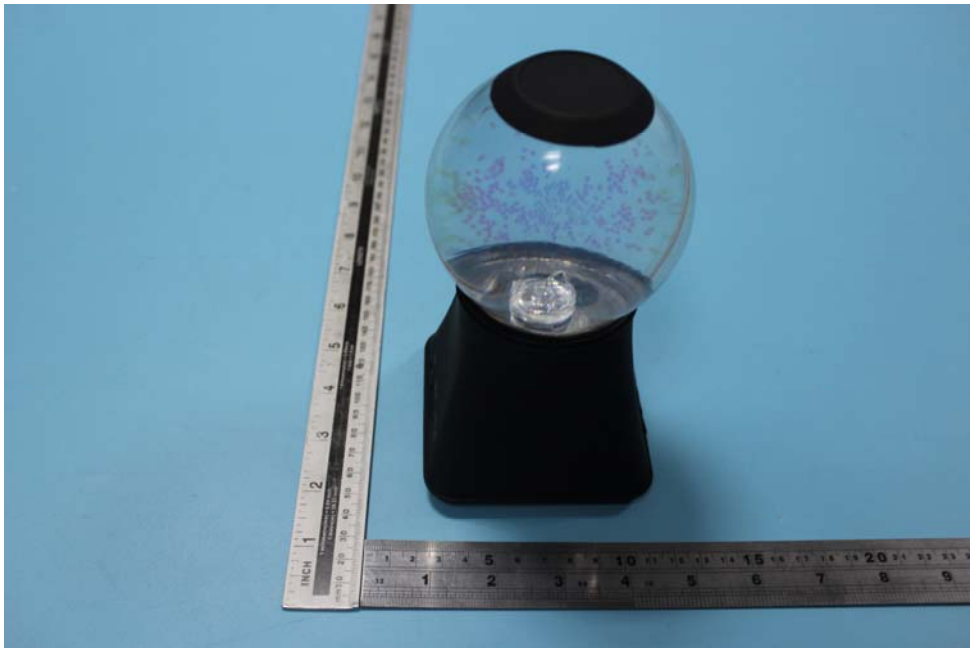
13.EUT PHOTOGRAPHS

13.1.External Photos



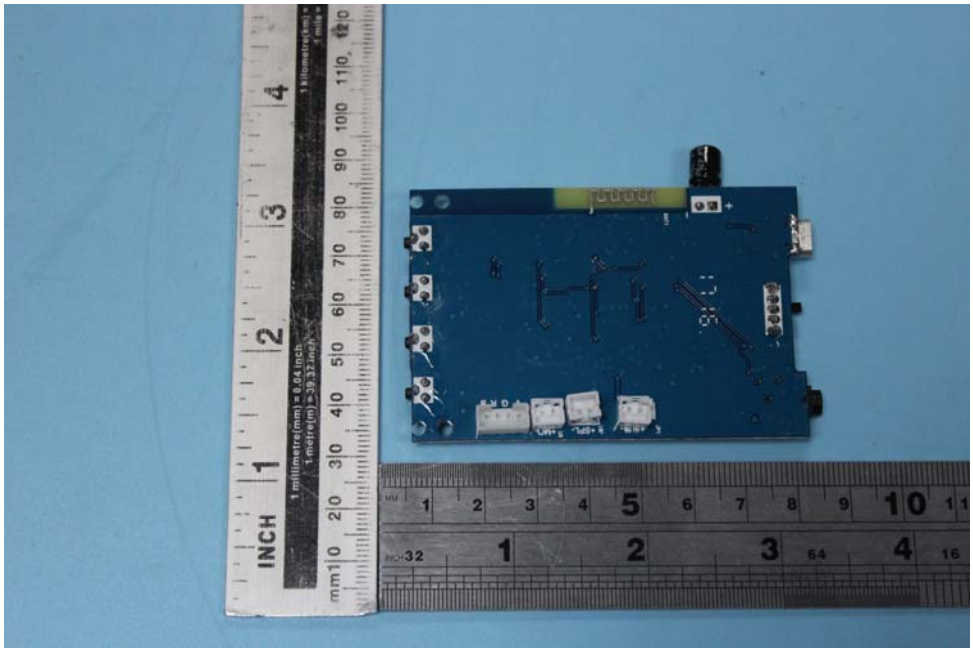


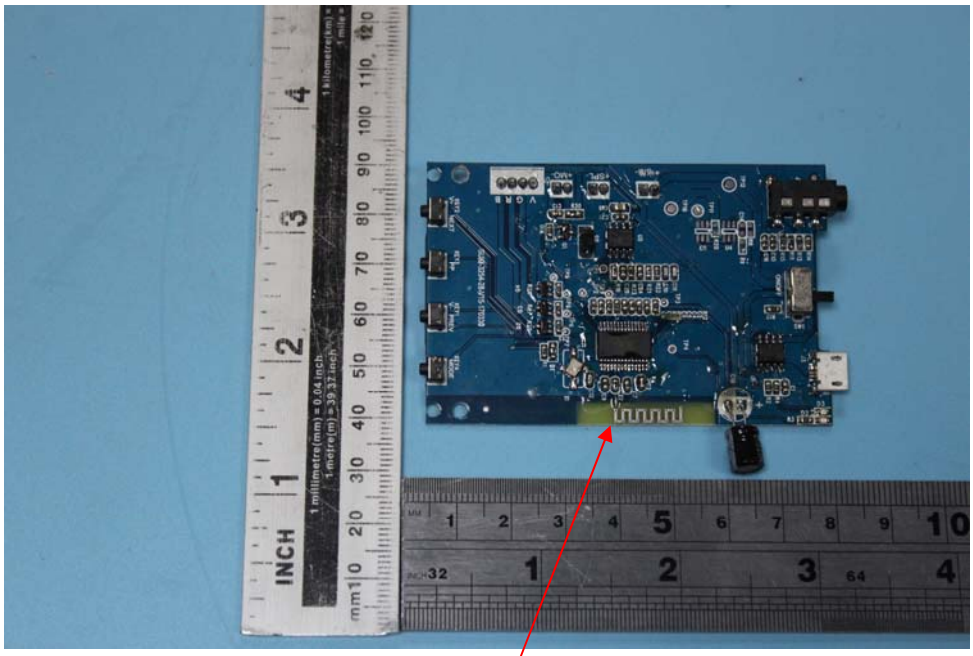





AUX
ON/OFF
DC5V
LED

13.2.Internal Photos





Antenna