



TEST REPORT

FCC ID: 2AH8THZ-935

Applicant : Sean & Stephen Corporation
Address : The third Industrial Zone, Tanzhou Town, Zhongshan City, Guangdong
Province, China

Equipment Under Test (EUT):

Name : Bluetooth lighting speaker
Model : HZ-935 , HZ-960, SS-HZ-935

In Accordance with: FCC PART 15, SUBPART C : 2015 (Section 15.247)
ANSI C63.4:2014 ; ANSI C63.10:2013

Report No : T1860636 01
Date of Test : April 22- April 26, 2016
Date of Issue : April 28, 2016

Test Result : PASS

In the configuration tested, the EUT complied with the standards specified above
Authorized Signature

(Mark Zhu)
Manager

The manufacture should ensure that all the products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of Shenzhen Alpha Product Testing Co., Ltd. Or test done by Shenzhen Alpha Product Testing Co., Ltd. Approvals in connection with, distribution or use of the product described in this report must be approved by Shenzhen Alpha Product Testing Co., Ltd. Approvals in writing.

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1. General Information

1.1. Description of Device (EUT)

| | | |
|---------------------|---|---|
| EUT | : | Bluetooth lighting speaker |
| Model No. | : | HZ-935 , HZ-960, SS-HZ-935 |
| DIFF | | Only differ in model number. |
| Trade mark | : | N/A |
| Power supply | : | DC 5V from USB port |
| Radio Technology | : | BT2.1+EDR |
| Operation frequency | : | 2402-2480MHz |
| Modulation | : | GFSK, $\pi/4$ DQPSK, 8-DPSK |
| Antenna Type | : | Integrated Antenna, max gain 0dBi. |
| Applicant | : | Sean & Stephen Corporation |
| Address | : | The third Industrial Zone, Tanzhou Town, Zhongshan City, Guangdong Province, China |
| Manufacturer | : | Shenzhen Huazeng Technology Co.,Ltd |
| Address | : | Floor 2nd, Yinjin Building, District 71, BaoAn, Shenzhen City, Guangdong, China. |

1.2. Accessories of device (EUT)

Description : N/A
Manufacturer : N/A
Model No. : N/A
Input : N/A
Output : N/A

1.3. Test Lab information

Shenzhen Alpha Product Testing Co., Ltd
Building B, East Area of Nanchang Second, Industrial Zone, Gushu 2nd Road,
Bao'an, Shenzhen, China

March 25, 2015 File on Federal Communication Commission
Registration Number: 203110

July 18, 2014 Certificated by IC
Registration Number: 12135A

2. Summary of test

2.1. Summary of test result

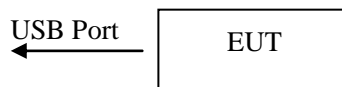
| Description of Test Item | Standard | Results |
|--------------------------------|---|---------|
| Maximum Peak Output Power | FCC Part 15: 15.247(b)(1) ANSI C63.4 :2014 & ANSI C63.10 :2013 | PASS |
| Bandwidth | FCC Part 15: 15.215 ANSI C63.4 :2014& ANSI C63.10 :2013 | PASS |
| Carrier Frequency Separation | FCC Part 15: 15.247(a)(1) ANSI C63.4 :2014 ANSI C63.10 :2013 | PASS |
| Number Of Hopping Channel | FCC Part 15: 15.247(a)(1)(iii) ANSI C63.4 :2014 & ANSI C63.10 :2013 | PASS |
| Dwell Time | FCC Part 15: 15.247(a)(1)(iii) ANSI C63.4 :2014& ANSI C63.10 :2013 | PASS |
| Radiated Emission | FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.4 :2014& ANSI C63.10 :2013 | PASS |
| Band Edge Compliance | FCC Part 15: 15.247(d) ANSI C63.4 :2014& ANSI C63.10 :2013 | PASS |
| Power Line Conducted Emissions | FCC Part 15: 15.207 ANSI C63.4 :2014& ANSI C63.10 :2013 | PASS |
| Antenna requirement | FCC Part 15: 15.203 4 | PASS |

2.2. Assistant equipment used for test

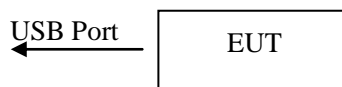
Description : N/A
 Manufacturer : N/A
 Model No. : N/A
 Input : N/A
 Output : N/A

2.3. Block Diagram

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



2, For Power Line Conducted Emissions Test: EUT was connected to notebook by 1.5m USB line



2.4. Test mode

Test methodology: Test had been referenced to the DA 00-705. The test was used to control EUT work in Continuous TX mode, and select test channel, wireless mode.

| Tested mode, channel, and data rate information | | |
|---|--------------|-----------------|
| Mode | Channel | Frequency (MHz) |
| GFSK | Low :CH1 | 2402 |
| | Middle: CH40 | 2441 |
| | High: CH79 | 2480 |

| Tested mode, channel, and data rate information | | |
|---|--------------|-----------------|
| Mode | Channel | Frequency (MHz) |
| π /4 DQPSK | Low :CH1 | 2402 |
| | Middle: CH40 | 2441 |
| | High: CH79 | 2480 |

| Tested mode, channel, and data rate information | | |
|---|--------------|-----------------|
| Mode | Channel | Frequency (MHz) |
| 8- DPSK | Low :CH1 | 2402 |
| | Middle: CH40 | 2441 |
| | High: CH79 | 2480 |

2.5. Test Conditions

| | |
|-------------------|-----------|
| Temperature range | 21-25°C |
| Humidity range | 40-75% |
| Pressure range | 86-106kPa |

2.6. Measurement Uncertainty (95% confidence levels, k=2)

| Item | MU | Remark |
|--|---------|-------------|
| Uncertainty for Power point Conducted Emissions Test | 2.71dB | |
| Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz) | 3.90 dB | Polarize: V |
| | 3.92dB | Polarize: H |
| Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz) | 4.26 dB | Polarize: H |
| | 4.28 dB | Polarize: V |
| Uncertainty for conducted RF Power | 0.16dB | |

2.7. Test Equipment

| Equipment | Manufacture | Model No. | Serial No. | Last cal. Due to | Cal Interval |
|--|-------------------|-------------|----------------------|---------------------|--------------|
| 3m Semi-Anechoic | CHENYU | N/A | N/A | 2018.01.18 | 2Year |
| Spectrum analyzer | Agilent | E4407B | MY46185649 | 2017.01.16 | 1Year |
| Receiver | R&S | ESPI | 101873 | 2017.01.16 | 1Year |
| Receiver | R&S | ESCI | 101165 | 2017.01.16 | 1Year |
| Bilog Antenna | SCHWARZBECK | VULB 9168 | VULB9168-438 | 2018.01.18 | 2Year |
| Horn Antenna | SCHWARZBECK | BBHA 9120 D | BBHA 9120 D(1201) | 2017.01.20 | 2Year |
| Cable | Resenberger | N/A | No.1 | 2017.01.16 | 1Year |
| Cable | SCHWARZBECK | N/A | No.2 | 2017.01.16 | 1Year |
| Cable | SCHWARZBECK | N/A | No.3 | 2017.01.16 | 1Year |
| Pre-amplifier | HP | HP8347A | 2834A00455 | 2017.01.18 | 1Year |
| Pre-amplifier | Agilent | 8449B | 3008A02664 | 2017.01.18 | 1Year |
| vector Signal Generator | Agilent | N5182A | MY49060042 | 2016.11.16 | 1 Year |
| vector Signal Generator | Agilent | E4438C | US44271917 | 2016.11.16 | 1 Year |
| X-series USB Peak and Average Power Sensor | Agilent | U2021XA | MY54080020 | 2016.11.16 | 1 Year |
| X-series USB Peak and Average Power Sensor | Agilent | U2021XA | MY54110001 | 2016.11.16 | 1 Year |
| Signal Analyzer | Agilent | N9020A | MY48030494 | 2016.11.16 | 1 Year |
| L.I.S.N.#1 | Schwarzbeck | NSLK8126 | 8126466 | 2017.01.16 | 1 Year |
| L.I.S.N.#2 | ROHDE&SCHWA RZ | ENV216 | 101043 | 2017.01.16 | 1 Year |

3. Maximum Peak Output power

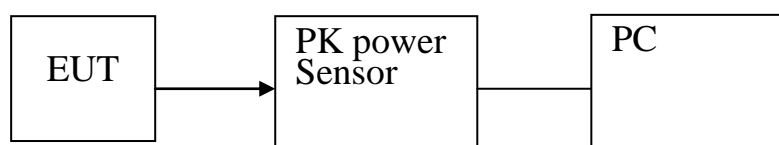
3.1. Limit

Please refer section 15.247.

3.2. Test Procedure

The transmitter output is connected to the RF Power Meter. The RF Power Meter is set to the peak power detection.

3.3. Test Setup



3.4. Test Result

| EUT: Bluetooth lighting speaker M/N: HZ-935 | | | | | |
|---|------------|-----------------------|----------------------|------------------|-------------|
| Test date: 2016-04-24 | | Test site: RF site | | Tested by: Peter | |
| Mode | Freq (MHz) | PK Output Power (dBm) | PK Output Power (mW) | Limit (dBm) | Margin (dB) |
| GFSK | 2402 | 2.354 | 1.719 | 30 | 27.646 |
| | 2441 | 2.443 | 1.755 | 30 | 27.557 |
| | 2480 | 2.981 | 1.987 | 30 | 27.019 |
| $\pi/4$ DQPSK, | 2402 | 1.576 | 1.437 | 21 | 19.424 |
| | 2441 | 1.783 | 1.508 | 21 | 19.217 |
| | 2480 | 2.426 | 1.748 | 21 | 18.574 |
| 8- DPSK | 2402 | 1.689 | 1.475 | 21 | 19.311 |
| | 2441 | 1.918 | 1.555 | 21 | 19.082 |
| | 2480 | 2.377 | 1.729 | 21 | 18.623 |
| Conclusion: PASS | | | | | |

4. Bandwidth

4.1. Limit

Please refer section 15.247.

4.2. Test Procedure

As required by DA 00-705, the transmitter output was coupled to a spectrum analyzer via an antenna. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW, Peak detector. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

4.3. Test Result

| EUT: Bluetooth lighting speaker M/N: HZ-935 | | | | |
|---|------------|----------------------|---------------------|------------------|
| Test date: 2016-04-24 | | Test site: RF site | | Tested by: Peter |
| Mode | Freq (MHz) | 20dB Bandwidth (KHz) | 99% Bandwidth (kHz) | Conclusion |
| GFSK | 2402 | 833.2 | / | PASS |
| | 2441 | 834.2 | / | PASS |
| | 2480 | 833.7 | / | PASS |
| $\pi/4$ DQPSK | 2402 | 1116 | / | PASS |
| | 2441 | 1118 | / | PASS |
| | 2480 | 1117 | / | PASS |
| 8- DPSK | 2402 | 1165 | / | PASS |
| | 2441 | 1165 | / | PASS |
| | 2480 | 1166 | / | PASS |

Original Test data

GFSK:





$\pi/4$ DQPSK:





8- DPSK:





5. Carrier Frequency Separation

5.1. Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW

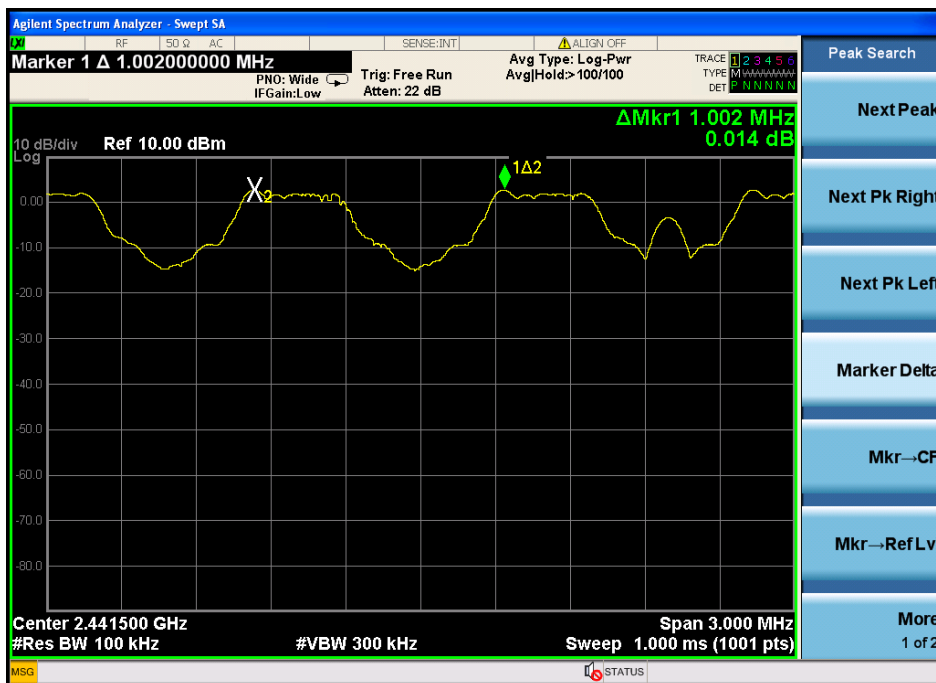
5.2. Test Procedure

The transmitter output was coupled to a spectrum analyzer via a antenna. The carrier frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW.

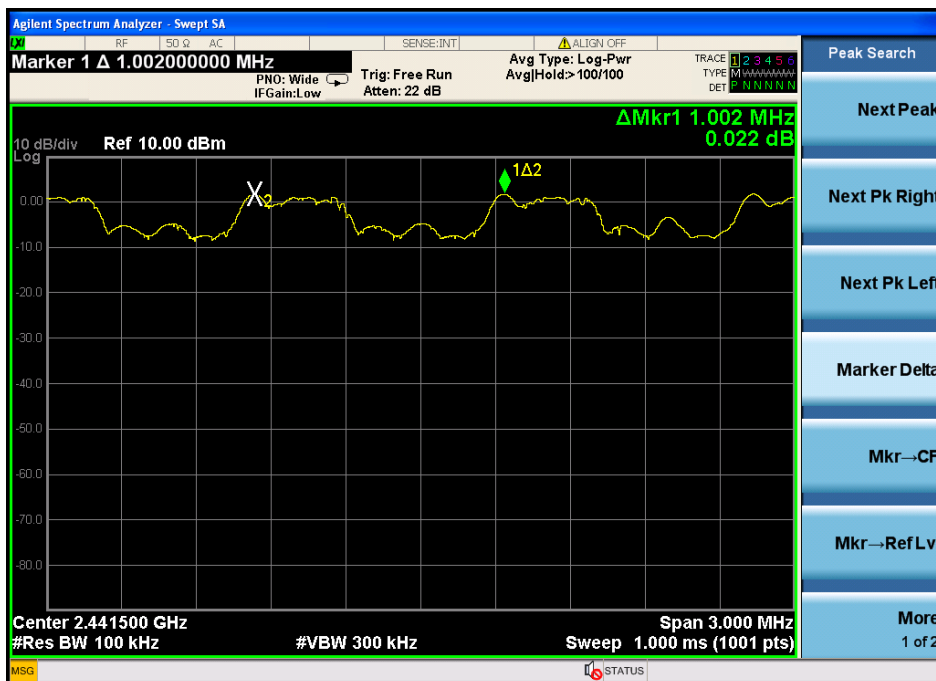
5.3. Test Result

| EUT: Bluetooth lighting speaker | | M/N: HZ-935 | | |
|---------------------------------|--------------------------|----------------------|--------------------------------------|------------------|
| Test date: 2016-04-24 | | Test site: RF site | | Tested by: Peter |
| Mode/Channel | Channel separation (KHz) | 20dB Bandwidth (KHz) | Limit (KHz) 2/3 20dB bandwidth | Conclusion |
| GFSK | 1002 | 834.200 | 556.133 | PASS |
| π /4 DQPSK | 1002 | 1118.000 | 745.333 | PASS |
| 8- DPSK | 1002 | 1165.000 | 776.667 | PASS |

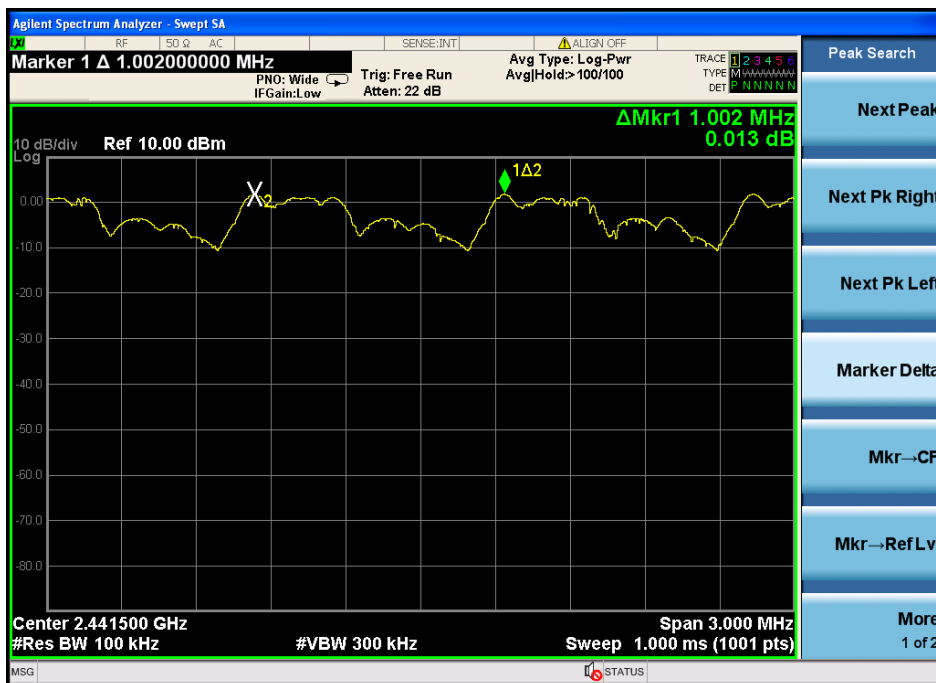
Original test data for channel separation
GFSK



$\pi/4$ DQPSK



8- DPSK:



6. Number Of Hopping Channel

6.1. Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels

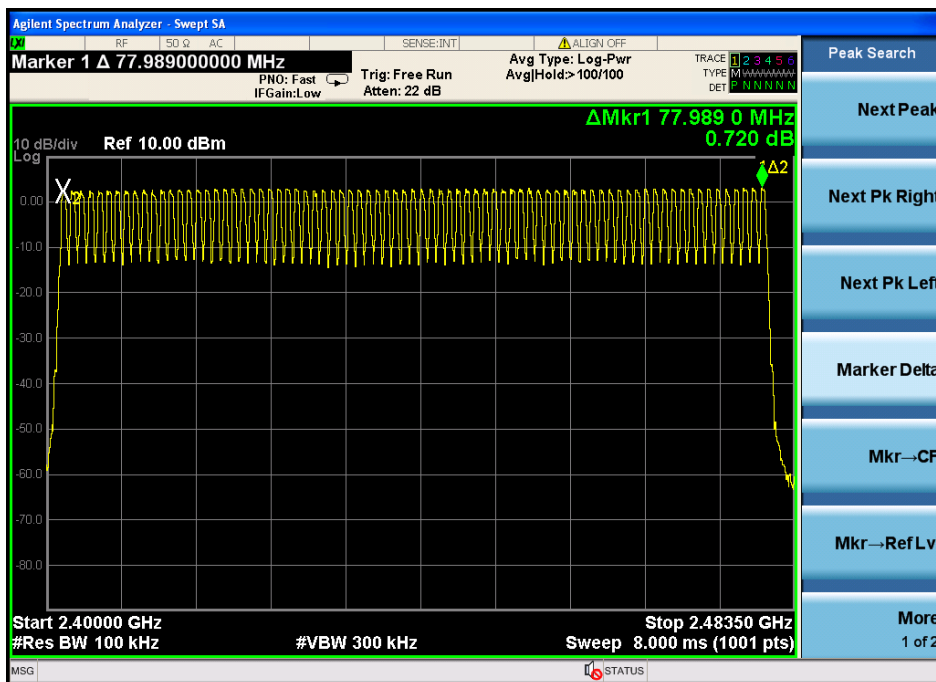
6.2. Test Procedure

The transmitter output was coupled to a spectrum analyzer via a antenna. The number of hopping channel was measured by spectrum analyzer with 300kHz RBW and 1MHz VBW.

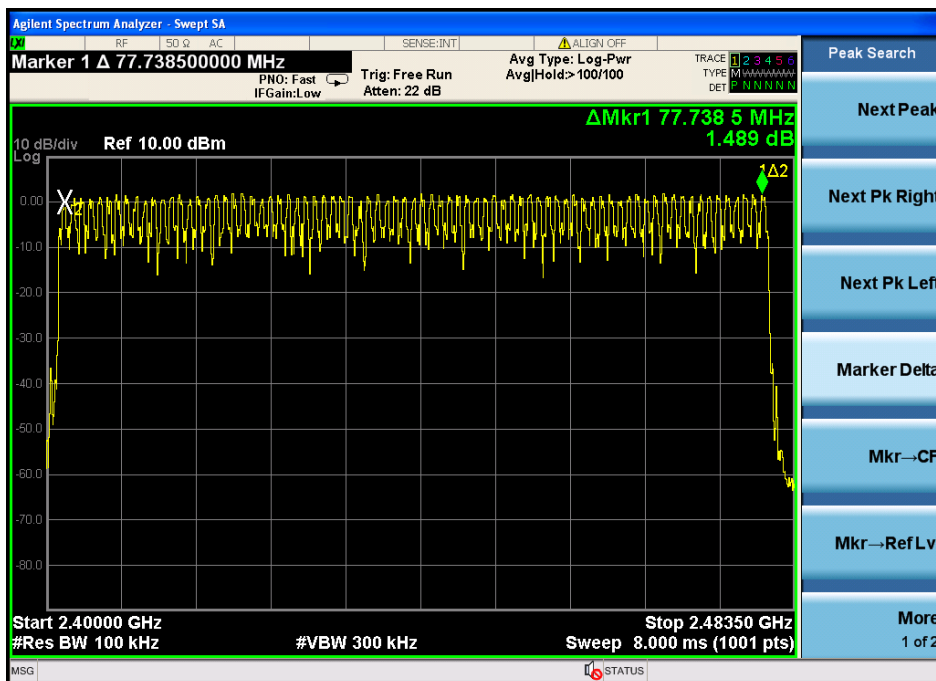
6.3. Test Result

| EUT: Bluetooth lighting speaker | | M/N: HZ-935 | |
|---------------------------------|---------------------------|--------------------|------------------|
| Test date: 2016-04-24 | | Test site: RF site | Tested by: Peter |
| Mode | Number of hopping channel | Limit | Conclusion |
| GFSK | 79 | >15 | PASS |
| $\pi/4$ DQPSK | 79 | >15 | PASS |
| 8- DPSK | 79 | >15 | PASS |

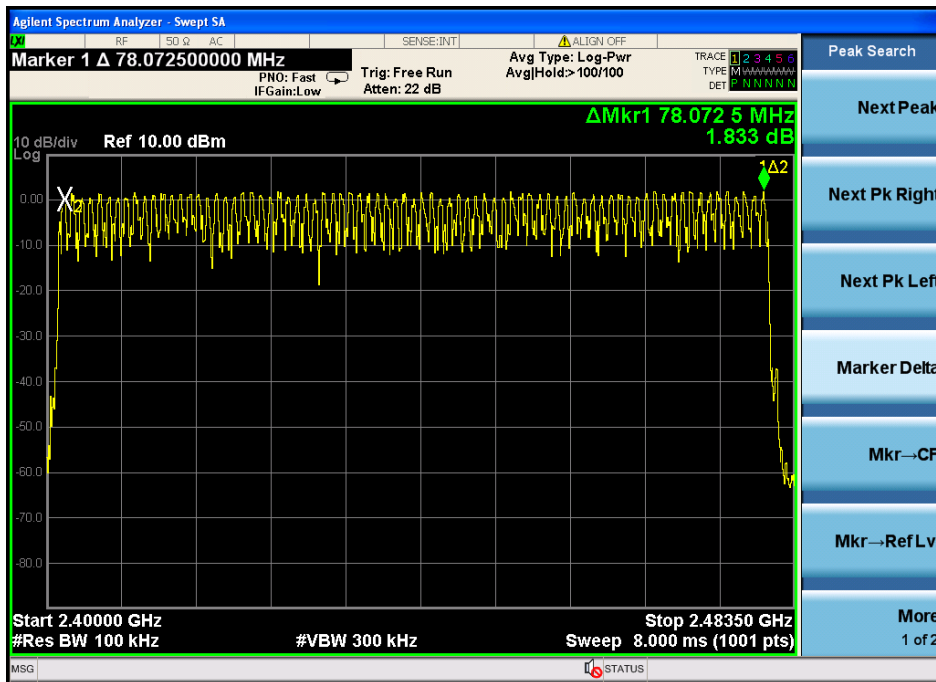
Original test data for hopping channel number
GFSK



$\pi/4$ DQPSK



8- DPSK:



7. Dwell Time

7.1. Test limit

Please refer section 15.247.

7.2. Test Procedure

7.2.1. Place the EUT on the table and set it in transmitting mode.

7.2.2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

7.2.3. Set center frequency of spectrum analyzer = operating frequency.

7.2.4. Set the spectrum analyzer as RBW, VBW=1MHz, Span = 0Hz, Sweep = auto.

7.2.5. Repeat above procedures until all frequency measured were complete.

7.3. Test Results

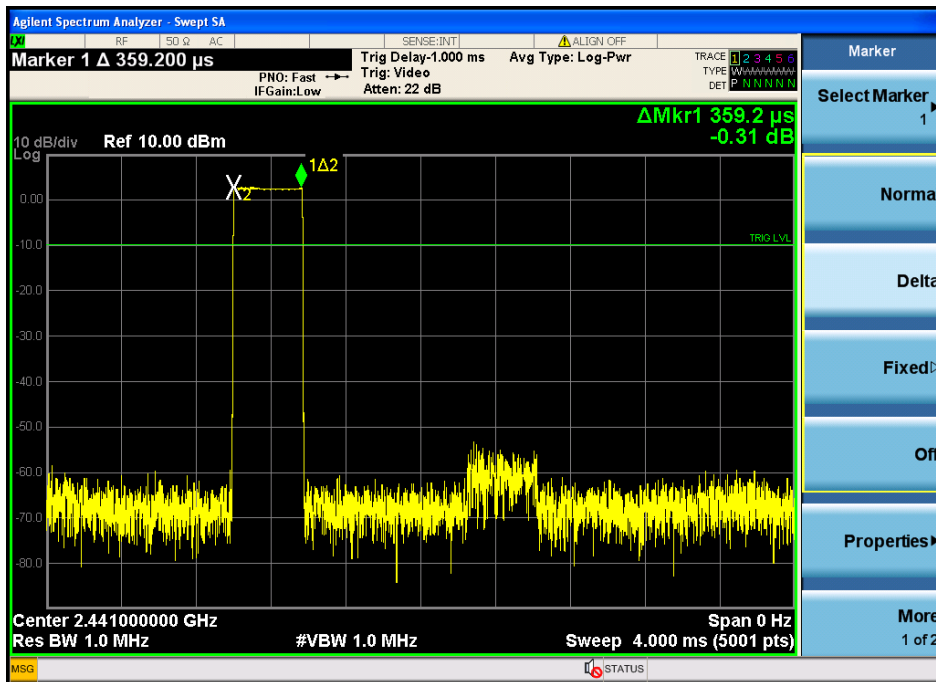
PASS.

Detailed information please see the following page.

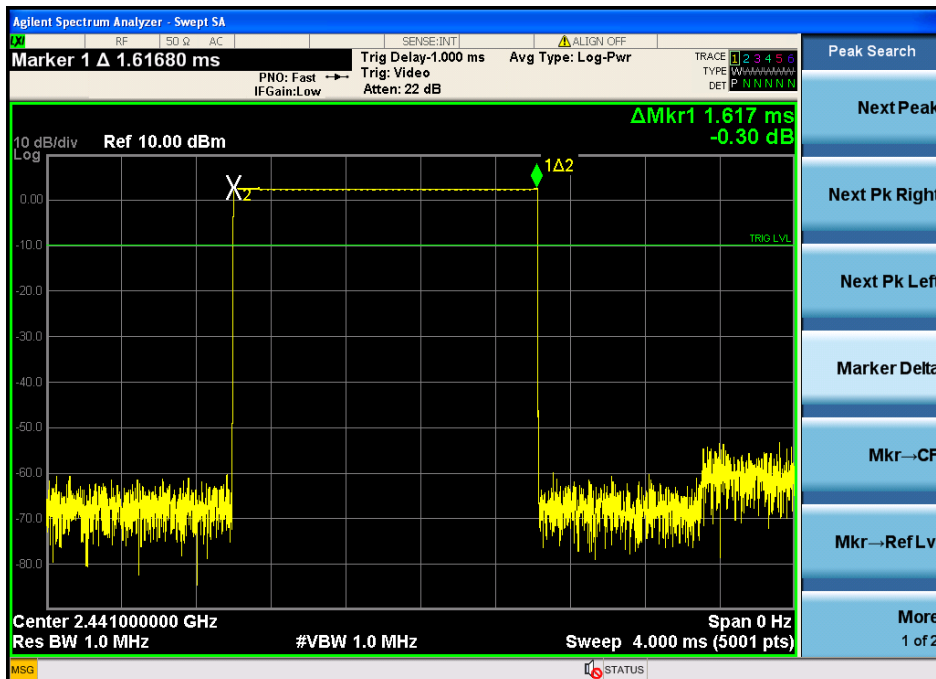
| EUT: Bluetooth lighting speaker M/N: HZ-935 | | | | | | |
|--|-------------|--------------------|---------------------|------------------|-----------|------------|
| Test date: 2016-04-24 | | Test site: RF site | | Tested by: Peter | | |
| Mode | Data Packet | Frequency (MHz) | Pulse Duration (ms) | Dwell Time (s) | Limit (s) | Conclusion |
| GFSK | DH1 | 2441 | 0.3592 | 0.230 | <0.4 | PASS |
| | DH3 | 2441 | 1.617 | 0.345 | <0.4 | PASS |
| | DH5 | 2441 | 2.868 | 0.367 | <0.4 | PASS |
| π /4 DQPSK | DH1 | 2441 | 0.3664 | 0.234 | <0.4 | PASS |
| | DH3 | 2441 | 1.618 | 0.345 | <0.4 | PASS |
| | DH5 | 2441 | 2.872 | 0.368 | <0.4 | PASS |
| 8- DPSK | DH1 | 2441 | 0.3728 | 0.239 | <0.4 | PASS |
| | DH3 | 2441 | 1.616 | 0.345 | <0.4 | PASS |
| | DH5 | 2441 | 2.869 | 0.367 | <0.4 | PASS |
| Note: 1 A period time = 0.4 (s) * 79 = 31.6(s) 2 DH1 time slot = Pulse Duration * (1600/(1*79)) * A period time DH3 time slot = Pulse Duration * (1600/(3*79)) * A period time DH5 time slot = Pulse Duration * (1600/(5*79)) * A period time | | | | | | |

GFSK

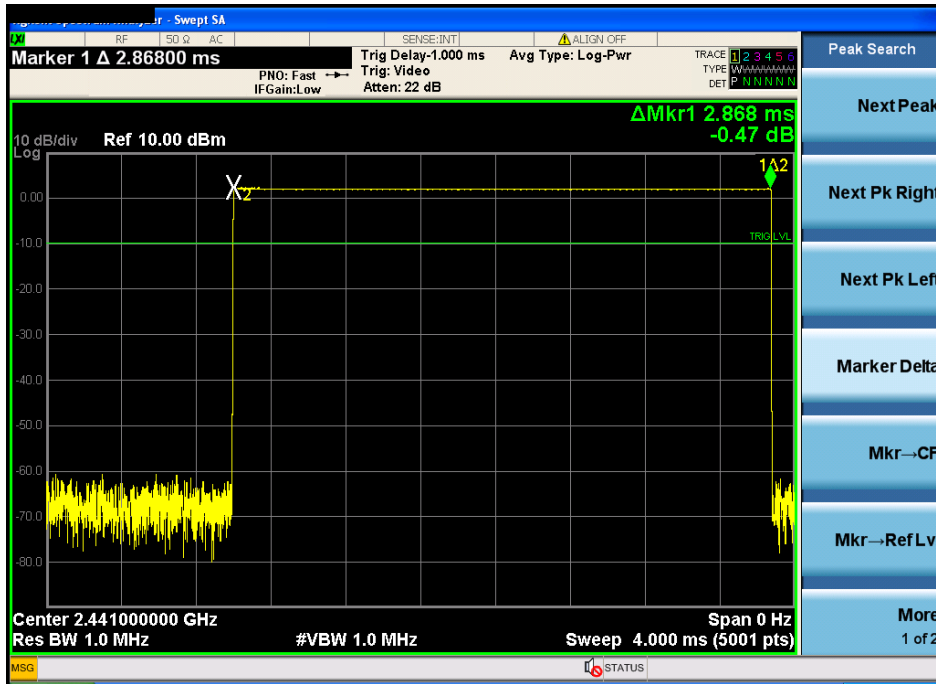
DH1:



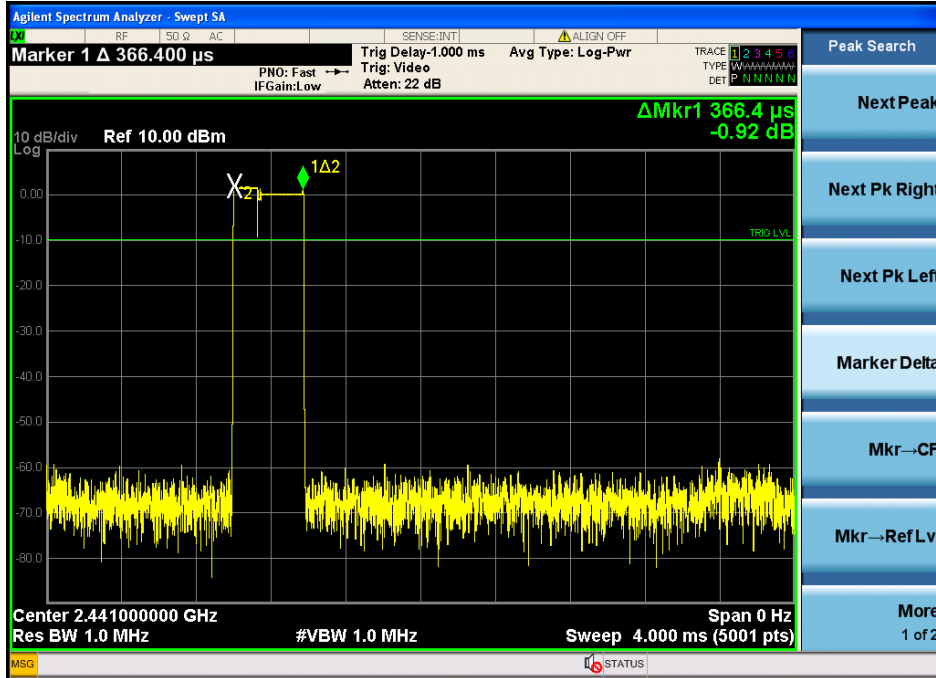
DH3:



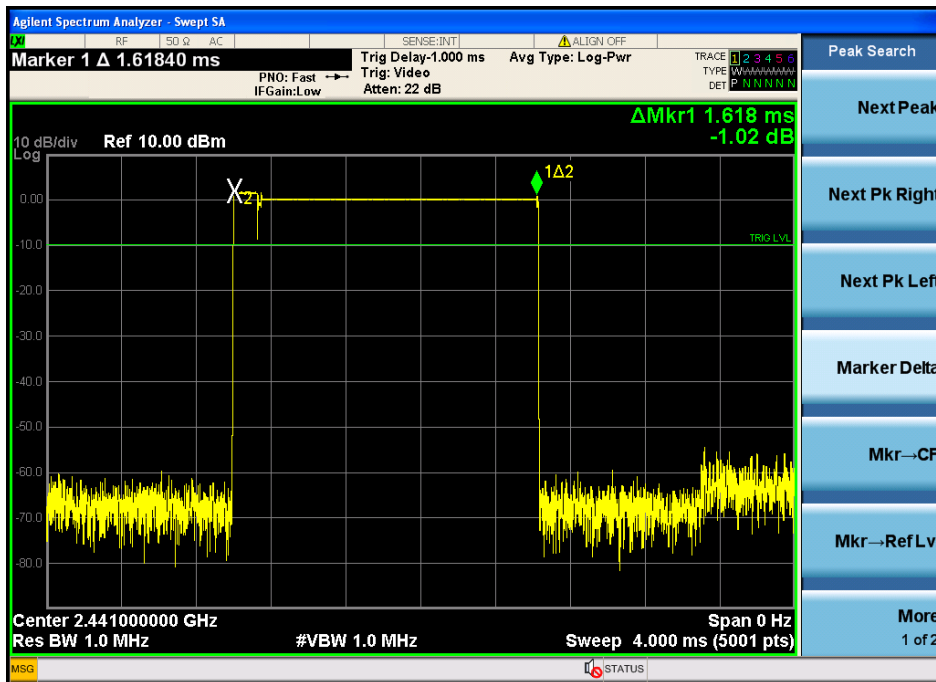
DH5



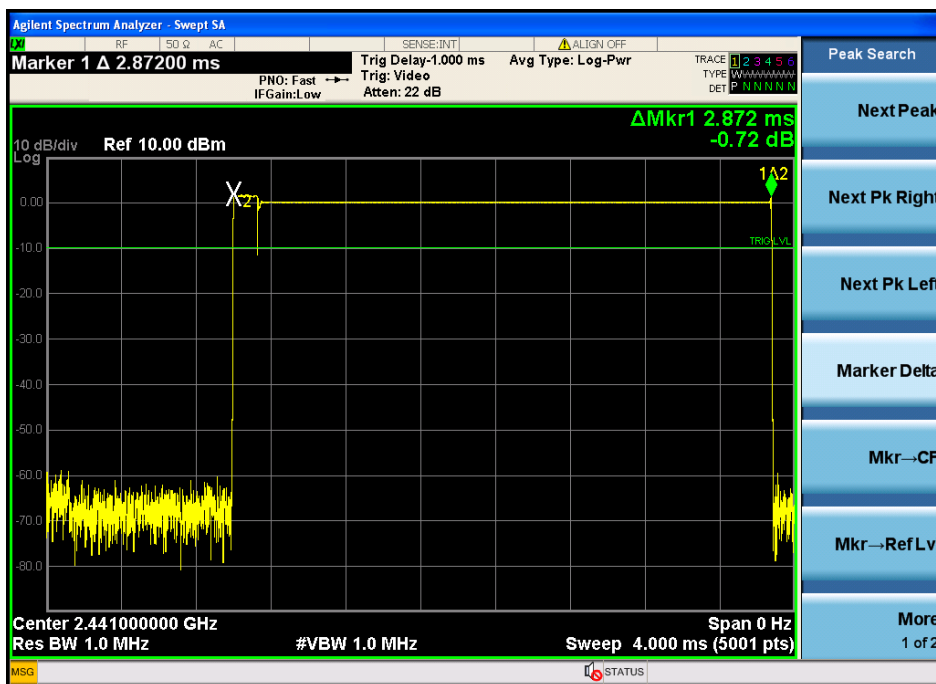
$\pi/4$ DQPSK
DH1



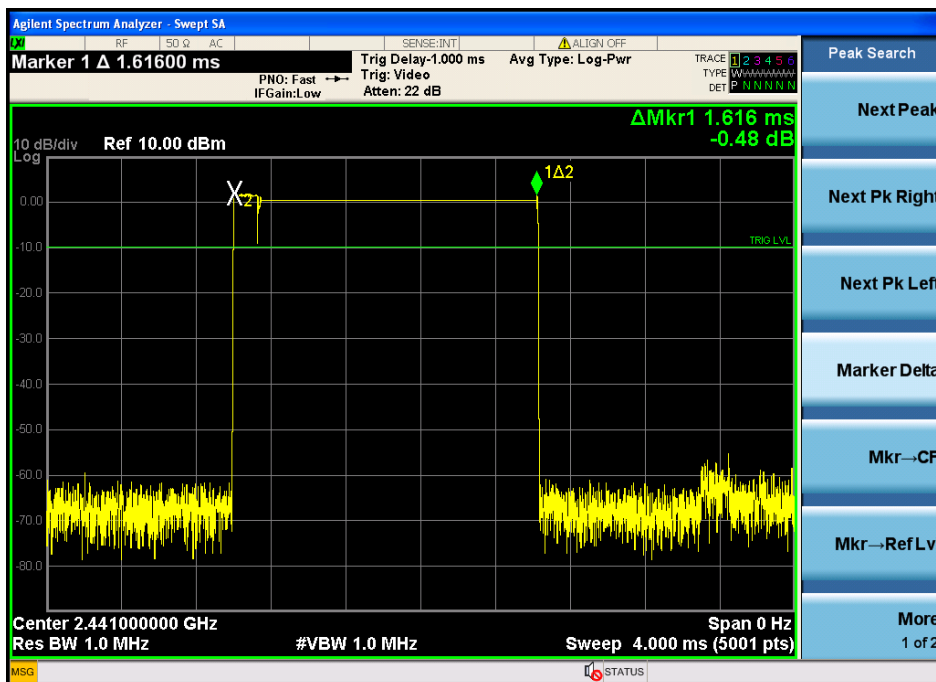
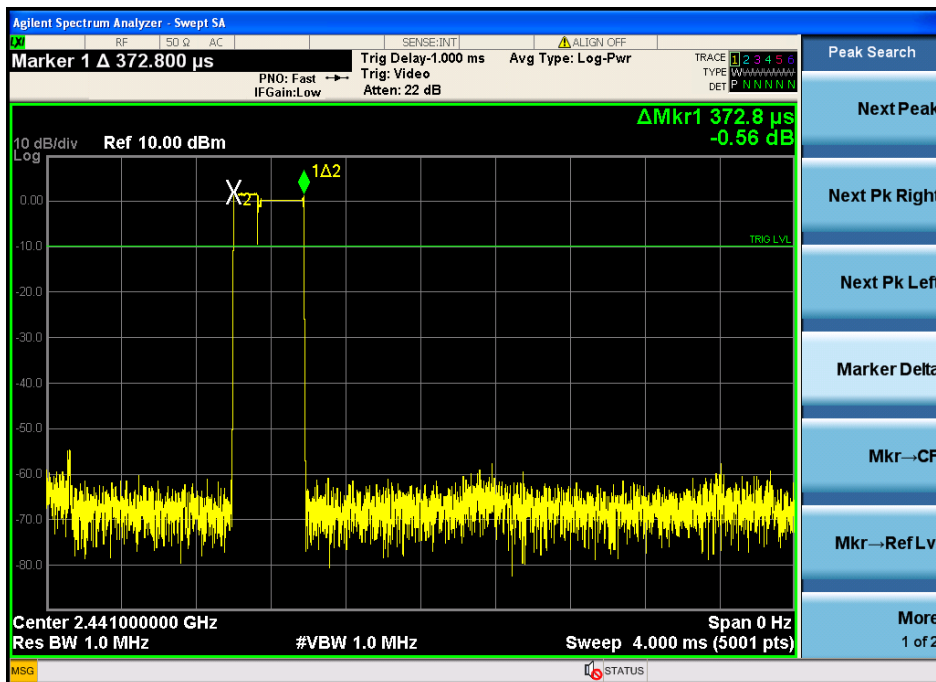
DH3

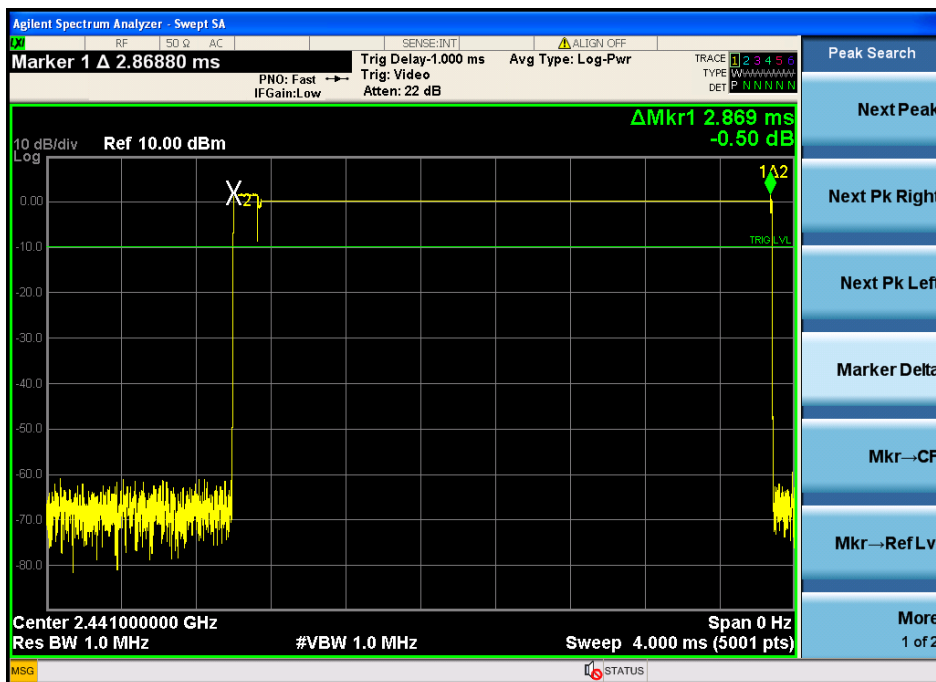


DH5



8- DPSK:





8. Radiated emissions

8.1. Limit

All the emissions appearing within FCC Part 15 restricted frequency bands shall not exceed the limits shown in FCC Part 15, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with FCC Part 15 limits.

FCC Part 15 Restricted frequency band

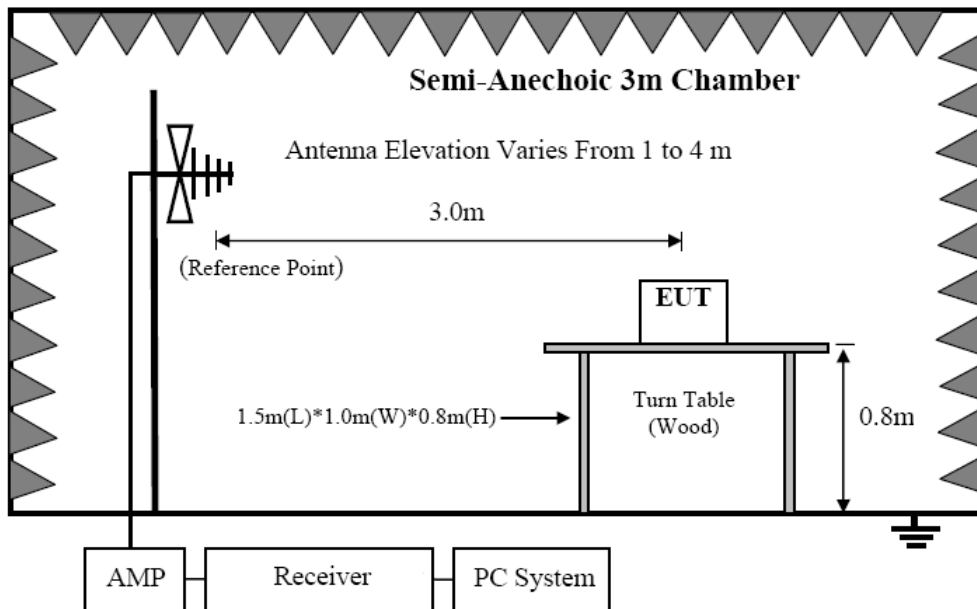
| MHz | MHz | MHz | GHz |
|----------------------------|-----------------------|-----------------|------------------|
| 0.090 - 0.110 | 16.42 - 16.423 | 399.9 - 410 | 4.5 - 5.15 |
| ¹ 0.495 - 0.505 | 16.69475 - 16.69525 | 608 - 614 | 5.35 - 5.46 |
| 2.1735 - 2.1905 | 16.80425 - 16.80475 | 960 - 1240 | 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) |

FCC Part 15 Limit

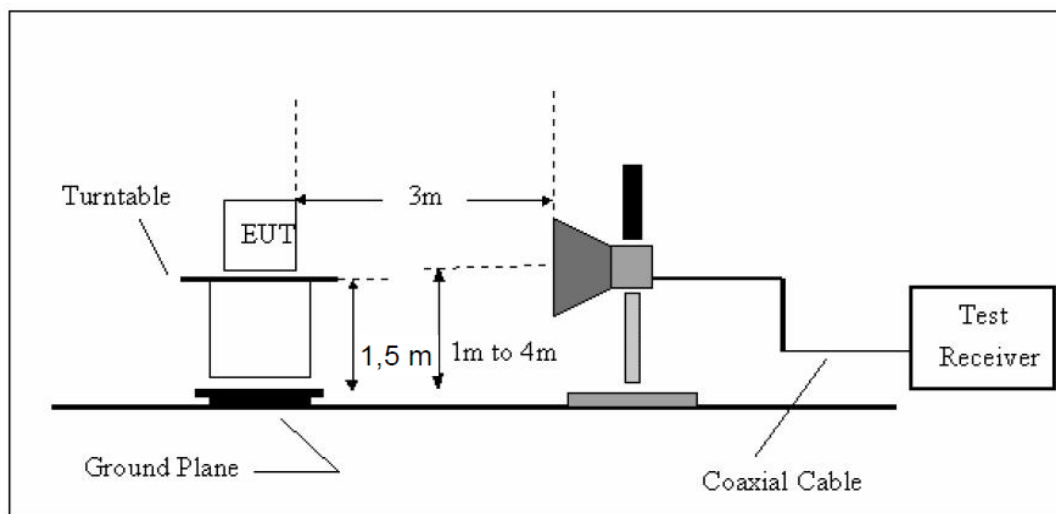
| FREQUENCY MHz | DISTANCE Meters | FIELD STRENGTHS LIMIT | |
|------------------|--------------------|---|-----------------------------------|
| | | $\mu\text{V}/\text{m}$ | $\text{dB}(\mu\text{V})/\text{m}$ |
| 0.009-0.490 | 300 | 2400/F(KHz) | / |
| 0.490-1.705 | 30 | 24000/F(KHz) | / |
| 1.705-30 | 30 | 30 | 29.5 |
| 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) | |

8.2. Block Diagram of Test setup

8.2.1 In 3m Anechoic Chamber Test Setup Diagram for below 1GHz



8.2.2 In 3m Anechoic Chamber Test Setup Diagram for frequency above 1GHz



Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

8.3. Test Procedure

- (1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber for below 1GHz testing, and 150cm for above 1GHz testing.
- (2) Setup EUT and simulator as shown in section 1.4 and 6.1
- (3) Test antenna was located 3m from the EUT on an adjustable mast. Below pre-scan procedure was first performed in order to find prominent radiated emissions.
 - (a) Change work frequency or channel of device if practicable.
 - (b) Change modulation type of device if practicable.
 - (c) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions
- (4) Spectrum frequency from 9KHz to 25GHz (tenth harmonic of fundamental frequency) was investigated
- (5) For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10 2013 on Radiated Emission test.
- (6) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz for Peak measure; RBW is set at 1MHz, VBW is set at 10Hz for Average measure.

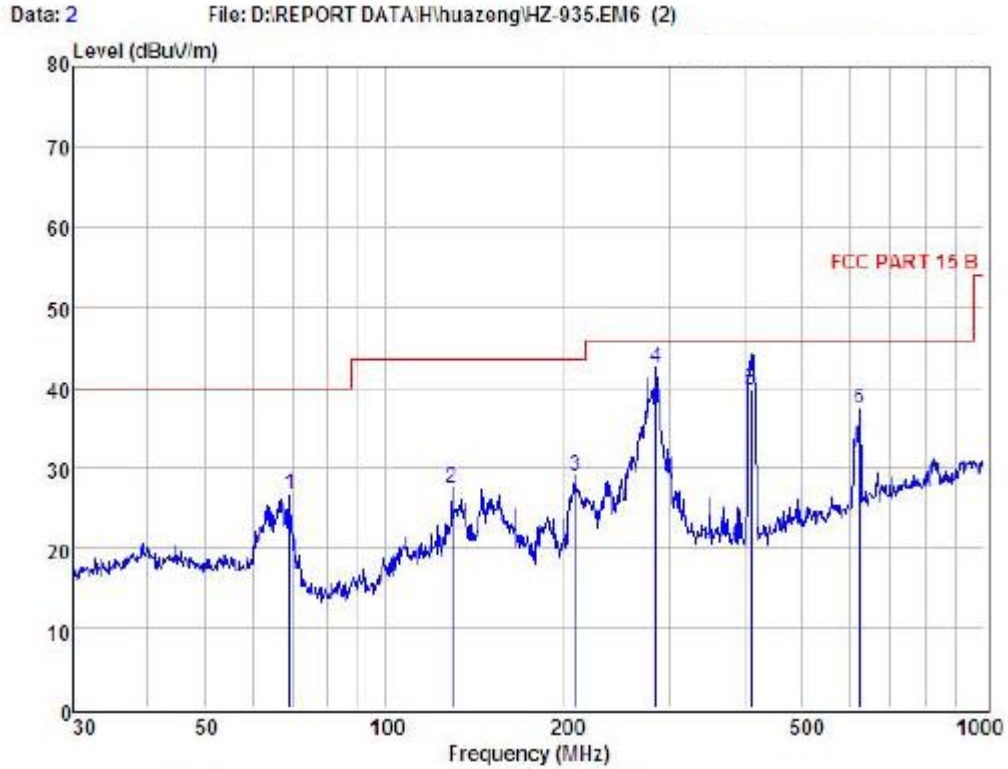
8.4. Test Result

We have scanned the 10th harmonic from 9KHz to the EUT.
Detailed information please see the following page.

From 9KHz to 30MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

From 30MHz to 1000MHz: Conclusion: PASS

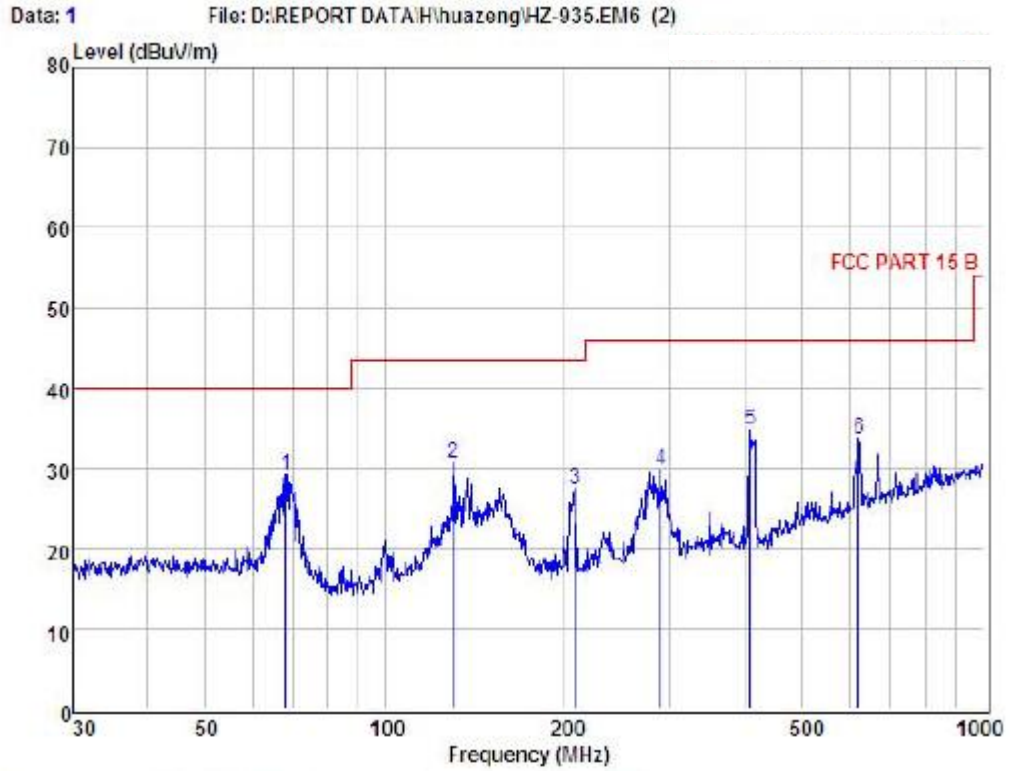


```

Condition : FCC PART 15 B      3m      POL: HORIZONTAL
EUI       :
Model No  : HZ-935
Test Mode :
Power     : DC 5V from PC with AC 120V/60Hz
Test Engineer : Peter
Remark    :
Temp     :
Hum      :
    
```

| Item | Freq MHz | Read Level dBuV | Antenna Factor dB | Preamp Factor dB | Cable Loss dB | Level dBuV | Limit dBuV | Margin dBuV | Remark |
|------|-------------|-----------------------|-------------------------|------------------------|---------------------|---------------|---------------|----------------|--------|
| 1 | 69.36 | 47.23 | 10.82 | 31.72 | 0.24 | 26.57 | 40.00 | -13.43 | Peak |
| 2 | 129.47 | 45.61 | 12.68 | 31.27 | 0.44 | 27.46 | 43.50 | -16.04 | Peak |
| 3 | 208.58 | 49.23 | 10.04 | 30.92 | 0.57 | 28.92 | 43.50 | -14.58 | Peak |
| 4 | 283.98 | 59.92 | 12.45 | 30.61 | 0.64 | 42.40 | 46.00 | -3.60 | Peak |
| 5 | 410.39 | 53.99 | 14.99 | 30.33 | 0.93 | 39.88 | 46.00 | -6.42 | QP |
| 6 | 622.89 | 46.92 | 18.73 | 29.38 | 1.11 | 37.38 | 46.00 | -8.62 | Peak |

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15 B 3m POL: VERTICAL
 EUI :
 Model No : HZ-935
 Test Mode :
 Power : DC 5V from PC with AC 120V/60Hz
 Test Engineer :
 Remark :
 Temp :
 Hum :

| Item | Freq MHz | Read Level dBuV | Antenna Factor dB | Preamp Factor dB | Cable Loss dB | Level dBuV | Limit dBuV | Margin dBuV | Remark |
|------|-------------|-----------------------|-------------------------|------------------------|---------------------|---------------|---------------|----------------|--------|
| 1 | 68.39 | 49.48 | 11.21 | 31.72 | 0.30 | 29.27 | 40.00 | -10.73 | Peak |
| 2 | 130.38 | 48.63 | 12.79 | 31.27 | 0.44 | 30.59 | 43.50 | -12.91 | Peak |
| 3 | 207.85 | 47.76 | 10.04 | 30.92 | 0.49 | 27.37 | 43.50 | -16.13 | Peak |
| 4 | 290.02 | 47.27 | 12.58 | 30.59 | 0.54 | 29.80 | 46.00 | -16.20 | Peak |
| 5 | 408.95 | 49.12 | 14.94 | 30.35 | 0.97 | 34.68 | 46.00 | -11.32 | Peak |
| 6 | 620.71 | 43.31 | 18.69 | 29.39 | 1.02 | 33.63 | 46.00 | -12.37 | Peak |

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

Remark: All modes have been tested, and only worst data of GFSK mode, Channel 2402MHz was listed in this report.

| 1GHz—25GHz Radiated emission Test result | | | | | | | | | |
|---|------------|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|--------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | | |
| Power: DC 3.7V from battery | | | | | | | | | |
| Test date: 2016-04-24 Test site: 3m Chamber Tested by: Peter | | | | | | | | | |
| Test mode: GFSK Tx CH1 2402MHz | | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | | |
| No | Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1 | 4804 | 42.69 | 33.95 | 10.18 | 34.26 | 52.56 | 74 | 21.44 | PK |
| 2 | 4804 | 32.05 | 33.95 | 10.18 | 34.26 | 41.92 | 54 | 12.08 | AV |
| 3 | 7206 | / | | | | | | | |
| 4 | 9608 | / | | | | | | | |
| 5 | 12010 | / | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | | |
| 1 | 4804 | 42.71 | 33.95 | 10.18 | 34.26 | 52.58 | 74 | 21.42 | PK |
| 2 | 4804 | 31.49 | 33.95 | 10.18 | 34.26 | 41.36 | 54 | 12.64 | AV |
| 3 | 7206 | / | | | | | | | |
| 4 | 9608 | / | | | | | | | |
| 5 | 12010 | / | | | | | | | |
| Note: | | | | | | | | | |
| 1, Measuring frequency from 1GHz to 25GHz | | | | | | | | | |
| 2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | | |

| 1GHz—25GHz Radiated emission Test result | | | | | | | | | |
|---|------------|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|--------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | | |
| Power: DC 3.7V from battery | | | | | | | | | |
| Test date: 2016-04-24 Test site: 3m Chamber Tested by: Peter | | | | | | | | | |
| Test mode: GFSK Tx CH40 2441MHz | | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | | |
| No | Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1 | 4882 | 43.11 | 33.93 | 10.2 | 34.29 | 52.95 | 74 | 21.05 | PK |
| 2 | 4882 | 32.31 | 33.93 | 10.2 | 34.29 | 42.15 | 54 | 11.85 | AV |
| 3 | 7323 | / | | | | | | | |
| 4 | 9764 | / | | | | | | | |
| 5 | 12205 | / | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | | |
| 1 | 4882 | 42.94 | 33.93 | 10.2 | 34.29 | 52.78 | 74 | 21.22 | PK |
| 2 | 4882 | 31.72 | 33.93 | 10.2 | 34.29 | 41.56 | 54 | 12.44 | AV |
| 3 | 7323 | / | | | | | | | |
| 4 | 9764 | / | | | | | | | |
| 5 | 12205 | / | | | | | | | |
| Note: | | | | | | | | | |
| 1, Measuring frequency from 1GHz to 25GHz | | | | | | | | | |
| 2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | | |

| 1GHz—25GHz Radiated emission Test result | | | | | | | | | |
|---|------------|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|--------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | | |
| Power: DC 3.7V from battery | | | | | | | | | |
| Test date: 2016-04-24 Test site: 3m Chamber Tested by: Peter | | | | | | | | | |
| Test mode: GFSK Tx CH79 2480MHz | | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | | |
| No | Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1 | 4960 | 43.39 | 33.98 | 10.22 | 34.25 | 53.34 | 74 | 20.66 | PK |
| 2 | 4960 | 31.72 | 33.98 | 10.22 | 34.25 | 41.67 | 54 | 12.33 | AV |
| 3 | 7440 | / | | | | | | | |
| 4 | 9920 | / | | | | | | | |
| 5 | 12400 | / | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | | |
| 1 | 4960 | 43.33 | 33.98 | 10.22 | 34.25 | 53.28 | 74 | 20.72 | PK |
| 2 | 4960 | 32.2 | 33.98 | 10.22 | 34.25 | 42.15 | 54 | 11.85 | AV |
| 3 | 7440 | / | | | | | | | |
| 4 | 9920 | / | | | | | | | |
| 5 | 12400 | / | | | | | | | |
| Note: | | | | | | | | | |
| 1, Measuring frequency from 1GHz to 25GHz | | | | | | | | | |
| 2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | | |

| 1GHz—25GHz Radiated emission Test result | | | | | | | | | |
|---|------------|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|--------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | | |
| Power: DC 3.7V from battery | | | | | | | | | |
| Test date: 2016-04-24 Test site: 3m Chamber Tested by: Peter | | | | | | | | | |
| Test mode: $\pi/4$ DQPSK Tx CH1 2402MHz | | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | | |
| No | Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1 | 4804 | 43 | 33.95 | 10.18 | 34.26 | 52.87 | 74 | 21.13 | PK |
| 2 | 4804 | 36.1 | 33.95 | 10.18 | 34.26 | 45.97 | 54 | 8.03 | AV |
| 3 | 7206 | / | | | | | | | |
| 4 | 9608 | / | | | | | | | |
| 5 | 12010 | / | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | | |
| 1 | 4804 | 43.02 | 33.95 | 10.18 | 34.26 | 52.89 | 74 | 21.11 | PK |
| 2 | 4804 | 32.77 | 33.95 | 10.18 | 34.26 | 42.64 | 54 | 11.36 | AV |
| 3 | 7206 | / | | | | | | | |
| 4 | 9608 | / | | | | | | | |
| 5 | 12010 | / | | | | | | | |
| Note: | | | | | | | | | |
| 1, Measuring frequency from 1GHz to 25GHz | | | | | | | | | |
| 2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | | |

| 1GHz—25GHz Radiated emission Test result | | | | | | | | | |
|---|------------|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|--------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | | |
| Power: DC 3.7V from battery | | | | | | | | | |
| Test date: 2016-04-24 Test site: 3m Chamber Tested by: Peter | | | | | | | | | |
| Test mode: $\pi/4$ DQPSK Tx CH40 2441MHz | | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | | |
| No | Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1 | 4882 | 43.12 | 33.93 | 10.2 | 34.29 | 52.96 | 74 | 21.04 | PK |
| 2 | 4882 | 32.7 | 33.93 | 10.2 | 34.29 | 42.54 | 54 | 11.46 | AV |
| 3 | 7323 | / | | | | | | | |
| 4 | 9764 | / | | | | | | | |
| 5 | 12205 | / | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | | |
| 1 | 4882 | 43.12 | 33.93 | 10.2 | 34.29 | 52.96 | 74 | 21.04 | PK |
| 2 | 4882 | 32.49 | 33.93 | 10.2 | 34.29 | 42.33 | 54 | 11.67 | AV |
| 3 | 7323 | / | | | | | | | |
| 4 | 9764 | / | | | | | | | |
| 5 | 12205 | / | | | | | | | |
| Note: | | | | | | | | | |
| 1, Measuring frequency from 1GHz to 25GHz | | | | | | | | | |
| 2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | | |

| 1GHz—25GHz Radiated emission Test result | | | | | | | | | |
|---|------------|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|--------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | | |
| Power: DC 3.7V from battery | | | | | | | | | |
| Test date: 2016-04-24 Test site: 3m Chamber Tested by: Peter | | | | | | | | | |
| Test mode: $\pi/4$ DQPSK Tx CH79 2480MHz | | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | | |
| No | Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1 | 4960 | 43.02 | 33.98 | 10.22 | 34.25 | 52.97 | 74 | 21.03 | PK |
| 2 | 4960 | 32.87 | 33.98 | 10.22 | 34.25 | 42.82 | 54 | 11.18 | AV |
| 3 | 7440 | / | | | | | | | |
| 4 | 9920 | / | | | | | | | |
| 5 | 12400 | / | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | | |
| 1 | 4960 | 43.4 | 33.98 | 10.22 | 34.25 | 53.35 | 74 | 20.65 | PK |
| 2 | 4960 | 32.97 | 33.98 | 10.22 | 34.25 | 42.92 | 54 | 11.08 | AV |
| 3 | 7440 | / | | | | | | | |
| 4 | 9920 | / | | | | | | | |
| 5 | 12400 | / | | | | | | | |
| Note: | | | | | | | | | |
| 1, Measuring frequency from 1GHz to 25GHz | | | | | | | | | |
| 2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | | |

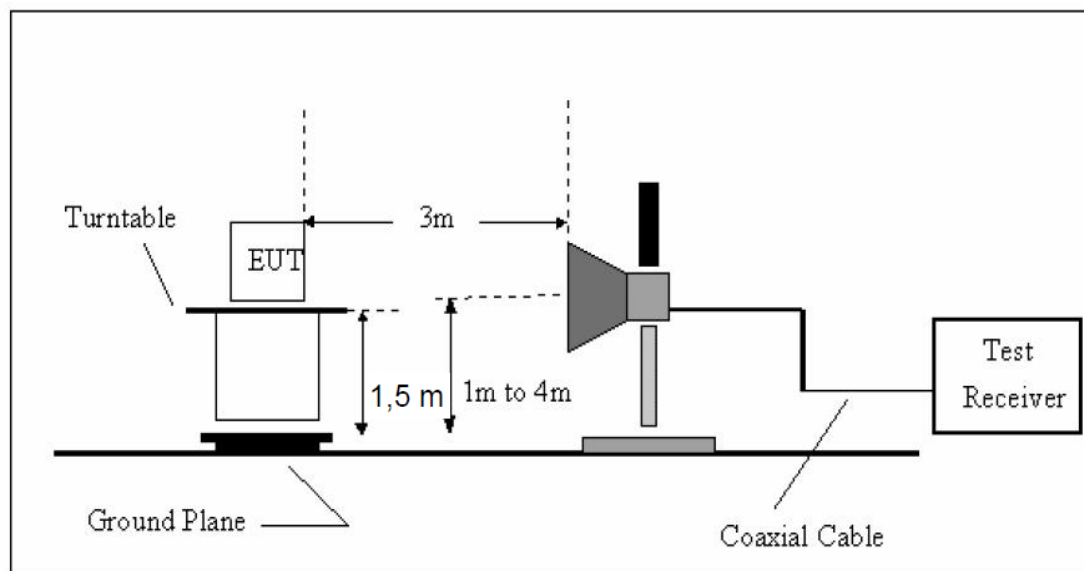
| 1GHz—25GHz Radiated emission Test result | | | | | | | | | |
|---|------------|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|--------|
| EUT: Bluetooth earphone | | | | | M/N: MDS-800X | | | | |
| Power: DC 5.0V From notebook | | | | | | | | | |
| Test date: 2015-01-07 Test site: 3m Chamber Tested by: Peter | | | | | | | | | |
| Test mode: 8- DQPSK Tx CH1 2402MHz | | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | | |
| No | Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1 | 4804 | 43.01 | 33.95 | 10.18 | 34.26 | 52.88 | 74 | 21.12 | PK |
| 2 | 4804 | 32.4 | 33.95 | 10.18 | 34.26 | 42.27 | 54 | 11.73 | AV |
| 3 | 7206 | / | | | | | | | |
| 4 | 9608 | / | | | | | | | |
| 5 | 12010 | / | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | | |
| 1 | 4804 | 42.69 | 33.95 | 10.18 | 34.26 | 52.56 | 74 | 21.44 | PK |
| 2 | 4804 | 32.06 | 33.95 | 10.18 | 34.26 | 41.93 | 54 | 12.07 | AV |
| 3 | 7206 | / | | | | | | | |
| 4 | 9608 | / | | | | | | | |
| 5 | 12010 | / | | | | | | | |
| Note: | | | | | | | | | |
| 1, Measuring frequency from 1GHz to 25GHz | | | | | | | | | |
| 2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | | |

| 1GHz—25GHz Radiated emission Test result | | | | | | | | | |
|---|------------|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|--------|
| EUT: Bluetooth earphone | | | | | M/N: MDS-800X | | | | |
| Power: DC 5.0V From notebook | | | | | | | | | |
| Test date: 2015-01-07 Test site: 3m Chamber Tested by: Peter | | | | | | | | | |
| Test mode: 8- DQPSK Tx CH40 2441MHz | | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | | |
| No | Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1 | 4882 | 42.82 | 33.93 | 10.2 | 34.29 | 52.66 | 74 | 21.34 | PK |
| 2 | 4882 | 32.49 | 33.93 | 10.2 | 34.29 | 42.33 | 54 | 11.67 | AV |
| 3 | 7323 | / | | | | | | | |
| 4 | 9764 | / | | | | | | | |
| 5 | 12205 | / | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | | |
| 1 | 4882 | 43.02 | 33.93 | 10.2 | 34.29 | 52.86 | 74 | 21.14 | PK |
| 2 | 4882 | 32.61 | 33.93 | 10.2 | 34.29 | 42.45 | 54 | 11.55 | AV |
| 3 | 7323 | / | | | | | | | |
| 4 | 9764 | / | | | | | | | |
| 5 | 12205 | / | | | | | | | |
| Note: | | | | | | | | | |
| 1, Measuring frequency from 1GHz to 25GHz | | | | | | | | | |
| 2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | | |

| 1GHz—25GHz Radiated emission Test result | | | | | | | | | |
|---|------------|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|--------|
| EUT: Bluetooth earphone | | | | | M/N: MDS-800X | | | | |
| Power: DC 5.0V From notebook | | | | | | | | | |
| Test date: 2015-01-07 Test site: 3m Chamber Tested by: Peter | | | | | | | | | |
| Test mode: 8- DQPSK Tx CH79 2480MHz | | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | | |
| No | Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1 | 4960 | 42.78 | 33.98 | 10.22 | 34.25 | 52.73 | 74 | 21.27 | PK |
| 2 | 4960 | 34.02 | 33.98 | 10.22 | 34.25 | 43.97 | 54 | 10.03 | AV |
| 3 | 7440 | / | | | | | | | |
| 4 | 9920 | / | | | | | | | |
| 5 | 12400 | / | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | | |
| 1 | 4960 | 43.12 | 33.98 | 10.22 | 34.25 | 53.07 | 74 | 20.93 | PK |
| 2 | 4960 | 32.49 | 33.98 | 10.22 | 34.25 | 42.44 | 54 | 11.56 | AV |
| 3 | 7440 | / | | | | | | | |
| 4 | 9920 | / | | | | | | | |
| 5 | 12400 | / | | | | | | | |
| Note: | | | | | | | | | |
| 1, Measuring frequency from 1GHz to 25GHz | | | | | | | | | |
| 2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | | |

9. Band Edge Compliance

9.1. Block Diagram of Test Setup



9.2. Limit

All the lower and upper band-edges emissions appearing within restricted frequency bands shall not exceed the limits shown in FCC Part 15, all the other emissions outside operation shall be at least 20dB below the fundamental emissions, or comply with FCC Part 15 limits.

9.3. Test Procedure

All restriction band and non- restriction band have been tested , only worse case is reported.

9.4. Test Result

PASS. (See below detailed test data)

Radiated Method

GFSK (CH Low)

| Band Edge Test result | | | | | | | | |
|---|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|-----------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | |
| Power: DC 3.7V from battery | | | | | | | | |
| Test date: 2016-04-24 Test site: 3m Chamber Tested by: Peter | | | | | | | | |
| Test mode: Tx CH Low 2402MHz | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | |
| Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 2390 | 44.52 | 27.62 | 3.92 | 34.97 | 41.09 | 74 | 32.91 | PK |
| 2390 | -- | 27.62 | 3.92 | 34.97 | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | |
| 2390 | 44.01 | 27.62 | 3.92 | 34.97 | 40.58 | 74 | 33.42 | PK |
| 2390 | -- | 27.62 | 3.92 | 34.97 | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Note: | | | | | | | | |
| 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | |

GFSK (CH High)

| Band Edge Test result | | | | | | | | |
|---|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|-----------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | |
| Power: DC 3.7V from battery | | | | | | | | |
| Test date: 2016-04-24 Test site: 3m Chamber Tested by: Peter | | | | | | | | |
| Test mode: Tx CH High 2480MHz | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | |
| Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 2483.5 | 43.85 | 27.89 | 4 | 34.97 | 40.77 | 74 | 33.23 | PK |
| 2483.5 | -- | 27.89 | 4 | 34.97 | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | |
| 2483.5 | 44.04 | 27.89 | 4 | 34.97 | 40.96 | 74 | 33.04 | PK |
| 2483.5 | -- | 27.89 | 4 | 34.97 | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Note: | | | | | | | | |
| 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | |

GFSK (Hopping Low)

| Band Edge Test result | | | | | | | | |
|---|---------------------|-----------------------|-----------------------|-----------------|------------------|----------------|-------------|-----------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | |
| Power: DC 3.7V from battery | | | | | | | | |
| Test date: 2016-04-24 | | | Test site: 3m Chamber | | Tested by: Peter | | | |
| Test mode: Tx | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | |
| Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 2390 | 42.85 | 27.62 | 3.92 | 34.97 | 39.42 | 74 | 34.58 | PK |
| 2390 | -- | 27.62 | 3.92 | 34.97 | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | |
| 2390 | 43.8 | 27.62 | 3.92 | 34.97 | 40.37 | 74 | 33.63 | PK |
| 2390 | -- | 27.62 | 3.92 | 34.97 | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| Note: | | | | | | | | |
| 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | |

GFSK (Hopping High)

| Band Edge Test result | | | | | | | | |
|---|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|-----------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | |
| Power: DC 3.7V from battery | | | | | | | | |
| Test date: 2016-04-24 Test site: 3m Chamber Tested by: Peter | | | | | | | | |
| Test mode: Tx | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | |
| Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 2483.5 | 43.32 | 27.89 | 4 | 34.97 | 40.24 | 74 | 33.76 | PK |
| 2483.5 | -- | -- | -- | -- | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | |
| 2483.5 | 43.54 | 27.89 | 4 | 34.97 | 40.46 | 74 | 33.54 | PK |
| 2483.5 | -- | -- | -- | -- | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Note: | | | | | | | | |
| 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | |

$\pi/4$ DQPSK (CH Low)

| Band Edge Test result | | | | | | | | |
|---|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|-----------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | |
| Power: DC 3.7V from battery | | | | | | | | |
| Test date: 2016-04-24 Test site: 3m Chamber Tested by: Peter | | | | | | | | |
| Test mode: Tx CH Low 2402MHz | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | |
| Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 2390 | 43.62 | 27.62 | 3.92 | 34.97 | 40.19 | 74 | 33.81 | PK |
| 2390 | -- | 27.62 | 3.92 | 34.97 | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | |
| 2390 | 43.94 | 27.62 | 3.92 | 34.97 | 40.51 | 74 | 33.49 | PK |
| 2390 | -- | 27.62 | 3.92 | 34.97 | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Note: | | | | | | | | |
| 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | |

$\pi/4$ DQPSK (CH High)

| Band Edge Test result | | | | | | | | |
|---|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|--------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | |
| Power: DC 3.7V from battery | | | | | | | | |
| Test date: 2016-04-24 Test site: 3m Chamber Tested by: Peter | | | | | | | | |
| Test mode: Tx CH High 2480MHz | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | |
| Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 2483.5 | 43.03 | 27.89 | 4 | 34.97 | 39.95 | 74 | 34.05 | PK |
| 2483.5 | -- | -- | -- | -- | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | |
| 2483.5 | 43.47 | 27.89 | 4 | 34.97 | 40.39 | 74 | 33.61 | PK |
| 2483.5 | -- | -- | -- | -- | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Note: | | | | | | | | |
| 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | |

$\pi/4$ DQPSK (Hopping Low)

| Band Edge Test result | | | | | | | | |
|---|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|-----------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | |
| Power: DC 3.7V from battery | | | | | | | | |
| Test date: 2016-04-24 Test site: 3m Chamber Tested by: Peter | | | | | | | | |
| Test mode: | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | |
| Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 2390 | 43.62 | 27.62 | 3.92 | 34.97 | 40.19 | 74 | 33.81 | PK |
| 2390 | -- | 27.62 | 3.92 | 34.97 | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | |
| 2390 | 43.58 | 27.62 | 3.92 | 34.97 | 40.15 | 74 | 33.85 | PK |
| 2390 | -- | 27.62 | 3.92 | 34.97 | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Note: | | | | | | | | |
| 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | |

$\pi/4$ DQPSK (Hopping High)

| Band Edge Test result | | | | | | | | |
|---|---------------------|-----------------------|-----------------------|-----------------|-----------------|------------------|-------------|--------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | |
| Power: DC 3.7V from battery | | | | | | | | |
| Test date: 2016-04-24 | | | Test site: 3m Chamber | | | Tested by: Peter | | |
| Test mode: Tx | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | |
| Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 2483.5 | 42.87 | 27.89 | 4 | 34.97 | 39.79 | 74 | 34.21 | PK |
| 2483.5 | -- | -- | -- | -- | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | |
| 2483.5 | 44.12 | 27.89 | 4 | 34.97 | 41.04 | 74 | 32.96 | PK |
| 2483.5 | -- | -- | -- | -- | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Note: | | | | | | | | |
| 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | |

8- DPSK (CH Low)

| Band Edge Test result | | | | | | | | |
|---|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|-----------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | |
| Power: DC 3.7V from battery | | | | | | | | |
| Test date: 2016-04-24 Test site: 3m Chamber Tested by: Peter | | | | | | | | |
| Test mode: Tx CH Low 2402MHz | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | |
| Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 2390 | 43.8 | 27.62 | 3.92 | 34.97 | 40.37 | 74 | 33.63 | PK |
| 2390 | -- | 27.62 | 3.92 | 34.97 | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | |
| 2390 | 44.01 | 27.62 | 3.92 | 34.97 | 40.58 | 74 | 33.42 | PK |
| 2390 | -- | 27.62 | 3.92 | 34.97 | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Note: | | | | | | | | |
| 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | |

8- DPSK (CH High)

| Band Edge Test result | | | | | | | | |
|---|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|-----------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | |
| Power: DC 3.7V from battery | | | | | | | | |
| Test date: 2016-04-24 Test site: 3m Chamber Tested by: Peter | | | | | | | | |
| Test mode: Tx CH High 2480MHz | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | |
| Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 2483.5 | 42.85 | 27.89 | 4 | 34.97 | 39.77 | 74 | 34.23 | PK |
| 2483.5 | -- | -- | -- | -- | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | |
| 2483.5 | 44.2 | 27.89 | 4 | 34.97 | 41.12 | 74 | 32.88 | PK |
| 2483.5 | -- | -- | -- | -- | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Note: | | | | | | | | |
| 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | |

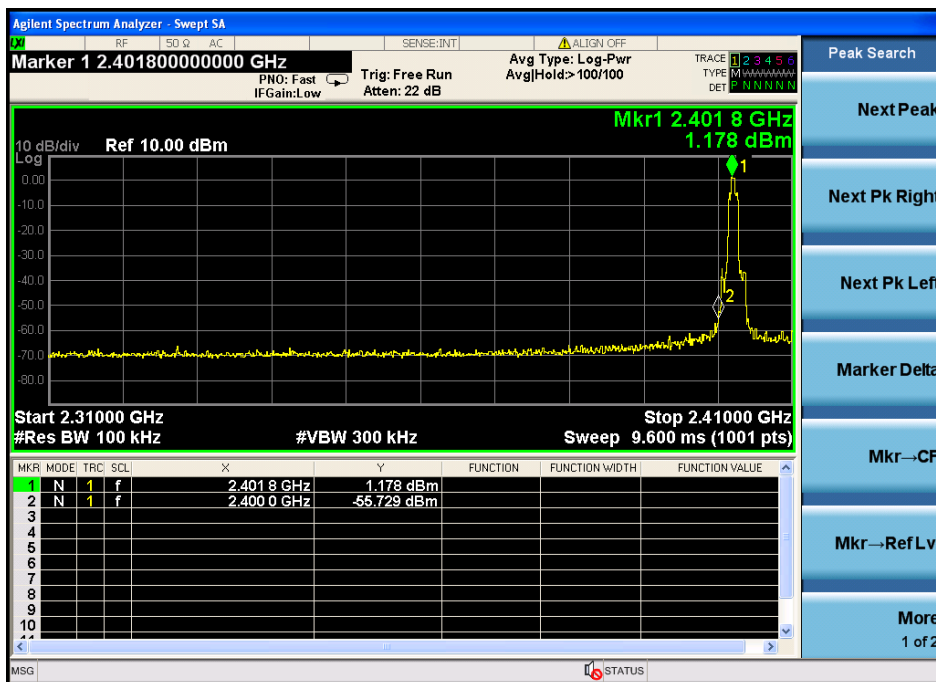
8- DPSK (Hopping Low)

| Band Edge Test result | | | | | | | | |
|---|---------------------|-----------------------|----------------|-----------------|-----------------|----------------|-------------|-----------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | |
| Power: DC 3.7V from battery | | | | | | | | |
| Test date: 2016-04-24 Test site: 3m Chamber Tested by: Peter | | | | | | | | |
| Test mode: Tx | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | |
| Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 2390 | 43.52 | 27.62 | 3.92 | 34.97 | 40.09 | 74 | 33.91 | PK |
| 2390 | -- | 27.62 | 3.92 | 34.97 | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | |
| 2390 | 44.05 | 27.62 | 3.92 | 34.97 | 40.62 | 74 | 33.38 | PK |
| 2390 | -- | 27.62 | 3.92 | 34.97 | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Note: | | | | | | | | |
| 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | |

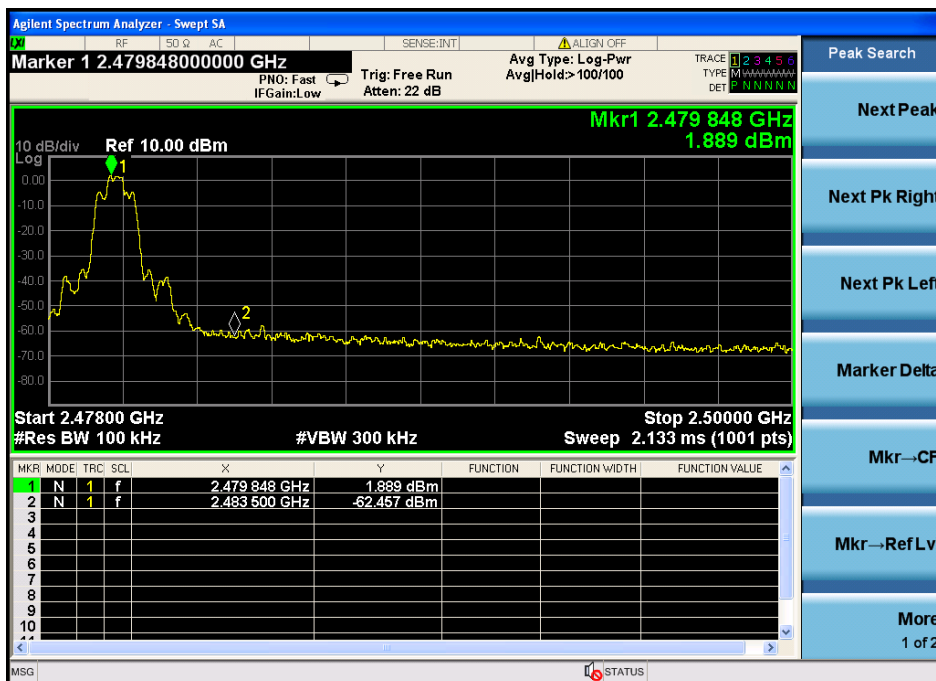
8- DPSK (Hopping High)

| Band Edge Test result | | | | | | | | |
|---|---------------------|-----------------------|-----------------------|-----------------|-----------------|------------------|-------------|--------|
| EUT: Bluetooth lighting speaker | | | | | M/N: HZ-935 | | | |
| Power: DC 3.7V from battery | | | | | | | | |
| Test date: 2016-04-24 | | | Test site: 3m Chamber | | | Tested by: Peter | | |
| Test mode: Tx | | | | | | | | |
| Antenna polarity: Vertical | | | | | | | | |
| Freq (MHz) | Read Level (dBuV/m) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 2483.5 | 42.94 | 27.89 | 4 | 34.97 | 39.86 | 74 | 34.14 | PK |
| 2483.5 | -- | -- | -- | -- | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Antenna Polarity: Horizontal | | | | | | | | |
| 2483.5 | 43.65 | 27.89 | 4 | 34.97 | 40.57 | 74 | 33.43 | PK |
| 2483.5 | -- | -- | -- | -- | -- | 54 | -- | AV |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Note: | | | | | | | | |
| 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK | | | | | | | | |
| 3, Result = Read level + Antenna factor + cable loss-Amp factor | | | | | | | | |
| 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit. | | | | | | | | |

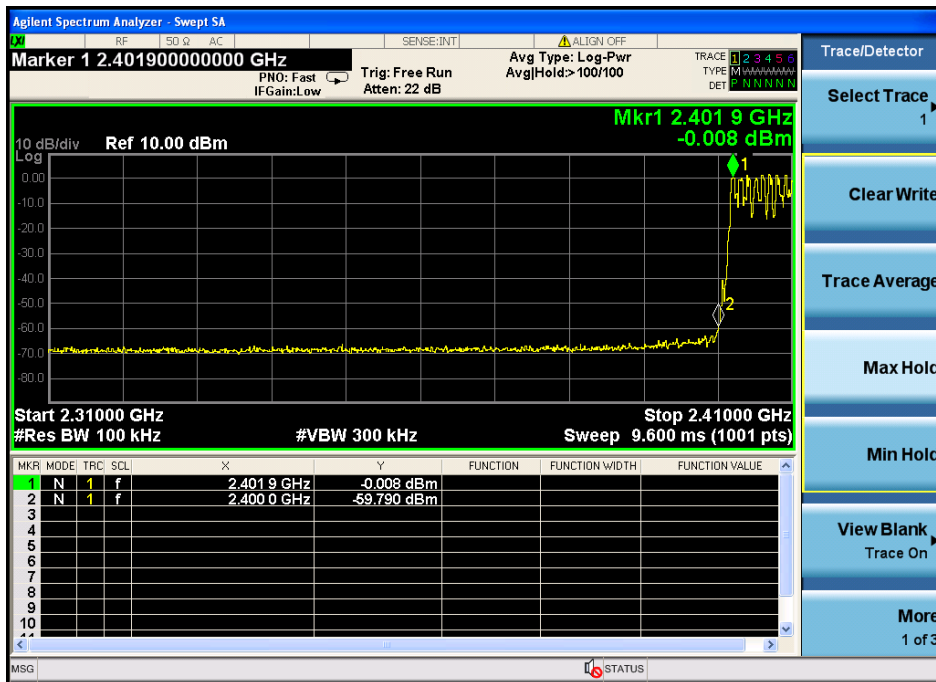
$\pi/4$ DQPSK
Low



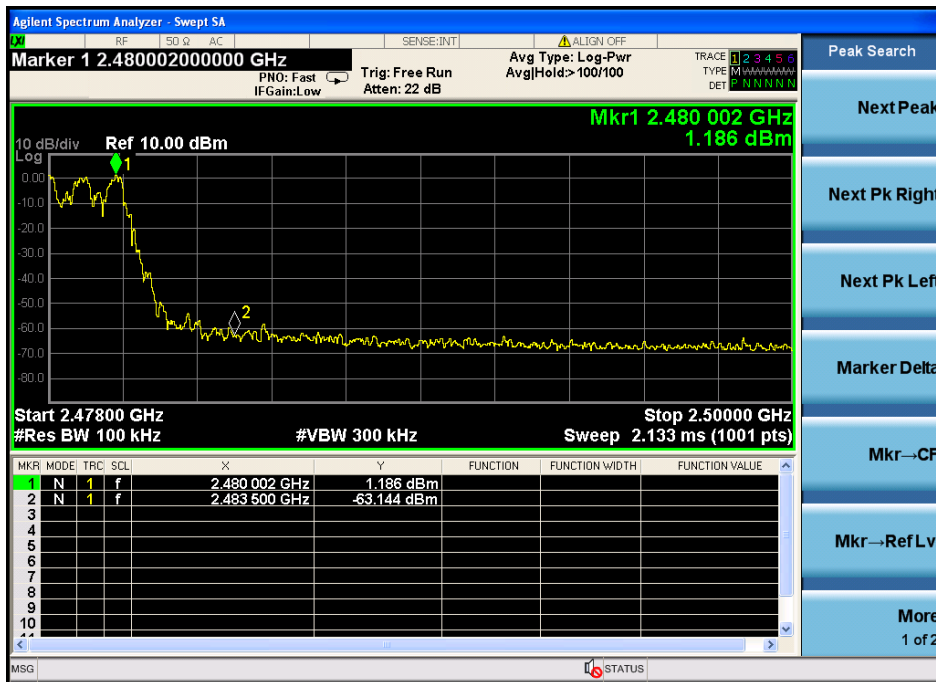
High



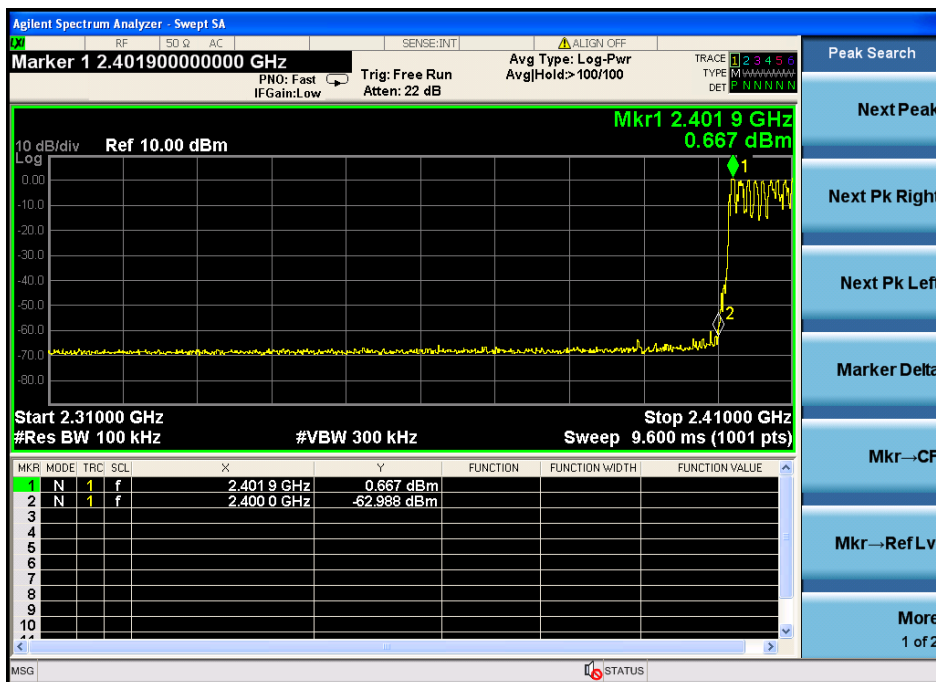
Hopping
Low



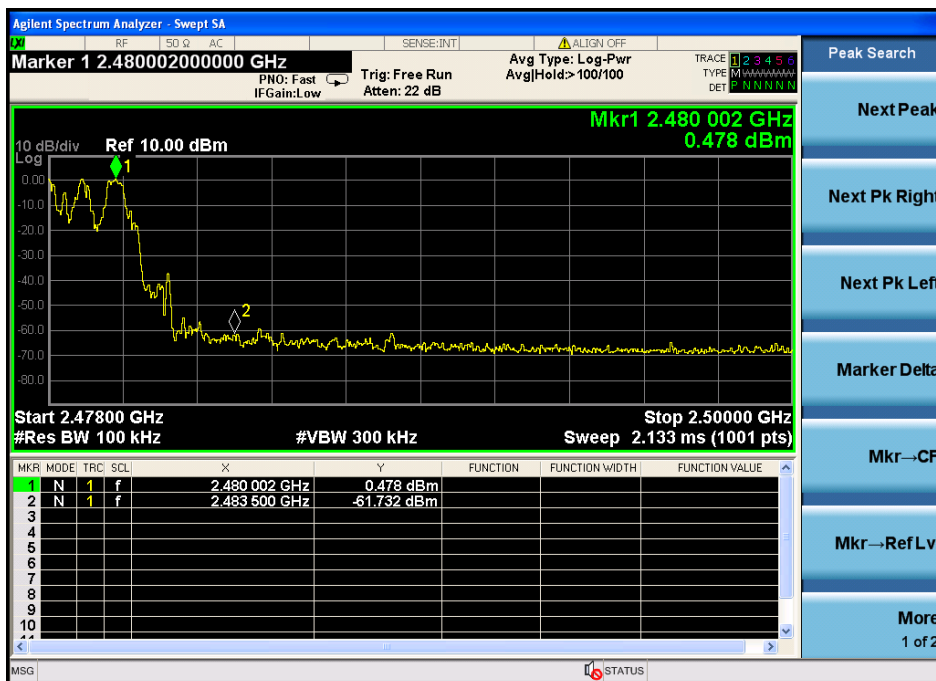
High



Hopping
Low

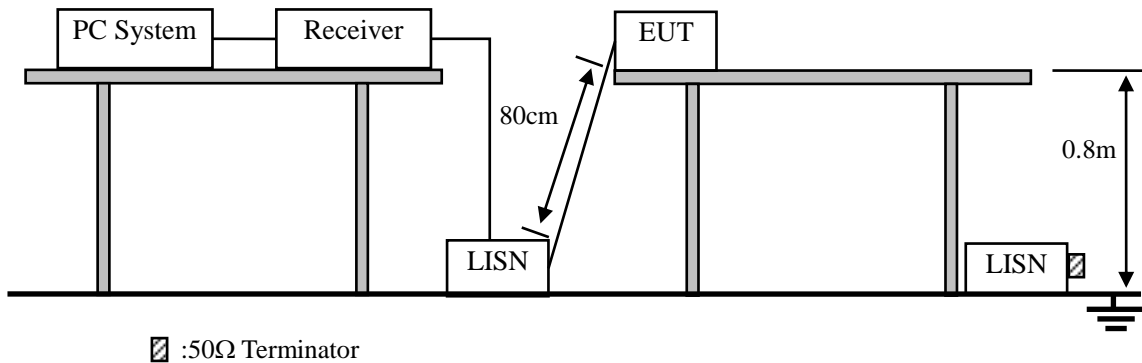


High



10. Power Line Conducted Emissions

10.1. Block Diagram of Test Setup



10.2. Limit

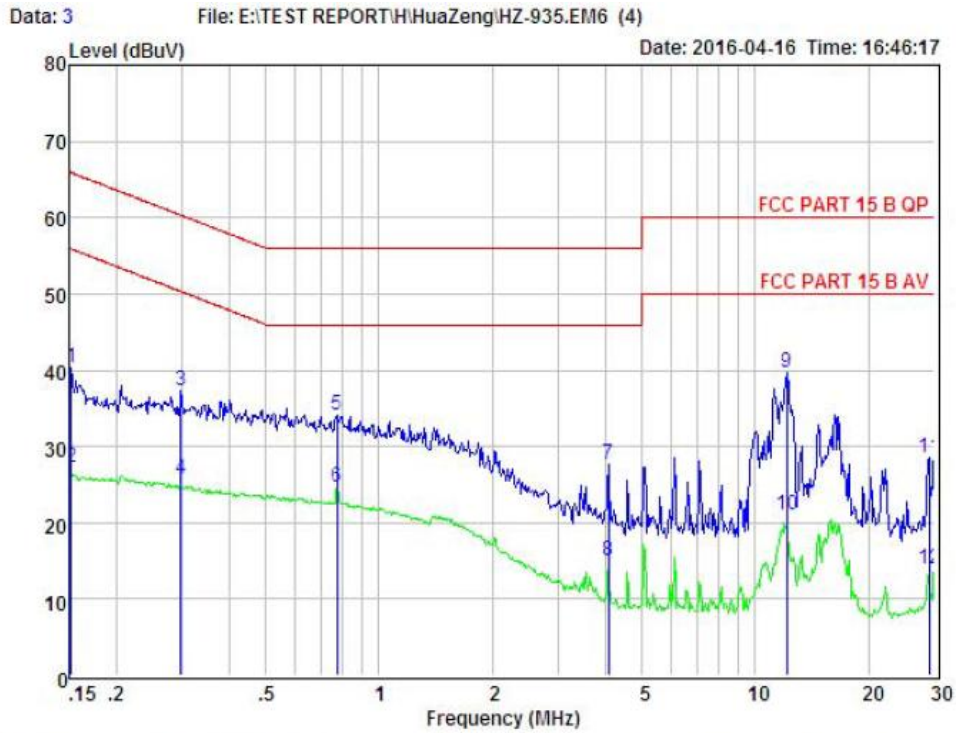
| Frequency | Maximum RF Line Voltage | |
|-----------------|----------------------------------|-------------------------------|
| | Quasi-Peak Level dB(μ V) | Average Level dB(μ V) |
| 150kHz ~ 500kHz | 66 ~ 56* | 56 ~ 46* |
| 500kHz ~ 5MHz | 56 | 46 |
| 5MHz ~ 30MHz | 60 | 50 |

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

10.3. Test Procedure

- (1) The EUT was placed on a non-metallic table, 80cm above the ground plane.
- (2) Setup the EUT and simulator as shown in 10.1
- (3) The EUT Power connected to the power mains through a power adapter and a line impedance stabilization network (L.I.S.N1). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N2), this provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10 2013 on conducted Emission test.
- (4) The bandwidth of test receiver is set at 10KHz.
- (5) The frequency range from 150 KHz to 30MHz is checked.

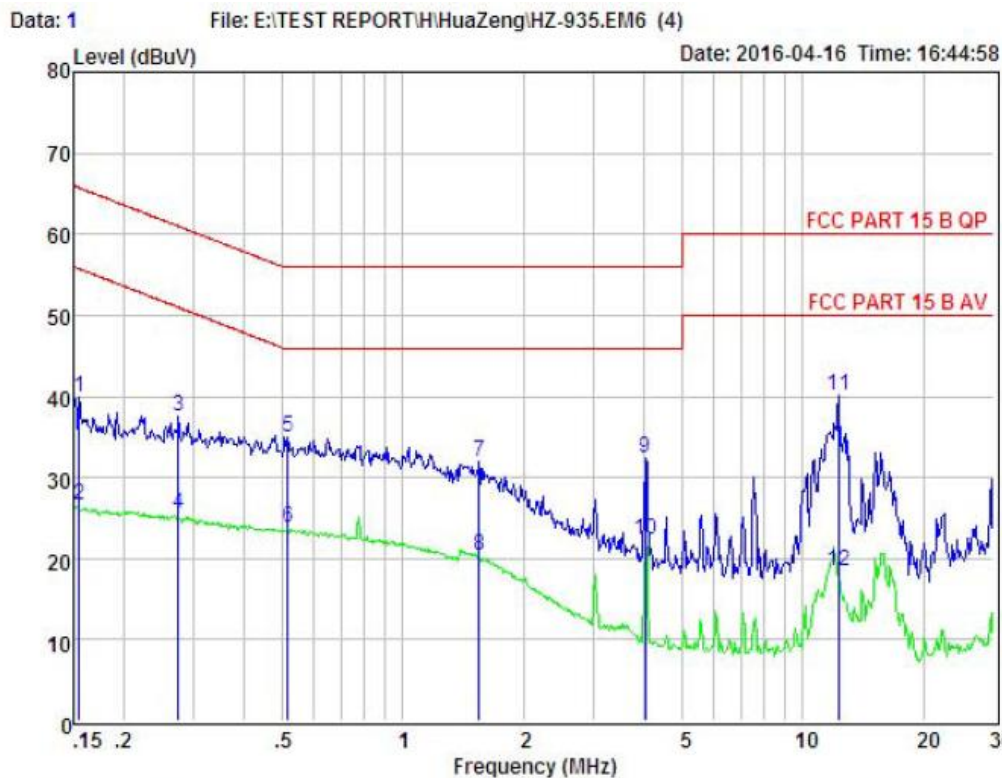
10.4. Test Result



Condition : FCC PART 15 B QP POL: LINE Temp: 20.1 °C Hum: 45 %
 EUT :
 Model No : HZ-935
 Test Mode :
 Power :
 Test Engineer :
 Remark :

| Item | Freq MHz | Read Level dBuV | LISN Factor dB | Preamp Factor dB | Cable Loss dB | Level dBuV | Limit dBuV | Margin dBuV | Remark |
|------|-------------|-----------------------|----------------------|------------------------|---------------------|---------------|---------------|----------------|---------|
| 1 | 0.152 | 30.65 | 0.03 | -9.52 | 0.10 | 40.30 | 65.91 | -25.61 | QP |
| 2 | 0.152 | 17.69 | 0.03 | -9.52 | 0.10 | 27.34 | 55.91 | -28.57 | Average |
| 3 | 0.297 | 27.55 | 0.03 | -9.56 | 0.10 | 37.24 | 60.32 | -23.08 | QP |
| 4 | 0.297 | 16.00 | 0.03 | -9.56 | 0.10 | 25.69 | 50.32 | -24.63 | Average |
| 5 | 0.775 | 24.38 | 0.00 | -9.60 | 0.10 | 34.08 | 56.00 | -21.92 | QP |
| 6 | 0.775 | 15.02 | 0.00 | -9.60 | 0.10 | 24.72 | 46.00 | -21.28 | Average |
| 7 | 4.070 | 17.65 | 0.08 | -9.88 | 0.12 | 27.73 | 56.00 | -28.27 | QP |
| 8 | 4.070 | 4.87 | 0.08 | -9.88 | 0.12 | 14.95 | 46.00 | -31.05 | Average |
| 9 | 12.124 | 29.25 | 0.26 | -9.90 | 0.22 | 39.63 | 60.00 | -20.37 | QP |
| 10 | 12.124 | 10.72 | 0.26 | -9.90 | 0.22 | 21.10 | 50.00 | -28.90 | Average |
| 11 | 29.061 | 17.66 | 0.48 | -9.86 | 0.61 | 28.61 | 60.00 | -31.39 | QP |
| 12 | 29.061 | 2.93 | 0.48 | -9.86 | 0.61 | 13.88 | 50.00 | -36.12 | Average |

Remark: Level = Read Level + LISN Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15 B QP POL: NEUTRAL Temp: 20.1 °C Hum: 45 %
 EUI :
 Model No : HZ-935
 Test Mode :
 Power :
 Test Engineer :
 Remark :

| Item | Freq MHz | Read Level dBuV | LISN Factor dB | Preamp Factor dB | Cable Loss dB | Level dBuV | Limit dBuV | Margin dBuV | Remark |
|------|-------------|-----------------------|----------------------|------------------------|---------------------|---------------|---------------|----------------|---------|
| 1 | 0.155 | 30.20 | 0.03 | -9.52 | 0.10 | 39.85 | 65.74 | -25.89 | QP |
| 2 | 0.155 | 17.00 | 0.03 | -9.52 | 0.10 | 26.65 | 55.74 | -29.09 | Average |
| 3 | 0.274 | 27.78 | 0.03 | -9.56 | 0.10 | 37.47 | 60.98 | -23.51 | QP |
| 4 | 0.274 | 15.91 | 0.03 | -9.56 | 0.10 | 25.60 | 50.98 | -25.38 | Average |
| 5 | 0.516 | 25.16 | 0.03 | -9.58 | 0.10 | 34.87 | 56.00 | -21.13 | QP |
| 6 | 0.516 | 14.13 | 0.03 | -9.58 | 0.10 | 23.84 | 46.00 | -22.16 | Average |
| 7 | 1.552 | 22.07 | 0.05 | -9.69 | 0.10 | 31.91 | 56.00 | -24.09 | QP |
| 8 | 1.552 | 10.52 | 0.05 | -9.69 | 0.10 | 20.36 | 46.00 | -25.64 | Average |
| 9 | 4.027 | 22.36 | 0.08 | -9.88 | 0.12 | 32.44 | 56.00 | -23.56 | QP |
| 10 | 4.027 | 12.23 | 0.08 | -9.88 | 0.12 | 22.31 | 46.00 | -23.69 | Average |
| 11 | 12.253 | 29.81 | 0.25 | -9.90 | 0.22 | 40.18 | 60.00 | -19.82 | QP |
| 12 | 12.253 | 8.16 | 0.25 | -9.90 | 0.22 | 18.53 | 50.00 | -31.47 | Average |

Remark: Level = Read Level + LISN Factor - Preamp Factor + Cable Loss

11. Antenna Requirements

11.1. Limit

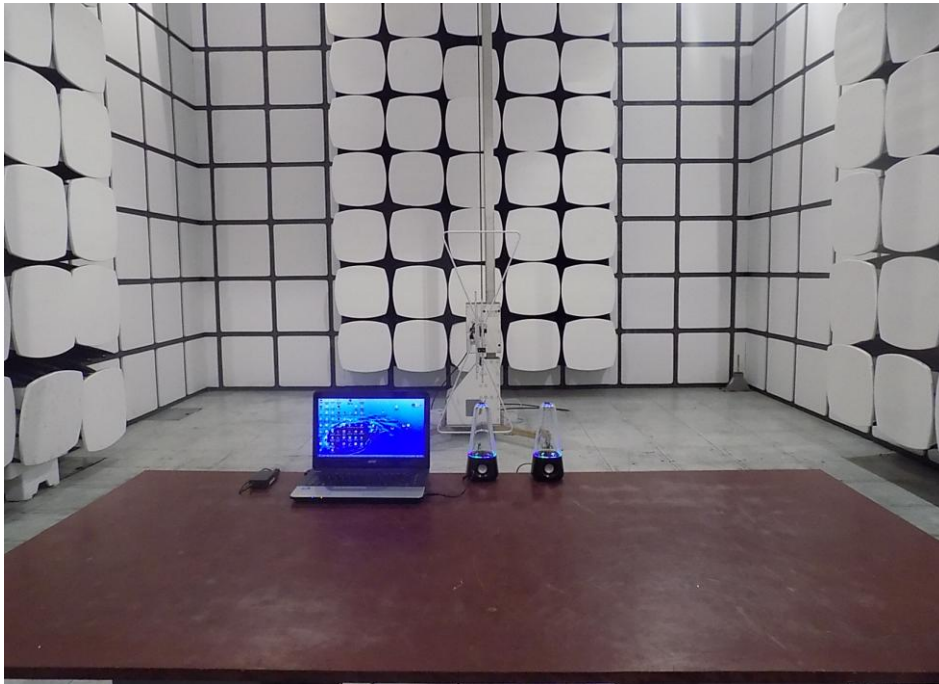
For intentional device, according to FCC Part 15, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC Part 15, if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

11.2. Result

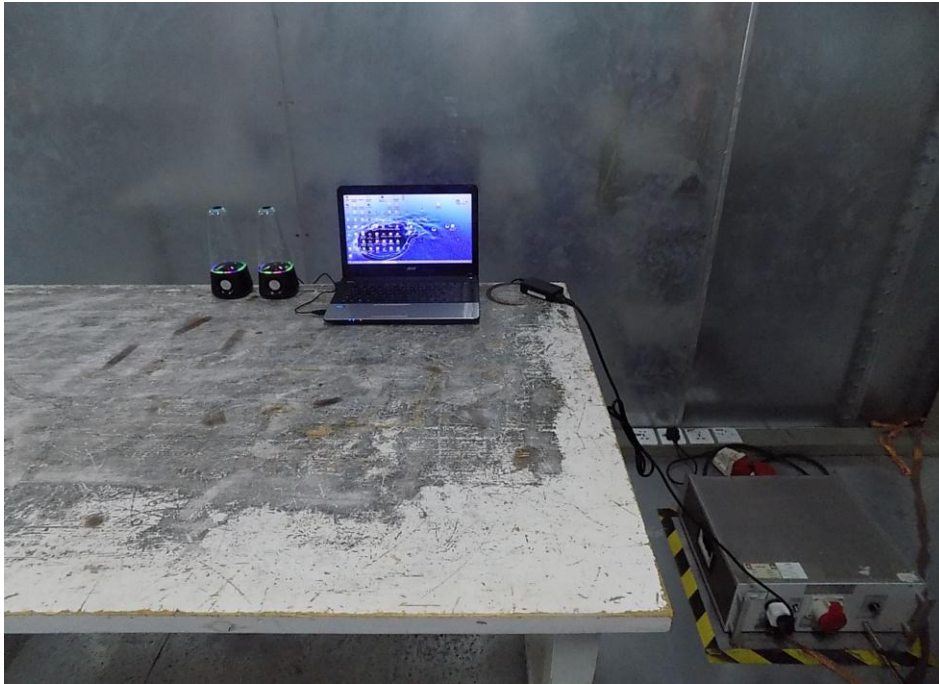
The antennas used for this product are PCB Antenna for Bluetooth, no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 0dBi .

12. Test setup photo

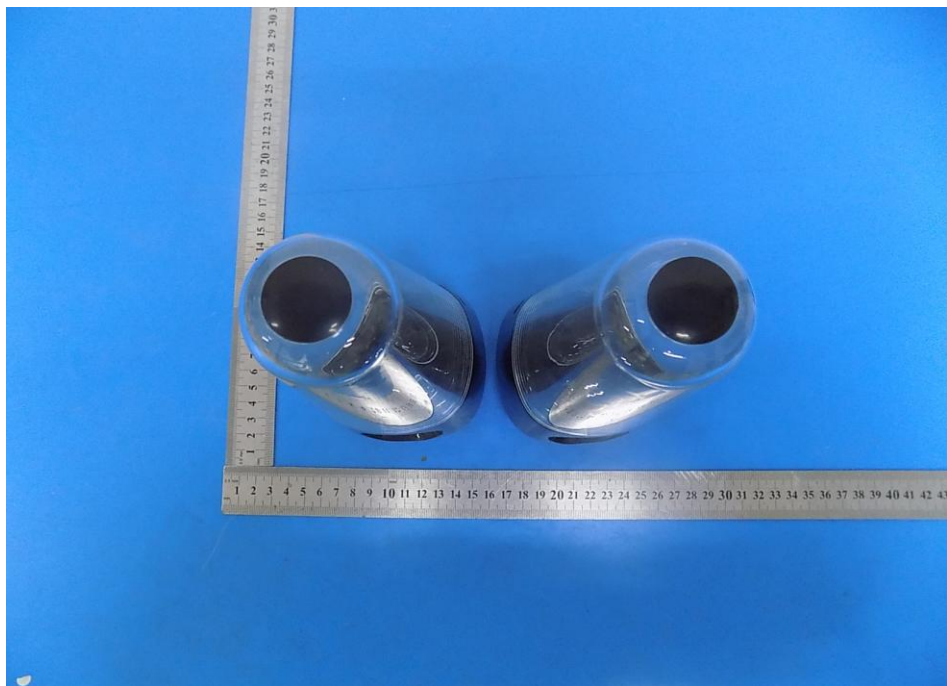
Photographs-Radiated Emission Test Setup in Chamber



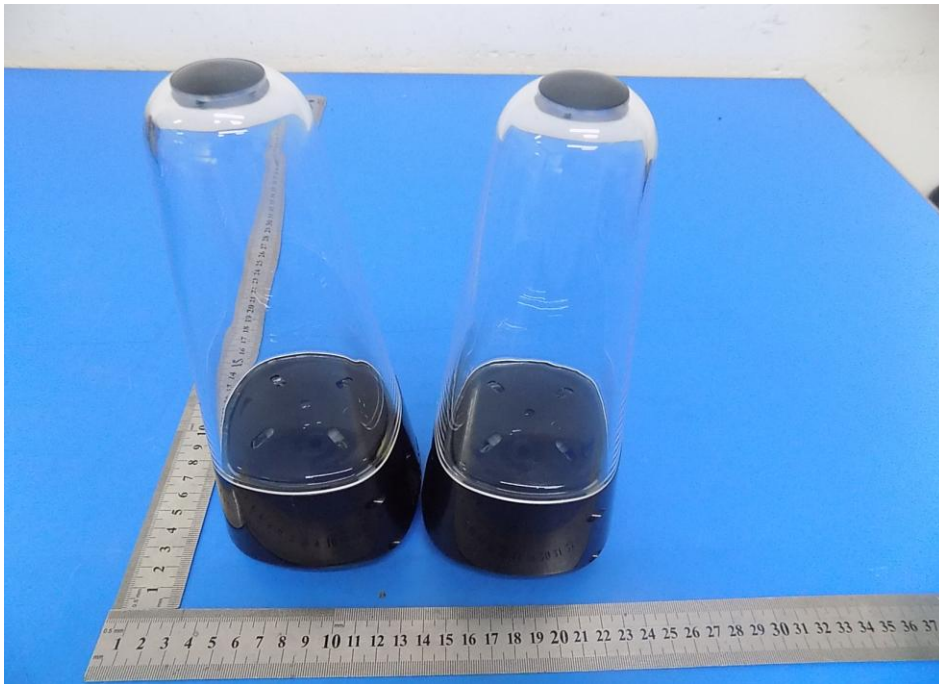
Photos of conducted emission

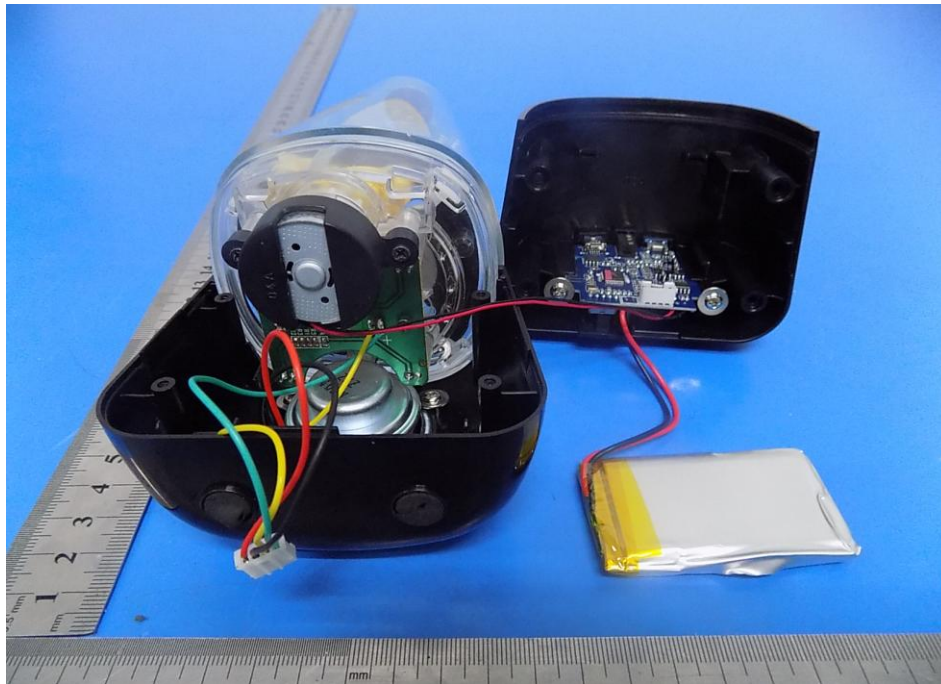


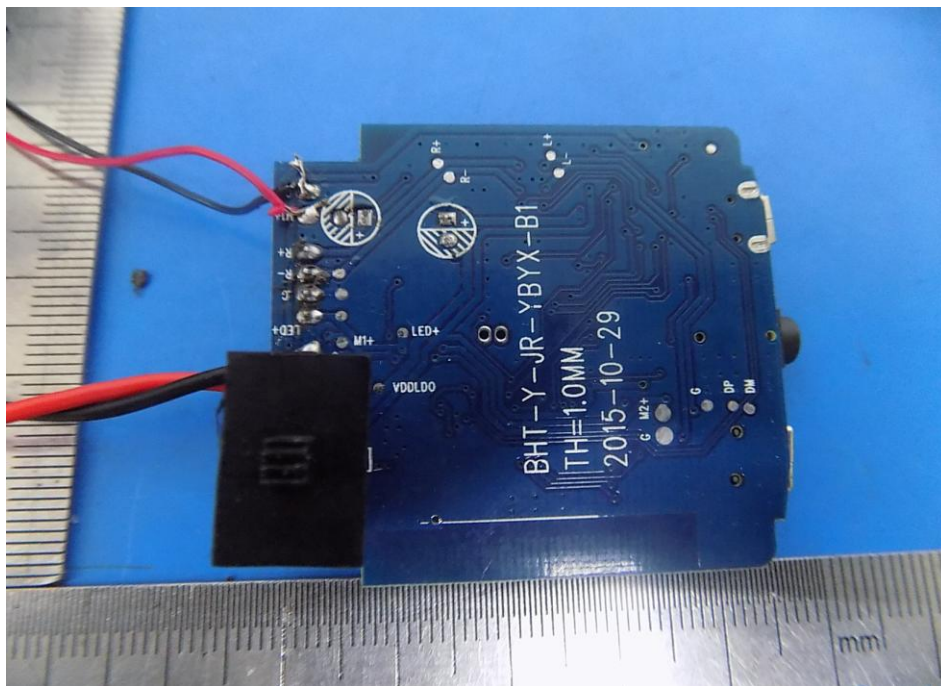
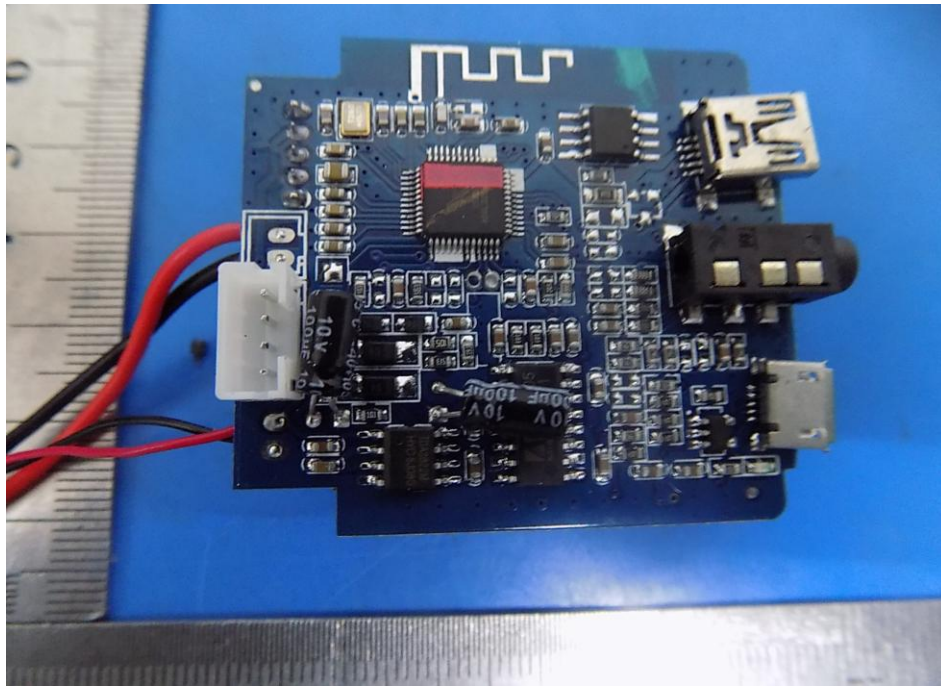
13. Photos of EUT

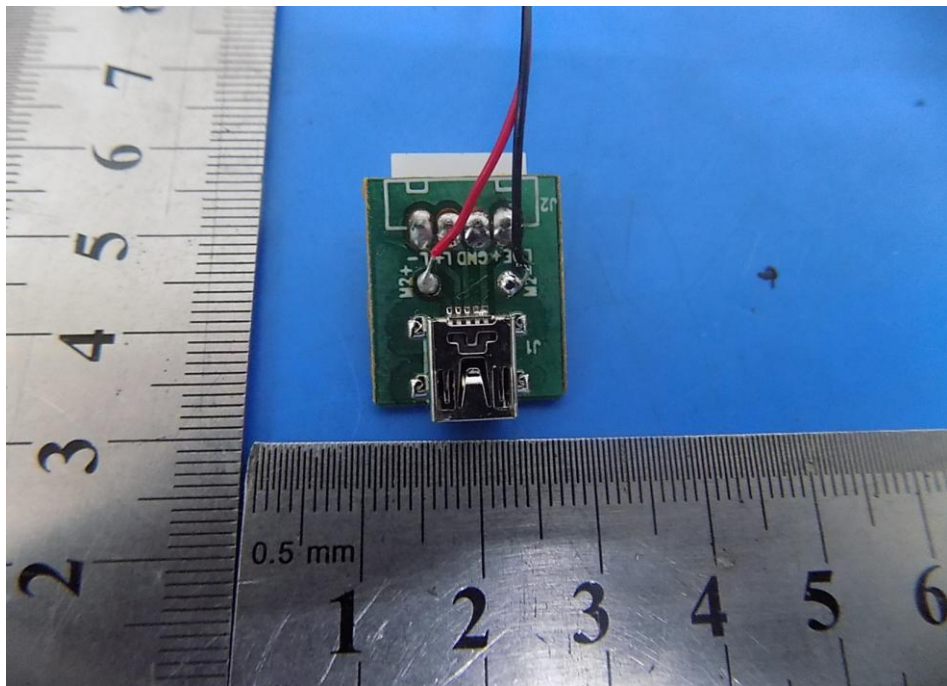
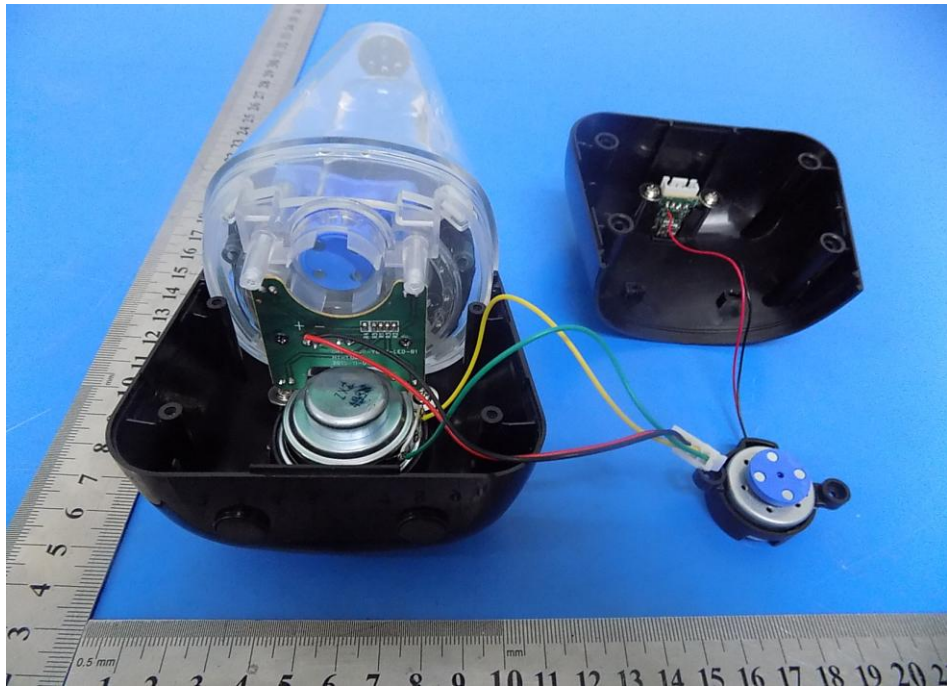


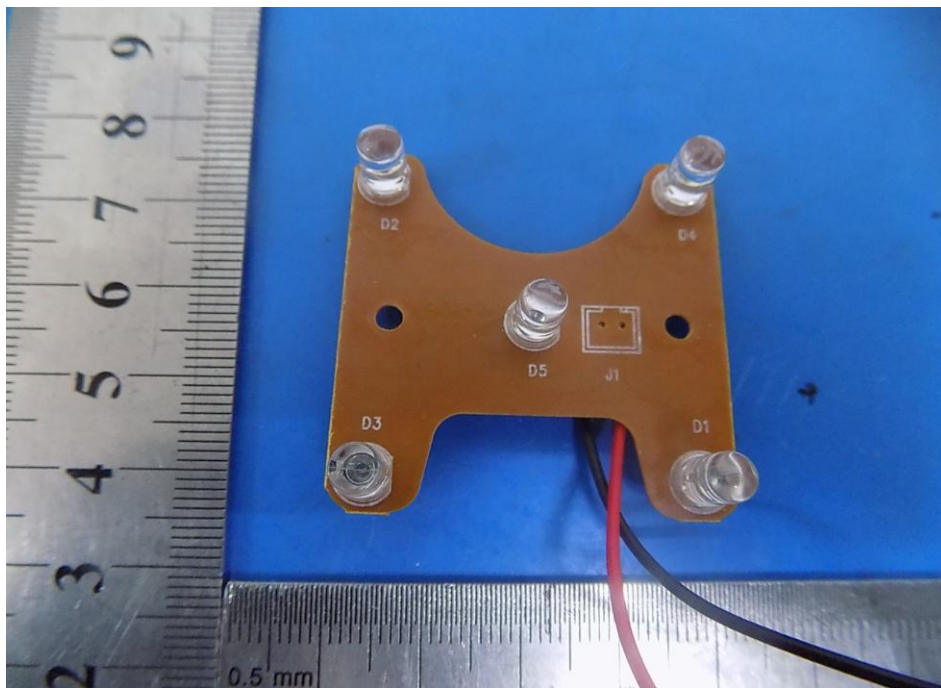
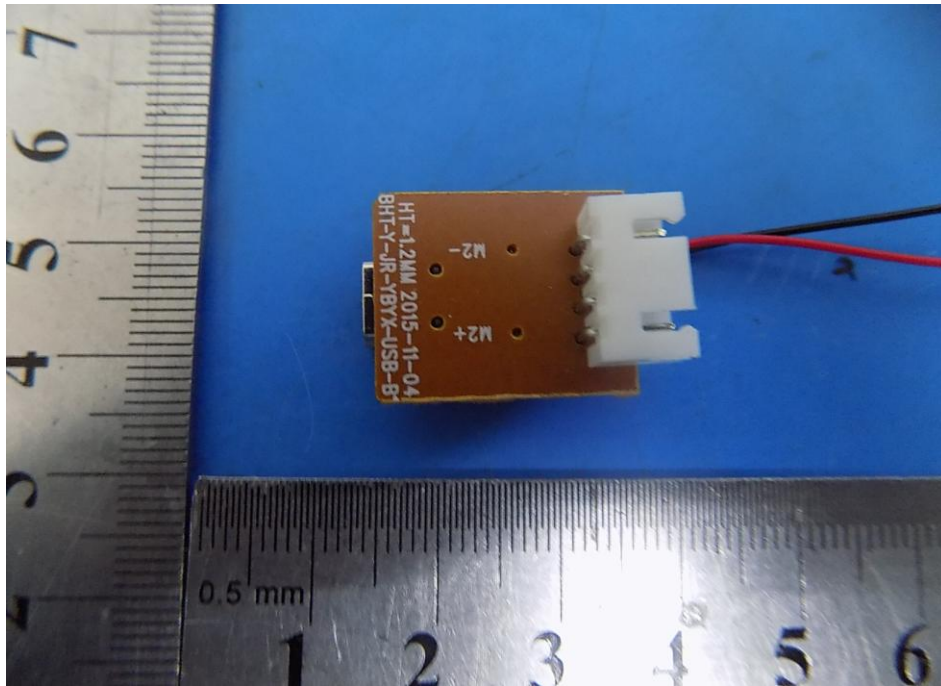


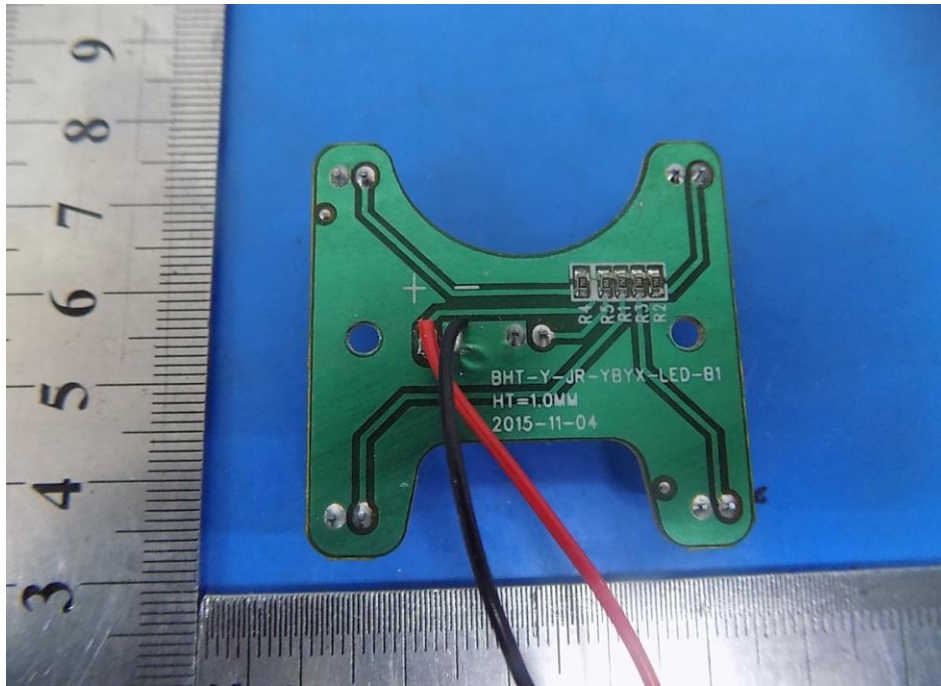












-----END OF THE REPORT-----