

FCC PART 15C TEST REPORT FOR CERTIFICATION  
On Behalf of

Microlab Electronics Co.,Ltd.

Bluetooth Speaker

Model Number: DS6

FCC ID: OR8-DS6

Prepared for : Microlab Electronics Co.,Ltd.  
South Baozi Rd., Shenzhen Microlab Industrial Park , Shenzhen  
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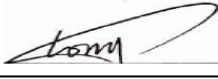
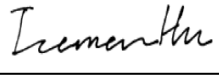
Report Number: ESTE-R1605021  
Date of Test : April 04 - May 20, 2016  
Date of Report : May 25, 2016

# TABLE OF CONTENTS

| Description                                 | Page |
|---------------------------------------------|------|
| TEST REPORT VERIFICATION.....               | 3    |
| 1. GENERAL INFORMATION.....                 | 5    |
| 1.1. Description of Device (EUT) .....      | 5    |
| 2. SUMMARY OF TEST .....                    | 6    |
| 2.1. Summary of test result.....            | 6    |
| 2.2. Test Facilities .....                  | 7    |
| 2.3. Measurement uncertainty .....          | 8    |
| 2.4. Assistant equipment used for test..... | 8    |
| 2.5. Block Diagram .....                    | 8    |
| 2.6. Test mode .....                        | 8    |
| 2.7. Channel List for Bluetooth.....        | 9    |
| 2.8. Test Equipment.....                    | 10   |
| 3 POWER LINE CONDUCTED EMISSION TEST.....   | 11   |
| 3.1. Limit.....                             | 11   |
| 3.2. Block Diagram of Test Setup .....      | 11   |
| 3.3. Test Procedure .....                   | 11   |
| 3.4. Test Result.....                       | 11   |
| 3.5. Test data .....                        | 12   |
| 4 RADIATED EMISSION TEST .....              | 20   |
| 4.1 Limit.....                              | 20   |
| 4.2. Block Diagram of Test setup .....      | 21   |
| 4.3. Test Procedure .....                   | 22   |
| 4.4. Test Result.....                       | 22   |
| 4.5. Test Data.....                         | 23   |
| 4 CONDUCTED SPURIOUS EMISSION.....          | 48   |
| 5.1 Limit .....                             | 48   |
| 5.2 Test Procedure .....                    | 48   |
| 5.3 Test Result.....                        | 48   |
| 5.4 Test Data.....                          | 49   |
| 6 BAND EDGE COMPLIANCE TEST .....           | 55   |
| 6.1 Limit .....                             | 55   |
| 6.2 Block Diagram of Test setup .....       | 55   |
| 6.3 Test Procedure .....                    | 55   |
| 6.4 Test Result.....                        | 55   |
| 6.5 Test Data.....                          | 56   |
| 7 6dB Bandwidth Test.....                   | 60   |
| 7.1 Limit .....                             | 60   |
| 7.2 Test Procedure .....                    | 60   |
| 7.3 Test Result.....                        | 60   |
| 7.4 Test Data.....                          | 61   |
| 8 OUTPUT POWER TEST .....                   | 63   |
| 8.1 Limit .....                             | 63   |

|      |                                   |    |
|------|-----------------------------------|----|
| 8.2  | Test Procedure .....              | 63 |
| 8.3  | Test Procedure .....              | 63 |
| 8.4  | Test Result .....                 | 64 |
| 8.5  | Test Data .....                   | 65 |
| 9    | POWER SPECTRAL DENSITY TEST ..... | 67 |
| 9.1  | Limit .....                       | 67 |
| 9.2  | Test Procedure .....              | 67 |
| 9.3  | Test Result .....                 | 68 |
| 9.4  | Test Data .....                   | 69 |
| 10   | ANTENNA REQUIREMENTS .....        | 71 |
| 10.1 | Limit .....                       | 71 |
| 10.2 | Result .....                      | 71 |
| 11   | TEST SETUP PHOTO .....            | 72 |
| 12   | PHOTO EUT .....                   | 75 |

## Test Report Verification

|                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                      |                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------|
| <b>Applicant:</b>                                                                                                                                                                                        | Microlab Electronics Co.,Ltd.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                      |                         |
| <b>Address:</b>                                                                                                                                                                                          | South Baozi Rd., Shenzhen Microlab Industrial Park , Shenzhen 518122 ,China                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                      |                         |
| <b>Manufacturer</b>                                                                                                                                                                                      | Klipsch Group, Inc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                      |                         |
| <b>Address:</b>                                                                                                                                                                                          | 3502 Woodview Trace, Indianapolis, IN 46268                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                      |                         |
| <b>E.U.T:</b>                                                                                                                                                                                            | Bluetooth Speaker                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                      |                         |
| <b>Model Number:</b>                                                                                                                                                                                     | DS6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                      |                         |
| <b>Power Supply:</b>                                                                                                                                                                                     | DC18V From Adapter Input AC 100~240V- 50/60 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                      |                         |
| <b>Test Voltage:</b>                                                                                                                                                                                     | DC18V From Adapter Input AC 120V/60 Hz<br>DC18V From Adapter Input AC 230V/50 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                      |                         |
| <b>Trade Name:</b>                                                                                                                                                                                       | Jamo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Serial No.:</b>                                                                                                   | -----                   |
| <b>Date of Receipt:</b>                                                                                                                                                                                  | April 04, 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Date of Test:</b>                                                                                                 | April 04 - May 20, 2016 |
| <b>Test Specification:</b>                                                                                                                                                                               | FCC Rules and Regulations Part 15 Subpart C:2015<br>ANSI C63.10:2013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                      |                         |
| <b>Test Result:</b>                                                                                                                                                                                      | <p>The device described above is tested by EST Technology Co., Ltd.. The measurement results were contained in this test report and EST Technology Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the FCC Rules and Regulations Part 15 Subpart C requirements.</p> <p style="text-align: right;">This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd.</p> <p style="text-align: right;"><b>Date:</b> May 25, 2016</p> |                                                                                                                      |                         |
| Prepared by:                                                                                                                                                                                             | Tested by:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Approved by:                                                                                                         |                         |
| <br>_____<br>Ada / Assistant                                                                                          | <br>_____<br>Tony.Tang/ Engineer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <br>_____<br>IcemanHu / Manager |                         |
| <b>Other Aspects:</b>                                                                                                                                                                                    | None.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                      |                         |
| <i>Abbreviations: OK/P=passed    fail/F=failed    n.a/N=not applicable    E.U.T=equipment under tested</i>                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                      |                         |
| <i>This test report is based on a single evaluation of one sample of above mentioned products ,It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.</i> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                      |                         |

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

|                            |   |                                                                                     |                                      |
|----------------------------|---|-------------------------------------------------------------------------------------|--------------------------------------|
| <b>Product Name</b>        | : | Bluetooth Speaker                                                                   |                                      |
|                            |   |                                                                                     |                                      |
| <b>Model Number</b>        | : | DS6                                                                                 |                                      |
|                            |   |                                                                                     |                                      |
| <b>FCC ID</b>              | : | OR8-DS6                                                                             |                                      |
|                            |   |                                                                                     |                                      |
| <b>Operation frequency</b> | : | 2402MHz~2480MHz                                                                     |                                      |
|                            |   |                                                                                     |                                      |
| <b>Number of channel</b>   | : | 79                                                                                  | 40                                   |
|                            |   |                                                                                     |                                      |
| <b>Antenna</b>             | : | Internal antenna, 0 dBi gain                                                        |                                      |
|                            |   |                                                                                     |                                      |
| <b>Modulation</b>          | : | Dual-mode Bluetooth 4.0<br>BT BDR: GFSK<br>BT EDR: $\pi/4$ -DQPSK<br>BT EDR: 8-DPSK | Dual-mode Bluetooth 4.0<br>BLE: GFSK |
|                            | : |                                                                                     |                                      |
| <b>Sample Type</b>         | : | Prototype production                                                                |                                      |

## 2. SUMMARY OF TEST

### 2.1. Summary of test result

| Description of Test Item                                                                                                                                                    | Standard                                      | Results |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|---------|
| Power Line Conducted Emission                                                                                                                                               | FCC Part 15: 15.207                           | PASS    |
| Radiated Emissions                                                                                                                                                          | FCC Part 15: 15.209<br>FCC Part 15: 15.247(d) | PASS    |
| Band Edge Compliance                                                                                                                                                        | FCC Part 15: 15.209<br>FCC Part 15: 15.247(d) | PASS    |
| Conducted spurious emissions                                                                                                                                                | FCC Part 15: 15.247(d)                        | PASS    |
| 6dB Bandwidth                                                                                                                                                               | FCC Part 15: 15.247 (a)(2)                    | PASS    |
| Peak Output Power                                                                                                                                                           | FCC Part 15: 15.247 (b)                       | PASS    |
| Power Spectral Density                                                                                                                                                      | FCC Part 15: 15.247 (e)                       | PASS    |
| Antenna requirement                                                                                                                                                         | FCC Part 15: 15.203                           | PASS    |
| Note: There will be two adapters with this equipment to sales, So we recorded the test results of two adapters in 15.207 and 15.209 ( 30-1000MHz Radiated Emission Test ) . |                                               |         |

## 2.2. Test Facilities

EMC Lab :      Certificated by CNAL, CHINA  
                          Registration No.: L5288  
                          Date of registration: December 07, 2015

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

                          Certificated by Industry Canada  
                          Registration No.: 9405A-1  
                          Date of registration: December 30, 2015

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

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

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

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

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

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

Name of Firm :      EST Technology Co., Ltd.

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

## 2.3. Measurement uncertainty

| Test Item                                                  | Uncertainty        |
|------------------------------------------------------------|--------------------|
| Uncertainty for Conduction emission test                   | 2.54dB             |
| Uncertainty for Radiation Emission test<br>(30MHz-1GHz)    | 3.62               |
| Uncertainty for Radiation Emission test<br>(1GHz to 18GHz) | 4.86               |
| Uncertainty for radio frequency                            | $7 \times 10^{-8}$ |
| Uncertainty for conducted RF Power                         | 0.20dB             |
| Uncertainty for Power density test                         | 0.26dB             |

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

## 2.4. Assistant equipment used for test

### 2.4.1. Adapter 1

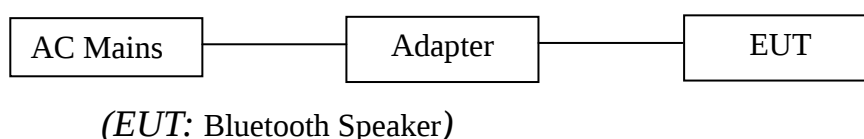
M / N : FJ-SW1803000D  
 Input : AC 100-240V~50/60Hz 1.5A MAX  
 Output : DC 18V 3.000A

### 2.4.2. Adapter 2

M / N : PS65B180Y3000S  
 Input : AC 100-240V~50/60Hz 1.5A MAX  
 Output : DC 18V 3.000A

## 2.5. Block Diagram

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



## 2.6. Test mode

A special test software was used to control EUT work in Continuous TX mode(100% duty cycle), and select test channel, wireless mode and data rate.

| Mode            | Channel | Frequency |
|-----------------|---------|-----------|
| BT 4.0-BLE GFSK | Low     | 2402MHz   |
|                 | Middle  | 2440MHz   |
|                 | High    | 2480MHz   |

## 2.7. Channel List for Bluetooth

| Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) |
|-------------|-----------------|-------------|-----------------|
| 1           | 2402            | 2           | 2404            |
| 3           | 2406            | 4           | 2408            |
| 5           | 2410            | 6           | 2412            |
| 7           | 2414            | 8           | 2416            |
| 9           | 2418            | 10          | 2420            |
| 11          | 2422            | 12          | 2424            |
| 13          | 2426            | 14          | 2428            |
| 15          | 2430            | 16          | 2432            |
| 17          | 2434            | 18          | 2436            |
| 19          | 2438            | 20          | 2440            |
| 21          | 2442            | 22          | 2444            |
| 23          | 2446            | 24          | 2448            |
| 25          | 2450            | 26          | 2452            |
| 27          | 2454            | 28          | 2456            |
| 29          | 2458            | 30          | 2460            |
| 31          | 2462            | 32          | 2464            |
| 33          | 2466            | 34          | 2468            |
| 35          | 2470            | 36          | 2472            |
| 37          | 2474            | 38          | 2476            |
| 39          | 2478            | 40          | 2480            |

## 2.8. Test Equipment

### 2.8.1. For conducted emission test

| Equipment               | Manufacturer    | Model No.     | Serial No. | Last Cal.  | Next Cal. |
|-------------------------|-----------------|---------------|------------|------------|-----------|
| EMI Test Receiver       | Rohde & Schwarz | ESHS30        | 832354     | June,28,15 | 1 Year    |
| Artificial Mains Networ | Rohde & Schwarz | ENV216        | 101260     | June,28,15 | 1 Year    |
| Pulse Limiter           | Rohde & Schwarz | ESSP-920BT-Z2 | 101100     | June,28,15 | 1 Year    |

### 2.8.2. For radiated emission test(9 kHz-30MHz)

| Equipment         | Manufacturer    | Model No. | Serial No. | Last Cal.  | Next Cal. |
|-------------------|-----------------|-----------|------------|------------|-----------|
| EMI Test Receiver | Rohde & Schwarz | ESCI      | 100435     | June,29,15 | 1 Year    |
| Loop Antenna      | ETS-LINDGREN    | 6502      | 00071730   | June,29,15 | 1 Year    |

### 2.8.3. For radiated emission test(30-1000MHz)

| Equipment         | Manufacturer    | Model No. | Serial No. | Last Cal.  | Next Cal. |
|-------------------|-----------------|-----------|------------|------------|-----------|
| EMI Test Receiver | Rohde & Schwarz | ESVS10    | 100004     | June,28,15 | 1 Year    |
| Spectrum Analyzer | Agilent         | E4411B    | MY50140697 | June,28,15 | 1 Year    |
| Bilog Antenna     | Teseq           | CBL 6111D | 27090      | June,28,15 | 1 Year    |
| Signal Amplifier  | Agilent         | 310N      | 187037     | June,28,15 | 1 Year    |
| RF Cable          | Hubersuhner     | W10.02    | 534123     | June,28,15 | 1 Year    |

### 2.8.4. For Radio & radiated emission test(above 1GHz)

| Equipment               | Manufacturer    | Model No.   | Serial No.    | Last Cal.  | Next Cal. |
|-------------------------|-----------------|-------------|---------------|------------|-----------|
| Horn Antenna            | SCHWARZB ECK    | BBHA 9120 D | BBHA9120D1002 | June,28,15 | 1 Year    |
| Board-Band Horn Antenna | SCHWARZB ECK    | BBHA 9170   | 9170-497      | June,28,15 | 1 Year    |
| Signal Amplifier        | SCHWARZB ECK    | BBV9718     | 9718-212      | June,28,15 | 1 Year    |
| Spectrum Analyzer       | Agilent         | E4408B      | MY44211139    | June,28,15 | 1 Year    |
| Spectrum Analyzer       | Rohde & Schwarz | FSV         | 103173        | June,28,15 | 1 Year    |
| RF Cable                | Hubersuhner     | RG 214/U    | 513423        | June,28,15 | 1 Year    |

### 3 POWER LINE CONDUCTED EMISSION TEST

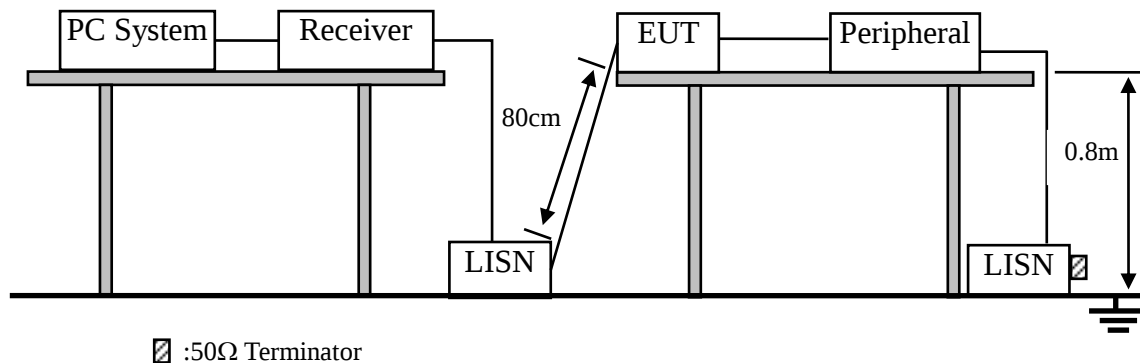
#### 3.1. Limit

| Frequency       | Maximum RF Line Voltage          |                               |
|-----------------|----------------------------------|-------------------------------|
|                 | Quasi-Peak Level<br>dB( $\mu$ V) | Average Level<br>dB( $\mu$ 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.

#### 3.2. Block Diagram of Test Setup



#### 3.3 Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#). This provides a 50 ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs). The AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2009 on Conducted Emission Test.

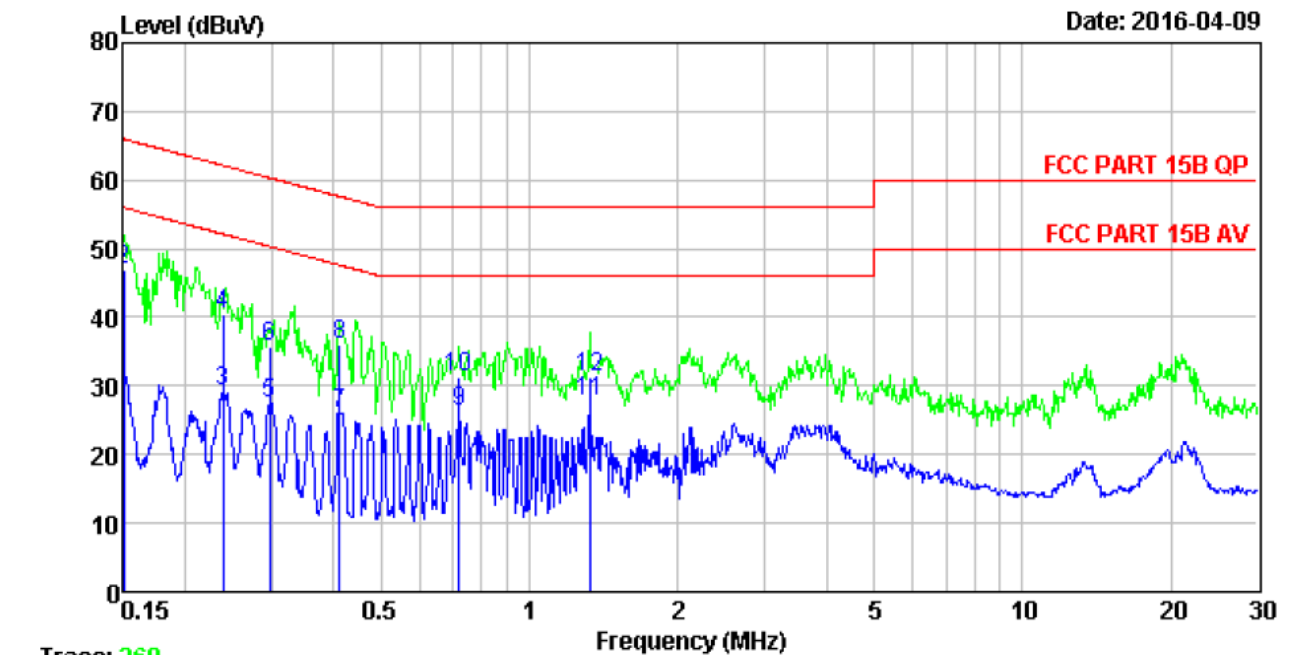
The bandwidth of test receiver (R & S ESHS30) is set at 10kHz.

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

#### 3.4. Test Result

**PASS.** (All emissions not reported below are too low against the prescribed limits.)

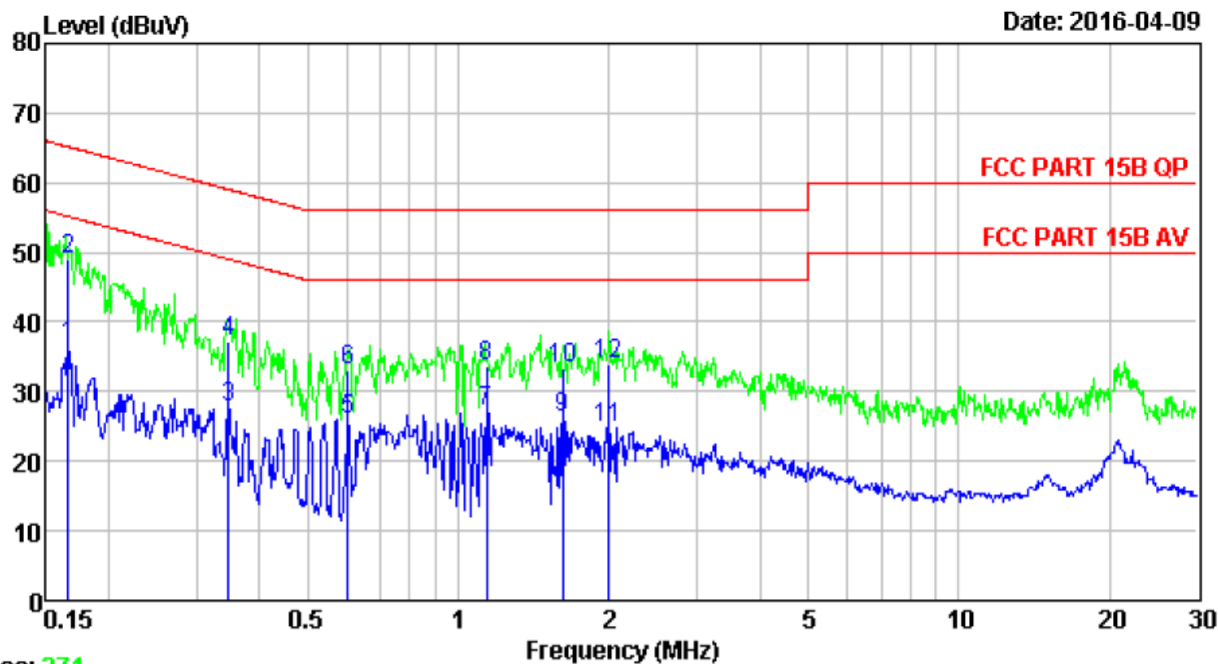
## 3.5. Test data



Trace: 269

Site no : 844 Shield Room Data no. : 270  
 Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa LINE Phase : LINE  
 Limit : FCC PART 15B QP  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : TX Mode  
 Adapter 1

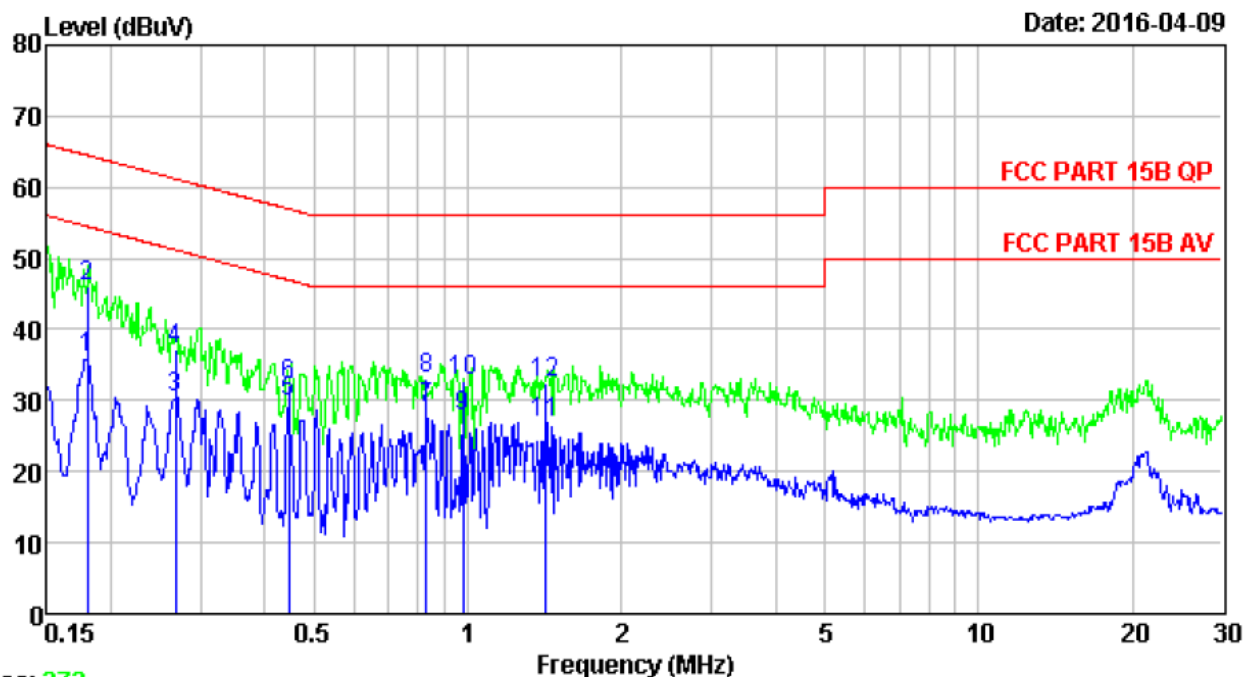
|    | Freq.<br>(MHz) | LISN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBUV) | Emission<br>Level<br>(dBUV) | Limits<br>(dBUV) | Margin<br>(dB) | Remark  |
|----|----------------|------------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.15           | 9.61                   | 9.81                  | 14.95             | 34.37                       | 56.00            | 21.63          | Average |
| 2  | 0.15           | 9.61                   | 9.81                  | 27.57             | 46.99                       | 66.00            | 19.01          | QP      |
| 3  | 0.24           | 9.61                   | 9.82                  | 9.80              | 29.23                       | 52.13            | 22.90          | Average |
| 4  | 0.24           | 9.61                   | 9.82                  | 21.03             | 40.46                       | 62.13            | 21.67          | QP      |
| 5  | 0.30           | 9.61                   | 9.83                  | 8.10              | 27.54                       | 50.32            | 22.78          | Average |
| 6  | 0.30           | 9.61                   | 9.83                  | 16.36             | 35.80                       | 60.32            | 24.52          | QP      |
| 7  | 0.41           | 9.61                   | 9.82                  | 6.68              | 26.11                       | 47.59            | 21.48          | Average |
| 8  | 0.41           | 9.61                   | 9.82                  | 16.50             | 35.93                       | 57.59            | 21.66          | QP      |
| 9  | 0.72           | 9.59                   | 9.81                  | 6.74              | 26.14                       | 46.00            | 19.86          | Average |
| 10 | 0.72           | 9.59                   | 9.81                  | 11.93             | 31.33                       | 56.00            | 24.67          | QP      |
| 11 | 1.32           | 9.63                   | 9.81                  | 8.39              | 27.83                       | 46.00            | 18.17          | Average |
| 12 | 1.32           | 9.63                   | 9.81                  | 11.75             | 31.19                       | 56.00            | 24.81          | QP      |



## Trace: 271

Site no : 844 Shield Room Data no. : 272  
 Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa LINE Phase : NEUTRAL  
 Limit : FCC PART 15B QP  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : TX Mode  
 Adapter 1

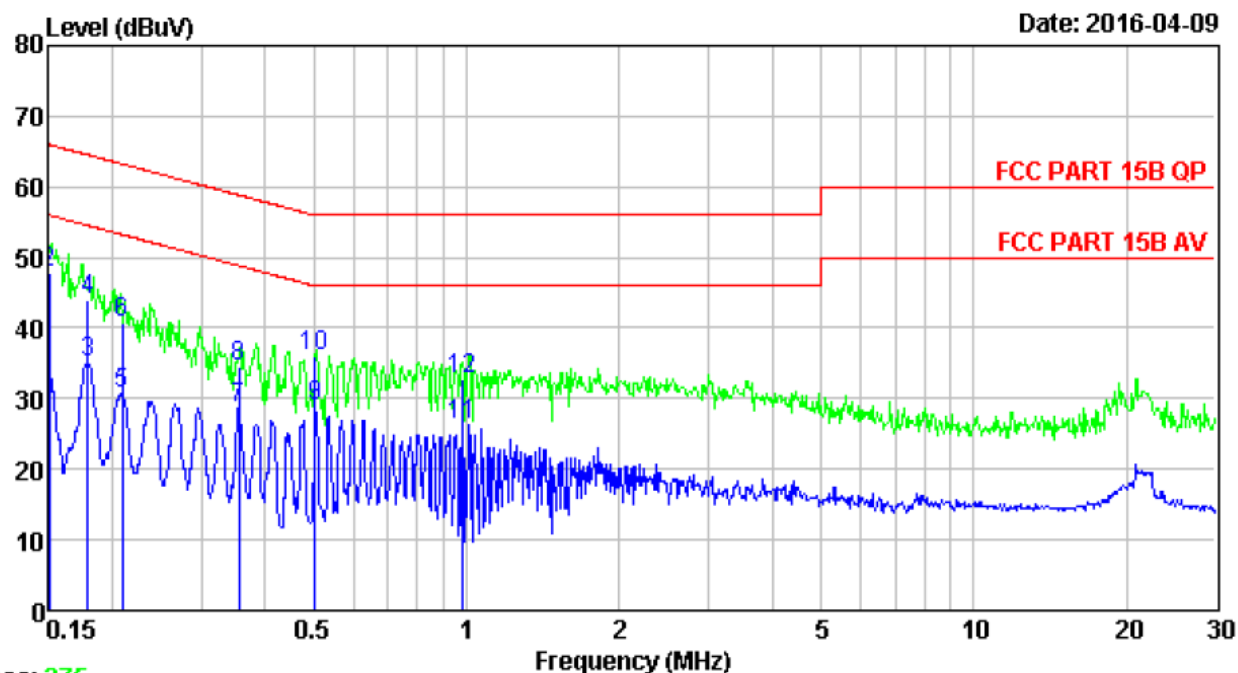
|    | Freq.<br>(MHz) | LISN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|------------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.17           | 9.51                   | 9.81                  | 17.35             | 36.67                       | 55.16            | 18.49          | Average |
| 2  | 0.17           | 9.51                   | 9.81                  | 29.64             | 48.96                       | 65.16            | 16.20          | QP      |
| 3  | 0.35           | 9.59                   | 9.83                  | 8.46              | 27.88                       | 49.05            | 21.17          | Average |
| 4  | 0.35           | 9.59                   | 9.83                  | 17.84             | 37.26                       | 59.05            | 21.79          | QP      |
| 5  | 0.60           | 9.61                   | 9.82                  | 6.58              | 26.01                       | 46.00            | 19.99          | Average |
| 6  | 0.60           | 9.61                   | 9.82                  | 13.65             | 33.08                       | 56.00            | 22.92          | QP      |
| 7  | 1.14           | 9.61                   | 9.81                  | 7.61              | 27.03                       | 46.00            | 18.97          | Average |
| 8  | 1.14           | 9.61                   | 9.81                  | 14.15             | 33.57                       | 56.00            | 22.43          | QP      |
| 9  | 1.62           | 9.62                   | 9.84                  | 6.86              | 26.32                       | 46.00            | 19.68          | Average |
| 10 | 1.62           | 9.62                   | 9.84                  | 13.99             | 33.45                       | 56.00            | 22.55          | QP      |
| 11 | 2.00           | 9.62                   | 9.83                  | 5.30              | 24.75                       | 46.00            | 21.25          | Average |
| 12 | 2.00           | 9.62                   | 9.83                  | 14.41             | 33.86                       | 56.00            | 22.14          | QP      |



Trace: 273

Site no : 844 Shield Room Data no. : 274  
 Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa LINE Phase : NEUTRAL  
 Limit : FCC PART 15B QP  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 240V/50Hz  
 M/N : DS6  
 Test Mode : TX Mode  
 Adapter 1

|    | Freq.<br>(MHz) | LISN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|------------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.18           | 9.55                   | 9.80                  | 16.81             | 36.16                       | 54.50            | 18.34          | Average |
| 2  | 0.18           | 9.55                   | 9.80                  | 26.67             | 46.02                       | 64.50            | 18.48          | QP      |
| 3  | 0.27           | 9.60                   | 9.83                  | 11.02             | 30.45                       | 51.20            | 20.75          | Average |
| 4  | 0.27           | 9.60                   | 9.83                  | 17.89             | 37.32                       | 61.20            | 23.88          | QP      |
| 5  | 0.45           | 9.59                   | 9.81                  | 10.34             | 29.74                       | 46.93            | 17.19          | Average |
| 6  | 0.45           | 9.59                   | 9.81                  | 12.81             | 32.21                       | 56.93            | 24.72          | QP      |
| 7  | 0.83           | 9.62                   | 9.81                  | 9.49              | 28.92                       | 46.00            | 17.08          | Average |
| 8  | 0.83           | 9.62                   | 9.81                  | 13.55             | 32.98                       | 56.00            | 23.02          | QP      |
| 9  | 0.98           | 9.61                   | 9.82                  | 8.42              | 27.85                       | 46.00            | 18.15          | Average |
| 10 | 0.98           | 9.61                   | 9.82                  | 13.36             | 32.79                       | 56.00            | 23.21          | QP      |
| 11 | 1.42           | 9.62                   | 9.82                  | 7.34              | 26.78                       | 46.00            | 19.22          | Average |
| 12 | 1.42           | 9.62                   | 9.82                  | 12.95             | 32.39                       | 56.00            | 23.61          | QP      |

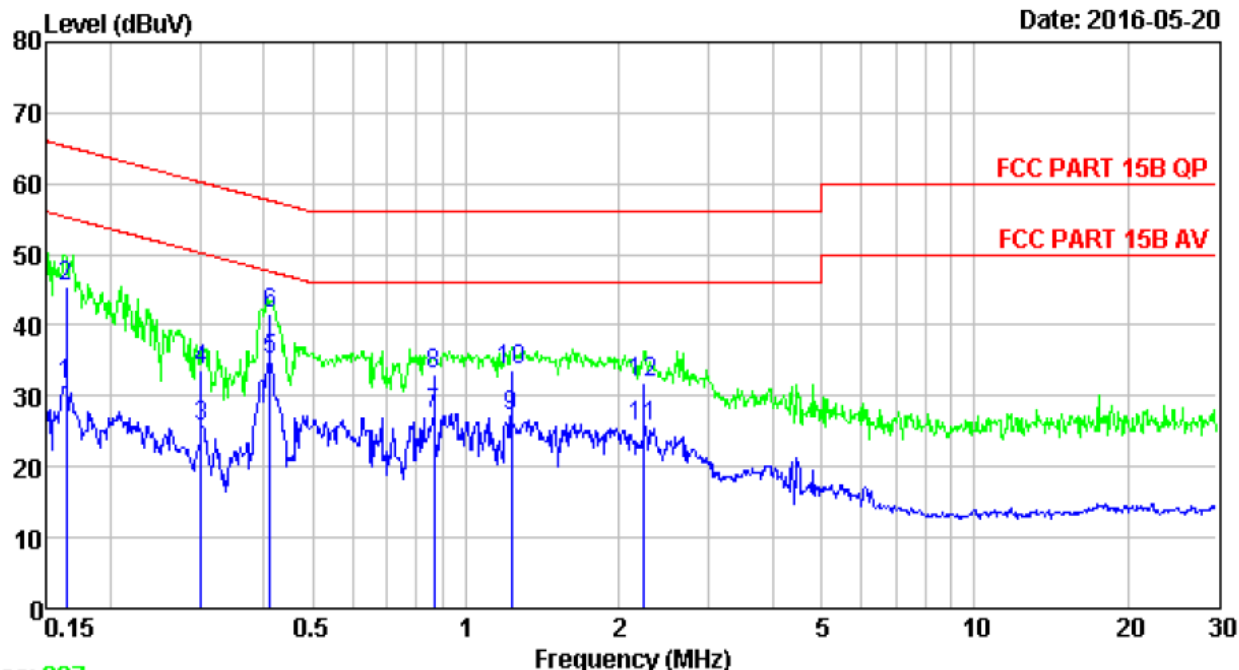


Trace: 275

Site no : 844 Shield Room Data no. : 276  
 Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa LINE Phase : LINE  
 Limit : FCC PART 15B QP  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 240V/50Hz  
 M/N : DS6  
 Test Mode : TX Mode  
 Adapter 1

|    | Freq.<br>(MHz) | LISN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|------------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.15           | 9.61                   | 9.81                  | 15.33             | 34.75                       | 56.00            | 21.25          | Average |
| 2  | 0.15           | 9.61                   | 9.81                  | 28.29             | 47.71                       | 66.00            | 18.29          | QP      |
| 3  | 0.18           | 9.61                   | 9.80                  | 15.60             | 35.01                       | 54.55            | 19.54          | Average |
| 4  | 0.18           | 9.61                   | 9.80                  | 24.57             | 43.98                       | 64.55            | 20.57          | QP      |
| 5  | 0.21           | 9.61                   | 9.80                  | 11.31             | 30.72                       | 53.23            | 22.51          | Average |
| 6  | 0.21           | 9.61                   | 9.80                  | 21.43             | 40.84                       | 63.23            | 22.39          | QP      |
| 7  | 0.36           | 9.61                   | 9.82                  | 9.18              | 28.61                       | 48.83            | 20.22          | Average |
| 8  | 0.36           | 9.61                   | 9.82                  | 15.02             | 34.45                       | 58.83            | 24.38          | QP      |
| 9  | 0.50           | 9.61                   | 9.81                  | 9.59              | 29.01                       | 46.00            | 16.99          | Average |
| 10 | 0.50           | 9.61                   | 9.81                  | 16.59             | 36.01                       | 56.00            | 19.99          | Peak    |
| 11 | 0.98           | 9.64                   | 9.82                  | 6.93              | 26.39                       | 46.00            | 19.61          | Average |
| 12 | 0.98           | 9.64                   | 9.82                  | 13.40             | 32.86                       | 56.00            | 23.14          | QP      |

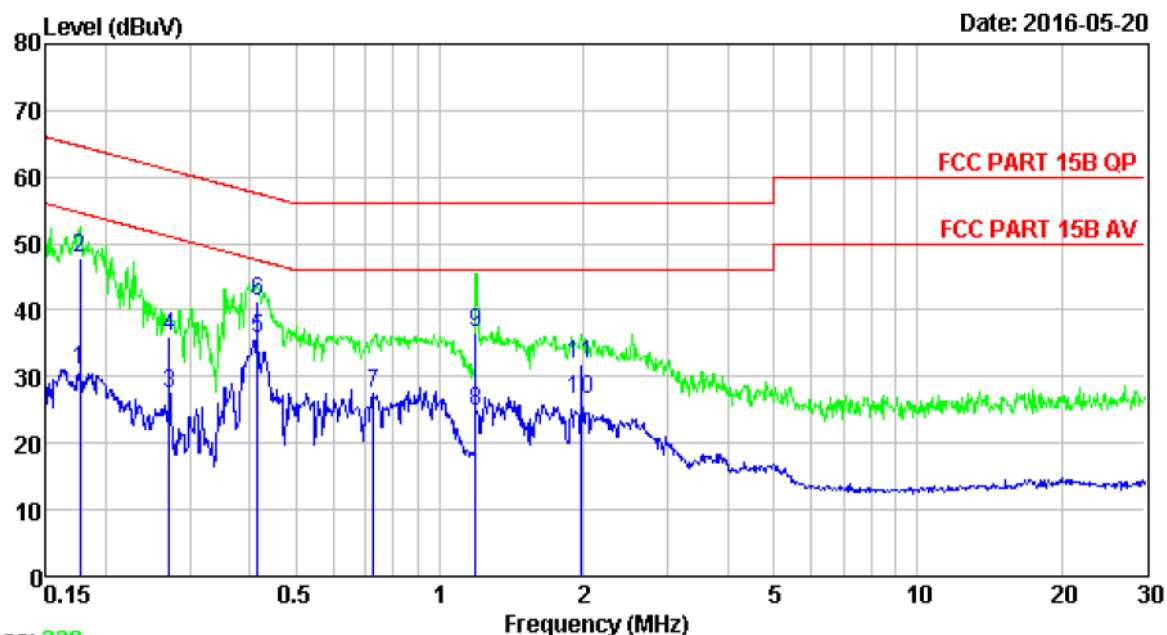
Date: 2016-05-20



Trace: 337

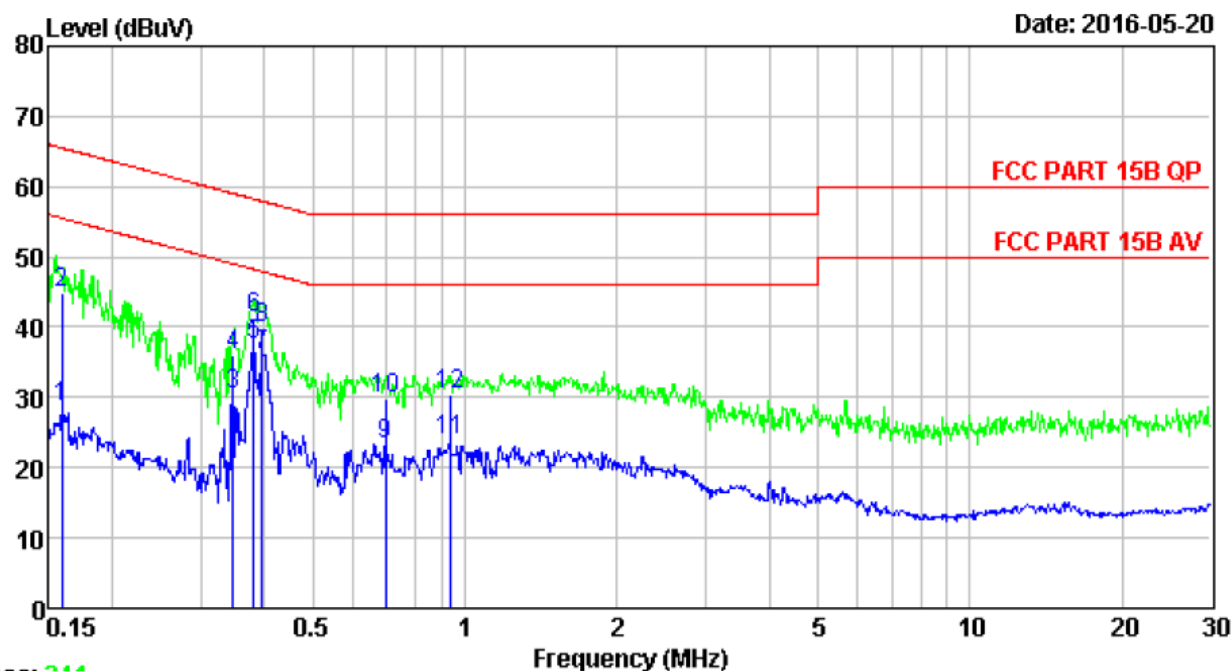
Site no : 844 Shield Room Data no. : 338  
 Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa LINE Phase : LINE  
 Limit : FCC PART 15B QP  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 240V/50Hz  
 M/N : DS6  
 Test Mode : TX Mode  
 Adapter 2

|    | Freq.<br>(MHz) | LISN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|------------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.16           | 9.61                   | 9.81                  | 12.02             | 31.44                       | 55.30            | 23.86          | Average |
| 2  | 0.16           | 9.61                   | 9.81                  | 26.18             | 45.60                       | 65.30            | 19.70          | QP      |
| 3  | 0.30           | 9.61                   | 9.83                  | 6.12              | 25.56                       | 50.19            | 24.63          | Average |
| 4  | 0.30           | 9.61                   | 9.83                  | 14.34             | 33.78                       | 60.19            | 26.41          | QP      |
| 5  | 0.41           | 9.61                   | 9.82                  | 15.71             | 35.14                       | 47.59            | 12.45          | Average |
| 6  | 0.41           | 9.61                   | 9.82                  | 22.16             | 41.59                       | 57.59            | 16.00          | QP      |
| 7  | 0.87           | 9.62                   | 9.82                  | 8.16              | 27.60                       | 46.00            | 18.40          | Average |
| 8  | 0.87           | 9.62                   | 9.82                  | 13.56             | 33.00                       | 56.00            | 23.00          | QP      |
| 9  | 1.23           | 9.63                   | 9.82                  | 7.80              | 27.25                       | 46.00            | 18.75          | Average |
| 10 | 1.23           | 9.63                   | 9.82                  | 14.25             | 33.70                       | 56.00            | 22.30          | QP      |
| 11 | 2.24           | 9.61                   | 9.84                  | 6.38              | 25.83                       | 46.00            | 20.17          | Average |
| 12 | 2.24           | 9.61                   | 9.84                  | 12.41             | 31.86                       | 56.00            | 24.14          | QP      |



Site no : 844 Shield Room Data no. : 340  
 Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa LINE Phase : NEUTRAL  
 Limit : FCC PART 15B QP  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 240V/50Hz  
 M/N : DS6  
 Test Mode : TX Mode  
 Adapter 2

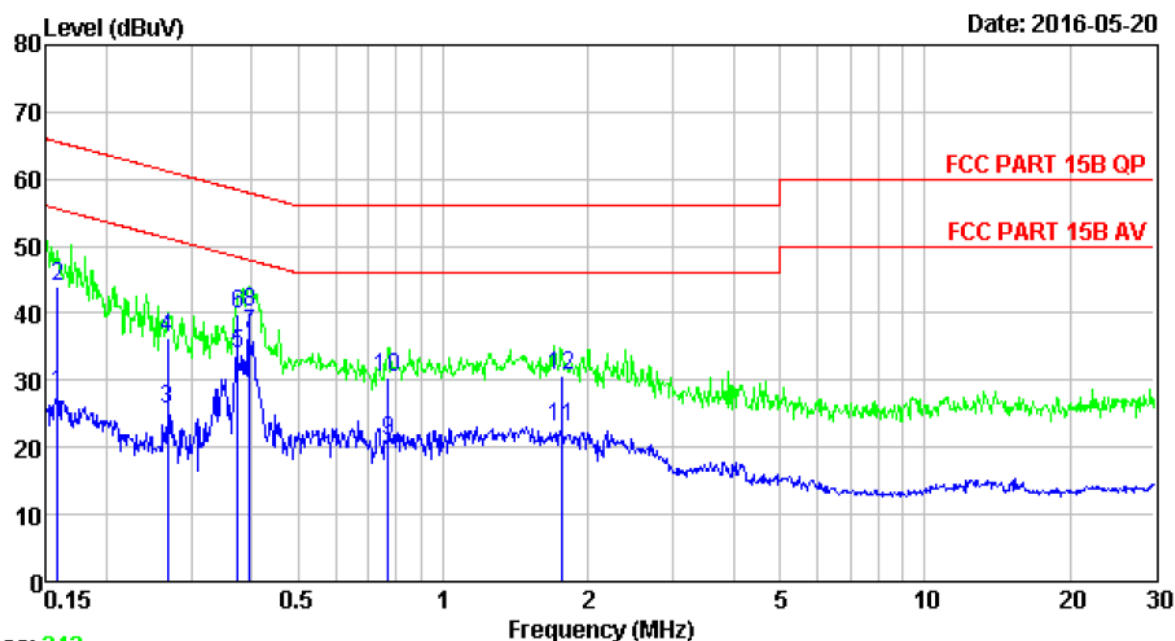
|    | Freq.<br>(MHz) | LISN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|------------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.18           | 9.54                   | 9.80                  | 11.77             | 31.11                       | 54.64            | 23.53          | Average |
| 2  | 0.18           | 9.54                   | 9.80                  | 28.42             | 47.76                       | 64.64            | 16.88          | QP      |
| 3  | 0.27           | 9.60                   | 9.83                  | 7.94              | 27.37                       | 51.07            | 23.70          | Average |
| 4  | 0.27           | 9.60                   | 9.83                  | 16.64             | 36.07                       | 61.07            | 25.00          | QP      |
| 5  | 0.41           | 9.59                   | 9.81                  | 16.32             | 35.72                       | 47.55            | 11.83          | Average |
| 6  | 0.41           | 9.59                   | 9.81                  | 21.97             | 41.37                       | 57.55            | 16.18          | QP      |
| 7  | 0.73           | 9.63                   | 9.81                  | 7.93              | 27.37                       | 46.00            | 18.63          | Average |
| 8  | 1.19           | 9.61                   | 9.81                  | 5.23              | 24.65                       | 46.00            | 21.35          | Average |
| 9  | 1.19           | 9.61                   | 9.81                  | 17.31             | 36.73                       | 56.00            | 19.27          | QP      |
| 10 | 1.98           | 9.62                   | 9.83                  | 7.20              | 26.65                       | 46.00            | 19.35          | Average |
| 11 | 1.98           | 9.62                   | 9.83                  | 12.58             | 32.03                       | 56.00            | 23.97          | QP      |



Trace: 341

Site no : 844 Shield Room Data no. : 342  
 Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa LINE Phase : LINE  
 Limit : FCC PART 15B QP  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : TX Mode  
 Adapter 2

|    | Freq.<br>(MHz) | LISN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|------------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.16           | 9.61                   | 9.81                  | 9.11              | 28.53                       | 55.52            | 26.99          | Average |
| 2  | 0.16           | 9.61                   | 9.81                  | 25.31             | 44.73                       | 65.52            | 20.79          | QP      |
| 3  | 0.35           | 9.61                   | 9.83                  | 11.07             | 30.51                       | 49.05            | 18.54          | Average |
| 4  | 0.35           | 9.61                   | 9.83                  | 16.67             | 36.11                       | 59.05            | 22.94          | QP      |
| 5  | 0.38           | 9.61                   | 9.82                  | 18.04             | 37.47                       | 48.25            | 10.78          | Average |
| 6  | 0.38           | 9.61                   | 9.82                  | 21.95             | 41.38                       | 58.25            | 16.87          | QP      |
| 7  | 0.40           | 9.61                   | 9.82                  | 16.71             | 36.14                       | 47.95            | 11.81          | Average |
| 8  | 0.40           | 9.61                   | 9.82                  | 20.45             | 39.88                       | 57.95            | 18.07          | QP      |
| 9  | 0.70           | 9.59                   | 9.81                  | 3.95              | 23.35                       | 46.00            | 22.65          | Average |
| 10 | 0.70           | 9.59                   | 9.81                  | 10.32             | 29.72                       | 56.00            | 26.28          | QP      |
| 11 | 0.93           | 9.63                   | 9.82                  | 4.36              | 23.81                       | 46.00            | 22.19          | Average |
| 12 | 0.93           | 9.63                   | 9.82                  | 10.89             | 30.34                       | 56.00            | 25.66          | QP      |



Trace: 343

Site no : 844 Shield Room Data no. : 344  
 Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa LINE Phase : NEUTRAL  
 Limit : FCC PART 15B QP  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : TX Mode  
 Adapter 2

|    | Freq.<br>(MHz) | LISN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|------------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.16           | 9.48                   | 9.81                  | 8.87              | 28.16                       | 55.56            | 27.40          | Average |
| 2  | 0.16           | 9.48                   | 9.81                  | 24.75             | 44.04                       | 65.56            | 21.52          | QP      |
| 3  | 0.27           | 9.60                   | 9.83                  | 6.14              | 25.57                       | 51.20            | 25.63          | Average |
| 4  | 0.27           | 9.60                   | 9.83                  | 16.86             | 36.29                       | 61.20            | 24.91          | QP      |
| 5  | 0.38           | 9.59                   | 9.82                  | 14.56             | 33.97                       | 48.39            | 14.42          | Average |
| 6  | 0.38           | 9.59                   | 9.82                  | 20.50             | 39.91                       | 58.39            | 18.48          | QP      |
| 7  | 0.40           | 9.59                   | 9.82                  | 17.57             | 36.98                       | 47.95            | 10.97          | Average |
| 8  | 0.40           | 9.59                   | 9.82                  | 20.62             | 40.03                       | 57.95            | 17.92          | QP      |
| 9  | 0.77           | 9.62                   | 9.81                  | 1.56              | 20.99                       | 46.00            | 25.01          | Average |
| 10 | 0.77           | 9.62                   | 9.81                  | 11.02             | 30.45                       | 56.00            | 25.55          | QP      |
| 11 | 1.76           | 9.62                   | 9.82                  | 3.65              | 23.09                       | 46.00            | 22.91          | Average |
| 12 | 1.76           | 9.62                   | 9.82                  | 11.26             | 30.70                       | 56.00            | 25.30          | QP      |

## 4 RADIATED EMISSION TEST

### 4.1 Limit

#### 4.1.1 15.209 limits

| Frequency (MHz) | Field strength ( $\mu\text{V/m}$ ) | Distance (m) |
|-----------------|------------------------------------|--------------|
| 0.009-0.490     | 2400/F(kHz)                        | 300          |
| 0.490-1.705     | 24000/F(kHz)                       | 30           |
| 1.705-30        | 30                                 | 30           |
| 30-88           | 100                                | 3            |
| 88-216          | 150                                | 3            |
| 216-960         | 200                                | 3            |
| Above 960       | 500                                | 3            |

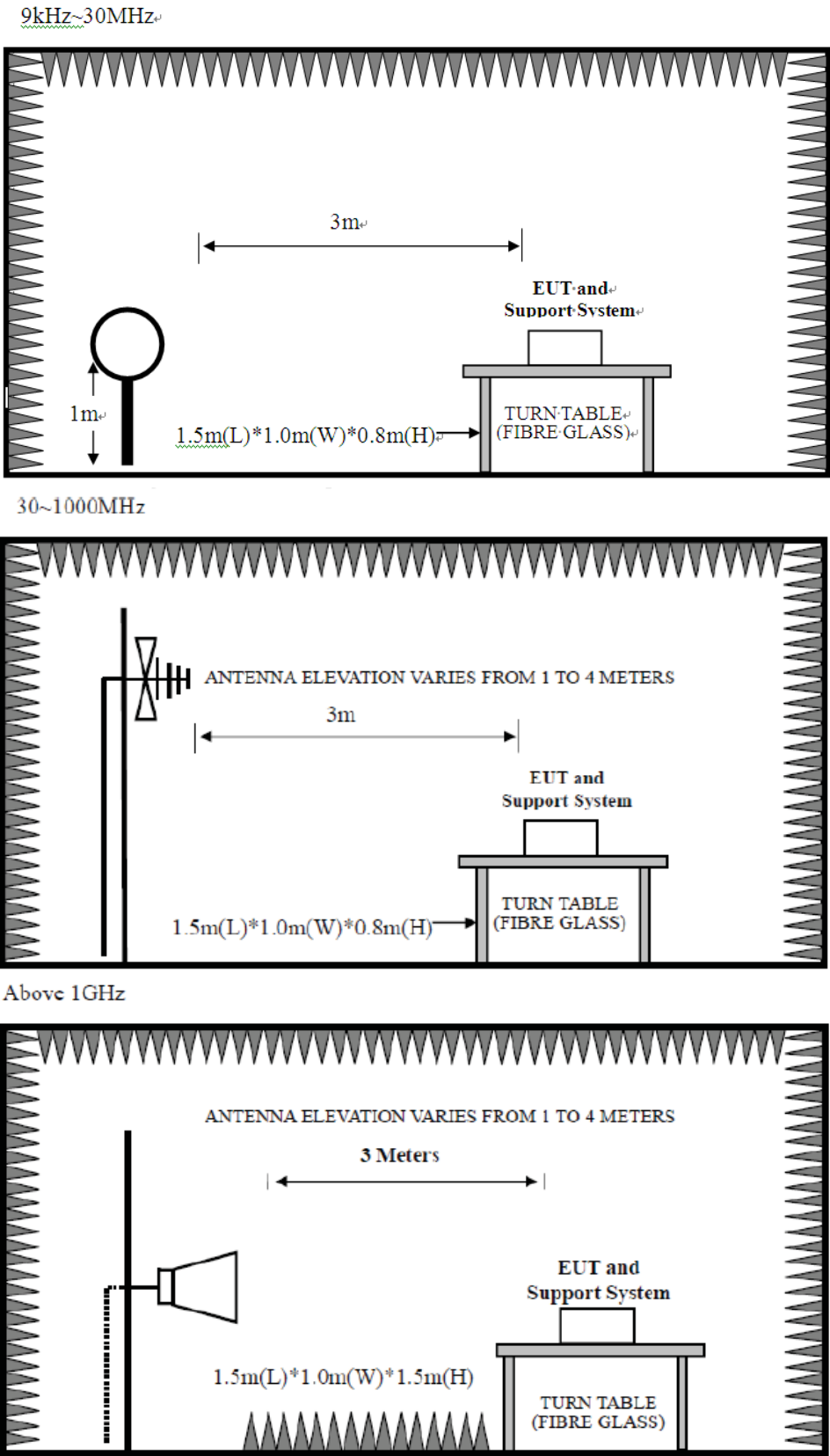
- Remark : (1) Emission level  $\text{dB}\mu\text{V} = 20 \log \text{Emission level } \mu\text{V/m}$   
 (2) The smaller limit shall apply at the cross point between two frequency bands.  
 (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

#### 4.1.2 15.205 Restricted bands of operation

| MHz                        | MHz                   | MHz             | GHz              |
|----------------------------|-----------------------|-----------------|------------------|
| 0.090 - 0.110              | 16.42 - 16.423        | 399.9 - 410     | 4.5 - 5.15       |
| <sup>1</sup> 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     | ( <sup>2</sup> ) |

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

4.2. Block Diagram of Test setup



### 4.3. Test Procedure

EUT was placed on a turn table, which is 0.8 meter high above ground for 9kHz~1000MHz test, and which is 1.5 meter high above ground for above 1GHz test. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

The test frequency analyzer system was set to Peak Detect (300Hz RBW in 9kHz to 150kHz and 10kHz RBW in 150kHz to 30MHz) Function and Specified Bandwidth with Maximum Hold Mode.

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

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

PEAK detector, 1MHz/1MHz for PAEK measurement,

PEAK detector, 1MHz/10Hz for Average measurement

The frequency range from 30MHz to 10th harmonic (25GHz) are checked.

### 4.4. Test Result

**PASS.**

All the emissions from 30MHz to 25 GHz were comply with 15.209 limits.

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

2、 The frequency 2402MHz 、 2440MHz and 2480 MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

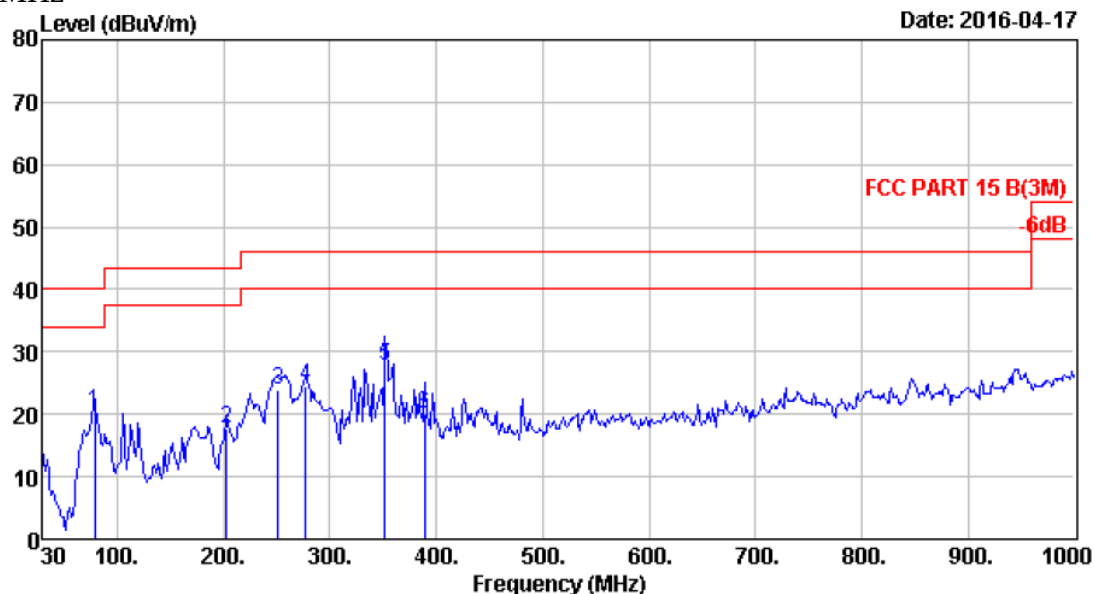
#### 4.5. Test Data

9 kHz – 30 MHz

Pass

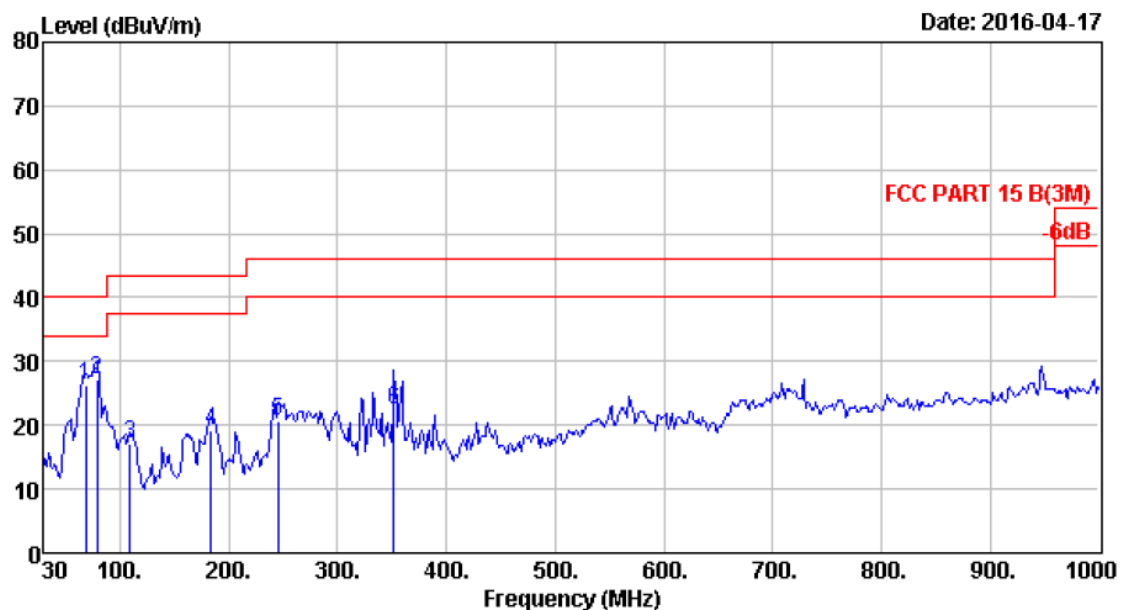
Note: The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

30-1000 MHz



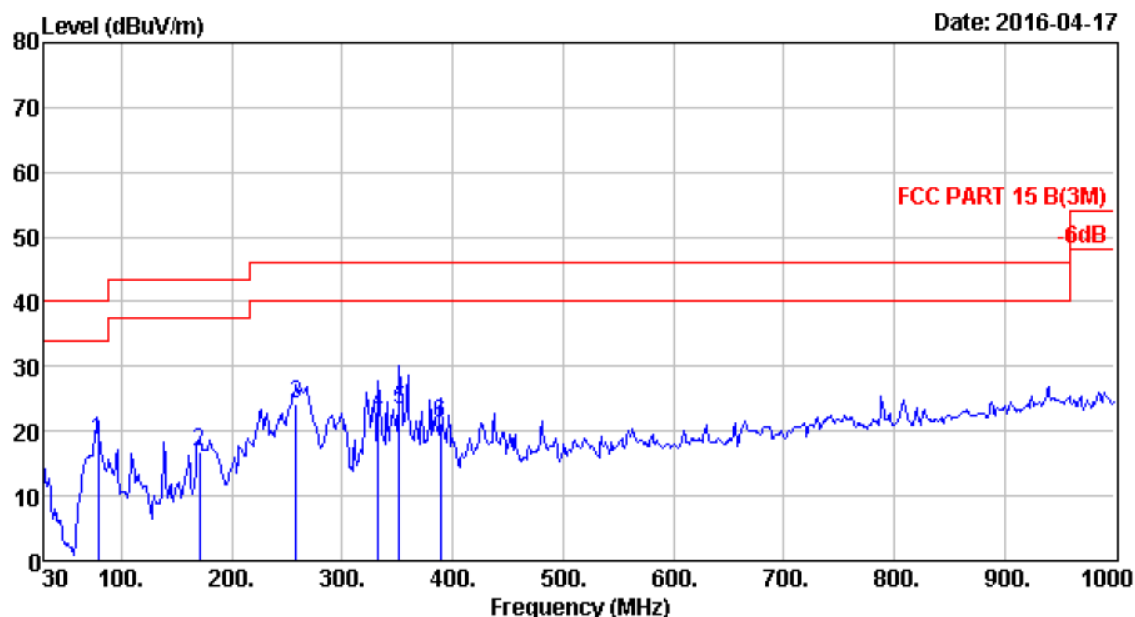
Site no. : 966 1# chamber                      Data no. : 215  
 Dis. / Ant. : 3m 27137                      Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 B(3M)  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2402MHz  
                  Adapter 1

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 78.50          | 6.89                    | 1.22                  | 12.23             | 20.34                         | 40.00             | 19.66          | QP     |
| 2 | 202.66         | 7.83                    | 1.84                  | 7.98              | 17.65                         | 43.50             | 25.85          | QP     |
| 3 | 251.16         | 11.94                   | 2.15                  | 9.94              | 24.03                         | 46.00             | 21.97          | QP     |
| 4 | 277.35         | 12.36                   | 2.25                  | 9.77              | 24.38                         | 46.00             | 21.62          | QP     |
| 5 | 352.04         | 14.47                   | 2.53                  | 10.62             | 27.62                         | 46.00             | 18.38          | QP     |
| 6 | 388.90         | 15.54                   | 2.65                  | 1.80              | 19.99                         | 46.00             | 26.01          | QP     |



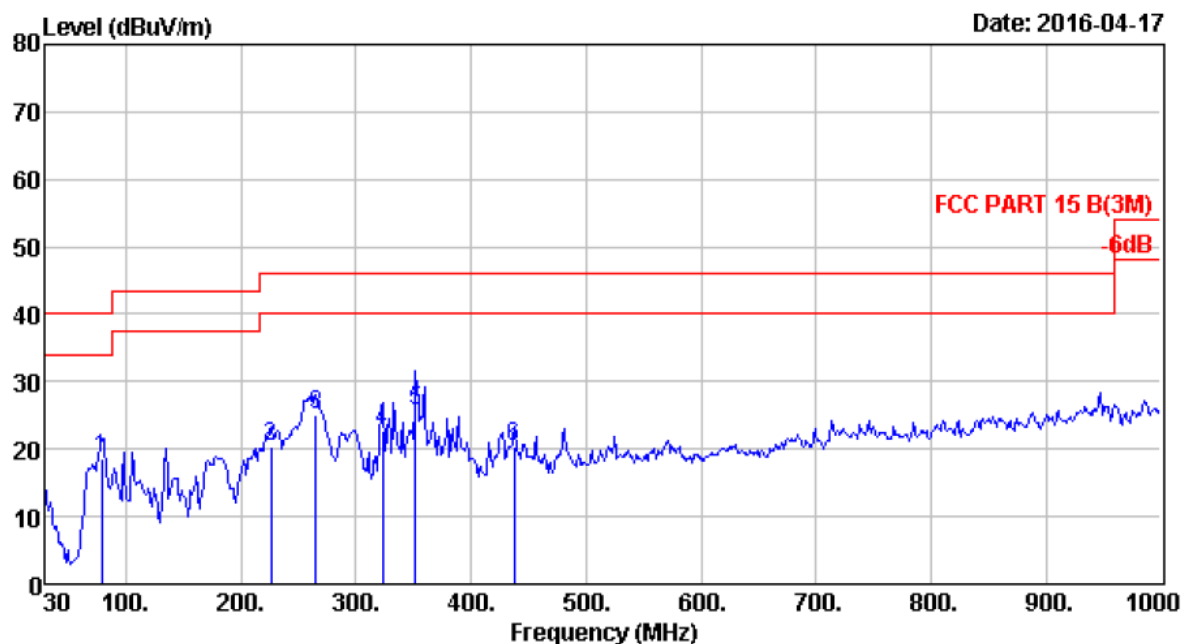
Site no. : 966 1# chamber                      Data no. : 216  
 Dis. / Ant. : 3m 27137                      Ant. pol. : VERTICAL  
 Limit : FCC PART 15 B(3M)  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2402MHz  
                  Adapter 1

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 68.80          | 5.51                    | 1.10                  | 19.56             | 26.17                         | 40.00             | 13.83          | QP     |
| 2 | 78.50          | 6.89                    | 1.22                  | 19.13             | 27.24                         | 40.00             | 12.76          | QP     |
| 3 | 109.54         | 10.44                   | 1.40                  | 5.14              | 16.98                         | 43.50             | 26.52          | QP     |
| 4 | 183.26         | 8.67                    | 1.69                  | 8.89              | 19.25                         | 43.50             | 24.25          | QP     |
| 5 | 245.34         | 11.06                   | 2.10                  | 7.50              | 20.66                         | 46.00             | 25.34          | QP     |
| 6 | 352.04         | 14.47                   | 2.53                  | 5.49              | 22.49                         | 46.00             | 23.51          | QP     |



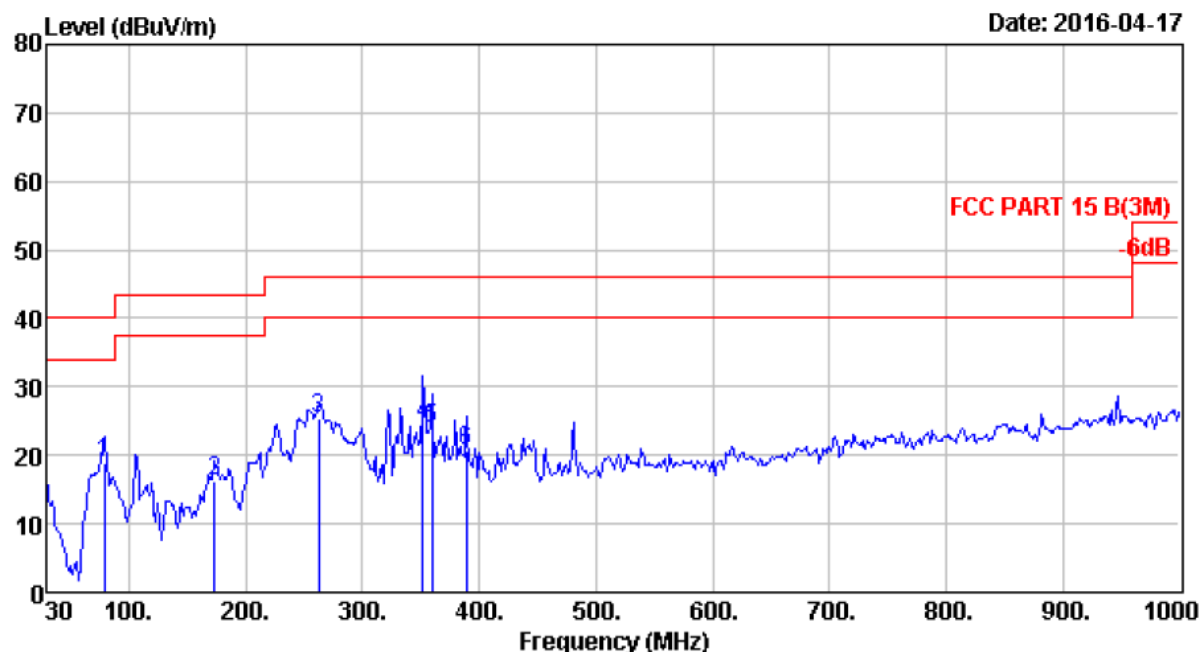
Site no. : 966 1# chamber                      Data no. : 217  
 Dis. / Ant. : 3m 27137                      Ant. pol. : VERTICAL  
 Limit : FCC PART 15 B(3M)  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2440MHz  
                  Adapter 1

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 78.50          | 6.89                    | 1.22                  | 10.58             | 18.69                         | 40.00             | 21.31          | QP     |
| 2 | 170.65         | 9.16                    | 1.69                  | 6.06              | 16.91                         | 43.50             | 26.59          | QP     |
| 3 | 257.95         | 12.75                   | 2.19                  | 9.24              | 24.18                         | 46.00             | 21.82          | QP     |
| 4 | 332.64         | 13.93                   | 2.48                  | 6.26              | 22.67                         | 46.00             | 23.33          | QP     |
| 5 | 352.04         | 14.47                   | 2.53                  | 6.23              | 23.23                         | 46.00             | 22.77          | QP     |
| 6 | 388.90         | 15.54                   | 2.65                  | 3.04              | 21.23                         | 46.00             | 24.77          | QP     |



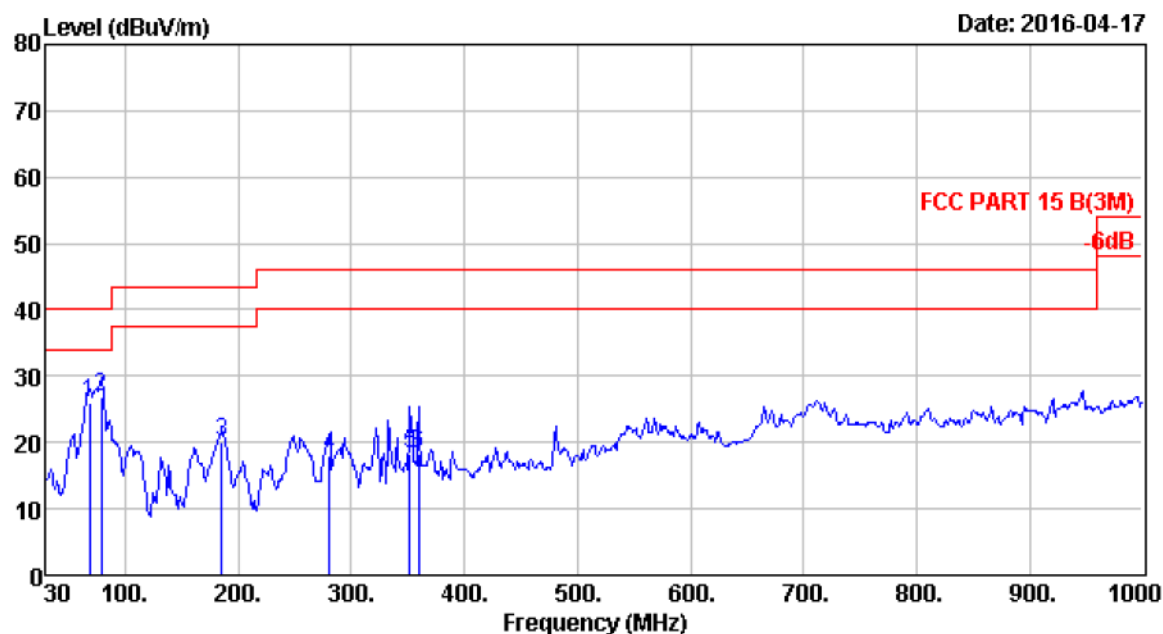
Site no. : 966 1# chamber                      Data no. : 218  
 Dis. / Ant. : 3m 27137                      Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 B(3M)  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2440MHz  
                  Adapter 1

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 78.50          | 6.89                    | 1.22                  | 10.52             | 18.63                         | 40.00             | 21.37          | QP     |
| 2 | 225.94         | 9.47                    | 1.99                  | 8.98              | 20.44                         | 46.00             | 25.56          | QP     |
| 3 | 264.74         | 12.94                   | 2.28                  | 9.83              | 25.05                         | 46.00             | 20.95          | QP     |
| 4 | 322.94         | 13.65                   | 2.43                  | 6.75              | 22.83                         | 46.00             | 23.17          | QP     |
| 5 | 352.04         | 14.47                   | 2.53                  | 8.54              | 25.54                         | 46.00             | 20.46          | QP     |
| 6 | 437.40         | 16.20                   | 2.85                  | 1.25              | 20.30                         | 46.00             | 25.70          | QP     |



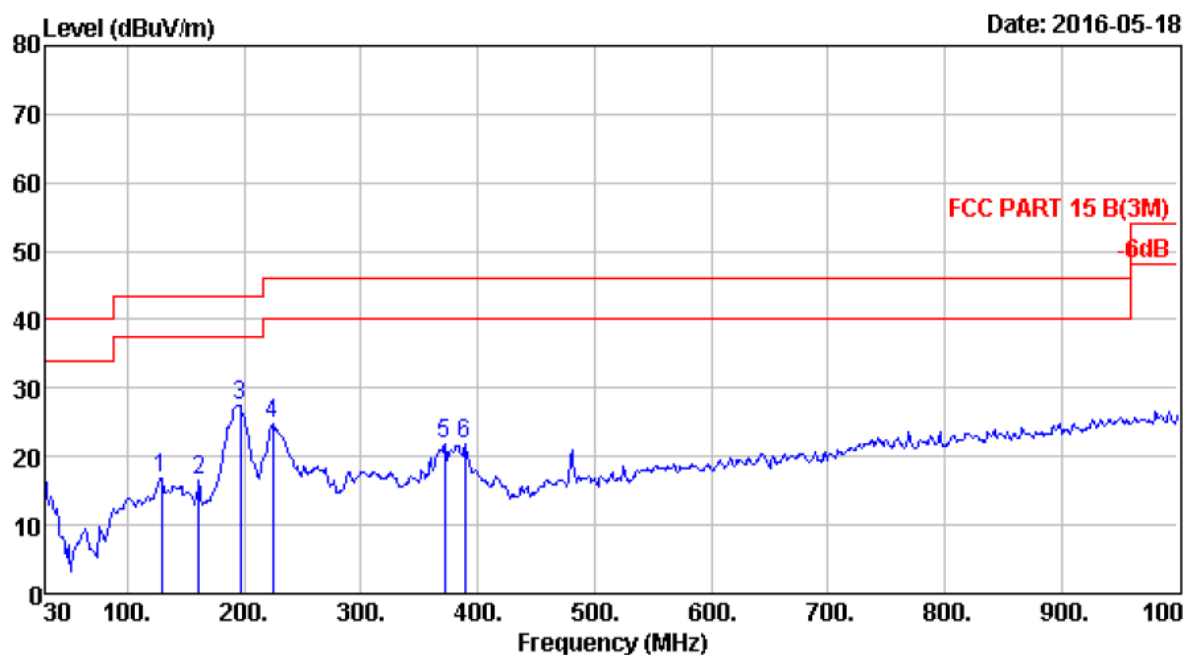
Site no. : 966 1# chamber                      Data no. : 219  
 Dis. / Ant. : 3m 27137                      Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 B(3M)  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2480MHz  
                  Adapter 1

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 78.50          | 6.89                    | 1.22                  | 10.70             | 18.81                         | 40.00             | 21.19          | QP     |
| 2 | 173.56         | 9.03                    | 1.68                  | 5.53              | 16.24                         | 43.50             | 27.26          | QP     |
| 3 | 262.80         | 12.95                   | 2.22                  | 10.19             | 25.36                         | 46.00             | 20.64          | QP     |
| 4 | 352.04         | 14.47                   | 2.53                  | 7.45              | 24.45                         | 46.00             | 21.55          | QP     |
| 5 | 359.80         | 14.45                   | 2.59                  | 6.74              | 23.78                         | 46.00             | 22.22          | QP     |
| 6 | 388.90         | 15.54                   | 2.65                  | 2.39              | 20.58                         | 46.00             | 25.42          | QP     |



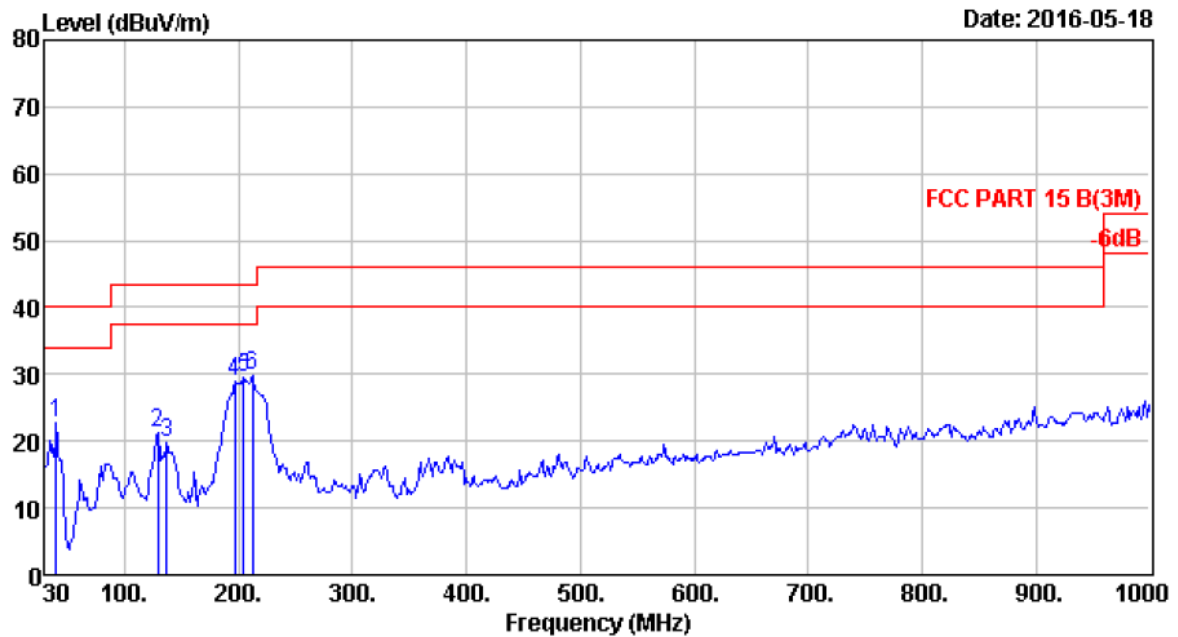
Site no. : 966 1# chamber                      Data no. : 220  
 Dis. / Ant. : 3m 27137                      Ant. pol. : VERTICAL  
 Limit : FCC PART 15 B(3M)  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2480MHz  
                  Adapter 1

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 68.80          | 5.51                    | 1.10                  | 19.46             | 26.07                         | 40.00             | 13.93          | QP     |
| 2 | 78.50          | 6.89                    | 1.22                  | 18.81             | 26.92                         | 40.00             | 13.08          | QP     |
| 3 | 185.20         | 8.48                    | 1.75                  | 9.79              | 20.02                         | 43.50             | 23.48          | QP     |
| 4 | 280.26         | 12.37                   | 2.28                  | 3.41              | 18.06                         | 46.00             | 27.94          | QP     |
| 5 | 352.04         | 14.47                   | 2.53                  | 1.39              | 18.39                         | 46.00             | 27.61          | QP     |
| 6 | 359.80         | 14.45                   | 2.59                  | 1.23              | 18.27                         | 46.00             | 27.73          | QP     |



Site no. : 966 1# chamber                      Data no. : 207  
 Dis. / Ant. : 3m 27137                      Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 B(3M)  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2402MHz  
               Adapter 2

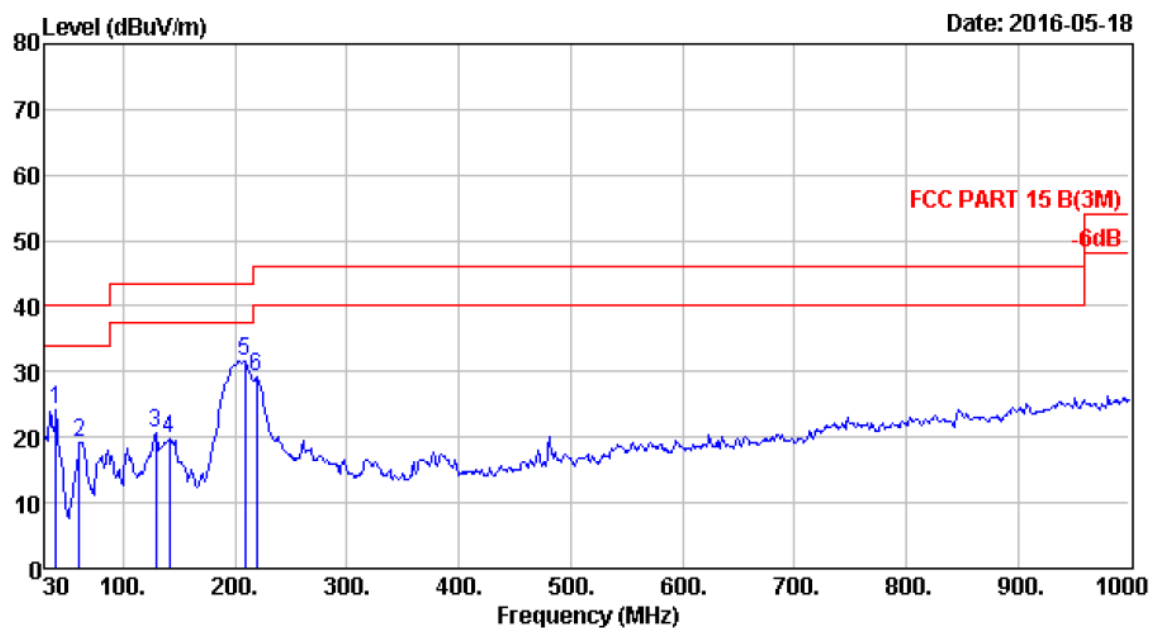
|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 128.94         | 11.33                   | 1.47                  | 4.15              | 16.95                         | 43.50             | 26.55          | QP     |
| 2 | 160.95         | 10.24                   | 1.70                  | 4.56              | 16.50                         | 43.50             | 27.00          | QP     |
| 3 | 196.84         | 7.72                    | 1.81                  | 18.04             | 27.57                         | 43.50             | 15.93          | QP     |
| 4 | 224.00         | 9.42                    | 2.01                  | 13.23             | 24.66                         | 46.00             | 21.34          | QP     |
| 5 | 371.44         | 14.89                   | 2.67                  | 4.40              | 21.96                         | 46.00             | 24.04          | QP     |
| 6 | 388.90         | 15.54                   | 2.65                  | 3.56              | 21.75                         | 46.00             | 24.25          | QP     |



Site no. : 966 1# chamber  
 Dis. / Ant. : 3m 27137  
 Limit : FCC PART 15 B(3M)  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2402MHz  
 Adapter 2

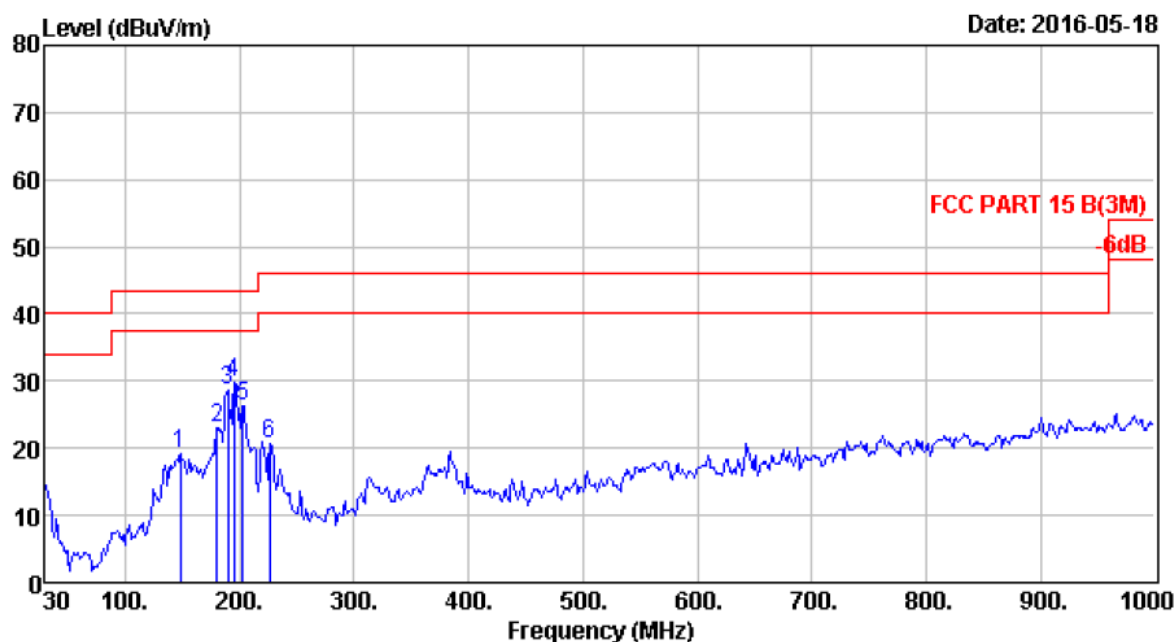
Data no. : 208  
Ant. pol. : VERTICAL

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 39.70          | 12.90                   | 0.81                  | 8.90              | 22.61                         | 40.00             | 17.39          | QP     |
| 2 | 128.94         | 11.33                   | 1.47                  | 8.55              | 21.35                         | 43.50             | 22.15          | QP     |
| 3 | 136.70         | 11.39                   | 1.57                  | 6.79              | 19.75                         | 43.50             | 23.75          | QP     |
| 4 | 196.84         | 7.72                    | 1.81                  | 19.27             | 28.80                         | 43.50             | 14.70          | QP     |
| 5 | 204.60         | 7.91                    | 1.88                  | 19.62             | 29.41                         | 43.50             | 14.09          | QP     |
| 6 | 212.36         | 8.56                    | 1.91                  | 19.38             | 29.85                         | 43.50             | 13.65          | QP     |



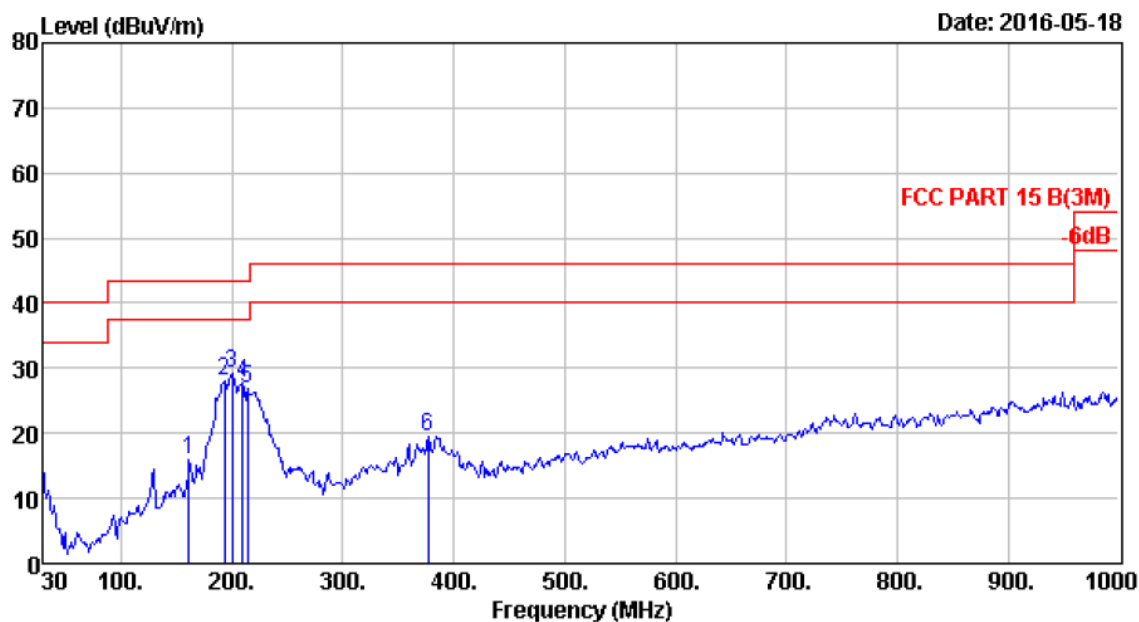
Site no. : 966 1# chamber Data no. : 209  
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 B(3M)  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2440MHz  
 Adapter 2

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 39.70          | 12.90                   | 0.81                  | 10.40             | 24.11                         | 40.00             | 15.89          | QP     |
| 2 | 61.04          | 4.74                    | 0.94                  | 13.59             | 19.27                         | 40.00             | 20.73          | QP     |
| 3 | 128.94         | 11.33                   | 1.47                  | 7.77              | 20.57                         | 43.50             | 22.93          | QP     |
| 4 | 141.55         | 11.36                   | 1.51                  | 6.83              | 19.70                         | 43.50             | 23.80          | QP     |
| 5 | 208.48         | 8.28                    | 1.95                  | 21.33             | 31.56                         | 43.50             | 11.94          | QP     |
| 6 | 219.15         | 9.10                    | 1.94                  | 18.06             | 29.10                         | 46.00             | 16.90          | QP     |



Site no. : 966 1# chamber                      Data no. : 210  
 Dis. / Ant. : 3m 27137                      Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 B(3M)  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2440MHz  
                  Adapter 2

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 148.34         | 11.00                   | 1.69                  | 6.43              | 19.12                         | 43.50             | 24.38          | QP     |
| 2 | 180.35         | 8.95                    | 1.70                  | 12.38             | 23.03                         | 43.50             | 20.47          | QP     |
| 3 | 190.05         | 7.94                    | 1.76                  | 18.92             | 28.62                         | 43.50             | 14.88          | QP     |
| 4 | 194.90         | 7.72                    | 1.78                  | 20.37             | 29.87                         | 43.50             | 13.63          | QP     |
| 5 | 202.66         | 7.83                    | 1.84                  | 16.73             | 26.40                         | 43.50             | 17.10          | QP     |
| 6 | 225.94         | 9.47                    | 1.99                  | 9.14              | 20.60                         | 46.00             | 25.40          | QP     |



Site no. : 966 1# chamber Data no. : 211  
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 B(3M)  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2480MHz  
 Adapter 2

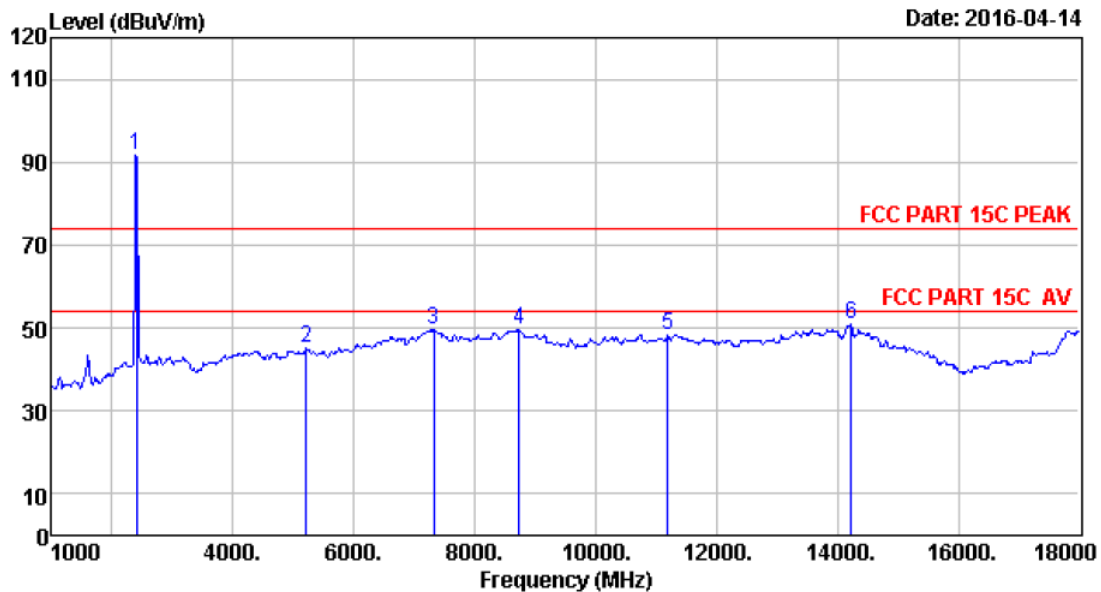
|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 160.95         | 10.24                   | 1.70                  | 4.10              | 16.04                         | 43.50             | 27.46          | QP     |
| 2 | 192.96         | 7.85                    | 1.77                  | 18.30             | 27.92                         | 43.50             | 15.58          | QP     |
| 3 | 199.75         | 7.71                    | 1.77                  | 19.63             | 29.11                         | 43.50             | 14.39          | QP     |
| 4 | 209.45         | 8.37                    | 1.91                  | 17.56             | 27.84                         | 43.50             | 15.66          | QP     |
| 5 | 214.30         | 8.65                    | 1.96                  | 16.16             | 26.77                         | 43.50             | 16.73          | QP     |
| 6 | 377.26         | 14.96                   | 2.62                  | 1.88              | 19.46                         | 46.00             | 26.54          | QP     |



Site no. : 966 1# chamber                      Data no. : 212  
 Dis. / Ant. : 3m 27137                      Ant. pol. : VERTICAL  
 Limit : FCC PART 15 B(3M)  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V From Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2480MHz  
                  Adapter 2

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 34.85          | 15.55                   | 0.72                  | 10.08             | 26.35                         | 40.00             | 13.65          | QP     |
| 2 | 39.70          | 12.90                   | 0.81                  | 12.40             | 26.11                         | 40.00             | 13.89          | QP     |
| 3 | 86.26          | 7.84                    | 1.24                  | 16.98             | 26.06                         | 40.00             | 13.94          | QP     |
| 4 | 105.66         | 10.05                   | 1.41                  | 12.89             | 24.35                         | 43.50             | 19.15          | QP     |
| 5 | 128.94         | 11.33                   | 1.47                  | 9.41              | 22.21                         | 43.50             | 21.29          | QP     |
| 6 | 202.66         | 7.83                    | 1.84                  | 21.24             | 30.91                         | 43.50             | 12.59          | QP     |

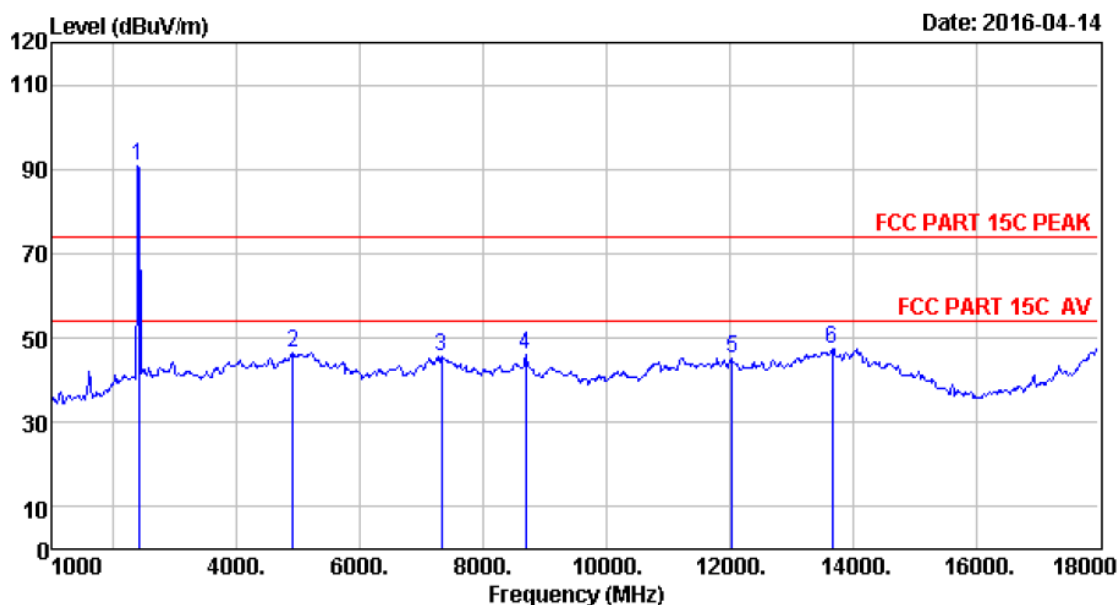
1000-18000 MHz



Site no. : 966 1# chamber                      Data no. : 205  
 Dis. / Ant. : 3m ANT 1-18G                      Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V Form Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2402MHz

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 2402.00        | 27.61                   | 6.62                  | 92.23             | 91.82                         | 74.00             | -17.82         | Peak   |
| 2 | 5216.00        | 31.68                   | 12.33                 | 37.16             | 45.20                         | 74.00             | 28.80          | Peak   |
| 3 | 7324.00        | 36.55                   | 11.57                 | 35.67             | 49.65                         | 74.00             | 24.35          | Peak   |
| 4 | 8735.00        | 37.40                   | 11.45                 | 34.68             | 49.77                         | 74.00             | 24.23          | Peak   |
| 5 | 11200.00       | 39.39                   | 11.14                 | 31.13             | 48.42                         | 74.00             | 25.58          | Peak   |
| 6 | 14226.00       | 41.66                   | 10.91                 | 31.74             | 50.90                         | 74.00             | 23.10          | Peak   |

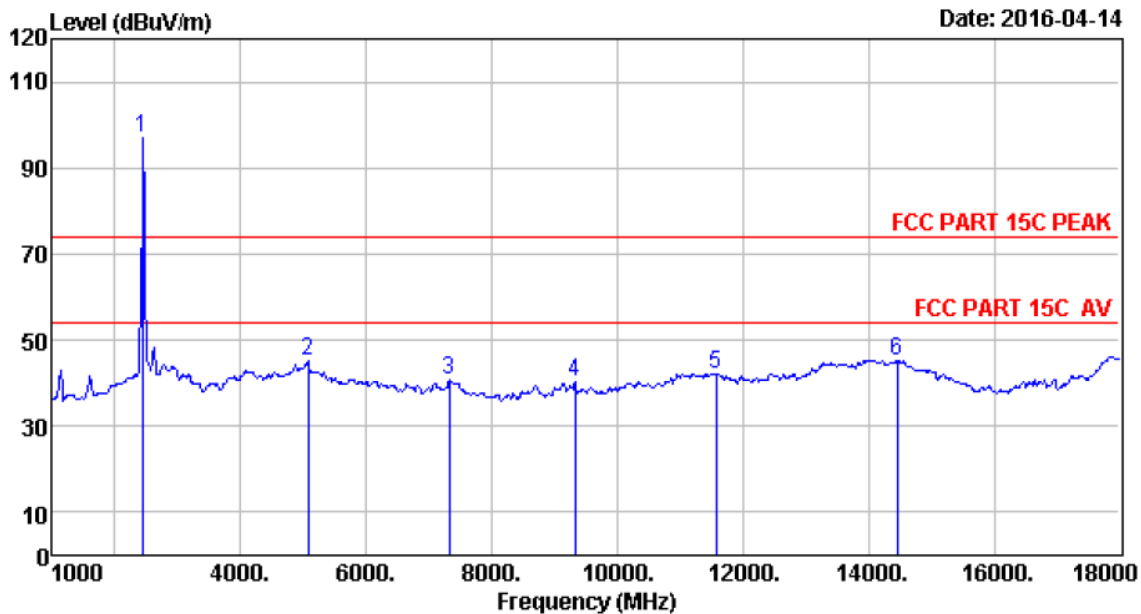
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber                      Data no. : 206  
 Dis. / Ant. : 3m ANT 1-18G                      Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V Form Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2402MHz

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 2402.00        | 27.61                   | 6.62                  | 91.03             | 90.62                         | 74.00             | -16.62         | Peak   |
| 2 | 4910.00        | 31.42                   | 12.22                 | 38.68             | 46.45                         | 74.00             | 27.55          | Peak   |
| 3 | 7324.00        | 36.55                   | 11.57                 | 31.57             | 45.55                         | 74.00             | 28.45          | Peak   |
| 4 | 8684.00        | 37.32                   | 11.45                 | 30.98             | 46.09                         | 74.00             | 27.91          | Peak   |
| 5 | 12050.00       | 38.63                   | 11.37                 | 28.76             | 45.21                         | 74.00             | 28.79          | Peak   |
| 6 | 13665.00       | 40.55                   | 11.30                 | 28.45             | 47.55                         | 74.00             | 26.45          | Peak   |

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

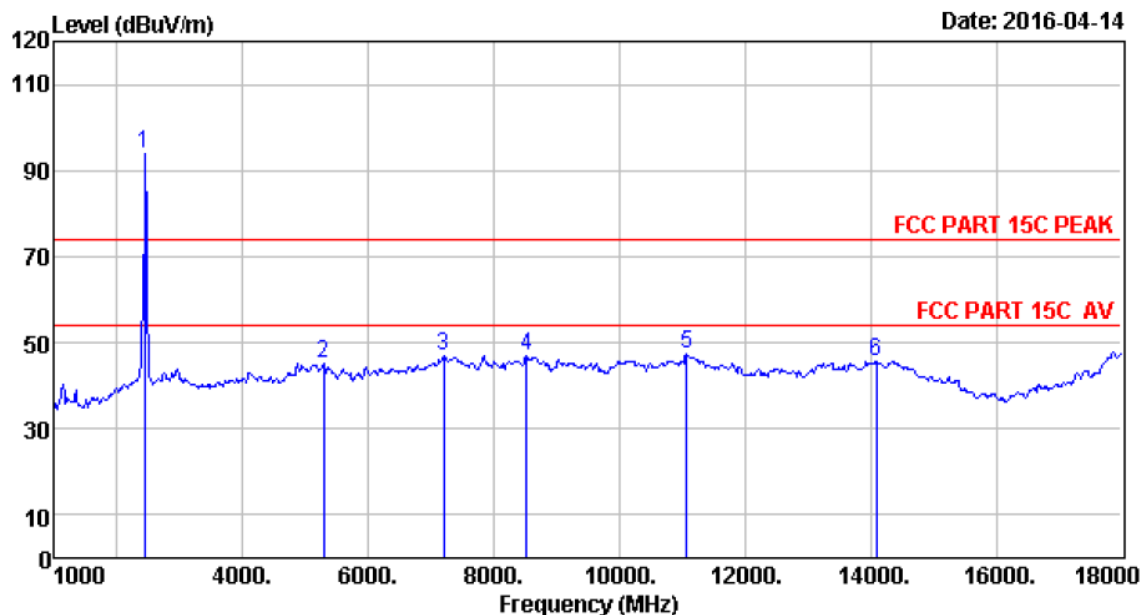


Site no. : 966 1# chamber                      Data no. : 209  
 Dis. / Ant. : 3m ANT 1-18G                      Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V Form Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2440MHz

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 2440.00        | 27.60                   | 6.67                  | 97.71             | 97.13                         | 74.00             | -23.13         | Peak   |
| 2 | 5080.00        | 31.59                   | 12.49                 | 37.15             | 45.10                         | 74.00             | 28.90          | Peak   |
| 3 | 7324.00        | 36.55                   | 11.57                 | 26.85             | 40.83                         | 74.00             | 33.17          | Peak   |
| 4 | 9330.00        | 37.97                   | 11.62                 | 25.40             | 40.31                         | 74.00             | 33.69          | Peak   |
| 5 | 11574.00       | 39.12                   | 10.99                 | 25.28             | 42.12                         | 74.00             | 31.88          | Peak   |
| 6 | 14464.00       | 41.85                   | 10.93                 | 25.99             | 45.32                         | 74.00             | 28.68          | Peak   |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

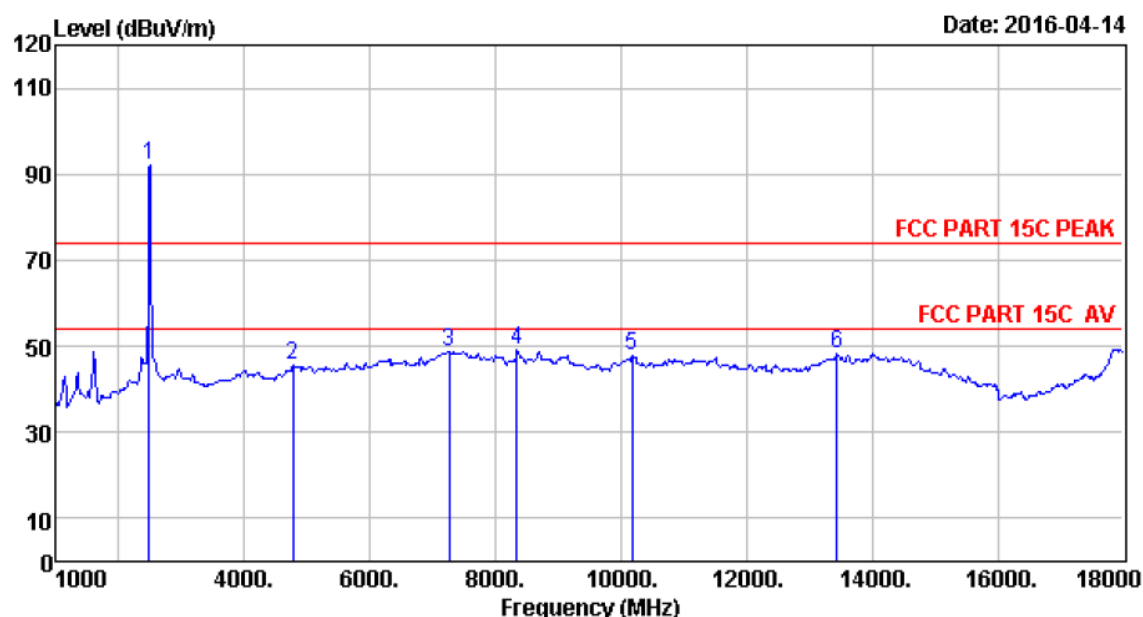
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber                      Data no. : 210  
 Dis. / Ant. : 3m ANT 1-18G                      Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V Form Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2440MHz

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 2440.00        | 27.60                   | 6.67                  | 94.45             | 93.87                         | 74.00             | -19.87         | Peak   |
| 2 | 5284.00        | 31.70                   | 12.25                 | 37.26             | 45.26                         | 74.00             | 28.74          | Peak   |
| 3 | 7205.00        | 36.52                   | 11.54                 | 32.62             | 46.76                         | 74.00             | 27.24          | Peak   |
| 4 | 8514.00        | 36.96                   | 11.45                 | 32.49             | 46.83                         | 74.00             | 27.17          | Peak   |
| 5 | 11064.00       | 39.48                   | 11.24                 | 30.63             | 47.52                         | 74.00             | 26.48          | Peak   |
| 6 | 14090.00       | 41.54                   | 10.91                 | 26.50             | 45.82                         | 74.00             | 28.18          | Peak   |

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

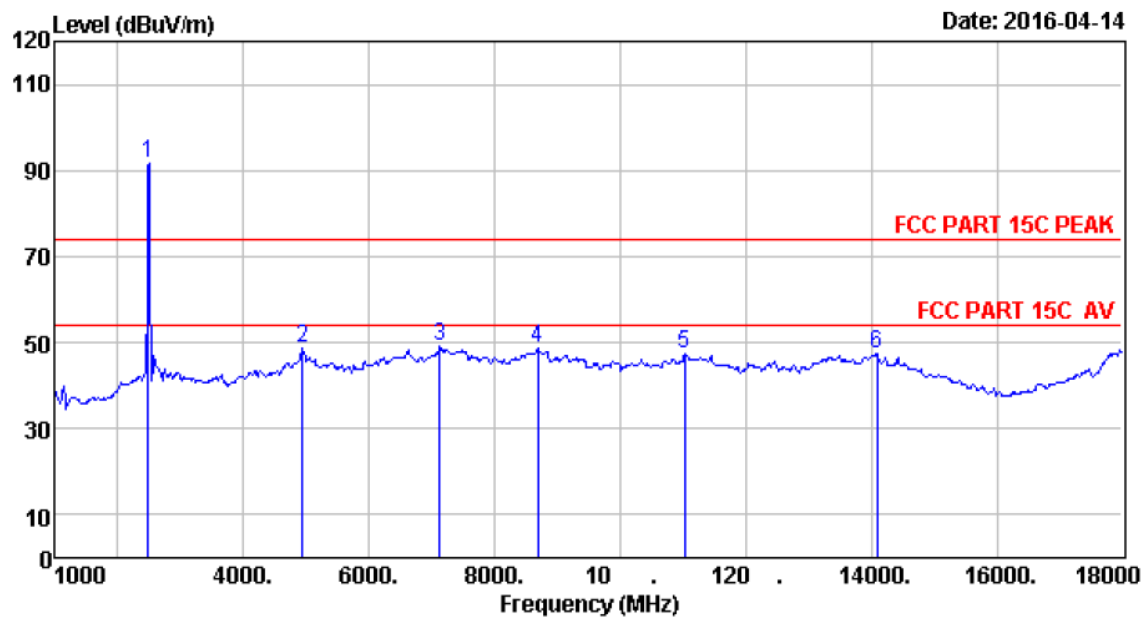


Site no. : 966 1# chamber                      Data no. : 211  
 Dis. / Ant. : 3m ANT 1-18G                      Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V Form Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2480MHz

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 2480.00        | 27.58                   | 6.71                  | 92.98             | 92.16                         | 74.00             | -18.16         | Peak   |
| 2 | 4774.00        | 31.20                   | 11.62                 | 38.25             | 45.46                         | 74.00             | 28.54          | Peak   |
| 3 | 7256.00        | 36.53                   | 11.55                 | 34.56             | 48.62                         | 74.00             | 25.38          | Peak   |
| 4 | 8344.00        | 36.67                   | 11.43                 | 35.55             | 49.08                         | 74.00             | 24.92          | Peak   |
| 5 | 10180.00       | 38.42                   | 11.49                 | 32.30             | 47.68                         | 74.00             | 26.32          | Peak   |
| 6 | 13444.00       | 39.95                   | 11.49                 | 29.66             | 48.36                         | 74.00             | 25.64          | Peak   |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

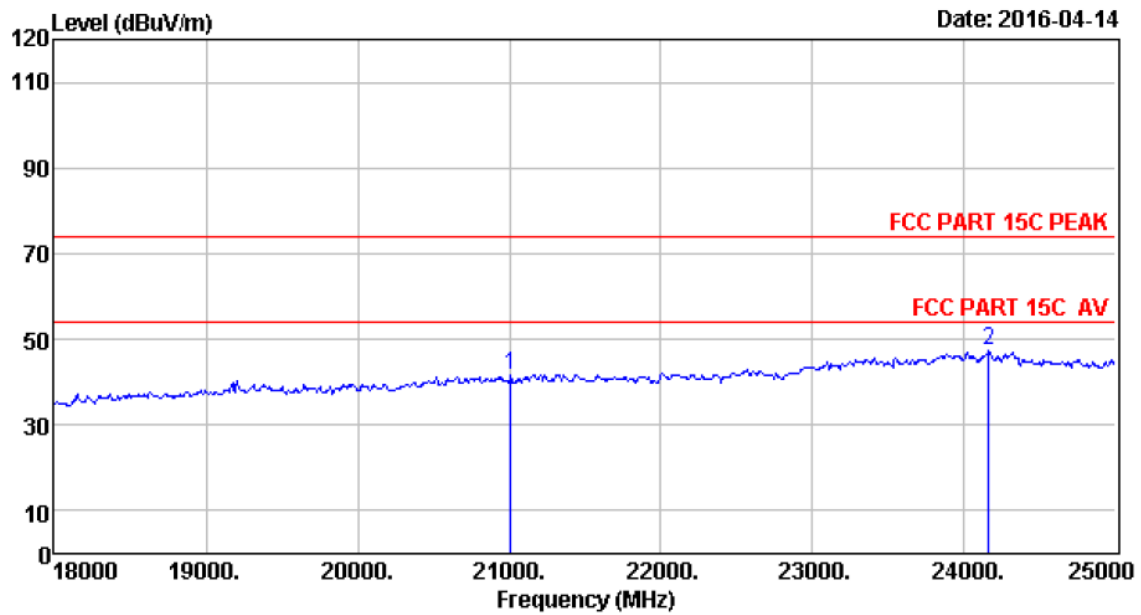


Site no. : 966 1# chamber                      Data no. : 212  
 Dis. / Ant. : 3m ANT 1-18G                      Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V Form Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2480MHz

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 2480.00        | 27.58                   | 6.71                  | 92.61             | 91.79                         | 74.00             | -17.79         | Peak   |
| 2 | 4944.00        | 31.47                   | 12.37                 | 40.91             | 48.79                         | 74.00             | 25.21          | Peak   |
| 3 | 7120.00        | 36.08                   | 11.51                 | 35.64             | 49.37                         | 74.00             | 24.63          | Peak   |
| 4 | 8684.00        | 37.32                   | 11.45                 | 33.51             | 48.62                         | 74.00             | 25.38          | Peak   |
| 5 | 11030.00       | 39.50                   | 11.27                 | 30.48             | 47.27                         | 74.00             | 26.73          | Peak   |
| 6 | 14090.00       | 41.54                   | 10.91                 | 28.04             | 47.36                         | 74.00             | 26.64          | Peak   |

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

18000-25000 MHz

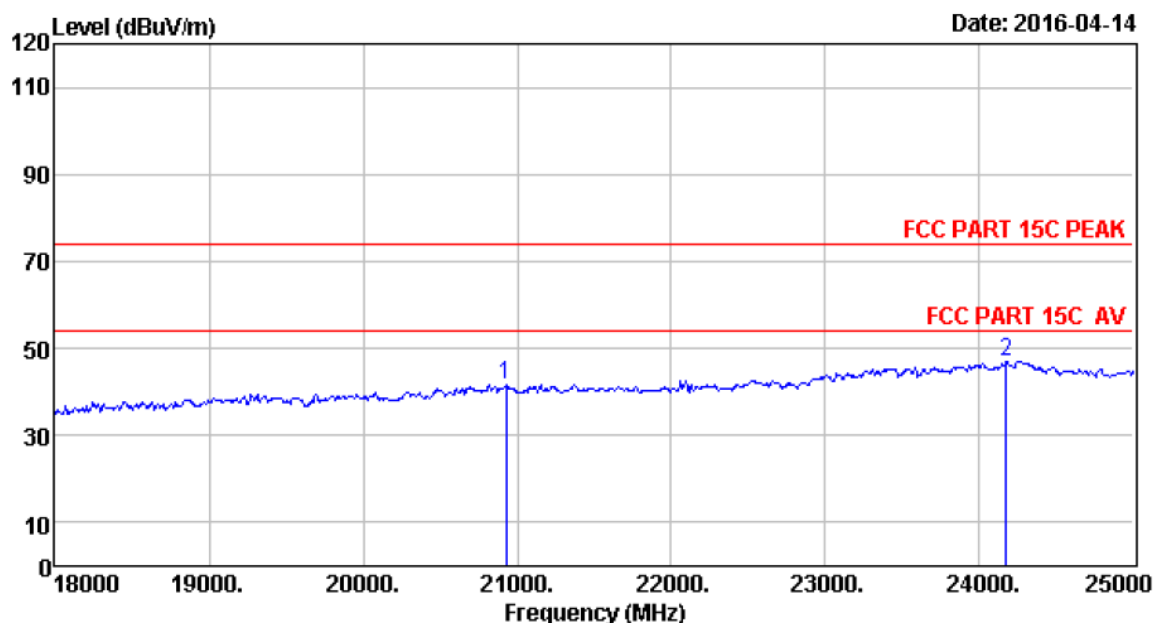


Site no. : 966 1# chamber                      Data no. : 199  
 Dis. / Ant. : 3m    ANT ABOVE 18G              Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V Form Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2402MHz

| Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 21010.00     | 46.29                   | 20.13                 | 11.03             | 41.65                         | 74.00             | 32.35          | Peak   |
| 2 24160.00     | 45.63                   | 22.13                 | 12.47             | 47.20                         | 74.00             | 26.80          | Peak   |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

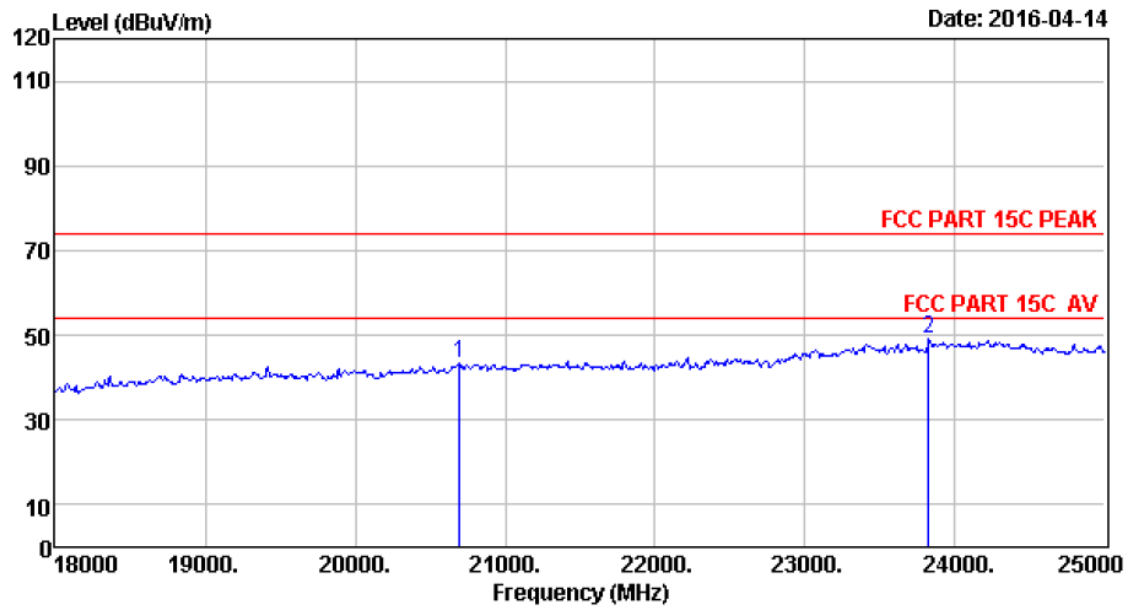
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber                      Data no. : 200  
 Dis. / Ant. : 3m ANT ABOVE 18G              Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V Form Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2402MHz

| Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 20926.00     | 46.26                   | 20.10                 | 11.26             | 41.75                         | 74.00             | 32.25          | Peak   |
| 2 24174.00     | 45.64                   | 22.14                 | 12.44             | 47.15                         | 74.00             | 26.85          | Peak   |

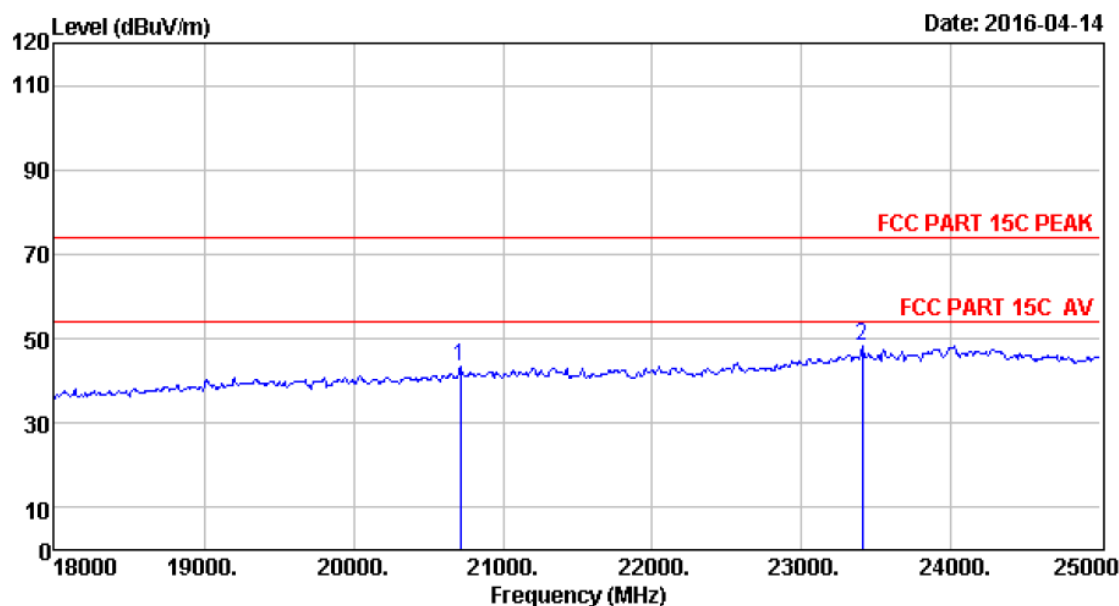
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber                      Data no. : 201  
 Dis. / Ant. : 3m ANT ABVOE 18G              Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V Form Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2440MHz

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 20695.00       | 46.11                   | 19.99                 | 13.19             | 43.22                         | 74.00             | 30.78          | Peak   |
| 2 | 23824.00       | 45.63                   | 21.89                 | 14.56             | 49.10                         | 74.00             | 24.90          | Peak   |

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

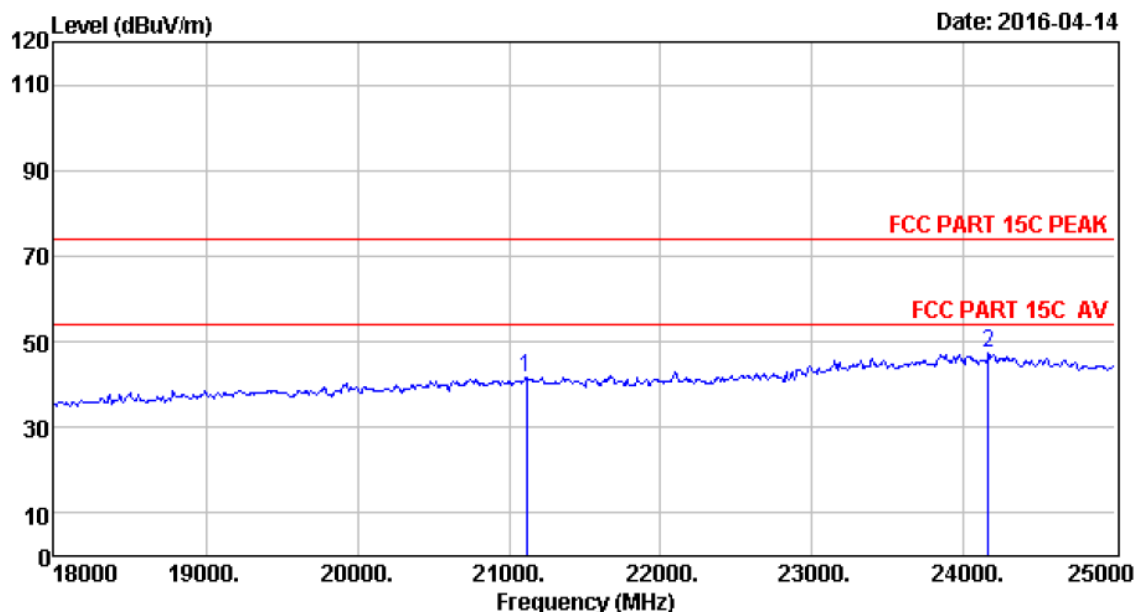


Site no. : 966 1# chamber                      Data no. : 202  
 Dis. / Ant. : 3m ANT ABOVE 18G              Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V Form Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2440MHz

| Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 20716.00     | 46.12                   | 20.00                 | 13.29             | 43.36                         | 74.00             | 30.64          | Peak   |
| 2 23404.00     | 45.68                   | 21.51                 | 14.34             | 48.10                         | 74.00             | 25.90          | Peak   |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

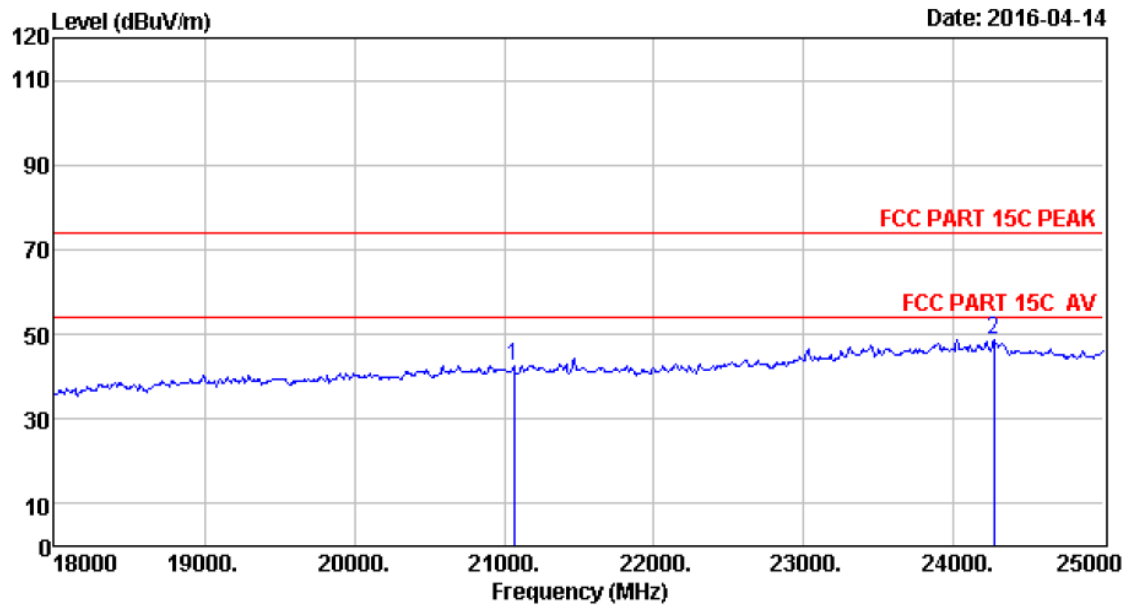


Site no. : 966 1# chamber Data no. : 203  
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V Form Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2480MHz

| Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 21115.00     | 46.22                   | 20.18                 | 11.00             | 41.71                         | 74.00             | 32.29          | Peak   |
| 2 24160.00     | 45.63                   | 22.13                 | 12.54             | 47.27                         | 74.00             | 26.73          | Peak   |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber                      Data no. : 204  
 Dis. / Ant. : 3m ANT ABOVE 18G              Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V Form Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2480MHz

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 21066.00       | 46.26                   | 20.16                 | 11.97             | 42.66                         | 74.00             | 31.34          | Peak   |
| 2 | 24265.00       | 45.65                   | 22.19                 | 14.13             | 48.74                         | 74.00             | 25.26          | Peak   |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

## 4 CONDUCTED SPURIOUS EMISSION

### 5.1 Limit

In any 100kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.

### 5.2 Test Procedure

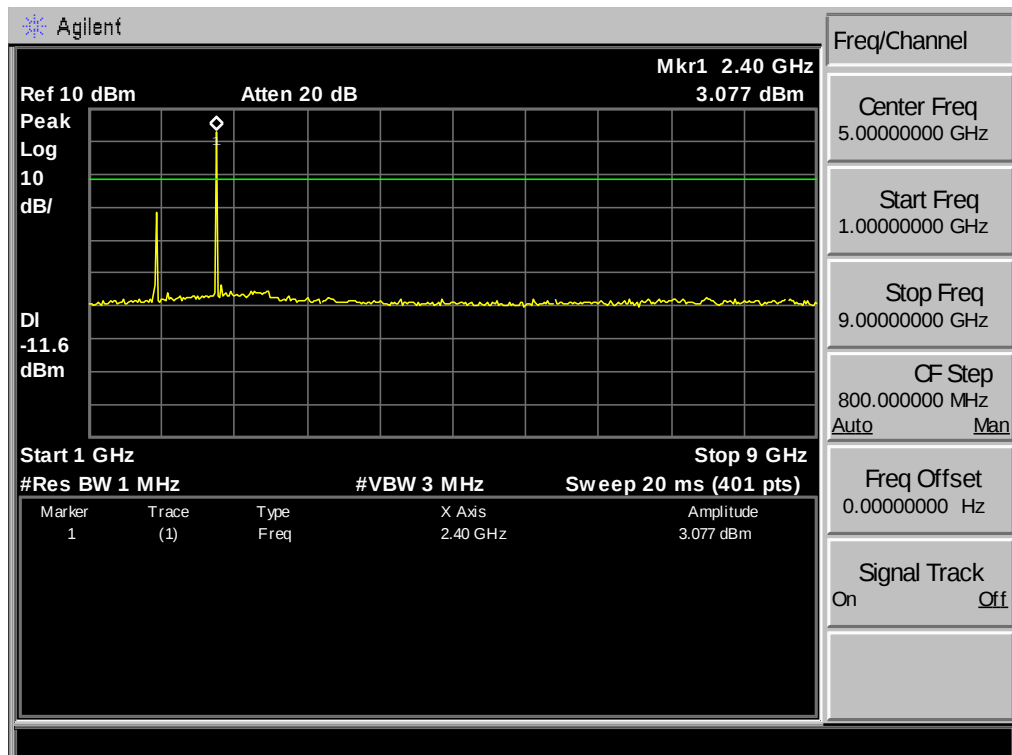
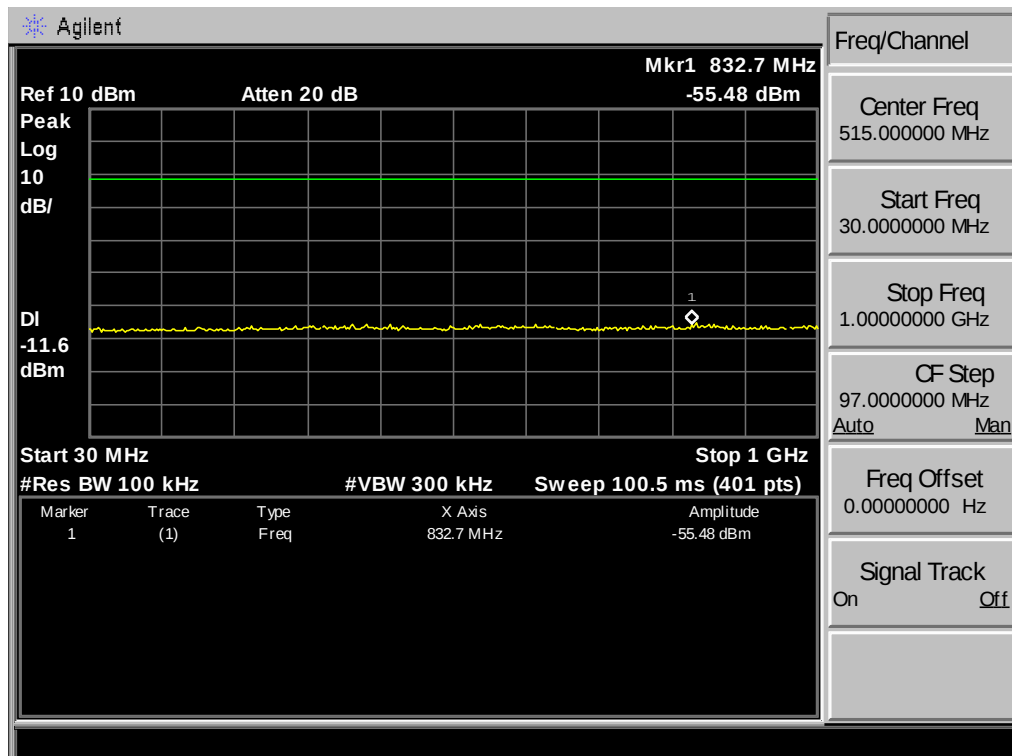
The transmitter output was connected to a spectrum analyzer, The resolution bandwidth is set to 100 kHz, The video bandwidth is set to 300 kHz for frequency range from 30MHz to 1000 MHz; The resolution bandwidth is set to 1 MHz, The video bandwidth is set to 3 MHz for frequency range from 1000MHz to 25000 MHz.

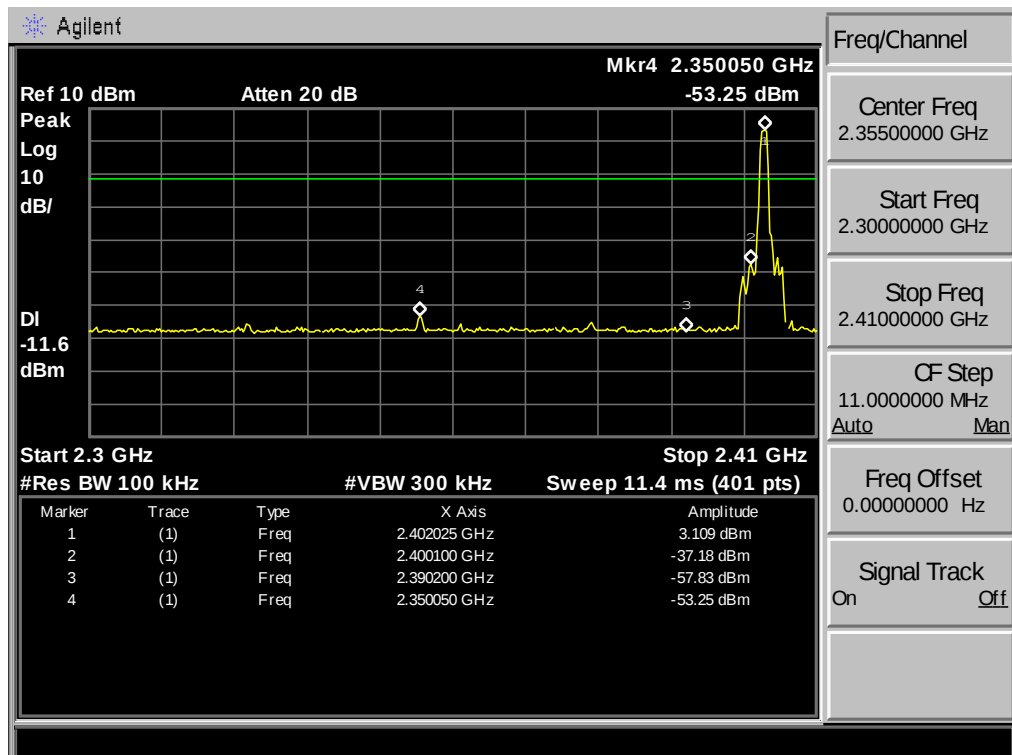
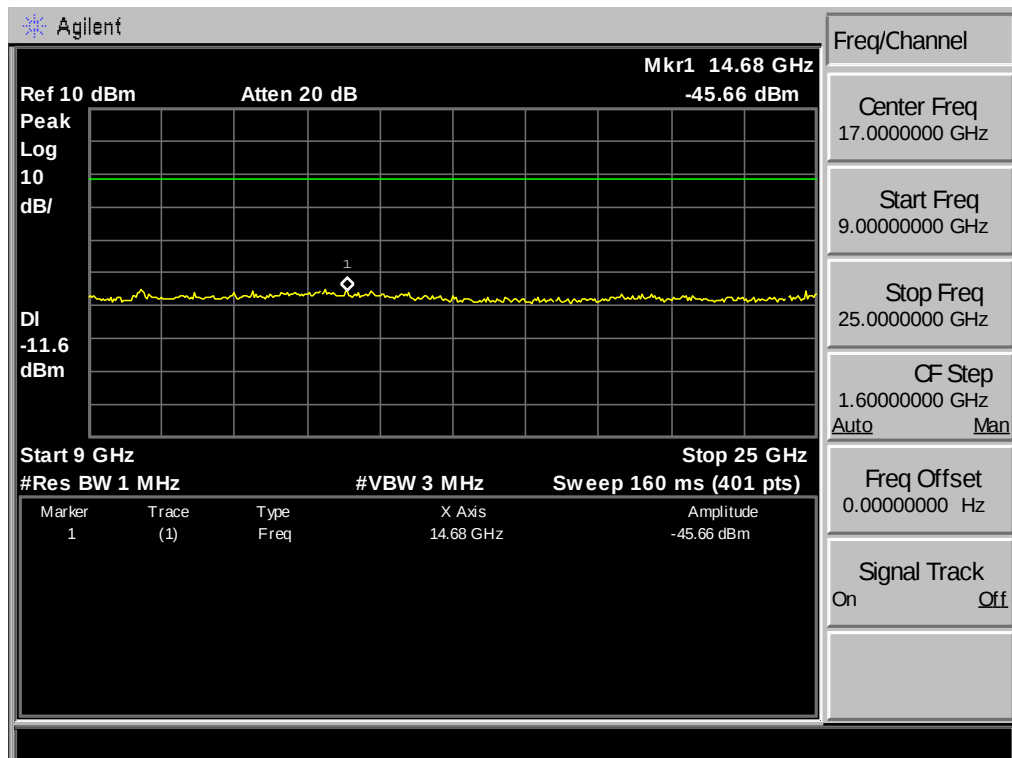
### 5.3 Test Result

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

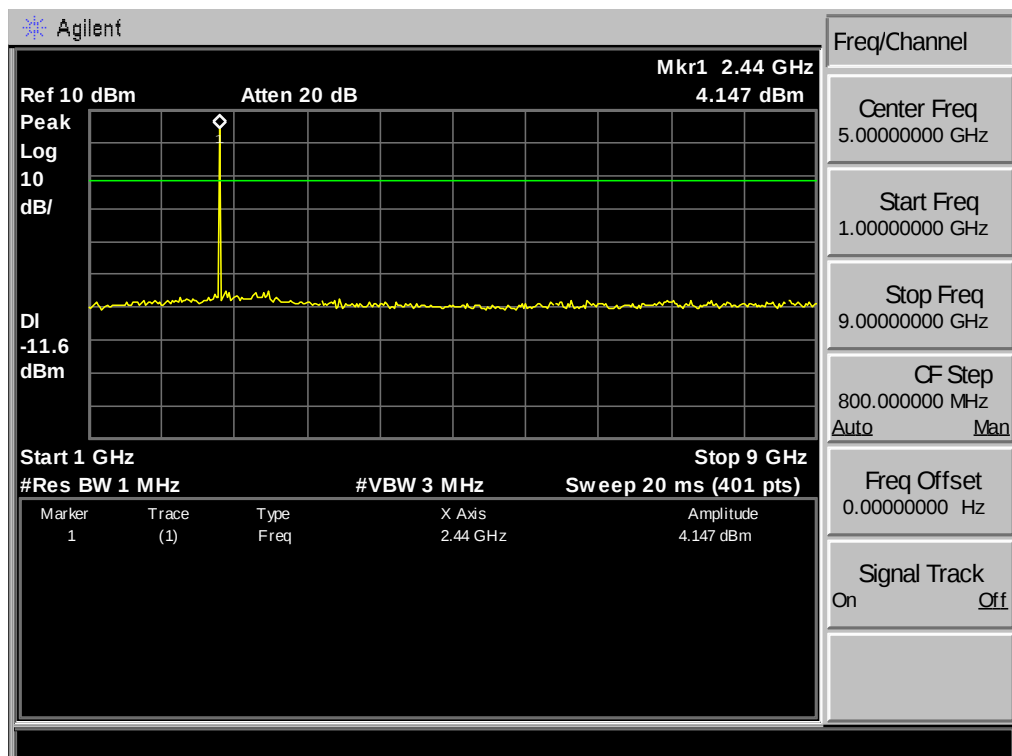
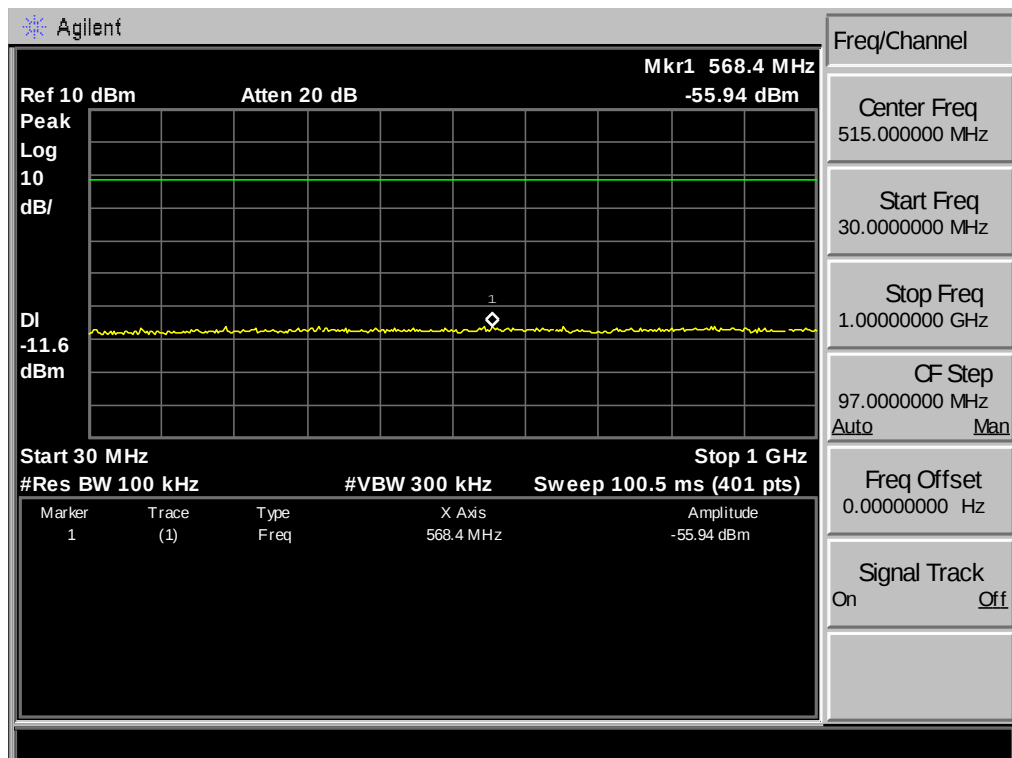
## 5.4 Test Data

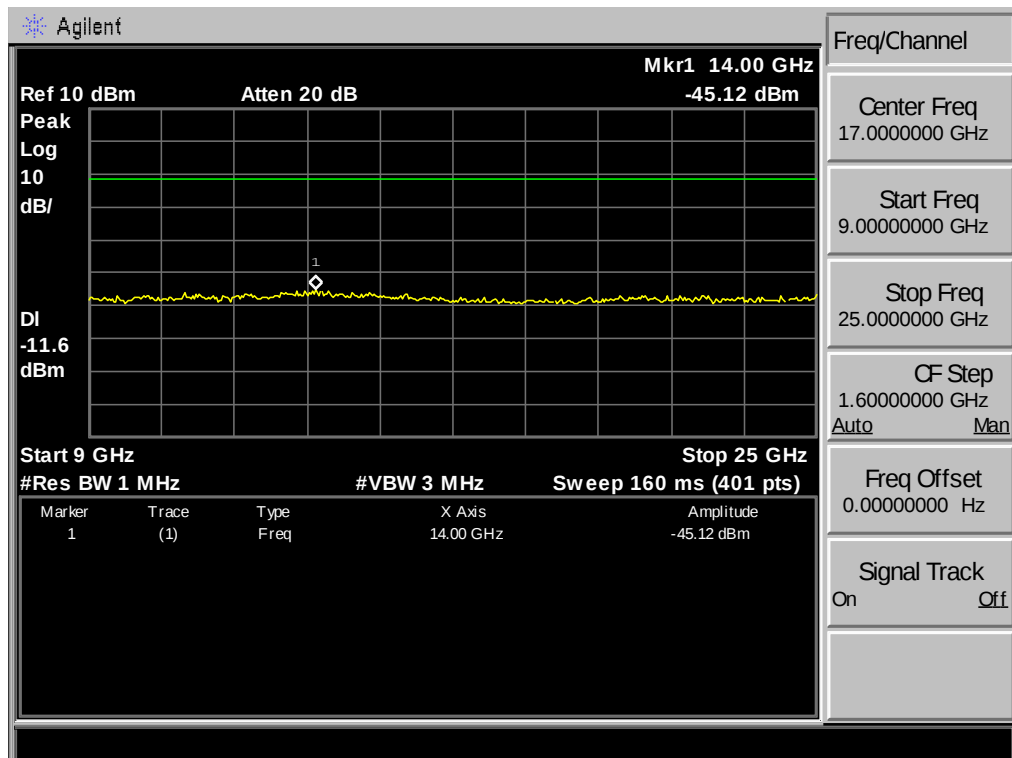
Test Mode: BT 4.0-BLE GFSK 2402MHz



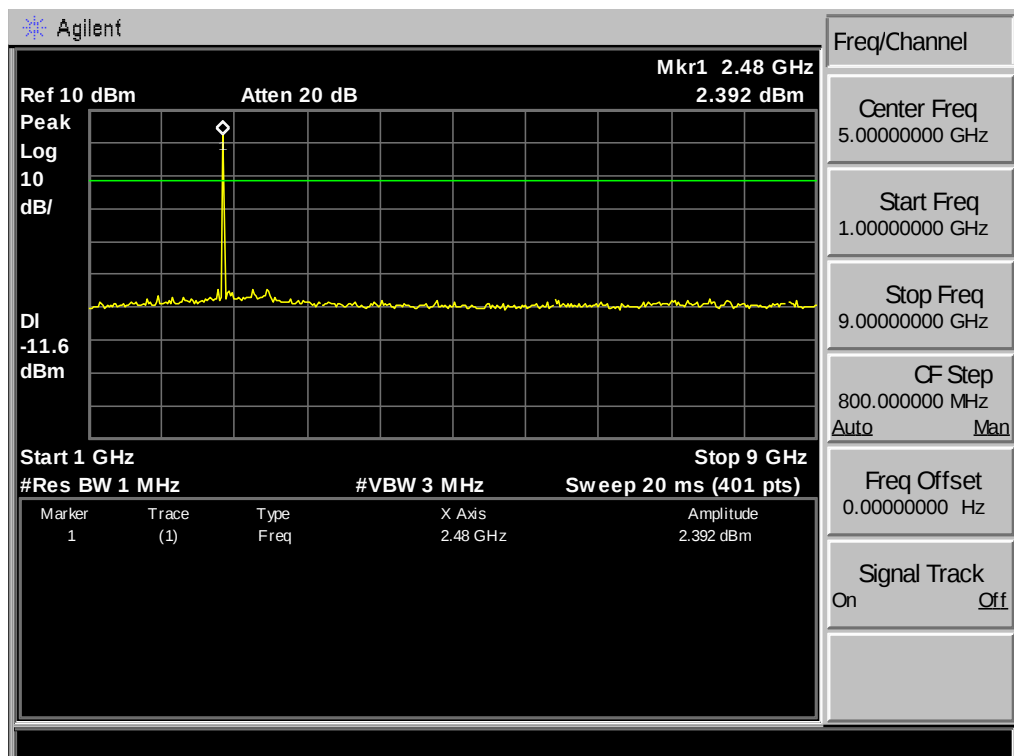
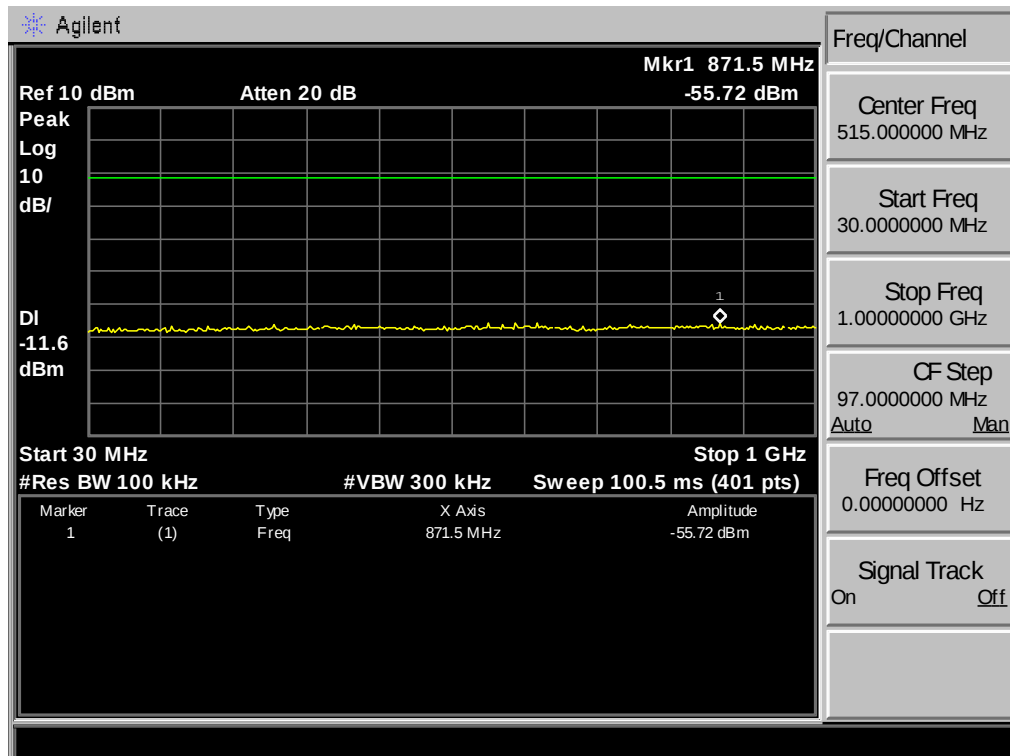


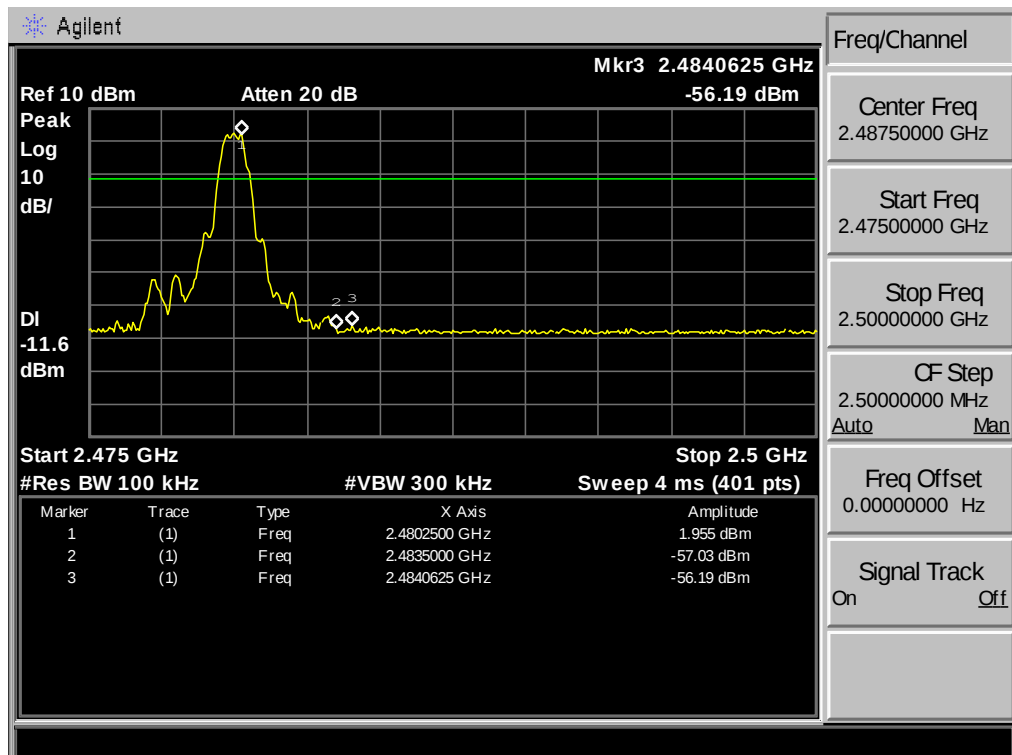
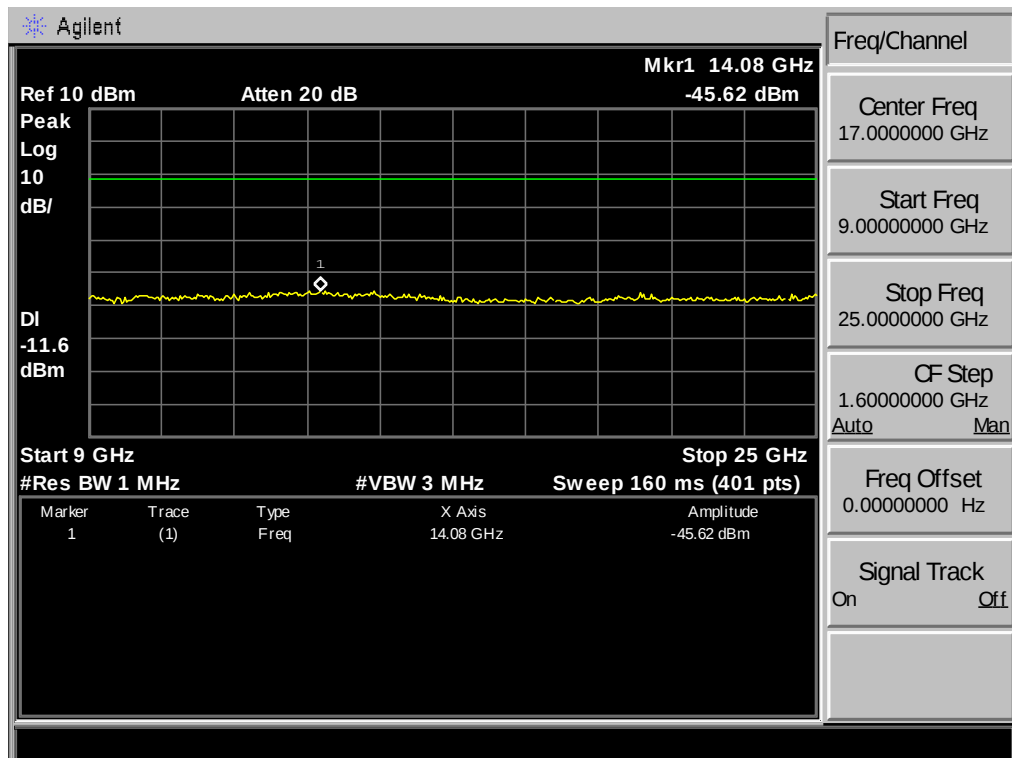
Test Mode: BT 4.0-BLE GFSK 2440MHz





Test Mode: BT 4.0-BLE GFSK 2480MHz



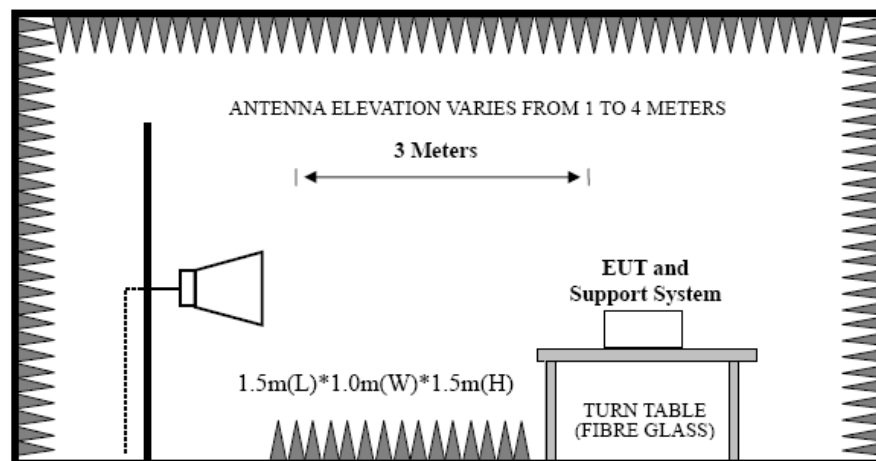


## 6 BAND EDGE COMPLIANCE TEST

### 6.1 Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits

### 6.2 Block Diagram of Test setup



### 6.3 Test Procedure

1. The EUT is placed on a turntable, which is 1.5m above the ground plane and worked at highest radiated power.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

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

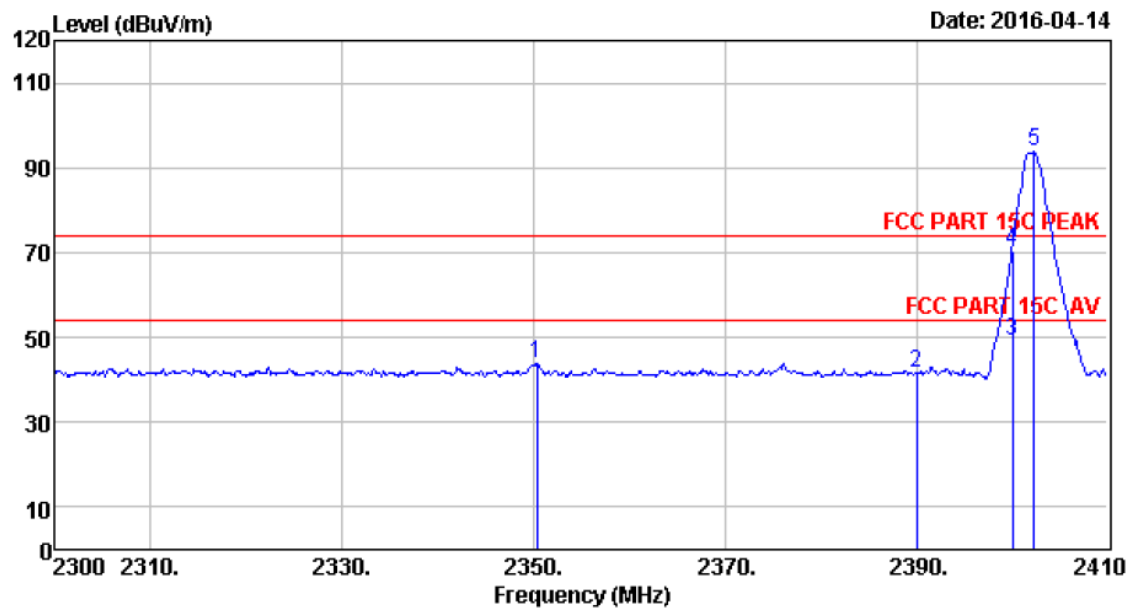
AV : RBW = 1MHz, VBW = 10Hz, Detector=PEAK detector, Sweep time = auto.

### 6.4 Test Result

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

- Note:
- 1、 For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
  - 2、 The frequency 2402MHz and 2480 MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

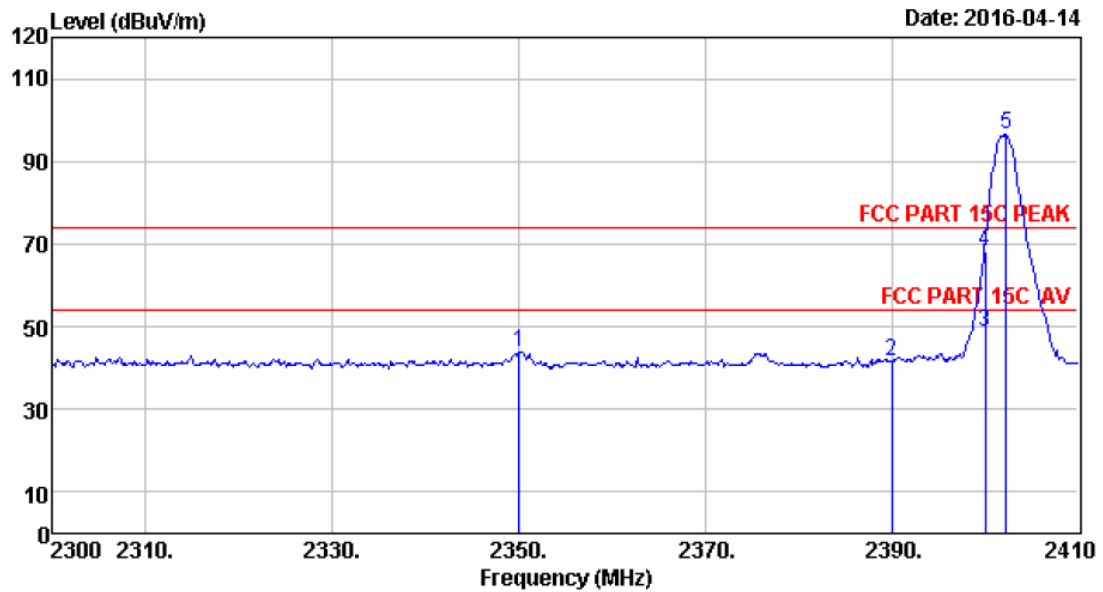
## 6.5 Test Data



Site no. : 966 1# chamber                      Data no. : 207  
 Dis. / Ant. : 3m ANT 1-18G                      Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V Form Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2402MHz

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|---------|
| 1 | 2350.38        | 27.70                   | 6.56                  | 44.24             | 43.93                         | 74.00             | 30.07          | Peak    |
| 2 | 2390.00        | 27.64                   | 6.62                  | 41.86             | 41.50                         | 74.00             | 32.50          | Peak    |
| 3 | 2400.00        | 27.61                   | 6.62                  | 49.57             | 49.16                         | 54.00             | 4.84           | Average |
| 4 | 2400.00        | 27.61                   | 6.62                  | 70.65             | 70.24                         | 74.00             | 3.76           | Peak    |
| 5 | 2402.30        | 27.61                   | 6.62                  | 94.19             | 93.78                         | 74.00             | -19.78         | Peak    |

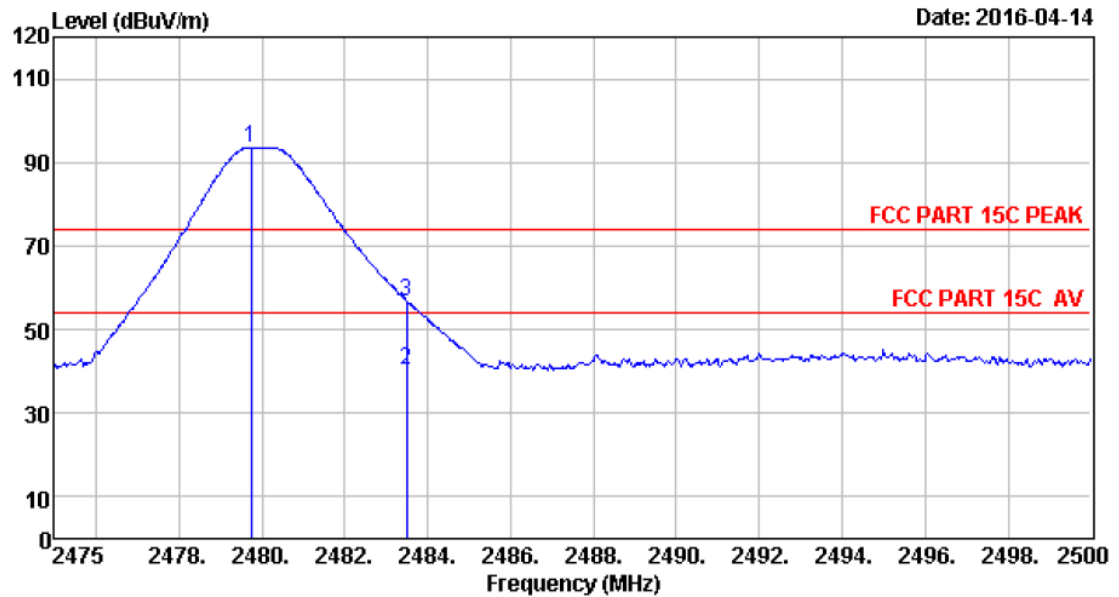
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber                      Data no. : 208  
 Dis. / Ant. : 3m ANT 1-18G                      Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V Form Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2402MHz

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|---------|
| 1 | 2350.05        | 27.70                   | 6.56                  | 44.07             | 43.76                         | 74.00             | 30.24          | Peak    |
| 2 | 2390.00        | 27.64                   | 6.62                  | 41.77             | 41.41                         | 74.00             | 32.59          | Peak    |
| 3 | 2400.00        | 27.61                   | 6.62                  | 49.07             | 48.66                         | 54.00             | 5.34           | Average |
| 4 | 2400.00        | 27.61                   | 6.62                  | 68.74             | 68.33                         | 74.00             | 5.67           | Peak    |
| 5 | 2402.30        | 27.61                   | 6.62                  | 96.89             | 96.48                         | 74.00             | -22.48         | Peak    |

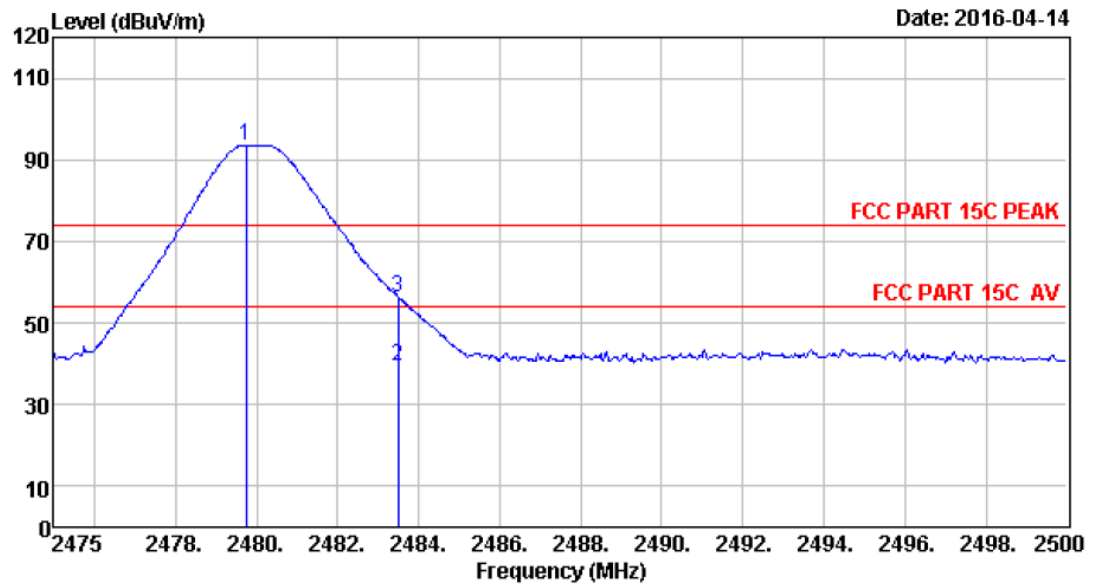
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber                      Data no. : 213  
 Dis. / Ant. : 3m ANT 1-18G                      Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V Form Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2480MHz

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|---------|
| 1 | 2479.75        | 27.58                   | 6.71                  | 94.43             | 93.61                         | 74.00             | -19.61         | Peak    |
| 2 | 2483.50        | 27.58                   | 6.71                  | 41.30             | 40.48                         | 54.00             | 13.52          | Average |
| 3 | 2483.50        | 27.58                   | 6.71                  | 57.66             | 56.84                         | 74.00             | 17.16          | Peak    |

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



Site no. : 966 1# chamber                      Data no. : 214  
 Dis. / Ant. : 3m ANT 1-18G                      Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Portable Bluetooth Speaker  
 Power : DC 18V Form Adapter Input AC 120V/60Hz  
 M/N : DS6  
 Test Mode : GFSK TX 2480MHz

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|---------|
| 1 | 2479.75        | 27.58                   | 6.71                  | 94.35             | 93.53                         | 74.00             | -19.53         | Peak    |
| 2 | 2483.50        | 27.58                   | 6.71                  | 40.06             | 39.24                         | 54.00             | 14.76          | Average |
| 3 | 2483.50        | 27.58                   | 6.71                  | 57.13             | 56.31                         | 74.00             | 17.69          | Peak    |

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

## 7 6dB Bandwidth Test

### 7.1 Limit

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz

### 7.2 Test Procedure

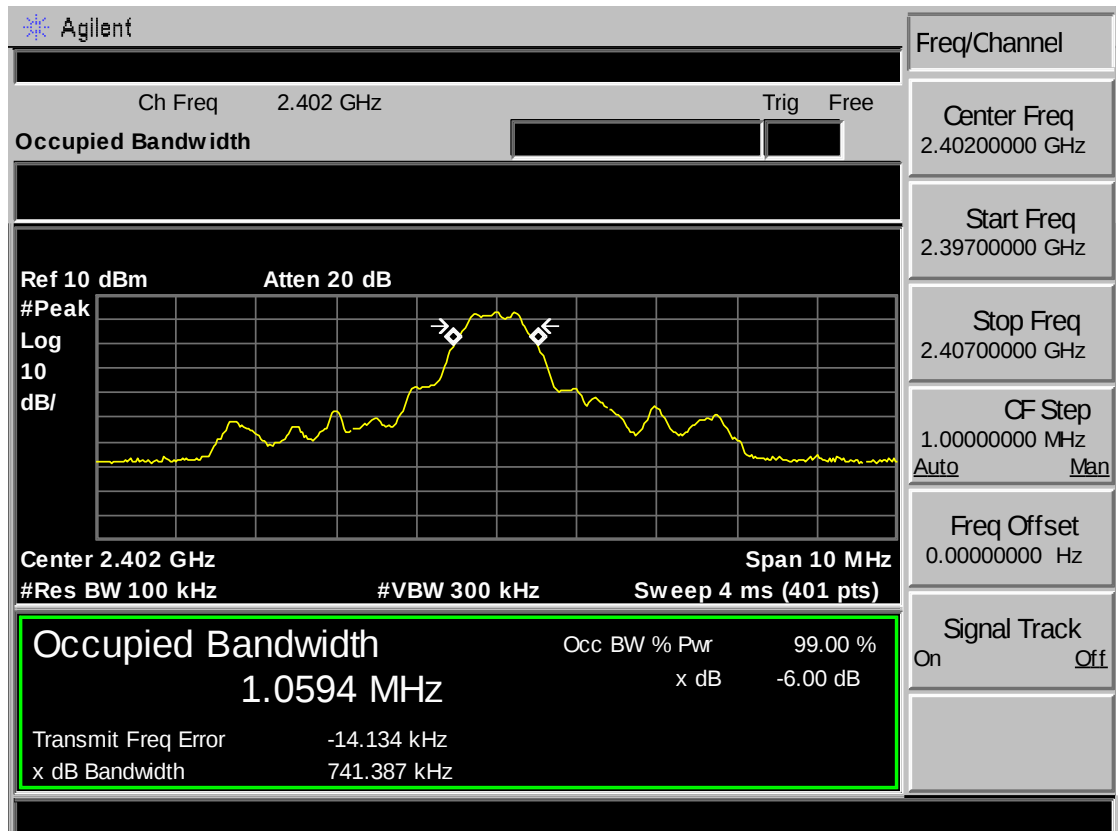
- 1, Connected the EUT's antenna port to spectrum analyzer device.
- 2, Follow the test procedure as described in KDB 558074
  - (1). Set resolution bandwidth (RBW) = 100 kHz.
  - (2). Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
  - (3). Detector = Peak.
  - (4). Trace mode = max hold.
  - (5). Sweep = auto couple.
  - (6). Allow the trace to stabilize.
  - (7). Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

### 7.3 Test Result

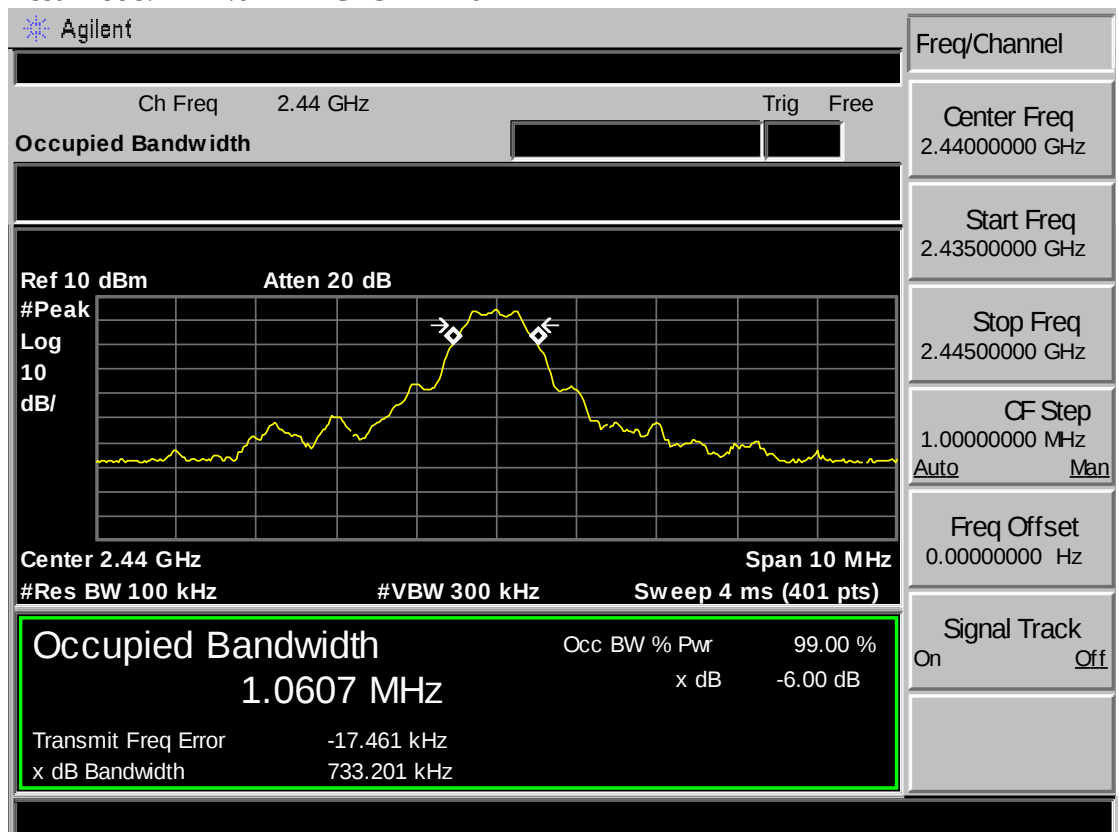
|                        |      |                          |                    |
|------------------------|------|--------------------------|--------------------|
| EUT: Bluetooth Speaker |      |                          |                    |
| M/N: DS6               |      |                          |                    |
| Test date: 2016-04-13  |      | Tested by: Tony.Tang     | Test site: RF Site |
| Test Mode              | CH   | 6dB bandwidth<br>( MHz ) | Limit<br>(KHz)     |
| BT 4.0-BLE<br>GFSK     | CH1  | 0.741                    | >500               |
|                        | CH20 | 0.733                    | >500               |
|                        | CH40 | 0.722                    | >500               |
| Conclusion : PASS      |      |                          |                    |

## 7.4 Test Data

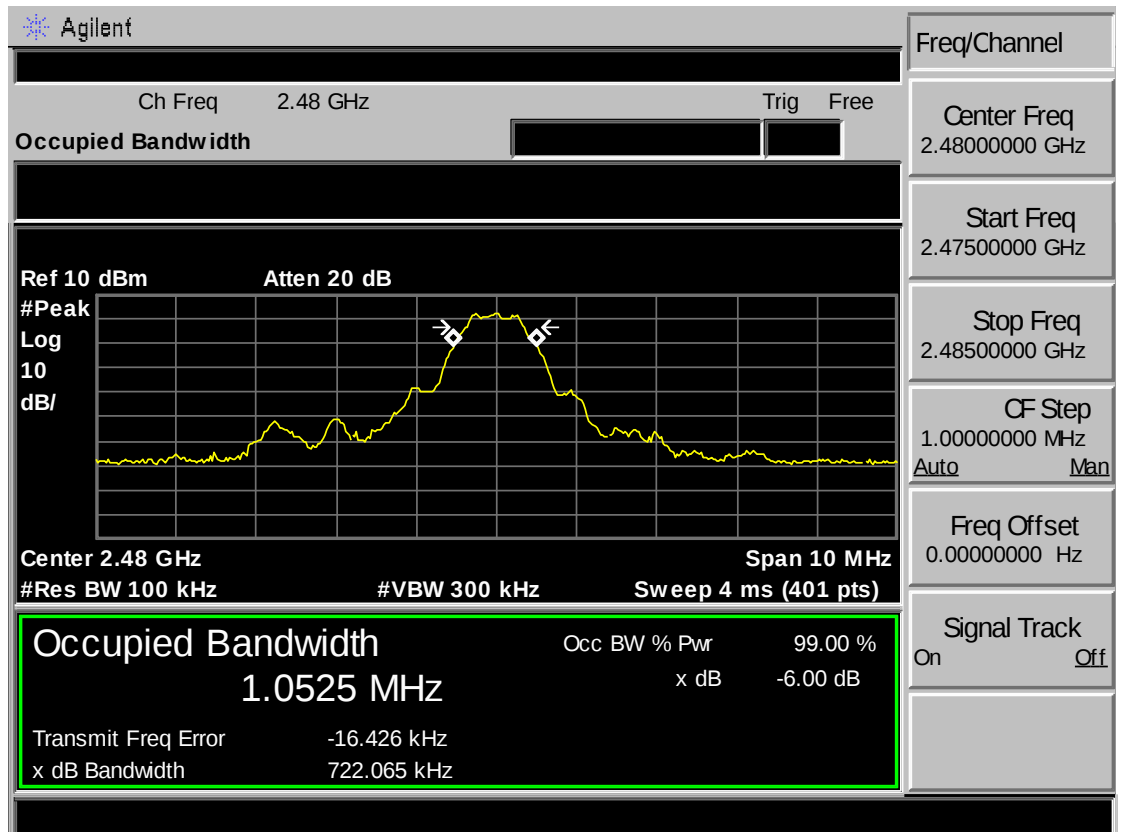
Test Mode: BT 4.0-BLE GFSK 2402MHz



Test Mode: BT 4.0-BLE GFSK 2440MHz



Test Mode: BT 4.0-BLE GFSK 2480MHz



## 8 OUTPUT POWER TEST

### 8.1 Limit

For systems using digital modulation in the 2400—2483.5MHz, The Peak out put Power shall not exceed 1W(30dBm)

### 8.2 Test Procedure

#### 8.3 Test Procedure

- 1, Connected the EUT's antenna port to spectrum analyzer device.
- 2, Follow the test procedure as described in KDB 558074
  - (1). Set the RBW  $\geq$  DTS bandwidth.
  - (2). Set VBW  $\geq$  3 x RBW.
  - (3). Set span  $\geq$  3 x RBW.
  - (4). Sweep time = auto couple.
  - (5). Detector = peak.
  - (6). Trace mode = max hold.
  - (7). Allow trace to fully stabilize.
  - (8). Use peak marker function to determine the peak amplitude level.

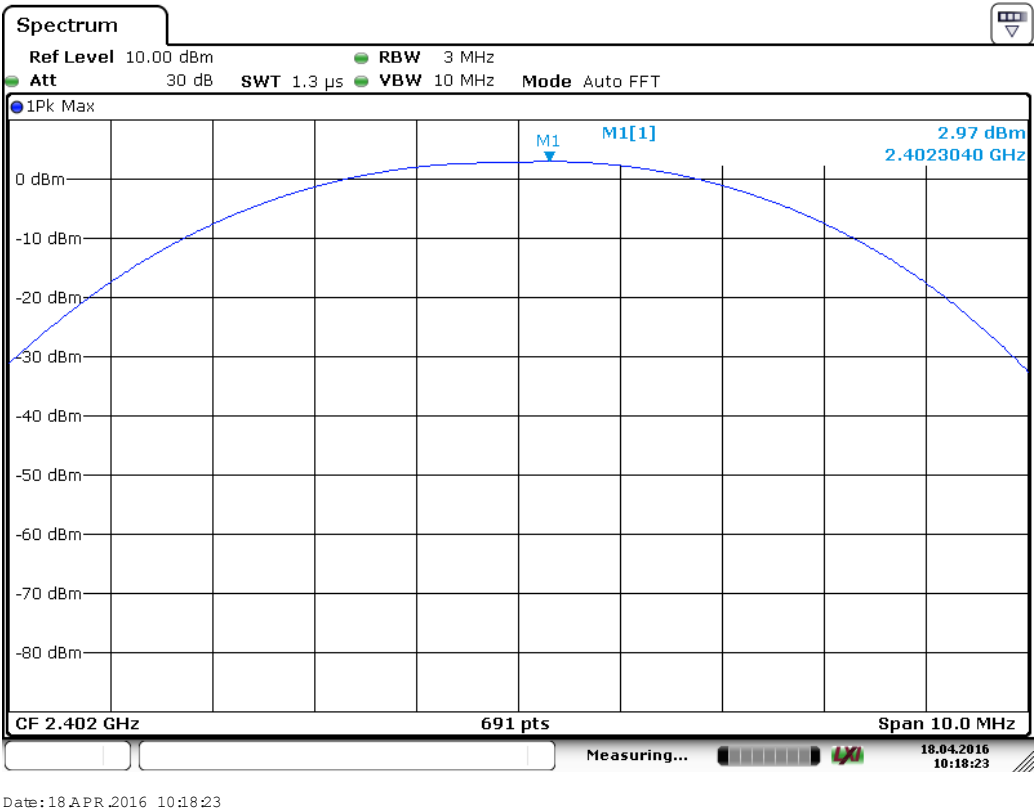
Note: The cable loss and attenuator loss were offset into measure device as an amplitude offs

## 8.4 Test Result

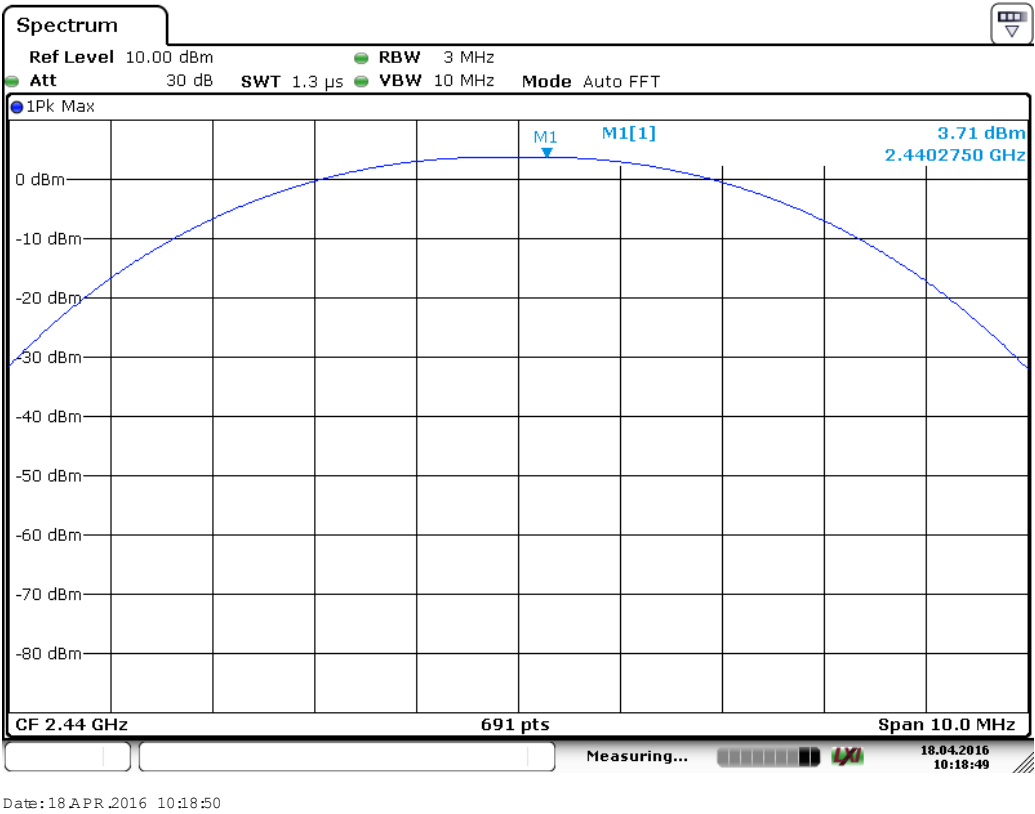
| EUT: Bluetooth Speaker |      |                              |                      |
|------------------------|------|------------------------------|----------------------|
| M/N:DS6                |      |                              |                      |
| Test date: 2016-04-18  |      | Test site: 3m Chamber        | Tested by: Tony Tang |
| Pass                   |      |                              |                      |
| Test Mode              | CH   | Peak output Power<br>( dBm ) | Limit<br>(dBm)       |
| BT 4.0-BLE<br>GFSK     | CH1  | 2.97                         | 30                   |
|                        | CH20 | 3.71                         | 30                   |
|                        | CH40 | 2.08                         | 30                   |
| Conclusion : PASS      |      |                              |                      |

8.5 Test Data

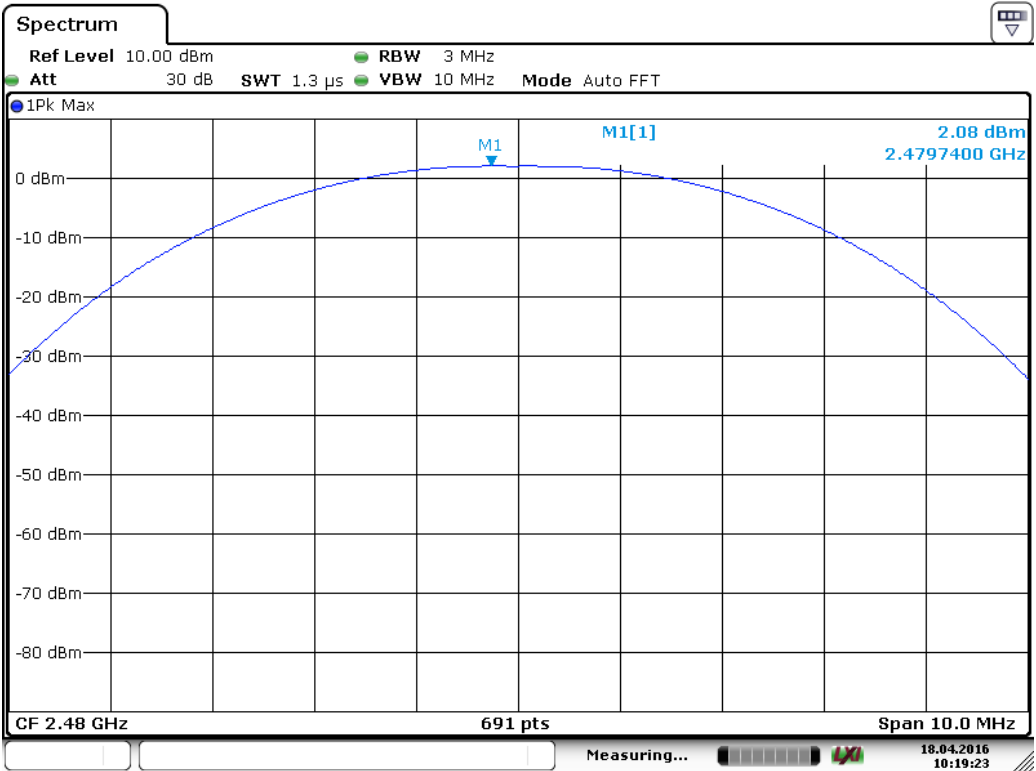
Test Mode: BT 4.0-BLE GFSK 2402MHz



Test Mode: BT 4.0-BLE GFSK 2440MHz



Test Mode: BT 4.0-BLE GFSK 2480MHz



Date:18.APR.2016 10:19:23

## 9 POWER SPECTRAL DENSITY TEST

### 9.1 Limit

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

### 9.2 Test Procedure

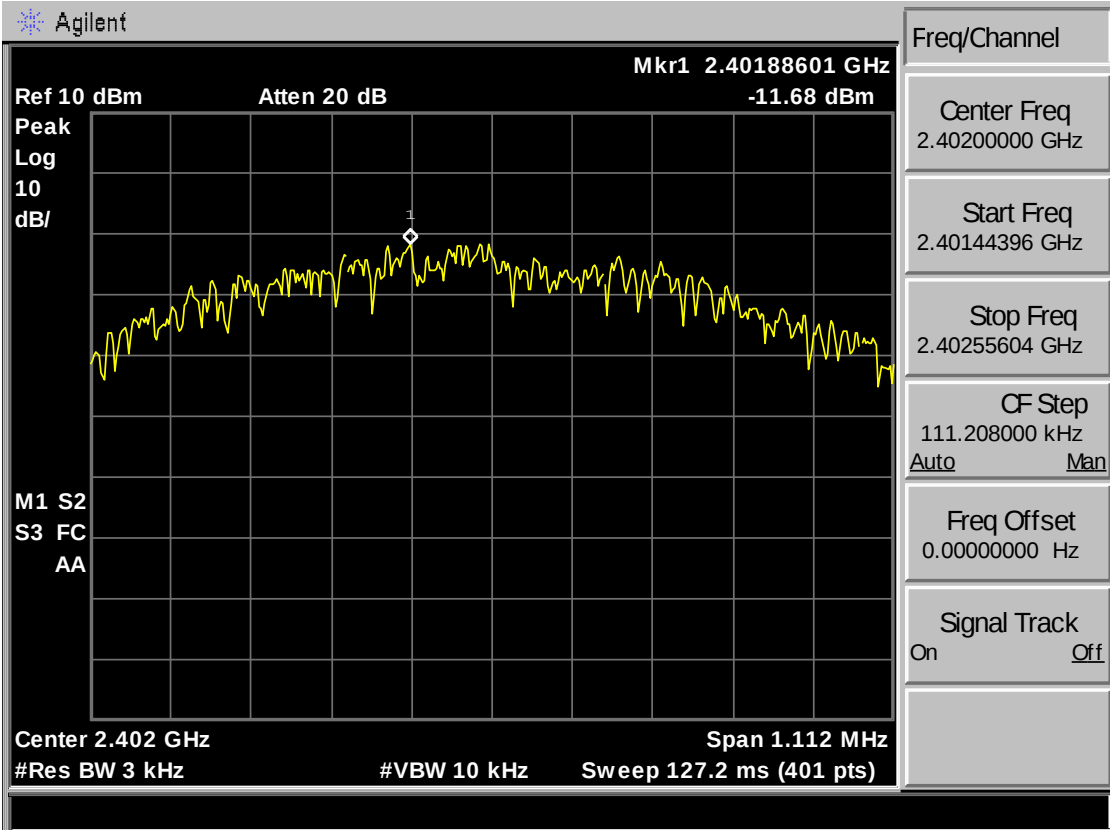
- 1, Connected the EUT's antenna port to spectrum analyzer device.
- 2, Follow the test procedure as described in KDB 558074
  - (1). Set analyzer center frequency to DTS channel center frequency.
  - (2). Set the span to 1.5 times the DTS bandwidth.
  - (3). Set the RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
  - (4). Set the VBW  $\geq 3 \text{ RBW}$ .
  - (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 3 kHz) and repeat.

## 9.3 Test Result

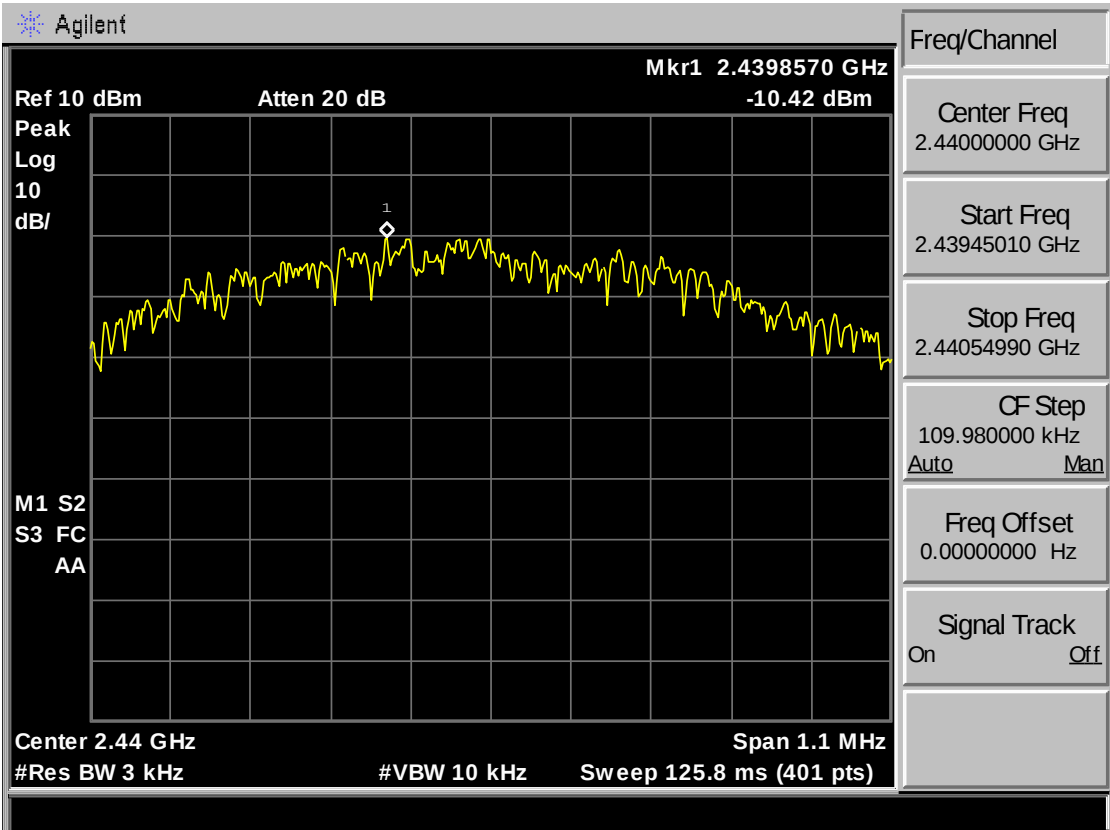
| EUT: Bluetooth Speaker |      |                              |                      |
|------------------------|------|------------------------------|----------------------|
| M/N: DS6               |      |                              |                      |
| Test date: 2016-04-10  |      | Test site: 3m Chamber        | Tested by: Tony Tang |
| Pass                   |      |                              |                      |
| Test Mode              | CH   | Power density<br>(dBm/3kHz ) | Limit<br>(dBm/3kHz)  |
| BT 4.0-BLE<br>GFSK     | CH1  | -11.68                       | 8                    |
|                        | CH20 | -10.42                       | 8                    |
|                        | CH40 | -12.33                       | 8                    |
| Conclusion : PASS      |      |                              |                      |

9.4 Test Data

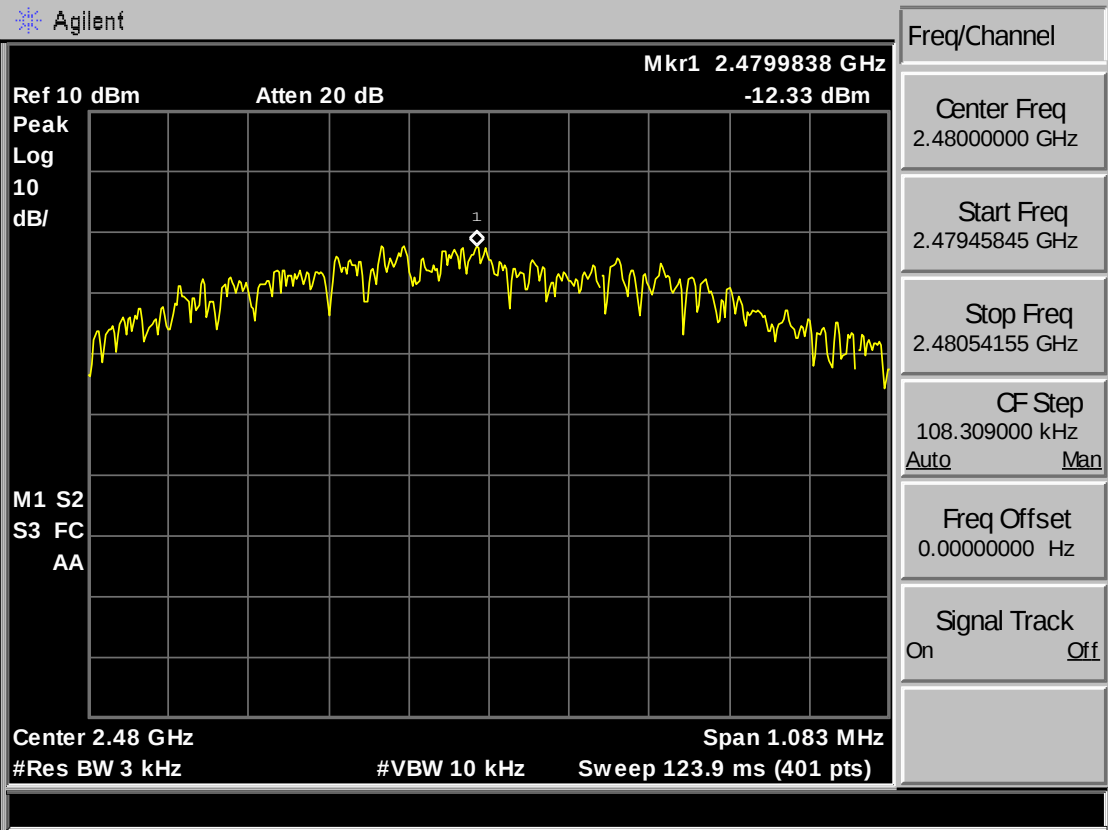
Test Mode: BT 4.0-BLE GFSK 2402MHz



Test Mode: BT 4.0-BLE GFSK 2440MHz



Test Mode: BT 4.0-BLE GFSK 2480MHz



## 10 ANTENNA REQUIREMENTS

### 10.1 Limit

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### 10.2 Result

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