

FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

Bang & Olufsen a/s

Bluetooth Speaker

Model Number: Beolit 15

FCC ID: TTUBEOLIT15

Prepared for : Bang & Olufsen a/s
Peter Bangs Vej 15, 7600 Struer, Denmark

Prepared By : EST Technology Co., Ltd.
San Tun Management Zone, Houjie District, Dongguan, China

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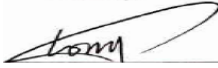

Report Number: ESTE-R1410003
Date of Test : September 26 ~ October 19, 2014
Date of Report : October 20, 2014

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Test Report Verification

| | | | |
|--|--|--|---------------------------------|
| Applicant: | Bang & Olufsen a/s | | |
| Address: | Peter Bangs Vej 15, 7600 Struer, Denmark | | |
| Manufacturer | Bang & Olufsen a/s | | |
| Address: | Peter Bangs Vej 15, 7600 Struer, Denmark | | |
| E.U.T: | Bluetooth Speaker | | |
| Model Number: | Beolit 15 | | |
| Power Supply: | DC 7.2V From Internal Battery AC 100~240V 50/60Hz | | |
| Test Voltage: | AC 120V/60Hz | | |
| Trade Name: | Bang & Olufsen | Serial No.: | ----- |
| Date of Receipt: | September 26, 2014 | Date of Test: | September 26 ~ October 19, 2014 |
| Test Specification: | FCC Rules and Regulations Part 15 Subpart C:2013 ANSI C63.4:2009 | | |
| Test Result: | <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 ETSI EN 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. Date: October 20, 2014</p> | | |
| Prepared by: | Tested by: | Approved by: | |
|  <hr style="width: 100px; margin: 0 auto;"/> |  <hr style="width: 100px; margin: 0 auto;"/> |  <hr style="width: 100px; margin: 0 auto;"/> | |
| Ada / Assistant | Tony.Tang/ Engineer | IcemanHu / Manager | |
| Other Aspects: | 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)

| | |
|----------------------------|---------------------------------------|
| Product Name | : Bluetooth Speaker |
| Model Number | : Beolit 15 |
| FCC ID | : TTUBEOLIT15 |
| Operation frequency | : 2402MHz~2480MHz |
| Number of channel | : 79 |
| Antenna | : Internal antenna, 3.11 dBi gain |
| Modulation | : FHSS (GFSK, $\pi/4$ -DQPSK, 8-DPSK) |
| Sample Type | : Prototype production |

2. SUMMARY OF TEST

2.1. Summary of test result

| Description of Test Item | Standard | Results |
|--------------------------------|--|---------|
| Maximum Peak Output Power | FCC Part 15: 15.247(b)(1) DA 00-705 | PASS |
| 20dB Bandwidth | FCC Part 15: 15.215 DA 00-705 | PASS |
| Carrier Frequency Separation | FCC Part 15: 15.247(a)(1) DA 00-705 | PASS |
| Number Of Hopping Channel | FCC Part 15: 15.247(a)(1)(iii) DA 00-705 | PASS |
| Dwell Time | FCC Part 15: 15.247(a)(1)(iii) DA 00-705 | PASS |
| Radiated Emission | FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.4: 2003 DA 00-705 | PASS |
| Band Edge Compliance | FCC Part 15: 15.247(d) DA 00-705 | PASS |
| Power Line Conducted Emissions | FCC Part 15: 15.207 ANSI C63.4: 2003 DA 00-705 | PASS |
| Antenna requirement | FCC Part 15: 15.203 | PASS |

2.2. Test Facilities

EMC Lab : Certificated by CNAL, CHINA
 Registration No.: L5288
 Date of registration: October 28, 2011

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

 Certificated by Industry Canada
 Registration No.: 46405-9405
 Test Side Number: 9405A-1
 Date of registration: January 03, 2013

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

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

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

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

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

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

Name of Firm : EST Technology Co., Ltd.

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

2.3. Measurement uncertainty

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

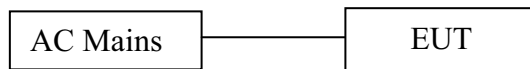
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.4. Assistant equipment used for test

2.4.1. N/A

2.5. Block Diagram

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



(EUT: Bluetooth Speaker)

2.6. Test mode

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

| Mode | Channel | Frequency |
|--------|---------|-----------|
| GFSK | Low | 2402MHz |
| | Middle | 2441MHz |
| | High | 2480MHz |
| 8-DPSK | Low | 2402MHz |
| | Middle | 2441MHz |
| | High | 2480MHz |

2.7. Channel List for Bluetooth

| Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) |
|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|
| 1 | 2402 | 2 | 2403 | 3 | 2404 | 4 | 2405 |
| 5 | 2406 | 6 | 2407 | 7 | 2408 | 8 | 2409 |
| 9 | 2410 | 10 | 2411 | 11 | 2412 | 12 | 2413 |
| 13 | 2414 | 14 | 2415 | 15 | 2416 | 16 | 2417 |
| 17 | 2418 | 18 | 2419 | 19 | 2420 | 20 | 2421 |
| 21 | 2422 | 22 | 2423 | 23 | 2424 | 24 | 2425 |
| 25 | 2426 | 26 | 2427 | 27 | 2428 | 28 | 2429 |
| 29 | 2430 | 30 | 2431 | 31 | 2432 | 32 | 2433 |
| 33 | 2434 | 34 | 2435 | 35 | 2436 | 36 | 2437 |
| 37 | 2438 | 38 | 2439 | 39 | 2440 | 40 | 2441 |
| 41 | 2442 | 42 | 2443 | 43 | 2444 | 44 | 2445 |
| 45 | 2446 | 46 | 2447 | 47 | 2448 | 48 | 2449 |
| 49 | 2450 | 50 | 2451 | 51 | 2452 | 52 | 2453 |
| 53 | 2454 | 54 | 2455 | 55 | 2456 | 56 | 2457 |
| 57 | 2458 | 58 | 2459 | 59 | 2460 | 60 | 2461 |
| 61 | 2462 | 62 | 2463 | 63 | 2464 | 64 | 2465 |
| 65 | 2466 | 66 | 2467 | 67 | 2468 | 68 | 2469 |
| 69 | 2470 | 70 | 2471 | 71 | 2472 | 72 | 2473 |
| 73 | 2474 | 74 | 2475 | 75 | 2476 | 76 | 2477 |
| 77 | 2478 | 78 | 2479 | 79 | 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,28,14 | 1 Year |
| Artificial Mains Networ | Rohde & Schwarz | ENV216 | 101260 | June,28,14 | 1 Year |
| Pulse Limiter | Rohde & Schwarz | ESH3-Z2 | 101100 | June,28,14 | 1 Year |

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

| Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
|-------------------|-----------------|-----------|------------|------------|-----------|
| EMI Test Receiver | Rohde & Schwarz | ESVS10 | 100004 | June,28,14 | 1 Year |
| Spectrum Analyzer | Agilent | E4411B | MY50140697 | June,28,14 | 1 Year |
| Bilog Antenna | Teseq | CBL 6111D | 27090 | June,28,14 | 1 Year |
| Signal Amplifier | Agilent | 310N | 187037 | June,28,14 | 1 Year |

2.8.3. For radiated emission test(above 1GHz)

| Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
|-------------------|--------------|-------------|---------------|------------|-----------|
| Horn Antenna | SCHWARZBECK | BBHA 9120 D | BBHA9120D1002 | June,28,14 | 1 Year |
| Signal Amplifier | SCHWARZBECK | BBV9718 | 9718-212 | June,28,14 | 1 Year |
| Spectrum Analyzer | Agilent | E4408B | MY44211139 | June,28,14 | 1 Year |

3. MAXIMUM PEAK OUTPUT POWER

3.1. Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts, the e.i.r.p shall not exceed 4W

3.2. Test Procedure

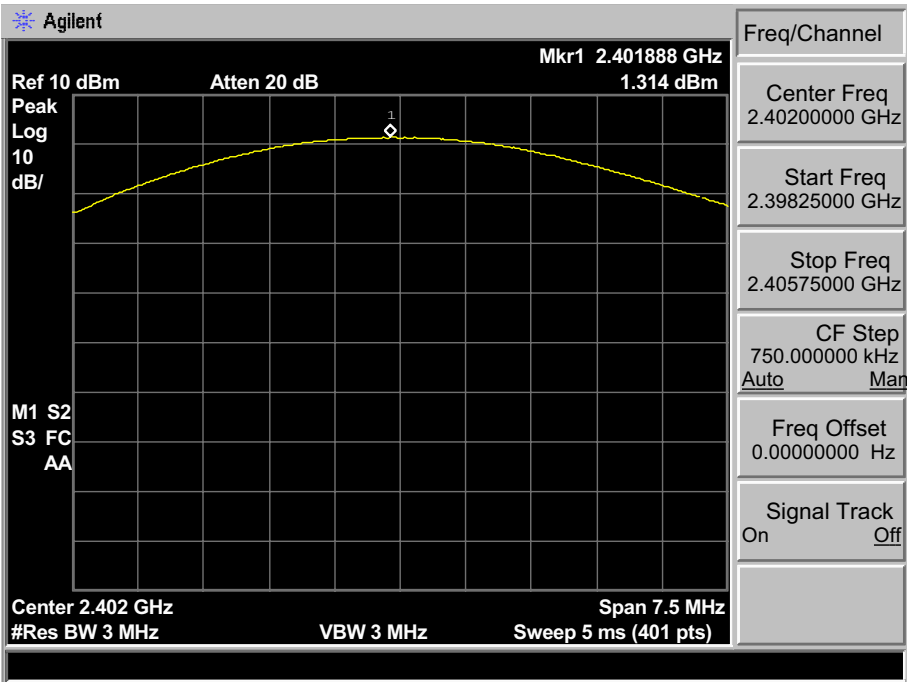
The transmitter output (antenna port) was connected to the spectrum analyzer

3.3. Test Result

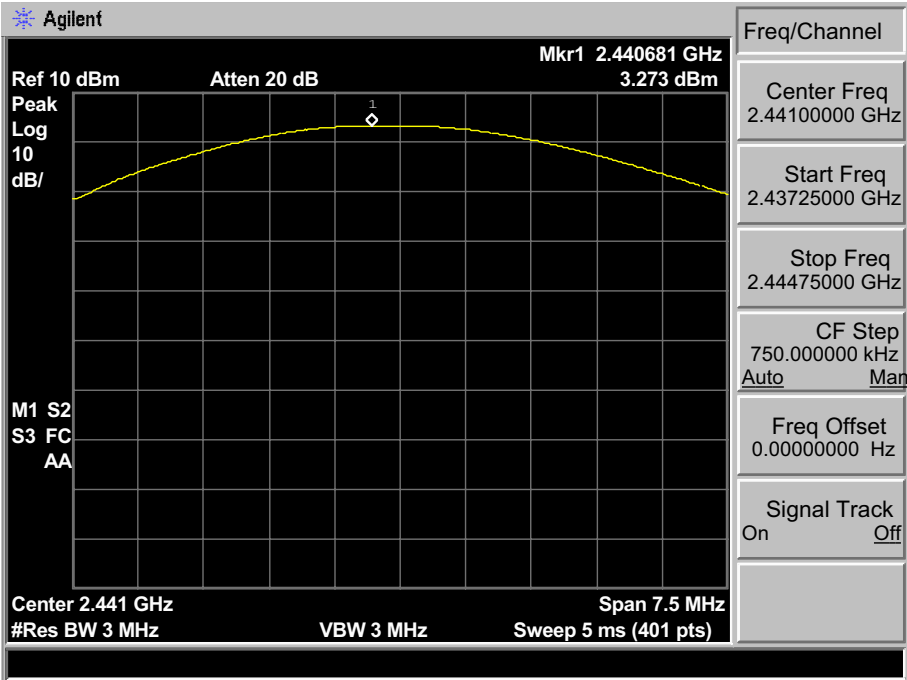
| EUT: Bluetooth Speaker | | | | | |
|------------------------|------------|--------------------|-------|----------------------|-------------|
| M/N: Beolit 15 | | | | | |
| Test date: 2014-10-14 | | Test site: RF site | | Tested by: Tony Tang | |
| Mode | Freq (MHz) | Result (dBm) | Limit | | Margin (dB) |
| | | | dBm | W | |
| GFSK | 2402 | 1.314 | 30.00 | 1 | 28.686 |
| | 2441 | 3.273 | 30.00 | 1 | 26.727 |
| | 2480 | 3.999 | 30.00 | 1 | 26.001 |
| 8-DPSK | 2402 | 0.554 | 21.00 | 0.125 | 20.446 |
| | 2441 | 2.263 | 21.00 | 0.125 | 18.737 |
| | 2480 | 3.070 | 21.00 | 0.125 | 17.930 |
| Conclusion: PASS | | | | | |

3.4. Test Data

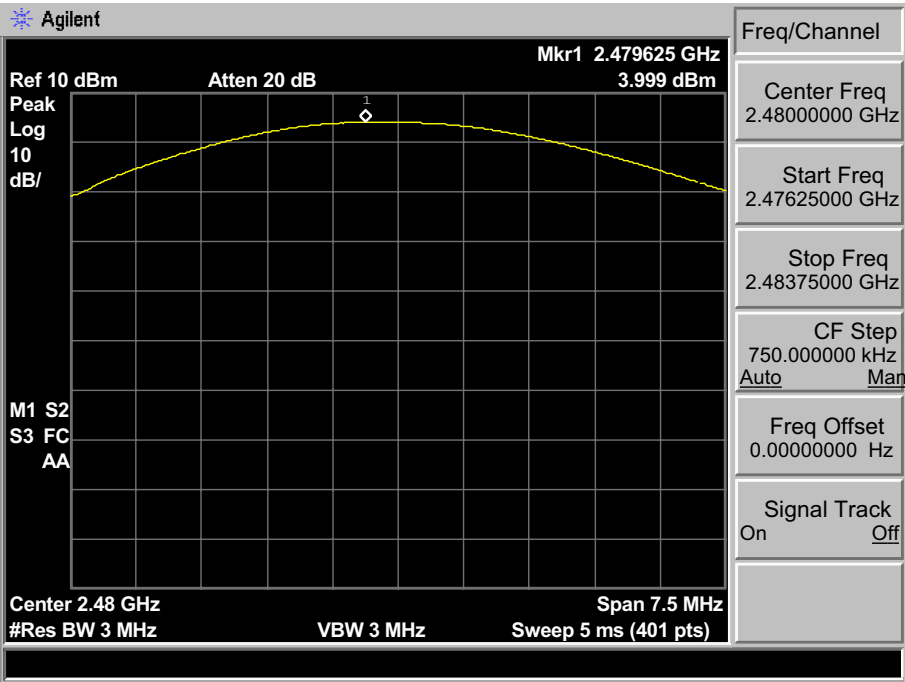
GFSK 2402 MHz



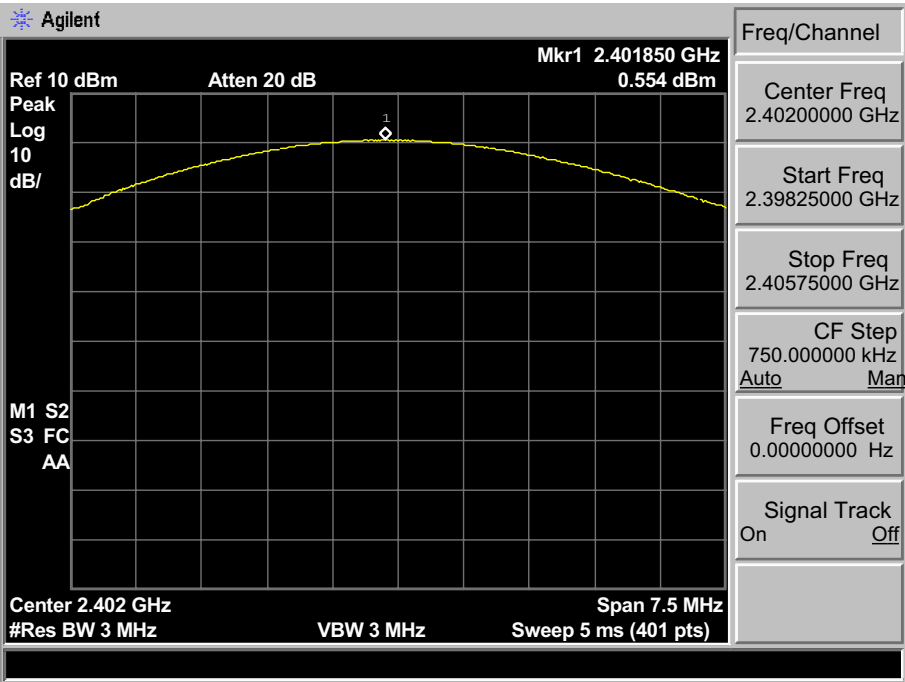
GFSK 2441 MHz



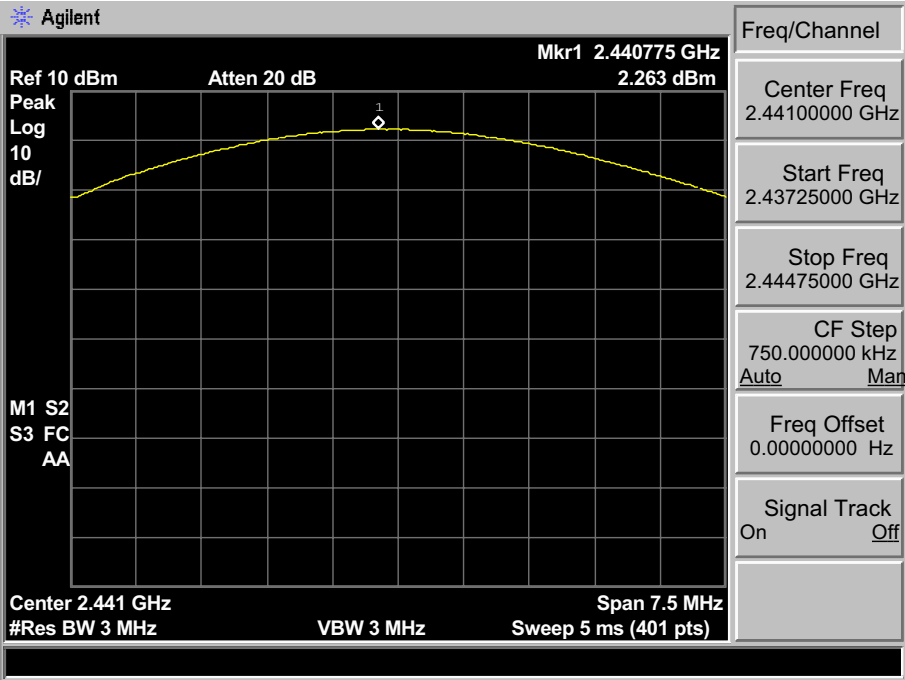
GFSK 2480 MHz



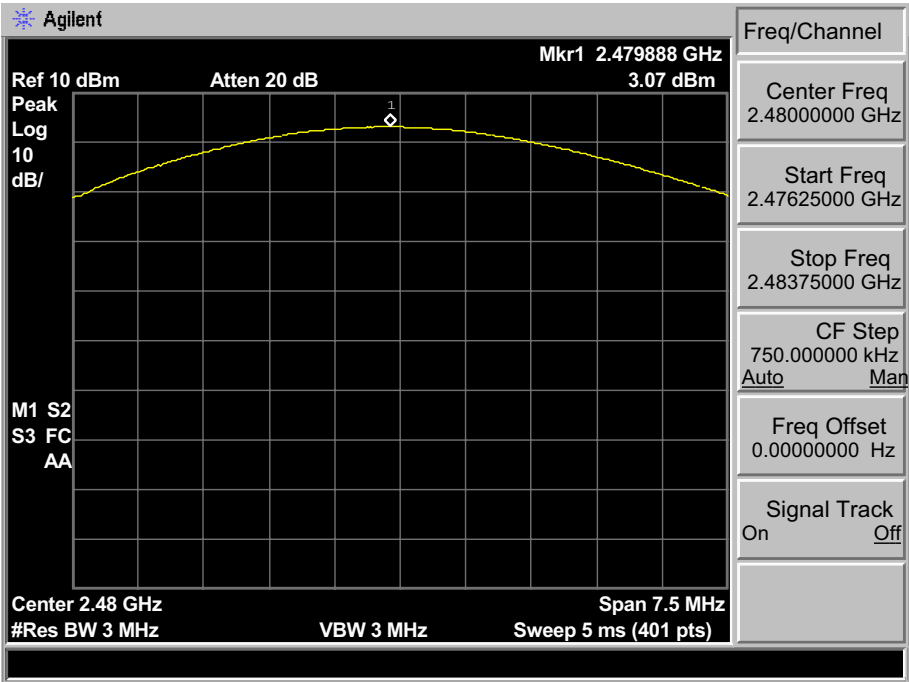
8-DPSK 2402 MHz



8-DPSK 2441 MHz



8-DPSK 2480 MHz



4. 20 DB BANDWIDTH

4.1. Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

4.2. Test Procedure

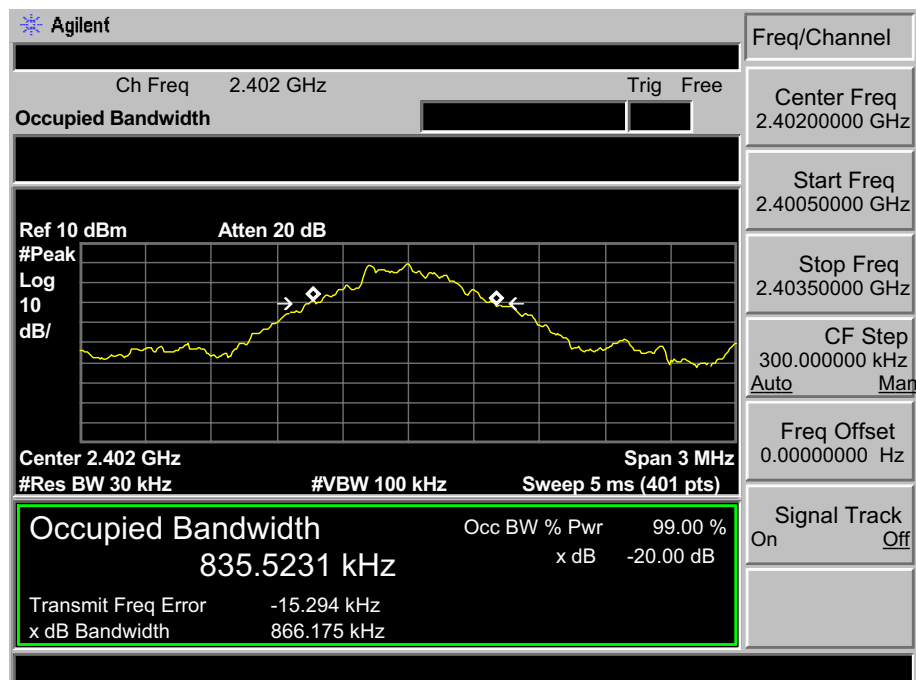
The transmitter output was coupled to a spectrum analyzer via a antenna. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

4.3. Test Result

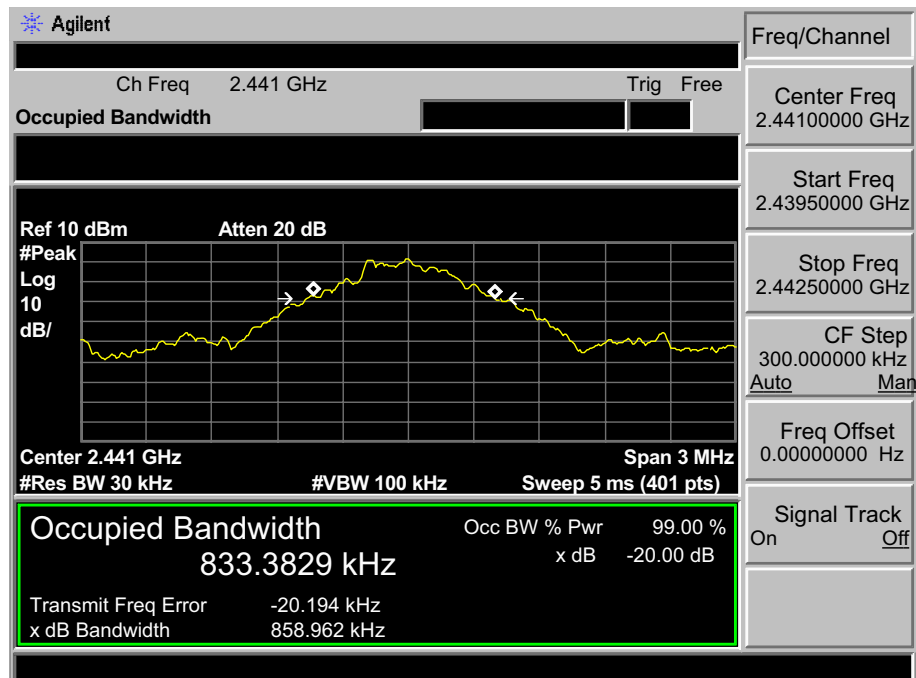
| EUT: Bluetooth Speaker | | | | |
|------------------------|------------|----------------------|-------------|----------------------|
| M/N: Beolit 15 | | | | |
| Test date: 2014-10-14 | | Test site: RF site | | Tested by: Tony Tang |
| Mode | Freq (MHz) | 20dB Bandwidth (MHz) | Limit (kHz) | Conclusion |
| GFSK | 2402 | 0.866 | / | PASS |
| | 2441 | 0.859 | / | PASS |
| | 2480 | 0.858 | / | PASS |
| 8-DPSK | 2402 | 1.220 | / | PASS |
| | 2441 | 1.222 | / | PASS |
| | 2480 | 1.224 | / | PASS |

4.4. Test Data

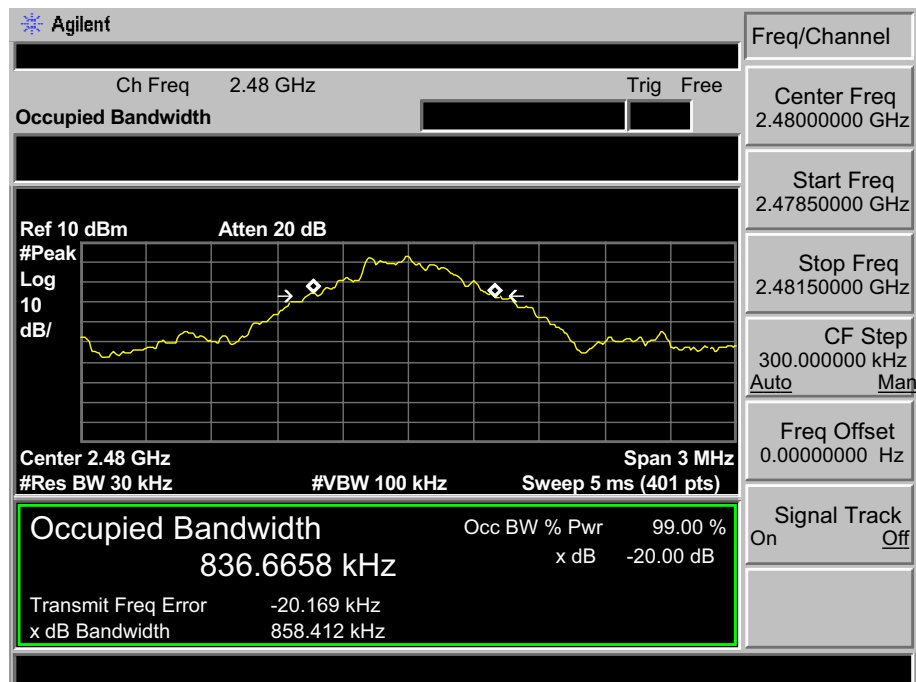
GFSK 2402MHz



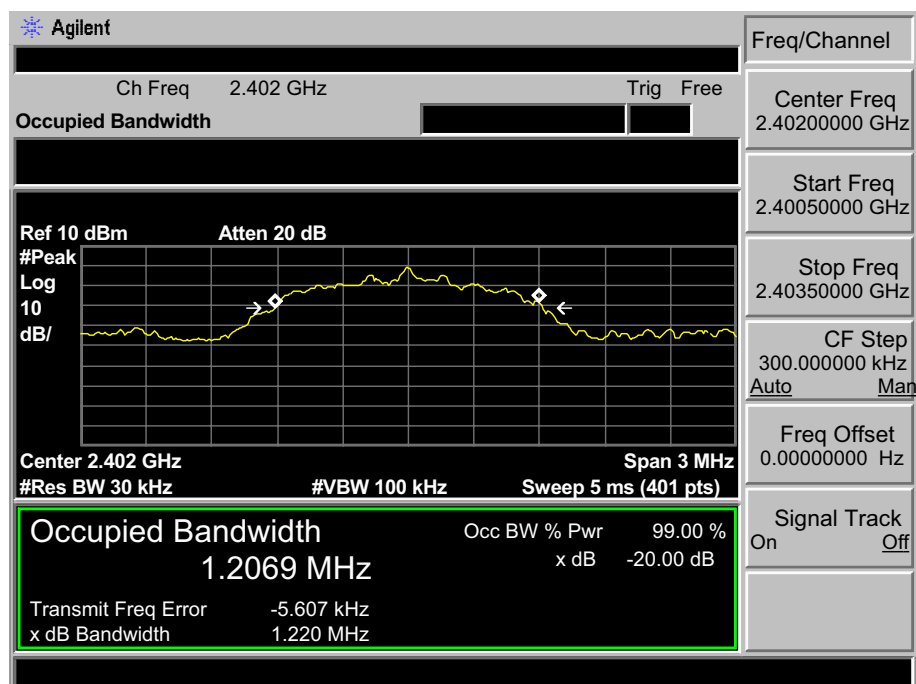
GFSK 2441MHz



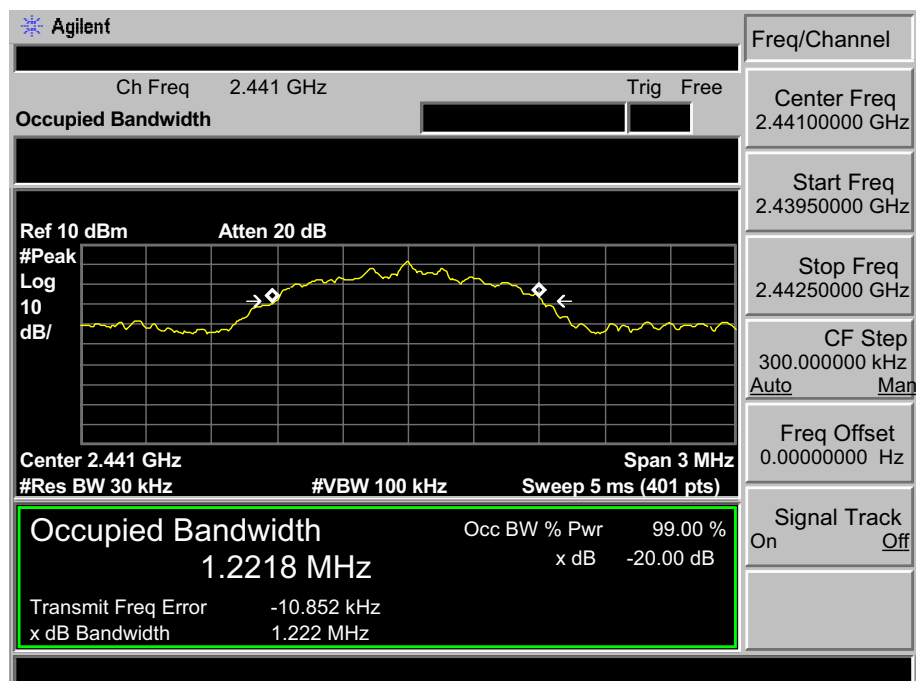
GFSK 2480MHz



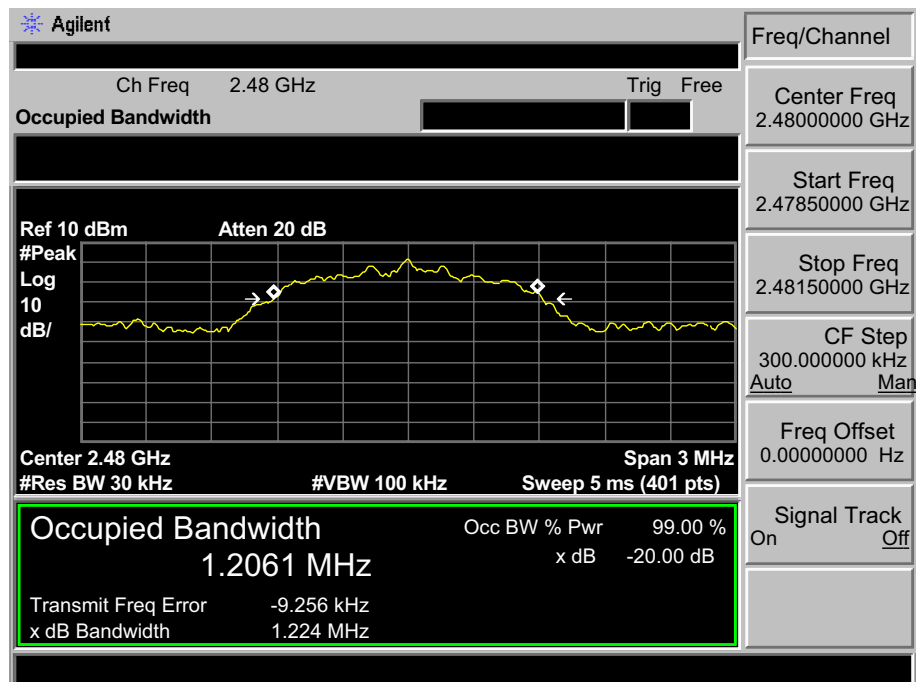
8-DPSK 2402MHz



8-DPSK 2441MHz



8-DPSK 2480MHz



5. CARRIER FREQUENCY SEPARATION

5.1. Limit

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

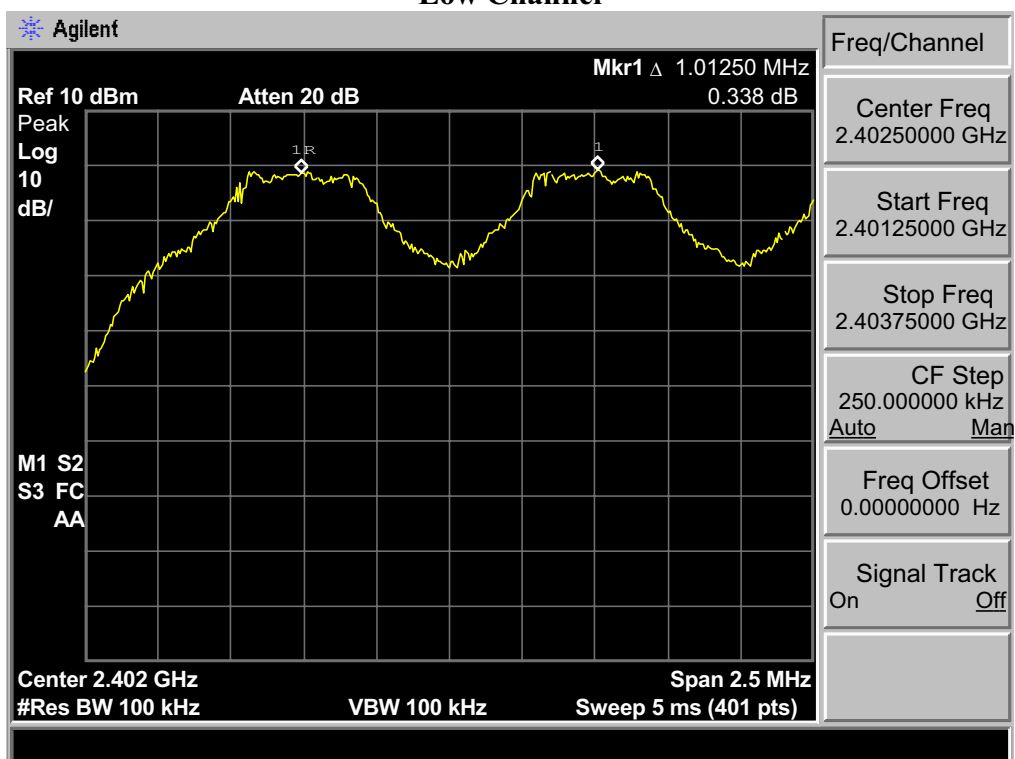
5.2. Test Procedure

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

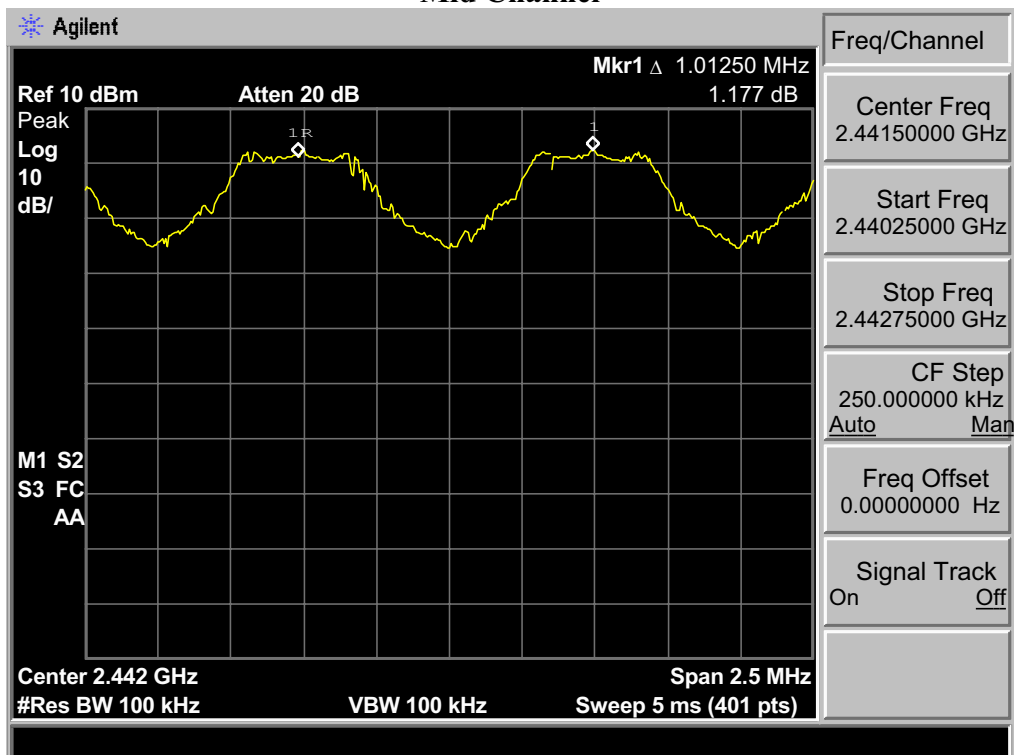
5.3. Test Result

| EUT: Bluetooth Speaker | | | | |
|------------------------|---------|--------------------------|---|----------------------|
| M/N: Beolit 15 | | | | |
| Test date: 2014-10-14 | | | Test site: RF site | Tested by: Tony Tang |
| Mode | Channel | Channel separation (MHz) | Limit | Conclusion |
| GFSK | Low CH | 1.013 | 0.866 MHz | PASS |
| | Mid CH | 1.013 | 0.859 MHz | PASS |
| | High CH | 1.000 | 0.858 MHz | PASS |
| 8-DPSK | Low CH | 1.006 | > 2/3 of the 20dB Bandwidth or 25[kHz](whichever is greater) | PASS |
| | Mid CH | 1.013 | | PASS |
| | High CH | 1.006 | | PASS |

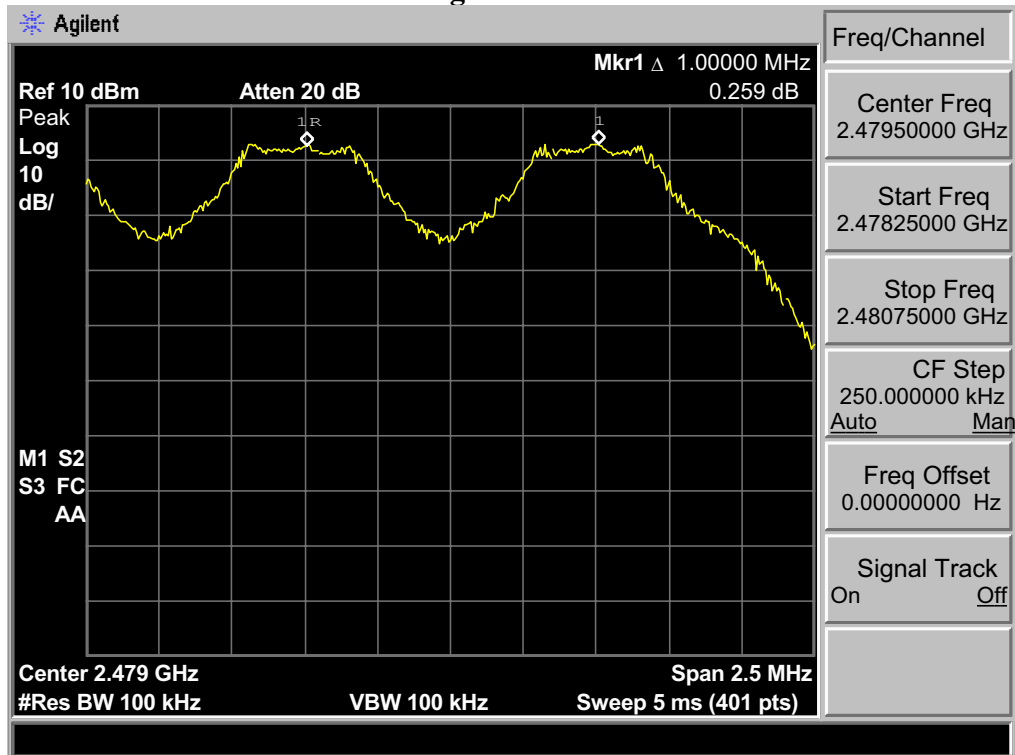
5.4. Test Data

GFSK
Low Channel

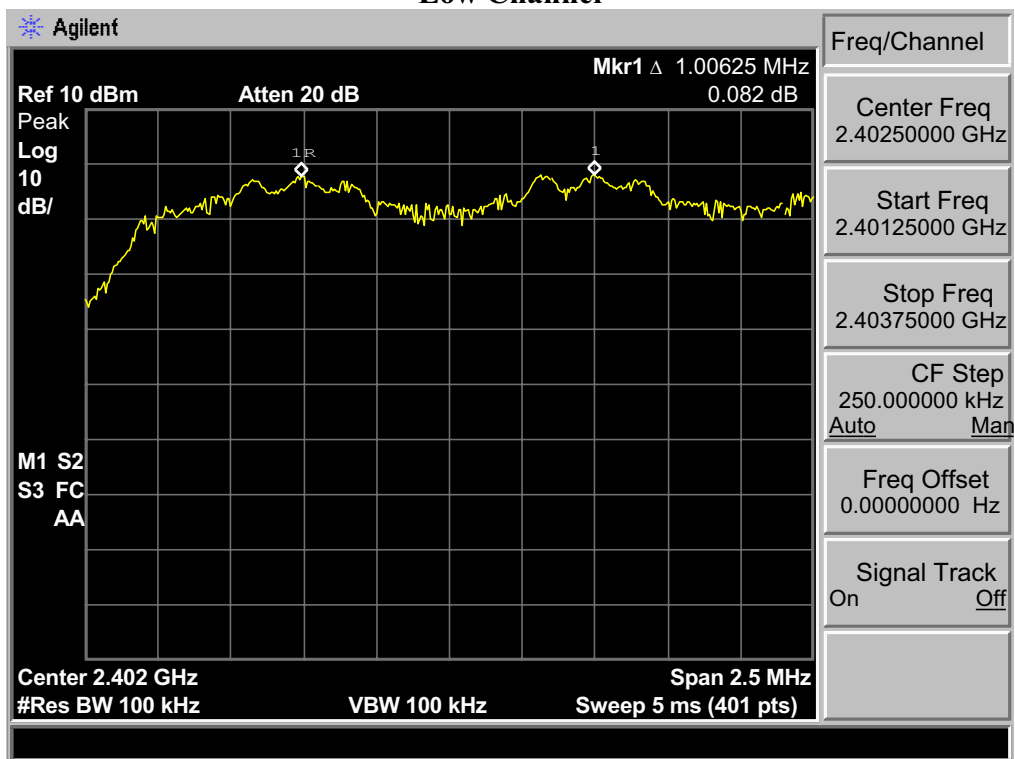
Mid Channel



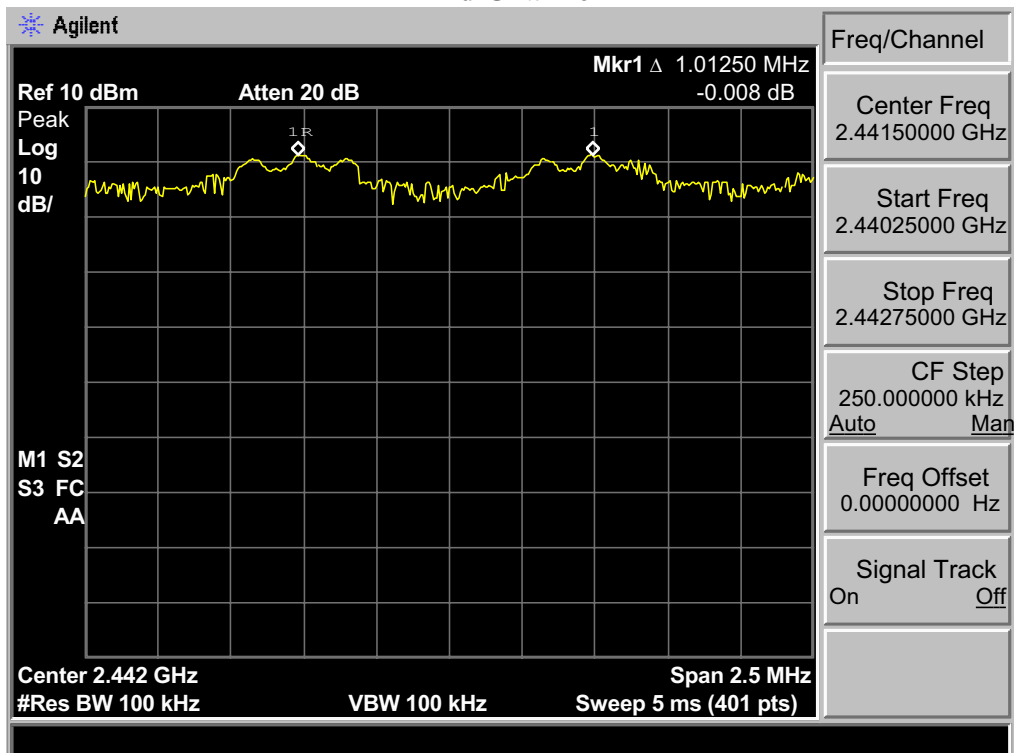
High Channel



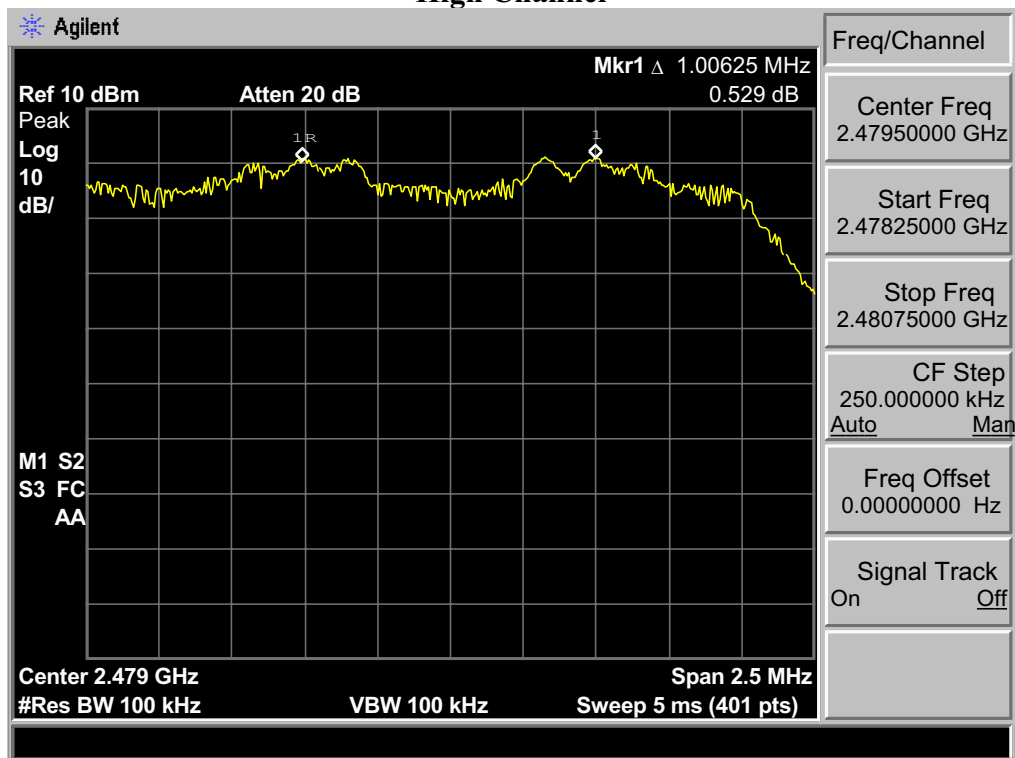
8-DPSK Low Channel



Mid Channel



High Channel



6. NUMBER OF HOPPING CHANNEL

6.1. Limit

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

6.2. Test Procedure

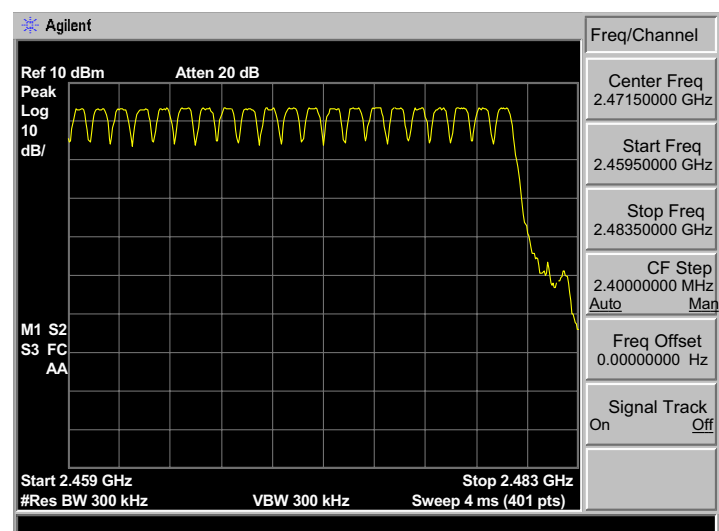
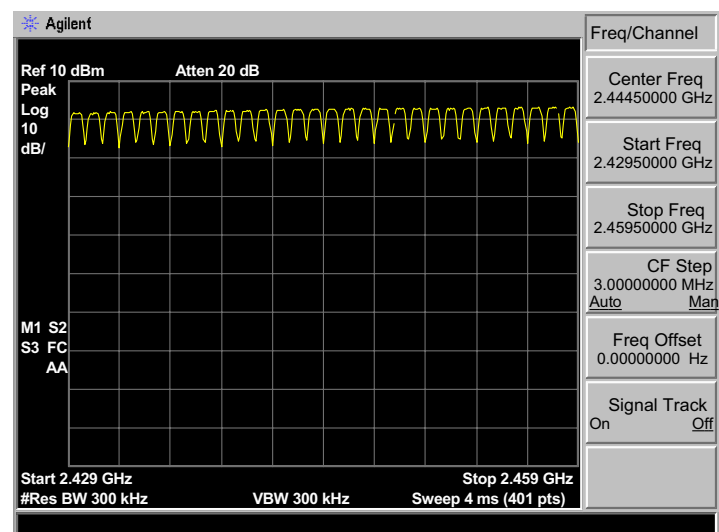
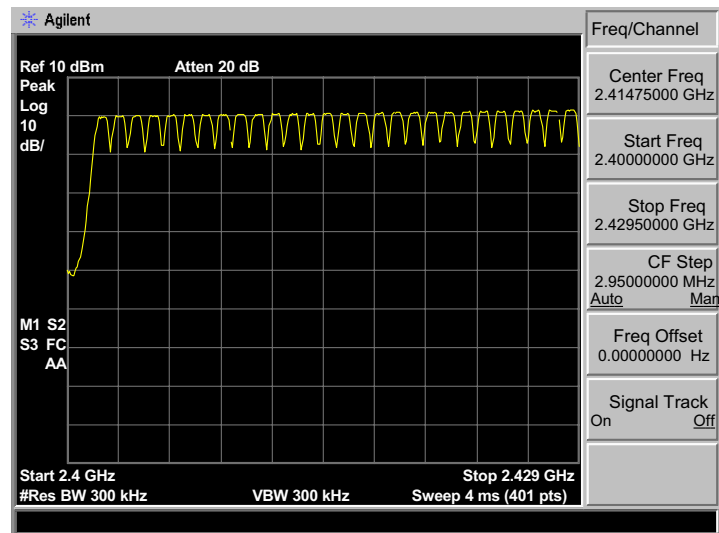
The transmitter output was coupled to a spectrum analyzer via a antenna. The number of hopping channel was measured by spectrum analyzer with 300kHz RBW and 300kHz VBW.

6.3. Test Result

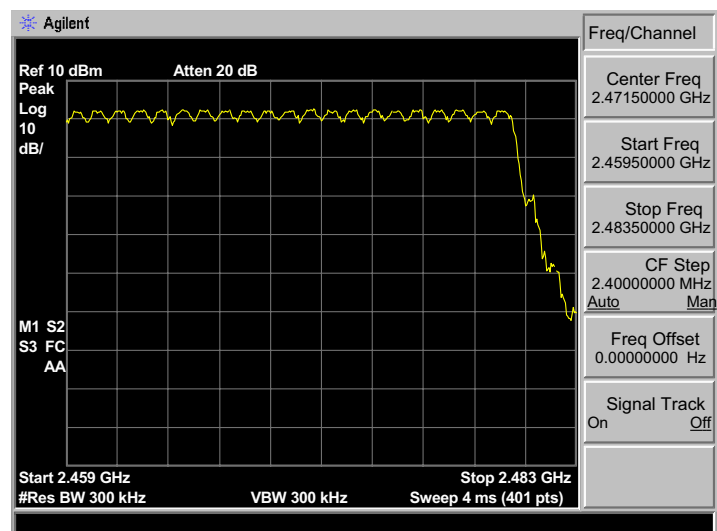
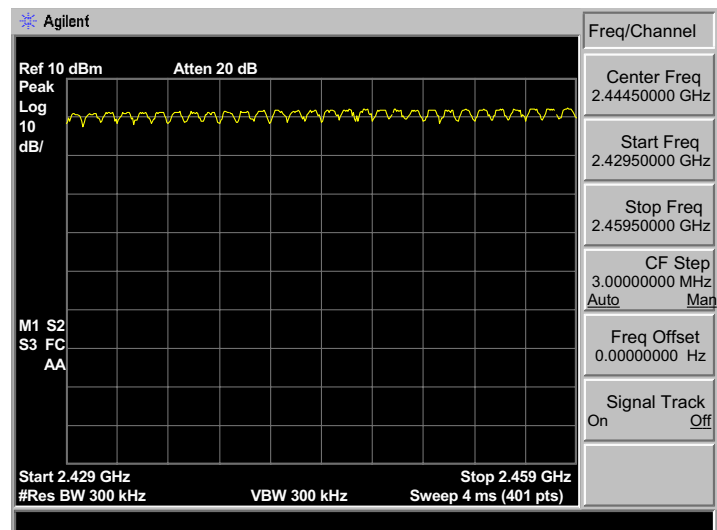
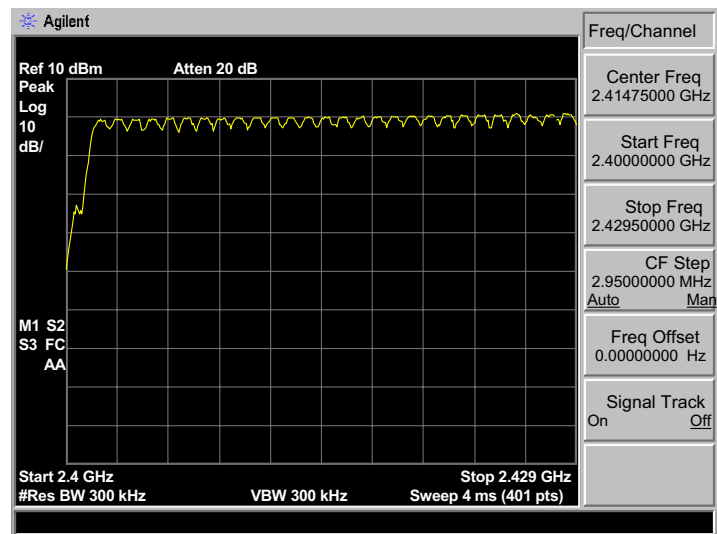
| EUT: Bluetooth Speaker | | | |
|------------------------|---------------------------|--------------------|----------------------|
| M/N: Beolit 15 | | | |
| Test date: 2014-10-14 | | Test site: RF site | Tested by: Tony.Tang |
| Mode | Number of hopping channel | Limit | Conclusion |
| GFSK | 79 | >15 | PASS |
| 8-DPSK | 79 | >15 | PASS |

6.4. Test Data

GFSK



8-DPSK



7. DWELL TIME

7.1. Limit

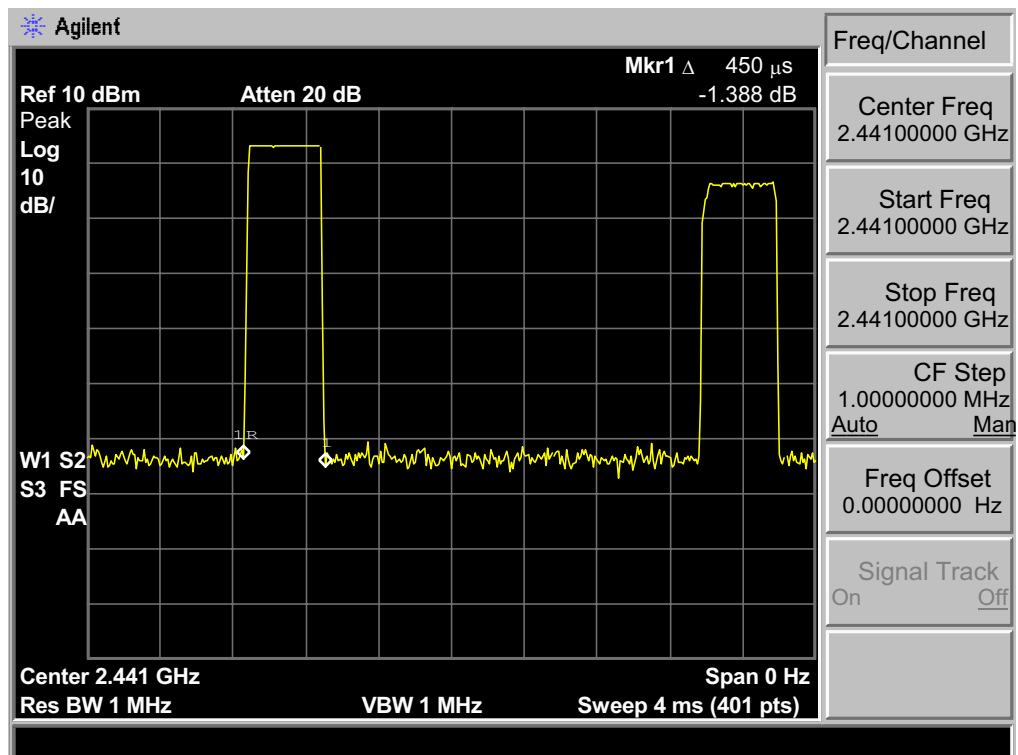
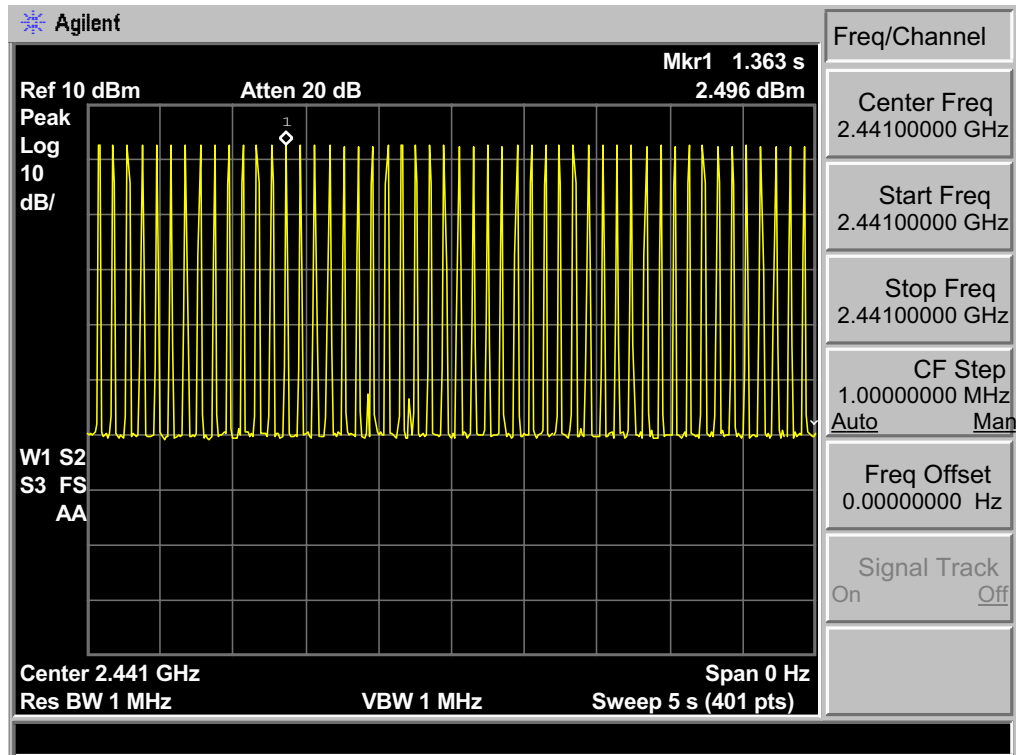
The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

7.2. Test Result

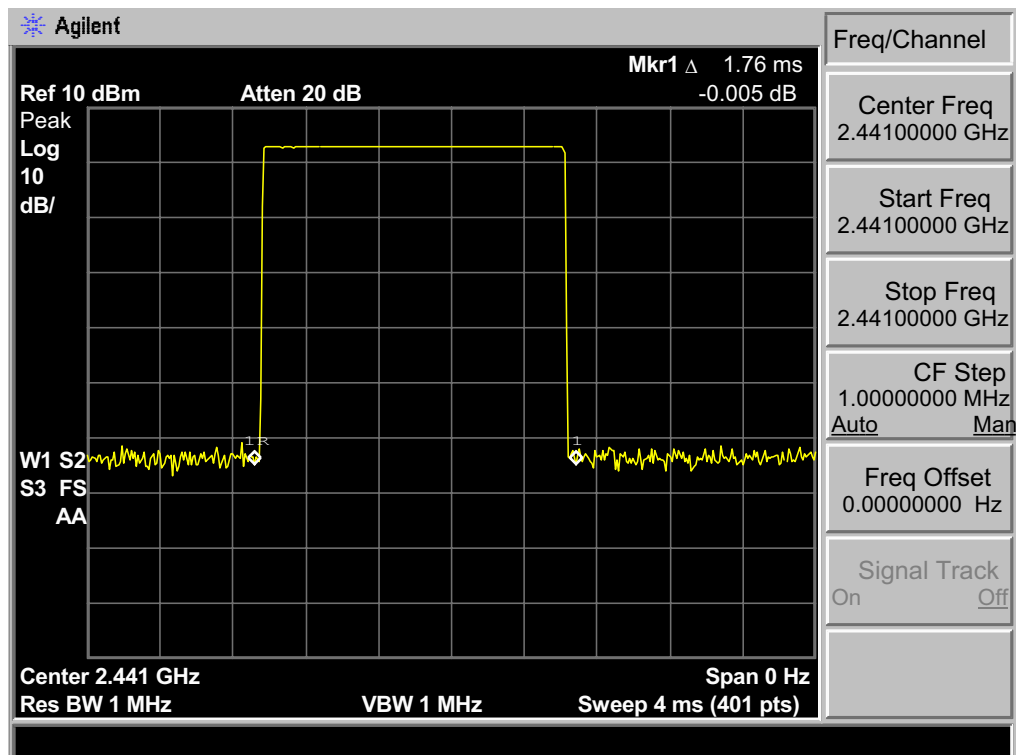
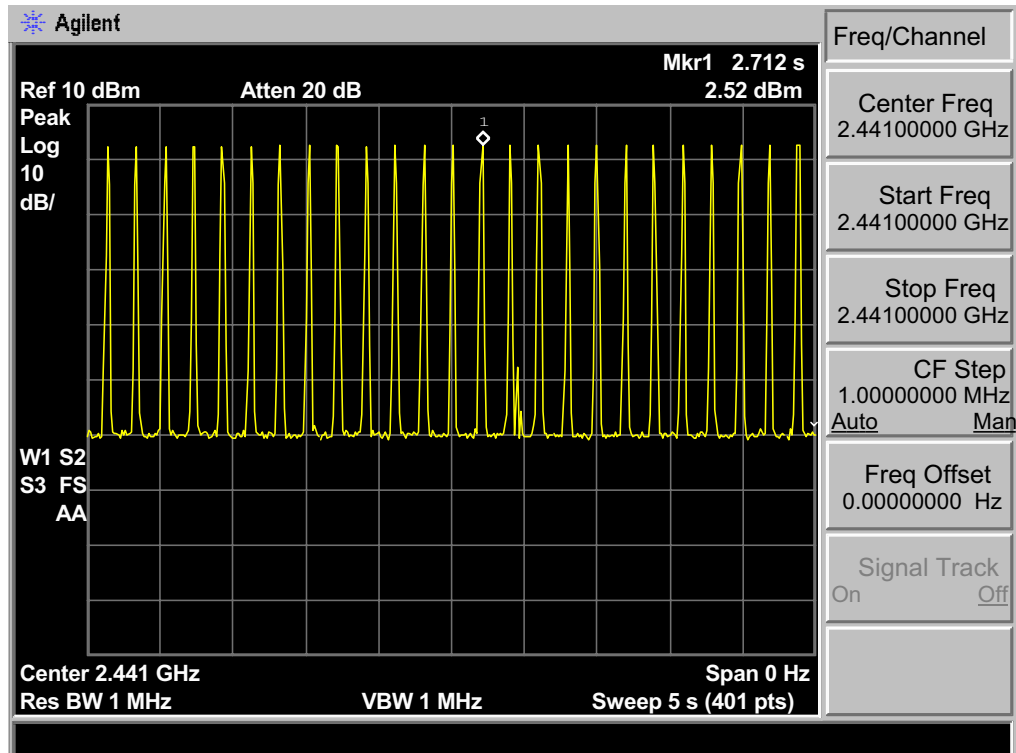
| EUT: Bluetooth Speaker | | | |
|------------------------|-----------------|--------------------|----------------------|
| M/N: Beolit 15 | | | |
| Test date: 2014-10-14 | | Test site: RF site | Tested by: Tony Tang |
| Mode | Dwell time (ms) | Limit | Conclusion |
| GFSK DH1 | 142.20 | <400ms | PASS |
| GFSK DH3 | 278.08 | <400ms | PASS |
| GFSK DH5 | 318.02 | <400ms | PASS |
| 8-DPSK DH1 | 158.00 | <400ms | PASS |
| 8-DPSK DH3 | 278.08 | <400ms | PASS |
| 8-DPSK DH5 | 325.54 | <400ms | PASS |

7.3. Test Data

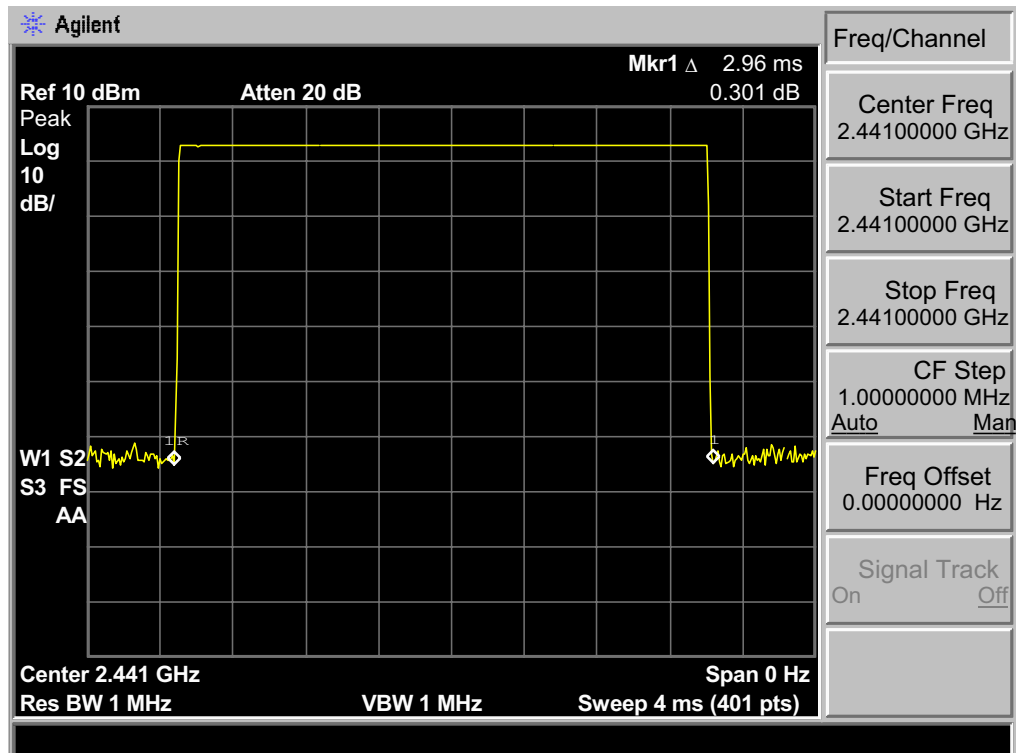
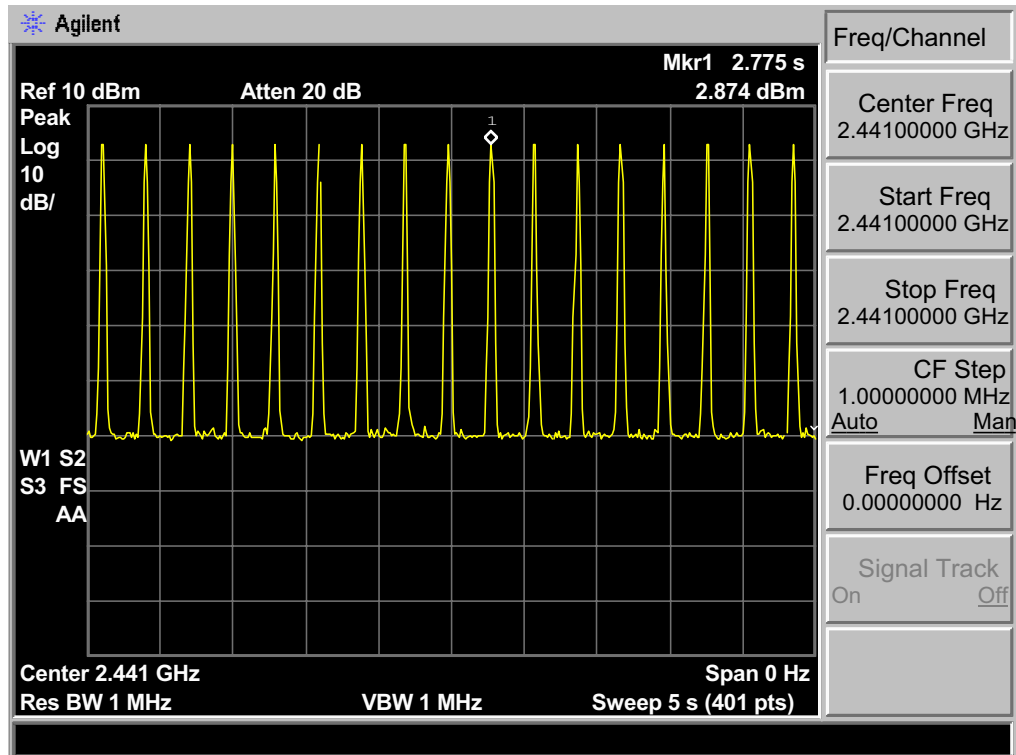
GFSK DH1 : $50\text{hop}/5\text{s} * 0.4 * 79 * 0.45\text{ms} = 142.20\text{ms}$



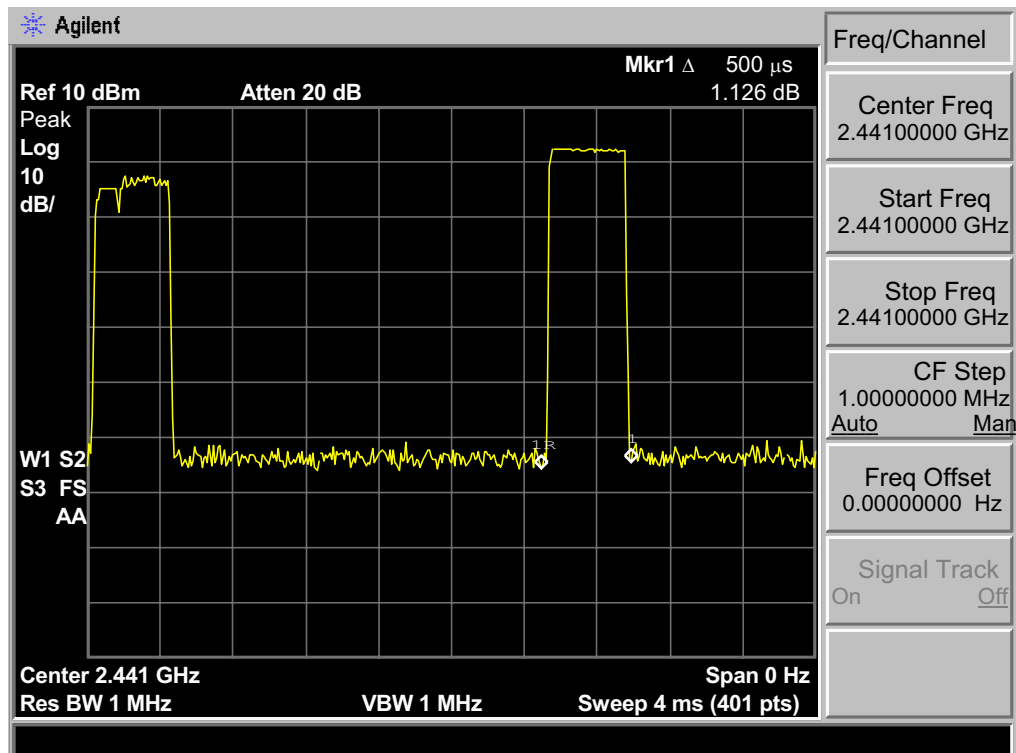
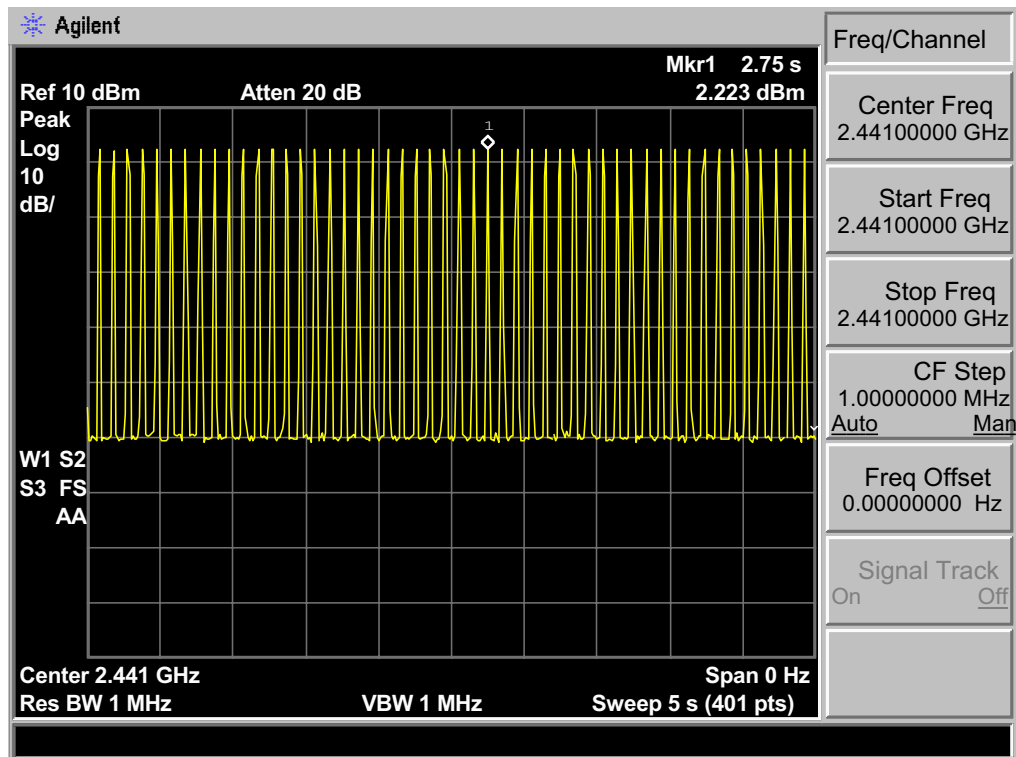
GFSK DH3 : $25\text{hop}/5\text{s} * 0.4 * 79 * 1.76\text{ms} = 278.08\text{ms}$



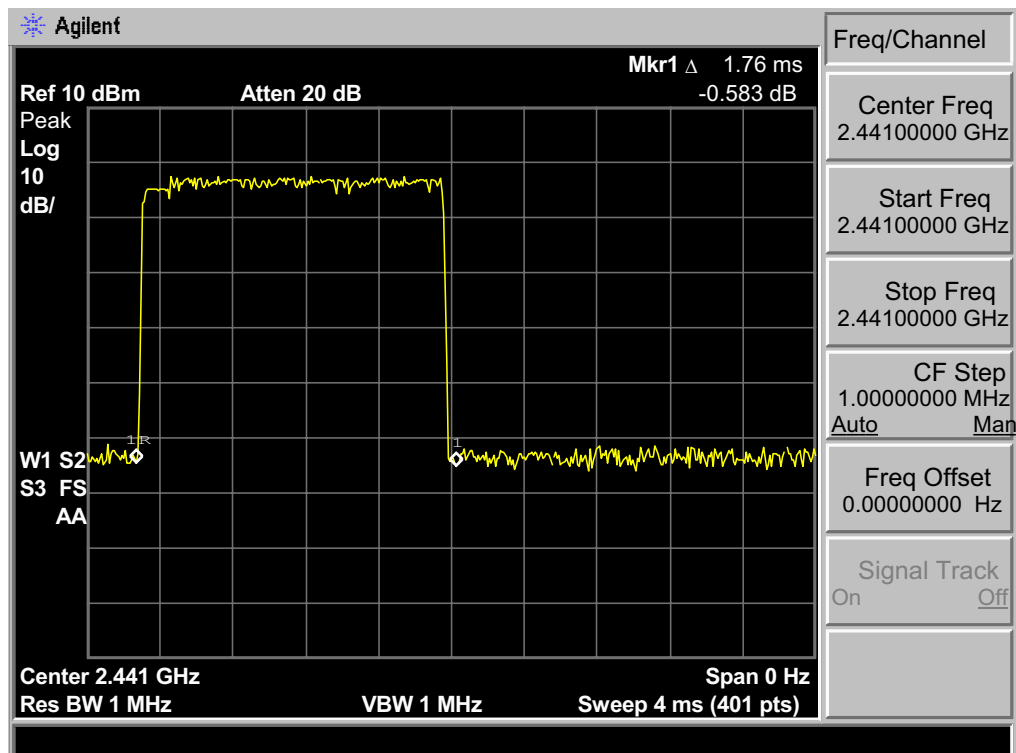
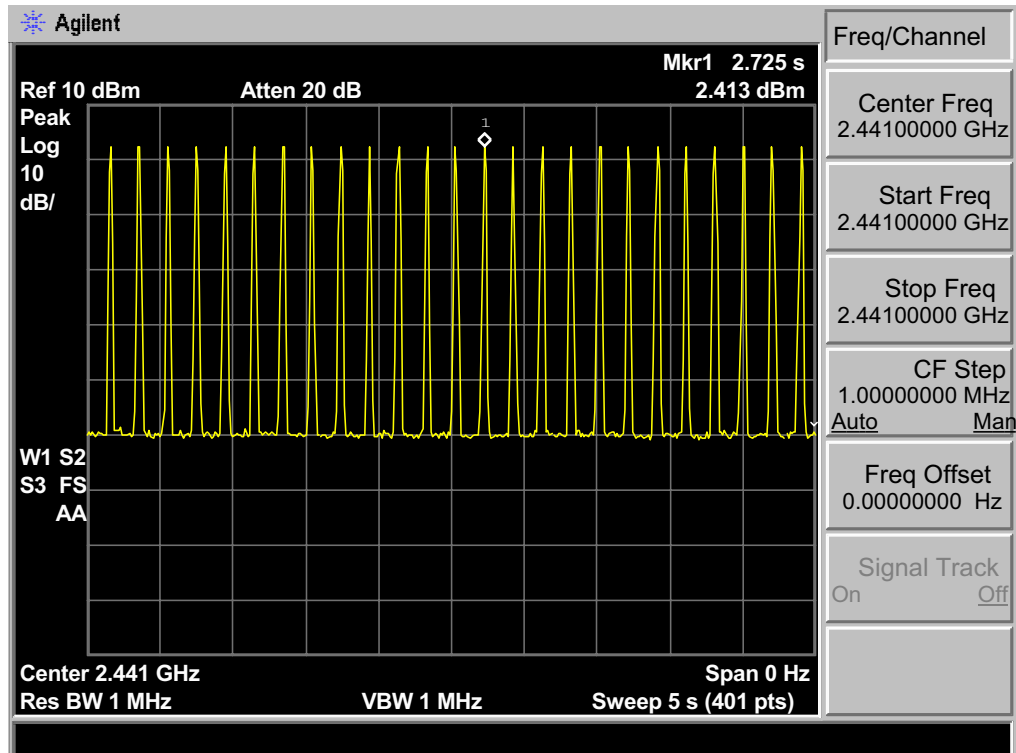
GSFK DH5 : $17\text{hop}/5\text{s} * 0.4 * 79 * 2.96\text{ms} = 318.02\text{ms}$



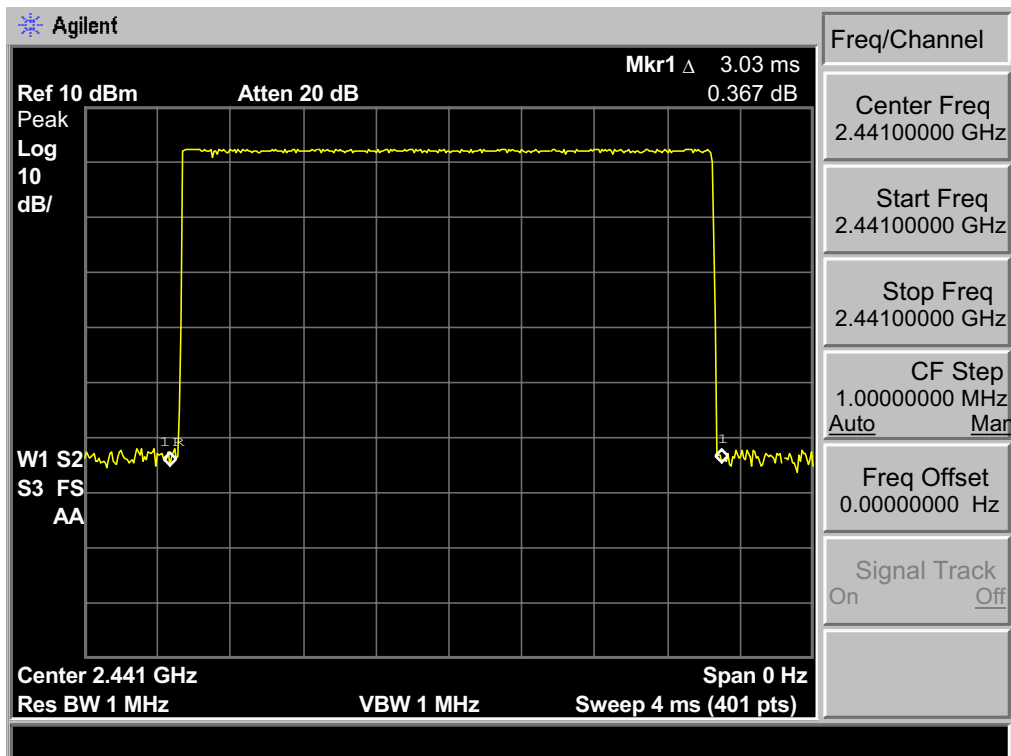
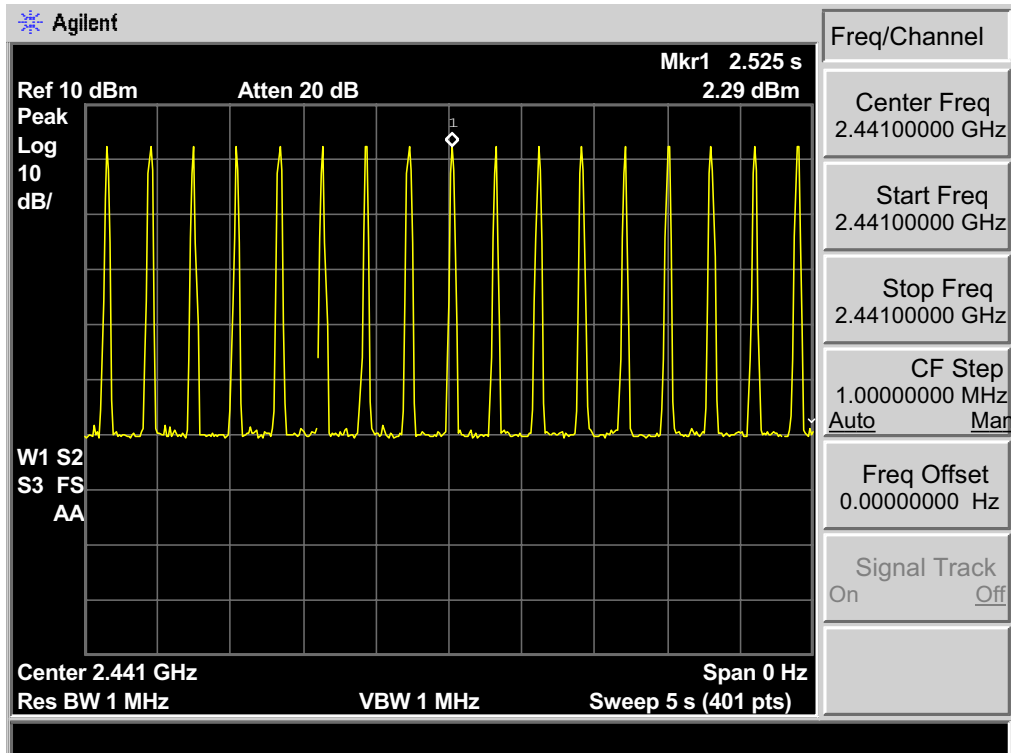
8-DPSK DH1 : $50\text{hop}/5\text{s} * 0.4 * 79 * 0.50\text{ms} = 158.00\text{ms}$



8-DPSK DH3 : $25\text{hop}/5\text{s} * 0.4 * 79 * 1.76\text{ms} = 278.08\text{ms}$



8-DPSK DH5 : $17\text{hop}/5\text{s} * 0.4 * 79 * 3.03\text{ms} = 325.54 \text{ ms}$



8. RADIATED EMISSIONS

8.1. Limit

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.

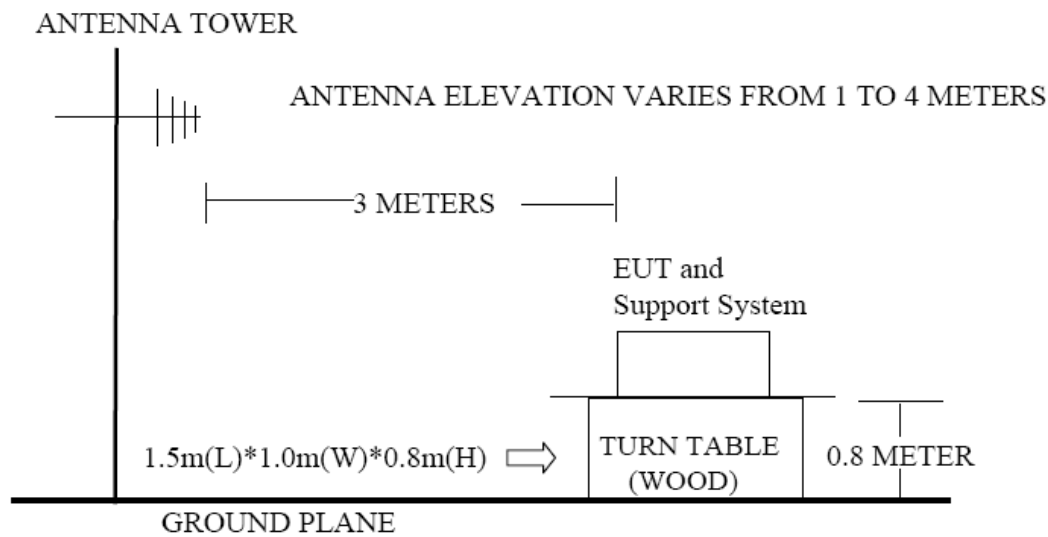
15.205 Restricted frequency band

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

15.209 Limit

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

8.2. Block Diagram of Test setup



8.3. Test Procedure

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

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

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

8.4. Test Result

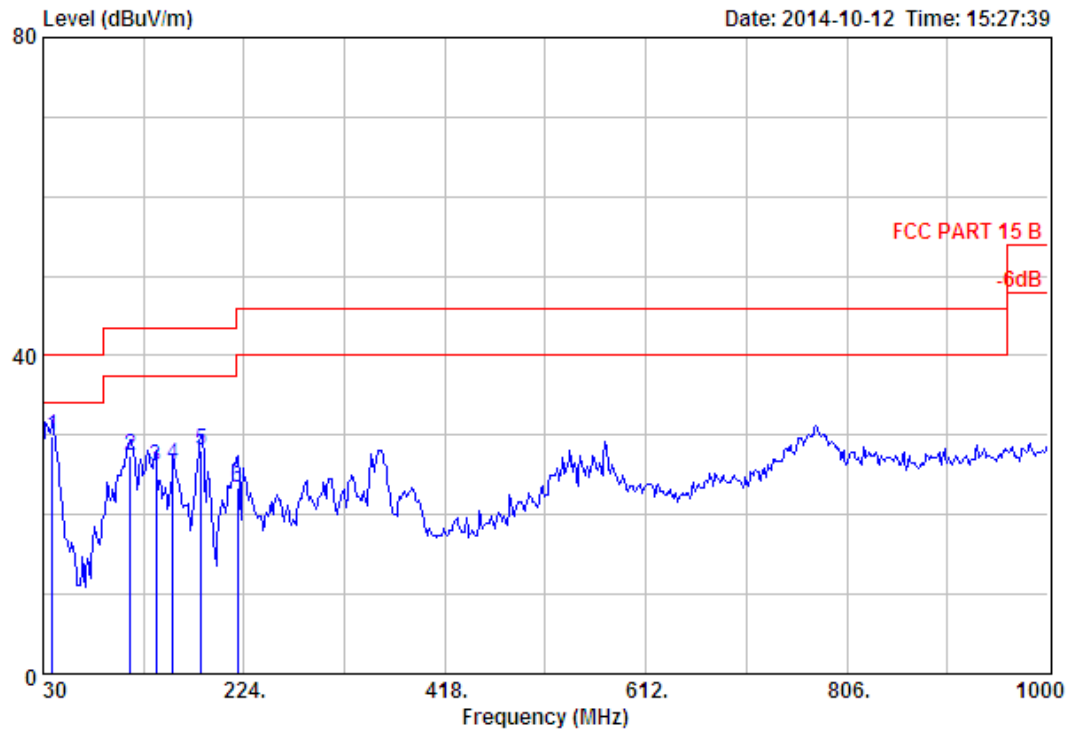
| 30MHz—25GHz Radiated emission Test result |
|--|
| EUT: Bluetooth Speaker |
| M/N: Beolit 15 |
| Power: AC 120V/60Hz |
| Test date: 2014-10-12 Test site: 3m Chamber Tested by: Tony Tang |
| Test mode: Tx Mode |
| Pass |

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 、2441MHz and 2480MHz 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.

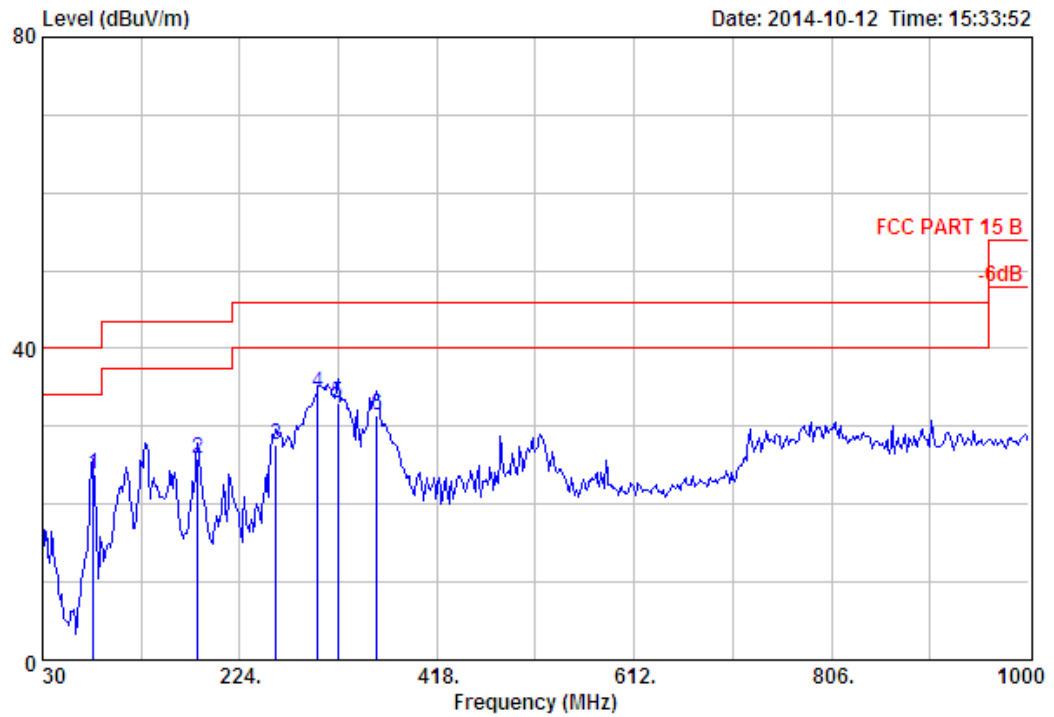
8.5. Test Data

30 MHz – 1000 MHz



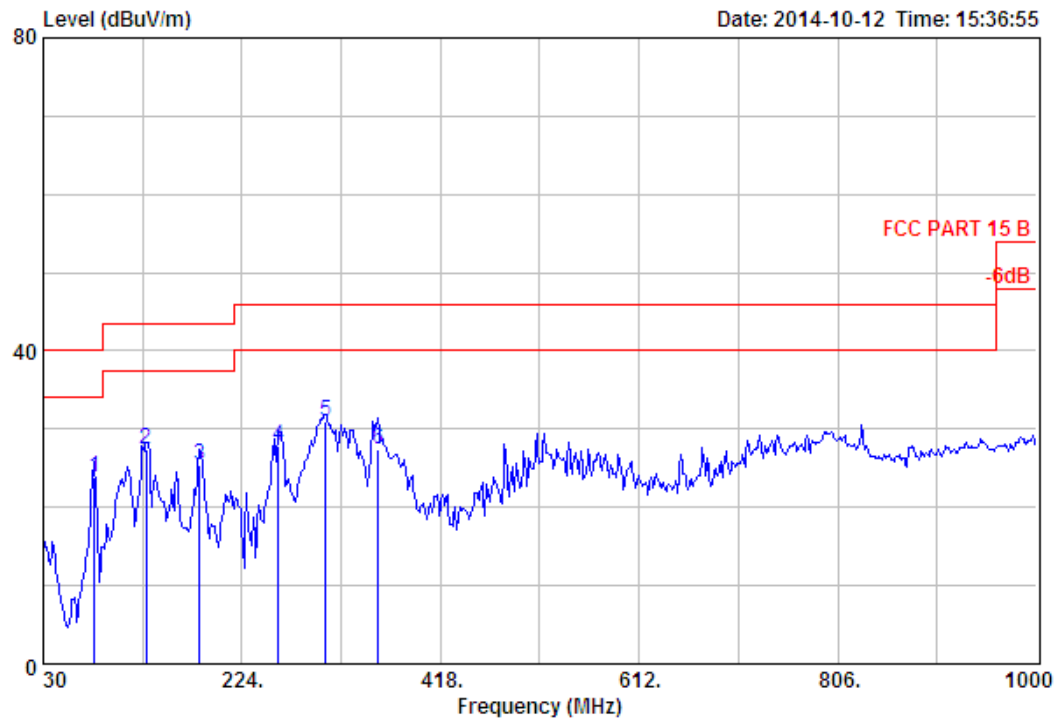
| | | | |
|-------------|---------------------------------------|-----------|------------|
| Site no. | : 3m Chamber | Data no. | : 223 |
| Dis. / Ant. | : 3m 27137 | Ant. pol. | : VERTICAL |
| Limit | : FCC PART 15 B | | |
| Env. / Ins. | : Temp:25.6';Humi:56%;Press:101.52kPa | | |
| Engineer | : Tony | | |
| EUT | : Bluetooth Speaker | | |
| Power | : AC 120V/60Hz | | |
| M/N | : Beolit 15 | | |
| Test Mode | : GFSK TX 2402MHz | | |

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission | | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------|--------------------|----------------|--------|
| | | | | | Level (dBuV/m) | Limits (dBuV/m) | | |
| 1 | 38.73 | 13.48 | 0.79 | 15.56 | 29.83 | 40.00 | 10.17 | QP |
| 2 | 114.39 | 10.85 | 1.42 | 15.19 | 27.46 | 43.50 | 16.04 | QP |
| 3 | 138.64 | 11.42 | 1.54 | 13.20 | 26.16 | 43.50 | 17.34 | QP |
| 4 | 155.13 | 10.67 | 1.69 | 13.97 | 26.33 | 43.50 | 17.17 | QP |
| 5 | 182.29 | 8.76 | 1.67 | 17.55 | 27.98 | 43.50 | 15.52 | QP |
| 6 | 218.18 | 9.00 | 1.90 | 12.55 | 23.45 | 46.00 | 22.55 | QP |



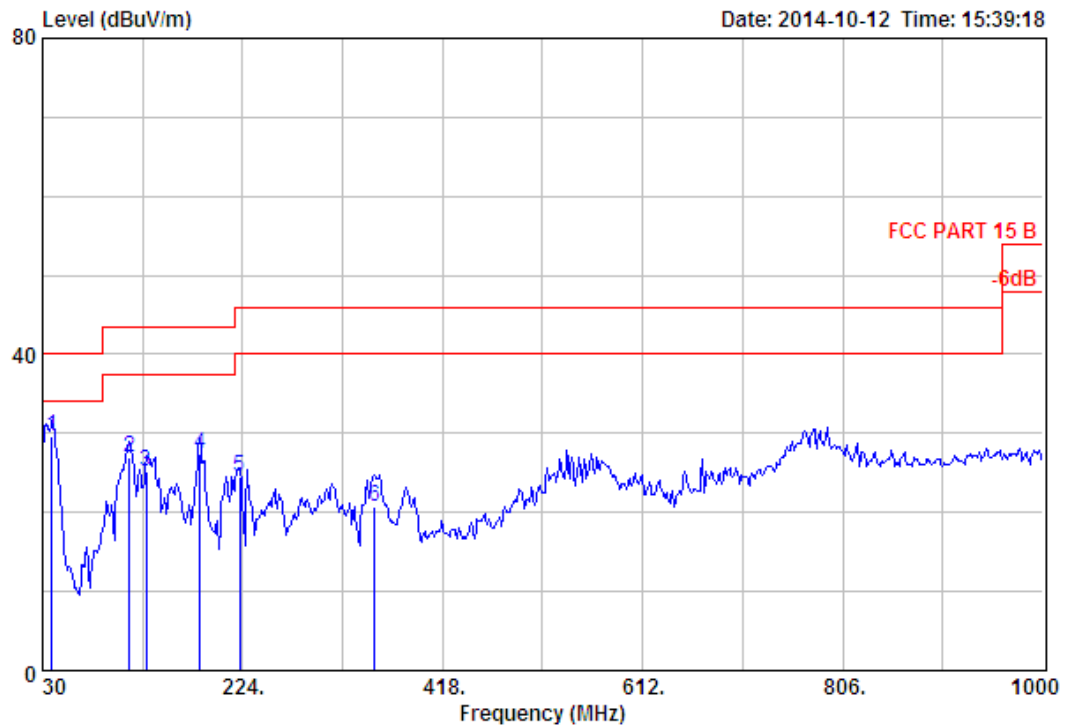
Site no. : 3m Chamber Data no. : 224
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2402MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 80.44 | 7.07 | 1.25 | 15.56 | 23.88 | 40.00 | 16.12 | QP |
| 2 | 182.29 | 8.76 | 1.67 | 15.33 | 25.76 | 43.50 | 17.74 | QP |
| 3 | 259.89 | 12.97 | 2.25 | 12.35 | 27.57 | 46.00 | 18.43 | QP |
| 4 | 300.63 | 13.03 | 2.37 | 18.81 | 34.21 | 46.00 | 11.79 | QP |
| 5 | 320.03 | 13.57 | 2.40 | 17.09 | 33.06 | 46.00 | 12.94 | QP |
| 6 | 358.83 | 14.45 | 2.56 | 14.50 | 31.51 | 46.00 | 14.49 | QP |



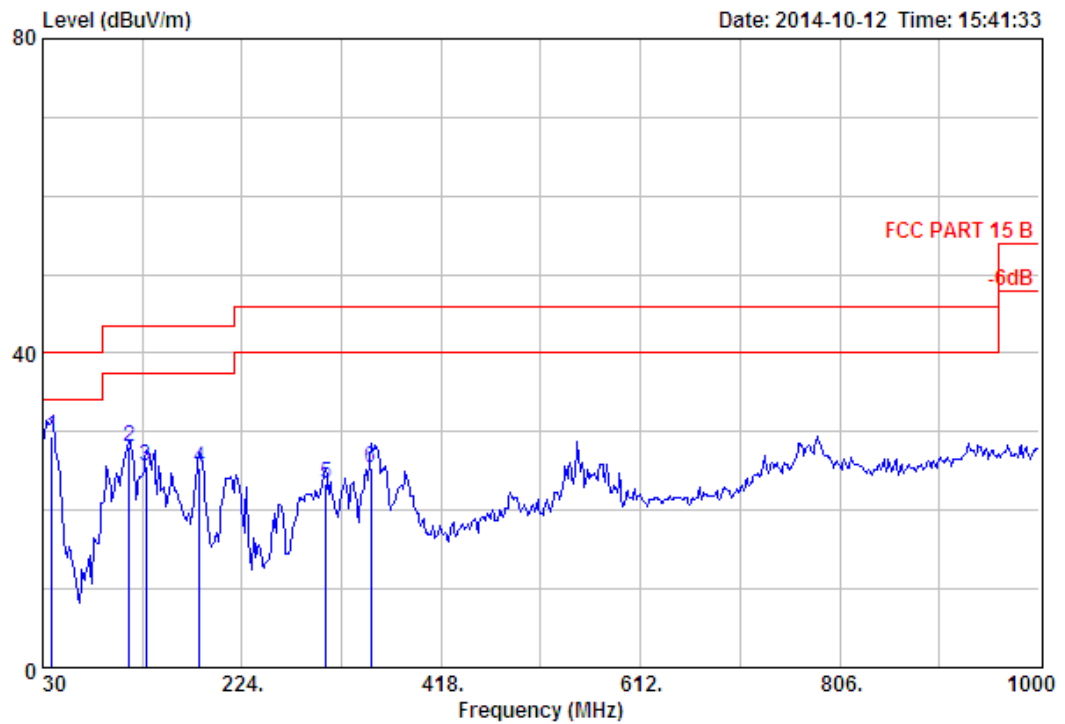
Site no. : 3m Chamber Data no.: 225
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2441MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 80.44 | 7.07 | 1.25 | 15.63 | 23.95 | 40.00 | 16.05 | QP |
| 2 | 130.88 | 11.33 | 1.47 | 14.59 | 27.39 | 43.50 | 16.11 | QP |
| 3 | 182.29 | 8.76 | 1.67 | 14.88 | 25.31 | 43.50 | 18.19 | QP |
| 4 | 259.89 | 12.97 | 2.25 | 12.64 | 27.86 | 46.00 | 18.14 | QP |
| 5 | 305.48 | 13.11 | 2.31 | 15.50 | 30.92 | 46.00 | 15.08 | QP |
| 6 | 356.89 | 14.46 | 2.56 | 10.41 | 27.43 | 46.00 | 18.57 | QP |



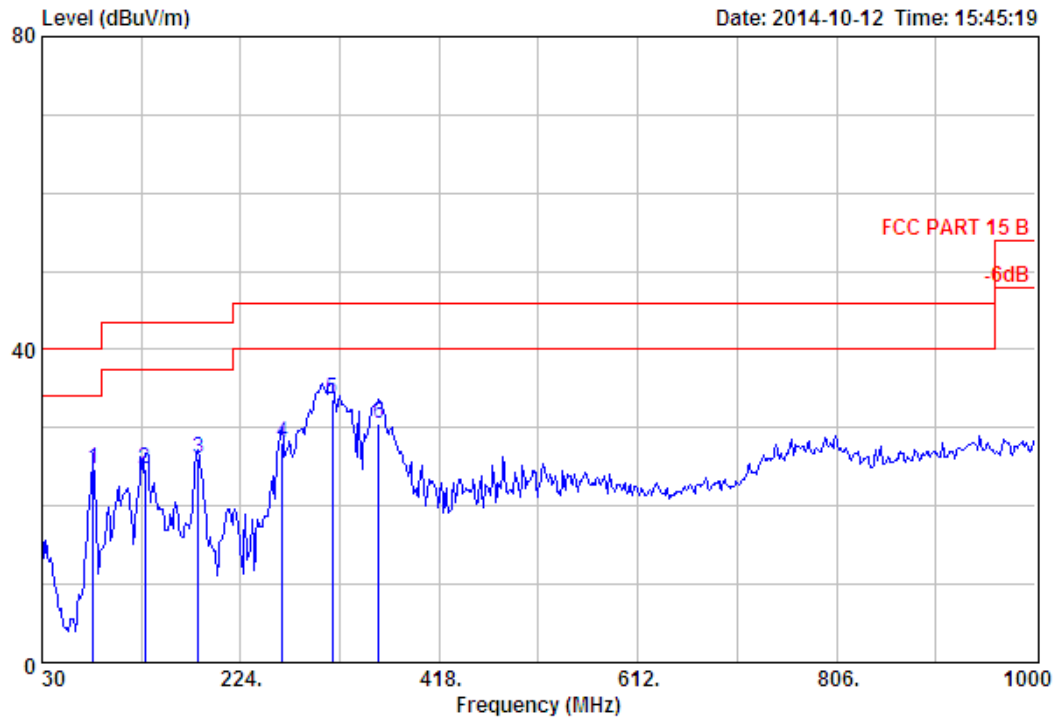
Site no. : 3m Chamber Data no. : 226
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2441MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 38.73 | 13.48 | 0.79 | 15.40 | 29.67 | 40.00 | 10.33 | QP |
| 2 | 114.39 | 10.85 | 1.42 | 14.75 | 27.02 | 43.50 | 16.48 | QP |
| 3 | 130.88 | 11.33 | 1.47 | 12.41 | 25.21 | 43.50 | 18.29 | QP |
| 4 | 182.29 | 8.76 | 1.67 | 17.00 | 27.43 | 43.50 | 16.07 | QP |
| 5 | 221.09 | 9.26 | 2.01 | 13.35 | 24.62 | 46.00 | 21.38 | QP |
| 6 | 352.04 | 14.47 | 2.53 | 3.72 | 20.72 | 46.00 | 25.28 | QP |



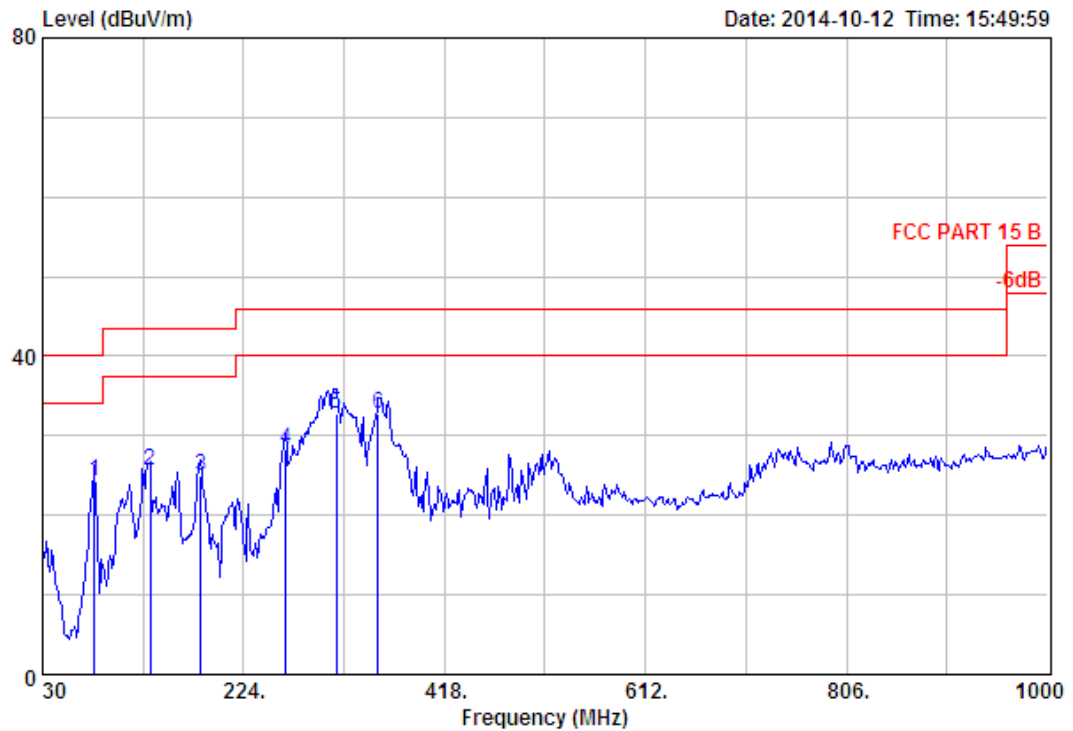
Site no. : 3m Chamber Data no. : 227
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2480MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 38.73 | 13.48 | 0.79 | 15.14 | 29.41 | 40.00 | 10.59 | QP |
| 2 | 114.39 | 10.85 | 1.42 | 15.73 | 28.00 | 43.50 | 15.50 | QP |
| 3 | 130.88 | 11.33 | 1.47 | 12.77 | 25.57 | 43.50 | 17.93 | QP |
| 4 | 182.29 | 8.76 | 1.67 | 14.98 | 25.41 | 43.50 | 18.09 | QP |
| 5 | 305.48 | 13.11 | 2.31 | 7.92 | 23.34 | 46.00 | 22.66 | QP |
| 6 | 349.13 | 14.44 | 2.50 | 8.49 | 25.43 | 46.00 | 20.57 | QP |



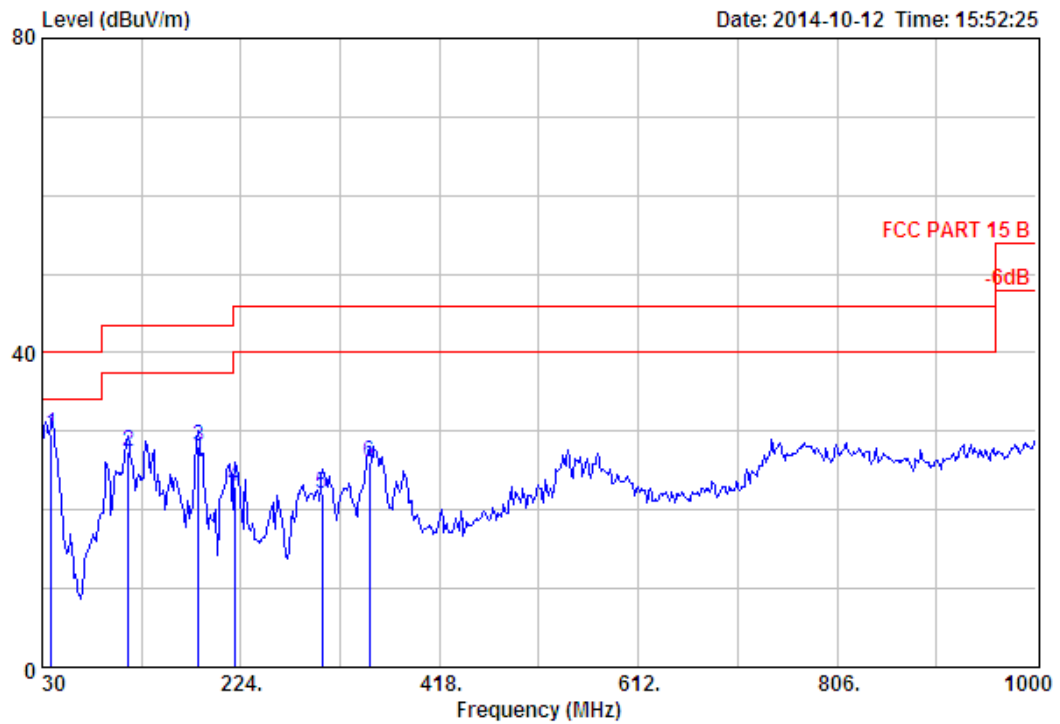
Site no. : 3m Chamber Data no. : 228
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2480MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 80.44 | 7.07 | 1.25 | 16.39 | 24.71 | 40.00 | 15.29 | QP |
| 2 | 130.88 | 11.33 | 1.47 | 11.98 | 24.78 | 43.50 | 18.72 | QP |
| 3 | 182.29 | 8.76 | 1.67 | 15.70 | 26.13 | 43.50 | 17.37 | QP |
| 4 | 264.74 | 12.94 | 2.28 | 12.87 | 28.09 | 46.00 | 17.91 | QP |
| 5 | 313.24 | 13.31 | 2.44 | 17.94 | 33.69 | 46.00 | 12.31 | QP |
| 6 | 358.83 | 14.45 | 2.56 | 13.57 | 30.58 | 46.00 | 15.42 | QP |



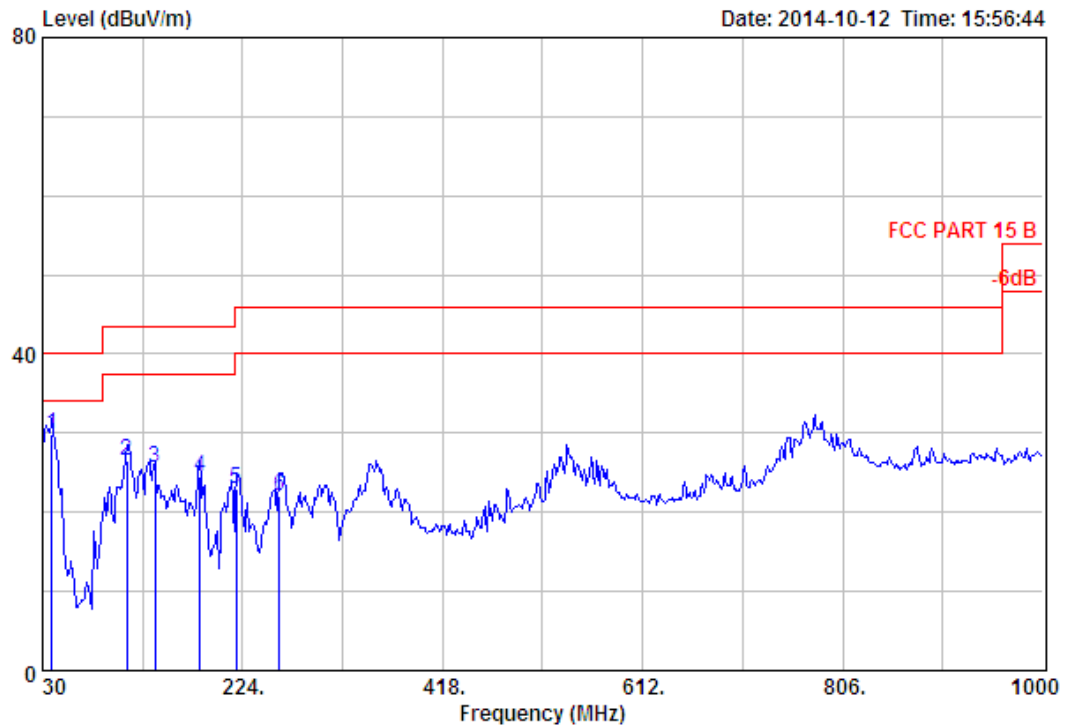
Site no. : 3m Chamber Data no. : 229
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2402MHz

| | Freq. | Ant. | Cable | | Emission | | | |
|---|--------|--------|-------|---------|----------|----------|--------|--------|
| | (MHz) | Factor | Loss | Reading | Level | Limits | Margin | Remark |
| | | (dB/m) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 80.44 | 7.07 | 1.25 | 16.03 | 24.35 | 40.00 | 15.65 | QP |
| 2 | 133.79 | 11.36 | 1.56 | 12.72 | 25.64 | 43.50 | 17.86 | QP |
| 3 | 182.29 | 8.76 | 1.67 | 14.61 | 25.04 | 43.50 | 18.46 | QP |
| 4 | 264.74 | 12.94 | 2.28 | 13.13 | 28.35 | 46.00 | 17.65 | QP |
| 5 | 313.24 | 13.31 | 2.44 | 17.07 | 32.82 | 46.00 | 13.18 | QP |
| 6 | 353.98 | 14.46 | 2.57 | 15.74 | 32.77 | 46.00 | 13.23 | QP |



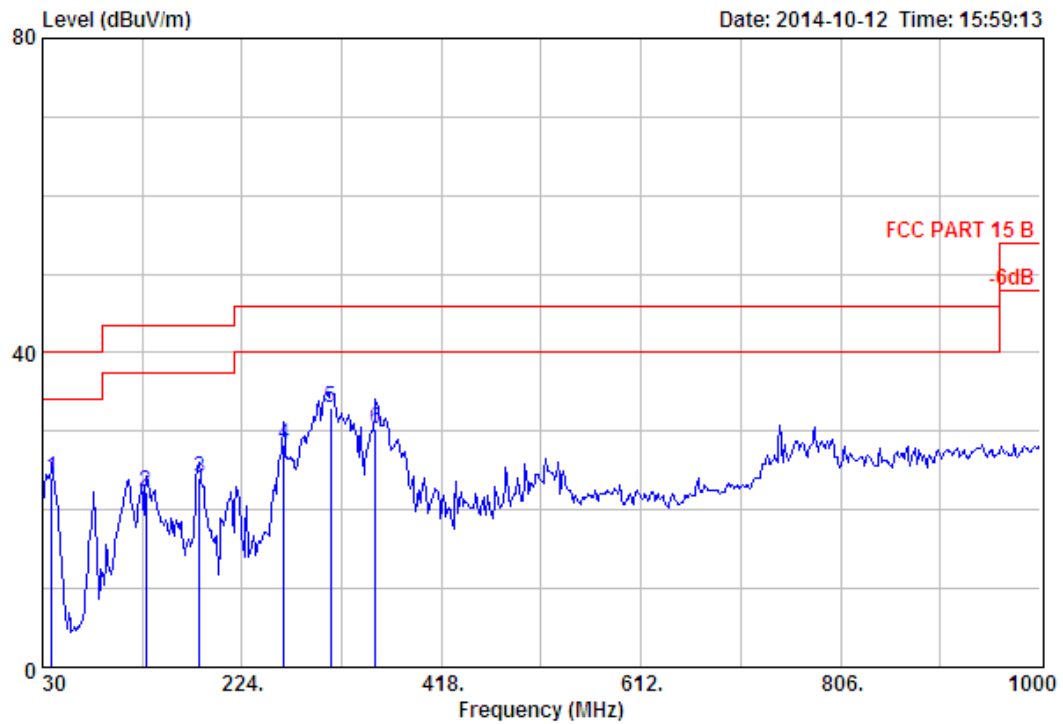
Site no. : 3m Chamber Data no. : 230
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2402MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 38.73 | 13.48 | 0.79 | 15.37 | 29.64 | 40.00 | 10.36 | QP |
| 2 | 114.39 | 10.85 | 1.42 | 15.17 | 27.44 | 43.50 | 16.06 | QP |
| 3 | 182.29 | 8.76 | 1.67 | 17.62 | 28.05 | 43.50 | 15.45 | QP |
| 4 | 218.18 | 9.00 | 1.90 | 12.14 | 23.04 | 46.00 | 22.96 | QP |
| 5 | 303.54 | 13.08 | 2.43 | 6.58 | 22.09 | 46.00 | 23.91 | QP |
| 6 | 349.13 | 14.44 | 2.50 | 9.16 | 26.10 | 46.00 | 19.90 | QP |



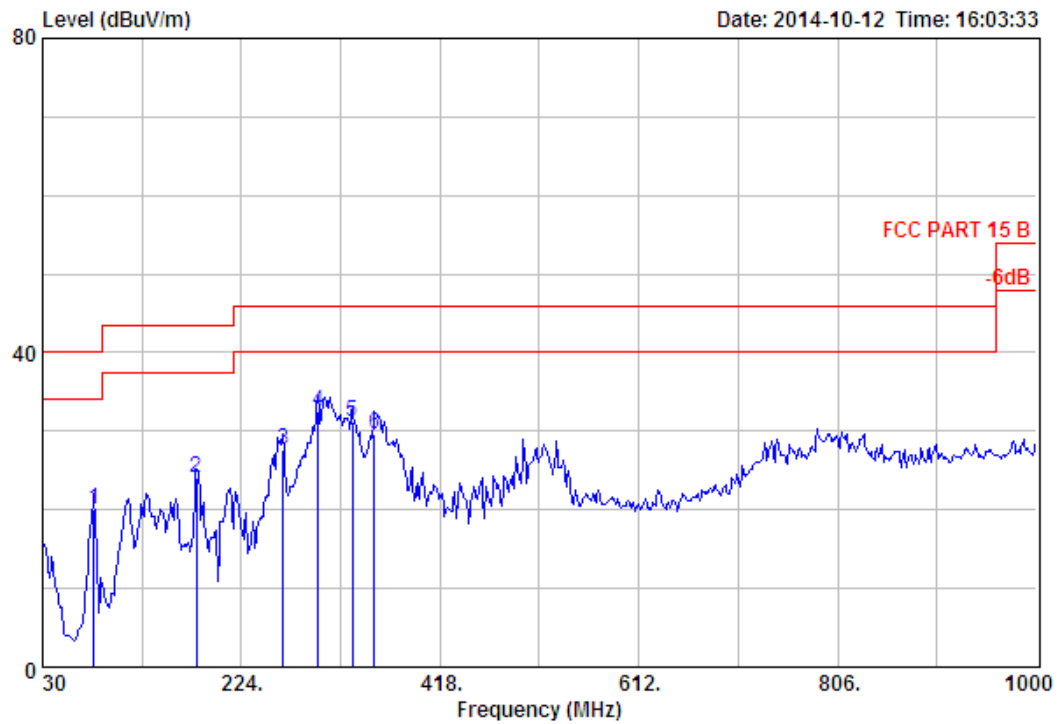
Site no. : 3m Chamber Data no. : 231
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2441MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 38.73 | 13.48 | 0.79 | 15.57 | 29.84 | 40.00 | 10.16 | QP |
| 2 | 111.48 | 10.60 | 1.44 | 14.57 | 26.61 | 43.50 | 16.89 | QP |
| 3 | 138.64 | 11.42 | 1.54 | 12.61 | 25.57 | 43.50 | 17.93 | QP |
| 4 | 182.29 | 8.76 | 1.67 | 13.98 | 24.41 | 43.50 | 19.09 | QP |
| 5 | 218.18 | 9.00 | 1.90 | 12.13 | 23.03 | 46.00 | 22.97 | QP |
| 6 | 259.89 | 12.97 | 2.25 | 6.74 | 21.96 | 46.00 | 24.04 | QP |



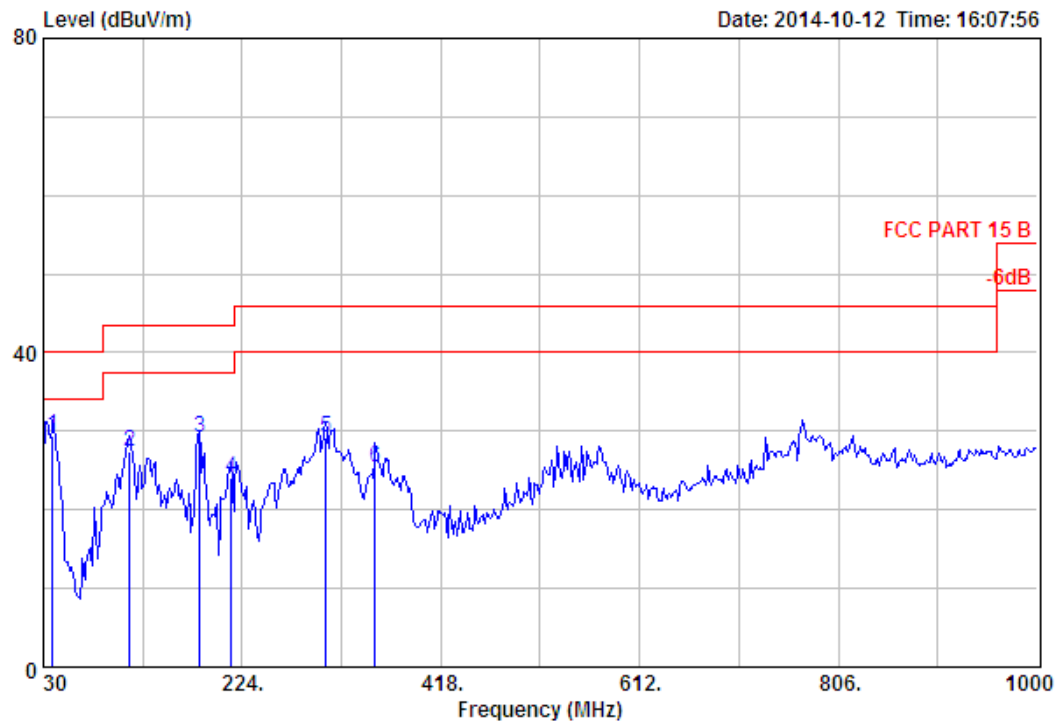
Site no. : 3m Chamber Data no. : 232
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2441MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 38.73 | 13.48 | 0.79 | 9.73 | 24.00 | 40.00 | 16.00 | QP |
| 2 | 130.88 | 11.33 | 1.47 | 9.41 | 22.21 | 43.50 | 21.29 | QP |
| 3 | 182.29 | 8.76 | 1.67 | 13.62 | 24.05 | 43.50 | 19.45 | QP |
| 4 | 264.74 | 12.94 | 2.28 | 13.03 | 28.25 | 46.00 | 17.75 | QP |
| 5 | 310.33 | 13.20 | 2.28 | 17.45 | 32.93 | 46.00 | 13.07 | QP |
| 6 | 353.98 | 14.46 | 2.57 | 13.17 | 30.20 | 46.00 | 15.80 | QP |



Site no. : 3m Chamber Data no. : 233
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2480MHz

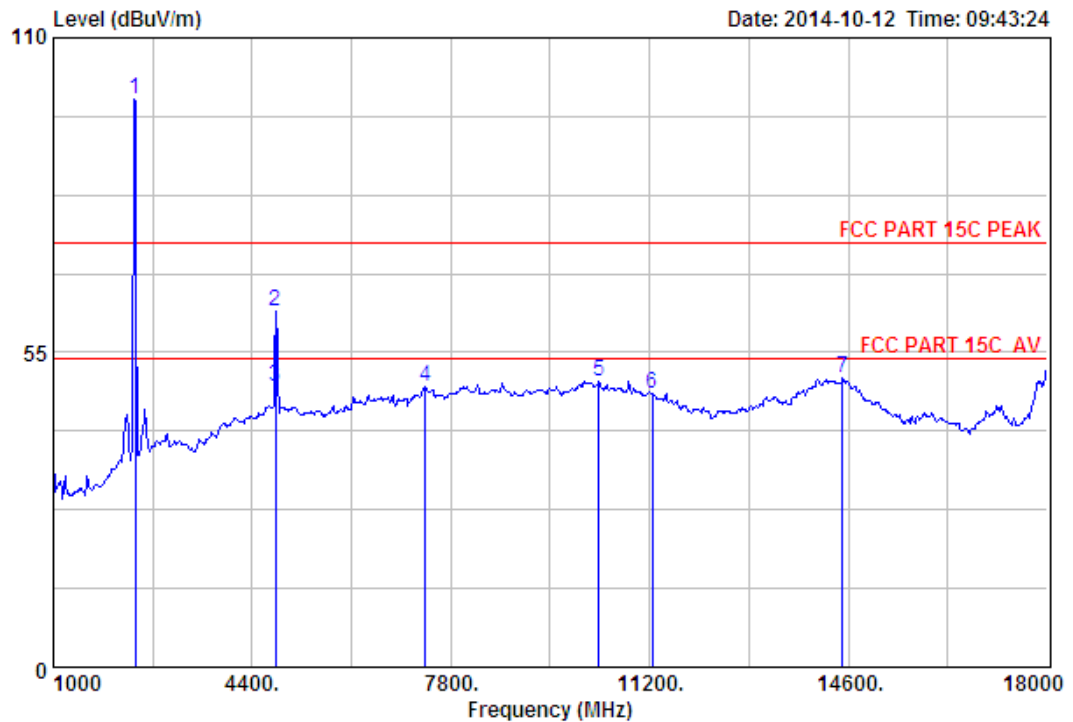
| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 80.44 | 7.07 | 1.25 | 11.76 | 20.08 | 40.00 | 19.92 | QP |
| 2 | 180.35 | 8.95 | 1.70 | 13.44 | 24.09 | 43.50 | 19.41 | QP |
| 3 | 264.74 | 12.94 | 2.28 | 12.47 | 27.69 | 46.00 | 18.31 | QP |
| 4 | 298.69 | 13.00 | 2.40 | 17.14 | 32.54 | 46.00 | 13.46 | QP |
| 5 | 332.64 | 13.93 | 2.48 | 14.77 | 31.18 | 46.00 | 14.82 | QP |
| 6 | 353.98 | 14.46 | 2.57 | 12.60 | 29.63 | 46.00 | 16.37 | QP |



Site no. : 3m Chamber Data no. : 234
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2480MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 38.73 | 13.48 | 0.79 | 15.07 | 29.34 | 40.00 | 10.66 | QP |
| 2 | 114.39 | 10.85 | 1.42 | 15.13 | 27.40 | 43.50 | 16.10 | QP |
| 3 | 182.29 | 8.76 | 1.67 | 18.76 | 29.19 | 43.50 | 14.31 | QP |
| 4 | 213.33 | 8.60 | 1.97 | 13.42 | 23.99 | 43.50 | 19.51 | QP |
| 5 | 305.48 | 13.11 | 2.31 | 13.67 | 29.09 | 46.00 | 16.91 | QP |
| 6 | 353.98 | 14.46 | 2.57 | 8.42 | 25.45 | 46.00 | 20.55 | QP |

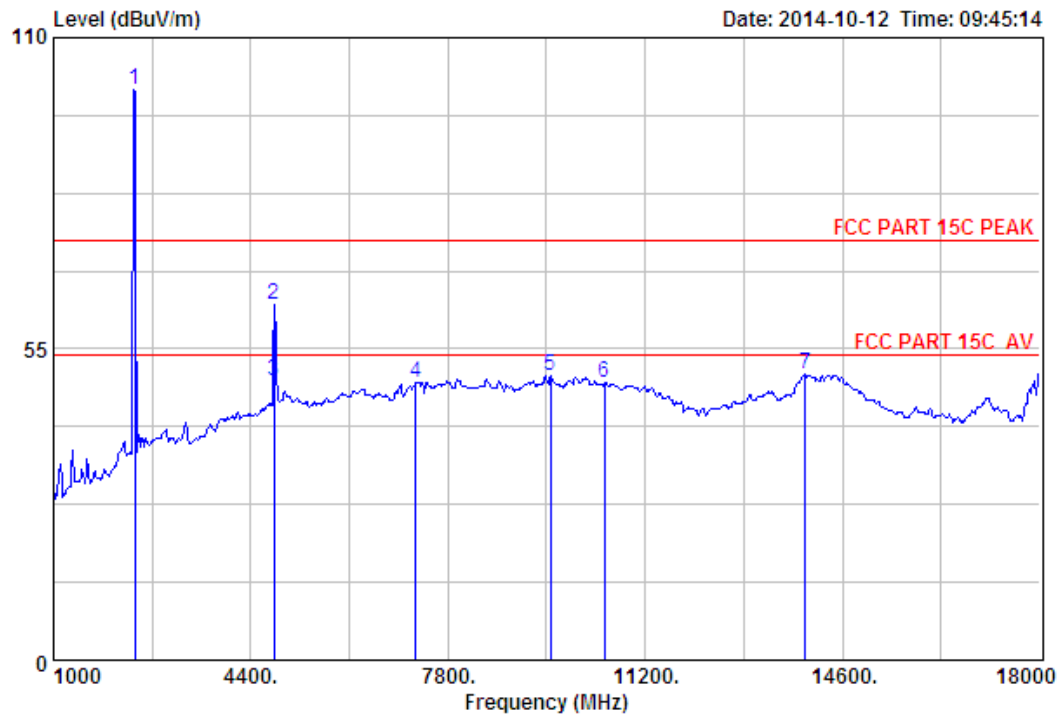
1000 MHz – 18000MHz



Site no. : 3m Chamber Data no. : 141
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2402MHz

| | Freq. | Ant. | Cable | Amp | Emission | | | | |
|---|----------|--------|-------|--------|----------|----------|----------|--------|---------|
| | (MHz) | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2402.00 | 27.61 | 6.62 | 34.18 | 99.27 | 99.32 | 74.00 | -25.32 | Peak |
| 2 | 4804.00 | 31.25 | 11.77 | 31.81 | 51.10 | 62.31 | 74.00 | 11.69 | Peak |
| 3 | 4804.00 | 31.25 | 11.77 | 31.81 | 37.79 | 49.00 | 54.00 | 5.00 | Average |
| 4 | 7358.00 | 36.56 | 11.58 | 31.99 | 32.81 | 48.96 | 74.00 | 25.04 | Peak |
| 5 | 10333.00 | 38.68 | 11.40 | 32.40 | 32.22 | 49.90 | 74.00 | 24.10 | Peak |
| 6 | 11251.00 | 39.35 | 11.10 | 34.13 | 31.53 | 47.85 | 74.00 | 26.15 | Peak |
| 7 | 14498.00 | 41.88 | 10.93 | 33.08 | 30.85 | 50.58 | 74.00 | 23.42 | Peak |

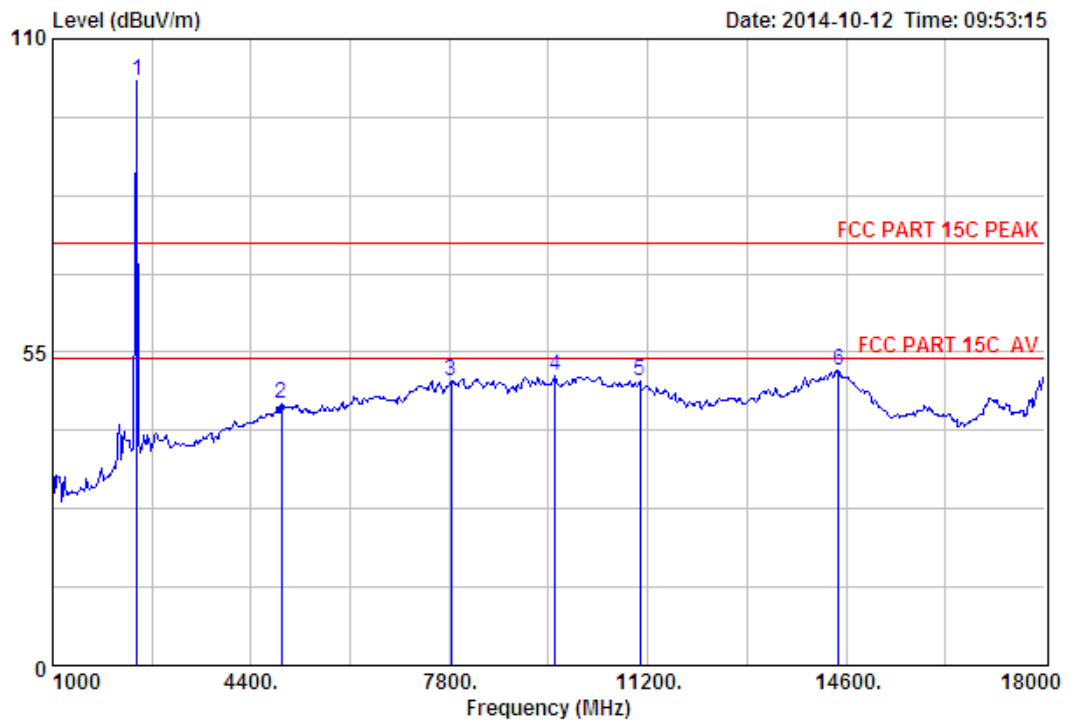
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 142
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2402MHz

| Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission | | Limits (dBuV/m) | Margin (dB) | Remark |
|----------------|--------------------------|-----------------------|-----------------------|-------------------|----------|--------|--------------------|----------------|---------|
| | | | | | Level | | | | |
| 1 | 2402.00 | 27.61 | 6.62 | 34.18 | 100.87 | 100.92 | 74.00 | -26.92 | Peak |
| 2 | 4804.00 | 31.25 | 11.77 | 31.81 | 51.62 | 62.83 | 74.00 | 11.17 | Peak |
| 3 | 4804.00 | 31.25 | 11.77 | 31.81 | 38.12 | 49.33 | 54.00 | 4.67 | Average |
| 4 | 7239.00 | 36.53 | 11.55 | 32.07 | 33.16 | 49.17 | 74.00 | 24.83 | Peak |
| 5 | 9568.00 | 37.94 | 11.69 | 31.93 | 32.60 | 50.30 | 74.00 | 23.70 | Peak |
| 6 | 10503.00 | 38.98 | 11.31 | 32.72 | 31.61 | 49.18 | 74.00 | 24.82 | Peak |
| 7 | 13954.00 | 41.35 | 10.96 | 34.13 | 32.41 | 50.59 | 74.00 | 23.41 | Peak |

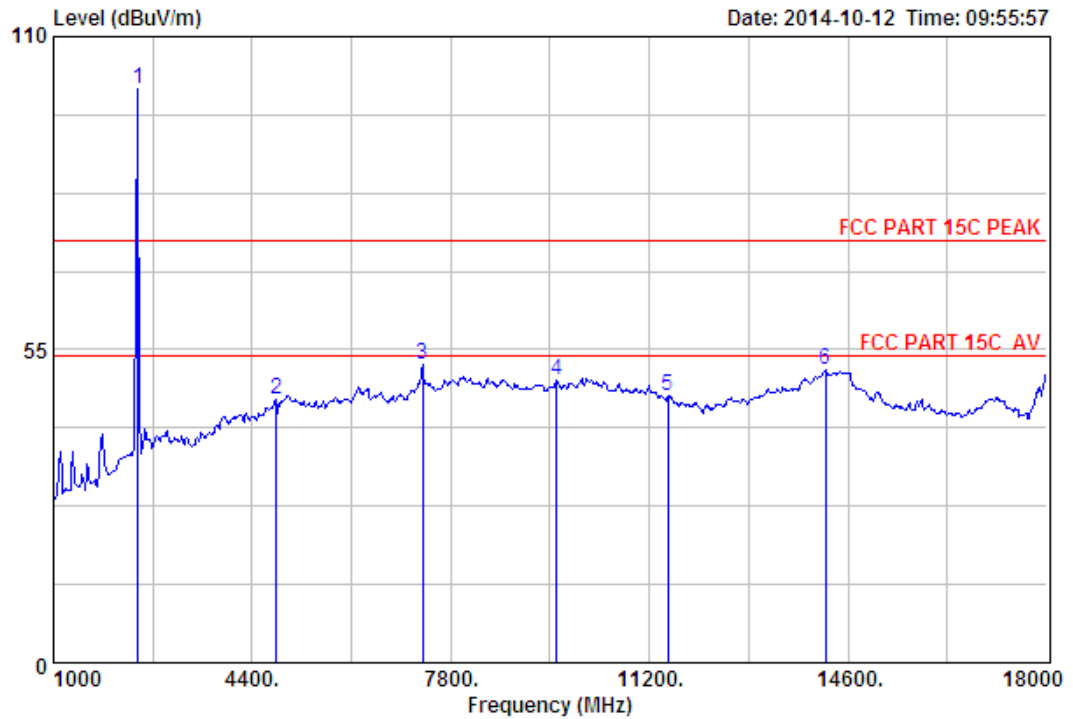
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 145
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2441MHz

| | Ant. | Cable | Amp | Emission | | | | | |
|-------|--------|-------|--------|----------|----------|----------|--------|--------|--|
| Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark | |
| (MHz) | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | | |
| 1 | 27.60 | 6.67 | 34.12 | 102.59 | 102.74 | 74.00 | -28.74 | Peak | |
| 2 | 31.45 | 12.29 | 31.95 | 34.23 | 46.02 | 74.00 | 27.98 | Peak | |
| 3 | 36.68 | 11.47 | 31.40 | 33.27 | 50.02 | 74.00 | 23.98 | Peak | |
| 4 | 37.93 | 11.68 | 31.92 | 33.04 | 50.73 | 74.00 | 23.27 | Peak | |
| 5 | 39.48 | 11.24 | 33.78 | 32.93 | 49.87 | 74.00 | 24.13 | Peak | |
| 6 | 41.85 | 10.93 | 32.96 | 32.04 | 51.86 | 74.00 | 22.14 | Peak | |

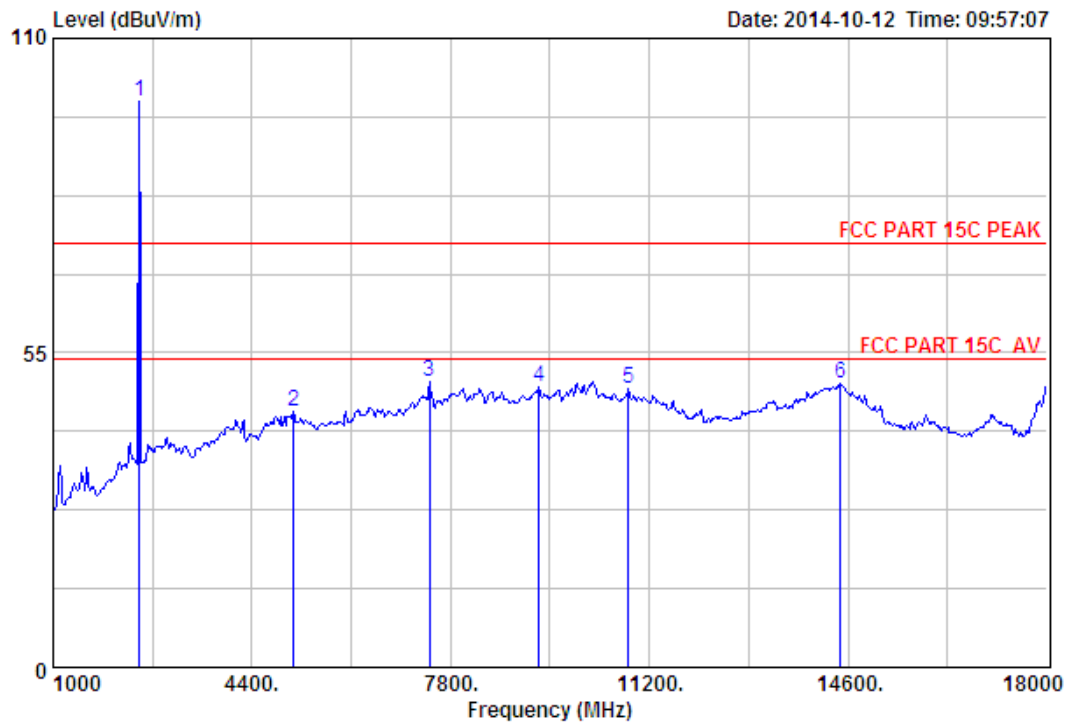
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 146
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2441MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission | | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------|--------------------|----------------|--------|
| | | | | | | Level (dBuV/m) | Limits (dBuV/m) | | |
| 1 | 2441.00 | 27.60 | 6.67 | 34.12 | 100.71 | 100.86 | 74.00 | -26.86 | Peak |
| 2 | 4808.00 | 31.25 | 11.77 | 31.81 | 35.08 | 46.29 | 74.00 | 27.71 | Peak |
| 3 | 7324.00 | 36.55 | 11.57 | 31.99 | 36.20 | 52.33 | 74.00 | 21.67 | Peak |
| 4 | 9619.00 | 37.93 | 11.68 | 31.92 | 31.94 | 49.63 | 74.00 | 24.37 | Peak |
| 5 | 11523.00 | 39.18 | 10.94 | 34.61 | 31.43 | 46.94 | 74.00 | 27.06 | Peak |
| 6 | 14209.00 | 41.64 | 10.91 | 33.34 | 32.16 | 51.37 | 74.00 | 22.63 | Peak |

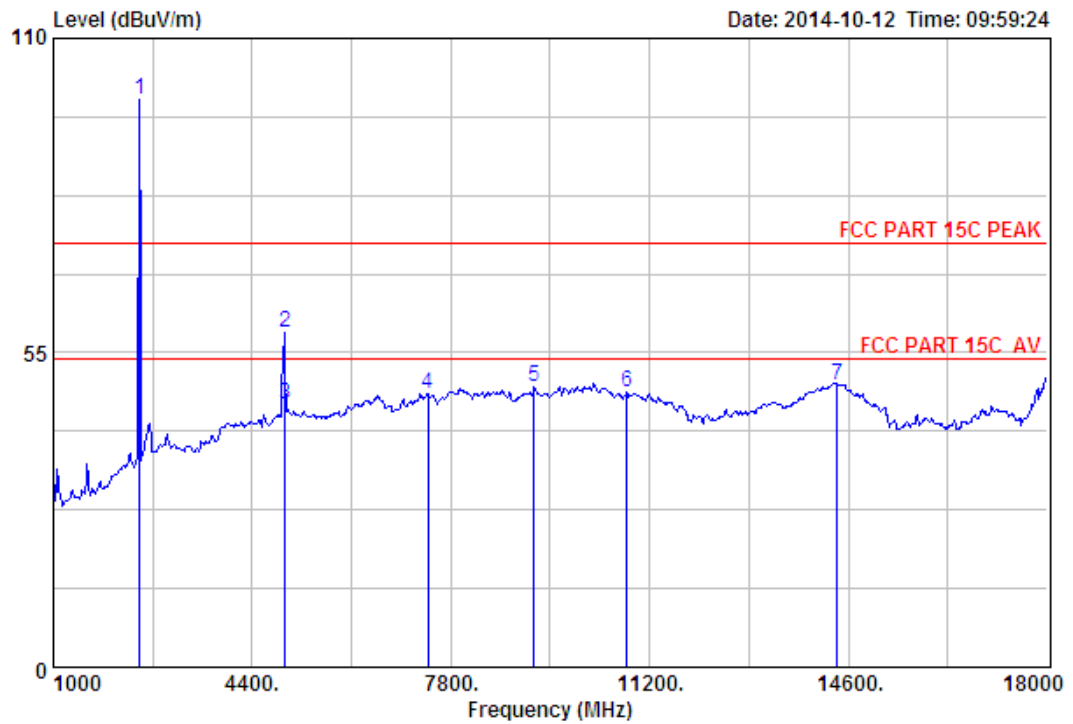
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 147
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2480MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2480.00 | 27.58 | 6.71 | 34.03 | 98.63 | 98.89 | 74.00 | -24.89 | Peak |
| 2 | 5114.00 | 31.62 | 12.45 | 32.17 | 32.83 | 44.73 | 74.00 | 29.27 | Peak |
| 3 | 7443.00 | 36.54 | 11.61 | 31.93 | 33.75 | 49.97 | 74.00 | 24.03 | Peak |
| 4 | 9313.00 | 37.94 | 11.62 | 32.15 | 31.63 | 49.04 | 74.00 | 24.96 | Peak |
| 5 | 10843.00 | 39.35 | 11.30 | 33.36 | 31.32 | 48.61 | 74.00 | 25.39 | Peak |
| 6 | 14464.00 | 41.85 | 10.93 | 32.96 | 29.78 | 49.60 | 74.00 | 24.40 | Peak |

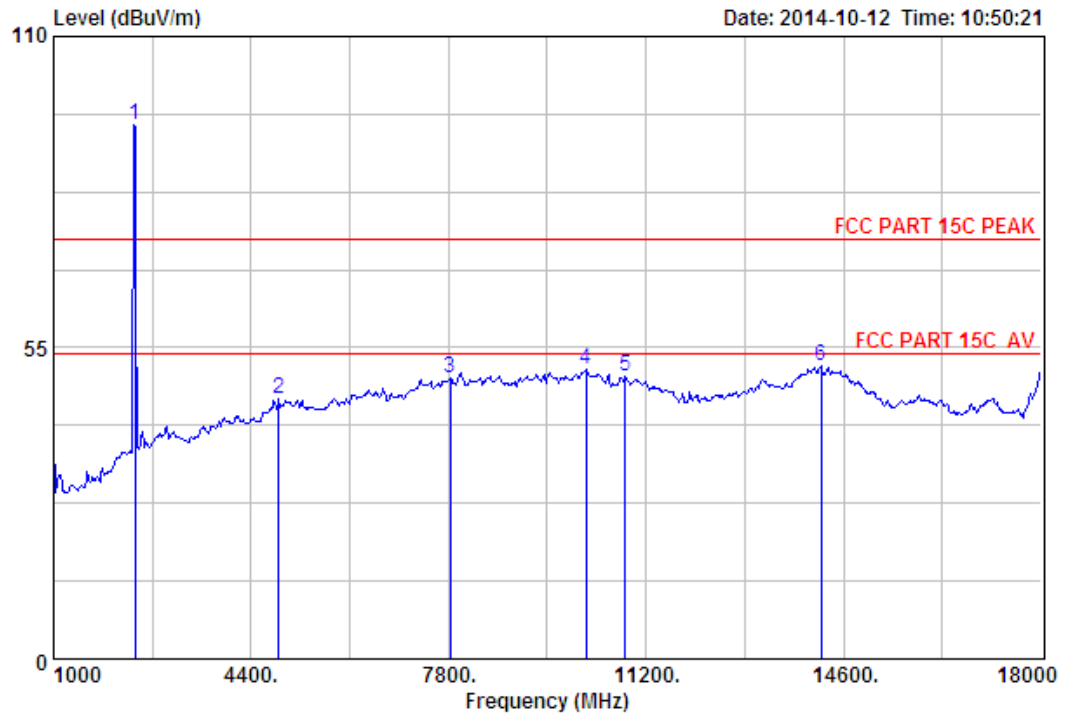
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 148
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2480MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 2480.00 | 27.58 | 6.71 | 34.03 | 98.90 | 99.16 | 74.00 | -25.16 | Peak |
| 2 | 4960.00 | 31.49 | 12.44 | 31.97 | 46.61 | 58.57 | 74.00 | 15.43 | Peak |
| 3 | 4960.00 | 31.49 | 12.44 | 31.97 | 34.05 | 46.01 | 54.00 | 7.99 | Average |
| 4 | 7409.00 | 36.58 | 11.60 | 31.97 | 31.67 | 47.88 | 74.00 | 26.12 | Peak |
| 5 | 9228.00 | 37.80 | 11.57 | 32.29 | 31.95 | 49.03 | 74.00 | 24.97 | Peak |
| 6 | 10809.00 | 39.31 | 11.30 | 33.30 | 30.85 | 48.16 | 74.00 | 25.84 | Peak |
| 7 | 14413.00 | 41.80 | 10.92 | 32.78 | 29.40 | 49.34 | 74.00 | 24.66 | Peak |

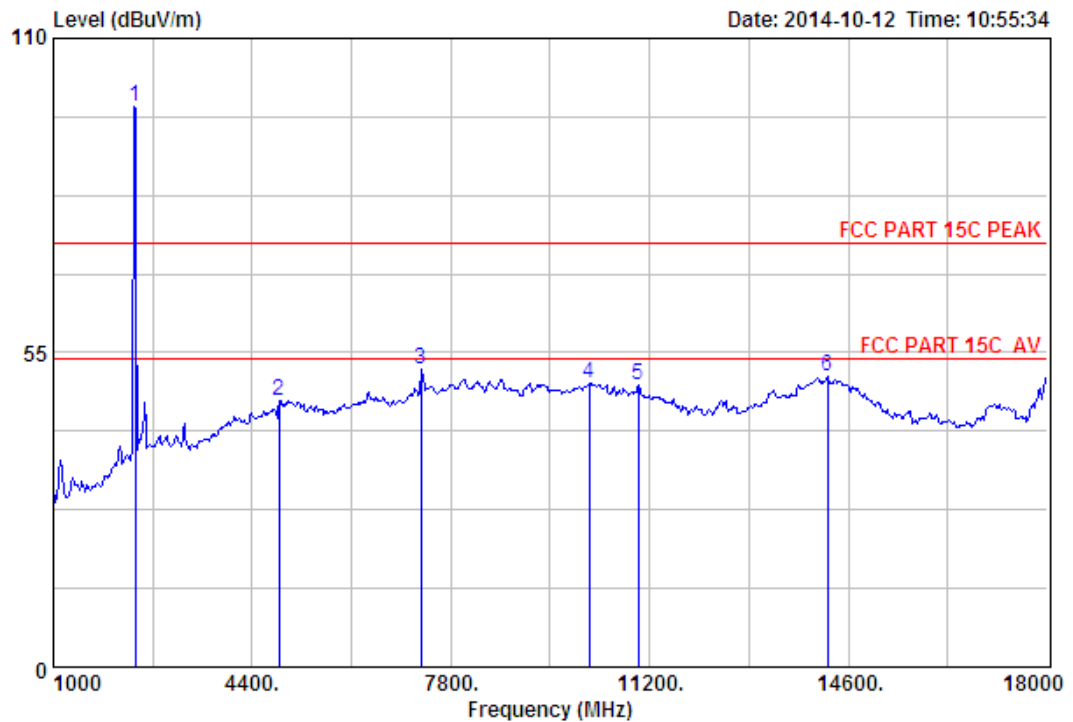
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 165
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2402MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2402.00 | 27.61 | 6.62 | 34.18 | 94.44 | 94.49 | 74.00 | -20.49 | Peak |
| 2 | 4876.00 | 31.37 | 12.07 | 31.90 | 34.33 | 45.87 | 74.00 | 28.13 | Peak |
| 3 | 7834.00 | 36.68 | 11.47 | 31.40 | 32.98 | 49.73 | 74.00 | 24.27 | Peak |
| 4 | 10163.00 | 38.39 | 11.50 | 32.08 | 33.29 | 51.10 | 74.00 | 22.90 | Peak |
| 5 | 10843.00 | 39.35 | 11.30 | 33.36 | 32.65 | 49.94 | 74.00 | 24.06 | Peak |
| 6 | 14209.00 | 41.64 | 10.91 | 33.34 | 32.58 | 51.79 | 74.00 | 22.21 | Peak |

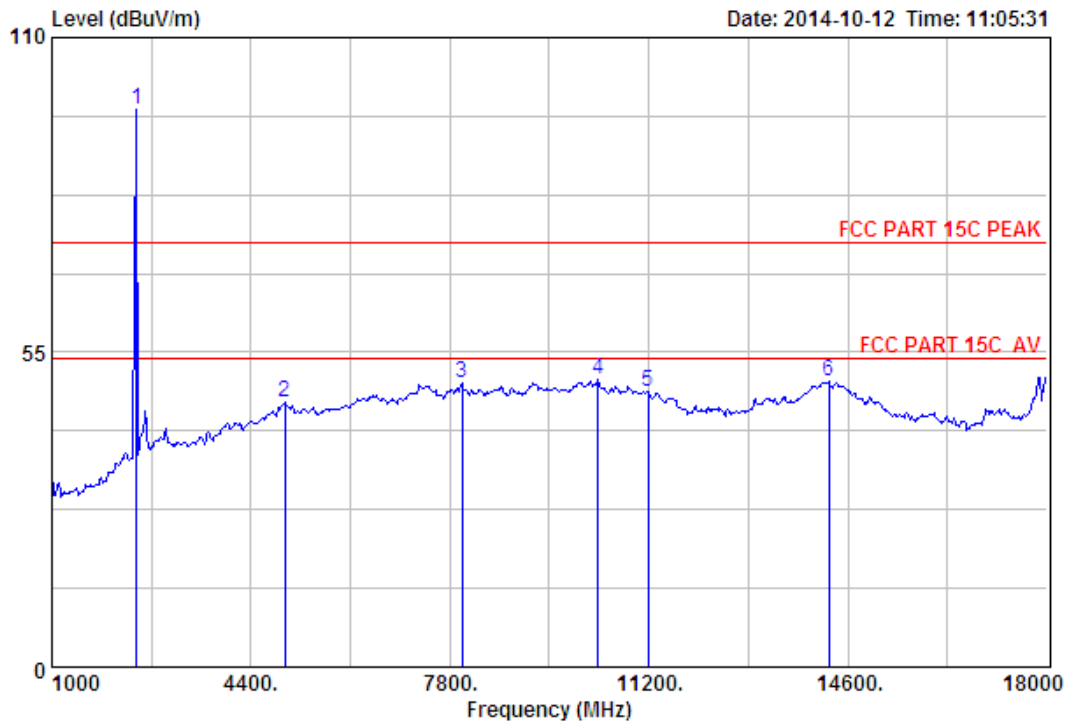
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 166
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2402MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2402.00 | 27.61 | 6.62 | 34.18 | 98.14 | 98.19 | 74.00 | -24.19 | Peak |
| 2 | 4859.00 | 31.34 | 11.99 | 31.88 | 35.10 | 46.55 | 74.00 | 27.45 | Peak |
| 3 | 7290.00 | 36.54 | 11.56 | 32.02 | 36.05 | 52.13 | 74.00 | 21.87 | Peak |
| 4 | 10163.00 | 38.39 | 11.50 | 32.08 | 31.87 | 49.68 | 74.00 | 24.32 | Peak |
| 5 | 11013.00 | 39.51 | 11.28 | 33.68 | 32.12 | 49.23 | 74.00 | 24.77 | Peak |
| 6 | 14243.00 | 41.67 | 10.91 | 33.24 | 31.44 | 50.78 | 74.00 | 23.22 | Peak |

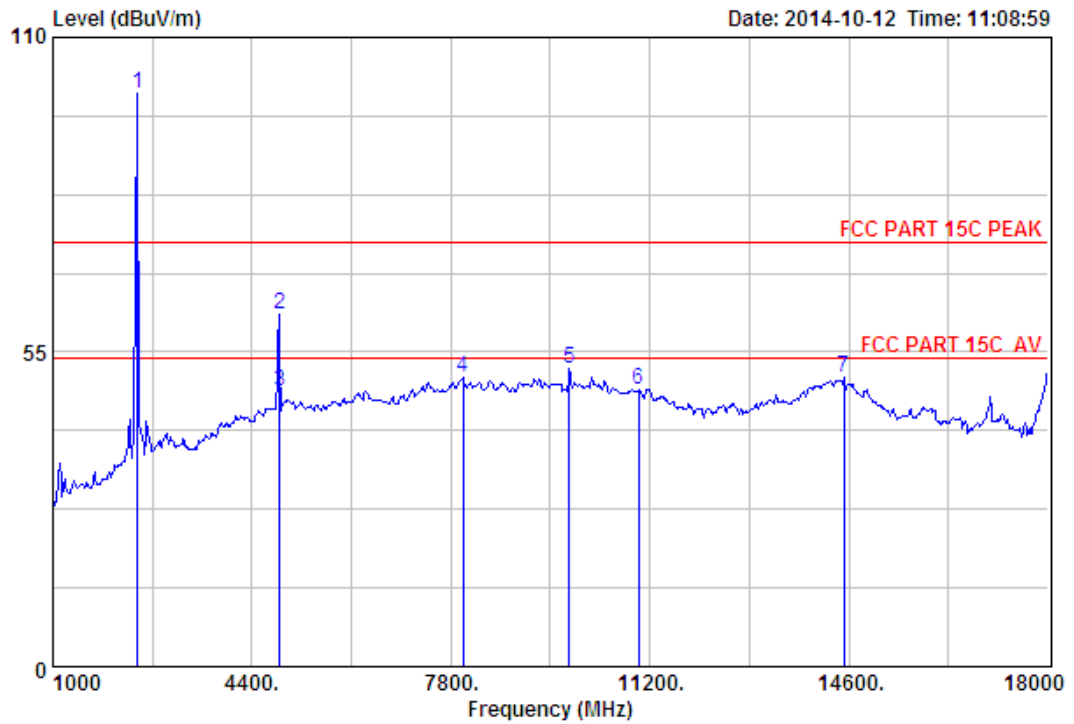
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 169
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2441MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2441.00 | 27.60 | 6.67 | 34.12 | 97.38 | 97.53 | 74.00 | -23.53 | Peak |
| 2 | 4978.00 | 31.52 | 12.52 | 31.99 | 34.11 | 46.16 | 74.00 | 27.84 | Peak |
| 3 | 8004.00 | 37.01 | 11.40 | 31.22 | 32.46 | 49.65 | 74.00 | 24.35 | Peak |
| 4 | 10333.00 | 38.68 | 11.40 | 32.40 | 32.60 | 50.28 | 74.00 | 23.72 | Peak |
| 5 | 11183.00 | 39.40 | 11.15 | 34.00 | 31.60 | 48.15 | 74.00 | 25.85 | Peak |
| 6 | 14277.00 | 41.70 | 10.92 | 33.14 | 30.45 | 49.93 | 74.00 | 24.07 | Peak |

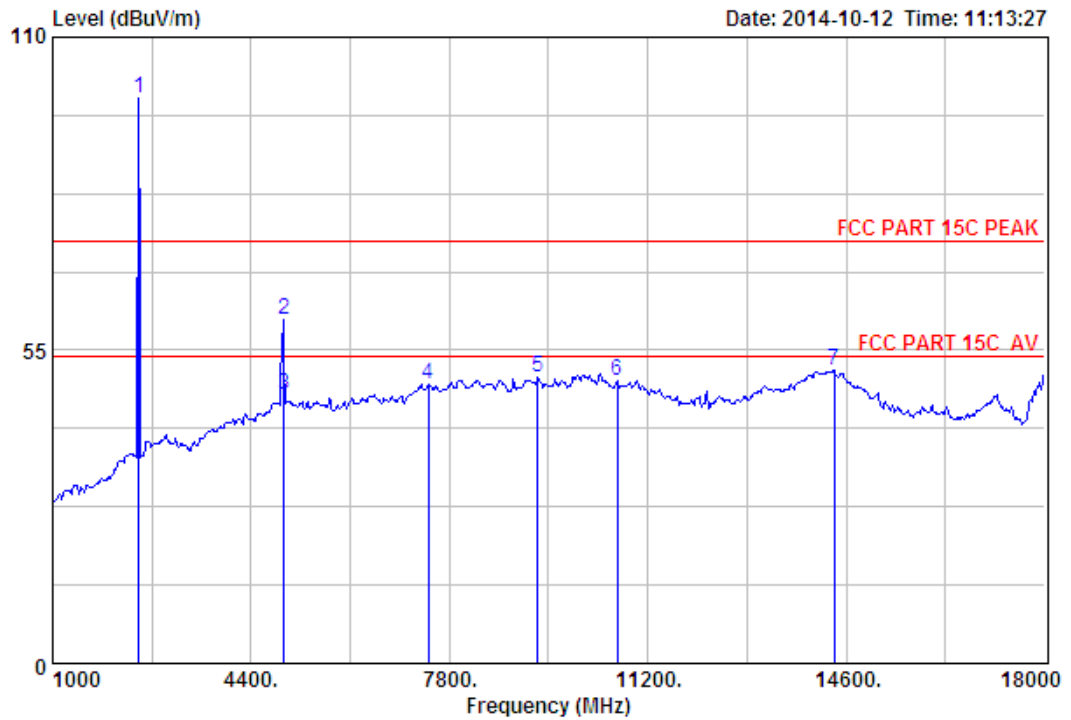
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 170
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2441MHz

| Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading | Emission | | Limits (dBuV/m) | Margin (dB) | Remark |
|----------------|--------------------------|-----------------------|-----------------------|---------|-----------------|-------------------|--------------------|----------------|---------|
| | | | | | Level (dBuV) | Level (dBuV/m) | | | |
| 1 | 2441.00 | 27.60 | 6.67 | 34.12 | 99.97 | 100.12 | 74.00 | -26.12 | Peak |
| 2 | 4882.00 | 31.37 | 12.07 | 31.90 | 49.96 | 61.50 | 74.00 | 12.50 | Peak |
| 3 | 4882.00 | 31.37 | 12.07 | 31.90 | 36.59 | 48.13 | 54.00 | 5.87 | Average |
| 4 | 8004.00 | 37.01 | 11.40 | 31.22 | 33.28 | 50.47 | 74.00 | 23.53 | Peak |
| 5 | 9823.00 | 38.17 | 11.63 | 31.82 | 34.16 | 52.14 | 74.00 | 21.86 | Peak |
| 6 | 11013.00 | 39.51 | 11.28 | 33.68 | 31.28 | 48.39 | 74.00 | 25.61 | Peak |
| 7 | 14515.00 | 41.89 | 10.93 | 33.14 | 30.79 | 50.47 | 74.00 | 23.53 | Peak |

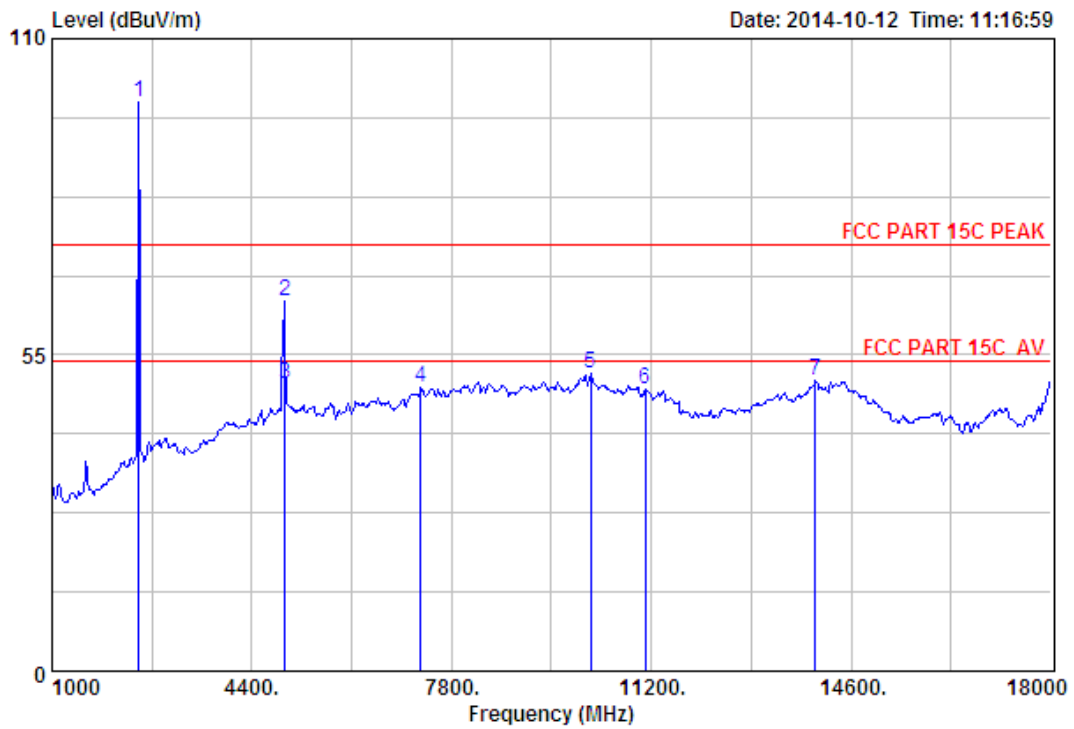
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 171
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2480MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Emission | | | | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------|--------------------|----------------|---------|
| | | | | | Reading (dBuV) | Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | |
| 1 | 2480.00 | 27.58 | 6.71 | 34.03 | 99.01 | 99.27 | 74.00 | -25.27 | Peak |
| 2 | 4960.00 | 31.49 | 12.44 | 31.97 | 48.35 | 60.31 | 74.00 | 13.69 | Peak |
| 3 | 4960.00 | 31.49 | 12.44 | 31.97 | 35.08 | 47.04 | 54.00 | 6.96 | Average |
| 4 | 7443.00 | 36.54 | 11.61 | 31.93 | 32.94 | 49.16 | 74.00 | 24.84 | Peak |
| 5 | 9313.00 | 37.94 | 11.62 | 32.15 | 32.73 | 50.14 | 74.00 | 23.86 | Peak |
| 6 | 10673.00 | 39.17 | 11.30 | 33.04 | 32.31 | 49.74 | 74.00 | 24.26 | Peak |
| 7 | 14396.00 | 41.79 | 10.92 | 32.83 | 31.71 | 51.59 | 74.00 | 22.41 | Peak |

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

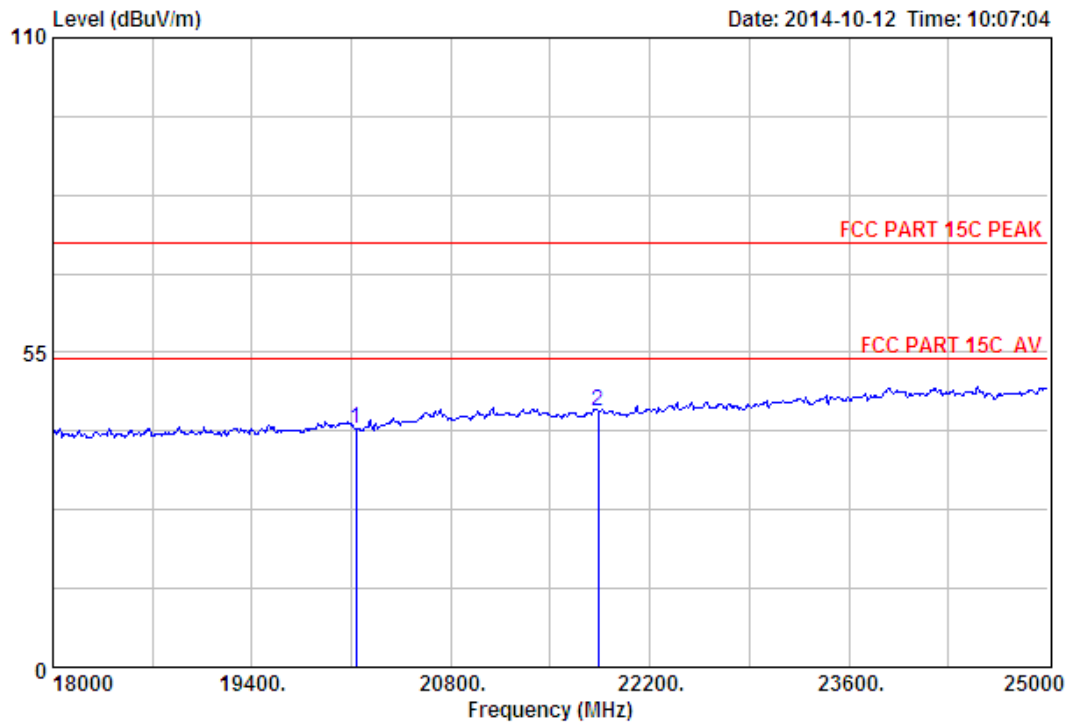


Site no. : 3m Chamber Data no. : 172
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2480MHz

| | Ant. | Cable | Amp | Emission | | | | | |
|-------|--------|-------|--------|----------|----------|----------|--------|---------|--|
| Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark | |
| (MHz) | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | | |
| 1 | 27.58 | 6.71 | 34.03 | 98.71 | 98.97 | 74.00 | -24.97 | Peak | |
| 2 | 31.49 | 12.44 | 31.97 | 52.36 | 64.32 | 74.00 | 9.68 | Peak | |
| 3 | 31.49 | 12.44 | 31.97 | 38.05 | 50.01 | 54.00 | 3.99 | Average | |
| 4 | 36.54 | 11.56 | 32.04 | 33.16 | 49.22 | 74.00 | 24.78 | Peak | |
| 5 | 38.39 | 11.50 | 32.08 | 34.00 | 51.81 | 74.00 | 22.19 | Peak | |
| 6 | 39.45 | 11.22 | 33.84 | 32.18 | 49.01 | 74.00 | 24.99 | Peak | |
| 7 | 41.45 | 10.92 | 34.00 | 32.07 | 50.44 | 74.00 | 23.56 | Peak | |

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

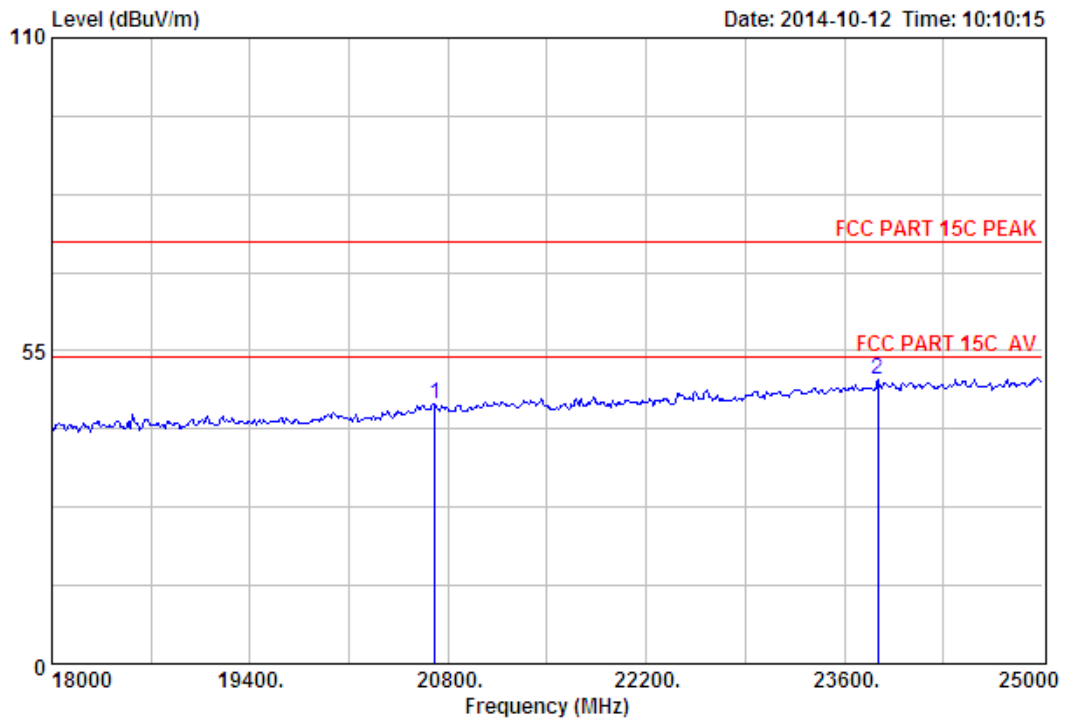
18000MHz – 25000MHz



Site no. : 3m Chamber Data no. : 151
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2402MHz

| | | Ant. | Cable | Amp | Emission | | | | |
|------------|--------|-------|--------|---------|----------|----------|--------|--------|--|
| Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark | |
| (MHz) | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | | |
| 1 20135.00 | 46.07 | 19.74 | 36.59 | 12.41 | 41.63 | 74.00 | 32.37 | Peak | |
| 2 21836.00 | 45.80 | 20.49 | 35.06 | 13.52 | 44.75 | 74.00 | 29.25 | Peak | |

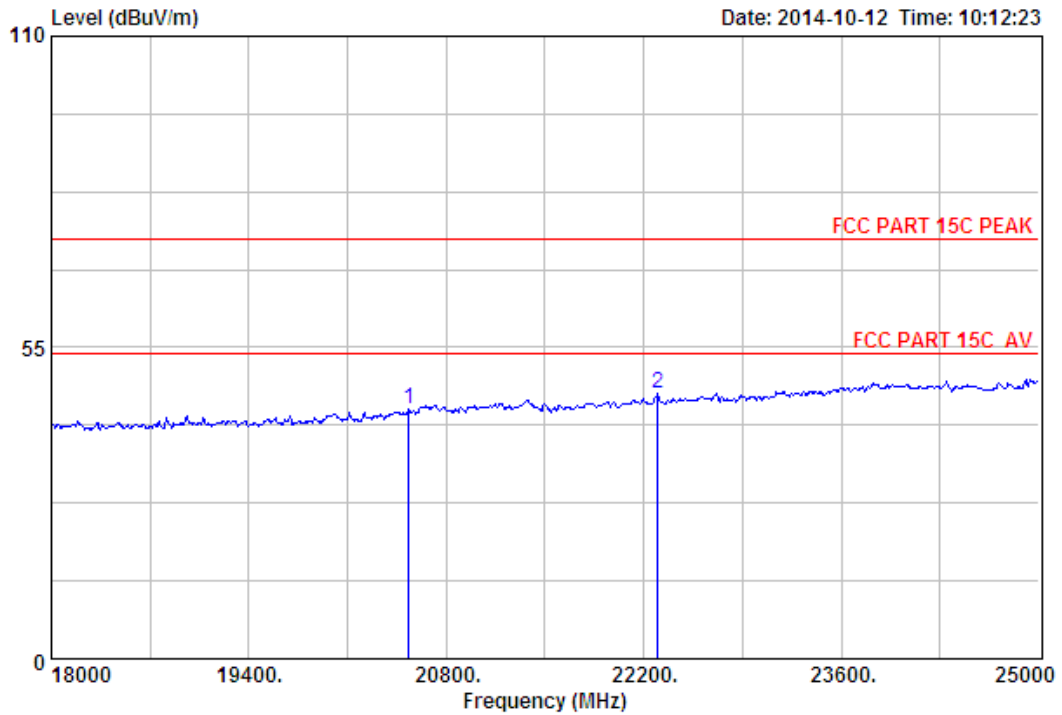
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 152
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2402MHz

| | Freq. | Ant. | Cable | Amp | Emission | | | | |
|---|----------|--------|-------|--------|----------|----------|----------|--------|--------|
| | (MHz) | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 20709.00 | 46.12 | 20.00 | 36.07 | 15.65 | 45.70 | 74.00 | 28.30 | Peak |
| 2 | 23838.00 | 45.63 | 21.90 | 32.96 | 15.43 | 50.00 | 74.00 | 24.00 | Peak |

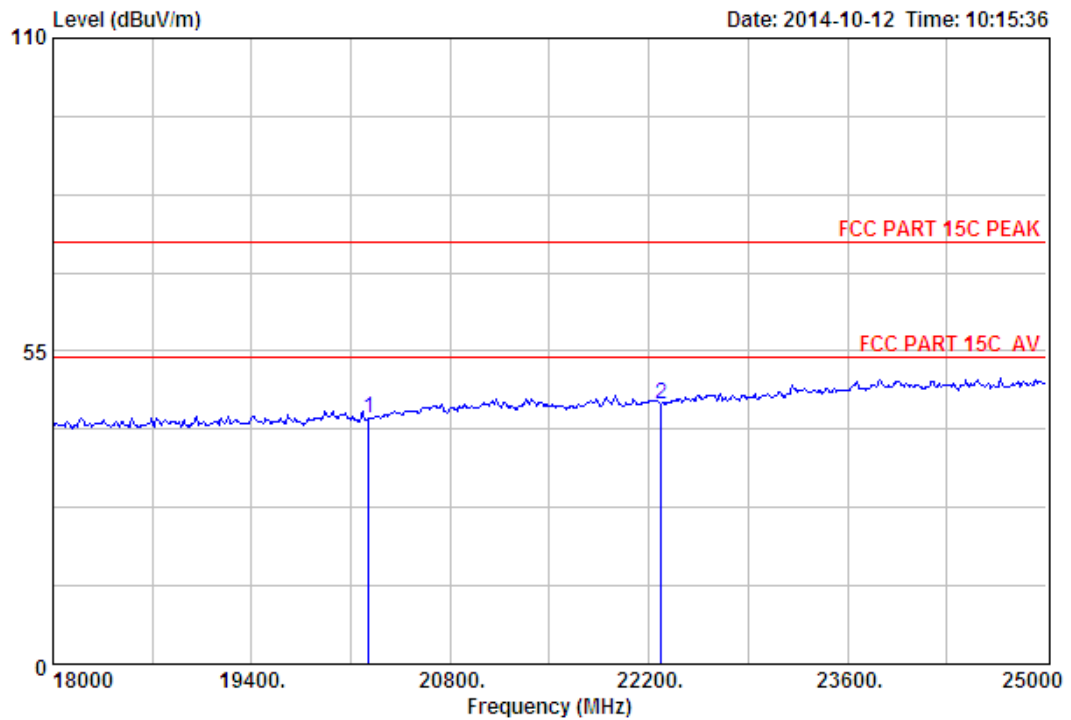
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 153
 Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2441MHz

| Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission | | Margin (dB) | Remark |
|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------|--------------------|----------------|--------|
| | | | | | Level (dBuV/m) | Limits (dBuV/m) | | |
| 1 20534.00 | 46.01 | 19.92 | 36.23 | 14.33 | 44.03 | 74.00 | 29.97 | Peak |
| 2 22298.00 | 45.76 | 20.74 | 34.59 | 14.84 | 46.75 | 74.00 | 27.25 | Peak |

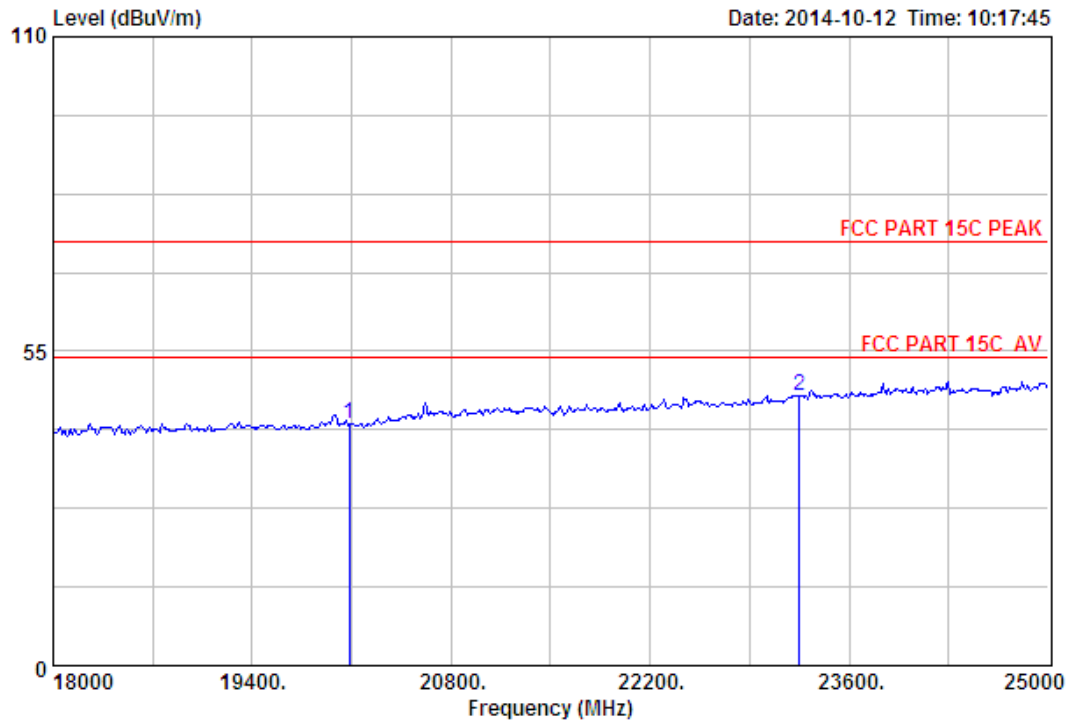
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 154
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2441MHz

| | Freq. | Ant. | Cable | Amp | Emission | | | | |
|---|----------|--------|-------|--------|----------|----------|----------|--------|--------|
| | (MHz) | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 20226.00 | 46.06 | 19.78 | 36.50 | 13.81 | 43.15 | 74.00 | 30.85 | Peak |
| 2 | 22284.00 | 45.76 | 20.73 | 34.61 | 13.79 | 45.67 | 74.00 | 28.33 | Peak |

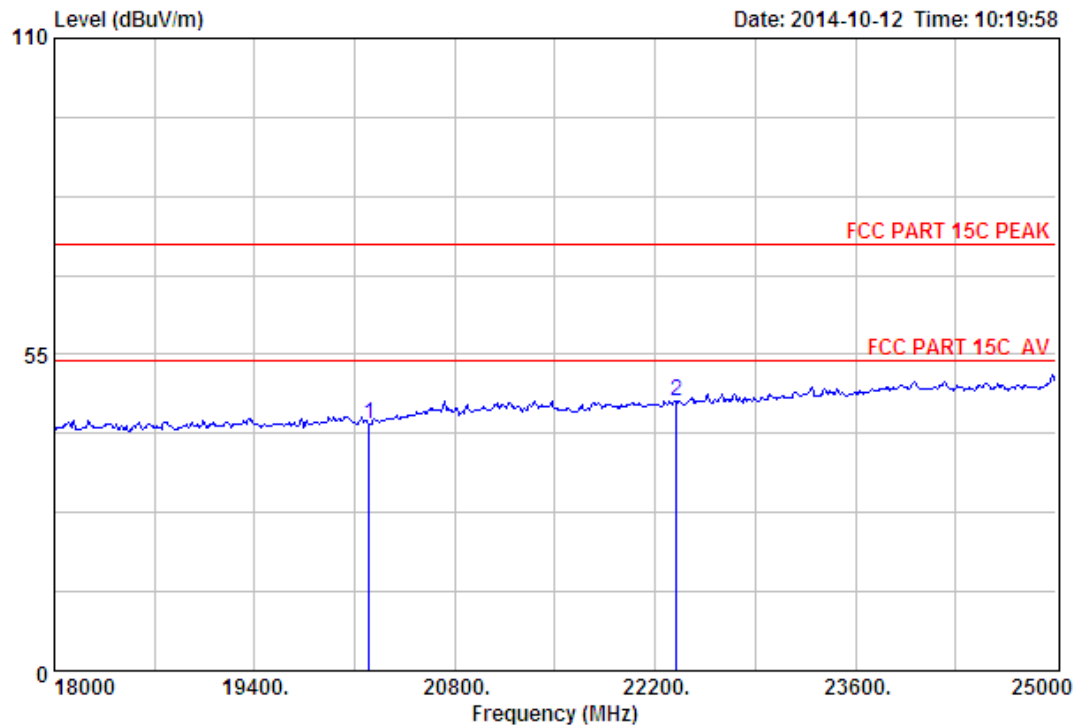
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 155
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2480MHz

| | | Ant. | Cable | Amp | Emission | | | | |
|---|----------|--------|-------|--------|----------|----------|----------|--------|--------|
| | Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | (MHz) | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 20086.00 | 46.08 | 19.72 | 36.63 | 13.01 | 42.18 | 74.00 | 31.82 | Peak |
| 2 | 23250.00 | 45.65 | 21.37 | 33.59 | 13.61 | 47.04 | 74.00 | 26.96 | Peak |

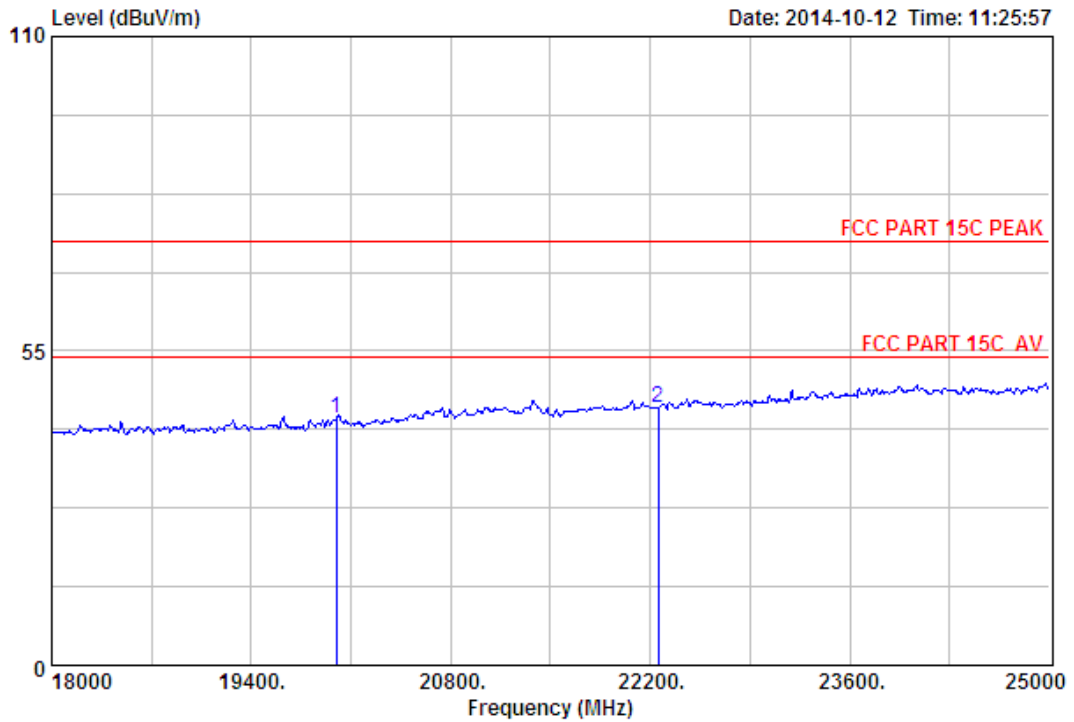
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 156
 Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2480MHz

| Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission | | Limits (dBuV/m) | Margin (dB) | Remark |
|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------|--|--------------------|----------------|--------|
| | | | | | Level (dBuV/m) | | | | |
| 1 20198.00 | 46.06 | 19.77 | 36.52 | 13.67 | 42.98 | | 74.00 | 31.02 | Peak |
| 2 22347.00 | 45.77 | 20.77 | 34.53 | 14.74 | 46.75 | | 74.00 | 27.25 | Peak |

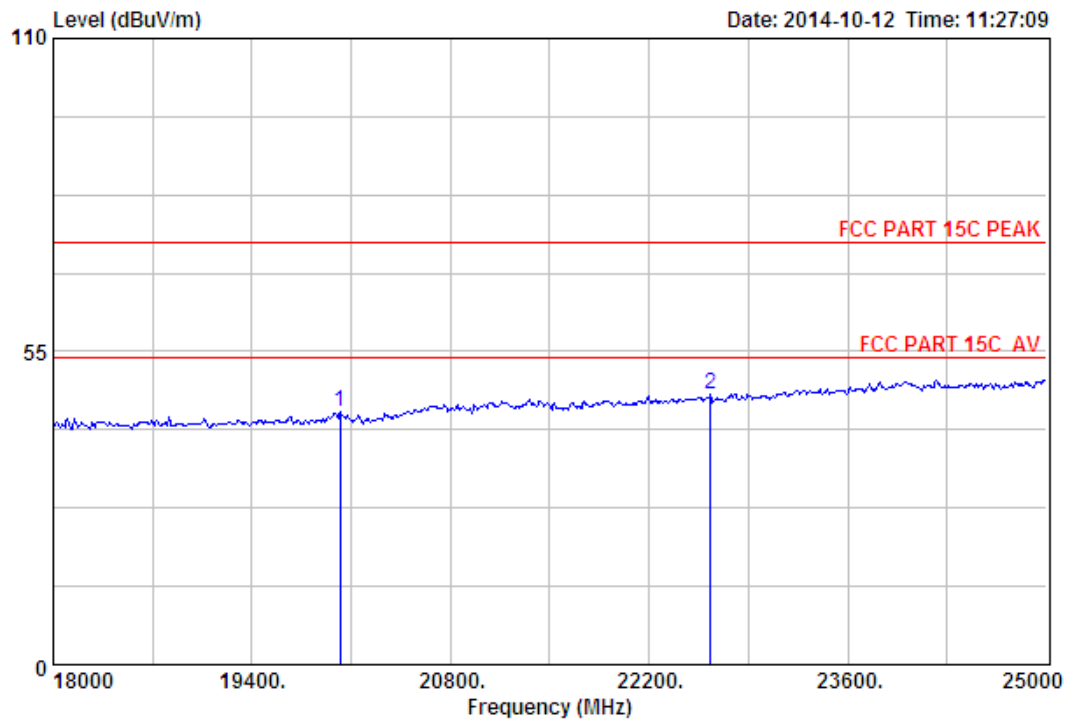
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 175
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2402MHz

| | | Ant. | Cable | Amp | Emission | | | | |
|---|----------|--------|-------|--------|----------|----------|----------|--------|--------|
| | Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | (MHz) | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 19995.00 | 46.10 | 19.68 | 36.70 | 14.10 | 43.18 | 74.00 | 30.82 | Peak |
| 2 | 22256.00 | 45.75 | 20.71 | 34.64 | 13.25 | 45.07 | 74.00 | 28.93 | Peak |

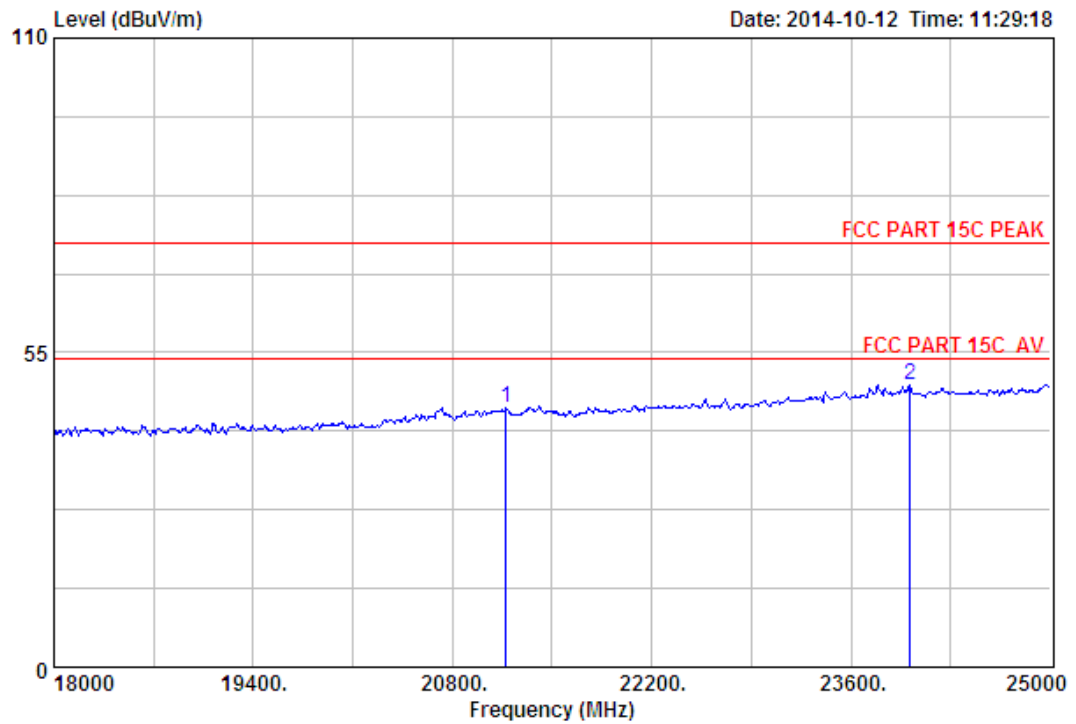
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 176
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2402MHz

| | | Ant. | Cable | Amp | Emission | | | | |
|---|----------|--------|-------|--------|----------|----------|----------|--------|--------|
| | Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | (MHz) | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 20023.00 | 46.10 | 19.69 | 36.68 | 15.42 | 44.53 | 74.00 | 29.47 | Peak |
| 2 | 22634.00 | 45.75 | 20.93 | 34.24 | 14.92 | 47.36 | 74.00 | 26.64 | Peak |

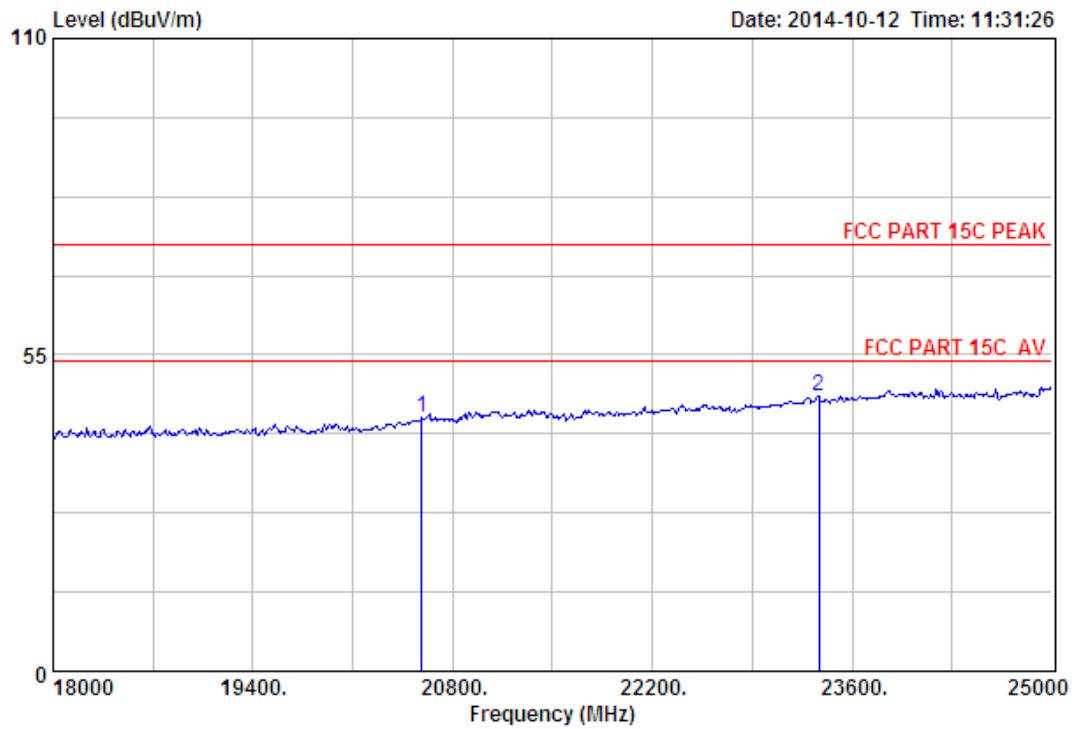
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 177
 Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2441MHz

| | | Ant. | Cable | Amp | Emission | | | | |
|-------|----------|-------|--------|---------|----------|----------|--------|--------|------|
| Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark | |
| (MHz) | (dB/m) | (dB) | (dB) | (dBUV) | (dBUV/m) | (dBUV/m) | (dB) | | |
| 1 | 21178.00 | 46.20 | 20.21 | 35.64 | 14.52 | 45.29 | 74.00 | 28.71 | Peak |
| 2 | 24013.00 | 45.60 | 22.05 | 32.84 | 14.51 | 49.32 | 74.00 | 24.68 | Peak |

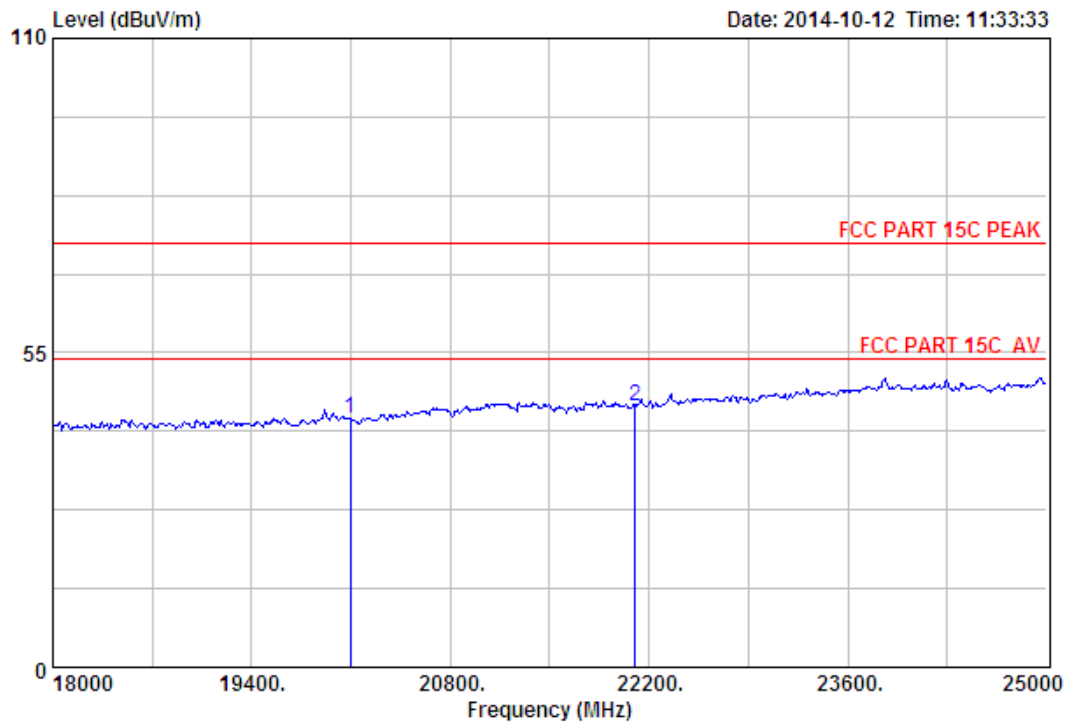
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 178
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2441MHz

| | Freq. | Ant. | Cable | Amp | Emission | | | | |
|---|----------|--------|-------|--------|----------|----------|----------|--------|--------|
| | (MHz) | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 20583.00 | 46.04 | 19.94 | 36.18 | 14.18 | 43.98 | 74.00 | 30.02 | Peak |
| 2 | 23369.00 | 45.67 | 21.48 | 33.46 | 14.25 | 47.94 | 74.00 | 26.06 | Peak |

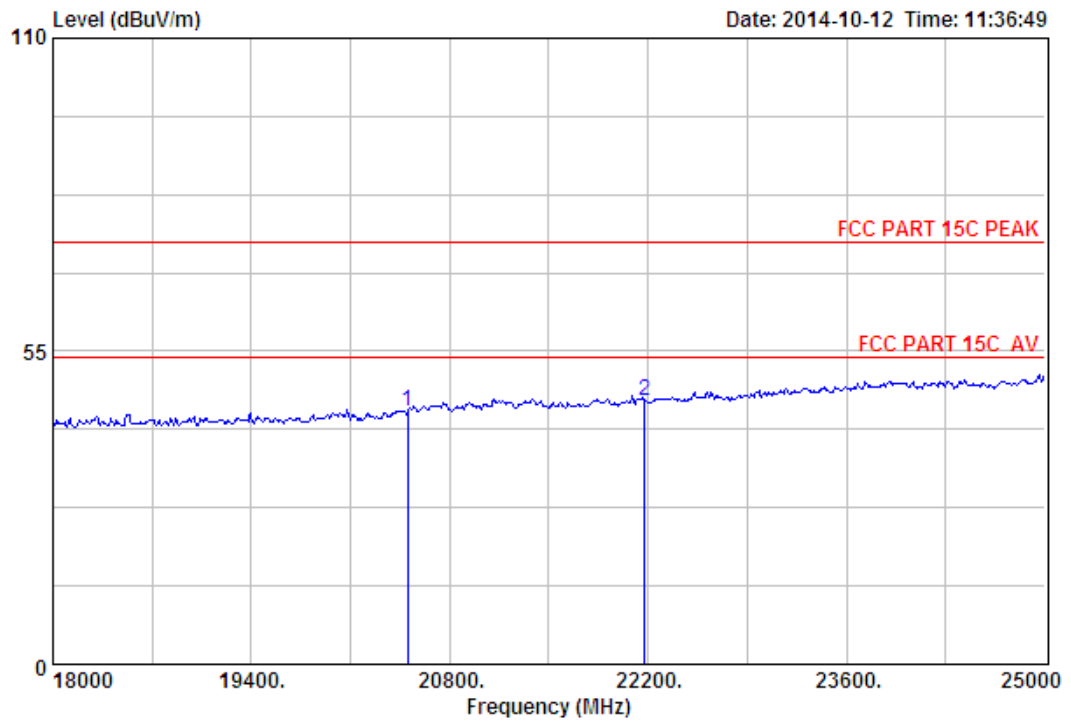
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 179
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2480MHz

| | Freq. | Ant. | Cable | Amp | Emission | | | | |
|---|----------|--------|-------|--------|----------|----------|----------|--------|--------|
| | (MHz) | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 20093.00 | 46.08 | 19.72 | 36.61 | 14.29 | 43.48 | 74.00 | 30.52 | Peak |
| 2 | 22102.00 | 45.72 | 20.62 | 34.80 | 14.24 | 45.78 | 74.00 | 28.22 | Peak |

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



Site no. : 3m Chamber Data no. : 180
 Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6°;Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2480MHz

| Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Emission | | Limits (dBuV/m) | Margin (dB) | Remark |
|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------|--------------------|----------------|--------|
| | | | | Reading (dBuV) | Level (dBuV/m) | | | |
| 1 20506.00 | 46.00 | 19.91 | 36.25 | 14.80 | 44.46 | 74.00 | 29.54 | Peak |
| 2 22179.00 | 45.73 | 20.67 | 34.72 | 14.57 | 46.25 | 74.00 | 27.75 | Peak |

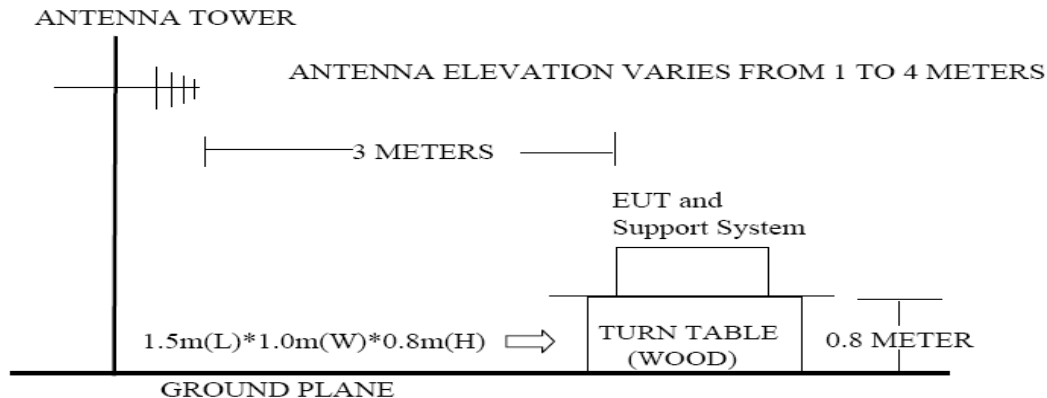
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

9. BAND EDGE COMPLIANCE

9.1. 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.

9.2. Block Diagram of Test setup



9.3. Test Procedure

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

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

- (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
- (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

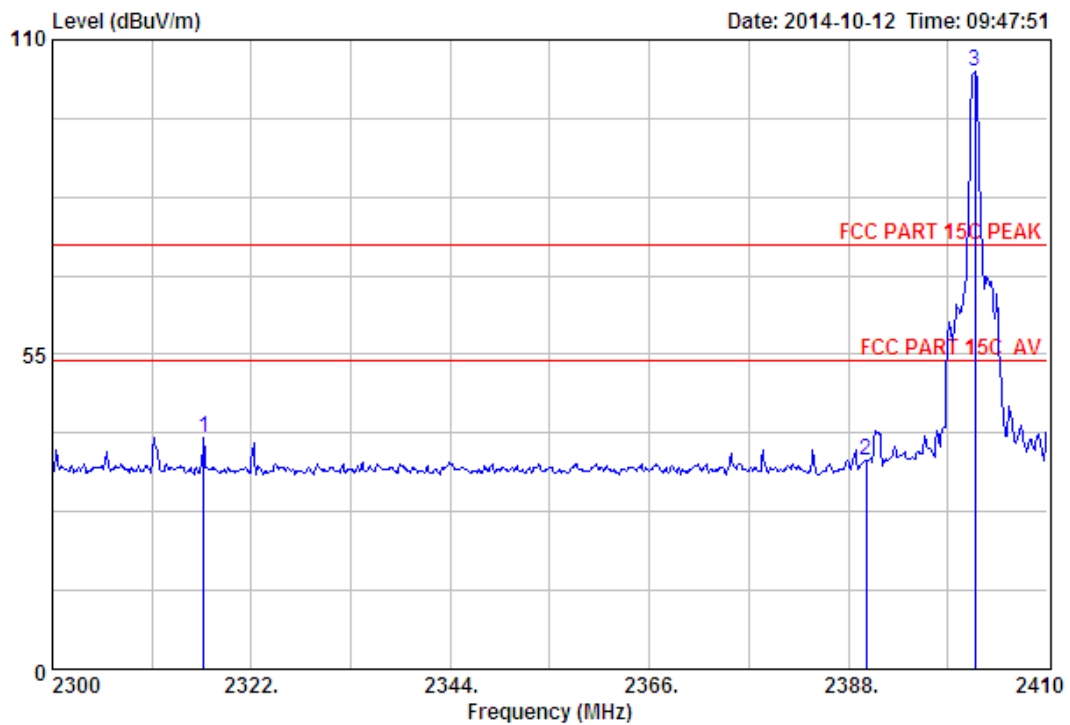
9.4. Test Result

| |
|--|
| EUT: Bluetooth Speaker |
| M/N: Beolit 15 |
| Power: AC 120V/60Hz |
| Test date: 2014-10-12 Test site: 3m Chamber Tested by: Tony Tang |
| Test mode: Tx Mode (Hopping On & No Hopping) |
| Pass |

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 、 2441MHz and 2480MHz 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.

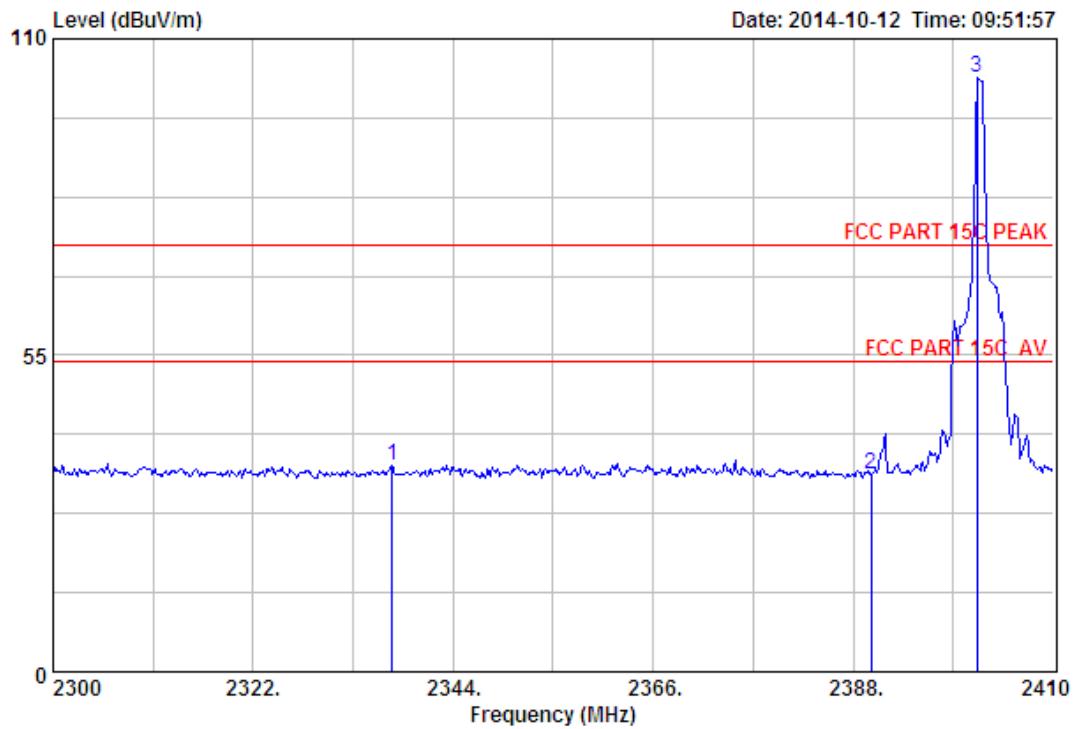
9.5. Test Data



Site no. : 3m Chamber Data no. : 143
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2402MHz (No Hopping)

| | | Ant. | Cable | Amp | Emission | | | | |
|---|---------|--------|-------|--------|----------|----------|----------|--------|--------|
| | Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | (MHz) | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2316.72 | 27.76 | 6.53 | 34.24 | 40.37 | 40.42 | 74.00 | 33.58 | Peak |
| 2 | 2390.00 | 27.64 | 6.62 | 34.19 | 36.32 | 36.39 | 74.00 | 37.61 | Peak |
| 3 | 2401.97 | 27.61 | 6.62 | 34.18 | 104.58 | 104.63 | 74.00 | -30.63 | Peak |

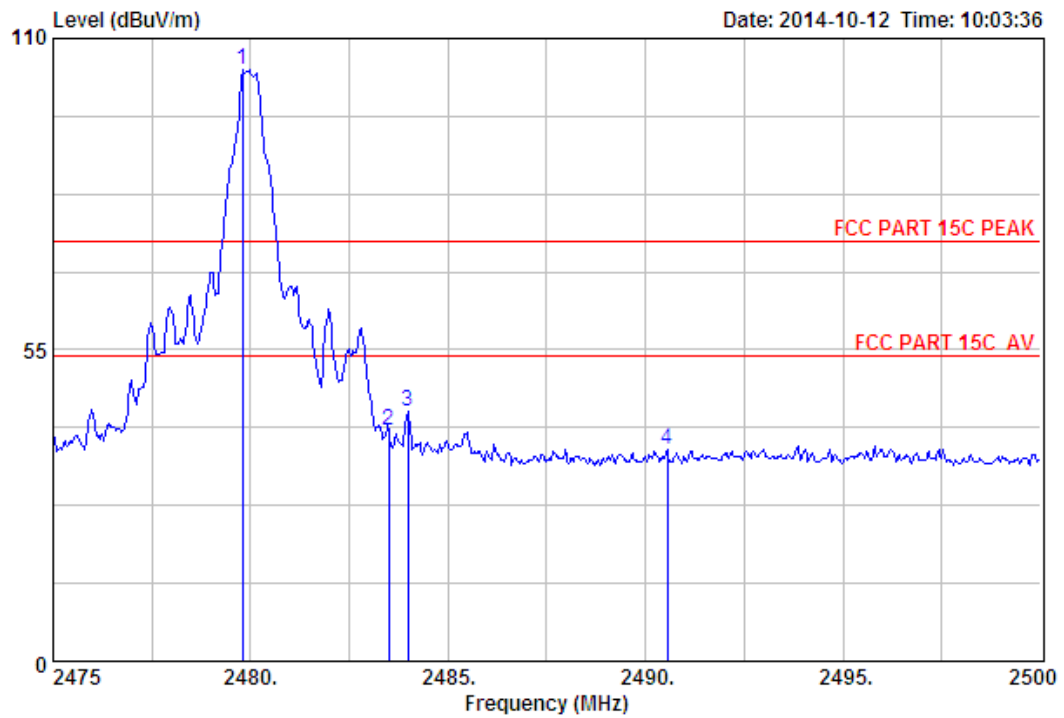
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 144
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2402MHz(No Hopping)

| | | Ant. | Cable | Amp | Emission | | | | |
|---|---------|--------|-------|--------|----------|----------|----------|--------|--------|
| | Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | (MHz) | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2337.29 | 27.73 | 6.56 | 34.23 | 35.94 | 36.00 | 74.00 | 38.00 | Peak |
| 2 | 2390.00 | 27.64 | 6.62 | 34.19 | 34.12 | 34.19 | 74.00 | 39.81 | Peak |
| 3 | 2401.64 | 27.61 | 6.62 | 34.18 | 103.14 | 103.19 | 74.00 | -29.19 | Peak |

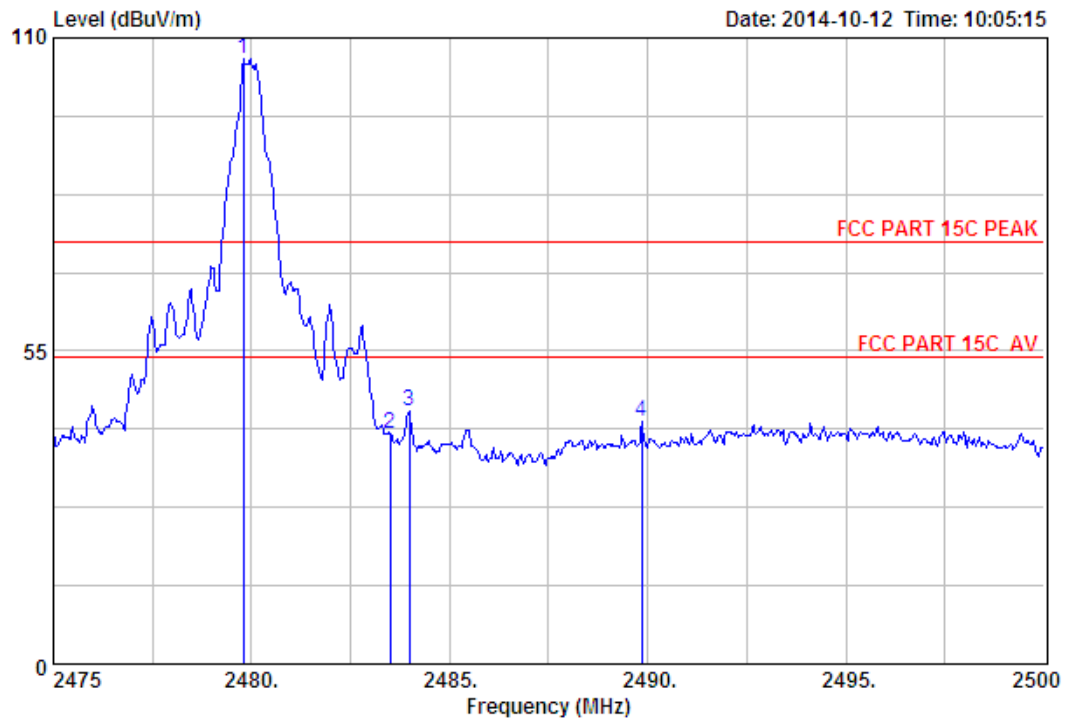
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 149
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2480MHz(No Hopping)

| | Ant. | Cable | Amp | | Emission | | | | |
|-------|---------|-------|--------|---------|----------|----------|--------|--------|------|
| Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark | |
| (MHz) | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | | |
| 1 | 2479.80 | 27.58 | 6.71 | 34.03 | 104.26 | 104.52 | 74.00 | -30.52 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 34.03 | 40.42 | 40.68 | 74.00 | 33.32 | Peak |
| 3 | 2483.98 | 27.58 | 6.71 | 34.03 | 43.78 | 44.04 | 74.00 | 29.96 | Peak |
| 4 | 2490.55 | 27.58 | 6.73 | 34.03 | 37.09 | 37.37 | 74.00 | 36.63 | Peak |

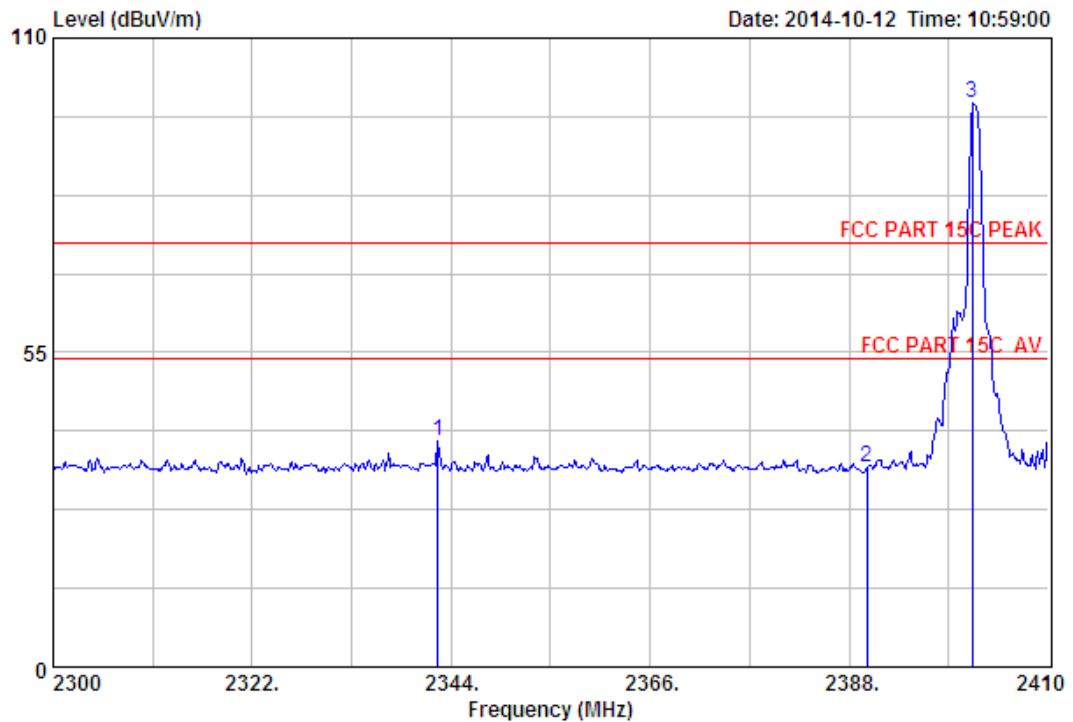
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 150
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2480MHz (No Hopping)

| | Ant. | Cable | Amp | | Emission | | | | |
|-------|---------|-------|--------|---------|----------|----------|--------|--------|------|
| Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark | |
| (MHz) | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | | |
| 1 | 2479.80 | 27.58 | 6.71 | 34.03 | 106.03 | 106.29 | 74.00 | -32.29 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 34.03 | 40.16 | 40.42 | 74.00 | 33.58 | Peak |
| 3 | 2483.98 | 27.58 | 6.71 | 34.03 | 44.13 | 44.39 | 74.00 | 29.61 | Peak |
| 4 | 2489.85 | 27.58 | 6.73 | 34.03 | 42.46 | 42.74 | 74.00 | 31.26 | Peak |

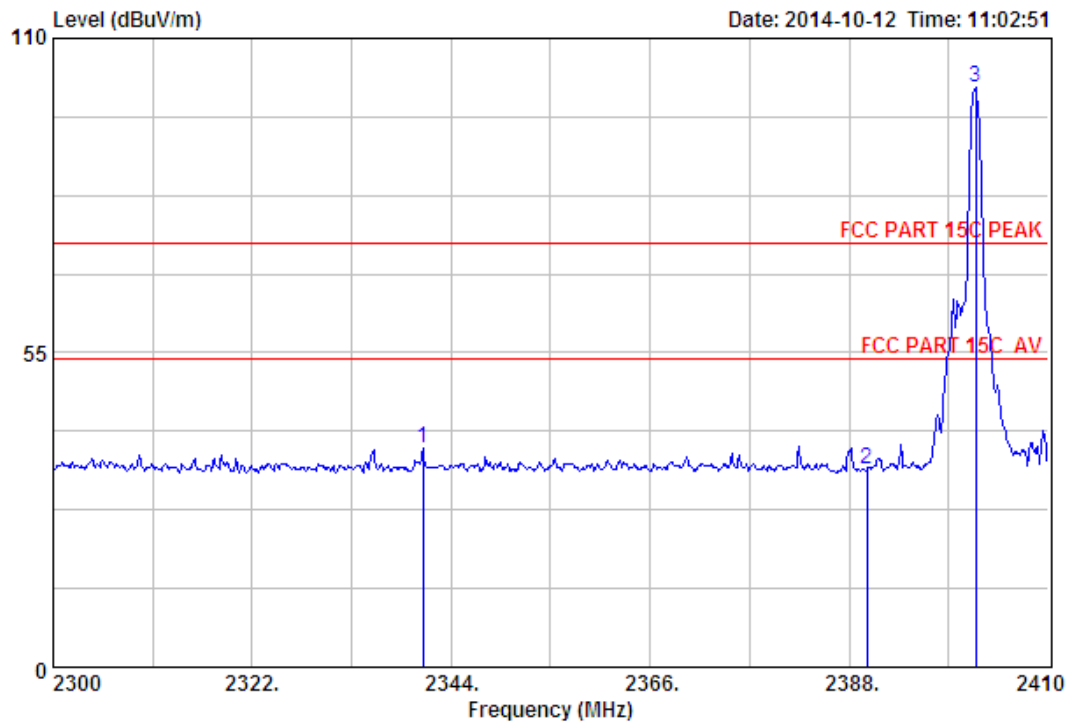
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 167
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2402MHz (No Hopping)

| | | Ant. | Cable | Amp | Emission | | | | |
|---|---------|--------|-------|--------|----------|----------|----------|--------|--------|
| | Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | (MHz) | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2342.57 | 27.70 | 6.56 | 34.22 | 39.54 | 39.58 | 74.00 | 34.42 | Peak |
| 2 | 2390.00 | 27.64 | 6.62 | 34.19 | 34.79 | 34.86 | 74.00 | 39.14 | Peak |
| 3 | 2401.64 | 27.61 | 6.62 | 34.18 | 98.51 | 98.56 | 74.00 | -24.56 | Peak |

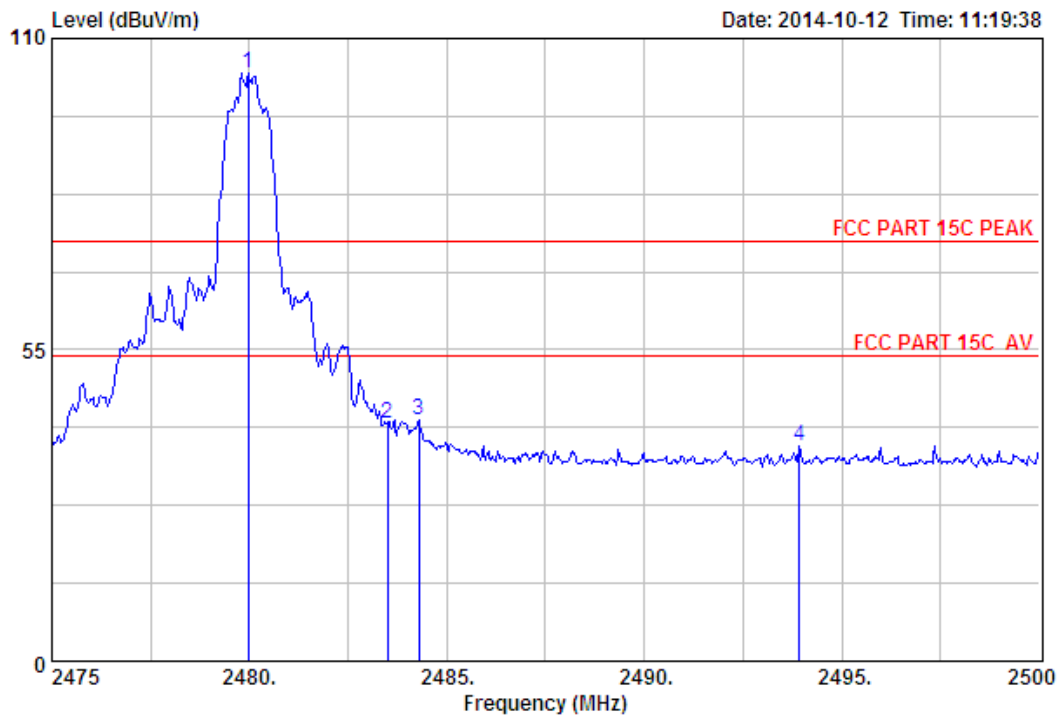
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 168
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2402MHz (No Hopping)

| | Freq. | Ant. | Cable | Amp | Emission | | | | |
|---|---------|--------|-------|--------|----------|----------|----------|--------|--------|
| | (MHz) | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2340.92 | 27.70 | 6.56 | 34.22 | 38.29 | 38.33 | 74.00 | 35.67 | Peak |
| 2 | 2390.00 | 27.64 | 6.62 | 34.19 | 34.53 | 34.60 | 74.00 | 39.40 | Peak |
| 3 | 2401.97 | 27.61 | 6.62 | 34.18 | 101.43 | 101.48 | 74.00 | -27.48 | Peak |

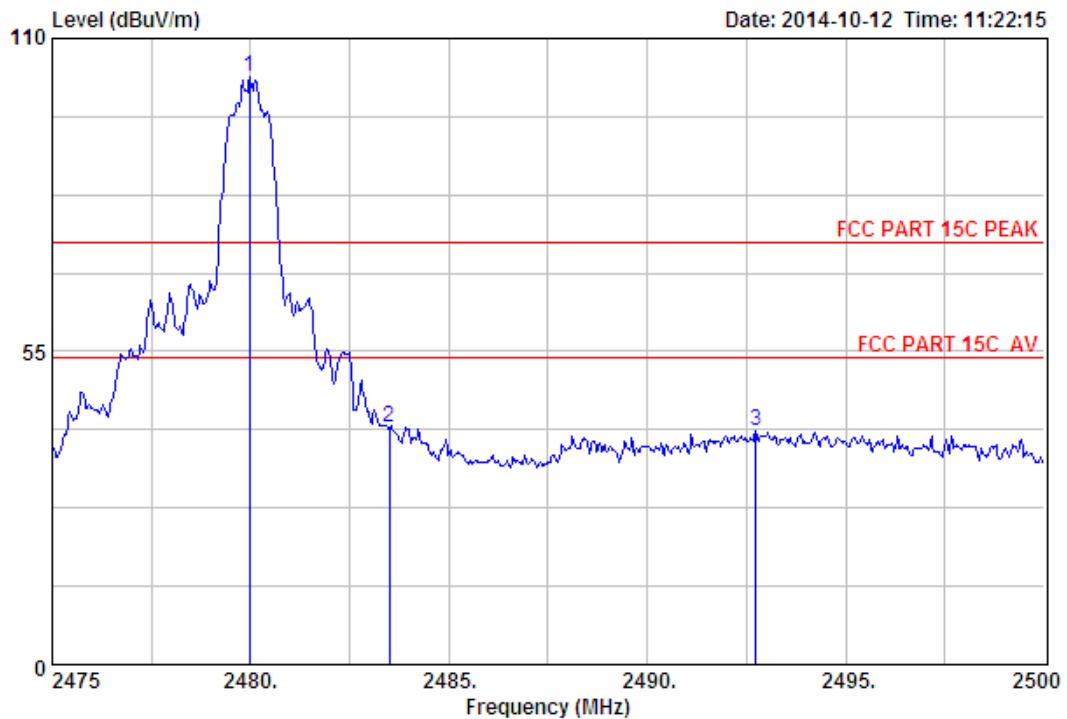
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 173
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2480MHz (No Hopping)

| | | Ant. | Cable | Amp | | Emission | | | |
|---|---------|--------|-------|--------|---------|----------|----------|--------|--------|
| | Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | (MHz) | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2479.98 | 27.58 | 6.71 | 34.03 | 103.76 | 104.02 | 74.00 | -30.02 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 34.03 | 41.76 | 42.02 | 74.00 | 31.98 | Peak |
| 3 | 2484.30 | 27.58 | 6.71 | 34.03 | 42.36 | 42.62 | 74.00 | 31.38 | Peak |
| 4 | 2493.93 | 27.58 | 6.73 | 34.03 | 37.65 | 37.93 | 74.00 | 36.07 | Peak |

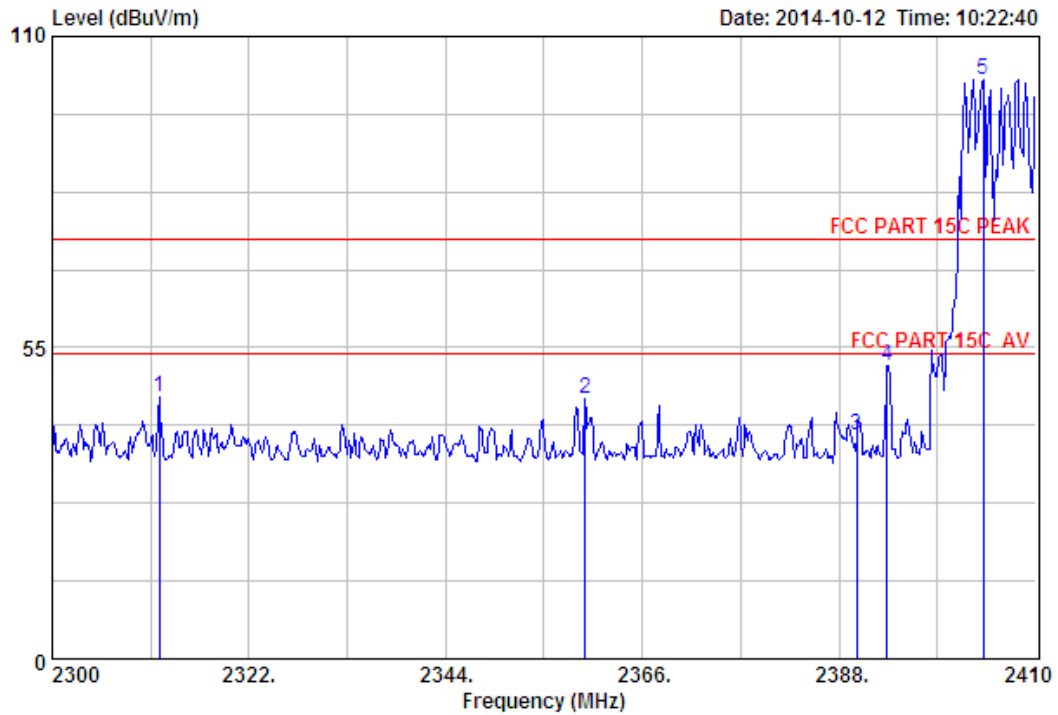
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 174
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2480MHz (No Hopping)

| | Freq. | Ant. | Cable | Amp | Emission | | | | |
|---|---------|--------|-------|--------|----------|----------|----------|--------|--------|
| | (MHz) | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2479.98 | 27.58 | 6.71 | 34.03 | 103.02 | 103.28 | 74.00 | -29.28 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 34.03 | 41.28 | 41.54 | 74.00 | 32.46 | Peak |
| 3 | 2492.73 | 27.58 | 6.73 | 34.03 | 40.67 | 40.95 | 74.00 | 33.05 | Peak |

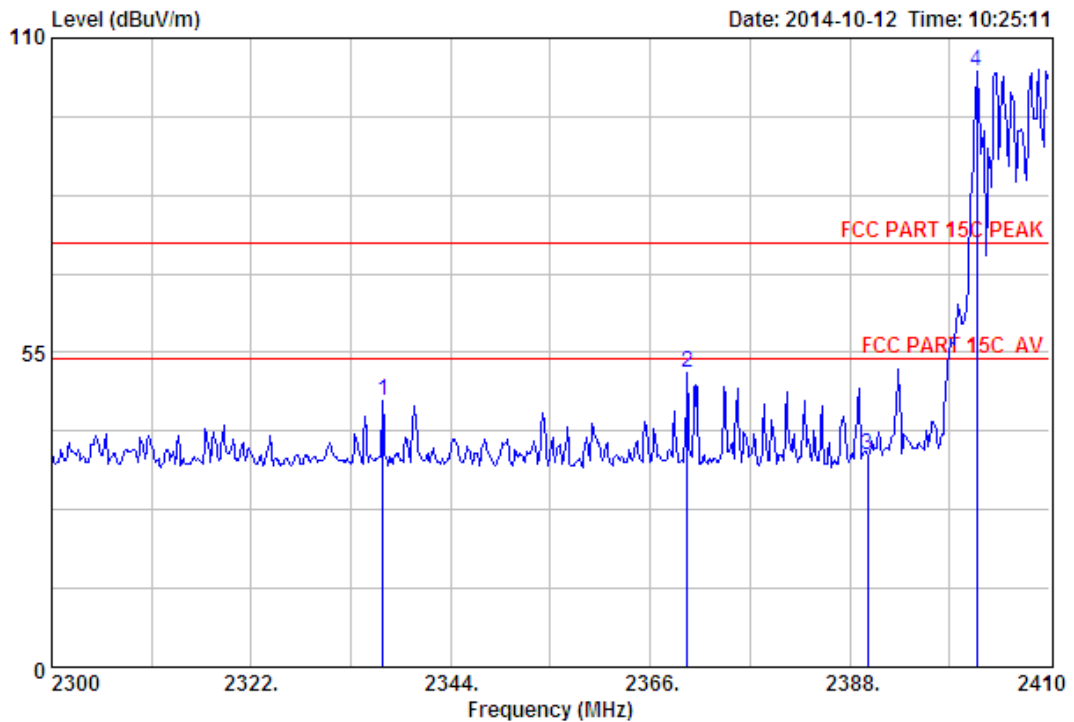
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 157
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2402MHz(Hopping On)

| | Freq. (MHz) | Ant. | Cable | Amp | Emission | | | Margin (dB) | Remark |
|---|----------------|------------------|--------------|----------------|-------------------|-------------------|--------------------|----------------|--------|
| | | Factor (dB/m) | Loss (dB) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limits (dBuV/m) | | |
| 1 | 2311.99 | 27.76 | 6.53 | 34.24 | 46.06 | 46.11 | 74.00 | 27.89 | Peak |
| 2 | 2359.62 | 27.67 | 6.58 | 34.20 | 45.98 | 46.03 | 74.00 | 27.97 | Peak |
| 3 | 2390.00 | 27.64 | 6.62 | 34.19 | 39.39 | 39.46 | 74.00 | 34.54 | Peak |
| 4 | 2393.39 | 27.61 | 6.62 | 34.18 | 51.66 | 51.71 | 74.00 | 22.29 | Peak |
| 5 | 2404.17 | 27.61 | 6.64 | 34.18 | 102.22 | 102.29 | 74.00 | -28.29 | Peak |

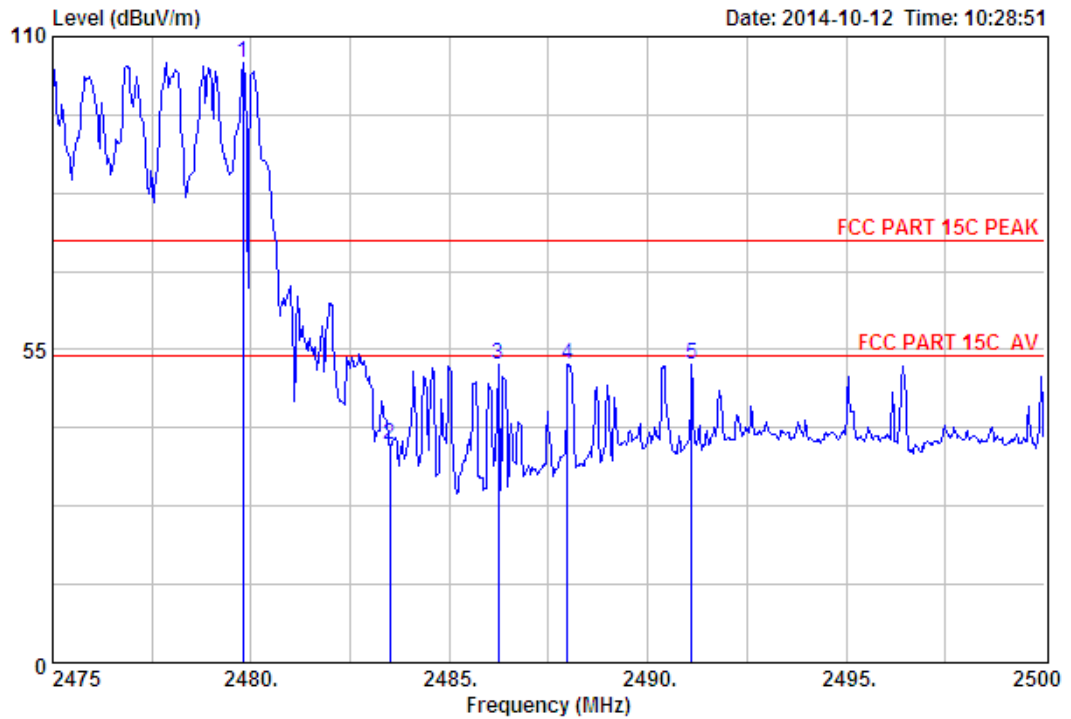
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 158
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2402MHz(Hopping On)

| | | Ant. | Cable | Amp | Emission | | | | |
|-------|---------|-------|--------|---------|----------|----------|--------|--------|------|
| Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark | |
| (MHz) | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | | |
| 1 | 2336.52 | 27.73 | 6.56 | 34.23 | 46.38 | 46.44 | 74.00 | 27.56 | Peak |
| 2 | 2370.07 | 27.67 | 6.60 | 34.20 | 51.41 | 51.48 | 74.00 | 22.52 | Peak |
| 3 | 2390.00 | 27.64 | 6.62 | 34.19 | 37.05 | 37.12 | 74.00 | 36.88 | Peak |
| 4 | 2401.97 | 27.61 | 6.62 | 34.18 | 104.09 | 104.14 | 74.00 | -30.14 | Peak |

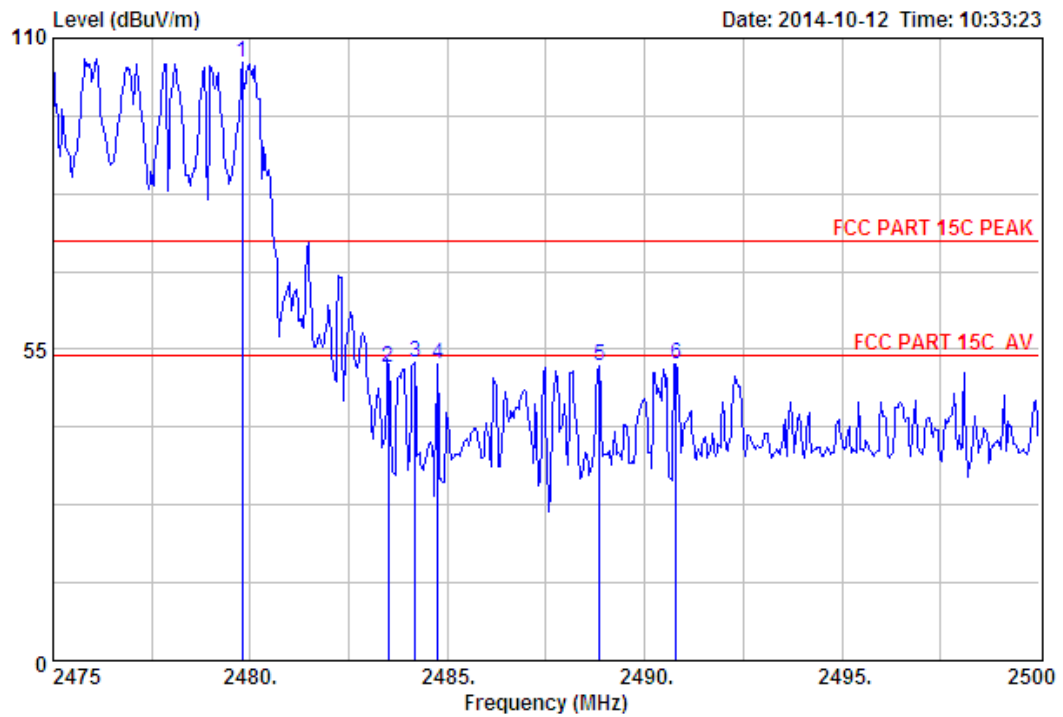
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 159
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2480MHz (Hopping On)

| | Ant. | Cable | Amp | Emission | | | | | |
|-------|---------|-------|--------|----------|----------|----------|--------|--------|------|
| Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark | |
| (MHz) | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | | |
| 1 | 2479.80 | 27.58 | 6.71 | 34.03 | 105.00 | 105.26 | 74.00 | -31.26 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 34.03 | 38.14 | 38.40 | 74.00 | 35.60 | Peak |
| 3 | 2486.23 | 27.58 | 6.71 | 34.03 | 52.20 | 52.46 | 74.00 | 21.54 | Peak |
| 4 | 2487.98 | 27.58 | 6.73 | 34.03 | 52.13 | 52.41 | 74.00 | 21.59 | Peak |
| 5 | 2491.10 | 27.58 | 6.73 | 34.03 | 52.11 | 52.39 | 74.00 | 21.61 | Peak |

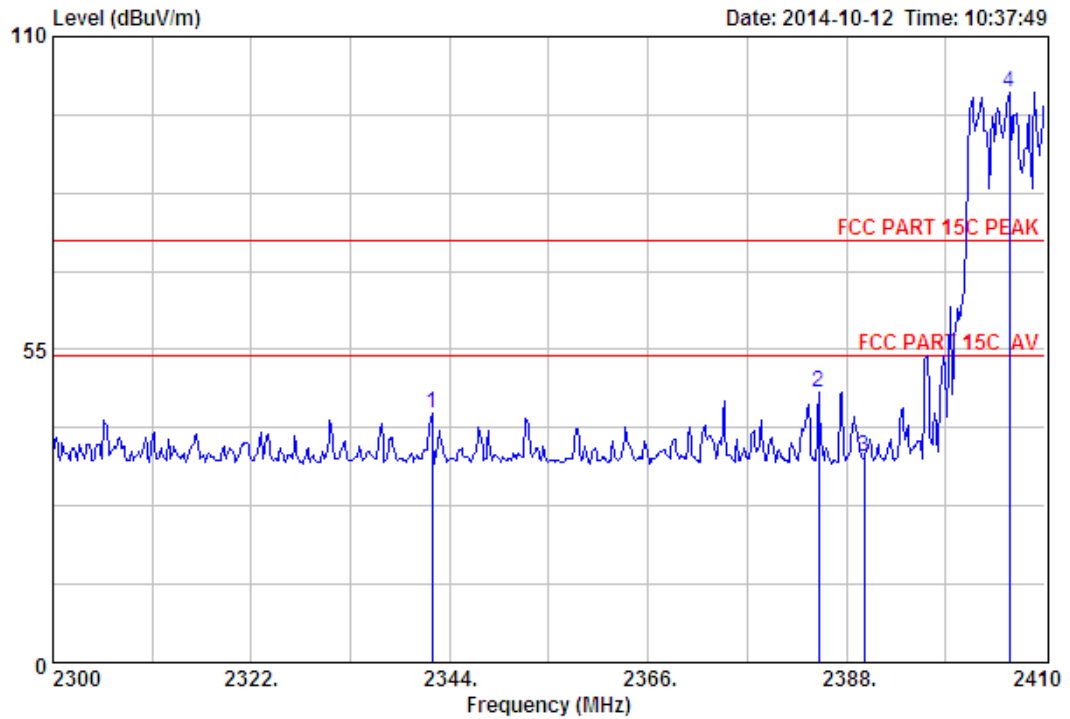
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 160
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : GFSK TX 2480MHz (Hopping On)

| | Ant. | Cable | Amp | | Emission | | | | |
|-------|---------|-------|--------|---------|----------|----------|--------|--------|------|
| Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark | |
| (MHz) | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | | |
| 1 | 2479.80 | 27.58 | 6.71 | 34.03 | 105.60 | 105.86 | 74.00 | -31.86 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 34.03 | 51.41 | 51.67 | 74.00 | 22.33 | Peak |
| 3 | 2484.18 | 27.58 | 6.71 | 34.03 | 52.31 | 52.57 | 74.00 | 21.43 | Peak |
| 4 | 2484.75 | 27.58 | 6.71 | 34.03 | 52.29 | 52.55 | 74.00 | 21.45 | Peak |
| 5 | 2488.85 | 27.58 | 6.73 | 34.03 | 51.81 | 52.09 | 74.00 | 21.91 | Peak |
| 6 | 2490.80 | 27.58 | 6.73 | 34.03 | 52.04 | 52.32 | 74.00 | 21.68 | Peak |

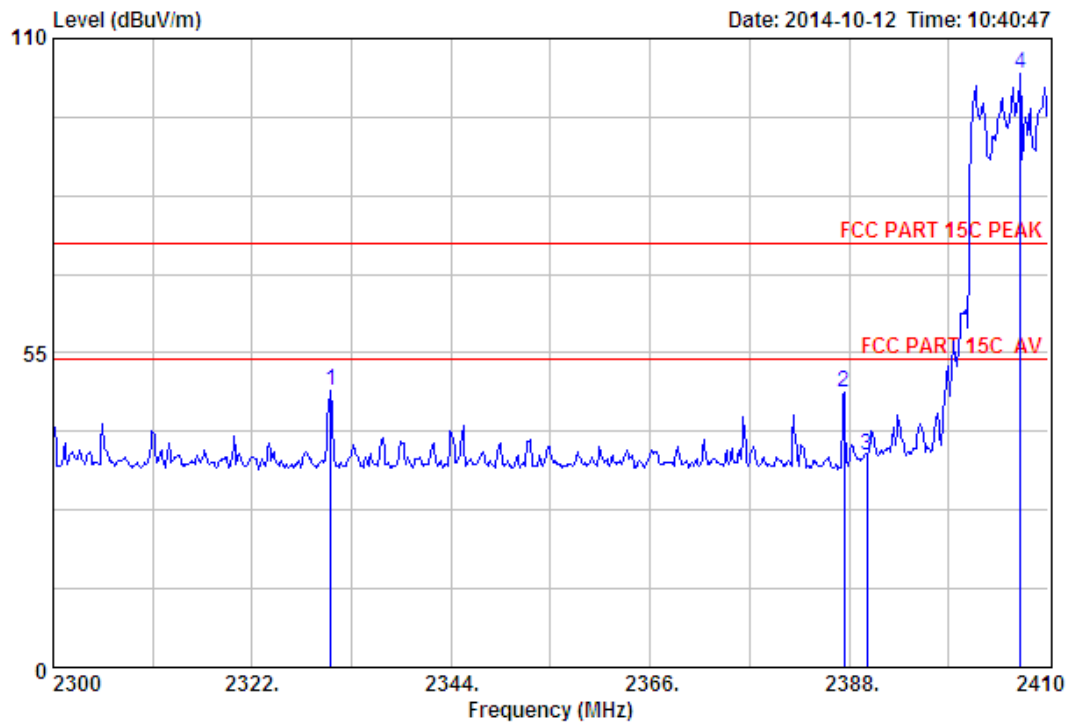
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 161
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2402MHz (Hopping On)

| | Ant. | Cable | Amp | Emission | | | | | |
|-------|---------|-------|--------|----------|----------|----------|--------|--------|------|
| Freq. | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark | |
| (MHz) | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | | |
| 1 | 2342.02 | 27.70 | 6.56 | 34.22 | 43.89 | 43.93 | 74.00 | 30.07 | Peak |
| 2 | 2384.92 | 27.64 | 6.60 | 34.19 | 47.56 | 47.61 | 74.00 | 26.39 | Peak |
| 3 | 2390.00 | 27.64 | 6.62 | 34.19 | 36.00 | 36.07 | 74.00 | 37.93 | Peak |
| 4 | 2406.04 | 27.61 | 6.64 | 34.18 | 99.97 | 100.04 | 74.00 | -26.04 | Peak |

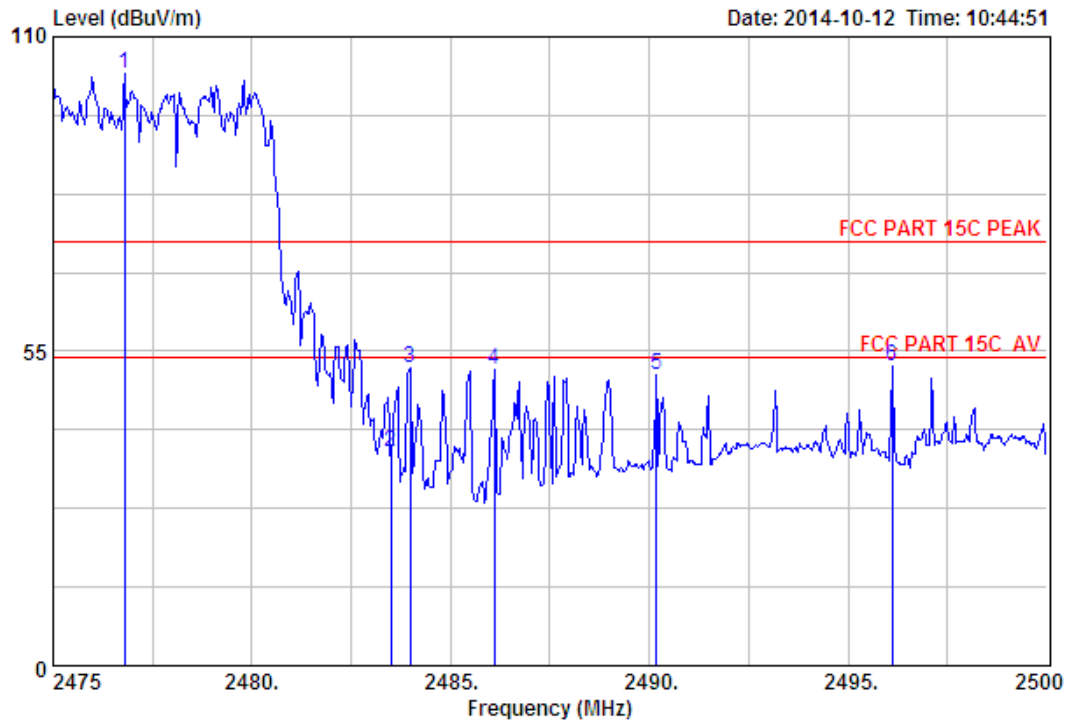
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 162
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2402MHz (Hopping On)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBUV) | Emission Level (dBUV/m) | Limits (dBUV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2330.69 | 27.73 | 6.54 | 34.23 | 48.42 | 48.46 | 74.00 | 25.54 | Peak |
| 2 | 2387.45 | 27.64 | 6.62 | 34.19 | 47.97 | 48.04 | 74.00 | 25.96 | Peak |
| 3 | 2390.00 | 27.64 | 6.62 | 34.19 | 37.14 | 37.21 | 74.00 | 36.79 | Peak |
| 4 | 2406.92 | 27.61 | 6.64 | 34.18 | 103.87 | 103.94 | 74.00 | -29.94 | Peak |

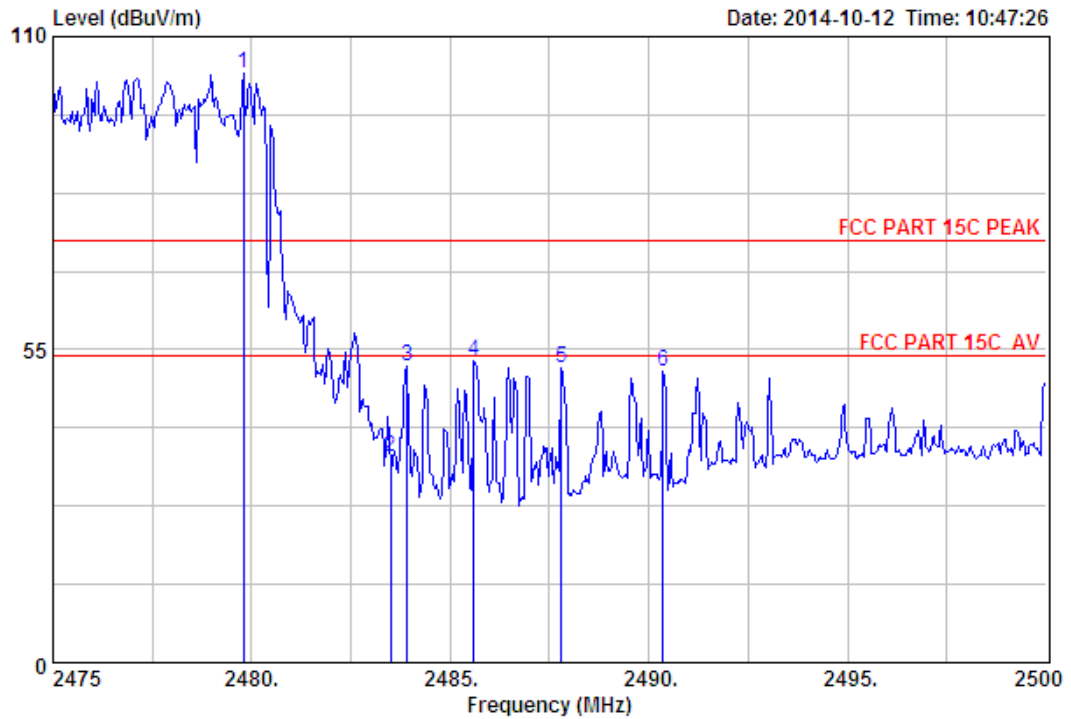
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 163
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2480MHz (Hopping On)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2476.80 | 27.58 | 6.71 | 34.06 | 103.32 | 103.55 | 74.00 | -29.55 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 34.03 | 37.27 | 37.53 | 74.00 | 36.47 | Peak |
| 3 | 2483.98 | 27.58 | 6.71 | 34.03 | 51.97 | 52.23 | 74.00 | 21.77 | Peak |
| 4 | 2486.10 | 27.58 | 6.71 | 34.03 | 51.40 | 51.66 | 74.00 | 22.34 | Peak |
| 5 | 2490.18 | 27.58 | 6.73 | 34.03 | 50.55 | 50.83 | 74.00 | 23.17 | Peak |
| 6 | 2496.10 | 27.57 | 6.73 | 34.00 | 52.01 | 52.31 | 74.00 | 21.69 | Peak |

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



Site no. : 3m Chamber Data no. : 164
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : 8-DPSK TX 2480MHz (Hopping On)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2479.80 | 27.58 | 6.71 | 34.03 | 103.16 | 103.42 | 74.00 | -29.42 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 34.03 | 36.03 | 36.29 | 74.00 | 37.71 | Peak |
| 3 | 2483.93 | 27.58 | 6.71 | 34.03 | 51.81 | 52.07 | 74.00 | 21.93 | Peak |
| 4 | 2485.60 | 27.58 | 6.71 | 34.03 | 52.85 | 53.11 | 74.00 | 20.89 | Peak |
| 5 | 2487.80 | 27.58 | 6.73 | 34.03 | 51.38 | 51.66 | 74.00 | 22.34 | Peak |
| 6 | 2490.35 | 27.58 | 6.73 | 34.03 | 50.77 | 51.05 | 74.00 | 22.95 | Peak |

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

10. POWER LINE CONDUCTED EMISSIONS

10.1. Limit

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

Notes: 1. * Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

10.2. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT was charged from PC's USB port which connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#).. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2003 on Conducted Emission Test.

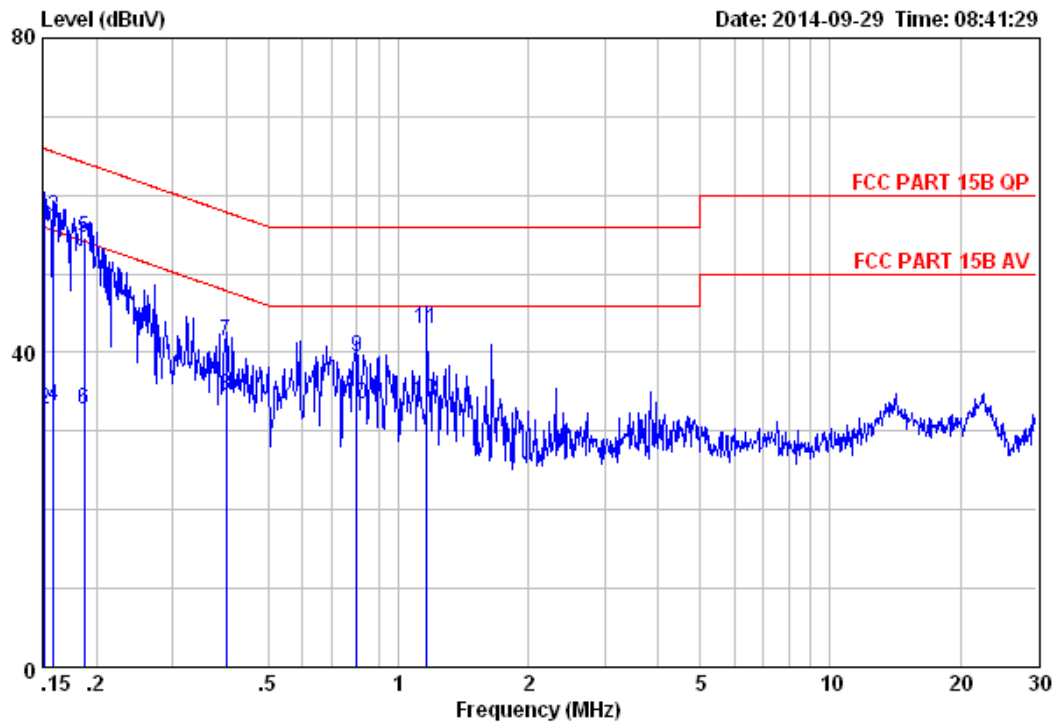
The bandwidth of test receiver (R & S ESHS30) is set at 10kHz.

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

10.3. Test Result

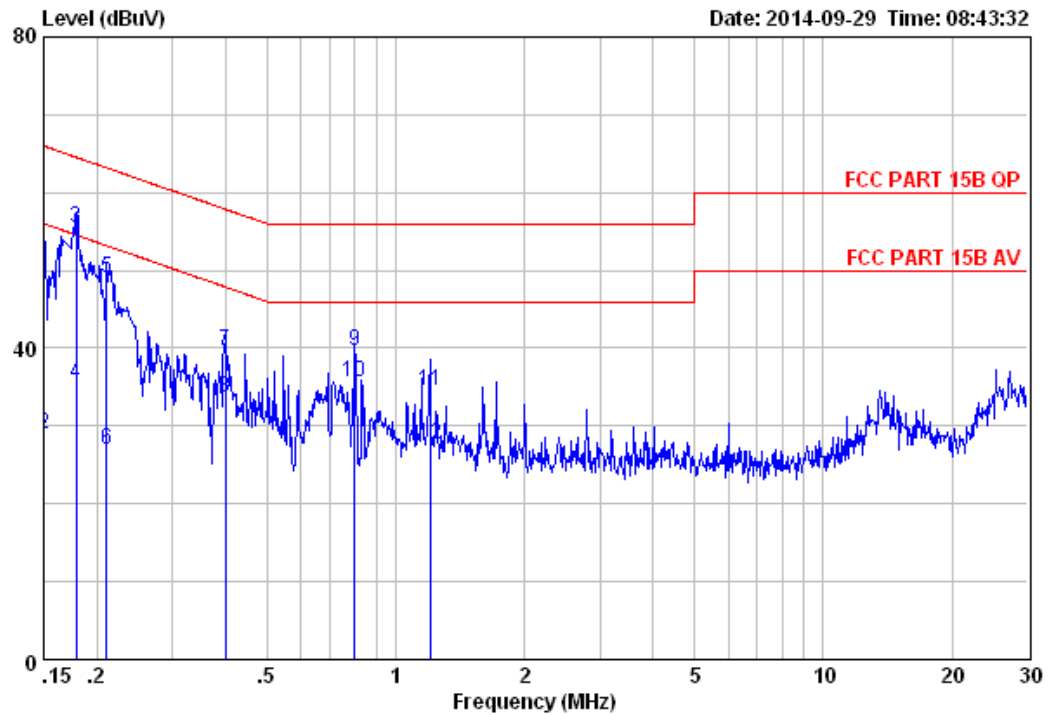
| 0.15MHz—30MHz Conducted emissison Test result | | |
|---|-----------------------|----------------------|
| EUT: Bluetooth Speaker | M/N:Beolit 15 | |
| Power: AC 120V/60Hz | | |
| Test date: 2014-09-29 | Test site: 3m Chamber | Tested by: Tony.Tang |
| Test mode: Tx Mode | | |
| Pass | | |

10.4. Test data



Site no. : EST Conduction Shielded RoomData no. : 575
 Limit : FCC PART 15B QP LINE Phase : LINE
 Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : TX Mode

| | Freq. (MHz) | LISN Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV) | Limits (dBuV) | Margin (dB) | Remark |
|----|----------------|------------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1 | 0.15 | 9.61 | 9.81 | 38.37 | 57.79 | 65.91 | 8.12 | QP |
| 2 | 0.15 | 9.61 | 9.81 | 13.37 | 32.79 | 55.91 | 23.12 | Average |
| 3 | 0.16 | 9.61 | 9.81 | 37.87 | 57.29 | 65.52 | 8.23 | QP |
| 4 | 0.16 | 9.61 | 9.81 | 13.87 | 33.29 | 55.52 | 22.23 | Average |
| 5 | 0.19 | 9.61 | 9.80 | 35.26 | 54.67 | 64.15 | 9.48 | QP |
| 6 | 0.19 | 9.61 | 9.80 | 13.26 | 32.67 | 54.15 | 21.48 | Average |
| 7 | 0.40 | 9.61 | 9.82 | 22.07 | 41.50 | 57.86 | 16.36 | QP |
| 8 | 0.40 | 9.61 | 9.82 | 15.07 | 34.50 | 47.86 | 13.36 | Average |
| 9 | 0.80 | 9.61 | 9.81 | 19.95 | 39.37 | 56.00 | 16.63 | QP |
| 10 | 0.80 | 9.61 | 9.81 | 13.95 | 33.37 | 46.00 | 12.63 | Average |
| 11 | 1.17 | 9.63 | 9.81 | 23.52 | 42.96 | 56.00 | 13.04 | QP |
| 12 | 1.17 | 9.63 | 9.81 | 14.52 | 33.96 | 46.00 | 12.04 | Average |



Site no. : EST Conduction Shielded Room Data no. : 577
 Limit : FCC PART 15B QP LINE Phase : NEUTRAL
 Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : AC 120V/60Hz
 M/N : Beolit 15
 Test Mode : TX Mode

| | Freq. (MHz) | LISN Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV) | Limits (dBuV) | Margin (dB) | Remark |
|----|----------------|------------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1 | 0.15 | 9.46 | 9.81 | 36.59 | 55.86 | 66.00 | 10.14 | QP |
| 2 | 0.15 | 9.46 | 9.81 | 9.59 | 28.86 | 56.00 | 27.14 | Average |
| 3 | 0.18 | 9.54 | 9.80 | 36.18 | 55.52 | 64.55 | 9.03 | QP |
| 4 | 0.18 | 9.54 | 9.80 | 16.18 | 35.52 | 54.55 | 19.03 | Average |
| 5 | 0.21 | 9.60 | 9.80 | 29.55 | 48.95 | 63.18 | 14.23 | QP |
| 6 | 0.21 | 9.60 | 9.80 | 7.55 | 26.95 | 53.18 | 26.23 | Average |
| 7 | 0.40 | 9.59 | 9.82 | 20.21 | 39.62 | 57.86 | 18.24 | QP |
| 8 | 0.40 | 9.59 | 9.82 | 14.21 | 33.62 | 47.86 | 14.24 | Average |
| 9 | 0.80 | 9.62 | 9.81 | 20.22 | 39.65 | 56.00 | 16.35 | QP |
| 10 | 0.80 | 9.62 | 9.81 | 16.22 | 35.65 | 46.00 | 10.35 | Average |
| 11 | 1.20 | 9.61 | 9.82 | 15.11 | 34.54 | 56.00 | 21.46 | QP |
| 12 | 1.20 | 9.61 | 9.82 | 8.11 | 27.54 | 46.00 | 18.46 | Average |

11.ANTENNA REQUIREMENTS

11.1.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.

11.2.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 3.11dBi.